Technical Memorandum No. 33-100
Volume 4, Part B

Earth–Mars Trajectories, 1971

R. J. Richard
R. Y. Roth

N65-35303

FACILITY FORM 602

(ACCESSION NUMBER)	(THRU)
753	1
(PAGES)	(CODE)
CR 67358	30
(NASA CR OR TMX OR AD NUMBER)	(CATEGORY)

GPO PRICE $ _____

CSFTI PRICE(S) $ _____

Hard copy (HC) 10.53

Microfiche (MF) 3.50

ff 653 July 65

JET PROPULSION LABORATORY
CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CALIFORNIA

June 15, 1965

Technical Memorandum No. 33-100
Volume 4, Part B

Earth–Mars Trajectories, 1971

R. J. Richard
R. Y. Roth

T. W. Hamilton, *Manager*
Systems Analysis Section

JET PROPULSION LABORATORY
CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CALIFORNIA

June 15, 1965

Copyright © 1965
Jet Propulsion Laboratory
California Institute of Technology

Prepared Under Contract No. NAS 7-100
National Aeronautics & Space Administration

CONTENTS

I. Introduction vii
A. Heliocentric Conic Computation vii
B. Planetocentric Conic Computation vii
C. Differential Corrections vii
D. Mid-Course Guidance vii
E. Orbit Determination viii
F. Accuracy of Computations viii

II. Analytical Model for Interplanetary Trajectories ix
A. Heliocentric Motion ix
B. Launch Planet Escape Hyperbola xi
C. Differential Corrections xiii
D. Mid-Course Execution Accuracy xv
E. Orbit Determination Accuracy xviii

III. Explanation of Trajectory Tables xxi
A. Heliocentric Conic Group xxi
B. Planetocentric Conic Group xxiii
C. Differential Corrections Group xxv
D. Mid-Course Execution Accuracy Group xxvi
E. Orbit Determination Accuracy Group xxvii

IV. Constants xxviii

References xxix

Earth–Mars Trajectories, 1971 xxx

TABLES

1. Trajectory parameters influencing tracking accuracy xix
2. Tracking station parameters influencing tracking accuracy xix

FIGURES

1. Heliocentric transfer geometry x
2. In-plane transfer geometry x
3. Determination of the hyperbolic-excess velocity vector V_{hL} xi
4. Vehicle flight plane xii
5. Impact parameter B xiii
6. The R, S, T target coordinate system xiii
7. The mapping of mid-course execution error xvi
8. Projection of three-dimensional error ellipsoid on the T-R plane . . xviii
9. Orientation of the X_i Cartesian coordinate system to describe uncertainties in the hyperbolic-excess velocity vector V_{hL} xviii
10. Generalized geometry for aiming point angles xxiii
11. Vertical impact point geometry xxiii
12. Ascent trajectory profile xxiv

FOREWORD

This volume is one of a set of seven giving key characteristics of Earth-to-Mars ballistic trajectories during the period 1964–1977, which period is divided into seven launch intervals (one interval per volume), spaced about 25 months apart. Within each interval, trajectories are calculated for each launch date and further subdivided into flight time ranges graduated in 2-day increments. Launch dates and approximate flight times for this volume are as follows (only trajectories requiring *vis viva* geocentric energies of less than 40 km/sec are included).

Launch date (1971)	Flight time range (days)
March 6–August 10	70–280

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

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

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

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

This volume would be incomplete without an expression of gratitude to V. C. Clarke, Jr., W. E. Bollman, T. W. Hamilton, and C. G. Pfeiffer, who laid the foundation upon which this document is based.

I. INTRODUCTION

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

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

A. Heliocentric Conic Computation

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

B. Planetocentric Conic Computation

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

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

C. Differential Corrections

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

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

D. Mid-Course Guidance

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

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

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

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

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

The approach guidance phase is not conveniently treated with this kind of analysis, and is not discussed further.

E. Orbit Determination

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

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

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

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

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

F. Accuracy of Computations

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

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

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

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

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

II. ANALYTICAL MODEL FOR INTERPLANETARY TRAJECTORIES

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

A. Heliocentric Motion

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

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

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

1. Determination of Planar Orientation

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

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

[2] Hyperbolic heliocentric motion is not considered herein.

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

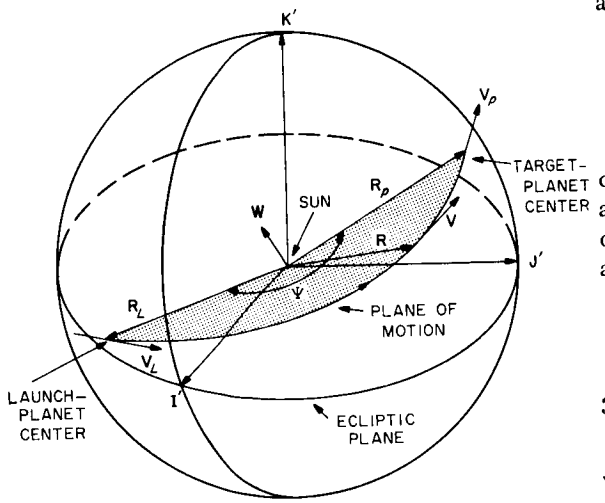


Fig. 1. Heliocentric transfer geometry

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

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

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

2. In-Plane Relations

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

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

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

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

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

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

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

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

and the path angle Γ is found from

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

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

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

3. Lambert's Theorem

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

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

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

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

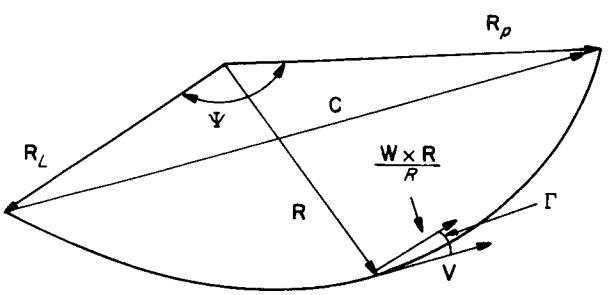


Fig. 2. In-plane transfer geometry

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

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

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

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

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

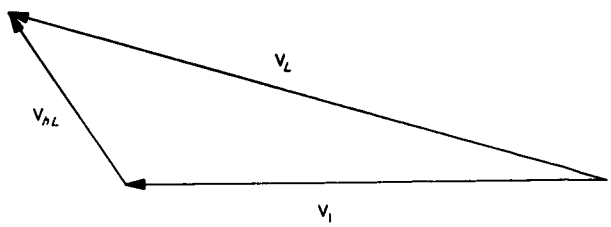


Fig. 3. Determination of the hyperbolic-excess velocity vector $\mathbf{V}_{hL}$

B. Launch Planet Escape Hyperbola

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

1. Assumptions

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

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

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

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

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

2. Size and Shape of the Escape Hyperbola

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

Size is basically determined by the energy C_3, which in turn is a function of boost vehicle capability. For boost vehicles in use (or shortly to be available) at this writing, values of energy less than or equal to 25 km^2/sec^2 are considered reasonable. The larger the value of energy that the booster is required to deliver, the smaller the payload and launch period over which the vehicle may be fired.

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

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

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

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

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

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

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

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

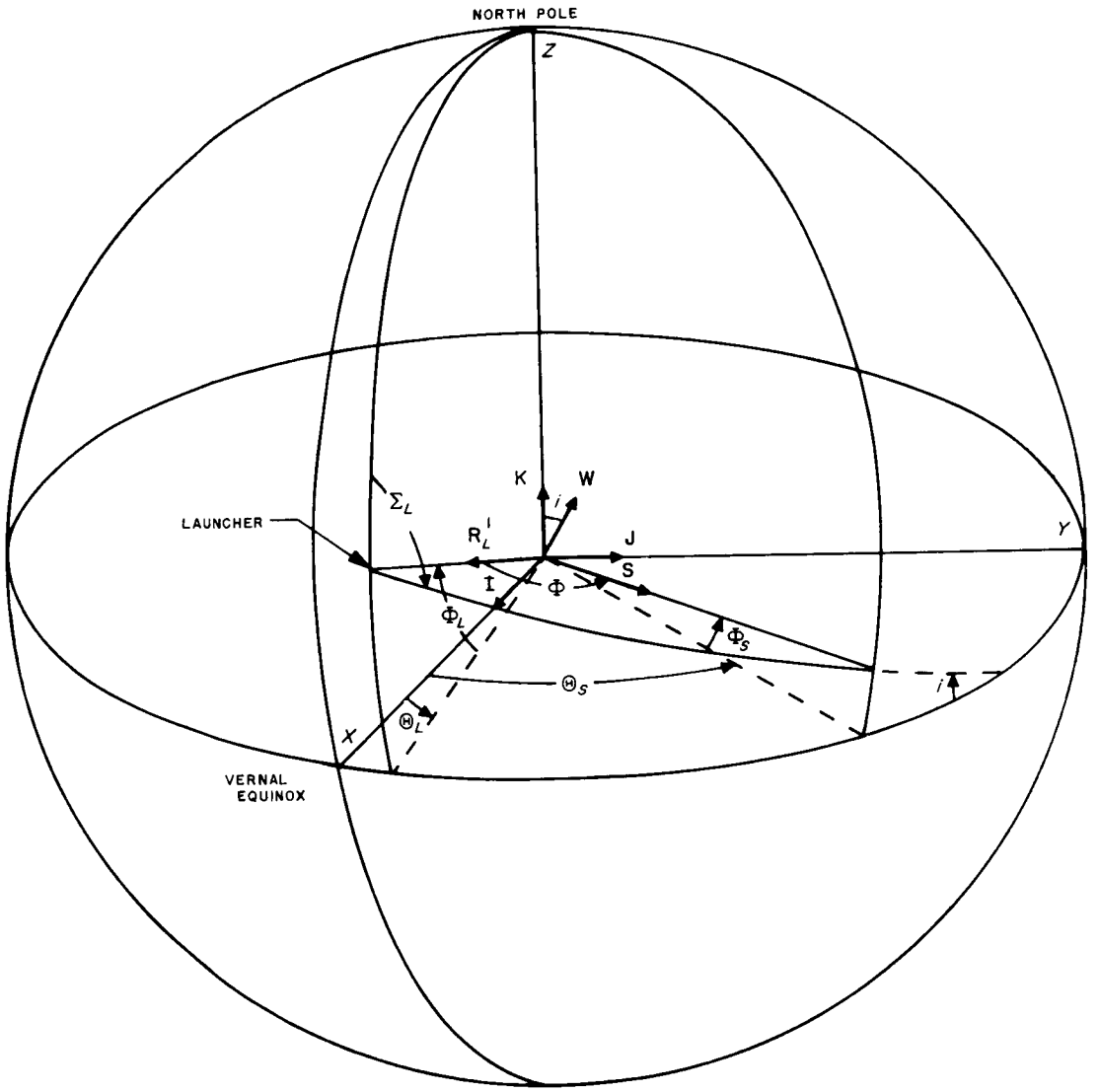


Fig. 4. Vehicle flight plane

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

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

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

C. Differential Corrections

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

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

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

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

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

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

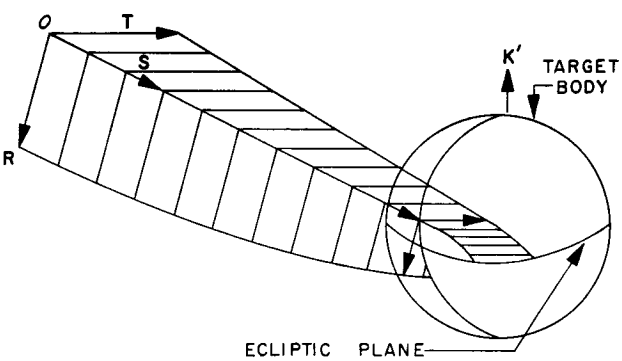


Fig. 6. The R, S, T target coordinate system

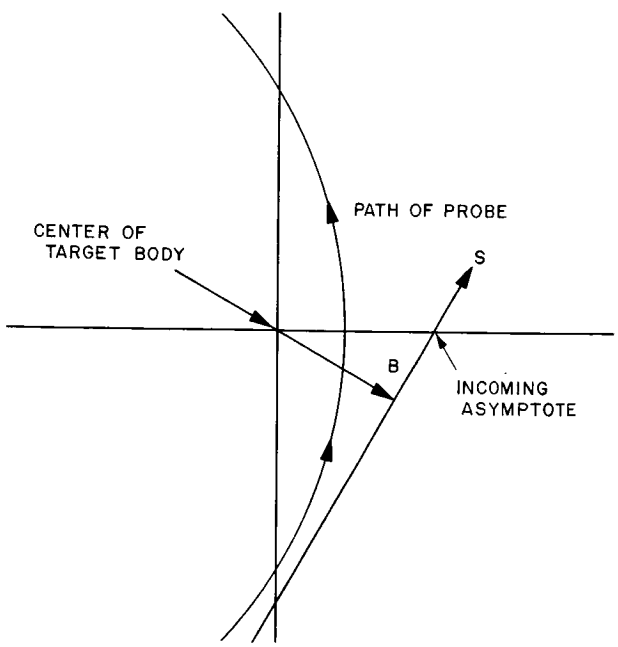


Fig. 5. Impact parameter B

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

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

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

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

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

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

where

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

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

The semimajor axis a' is obtained from

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

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

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

The semilatus rectum p' and eccentricity e' are

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

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

The eccentric anomaly at launch E'_L is

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

The mean anomaly at launch M'_L is obtained from

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

The mean orbital rate n' is

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

The mean anomaly at the target M'_p is

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

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

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

if

$$\cos E_p \geqq 0$$

or

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

if

$$\cos E_p < 0$$

where

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

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

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

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

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

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

The heliocentric central angle Ψ' is

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

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

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

The heliocentric position vector at the target is

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

where

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

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

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

The heliocentric velocity at the target is

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

The hyperbolic-excess velocity at the target is

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

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

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

The impact parameter **B** is

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

The flight time error is

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

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

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

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

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

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

from whence

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

and

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

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

The effect of solar radiation pressure acting on the probe may also be evaluated as follows: In Eq. (19) let $\Delta\mathbf{V}_{hL} = 0$, but in Eq. (20), (22), (24), (26), (36), vary GM_S by adding an increment ΔGM_S. This procedure gives rise to a varied trajectory from which the impact parameter **B** and flight time error ΔT_F may be obtained. The partials $\partial B/\partial GM_S$ and $\partial T_F/\partial GM_S$ may then be calculated. Since the acceleration caused by solar radiation pressure acts opposite to the gravitational attraction of the Sun, radiation pressure has the effect of decreasing the Sun's gravitational attraction, or decreasing GM_S. A decrease, $\Delta GM_S = -1.25\times10^6$ km^3/sec^2 corresponds to the solar radiation pressure acting on a 3500-kg spacecraft having a perfectly reflecting area of 22 square meters. Thus the miss, always being a positive number, is obtained by $\Delta B_{sp} = 1.25\times10^6\,\partial B/\partial GM_S$, and the corresponding flight time error is $\Delta T_{F_{sp}} = -1.25\times10^6\,\partial T_F/\partial GM_S$, which is sign sensitive.

D. Mid-Course Execution Accuracy

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

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

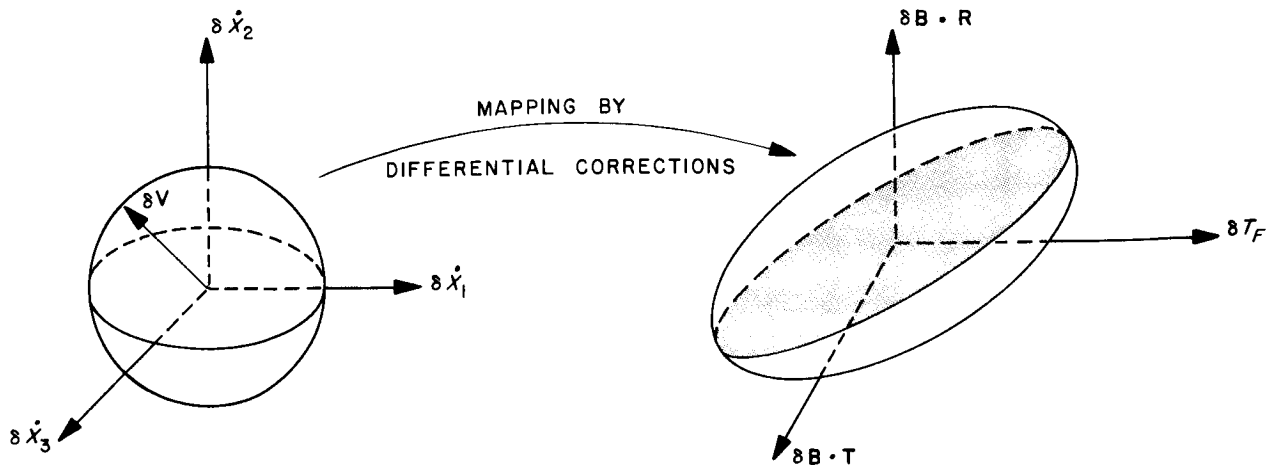


Fig. 7. The mapping of mid-course execution error

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

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

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

Then a new matrix F can be formed,

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

where

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

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

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

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

$$\delta \mathbf{M}\, \Lambda^{-1}\, \delta \mathbf{M}^T = 1 \quad (50)$$

where

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

and

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

The elements of the Λ matrix are:

$$\lambda_{11} = \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Phi_S}\right)^2 + \frac{1}{C_3 \cos^2 \Phi_S}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Theta_S}\right)^2 + 4C_3\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial C_3}\right)^2\right]$$

$$\lambda_{12} = \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Phi_S}\right)\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Phi_S}\right) + \frac{1}{C_3 \cos^2 \Phi_S}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Theta_S}\right) \times \left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Theta_S}\right) + 4C_3\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial C_3}\right)\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial C_3}\right)\right]$$

$$\lambda_{13} = \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Phi_S}\right)\left(\frac{\partial T_F}{\partial \Phi_S}\right) + \frac{1}{C_3 \cos^2 \Phi_S}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Theta_S}\right)\left(\frac{\partial T_F}{\partial \Theta_S}\right) + 4C_3\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial C_3}\right)\left(\frac{\partial T_F}{\partial C_3}\right)\right]$$

$$\lambda_{22} = \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Phi_S}\right)^2 + \frac{1}{C_3 \cos^2 \Phi_S}\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Theta_S}\right)^2 + 4C_3\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial C_3}\right)^2\right]$$

$$\lambda_{23} = \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Phi_S}\right)\left(\frac{\partial T_F}{\partial \Phi_S}\right) + \frac{1}{C_3 \cos^2 \Phi_S}\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Theta_S}\right)\left(\frac{\partial T_F}{\partial \Theta_S}\right) + 4C_3\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial C_3}\right)\left(\frac{\partial T_F}{\partial C_3}\right)\right]$$

$$\lambda_{33} = \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial T_F}{\partial \Phi_S}\right)^2 + \frac{1}{C_3 \cos^2 \Phi_S}\left(\frac{\partial T_F}{\partial \Theta_S}\right)^2 + 4C_3\left(\frac{\partial T_F}{\partial C_3}\right)^2\right] \quad (52)$$

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

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

Then the Λ matrix becomes

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

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

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

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

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

where the matrix L is given by

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

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

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

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

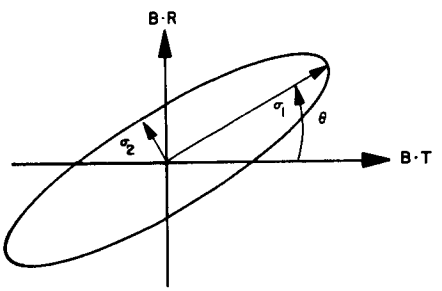


Fig. 8. Projection of three-dimensional error ellipsoid on the T-R plane

E. Orbit Determination Accuracy

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

1. Method of Describing Orbit Determination Accuracy

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

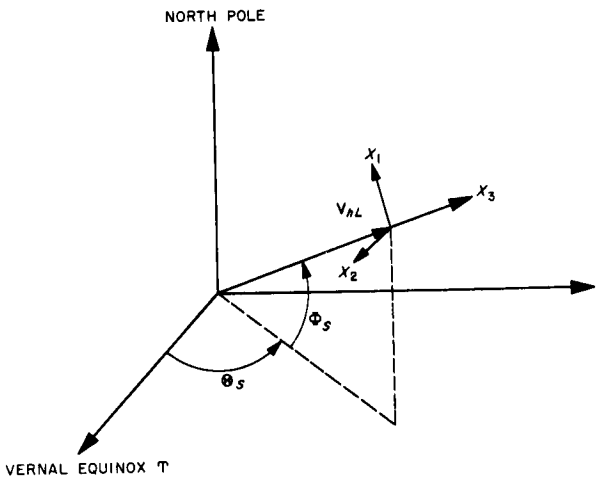


Fig. 9. Orientation of the X_i Cartesian coordinate system to describe uncertainties in the hyperbolic-excess velocity vector $\mathbf{V}_{hL}$

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

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

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

Note that

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

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

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

2. Accuracy of Near-Earth Tracking

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

Table 1. Trajectory parameters influencing tracking accuracy

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

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

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

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

Table 2. Tracking station parameters influencing tracking accuracy

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

The tracking accuracies reported here are representative of those foreseen for the 1971 time period. Range rate data were taken from the DSIF stations in South Africa, Australia, and the United States. The measurements were assigned standard deviations at 0.001 meters/sec, corresponding to a 60-sec sample rate. Station location uncertainties were assumed to be uncorrelated, with standard deviations of 0.001 deg in latitude, 0.0005 deg in longitude, and 30 meters in geocentric radius. Simultaneous tracking by more than one station was not allowed. The uncertainties quoted are those to be expected in the absence of other error sources, notably solar pressure and astronomical unit uncertainties.

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

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

3. Calculation of Target Errors

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

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

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

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

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

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

By postmultiplying K by

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

the F matrix is obtained.

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

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

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

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

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

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

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

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

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

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

III. EXPLANATION OF TRAJECTORY TABLES

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

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

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

A. Heliocentric Conic Group

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

HELIOCENTRIC CONIC DISTANCE

RL LAL LOL VL GAL AZL HCA SMA ECC INC V1

RP LAP LOP VP GAP AZP TAL TAP RCA APO V2

RC GL GP ZAL ZAP ETS ZAE ETE ZAC ETC LVI

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

Line 1

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Line 2

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

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

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

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

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

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

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

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

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

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

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

Line 3

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

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

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

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

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

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

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

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

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

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

In this diagram, the reference coordinate system is the same target **R**, **S**, **T** system defined in Section IIC. A unit

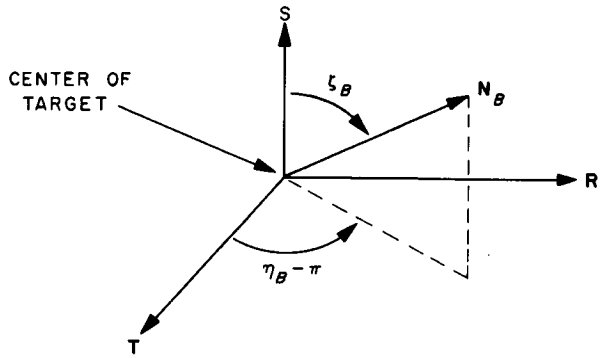


Fig. 10. Generalized geometry for aiming point angles

vector $\mathbf{N}_B$ (subscript B for body) is directed from the target center to another celestial body. The angular quantity ζ_B is the angle subtended at the target center between the incoming asymptote S and the target–celestial body line $\mathbf{N}_B$. Thus

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

since

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

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

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

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

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

ZAP, ζ_S (or ζ_p) — This angle is useful in that it indicates the direction of the probe's approach to the target. If $\zeta_S < \pi/2$, the probe approaches from the target planet's dark side. If $\zeta_S > \pi/2$, it approaches from the light side. Thus the parameter is equivalent to the Sun–probe-target angle a few days before encounter.

ETS, η_S — defined as above.

ZAE, ζ_E — This angle is useful in locating the Earth as the probe approaches the target. The parameter is equivalent to the Earth–probe-target angle a few days before encounter.

ETE, η_E — defined as above.

ZAC, ζ_C — the Canopus–probe-target angle a few days before encounter.

ETC, η_C — defined as above.

LVI,Φ_I[†] — the declination (latitude) of the vertical impact point referenced to the target planet's equator. The vertical impact point is that point on the surface of the target planet that the incoming asymptote would intersect if it were to pass through the center of the planet. This quantity is defined by

$$\sin \Phi_I = -(\cos \Theta_{sp} \cos \Phi_{sp} \cos \Theta_p \cos \Phi_p + \sin \Theta_{sp} \cos \Phi_{sp} \sin \Theta_p \cos \Phi_p + \sin \Phi_{sp} \sin \Phi_p)$$

where Θ_p and Φ_p are the Earth equatorial right ascension and declination of the Mars north pole, and Θ_{sp} and Φ_{sp} are the right ascension and declination of the incoming asymptote with respect to the Earth's equator (Fig. 11).

[†] Because of its importance in trajectory studies, the parameter LVI has been substituted in place of CLP, which was given in previous volumes.

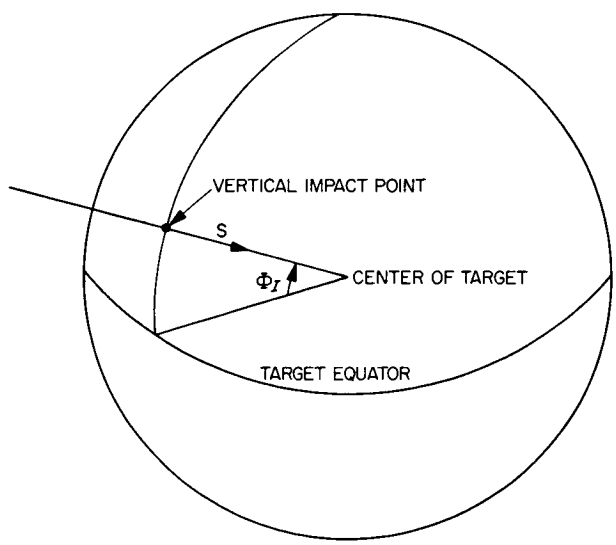


Fig. 11. Vertical impact point geometry

B. Planetocentric Conic Group

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

A special case may arise when the declination of the outgoing asymptote of the escape hyperbola is greater than the launch site latitude (Cape Kennedy). In this case, owing to geometrical restrictions, it may not be possible to fire in a symmetrical band of azimuths about due east, as explained in Ref. 6. This band of restricted azimuths may eliminate part or all of the selected launch azimuth band 50 to 110 deg. When this happens, only those trajectories with permissible azimuths are printed, in addition to the limiting azimuths, or the most northerly and southerly azimuths, that are possible.

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

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

t_1 the time from launch to parking-orbit injection.

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

t_2 the time of final burn.

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

v_1 the true anomaly in the hyperbolic orbit at injection.

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

ϕ_L the longitude of the launch site.

θ_L the latitude of the launch site.

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

$\Phi_1 = 23$ deg

$t_1 = 700$ sec

$\Phi_2 = 25$ deg

$t_2 = 300$ sec

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

$v_1 = 12$ deg

$R_p = 6560$ km

$\phi_L = 28.28$ deg

$\theta_L = 279.5$ deg

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

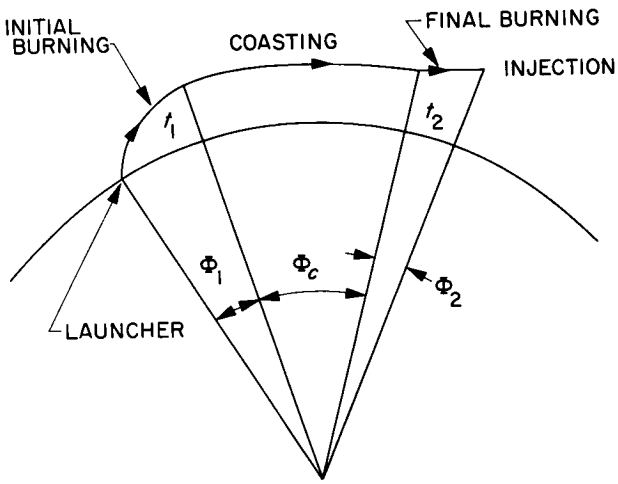


Fig. 12. Ascent trajectory profile

The print array for the PLANETOCENTRIC CONIC group is:

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

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

Line 1

C3, C_3 — the *vis viva* integral (Moulton), or twice the total energy per unit mass, expressed in km²/sec² and defined by $C_3 = V^2_{hL}$.

VHL, V_{hL} — the launch hyperbolic-excess speed.

DLA, Φ_S — the declination of the outgoing asymptote of the escape hyperbola defined in Eq. (18).

RAL, Θ_S — the right ascension of the outgoing asymptote of the escape hyperbola defined in Eq. (18).

RAD, $R = |\mathbf{R}|$ — the launch-planet-centered injection radius.

VEL, $V = |\mathbf{V}|$ — the inertial injection speed.

PTH, Γ — the injection path angle defined by

$$\sin\Gamma = \frac{\mathbf{V}\cdot\mathbf{R}}{VR} \qquad -\frac{\pi}{2} \leq \Gamma \leq \frac{\pi}{2}$$

VHP, V_{hp} — the hyperbolic-excess speed at the target.

DPA, Φ_{Sp} — the declination of the incoming asymptote at the target. The reference coordinate system here is vernal equinox, Earth equatorial, mean of *launch* date

RAP, Θ_{Sp} — the right ascension of the incoming asymptote at the target. Same reference coordinates as for Φ_{Sp}.

ECC, e — the eccentricity of the escape hyperbola.

Line 2

LNCH AZMTH, Σ_L — the launch azimuth measured in a plane tangent to the surface of the launch planet at the launch site, positive east of true north.

LNCH TIME, T_L — the launch time. For the range of launch azimuths given herein, launch time may cross 0 hours, or midnight. In this case, the launch date may be advanced to the following day for times after midnight, or it may be retarded to the previous day for times before midnight, whichever the reader wishes.

L-I TIME, t_{LI} — the launch-to-injection time.

INJ LAT, ϕ — the injection latitude (or declination Φ).

INJ LONG, θ — the injection longitude, measured positive east of Greenwich, $0 \leq \theta \leq 2\pi$.

INJ RT ASC, Θ — the injection right ascension.

INJ AZMTH, Σ — the injection azimuth, or angle between the projection of the velocity vector V, on the local horizontal plane and the projection of true north on this plane, measured positive east of true north.

INJ TIME, T_I — the injection time. The same comment applies to this quantity regarding launch date as applied to the launch time. However, both times must be consistent. For example, if launch time is on the previous day, injection time may fall on the launch date shown, or it may be on the following day.

PO CST TIM, t_c — the coast time in the parking orbit, in sec.

INJ 2 LAT, ϕ_2 — the latitude of the start of final burn out of the parking orbit.

INJ 2 LONG, θ_2 — the longitude of the start of final burn out of the parking orbit, $0 \leq \theta_2 \leq 2\pi$.

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

C. Differential Corrections Group

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

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

DIFFERENTIAL CORRECTIONS

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

The symbols are defined as follows:

Line 1

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

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

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

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

Line 2

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

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

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

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

Line 3

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

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

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

BSP, ΔB_{sp} the target miss (in km) caused by solar radiation pressure acting on a 3500-kg spacecraft having an effective perfectly reflecting area of 22 square meters.

Line 4

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

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

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

FSP, $\Delta T_{F_{sp}}$ the flight time error (in sec) caused by solar radiation pressure acting on a 3500-kg spacecraft having an effective perfectly reflecting area of 22 square meters.

D. Mid-Course Execution Accuracy Group

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

The print array for this group is:

MID-COURSE EXECUTION ACCURACY

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

The quantities are defined as follows:

Line 1

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

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

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

Line 2

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

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

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

Line 3

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

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

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

Line 4

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

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

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

E. Orbit Determination Accuracy Group

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

ORBIT DETERMINATION ACCURACY

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

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

Line 1

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

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

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

Line 2

CRT, ρ_{RT} the linear correlation coefficient relating errors in **B**·**R** to errors in **B**·**T**, dimensionless.

CRS, ρ_{RS} the linear correlation coefficient relating errors in **B**·**R** to errors in S, dimensionless.

CST, ρ_{TS} the linear correlation coefficient relating errors in **B**·**T** to errors in S, dimensionless.

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

Line 3

LSA, $\sqrt{\varepsilon_{max}}$ the largest semiaxis of the position ellipsoid, in km. (ε_{max} is the largest eigenvalue of Λ_{M_1}, in km^2.)

MSA, $\sqrt{\varepsilon_{mid}}$ the middle semiaxis of the position ellipsoid, in km. (ε_{mid} is the second-largest, or middle, eigenvalue of Λ_{M_1}, in km^2.)

SSA, $\sqrt{\varepsilon_{min}}$ the smallest semiaxis of the position ellipsoid, in km. (ε_{min} is the smallest eigenvalue of Λ_{M_1}, in km^2.)

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

Line 4

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

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

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

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

$$\Lambda_{\mathbf{X}}^* = \begin{pmatrix} 25 \times 10^{-12} & 0 & 0 \\ 0 & 2.25 \times 10^{-12} & 0 \\ 0 & 0 & .0225 \times 10^{-12} \end{pmatrix} \left(\frac{\text{km}}{\text{sec}}\right)^2$$

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

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

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

The correlation coefficients between T_F and **B**·**T** are those given by CST; those between T_F and **B**·**R** are given by CRS.

IV. CONSTANTS

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

Gravitational Constants

1. Sun

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

2. Earth

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

Astronomical Unit-to-Kilometer Conversion Factor

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

Earth's Rotation Rate

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

REFERENCES

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

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

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

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

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

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

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

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

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

Earth-Mars Trajectories, 1971

This data presentation has been photographically reproduced (enlarged 9 times) from microfilm generated by computer magnetic tape.

LAUNCH DATE APR 23 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 441.736 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.451	GAL	-2.14	AZL	92.65	HCA	148.21	SMA	186.49	ECC	.19690	INC	2.6471	V1	29.624
RP	208.32	LAP	-1.39	LOP	.44	VP	23.717	GAP	9.17	AZP	87.75	TAL	346.91	TAP	135.12	RCA	149.77	APO	223.21	V2	26.304
RC	93.190	GL	-24.78	GP	5.98	ZAL	118.09	ZAP	134.21	ETS	174.01	ZAE	170.73	ETE	128.55	ZAC	106.37	ETC	277.28	LVI	-22.86

PLANETOCENTRIC CONIC

C3	12.765	VHL	3.573	DLA	-33.10	RAL	345.79	RAD	6639.4	VEL	11.525	PTH	6.57	VHP	4.057	DPA	-12.39	RAP	316.17	ECC	1.2101

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 44 36	2331.28	1.06	59.34	201.38	137.57	19 23 27	1331.3	19.19	43.02
60.00	20 18 41	2080.83	7.30	42.75	207.34	129.75	20 53 22	1080.8	22.53	23.41
70.00	22 45 23	1648.43	16.46	14.34	213.89	120.36	23 12 51	648.4	27.49	351.32
72.04	0 6 1	1412.80	22.17	359.28	217.08	115.23	0 29 34	412.8	30.58	334.17
72.04	0 6 1	1412.80	22.17	359.28	217.08	115.23	0 29 34	412.8	30.58	334.17
72.04	0 6 1	1412.80	22.17	359.28	217.08	115.23	0 29 34	412.8	30.58	334.17
110.00	3 48 45	5983.28	16.46	281.16	213.89	120.36	5 28 28	4983.3	27.49	258.14

DIFFERENTIAL CORRECTIONS

TDE	-.3904	TRA	-.6318	TC3	-.0302	BAU	.0981														

MID-COURSE EXECUTION ACCURACY

SGT	1362.0	SGR	603.1	SG3	1025.3																
RRT	.6552	RRF	-.8261	RTF	-.7707																
SGB	1489.6	R23	-.3472	R13	-.8087																
SG1	1424.4	SG2	435.6	THA	17.91																

ORBIT DETERMINATION ACCURACY

ST	36.2	SR	17.9	SS	57.2																
CRT	.9561	CR8	.6496	C8T	.8407																
LSA	66.9	MSA	20.6	S8A	1.0																
EL1	40.1	EL2	4.7	ALF	25.71																

LAUNCH DATE APR 23 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 445.831 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.429	GAL	-2.12	AZL	92.69	HCA	149.46	SMA	186.11	ECC	.19525	INC	2.6914	V1	29.624
RP	208.49	LAP	-1.37	LOP	1.69	VP	23.665	GAP	8.91	AZP	87.68	TAL	346.93	TAP	136.39	RCA	149.77	APO	222.45	V2	26.284
RC	95.074	GL	-25.31	GP	6.35	ZAL	117.99	ZAP	132.41	ETS	174.01	ZAE	169.65	ETE	133.69	ZAC	106.80	ETC	277.18	LVI	-23.04

PLANETOCENTRIC CONIC

C3	12.674	VHL	3.560	DLA	-33.56	RAL	346.09	RAD	6639.4	VEL	11.522	PTH	6.57	VHP	3.960	DPA	-12.20	RAP	315.55	ECC	1.2086

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 48 48	2318.34	1.71	58.80	201.84	137.55	19 27 26	1318.3	19.80	42.40
60.00	20 24 47	2062.82	8.08	41.87	207.91	129.62	20 59 10	1062.8	23.22	22.38
70.00	23 2 25	1597.74	18.18	11.41	215.03	119.43	23 29 3	397.7	28.68	347.86
71.14	0 1 34	1428.72	22.50	.68	217.43	115.58	0 25 23	428.7	31.02	335.52
71.14	0 1 34	1428.72	22.50	.68	217.43	115.58	0 25 23	428.7	31.02	335.52
71.14	0 1 34	1428.72	22.50	.68	217.43	115.58	0 25 23	428.7	31.02	335.52
110.00	4 5 47	5932.59	18.18	278.24	215.03	119.43	5 44 40	4932.6	28.68	254.68

DIFFERENTIAL CORRECTIONS

TDE	-.3918	TRA	-.5955	TC3	-.1191	BAU	.1043														

MID-COURSE EXECUTION ACCURACY

SGT	1314.4	SGR	633.6	SG3	1078.8																
RRT	.6497	RRF	-.8551	RTF	-.7392																
SGB	1459.2	R23	-.4035	R13	-.7917																
SG1	1385.8	SG2	456.9	THA	19.61																

ORBIT DETERMINATION ACCURACY

ST	35.9	SR	17.8	SS	59.0																
CRT	.9722	CR8	.6776	C8T	.8271																
LSA	68.2	MSA	20.9	S8A	1.0																
EL1	39.9	EL2	3.8	ALF	25.99																

LAUNCH DATE APR 23 1971 FLIGHT TIME 182.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 449.936 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.408	GAL	-2.11	AZL	92.74	HCA	150.70	SMA	185.77	ECC	.19372	INC	2.7391	V1	29.624
RP	208.67	LAP	-1.34	LOP	2.93	VP	23.614	GAP	8.66	AZP	87.61	TAL	346.94	TAP	137.64	RCA	149.78	APO	221.75	V2	26.264
RC	96.988	GL	-25.84	GP	6.74	ZAL	117.90	ZAP	130.57	ETS	174.02	ZAE	168.42	ETE	137.97	ZAC	107.26	ETC	277.07	LVI	-23.24

PLANETOCENTRIC CONIC

C3	12.604	VHL	3.550	DLA	-34.02	RAL	346.42	RAD	6639.4	VEL	11.519	PTH	6.57	VHP	3.868	DPA	-11.98	RAP	314.87	ECC	1.2074

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 53 14	2305.44	2.36	58.26	202.36	137.53	19 31 39	1305.4	20.42	41.78
60.00	20 31 16	2044.42	8.88	40.97	208.56	129.47	21 5 21	1044.4	23.91	21.32
70.00	23 29 22	1517.86	20.78	6.68	216.72	117.74	23 54 40	517.9	30.36	342.25
70.25	23 53 31	1444.20	22.83	2.05	217.83	115.94	24 17 35	444.2	31.47	336.85
70.25	23 53 31	1444.20	22.83	2.05	217.83	115.94	24 17 35	444.2	31.47	336.85
70.25	23 53 31	1444.20	22.83	2.05	217.83	115.94	24 17 35	444.2	31.47	336.85
110.00	4 32 44	5852.72	20.78	273.51	216.72	117.74	6 10 17	4852.7	30.36	249.07

DIFFERENTIAL CORRECTIONS

TDE	-.3857	TRA	-.5487	TC3	-.1906	BAU	.1123														

MID-COURSE EXECUTION ACCURACY

SGT	1243.9	SGR	669.0	SG3	1132.1																
RRT	.6380	RRF	-.8806	RTF	-.7150																
SGB	1412.4	R23	-.4511	R13	-.7788																
SG1	1327.3	SG2	482.8	THA	22.00																

ORBIT DETERMINATION ACCURACY

ST	35.0	SR	17.7	SS	60.5																
CRT	.9850	CR8	.7030	C8T	.8098																
LSA	68.9	MSA	21.2	S8A	.9																
EL1	39.1	EL2	2.7	ALF	26.66																

LAUNCH DATE APR 23 1971 FLIGHT TIME 184.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 454.052 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.389	GAL	-2.10	AZL	92.79	HCA	151.95	SMA	185.45	ECC	.19232	INC	2.7904	V1	29.624
RP	208.85	LAP	-1.31	LOP	4.18	VP	23.564	GAP	8.41	AZP	87.54	TAL	346.93	TAP	138.88	RCA	149.78	APO	221.12	V2	26.243
RC	98.929	GL	-26.40	GP	7.16	ZAL	117.82	ZAP	128.68	ETS	174.03	ZAE	167.06	ETE	141.50	ZAC	107.76	ETC	276.95	LVI	-23.45

PLANETOCENTRIC CONIC

C3	12.558	VHL	3.544	DLA	-34.50	RAL	346.79	RAD	6639.3	VEL	11.517	PTH	6.56	VHP	3.782	DPA	-11.74	RAP	314.15	ECC	1.2067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 57 54	2292.57	3.01	57.72	202.94	137.50	19 36 7	1292.6	21.02	41.16
60.00	20 38 12	2025.51	9.69	40.04	209.29	129.31	21 11 58	1025.5	24.62	20.22
69.37	23 49 42	1459.37	23.15	3.41	218.30	116.32	24 14 2	459.4	31.91	338.16
69.37	23 49 42	1459.37	23.15	3.41	218.30	116.32	24 14 2	459.4	31.91	338.16
69.37	23 49 42	1459.37	23.15	3.41	218.30	116.32	24 14 2	459.4	31.91	338.16
69.37	23 49 42	1459.37	23.15	3.41	218.30	116.32	24 14 2	459.4	31.91	338.16
69.37	23 49 42	1459.37	23.15	3.41	218.30	116.32	24 14 2	459.4	31.91	338.16

DIFFERENTIAL CORRECTIONS

TDE	-.3796	TRA	-.4995	TC3	-.2693	BAU	.1221														

MID-COURSE EXECUTION ACCURACY

SGT	1171.8	SGR	709.9	SG3	1186.0																
RRT	.6129	RRF	-.9028	RTF	-.6605																
SGB	1370.1	R23	-.4969	R13	-.7658																
SG1	1268.3	SG2	518.3	THA	24.78																

ORBIT DETERMINATION ACCURACY

ST	34.0	SR	17.7	SS	61.9																
CRT	.9942	CR8	.7295	C8T	.7891																
LSA	69.6	MSA	21.5	S8A	.9																
EL1	38.3	EL2	1.7	ALF	27.41																

LAUNCH DATE APR 23 1971 FLIGHT TIME 186.00 ARRIVAL DATE OCT 26 1971

DISTANCE 458.176

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.372	GAL	-2.09	AZL	92.85	HCA	153.19	SMA	185.16	ECC	.19104	INC	2.8463	V1	29.624
RP	209.04	LAP	-1.28	LOP	5.42	VP	23.516	GAP	8.17	AZP	87.46	TAL	346.92	TAP	140.10	RCA	149.79	APO	220.53	V2	26.221
RC	100.898	GL	-26.98	GP	7.62	ZAL	117.74	ZAP	126.76	ETS	174.04	ZAE	165.60	ETE	144.41	ZAC	108.29	ETC	276.82	LVI	-23.68

PLANETOCENTRIC CONIC

C3	12.536	VHL	3.541	DLA	-34.99	RAL	347.18	RAD	6639.3	VEL	11.516	PTH	6.56	VHP	3.701	DPA	-11.48	RAP	313.38	ECC	1.2063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 2 53	2279.64	3.66	57.18	203.59	137.47	19 40 52	1279.6	21.63	40.53
60.00	20 45 40	2005.87	10.54	39.08	210.11	129.13	21 19 6	1005.9	25.34	19.06
68.49	23 46 9	1474.47	23.46	4.77	218.83	116.73	24 10 44	474.5	32.36	339.48
68.49	23 46 9	1474.47	23.46	4.77	218.83	116.73	24 10 44	474.5	32.36	339.48
68.49	23 46 9	1474.47	23.46	4.77	218.83	116.73	24 10 44	474.5	32.36	339.48
68.49	23 46 9	1474.47	23.46	4.77	218.83	116.73	24 10 44	474.5	32.36	339.48
68.49	23 46 9	1474.47	23.46	4.77	218.83	116.73	24 10 44	474.5	32.36	339.48

DIFFERENTIAL CORRECTIONS

TDE	-.3734	TRA	-.4465	TC3	-.3547	BAU	.1336
RDE	-.2024	RRA	-.2317	RC3	.7140	FAU	.16255
FDE	1.0914	FRA	5.9809	FC-11.2261		BSP	2015
BDE	.4247	BRA	.5031	BC3	.7973	FSP	2073

MID-COURSE EXECUTION ACCURACY

SGT	1098.2	SGR	756.5	SG3	1239.7
RRT	.5711	RRF	-.9217	RTF	-.6022
SGB	1333.6	R23	-.5368	R13	-.7549
SG1	1208.2	SG2	564.5	THA	28.13

ORBIT DETERMINATION ACCURACY

ST	33.0	SR	17.8	SS	63.4
CRT	.9984	CRS	.7579	CST	.7655
LSA	70.4	MSA	21.8	SSA	.9
EL1	37.5	EL2	.9	ALF	28.29

LAUNCH DATE APR 23 1971 FLIGHT TIME 188.00 ARRIVAL DATE OCT 28 1971

DISTANCE 462.309

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.356	GAL	-2.08	AZL	92.91	HCA	154.43	SMA	184.89	ECC	.18988	INC	2.9067	V1	29.624
RP	209.24	LAP	-1.25	LOP	6.66	VP	23.468	GAP	7.93	AZP	87.38	TAL	346.89	TAP	141.31	RCA	149.79	APO	220.00	V2	26.198
RC	102.893	GL	-27.59	GP	8.12	ZAL	117.67	ZAP	124.80	ETS	174.07	ZAE	164.03	ETE	146.80	ZAC	108.87	ETC	276.68	LVI	-23.93

PLANETOCENTRIC CONIC

C3	12.537	VHL	3.541	DLA	-35.49	RAL	347.60	RAD	6639.3	VEL	11.516	PTH	6.56	VHP	3.627	DPA	-11.19	RAP	312.56	ECC	1.2063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 8 11	2266.53	4.31	56.63	204.31	137.43	19 45 58	1266.5	22.24	39.89
60.00	20 53 48	1985.21	11.42	38.05	211.04	128.92	21 26 53	985.2	26.09	17.82
67.61	23 42 51	1489.54	23.77	6.14	219.43	117.16	24 7 41	489.5	32.81	340.81
67.61	23 42 51	1489.54	23.77	6.14	219.43	117.16	24 7 41	489.5	32.81	340.81
67.61	23 42 51	1489.54	23.77	6.14	219.43	117.16	24 7 41	489.5	32.81	340.81
67.61	23 42 51	1489.54	23.77	6.14	219.43	117.16	24 7 41	489.5	32.81	340.81
67.61	23 42 51	1489.54	23.77	6.14	219.43	117.16	24 7 41	489.5	32.81	340.81

DIFFERENTIAL CORRECTIONS

TDE	-.3629	TRA	-.3862	TC3	-.4301	BAU	.1462
RDE	-.1988	RRA	-.2580	RC3	.7588	FAU	.16942
FDE	1.1148	FRA	6.1994	FC-11.6992		BSP	1867
BDE	.4138	BRA	.4644	BC3	.8722	FSP	2149

MID-COURSE EXECUTION ACCURACY

SGT	1013.2	SGR	809.4	SG3	1292.2
RRT	.5106	RRF	-.9375	RTF	-.5274
SGB	1296.8	R23	-.5573	R13	-.7560
SG1	1139.7	SG2	618.7	THA	33.04

ORBIT DETERMINATION ACCURACY

ST	31.5	SR	17.8	SS	64.6
CRT	.9956	CRS	.7838	CST	.7341
LSA	70.7	MSA	22.0	SSA	.8
EL1	36.2	EL2	1.5	ALF	29.45

LAUNCH DATE APR 23 1971 FLIGHT TIME 190.00 ARRIVAL DATE OCT 30 1971

DISTANCE 466.448

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.341	GAL	-2.08	AZL	92.97	HCA	155.66	SMA	184.65	ECC	.18882	INC	2.9728	V1	29.624
RP	209.44	LAP	-1.22	LOP	7.89	VP	23.422	GAP	7.70	AZP	87.29	TAL	346.84	TAP	142.50	RCA	149.78	APO	219.52	V2	26.174
RC	104.913	GL	-28.22	GP	8.66	ZAL	117.60	ZAP	122.80	ETS	174.10	ZAE	162.37	ETE	148.75	ZAC	109.50	ETC	276.54	LVI	-24.21

PLANETOCENTRIC CONIC

C3	12.564	VHL	3.545	DLA	-36.01	RAL	348.07	RAD	6639.3	VEL	11.517	PTH	6.56	VHP	3.557	DPA	-10.85	RAP	311.70	ECC	1.2068

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 13 53	2253.22	4.98	56.07	205.13	137.38	19 51 27	1253.2	22.86	39.23
60.00	21 2 43	1963.27	12.36	36.95	212.08	128.67	21 35 26	963.3	26.87	16.49
66.71	23 39 47	1504.74	24.08	7.52	220.11	117.62	24 4 52	504.7	33.28	342.17
66.71	23 39 47	1504.74	24.08	7.52	220.11	117.62	24 4 52	504.7	33.28	342.17
66.71	23 39 47	1504.74	24.08	7.52	220.11	117.62	24 4 52	504.7	33.28	342.17
66.71	23 39 47	1504.74	24.08	7.52	220.11	117.62	24 4 52	504.7	33.28	342.17
66.71	23 39 47	1504.74	24.08	7.52	220.11	117.62	24 4 52	504.7	33.28	342.17

DIFFERENTIAL CORRECTIONS

TDE	-.3635	TRA	-.3329	TC3	-.5472	BAU	.1628
RDE	-.1979	RRA	-.2886	RC3	.7997	FAU	.17440
FDE	1.1775	FRA	6.4831	FC-12.0172		BSP	1851
BDE	.4139	BRA	.4406	BC3	.9690	FSP	2263

MID-COURSE EXECUTION ACCURACY

SGT	968.6	SGR	869.7	SG3	1345.4
RRT	.4175	RRF	-.9508	RTF	-.4_37
SGB	1301.8	R23	-.5785	R13	-.7551
SG1	1100.2	SG2	695.8	THA	37.75

ORBIT DETERMINATION ACCURACY

ST	31.0	SR	18.2	SS	66.4
CRT	.9837	CRS	.8156	CST	.7041
LSA	72.1	MSA	22.5	SSA	.8
EL1	35.9	EL2	2.8	ALF	30.19

LAUNCH DATE APR 23 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 1 1971

DISTANCE 470.595

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.328	GAL	-2.08	AZL	93.05	HCA	156.90	SMA	184.43	ECC	.18787	INC	3.0454	V1	29.624
RP	209.66	LAP	-1.19	LOP	9.13	VP	23.376	GAP	7.47	AZP	87.20	TAL	346.78	TAP	143.68	RCA	149.78	APO	219.08	V2	26.150
RC	106.958	GL	-28.90	GP	9.26	ZAL	117.53	ZAP	120.77	ETS	174.14	ZAE	160.62	ETE	150.35	ZAC	110.18	ETC	276.39	LVI	-24.52

PLANETOCENTRIC CONIC

C3	12.618	VHL	3.552	DLA	-36.56	RAL	348.58	RAD	6639.4	VEL	11.519	PTH	6.57	VHP	3.494	DPA	-10.48	RAP	310.79	ECC	1.2077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 20 4	2239.45	5.67	55.49	206.04	137.32	19 57 23	1239.5	23.50	38.54
60.00	21 12 40	1939.37	13.37	35.74	213.27	128.38	21 44 59	939.4	27.70	15.02
65.80	23 36 54	1520.27	24.39	8.95	220.88	118.12	24 2 14	520.3	33.75	343.56
65.80	23 36 54	1520.27	24.39	8.95	220.88	118.12	24 2 14	520.3	33.75	343.56
65.80	23 36 54	1520.27	24.39	8.95	220.88	118.12	24 2 14	520.3	33.75	343.56
65.80	23 36 54	1520.27	24.39	8.95	220.88	118.12	24 2 14	520.3	33.75	343.56
65.80	23 36 54	1520.27	24.39	8.95	220.88	118.12	24 2 14	520.3	33.75	343.56

DIFFERENTIAL CORRECTIONS

TDE	-.3565	TRA	-.2688	TC3	-.6451	BAU	.1797
RDE	-.1962	RRA	-.3206	RC3	.8478	FAU	.18038
FDE	1.2150	FRA	6.6761	FC-12.3763		BSP	1793
BDE	.4070	BRA	.4184	BC3	1.0653	FSP	2347

MID-COURSE EXECUTION ACCURACY

SGT	912.1	SGR	936.8	SG3	1395.5
RRT	.2967	RRF	-.9615	RTF	-.2941
SGB	1307.5	R23	-.5289	R13	-.8031
SG1	1053.2	SG2	774.8	THA	47.57

ORBIT DETERMINATION ACCURACY

ST	29.9	SR	18.6	SS	67.6
CRT	.9603	CRS	.8426	CST	.6626
LSA	72.7	MSA	22.9	SSA	.7
EL1	34.9	EL2	4.4	ALF	31.39

LAUNCH DATE APR 23 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 474,747 EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.316 GAL -2.08 AZL 93.13 HCA 158.13 SMA 184.23 ECC .18701 INC 3.1256 V1 29.624
RP 209.87 LAP -1.16 LOP 10.36 VP 23.331 GAP 7.25 AZP 87.10 TAL 346.71 TAP 144.84 RCA 149.78 APO 218.68 V2 26.124
RC 109.028 GL -29.61 GP 9.90 ZAL 117.46 ZAP 118.71 ETS 174.19 ZAE 158.78 ETE 151.65 ZAC 110.91 ETC 276.23 LVI -24.87

PLANETOCENTRIC CONIC

C3 12.701 VHL 3.564 DLA -37.13 RAL 349.14 RAD 6639.4 VEL 11.523 PTH 6.57 VHP 3.436 DPA -10.05 RAP 309.85 ECC 1.2090

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 26 48	2228.13	6.39	54.88	207.06	137.25	20 3 53	1225.1	24.16	37.81
60.00	21 23 56	1912.82	14.49	34.39	214.63	128.03	21 55 49	912.8	28.61	13.36
64.86	23 34 12	1536.23	24.69	10.42	221.74	118.66	23 59 48	536.2	34.25	345.02
64.86	23 34 12	1536.23	24.69	10.42	221.74	118.66	23 59 48	536.2	34.25	345.02
64.86	23 34 12	1536.23	24.69	10.42	221.74	118.66	23 59 48	536.2	34.25	345.02
64.86	23 34 12	1536.23	24.69	10.42	221.74	118.66	23 59 48	536.2	34.25	345.02
64.86	23 34 12	1536.23	24.69	10.42	221.74	118.66	23 59 48	536.2	34.25	345.02

DIFFERENTIAL CORRECTIONS

TDE -.3535 TRA -.2038 TC3 -.7579 BAU .1993
RDE -.1964 RRA -.3564 RC3 .8963 FAU .18548
FDE 1.2719 FRA 6.9029 FC-12.6425 BSP 1809
BDE .4044 BRA .4106 BC3 1.1737 FSP 2440

MID-COURSE EXECUTION ACCURACY

SGT 885.3 SGR 1012.1 SG3 1443.6
RRT .1449 RRF -.9702 RTF -.1363
SGB 1344.7 R23 -.3312 R13 -.9120
SG1 1039.7 SG2 852.7 THA 66.41

ORBIT DETERMINATION ACCURACY

ST 29.1 SR 19.1 SS 69.1
CRT .9237 CRS .8700 CST .6173
LSA 73.8 MSA 23.4 SSA .7
EL1 34.3 EL2 6.2 ALF 32.50

LAUNCH DATE APR 23 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 478,905 EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.305 GAL -2.09 AZL 93.21 HCA 159.36 SMA 184.05 ECC .18626 INC 3.2147 V1 29.624
RP 210.10 LAP -1.13 LOP 11.59 VP 23.287 GAP 7.02 AZP 86.99 TAL 346.62 TAP 145.98 RCA 149.77 APO 218.33 V2 26.098
RC 111.121 GL -30.38 GP 10.62 ZAL 117.38 ZAP 116.62 ETS 174.26 ZAE 156.88 ETE 152.69 ZAC 111.71 ETC 276.06 LVI -25.26

PLANETOCENTRIC CONIC

C3 12.816 VHL 3.580 DLA -37.75 RAL 349.76 RAD 6639.5 VEL 11.528 PTH 6.57 VHP 3.385 DPA -9.57 RAP 308.86 ECC 1.2109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 34 13	2209.99	7.14	54.24	208.22	137.17	20 11 3	1210.0	24.65	37.03
60.00	21 37 3	1882.35	15.76	32.82	216.22	127.58	22 8 25	882.4	29.62	11.42
63.88	23 31 39	1552.79	25.00	11.96	222.71	119.25	23 57 32	552.8	34.76	346.54
63.88	23 31 39	1552.79	25.00	11.96	222.71	119.25	23 57 32	552.8	34.76	346.54
63.88	23 31 39	1552.79	25.00	11.96	222.71	119.25	23 57 32	552.8	34.76	346.54
63.88	23 31 39	1552.79	25.00	11.96	222.71	119.25	23 57 32	552.8	34.76	346.54
63.88	23 31 39	1552.79	25.00	11.96	222.71	119.25	23 57 32	552.8	34.76	346.54

DIFFERENTIAL CORRECTIONS

TDE -.3491 TRA -.1343 TC3 -.8688 BAU .2204
RDE -.1972 RRA -.3955 RC3 .9487 FAU .19050
FDE 1.3241 FRA 7.1164 FC-12.8683 BSP 1867
BDE .4009 BRA .4177 BC3 1.2864 FSP 2520

MID-COURSE EXECUTION ACCURACY

SGT 879.2 SGR 1096.3 SG3 1488.6
RRT -.0297 RRF -.9772 RTF .0417
SGB 1405.3 R23 .0391 R13 -.9765
SG1 1097.1 SG2 878.1 THA 93.80

ORBIT DETERMINATION ACCURACY

ST 28.2 SR 19.9 SS 70.5
CRT .8716 CRS .8944 CST .5623
LSA 74.8 MSA 23.8 SSA .6
EL1 33.5 EL2 8.2 ALF 33.78

LAUNCH DATE APR 23 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 483,068 EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.295 GAL -2.10 AZL 93.31 HCA 160.59 SMA 183.89 ECC .18559 INC 3.3142 V1 29.624
RP 210.33 LAP -1.10 LOP 12.82 VP 23.243 GAP 6.81 AZP 86.87 TAL 346.52 TAP 147.11 RCA 149.76 APO 218.02 V2 26.071
RC 113.239 GL -31.21 GP 11.41 ZAL 117.30 ZAP 114.51 ETS 174.35 ZAE 154.89 ETE 153.51 ZAC 112.59 ETC 275.89 LVI -25.71

PLANETOCENTRIC CONIC

C3 12.968 VHL 3.601 DLA -38.40 RAL 350.44 RAD 6639.5 VEL 11.534 PTH 6.58 VHP 3.339 DPA -9.01 RAP 307.83 ECC 1.2134

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 42 28	2193.78	7.95	53.55	209.53	137.07	20 19 2	1193.8	25.58	36.19
60.00	21 52 50	1845.79	17.27	30.91	218.11	127.00	22 23 35	845.8	30.79	9.03
62.86	23 29 16	1570.11	25.31	13.58	223.80	119.90	23 55 26	570.1	35.30	348.16
62.86	23 29 16	1570.11	25.31	13.58	223.80	119.90	23 55 26	570.1	35.30	348.16
62.86	23 29 16	1570.11	25.31	13.58	223.80	119.90	23 55 26	570.1	35.30	348.16
62.86	23 29 16	1570.11	25.31	13.58	223.80	119.90	23 55 26	570.1	35.30	348.16
62.86	23 29 16	1570.11	25.31	13.58	223.80	119.90	23 55 26	570.1	35.30	348.16

DIFFERENTIAL CORRECTIONS

TDE -.3453 TRA -.0612 TC3 -.9835 BAU .2436
RDE -.1993 RRA -.4387 RC3 1.0037 FAU .19500
FDE 1.3808 FRA 7.3154 FC-13.0184 BSP 1993
BDE .3987 BRA .4429 BC3 1.4052 FSP 2598

MID-COURSE EXECUTION ACCURACY

SGT 905.0 SGR 1190.1 SG3 1529.4
RRT -.2109 RRF -.9827 RTF .2041
SGB 1495.1 R23 .2105 R13 -.9601
SG1 1221.8 SG2 861.6 THA 108.63

ORBIT DETERMINATION ACCURACY

ST 27.6 SR 20.8 SS 71.8
CRT .8029 CRS .9163 CST .4985
LSA 75.8 MSA 24.4 SSA .6
EL1 32.9 EL2 10.4 ALF 35.17

LAUNCH DATE APR 23 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 487,235 EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.287 GAL -2.11 AZL 93.43 HCA 161.81 SMA 183.75 ECC .18500 INC 3.4264 V1 29.624
RP 210.57 LAP -1.07 LOP 14.04 VP 23.200 GAP 6.60 AZP 86.74 TAL 346.41 TAP 148.22 RCA 149.75 APO 217.74 V2 26.044
RC 115.380 GL -32.11 GP 12.29 ZAL 117.19 ZAP 112.38 ETS 174.45 ZAE 152.84 ETE 154.13 ZAC 113.56 ETC 275.72 LVI -26.23

PLANETOCENTRIC CONIC

C3 13.161 VHL 3.628 DLA -39.12 RAL 351.20 RAD 6639.6 VEL 11.542 PTH 6.59 VHP 3.300 DPA -8.36 RAP 306.78 ECC 1.2166

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 51 46	2176.10	8.83	52.79	211.03	136.94	20 28 3	1176.1	26.38	35.26
60.00	22 13 4	1798.45	19.19	28.38	220.46	126.14	22 43 2	798.4	32.23	5.84
61.77	23 27 1	1588.39	25.62	15.30	225.04	120.63	23 53 30	588.4	35.88	349.88
61.77	23 27 1	1588.39	25.62	15.30	225.04	120.63	23 53 30	588.4	35.88	349.88
61.77	23 27 1	1588.39	25.62	15.30	225.04	120.63	23 53 30	588.4	35.88	349.88
61.77	23 27 1	1588.39	25.62	15.30	225.04	120.63	23 53 30	588.4	35.88	349.88
61.77	23 27 1	1588.39	25.62	15.30	225.04	120.63	23 53 30	588.4	35.88	349.88

DIFFERENTIAL CORRECTIONS

TDE -.3419 TRA .0156 TC3-1.0983 BAU .2687
RDE -.2032 RRA -.4868 RC3 1.0611 FAU .19887
FDE 1.4441 FRA 7.5006 FC-13.0822 BSP 2184
BDE .3978 BRA .4871 BC3 1.5272 FSP 2670

MID-COURSE EXECUTION ACCURACY

SGT 963.2 SGR 1295.3 SG3 1565.8
RRT -.3781 RRF -.9871 RTF .3906
SGB 1614.1 R23 .2590 R13 -.9527
SG1 1380.3 SG2 836.7 THA 115.75

ORBIT DETERMINATION ACCURACY

ST 27.0 SR 21.9 SS 73.1
CRT .7175 CRS .9355 CST .4263
LSA 77.0 MSA 24.9 SSA .6
EL1 32.4 EL2 12.7 ALF 36.77

LAUNCH DATE APR 23 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 11 1971

DISTANCE 491.405

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.279 GAL -2.13 AZL 93.55 HCA 163.03 SMA 183.62 ECC .18451 INC 3.5540 V1 29.624
RP 210.82 LAP -1.04 LOP 15.26 VP 23.158 GAP 6.39 AZP 86.60 TAL 346.28 TAP 149.31 RCA 149.74 APO 217.50 V2 26.015
RC 117.545 GL -33.11 GP 13.27 ZAL 117.07 ZAP 110.23 ETS 174.58 ZAE 150.72 ETE 154.57 ZAC 114.63 ETC 275.54 LVI -26.83

PLANETOCENTRIC CONIC

C3 13.403 VHL 3.661 DLA -39.90 RAL 352.04 RAD 6639.8 VEL 11.553 PTH 6.60 VHP 3.268 DPA -7.61 RAP 305.68 ECC 1.2206

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 2 24	2156.46	9.81	51.95	212.77	136.79	20 38 21	1156.5	27.25	34.21
60.00	22 43 38	1724.30	22.12	24.29	223.72	124.59	23 12 22	724.3	34.30	.64
60.60	23 24 56	1607.85	25.94	17.15	226.44	121.44	23 51 44	607.9	36.49	351.75
60.60	23 24 56	1607.85	25.94	17.15	226.44	121.44	23 51 44	607.9	36.49	351.75
60.60	23 24 56	1607.85	25.94	17.15	226.44	121.44	23 51 44	607.9	36.49	351.75
60.60	23 24 56	1607.85	25.94	17.15	226.44	121.44	23 51 44	607.9	36.49	351.75
60.60	23 24 56	1607.85	25.94	17.15	226.44	121.44	23 51 44	607.9	36.49	351.75

DIFFERENTIAL CORRECTIONS

TDE -.3383 TRA .0972 TC3-1.2088 BAU .2956
RDE -.2089 RRA -.5400 RC3 1.1227 FAU .20235
FDE 1.5095 FRA 7.6572 FC-13.0696 BSP 2432
BDE .3976 BRA .5487 BC3 1.6497 FSP 2726

MID-COURSE EXECUTION ACCURACY

SGT 1050.2 SGR 1412.8 SG3 1595.8
RRT -.5209 RRF -.9904 RTF .5319
SGB 1760.4 R23 .2661 R13 -.9542
SG1 1562.8 SG2 810.5 THA 119.99

ORBIT DETERMINATION ACCURACY

ST 26.7 SR 23.3 SS 74.2
CRT .6153 CRS .9515 CST .3439
LSA 78.2 MSA 25.5 SSA .5
EL1 31.9 EL2 15.3 ALF 38.75

LAUNCH DATE APR 23 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 13 1971

DISTANCE 495.579

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.272 GAL -2.14 AZL 93.70 HCA 164.25 SMA 183.51 ECC .18409 INC 3.7003 V1 29.624
RP 211.07 LAP -1.00 LOP 16.48 VP 23.116 GAP 6.18 AZP 86.44 TAL 346.14 TAP 150.39 RCA 149.73 APO 217.29 V2 25.986
RC 119.734 GL -34.21 GP 14.37 ZAL 116.91 ZAP 108.07 ETS 174.74 ZAE 148.52 ETE 154.85 ZAC 115.82 ETC 275.37 LVI -27.54

PLANETOCENTRIC CONIC

C3 13.706 VHL 3.702 DLA -40.76 RAL 352.99 RAD 6639.9 VEL 11.566 PTH 6.61 VHP 3.244 DPA -6.73 RAP 304.56 ECC 1.2256

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 14 46	2134.15	10.91	50.98	214.81	136.60	20 50 20	1134.1	28.24	32.99
59.33	23 23 1	1628.75	26.26	19.15	228.05	122.36	23 50 9	628.7	37.15	353.79
59.33	23 23 1	1628.75	26.26	19.15	228.05	122.36	23 50 9	628.7	37.15	353.79
59.33	23 23 1	1628.75	26.26	19.15	228.05	122.36	23 50 9	628.7	37.15	353.79
59.33	23 23 1	1628.75	26.26	19.15	228.05	122.36	23 50 9	628.7	37.15	353.79
59.33	23 23 1	1628.75	26.26	19.15	228.05	122.36	23 50 9	628.7	37.15	353.79
59.33	23 23 1	1628.75	26.26	19.15	228.05	122.36	23 50 9	628.7	37.15	353.79

DIFFERENTIAL CORRECTIONS

TDE -.3351 TRA .1827 TC3-1.3165 BAU .3246
RDE -.2176 RRA -.6000 RC3 1.1853 FAU .20472
FDE 1.5858 FRA 7.7897 FC-12.9308 BSP 2744
BDE .3995 BRA .6272 BC3 1.7715 FSP 2775

MID-COURSE EXECUTION ACCURACY

SGT 1165.5 SGR 1544.9 SG3 1618.7
RRT -.6323 RRF -.9930 RTF .6412
SGB 1935.2 R23 .2587 R13 -.9589
SG1 1766.8 SG2 789.5 THA 122.85

ORBIT DETERMINATION ACCURACY

ST 26.6 SR 25.0 SS 75.3
CRT .5002 CRS .9647 CST .2554
LSA 79.5 MSA 26.1 SSA .5
EL1 31.6 EL2 18.2 ALF 41.47

LAUNCH DATE APR 23 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 15 1971

DISTANCE 499.756

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.267 GAL -2.16 AZL 93.87 HCA 165.46 SMA 183.42 ECC .18374 INC 3.8699 V1 29.624
RP 211.33 LAP -.97 LOP 17.70 VP 23.074 GAP 5.98 AZP 86.25 TAL 345.98 TAP 151.44 RCA 149.72 APO 217.12 V2 25.957
RC 121.945 GL -35.44 GP 15.63 ZAL 116.71 ZAP 105.91 ETS 174.93 ZAE 146.25 ETE 154.96 ZAC 117.16 ETC 275.20 LVI -28.38

PLANETOCENTRIC CONIC

C3 14.084 VHL 3.753 DLA -41.72 RAL 354.07 RAD 6640.1 VEL 11.582 PTH 6.63 VHP 3.228 DPA -5.71 RAP 303.41 ECC 1.2318

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 29 27	2108.09	12.20	49.85	217.24	136.35	21 4 35	1108.1	29.37	31.55
57.95	23 21 19	1651.34	26.59	21.33	229.91	123.42	23 48 50	651.3	37.86	356.05
57.95	23 21 19	1651.34	26.59	21.33	229.91	123.42	23 48 50	651.3	37.86	356.05
57.95	23 21 19	1651.34	26.59	21.33	229.91	123.42	23 48 50	651.3	37.86	356.05
57.95	23 21 19	1651.34	26.59	21.33	229.91	123.42	23 48 50	651.3	37.86	356.05
57.95	23 21 19	1651.34	26.59	21.33	229.91	123.42	23 48 50	651.3	37.86	356.05
57.95	23 21 19	1651.34	26.59	21.33	229.91	123.42	23 48 50	651.3	37.86	356.05

DIFFERENTIAL CORRECTIONS

TDE -.3327 TRA .2717 TC3-1.4188 BAU .3561
RDE -.2297 RRA -.6677 RC3 1.2509 FAU .20627
FDE 1.6684 FRA 7.8855 FC-12.6797 BSP 3105
BDE .4043 BRA .7209 BC3 1.8915 FSP 2808

MID-COURSE EXECUTION ACCURACY

SGT 1304.2 SGR 1694.0 SG3 1633.0
RRT -.7155 RRF -.9950 RTF .[illegible]24
SGB 2137.9 R23 .2456 R13 -.9643
SG1 1992.6 SG2 774.6 THA 124.86

ORBIT DETERMINATION ACCURACY

ST 26.8 SR 27.0 SS 76.4
CRT .3766 CRS .9752 CST .1629
LSA 81.0 MSA 26.8 SSA .4
EL1 31.6 EL2 21.2 ALF 45.64

LAUNCH DATE APR 23 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 17 1971

DISTANCE 503.935

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.262 GAL -2.19 AZL 94.07 HCA 166.67 SMA 183.34 ECC .18347 INC 4.0690 V1 29.624
RP 211.60 LAP -.94 LOP 18.91 VP 23.033 GAP 5.78 AZP 86.04 TAL 345.81 TAP 152.49 RCA 149.70 APO 216.97 V2 25.926
RC 124.177 GL -36.84 GP 17.07 ZAL 116.45 ZAP 103.75 ETS 175.16 ZAE 143.90 ETE 154.92 ZAC 118.68 ETC 275.03 LVI -29.38

PLANETOCENTRIC CONIC

C3 14.557 VHL 3.815 DLA -42.81 RAL 355.32 RAD 6640.3 VEL 11.602 PTH 6.64 VHP 3.222 DPA -4.49 RAP 302.22 ECC 1.2396

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 47 25	2076.56	13.75	48.45	220.22	136.01	21 22 2	1076.6	30.71	29.74
56.42	23 19 52	1676.13	26.91	23.75	232.07	124.64	23 47 48	676.1	38.64	358.57
56.42	23 19 52	1676.13	26.91	23.75	232.07	124.64	23 47 48	676.1	38.64	358.57
56.42	23 19 52	1676.13	26.91	23.75	232.07	124.64	23 47 48	676.1	38.64	358.57
56.42	23 19 52	1676.13	26.91	23.75	232.07	124.64	23 47 48	676.1	38.64	358.57
56.42	23 19 52	1676.13	26.91	23.75	232.07	124.64	23 47 48	676.1	38.64	358.57
56.42	23 19 52	1676.13	26.91	23.75	232.07	124.64	23 47 48	676.1	38.64	358.57

DIFFERENTIAL CORRECTIONS

TDE -.3308 TRA .3648 TC3-1.5117 BAU .3907
RDE -.2463 RRA -.7438 RC3 1.3207 FAU .20711
FDE 1.7578 FRA 7.9289 FC-12.3169 BSP 3509
BDE .4124 BRA .8285 BC3 2.0073 FSP 2815

MID-COURSE EXECUTION ACCURACY

SGT 1461.2 SGR 1862.9 SG3 1636.3
RRT -.7773 RRF -.9965 RTF .7823
SGB 2367.6 R23 .2296 R13 -.9697
SG1 2240.9 SG2 764.3 THA 126.24

ORBIT DETERMINATION ACCURACY

ST 27.3 SR 29.4 SS 77.2
CRT .2501 CRS .9832 CST .0696
LSA 82.5 MSA 27.6 SSA .4
EL1 31.9 EL2 24.4 ALF 53.34

LAUNCH DATE APR 23 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 508.116 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.257	GAL	-2.21	AZL	94.31	HCA	167.88	SMA	183.27	ECC	.18327	INC	4.3067	V1	29.624
RP	211.87	LAP	-.90	LOP	20.12	VP	22.893	GAP	5.58	AZP	85.79	TAL	345.63	TAP	153.52	RCA	149.68	APO	216.86	V2	25.896
RC	126.431	GL	-38.44	GP	18.74	ZAL	116.11	ZAP	101.60	ETS	175.44	ZAE	141.45	ETE	154.70	ZAC	120.42	ETC	274.87	LVI	-30.58

PLANETOCENTRIC CONIC

C3	15.159	VHL	3.893	DLA	-44.05	RAL	356.77	RAD	6640.6	VEL	11.628	PTH	6.67	VHP	3.228	DPA	-3.04	RAP	301.01	ECC	1.2495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 10 21	2036.32	15.71	46.65	224.00	135.51	21 44 17	1036.3	32.39	27.37
54.71	23 18 51	1703.44	27.23	26.45	234.62	126.07	23 47 14	703.4	39.48	1.43
54.71	23 18 51	1703.44	27.23	26.45	234.62	126.07	23 47 14	703.4	39.48	1.43
54.71	23 18 51	1703.44	27.23	26.45	234.62	126.07	23 47 14	703.4	39.48	1.43
54.71	23 18 51	1703.44	27.23	26.45	234.62	126.07	23 47 14	703.4	39.48	1.43
54.71	23 18 51	1703.44	27.23	26.45	234.62	126.07	23 47 14	703.4	39.48	1.43
54.71	23 18 51	1703.44	27.23	26.45	234.62	126.07	23 47 14	703.4	39.48	1.43

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3282	TRA	.4633	TC3	-1.5894	BAU	.4279	SGT	1632.4	SGR	2055.2	SG3	1626.1	ST	28.1	SR	32.4	SS	77.9
RDE	-.2704	RRA	-.8309	RC3	1.3900	FAU	.20635	RRT	-.8230	RRF	-.9976	RTF	.8266	CRT	.1258	CRS	.9892	CST	-.0208
FDE	1.8680	FRA	7.9132	FC-	11.7843	BSP	3967	SGB	2624.6	R23	.2125	R13	-.9747	LSA	84.3	MSA	28.4	SSA	.3
BDE	.4253	BRA	.9514	BC3	2.1115	FSP	2800	SG1	2512.6	SG2	758.5	THA	127.12	EL1	33.1	EL2	27.3	ALF	69.35

LAUNCH DATE APR 23 1971 FLIGHT TIME 212.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 512.298 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.254	GAL	-2.24	AZL	94.60	HCA	169.09	SMA	183.22	ECC	.18313	INC	4.5957	V1	29.624
RP	212.14	LAP	-.87	LOP	21.32	VP	22.952	GAP	5.39	AZP	85.49	TAL	345.44	TAP	154.53	RCA	149.66	APO	216.77	V2	25.864
RC	128.706	GL	-40.30	GP	20.70	ZAL	115.66	ZAP	99.47	ETS	175.78	ZAE	138.89	ETE	154.31	ZAC	122.46	ETC	274.73	LVI	-32.04

PLANETOCENTRIC CONIC

C3	15.938	VHL	3.992	DLA	-45.47	RAL	358.51	RAD	6641.0	VEL	11.661	PTH	6.70	VHP	3.248	DPA	-1.29	RAP	299.76	ECC	1.2623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 41 57	1979.83	18.44	44.04	229.08	134.67	22 14 57	979.8	34.65	23.87
52.78	23 18 24	1734.05	27.51	29.50	237.68	127.76	23 47 18	734.0	40.40	4.72
52.78	23 18 24	1734.05	27.51	29.50	237.68	127.76	23 47 18	734.0	40.40	4.72
52.78	23 18 24	1734.05	27.51	29.50	237.68	127.76	23 47 18	734.0	40.40	4.72
52.78	23 18 24	1734.05	27.51	29.50	237.68	127.76	23 47 18	734.0	40.40	4.72
52.78	23 18 24	1734.05	27.51	29.50	237.68	127.76	23 47 18	734.0	40.40	4.72
52.78	23 18 24	1734.05	27.51	29.50	237.68	127.76	23 47 18	734.0	40.40	4.72

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3233	TRA	.5679	TC3	-1.6451	BAU	.4680	SGT	1814.3	SGR	2278.9	SG3	1601.4	ST	29.1	SR	36.2	SS	78.9
RDE	-.3070	RRA	-.9333	RC3	1.4554	FAU	.20345	RRT	-.8567	RRF	-.9984	RTF	.8592	CRT	.0077	CRS	.9935	CST	-.1058
FDE	2.0160	FRA	7.8377	FC-	11.0510	BSP	4502	SGB	2912.9	R23	.1948	R13	-.9792	LSA	86.7	MSA	29.2	SSA	.3
BDE	.4459	BRA	1.0925	BC3	2.1965	FSP	2771	SG1	2812.5	SG2	758.2	THA	127.49	EL1	36.2	EL2	29.1	ALF	69.00

LAUNCH DATE APR 23 1971 FLIGHT TIME 214.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 516.480 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.252	GAL	-2.27	AZL	94.95	HCA	170.29	SMA	183.17	ECC	.18306	INC	4.9538	V1	29.624
RP	212.43	LAP	-.83	LOP	22.53	VP	22.912	GAP	5.20	AZP	85.12	TAL	345.24	TAP	155.52	RCA	149.64	APO	216.70	V2	25.832
RC	130.999	GL	-42.49	GP	23.03	ZAL	115.07	ZAP	97.38	ETS	176.21	ZAE	136.19	ETE	153.73	ZAC	124.86	ETC	274.61	LVI	-33.82

PLANETOCENTRIC CONIC

C3	16.974	VHL	4.120	DLA	-47.14	RAL	.63	RAD	6641.5	VEL	11.705	PTH	6.74	VHP	3.289	DPA	.83	RAP	298.48	ECC	1.2793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	22 37 5	1873.13	23.46	38.86	237.27	132.66	23 8 18	873.1	38.57	16.69
50.57	23 18 53	1768.71	27.73	32.97	241.42	129.78	23 48 22	768.7	41.38	8.57
50.57	23 18 53	1768.71	27.73	32.97	241.42	129.78	23 48 22	768.7	41.38	8.57
50.57	23 18 53	1768.71	27.73	32.97	241.42	129.78	23 48 22	768.7	41.38	8.57
50.57	23 18 53	1768.71	27.73	32.97	241.42	129.78	23 48 22	768.7	41.38	8.57
50.57	23 18 53	1768.71	27.73	32.97	241.42	129.78	23 48 22	768.7	41.38	8.57
50.57	23 18 53	1768.71	27.73	32.97	241.42	129.78	23 48 22	768.7	41.38	8.57

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3169	TRA	.6765	TC3	-1.6801	BAU	.5138	SGT	2005.9	SGR	2537.8	SG3	1555.5	ST	30.3	SR	40.9	SS	79.6
RDE	-.3607	RRA	-1.0518	RC3	1.5178	FAU	.19866	RRT	-.8810	RRF	-.9989	RTF	.8524	CRT	-.0970	CRS	.9964	CST	-.1808
FDE	2.1929	FRA	7.6575	FC-	10.1327	BSP	5078	SGB	3234.8	R23	.1785	R13	-.9829	LSA	89.6	MSA	30.0	SSA	.2
BDE	.4801	BRA	1.2506	BC3	2.2642	FSP	2699	SG1	3142.7	SG2	766.5	THA	127.46	EL1	41.1	EL2	30.0	ALF	98.87

LAUNCH DATE APR 23 1971 FLIGHT TIME 216.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 520.663 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.250	GAL	-2.30	AZL	95.41	HCA	171.49	SMA	183.14	ECC	.18304	INC	5.4109	V1	29.624
RP	212.72	LAP	-.80	LOP	23.73	VP	22.873	GAP	5.01	AZP	84.65	TAL	345.02	TAP	156.51	RCA	149.62	APO	216.67	V2	25.799
RC	133.312	GL	-45.11	GP	25.85	ZAL	114.29	ZAP	95.33	ETS	176.73	ZAE	133.30	ETE	152.92	ZAC	127.74	ETC	274.53	LVI	-36.04

PLANETOCENTRIC CONIC

C3	18.399	VHL	4.289	DLA	-49.10	RAL	3.30	RAD	6642.1	VEL	11.765	PTH	6.79	VHP	3.357	DPA	3.44	RAP	297.14	ECC	1.3028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.03	23 20 52	1808.71	27.82	36.96	246.08	132.24	23 51 1	808.7	42.39	13.15
48.03	23 20 52	1808.71	27.82	36.96	246.08	132.24	23 51 1	808.7	42.39	13.15
48.03	23 20 52	1808.71	27.82	36.96	246.08	132.24	23 51 1	808.7	42.39	13.15
48.03	23 20 52	1808.71	27.82	36.96	246.08	132.24	23 51 1	808.7	42.39	13.15
48.03	23 20 52	1808.71	27.82	36.96	246.08	132.24	23 51 1	808.7	42.39	13.15
48.03	23 20 52	1808.71	27.82	36.96	246.08	132.24	23 51 1	808.7	42.39	13.15
48.03	23 20 52	1808.71	27.82	36.96	246.08	132.24	23 51 1	808.7	42.39	13.15

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3011	TRA	.7935	TC3	-1.6781	BAU	.5651	SGT	2203.3	SGR	2841.0	SG3	1482.8	ST	31.6	SR	47.1	SS	80.4
RDE	-.4444	RRA	-1.1914	RC3	1.5692	FAU	.19098	RRT	-.9000	RRF	-.9993	RTF	.9007	CRT	-.1969	CRS	.9982	CST	-.2544
FDE	2.4234	FRA	7.3467	FC-	8.9861	BSP	5733	SGB	3595.3	R23	.1617	R13	-.9862	LSA	93.5	MSA	30.7	SSA	.2
BDE	.5368	BRA	1.4315	BC3	2.2975	FSP	2579	SG1	3510.2	SG2	777.5	THA	127.03	EL1	47.8	EL2	30.5	ALF	102.86

LAUNCH DATE APR 23 1971 FLIGHT TIME 218.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC — DISTANCE 524.845 — EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.249 GAL -2.34 AZL 96.01 HCA 172.68 SMA 183.12 ECC .18309 INC 6.0136 V1 29.624
RP 213.01 LAP -.76 LOP 24.92 VP 22.834 GAP 4.83 AZP 84.03 TAL 344.79 TAP 157.47 RCA 149.60 APO 216.65 V2 25.766
RC 135.643 GL -48.28 GP 29.31 ZAL 113.23 ZAP 93.36 ETS 177.38 ZAE 130.15 ETE 151.87 ZAC 131.25 ETC 274.51 LVI -38.80

PLANETOCENTRIC CONIC

C3 20.458 VHL 4.523 DLA -51.41 RAL 6.78 RAD 6643.0 VEL 11.852 PTH 6.87 VHP 3.470 DPA 6.69 RAP 295.74 ECC 1.3367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.10	23 25 22	1855.95	27.65	41.61	252.05	135.24	23 56 18	855.9	43.34	18.71
45.10	23 25 22	1855.95	27.65	41.61	252.05	135.24	23 56 18	855.9	43.34	18.71
45.10	23 25 22	1855.95	27.65	41.61	252.05	135.24	23 56 18	855.9	43.34	18.71
45.10	23 25 22	1855.95	27.65	41.61	252.05	135.24	23 56 18	855.9	43.34	18.71
45.10	23 25 22	1855.95	27.65	41.61	252.05	135.24	23 56 18	855.9	43.34	18.71
45.10	23 25 22	1855.95	27.65	41.61	252.05	135.24	23 56 18	855.9	43.34	18.71
45.10	23 25 22	1855.95	27.65	41.61	252.05	135.24	23 56 18	855.9	43.34	18.71

DIFFERENTIAL CORRECTIONS

TDE -.2719 TRA .9148 TC3-1.6398 BAU .6292
RDE -.5781 RRA-1.3518 RC3 1.6134 FAU .18111
FDE 2.7082 FRA 6.8344 FC3-7.6641 BSP 6379
BDE .6388 BRA 1.6323 BC3 2.3005 FSP 2365

MID-COURSE EXECUTION ACCURACY

SGT 2402.2 SGR 3194.3 SG3 1372.9
RRT -.9140 RRF -.9996 RTF .9140
SGB 3996.7 R23 .1460 R13 -.9889
SG1 3916.9 SG2 794.9 THA 126.23

ORBIT DETERMINATION ACCURACY

ST 32.8 SR 55.1 SS 80.9
CRT -.2882 CRS .9993 CST -.3239
LSA 98.5 MSA 31.0 SSA .2
EL1 56.3 EL2 30.8 ALF 104.00

LAUNCH DATE APR 23 1971 FLIGHT TIME 220.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC — DISTANCE 529.026 — EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.248 GAL -2.37 AZL 96.85 HCA 173.87 SMA 183.12 ECC .18319 INC 6.8480 V1 29.624
RP 213.31 LAP -.73 LOP 26.11 VP 22.794 GAP 4.64 AZP 83.19 TAL 344.56 TAP 158.42 RCA 149.57 APO 216.66 V2 25.732
RC 137.991 GL -52.21 GP 33.61 ZAL 111.79 ZAP 91.52 ETS 178.19 ZAE 126.64 ETE 150.56 ZAC 135.60 ETC 274.59 LVI -42.29

PLANETOCENTRIC CONIC

C3 23.637 VHL 4.862 DLA -54.14 RAL 11.55 RAD 6644.4 VEL 11.984 PTH 6.98 VHP 3.655 DPA 10.80 RAP 294.24 ECC 1.3890

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.70	23 34 17	1913.45	26.98	47.03	259.95	138.90	24 6 10	913.5	44.03	25.56
41.70	23 34 17	1913.45	26.98	47.03	259.95	138.90	24 6 10	913.5	44.03	25.56
41.70	23 34 17	1913.45	26.98	47.03	259.95	138.90	24 6 10	913.5	44.03	25.56
41.70	23 34 17	1913.45	26.98	47.03	259.95	138.90	24 6 10	913.5	44.03	25.56
41.70	23 34 17	1913.45	26.98	47.03	259.95	138.90	24 6 10	913.5	44.03	25.56
41.70	23 34 17	1913.45	26.98	47.03	259.95	138.90	24 6 10	913.5	44.03	25.56
41.70	23 34 17	1913.45	26.98	47.03	259.95	138.90	24 6 10	913.5	44.03	25.56

DIFFERENTIAL CORRECTIONS

TDE -.1951 TRA 1.0549 TC3-1.5345 BAU .7012
RDE -.8304 RRA-1.5521 RC3 1.6029 FAU .16395
FDE 3.1545 FRA 6.1275 FC3-6.0049 BSP 7252
BDE .8530 BRA 1.8767 BC3 2.2190 FSP 2119

MID-COURSE EXECUTION ACCURACY

SGT 2604.4 SGR 3624.5 SG3 1221.5
RRT -.9245 RRF -.9998 RTF .9239
SGB 4463.1 R23 .1308 R13 -.9912
SG1 4387.1 SG2 820.0 THA 125.00

ORBIT DETERMINATION ACCURACY

ST 33.9 SR 67.8 SS 82.8
CRT -.4062 CRS .9998 CST -.4236
LSA 108.0 MSA 30.6 SSA .1
EL1 69.5 EL2 30.2 ALF 104.24

LAUNCH DATE APR 23 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC — DISTANCE 533.204 — EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.248 GAL -2.41 AZL 98.08 HCA 175.05 SMA 183.12 ECC .18335 INC 8.0772 V1 29.624
RP 213.61 LAP -.69 LOP 27.30 VP 22.756 GAP 4.46 AZP 81.95 TAL 344.31 TAP 159.36 RCA 149.54 APO 216.69 V2 25.697
RC 140.356 GL -57.17 GP 39.03 ZAL 109.82 ZAP 89.69 ETS 179.21 ZAE 122.63 ETE 148.98 ZAC 141.05 ETC 274.86 LVI -46.68

PLANETOCENTRIC CONIC

C3 29.029 VHL 5.388 DLA -57.29 RAL 18.51 RAD 6646.6 VEL 12.205 PTH 7.16 VHP 3.974 DPA 16.02 RAP 292.62 ECC 1.4777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.85	23 51 21	1986.42	25.35	53.28	270.79	143.28	24 24 28	986.4	43.96	33.99
37.85	23 51 21	1986.42	25.35	53.28	270.79	143.28	24 24 28	986.4	43.96	33.99
37.85	23 51 21	1986.42	25.35	53.28	270.79	143.28	24 24 28	986.4	43.96	33.99
37.85	23 51 21	1986.42	25.35	53.28	270.79	143.28	24 24 28	986.4	43.96	33.99
37.85	23 51 21	1986.42	25.35	53.28	270.79	143.28	24 24 28	986.4	43.96	33.99
37.85	23 51 21	1986.42	25.35	53.28	270.79	143.28	24 24 28	986.4	43.96	33.99
37.85	23 51 21	1986.42	25.35	53.28	270.79	143.28	24 24 28	986.4	43.96	33.99

DIFFERENTIAL CORRECTIONS

TDE -.0149 TRA 1.2136 TC3-1.3606 BAU .7946
RDE-1.3239 RRA-1.7882 RC3 1.5300 FAU .14008
FDE 3.7321 FRA 5.1003 FC3-4.1775 BSP 8254
BDE 1.3239 BRA 2.1612 BC3 2.0475 FSP 1769

MID-COURSE EXECUTION ACCURACY

SGT 2802.7 SGR 4133.6 SG3 1010.5
RRT -.9323 RRF -.9999 RTF .9309
SGB 4994.2 R23 .1170 R13 -.9930
SG1 4921.1 SG2 851.2 THA 123.43

ORBIT DETERMINATION ACCURACY

ST 35.9 SR 88.0 SS 85.6
CRT -.5826 CRS 1.0000 CST -.5871
LSA 124.6 MSA 28.7 SSA .1
EL1 90.8 EL2 28.3 ALF 104.85

LAUNCH DATE APR 23 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC — DISTANCE 537.374 — EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.249 GAL -2.45 AZL 100.07 HCA 176.23 SMA 183.13 ECC .18355 INC10.0670 V1 29.624
RP 213.92 LAP -.66 LOP 28.49 VP 22.717 GAP 4.28 AZP 79.95 TAL 344.06 TAP 160.29 RCA 149.51 APO 216.74 V2 25.662
RC 142.739 GL -63.56 GP 45.82 ZAL 107.10 ZAP 88.61 ETS 180.43 ZAE 117.98 ETE 147.17 ZAC 147.86 ETC 275.52 LVI -52.09

PLANETOCENTRIC CONIC

C3 39.567 VHL 6.290 DLA -60.66 RAL 29.38 RAD 6650.5 VEL 12.627 PTH 7.48 VHP 4.570 DPA 22.61 RAP 290.82 ECC 1.6512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
33.80	0 28 16	2084.20	21.85	60.17	286.35	148.14	1 3 0	1084.2	42.10	43.93
33.80	0 28 16	2084.20	21.85	60.17	286.35	148.14	1 3 0	1084.2	42.10	43.93
33.80	0 28 16	2084.20	21.85	60.17	286.35	148.14	1 3 0	1084.2	42.10	43.93
33.80	0 28 16	2084.20	21.85	60.17	286.35	148.14	1 3 0	1084.2	42.10	43.93
33.80	0 28 16	2084.20	21.85	60.17	286.35	148.14	1 3 0	1084.2	42.10	43.93
33.80	0 28 16	2084.20	21.85	60.17	286.35	148.14	1 3 0	1084.2	42.10	43.93
33.80	0 28 16	2084.20	21.85	60.17	286.35	148.14	1 3 0	1084.2	42.10	43.93

DIFFERENTIAL CORRECTIONS

TDE .4313 TRA 1.3885 TC3-1.1226 BAU .9426
RDE-2.3608 RRA-2.0318 RC3 1.3839 FAU .10968
FDE 4.2970 FRA 3.6475 FC3-2.3997 BSP 9059
BDE 2.4195 BRA 2.4609 BC3 1.7819 FSP 1249

MID-COURSE EXECUTION ACCURACY

SGT 2968.5 SGR 4690.6 SG3 725.0
RRT -.9380 RRF -.9999 RTF .9356
SGB 5551.0 R23 .1052 R13 -.9944
SG1 5480.7 SG2 880.5 THA 121.61

ORBIT DETERMINATION ACCURACY

ST 43.5 SR 122.4 SS 87.1
CRT -.8139 CRS 1.0000 CST -.8126
LSA 154.4 MSA 24.6 SSA .1
EL1 127.6 EL2 24.2 ALF 106.75

LAUNCH DATE APR 23 1971 FLIGHT TIME 236.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE 562.587 EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.263 GAL -2.78 AZL 82.44 HCA 183.36 SMA 183.36 ECC .18594 INC 7.5568 V1 29.624
RP 215.87 LAP -.44 LOP 35.53 VP 22.489 GAP 3.26 AZP 97.55 TAL 342.09 TAP 165.45 RCA 149.27 APO 217.46 V2 25.443
RC 157.385 GL 53.91 GP -47.99 ZAL 112.82 ZAP 82.03 ETS 169.82 ZAE 109.44 ETE 203.48 ZAC 54.43 ETC 272.25 LVI 34.29

PLANETOCENTRIC CONIC

C3 27.514 VHL 5.245 DLA 42.41 RAL 319.86 RAD 6646.0 VEL 12.144 PTH 7.11 VHP 4.905 DPA -69.54 RAP 315.47 ECC 1.4528

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	10 49 35	4181.37	-37.46	188.12	218.82	58.20	11 59 16	3181.4	-46.72	157.78
56.98	9 2 49	4464.58	-20.64	200.41	205.52	52.09	10 17 14	3464.6	-34.22	177.88
56.98	9 2 49	4464.58	-20.64	200.41	205.52	52.09	10 17 14	3464.6	-34.22	177.88
56.98	9 2 49	4464.58	-20.64	200.41	205.52	52.09	10 17 14	3464.6	-34.22	177.88
56.98	9 2 49	4464.58	-20.64	200.41	205.52	52.09	10 17 14	3464.6	-34.22	177.88
56.98	9 2 49	4464.58	-20.64	200.41	205.52	52.09	10 17 14	3464.6	-34.22	177.88
56.98	9 2 49	4464.58	-20.64	200.41	205.52	52.09	10 17 14	3464.6	-34.22	177.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.1239 TRA 1.0014 TC3-2.0828 BAU 1.0087 SGT 4314.2 SGR 4733.7 SG3 598.2 ST 172.1 SR 172.8 SS 104.4
RDE 3.0715 RRA 1.8697 RC3-1.7837 FAU .08521 RRT .9614 RRF .9996 RTF .9566 CRT .9936 CRS -.9999 CST -.9920
FDE 4.3639 FRA 2.8125 FC3-2.6810 BSP 10511 SGB 6404.7 R23 .1418 R13 .9896 LSA 264.9 MSA 15.3 SSA .1
BDE 4.3809 BRA 2.1210 BC3 2.7422 FSP 1051 SG1 6343.2 SG2 885.6 THA 47.76 EL1 243.5 EL2 13.8 ALF 45.12

LAUNCH DATE APR 23 1971 FLIGHT TIME 238.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 566.743 EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.267 GAL -2.84 AZL 84.84 HCA 184.51 SMA 183.43 ECC .18646 INC 5.1592 V1 29.624
RP 216.21 LAP -.41 LOP 36.69 VP 22.452 GAP 3.09 AZP 95.14 TAL 341.77 TAP 166.28 RCA 149.23 APO 217.63 V2 25.405
RC 159.881 GL 41.94 GP -40.57 ZAL 118.45 ZAP 79.34 ETS 169.60 ZAE 110.79 ETE 199.30 ZAC 61.87 ETC 271.86 LVI 27.89

PLANETOCENTRIC CONIC

C3 18.802 VHL 4.336 DLA 31.46 RAL 326.04 RAD 6642.3 VEL 11.782 PTH 6.81 VHP 4.170 DPA -62.87 RAP 307.18 ECC 1.3094

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 44 20	3780.24	-47.08	154.87	212.65	82.19	13 47 21	2780.2	-44.66	120.06
60.00	12 35 21	3804.23	-38.44	156.84	210.48	76.84	13 38 45	2804.2	-39.71	123.76
70.00	12 14 52	3864.78	-28.90	156.42	207.17	70.96	13 19 17	2864.8	-33.97	128.88
75.61	11 9 6	4069.85	-18.66	167.44	202.56	64.20	12 16 56	3069.9	-27.66	143.25
75.61	11 9 6	4069.85	-18.66	167.44	202.56	64.20	12 16 56	3069.9	-27.66	143.25
75.61	11 9 6	4069.85	-18.66	167.44	202.56	64.20	12 16 56	3069.9	-27.66	143.25
110.00	17 14 19	2911.60	-28.90	85.34	207.17	70.96	18 2 50	1911.6	-33.97	57.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.3449 TRA 1.2996 TC3-2.9899 BAU .9123 SGT 4514.0 SGR 4144.0 SG3 891.5 ST 157.9 SR 135.8 SS 118.4
RDE 1.9621 RRA 1.7403 RC3-2.0575 FAU .11373 RRT .9669 RRF .9997 RTF .9640 CRT .9940 CRS -.9999 CST -.9922
FDE 4.7249 FRA 4.4194 FC3-5.2367 BSP 10347 SGB 6127.7 R23 .1496 R13 .9885 LSA 239.2 MSA 13.9 SSA .1
BDE 3.0575 BRA 2.1720 BC3 3.6295 FSP 1603 SG1 6077.2 SG2 785.6 THA 42.47 EL1 208.0 EL2 11.3 ALF 40.68

LAUNCH DATE APR 23 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 570.904 EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.271 GAL -2.89 AZL 86.26 HCA 185.66 SMA 183.50 ECC .18702 INC 3.7383 V1 29.624
RP 216.56 LAP -.37 LOP 37.85 VP 22.415 GAP 2.92 AZP 93.72 TAL 341.44 TAP 167.10 RCA 149.18 APO 217.82 V2 25.366
RC 162.390 GL 32.53 GP -34.62 ZAL 122.47 ZAP 76.91 ETS 169.70 ZAE 111.17 ETE 195.82 ZAC 67.84 ETC 271.61 LVI 22.71

PLANETOCENTRIC CONIC

C3 15.282 VHL 3.909 DLA 22.84 RAL 330.33 RAD 6640.7 VEL 11.633 PTH 6.67 VHP 3.799 DPA -57.31 RAP 302.76 ECC 1.2515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 46 44	3537.73	-46.76	131.61	204.03	100.04	14 45 41	2537.7	-37.57	101.20
60.00	13 57 49	3508.17	-40.17	130.03	205.10	93.51	14 56 18	2506.2	-34.39	100.54
70.00	14 15 45	3455.37	-34.11	125.87	205.22	88.16	15 13 20	2455.4	-31.30	97.50
80.00	14 48 50	3351.61	-29.34	117.64	204.84	84.19	15 44 41	2351.6	-28.77	90.23
90.00	15 53 0	3144.43	-27.37	102.16	204.58	82.59	16 45 24	2144.4	-27.71	75.16
100.00	17 31 42	2826.08	-29.34	79.00	204.84	84.19	18 18 48	1826.1	-28.77	51.59
110.00	19 15 11	2502.19	-34.11	54.79	205.22	88.16	19 56 53	1502.2	-31.30	26.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.9000 TRA 1.5003 TC3-3.7633 BAU .8835 SGT 4701.6 SGR 3591.1 SG3 1104.3 ST 143.8 SR 107.1 SS 120.6
RDE 1.3715 RRA 1.5506 RC3-2.1302 FAU .13655 RRT .9703 RRF .9998 RTF .9683 CRT .9949 CRS -.9998 CST -.9925
FDE 4.6675 FRA 5.6232 FC3-7.7355 BSP 9864 SGB 5916.2 R23 .1609 R13 .9866 LSA 215.8 MSA 12.2 SSA .2
BDE 2.3433 BRA 2.1576 BC3 4.3244 FSP 1963 SG1 5875.2 SG2 695.3 THA 37.15 EL1 179.1 EL2 8.7 ALF 36.64

LAUNCH DATE APR 23 1971 FLIGHT TIME 242.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC DISTANCE 575.066 EARTH TO MARS

RL 150.41 LAL -.00 LOL 212.20 VL 32.276 GAL -2.96 AZL 87.20 HCA 186.81 SMA 183.57 ECC .18763 INC 2.7992 V1 29.624
RP 216.91 LAP -.33 LOP 39.00 VP 22.378 GAP 2.76 AZP 92.76 TAL 341.10 TAP 167.91 RCA 149.13 APO 218.02 V2 25.327
RC 164.912 GL 25.22 GP -29.93 ZAL 125.25 ZAP 74.70 ETS 169.92 ZAE 110.88 ETE 192.99 ZAC 72.55 ETC 271.44 LVI 18.60

PLANETOCENTRIC CONIC

C3 13.659 VHL 3.696 DLA 16.19 RAL 333.52 RAD 6639.9 VEL 11.564 PTH 6.61 VHP 3.594 DPA -52.86 RAP 300.00 ECC 1.2248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 28 25	3372.70	-43.73	116.91	199.08	111.01	15 24 38	2372.7	-31.13	90.71
60.00	14 49 31	3316.51	-38.16	114.18	201.41	104.08	15 44 49	2316.5	-28.63	87.59
70.00	15 20 32	3225.19	-33.17	108.02	202.64	98.65	16 14 18	2225.2	-26.27	81.50
80.00	16 8 43	3074.25	-29.48	97.09	203.16	94.95	16 59 57	2074.2	-24.47	70.79
90.00	17 21 3	2840.73	-28.07	80.05	203.28	93.58	18 8 24	1840.7	-23.78	53.86
100.00	18 51 34	2548.72	-29.48	58.46	203.16	94.95	19 34 3	1548.7	-24.47	32.15
110.00	20 19 59	2272.01	-33.17	36.94	202.64	98.65	20 57 51	1272.0	-26.27	10.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6340 TRA 1.6717 TC3-4.3325 BAU .8744 SGT 4894.4 SGR 3124.8 SG3 1250.7 ST 133.1 SR 86.8 SS 118.9
RDE 1.0331 RRA 1.3751 RC3-2.0390 FAU .15197 RRT .9726 RRF .9994 RTF .9711 CRT .9964 CRS -.9995 CST -.9934
FDE 4.5000 FRA 6.5028 FC3-9.6321 BSP 9624 SGB 5806.8 R23 .1704 R13 .9847 LSA 198.1 MSA 10.5 SSA .3
BDE 1.9332 BRA 2.1646 BC3 4.7883 FSP 2216 SG1 5774.0 SG2 616.2 THA 32.25 EL1 158.7 EL2 6.2 ALF 33.07

LAUNCH DATE APR 23 1971 FLIGHT TIME 244.00 ARRIVAL DATE DEC 23 1971

DISTANCE 579.226

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.41 LAL -.00 LOL 212.20 VL 32.281 GAL -3.02 AZL 87.67 HCA 187.96 SMA 183.66 ECC .18028 INC 2.1335 V1 29.624
RP 217.26 LAP -.30 LOP 40.15 VP 22.341 GAP 2.59 AZP 92.11 TAL 340.74 TAP 188.70 RCA 149.08 APO 218.23 V2 25.288
RC 167.446 GL 19.55 GP -26.19 ZAL 127.19 ZAP 72.67 ETS 170.17 ZAE 110.17 ETE 190.70 ZAC 76.30 ETC 271.30 LVI 15.34

PLANETOCENTRIC CONIC

C3 12.873 VHL 3.588 DLA 11.05 RAL 336.02 RAD 6639.5 VEL 11.530 PTH 6.58 VHP 3.474 DPA -49.30 RAP 298.09 ECC 1.2119

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 58 45	3255.02	-40.42	107.56	196.84	117.61	15 53 0	2255.0	-26.01	84.19
60.00	15 26 14	3181.87	-35.42	103.81	199.68	110.64	16 19 16	2181.9	-23.82	79.45
70.00	16 4 50	3068.29	-30.95	98.34	201.41	105.22	16 55 58	2068.3	-21.78	71.54
80.00	17 0 31	2893.85	-27.70	83.99	202.30	101.60	17 48 45	1893.8	-20.25	59.06
90.00	18 16 23	2649.01	-26.48	66.26	202.56	100.30	19 0 32	1649.0	-19.67	41.31
100.00	19 43 23	2368.32	-27.70	45.36	202.30	101.60	20 22 51	1368.3	-20.25	20.43
110.00	21 4 16	2115.10	-30.95	25.25	201.41	105.22	21 39 31	1115.1	-21.78	.46

DIFFERENTIAL CORRECTIONS

TDE 1.4730 TRA 1.8342 TC3-4.7184 BAU .8728
RDE .8281 RRA 1.2264 RC3-1.8601 FAU .16065
FDE 4.3422 FRA 7.1560 FC-10.8044 BSP .9655
BDE 1.6899 BRA 2.2064 BC3 5.0718 FSP .2412

MID-COURSE EXECUTION ACCURACY

SGT 5089.6 SGR 2740.8 SG3 1349.0
RRT .9739 RRF .9991 RTF .9729
SGB 5780.7 R23 .1775 R13 .9832
SG1 5754.4 SG2 550.5 THA 27.95

ORBIT DETERMINATION ACCURACY

ST 126.0 SR 72.6 SS 116.6
CRT .9980 CRS -.9991 CST -.9947
LSA 186.1 MSA 8.9 SSA .4
EL1 145.3 EL2 3.9 ALF 29.94

LAUNCH DATE APR 23 1971 FLIGHT TIME 246.00 ARRIVAL DATE DEC 25 1971

DISTANCE 583.385

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.41 LAL -.00 LOL 212.20 VL 32.286 GAL -3.08 AZL 88.36 HCA 189.10 SMA 183.74 ECC .18896 INC 1.6345 V1 29.624
RP 217.61 LAP -.26 LOP 41.30 VP 22.304 GAP 2.43 AZP 91.62 TAL 340.38 TAP 189.48 RCA 149.02 APO 218.46 V2 25.249
RC 169.992 GL 15.09 GP -23.19 ZAL 128.58 ZAP 70.80 ETS 170.43 ZAE 109.19 ETE 188.86 ZAC 79.32 ETC 271.19 LVI 12.72

PLANETOCENTRIC CONIC

C3 12.506 VHL 3.536 DLA 7.06 RAL 338.06 RAD 6639.3 VEL 11.514 PTH 6.56 VHP 3.403 DPA -46.42 RAP 296.67 ECC 1.2058

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 21 58	3168.48	-37.50	101.34	196.08	121.75	16 14 47	2168.5	-22.04	79.78
60.00	15 53 59	3083.30	-32.82	96.75	199.16	114.84	16 45 22	2083.3	-20.00	73.91
70.00	16 37 46	2954.52	-28.64	88.29	201.14	109.46	17 27 0	1954.5	-18.11	64.76
80.00	17 38 18	2764.88	-25.61	74.99	202.23	105.89	18 24 23	1764.9	-16.70	51.13
90.00	18 56 21	2513.03	-24.48	56.82	202.57	104.62	19 38 14	1513.0	-16.17	32.87
100.00	20 21 10	2239.36	-25.61	36.36	202.23	105.89	20 58 30	1239.4	-16.70	12.50
110.00	21 37 12	2001.34	-28.64	17.21	201.14	109.46	22 13 33	1001.3	-18.11	353.68

DIFFERENTIAL CORRECTIONS

TDE 1.3575 TRA 1.9738 TC3-5.0272 BAU .8868
RDE .6857 RRA 1.0906 RC3-1.6900 FAU .16792
FDE 4.1457 FRA 7.5747 FC-11.6239 BSP .9601
BDE 1.5208 BRA 2.2551 BC3 5.3037 FSP .2491

MID-COURSE EXECUTION ACCURACY

SGT 5278.5 SGR 2415.2 SG3 1408.1
RRT .9751 RRF .9986 RTF .9747
SGB 5804.8 R23 .1800 R13 .9822
SG1 5784.1 SG2 489.2 THA 24.23

ORBIT DETERMINATION ACCURACY

ST 120.2 SR 61.7 SS 112.9
CRT .9983 CRS -.9984 CST -.9958
LSA 175.9 MSA 7.5 SSA .6
EL1 135.1 EL2 2.0 ALF 27.14

LAUNCH DATE APR 23 1971 FLIGHT TIME 248.00 ARRIVAL DATE DEC 27 1971

DISTANCE 587.543

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.41 LAL -.00 LOL 212.20 VL 32.292 GAL -3.15 AZL 88.75 HCA 190.24 SMA 183.84 ECC .18968 INC 1.2493 V1 29.624
RP 217.97 LAP -.22 LOP 42.44 VP 22.267 GAP 2.26 AZP 91.23 TAL 340.01 TAP 170.25 RCA 148.97 APO 218.71 V2 25.209
RC 172.547 GL 11.53 GP -20.73 ZAL 129.64 ZAP 69.04 ETS 170.68 ZAE 108.05 ETE 187.37 ZAC 81.79 ETC 271.10 LVI 10.56

PLANETOCENTRIC CONIC

C3 12.370 VHL 3.517 DLA 3.92 RAL 339.77 RAD 6639.2 VEL 11.508 PTH 6.56 VHP 3.362 DPA -44.06 RAP 295.57 ECC 1.2036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 40 24	3103.36	-35.08	97.00	196.10	124.48	16 32 8	2103.4	-18.97	76.64
60.00	16 15 50	3009.13	-30.58	91.73	199.32	117.64	17 5 59	2009.1	-17.00	69.94
70.00	17 3 26	2869.11	-26.56	82.52	201.45	112.30	17 51 15	1869.1	-15.18	59.87
80.00	18 7 30	2668.47	-23.65	68.50	202.65	108.77	18 51 58	1668.5	-13.83	45.42
90.00	19 27 5	2411.63	-22.57	50.01	203.04	107.51	20 7 17	1411.6	-13.32	26.79
100.00	20 50 22	2142.94	-23.25	29.87	202.65	108.77	21 26 5	1142.9	-13.83	6.78
110.00	22 2 52	1915.93	-26.56	11.43	201.45	112.30	22 34 48	915.9	-15.18	348.79

DIFFERENTIAL CORRECTIONS

TDE 1.2840 TRA 2.1110 TC3-5.2450 BAU .9033
RDE .5868 RRA .9737 RC3-1.5254 FAU .17288
FDE 3.9654 FRA 7.8504 FC-12.0993 BSP .9684
BDE 1.4117 BRA 2.3248 BC3 5.4623 FSP .2520

MID-COURSE EXECUTION ACCURACY

SGT 5465.3 SGR 2143.2 SG3 1441.8
RRT .9766 RRF .9979 RTF .9769
SGB 5870.5 R23 .1760 R13 .9823
SG1 5854.7 SG2 430.2 THA 21.07

ORBIT DETERMINATION ACCURACY

ST 116.8 SR 53.4 SS 109.3
CRT .9998 CRS -.9973 CST -.9969
LSA 168.5 MSA 6.5 SSA .8
EL1 128.4 EL2 .9 ALF 24.58

LAUNCH DATE APR 23 1971 FLIGHT TIME 250.00 ARRIVAL DATE DEC 29 1971

DISTANCE 591.692

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.41 LAL -.00 LOL 212.20 VL 32.298 GAL -3.22 AZL 89.06 HCA 191.38 SMA 183.93 ECC .19044 INC .9387 V1 29.624
RP 218.33 LAP -.19 LOP 43.58 VP 22.230 GAP 2.10 AZP 90.92 TAL 339.62 TAP 171.01 RCA 148.91 APO 218.96 V2 25.169
RC 175.114 GL 8.66 GP -18.70 ZAL 130.47 ZAP 67.39 ETS 170.92 ZAE 106.81 ETE 186.16 ZAC 83.83 ETC 271.03 LVI 8.82

PLANETOCENTRIC CONIC

C3 12.372 VHL 3.517 DLA 1.42 RAL 341.25 RAD 6639.2 VEL 11.509 PTH 6.56 VHP 3.341 DPA -42.10 RAP 294.71 ECC 1.2036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 27	3053.58	-33.11	93.88	196.54	126.35	16 46 21	2053.6	-16.57	74.33
60.00	16 33 32	2952.27	-28.73	88.06	199.84	119.57	17 22 44	1952.3	-14.64	66.99
70.00	17 24 6	2803.54	-24.80	78.24	202.08	114.27	18 10 50	1803.5	-12.85	56.22
80.00	18 30 53	2594.45	-21.95	63.66	203.37	110.77	19 14 7	1594.4	-11.52	41.13
90.00	19 51 39	2333.81	-20.89	44.92	203.79	109.51	20 30 33	1333.8	-11.02	22.23
100.00	21 13 44	2068.92	-21.95	25.03	203.37	110.77	21 48 13	1068.9	-11.52	2.50
110.00	22 23 33	1850.36	-24.80	7.16	202.08	114.27	22 54 23	850.4	-12.85	345.14

DIFFERENTIAL CORRECTIONS

TDE 1.2422 TRA 2.2513 TC3-5.3943 BAU .9192
RDE .5268 RRA .8845 RC3-1.3367 FAU .17138
FDE 3.9008 FRA 8.1271 FC-11.9929 BSP .9934
BDE 1.3493 BRA 2.4188 BC3 5.5575 FSP .2619

MID-COURSE EXECUTION ACCURACY

SGT 5652.5 SGR 1922.9 SG3 1463.5
RRT .9744 RRF .9969 RTF .9760
SGB 5970.7 R23 .1816 R13 .9804
SG1 5956.6 SG2 410.0 THA 18.43

ORBIT DETERMINATION ACCURACY

ST 115.3 SR 48.1 SS 108.2
CRT .9993 CRS -.9958 CST -.9980
LSA 165.2 MSA 5.6 SSA 1.1
EL1 124.9 EL2 1.7 ALF 22.62

LAUNCH DATE APR 23 1971 FLIGHT TIME 252.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 595.840 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.304	GAL	-3.29	AZL	89.31	HCA	192.52	SMA	184.04	ECC	.19123	INC	.6882	V1	29.624
RP	218.69	LAP	-.15	LOP	44.72	VP	22.194	GAP	1.94	AZP	90.67	TAL	339.24	TAP	171.75	RCA	148.84	APO	219.23	V2	25.129
RC	177.690	GL	6.30	GP	-16.99	ZAL	131.17	ZAP	65.83	ETS	171.14	ZAE	105.53	ETE	185.16	ZAC	85.55	ETC	270.96	LVI	7.34

PLANETOCENTRIC CONIC

C3	12.459	VHL	3.530	DLA	-.60	RAL	342.54	RAD	6639.3	VEL	11.512	PTH	6.56	VHP	3.332	DPA	-40.45	RAP	294.01	ECC	1.2050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 58	3013.00	-31.53	91.55	197.19	127.68	16 58 13	2015.0	-14.70	72.58
60.00	16 48 11	2908.03	-27.21	85.30	200.57	120.95	17 36 39	1908.0	-12.78	64.74
70.00	17 41 8	2752.34	-23.32	74.99	202.89	115.69	18 27 0	1752.3	-10.99	53.42
80.00	18 50 3	2536.51	-20.50	59.97	204.24	112.19	19 32 20	1536.5	-9.67	37.83
90.00	20 11 46	2272.85	-19.45	41.03	204.68	110.94	20 49 39	1272.8	-9.17	18.72
100.00	21 32 55	2010.98	-20.50	21.34	204.24	112.19	22 6 26	1011.0	-9.67	359.20
110.00	22 40 34	1799.16	-23.32	3.91	202.89	115.69	23 10 33	799.2	-10.99	342.34

DIFFERENTIAL CORRECTIONS

TDE	1.2228	TRA	2.3925	TC3	-5.4917	BAU	.9355														
RDE	.4816	RRA	.8041	RC3	-1.1774	FAU	.16937														
FDE	3.8366	FRA	8.3090	FC	-11.7688	BSP	10259														
BDE	1.3142	BRA	2.5240	BC3	5.6165	FSP	2678														

MID-COURSE EXECUTION ACCURACY

SGT	5835.6	SGR	1733.8	SG3	1470.7																
RRT	.9729	RRF	.9956	RTF	.9761																
SGB	6087.7	R23	.1806	R13	.9796																
SG1	6075.5	SG2	384.7	THA	16.19																

ORBIT DETERMINATION ACCURACY

ST	115.2	SR	43.7	SS	107.0																
CRT	.9976	CRS	-.9938	CST	-.9988																
LSA	163.1	MSA	5.1	SSA	1.4																
EL1	123.2	EL2	2.9	ALF	20.75																

LAUNCH DATE APR 23 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 599.985 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.311	GAL	-3.36	AZL	89.52	HCA	193.65	SMA	184.14	ECC	.19205	INC	.4769	V1	29.624
RP	219.06	LAP	-.11	LOP	45.85	VP	22.158	GAP	1.78	AZP	90.46	TAL	338.84	TAP	172.49	RCA	148.78	APO	219.51	V2	25.089
RC	180.275	GL	4.34	GP	-15.54	ZAL	131.77	ZAP	64.34	ETS	171.35	ZAE	104.21	ETE	184.33	ZAC	87.01	ETC	270.91	LVI	6.08

PLANETOCENTRIC CONIC

C3	12.603	VHL	3.550	DLA	-2.24	RAL	343.70	RAD	6639.4	VEL	11.519	PTH	6.57	VHP	3.334	DPA	-39.05	RAP	293.44	ECC	1.2074

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 34	2984.85	-30.26	89.80	197.97	128.64	17 8 19	1984.9	-13.22	71.23
60.00	17 0 31	2873.26	-25.98	83.19	201.41	121.97	17 48 25	1873.3	-11.29	63.00
70.00	17 55 24	2711.90	-22.11	72.49	203.79	116.72	18 40 36	1711.9	-9.50	51.24
80.00	19 6 5	2490.58	-19.30	57.09	205.19	113.24	19 47 36	1490.6	-8.17	35.25
90.00	20 28 34	2224.46	-18.24	37.99	205.65	111.99	21 5 38	1224.5	-7.67	15.95
100.00	21 48 57	1965.05	-19.30	18.46	205.19	113.24	22 21 42	965.1	-8.17	356.61
110.00	22 54 50	1758.72	-22.11	1.40	203.79	116.72	23 24 9	758.7	-9.50	340.15

DIFFERENTIAL CORRECTIONS

TDE	1.2040	TRA	2.5186	TC3	-5.6031	BAU	.9608														
RDE	.4421	RRA	.7280	RC3	-1.0593	FAU	.16964														
FDE	3.7222	FRA	8.3756	FC	-11.6531	BSP	10417														
BDE	1.2826	BRA	2.6218	BC3	5.7024	FSP	2644														

MID-COURSE EXECUTION ACCURACY

SGT	6012.6	SGR	1567.7	SG3	1465.1																
RRT	.9720	RRF	.9937	RTF	.9771																
SGB	6213.6	R23	.1730	R13	.9797																
SG1	6203.4	SG2	356.7	THA	14.27																

ORBIT DETERMINATION ACCURACY

ST	114.9	SR	39.8	SS	104.5																
CRT	.9946	CRS	-.9909	CST	-.9993																
LSA	160.2	MSA	5.2	SSA	1.5																
EL1	121.5	EL2	3.9	ALF	19.04																

LAUNCH DATE APR 23 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 604.126 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.317	GAL	-3.44	AZL	89.70	HCA	194.77	SMA	184.25	ECC	.19291	INC	.2973	V1	29.624
RP	219.43	LAP	-.08	LOP	46.98	VP	22.121	GAP	1.61	AZP	90.29	TAL	338.44	TAP	173.21	RCA	148.71	APO	219.80	V2	25.048
RC	182.871	GL	2.70	GP	-14.29	ZAL	132.32	ZAP	62.91	ETS	171.54	ZAE	102.89	ETE	183.63	ZAC	88.26	ETC	270.87	LVI	5.00

PLANETOCENTRIC CONIC

C3	12.788	VHL	3.576	DLA	-3.58	RAL	344.75	RAD	6639.5	VEL	11.526	PTH	6.57	VHP	3.342	DPA	-37.85	RAP	292.98	ECC	1.2105

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 41	2961.23	-29.25	88.46	198.81	129.36	17 17 2	1961.2	-12.06	70.19
60.00	17 11 4	2845.84	-24.98	81.56	202.30	122.72	17 58 30	1845.8	-10.12	61.64
70.00	18 7 32	2679.80	-21.11	70.53	204.74	117.49	18 52 12	1679.8	-8.31	49.52
80.00	19 19 40	2453.93	-18.30	54.83	206.18	114.01	20 0 34	1453.9	-6.96	33.20
90.00	20 42 47	2185.76	-17.24	35.60	206.66	112.77	21 19 13	1185.8	-6.45	13.76
100.00	22 2 32	1928.41	-18.30	16.20	206.18	114.01	22 34 40	928.4	-6.96	354.57
110.00	23 6 58	1726.61	-21.11	359.45	204.74	117.49	23 35 45	726.6	-8.31	338.43

DIFFERENTIAL CORRECTIONS

TDE	1.1987	TRA	2.6470	TC3	-5.6832	BAU	.9851														
RDE	.4139	RRA	.6629	RC3	-.9485	FAU	.16795														
FDE	3.6420	FRA	8.4238	FC	-11.3697	BSP	10644														
BDE	1.2682	BRA	2.7288	BC3	5.7618	FSP	2626														

MID-COURSE EXECUTION ACCURACY

SGT	6186.1	SGR	1425.7	SG3	1453.6																
RRT	.9698	RRF	.9913	RTF	.9774																
SGB	6348.2	R23	.1663	R13	.9795																
SG1	6339.2	SG2	339.2	THA	12.64																

ORBIT DETERMINATION ACCURACY

ST	115.4	SR	36.8	SS	102.7																
CRT	.9903	CRS	-.9874	CST	-.9996																
LSA	158.7	MSA	5.5	SSA	1.5																
EL1	121.0	EL2	4.9	ALF	17.56																

LAUNCH DATE APR 23 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 6 1972

HELIOCENTRIC CONIC DISTANCE 608.262 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.324	GAL	-3.52	AZL	89.85	HCA	195.90	SMA	184.37	ECC	.19379	INC	.1432	V1	29.624
RP	219.80	LAP	-.04	LOP	48.10	VP	22.085	GAP	1.45	AZP	90.14	TAL	338.03	TAP	173.93	RCA	148.64	APO	220.10	V2	25.007
RC	185.475	GL	1.31	GP	-13.21	ZAL	132.83	ZAP	61.55	ETS	171.72	ZAE	101.57	ETE	183.05	ZAC	89.35	ETC	270.84	LVI	4.05

PLANETOCENTRIC CONIC

C3	13.003	VHL	3.606	DLA	-4.69	RAL	345.72	RAD	6639.6	VEL	11.536	PTH	6.58	VHP	3.356	DPA	-36.80	RAP	292.61	ECC	1.2140

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 36	2942.73	-28.45	87.43	199.69	129.89	17 24 39	1942.7	-11.15	69.38
60.00	17 20 10	2824.18	-24.18	80.29	203.22	123.28	18 7 14	1824.2	-9.18	60.57
70.00	18 17 58	2654.24	-20.30	68.99	205.71	118.07	19 2 12	1654.2	-7.35	48.16
80.00	19 31 19	2424.58	-17.47	53.04	207.19	114.60	20 11 44	1424.6	-5.99	31.56
90.00	20 54 58	2154.70	-16.41	33.69	207.68	113.36	21 30 52	1154.7	-5.47	12.01
100.00	22 14 11	1899.05	-17.47	14.41	207.19	114.60	22 45 50	899.1	-5.99	352.93
110.00	23 17 24	1701.06	-20.30	357.91	205.71	118.07	23 45 45	701.1	-7.35	337.07

DIFFERENTIAL CORRECTIONS

TDE	1.2035	TRA	2.7767	TC3	-5.7423	BAU	1.0091														
RDE	.3930	RRA	.6056	RC3	-.8505	FAU	.16550														
FDE	3.5791	FRA	8.4470	FC	-11.0189	BSP	10903														
BDE	1.2661	BRA	2.8419	BC3	5.8049	FSP	2603														

MID-COURSE EXECUTION ACCURACY

SGT	6356.3	SGR	1303.2	SG3	1437.6																
RRT	.9668	RRF	.9882	RTF	.9777																
SGB	6488.5	R23	.1585	R13	.9793																
SG1	6480.3	SG2	326.9	THA	11.24																

ORBIT DETERMINATION ACCURACY

ST	116.6	SR	34.4	SS	101.2																
CRT	.9848	CRS	-.9832	CST	-.9998																
LSA	158.0	MSA	6.0	SSA	1.5																
EL1	121.4	EL2	5.7	ALF	16.26																

LAUNCH DATE APR 23 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 8 1972

DISTANCE 612.394

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.41 LAL -.00 LOL 212.20 VL 32.331 GAL -3.59 AZL 89.99 HCA 197.02 SMA 184.49 ECC .19471 INC .0000 V1 29.624
RP 220.18 LAP -.00 LOP 49.22 VP 22.049 GAP 1.29 AZP 90.01 TAL 337.62 TAP 174.64 RCA 148.57 APO 220.41 V2 24.966
RC 188.089 GL .12 GP -12.26 ZAL 133.31 ZAP 60.24 ETS 171.89 ZAE 100.25 ETE 182.55 ZAC 90.29 ETC 270.82 LVI 3.22

PLANETOCENTRIC CONIC

C3 13.241 VHL 3.639 DLA -5.60 RAL 346.61 RAD 6639.7 VEL 11.546 PTH 6.59 VHP 3.373 DPA -35.88 RAP 292.32 ECC 1.2179

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 33	2928.32	-27.81	86.64	200.58	130.29	17 31 21	1928.3	-10.44	68.76
60.00	17 28 7	2807.14	-23.53	79.30	204.16	123.71	18 14 54	1807.1	-8.44	59.73
70.00	18 27 1	2633.94	-19.65	67.78	206.68	118.52	19 10 55	1633.9	-6.59	47.08
80.00	19 41 24	2401.09	-16.80	51.62	208.19	115.05	20 21 25	1401.1	-5.20	30.26
90.00	21 5 29	2129.76	-15.73	32.18	208.70	113.81	21 40 59	1129.8	-4.68	10.60
100.00	22 24 16	1875.56	-16.80	12.99	208.19	115.05	22 55 31	875.6	-5.20	351.63
110.00	23 26 28	1680.76	-19.65	356.70	206.68	118.52	23 54 28	680.8	-6.59	336.00

DIFFERENTIAL CORRECTIONS

TDE 1.2148 TRA 2.9060 TC3-5.7906 BAU 1.0340
RDE .3772 RRA .5542 RC3 -.7649 FAU .16264
FDE 3.5245 FRA 8.4464 FC-10.6338 BSP 11159
BDE 1.2720 BRA 2.9584 BC3 5.8409 FSP 2572

MID-COURSE EXECUTION ACCURACY

SGT 6523.5 SGR 1196.5 SG3 1417.8
RRT .9626 RRF .9842 RTF .9778
SGB 6632.3 R23 .1901 R13 .9791
SG1 6624.7 SG2 319.0 THA 10.04

ORBIT DETERMINATION ACCURACY

ST 118.1 SR 32.5 SS 99.8
CRT .9781 CRS -.9783 CST -.9998
LSA 157.9 MSA 6.6 SSA 1.5
EL1 122.3 EL2 6.5 ALF 15.11

LAUNCH DATE APR 23 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 10 1972

DISTANCE 616.520

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.41 LAL -.00 LOL 212.20 VL 32.339 GAL -3.67 AZL 90.10 HCA 198.13 SMA 184.61 ECC .19566 INC .0954 V1 29.624
RP 220.55 LAP .03 LOP 50.33 VP 22.013 GAP 1.13 AZP 89.90 TAL 337.20 TAP 175.33 RCA 148.49 APO 220.73 V2 24.925
RC 190.711 GL -.91 GP -11.43 ZAL 133.77 ZAP 58.99 ETS 172.05 ZAE 98.96 ETE 182.13 ZAC 91.13 ETC 270.80 LVI 2.47

PLANETOCENTRIC CONIC

C3 13.498 VHL 3.674 DLA -6.37 RAL 347.45 RAD 6639.8 VEL 11.557 PTH 6.60 VHP 3.394 DPA -35.06 RAP 292.09 ECC 1.2221

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 43	2917.25	-27.32	86.04	201.48	130.59	17 37 20	1917.3	-9.89	68.28
60.00	17 35 6	2793.87	-23.03	78.54	205.09	124.03	18 21 40	1793.9	-7.87	59.09
70.00	18 34 57	2617.91	-19.12	66.83	207.65	118.85	19 18 35	1617.9	-5.98	46.23
80.00	19 50 11	2382.38	-16.26	50.49	209.19	115.39	20 29 53	1382.4	-4.58	29.23
90.00	21 14 39	2109.83	-15.18	30.97	209.71	114.15	21 49 49	1109.8	-4.04	9.48
100.00	22 33 3	1856.85	-16.26	11.86	209.19	115.39	23 4 0	856.8	-4.58	350.60
110.00	23 34 23	1664.73	-19.12	355.75	207.65	118.85	24 2 8	664.7	-5.98	335.15

DIFFERENTIAL CORRECTIONS

TDE 1.2307 TRA 3.0346 TC3-5.8304 BAU 1.0595
RDE .3651 RRA .5080 RC3 -.6901 FAU .15950
FDE 3.4756 FRA 8.4270 FC-10.2302 BSP 11416
BDE 1.2837 BRA 3.0768 BC3 5.8711 FSP 2538

MID-COURSE EXECUTION ACCURACY

SGT 6686.8 SGR 1103.1 SG3 1395.2
RRT .9573 RRF .9791 RTF .9778
SGB 6777.1 R23 .1416 R13 .9788
SG1 6769.8 SG2 314.9 THA 8.99

ORBIT DETERMINATION ACCURACY

ST 119.8 SR 30.9 SS 98.5
CRT .9704 CRS -.9727 CST -.9998
LSA 158.0 MSA 7.2 SSA 1.5
EL1 123.5 EL2 7.2 ALF 14.10

LAUNCH DATE APR 23 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 12 1972

DISTANCE 620.843

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.41 LAL -.00 LOL 212.20 VL 32.346 GAL -3.76 AZL 90.21 HCA 199.24 SMA 184.73 ECC .19664 INC .2050 V1 29.624
RP 220.93 LAP .07 LOP 51.45 VP 21.978 GAP .97 AZP 89.81 TAL 336.78 TAP 176.02 RCA 148.41 APO 221.06 V2 24.884
RC 193.341 GL -1.80 GP -10.69 ZAL 134.22 ZAP 57.78 ETS 172.20 ZAE 97.68 ETE 181.76 ZAC 91.87 ETC 270.80 LVI 1.80

PLANETOCENTRIC CONIC

C3 13.771 VHL 3.711 DLA -7.00 RAL 348.24 RAD 6639.9 VEL 11.569 PTH 6.61 VHP 3.418 DPA -34.33 RAP 291.93 ECC 1.2266

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 13	2908.92	-26.95	85.59	202.38	130.81	17 42 42	1908.9	-9.47	67.92
60.00	17 41 18	2783.68	-22.64	77.96	206.02	124.27	18 27 42	1783.7	-7.43	58.59
70.00	18 41 56	2605.43	-18.71	66.10	208.62	119.11	19 25 21	1605.4	-5.51	45.58
80.00	19 57 53	2367.62	-15.83	49.61	210.18	115.65	20 37 21	1367.6	-4.08	28.41
90.00	21 22 41	2094.04	-14.74	30.03	210.71	114.41	21 57 35	1094.0	-3.54	8.60
100.00	22 40 45	1842.09	-15.83	10.98	210.18	115.65	23 11 27	842.1	-4.08	349.78
110.00	23 41 22	1652.24	-18.71	355.01	208.62	119.11	24 8 54	652.2	-5.51	334.49

DIFFERENTIAL CORRECTIONS

TDE 1.2530 TRA 3.1652 TC3-5.8577 BAU 1.0845
RDE .3562 RRA .4661 RC3 -.6247 FAU .15620
FDE 3.4322 FRA 8.3930 FC3-8.8198 BSP 11692
BDE 1.3026 BRA 3.1993 BC3 5.8909 FSP 2498

MID-COURSE EXECUTION ACCURACY

SGT 6847.3 SGR 1021.3 SG3 1370.6
RRT .9508 RRF .9727 RTF .9779
SGB 6923.1 R23 .1322 R13 .9787
SG1 6916.0 SG2 313.1 THA 8.09

ORBIT DETERMINATION ACCURACY

ST 121.9 SR 29.6 SS 97.4
CRT .9619 CRS -.9664 CST -.9997
LSA 158.6 MSA 7.9 SSA 1.4
EL1 125.2 EL2 7.9 ALF 13.19

LAUNCH DATE APR 23 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 14 1972

DISTANCE 624.759

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.41 LAL -.00 LOL 212.20 VL 32.354 GAL -3.84 AZL 90.30 HCA 200.35 SMA 184.86 ECC .19764 INC .2964 V1 29.624
RP 221.31 LAP .10 LOP 52.55 VP 21.942 GAP .81 AZP 89.72 TAL 336.35 TAP 176.70 RCA 148.33 APO 221.40 V2 24.842
RC 195.978 GL -2.57 GP -10.03 ZAL 134.67 ZAP 56.62 ETS 172.34 ZAE 96.42 ETE 181.45 ZAC 92.52 ETC 270.80 LVI 1.20

PLANETOCENTRIC CONIC

C3 14.057 VHL 3.749 DLA -7.53 RAL 348.98 RAD 6640.1 VEL 11.581 PTH 6.62 VHP 3.444 DPA -33.68 RAP 291.82 ECC 1.2314

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 9	2902.87	-26.69	85.27	203.27	130.97	17 47 32	1902.9	-9.17	67.66
60.00	17 46 50	2778.09	-22.35	77.53	206.95	124.45	18 33 6	1776.1	-7.10	58.22
70.00	18 48 7	2595.90	-18.39	65.54	209.57	119.30	19 31 23	1595.9	-5.15	45.07
80.00	20 4 41	2356.18	-15.49	48.93	211.16	115.85	20 43 57	1356.2	-3.69	27.78
90.00	21 29 45	2081.73	-14.39	29.29	211.69	114.61	22 4 27	1081.7	-3.14	7.91
100.00	22 47 33	1830.65	-15.49	10.30	211.16	115.85	23 18 4	830.6	-3.69	349.15
110.00	23 47 33	1642.71	-18.39	354.46	209.57	119.30	24 14 56	642.7	-5.15	333.99

DIFFERENTIAL CORRECTIONS

TDE 1.2771 TRA 3.2947 TC3-5.8819 BAU 1.1105
RDE .3496 RRA .4278 RC3 -.5673 FAU .15278
FDE 3.3908 FRA 8.3469 FC3-9.4087 BSP 11942
BDE 1.3241 BRA 3.3224 BC3 5.9091 FSP 2454

MID-COURSE EXECUTION ACCURACY

SGT 7003.9 SGR 949.3 SG3 1344.5
RRT .9427 RRF .9649 RTF .9778
SGB 7067.9 R23 .1236 R13 .9785
SG1 7060.9 SG2 314.2 THA 7.30

ORBIT DETERMINATION ACCURACY

ST 124.0 SR 28.5 SS 96.2
CRT .9525 CRS -.9595 CST -.9995
LSA 159.2 MSA 8.5 SSA 1.4
EL1 126.9 EL2 8.5 ALF 12.40

LAUNCH DATE APR 23 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 628.871 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.362	GAL	-3.93	AZL	90.38	HCA	201.46	SMA	184.99	ECC	.19867	INC	.3803
V1	29.624	RP	221.69	LAP	.14	LOP	53.66	VP	21.907	GAP	.65	AZP	89.65	TAL	335.92	TAP	177.37	RCA	148.24
APO	221.75	V2	24.801	RC	198.621	GL	-3.25	GP	-9.44	ZAL	135.11	ZAP	55.51	ETS	172.47	ZAE	98.19	ETE	181.17
ZAC	93.11	ETC	270.81	LVI	.64														

PLANETOCENTRIC CONIC

C3	14.357	VHL	3.789	DLA	-7.97	RAL	349.69	RAD	6640.2	VEL	11.594	PTH	6.64	VHP	3.471	DPA	-33.09	RAP	291.77
ECC	1.2363																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 38	2898.75	-26.50	85.05	204.15	131.08	17 51 56	1898.8	-8.97	67.48
60.00	17 51 47	2770.67	-22.14	77.22	207.86	124.58	18 37 58	1770.7	-6.86	57.96
70.00	18 53 37	2588.86	-18.16	65.13	210.51	119.43	19 36 46	1588.9	-4.88	44.70
80.00	20 10 42	2347.54	-15.23	48.42	212.12	115.99	20 49 50	1347.5	-3.40	27.31
90.00	21 36 0	2072.36	-14.13	28.73	212.66	114.76	22 10 32	1072.4	-2.84	7.39
100.00	22 53 34	1822.01	-15.23	9.79	212.12	115.99	23 23 56	822.0	-3.40	348.67
110.00	23 53 4	1635.68	-18.16	354.05	210.51	119.43	24 20 19	635.7	-4.88	333.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3072	TRA	3.4266	TC3	-5.8952	BAU	1.1359	SGT	7158.1	SGR	886.3	SG3	1317.6	ST	126.4	SR	27.6	SS	95.1
RDE	.3453	RRA	.3929	RC3	-.5161	FAU	.14910	RRT	.9328	RRF	.9554	RTF	.9777	CRT	.9426	CRS	-.9522	CST	-.9994
FDE	3.3578	FRA	8.2935	FC3	-8.9910	BSP	12216	SGB	7212.8	R23	.1152	R13	.9783	LSA	160.3	MSA	9.1	SSA	1.4
BDE	1.3520	BRA	3.4491	BC3	5.9177	FSP	2411	SG1	7205.8	SG2	317.2	THA	6.60	EL1	129.0	EL2	9.0	ALF	11.70

LAUNCH DATE APR 23 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 632.977 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.370	GAL	-4.01	AZL	90.46	HCA	202.56	SMA	185.13	ECC	.19974	INC	.4556
V1	29.624	RP	222.07	LAP	.17	LOP	54.76	VP	21.871	GAP	.49	AZP	89.58	TAL	335.48	TAP	178.04	RCA	148.15
APO	222.11	V2	24.759	RC	201.270	GL	-3.84	GP	-8.91	ZAL	135.55	ZAP	54.43	ETS	172.60	ZAE	93.98	ETE	180.94
ZAC	93.64	ETC	270.83	LVI	.12														

PLANETOCENTRIC CONIC

C3	14.669	VHL	3.830	DLA	-8.33	RAL	350.37	RAD	6640.4	VEL	11.607	PTH	6.65	VHP	3.500	DPA	-32.56	RAP	291.76
ECC	1.2414																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 41	2896.27	-26.39	84.91	205.03	131.14	17 55 58	1896.3	-8.85	67.38
60.00	17 56 15	2767.12	-22.00	77.02	208.77	124.66	18 42 22	1767.1	-6.70	57.79
70.00	18 58 33	2583.97	-18.00	64.84	211.44	119.53	19 41 37	1584.0	-4.70	44.45
80.00	20 16 4	2341.31	-15.04	48.05	213.07	116.10	20 55 5	1341.3	-3.19	26.96
90.00	21 41 32	2065.51	-13.93	28.32	213.61	114.86	22 15 58	1065.5	-2.62	7.00
100.00	22 58 55	1815.78	-15.04	9.42	213.07	116.10	23 29 11	815.8	-3.19	348.33
110.00	0 1 55	1630.78	-18.00	353.76	211.44	119.53	0 29 6	630.8	-4.70	333.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3408	TRA	3.5608	TC3	-5.8991	BAU	1.1605	SGT	7309.3	SGR	831.0	SG3	1290.3	ST	128.9	SR	26.9	SS	94.2
RDE	.3429	RRA	.3610	RC3	-.4700	FAU	.14505	RRT	.9209	RRF	.9440	RTF	.9774	CRT	.9323	CRS	-.9445	CST	-.9992
FDE	3.3308	FRA	8.2393	FC3	-8.5609	BSP	12501	SGB	7356.4	R23	.1081	R13	.9779	LSA	161.7	MSA	9.7	SSA	1.4
BDE	1.3839	BRA	3.5790	BC3	5.9178	FSP	2372	SG1	7349.3	SG2	322.1	THA	5.99	EL1	131.4	EL2	9.6	ALF	11.08

LAUNCH DATE APR 23 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 637.078 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.378	GAL	-4.10	AZL	90.52	HCA	203.66	SMA	185.27	ECC	.20082	INC	.5234
V1	29.624	RP	222.46	LAP	.21	LOP	55.86	VP	21.836	GAP	.33	AZP	89.52	TAL	335.03	TAP	178.69	RCA	148.06
APO	222.47	V2	24.717	RC	203.922	GL	-4.37	GP	-8.43	ZAL	135.99	ZAP	53.39	ETS	172.72	ZAE	92.79	ETE	180.73
ZAC	94.12	ETC	270.86	LVI	-.36														

PLANETOCENTRIC CONIC

C3	14.992	VHL	3.872	DLA	-8.62	RAL	351.03	RAD	6640.5	VEL	11.621	PTH	6.66	VHP	3.531	DPA	-32.07	RAP	291.79
ECC	1.2467																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 24	2895.19	-26.34	84.86	205.90	131.17	17 59 40	1895.2	-8.79	67.33
60.00	18 0 18	2765.16	-21.93	76.91	209.66	124.70	18 46 23	1765.2	-6.62	57.69
70.00	19 2 58	2580.89	-17.89	64.67	212.36	119.59	19 45 59	1580.9	-4.58	44.29
80.00	20 20 50	2337.13	-14.02	47.80	214.00	116.17	20 59 47	1337.1	-3.05	26.73
90.00	21 46 29	2060.83	-13.80	28.05	214.55	114.93	22 20 49	1060.8	-2.47	6.74
100.00	23 3 42	1811.61	-14.92	9.17	214.00	116.17	23 33 54	811.6	-3.05	348.10
110.00	0 6 21	1627.71	-17.89	353.58	212.36	119.59	0 33 28	627.7	-4.58	333.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3751	TRA	3.6935	TC3	-5.9046	BAU	1.1866	SGT	7457.0	SGR	782.3	SG3	1262.1	ST	131.4	SR	26.3	SS	93.2
RDE	.3415	RRA	.3310	RC3	-.4304	FAU	.14140	RRT	.9070	RRF	.9306	RTF	.9773	CRT	.9215	CRS	-.9364	CST	-.9990
FDE	3.2991	FRA	8.1708	FC3	-8.1654	BSP	12756	SGB	7498.0	R23	.1008	R13	.9777	LSA	162.9	MSA	10.3	SSA	1.4
BDE	1.4169	BRA	3.7083	BC3	5.9203	FSP	2324	SG1	7490.8	SG2	327.9	THA	5.45	EL1	133.7	EL2	10.1	ALF	10.53

LAUNCH DATE APR 23 1971 FLIGHT TIME 274.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 641.173 EARTH TO MARS

RL	150.41	LAL	-.00	LOL	212.20	VL	32.387	GAL	-4.19	AZL	90.59	HCA	204.78	SMA	185.41	ECC	.20194	INC	.5854
V1	29.624	RP	222.84	LAP	.25	LOP	56.95	VP	21.801	GAP	.17	AZP	89.47	TAL	334.59	TAP	179.34	RCA	147.97
APO	222.85	V2	24.675	RC	206.578	GL	-4.84	GP	-7.99	ZAL	136.42	ZAP	52.39	ETS	172.84	ZAE	91.62	ETE	180.54
ZAC	94.55	ETC	270.89	LVI	-.81														

PLANETOCENTRIC CONIC

C3	15.326	VHL	3.915	DLA	-8.86	RAL	351.65	RAD	6640.7	VEL	11.635	PTH	6.67	VHP	3.562	DPA	-31.62	RAP	291.87
ECC	1.2522																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 49	2895.33	-26.35	84.86	206.76	131.17	18 3 4	1895.3	-8.80	67.34
60.00	18 3 59	2764.58	-21.91	76.88	210.55	124.71	18 50 3	1764.6	-6.59	57.66
70.00	19 6 58	2579.41	-17.84	64.58	213.27	119.62	19 49 57	1579.4	-4.52	44.21
80.00	20 25 7	2334.75	-14.85	47.66	214.92	116.20	21 4 2	1334.7	-2.97	26.60
90.00	21 50 53	2058.03	-13.72	27.88	215.48	114.98	22 25 11	1058.0	-2.38	6.59
100.00	23 7 59	1809.22	-14.85	9.03	214.92	116.20	23 38 8	809.2	-2.97	347.97
110.00	0 10 20	1626.23	-17.84	353.50	213.27	119.62	0 37 26	626.2	-4.52	333.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4126	TRA	3.8280	TC3	-5.9043	BAU	1.2125	SGT	7602.3	SGR	739.9	SG3	1233.9	ST	134.0	SR	25.9	SS	92.2
RDE	.3416	RRA	.3033	RC3	-.3950	FAU	.13763	RRT	.8908	RRF	.9149	RTF	.9770	CRT	.9106	CRS	-.9282	CST	-.9988
FDE	3.2720	FRA	8.1001	FC3	-7.7744	BSP	13012	SGB	7638.3	R23	.0944	R13	.9774	LSA	164.4	MSA	10.8	SSA	1.3
BDE	1.4533	BRA	3.8400	BC3	5.9175	FSP	2277	SG1	7630.9	SG2	334.9	THA	4.96	EL1	136.1	EL2	10.5	ALF	10.04

LAUNCH DATE APR 23 1971 FLIGHT TIME 276.00 ARRIVAL DATE JAN 24 1972

DISTANCE 645.266

HELIOCENTRIC CONIC

RL 150.41 LAL -.00 LOL 212.20 VL 32.395 GAL -4.28 AZL 90.64 HCA 205.84 SMA 185.55 ECC .20308 INC .6419 V1 29.624
RP 223.23 LAP .28 LOP 58.04 VP 21.767 GAP .01 AZP 89.42 TAL 334.14 TAP 179.97 RCA 147.87 APO 223.23 V2 24.633
RC 209.236 GL -5.25 GP -7.60 ZAL 136.86 ZAP 51.42 ETS 172.95 ZAE 90.48 ETE 180.38 ZAC 94.95 ETC 270.93 LVI -1.24

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.671 VHL 3.959 DLA -9.05 RAL 352.26 RAD 6640.8 VEL 11.650 PTH 6.69 VHP 3.594 DPA -31.20 RAP 291.98 ECC 1.2579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 58	2896.52	-26.40	84.93	207.62	131.13	18 6 14	1896.5	-8.86	67.39
60.00	18 7 20	2765.20	-21.93	76.91	211.43	124.70	18 53 25	1765.2	-6.62	57.69
70.00	19 10 34	2579.31	-17.84	64.57	214.16	119.62	19 53 33	1579.3	-4.52	44.20
80.00	20 28 57	2333.92	-14.82	47.61	215.83	116.22	21 7 51	1333.9	-2.94	26.56
90.00	21 54 49	2056.88	-13.68	27.81	216.39	114.99	22 29 6	1056.9	-2.34	6.52
100.00	23 11 49	1808.40	-14.82	8.98	215.83	116.22	23 41 57	808.4	-2.94	347.93
110.00	0 13 56	1626.13	-17.84	353.49	214.16	119.62	0 41 2	626.1	-4.52	333.12

DIFFERENTIAL CORRECTIONS

TDE 1.4512 TRA 3.9625 TC3-5.9015 BAU 1.2388
RDE .3425 RRA .2774 RC3 -.3636 FAU .13392
FDE 3.2431 FRA 8.0239 FC3-7.3979 BSP 13259
BDE 1.4911 BRA 3.9722 BC3 5.9127 FSP 2229

MID-COURSE EXECUTION ACCURACY

SGT 7744.0 SGR 702.7 SG3 1205.4
RRT .8723 RRF .8970 RTF .9767
SGB 7775.8 R23 .0885 R13 .9770
SG1 7768.3 SG2 342.5 THA 4.53

ORBIT DETERMINATION ACCURACY

ST 136.6 SR 25.5 SS 91.2
CRT .8995 CRS -.9197 CST -.9986
LSA 165.9 MSA 11.3 SSA 1.3
EL1 138.6 EL2 11.0 ALF 9.60

LAUNCH DATE APR 23 1971 FLIGHT TIME 278.00 ARRIVAL DATE JAN 26 1972

DISTANCE 649.345

HELIOCENTRIC CONIC

RL 150.41 LAL -.00 LOL 212.20 VL 32.404 GAL -4.38 AZL 90.69 HCA 206.93 SMA 185.69 ECC .20425 INC .6942 V1 29.624
RP 223.62 LAP .31 LOP 59.13 VP 21.732 GAP -.16 AZP 89.38 TAL 333.68 TAP 180.61 RCA 147.77 APO 223.62 V2 24.591
RC 211.896 GL -5.61 GP -7.23 ZAL 137.29 ZAP 50.49 ETS 173.06 ZAE 89.36 ETE 180.24 ZAC 95.31 ETC 270.98 LVI -1.64

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 16.028 VHL 4.003 DLA -9.20 RAL 352.85 RAD 6641.0 VEL 11.665 PTH 6.70 VHP 3.628 DPA -30.82 RAP 292.13 ECC 1.2638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 52	2898.64	-26.50	85.04	208.47	131.08	18 9 11	1898.6	-8.96	67.48
60.00	18 10 25	2766.87	-21.99	77.01	212.30	124.66	18 56 32	1766.9	-6.69	57.77
70.00	19 13 50	2580.42	-17.88	64.64	215.05	119.60	19 56 50	1580.4	-4.56	44.26
80.00	20 32 24	2334.47	-14.84	47.65	216.73	116.21	21 11 18	1334.5	-2.96	26.59
90.00	21 58 21	2057.16	-13.69	27.83	217.30	114.99	22 32 38	1057.2	-2.35	8.54
100.00	23 15 16	1808.94	-14.84	9.02	216.73	116.21	23 45 25	808.9	-2.96	347.95
110.00	0 17 12	1627.23	-17.88	353.56	215.05	119.60	0 44 19	627.2	-4.56	333.18

DIFFERENTIAL CORRECTIONS

TDE 1.4928 TRA 4.0993 TC3-5.8927 BAU 1.2647
RDE .3445 RRA .2532 RC3 -.3353 FAU .13009
FDE 3.2185 FRA 7.9471 FC3-7.0271 BSP 13506
BDE 1.5320 BRA 4.1071 BC3 5.9022 FSP 2181

MID-COURSE EXECUTION ACCURACY

SGT 7883.4 SGR 670.7 SG3 1177.2
RRT .8514 RRF .8766 RTF .9763
SGB 7911.9 R23 .0834 R13 .9766
SG1 7904.1 SG2 350.9 THA 4.15

ORBIT DETERMINATION ACCURACY

ST 139.3 SR 25.3 SS 90.3
CRT .8805 CRS -.9114 CST -.9984
LSA 167.5 MSA 11.6 SSA 1.3
EL1 141.1 EL2 11.4 ALF 9.21

LAUNCH DATE APR 23 1971 FLIGHT TIME 280.00 ARRIVAL DATE JAN 28 1972

DISTANCE 653.423

HELIOCENTRIC CONIC

RL 150.41 LAL -.00 LOL 212.20 VL 32.412 GAL -4.47 AZL 90.74 HCA 206.01 SMA 185.84 ECC .20544 INC .7428 V1 29.624
RP 224.01 LAP .35 LOP 60.21 VP 21.698 GAP -.32 AZP 89.34 TAL 333.22 TAP 181.23 RCA 147.66 APO 224.02 V2 24.550
RC 214.558 GL -5.94 GP -6.89 ZAL 137.73 ZAP 49.59 ETS 173.16 ZAE 88.26 ETE 180.11 ZAC 95.64 ETC 271.03 LVI -2.03

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 16.395 VHL 4.049 DLA -9.31 RAL 353.42 RAD 6641.2 VEL 11.681 PTH 6.72 VHP 3.662 DPA -30.46 RAP 292.31 ECC 1.2698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 34	2901.56	-26.63	85.20	209.31	131.01	18 11 56	1901.6	-9.11	67.61
60.00	18 13 14	2769.46	-22.09	77.15	213.17	124.60	18 59 24	1769.5	-6.81	57.90
70.00	19 16 48	2582.59	-17.95	64.76	215.93	119.56	19 59 51	1582.6	-4.65	44.37
80.00	20 35 30	2336.22	-14.89	47.75	217.62	116.18	21 14 26	1336.2	-3.02	26.68
90.00	22 1 31	2058.72	-13.73	27.92	218.19	114.96	22 35 49	1058.7	-2.40	6.62
100.00	23 18 22	1810.69	-14.89	9.11	217.62	116.18	23 48 33	810.7	-3.02	348.05
110.00	0 20 10	1629.41	-17.95	353.68	215.93	119.56	0 47 20	629.4	-4.65	333.29

DIFFERENTIAL CORRECTIONS

TDE 1.5372 TRA 4.2361 TC3-5.8797 BAU 1.2905
RDE .3473 RRA .2304 RC3 -.3102 FAU .12634
FDE 3.1954 FRA 7.8677 FC3-6.8713 BSP 13761
BDE 1.5760 BRA 4.2443 BC3 5.8879 FSP 2136

MID-COURSE EXECUTION ACCURACY

SGT 8020.9 SGR 643.3 SG3 1149.2
RRT .8282 RRF .8940 RTF .9760
SGB 8046.7 R23 .0787 R13 .9762
SG1 8038.6 SG2 359.7 THA 3.81

ORBIT DETERMINATION ACCURACY

ST 142.1 SR 25.1 SS 89.4
CRT .8778 CRS -.9032 CST -.9983
LSA 169.3 MSA 12.3 SSA 1.3
EL1 143.8 EL2 11.9 ALF 8.86

LAUNCH DATE APR 24 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 14 1971

HELIOCENTRIC CONIC DISTANCE 324.219 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	34.993	GAL	-4.58	AZL	91.93	HCA	106.15	SMA	245.90	ECC	.39508	INC	1.9259	V1	29.616
RP	207.38	LAP	-1.85	LOP	319.34	VP	27.207	GAP	21.54	AZP	89.46	TAL	343.75	TAP	89.90	RCA	148.75	APO	343.05	V2	26.414
RC	56.241	GL	-10.74	GP	1.27	ZAL	121.24	ZAP	173.95	ETS	167.74	ZAE	173.22	ETE	112.37	ZAC	101.88	ETC	276.81	LVI	-17.91

PLANETOCENTRIC CONIC

C3	39.573	VHL	6.291	DLA	-19.63	RAL	341.02	RAD	6650.5	VEL	12.627	PTH	7.48	VHP	10.682	DPA	-17.34	RAP	316.06	ECC	1.6513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 40	2905.59	-26.81	85.41	207.55	130.90	18 0 6	1905.6	-9.31	67.78
60.00	18 14 35	2738.32	-20.88	75.42	212.62	125.29	19 0 13	1738.3	-5.45	56.39
70.00	19 34 8	2504.45	-15.27	60.30	216.47	120.93	20 15 52	1504.5	-1.67	40.28
80.00	21 9 7	2207.14	-10.89	40.26	219.01	117.97	21 45 55	1207.1	1.35	19.60
90.00	22 42 58	1904.40	-9.13	18.93	219.93	116.88	23 14 43	904.4	2.57	358.01
100.00	23 51 59	1681.61	-10.89	1.63	219.01	117.97	24 20 1	681.6	1.35	340.96
110.00	0 37 30	1551.27	-15.27	349.21	216.47	120.93	1 3 21	551.3	-1.67	329.20

DIFFERENTIAL CORRECTIONS

TDE	-.5901	TRA	-1.2599	TC3	-.0504	BAU	.0537												
RDE	-.5783	RRA	.2000	RC3	.0881	FAU	.03545												
FDE	.3389	FRA	1.1797	FC3	-.7756	BSP	2082												
BDE	.8262	BRA	1.2756	BC3	.1015	FSP	170												

MID-COURSE EXECUTION ACCURACY

SGT	1333.1	SGR	572.0	SG3	132.4														
RRT	.0530	RRF	-.0572	RTF	-.7312														
SGB	1450.6	R23	-.0097	R13	-.7313														
SG1	1333.5	SG2	571.0	THA	1.60														

ORBIT DETERMINATION ACCURACY

ST	32.5	SR	26.5	SS	21.3														
CRT	.7603	CRS	.5837	CST	.9693														
LSA	43.9	MSA	16.9	SSA	1.1														
EL1	39.5	EL2	14.2	ALF	37.44														

LAUNCH DATE APR 24 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 16 1971

HELIOCENTRIC CONIC DISTANCE 326.449 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	34.824	GAL	-4.45	AZL	91.94	HCA	107.42	SMA	240.63	ECC	.38162	INC	1.9382	V1	29.616
RP	207.27	LAP	-1.85	LOP	320.60	VP	27.001	GAP	21.64	AZP	89.42	TAL	343.80	TAP	91.22	RCA	148.80	APO	332.46	V2	26.426
RC	56.362	GL	-11.08	GP	1.31	ZAL	121.27	ZAP	173.10	ETS	168.89	ZAE	173.50	ETE	104.75	ZAC	101.88	ETC	276.90	LVI	-18.08

PLANETOCENTRIC CONIC

C3	37.305	VHL	6.108	DLA	-19.92	RAL	341.23	RAD	6649.7	VEL	12.538	PTH	7.41	VHP	10.352	DPA	-17.18	RAP	316.46	ECC	1.6139

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 47	2884.55	-25.86	84.30	206.87	131.44	18 1 52	1884.6	-8.26	66.88
60.00	18 17 8	2716.11	-20.00	74.20	211.95	125.75	19 2 24	1716.1	-4.47	55.33
70.00	19 37 15	2480.57	-14.43	58.96	215.81	121.30	20 18 36	1480.6	-.76	39.04
80.00	21 12 55	2181.23	-10.05	38.79	218.37	118.26	21 49 16	1181.2	2.23	18.17
90.00	22 47 6	1877.38	-8.30	17.38	219.30	117.13	23 18 23	877.4	3.44	356.50
100.00	23 55 46	1655.70	-10.05	.16	218.37	118.26	24 23 21	655.7	2.23	339.54
110.00	0 40 37	1527.39	-14.43	347.87	215.81	121.30	1 6 5	527.4	-.76	327.96

DIFFERENTIAL CORRECTIONS

TDE	-.5867	TRA	-1.2526	TC3	-.0362	BAU	.0509												
RDE	-.5601	RRA	.1911	RC3	.0945	FAU	.03657												
FDE	.3501	FRA	1.2283	FC3	-.8487	BSP	2173												
BDE	.8111	BRA	1.2671	BC3	.1020	FSP	185												

MID-COURSE EXECUTION ACCURACY

SGT	1366.4	SGR	570.7	SG3	141.6														
RRT	.0583	RRF	-.0626	RTF	-.7433														
SGB	1480.8	R23	-.0102	R13	-.7434														
SG1	1366.9	SG2	569.6	THA	1.69														

ORBIT DETERMINATION ACCURACY

ST	33.3	SR	26.4	SS	22.1														
CRT	.7606	CRS	.5808	CST	.9684														
LSA	44.8	MSA	17.1	SSA	1.1														
EL1	40.0	EL2	14.3	ALF	36.48														

LAUNCH DATE APR 24 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 18 1971

HELIOCENTRIC CONIC DISTANCE 328.865 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	34.664	GAL	-4.33	AZL	91.95	HCA	108.68	SMA	235.88	ECC	.36893	INC	1.9508	V1	29.616
RP	207.18	LAP	-1.85	LOP	321.87	VP	26.806	GAP	20.54	AZP	89.37	TAL	343.87	TAP	92.55	RCA	148.86	APO	322.90	V2	26.438
RC	56.568	GL	-11.44	GP	1.36	ZAL	121.28	ZAP	172.25	ETS	169.79	ZAE	173.65	ETE	96.85	ZAC	101.87	ETC	276.99	LVI	-18.24

PLANETOCENTRIC CONIC

C3	35.213	VHL	5.934	DLA	-20.22	RAL	341.43	RAD	6649.0	VEL	12.454	PTH	7.35	VHP	10.032	DPA	-17.02	RAP	316.85	ECC	1.5795

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 55	2863.55	-24.91	83.20	206.22	131.94	18 3 38	1863.5	-7.21	65.98
60.00	18 19 43	2693.87	-19.11	72.99	211.30	126.18	19 4 37	1693.9	-3.50	54.26
70.00	19 40 27	2456.54	-13.57	57.62	215.17	121.65	20 21 23	1456.5	.16	37.78
80.00	21 16 48	2135.00	-9.20	37.31	217.75	118.53	21 52 43	1135.0	3.11	16.73
90.00	22 51 22	1849.94	-7.44	15.82	218.70	117.36	23 22 12	849.9	4.32	354.96
100.00	0 3 35	1629.47	-9.20	358.68	217.75	118.53	0 30 45	629.5	3.11	338.10
110.00	0 43 49	1503.35	-13.57	346.54	215.17	121.65	1 8 52	503.4	.16	326.70

DIFFERENTIAL CORRECTIONS

TDE	-.5821	TRA	-1.2434	TC3	-.0282	BAU	.0495												
RDE	-.5424	RRA	.1823	RC3	.1013	FAU	.03774												
FDE	.3614	FRA	1.2787	FC3	-.9279	BSP	2238												
BDE	.7956	BRA	1.2566	BC3	.1051	FSP	200												

MID-COURSE EXECUTION ACCURACY

SGT	1397.8	SGR	569.1	SG3	151.3														
RRT	.0632	RRF	-.0684	RTF	-.[illegible]29														
SGB	1509.2	R23	-.0115	R13	-.7531														
SG1	1398.4	SG2	567.8	THA	1.76														

ORBIT DETERMINATION ACCURACY

ST	34.0	SR	26.3	SS	22.9														
CRT	.7608	CRS	.5777	CST	.9675														
LSA	45.6	MSA	17.2	SSA	1.1														
EL1	40.6	EL2	14.3	ALF	35.60														

LAUNCH DATE APR 24 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 331.447 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	34.513	GAL	-4.20	AZL	91.96	HCA	109.94	SMA	231.57	ECC	.35696	INC	1.9636	V1	29.616
RP	207.09	LAP	-1.85	LOP	323.13	VP	26.620	GAP	20.05	AZP	89.33	TAL	343.95	TAP	93.90	RCA	148.91	APO	314.23	V2	26.448
RC	56.856	GL	-11.80	GP	1.41	ZAL	121.27	ZAP	171.38	ETS	170.51	ZAE	173.70	ETE	89.02	ZAC	101.87	ETC	277.07	LVI	-18.40

PLANETOCENTRIC CONIC

C3	33.280	VHL	5.769	DLA	-20.54	RAL	341.61	RAD	6648.3	VEL	12.377	PTH	7.29	VHP	9.723	DPA	-16.86	RAP	317.22	ECC	1.5477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 3	2842.57	-23.95	82.13	205.60	132.42	18 5 25	1842.6	-6.17	65.09
60.00	18 22 20	2671.58	-18.21	71.79	210.66	126.59	19 6 52	1671.6	-2.52	53.19
70.00	19 43 43	2432.34	-12.71	56.28	214.56	121.97	20 24 16	1432.3	1.09	36.52
80.00	21 20 49	2128.44	-8.34	35.81	217.16	118.77	21 56 18	1128.4	4.01	15.27
90.00	22 55 48	1822.05	-6.56	14.24	218.12	117.57	23 26 10	822.0	5.20	353.39
100.00	0 7 37	1602.91	-8.34	357.18	217.16	118.77	0 34 20	602.9	4.01	336.64
110.00	0 47 5	1479.16	-12.71	345.20	214.56	121.97	1 11 45	479.2	1.09	325.44

DIFFERENTIAL CORRECTIONS

TDE	-.5695	TRA	-1.2251	TC3	-.0072	BAU	.0483												
RDE	-.5252	RRA	.1737	RC3	.1083	FAU	.03689												
FDE	.3750	FRA	1.3333	FC3	-1.0116	BSP	2200												
BDE	.7747	BRA	1.2373	BC3	.1086	FSP	218												

MID-COURSE EXECUTION ACCURACY

SGT	1417.1	SGR	567.1	SG3	161.7														
RRT	.0681	RRF	-.0751	RTF	-.7687														
SGB	1526.4	R23	-.0129	R13	-.7690														
SG1	1417.8	SG2	565.6	THA	1.86														

ORBIT DETERMINATION ACCURACY

ST	34.3	SR	26.2	SS	23.8														
CRT	.7590	CRS	.5762	CST	.9678														
LSA	46.1	MSA	17.4	SSA	1.1														
EL1	40.7	EL2	14.4	ALF	35.11														

LAUNCH DATE APR 24 1971 FLIGHT TIME 120.00 ARRIVAL DATE AUG 22 1971

DISTANCE 334.175

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 34.370 GAL -4.08 AZL 91.98 HCA 111.21 SMA 227.67 ECC .34569 INC 1.9765 V1 29.616
RP 207.01 LAP -1.84 LOP 324.40 VP 26.444 GAP 19.57 AZP 89.28 TAL 344.04 TAP 95.25 RCA 148.96 APO 306.37 V2 26.457
RC 57.225 GL -12.16 GP 1.46 ZAL 121.24 ZAP 170.49 ETS 171.10 ZAE 173.63 ETE 81.57 ZAC 101.88 ETC 277.15 LVI -18.56

PLANETOCENTRIC CONIC

C3 31.498 VHL 5.612 DLA -20.87 RAL 341.79 RAD 6647.6 VEL 12.305 PTH 7.24 VHP 9.424 DPA -16.71 RAP 317.58 ECC 1.5184

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 11	2821.72	-22.99	81.08	205.00	132.88	18 7 13	1821.7	-5.12	64.21
60.00	18 25 0	2649.36	-17.31	70.61	210.06	126.98	19 9 9	1649.4	-1.54	52.13
70.00	19 47 4	2408.09	-11.83	54.95	213.96	122.28	20 27 12	1408.1	2.01	35.26
80.00	21 24 59	2101.65	-7.46	34.31	216.59	119.00	22 0 1	1101.7	4.91	13.79
90.00	23 0 25	1793.81	-5.67	12.64	217.56	117.75	23 30 19	793.8	6.10	351.80
100.00	0 11 47	1576.12	-7.46	355.68	216.59	119.00	0 38 3	576.1	4.91	335.16
110.00	0 50 27	1454.91	-11.83	343.87	213.96	122.28	1 14 41	454.9	2.01	324.17

DIFFERENTIAL CORRECTIONS

TDE -.5684 TRA-1.2185 TC3 .0005 BAU .0487
RDE -.5086 RRA .1651 RC3 .1157 FAU .04025
FDE .3856 FRA 1.3874 FC3-1.1064 BSP 2308
BDE .7627 BRA 1.2296 BC3 .1157 FSP 235

MID-COURSE EXECUTION ACCURACY

SGT 1452.3 SGR 564.8 SG3 172.7
RRT .0747 RRF -.0818 RTF -.7742
SGB 1558.2 R23 -.0138 R13 -.7744
SG1 1453.0 SG2 562.9 THA 1.96

ORBIT DETERMINATION ACCURACY

ST 35.2 SR 26.1 SS 24.5
CRT .7605 CRS .5719 CST .9659
LSA 47.1 MSA 17.5 SSA 1.1
EL1 41.4 EL2 14.4 ALF 34.10

LAUNCH DATE APR 24 1971 FLIGHT TIME 122.00 ARRIVAL DATE AUG 24 1971

DISTANCE 337.035

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 34.235 GAL -3.96 AZL 91.99 HCA 112.47 SMA 224.11 ECC .33507 INC 1.9897 V1 29.616
RP 206.94 LAP -1.84 LOP 325.66 VP 26.277 GAP 19.10 AZP 89.24 TAL 344.15 TAP 96.62 RCA 149.02 APO 299.20 V2 26.466
RC 57.675 GL -12.54 GP 1.52 ZAL 121.20 ZAP 169.59 ETS 171.60 ZAE 173.49 ETE 74.75 ZAC 101.88 ETC 277.23 LVI -18.72

PLANETOCENTRIC CONIC

C3 29.852 VHL 5.464 DLA -21.21 RAL 341.94 RAD 6646.9 VEL 12.239 PTH 7.19 VHP 9.135 DPA -16.55 RAP 317.92 ECC 1.4913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 21	2800.97	-22.03	80.05	204.42	133.30	18 9 2	1801.0	-4.08	63.34
60.00	18 27 42	2627.17	-16.39	69.45	209.48	127.35	19 11 29	1627.2	-.56	51.07
70.00	19 50 30	2383.75	-10.94	53.63	213.40	122.56	20 30 14	1383.8	2.94	33.98
80.00	21 29 18	2074.58	-6.56	32.80	216.05	119.19	22 3 52	1074.6	5.81	12.29
90.00	23 5 13	1765.18	-4.76	11.03	217.03	117.91	23 34 38	765.2	7.00	350.18
100.00	0 16 5	1549.05	-6.56	354.17	216.05	119.19	0 41 54	549.1	5.81	333.66
110.00	0 53 53	1430.57	-10.94	342.54	213.40	122.56	1 17 43	430.6	2.94	322.90

DIFFERENTIAL CORRECTIONS

TDE -.5660 TRA-1.2100 TC3 .0113 BAU .0495
RDE -.4925 RRA .1566 RC3 .1235 FAU .04168
FDE .3973 FRA 1.4446 FC3-1.2086 BSP 2396
BDE .7503 BRA 1.2201 BC3 .1240 FSP 253

MID-COURSE EXECUTION ACCURACY

SGT 1485.0 SGR 562.1 SG3 184.5
RRT .0821 RRF -.0893 RTF -.7808
SGB 1587.8 R23 -.0147 R13 -.7811
SG1 1485.8 SG2 559.9 THA 2.07

ORBIT DETERMINATION ACCURACY

ST 36.0 SR 26.0 SS 25.4
CRT .7619 CRS .5683 CST .9643
LSA 48.0 MSA 17.6 SSA 1.2
EL1 42.0 EL2 14.4 ALF 33.18

LAUNCH DATE APR 24 1971 FLIGHT TIME 124.00 ARRIVAL DATE AUG 26 1971

DISTANCE 340.012

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 34.107 GAL -3.84 AZL 92.00 HCA 113.74 SMA 220.86 ECC .32505 INC 2.0031 V1 29.616
RP 206.87 LAP -1.83 LOP 326.93 VP 26.118 GAP 18.63 AZP 89.19 TAL 344.26 TAP 97.99 RCA 149.07 APO 292.65 V2 26.473
RC 58.203 GL -12.91 GP 1.57 ZAL 121.13 ZAP 168.67 ETS 172.01 ZAE 173.28 ETE 68.71 ZAC 101.90 ETC 277.31 LVI -18.87

PLANETOCENTRIC CONIC

C3 28.331 VHL 5.323 DLA -21.57 RAL 342.09 RAD 6646.3 VEL 12.177 PTH 7.14 VHP 8.855 DPA -16.39 RAP 318.25 ECC 1.4663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 32	2780.36	-21.06	79.04	203.87	133.71	18 10 52	1780.4	-3.05	62.48
60.00	18 30 27	2605.04	-15.48	68.30	208.93	127.69	19 13 52	1605.0	.41	50.01
70.00	19 54 2	2359.34	-10.04	52.31	212.86	122.82	20 33 21	1359.3	3.87	32.71
80.00	21 33 45	2047.23	-5.65	31.28	215.53	119.37	22 7 53	1047.2	6.72	10.77
90.00	23 10 13	1736.11	-3.83	9.40	216.53	118.04	23 39 9	736.1	7.91	348.53
100.00	0 20 33	1521.70	-5.65	352.65	215.53	119.37	0 45 55	521.7	6.72	332.14
110.00	0 57 24	1406.16	-10.04	341.22	212.86	122.82	1 20 50	406.2	3.87	321.62

DIFFERENTIAL CORRECTIONS

TDE -.5617 TRA-1.2000 TC3 .0242 BAU .0507
RDE -.4769 RRA .1482 RC3 .1316 FAU .04320
FDE .4091 FRA 1.5045 FC3-1.3202 BSP 2466
BDE .7369 BRA 1.2091 BC3 .1330 FSP 273

MID-COURSE EXECUTION ACCURACY

SGT 1515.1 SGR 559.1 SG3 197.1
RRT .0895 RRF -.0975 RTF -.7875
SGB 1614.9 R23 -.0161 R13 -.7878
SG1 1516.0 SG2 556.5 THA 2.19

ORBIT DETERMINATION ACCURACY

ST 36.7 SR 25.8 SS 26.2
CRT .7627 CRS .5644 CST .9628
LSA 48.8 MSA 17.7 SSA 1.2
EL1 42.5 EL2 14.4 ALF 32.36

LAUNCH DATE APR 24 1971 FLIGHT TIME 126.00 ARRIVAL DATE AUG 28 1971

DISTANCE 343.093

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 33.987 GAL -3.73 AZL 92.02 HCA 115.01 SMA 217.88 ECC .31561 INC 2.0169 V1 29.616
RP 206.82 LAP -1.83 LOP 328.20 VP 25.967 GAP 18.17 AZP 89.15 TAL 344.37 TAP 99.38 RCA 149.12 APO 286.65 V2 26.479
RC 58.807 GL -13.30 GP 1.63 ZAL 121.06 ZAP 167.73 ETS 172.36 ZAE 173.04 ETE 63.48 ZAC 101.91 ETC 277.38 LVI -19.03

PLANETOCENTRIC CONIC

C3 26.926 VHL 5.189 DLA -21.93 RAL 342.23 RAD 6645.8 VEL 12.120 PTH 7.09 VHP 8.584 DPA -16.24 RAP 318.56 ECC 1.4431

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 43	2759.90	-20.10	78.05	203.35	134.08	18 12 43	1759.9	-2.02	61.62
60.00	18 33 15	2582.99	-14.55	67.16	208.40	128.01	19 16 18	1583.0	1.38	48.96
70.00	19 57 39	2334.89	-9.14	50.99	212.35	123.05	20 36 33	1334.9	4.80	31.42
80.00	21 38 23	2019.61	-4.73	29.75	215.05	119.52	22 12 2	1019.6	7.63	9.23
90.00	23 15 25	1706.60	-2.89	7.75	216.06	118.14	23 43 52	706.6	8.83	346.85
100.00	0 25 11	1494.08	-4.73	351.12	215.05	119.52	0 50 5	494.1	7.63	330.60
110.00	1 1 1	1381.70	-9.14	339.91	212.35	123.05	1 24 2	381.7	4.80	320.34

DIFFERENTIAL CORRECTIONS

TDE -.5573 TRA-1.1893 TC3 .0381 BAU .0523
RDE -.4618 RRA .1398 RC3 .1401 FAU .04479
FDE .4214 FRA 1.5676 FC3-1.4402 BSP 2537
BDE .7238 BRA 1.1974 BC3 .1452 FSP 294

MID-COURSE EXECUTION ACCURACY

SGT 1544.1 SGR 555.8 SG3 210.4
RRT .0978 RRF -.1064 RTF -.7942
SGB 1641.0 R23 -.0174 R13 -.7946
SG1 1545.2 SG2 552.7 THA 2.31

ORBIT DETERMINATION ACCURACY

ST 37.4 SR 25.6 SS 27.0
CRT .7637 CRS .5607 CST .9612
LSA 49.7 MSA 17.8 SSA 1.2
EL1 43.0 EL2 14.4 ALF 31.57

LAUNCH DATE APR 24 1971 FLIGHT TIME 128.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 346.270 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	33.873	GAL	-3.62	AZL	92.03	HCA	116.27	SMA	215.16	ECC	.30670	INC	2.0309
RP	206.77	LAP	-1.82	LOP	329.46	VP	25.823	GAP	17.72	AZP	89.10	TAL	344.50	TAP	100.77	RCA	149.17	APO	281.15
RC	59.485	GL	-13.69	GP	1.70	ZAL	120.96	ZAP	166.78	ETS	172.66	ZAE	172.77	ETE	59.05	ZAC	101.94	ETC	277.45

V1	29.816	V2	26.485	LVI	-19.18														

PLANETOCENTRIC CONIC

C3	25.628	VHL	5.062	DLA	-22.31	RAL	342.35	RAD	6645.3	VEL	12.066	PTH	7.05	VHP	8.322	DPA	-16.08	RAP	318.85

ECC	1.4218																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 56	2739.63	-19.13	77.09	202.86	134.43	18 14 36	1739.6	-1.00	60.77
60.00	18 36 5	2561.05	-13.63	66.04	207.90	128.30	19 18 46	1561.1	2.35	47.91
70.00	20 1 21	2310.40	-8.23	49.68	211.87	123.27	20 39 51	1310.4	5.73	30.13
80.00	21 43 11	1991.71	-3.79	28.21	214.59	119.64	22 16 23	991.7	8.55	7.66
90.00	23 20 52	1676.62	-1.92	6.07	215.63	118.22	23 48 49	676.6	9.75	345.13
100.00	0 29 59	1466.18	-3.79	349.58	214.59	119.64	0 54 25	466.2	8.55	329.03
110.00	1 4 43	1357.22	-8.23	338.60	211.87	123.27	1 27 21	357.2	5.73	319.05

DIFFERENTIAL CORRECTIONS

TDE	-.5522	TRA	-1.1779	TC3	.0531	BAU	.0542												

MID-COURSE EXECUTION ACCURACY

SGT	1571.6	SGR	552.2	SG3	224.7														

ORBIT DETERMINATION ACCURACY

ST	38.0	SR	25.4	SS	27.9														

RDE	-.4473	RRA	.1315	RC3	.1489	FAU	.04649												
FDE	.4342	FRA	1.6339	FC3	-1.5706	BSP	2599												
BDE	.7106	BRA	1.1853	BC3	.1581	FSP	317												

RRT	.1067	RRF	-.1162	RTF	-.8006														

CRT	.7647	CRS	.5570	CST	.9596														

SGB	1665.8	R23	-.0190	R13	-.8010														

LSA	50.5	MSA	17.9	SSA	1.2														

SG1	1572.9	SG2	548.6	THA	2.44														

EL1	43.4	EL2	14.3	ALF	30.83														

LAUNCH DATE APR 24 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 349.532 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	33.766	GAL	-3.51	AZL	92.05	HCA	117.54	SMA	212.65	ECC	.29831	INC	2.0452
RP	206.74	LAP	-1.81	LOP	330.73	VP	25.687	GAP	17.28	AZP	89.05	TAL	344.63	TAP	102.18	RCA	149.22	APO	276.09
RC	60.233	GL	-14.09	GP	1.77	ZAL	120.85	ZAP	165.80	ETS	172.91	ZAE	172.51	ETE	55.34	ZAC	101.97	ETC	277.51

V1	29.816	V2	26.489	LVI	-19.33														

PLANETOCENTRIC CONIC

C3	24.427	VHL	4.942	DLA	-22.69	RAL	342.47	RAD	6644.8	VEL	12.017	PTH	7.01	VHP	8.068	DPA	-15.93	RAP	319.12

ECC	1.4020																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 31 11	2719.56	-18.17	76.14	202.39	134.76	18 16 30	1719.6	.01	59.94
60.00	18 38 59	2539.24	-12.71	64.94	207.43	128.57	19 21 18	1539.2	3.31	46.87
70.00	20 5 10	2285.89	-7.31	48.38	211.41	123.46	20 43 16	1285.9	6.65	28.84
80.00	21 48 10	1963.52	-2.84	26.66	214.17	119.74	22 20 53	963.5	9.47	6.07
90.00	23 26 34	1646.14	-.94	4.37	215.23	118.27	23 54 0	646.1	10.67	343.37
100.00	0 34 58	1437.99	-2.84	348.03	214.17	119.74	0 58 56	438.0	9.47	327.44
110.00	1 8 32	1332.71	-7.31	337.30	211.41	123.46	1 30 45	332.7	6.65	317.76

DIFFERENTIAL CORRECTIONS

TDE	-.5465	TRA	-1.1659	TC3	.0695	BAU	.0564												

MID-COURSE EXECUTION ACCURACY

SGT	1597.6	SGR	548.3	SG3	240.0														

ORBIT DETERMINATION ACCURACY

ST	38.6	SR	25.2	SS	28.8														

RDE	-.4332	RRA	.1233	RC3	.1582	FAU	.04830												
FDE	.4468	FRA	1.7036	FC3	-1.7119	BSP	2652												
BDE	.6973	BRA	1.1724	BC3	.1727	FSP	342												

RRT	.1163	RRF	-.1267	RTF	-.8069														

CRT	.7656	CRS	.5529	CST	.9579														

SGB	1689.1	R23	-.0207	R13	-.8073														

LSA	51.2	MSA	18.0	SSA	1.2														

SG1	1599.1	SG2	544.1	THA	2.58														

EL1	43.8	EL2	14.3	ALF	30.13														

LAUNCH DATE APR 24 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC DISTANCE 352.872 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	33.664	GAL	-3.41	AZL	92.06	HCA	118.81	SMA	210.35	ECC	.29039	INC	2.0599
RP	206.71	LAP	-1.80	LOP	332.00	VP	25.557	GAP	16.85	AZP	89.01	TAL	344.77	TAP	103.59	RCA	149.26	APO	271.43
RC	61.050	GL	-14.49	GP	1.84	ZAL	120.73	ZAP	164.81	ETS	173.13	ZAE	172.27	ETE	52.29	ZAC	102.00	ETC	277.57

V1	29.816	V2	26.492	LVI	-19.48														

PLANETOCENTRIC CONIC

C3	23.310	VHL	4.829	DLA	-23.08	RAL	342.58	RAD	6644.3	VEL	11.971	PTH	6.97	VHP	7.822	DPA	-15.78	RAP	319.37

ECC	1.3838																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 27	2699.70	-17.22	75.22	201.96	135.07	18 18 26	1699.7	1.00	59.11
60.00	18 41 56	2517.58	-11.79	63.85	206.99	128.82	19 23 53	1517.6	4.26	45.83
70.00	20 9 4	2261.38	-6.39	47.08	211.00	123.62	20 46 46	1261.4	7.57	27.54
80.00	21 53 21	1935.03	-1.87	25.10	213.79	119.80	22 25 36	935.0	10.39	4.46
90.00	23 32 32	1615.11	.06	2.64	214.86	118.28	23 59 27	615.1	11.60	341.57
100.00	0 40 9	1409.51	-1.87	346.47	213.79	119.80	1 3 38	409.5	10.39	325.83
110.00	1 12 27	1308.20	-6.39	336.00	211.00	123.62	1 34 15	308.2	7.57	316.46

DIFFERENTIAL CORRECTIONS

TDE	-.5407	TRA	-1.1535	TC3	.0867	BAU	.0589												

MID-COURSE EXECUTION ACCURACY

SGT	1622.3	SGR	544.2	SG3	256.2														

ORBIT DETERMINATION ACCURACY

ST	39.1	SR	25.0	SS	29.7														

RDE	-.4196	RRA	.1151	RC3	.1678	FAU	.05023												
FDE	.4599	FRA	1.7770	FC3	-1.8650	BSP	2706												
BDE	.6844	BRA	1.1592	BC3	.1889	FSP	369												

RRT	.1269	RRF	-.1383	RTF	-.8128														

CRT	.7667	CRS	.5489	CST	.9560														

SGB	1711.2	R23	-.0225	R13	-.8133														

LSA	52.0	MSA	18.1	SSA	1.2														

SG1	1624.0	SG2	539.2	THA	2.74														

EL1	44.2	EL2	14.2	ALF	29.46														

LAUNCH DATE APR 24 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC DISTANCE 356.283 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	33.569	GAL	-3.31	AZL	92.08	HCA	120.08	SMA	208.22	ECC	.28293	INC	2.0750
RP	206.69	LAP	-1.80	LOP	333.27	VP	25.433	GAP	16.43	AZP	88.96	TAL	344.92	TAP	105.00	RCA	149.31	APO	267.13
RC	61.933	GL	-14.89	GP	1.91	ZAL	120.60	ZAP	163.79	ETS	173.33	ZAE	172.05	ETE	49.81	ZAC	102.04	ETC	277.63

V1	29.816	V2	26.495	LVI	-19.62														

PLANETOCENTRIC CONIC

C3	22.293	VHL	4.722	DLA	-23.49	RAL	342.68	RAD	6643.8	VEL	11.928	PTH	6.93	VHP	7.585	DPA	-15.63	RAP	319.60

ECC	1.3660																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 44	2680.09	-16.27	74.32	201.55	135.35	18 20 24	1680.1	1.99	58.29
60.00	18 44 56	2496.08	-10.87	62.78	206.58	129.05	19 26 32	1496.1	5.20	44.79
70.00	20 13 6	2236.88	-5.46	45.79	210.61	123.77	20 50 23	1236.9	8.49	26.23
80.00	21 58 45	1906.23	-.90	23.52	213.44	119.85	22 30 31	906.?	11.31	2.82
90.00	23 38 49	1583.46	1.08	.88	214.54	118.26	24 5 13	583.5	12.54	339.71
100.00	0 45 33	1380.70	-.90	344.88	213.44	119.85	1 8 33	380.7	11.31	324.19
110.00	1 16 28	1283.70	-5.46	334.70	210.61	123.77	1 37 52	283.7	8.49	315.15

DIFFERENTIAL CORRECTIONS

TDE	-.5344	TRA	-1.1404	TC3	.1040	BAU	.0614												

MID-COURSE EXECUTION ACCURACY

SGT	1645.3	SGR	539.9	SG3	273.5														

ORBIT DETERMINATION ACCURACY

ST	39.5	SR	24.8	SS	30.6														

RDE	-.4064	RRA	.1070	RC3	.1778	FAU	.05228												
FDE	.4734	FRA	1.8538	FC3	-2.0303	BSP	2761												
BDE	.6714	BRA	1.1454	BC3	.2060	FSP	397												

RRT	.1382	RRF	-.1510	RTF	-.8182														

CRT	.7678	CRS	.5451	CST	.9542														

SGB	1731.6	R23	-.0249	R13	-.8188														

LSA	52.7	MSA	18.2	SSA	1.2														

SG1	1647.2	SG2	534.1	THA	2.90														

EL1	44.5	EL2	14.1	ALF	28.84														

LAUNCH DATE APR 24 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 7 1971

DISTANCE 359.758

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 33.478 GAL -3.21 AZL 92.09 HCA 121.35 SMA 206.26 ECC .27590 INC 2.0904 V1 29.616
RP 206.68 LAP -1.79 LOP 334.54 VP 25.315 GAP 16.02 AZP 88.91 TAL 345.07 TAP 106.42 RCA 149.35 APO 263.17 V2 26.496
RC 62.879 GL -15.30 GP 2.00 ZAL 120.46 ZAP 162.76 ETS 173.49 ZAE 171.86 ETE 47.85 ZAC 102.09 ETC 277.68 LVI -19.77

PLANETOCENTRIC CONIC

C3 21.345 VHL 4.620 DLA -23.89 RAL 342.78 RAD 6643.4 VEL 11.889 PTH 6.90 VHP 7.354 DPA -15.48 RAP 319.81 ECC 1.3513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 38 4	2660.74	-15.33	73.44	201.17	135.61	18 22 24	1660.7	2.96	57.48
60.00	18 47 59	2474.76	-9.95	61.73	206.21	129.26	19 29 14	1474.8	6.13	43.76
70.00	20 17 14	2212.39	-4.53	44.50	210.25	123.89	20 54 6	1212.4	9.40	24.92
80.00	22 4 23	1877.07	.09	21.92	213.13	119.86	22 35 40	877.1	12.23	1.14
90.00	23 45 26	1551.11	2.12	359.07	214.26	118.21	24 11 17	551.1	13.48	337.61
100.00	0 51 10	1351.54	.09	343.28	213.13	119.86	1 13 42	351.5	12.23	322.51
110.00	1 20 36	1259.21	-4.53	333.42	210.25	123.89	1 41 35	259.2	9.40	313.84

DIFFERENTIAL CORRECTIONS

TDE -.5280 TRA-1.1269 TC3 .1220 BAU .0640
RDE -.3937 RRA .0988 RC3 .1882 FAU .05446
FDE .4869 FRA 1.9350 FC3-2.2088 BSP 2805
BDE .6586 BRA 1.1312 BC3 .2243 FSP 428

MID-COURSE EXECUTION ACCURACY

SGT 1666.6 SGR 535.4 SG3 292.0
RRT .1506 RRF -.1647 RTF -.8234
SGB 1750.5 R23 -.0271 R13 -.8240
SG1 1668.8 SG2 528.6 THA 3.08

ORBIT DETERMINATION ACCURACY

ST 40.0 SR 24.5 SS 31.6
CRT .7692 CRS .5409 CST .9521
LSA 53.5 MSA 18.3 SSA 1.2
EL1 44.7 EL2 14.0 ALF 28.24

LAUNCH DATE APR 24 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 9 1971

DISTANCE 363.292

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 33.393 GAL -3.12 AZL 92.11 HCA 122.62 SMA 204.45 ECC .26927 INC 2.1062 V1 29.616
RP 206.67 LAP -1.77 LOP 335.81 VP 25.202 GAP 15.61 AZP 88.86 TAL 345.22 TAP 107.84 RCA 149.40 APO 259.50 V2 26.496
RC 63.888 GL -15.72 GP 2.08 ZAL 120.30 ZAP 161.69 ETS 173.64 ZAE 171.72 ETE 46.35 ZAC 102.15 ETC 277.73 LVI -19.91

PLANETOCENTRIC CONIC

C3 20.470 VHL 4.524 DLA -24.31 RAL 342.87 RAD 6643.0 VEL 11.852 PTH 6.87 VHP 7.132 DPA -15.33 RAP 319.99 ECC 1.3369

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 40 25	2641.66	-14.40	72.58	200.82	135.85	18 24 26	1641.7	3.92	56.68
60.00	18 51 7	2453.64	-9.04	60.69	205.86	129.44	19 32 0	1453.6	7.05	42.74
70.00	20 21 29	2187.93	-3.60	43.22	209.94	123.99	20 57 57	1187.9	10.30	23.60
80.00	22 10 15	1847.51	1.09	20.29	212.86	119.84	22 41 3	847.5	13.15	359.43
90.00	23 52 27	1517.93	3.19	357.22	214.02	118.11	24 17 45	517.9	14.43	335.83
100.00	0 57 3	1321.98	1.09	341.66	212.86	119.84	1 19 5	322.0	13.15	320.80
110.00	1 24 52	1234.75	-3.60	332.13	209.94	123.99	1 45 26	234.7	10.30	312.52

DIFFERENTIAL CORRECTIONS

TDE -.5216 TRA-1.1130 TC3 .1396 BAU .0665
RDE -.3814 RRA .0907 RC3 .1991 FAU .05679
FDE .5009 FRA 2.0206 FC3-2.4020 BSP 2846
BDE .6462 BRA 1.1167 BC3 .2432 FSP 460

MID-COURSE EXECUTION ACCURACY

SGT 1686.4 SGR 530.7 SG3 311.6
RRT .1642 RRF -.1798 RTF -.8279
SGB 1768.0 R23 -.0299 R13 -.8285
SG1 1688.9 SG2 522.8 THA 3.27

ORBIT DETERMINATION ACCURACY

ST 40.4 SR 24.2 SS 32.5
CRT .7710 CRS .5371 CST .9499
LSA 54.2 MSA 18.4 SSA 1.2
EL1 45.0 EL2 13.8 ALF 27.68

LAUNCH DATE APR 24 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 11 1971

DISTANCE 366.879

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 33.312 GAL -3.03 AZL 92.12 HCA 123.89 SMA 202.77 ECC .26303 INC 2.1225 V1 29.616
RP 206.68 LAP -1.76 LOP 337.08 VP 25.095 GAP 15.21 AZP 88.82 TAL 345.38 TAP 109.26 RCA 149.44 APO 256.11 V2 26.496
RC 64.956 GL -16.13 GP 2.17 ZAL 120.14 ZAP 160.61 ETS 173.76 ZAE 171.63 ETE 45.29 ZAC 102.21 ETC 277.77 LVI -20.05

PLANETOCENTRIC CONIC

C3 19.661 VHL 4.434 DLA -24.73 RAL 342.96 RAD 6642.7 VEL 11.818 PTH 6.84 VHP 6.916 DPA -15.19 RAP 320.14 ECC 1.3236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 42 48	2622.87	-13.48	71.75	200.50	136.07	18 26 31	1622.9	4.86	55.89
60.00	18 54 18	2432.73	-8.13	59.66	205.55	129.61	19 34 50	1432.7	7.96	41.72
70.00	20 25 52	2163.49	-2.67	41.94	209.65	124.06	21 1 56	1163.5	11.20	22.28
80.00	22 16 25	1817.51	2.11	18.65	212.63	119.79	22 46 42	817.5	14.07	357.68
90.00	0 3 49	1483.79	4.28	355.30	213.83	117.98	0 28 33	483.8	15.39	333.78
100.00	1 3 13	1291.98	2.11	340.01	212.63	119.79	1 24 45	292.0	14.07	319.05
110.00	1 29 14	1210.31	-2.67	330.86	209.65	124.06	1 49 25	210.3	11.20	311.20

DIFFERENTIAL CORRECTIONS

TDE -.5150 TRA-1.0979 TC3 .1567 BAU .0690
RDE -.3696 RRA .0825 RC3 .2104 FAU .05924
FDE .5154 FRA 2.1100 FC3-2.6083 BSP 2888
BDE .6339 BRA 1.1010 BC3 .2624 FSP 495

MID-COURSE EXECUTION ACCURACY

SGT 1703.5 SGR 526.0 SG3 332.4
RRT .1790 RRF -.1963 RTF -.8220
SGB 1782.8 R23 -.0328 R13 -.8327
SG1 1706.3 SG2 516.6 THA 3.48

ORBIT DETERMINATION ACCURACY

ST 40.7 SR 23.9 SS 33.5
CRT .7731 CRS .5335 CST .9479
LSA 54.9 MSA 18.5 SSA 1.2
EL1 45.2 EL2 13.7 ALF 27.15

LAUNCH DATE APR 24 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 13 1971

DISTANCE 370.517

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 33.237 GAL -2.94 AZL 92.14 HCA 125.16 SMA 201.22 ECC .25715 INC 2.1393 V1 29.616
RP 206.70 LAP -1.75 LOP 338.35 VP 24.992 GAP 14.82 AZP 88.77 TAL 345.54 TAP 110.69 RCA 149.48 APO 252.96 V2 26.494
RC 66.082 GL -16.55 GP 2.27 ZAL 119.97 ZAP 159.50 ETS 173.87 ZAE 171.59 ETE 44.63 ZAC 102.29 ETC 277.81 LVI -20.18

PLANETOCENTRIC CONIC

C3 18.914 VHL 4.349 DLA -25.15 RAL 343.04 RAD 6642.3 VEL 11.787 PTH 6.81 VHP 6.707 DPA -15.05 RAP 320.27 ECC 1.3113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 45 13	2604.35	-12.57	70.93	200.21	136.28	18 28 38	1604.3	5.79	55.11
60.00	18 57 32	2412.00	-7.23	58.65	205.27	129.76	19 37 44	1412.0	8.86	40.71
70.00	20 30 23	2139.03	-1.74	40.66	209.41	124.11	21 6 2	1139.0	12.09	20.95
80.00	22 22 53	1786.93	3.14	16.96	212.44	119.71	22 52 40	786.9	15.00	355.88
90.00	0 11 48	1448.36	5.41	353.31	213.69	117.80	0 35 56	448.4	16.36	331.63
100.00	1 9 41	1261.39	3.14	338.33	212.44	119.71	1 30 42	261.4	15.00	317.25
110.00	1 33 45	1185.85	-1.74	329.58	209.41	124.11	1 53 31	185.8	12.09	309.86

DIFFERENTIAL CORRECTIONS

TDE -.4989 TRA-1.0731 TC3 .1934 BAU .0745
RDE -.3580 RRA .0744 RC3 .2224 FAU .06192
FDE .5283 FRA 2.2026 FC3-2.8342 BSP 2807
BDE .6141 BRA 1.0756 BC3 .2948 FSP 530

MID-COURSE EXECUTION ACCURACY

SGT 1702.8 SGR 521.2 SG3 354.5
RRT .1954 RRF -.2141 RTF -.8414
SGB 1780.8 R23 -.0342 R13 -.8422
SG1 1706.2 SG2 510.2 THA 3.76

ORBIT DETERMINATION ACCURACY

ST 40.4 SR 23.6 SS 34.5
CRT .7725 CRS .5289 CST .9462
LSA 55.0 MSA 18.6 SSA 1.2
EL1 44.8 EL2 13.5 ALF 27.02

LAUNCH DATE APR 24 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 374.199 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	33.165	GAL	-2.86	AZL	92.16	HCA	126.42	SMA	199.78	ECC	.25162	INC	2.1567
RP	206.72	LAP	-1.74	LOP	339.62	VP	24.894	GAP	14.44	AZP	88.72	TAL	345.69	TAP	112.12	RCA	149.51	APO	250.05
RC	67.265	GL	-16.98	GP	2.37	ZAL	119.80	ZAP	158.36	ETS	173.97	ZAE	171.61	ETE	44.37	ZAC	102.37	ETC	277.84

V1	29.616																		
V2	26.491																		
LVI	-20.32																		

PLANETOCENTRIC CONIC

C3	18.225	VHL	4.269	DLA	-25.58	RAL	343.13	RAD	6642.0	VEL	11.758	PTH	6.79	VHP	6.506	DPA	-14.91	RAP	320.37

ECC	1.2999																		
INJ 2 LONG																			
54.34																			
39.71																			
19.61																			
354.04																			
329.38																			
315.40																			
308.53																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT
50.00	17 47 41	2586.20	-11.68	70.13	199.96	136.46	18 30 47	1586.2	6.69
60.00	19 0 51	2391.58	-6.34	57.66	205.02	129.88	19 40 43	1391.6	9.74
70.00	20 35 2	2114.67	-.81	39.39	209.20	124.15	21 10 17	1114.7	12.97
80.00	22 29 41	1755.82	4.19	15.25	212.30	119.59	22 58 57	755.8	15.92
90.00	0 20 22	1411.57	6.57	351.24	213.61	117.57	0 43 53	411.6	17.34
100.00	1 16 29	1230.29	4.19	336.62	212.30	119.59	1 37 0	230.3	15.92
110.00	1 38 24	1161.49	-.81	328.31	209.20	124.15	1 57 46	161.5	12.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4965	TRA	-1.0618	TC3	.2000	BAU	.0751	SGT	1723.2	SGR	516.5	SG3	378.2	ST	40.9	SR	23.3	SS	35.5
RDE	-.3471	RRA	.0661	RC3	.2346	FAU	.06469	RRT	.2127	RRF	-.2337	RTF	-.8416	CRT	.7766	CRS	.5257	CST	.9428
FDE	.5434	FRA	2.3029	FC3	-3.0731	BSP	2895	SGB	1798.9	R23	-.0389	R13	-.8426	LSA	55.9	MSA	18.6	SSA	1.2
BDE	.6058	BRA	1.0639	BC3	.3083	FSP	570	SG1	1727.0	SG2	503.6	THA	3.99	EL1	45.2	EL2	13.3	ALF	26.38

LAUNCH DATE APR 24 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 377.922 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	33.098	GAL	-2.78	AZL	92.17	HCA	127.69	SMA	198.45	ECC	.24642	INC	2.1746
RP	206.75	LAP	-1.72	LOP	340.89	VP	24.801	GAP	14.07	AZP	88.67	TAL	345.85	TAP	113.54	RCA	149.55	APO	247.35
RC	68.502	GL	-17.40	GP	2.48	ZAL	119.63	ZAP	157.19	ETS	174.05	ZAE	171.67	ETE	44.53	ZAC	102.46	ETC	277.86

V1	29.616																		
V2	26.487																		
LVI	-20.45																		

PLANETOCENTRIC CONIC

C3	17.590	VHL	4.194	DLA	-26.01	RAL	343.21	RAD	6641.7	VEL	11.731	PTH	6.76	VHP	6.311	DPA	-14.78	RAP	320.44

ECC	1.2895																		
INJ 2 LONG																			
53.58																			
38.71																			
18.26																			
352.13																			
326.98																			
313.49																			
307.18																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT
50.00	17 50 11	2568.37	-10.80	69.36	199.74	136.63	18 32 59	1568.4	7.58
60.00	19 4 14	2371.40	-5.46	56.69	204.81	129.99	19 43 46	1371.4	10.61
70.00	20 39 50	2090.33	.12	38.12	209.03	124.15	21 14 40	1090.3	13.84
80.00	22 36 53	1723.97	5.26	13.49	212.21	119.43	23 5 37	724.0	16.85
90.00	0 29 42	1372.84	7.79	349.04	213.59	117.27	0 52 34	372.8	18.34
100.00	1 23 41	1198.44	5.26	334.86	212.21	119.43	1 43 39	198.4	16.85
110.00	1 43 12	1137.15	.12	327.04	209.03	124.15	2 2 9	137.1	13.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4921	TRA	-1.0478	TC3	.2093	BAU	.0762	SGT	1737.7	SGR	511.9	SG3	403.3	ST	41.2	SR	23.0	SS	36.6
RDE	-.3365	RRA	.0576	RC3	.2473	FAU	.06762	RRT	.2316	RRF	-.2551	RTF	-.8428	CRT	.7807	CRS	.5230	CST	.9396
FDE	.5593	FRA	2.4087	FC3	-3.3281	BSP	2952	SGB	1811.5	R23	-.0438	R13	-.8439	LSA	56.7	MSA	18.7	SSA	1.2
BDE	.5962	BRA	1.0493	BC3	.3240	FSP	612	SG1	1742.1	SG2	496.7	THA	4.25	EL1	45.4	EL2	13.1	ALF	25.85

LAUNCH DATE APR 24 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC DISTANCE 381.685 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	33.034	GAL	-2.71	AZL	92.19	HCA	128.96	SMA	197.22	ECC	.24152	INC	2.1931
RP	206.79	LAP	-1.71	LOP	342.16	VP	24.711	GAP	13.70	AZP	88.62	TAL	346.00	TAP	114.96	RCA	149.58	APO	244.85
RC	69.791	GL	-17.83	GP	2.60	ZAL	119.45	ZAP	155.99	ETS	174.12	ZAE	171.80	ETE	45.11	ZAC	102.57	ETC	277.88

V1	29.616																		
V2	26.483																		
LVI	-20.59																		

PLANETOCENTRIC CONIC

C3	17.005	VHL	4.124	DLA	-26.45	RAL	343.30	RAD	6641.5	VEL	11.706	PTH	6.74	VHP	6.122	DPA	-14.64	RAP	320.47

ECC	1.2799																		
INJ 2 LONG																			
52.84																			
37.72																			
16.90																			
350.14																			
324.38																			
311.51																			
305.82																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT
50.00	17 52 44	2550.68	-9.93	68.60	199.54	136.77	18 35 14	1550.9	8.46
60.00	19 7 42	2351.47	-4.59	55.73	204.64	130.08	19 46 53	1351.5	11.47
70.00	20 44 47	2065.99	1.05	36.85	208.90	124.14	21 19 13	1066.0	14.70
80.00	22 44 32	1691.19	6.35	11.67	212.18	119.24	23 12 43	691.2	17.78
90.00	0 40 0	1331.49	9.07	346.68	213.64	116.90	1 2 11	331.5	19.37
100.00	1 31 20	1165.66	6.35	333.04	212.18	119.24	1 50 45	165.7	17.78
110.00	1 48 9	1112.81	1.05	325.77	208.90	124.14	2 6 42	112.8	14.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4859	TRA	-1.0311	TC3	.2203	BAU	.0776	SGT	1746.2	SGR	507.4	SG3	429.8	ST	41.4	SR	22.7	SS	37.6
RDE	-.3263	RRA	.0491	RC3	.2606	FAU	.07075	RRT	.2519	RRF	-.2784	RTF	-.8443	CRT	.7848	CRS	.5203	CST	.9362
FDE	.5747	FRA	2.5190	FC3	-3.6022	BSP	2986	SGB	1818.4	R23	-.0491	R13	-.8456	LSA	57.3	MSA	18.8	SSA	1.3
BDE	.5853	BRA	1.0323	BC3	.3412	FSP	657	SG1	1751.3	SG2	489.7	THA	4.54	EL1	45.5	EL2	12.8	ALF	25.44

LAUNCH DATE APR 24 1971 FLIGHT TIME 150.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC DISTANCE 385.482 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.975	GAL	-2.64	AZL	92.21	HCA	130.23	SMA	196.07	ECC	.23692	INC	2.2123
RP	206.84	LAP	-1.69	LOP	343.43	VP	24.625	GAP	13.34	AZP	88.57	TAL	346.16	TAP	116.38	RCA	149.62	APO	242.52
RC	71.130	GL	-18.26	GP	2.72	ZAL	119.27	ZAP	154.76	ETS	174.18	ZAE	171.97	ETE	46.17	ZAC	102.69	ETC	277.89

V1	29.616																		
V2	26.477																		
LVI	-20.72																		

PLANETOCENTRIC CONIC

C3	16.465	VHL	4.058	DLA	-26.88	RAL	343.39	RAD	6641.2	VEL	11.684	PTH	6.72	VHP	5.941	DPA	-14.51	RAP	320.48

ECC	1.2710																		
INJ 2 LONG																			
52.10																			
36.74																			
15.53																			
348.06																			
321.51																			
309.43																			
304.45																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT
50.00	17 55 19	2533.73	-9.08	67.86	199.38	136.91	18 37 33	1533.7	9.31
60.00	19 11 14	2331.80	-3.72	54.79	204.50	130.16	19 50 6	1331.8	12.30
70.00	20 49 54	2041.66	1.98	35.58	208.81	124.10	21 23 56	1041.7	15.55
80.00	22 52 42	1657.27	7.47	9.78	212.19	118.99	23 20 20	657.3	18.72
90.00	0 51 38	1286.40	10.45	344.08	213.77	116.43	1 13 5	286.4	20.45
100.00	1 39 30	1131.74	7.47	331.15	212.19	118.99	1 58 22	131.7	18.72
110.00	1 53 17	1088.47	1.98	324.50	208.81	124.10	2 11 25	88.5	15.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4798	TRA	-1.0138	TC3	.2300	BAU	.0788	SGT	1752.1	SGR	503.3	SG3	458.0	ST	41.6	SR	22.4	SS	38.7
RDE	-.3164	RRA	.0404	RC3	.2744	FAU	.07405	RRT	.2741	RRF	-.3037	RTF	-.8457	CRT	.7895	CRS	.5188	CST	.9329
FDE	.5918	FRA	2.6367	FC3	-3.8935	BSP	3007	SGB	1822.9	R23	-.0550	R13	-.8472	LSA	58.0	MSA	18.9	SSA	1.3
BDE	.5748	BRA	1.0146	BC3	.3581	FSP	705	SG1	1757.9	SG2	482.4	THA	4.87	EL1	45.5	EL2	12.5	ALF	25.05

LAUNCH DATE APR 24 1971 FLIGHT TIME 152.00 ARRIVAL DATE SEP 23 1971

DISTANCE 389.313

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.919 GAL -2.57 AZL 92.23 HCA 131.50 SMA 195.00 ECC .23260 INC 2.2322 V1 29.618
RP 206.90 LAP -1.67 LOP 344.69 VP 24.542 GAP 13.00 AZP 88.52 TAL 346.31 TAP 117.80 RCA 149.65 APO 240.36 V2 26.470
RC 72.517 GL -18.69 GP 2.85 ZAL 119.09 ZAP 153.50 ETS 174.23 ZAE 172.19 ETE 47.76 ZAC 102.81 ETC 277.90 LVI -20.85

PLANETOCENTRIC CONIC

C3 15.970 VHL 3.996 DLA -27.32 RAL 343.48 RAD 6641.0 VEL 11.662 PTH 6.70 VHP 5.765 DPA -14.38 RAP 320.45 ECC 1.2628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 57 57	2516.94	-8.24	67.14	199.25	137.03	18 39 54	1516.9	10.14	51.38
60.00	19 14 51	2312.41	-2.87	53.86	204.39	130.22	19 53 23	1312.4	13.13	35.76
70.00	20 55 12	2017.30	2.91	34.31	208.77	124.04	21 28 50	1017.3	16.40	14.15
80.00	23 1 31	1621.87	8.64	7.80	212.27	118.69	23 28 33	621.9	19.67	345.87
90.00	1 5 17	1235.43	11.98	341.12	214.02	115.81	1 25 53	235.4	21.60	318.22
100.00	1 48 19	1096.34	8.64	329.17	212.27	118.69	2 6 35	96.3	19.67	307.23
110.00	1 58 35	1064.11	2.91	323.22	208.77	124.04	2 16 19	64.1	16.40	303.07

DIFFERENTIAL CORRECTIONS

TDE -.4728 TRA -.9946 TC3 .2382 BAU .0799
RDE -.3069 RRA .0314 RC3 .3772 FAU .07754
FDE .6087 FRA 2.7600 FC3-4.2035 BSP 3024
BDE .5637 BRA .9951 BC3 .3744 FSP 756

MID-COURSE EXECUTION ACCURACY

SGT 1752.7 SGR 499.6 SG3 487.9
RRT .2979 RRF -.3311 RTF -.8467
SGB 1822.5 R23 -.0616 R13 -.8485
SG1 1759.5 SG2 475.0 THA 5.24

ORBIT DETERMINATION ACCURACY

ST 41.6 SR 22.0 SS 39.8
CRT .7948 CRS .5175 CST .9292
LSA 58.6 MSA 19.0 SSA 1.2
EL1 45.4 EL2 12.2 ALF 24.74

LAUNCH DATE APR 24 1971 FLIGHT TIME 154.00 ARRIVAL DATE SEP 25 1971

DISTANCE 393.173

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.866 GAL -2.51 AZL 92.25 HCA 132.76 SMA 194.01 ECC .22854 INC 2.2529 V1 29.616
RP 206.96 LAP -1.65 LOP 345.96 VP 24.463 GAP 12.65 AZP 88.47 TAL 346.45 TAP 119.21 RCA 149.67 APO 238.35 V2 26.462
RC 73.950 GL -19.13 GP 2.99 ZAL 118.91 ZAP 152.21 ETS 174.27 ZAE 172.45 ETE 49.96 ZAC 102.96 ETC 277.90 LVI -20.98

PLANETOCENTRIC CONIC

C3 15.514 VHL 3.939 DLA -27.75 RAL 343.58 RAD 6640.8 VEL 11.643 PTH 6.68 VHP 5.595 DPA -14.25 RAP 320.38 ECC 1.2553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 0 39	2500.50	-7.42	66.44	199.16	137.13	18 42 19	1500.5	10.96	50.67
60.00	19 18 33	2293.29	-2.03	52.94	204.32	130.26	19 56 46	1293.3	13.93	34.79
70.00	21 0 42	1992.89	3.84	33.03	208.76	123.96	21 33 55	992.9	17.23	12.75
80.00	23 11 9	1584.50	9.85	5.69	212.42	118.33	23 37 33	584.5	20.65	343.52
90.00	1 22 33	1173.41	13.79	337.46	214.43	114.94	1 42 7	173.4	22.89	314.14
100.00	1 57 56	1058.98	9.85	327.06	212.42	118.33	2 15 35	59.0	20.65	304.89
110.00	2 4 4	1039.71	3.84	321.95	208.76	123.96	2 21 24	39.7	17.23	301.67

DIFFERENTIAL CORRECTIONS

TDE -.4656 TRA -.9745 TC3 .2439 BAU .0808
RDE -.2978 RRA .0223 RC3 .3041 FAU .08122
FDE .6257 FRA 2.8898 FC3-4.5322 BSP 3023
BDE .5527 BRA .9748 BC3 .3898 FSP 810

MID-COURSE EXECUTION ACCURACY

SGT 1749.7 SGR 496.3 SG3 519.4
RRT .3232 RRF -.3604 RTF -.8472
SGB 1818.7 R23 -.0692 R13 -.8493
SG1 1757.6 SG2 467.6 THA 5.64

ORBIT DETERMINATION ACCURACY

ST 41.5 SR 21.7 SS 41.0
CRT .8006 CRS .5167 CST .9253
LSA 59.2 MSA 19.1 SSA 1.2
EL1 45.3 EL2 11.9 ALF 24.47

LAUNCH DATE APR 24 1971 FLIGHT TIME 156.00 ARRIVAL DATE SEP 27 1971

DISTANCE 397.062

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.816 GAL -2.45 AZL 92.27 HCA 134.03 SMA 193.09 ECC .22473 INC 2.2744 V1 29.616
RP 207.04 LAP -1.64 LOP 347.23 VP 24.387 GAP 12.32 AZP 88.42 TAL 346.59 TAP 120.62 RCA 149.70 APO 236.49 V2 26.454
RC 75.426 GL -19.37 GP 3.14 ZAL 118.74 ZAP 150.88 ETS 174.31 ZAE 172.74 ETE 52.87 ZAC 103.11 ETC 277.89 LVI -21.10

PLANETOCENTRIC CONIC

C3 15.097 VHL 3.885 DLA -28.19 RAL 343.68 RAD 6640.6 VEL 11.625 PTH 6.67 VHP 5.432 DPA -14.13 RAP 320.28 ECC 1.2485

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 3 23	2484.44	-6.62	65.76	199.10	137.22	18 44 48	1484.4	11.75	49.97
60.00	19 22 20	2274.44	-1.20	52.04	204.29	130.29	20 0 15	1274.4	14.73	33.82
70.00	21 6 24	1968.40	4.77	31.74	208.80	123.86	21 39 12	968.4	18.06	11.33
80.00	23 21 49	1544.39	11.14	3.41	212.64	117.88	23 47 33	544.4	21.65	340.98
90.00	1 51 6	1075.54	16.51	331.57	215.29	113.29	2 9 2	75.5	24.69	307.93
100.00	2 8 37	1018.86	11.14	324.77	212.64	117.88	2 25 36	18.9	21.65	302.33
110.00	2 9 46	1015.22	4.77	320.66	208.80	123.86	2 26 41	15.2	18.06	300.25

DIFFERENTIAL CORRECTIONS

TDE -.4583 TRA -.9528 TC3 .2473 BAU .0816
RDE -.2890 RRA .0128 RC3 .3200 FAU .08514
FDE .6431 FRA 3.0256 FC3-4.8825 BSP 3021
BDE .5418 BRA .9928 BC3 .4044 FSP 867

MID-COURSE EXECUTION ACCURACY

SGT 1742.0 SGR 493.8 SG3 552.7
RRT .3504 RRF -.3921 RTF -.8471
SGB 1810.6 R23 -.0779 R13 -.8498
SG1 1751.2 SG2 460.1 THA 6.09

ORBIT DETERMINATION ACCURACY

ST 41.4 SR 21.3 SS 42.1
CRT .8074 CRS .5167 CST .9209
LSA 59.7 MSA 19.2 SSA 1.2
EL1 45.1 EL2 11.5 ALF 24.26

LAUNCH DATE APR 24 1971 FLIGHT TIME 158.00 ARRIVAL DATE SEP 29 1971

DISTANCE 400.977

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.770 GAL -2.39 AZL 92.30 HCA 135.29 SMA 192.24 ECC .22116 INC 2.2969 V1 29.616
RP 207.12 LAP -1.62 LOP 348.49 VP 24.314 GAP 11.99 AZP 88.37 TAL 346.72 TAP 122.02 RCA 149.72 APO 234.76 V2 26.444
RC 76.944 GL -20.00 GP 3.30 ZAL 118.56 ZAP 149.52 ETS 174.34 ZAE 173.05 ETE 56.64 ZAC 103.28 ETC 277.88 LVI -21.23

PLANETOCENTRIC CONIC

C3 14.715 VHL 3.836 DLA -28.63 RAL 343.79 RAD 6640.4 VEL 11.609 PTH 6.65 VHP 5.274 DPA -14.01 RAP 320.14 ECC 1.2422

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 6 12	2468.71	-5.83	65.09	199.07	137.30	18 47 21	1468.7	12.52	49.27
60.00	19 26 13	2255.83	-.38	51.15	204.30	130.30	20 3 49	1255.8	15.50	32.86
70.00	21 12 20	1943.74	5.70	30.44	208.89	123.73	21 44 44	943.7	18.88	9.89
80.00	23 34 0	1500.07	12.53	.86	212.97	117.32	23 59 0	500.1	22.71	338.10
85.36	1 32 27	1131.57	18.55	336.57	215.84	112.21	1 51 18	131.6	26.08	312.00
100.00	2 20 48	6262.58	12.53	300.13	212.97	117.32	4 5 11	5262.6	22.71	277.37
110.00	2 15 43	6278.59	5.70	297.27	208.89	123.73	4 0 21	5278.6	18.88	276.72

DIFFERENTIAL CORRECTIONS

TDE -.4432 TRA -.9229 TC3 .2662 BAU .0845
RDE -.2802 RRA .0033 RC3 .3372 FAU .08943
FDE .6557 FRA 3.1649 FC3-5.2619 BSP 2911
BDE .5243 BRA .9229 BC3 .4297 FSP 921

MID-COURSE EXECUTION ACCURACY

SGT 1716.5 SGR 492.1 SG3 587.7
RRT .3801 RRF -.4255 RTF -.8506
SGB 1785.7 R23 -.0843 R13 -.8536
SG1 1727.4 SG2 452.3 THA 6.68

ORBIT DETERMINATION ACCURACY

ST 40.6 SR 20.9 SS 43.1
CRT .8123 CRS .5150 CST .9168
LSA 59.8 MSA 19.3 SSA 1.2
EL1 44.3 EL2 11.2 ALF 24.37

LAUNCH DATE APR 24 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 1 1971

HELIOCENTRIC CONIC DISTANCE 404.915 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.726	GAL	-2.34	AZL	92.32	HCA	136.55	SMA	191.45	ECC	.21782	INC	2.3203
RP	207.21	LAP	-1.60	LOP	349.75	VP	24.243	GAP	11.67	AZP	88.31	TAL	346.85	TAP	123.40	RCA	149.75	APO	233.15
RC	78.502	GL	-20.44	GP	3.47	ZAL	118.40	ZAP	148.12	ETS	174.36	ZAE	173.35	ETE	61.39	ZAC	103.47	ETC	277.86

V1	29.616																		
V2	26.433																		
LVI	-21.36																		

PLANETOCENTRIC CONIC

C3	14.367	VHL	3.790	DLA	-29.06	RAL	343.91	RAD	6640.2	VEL	11.594	PTH	6.64	VHP	5.123	DPA	-13.88	RAP	319.96

ECC	1.2364																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 9 4	2453.42	-5.07	64.45	199.08	137.37	18 49 57	1453.4	13.28	48.60
60.00	19 30 12	2237.57	.42	50.28	204.35	130.30	20 7 30	1237.6	16.26	31.92
70.00	21 18 31	1918.99	6.64	29.14	209.03	123.58	21 50 30	919.0	19.69	8.43
80.00	23 48 30	1449.12	14.11	357.90	213.42	116.59	24 12 39	449.1	23.85	334.74
83.01	1 13 51	1187.80	18.95	340.88	215.73	112.45	1 33 39	187.8	26.55	316.24
100.00	2 35 18	6211.63	14.11	297.17	213.42	116.59	4 18 49	5211.6	23.85	274.02
110.00	2 21 53	6253.85	6.64	295.96	209.03	123.58	4 6 7	5253.9	19.69	275.25

DIFFERENTIAL CORRECTIONS

TDE	-.4431	TRA	-.9061	TC3	.2423	BAU	.0824												
RDE	-.2723	RRA	-.0071	RC3	.3542	FAU	.09355												
FDE	.6799	FRA	3.3208	FC3	-5.6372	BSP	2979												
BDE	.5201	BRA	.9061	BC3	.4292	FSP	990												

MID-COURSE EXECUTION ACCURACY

SGT	1714.0	SGR	491.6	SG3	624.8														
RRT	.4084	RRF	-.4615	RTF	-.8449														
SGB	1783.1	R23	-.1001	R13	-.8486														
SG1	1726.5	SG2	445.5	THA	7.16														

ORBIT DETERMINATION ACCURACY

ST	40.9	SR	20.6	SS	44.5														
CRT	.8235	CRS	.5200	CST	.9113														
LSA	60.8	MSA	19.4	SSA	1.2														
EL1	44.5	EL2	10.7	ALF	23.99														

LAUNCH DATE APR 24 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 3 1971

HELIOCENTRIC CONIC DISTANCE 408.876 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.685	GAL	-2.29	AZL	92.34	HCA	137.82	SMA	190.71	ECC	.21469	INC	2.3449
RP	207.31	LAP	-1.57	LOP	351.02	VP	24.175	GAP	11.36	AZP	88.26	TAL	346.97	TAP	124.78	RCA	149.77	APO	231.66
RC	80.098	GL	-20.88	GP	3.65	ZAL	118.24	ZAP	146.68	ETS	174.38	ZAE	173.62	ETE	67.27	ZAC	103.67	ETC	277.83

V1	29.616																		
V2	26.422																		
LVI	-21.49																		

PLANETOCENTRIC CONIC

C3	14.050	VHL	3.748	DLA	-29.49	RAL	344.04	RAD	6640.1	VEL	11.581	PTH	6.62	VHP	4.977	DPA	-13.76	RAP	319.74

ECC	1.2312																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 12 0	2438.46	-4.32	63.82	199.13	137.43	18 52 39	1438.5	14.01	47.93
60.00	19 34 17	2219.54	1.22	49.42	204.44	130.29	20 11 17	1219.5	17.00	30.97
70.00	21 24 59	1893.94	7.58	27.81	209.22	123.40	21 56 33	893.9	20.50	6.94
80.00	0 11 43	1383.59	16.07	354.02	214.11	115.51	0 34 47	383.6	25.20	330.34
81.26	1 0 31	1227.42	19.35	343.98	215.65	112.70	1 20 58	227.4	27.01	319.28
100.00	2 54 35	6146.10	16.07	293.29	214.11	115.51	4 37 1	5146.1	25.20	269.61
110.00	2 28 21	6228.80	7.58	294.63	209.22	123.40	4 12 10	5228.8	20.50	273.76

DIFFERENTIAL CORRECTIONS

TDE	-.4374	TRA	-.8823	TC3	.2301	BAU	.0822												
RDE	-.2645	RRA	-.0177	RC3	.3725	FAU	.09802												
FDE	.7023	FRA	3.4823	FC3	-6.0396	BSP	2960												
BDE	.5112	BRA	.8825	BC3	.4379	FSP	1058												

MID-COURSE EXECUTION ACCURACY

SGT	1696.4	SGR	492.4	SG3	663.9														
RRT	.4391	RRF	-.4992	RTF	-.8419														
SGB	1766.4	R23	-.1146	R13	-.8464														
SG1	1711.1	SG2	438.6	THA	7.78														

ORBIT DETERMINATION ACCURACY

ST	40.7	SR	20.2	SS	45.6														
CRT	.8340	CRS	.5250	CST	.9059														
LSA	61.5	MSA	19.6	SSA	1.2														
EL1	44.3	EL2	10.3	ALF	23.87														

LAUNCH DATE APR 24 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 412.857 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.647	GAL	-2.25	AZL	92.37	HCA	139.08	SMA	190.03	ECC	.21177	INC	2.3707
RP	207.42	LAP	-1.55	LOP	352.28	VP	24.110	GAP	11.06	AZP	88.21	TAL	347.08	TAP	126.16	RCA	149.79	APO	230.27
RC	81.730	GL	-21.33	GP	3.85	ZAL	118.08	ZAP	145.21	ETS	174.39	ZAE	173.83	ETE	74.35	ZAC	103.89	ETC	277.79

V1	29.616																		
V2	26.409																		
LVI	-21.61																		

PLANETOCENTRIC CONIC

C3	13.763	VHL	3.710	DLA	-29.93	RAL	344.18	RAD	6639.9	VEL	11.568	PTH	6.61	VHP	4.837	DPA	-13.64	RAP	319.48

ECC	1.2265																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 15 1	2423.86	-3.59	63.21	199.21	137.47	18 55 25	1423.9	14.72	47.28
60.00	19 38 30	2201.76	2.00	48.57	204.57	130.26	20 15 12	1201.8	17.73	30.03
70.00	21 31 46	1868.32	8.53	26.45	209.46	123.20	22 2 55	868.5	21.30	5.40
79.78	0 49 43	1259.25	19.74	346.52	215.61	112.96	1 10 42	259.3	27.47	321.76
79.78	0 49 43	1259.25	19.74	346.52	215.61	112.96	1 10 42	259.3	27.47	321.76
79.78	0 49 43	1259.25	19.74	346.52	215.61	112.96	1 10 42	259.3	27.47	321.76
110.00	2 35 9	6203.38	8.53	293.28	209.46	123.20	4 18 32	5203.4	21.30	272.22

DIFFERENTIAL CORRECTIONS

TDE	-.4297	TRA	-.8551	TC3	.2163	BAU	.0824												
RDE	-.2570	RRA	-.0268	RC3	.3921	FAU	.10282												
FDE	.7213	FRA	3.6471	FC3	-6.4674	BSP	2914												
BDE	.5007	BRA	.8555	BC3	.4478	FSP	1128												

MID-COURSE EXECUTION ACCURACY

SGT	1669.7	SGR	494.8	SG3	704.6														
RRT	.4700	RRF	-.5382	RTF	-.8281														
SGB	1741.5	R23	-.1314	R13	-.8437														
SG1	1687.0	SG2	432.2	THA	8.49														

ORBIT DETERMINATION ACCURACY

ST	40.3	SR	19.9	SS	47.0														
CRT	.8448	CRS	.5295	CST	.8996														
LSA	62.0	MSA	19.7	SSA	1.2														
EL1	43.9	EL2	9.8	ALF	23.87														

LAUNCH DATE APR 24 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 416.857 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.611	GAL	-2.21	AZL	92.40	HCA	140.34	SMA	189.39	ECC	.20904	INC	2.3977
RP	207.54	LAP	-1.53	LOP	353.54	VP	24.046	GAP	10.76	AZP	88.15	TAL	347.18	TAP	127.82	RCA	149.80	APO	228.99
RC	83.399	GL	-21.78	GP	4.06	ZAL	117.93	ZAP	143.69	ETS	174.40	ZAE	173.93	ETE	82.56	ZAC	104.13	ETC	277.75

V1	29.616																		
V2	26.395																		
LVI	-21.74																		

PLANETOCENTRIC CONIC

C3	13.504	VHL	3.675	DLA	-30.36	RAL	344.34	RAD	6639.8	VEL	11.557	PTH	6.60	VHP	4.703	DPA	-13.51	RAP	319.17

ECC	1.2222																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 18 7	2409.61	-2.87	62.61	199.33	137.51	18 58 16	1409.6	15.42	46.64
60.00	19 42 50	2184.20	2.77	47.73	204.74	130.22	20 19 14	1184.2	18.44	29.10
70.00	21 38 56	1842.59	9.49	25.06	209.76	122.96	22 9 39	842.6	22.10	3.82
78.48	0 40 34	1286.18	20.12	348.70	215.61	113.23	1 2 0	286.2	27.92	323.88
78.48	0 40 34	1286.18	20.12	348.70	215.61	113.23	1 2 0	286.2	27.92	323.88
78.48	0 40 34	1286.18	20.12	348.70	215.61	113.23	1 2 0	286.2	27.92	323.88
110.00	2 42 19	6177.45	9.49	291.89	209.76	122.96	4 25 16	5177.4	22.10	270.64

DIFFERENTIAL CORRECTIONS

TDE	-.4201	TRA	-.8241	TC3	.2036	BAU	.0831												
RDE	-.2496	RRA	-.0404	RC3	.4130	FAU	.10787												
FDE	.7399	FRA	3.8191	FC3	-6.9156	BSP	2834												
BDE	.4887	BRA	.8251	BC3	.4604	FSP	1198												

MID-COURSE EXECUTION ACCURACY

SGT	1633.6	SGR	498.9	SG3	747.2														
RRT	.5018	RRF	-.5783	RTF	-.8347														
SGB	1708.1	R23	-.1488	R13	-.8418														
SG1	1654.1	SG2	426.2	THA	9.34														

ORBIT DETERMINATION ACCURACY

ST	39.6	SR	19.5	SS	48.2														
CRT	.8564	CRS	.5353	CST	.8929														
LSA	62.3	MSA	19.8	SSA	1.2														
EL1	43.2	EL2	9.2	ALF	24.01														

LAUNCH DATE APR 24 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 9 1971

DISTANCE 420.875

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.578 GAL -2.17 AZL 92.43 HCA 141.59 SMA 188.81 ECC .20649 INC 2.4262 V1 29.616
RP 207.66 LAP -1.51 LOP 334.80 VP 23.985 GAP 10.47 AZP 88.10 TAL 347.27 TAP 128.86 RCA 149.82 APO 227.79 V2 26.381
RC 85.104 GL -22.23 GP 4.28 ZAL 117.80 ZAP 142.13 ETS 174.41 ZAE 173.89 ETE 91.60 ZAC 104.39 ETC 277.69 LVI -21.67

PLANETOCENTRIC CONIC

C3 13.273 VHL 3.643 DLA -30.78 RAL 344.51 RAD 6639.7 VEL 11.547 PTH 6.59 VHP 4.574 DPA -13.39 RAP 318.82 ECC 1.2184

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 21 18	2395.72	-2.17	62.03	199.49	137.54	19 1 13	1395.7	16.09	46.01
60.00	19 47 18	2166.88	3.53	46.90	204.96	130.17	20 23 25	1166.9	19.14	28.17
70.00	21 46 32	1816.03	10.47	23.63	210.12	122.70	22 16 48	816.0	22.91	2.17
77.30	0 32 38	1309.73	20.49	350.63	215.65	113.49	0 54 28	309.7	28.36	325.75
77.30	0 32 38	1309.73	20.49	350.63	215.65	113.49	0 54 28	309.7	28.36	325.75
77.30	0 32 38	1309.73	20.49	350.63	215.65	113.49	0 54 28	309.7	28.36	325.75
110.00	2 49 54	6150.89	10.47	290.46	210.12	122.70	4 32 25	5150.9	22.91	269.00

DIFFERENTIAL CORRECTIONS

TDE -.4161 TRA -.7970 TC3 .1685 BAU .0827
RDE -.2429 RRA -.0529 RC3 .4343 FAU .11287
FDE .7659 FRA 4.0050 FC3-7.3621 BSP 2812
BDE .4818 BRA .7987 BC3 .4658 FSP 1280

MID-COURSE EXECUTION ACCURACY

SGT 1603.8 SGR 505.4 SG3 791.8
RRT .5306 RRF -.6191 RTF -.8263
SGB 1681.5 R23 -.1744 R13 -.8353
SG1 1627.7 SG2 422.1 THA 10.18

ORBIT DETERMINATION ACCURACY

ST 39.4 SR 19.2 SS 49.7
CRT .8708 CRS .5457 CST .8853
LSA 63.1 MSA 20.0 SSA 1.2
EL1 42.9 EL2 8.6 ALF 24.00

LAUNCH DATE APR 24 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 11 1971

DISTANCE 424.909

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.546 GAL -2.13 AZL 92.46 HCA 142.85 SMA 188.26 ECC .20412 INC 2.4563 V1 29.616
RP 207.80 LAP -1.48 LOP 356.05 VP 23.925 GAP 10.18 AZP 88.04 TAL 347.35 TAP 130.20 RCA 149.83 APO 226.69 V2 26.365
RC 86.843 GL -22.68 GP 4.52 ZAL 117.66 ZAP 140.53 ETS 174.41 ZAE 173.67 ETE 100.96 ZAC 104.67 ETC 277.63 LVI -22.00

PLANETOCENTRIC CONIC

C3 13.066 VHL 3.615 DLA -31.21 RAL 344.70 RAD 6639.6 VEL 11.538 PTH 6.58 VHP 4.451 DPA -13.26 RAP 318.42 ECC 1.2190

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 24 34	2382.15	-1.49	61.46	199.68	137.56	19 4 17	1382.2	16.75	45.39
60.00	19 51 55	2149.73	4.28	46.08	205.23	130.11	20 27 45	1149.7	19.83	27.24
70.00	21 54 39	1788.55	11.48	22.14	210.55	122.39	22 24 27	788.6	23.72	.45
76.21	0 25 35	1330.92	20.85	352.39	215.74	113.77	0 47 46	330.9	28.80	327.46
76.21	0 25 35	1330.92	20.85	352.39	215.74	113.77	0 47 46	330.9	28.80	327.46
76.21	0 25 35	1330.92	20.85	352.39	215.74	113.77	0 47 46	330.9	28.80	327.46
110.00	2 58 1	6123.41	11.48	288.97	210.55	122.39	4 40 4	5123.4	23.72	267.28

DIFFERENTIAL CORRECTIONS

TDE -.4093 TRA -.7649 TC3 .1361 BAU .0834
RDE -.2363 RRA -.0659 RC3 .4573 FAU .11824
FDE .7899 FRA 4.1947 FC3-7.8341 BSP 2741
BDE .4726 BRA .7677 BC3 .4772 FSP 1360

MID-COURSE EXECUTION ACCURACY

SGT 1562.0 SGR 514.4 SG3 838.0
RRT .5585 RRF -.6597 RTF -.8178
SGB 1644.5 R23 -.2017 R13 -.8294
SG1 1590.2 SG2 419.1 THA 11.21

ORBIT DETERMINATION ACCURACY

ST 38.8 SR 18.8 SS 51.0
CRT .8855 CRS .5569 CST .8770
LSA 63.7 MSA 20.2 SSA 1.1
EL1 42.4 EL2 8.0 ALF 24.18

LAUNCH DATE APR 24 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 13 1971

DISTANCE 428.959

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.517 GAL -2.10 AZL 92.49 HCA 144.11 SMA 187.76 ECC .20192 INC 2.4882 V1 29.616
RP 207.94 LAP -1.46 LOP 357.31 VP 23.868 GAP 9.90 AZP 87.98 TAL 347.42 TAP 131.52 RCA 149.85 APO 225.67 V2 26.349
RC 88.616 GL -23.14 GP 4.77 ZAL 117.54 ZAP 138.89 ETS 174.42 ZAE 173.24 ETE 110.04 ZAC 104.97 ETC 277.56 LVI -22.14

PLANETOCENTRIC CONIC

C3 12.884 VHL 3.589 DLA -31.64 RAL 344.90 RAD 6639.5 VEL 11.531 PTH 6.58 VHP 4.333 DPA -13.13 RAP 317.98 ECC 1.2120

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 27 58	2368.90	-.83	60.91	199.92	137.57	19 7 26	1368.9	17.39	44.76
60.00	19 56 42	2132.74	5.03	45.26	205.54	130.04	20 32 15	1132.7	20.50	26.31
70.00	22 3 23	1759.82	12.52	20.57	211.05	122.04	22 32 43	759.8	24.54	358.63
75.19	0 19 18	1350.21	21.20	354.02	215.87	114.05	0 41 48	350.2	29.23	329.03
75.19	0 19 18	1350.21	21.20	354.02	215.87	114.05	0 41 48	350.2	29.23	329.03
75.19	0 19 18	1350.21	21.20	354.02	215.87	114.05	0 41 48	350.2	29.23	329.03
110.00	3 6 46	6094.67	12.52	287.39	211.05	122.04	4 48 20	5094.7	24.54	265.45

DIFFERENTIAL CORRECTIONS

TDE -.4025 TRA -.7314 TC3 .0958 BAU .0846
RDE -.2301 RRA -.0799 RC3 .4816 FAU .12370
FDE .8145 FRA 4.3950 FC3-8.3116 BSP 2666
BDE .4636 BRA .7358 BC3 .4910 FSP 1445

MID-COURSE EXECUTION ACCURACY

SGT 1515.9 SGR 526.1 SG3 886.2
RRT .5832 RRF -.6995 RTF -.8389
SGB 1604.7 R23 -.2337 R13 -.8221
SG1 1549.2 SG2 418.2 THA 12.36

ORBIT DETERMINATION ACCURACY

ST 38.1 SR 18.5 SS 52.4
CRT .9011 CRS .5700 CST .8677
LSA 64.2 MSA 20.4 SSA 1.1
EL1 41.8 EL2 7.3 ALF 24.41

LAUNCH DATE APR 24 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 15 1971

DISTANCE 433.022

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.490 GAL -2.08 AZL 92.52 HCA 145.36 SMA 187.29 ECC .19988 INC 2.5219 V1 29.616
RP 208.08 LAP -1.43 LOP 358.56 VP 23.811 GAP 9.63 AZP 87.92 TAL 347.47 TAP 132.83 RCA 149.86 APO 224.73 V2 26.332
RC 90.421 GL -23.61 GP 5.04 ZAL 117.43 ZAP 137.21 ETS 174.42 ZAE 172.62 ETE 118.33 ZAC 105.30 ETC 277.48 LVI -22.28

PLANETOCENTRIC CONIC

C3 12.726 VHL 3.567 DLA -32.07 RAL 345.12 RAD 6639.4 VEL 11.524 PTH 6.57 VHP 4.221 DPA -12.99 RAP 317.49 ECC 1.2094

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 31 28	2355.93	-.18	60.37	200.21	137.58	19 10 44	1355.9	18.01	44.17
60.00	20 1 41	2115.85	5.77	44.45	205.90	129.96	20 36 57	1115.8	21.17	25.37
70.00	22 12 57	1729.34	13.62	18.89	211.63	121.63	22 41 46	729.3	25.39	356.67
74.22	0 13 37	1368.13	21.54	355.54	216.04	114.35	0 36 25	368.1	29.66	330.50
74.22	0 13 37	1368.13	21.54	355.54	216.04	114.35	0 36 25	368.1	29.66	330.50
74.22	0 13 37	1368.13	21.54	355.54	216.04	114.35	0 36 25	368.1	29.66	330.50
110.00	3 16 19	6064.19	13.62	285.71	211.63	121.63	4 57 23	5064.2	25.39	263.49

DIFFERENTIAL CORRECTIONS

TDE -.3957 TRA -.6952 TC3 .0502 BAU .0868
RDE -.2241 RRA -.0947 RC3 .5076 FAU .12945
FDE .8393 FRA 4.6000 FC3-8.8062 BSP 2574
BDE .4547 BRA .7017 BC3 .5101 FSP 1532

MID-COURSE EXECUTION ACCURACY

SGT 1463.4 SGR 541.2 SG3 935.8
RRT .6039 RRF -.7380 RTF -.7931
SGB 1560.2 R23 -.2704 R13 -.8133
SG1 1502.6 SG2 420.1 THA 13.68

ORBIT DETERMINATION ACCURACY

ST 37.4 SR 18.2 SS 53.8
CRT .9176 CRS .5851 CST .8568
LSA 64.8 MSA 20.6 SSA 1.1
EL1 41.1 EL2 6.6 ALF 24.73

LAUNCH DATE APR 24 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 437.099 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.465	GAL	-2.05	AZL	92.56	HCA	146.61	SMA	186.86	ECC	.19798	INC	2.5579
RP	208.24	LAP	-1.41	LOP	359.81	VP	23.757	GAP	9.36	AZP	87.86	TAL	347.52	TAP	134.13	RCA	149.86	APO	223.85
RC	92.259	GL	-24.08	GP	5.34	ZAL	117.33	ZAP	135.48	ETS	174.42	ZAE	171.81	ETE	125.55	ZAC	105.65	ETC	277.39

V1	29.616																		
V2	26.313																		
LVI	-22.42																		

PLANETOCENTRIC CONIC

C3	12.590	VHL	3.548	DLA	-32.49	RAL	345.36	RAD	6639.4	VEL	11.518	PTH	6.57	VHP	4.115	DPA	-12.84	RAP	316.95

ECC	1.2072																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 35 6	2343.21	.46	59.84	200.54	137.57	19 14 10	1343.2	18.62	43.58
60.00	20 6 52	2098.99	6.50	43.63	206.32	129.86	20 41 51	1099.0	21.83	24.43
70.00	22 23 35	1696.31	14.79	17.05	212.32	121.14	22 51 51	696.3	26.27	354.51
73.29	0 8 27	1384.92	21.88	356.99	216.27	114.65	0 31 32	384.9	30.08	331.89
73.29	0 8 27	1384.92	21.88	356.99	216.27	114.65	0 31 32	384.9	30.08	331.89
73.29	0 8 27	1384.92	21.88	356.99	216.27	114.65	0 31 32	384.9	30.08	331.89
110.00	3 26 57	6031.17	14.79	283.87	212.32	121.14	5 7 28	5031.2	26.27	261.33

DIFFERENTIAL CORRECTIONS

TDE	-.3879	TRA	-.6551	TC3	.0026	BAU	.0902												
RDE	-.2184	RRA	-.1105	RC3	.5358	FAU	.13551												
FDE	.8644	FRA	4.8092	FC3	-9.3177	BSP	2450												
BDE	.4451	BRA	.6644	BC3	.5358	FSP	1616												

MID-COURSE EXECUTION ACCURACY

SGT	1401.9	SGR	560.0	SG3	986.8						
RRT	.6200	RRF	-.7744	RTF	-.7766						
SGB	1509.6	R23	-.3102	R13	-.8039						
SG1	1448.5	SG2	425.2	THA	15.26						

ORBIT DETERMINATION ACCURACY

ST	36.5	SR	17.9	SS	55.1						
CRT	.9344	CRS	.6024	CST	.8445						
LSA	65.3	MSA	20.7	SSA	1.1						
EL1	40.3	EL2	5.8	ALF	25.18						

LAUNCH DATE APR 24 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 441.188 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.442	GAL	-2.03	AZL	92.60	HCA	147.86	SMA	186.46	ECC	.19623	INC	2.5962
RP	208.41	LAP	-1.38	LOP	1.06	VP	23.704	GAP	9.10	AZP	87.80	TAL	347.55	TAP	135.41	RCA	149.87	APO	223.05
RC	94.128	GL	-24.57	GP	5.65	ZAL	117.24	ZAP	133.71	ETS	174.43	ZAE	170.82	ETE	131.65	ZAC	106.03	ETC	277.30

V1	29.616																		
V2	26.294																		
LVI	-22.57																		

PLANETOCENTRIC CONIC

C3	12.477	VHL	3.532	DLA	-32.92	RAL	345.63	RAD	6639.3	VEL	11.513	PTH	6.56	VHP	4.014	DPA	-12.68	RAP	316.36

ECC	1.2053																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 38 54	2330.70	1.09	59.31	200.91	137.57	19 17 45	1330.7	19.22	42.99
60.00	20 12 18	2082.09	7.24	42.81	206.79	129.75	20 47 0	1082.1	22.48	23.48
70.00	22 35 45	1659.36	16.08	14.96	213.13	120.55	23 3 24	659.4	27.22	352.05
72.39	0 3 42	1400.98	22.20	358.39	216.54	114.96	0 27 3	401.0	30.50	333.24
72.39	0 3 42	1400.98	22.20	358.39	216.54	114.96	0 27 3	401.0	30.50	333.24
72.39	0 3 42	1400.98	22.20	358.39	216.54	114.96	0 27 3	401.0	30.50	333.24
110.00	3 39 7	5994.21	16.08	281.78	213.13	120.55	5 19 1	4994.2	27.22	258.88

DIFFERENTIAL CORRECTIONS

TDE	-.3761	TRA	-.6089	TC3	-.0420	BAU	.0948												
RDE	-.2126	RRA	-.1270	RC3	.5665	FAU	.14194												
FDE	.8813	FRA	5.0160	FC3	-9.8489	BSP	2282												
BDE	.4320	BRA	.6220	BC3	.5681	FSP	1698												

MID-COURSE EXECUTION ACCURACY

SGT	1325.7	SGR	582.5	SG3	1038.3						
RRT	.6309	RRF	-.8080	RTF	-.7577						
SGB	1448.1	R23	-.3498	R13	-.7953						
SG1	1381.6	SG2	433.6	THA	17.24						

ORBIT DETERMINATION ACCURACY

ST	35.2	SR	17.6	SS	56.3						
CRT	.9504	CRS	.6193	CST	.8295						
LSA	65.5	MSA	20.9	SSA	1.0						
EL1	39.1	EL2	4.9	ALF	25.89						

LAUNCH DATE APR 24 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 445.286 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.420	GAL	-2.02	AZL	92.64	HCA	149.11	SMA	186.09	ECC	.19462	INC	2.6372
RP	208.58	LAP	-1.35	LOP	2.31	VP	23.652	GAP	8.84	AZP	87.74	TAL	347.57	TAP	136.68	RCA	149.88	APO	222.31
RC	96.027	GL	-25.06	GP	5.99	ZAL	117.15	ZAP	131.90	ETS	174.44	ZAE	169.68	ETE	136.69	ZAC	106.44	ETC	277.19

V1	29.616																		
V2	26.274																		
LVI	-22.73																		

PLANETOCENTRIC CONIC

C3	12.386	VHL	3.519	DLA	-33.36	RAL	345.92	RAD	6639.3	VEL	11.509	PTH	6.56	VHP	3.918	DPA	-12.51	RAP	315.73

ECC	1.2036																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 42 51	2318.44	1.71	58.80	201.34	137.55	19 21 30	1318.4	19.80	42.41
60.00	20 18 0	2065.18	7.98	41.99	207.32	129.64	20 52 25	1065.2	23.13	22.52
70.00	22 50 18	1616.02	17.56	12.48	214.11	119.77	23 17 14	616.0	28.26	349.12
71.53	23 55 27	1416.30	22.52	359.73	216.86	115.28	24 19 3	416.3	30.92	334.53
71.53	23 55 27	1416.30	22.52	359.73	216.86	115.28	24 19 3	416.3	30.92	334.53
71.53	23 55 27	1416.30	22.52	359.73	216.86	115.28	24 19 3	416.3	30.92	334.53
110.00	3 53 41	5950.86	17.56	279.30	214.11	119.77	5 32 52	4950.9	28.26	255.94

DIFFERENTIAL CORRECTIONS

TDE	-.3777	TRA	-.5731	TC3	-.1346	BAU	.1011												
RDE	-.2084	RRA	-.1460	RC3	.5935	FAU	.14731												
FDE	.9281	FRA	5.2580	FC3	-10.2964	BSP	2259												
BDE	.4314	BRA	.5914	BC3	.6105	FSP	1809												

MID-COURSE EXECUTION ACCURACY

SGT	1278.6	SGR	609.7	SG3	1092.3						
RRT	.6244	RRF	-.8389	RTF	-.[illegible]32						
SGB	1416.5	R23	-.4099	R13	-.7752						
SG1	1341.9	SG2	453.8	THA	18.81						

ORBIT DETERMINATION ACCURACY

ST	35.0	SR	17.5	SS	58.1						
CRT	.9675	CRS	.6473	CST	.8148						
LSA	66.7	MSA	21.2	SSA	1.0						
EL1	38.9	EL2	4.0	ALF	26.10						

LAUNCH DATE APR 24 1971 FLIGHT TIME 182.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 449.396 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.400	GAL	-2.00	AZL	92.68	HCA	150.35	SMA	185.78	ECC	.19313	INC	2.6813
RP	208.76	LAP	-1.33	LOP	3.55	VP	23.602	GAP	8.59	AZP	87.67	TAL	347.58	TAP	137.93	RCA	149.88	APO	221.63
RC	97.955	GL	-25.57	GP	6.36	ZAL	117.08	ZAP	130.05	ETS	174.45	ZAE	168.41	ETE	140.83	ZAC	106.87	ETC	277.07

V1	29.616																		
V2	26.254																		
LVI	-22.90																		

PLANETOCENTRIC CONIC

C3	12.316	VHL	3.509	DLA	-33.79	RAL	346.24	RAD	6639.2	VEL	11.506	PTH	6.55	VHP	3.628	DPA	-12.33	RAP	315.04

ECC	1.2027																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 47 1	2306.28	2.32	58.29	201.82	137.53	19 25 27	1306.3	20.38	41.83
60.00	20 24 2	2048.01	8.72	41.15	207.92	129.50	20 58 10	1048.0	23.78	21.53
70.00	23 9 51	1558.37	19.48	9.10	215.40	118.63	23 35 49	558.4	29.54	345.12
70.68	23 51 28	1431.21	22.83	1.04	217.24	115.62	24 15 19	431.2	31.34	335.80
70.68	23 51 28	1431.21	22.83	1.04	217.24	115.62	24 15 19	431.2	31.34	335.80
70.68	23 51 28	1431.21	22.83	1.04	217.24	115.62	24 15 19	431.2	31.34	335.80
110.00	4 13 13	5893.23	19.48	275.93	215.40	118.63	5 51 26	4893.2	29.54	251.94

DIFFERENTIAL CORRECTIONS

TDE	-.3717	TRA	-.5268	TC3	-.2101	BAU	.1092												
RDE	-.2038	RRA	-.1657	RC3	.6288	FAU	.15351												
FDE	.9596	FRA	5.4868	FC3	-10.7904	BSP	2141												
BDE	.4239	BRA	.5522	BC3	.6630	FSP	1905												

MID-COURSE EXECUTION ACCURACY

SGT	1208.7	SGR	641.5	SG3	1146.2						
RRT	.6110	RRF	-.8664	RTF	-.6853						
SGB	1368.4	R23	-.4623	R13	-.7588						
SG1	1281.9	SG2	478.8	THA	21.04						

ORBIT DETERMINATION ACCURACY

ST	34.1	SR	17.4	SS	59.5						
CRT	.9815	CRS	.6724	CST	.7960						
LSA	67.4	MSA	21.5	SSA	1.0						
EL1	38.1	EL2	3.0	ALF	26.73						

LAUNCH DATE APR 24 1971 FLIGHT TIME 184.00 ARRIVAL DATE OCT 25 1971

DISTANCE 453.515

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.382 GAL -1.99 AZL 92.73 HCA 151.59 SMA 185.45 ECC .19177 INC 2.7287 V1 29.616
RP 208.94 LAP -1.30 LOP 4.80 VP 23.552 GAP 8.34 AZP 87.60 TAL 347.87 TAP 139.16 RCA 149.88 APO 221.01 V2 26.232
RC 99.910 GL -26.10 GP 6.75 ZAL 117.02 ZAP 128.16 ETS 174.46 ZAE 167.02 ETE 144.22 ZAC 107.35 ETC 276.95 LVI -23.08

PLANETOCENTRIC CONIC

C3 12.269 VHL 3.503 DLA -34.24 RAL 346.58 RAD 6639.2 VEL 11.504 PTH 6.58 VHP 3.743 DPA -12.12 RAP 314.31 ECC 1.2019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 51 23	2294.20	2.93	57.79	202.36	137.51	19 29 37	1294.2	20.95	41.24
60.00	20 30 26	2030.48	9.48	40.29	208.60	129.36	21 4 17	1030.5	24.43	20.51
69.84	23 47 47	1445.82	23.13	2.34	217.68	115.97	24 11 53	445.8	31.75	337.06
69.84	23 47 47	1445.82	23.13	2.34	217.68	115.97	24 11 53	445.8	31.75	337.06
69.84	23 47 47	1445.82	23.13	2.34	217.68	115.97	24 11 53	445.8	31.75	337.06
69.84	23 47 47	1445.82	23.13	2.34	217.68	115.97	24 11 53	445.8	31.75	337.06
69.84	23 47 47	1445.82	23.13	2.34	217.68	115.97	24 11 53	445.8	31.75	337.06

DIFFERENTIAL CORRECTIONS

TDE -.3664 TRA -.4777 TC3 -.2946 BAU .1191
RDE -.1998 RRA -.1871 RC3 .6640 FAU .15963
FDE .9945 FRA 5.7193 FC-11.2639 BSP 2022
BDE .4173 BRA .5130 BC3 .7264 FSP 2001

MID-COURSE EXECUTION ACCURACY

SGT 1138.1 SGR 678.3 SG3 1200.2
RRT .5826 RRF -.8904 RTF -.6352
SGB 1324.9 R23 -.5150 R13 -.7404
SG1 1221.2 SG2 513.8 THA 23.56

ORBIT DETERMINATION ACCURACY

ST 33.2 SR 17.3 SS 61.0
CRT .9922 CRS .6999 CST .7742
LSA 68.1 MSA 21.8 SSA .9
EL1 37.3 EL2 1.9 ALF 27.42

LAUNCH DATE APR 24 1971 FLIGHT TIME 186.00 ARRIVAL DATE OCT 27 1971

DISTANCE 457.642

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.365 GAL -1.98 AZL 92.78 HCA 152.83 SMA 185.17 ECC .19053 INC 2.7801 V1 29.616
RP 209.14 LAP -1.27 LOP 6.04 VP 23.504 GAP 8.10 AZP 87.53 TAL 347.55 TAP 140.38 RCA 149.89 APO 220.44 V2 26.209
RC 101.892 GL -26.64 GP 7.18 ZAL 116.96 ZAP 126.23 ETS 174.48 ZAE 165.52 ETE 146.98 ZAC 107.85 ETC 276.81 LVI -23.28

PLANETOCENTRIC CONIC

C3 12.243 VHL 3.499 DLA -34.69 RAL 346.96 RAD 6639.2 VEL 11.503 PTH 6.55 VHP 3.664 DPA -11.89 RAP 313.54 ECC 1.2015

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 56 1	2282.13	3.53	57.28	202.97	137.48	19 34 3	1282.1	21.51	40.65
60.00	20 37 18	2012.43	10.26	39.40	209.35	129.19	21 10 50	1012.4	25.10	19.45
69.01	23 44 23	1460.24	23.43	3.63	218.18	116.35	24 8 43	460.2	32.18	338.31
69.01	23 44 23	1460.24	23.43	3.63	218.18	116.35	24 8 43	460.2	32.18	338.31
69.01	23 44 23	1460.24	23.43	3.63	218.18	116.35	24 8 43	460.2	32.18	338.31
69.01	23 44 23	1460.24	23.43	3.63	218.18	116.35	24 8 43	460.2	32.18	338.31
69.01	23 44 23	1460.24	23.43	3.63	218.18	116.35	24 8 43	460.2	32.18	338.31

DIFFERENTIAL CORRECTIONS

TDE -.3605 TRA -.4252 TC3 -.3844 BAU .1309
RDE -.1962 RRA -.2102 RC3 .7012 FAU .16569
FDE 1.0309 FRA 5.9544 FC-11.7164 BSP 1903
BDE .4104 BRA .4744 BC3 .7997 FSP 2099

MID-COURSE EXECUTION ACCURACY

SGT 1066.8 SGR 720.6 SG3 1254.1
RRT .5361 RRF -.9111 RTF -.5705
SGB 1287.3 R23 -.5632 R13 -.7227
SG1 1159.3 SG2 559.7 THA 26.55

ORBIT DETERMINATION ACCURACY

ST 32.1 SR 17.3 SS 62.4
CRT .9979 CRS .7288 CST .7487
LSA 68.9 MSA 22.1 SSA .9
EL1 36.5 EL2 1.0 ALF 28.22

LAUNCH DATE APR 24 1971 FLIGHT TIME 188.00 ARRIVAL DATE OCT 29 1971

DISTANCE 461.778

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.349 GAL -1.98 AZL 92.84 HCA 154.07 SMA 184.91 ECC .18940 INC 2.8358 V1 29.616
RP 209.34 LAP -1.24 LOP 7.28 VP 23.456 GAP 7.87 AZP 87.45 TAL 347.51 TAP 141.59 RCA 149.89 APO 219.93 V2 26.186
RC 103.900 GL -27.21 GP 7.64 ZAL 116.90 ZAP 124.26 ETS 174.51 ZAE 163.92 ETE 149.25 ZAC 108.40 ETC 276.67 LVI -23.49

PLANETOCENTRIC CONIC

C3 12.239 VHL 3.498 DLA -35.16 RAL 347.36 RAD 6639.2 VEL 11.503 PTH 6.55 VHP 3.590 DPA -11.64 RAP 312.72 ECC 1.2014

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 0 57	2269.94	4.14	56.77	203.64	137.44	19 38 47	1269.9	22.08	40.06
60.00	20 44 42	1993.60	11.07	38.47	210.19	129.00	21 17 56	993.6	25.78	18.33
68.17	23 41 11	1474.76	23.73	4.94	218.74	116.75	24 5 45	474.8	32.60	339.58
68.17	23 41 11	1474.76	23.73	4.94	218.74	116.75	24 5 45	474.8	32.60	339.58
68.17	23 41 11	1474.76	23.73	4.94	218.74	116.75	24 5 45	474.8	32.60	339.58
68.17	23 41 11	1474.76	23.73	4.94	218.74	116.75	24 5 45	474.8	32.60	339.58
68.17	23 41 11	1474.76	23.73	4.94	218.74	116.75	24 5 45	474.8	32.60	339.58

DIFFERENTIAL CORRECTIONS

TDE -.3503 TRA -.3653 TC3 -.4658 BAU .1436
RDE -.1922 RRA -.2345 RC3 .7437 FAU .17249
FDE 1.0518 FRA 6.1738 FC-12.2012 BSP 1746
BDE .3996 BRA .4341 BC3 .8775 FSP 2177

MID-COURSE EXECUTION ACCURACY

SGT 985.4 SGR 768.5 SG3 1307.0
RRT .4686 RRF -.9286 RTF -.6269
SGB 1249.6 R23 -.5950 R13 -.7154
SG1 1087.8 SG2 615.0 THA 30.90

ORBIT DETERMINATION ACCURACY

ST 30.7 SR 17.3 SS 63.6
CRT .9966 CRS .7556 CST .7190
LSA 69.2 MSA 22.3 SSA .8
EL1 35.2 EL2 1.2 ALF 29.29

LAUNCH DATE APR 24 1971 FLIGHT TIME 190.00 ARRIVAL DATE OCT 31 1971

DISTANCE 465.920

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.335 GAL -1.98 AZL 92.90 HCA 155.31 SMA 184.67 ECC .18838 INC 2.8965 V1 29.616
RP 209.55 LAP -1.21 LOP 8.51 VP 23.410 GAP 7.64 AZP 87.37 TAL 347.46 TAP 142.77 RCA 149.88 APO 219.46 V2 26.162
RC 105.933 GL -27.80 GP 8.15 ZAL 116.86 ZAP 122.26 ETS 174.55 ZAE 162.24 ETE 151.09 ZAC 108.98 ETC 276.52 LVI -23.73

PLANETOCENTRIC CONIC

C3 12.260 VHL 3.501 DLA -35.65 RAL 347.81 RAD 6639.2 VEL 11.504 PTH 6.55 VHP 3.522 DPA -11.35 RAP 311.85 ECC 1.2018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 6 13	2257.65	4.76	56.25	204.40	137.39	19 43 51	1257.6	22.66	39.45
60.00	20 52 46	1973.83	11.91	37.46	211.15	128.79	21 25 40	973.8	26.49	17.14
67.33	23 38 15	1489.27	24.02	6.25	219.38	117.17	24 3 4	489.3	33.04	340.86
67.33	23 38 15	1489.27	24.02	6.25	219.38	117.17	24 3 4	489.3	33.04	340.86
67.33	23 38 15	1489.27	24.02	6.25	219.38	117.17	24 3 4	489.3	33.04	340.86
67.33	23 38 15	1489.27	24.02	6.25	219.38	117.17	24 3 4	489.3	33.04	340.86
67.33	23 38 15	1489.27	24.02	6.25	219.38	117.17	24 3 4	489.3	33.04	340.86

DIFFERENTIAL CORRECTIONS

TDE -.3506 TRA -.3122 TC3 -.5878 BAU .1605
RDE -.1904 RRA -.2627 RC3 .7830 FAU .17759
FDE 1.1077 FRA 6.4245 FC-12.5407 BSP 1721
BDE .3989 BRA .4080 BC3 .9791 FSP 2289

MID-COURSE EXECUTION ACCURACY

SGT 945.3 SGR 823.2 SG3 1360.0
RRT .3670 RRF -.9434 RTF -.3734
SGB 1253.5 R23 -.6324 R13 -.7007
SG1 1044.5 SG2 693.1 THA 34.64

ORBIT DETERMINATION ACCURACY

ST 30.2 SR 17.5 SS 65.3
CRT .9860 CRS .7888 CST .6823
LSA 70.4 MSA 22.8 SSA .8
EL1 34.8 EL2 2.5 ALF 29.92

LAUNCH DATE APR 24 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 470.069 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.322	GAL	-1.98	AZL	92.98	HCA	156.54	SMA	184.46	ECC	.18746	INC	2.9633	V1	29.816
RP	209.76	LAP	-1.18	LOP	9.75	VP	23.364	GAP	7.41	AZP	87.28	TAL	347.40	TAP	143.94	RCA	149.88	APO	219.04	V2	26.137
RC	107.990	GL	-28.43	GP	8.70	ZAL	116.82	ZAP	120.23	ETS	174.60	ZAE	160.47	ETE	132.60	ZAC	109.62	ETC	276.36	LVI	-23.99

PLANETOCENTRIC CONIC

C3	12.304	VHL	3.508	DLA	-36.15	RAL	348.30	RAD	6639.2	VEL	11.506	PTH	6.55	VHP	3.459	DPA	-11.02	RAP	310.95	ECC	1.2025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 11 54	2245.00	5.39	55.72	205.24	137.34	19 49 19	1245.0	23.24	38.81
60.00	21 1 40	1952.55	12.82	36.41	212.22	128.54	21 34 12	952.5	27.25	15.84
66.48	23 35 26	1504.19	24.31	7.61	220.09	117.63	24 0 31	504.2	33.48	342.19
66.48	23 35 26	1504.19	24.31	7.61	220.09	117.63	24 0 31	504.2	33.48	342.19
66.48	23 35 26	1504.19	24.31	7.61	220.09	117.63	24 0 31	504.2	33.48	342.19
66.48	23 35 26	1504.19	24.31	7.61	220.09	117.63	24 0 31	504.2	33.48	342.19
66.48	23 35 26	1504.19	24.31	7.61	220.09	117.63	24 0 31	504.2	33.48	342.19

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3440	TRA	-.2484	TC3	-.6903	BAU	.1775	SGT	895.9	SGR	884.4	SG3	1410.5	ST	29.1	SR	17.8	SS	66.6
RDE	-.1882	RRA	-.2922	RC3	.8291	FAU	.18383	RRT	.2374	RRF	-.9555	RTF	-.2337	CRT	.9634	CRS	.8181	CST	.6384
FDE	1.1452	FRA	6.6482	FC-12.9200		BSP	1660	SGB	1258.9	R23	-.6041	R13	-.7403	LSA	71.1	MSA	23.1	SSA	.8
BDE	.3921	BRA	.3835	BC3	1.0788	FSP	2376	SG1	990.4	SG2	777.2	THA	43.45	EL1	33.8	EL2	4.1	ALF	30.97

LAUNCH DATE APR 24 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 474.224 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.311	GAL	-1.98	AZL	93.04	HCA	157.77	SMA	184.27	ECC	.18663	INC	3.0366	V1	29.816
RP	209.99	LAP	-1.15	LOP	10.98	VP	23.319	GAP	7.19	AZP	87.19	TAL	347.32	TAP	145.09	RCA	149.88	APO	218.66	V2	26.111
RC	110.071	GL	-29.10	GP	9.30	ZAL	116.77	ZAP	118.16	ETS	174.65	ZAE	158.63	ETE	153.83	ZAC	110.31	ETC	276.20	LVI	-24.29

PLANETOCENTRIC CONIC

C3	12.376	VHL	3.518	DLA	-36.68	RAL	348.83	RAD	6639.2	VEL	11.509	PTH	6.56	VHP	3.402	DPA	-10.64	RAP	310.00	ECC	1.2037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 18 5	2231.91	6.05	55.17	206.18	137.28	19 55 17	1231.9	23.84	38.15
60.00	21 11 37	1929.30	13.80	35.23	213.44	128.25	21 43 46	929.3	28.05	14.40
65.59	23 32 51	1519.40	24.60	9.00	220.90	118.12	23 58 10	519.4	33.94	343.55
65.59	23 32 51	1519.40	24.60	9.00	220.90	118.12	23 58 10	519.4	33.94	343.55
65.59	23 32 51	1519.40	24.60	9.00	220.90	118.12	23 58 10	519.4	33.94	343.55
65.59	23 32 51	1519.40	24.60	9.00	220.90	118.12	23 58 10	519.4	33.94	343.55
65.59	23 32 51	1519.40	24.60	9.00	220.90	118.12	23 58 10	519.4	33.94	343.55

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3407	TRA	-.1846	TC3	-.8081	BAU	.1972	SGT	878.5	SGR	953.4	SG3	1459.5	ST	28.3	SR	18.2	SS	68.0
RDE	-.1872	RRA	-.3252	RC3	.8761	FAU	.18895	RRT	.0792	RRF	-.9654	RTF	-.0692	CRT	.9269	CRS	.8473	CST	.5890
FDE	1.1918	FRA	6.8778	FC-13.2177		BSP	1671	SGB	1296.5	R23	-.3343	R13	-.9057	LSA	72.1	MSA	23.6	SSA	.7
BDE	.3887	BRA	.3739	BC3	1.1919	FSP	2467	SG1	967.4	SG2	863.1	THA	67.99	EL1	33.2	EL2	5.8	ALF	31.88

LAUNCH DATE APR 24 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 478.383 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.300	GAL	-1.99	AZL	93.12	HCA	159.00	SMA	184.09	ECC	.18590	INC	3.1180	V1	29.816
RP	210.22	LAP	-1.12	LOP	12.20	VP	23.275	GAP	6.97	AZP	87.09	TAL	347.23	TAP	146.23	RCA	149.87	APO	218.32	V2	26.085
RC	112.177	GL	-29.81	GP	9.96	ZAL	116.73	ZAP	116.07	ETS	174.73	ZAE	156.72	ETE	154.81	ZAC	111.06	ETC	276.03	LVI	-24.63

PLANETOCENTRIC CONIC

C3	12.477	VHL	3.532	DLA	-37.25	RAL	349.41	RAD	6639.3	VEL	11.513	PTH	6.56	VHP	3.351	DPA	-10.21	RAP	309.02	ECC	1.2053

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 24 51	2218.18	6.73	54.59	207.24	137.21	20 1 49	1218.2	24.47	37.45
60.00	21 22 58	1903.22	14.89	33.90	214.84	127.89	21 54 42	903.2	28.93	12.75
64.68	23 30 24	1535.17	24.89	10.45	221.80	118.66	23 55 59	535.2	34.42	344.99
64.68	23 30 24	1535.17	24.89	10.45	221.80	118.66	23 55 59	535.2	34.42	344.99
64.68	23 30 24	1535.17	24.89	10.45	221.80	118.66	23 55 59	535.2	34.42	344.99
64.68	23 30 24	1535.17	24.89	10.45	221.80	118.66	23 55 59	535.2	34.42	344.99
64.68	23 30 24	1535.17	24.89	10.45	221.80	118.66	23 55 59	535.2	34.42	344.99

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3373	TRA	-.1162	TC3	-.9271	BAU	.2185	SGT	885.7	SGR	1030.4	SG3	1505.2	ST	27.6	SR	18.8	SS	69.4
RDE	-.1872	RRA	-.3613	RC3	.9255	FAU	.19384	RRT	-.0961	RRF	-.9734	RTF	.1997	CRT	.8742	CRS	.8750	CST	.5322
FDE	1.2461	FRA	7.0966	FC-13.4502		BSP	1738	SGB	1358.7	R23	.2131	R13	-.9499	LSA	73.2	MSA	24.0	SSA	.7
BDE	.3858	BRA	.3795	BC3	1.3100	FSP	2556	SG1	1042.7	SG2	871.2	THA	106.15	EL1	32.5	EL2	7.8	ALF	32.89

LAUNCH DATE APR 24 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 482.548 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.291	GAL	-2.00	AZL	93.21	HCA	160.22	SMA	183.94	ECC	.18526	INC	3.2087	V1	29.816
RP	210.45	LAP	-1.09	LOP	13.43	VP	23.232	GAP	6.75	AZP	86.98	TAL	347.13	TAP	147.35	RCA	149.86	APO	218.02	V2	26.058
RC	114.307	GL	-30.58	GP	10.68	ZAL	116.67	ZAP	113.96	ETS	174.82	ZAE	154.74	ETE	155.58	ZAC	111.87	ETC	275.86	LVI	-25.02

PLANETOCENTRIC CONIC

C3	12.610	VHL	3.551	DLA	-37.85	RAL	350.06	RAD	6639.4	VEL	11.519	PTH	6.57	VHP	3.306	DPA	-9.72	RAP	308.00	ECC	1.2075

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 32 20	2203.55	7.46	53.97	208.43	137.13	20 9 4	1203.5	25.14	36.70
60.00	21 36 15	1872.96	16.15	32.33	216.48	127.44	22 7 28	873.0	29.93	10.81
63.72	23 28 4	1551.74	25.18	11.98	222.81	119.25	23 53 56	551.7	34.92	346.51
63.72	23 28 4	1551.74	25.18	11.98	222.81	119.25	23 53 56	551.7	34.92	346.51
63.72	23 28 4	1551.74	25.18	11.98	222.81	119.25	23 53 56	551.7	34.92	346.51
63.72	23 28 4	1551.74	25.18	11.98	222.81	119.25	23 53 56	551.7	34.92	346.51
63.72	23 28 4	1551.74	25.18	11.98	222.81	119.25	23 53 56	551.7	34.92	346.51

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3334	TRA	-.0439	TC3	-1.0459	BAU	.2416	SGT	921.5	SGR	1116.3	SG3	1546.9	ST	27.0	SR	19.5	SS	70.6
RDE	-.1877	RRA	-.4007	RC3	.9796	FAU	.19874	RRT	-.2726	RRF	-.9797	RTF	.2873	CRT	.8031	CRS	.8993	CST	.4634
FDE	1.2912	FRA	7.2963	FC-13.6451		BSP	1859	SGB	1447.5	R23	.3186	R13	-.9267	LSA	74.1	MSA	24.5	SSA	.6
BDE	.3826	BRA	.4031	BC3	1.4330	FSP	2629	SG1	1179.5	SG2	839.1	THA	117.35	EL1	31.8	EL2	9.9	ALF	33.89

LAUNCH DATE APR 24 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 10 1971

DISTANCE 486.717 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.283 GAL -2.02 AZL 93.31 HCA 161.45 SMA 183.80 ECC .18471 INC 3.3108 V1 29.616
RP 210.70 LAP -1.03 LOP 14.65 VP 23.189 GAP 6.54 AZP 86.86 TAL 347.01 TAP 148.45 RCA 149.85 APO 217.75 V2 26.030
RC 116.460 GL -31.42 GP 11.49 ZAL 116.61 ZAP 111.83 ETS 174.93 ZAE 152.69 ETE 156.17 ZAC 112.77 ETC 275.68 LVI -25.48

PLANETOCENTRIC CONIC

C3 12.780 VHL 3.575 DLA -38.50 RAL 350.77 RAD 6639.4 VEL 11.526 PTH 6.57 VHP 3.267 DPA -9.14 RAP 306.95 ECC 1.2103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 40 43	2187.71	8.25	53.29	209.79	137.03	20 17 11	1187.7	29.86	35.87
60.00	21 52 24	1836.10	17.67	30.40	218.44	126.83	22 23 1	836.1	31.09	8.38
62.70	23 25 52	1569.18	25.48	13.60	223.96	119.91	23 52 1	569.2	35.45	348.13
62.70	23 25 52	1569.18	25.48	13.60	223.96	119.91	23 52 1	569.2	35.45	348.13
62.70	23 25 52	1569.18	25.48	13.60	223.96	119.91	23 52 1	569.2	35.45	348.13
62.70	23 25 52	1569.18	25.48	13.60	223.96	119.91	23 52 1	569.2	35.45	348.13
62.70	23 25 52	1569.18	25.48	13.60	223.96	119.91	23 52 1	569.2	35.45	348.13

DIFFERENTIAL CORRECTIONS

TDE -.3297 TRA .0325 TC3-1.1655 BAU .2664
RDE -.1898 RRA -.4445 RC3 1.0354 FAU .20282
FDE 1.3466 FRA 7.4831 FC-13.7398 BSP 2050
BDE .3805 BRA .4457 BC3 1.5590 FSP 2700

MID-COURSE EXECUTION ACCURACY

SGT 989.0 SGR 1212.2 SG3 1583.9
RRT -.4310 RRF -.9847 RTF .4449
SGB 1564.5 R23 .3291 R13 -.9284
SG1 1340.1 SG2 807.2 THA 122.29

ORBIT DETERMINATION ACCURACY

ST 26.5 SR 20.5 SS 71.8
CRT .7139 CRS .9212 CST .3866
LSA 75.2 MSA 25.0 SSA .6
EL1 31.2 EL2 12.2 ALF 34.99

LAUNCH DATE APR 24 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 12 1971

DISTANCE 490.889 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.275 GAL -2.03 AZL 93.43 HCA 162.67 SMA 183.68 ECC .18423 INC 3.4264 V1 29.616
RP 210.95 LAP -1.02 LOP 15.87 VP 23.146 GAP 6.34 AZP 86.73 TAL 346.87 TAP 149.54 RCA 149.84 APO 217.52 V2 26.001
RC 118.637 GL -32.33 GP 12.39 ZAL 116.53 ZAP 109.69 ETS 175.06 ZAE 150.59 ETE 156.60 ZAC 113.75 ETC 275.50 LVI -26.01

PLANETOCENTRIC CONIC

C3 12.993 VHL 3.605 DLA -39.22 RAL 351.56 RAD 6639.6 VEL 11.535 PTH 6.58 VHP 3.234 DPA -8.47 RAP 305.87 ECC 1.2138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 50 13	2170.26	9.12	52.54	211.35	136.90	20 26 23	1170.3	26.64	34.95
60.00	22 13 28	1787.25	19.64	27.77	220.89	125.93	22 43 16	787.2	32.56	5.07
61.61	23 23 47	1587.73	25.78	15.34	225.26	120.64	23 50 15	587.7	36.02	349.88
61.61	23 23 47	1587.73	25.78	15.34	225.26	120.64	23 50 15	587.7	36.02	349.88
61.61	23 23 47	1587.73	25.78	15.34	225.26	120.64	23 50 15	587.7	36.02	349.88
61.61	23 23 47	1587.73	25.78	15.34	225.26	120.64	23 50 15	587.7	36.02	349.88
61.61	23 23 47	1587.73	25.78	15.34	225.26	120.64	23 50 15	587.7	36.02	349.88

DIFFERENTIAL CORRECTIONS

TDE -.3271 TRA .1125 TC3-1.2858 BAU .2932
RDE -.1937 RRA -.4931 RC3 1.0936 FAU .20617
FDE 1.4088 FRA 7.6470 FC-13.7376 BSP 2297
BDE .3802 BRA .5058 BC3 1.6880 FSP 2757

MID-COURSE EXECUTION ACCURACY

SGT 1087.6 SGR 1319.0 SG3 1614.7
RRT -.5605 RRF -.9886 RTF .5725
SGB 1709.6 R23 .3188 R13 -.9361
SG1 1520.6 SG2 781.3 THA 125.45

ORBIT DETERMINATION ACCURACY

ST 26.3 SR 21.6 SS 72.9
CRT .6086 CRS .9401 CST .3028
LSA 76.3 MSA 25.6 SSA .5
EL1 30.7 EL2 14.7 ALF 36.14

LAUNCH DATE APR 24 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 14 1971

DISTANCE 495.064 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.269 GAL -2.05 AZL 93.56 HCA 163.88 SMA 183.58 ECC .18384 INC 3.5587 V1 29.616
RP 211.20 LAP -.99 LOP 17.09 VP 23.105 GAP 6.13 AZP 86.58 TAL 346.73 TAP 150.61 RCA 149.83 APO 217.32 V2 25.972
RC 120.836 GL -33.35 GP 13.40 ZAL 116.42 ZAP 107.54 ETS 175.22 ZAE 148.42 ETE 156.87 ZAC 114.85 ETC 275.32 LVI -26.63

PLANETOCENTRIC CONIC

C3 13.258 VHL 3.641 DLA -40.01 RAL 352.44 RAD 6639.7 VEL 11.547 PTH 6.59 VHP 3.209 DPA -7.69 RAP 304.76 ECC 1.2182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 1 10	2150.62	10.10	51.70	213.17	136.75	20 37 0	1150.6	27.51	33.89
60.00	22 47 5	1705.55	22.84	23.23	224.43	124.16	23 15 30	705.5	34.78	359.28
60.43	23 21 51	1607.61	26.09	17.23	226.74	121.48	23 48 39	607.6	36.64	351.79
60.43	23 21 51	1607.61	26.09	17.23	226.74	121.48	23 48 39	607.6	36.64	351.79
60.43	23 21 51	1607.61	26.09	17.23	226.74	121.48	23 48 39	607.6	36.64	351.79
60.43	23 21 51	1607.61	26.09	17.23	226.74	121.48	23 48 39	607.6	36.64	351.79
60.43	23 21 51	1607.61	26.09	17.23	226.74	121.48	23 48 39	607.6	36.64	351.79

DIFFERENTIAL CORRECTIONS

TDE -.3241 TRA .1967 TC3-1.3990 BAU .3217
RDE -.1994 RRA -.5474 RC3 1.1566 FAU .20918
FDE 1.4720 FRA 7.7858 FC-13.6591 BSP 2602
BDE .3806 BRA .5817 BC3 1.8152 FSP 2806

MID-COURSE EXECUTION ACCURACY

SGT 1208.9 SGR 1439.6 SG3 1639.6
RRT -.6622 RRF -.9916 RTF .6120
SGB 1879.9 R23 .2991 R13 -.9457
SG1 1720.3 SG2 758.0 THA 127.57

ORBIT DETERMINATION ACCURACY

ST 26.3 SR 23.1 SS 74.0
CRT .4883 CRS .9956 CST .2108
LSA 77.5 MSA 26.2 SSA .5
EL1 30.3 EL2 17.5 ALF 37.56

LAUNCH DATE APR 24 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 16 1971

DISTANCE 499.242 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.263 GAL -2.07 AZL 93.71 HCA 165.10 SMA 183.49 ECC .18351 INC 3.7115 V1 29.616
RP 211.46 LAP -.95 LOP 18.30 VP 23.063 GAP 5.93 AZP 86.41 TAL 346.57 TAP 151.66 RCA 149.81 APO 217.16 V2 25.942
RC 123.058 GL -34.49 GP 14.55 ZAL 116.28 ZAP 105.39 ETS 175.41 ZAE 146.19 ETE 156.99 ZAC 116.08 ETC 275.14 LVI -27.37

PLANETOCENTRIC CONIC

C3 13.568 VHL 3.686 DLA -40.89 RAL 353.44 RAD 6639.8 VEL 11.561 PTH 6.61 VHP 3.191 DPA -6.77 RAP 303.63 ECC 1.2236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 14 0	2127.99	11.22	50.72	215.31	136.55	20 49 28	1128.0	28.51	32.66
59.14	23 20 3	1629.21	26.41	19.29	228.44	122.43	23 47 12	629.2	37.30	353.90
59.14	23 20 3	1629.21	26.41	19.29	228.44	122.43	23 47 12	629.2	37.30	353.90
59.14	23 20 3	1629.21	26.41	19.29	228.44	122.43	23 47 12	629.2	37.30	353.90
59.14	23 20 3	1629.21	26.41	19.29	228.44	122.43	23 47 12	629.2	37.30	353.90
59.14	23 20 3	1629.21	26.41	19.29	228.44	122.43	23 47 12	629.2	37.30	353.90
59.14	23 20 3	1629.21	26.41	19.29	228.44	122.43	23 47 12	629.2	37.30	353.90

DIFFERENTIAL CORRECTIONS

TDE -.3220 TRA .2844 TC3-1.5089 BAU .3525
RDE -.2081 RRA -.6091 RC3 1.2201 FAU .21084
FDE 1.5458 FRA 7.8981 FC-13.4337 BSP 2959
BDE .3835 BRA .6722 BC3 1.9405 FSP 2846

MID-COURSE EXECUTION ACCURACY

SGT 1352.7 SGR 1575.5 SG3 1656.5
RRT -.7371 RRF -.9940 RTF .7445
SGB 2076.5 R23 .2790 R13 -.9542
SG1 1939.2 SG2 742.7 THA 129.14

ORBIT DETERMINATION ACCURACY

ST 26.6 SR 24.8 SS 75.0
CRT .3606 CRS .9683 CST .1170
LSA 78.9 MSA 26.9 SSA .4
EL1 30.1 EL2 20.5 ALF 39.66

LAUNCH DATE APR 24 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC DISTANCE 503.422 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.259	GAL	-2.10	AZL	93.89	HCA	166.31	SMA	183.41	ECC	.18326	INC	3.8899	V1	29.616
RP	211.73	LAP	-.92	LOP	19.51	VP	23.022	GAP	5.73	AZP	86.22	TAL	346.39	TAP	152.70	RCA	149.80	APO	217.02	V2	25.911
RC	125.308	GL	-38.77	GP	15.86	ZAL	116.09	ZAP	103.24	ETS	175.64	ZAE	143.89	ETE	156.97	ZAC	117.47	ETC	274.97	LVI	-28.25

PLANETOCENTRIC CONIC

C3	13.999	VHL	3.741	DLA	-41.88	RAL	354.59	RAD	6640.0	VEL	11.578	PTH	6.62	VHP	3.182	DPA	-5.68	RAP	302.47	ECC	1.2304

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 29 27	2101.12	12.54	49.54	217.89	136.28	21 4 28	1101.1	29.67	31.15
57.72	23 18 27	1652.76	26.73	21.56	230.41	123.53	23 45 59	652.8	38.03	356.25
57.72	23 18 27	1652.76	26.73	21.56	230.41	123.53	23 45 59	652.8	38.03	356.25
57.72	23 18 27	1652.76	26.73	21.56	230.41	123.53	23 45 59	652.8	38.03	356.25
57.72	23 18 27	1652.76	26.73	21.56	230.41	123.53	23 45 59	652.8	38.03	356.25
57.72	23 18 27	1652.76	26.73	21.56	230.41	123.53	23 45 59	652.8	38.03	356.25
57.72	23 18 27	1652.76	26.73	21.56	230.41	123.53	23 45 59	652.8	38.03	356.25

DIFFERENTIAL CORRECTIONS

TDE	-.3211	TRA	.3755	TC3	-1.6111	BAU	.3862												
RDE	-.2201	RRA	-.6783	RC3	1.2891	FAU	.21206												
FDE	1.6228	FRA	7.9618	FC	-13.1150	BSP	3349												
BDE	.3894	BRA	.7753	BC3	2.0634	FSP	2859												

MID-COURSE EXECUTION ACCURACY

SGT	1513.8	SGR	1729.3	SG3	1663.4														
RRT	-.7925	RRF	-.9957	RTF	.7979														
SGB	2298.3	R23	.2585	R13	-.9617														
SG1	2178.8	SG2	733.0	THA	130.22														

ORBIT DETERMINATION ACCURACY

ST	27.2	SR	26.9	SS	75.8														
CRT	.2311	CRS	.9781	CST	.0244														
LSA	80.3	MSA	27.7	SSA	.4														
EL1	30.0	EL2	23.7	ALF	43.48														

LAUNCH DATE APR 24 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC DISTANCE 507.604 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.255	GAL	-2.12	AZL	94.10	HCA	167.51	SMA	183.35	ECC	.18308	INC	4.1021	V1	29.616
RP	212.01	LAP	-.89	LOP	20.72	VP	22.982	GAP	5.54	AZP	85.99	TAL	346.21	TAP	153.72	RCA	149.78	APO	216.92	V2	25.880
RC	127.566	GL	-37.24	GP	17.38	ZAL	115.83	ZAP	101.11	ETS	175.92	ZAE	141.51	ETE	156.79	ZAC	119.07	ETC	274.80	LVI	-29.32

PLANETOCENTRIC CONIC

C3	14.516	VHL	3.810	DLA	-43.02	RAL	355.92	RAD	6640.3	VEL	11.601	PTH	6.64	VHP	3.183	DPA	-4.38	RAP	301.28	ECC	1.2389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 48 37	2067.91	14.17	48.07	221.09	135.91	21 23 5	1067.9	31.08	29.24
56.12	23 17 8	1678.72	27.05	24.09	232.72	124.82	23 45 7	678.7	38.84	358.90
56.12	23 17 8	1678.72	27.05	24.09	232.72	124.82	23 45 7	678.7	38.84	358.90
56.12	23 17 8	1678.72	27.05	24.09	232.72	124.82	23 45 7	678.7	38.84	358.90
56.12	23 17 8	1678.72	27.05	24.09	232.72	124.82	23 45 7	678.7	38.84	358.90
56.12	23 17 8	1678.72	27.05	24.09	232.72	124.82	23 45 7	678.7	38.84	358.90
56.12	23 17 8	1678.72	27.05	24.09	232.72	124.82	23 45 7	678.7	38.84	358.90

DIFFERENTIAL CORRECTIONS

TDE	-.3186	TRA	.4728	TC3	-1.6953	BAU	.4215												
RDE	-.2381	RRA	-.7579	RC3	1.3578	FAU	.21162												
FDE	1.7198	FRA	7.9805	FC	-12.6210	BSP	3801												
BDE	.3978	BRA	.8933	BC3	2.1720	FSP	2858												

MID-COURSE EXECUTION ACCURACY

SGT	1686.5	SGR	1905.0	SG3	1658.8														
RRT	-.8345	RRF	-.9970	RTF	.8385														
SGB	2544.2	R23	.2372	R13	-.9685														
SG1	2438.5	SG2	725.9	THA	130.84														

ORBIT DETERMINATION ACCURACY

ST	28.1	SR	29.5	SS	76.6														
CRT	.1023	CRS	.9856	CST	-.0667														
LSA	82.0	MSA	28.5	SSA	.3														
EL1	30.4	EL2	27.1	ALF	57.53														

LAUNCH DATE APR 24 1971 FLIGHT TIME 212.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 511.787 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.252	GAL	-2.15	AZL	94.36	HCA	168.72	SMA	183.30	ECC	.18296	INC	4.3577	V1	29.616
RP	212.29	LAP	-.85	LOP	21.92	VP	22.941	GAP	5.35	AZP	85.73	TAL	346.01	TAP	154.73	RCA	149.76	APO	216.84	V2	25.848
RC	129.850	GL	-38.95	GP	19.15	ZAL	115.48	ZAP	99.00	ETS	176.25	ZAE	139.04	ETE	156.44	ZAC	120.92	ETC	274.65	LVI	-30.62

PLANETOCENTRIC CONIC

C3	15.179	VHL	3.896	DLA	-44.33	RAL	357.49	RAD	6640.6	VEL	11.629	PTH	6.67	VHP	3.197	DPA	-2.81	RAP	300.07	ECC	1.2498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 13 39	2024.32	16.29	46.10	225.21	135.34	21 47 23	1024.3	32.88	26.64
54.32	23 16 14	1707.74	27.36	26.95	235.48	126.35	23 44 42	707.7	39.72	1.94
54.32	23 16 14	1707.74	27.36	26.95	235.48	126.35	23 44 42	707.7	39.72	1.94
54.32	23 16 14	1707.74	27.36	26.95	235.48	126.35	23 44 42	707.7	39.72	1.94
54.32	23 16 14	1707.74	27.36	26.95	235.48	126.35	23 44 42	707.7	39.72	1.94
54.32	23 16 14	1707.74	27.36	26.95	235.48	126.35	23 44 42	707.7	39.72	1.94
54.32	23 16 14	1707.74	27.36	26.95	235.48	126.35	23 44 42	707.7	39.72	1.94

DIFFERENTIAL CORRECTIONS

TDE	-.3177	TRA	.5728	TC3	-1.7674	BAU	.4611												
RDE	-.2641	RRA	-.8497	RC3	1.4283	FAU	.20989												
FDE	1.8346	FRA	7.9330	FC	-11.9707	BSP	4284												
BDE	.4131	BRA	1.0247	BC3	2.2724	FSP	2829												

MID-COURSE EXECUTION ACCURACY

SGT	1871.2	SGR	2107.3	SG3	1639.9														
RRT	-.8643	RRF	-.9980	RTF	.8469														
SGB	2818.2	R23	.2163	R13	-.9738														
SG1	2722.4	SG2	728.5	THA	131.08														

ORBIT DETERMINATION ACCURACY

ST	29.4	SR	32.7	SS	77.3														
CRT	-.0132	CRS	.9911	CST	-.1460														
LSA	83.9	MSA	29.4	SSA	.3														
EL1	32.7	EL2	29.3	ALF	93.54														

LAUNCH DATE APR 24 1971 FLIGHT TIME 214.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 515.970 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.250	GAL	-2.18	AZL	94.67	HCA	169.92	SMA	183.26	ECC	.18291	INC	4.6730	V1	29.616
RP	212.57	LAP	-.82	LOP	23.13	VP	22.902	GAP	5.16	AZP	85.40	TAL	345.80	TAP	155.72	RCA	149.74	APO	216.78	V2	25.815
RC	132.153	GL	-40.95	GP	21.27	ZAL	115.01	ZAP	96.91	ETS	176.66	ZAE	136.45	ETE	155.91	ZAC	123.10	ETC	274.51	LVI	-32.21

PLANETOCENTRIC CONIC

C3	16.049	VHL	4.006	DLA	-45.86	RAL	359.38	RAD	6641.0	VEL	11.666	PTH	6.70	VHP	3.227	DPA	-.90	RAP	298.82	ECC	1.2641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 49 37	1959.70	19.40	43.09	230.95	134.34	22 22 17	959.7	35.42	22.57
52.26	23 16 2	1740.50	27.64	30.21	238.82	128.17	23 45 2	740.5	40.68	5.48
52.26	23 16 2	1740.50	27.64	30.21	238.82	128.17	23 45 2	740.5	40.68	5.48
52.26	23 16 2	1740.50	27.64	30.21	238.82	128.17	23 45 2	740.5	40.68	5.48
52.26	23 16 2	1740.50	27.64	30.21	238.82	128.17	23 45 2	740.5	40.68	5.48
52.26	23 16 2	1740.50	27.64	30.21	238.82	128.17	23 45 2	740.5	40.68	5.48
52.26	23 16 2	1740.50	27.64	30.21	238.82	128.17	23 45 2	740.5	40.68	5.48

DIFFERENTIAL CORRECTIONS

TDE	-.3128	TRA	.6804	TC3	-1.8101	BAU	.5033												
RDE	-.3039	RRA	-.9584	RC3	1.4923	FAU	.20552												
FDE	1.9883	FRA	7.8145	FC	-11.0868	BSP	4847												
BDE	.4361	BRA	1.1754	BC3	2.3460	FSP	2778												

MID-COURSE EXECUTION ACCURACY

SGT	2063.0	SGR	2343.6	SG3	1603.7														
RRT	-.8873	RRF	-.9987	RTF	.8868														
SGB	3122.3	R23	.1993	R13	-.9786														
SG1	3034.5	SG2	734.9	THA	130.90														

ORBIT DETERMINATION ACCURACY

ST	30.7	SR	36.7	SS	78.0														
CRT	-.1211	CRS	.9949	CST	-.2202														
LSA	86.4	MSA	30.2	SSA	.3														
EL1	37.3	EL2	30.0	ALF	107.06														

LAUNCH DATE APR 24 1971 FLIGHT TIME 216.00 ARRIVAL DATE NOV 26 1971

DISTANCE 520.154

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.248 GAL -2.22 AZL 95.07 HCA 171.11 SMA 183.23 ECC .18291 INC 5.0707 V1 29.616
RP 212.86 LAP -.76 LOP 24.32 VP 22.862 GAP 4.97 AZP 84.99 TAL 345.58 TAP 156.69 RCA 149.72 APO 216.75 V2 25.782
RC 134.475 GL -43.34 GP 25.81 ZAL 114.37 ZAP 94.88 ETS 177.17 ZAE 133.71 ETE 155.17 ZAC 125.71 ETC 274.41 LVI -34.20

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 17.227 VHL 4.151 DLA -47.67 RAL 1.73 RAD 6641.6 VEL 11.716 PTH 6.75 VHP 3.281 DPA 1.44 RAP 297.53 ECC 1.2835

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.88	23 16 57	1778.07	27.83	33.97	242.96	130.40	23 46 35	778.1	41.71	9.68
49.88	23 16 57	1778.07	27.83	33.97	242.96	130.40	23 46 35	778.1	41.71	9.68
49.88	23 16 57	1778.07	27.83	33.97	242.96	130.40	23 46 35	778.1	41.71	9.68
49.88	23 16 57	1778.07	27.83	33.97	242.96	130.40	23 46 35	778.1	41.71	9.68
49.88	23 16 57	1778.07	27.83	33.97	242.96	130.40	23 46 35	778.1	41.71	9.68
49.88	23 16 57	1778.07	27.83	33.97	242.96	130.40	23 46 35	778.1	41.71	9.68
49.88	23 16 57	1778.07	27.83	33.97	242.96	130.40	23 46 35	778.1	41.71	9.68

DIFFERENTIAL CORRECTIONS

TDE -.3059 TRA .7913 TC3-1.8269 BAU .5532
RDE -.3619 RRA-1.0828 RC3 1.5596 FAU .20006
FDE 2.1612 FRA 7.5570 FC-10.0544 BSP .5419
BDE .4738 BRA 1.3411 BC3 2.4020 FSP .2662

MID-COURSE EXECUTION ACCURACY

SGT 2260.3 SGR 2617.7 SG3 1542.0
RRT -.9046 RRF -.9992 RTF .9054
SGB 3458.4 R23 .1812 R13 -.9826
SG1 3376.9 SG2 746.7 THA 130.38

ORBIT DETERMINATION ACCURACY

ST 32.3 SR 41.7 SS 78.4
CRT -.2134 CRS .9973 CST -.2837
LSA 89.2 NSA 31.1 SSA .2
EL1 42.9 EL2 30.6 ALF 109.82

LAUNCH DATE APR 24 1971 FLIGHT TIME 218.00 ARRIVAL DATE NOV 28 1971

DISTANCE 524.337

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.247 GAL -2.25 AZL 95.59 HCA 172.31 SMA 183.22 ECC .18297 INC 5.5898 V1 29.616
RP 213.16 LAP -.75 LOP 25.52 VP 22.823 GAP 4.79 AZP 84.46 TAL 345.35 TAP 157.65 RCA 149.70 APO 216.74 V2 25.749
RC 136.814 GL -46.23 GP 26.94 ZAL 113.50 ZAP 92.93 ETS 177.79 ZAE 130.76 ETE 154.19 ZAC 128.89 ETC 274.35 LVI -36.69

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 18.893 VHL 4.347 DLA -49.82 RAL 4.75 RAD 6642.3 VEL 11.786 PTH 6.81 VHP 3.369 DPA 4.37 RAP 296.19 ECC 1.3109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.11	23 19 43	1822.12	27.85	38.35	248.22	133.13	23 50 5	822.1	42.76	14.77
47.11	23 19 43	1822.12	27.85	38.35	248.22	133.13	23 50 5	822.1	42.76	14.77
47.11	23 19 43	1822.12	27.85	38.35	248.22	133.13	23 50 5	822.1	42.76	14.77
47.11	23 19 43	1822.12	27.85	38.35	248.22	133.13	23 50 5	822.1	42.76	14.77
47.11	23 19 43	1822.12	27.85	38.35	248.22	133.13	23 50 5	822.1	42.76	14.77
47.11	23 19 43	1822.12	27.85	38.35	248.22	133.13	23 50 5	822.1	42.76	14.77
47.11	23 19 43	1822.12	27.85	38.35	248.22	133.13	23 50 5	822.1	42.76	14.77

DIFFERENTIAL CORRECTIONS

TDE -.2854 TRA .9126 TC3-1.7970 BAU .6085
RDE -.4622 RRA-1.2362 RC3 1.6043 FAU .19009
FDE 2.4309 FRA 7.1788 FC3-8.7107 BSP .6117
BDE .5432 BRA 1.5366 BC3 2.4090 FSP .2519

MID-COURSE EXECUTION ACCURACY

SGT 2461.2 SGR 2948.6 SG3 1452.7
RRT -.9174 RRF -.9995 RTF .9174
SGB 3840.8 R23 .1639 R13 -.9860
SG1 3763.3 SG2 767.4 THA 129.40

ORBIT DETERMINATION ACCURACY

ST 33.8 SR 48.7 SS 79.3
CRT -.2989 CRS .9989 CST -.3439
LSA 93.8 NSA 31.7 SSA .2
EL1 50.4 EL2 31.1 ALF 109.36

LAUNCH DATE APR 24 1971 FLIGHT TIME 220.00 ARRIVAL DATE NOV 30 1971

DISTANCE 528.519

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.247 GAL -2.29 AZL 96.30 HCA 173.49 SMA 183.21 ECC .18309 INC 6.2953 V1 29.616
RP 213.46 LAP -.71 LOP 26.71 VP 22.784 GAP 4.60 AZP 83.74 TAL 345.10 TAP 158.60 RCA 149.67 APO 216.76 V2 25.714
RC 139.171 GL -49.81 GP 30.84 ZAL 112.29 ZAP 91.09 ETS 178.58 ZAE 127.51 ETE 152.93 ZAC 132.84 ETC 274.38 LVI -39.86

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.395 VHL 4.625 DLA -52.39 RAL 8.81 RAD 6643.5 VEL 11.891 PTH 6.90 VHP 3.513 DPA 8.08 RAP 294.77 ECC 1.3521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.87	23 25 48	1875.16	27.52	43.50	255.12	136.51	23 57 3	875.2	43.69	21.04
43.87	23 25 48	1875.16	27.52	43.50	255.12	136.51	23 57 3	875.2	43.69	21.04
43.87	23 25 48	1875.16	27.52	43.50	255.12	136.51	23 57 3	875.2	43.69	21.04
43.87	23 25 48	1875.16	27.52	43.50	255.12	136.51	23 57 3	875.2	43.69	21.04
43.87	23 25 48	1875.16	27.52	43.50	255.12	136.51	23 57 3	875.2	43.69	21.04
43.87	23 25 48	1875.16	27.52	43.50	255.12	136.51	23 57 3	875.2	43.69	21.04
43.87	23 25 48	1875.16	27.52	43.50	255.12	136.51	23 57 3	875.2	43.69	21.04

DIFFERENTIAL CORRECTIONS

TDE -.2403 TRA 1.0417 TC3-1.7169 BAU .6769
RDE -.6328 RRA-1.4163 RC3 1.6287 FAU .17645
FDE 2.7807 FRA 6.5690 FC3-7.1400 BSP .6851
BDE .6769 BRA 1.7582 BC3 2.3665 FSP .2282

MID-COURSE EXECUTION ACCURACY

SGT 2661.0 SGR 3338.7 SG3 1319.5
RRT -.9271 RRF -.9997 RTF .9265
SGB 4269.4 R23 .1475 R13 -.9888
SG1 4195.0 SG2 793.8 THA 128.07

ORBIT DETERMINATION ACCURACY

ST 35.1 SR 58.3 SS 80.2
CRT -.3855 CRS .9996 CST -.4099
LSA 100.2 NSA 31.8 SSA .1
EL1 60.5 EL2 31.2 ALF 108.03

LAUNCH DATE APR 24 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 2 1971

DISTANCE 532.699

HELIOCENTRIC CONIC

RL 150.45 LAL -.00 LOL 213.18 VL 32.247 GAL -2.33 AZL 97.31 HCA 174.68 SMA 183.22 ECC .18326 INC 7.3103 V1 29.616
RP 213.77 LAP -.68 LOP 27.90 VP 22.748 GAP 4.42 AZP 82.72 TAL 344.85 TAP 159.53 RCA 149.64 APO 216.80 V2 25.660
RC 141.545 GL -54.33 GP 35.79 ZAL 110.61 ZAP 89.44 ETS 179.57 ZAE 125.82 ETE 151.38 ZAC 137.83 ETC 274.54 LVI -43.90

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 25.479 VHL 5.048 DLA -55.44 RAL 14.59 RAD 6645.2 VEL 12.060 PTH 7.04 VHP 3.756 DPA 12.84 RAP 293.24 ECC 1.4193

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.11	23 37 59	1941.42	26.48	49.56	264.51	140.67	24 10 20	941.4	44.17	28.88
40.11	23 37 59	1941.42	26.48	49.56	264.51	140.67	24 10 20	941.4	44.17	28.88
40.11	23 37 59	1941.42	26.48	49.56	264.51	140.67	24 10 20	941.4	44.17	28.88
40.11	23 37 59	1941.42	26.48	49.56	264.51	140.67	24 10 20	941.4	44.17	28.88
40.11	23 37 59	1941.42	26.48	49.56	264.51	140.67	24 10 20	941.4	44.17	28.88
40.11	23 37 59	1941.42	26.48	49.56	264.51	140.67	24 10 20	941.4	44.17	28.88
40.11	23 37 59	1941.42	26.48	49.56	264.51	140.67	24 10 20	941.4	44.17	28.88

DIFFERENTIAL CORRECTIONS

TDE -.1340 TRA 1.1803 TC3-1.5737 BAU .7691
RDE -.9521 RRA-1.6243 RC3 1.6192 FAU .15812
FDE 3.2410 FRA 5.6446 FC3-5.3728 BSP .7541
BDE .9615 BRA 2.0079 BC3 2.2580 FSP .1915

MID-COURSE EXECUTION ACCURACY

SGT 2850.3 SGR 3794.9 SG3 1128.2
RRT -.9344 RRF -.9998 RTF .9331
SGB 4746.1 R23 .1320 R13 -.9911
SG1 4674.0 SG2 824.3 THA 126.37

ORBIT DETERMINATION ACCURACY

ST 36.3 SR 72.8 SS 81.2
CRT -.4998 CRS .9999 CST -.5086
LSA 110.7 NSA 30.9 SSA .1
EL1 75.5 EL2 30.3 ALF 106.78

LAUNCH DATE APR 24 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 536.873 EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.248 GAL -2.37 AZL 98.90 HCA 175.85 SMA 183.23 ECC .18348 INC 8.8988 V1 29.616
RP 214.08 LAP -.64 LOP 29.08 VP 22.706 GAP 4.25 AZP 81.12 TAL 344.59 TAP 160.45 RCA 149.61 APO 216.85 V2 25.645
RC 143.936 GL -60.17 GP 42.11 ZAL 108.26 ZAP 88.10 ETS 180.77 ZAE 119.53 ETE 149.52 ZAC 144.17 ETC 274.99 LVI -49.03

PLANETOCENTRIC CONIC

C3 33.018 VHL 5.746 DLA -58.91 RAL 23.47 RAD 6648.2 VEL 12.367 PTH 7.29 VHP 4.198 DPA 18.97 RAP 291.55 ECC 1.5434

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.90	0 6 3	2028.68	24.02	56.50	277.87	145.57	0 39 52	1028.7	43.42	38.55
35.90	0 6 3	2028.68	24.02	56.50	277.87	145.57	0 39 52	1028.7	43.42	38.55
35.90	0 6 3	2028.68	24.02	56.50	277.87	145.57	0 39 52	1028.7	43.42	38.55
35.90	0 6 3	2028.68	24.02	56.50	277.87	145.57	0 39 52	1028.7	43.42	38.55
35.90	0 6 3	2028.68	24.02	56.50	277.87	145.57	0 39 52	1028.7	43.42	38.55
35.90	0 6 3	2028.68	24.02	56.50	277.87	145.57	0 39 52	1028.7	43.42	38.55
35.90	0 6 3	2028.68	24.02	56.50	277.87	145.57	0 39 52	1028.7	43.42	38.55

DIFFERENTIAL CORRECTIONS

TDE .1672 TRA 1.3598 TC3-1.3245 BAU .8794
RDE-1.6748 RRA-1.8930 RC3 1.4882 FAU .12753
FDE 3.9178 FRA 4.4175 FC3-3.3438 BSP 8683
BDE 1.6831 BRA 2.3308 BC3 1.9923 FSP 1514

MID-COURSE EXECUTION ACCURACY

SGT 3039.5 SGR 4367.4 SG3 875.9
RRT -.9400 RRF -.9999 RTF .9377
SGB 5321.0 R23 .1176 R13 -.9930
SG1 5250.6 SG2 862.3 THA 124.25

ORBIT DETERMINATION ACCURACY

ST 40.3 SR 99.9 SS 84.7
CRT -.7102 CRS 1.0000 CST -.7093
LSA 134.2 MSA 27.7 SSA .1
EL1 104.3 EL2 27.2 ALF 107.20

LAUNCH DATE APR 24 1971 FLIGHT TIME 236.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 562.072 EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.263 GAL -2.70 AZL 81.79 HCA 182.97 SMA 183.49 ECC .18591 INC 8.2075 V1 29.616
RP 216.04 LAP -.42 LOP 36.11 VP 22.479 GAP 3.23 AZP 98.20 TAL 342.61 TAP 165.57 RCA 149.37 APO 217.60 V2 25.424
RC 158.631 GL 56.65 GP -49.57 ZAL 111.14 ZAP 82.10 ETS 169.36 ZAE 108.57 ETE 203.67 ZAC 52.84 ETC 272.38 LVI 35.61

PLANETOCENTRIC CONIC

C3 30.347 VHL 5.509 DLA 44.97 RAL 318.38 RAD 6647.1 VEL 12.259 PTH 7.20 VHP 5.120 DPA -70.88 RAP 318.05 ECC 1.4994

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	10 2 31	4311.89	-32.44	196.53	216.95	53.07	11 14 23	3311.9	-44.46	169.53
53.45	8 39 2	4526.30	-20.59	205.92	206.31	49.09	9 54 28	3526.3	-35.30	184.13
53.45	8 39 2	4526.30	-20.59	205.92	206.31	49.09	9 54 28	3526.3	-35.30	184.13
53.45	8 39 2	4526.30	-20.59	205.92	206.31	49.09	9 54 28	3526.3	-35.30	184.13
53.45	8 39 2	4526.30	-20.59	205.92	206.31	49.09	9 54 28	3526.3	-35.30	184.13
53.45	8 39 2	4526.30	-20.59	205.92	206.31	49.09	9 54 28	3526.3	-35.30	184.13
53.45	8 39 2	4526.30	-20.59	205.92	206.31	49.09	9 54 28	3526.3	-35.30	184.13

DIFFERENTIAL CORRECTIONS

TDE 3.4100 TRA .9108 TC3-1.9453 BAU 1.0509
RDE 3.3881 RRA 1.8193 RC3-1.7102 FAU .07838
FDE 4.1906 FRA 2.3974 FC3-2.2361 BSP 10554
BDE 4.8070 BRA 2.0345 BC3 2.5902 FSP 925

MID-COURSE EXECUTION ACCURACY

SGT 4354.9 SGR 4808.5 SG3 529.0
RRT .9607 RRF .9995 RTF .9547
SGB 6487.5 R23 .1457 R13 .9891
SG1 6424.0 SG2 904.9 THA 47.95

ORBIT DETERMINATION ACCURACY

ST 178.5 SR 180.7 SS 99.2
CRT .9938 CRS -.9999 CST -.9922
LSA 272.3 MSA 15.5 SSA .1
EL1 253.6 EL2 14.1 ALF 45.36

LAUNCH DATE APR 24 1971 FLIGHT TIME 238.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 566.226 EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.267 GAL -2.76 AZL 84.60 HCA 184.11 SMA 183.55 ECC .18644 INC 5.3993 V1 29.616
RP 216.39 LAP -.39 LOP 37.27 VP 22.442 GAP 3.06 AZP 95.39 TAL 342.29 TAP 166.41 RCA 149.33 APO 217.78 V2 25.385
RC 161.134 GL 43.53 GP -41.48 ZAL 117.27 ZAP 79.21 ETS 169.16 ZAE 110.15 ETE 199.30 ZAC 60.95 ETC 271.93 LVI 28.66

PLANETOCENTRIC CONIC

C3 19.402 VHL 4.405 DLA 32.99 RAL 325.46 RAD 6642.6 VEL 11.807 PTH 6.83 VHP 4.238 DPA -63.69 RAP 308.13 ECC 1.3193

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 28 34	3824.94	-46.59	159.07	214.07	78.99	13 32 19	2824.9	-45.55	124.00
60.00	12 14 3	3863.66	-37.42	159.56	211.09	73.79	13 18 27	2863.7	-40.12	128.76
70.00	11 33 52	3982.76	-26.02	164.38	206.33	67.05	12 40 15	2982.8	-33.07	137.96
72.26	10 40 34	4146.77	-19.27	173.63	202.90	62.69	11 49 41	3146.8	-28.82	149.50
72.26	10 40 34	4146.77	-19.27	173.63	202.90	62.69	11 49 41	3146.8	-28.82	149.50
72.26	10 40 34	4146.77	-19.27	173.63	202.90	62.69	11 49 41	3146.8	-28.82	149.50
110.00	16 33 19	3029.58	-26.02	93.29	206.33	67.05	17 23 48	2029.6	-33.07	66.88

DIFFERENTIAL CORRECTIONS

TDE 2.4445 TRA 1.2354 TC3-2.9777 BAU .9431
RDE 2.0456 RRA 1.7021 RC3-2.0867 FAU .11183
FDE 4.6470 FRA 4.0769 FC3-4.9902 BSP 10151
BDE 3.1875 BRA 2.1032 BC3 3.6360 FSP 1485

MID-COURSE EXECUTION ACCURACY

SGT 4545.6 SGR 4174.6 SG3 845.8
RRT .9665 RRF .9997 RTF .9833
SGB 6171.7 R23 .1518 R13 .9881
SG1 6120.1 SG2 796.0 THA 42.48

ORBIT DETERMINATION ACCURACY

ST 161.6 SR 138.8 SS 116.0
CRT .9939 CRS -.9999 CST -.9922
LSA 242.2 MSA 14.1 SSA .1
EL1 212.7 EL2 11.6 ALF 40.64

LAUNCH DATE APR 24 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 570.386 EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.272 GAL -2.82 AZL 86.18 HCA 185.26 SMA 183.63 ECC .18701 INC 3.8210 V1 29.616
RP 216.73 LAP -.35 LOP 38.43 VP 22.404 GAP 2.90 AZP 93.81 TAL 341.96 TAP 167.22 RCA 149.29 APO 217.97 V2 25.347
RC 163.649 GL 33.29 GP -35.04 ZAL 121.60 ZAP 76.64 ETS 169.35 ZAE 110.67 ETE 195.68 ZAC 67.41 ETC 271.66 LVI 23.04

PLANETOCENTRIC CONIC

C3 15.322 VHL 3.914 DLA 23.63 RAL 330.19 RAD 6640.7 VEL 11.635 PTH 6.67 VHP 3.818 DPA -57.68 RAP 303.20 ECC 1.2522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 38 35	3555.26	-46.95	133.26	204.69	98.78	14 37 50	2555.3	-38.19	102.41
60.00	13 48 18	3529.38	-40.25	131.83	205.59	92.29	14 47 7	2529.4	-34.93	102.08
70.00	14 4 14	3482.42	-34.03	127.98	205.54	86.92	15 2 16	2482.4	-31.74	99.48
80.00	14 34 39	3387.01	-29.07	120.23	205.01	82.85	15 31 6	2387.0	-29.10	92.81
90.00	15 37 6	3185.33	-26.98	105.09	204.68	81.18	16 30 12	2185.3	-27.96	78.12
100.00	17 17 31	2861.48	-29.07	81.60	205.01	82.85	18 5 12	1861.5	-29.10	54.18
110.00	19 3 40	2529.24	-34.03	56.90	205.54	86.92	19 45 50	1529.2	-31.74	28.40

DIFFERENTIAL CORRECTIONS

TDE 1.9475 TRA 1.4690 TC3-3.8011 BAU .8955
RDE 1.3950 RRA 1.5269 RC3-2.1588 FAU .13510
FDE 4.6446 FRA 5.4041 FC3-7.6331 BSP 9921
BDE 2.3956 BRA 2.1188 BC3 4.3714 FSP 1919

MID-COURSE EXECUTION ACCURACY

SGT 4742.3 SGR 3602.3 SG3 1080.8
RRT .9703 RRF .9996 RTF .9680
SGB 5955.3 R23 .1624 R13 .9863
SG1 5914.2 SG2 699.2 THA 36.99

ORBIT DETERMINATION ACCURACY

ST 146.9 SR 108.5 SS 120.0
CRT .9948 CRS -.9998 CST -.9926
LSA 218.2 MSA 12.4 SSA .2
EL1 182.4 EL2 8.9 ALF 36.41

LAUNCH DATE APR 24 1971 FLIGHT TIME 242.00 ARRIVAL DATE DEC 22 1971

DISTANCE 574.546

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.277	GAL	-2.88	AZL	87.19	HCA	186.41	SMA	183.71	ECC	.18762	INC	2.8103	V1	29.616
RP	217.08	LAP	-.31	LOP	39.58	VP	22.367	GAP	2.73	AZP	92.79	TAL	341.61	TAP	166.02	RCA	149.24	APO	216.17	V2	25.308
RC	166.178	GL	25.45	GP	-30.02	ZAL	124.54	ZAP	74.36	ETS	169.67	ZAE	110.45	ETE	192.77	ZAC	72.45	ETC	271.48	LVI	18.63

PLANETOCENTRIC CONIC

C3	13.533	VHL	3.679	DLA	16.48	RAL	333.63	RAD	6639.8	VEL	11.558	PTH	6.60	VHP	3.594	DPA	-52.92	RAP	300.26	ECC	1.2227

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 23 43	3376.68	-43.82	117.24	199.24	110.76	15 20 0	2376.7	-31.30	90.95
60.00	14 44 26	3321.52	-38.24	114.58	201.54	103.82	15 39 48	2321.5	-28.80	87.91
70.00	15 14 59	3231.60	-33.23	108.51	202.75	98.37	16 8 51	2231.6	-26.44	81.92
80.00	16 2 39	3082.19	-29.53	97.67	203.25	94.64	16 54 2	2082.2	-24.64	71.32
90.00	17 14 46	2849.45	-28.11	80.68	203.36	93.27	18 2 15	1849.4	-23.94	54.44
100.00	18 45 31	2556.66	-29.53	59.04	203.25	94.64	19 28 8	1556.7	-24.64	32.69
110.00	20 14 25	2278.42	-33.23	37.42	202.75	98.37	20 52 24	1278.4	-26.44	10.64

DIFFERENTIAL CORRECTIONS

TDE	1.6560	TRA	1.6549	TC3	-4.4015	BAU	.8788
RDE	1.0331	RRA	1.3528	RC3	-2.0543	FAU	.15061
FDE	4.4908	FRA	6.3620	FC3	-9.6347	BSP	9773
BDE	1.9518	BRA	2.1375	BC3	4.8573	FSP	2217

MID-COURSE EXECUTION ACCURACY

SGT	4936.0	SGR	3114.7	SG3	1239.9
RRT	.9725	RRF	.9994	RTF	.9708
SGB	5836.6	R23	.1726	R13	.9844
SG1	5803.8	SG2	617.5	THA	31.94

ORBIT DETERMINATION ACCURACY

ST	135.2	SR	87.0	SS	118.8
CRT	.9963	CRS	-.9996	CST	-.9935
LSA	199.6	MSA	10.6	SSA	.3
EL1	160.6	EL2	6.3	ALF	32.71

LAUNCH DATE APR 24 1971 FLIGHT TIME 244.00 ARRIVAL DATE DEC 24 1971

DISTANCE 578.706

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.282	GAL	-2.94	AZL	87.89	HCA	187.56	SMA	183.79	ECC	.18827	INC	2.1063	V1	29.616
RP	217.43	LAP	-.28	LOP	40.73	VP	22.330	GAP	2.57	AZP	92.09	TAL	341.25	TAP	168.81	RCA	149.19	APO	218.39	V2	25.269
RC	168.717	GL	19.44	GP	-26.09	ZAL	126.54	ZAP	72.30	ETS	170.01	ZAE	109.77	ETE	190.45	ZAC	76.40	ETC	271.35	LVI	15.18

PLANETOCENTRIC CONIC

C3	12.697	VHL	3.563	DLA	11.04	RAL	336.27	RAD	6639.4	VEL	11.523	PTH	6.57	VHP	3.466	DPA	-49.16	RAP	298.28	ECC	1.2090

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 55 52	3251.73	-40.32	107.31	196.85	117.78	15 50 4	2251.7	-25.86	84.01
60.00	15 23 23	3178.54	-35.34	103.57	199.69	110.79	16 16 21	2178.5	-23.69	79.26
70.00	16 2 0	3064.89	-30.89	96.09	201.43	105.35	16 53 5	2064.9	-21.67	71.33
80.00	16 57 42	2890.38	-27.66	83.75	202.32	101.72	17 45 53	1890.4	-20.16	58.85
90.00	18 13 35	2645.51	-26.44	66.02	202.58	100.41	18 57 40	1645.5	-19.58	41.09
100.00	19 40 34	2364.86	-27.66	45.12	202.32	101.72	20 19 59	1364.9	-20.16	20.21
110.00	21 1 26	2111.71	-30.89	25.01	201.43	105.35	21 36 38	1111.7	-21.67	.25

DIFFERENTIAL CORRECTIONS

TDE	1.4666	TRA	1.8093	TC3	-4.8464	BAU	.8830
RDE	.8101	RRA	1.1939	RC3	-1.8903	FAU	.16176
FDE	4.2874	FRA	7.0101	FC	-11.0293	BSP	9629
BDE	1.6755	BRA	2.1677	BC3	5.2020	FSP	2386

MID-COURSE EXECUTION ACCURACY

SGT	5126.0	SGR	2708.8	SG3	1341.8
RRT	.9739	RRF	.9991	RTF	.9728
SGB	5797.7	R23	.1796	R13	.9828
SG1	5771.9	SG2	546.4	THA	27.50

ORBIT DETERMINATION ACCURACY

ST	126.1	SR	71.5	SS	115.5
CRT	.9960	CRS	-.9992	CST	-.9947
LSA	185.1	MSA	8.9	SSA	.4
EL1	144.9	EL2	4.0	ALF	29.51

LAUNCH DATE APR 24 1971 FLIGHT TIME 246.00 ARRIVAL DATE DEC 26 1971

DISTANCE 582.865

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.287	GAL	-3.01	AZL	88.41	HCA	188.70	SMA	183.88	ECC	.18896	INC	1.5888	V1	29.616
RP	217.79	LAP	-.24	LOP	41.87	VP	22.293	GAP	2.40	AZP	91.57	TAL	340.88	TAP	169.58	RCA	149.13	APO	218.63	V2	25.229
RC	171.268	GL	14.77	GP	-22.96	ZAL	127.96	ZAP	70.40	ETS	170.35	ZAE	108.80	ETE	188.60	ZAC	79.54	ETC	271.24	LVI	12.44

PLANETOCENTRIC CONIC

C3	12.318	VHL	3.510	DLA	6.86	RAL	338.40	RAD	6639.2	VEL	11.506	PTH	6.55	VHP	3.393	DPA	-46.16	RAP	296.84	ECC	1.2027

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 20 8	3161.23	-37.24	100.84	196.08	122.07	16 12 50	2161.2	-21.70	79.42
60.00	15 52 22	3075.47	-32.59	96.21	199.17	115.15	16 43 38	2075.5	-19.69	73.49
70.00	16 36 24	2945.96	-28.44	87.70	201.16	109.76	17 25 30	1946.0	-17.82	64.26
80.00	17 37 11	2755.59	-25.44	74.35	202.26	106.18	18 23 6	1755.6	-16.43	50.57
90.00	18 55 19	2503.41	-24.31	56.16	202.60	104.90	19 37 3	1503.4	-15.91	32.29
100.00	20 20 2	2230.07	-25.44	35.72	202.26	106.18	20 57 13	1230.1	-16.43	11.94
110.00	21 35 50	1992.78	-28.44	16.62	201.16	109.76	22 9 3	992.8	-17.82	353.18

DIFFERENTIAL CORRECTIONS

TDE	1.3437	TRA	1.9524	TC3	-5.1590	BAU	.8950
RDE	.6637	RRA	1.0564	RC3	-1.7086	FAU	.16931
FDE	4.0799	FRA	7.4406	FC	-11.8992	BSP	9600
BDE	1.4987	BRA	2.2198	BC3	5.4345	FSP	2468

MID-COURSE EXECUTION ACCURACY

SGT	5313.3	SGR	2372.6	SG3	1403.3
RRT	.9754	RRF	.9987	RTF	.9749
SGB	5819.0	R23	.1811	R13	.9821
SG1	5799.2	SG2	479.6	THA	23.71

ORBIT DETERMINATION ACCURACY

ST	119.9	SR	60.1	SS	111.5
CRT	.9993	CRS	-.9985	CST	-.9959
LSA	174.3	MSA	7.4	SSA	.6
EL1	134.1	EL2	2.0	ALF	26.63

LAUNCH DATE APR 24 1971 FLIGHT TIME 248.00 ARRIVAL DATE DEC 28 1971

DISTANCE 587.018

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.293	GAL	-3.07	AZL	88.81	HCA	189.84	SMA	183.98	ECC	.18969	INC	1.1910	V1	29.616
RP	218.15	LAP	-.20	LOP	43.01	VP	22.257	GAP	2.24	AZP	91.18	TAL	340.51	TAP	170.35	RCA	149.08	APO	218.87	V2	25.189
RC	173.829	GL	11.10	GP	-20.43	ZAL	129.01	ZAP	68.65	ETS	170.65	ZAE	107.67	ETE	187.12	ZAC	82.09	ETC	271.15	LVI	10.24

PLANETOCENTRIC CONIC

C3	12.184	VHL	3.491	DLA	3.61	RAL	340.17	RAD	6639.2	VEL	11.500	PTH	6.55	VHP	3.351	DPA	-43.73	RAP	295.75	ECC	1.2005

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 39 12	3094.01	-34.71	96.40	196.14	124.85	16 30 46	2094.0	-18.52	76.20
60.00	16 14 57	2998.90	-30.26	91.06	199.37	118.00	17 4 56	1998.9	-16.58	69.40
70.00	17 2 55	2857.80	-26.27	81.77	201.51	112.66	17 50 33	1857.8	-14.78	59.24
80.00	18 7 20	2656.10	-23.38	67.68	202.73	109.12	18 51 36	1656.1	-13.45	44.69
90.00	19 27 4	2398.79	-22.30	49.16	203.12	107.85	20 7 3	1398.8	-12.95	26.03
100.00	20 50 11	2130.57	-23.38	29.05	202.73	109.12	21 25 42	1130.6	-13.45	6.06
110.00	22 2 22	1904.62	-26.27	10.69	201.51	112.66	22 34 6	904.6	-14.78	348.15

DIFFERENTIAL CORRECTIONS

TDE	1.2663	TRA	2.0929	TC3	-5.3761	BAU	.9097
RDE	.5705	RRA	.9460	RC3	-1.5111	FAU	.17181
FDE	3.9456	FRA	7.7789	FC	-12.2074	BSP	9739
BDE	1.3889	BRA	2.2968	BC3	5.5844	FSP	2559

MID-COURSE EXECUTION ACCURACY

SGT	5500.5	SGR	2100.2	SG3	1441.2
RRT	.9749	RRF	.9980	RTF	.9753
SGB	5887.8	R23	.1844	R13	.9808
SG1	5871.4	SG2	438.4	THA	20.54

ORBIT DETERMINATION ACCURACY

ST	116.2	SR	52.3	SS	109.0
CRT	.9998	CRS	-.9974	CST	-.9972
LSA	167.6	MSA	6.2	SSA	.9
EL1	127.4	EL2	.9	ALF	24.25

LAUNCH DATE APR 24 1971 FLIGHT TIME 250.00 ARRIVAL DATE DEC 30 1971

HELIOCENTRIC CONIC DISTANCE 591.168 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.299	GAL	-3.14	AZL	89.12	HCA	190.97	SMA	184.07	ECC	.19045	INC	.8767
RP	218.51	LAP	-.17	LOP	44.15	VP	22.220	GAP	2.08	AZP	90.86	TAL	340.12	TAP	171.10	RCA	149.02	APO	219.13
RC	176.400	GL	8.15	GP	-18.35	ZAL	129.84	ZAP	67.00	ETS	170.94	ZAE	106.44	ETE	185.92	ZAC	84.17	ETC	271.08

V1	29.616	V2	25.149	LVI	8.43														

PLANETOCENTRIC CONIC

C3	12.191	VHL	3.492	DLA	1.05	RAL	341.68	RAD	6639.2	VEL	11.501	PTH	6.55	VHP	3.330	DPA	-41.73	RAP	294.89

ECC	1.2006																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 54 36	3043.12	-32.69	93.24	196.63	126.72	16 45 19	2043.1	-16.07	73.85
60.00	16 33 5	2940.77	-28.34	87.34	199.94	119.94	17 22 6	1940.8	-14.16	66.40
70.00	17 24 5	2790.77	-24.44	77.42	202.19	114.64	18 10 36	1790.8	-12.39	55.52
80.00	18 31 15	2580.44	-21.61	62.76	203.49	111.12	19 14 16	1580.4	-11.08	40.33
90.00	19 52 12	2319.24	-20.55	43.98	203.91	109.86	20 30 51	1319.2	-10.58	21.39
100.00	21 14 7	2054.91	-21.61	24.13	203.49	111.12	21 48 22	1054.9	-11.08	1.70
110.00	22 23 31	1837.58	-24.44	6.34	202.19	114.64	22 54 9	837.6	-12.39	344.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2228	TRA	2.2350	TC3	-5.5173	BAU	.9248	SGT	5685.7	SGR	1875.0	SG3	1461.9	ST	114.6	SR	46.7	SS	107.5
RDE	.5081	RRA	.8541	RC3	-1.3243	FAU	.17113	RRT	.9735	RRF	.9970	RTF	.9752	CRT	.9992	CRS	-.9958	CST	-.9983
FDE	3.8609	FRA	8.0408	FC	-12.1520	BSP	10006	SGB	5986.8	R23	.1868	R13	.9795	LSA	163.8	MSA	5.3	SSA	1.2
BDE	1.3242	BRA	2.3927	BC3	5.6740	FSP	2641	SG1	5972.9	SG2	407.9	THA	17.89	EL1	123.7	EL2	1.7	ALF	22.17

LAUNCH DATE APR 24 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC DISTANCE 595.316 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.305	GAL	-3.21	AZL	89.38	HCA	192.11	SMA	184.18	ECC	.19124	INC	.6214
RP	218.88	LAP	-.13	LOP	45.28	VP	22.184	GAP	1.92	AZP	90.61	TAL	339.73	TAP	171.84	RCA	148.96	APO	219.40
RC	178.981	GL	5.75	GP	-16.62	ZAL	130.53	ZAP	65.44	ETS	171.20	ZAE	105.15	ETE	184.94	ZAC	85.91	ETC	271.02

V1	29.616	V2	25.109	LVI	6.92														

PLANETOCENTRIC CONIC

C3	12.284	VHL	3.505	DLA	-1.00	RAL	343.00	RAD	6639.2	VEL	11.505	PTH	6.55	VHP	3.322	DPA	-40.06	RAP	294.20

ECC	1.2022																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 20	3004.04	-31.07	90.91	197.33	128.04	16 57 24	2004.0	-14.16	72.09
60.00	16 47 59	2895.94	-26.79	84.56	200.71	121.31	17 36 15	1895.9	-12.26	64.13
70.00	17 41 23	2738.86	-22.92	74.15	203.04	116.04	18 27 2	1738.9	-10.50	52.69
80.00	18 50 45	2521.70	-20.12	59.03	204.40	112.54	19 32 46	1521.7	-9.19	37.00
90.00	20 12 39	2257.44	-19.07	40.06	204.85	111.28	20 50 16	1257.4	-8.69	17.83
100.00	21 33 37	1996.17	-20.12	20.40	204.40	112.54	22 6 53	996.2	-9.19	358.36
110.00	22 40 50	1785.68	-22.92	3.07	203.04	116.04	23 10 35	785.7	-10.50	341.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1913	TRA	2.3657	TC3	-5.6406	BAU	.9464	SGT	5864.0	SGR	1680.0	SG3	1465.4	ST	113.5	SR	41.9	SS	105.0
RDE	.4577	RRA	.7688	RC3	-1.1787	FAU	.17154	RRT	.9730	RRF	.9956	RTF	.9762	CRT	.9973	CRS	-.9936	CST	-.9989
FDE	3.7406	FRA	8.1704	FC	-12.0892	BSP	10192	SGB	6099.9	R23	.1816	R13	.9794	LSA	160.1	MSA	4.9	SSA	1.4
BDE	1.2762	BRA	2.4875	BC3	5.7625	FSP	2640	SG1	6088.5	SG2	373.4	THA	15.64	EL1	121.0	EL2	2.9	ALF	20.23

LAUNCH DATE APR 24 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC DISTANCE 599.460 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.312	GAL	-3.29	AZL	89.59	HCA	193.24	SMA	184.29	ECC	.19206	INC	.4088
RP	219.25	LAP	-.09	LOP	46.41	VP	22.147	GAP	1.76	AZP	90.40	TAL	339.34	TAP	172.57	RCA	148.89	APO	219.68
RC	181.572	GL	3.78	GP	-15.15	ZAL	131.12	ZAP	63.96	ETS	171.43	ZAE	103.84	ETE	184.13	ZAC	87.38	ETC	270.97

V1	29.616	V2	25.068	LVI	5.65														

PLANETOCENTRIC CONIC

C3	12.434	VHL	3.526	DLA	-2.65	RAL	344.18	RAD	6639.3	VEL	11.511	PTH	6.56	VHP	3.324	DPA	-38.64	RAP	293.64

ECC	1.2046																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 4	2973.77	-29.79	89.17	198.15	128.98	17 7 38	1973.8	-12.68	70.74
60.00	17 0 27	2861.02	-25.53	82.46	201.59	122.31	17 48 8	1861.0	-10.77	62.39
70.00	17 55 49	2698.22	-21.69	71.65	203.98	117.05	18 40 47	1698.2	-8.99	50.50
80.00	19 6 57	2475.52	-18.89	56.16	205.39	113.56	19 48 12	1475.5	-7.68	34.40
90.00	20 29 37	2208.76	-17.84	37.02	205.86	112.31	21 6 26	1208.8	-7.18	15.06
100.00	21 49 48	1949.99	-18.89	17.53	205.39	113.56	22 22 18	950.0	-7.68	355.77
110.00	22 55 15	1745.04	-21.69	.57	203.98	117.05	23 24 20	745.0	-8.99	339.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1732	TRA	2.4937	TC3	-5.7418	BAU	.9704	SGT	6040.0	SGR	1515.3	SG3	1460.2	ST	113.2	SR	38.2	SS	102.8
RDE	.4207	RRA	.6930	RC3	-1.0526	FAU	.17111	RRT	.9718	RRF	.9937	RTF	.9769	CRT	.9939	CRS	-.9906	CST	-.9994
FDE	3.6395	FRA	8.2494	FC	-11.9137	BSP	10390	SGB	6227.2	R23	.1747	R13	.9794	LSA	157.5	MSA	5.0	SSA	1.5
BDE	1.2463	BRA	2.5887	BC3	5.8372	FSP	2621	SG1	6217.5	SG2	347.4	THA	13.74	EL1	119.4	EL2	4.0	ALF	18.54

LAUNCH DATE APR 24 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 603.599 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.319	GAL	-3.36	AZL	89.77	HCA	194.36	SMA	184.40	ECC	.19292	INC	.2348
RP	219.62	LAP	-.06	LOP	47.54	VP	22.111	GAP	1.60	AZP	90.23	TAL	338.93	TAP	173.29	RCA	148.83	APO	219.97
RC	184.172	GL	2.13	GP	-13.90	ZAL	131.66	ZAP	62.55	ETS	171.65	ZAE	102.52	ETE	183.46	ZAC	88.64	ETC	270.93

V1	29.616	V2	25.028	LVI	4.55														

PLANETOCENTRIC CONIC

C3	12.624	VHL	3.553	DLA	-3.99	RAL	345.25	RAD	6639.4	VEL	11.519	PTH	6.57	VHP	3.333	DPA	-37.43	RAP	293.20

ECC	1.2078																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 14	2950.24	-28.77	87.85	199.03	129.68	17 16 24	1950.2	-11.52	69.71
60.00	17 11 3	2833.68	-24.53	80.84	202.52	123.04	17 58 17	1833.7	-9.59	61.04
70.00	18 8 1	2666.19	-20.68	69.71	204.96	117.80	18 52 27	1666.2	-7.80	48.79
80.00	19 20 36	2438.92	-17.88	53.91	206.42	114.32	20 1 15	1438.9	-6.46	32.36
90.00	20 43 55	2170.12	-16.83	34.63	206.90	113.07	21 20 5	1170.1	-5.96	12.88
100.00	22 3 28	1913.39	-17.88	15.28	206.42	114.32	22 35 21	913.4	-6.46	353.73
110.00	23 7 27	1713.01	-20.68	358.62	204.96	117.80	23 36 0	713.0	-7.80	337.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1727	TRA	2.6276	TC3	-5.8004	BAU	.9916	SGT	6213.5	SGR	1375.6	SG3	1449.3	ST	114.2	SR	35.3	SS	101.3
RDE	.3948	RRA	.6323	RC3	-.9356	FAU	.16865	RRT	.9695	RRF	.9912	RTF	.9773	CRT	.9893	CRS	-.9870	CST	-.9997
FDE	3.5755	FRA	8.3132	FC	-11.5664	BSP	10697	SGB	6363.9	R23	.1675	R13	.9792	LSA	156.6	MSA	5.4	SSA	1.5
BDE	1.2374	BRA	2.7026	BC3	5.8754	FSP	2620	SG1	6355.4	SG2	329.8	THA	12.15	EL1	119.4	EL2	4.9	ALF	17.06

LAUNCH DATE APR 24 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 7 1972

DISTANCE 607.734

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.326	GAL	-3.44	AZL	89.92	HCA	195.48	SMA	184.52	ECC	.19381	INC	.0678	V1	29.616
RP	219.99	LAP	-.02	LOP	48.66	VP	22.075	GAP	1.44	AZP	90.08	TAL	338.52	TAP	174.01	RCA	148.76	APO	220.28	V2	24.987
RC	186.781	GL	.74	GP	-12.83	ZAL	132.17	ZAP	61.20	ETS	171.85	ZAE	101.20	ETE	182.89	ZAC	89.72	ETC	270.90	LVI	3.61

PLANETOCENTRIC CONIC

C3	12.842	VHL	3.584	DLA	-5.09	RAL	346.22	RAD	6639.5	VEL	11.529	PTH	6.58	VHP	3.347	DPA	-36.38	RAP	292.84	ECC	1.2113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 10	2931.96	-27.97	86.84	199.93	130.19	17 24 2	1932.0	-10.62	68.92
60.00	17 20 10	2812.26	-23.73	79.59	203.47	123.58	18 7 3	1812.3	-6.67	59.98
70.00	18 18 27	2640.88	-19.87	68.19	205.96	118.37	19 2 28	1640.9	-6.85	47.45
80.00	19 32 16	2409.82	-17.05	52.15	207.45	114.89	20 12 25	1409.8	-5.49	30.75
90.00	20 56 6	2139.31	-15.99	32.76	207.95	113.64	21 31 45	1139.3	-4.98	11.14
100.00	22 15 7	1884.29	-17.05	13.51	207.45	114.89	22 46 32	884.3	-5.49	352.11
110.00	23 17 54	1687.70	-19.87	357.11	205.96	118.37	23 46 1	687.7	-6.85	336.37

DIFFERENTIAL CORRECTIONS

TDE	1.1728	TRA	2.7526	TC3	-5.8682	BAU	1.0177
RDE	.3741	RRA	.5756	RC3	-.8386	FAU	.16651
FDE	3.5053	FRA	8.3292	FC	-11.2253	BSP	10909
BDE	1.2310	BRA	2.8121	BC3	5.9278	FSP	2588

MID-COURSE EXECUTION ACCURACY

SGT	6381.8	SGR	1254.1	SG3	1432.5
RRT	.9661	RRF	.9879	RTF	.9774
SGB	6503.8	R23	.1599	R13	.9789
SG1	6496.0	SG2	318.1	THA	10.78

ORBIT DETERMINATION ACCURACY

ST	115.0	SR	33.0	SS	99.7
CRT	.9832	CRS	-.9825	CST	-.9998
LSA	155.6	MSA	5.9	SSA	1.5
EL1	119.5	EL2	5.8	ALF	15.78

LAUNCH DATE APR 24 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 9 1972

DISTANCE 611.865

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.333	GAL	-3.52	AZL	90.05	HCA	196.60	SMA	184.64	ECC	.19472	INC	.0280	V1	29.616
RP	220.36	LAP	.01	LOP	49.78	VP	22.039	GAP	1.28	AZP	89.95	TAL	338.11	TAP	174.71	RCA	148.68	APO	220.59	V2	24.946
RC	189.399	GL	-.44	GP	-11.89	ZAL	132.65	ZAP	59.91	ETS	172.03	ZAE	99.89	ETE	182.41	ZAC	90.66	ETC	270.88	LVI	2.77

PLANETOCENTRIC CONIC

C3	13.082	VHL	3.617	DLA	-6.00	RAL	347.13	RAD	6639.6	VEL	11.539	PTH	6.59	VHP	3.365	DPA	-35.47	RAP	292.56	ECC	1.2153

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 7	2917.86	-27.35	86.07	200.85	130.58	17 30 45	1917.9	-9.92	68.31
60.00	17 28 6	2795.55	-23.10	78.63	204.43	123.99	18 14 42	1795.5	-7.94	59.17
70.00	18 27 29	2620.93	-19.22	67.01	206.96	118.79	19 11 10	1620.9	-6.10	46.39
80.00	19 42 18	2386.70	-16.39	50.75	208.48	115.31	20 22 5	1386.7	-4.72	29.47
90.00	21 6 35	2114.75	-15.32	31.27	208.99	114.07	21 41 50	1114.8	-4.20	9.76
100.00	22 25 10	1861.17	-16.39	12.12	208.48	115.31	22 56 11	861.2	-4.72	350.83
110.00	23 26 56	1667.75	-19.22	355.93	206.96	118.79	23 54 43	667.8	-6.10	335.31

DIFFERENTIAL CORRECTIONS

TDE	1.1838	TRA	2.8812	TC3	-5.9120	BAU	1.0423
RDE	.3591	RRA	.5254	RC3	-.7523	FAU	.16356
FDE	3.4527	FRA	8.3280	FC	-10.8239	BSP	11172
BDE	1.2371	BRA	2.9287	BC3	5.9597	FSP	2557

MID-COURSE EXECUTION ACCURACY

SGT	6547.3	SGR	1149.0	SG3	1412.3
RRT	.9617	RRF	.9837	RTF	.9776
SGB	6647.4	R23	.1510	R13	.9788
SG1	6640.1	SG2	310.4	THA	9.60

ORBIT DETERMINATION ACCURACY

ST	116.5	SR	31.1	SS	98.4
CRT	.9760	CRS	-.9773	CST	-.9998
LSA	155.5	MSA	6.6	SSA	1.5
EL1	120.4	EL2	6.5	ALF	14.65

LAUNCH DATE APR 24 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 11 1972

DISTANCE 615.990

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.341	GAL	-3.60	AZL	90.16	HCA	197.71	SMA	184.76	ECC	.19567	INC	.1609	V1	29.616
RP	220.74	LAP	.05	LOP	50.89	VP	22.003	GAP	1.12	AZP	89.84	TAL	337.69	TAP	175.40	RCA	148.61	APO	220.91	V2	24.904
RC	192.025	GL	-1.45	GP	-11.06	ZAL	133.11	ZAP	58.67	ETS	172.20	ZAE	98.60	ETE	182.01	ZAC	91.49	ETC	270.97	LVI	2.03

PLANETOCENTRIC CONIC

C3	13.340	VHL	3.652	DLA	-6.74	RAL	347.97	RAD	6639.7	VEL	11.550	PTH	6.60	VHP	3.386	DPA	-34.66	RAP	292.35	ECC	1.2195

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 15	2907.14	-26.88	85.49	201.76	130.86	17 36 42	1907.1	-9.39	67.64
60.00	17 35 3	2782.65	-22.60	77.90	205.38	124.30	18 21 26	1782.6	-7.38	58.54
70.00	18 35 22	2605.33	-18.71	66.09	207.95	119.11	19 18 47	1605.3	-5.51	45.57
80.00	19 51 2	2368.44	-15.85	49.66	209.50	115.64	20 30 30	1368.4	-4.11	28.46
90.00	21 15 41	2095.28	-14.77	30.10	210.02	114.39	21 50 36	1095.3	-3.58	8.67
100.00	22 33 53	1842.91	-15.85	11.03	209.50	115.64	23 4 36	842.9	-4.11	349.83
110.00	23 34 48	1652.15	-18.71	355.01	207.95	119.11	24 2 20	652.1	-5.51	334.49

DIFFERENTIAL CORRECTIONS

TDE	1.2001	TRA	3.0102	TC3	-5.9457	BAU	1.0673
RDE	.3479	RRA	.4806	RC3	-.6771	FAU	.16029
FDE	3.4062	FRA	8.3114	FC	-10.4022	BSP	11445
BDE	1.2495	BRA	3.0483	BC3	5.9842	FSP	2524

MID-COURSE EXECUTION ACCURACY

SGT	6709.6	SGR	1057.7	SG3	1389.6
RRT	.9561	RRF	.9782	RTF	.9776
SGB	6792.4	R23	.1420	R13	.9786
SG1	6785.5	SG2	306.4	THA	8.59

ORBIT DETERMINATION ACCURACY

ST	118.3	SR	29.6	SS	97.2
CRT	.9677	CRS	-.9713	CST	-.9997
LSA	155.7	MSA	7.2	SSA	1.5
EL1	121.7	EL2	7.2	ALF	13.65

LAUNCH DATE APR 24 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 13 1972

DISTANCE 620.111

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.348	GAL	-3.68	AZL	90.27	HCA	198.82	SMA	184.89	ECC	.19665	INC	.2652	V1	29.616
RP	221.12	LAP	.09	LOP	52.00	VP	21.968	GAP	.96	AZP	89.75	TAL	337.26	TAP	176.08	RCA	148.53	APO	221.25	V2	24.863
RC	194.659	GL	-2.33	GP	-10.33	ZAL	133.57	ZAP	57.48	ETS	172.36	ZAE	97.33	ETE	181.66	ZAC	92.22	ETC	270.87	LVI	1.37

PLANETOCENTRIC CONIC

C3	13.614	VHL	3.690	DLA	-7.36	RAL	348.76	RAD	6639.9	VEL	11.562	PTH	6.61	VHP	3.410	DPA	-33.94	RAP	292.20	ECC	1.2240

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 42	2899.17	-26.52	85.07	202.67	131.07	17 42 2	1899.2	-8.99	67.50
60.00	17 41 12	2772.88	-22.23	77.35	206.33	124.53	18 27 24	1772.9	-6.96	58.07
70.00	18 42 16	2593.30	-18.31	65.39	208.93	119.35	19 25 29	1593.3	-5.05	44.94
80.00	19 58 39	2354.18	-15.43	48.81	210.50	115.88	20 37 53	1354.2	-3.63	27.67
90.00	21 23 38	2080.01	-14.34	29.19	211.03	114.64	21 58 18	1080.0	-3.09	7.81
100.00	22 41 31	1828.65	-15.43	10.18	210.50	115.88	23 11 59	828.7	-3.63	349.04
110.00	23 41 43	1640.11	-18.31	354.31	208.93	119.35	24 9 3	640.1	-5.05	333.85

DIFFERENTIAL CORRECTIONS

TDE	1.2221	TRA	3.1405	TC3	-5.9694	BAU	1.0921
RDE	.3398	RRA	.4401	RC3	-.6114	FAU	.15680
FDE	3.3666	FRA	8.2826	FC3	-9.9717	BSP	11719
BDE	1.2684	BRA	3.1711	BC3	6.0006	FSP	2486

MID-COURSE EXECUTION ACCURACY

SGT	6869.1	SGR	978.1	SG3	1365.2
RRT	.9491	RRF	.9715	RTF	.9776
SGB	6938.4	R23	.1327	R13	.9784
SG1	6931.7	SG2	305.3	THA	7.71

ORBIT DETERMINATION ACCURACY

ST	120.4	SR	28.3	SS	96.0
CRT	.9586	CRS	-.9647	CST	-.9996
LSA	156.4	MSA	7.9	SSA	1.4
EL1	123.4	EL2	7.9	ALF	12.77

LAUNCH DATE APR 24 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 624.227 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.356	GAL	-3.77	AZL	90.36	HCA	199.93	SMA	185.02	ECC	.19765	INC	.3549
RP	221.30	LAP	.12	LOP	53.11	VP	21.932	GAP	.80	AZP	89.66	TAL	336.83	TAP	176.76	RCA	148.45	APO	221.59
RC	197.299	GL	-3.09	GP	-9.69	ZAL	134.02	ZAP	56.33	ETS	172.51	ZAE	96.08	ETE	181.36	ZAC	92.86	ETC	270.88

V1	29.616																		
V2	24.821																		
LVI	.76																		

PLANETOCENTRIC CONIC

C3	13.900	VHL	3.728	DLA	-7.87	RAL	349.51	RAD	6640.0	VEL	11.574	PTH	6.62	VHP	3.436	DPA	-33.30	RAP	292.11

ECC	1.2288																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 36	2893.50	-26.27	84.77	203.58	131.21	17 46 50	1893.5	-8.71	67.26
60.00	17 46 39	2765.70	-21.95	76.94	207.26	124.69	18 32 45	1765.7	-6.64	57.72
70.00	18 48 22	2584.24	-18.01	64.86	209.89	119.52	19 31 27	1584.2	-4.71	44.46
80.00	20 5 21	2343.26	-15.10	48.17	211.49	116.07	20 44 24	1343.3	-3.26	27.07
90.00	21 30 36	2068.24	-14.01	28.49	212.03	114.82	22 5 4	1068.2	-2.71	7.16
100.00	22 48 13	1817.73	-15.10	9.53	211.49	116.07	23 18 31	817.7	-3.26	348.44
110.00	23 47 49	1631.06	-18.01	353.78	209.89	119.52	24 15 0	631.1	-4.71	333.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2458	TRA	3.2684	TC3	-5.9918	BAU	1.1182	SGT	7024.1	SGR	908.1	SG3	1338.8	ST	122.4	SR	27.3	SS	94.9
RDE	.3338	RRA	.4029	RC3	-.5543	FAU	.15332	RRT	.9404	RRF	.9631	RTF	.9775	CRT	.9485	CRS	-.9574	CST	-.9994
FDE	3.3270	FRA	8.2359	FC3	-9.5492	BSP	11975	SGB	7082.6	R23	.1239	R13	.9782	LSA	157.1	MSA	8.5	SSA	1.4
BDE	1.2898	BRA	3.2932	BC3	6.0173	FSP	2443	SG1	7075.9	SG2	306.7	THA	6.94	EL1	125.2	EL2	8.5	ALF	12.00

LAUNCH DATE APR 24 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 628.337 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.364	GAL	-3.85	AZL	90.44	HCA	201.03	SMA	185.15	ECC	.19868	INC	.4370
RP	221.88	LAP	.16	LOP	54.21	VP	21.897	GAP	.64	AZP	89.59	TAL	336.39	TAP	177.43	RCA	148.37	APO	221.94
RC	199.945	GL	-3.75	GP	-9.11	ZAL	134.46	ZAP	55.23	ETS	172.66	ZAE	94.85	ETE	181.10	ZAC	93.44	ETC	270.89

V1	29.616																		
V2	24.780																		
LVI	.21																		

PLANETOCENTRIC CONIC

C3	14.199	VHL	3.768	DLA	-8.29	RAL	350.22	RAD	6640.1	VEL	11.587	PTH	6.63	VHP	3.463	DPA	-32.72	RAP	292.07

ECC	1.2337																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 1	2889.76	-26.10	84.57	204.47	131.31	17 51 11	1889.8	-8.52	67.10
60.00	17 51 33	2760.71	-21.76	76.66	208.19	124.80	18 37 33	1760.7	-6.42	57.48
70.00	18 53 48	2577.69	-17.78	64.48	210.85	119.65	19 36 45	1577.7	-4.46	44.12
80.00	20 11 16	2335.16	-14.86	47.69	212.46	116.20	20 50 11	1335.2	-2.99	26.62
90.00	21 36 44	2059.42	-13.76	27.96	213.01	114.95	22 11 3	1059.4	-2.42	6.66
100.00	22 54 8	1809.63	-14.86	9.06	212.46	116.20	23 24 18	809.6	-2.99	347.99
110.00	23 53 14	1624.50	-17.78	353.40	210.85	119.65	24 20 19	624.5	-4.46	333.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2752	TRA	3.3995	TC3	-6.0019	BAU	1.1433	SGT	7176.8	SGR	847.1	SG3	1311.8	ST	124.8	SR	26.5	SS	93.9
RDE	.3301	RRA	.3691	RC3	-.5035	FAU	.14953	RRT	.9297	RRF	.9529	RTF	.9774	CRT	.9379	CRS	-.9497	CST	-.9992
FDE	3.2965	FRA	8.1854	FC3	-9.1170	BSP	12250	SGB	7226.6	R23	.1156	R13	.9779	LSA	158.2	MSA	9.2	SSA	1.4
BDE	1.3173	BRA	3.4195	BC3	6.0230	FSP	2402	SG1	7220.0	SG2	310.1	THA	6.27	EL1	127.3	EL2	9.0	ALF	11.32

LAUNCH DATE APR 24 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC DISTANCE 632.442 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.372	GAL	-3.94	AZL	90.51	HCA	202.13	SMA	185.29	ECC	.19974	INC	.5099
RP	222.27	LAP	.19	LOP	55.31	VP	21.862	GAP	.48	AZP	89.53	TAL	335.95	TAP	178.09	RCA	148.28	APO	222.30
RC	202.595	GL	-4.33	GP	-8.59	ZAL	134.90	ZAP	54.16	ETS	172.79	ZAE	93.65	ETE	180.87	ZAC	93.96	ETC	270.91

V1	29.616																		
V2	24.738																		
LVI	-.30																		

PLANETOCENTRIC CONIC

C3	14.509	VHL	3.809	DLA	-8.64	RAL	350.90	RAD	6640.3	VEL	11.600	PTH	6.64	VHP	3.492	DPA	-32.19	RAP	292.07

ECC	1.2388																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 2	2887.65	-26.00	84.46	205.36	131.36	17 55 10	1887.6	-8.42	67.01
60.00	17 55 57	2757.57	-21.63	76.49	209.10	124.87	18 41 54	1757.6	-6.29	57.32
70.00	18 58 38	2573.26	-17.64	64.22	211.78	119.73	19 41 31	1573.3	-4.29	43.88
80.00	20 16 31	2329.45	-14.69	47.35	213.42	116.29	20 55 20	1329.5	-2.79	26.31
90.00	21 42 9	2053.13	-13.57	27.59	213.97	115.05	22 16 23	1053.1	-2.22	6.31
100.00	22 59 23	1803.92	-14.69	8.72	213.42	116.29	23 29 27	803.9	-2.79	347.68
110.00	0 2 0	1620.08	-17.64	353.14	211.78	119.73	0 29 0	620.1	-4.29	332.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3067	TRA	3.5306	TC3	-6.0099	BAU	1.1692	SGT	7326.7	SGR	793.7	SG3	1284.3	ST	127.3	SR	25.8	SS	92.9
RDE	.3280	RRA	.3380	RC3	-.4589	FAU	.14574	RRT	.9170	RRF	.9407	RTF	.9771	CRT	.9269	CRS	-.9415	CST	-.9990
FDE	3.2670	FRA	8.1275	FC3	-8.6957	BSP	12508	SGB	7369.5	R23	.1080	R13	.9776	LSA	159.4	MSA	9.8	SSA	1.4
BDE	1.3472	BRA	3.5468	BC3	6.0274	FSP	2356	SG1	7362.8	SG2	315.1	THA	5.68	EL1	129.5	EL2	9.5	ALF	10.72

LAUNCH DATE APR 24 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 636.541 EARTH TO MARS

RL	150.45	LAL	-.00	LOL	213.18	VL	32.380	GAL	-4.03	AZL	90.58	HCA	203.23	SMA	185.43	ECC	.20083	INC	.5765
RP	222.65	LAP	.23	LOP	56.40	VP	21.827	GAP	.32	AZP	89.47	TAL	335.51	TAP	178.74	RCA	148.19	APO	222.66
RC	203.250	GL	-4.85	GP	-8.12	ZAL	135.35	ZAP	53.14	ETS	172.92	ZAE	92.46	ETE	180.67	ZAC	94.43	ETC	270.94

V1	29.616																		
V2	24.696																		
LVI	-.77																		

PLANETOCENTRIC CONIC

C3	14.830	VHL	3.851	DLA	-8.91	RAL	351.56	RAD	6640.4	VEL	11.614	PTH	6.65	VHP	3.523	DPA	-31.71	RAP	292.12

ECC	1.2441																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 42	2886.93	-25.97	84.42	206.23	131.38	17 58 49	1886.9	-8.38	68.98
60.00	17 59 55	2756.02	-21.57	76.40	210.00	124.90	18 45 51	1756.0	-6.22	57.25
70.00	19 2 58	2570.66	-17.55	64.07	212.71	119.78	19 45 48	1570.7	-4.19	43.75
80.00	20 21 11	2325.80	-14.58	47.14	214.36	116.35	20 59 57	1325.8	-2.67	26.11
90.00	21 46 58	2049.00	-13.45	27.34	214.91	115.11	22 21 7	1049.0	-2.09	6.08
100.00	23 4 3	1800.28	-14.58	8.50	214.36	116.35	23 34 3	800.3	-2.67	347.48
110.00	0 6 20	1617.48	-17.55	352.99	212.71	119.78	0 33 17	617.5	-4.19	332.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3411	TRA	3.6627	TC3	-6.0124	BAU	1.1950	SGT	7473.5	SGR	747.0	SG3	1256.2	ST	129.8	SR	25.3	SS	92.0
RDE	.3271	RRA	.3091	RC3	-.4198	FAU	.14202	RRT	.9020	RRF	.9263	RTF	.9769	CRT	.9155	CRS	-.9331	CST	-.9987
FDE	3.2383	FRA	8.0618	FC3	-8.2903	BSP	12771	SGB	7510.7	R23	.1006	R13	.9773	LSA	160.7	MSA	10.3	SSA	1.3
BDE	1.3804	BRA	3.6758	BC3	6.0271	FSP	2310	SG1	7503.8	SG2	321.2	THA	5.16	EL1	131.9	EL2	10.0	ALF	10.19

LAUNCH DATE APR 24 1971 FLIGHT TIME 274.00 ARRIVAL DATE JAN 23 1972

DISTANCE 640.636

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.389 GAL -4.12 AZL 90.64 HCA 204.32 SMA 185.57 ECC .20194 INC .6367 V1 29.616
RP 223.04 LAP .26 LOP 57.50 VP 21.792 GAP .16 AZP 89.42 TAL 333.06 TAP 179.38 RCA 148.09 APO 223.04 V2 24.654
RC 207.907 GL -5.30 GP -7.69 ZAL 135.79 ZAP 52.15 ETS 173.04 ZAE 91.30 ETE 180.50 ZAC 94.85 ETC 270.97 LVI -1.22

PLANETOCENTRIC CONIC

C3 15.162 VHL 3.894 DLA -9.14 RAL 352.19 RAD 6640.6 VEL 11.628 PTH 6.67 VHP 3.554 DPA -31.27 RAP 292.20 ECC 1.2495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 3	2887.41	-25.99	84.45	207.10	131.36	18 2 10	1887.4	-8.40	67.00
60.00	18 3 31	2755.84	-21.57	76.39	210.90	124.91	18 49 27	1755.8	-6.21	57.24
70.00	19 6 51	2569.63	-17.51	64.01	213.62	119.80	19 49 41	1569.6	-4.15	43.69
80.00	20 25 20	2323.94	-14.52	47.03	215.28	116.38	21 4 4	1323.9	-2.61	26.01
90.00	21 51 15	2046.74	-13.39	27.21	215.84	115.14	22 25 22	1046.7	-2.02	5.96
100.00	23 8 12	1798.41	-14.52	8.39	215.28	116.38	23 38 11	798.4	-2.61	347.38
110.00	0 10 14	1616.45	-17.51	352.93	213.62	119.80	0 37 10	616.5	-4.15	332.61

DIFFERENTIAL CORRECTIONS

TDE 1.3782 TRA 3.7956 TC3-6.0108 BAU 1.2209
RDE .3276 RRA .2823 RC3 -.3848 FAU .13818
FDE 3.2139 FRA 7.9930 FC3-7.8895 BSP 13023
BDE 1.4166 BRA 3.8061 BC3 6.0231 FSP 2264

MID-COURSE EXECUTION ACCURACY

SGT 7617.3 SGR 706.5 SG3 1228.0
RRT .8845 RRF .9095 RTF .9766
SGB 7650.0 R23 .0943 R13 .9770
SG1 7643.0 SG2 328.5 THA 4.70

ORBIT DETERMINATION ACCURACY

ST 132.4 SR 24.9 SS 91.1
CRT .9040 CRS -.9245 CST -.9985
LSA 162.2 MSA 10.9 SSA 1.3
EL1 134.3 EL2 10.5 ALF 9.72

LAUNCH DATE APR 24 1971 FLIGHT TIME 276.00 ARRIVAL DATE JAN 25 1972

DISTANCE 644.714

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.397 GAL -4.21 AZL 90.69 HCA 205.41 SMA 185.71 ECC .20307 INC .6923 V1 29.616
RP 223.42 LAP .30 LOP 58.58 VP 21.757 GAP -.00 AZP 89.37 TAL 334.61 TAP 180.01 RCA 148.00 APO 223.42 V2 24.612
RC 210.566 GL -5.69 GP -7.30 ZAL 136.23 ZAP 51.19 ETS 173.15 ZAE 90.17 ETE 180.35 ZAC 95.23 ETC 271.02 LVI -1.64

PLANETOCENTRIC CONIC

C3 15.505 VHL 3.938 DLA -9.31 RAL 352.80 RAD 6640.8 VEL 11.643 PTH 6.68 VHP 3.586 DPA -30.86 RAP 292.32 ECC 1.2552

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 8	2888.94	-26.06	84.53	207.96	131.33	18 5 17	1888.9	-8.48	67.06
60.00	18 6 48	2756.84	-21.60	76.45	211.78	124.89	18 52 45	1756.8	-6.26	57.29
70.00	19 10 22	2569.97	-17.52	64.03	214.52	119.79	19 53 12	1570.0	-4.17	43.71
80.00	20 29 4	2323.61	-14.51	47.01	216.19	116.38	21 7 47	1323.6	-2.60	25.99
90.00	21 55 4	2046.11	-13.37	27.17	216.76	115.15	22 29 11	1046.1	-2.00	5.92
100.00	23 11 56	1798.09	-14.51	8.38	216.19	116.38	23 41 54	798.1	-2.60	347.36
110.00	0 13 44	1616.79	-17.52	352.95	214.52	119.79	0 40 41	616.8	-4.17	332.63

DIFFERENTIAL CORRECTIONS

TDE 1.4174 TRA 3.9305 TC3-6.0036 BAU 1.2467
RDE .3289 RRA .2574 RC3 -.3539 FAU .13437
FDE 3.1887 FRA 7.9206 FC3-7.5031 BSP 13277
BDE 1.4551 BRA 3.9389 BC3 6.0142 FSP 2217

MID-COURSE EXECUTION ACCURACY

SGT 7758.7 SGR 671.4 SG3 1199.8
RRT .8647 RRF .8902 RTF .9763
SGB 7787.7 R23 .0883 R13 .9766
SG1 7780.5 SG2 336.3 THA 4.29

ORBIT DETERMINATION ACCURACY

ST 135.1 SR 24.6 SS 90.1
CRT .8925 CRS -.9158 CST -.9983
LSA 163.8 MSA 11.4 SSA 1.3
EL1 136.8 EL2 11.0 ALF 9.29

LAUNCH DATE APR 24 1971 FLIGHT TIME 278.00 ARRIVAL DATE JAN 27 1972

DISTANCE 648.805

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.406 GAL -4.30 AZL 90.74 HCA 206.49 SMA 185.86 ECC .20424 INC .7434 V1 29.616
RP 223.81 LAP .33 LOP 59.67 VP 21.723 GAP -.16 AZP 89.33 TAL 334.15 TAP 180.64 RCA 147.90 APO 223.82 V2 24.571
RC 213.227 GL -6.05 GP -6.94 ZAL 136.67 ZAP 50.27 ETS 173.26 ZAE 89.05 ETE 180.21 ZAC 95.58 ETC 271.06 LVI -2.04

PLANETOCENTRIC CONIC

C3 15.858 VHL 3.982 DLA -9.44 RAL 353.39 RAD 6640.9 VEL 11.658 PTH 6.70 VHP 3.619 DPA -30.49 RAP 292.48 ECC 1.2610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 59	2891.38	-26.17	84.66	208.82	131.26	18 8 11	1891.4	-8.60	67.17
60.00	18 9 49	2758.88	-21.68	76.56	212.66	124.84	18 55 48	1758.9	-6.34	57.39
70.00	19 13 32	2571.51	-17.58	64.12	215.41	119.77	19 56 24	1571.5	-4.22	43.79
80.00	20 32 24	2324.65	-14.54	47.07	217.10	116.37	21 11 9	1324.6	-2.63	26.05
90.00	21 58 29	2046.91	-13.39	27.22	217.67	115.14	22 32 36	1046.9	-2.02	5.96
100.00	23 15 16	1799.12	-14.54	8.44	217.10	116.37	23 45 15	799.1	-2.63	347.41
110.00	0 16 55	1618.33	-17.58	353.04	215.41	119.77	0 43 53	618.3	-4.22	332.71

DIFFERENTIAL CORRECTIONS

TDE 1.4593 TRA 4.0668 TC3-5.9934 BAU 1.2725
RDE .3313 RRA .2341 RC3 -.3263 FAU .13055
FDE 3.1662 FRA 7.8468 FC3-7.1274 BSP 13535
BDE 1.4964 BRA 4.0736 BC3 6.0023 FSP 2171

MID-COURSE EXECUTION ACCURACY

SGT 7898.0 SGR 641.3 SG3 1171.9
RRT .8423 RRF .8684 RTF .9760
SGB 7924.0 R23 .0831 R13 .9762
SG1 7916.5 SG2 344.9 THA 3.92

ORBIT DETERMINATION ACCURACY

ST 137.8 SR 24.4 SS 89.2
CRT .8812 CRS -.9072 CST -.9981
LSA 165.5 MSA 11.9 SSA 1.3
EL1 139.5 EL2 11.4 ALF 8.92

LAUNCH DATE APR 24 1971 FLIGHT TIME 280.00 ARRIVAL DATE JAN 29 1972

DISTANCE 652.881

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.45 LAL -.00 LOL 213.18 VL 32.415 GAL -4.40 AZL 90.79 HCA 207.57 SMA 186.01 ECC .20542 INC .7903 V1 29.616
RP 224.20 LAP .37 LOP 60.75 VP 21.688 GAP -.33 AZP 89.30 TAL 333.69 TAP 181.26 RCA 147.80 APO 224.22 V2 24.529
RC 215.890 GL -6.36 GP -6.62 ZAL 137.11 ZAP 49.38 ETS 173.37 ZAE 87.96 ETE 180.09 ZAC 95.90 ETC 271.12 LVI -2.42

PLANETOCENTRIC CONIC

C3 16.221 VHL 4.028 DLA -9.54 RAL 353.96 RAD 6641.1 VEL 11.673 PTH 6.71 VHP 3.653 DPA -30.13 RAP 292.67 ECC 1.2670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 38	2894.61	-26.32	84.83	209.67	131.18	18 10 53	1894.6	-8.76	67.31
60.00	18 12 34	2761.83	-21.80	76.73	213.52	124.78	18 58 36	1761.8	-6.47	57.53
70.00	19 16 25	2574.10	-17.66	64.27	216.29	119.72	19 59 19	1574.1	-4.32	43.93
80.00	20 35 24	2326.87	-14.61	47.20	217.99	116.33	21 14 11	1326.9	-2.71	26.17
90.00	22 1 32	2048.97	-13.45	27.34	218.56	115.11	22 35 41	1049.0	-2.09	6.08
100.00	23 18 16	1801.34	-14.61	8.57	217.99	116.33	23 48 17	801.3	-2.71	347.54
110.00	0 19 47	1620.92	-17.66	353.19	216.29	119.72	0 46 48	620.9	-4.32	332.85

DIFFERENTIAL CORRECTIONS

TDE 1.5020 TRA 4.2034 TC3-5.9813 BAU 1.2988
RDE .3343 RRA .2120 RC3 -.3019 FAU .12684
FDE 3.1426 FRA 7.7680 FC3-6.7693 BSP 13777
BDE 1.5388 BRA 4.2087 BC3 5.9889 FSP 2123

MID-COURSE EXECUTION ACCURACY

SGT 8034.0 SGR 615.5 SG3 1143.9
RRT .8175 RRF .8442 RTF .9756
SGB 8057.6 R23 .0784 R13 .9758
SG1 8049.8 SG2 353.8 THA 3.59

ORBIT DETERMINATION ACCURACY

ST 140.5 SR 24.2 SS 88.3
CRT .8700 CRS -.8986 CST -.9979
LSA 167.2 MSA 12.4 SSA 1.3
EL1 142.1 EL2 11.8 ALF 8.59

LAUNCH DATE APR 25 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 15 1971

HELIOCENTRIC CONIC DISTANCE 323.024 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 34.948 GAL -4.40 AZL 91.92 HCA 105.81 SMA 244.58 ECC .39114 INC 1.9224 V1 29.608
RP 207.32 LAP -1.85 LOP 319.97 VP 27.160 GAP 21.38 AZP 89.48 TAL 344.30 TAP 90.12 RCA 148.91 APO 340.24 V2 26.420
RC 56.291 GL -10.86 GP 1.21 ZAL 120.43 ZAP 173.78 ETS 168.69 ZAE 173.53 ETE 106.85 ZAC 101.76 ETC 276.90 LVI -17.98

PLANETOCENTRIC CONIC

C3 38.462 VHL 6.202 DLA -19.68 RAL 341.23 RAD 6650.1 VEL 12.583 PTH 7.45 VHP 10.570 DPA -17.28 RAP 316.53 ECC 1.6330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 48	2897.27	-26.44	84.97	207.33	131.12	17 57 5	1697.3	-8.90	67.42
60.00	18 11 47	2729.79	-20.54	74.95	212.40	125.47	18 57 17	1729.8	-5.07	55.98
70.00	19 31 26	2495.62	-14.96	59.80	216.24	121.07	20 13 2	1495.6	-1.33	39.82
80.00	21 6 33	2197.94	-10.59	39.74	218.78	118.08	21 43 11	1197.9	1.66	19.09
90.00	22 40 28	1895.00	-8.84	18.39	219.71	116.97	23 12 3	895.0	2.87	357.49
100.00	23 49 25	1672.41	-10.59	1.11	218.78	118.08	24 17 17	672.4	1.66	340.46
110.00	0 34 49	1542.43	-14.96	348.72	216.24	121.07	1 0 31	542.4	-1.33	328.74

DIFFERENTIAL CORRECTIONS

TDE -.5787 TRA-1.2290 TC3 -.0429 BAU .0512
RDE -.5707 RRA .1996 RC3 .0899 FAU .03576
FDE .3328 FRA 1.1708 FC3 -.8050 BSP 2174
BDE .8128 BRA 1.2451 BC3 .0996 FSP 174

MID-COURSE EXECUTION ACCURACY

SGT 1320.2 SGR 573.4 SG3 134.2
RRT .0527 RRF -.0544 RTF -.7300
SGB 1439.3 R23 -.0071 R13 -.7301
SG1 1320.6 SG2 572.4 THA 1.61

ORBIT DETERMINATION ACCURACY

ST 32.3 SR 26.5 SS 21.1
CRT .7611 CRS .5781 CST .9673
LSA 43.6 MSA 16.9 SSA 1.1
EL1 39.3 EL2 14.1 ALF 37.72

LAUNCH DATE APR 25 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 325.314 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 34.777 GAL -4.27 AZL 91.93 HCA 107.07 SMA 239.44 ECC .37786 INC 1.9341 V1 29.608
RP 207.22 LAP -1.85 LOP 321.23 VP 26.956 GAP 20.87 AZP 89.43 TAL 344.37 TAP 91.44 RCA 148.97 APO 329.91 V2 26.432
RC 56.455 GL -11.21 GP 1.25 ZAL 120.45 ZAP 172.93 ETS 169.73 ZAE 173.72 ETE 98.83 ZAC 101.75 ETC 276.99 LVI -18.14

PLANETOCENTRIC CONIC

C3 36.259 VHL 6.022 DLA -19.98 RAL 341.43 RAD 6649.3 VEL 12.496 PTH 7.38 VHP 10.242 DPA -17.12 RAP 316.92 ECC 1.5967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 53	2876.15	-25.48	83.86	206.66	131.64	17 58 49	1876.2	-7.84	66.52
60.00	18 14 19	2707.48	-19.66	73.73	211.72	125.92	18 59 26	1707.5	-4.09	54.91
70.00	19 34 33	2471.60	-14.11	58.46	215.58	121.43	20 15 45	1471.6	-.41	38.57
80.00	21 10 20	2171.85	-9.75	38.26	218.14	118.36	21 46 31	1171.8	2.54	17.66
90.00	22 44 36	1867.77	-8.00	16.83	219.08	117.22	23 15 44	867.8	3.74	355.96
100.00	23 53 12	1646.32	-9.75	359.63	218.14	118.36	24 20 38	646.3	2.54	339.03
110.00	0 37 55	1518.42	-14.11	347.37	215.58	121.43	1 3 14	518.4	-.41	327.49

DIFFERENTIAL CORRECTIONS

TDE -.5735 TRA-1.2277 TC3 -.0303 BAU .0490
RDE -.5527 RRA .1908 RC3 .0964 FAU .03690
FDE .3434 FRA 1.2198 FC3 -.8809 BSP 2157
BDE .7965 BRA 1.2425 BC3 .1010 FSP 188

MID-COURSE EXECUTION ACCURACY

SGT 1358.0 SGR 572.1 SG3 143.5
RRT .0549 RRF -.0594 RTF -.7426
SGB 1473.6 R23 -.0099 R13 -.7428
SG1 1358.4 SG2 571.1 THA 1.61

ORBIT DETERMINATION ACCURACY

ST 33.0 SR 26.5 SS 21.9
CRT .7588 CRS .5746 CST .9672
LSA 44.5 MSA 17.1 SSA 1.1
EL1 39.8 EL2 14.3 ALF 36.77

LAUNCH DATE APR 25 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 327.784 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 34.620 GAL -4.14 AZL 91.95 HCA 108.34 SMA 234.80 ECC .36534 INC 1.9458 V1 29.608
RP 207.13 LAP -1.85 LOP 322.50 VP 26.763 GAP 20.38 AZP 89.39 TAL 344.44 TAP 92.78 RCA 149.02 APO 320.58 V2 26.443
RC 56.701 GL -11.56 GP 1.29 ZAL 120.45 ZAP 172.07 ETS 170.54 ZAE 173.79 ETE 90.75 ZAC 101.75 ETC 277.08 LVI -18.30

PLANETOCENTRIC CONIC

C3 34.228 VHL 5.850 DLA -20.29 RAL 341.62 RAD 6648.6 VEL 12.415 PTH 7.32 VHP 9.926 DPA -16.96 RAP 317.30 ECC 1.5633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 59	2855.08	-24.53	82.77	206.00	132.14	18 0 34	1855.1	-6.79	65.62
60.00	18 16 53	2685.15	-18.76	72.52	211.07	126.35	19 1 38	1685.2	-3.11	53.84
70.00	19 37 44	2447.45	-13.25	57.11	214.94	121.77	20 18 32	1447.4	.51	37.31
80.00	21 14 14	2145.46	-8.89	36.77	217.52	118.62	21 49 59	1145.5	3.43	16.21
90.00	22 48 53	1840.14	-7.13	15.26	218.47	117.44	23 19 33	840.1	4.63	354.41
100.00	0 1 2	1619.93	-8.89	358.14	217.52	118.62	0 28 2	619.9	3.43	337.57
110.00	0 41 7	1494.27	-13.25	346.03	214.94	121.77	1 6 1	494.3	.51	326.23

DIFFERENTIAL CORRECTIONS

TDE -.5693 TRA-1.2184 TC3 -.0201 BAU .0481
RDE -.5353 RRA .1822 RC3 .1032 FAU .03810
FDE .3543 FRA 1.2699 FC3 -.9636 BSP 2214
BDE .7814 BRA 1.2320 BC3 .1051 FSP 203

MID-COURSE EXECUTION ACCURACY

SGT 1389.1 SGR 570.6 SG3 153.3
RRT .0598 RRF -.0649 RTF -.7519
SGB 1501.8 R23 -.0109 R13 -.7521
SG1 1389.7 SG2 569.3 THA 1.69

ORBIT DETERMINATION ACCURACY

ST 33.8 SR 26.4 SS 22.7
CRT .7592 CRS .5712 CST .9661
LSA 45.3 MSA 17.3 SSA 1.1
EL1 40.4 EL2 14.4 ALF 35.87

LAUNCH DATE APR 25 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 330.414 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 34.470 GAL -4.02 AZL 91.96 HCA 109.60 SMA 230.59 ECC .35355 INC 1.9578 V1 29.608
RP 207.05 LAP -1.84 LOP 323.78 VP 26.579 GAP 19.89 AZP 89.34 TAL 344.53 TAP 94.13 RCA 149.07 APO 312.12 V2 26.453
RC 57.030 GL -11.92 GP 1.34 ZAL 120.43 ZAP 171.19 ETS 171.20 ZAE 173.75 ETE 82.97 ZAC 101.75 ETC 277.16 LVI -18.46

PLANETOCENTRIC CONIC

C3 32.352 VHL 5.688 DLA -20.61 RAL 341.79 RAD 6647.9 VEL 12.340 PTH 7.27 VHP 9.619 DPA -16.81 RAP 317.67 ECC 1.5324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 5	2834.05	-23.56	81.70	205.37	132.61	18 2 19	1834.1	-5.74	64.73
60.00	18 19 29	2662.80	-17.85	71.32	210.43	126.75	19 3 52	1662.8	-2.13	52.77
70.00	19 41 0	2423.16	-12.37	55.78	214.32	122.09	20 21 23	1423.2	1.44	36.04
80.00	21 18 16	2118.76	-8.02	35.27	216.92	118.86	21 53 35	1118.8	4.33	14.73
90.00	22 53 20	1812.09	-6.25	13.68	217.88	117.64	23 23 32	812.1	5.52	352.83
100.00	0 5 4	1593.23	-8.02	356.64	216.92	118.86	0 31 37	593.2	4.33	336.10
110.00	0 44 23	1469.97	-12.37	344.69	214.32	122.09	1 8 52	470.0	1.44	324.96

DIFFERENTIAL CORRECTIONS

TDE -.5574 TRA-1.2011 TC3 .0010 BAU .0477
RDE -.5183 RRA .1737 RC3 .1103 FAU .03929
FDE .3671 FRA 1.3241 FC3-1.0515 BSP 2191
BDE .7612 BRA 1.2136 BC3 .1103 FSP 221

MID-COURSE EXECUTION ACCURACY

SGT 1409.3 SGR 568.6 SG3 163.9
RRT .0644 RRF -.0712 RTF -.7672
SGB 1519.7 R23 -.0122 R13 -.7674
SG1 1409.9 SG2 567.2 THA 1.78

ORBIT DETERMINATION ACCURACY

ST 34.1 SR 26.3 SS 23.5
CRT .7574 CRS .5690 CST .9662
LSA 45.8 MSA 17.5 SSA 1.1
EL1 40.6 EL2 14.4 ALF 35.36

LAUNCH DATE APR 25 1971 FLIGHT TIME 120.00 ARRIVAL DATE AUG 23 1971

DISTANCE 333.187

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 34.330 GAL -3.90 AZL 91.97 HCA 110.87 SMA 226.78 ECC .34244 INC 1.9700 V1 29.608
RP 206.97 LAP -1.84 LOP 325.03 VP 26.405 GAP 19.41 AZP 89.30 TAL 344.63 TAP 95.50 RCA 149.12 APO 304.43 V2 26.462
RC 57.440 GL -12.28 GP 1.39 ZAL 120.39 ZAP 170.29 ETS 171.74 ZAE 173.62 ETE 75.78 ZAC 101.75 ETC 277.24 LVI -18.61

PLANETOCENTRIC CONIC

C3 30.623 VHL 5.534 DLA -20.94 RAL 341.95 RAD 6647.2 VEL 12.270 PTH 7.21 VHP 9.323 DPA -16.65 RAP 318.02 ECC 1.5040

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 12	2813.17	-22.60	80.65	204.77	133.06	18 4 5	1813.2	-4.69	63.85
60.00	18 22 7	2640.53	-16.94	70.15	209.82	127.13	19 6 8	1640.5	-1.15	51.71
70.00	19 44 21	2398.83	-11.49	54.45	213.72	122.39	20 24 19	1398.8	2.37	34.77
80.00	21 22 26	2091.84	-7.13	33.76	216.35	119.07	21 57 18	1091.8	5.23	13.25
90.00	22 57 58	1783.71	-5.35	12.07	217.32	117.81	23 27 41	783.7	6.42	351.23
100.00	0 9 14	1566.31	-7.13	355.13	216.35	119.07	0 35 20	566.3	5.23	334.61
110.00	0 47 43	1445.64	-11.49	343.36	213.72	122.39	1 11 48	445.6	2.37	323.69

DIFFERENTIAL CORRECTIONS

TDE -.5561 TRA-1.1943 TC3 .0100 BAU .0484
RDE -.5020 RRA .1653 RC3 .1178 FAU .04069
FDE .3777 FRA 1.3779 FC3-1.1503 BSP 2293
BDE .7492 BRA 1.2057 BC3 .1182 FSP 238

MID-COURSE EXECUTION ACCURACY

SGT 1443.9 SGR 566.3 SG3 175.1
RRT .0709 RRF -.0777 RTF -.7730
SGB 1551.0 R23 -.0130 R13 -.7732
SG1 1444.5 SG2 564.6 THA 1.88

ORBIT DETERMINATION ACCURACY

ST 35.0 SR 26.1 SS 24.3
CRT .7588 CRS .5648 CST .9643
LSA 46.8 MSA 17.6 SSA 1.2
EL1 41.2 EL2 14.4 ALF 34.36

LAUNCH DATE APR 25 1971 FLIGHT TIME 122.00 ARRIVAL DATE AUG 25 1971

DISTANCE 336.085

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 34.197 GAL -3.79 AZL 91.98 HCA 112.13 SMA 223.30 ECC .33197 INC 1.9823 V1 29.608
RP 206.90 LAP -1.84 LOP 326.30 VP 26.240 GAP 18.94 AZP 89.25 TAL 344.74 TAP 96.87 RCA 149.17 APO 297.43 V2 26.469
RC 57.930 GL -12.66 GP 1.44 ZAL 120.34 ZAP 169.38 ETS 172.19 ZAE 173.41 ETE 69.36 ZAC 101.75 ETC 277.32 LVI -18.76

PLANETOCENTRIC CONIC

C3 29.026 VHL 5.388 DLA -21.29 RAL 342.09 RAD 6646.6 VEL 12.205 PTH 7.16 VHP 9.036 DPA -16.50 RAP 318.36 ECC 1.4777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 20	2792.41	-21.63	79.63	204.19	133.47	18 5 52	1792.4	-3.65	62.98
60.00	18 24 48	2618.30	-16.03	68.99	209.24	127.49	19 8 27	1318.3	-.17	50.65
70.00	19 47 46	2374.42	-10.60	53.12	213.15	122.66	20 27 20	1374.4	3.30	33.50
80.00	21 26 44	2064.66	-6.23	32.25	215.80	119.26	22 1 9	1064.7	6.14	11.74
90.00	23 2 46	1754.92	-4.43	10.46	216.78	117.96	23 32 1	754.9	7.32	349.60
100.00	0 13 32	1539.13	-6.23	353.62	215.80	119.26	0 39 11	539.1	6.14	333.11
110.00	0 51 8	1421.24	-10.60	342.04	213.15	122.66	1 14 49	421.2	3.30	322.41

DIFFERENTIAL CORRECTIONS

TDE -.5529 TRA-1.1853 TC3 .0213 BAU .0494
RDE -.4861 RRA .1571 RC3 .1256 FAU .04216
FDE .3883 FRA 1.4348 FC3-1.2575 BSP 2377
BDE .7362 BRA 1.1956 BC3 .1274 FSP 257

MID-COURSE EXECUTION ACCURACY

SGT 1475.3 SGR 563.7 SG3 187.1
RRT .0777 RRF -.0847 RTF -.7793
SGB 1579.3 R23 -.0139 R13 -.7795
SG1 1476.0 SG2 561.7 THA 1.99

ORBIT DETERMINATION ACCURACY

ST 35.7 SR 26.0 SS 25.1
CRT .7598 CRS .5602 CST .9625
LSA 47.6 MSA 17.7 SSA 1.2
EL1 41.7 EL2 14.5 ALF 33.47

LAUNCH DATE APR 25 1971 FLIGHT TIME 124.00 ARRIVAL DATE AUG 27 1971

DISTANCE 339.098

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 34.071 GAL -3.67 AZL 91.99 HCA 113.40 SMA 220.12 ECC .32210 INC 1.9949 V1 29.608
RP 206.85 LAP -1.83 LOP 327.56 VP 26.083 GAP 18.48 AZP 89.21 TAL 344.85 TAP 98.25 RCA 149.22 APO 291.02 V2 26.476
RC 58.496 GL -13.03 GP 1.49 ZAL 120.26 ZAP 168.46 ETS 172.57 ZAE 173.16 ETE 63.78 ZAC 101.76 ETC 277.39 LVI -18.91

PLANETOCENTRIC CONIC

C3 27.551 VHL 5.249 DLA -21.64 RAL 342.23 RAD 6646.0 VEL 12.145 PTH 7.11 VHP 8.759 DPA -16.35 RAP 318.68 ECC 1.4534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 29	2771.81	-20.66	78.62	203.64	133.87	18 7 40	1771.8	-2.62	62.12
60.00	18 27 31	2596.16	-15.11	67.84	208.68	127.82	19 10 48	1596.2	.80	49.59
70.00	19 51 16	2349.98	-9.70	51.80	212.61	122.91	20 30 26	1350.0	4.23	32.22
80.00	21 31 12	2037.22	-5.32	30.73	215.28	119.42	22 5 9	1037.2	7.05	10.21
90.00	23 7 46	1725.72	-3.50	8.82	216.28	118.08	23 36 32	725.7	8.23	347.94
100.00	0 18 0	1511.70	-5.32	352.10	215.28	119.42	0 43 11	511.7	7.05	331.58
110.00	0 54 38	1396.79	-9.70	340.72	212.61	122.91	1 17 55	396.8	4.23	321.13

DIFFERENTIAL CORRECTIONS

TDE -.5489 TRA-1.1757 TC3 .0344 BAU .0509
RDE -.4708 RRA .1489 RC3 .1337 FAU .04369
FDE .3998 FRA 1.4947 FC3-1.3728 BSP 2453
BDE .7231 BRA 1.1851 BC3 .1381 FSP 277

MID-COURSE EXECUTION ACCURACY

SGT 1505.5 SGR 560.7 SG3 199.8
RRT .0848 RRF -.0923 RTF -.7861
SGB 1606.5 R23 -.0151 R13 -.7864
SG1 1506.4 SG2 558.3 THA 2.10

ORBIT DETERMINATION ACCURACY

ST 36.4 SR 25.8 SS 25.0
CRT .7606 CRS .5560 CST .9609
LSA 48.4 MSA 17.9 SSA 1.2
EL1 42.2 EL2 14.5 ALF 32.63

LAUNCH DATE APR 25 1971 FLIGHT TIME 126.00 ARRIVAL DATE AUG 29 1971

DISTANCE 342.212

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 33.952 GAL -3.56 AZL 92.01 HCA 114.67 SMA 217.21 ECC .31279 INC 2.0078 V1 29.608
RP 206.80 LAP -1.82 LOP 328.83 VP 25.933 GAP 18.03 AZP 89.16 TAL 344.98 TAP 99.65 RCA 149.27 APO 285.15 V2 26.482
RC 59.137 GL -13.41 GP 1.55 ZAL 120.18 ZAP 167.51 ETS 172.89 ZAE 172.89 ETE 59.03 ZAC 101.78 ETC 277.46 LVI -19.06

PLANETOCENTRIC CONIC

C3 26.189 VHL 5.118 DLA -22.01 RAL 342.35 RAD 6645.5 VEL 12.089 PTH 7.07 VHP 8.491 DPA -16.20 RAP 318.98 ECC 1.4310

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 38	2751.37	-19.69	77.64	203.12	134.23	18 9 30	1751.4	-1.59	61.26
60.00	18 30 17	2574.12	-14.18	66.71	208.15	128.13	19 13 11	1574.1	1.77	48.54
70.00	19 54 52	2325.50	-8.79	50.49	212.09	123.14	20 33 37	1325.5	5.15	30.93
80.00	21 35 49	2009.53	-4.39	29.20	214.79	119.56	22 9 19	1009.5	7.97	8.66
90.00	23 12 59	1696.10	-2.55	7.16	215.81	118.17	23 41 15	696.1	9.15	346.25
100.00	0 22 37	1484.00	-4.39	350.57	214.79	119.56	0 47 21	484.0	7.97	330.03
110.00	0 58 14	1372.32	-8.79	339.41	212.09	123.14	1 21 6	372.3	5.15	319.85

DIFFERENTIAL CORRECTIONS

TDE -.5437 TRA-1.1644 TC3 .0491 BAU .0527
RDE -.4559 RRA .1408 RC3 .1422 FAU .04533
FDE .4112 FRA 1.5570 FC3-1.4986 BSP 2516
BDE .7096 BRA 1.1729 BC3 .1505 FSP 299

MID-COURSE EXECUTION ACCURACY

SGT 1533.1 SGR 557.4 SG3 213.4
RRT .0925 RRF -.1008 RTF -.7926
SGB 1631.3 R23 -.0165 R13 -.7930
SG1 1534.1 SG2 554.6 THA 2.22

ORBIT DETERMINATION ACCURACY

ST 37.0 SR 25.7 SS 26.8
CRT .7612 CRS .5516 CST .9592
LSA 49.2 MSA 18.0 SSA 1.2
EL1 42.7 EL2 14.4 ALF 31.87

LAUNCH DATE APR 25 1971 FLIGHT TIME 128.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 345.418 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 33.840 GAL -3.45 AZL 92.02 HCA 115.93 SMA 214.54 ECC .30402 INC 2.0209 V1 29.608
RP 206.75 LAP -1.82 LOP 330.10 VP 25.791 GAP 17.58 AZP 89.12 TAL 345.11 TAP 101.05 RCA 149.31 APO 279.76 V2 26.487
RC 59.850 GL -13.80 GP 1.61 ZAL 120.07 ZAP 166.55 ETS 173.17 ZAE 172.61 ETE 55.03 ZAC 101.80 ETC 277.53 LVI -19.21

PLANETOCENTRIC CONIC

C3 24.930 VHL 4.993 DLA -22.39 RAL 342.46 RAD 6645.0 VEL 12.038 PTH 7.02 VHP 8.231 DPA -16.05 RAP 319.27 ECC 1.4103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 49	2731.14	-18.73	76.69	202.62	134.58	18 11 20	1731.1	-.58	60.42
60.00	18 33 6	2552.21	-13.26	65.59	207.65	128.41	19 15 38	1552.2	2.74	47.49
70.00	19 58 33	2301.01	-7.87	49.18	211.61	123.34	20 36 54	1301.0	6.08	29.64
80.00	21 40 37	1981.58	-3.45	27.66	214.34	119.68	22 13 38	981.6	8.88	7.09
90.00	23 18 26	1666.03	-1.58	5.48	215.37	118.24	23 46 12	666.0	10.07	344.52
100.00	0 27 24	1456.05	-3.45	349.02	214.34	119.68	0 51 40	456.0	8.88	328.46
110.00	1 1 55	1347.83	-7.87	338.10	211.61	123.34	1 24 23	347.8	6.08	318.56

DIFFERENTIAL CORRECTIONS

TDE -.5383 TRA-1.1531 TC3 .0655 BAU .0549
RDE -.4416 RRA .1327 RC3 .1511 FAU .04709
FDE .4229 FRA 1.6231 FC3-1.6353 BSP 2577
BDE .6963 BRA 1.1607 BC3 .1647 FSP 322

MID-COURSE EXECUTION ACCURACY

SGT 1560.1 SGR 553.7 SG3 227.9
RRT .1009 RRF -.1099 RTF -.7992
SGB 1655.4 R23 -.0179 R13 -.7995
SG1 1561.2 SG2 550.5 THA 2.34

ORBIT DETERMINATION ACCURACY

ST 37.6 SR 25.5 SS 27.6
CRT .7619 CRS .5470 CST .9574
LSA 50.0 MSA 18.1 SSA 1.2
EL1 43.1 EL2 14.4 ALF 31.14

LAUNCH DATE APR 25 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 348.707 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 33.734 GAL -3.35 AZL 92.03 HCA 117.20 SMA 212.09 ECC .29576 INC 2.0343 V1 29.608
RP 206.72 LAP -1.81 LOP 331.37 VP 25.656 GAP 17.14 AZP 89.07 TAL 345.25 TAP 102.46 RCA 149.36 APO 274.81 V2 26.491
RC 60.633 GL -14.19 GP 1.67 ZAL 119.95 ZAP 165.57 ETS 173.40 ZAE 172.34 ETE 51.72 ZAC 101.82 ETC 277.59 LVI -19.35

PLANETOCENTRIC CONIC

C3 23.767 VHL 4.875 DLA -22.77 RAL 342.57 RAD 6644.5 VEL 11.989 PTH 6.98 VHP 7.979 DPA -15.90 RAP 319.53 ECC 1.3911

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 1	2711.12	-17.77	75.75	202.16	134.90	18 13 12	1711.1	.43	59.58
60.00	18 35 57	2530.44	-12.34	64.50	207.18	128.68	19 18 8	1530.4	3.69	46.44
70.00	20 2 20	2276.52	-6.96	47.88	211.15	123.52	20 40 16	1276.5	7.00	28.34
80.00	21 45 35	1953.36	-2.49	26.10	213.91	119.76	22 18 8	953.4	9.80	5.50
90.00	23 24 8	1635.48	-.60	3.78	214.96	118.27	23 51 24	635.5	10.99	342.75
100.00	0 32 23	1427.83	-2.49	347.47	213.91	119.76	0 56 11	427.8	9.80	326.87
110.00	1 5 42	1323.34	-6.96	336.80	211.15	123.52	1 27 45	323.3	7.00	317.26

DIFFERENTIAL CORRECTIONS

TDE -.5326 TRA-1.1414 TC3 .0824 BAU .0573
RDE -.4277 RRA .1247 RC3 .1604 FAU .04895
FDE .4354 FRA 1.6927 FC3-1.7829 BSP 2631
BDE .6831 BRA 1.1482 BC3 .1803 FSP 347

MID-COURSE EXECUTION ACCURACY

SGT 1585.8 SGR 549.9 SG3 243.4
RRT .1100 RRF -.1201 RTF -.8054
SGB 1678.5 R23 -.0197 R13 -.8058
SG1 1587.1 SG2 546.1 THA 2.48

ORBIT DETERMINATION ACCURACY

ST 38.2 SR 25.2 SS 28.5
CRT .7626 CRS .5428 CST .9557
LSA 50.7 MSA 18.2 SSA 1.2
EL1 43.4 EL2 14.3 ALF 30.44

LAUNCH DATE APR 25 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 352.071 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 33.634 GAL -3.25 AZL 92.05 HCA 118.47 SMA 209.83 ECC .28796 INC 2.0480 V1 29.608
RP 206.70 LAP -1.80 LOP 332.64 VP 25.528 GAP 16.71 AZP 89.02 TAL 345.40 TAP 103.87 RCA 149.41 APO 270.25 V2 26.494
RC 61.483 GL -14.59 GP 1.74 ZAL 119.82 ZAP 164.56 ETS 173.61 ZAE 172.10 ETE 49.01 ZAC 101.86 ETC 277.65 LVI -19.49

PLANETOCENTRIC CONIC

C3 22.693 VHL 4.764 DLA -23.16 RAL 342.67 RAD 6644.0 VEL 11.945 PTH 6.95 VHP 7.736 DPA -15.76 RAP 319.77 ECC 1.3735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 30 14	2691.35	-16.82	74.84	201.72	135.19	18 15 6	1691.3	1.42	58.76
60.00	18 38 52	2508.84	-11.41	63.42	206.74	128.92	19 20 40	1508.8	4.64	45.41
70.00	20 6 12	2252.06	-6.03	46.59	210.73	123.68	20 43 44	1252.1	7.92	27.04
80.00	21 50 45	1924.87	-1.53	24.54	213.52	119.82	22 22 50	924.9	10.71	3.88
90.00	23 30 7	1604.39	.40	2.04	214.60	118.28	23 56 51	604.4	11.92	340.94
100.00	0 37 33	1399.34	-1.53	345.91	213.52	119.82	1 0 52	399.3	10.71	325.25
110.00	1 9 35	1298.88	-6.03	335.51	210.73	123.68	1 31 14	298.9	7.92	315.96

DIFFERENTIAL CORRECTIONS

TDE -.5262 TRA-1.1284 TC3 .1006 BAU .0599
RDE -.4142 RRA .1168 RC3 .1700 FAU .05094
FDE .4472 FRA 1.7649 FC3-1.9434 BSP 2680
BDE .6697 BRA 1.1344 BC3 .1976 FSP 374

MID-COURSE EXECUTION ACCURACY

SGT 1609.0 SGR 545.7 SG3 259.9
RRT .1198 RRF -.1310 RTF -.8118
SGB 1699.1 R23 -.0215 R13 -.8117
SG1 1610.5 SG2 541.3 THA 2.62

ORBIT DETERMINATION ACCURACY

ST 38.6 SR 25.0 SS 29.4
CRT .7633 CRS .5379 CST .9537
LSA 51.4 MSA 18.3 SSA 1.2
EL1 43.7 EL2 14.3 ALF 29.80

LAUNCH DATE APR 25 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 355.505 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 33.540 GAL -3.15 AZL 92.06 HCA 119.74 SMA 207.75 ECC .28062 INC 2.0621 V1 29.608
RP 206.68 LAP -1.79 LOP 333.91 VP 25.405 GAP 16.29 AZP 88.98 TAL 345.55 TAP 105.29 RCA 149.45 APO 266.05 V2 26.496
RC 62.398 GL -14.99 GP 1.82 ZAL 119.68 ZAP 163.54 ETS 173.78 ZAE 171.89 ETE 46.82 ZAC 101.89 ETC 277.70 LVI -19.63

PLANETOCENTRIC CONIC

C3 21.700 VHL 4.658 DLA -23.57 RAL 342.76 RAD 6643.6 VEL 11.904 PTH 6.91 VHP 7.500 DPA -15.61 RAP 319.99 ECC 1.3571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 32 29	2671.83	-15.87	73.95	201.31	135.47	18 17 1	1671.8	2.40	57.94
60.00	18 41 49	2487.43	-10.50	62.35	206.32	129.14	19 23 16	1487.4	5.58	44.38
70.00	20 10 11	2227.62	-5.11	45.30	210.34	123.82	20 47 19	1227.6	8.83	25.74
80.00	21 56 8	1896.08	-.55	22.96	213.17	119.85	22 27 44	896.1	11.63	2.24
90.00	23 36 23	1572.71	1.43	.28	214.27	118.25	24 2 36	572.7	12.86	339.08
100.00	0 42 55	1370.55	-.55	344.33	213.17	119.85	1 5 46	370.5	11.63	323.60
110.00	1 13 34	1274.44	-5.11	334.22	210.34	123.82	1 34 48	274.4	8.83	314.66

DIFFERENTIAL CORRECTIONS

TDE -.5200 TRA-1.1156 TC3 .1181 BAU .0624
RDE -.4013 RRA .1089 RC3 .1800 FAU .05301
FDE .4599 FRA 1.8419 FC3-2.1151 BSP 2731
BDE .6568 BRA 1.1209 BC3 .2152 FSP 404

MID-COURSE EXECUTION ACCURACY

SGT 1631.6 SGR 541.4 SG3 277.4
RRT .1305 RRF -.1429 RTF -.8166
SGB 1719.1 R23 -.0235 R13 -.8171
SG1 1633.4 SG2 536.2 THA 2.78

ORBIT DETERMINATION ACCURACY

ST 39.1 SR 24.8 SS 30.3
CRT .7643 CRS .5334 CST .9516
LSA 52.1 MSA 18.4 SSA 1.2
EL1 44.0 EL2 14.2 ALF 29.16

LAUNCH DATE APR 25 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 8 1971

DISTANCE 359,000

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 33.451 GAL -3.06 AZL 92.08 HCA 121.01 SMA 205.83 ECC .27370 INC 2.0765 V1 29.608
RP 206.67 LAP -1.78 LOP 335.18 VP 25.288 GAP 15.88 AZP 88.93 TAL 345.70 TAP 106.71 RCA 149.49 APO 262.16 V2 26.496
RC 63.376 GL -15.40 GP 1.89 ZAL 119.53 ZAP 162.49 ETS 173.94 ZAE 171.72 ETE 45.11 ZAC 101.94 ETC 277.75 LVI -19.77

PLANETOCENTRIC CONIC

C3 20.782 VHL 4.559 DLA -23.97 RAL 342.84 RAD 6643.2 VEL 11.865 PTH 6.88 VHP 7.272 DPA -15.47 RAP 320.19 ECC 1.3420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 34 45	2652.59	-14.93	73.08	200.92	135.72	18 18 58	1652.6	3.37	57.14
60.00	18 44 50	2466.22	-9.58	61.31	205.94	129.34	19 25 56	1466.2	6.50	43.35
70.00	20 14 17	2203.23	-4.18	44.02	209.98	123.93	20 51 0	1203.2	9.74	24.43
80.00	22 1 44	1866.96	.43	21.36	212.86	119.85	22 32 51	867.0	12.55	.56
90.00	23 43 0	1540.34	2.47	358.47	213.98	118.18	24 8 40	540.3	13.79	337.17
100.00	0 48 32	1341.43	.43	342.73	212.86	119.85	1 10 53	341.4	12.55	321.93
110.00	1 17 39	1250.05	-4.18	332.94	209.98	123.93	1 38 29	250.0	9.74	313.35

DIFFERENTIAL CORRECTIONS

TDE -.5136 TRA-1.1020 TC3 .1363 BAU .0651
RDE -.3888 RRA .1011 RC3 .1903 FAU .05526
FDE .4727 FRA 1.9224 FC3-2.3019 BSP 2776
BDE .6442 BRA 1.1066 BC3 .2341 FSP 434

MID-COURSE EXECUTION ACCURACY

SGT 1652.2 SGR 536.8 SG3 296.2
RRT .1424 RRF -.1559 RTF -.8215
SGB 1737.2 R23 -.0258 R13 -.8220
SG1 1654.1 SG2 530.7 THA 2.95

ORBIT DETERMINATION ACCURACY

ST 39.5 SR 24.5 SS 31.2
CRT .7656 CRS .5288 CST .9494
LSA 52.8 MSA 18.5 SSA 1.2
EL1 44.3 EL2 14.1 ALF 28.57

LAUNCH DATE APR 25 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 10 1971

DISTANCE 362,553

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 33.367 GAL -2.97 AZL 92.09 HCA 122.28 SMA 204.05 ECC .26719 INC 2.0913 V1 29.608
RP 206.68 LAP -1.77 LOP 336.45 VP 25.177 GAP 15.48 AZP 88.88 TAL 345.86 TAP 108.14 RCA 149.53 APO 258.57 V2 26.496
RC 64.414 GL -15.80 GP 1.97 ZAL 119.37 ZAP 161.42 ETS 174.07 ZAE 171.60 ETE 43.83 ZAC 101.99 ETC 277.80 LVI -19.90

PLANETOCENTRIC CONIC

C3 19.935 VHL 4.465 DLA -24.38 RAL 342.92 RAD 6642.8 VEL 11.830 PTH 6.85 VHP 7.052 DPA -15.33 RAP 320.36 ECC 1.3281

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 3	2633.65	-14.01	72.23	200.57	135.95	18 20 57	1633.6	4.32	56.34
60.00	18 47 54	2445.24	-8.68	60.28	205.59	129.51	19 28 39	1445.2	7.42	42.33
70.00	20 18 29	2178.88	-3.26	42.74	209.66	124.02	20 54 48	1178.9	10.63	23.12
80.00	22 7 35	1837.47	1.43	19.74	212.58	119.83	22 38 12	837.5	13.46	358.85
90.00	23 49 59	1507.17	3.53	356.61	213.74	118.08	24 15 7	507.2	14.74	335.19
100.00	0 54 22	1311.95	1.43	341.11	212.58	119.83	1 16 14	311.9	13.46	320.22
110.00	1 21 52	1225.70	-3.26	331.66	209.66	124.02	1 42 17	225.7	10.63	312.03

DIFFERENTIAL CORRECTIONS

TDE -.5065 TRA-1.0875 TC3 .1545 BAU .0676
RDE -.3767 RRA .0932 RC3 .2011 FAU .05764
FDE .4851 FRA 2.0068 FC3-2.5032 BSP 2820
BDE .6312 BRA 1.0915 BC3 .2536 FSP 467

MID-COURSE EXECUTION ACCURACY

SGT 1670.1 SGR 532.1 SG3 316.0
RRT .1549 RRF -.1701 RTF -.8259
SGB 1752.8 R23 -.0284 R13 -.8266
SG1 1672.3 SG2 525.0 THA 3.14

ORBIT DETERMINATION ACCURACY

ST 39.8 SR 24.2 SS 32.1
CRT .7668 CRS .5238 CST .9470
LSA 53.4 MSA 18.6 SSA 1.2
EL1 44.5 EL2 13.9 ALF 28.03

LAUNCH DATE APR 25 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 12 1971

DISTANCE 366,158

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 33.288 GAL -2.86 AZL 92.11 HCA 123.55 SMA 202.41 ECC .26105 INC 2.1066 V1 29.608
RP 206.69 LAP -1.76 LOP 337.72 VP 25.071 GAP 15.08 AZP 88.84 TAL 346.02 TAP 109.57 RCA 149.57 APO 255.25 V2 26.495
RC 65.512 GL -16.22 GP 2.06 ZAL 119.21 ZAP 160.32 ETS 174.19 ZAE 171.54 ETE 42.94 ZAC 102.05 ETC 277.84 LVI -20.03

PLANETOCENTRIC CONIC

C3 19.152 VHL 4.376 DLA -24.80 RAL 343.00 RAD 6642.5 VEL 11.797 PTH 6.82 VHP 6.838 DPA -15.20 RAP 320.51 ECC 1.3152

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 39 23	2615.01	-13.10	71.40	200.29	136.16	18 22 58	1615.0	5.25	55.58
60.00	18 51 1	2424.48	-7.77	59.26	205.28	129.67	19 31 26	1424.5	8.32	41.32
70.00	20 22 49	2154.60	-2.33	41.47	209.37	124.08	20 58 44	1154.6	11.52	21.80
80.00	22 13 42	1807.57	2.44	18.10	212.35	119.77	22 43 49	807.6	14.37	357.10
90.00	0 1 21	1473.04	4.62	354.70	213.55	117.93	0 25 54	473.0	15.69	333.13
100.00	1 0 29	1282.04	2.44	339.47	212.35	119.77	1 21 51	282.0	14.37	316.47
110.00	1 26 11	1201.41	-2.33	330.39	209.37	124.08	1 46 13	201.4	11.52	310.71

DIFFERENTIAL CORRECTIONS

TDE -.5004 TRA-1.0733 TC3 .1722 BAU .0700
RDE -.3650 RRA .0853 RC3 .2123 FAU .06016
FDE .4991 FRA 2.0967 FC3-2.7196 BSP 2855
BDE .6193 BRA 1.0767 BC3 .2734 FSP 502

MID-COURSE EXECUTION ACCURACY

SGT 1687.6 SGR 527.3 SG3 337.3
RRT .1692 RRF -.1858 RTF -.8300
SGB 1768.1 R23 -.0312 R13 -.8307
SG1 1690.2 SG2 518.9 THA 3.34

ORBIT DETERMINATION ACCURACY

ST 40.1 SR 24.0 SS 33.1
CRT .7688 CRS .5198 CST .9445
LSA 54.1 MSA 18.7 SSA 1.3
EL1 44.7 EL2 13.8 ALF 27.48

LAUNCH DATE APR 25 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 14 1971

DISTANCE 369,812

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 33.213 GAL -2.80 AZL 92.12 HCA 124.82 SMA 200.89 ECC .25527 INC 2.1223 V1 29.608
RP 206.71 LAP -1.74 LOP 338.99 VP 24.969 GAP 14.70 AZP 88.79 TAL 346.18 TAP 111.00 RCA 149.61 APO 252.17 V2 26.493
RC 66.667 GL -16.63 GP 2.15 ZAL 119.03 ZAP 159.20 ETS 174.29 ZAE 171.52 ETE 42.44 ZAC 102.12 ETC 277.87 LVI -20.16

PLANETOCENTRIC CONIC

C3 18.429 VHL 4.293 DLA -25.22 RAL 343.07 RAD 6642.1 VEL 11.767 PTH 6.79 VHP 6.632 DPA -15.06 RAP 320.63 ECC 1.3033

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 41 45	2596.66	-12.19	70.59	199.96	136.36	18 25 1	1596.7	6.17	54.78
60.00	18 54 12	2403.94	-6.88	58.26	204.99	129.81	19 34 16	1403.9	9.21	40.32
70.00	20 27 16	2130.31	-1.41	40.20	209.12	124.13	21 2 46	1130.3	12.40	20.47
80.00	22 20 7	1777.12	3.47	16.42	212.15	119.67	22 49 44	777.1	15.29	355.30
90.00	0 9 18	1437.67	5.75	352.71	213.40	117.74	0 33 16	437.7	16.65	330.98
100.00	1 6 55	1251.59	3.47	337.79	212.15	119.67	1 27 46	251.6	15.29	316.67
110.00	1 30 38	1177.13	-1.41	329.12	209.12	124.13	1 50 16	177.1	12.40	309.39

DIFFERENTIAL CORRECTIONS

TDE -.4845 TRA-1.0488 TC3 .2088 BAU .0755
RDE -.3536 RRA .0776 RC3 .2243 FAU .06293
FDE .5106 FRA 2.1888 FC3-2.9564 BSP 2779
BDE .5998 BRA 1.0517 BC3 .3064 FSP 538

MID-COURSE EXECUTION ACCURACY

SGT 1686.7 SGR 522.4 SG3 359.7
RRT .1846 RRF -.2027 RTF -.8391
SGB 1765.7 R23 -.0326 R13 -.8399
SG1 1689.7 SG2 512.5 THA 3.60

ORBIT DETERMINATION ACCURACY

ST 39.8 SR 23.7 SS 34.0
CRT .7679 CRS .5142 CST .9428
LSA 54.3 MSA 18.8 SSA 1.2
EL1 44.3 EL2 13.6 ALF 27.34

LAUNCH DATE APR 25 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 373.509 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 33.143 GAL -2.72 AZL 92.14 HCA 126.09 SMA 199.48 ECC .24983 INC 2.1384 V1 29.608
RP 206.73 LAP -1.73 LOP 340.26 VP 24.872 GAP 14.32 AZP 88.74 TAL 346.34 TAP 112.43 RCA 149.64 APO 249.31 V2 26.489
RC 67.877 GL -17.04 GP 2.25 ZAL 118.86 ZAP 158.05 ETS 174.38 ZAE 171.57 ETE 42.32 ZAC 102.20 ETC 277.90 LVI -20.29

PLANETOCENTRIC CONIC

C3 17.763 VHL 4.215 DLA -25.65 RAL 343.14 RAD 6641.8 VEL 11.738 PTH 6.77 VHP 6.432 DPA -14.93 RAP 320.72 ECC 1.2923

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 44 8	2578.70	-11.31	69.80	199.70	136.53	18 27 7	1578.7	7.07	54.02
60.00	18 57 27	2383.72	-6.00	57.28	204.74	129.93	19 37 11	1383.7	10.08	39.32
70.00	20 31 51	2106.17	-.48	38.94	208.91	124.15	21 6 57	1106.2	13.27	19.14
80.00	22 26 52	1746.19	4.51	14.72	212.01	119.55	22 55 58	746.2	16.20	353.46
90.00	0 17 51	1400.95	6.91	350.63	213.32	117.49	0 41 12	400.9	17.62	328.72
100.00	1 13 39	1220.66	4.51	336.09	212.01	119.55	1 34 0	220.7	16.20	314.83
110.00	1 35 13	1152.99	-.48	327.86	208.91	124.15	1 54 26	153.0	13.27	308.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4821 TRA-1.0376 TC3 .2153 BAU .0759 SGT 1706.2 SGR 517.5 SG3 383.7 ST 40.3 SR 23.4 SS 35.0
RDE -.3428 RRA .0695 RC3 .2362 FAU .06576 RRT .2010 RRF -.2214 RTF -.8393 CRT .7719 CRS .5106 CST .9393
FDE .5253 FRA 2.2892 FC3-3.2051 BSP 2866 SGB 1782.9 R23 -.0371 R13 -.8402 LSA 55.1 MSA 18.9 SSA 1.2
BDE .5915 BRA 1.0399 BC3 .3196 FSP 579 SG1 1709.6 SG2 505.9 THA 3.82 EL1 44.6 EL2 13.4 ALF 26.70

LAUNCH DATE APR 25 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 377.247 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 33.076 GAL -2.64 AZL 92.16 HCA 127.35 SMA 198.17 ECC .24472 INC 2.1551 V1 29.608
RP 206.77 LAP -1.71 LOP 341.52 VP 24.779 GAP 13.95 AZP 88.69 TAL 346.50 TAP 113.86 RCA 149.68 APO 246.67 V2 26.485
RC 69.140 GL -17.46 GP 2.35 ZAL 118.68 ZAP 156.87 ETS 174.46 ZAE 171.67 ETE 42.59 ZAC 102.29 ETC 277.92 LVI -20.41

PLANETOCENTRIC CONIC

C3 17.148 VHL 4.141 DLA -26.07 RAL 343.21 RAD 6641.5 VEL 11.712 PTH 6.74 VHP 6.239 DPA -14.81 RAP 320.78 ECC 1.2822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 34	2561.09	-10.44	69.04	199.47	136.69	18 29 15	1561.1	7.95	53.27
60.00	19 0 45	2363.77	-5.13	56.32	204.52	130.03	19 40 9	1363.8	10.94	38.33
70.00	20 36 34	2082.07	.44	37.69	208.73	124.15	21 11 16	1082.1	14.13	17.80
80.00	22 33 59	1714.55	5.57	12.97	211.91	119.38	23 2 34	714.5	17.12	351.56
90.00	0 27 8	1362.30	8.12	348.44	213.29	117.18	0 49 51	362.3	18.61	326.32
100.00	1 20 47	1189.02	5.57	334.34	211.91	119.38	1 40 36	189.0	17.12	312.93
110.00	1 39 56	1128.89	.44	326.61	208.73	124.15	1 58 45	128.9	14.13	306.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4776 TRA-1.0230 TC3 .2251 BAU .0769 SGT 1718.9 SGR 512.7 SG3 409.1 ST 40.6 SR 23.0 SS 36.1
RDE -.3323 RRA .0615 RC3 .2487 FAU .06876 RRT .2191 RRF -.2417 RTF -.8404 CRT .7759 CRS .5073 CST .9359
FDE .5400 FRA 2.3938 FC3-3.4714 BSP 2922 SGB 1793.7 R23 -.0416 R13 -.8415 LSA 55.9 MSA 19.0 SSA 1.3
BDE .5818 BRA 1.0248 BC3 .3355 FSP 623 SG1 1722.9 SG2 499.1 THA 4.08 EL1 44.8 EL2 13.2 ALF 26.18

LAUNCH DATE APR 25 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 381.022 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 33.014 GAL -2.57 AZL 92.17 HCA 128.62 SMA 196.96 ECC .23992 INC 2.1724 V1 29.608
RP 206.81 LAP -1.70 LOP 342.79 VP 24.690 GAP 13.59 AZP 88.64 TAL 346.66 TAP 115.28 RCA 149.71 APO 244.21 V2 26.480
RC 70.455 GL -17.88 GP 2.46 ZAL 118.50 ZAP 155.67 ETS 174.52 ZAE 171.83 ETE 43.29 ZAC 102.39 ETC 277.94 LVI -20.54

PLANETOCENTRIC CONIC

C3 16.582 VHL 4.072 DLA -26.50 RAL 343.29 RAD 6641.3 VEL 11.688 PTH 6.72 VHP 6.053 DPA -14.68 RAP 320.80 ECC 1.2729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 49 2	2543.83	-9.58	68.29	199.27	136.83	18 31 26	1543.8	8.81	52.53
60.00	19 4 8	2344.10	-4.26	55.38	204.34	130.11	19 43 12	1344.1	11.78	37.35
70.00	20 41 25	2058.02	1.36	36.43	208.59	124.13	21 15 43	1058.0	14.98	16.45
80.00	22 41 32	1682.04	6.65	11.16	211.86	119.17	23 9 34	682.0	18.04	349.58
90.00	0 37 25	1321.05	9.39	346.08	213.33	116.80	0 59 26	321.1	19.62	323.72
100.00	1 28 20	1156.51	6.65	332.53	211.86	119.17	1 47 37	156.5	18.04	310.95
110.00	1 44 48	1104.84	1.36	325.35	208.59	124.13	2 3 12	104.8	14.98	305.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4714 TRA-1.0069 TC3 .2350 BAU .0780 SGT 1727.1 SGR 507.9 SG3 436.1 ST 40.8 SR 22.7 SS 37.1
RDE -.3222 RRA .0533 RC3 .2618 FAU .07194 RRT .2382 RRF -.2636 RTF -.8417 CRT .7796 CRS .5038 CST .9323
FDE .5544 FRA 2.5048 FC3-3.7559 BSP 2956 SGB 1800.2 R23 -.0468 R13 -.8430 LSA 56.5 MSA 19.1 SSA 1.3
BDE .5710 BRA 1.0083 BC3 .3518 FSP 669 SG1 1731.7 SG2 492.0 THA 4.36 EL1 44.9 EL2 12.9 ALF 25.75

LAUNCH DATE APR 25 1971 FLIGHT TIME 150.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 384.832 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.955 GAL -2.50 AZL 92.19 HCA 129.89 SMA 193.84 ECC .23540 INC 2.1903 V1 29.608
RP 206.87 LAP -1.68 LOP 344.06 VP 24.605 GAP 13.23 AZP 88.59 TAL 346.82 TAP 116.70 RCA 149.74 APO 241.94 V2 26.474
RC 71.818 GL -18.30 GP 2.58 ZAL 118.31 ZAP 154.43 ETS 174.58 ZAE 172.04 ETE 44.46 ZAC 102.50 ETC 277.95 LVI -20.66

PLANETOCENTRIC CONIC

C3 16.061 VHL 4.008 DLA -26.93 RAL 343.36 RAD 6641.0 VEL 11.666 PTH 6.70 VHP 5.873 DPA -14.56 RAP 320.80 ECC 1.2643

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 51 33	2526.93	-8.74	67.57	199.10	136.96	18 33 40	1526.9	9.65	51.81
60.00	19 7 34	2324.71	-3.41	54.45	204.19	130.18	19 46 19	1324.7	12.61	36.38
70.00	20 46 26	2034.01	2.27	35.18	208.50	124.09	21 20 20	1034.0	15.82	15.10
80.00	22 49 37	1648.45	7.76	9.29	211.87	118.92	23 17 5	648.4	18.96	347.52
90.00	0 49 1	1276.07	10.76	343.48	213.46	116.31	1 10 17	276.1	20.68	320.85
100.00	1 36 24	1122.92	7.76	330.66	211.87	118.92	1 55 7	122.9	18.96	308.88
110.00	1 49 48	1080.83	2.27	324.10	208.50	124.09	2 7 49	80.8	15.82	304.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4648 TRA -.9891 TC3 .2449 BAU .0791 SGT 1730.8 SGR 503.5 SG3 464.6 ST 40.9 SR 22.4 SS 38.2
RDE -.3125 RRA .0450 RC3 .2754 FAU .07533 RRT .2591 RRF -.2877 RTF -.8429 CRT .7839 CRS .5009 CST .9286
FDE .5693 FRA 2.6210 FC3-4.0606 BSP 2975 SGB 1802.5 R23 -.0524 R13 -.8443 LSA 57.1 MSA 19.2 SSA 1.3
BDE .5601 BRA .9901 BC3 .3685 FSP 717 SG1 1736.1 SG2 484.8 THA 4.68 EL1 44.8 EL2 12.7 ALF 25.39

LAUNCH DATE APR 25 1971 FLIGHT TIME 152.00 ARRIVAL DATE SEP 24 1971

DISTANCE 388.673

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.900	GAL	-2.44	AZL	92.21	HCA	131.15	SMA	194.79	ECC	.23116	INC	2.2088	V1	29.608
RP	206.93	LAP	-1.66	LOP	345.33	VP	24.523	GAP	12.69	AZP	88.55	TAL	346.97	TAP	118.12	RCA	149.76	APO	239.82	V2	26.466
RC	73.228	GL	-18.72	GP	2.70	ZAL	118.13	ZAP	153.16	ETS	174.63	ZAE	172.29	ETE	46.18	ZAC	102.63	ETC	277.95	LVI	-20.78

PLANETOCENTRIC CONIC

C3	15.581	VHL	3.947	DLA	-27.36	RAL	343.44	RAD	6640.8	VEL	11.646	PTH	6.68	VHP	5.699	DPA	-14.44	RAP	320.76	ECC	1.2564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 54 6	2510.41	-7.92	66.86	198.97	137.07	18 35 56	1510.4	10.47	51.10
60.00	19 11 5	2305.63	-2.57	53.53	204.08	130.23	19 49 31	1305.6	13.41	35.41
70.00	20 51 37	2010.03	3.19	33.93	208.44	124.02	21 25 7	1010.0	16.65	13.73
80.00	22 58 18	1613.45	8.91	7.32	211.94	118.62	23 25 11	613.5	19.90	345.34
90.00	1 2 38	1225.16	12.28	340.52	213.70	115.68	1 23 3	225.2	21.82	317.55
100.00	1 45 6	1087.92	8.91	328.69	211.94	118.62	2 3 14	87.9	19.90	306.71
110.00	1 54 59	1056.85	3.19	322.84	208.44	124.02	2 12 36	56.8	16.65	302.65

DIFFERENTIAL CORRECTIONS

TDE	-.4580	TRA	-.9706	TC3	.2527	BAU	.0801
RDE	-.3031	RRA	.0365	RC3	.2896	FAU	.07892
FDE	.5849	FRA	2.7444	FC3	-4.3850	BSP	2981
BDE	.5492	BRA	.9713	BC3	.3843	FSP	768

MID-COURSE EXECUTION ACCURACY

SGT	1731.5	SGR	499.3	SG3	495.0		
RRT	.2817	RRF	-.3138	RTF	-.8438		
SGB	1802.0	R23	-.0589	R13	-.8454		
SG1	1737.6	SG2	477.4	THA	5.02		

ORBIT DETERMINATION ACCURACY

ST	40.9	SR	22.0	SS	39.3
CRT	.7889	CRS	.4987	CST	.9247
LSA	57.7	MSA	19.3	SSA	1.3
EL1	44.8	EL2	12.4	ALF	25.06

LAUNCH DATE APR 25 1971 FLIGHT TIME 154.00 ARRIVAL DATE SEP 26 1971

DISTANCE 392.544

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.848	GAL	-2.38	AZL	92.23	HCA	132.42	SMA	193.82	ECC	.22718	INC	2.2280	V1	29.608
RP	207.00	LAP	-1.64	LOP	346.59	VP	24.445	GAP	12.55	AZP	88.50	TAL	347.11	TAP	119.53	RCA	149.79	APO	237.85	V2	26.458
RC	74.683	GL	-19.14	GP	2.83	ZAL	117.96	ZAP	151.85	ETS	174.67	ZAE	172.59	ETE	48.52	ZAC	102.76	ETC	277.95	LVI	-20.89

PLANETOCENTRIC CONIC

C3	15.141	VHL	3.891	DLA	-27.79	RAL	343.53	RAD	6640.6	VEL	11.627	PTH	6.67	VHP	5.532	DPA	-14.33	RAP	320.68	ECC	1.2492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 56 42	2494.26	-7.11	66.18	198.87	137.17	18 38 16	1494.3	11.26	50.39
60.00	19 14 41	2286.86	-1.75	52.63	204.01	130.27	19 52 48	1286.9	14.21	34.46
70.00	20 56 58	1986.05	4.10	32.67	208.43	123.94	21 30 4	986.0	17.47	12.36
80.00	23 7 45	1576.58	10.11	5.24	212.07	118.25	23 34 2	576.6	20.85	343.02
90.00	1 19 57	1162.94	14.08	336.84	214.10	114.78	1 39 20	162.9	23.10	313.44
100.00	1 54 33	1051.06	10.11	326.61	212.07	118.25	2 12 4	51.1	20.85	304.38
110.00	2 0 20	1032.86	4.10	321.59	208.43	123.94	2 17 33	32.9	17.47	301.27

DIFFERENTIAL CORRECTIONS

TDE	-.4504	TRA	-.9503	TC3	.2582	BAU	.0808
RDE	-.2940	RRA	.0278	RC3	.3044	FAU	.08270
FDE	.6000	FRA	2.8736	FC3	-4.7288	BSP	2981
BDE	.5376	BRA	.9507	BC3	.3992	FSP	823

MID-COURSE EXECUTION ACCURACY

SGT	1726.8	SGR	495.6	SG3	527.0		
RRT	.3056	RRF	-.3418	RTF	-.8441		
SGB	1796.5	R23	-.0663	R13	-.8461		
SG1	1734.0	SG2	469.9	THA	5.41		

ORBIT DETERMINATION ACCURACY

ST	40.8	SR	21.7	SS	40.4
CRT	.7942	CRS	.4967	CST	.9204
LSA	58.2	MSA	19.4	SSA	1.3
EL1	44.6	EL2	12.0	ALF	24.80

LAUNCH DATE APR 25 1971 FLIGHT TIME 156.00 ARRIVAL DATE SEP 28 1971

DISTANCE 396.443

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.800	GAL	-2.32	AZL	92.25	HCA	133.69	SMA	192.92	ECC	.22344	INC	2.2481	V1	29.608
RP	207.08	LAP	-1.63	LOP	347.86	VP	24.369	GAP	12.22	AZP	88.45	TAL	347.25	TAP	120.94	RCA	149.82	APO	236.03	V2	26.449
RC	76.180	GL	-19.57	GP	2.97	ZAL	117.78	ZAP	150.51	ETS	174.70	ZAE	172.92	ETE	51.63	ZAC	102.91	ETC	277.94	LVI	-21.01

PLANETOCENTRIC CONIC

C3	14.738	VHL	3.839	DLA	-28.21	RAL	343.62	RAD	6640.4	VEL	11.610	PTH	6.65	VHP	5.370	DPA	-14.22	RAP	320.57	ECC	1.2425

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 59 21	2478.54	-6.33	65.51	198.80	137.25	18 40 39	1478.5	12.04	49.71
60.00	19 18 21	2268.39	-.94	51.75	203.97	130.29	19 56 9	1268.4	14.98	33.51
70.00	21 2 31	1962.04	5.01	31.41	208.46	123.83	21 35 13	962.0	18.27	10.96
80.00	23 18 13	1537.12	11.37	2.99	212.28	117.80	23 43 51	537.1	21.83	340.49
90.00	1 49 39	1061.35	16.89	330.71	214.99	113.02	2 7 21	61.3	24.93	306.56
100.00	2 5 1	1011.59	11.37	324.36	212.28	117.80	2 21 53	11.6	21.83	301.86
110.00	2 5 53	1008.86	5.01	320.33	208.46	123.83	2 22 42	8.9	18.27	299.88

DIFFERENTIAL CORRECTIONS

TDE	-.4435	TRA	-.9295	TC3	.2588	BAU	.0811
RDE	-.2852	RRA	.0188	RC3	.3198	FAU	.08666
FDE	.6160	FRA	3.0109	FC3	-5.0907	BSP	2972
BDE	.5271	BRA	.9297	BC3	.4114	FSP	880

MID-COURSE EXECUTION ACCURACY

SGT	1719.2	SGR	492.4	SG3	560.8		
RRT	.3312	RRF	-.3720	RTF	-.8436		
SGB	1788.4	R23	-.0750	R13	-.8459		
SG1	1727.6	SG2	462.4	THA	5.84		

ORBIT DETERMINATION ACCURACY

ST	40.6	SR	21.3	SS	41.5
CRT	.8007	CRS	.4957	CST	.9197
LSA	58.7	MSA	19.5	SSA	1.2
EL1	44.4	EL2	11.7	ALF	24.57

LAUNCH DATE APR 25 1971 FLIGHT TIME 158.00 ARRIVAL DATE SEP 30 1971

DISTANCE 400.366

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.754	GAL	-2.26	AZL	92.27	HCA	134.95	SMA	192.09	ECC	.21994	INC	2.2690	V1	29.608
RP	207.17	LAP	-1.61	LOP	349.12	VP	24.297	GAP	11.89	AZP	88.40	TAL	347.39	TAP	122.34	RCA	149.84	APO	234.33	V2	26.439
RC	77.718	GL	-19.99	GP	3.12	ZAL	117.61	ZAP	149.13	ETS	174.73	ZAE	173.27	ETE	55.65	ZAC	103.07	ETC	277.92	LVI	-21.12

PLANETOCENTRIC CONIC

C3	14.368	VHL	3.791	DLA	-28.64	RAL	343.72	RAD	6640.2	VEL	11.594	PTH	6.64	VHP	5.215	DPA	-14.11	RAP	320.42	ECC	1.2365

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 2 3	2463.15	-5.56	64.86	198.76	137.33	18 43 6	1463.2	12.80	49.03
60.00	19 22 6	2250.19	-.13	50.88	203.96	130.30	19 59 36	1250.2	15.74	32.57
70.00	21 8 17	1937.93	5.92	30.14	208.53	123.70	21 40 35	937.9	19.07	9.55
80.00	23 30 8	1493.66	12.73	.49	212.59	117.24	23 55 2	493.7	22.86	337.68
85.28	1 27 35	1128.39	18.69	336.40	215.42	112.10	1 46 23	128.4	26.17	311.78
100.00	2 16 56	6256.17	12.73	299.76	212.59	117.24	4 1 12	5256.2	22.86	276.95
110.00	2 11 39	6272.79	5.92	296.96	208.53	123.70	3 56 12	5272.8	19.07	276.37

DIFFERENTIAL CORRECTIONS

TDE	-.4290	TRA	-.8994	TC3	.2769	BAU	.0837
RDE	-.2766	RRA	.0098	RC3	.3366	FAU	.09110
FDE	.6277	FRA	3.1472	FC3	-5.4895	BSP	2871
BDE	.5105	BRA	.8994	BC3	.4359	FSP	936

MID-COURSE EXECUTION ACCURACY

SGT	1692.3	SGR	490.1	SG3	596.1		
RRT	.3600	RRF	-.4044	RTF	-.8466		
SGB	1761.8	R23	-.0814	R13	-.8494		
SG1	1702.2	SG2	454.6	THA	6.41		

ORBIT DETERMINATION ACCURACY

ST	39.9	SR	20.9	SS	42.5
CRT	.8057	CRS	.4935	CST	.9112
LSA	58.7	MSA	19.6	SSA	1.2
EL1	43.6	EL2	11.3	ALF	24.67

LAUNCH DATE APR 25 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 404.313 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.711 GAL -2.21 AZL 92.29 HCA 136.21 SMA 191.31 ECC .21667 INC 2.2908 V1 29.608
RP 207.26 LAP -1.58 LOP 350.39 VP 24.227 GAP 11.58 AZP 88.35 TAL 347.51 TAP 123.73 RCA 149.86 APO 232.76 V2 26.428
RC 79.295 GL -20.41 GP 3.28 ZAL 117.45 ZAP 147.72 ETS 174.75 ZAE 173.60 ETE 60.75 ZAC 103.25 ETC 277.90 LVI -21.24

PLANETOCENTRIC CONIC

C3 14.032 VHL 3.746 DLA -29.06 RAL 343.83 RAD 6640.1 VEL 11.580 PTH 6.62 VHP 5.065 DPA -14.00 RAP 320.23 ECC 1.2309

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 4 48	2448.22	-4.81	64.23	198.76	137.39	18 45 37	1448.2	13.53	48.37
60.00	19 25 56	2232.38	.65	50.03	204.00	130.30	20 3 9	1232.4	16.47	31.65
70.00	21 14 15	1913.81	6.83	28.86	208.65	123.54	21 46 9	913.8	19.86	8.12
80.00	23 44 14	1443.97	14.26	357.59	213.01	116.51	24 8 18	444.0	23.96	334.40
83.02	1 9 39	1182.44	19.09	340.54	215.30	112.34	1 29 21	182.4	26.63	315.87
100.00	2 31 1	6206.49	14.26	296.87	213.01	116.51	4 14 28	5206.5	23.96	273.67
110.00	2 17 37	6248.67	6.83	295.69	208.65	123.54	4 1 46	5248.7	19.86	274.95

DIFFERENTIAL CORRECTIONS

TDE -.4287 TRA -.8824 TC3 .2520 BAU .0814
RDE -.2687 RRA -.0000 RC3 .3531 FAU .09528
FDE .6510 FRA 3.3039 FC3-5.8783 BSP 2928
BDE .5060 BRA .8824 BC3 .4338 FSP 1006

MID-COURSE EXECUTION ACCURACY

SGT 1688.2 SGR 488.7 SG3 633.8
RRT .3873 RRF -.4392 RTF -.8407
SGB 1757.5 R23 -.0965 R13 -.8442
SG1 1699.6 SG2 447.5 THA 6.88

ORBIT DETERMINATION ACCURACY

ST 40.1 SR 20.6 SS 43.9
CRT .8168 CRS .4980 CST .9055
LSA 59.7 MSA 19.7 SSA 1.2
EL1 43.8 EL2 10.9 ALF 24.29

LAUNCH DATE APR 25 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 408.281 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.671 GAL -2.17 AZL 92.31 HCA 137.47 SMA 190.59 ECC .21361 INC 2.3136 V1 29.608
RP 207.37 LAP -1.56 LOP 351.65 VP 24.159 GAP 11.27 AZP 88.29 TAL 347.63 TAP 125.11 RCA 149.88 APO 231.30 V2 26.415
RC 80.909 GL -20.84 GP 3.45 ZAL 117.29 ZAP 146.27 ETS 174.77 ZAE 173.90 ETE 67.11 ZAC 103.45 ETC 277.86 LVI -21.35

PLANETOCENTRIC CONIC

C3 13.726 VHL 3.705 DLA -29.48 RAL 343.95 RAD 6639.9 VEL 11.567 PTH 6.61 VHP 4.921 DPA -13.89 RAP 320.00 ECC 1.2259

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 7 37	2433.66	-4.08	63.62	198.79	137.44	18 48 11	1433.7	14.24	47.72
60.00	19 29 52	2214.84	1.42	49.20	204.08	130.28	20 6 47	1214.8	17.20	30.72
70.00	21 20 29	1889.48	7.75	27.57	208.82	123.37	21 51 59	889.5	20.64	6.67
80.00	0 6 41	1380.85	16.15	353.85	213.65	115.46	0 29 41	380.9	25.25	330.15
81.31	0 56 36	1221.05	19.47	343.56	215.21	112.58	1 16 57	221.1	27.07	318.83
100.00	2 49 32	6143.37	16.15	293.13	213.65	115.46	4 31 56	5143.4	25.25	269.43
110.00	2 23 51	6224.33	7.75	294.40	208.82	123.37	4 7 36	5224.3	20.64	273.49

DIFFERENTIAL CORRECTIONS

TDE -.4220 TRA -.8582 TC3 .2388 BAU .0810
RDE -.2608 RRA -.0101 RC3 .3710 FAU .09991
FDE .6682 FRA 3.4627 FC3-6.3020 BSP 2903
BDE .4961 BRA .8582 BC3 .4412 FSP 1075

MID-COURSE EXECUTION ACCURACY

SGT 1667.8 SGR 488.4 SG3 673.2
RRT .4163 RRF -.4757 RTF -.8372
SGB 1737.8 R23 -.1110 R13 -.8415
SG1 1681.0 SG2 440.6 THA 7.47

ORBIT DETERMINATION ACCURACY

ST 39.8 SR 20.2 SS 45.1
CRT .8264 CRS .5003 CST .8993
LSA 60.2 MSA 19.9 SSA 1.2
EL1 43.4 EL2 10.4 ALF 24.19

LAUNCH DATE APR 25 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 412.269 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.634 GAL -2.12 AZL 92.34 HCA 138.73 SMA 189.92 ECC .21074 INC 2.3375 V1 29.608
RP 207.48 LAP -1.54 LOP 352.91 VP 24.094 GAP 10.96 AZP 88.24 TAL 347.74 TAP 126.48 RCA 149.90 APO 229.94 V2 26.402
RC 82.560 GL -21.27 GP 3.64 ZAL 117.14 ZAP 144.78 ETS 174.79 ZAE 174.13 ETE 74.81 ZAC 103.66 ETC 277.82 LVI -21.46

PLANETOCENTRIC CONIC

C3 13.448 VHL 3.667 DLA -29.90 RAL 344.08 RAD 6639.8 VEL 11.555 PTH 6.60 VHP 4.783 DPA -13.78 RAP 319.72 ECC 1.2213

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 10 31	2419.47	-3.37	63.02	198.86	137.49	18 50 50	1419.5	14.94	47.08
60.00	19 33 55	2197.50	2.18	48.37	204.19	130.25	20 10 32	1197.6	17.90	29.81
70.00	21 27 0	1864.88	8.66	26.26	209.04	123.17	21 58 5	864.9	21.41	5.18
79.87	0 46 4	1251.97	19.85	346.03	215.16	112.82	1 6 56	252.0	27.51	321.23
79.87	0 46 4	1251.97	19.85	346.03	215.16	112.82	1 6 56	252.0	27.51	321.23
79.87	0 46 4	1251.97	19.85	346.03	215.16	112.82	1 6 56	252.0	27.51	321.23
110.00	2 30 23	6199.74	8.66	293.08	209.04	123.17	4 13 42	5199.7	21.41	272.00

DIFFERENTIAL CORRECTIONS

TDE -.4149 TRA -.8316 TC3 .2224 BAU .0807
RDE -.2533 RRA -.0205 RC3 .3897 FAU .10473
FDE .6870 FRA 3.6291 FC3-6.7422 BSP 2858
BDE .4661 BRA .8319 BC3 .4487 FSP 1146

MID-COURSE EXECUTION ACCURACY

SGT 1641.1 SGR 489.6 SG3 714.5
RRT .4464 RRF -.5139 RTF -.8431
SGB 1712.5 R23 -.1273 R13 -.8384
SG1 1656.6 SG2 434.0 THA 8.15

ORBIT DETERMINATION ACCURACY

ST 39.4 SR 19.8 SS 46.3
CRT .8373 CRS .5045 CST .8928
LSA 60.7 MSA 20.0 SSA 1.2
EL1 43.0 EL2 9.9 ALF 24.17

LAUNCH DATE APR 25 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 416.277 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.598 GAL -2.09 AZL 92.36 HCA 139.99 SMA 189.30 ECC .20807 INC 2.3626 V1 29.608
RP 207.60 LAP -1.52 LOP 354.17 VP 24.031 GAP 10.67 AZP 88.19 TAL 347.84 TAP 127.83 RCA 149.91 APO 228.69 V2 26.388
RC 84.247 GL -21.70 GP 3.83 ZAL 117.00 ZAP 143.25 ETS 174.80 ZAE 174.24 ETE 83.76 ZAC 103.89 ETC 277.78 LVI -21.58

PLANETOCENTRIC CONIC

C3 13.197 VHL 3.633 DLA -30.31 RAL 344.23 RAD 6639.7 VEL 11.544 PTH 6.59 VHP 4.650 DPA -13.68 RAP 319.41 ECC 1.2172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 13 28	2405.66	-2.67	62.44	198.97	137.52	18 53 34	1405.7	15.61	46.46
60.00	19 38 3	2180.60	2.93	47.56	204.35	130.21	20 14 24	1180.6	18.59	28.90
70.00	21 33 51	1839.90	9.59	24.92	209.31	122.94	22 4 31	839.9	22.19	3.65
78.61	0 37 8	1278.16	20.22	348.14	215.15	113.07	0 58 26	278.2	27.95	323.28
78.61	0 37 8	1278.16	20.22	348.14	215.15	113.07	0 58 26	278.2	27.95	323.28
78.61	0 37 8	1278.16	20.22	348.14	215.15	113.07	0 58 26	278.2	27.95	323.28
110.00	2 37 14	6174.76	9.59	291.74	209.31	122.94	4 20 8	5174.8	22.19	270.47

DIFFERENTIAL CORRECTIONS

TDE -.4055 TRA -.8010 TC3 .2081 BAU .0811
RDE -.2460 RRA -.0314 RC3 .4100 FAU .10994
FDE .7040 FRA 3.8004 FC3-7.2118 BSP 2776
BDE .4743 BRA .8016 BC3 .4598 FSP 1219

MID-COURSE EXECUTION ACCURACY

SGT 1604.2 SGR 492.4 SG3 757.6
RRT .4774 RRF -.5535 RTF -.8291
SGB 1678.1 R23 -.1448 R13 -.8358
SG1 1622.6 SG2 427.8 THA 8.97

ORBIT DETERMINATION ACCURACY

ST 38.8 SR 19.4 SS 47.5
CRT .8487 CRS .5094 CST .8856
LSA 61.1 MSA 20.2 SSA 1.2
EL1 42.3 EL2 9.4 ALF 24.30

LAUNCH DATE APR 25 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 10 1971

DISTANCE 420.301

HELIOCENTRIC CONIC

RL	150.49	LAL	-.00	LOL	214.15	VL	32.566	GAL	-2.05	AZL	92.39	HCA	141.25	SMA	188.72	ECC	.20559	INC	2.3891
RP	207.73	LAP	-1.50	LOP	355.42	VP	23.970	GAP	10.38	AZP	88.14	TAL	347.93	TAP	128.18	RCA	149.93	APO	227.52
RC	85.969	GL	-22.13	GP	4.04	ZAL	116.86	ZAP	141.68	ETS	174.81	ZAE	174.18	ETE	93.57	ZAC	104.13	ETC	277.72

EARTH TO MARS

V1	29.608																		
V2	26.373																		
LVI	-21.69																		

PLANETOCENTRIC CONIC

C3	12.973	VHL	3.602	DLA	-30.72	RAL	344.38	RAD	6639.5	VEL	11.534	PTH	6.58	VHP	4.523	DPA	-13.57	RAP	319.04

ECC	1.2135																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 16 30	2392.25	-2.00	61.88	199.11	137.54	18 56 22	1392.2	16.26	45.85
60.00	19 42 19	2163.91	3.66	46.76	204.54	130.16	20 18 23	1163.9	19.26	28.01
70.00	21 41 4	1814.46	10.53	23.55	209.64	122.68	22 11 19	814.5	22.95	2.08
77.46	0 29 23	1301.04	20.58	350.02	215.18	113.33	0 51 4	301.0	28.38	325.10
77.46	0 29 23	1301.04	20.58	350.02	215.18	113.33	0 51 4	301.0	28.38	325.10
77.46	0 29 23	1301.04	20.58	350.02	215.18	113.33	0 51 4	301.0	28.38	325.10
110.00	2 44 27	6149.32	10.53	290.37	209.64	122.68	4 26 56	5149.3	22.95	268.90

DIFFERENTIAL CORRECTIONS

TDE	-.4016	TRA	-.7738	TC3	.1695	BAU	.0802				
RDE	-.2391	RRA	-.0431	RC3	.4304	FAU	.11500				
FDE	.7278	FRA	3.9854	FC3	-7.6745	BSP	2748				
BDE	.4674	BRA	.7750	BC3	.4626	FSP	1300				

MID-COURSE EXECUTION ACCURACY

SGT	1572.7	SGR	497.2	SG3	802.6						
RRT	.5054	RRF	-.5939	RTF	-.8197						
SGB	1649.4	R23	-.1706	R13	-.8283						
SG1	1594.2	SG2	423.3	THA	9.77						

ORBIT DETERMINATION ACCURACY

ST	38.5	SR	19.1	SS	48.9						
CRT	.8631	CRS	.5187	CST	.8775						
LSA	61.8	MSA	20.3	SSA	1.2						
EL1	42.0	EL2	8.8	ALF	24.28						

LAUNCH DATE APR 25 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 12 1971

DISTANCE 424.341

HELIOCENTRIC CONIC

RL	150.49	LAL	-.00	LOL	214.15	VL	32.535	GAL	-2.02	AZL	92.42	HCA	142.50	SMA	188.19	ECC	.20327	INC	2.4170
RP	207.86	LAP	-1.47	LOP	356.68	VP	23.911	GAP	10.10	AZP	88.08	TAL	348.01	TAP	130.51	RCA	149.94	APO	226.45
RC	87.725	GL	-22.56	GP	4.26	ZAL	116.74	ZAP	140.07	ETS	174.81	ZAE	173.93	ETE	103.61	ZAC	104.40	ETC	277.65

EARTH TO MARS

V1	29.608																		
V2	26.357																		
LVI	-21.80																		

PLANETOCENTRIC CONIC

C3	12.773	VHL	3.574	DLA	-31.13	RAL	344.56	RAD	6639.4	VEL	11.526	PTH	6.57	VHP	4.402	DPA	-13.46	RAP	318.64

ECC	1.2102																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 19 37	2379.18	-1.34	61.34	199.29	137.56	18 59 16	1379.2	16.89	45.25
60.00	19 46 42	2147.44	4.38	45.97	204.79	130.10	20 22 30	1147.4	19.92	27.11
70.00	21 48 45	1788.30	11.49	22.13	210.04	122.39	22 18 33	788.3	23.72	.44
76.41	0 22 33	1321.53	20.93	351.72	215.25	113.59	0 44 34	321.5	28.80	326.75
76.41	0 22 33	1321.53	20.93	351.72	215.25	113.59	0 44 34	321.5	28.80	326.75
76.41	0 22 33	1321.53	20.93	351.72	215.25	113.59	0 44 34	321.5	28.80	326.75
110.00	2 52 7	6123.15	11.49	288.95	210.04	122.39	4 34 10	5123.2	23.72	267.26

DIFFERENTIAL CORRECTIONS

TDE	-.3949	TRA	-.7418	TC3	.1354	BAU	.0807				
RDE	-.2325	RRA	-.0554	RC3	.4528	FAU	.12051				
FDE	.7496	FRA	4.1743	FC3	-8.1684	BSP	2672				
BDE	.4583	BRA	.7439	BC3	.4726	FSP	1382				

MID-COURSE EXECUTION ACCURACY

SGT	1529.9	SGR	504.4	SG3	849.4						
RRT	.5331	RRF	-.6348	RTF	-.8103						
SGB	1610.9	R23	-.1979	R13	-.8216						
SG1	1555.3	SG2	419.8	THA	10.76						

ORBIT DETERMINATION ACCURACY

ST	37.9	SR	18.7	SS	50.2						
CRT	.8779	CRS	.5288	CST	.8686						
LSA	62.3	MSA	20.5	SSA	1.1						
EL1	41.5	EL2	8.2	ALF	24.44						

LAUNCH DATE APR 25 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 14 1971

DISTANCE 428.395

HELIOCENTRIC CONIC

RL	150.49	LAL	-.00	LOL	214.15	VL	32.507	GAL	-1.99	AZL	92.45	HCA	143.76	SMA	187.70	ECC	.20112	INC	2.4463
RP	208.01	LAP	-1.45	LOP	357.93	VP	23.853	GAP	9.82	AZP	88.03	TAL	348.08	TAP	131.83	RCA	149.95	APO	225.45
RC	89.514	GL	-23.00	GP	4.50	ZAL	116.63	ZAP	138.42	ETS	174.82	ZAE	173.46	ETE	113.15	ZAC	104.69	ETC	277.58

EARTH TO MARS

V1	29.608																		
V2	26.340																		
LVI	-21.92																		

PLANETOCENTRIC CONIC

C3	12.596	VHL	3.549	DLA	-31.54	RAL	344.75	RAD	6639.4	VEL	11.518	PTH	6.57	VHP	4.286	DPA	-13.35	RAP	318.18

ECC	1.2073																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 22 50	2366.45	-.70	60.81	199.51	137.57	19 2 16	1366.5	17.50	44.66
60.00	19 51 15	2131.19	5.10	45.19	205.07	130.03	20 26 46	1131.2	20.57	26.22
70.00	21 56 57	1761.17	12.47	20.64	210.50	122.05	22 26 18	761.2	24.50	358.72
75.42	0 16 24	1340.29	21.27	353.30	215.37	113.85	0 38 44	340.3	29.21	328.27
75.42	0 16 24	1340.29	21.27	353.30	215.37	113.85	0 38 44	340.3	29.21	328.27
75.42	0 16 24	1340.29	21.27	353.30	215.37	113.85	0 38 44	340.3	29.21	328.27
110.00	3 0 19	6096.02	12.47	287.47	210.50	122.05	4 41 55	5096.0	24.50	265.54

DIFFERENTIAL CORRECTIONS

TDE	-.3887	TRA	-.7086	TC3	.0911	BAU	.0816				
RDE	-.2261	RRA	-.0684	RC3	.4760	FAU	.12606				
FDE	.7725	FRA	4.3731	FC3	-8.6641	BSP	2596				
BDE	.4497	BRA	.7119	BC3	.4847	FSP	1468				

MID-COURSE EXECUTION ACCURACY

SGT	1483.0	SGR	514.0	SG3	897.9						
RRT	.5573	RRF	-.6752	RTF	-.[illegible]80						
SGB	1569.6	R23	-.2308	R13	-.8127						
SG1	1512.8	SG2	418.4	THA	11.85						

ORBIT DETERMINATION ACCURACY

ST	37.3	SR	18.4	SS	51.6						
CRT	.8938	CRS	.5411	CST	.8585						
LSA	62.9	MSA	20.7	SSA	1.1						
EL1	40.9	EL2	7.5	ALF	24.65						

LAUNCH DATE APR 25 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 16 1971

DISTANCE 432.464

HELIOCENTRIC CONIC

RL	150.49	LAL	-.00	LOL	214.15	VL	32.480	GAL	-1.96	AZL	92.48	HCA	145.01	SMA	187.24	ECC	.19912	INC	2.4776
RP	208.16	LAP	-1.42	LOP	359.19	VP	23.798	GAP	9.55	AZP	87.97	TAL	348.13	TAP	133.14	RCA	149.96	APO	224.53
RC	91.337	GL	-23.44	GP	4.76	ZAL	116.53	ZAP	136.72	ETS	174.83	ZAE	172.78	ETE	121.65	ZAC	105.00	ETC	277.50

EARTH TO MARS

V1	29.608																		
V2	26.323																		
LVI	-22.03																		

PLANETOCENTRIC CONIC

C3	12.442	VHL	3.527	DLA	-31.94	RAL	344.96	RAD	6639.3	VEL	11.512	PTH	6.56	VHP	4.176	DPA	-13.23	RAP	317.68

ECC	1.2048																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 26 9	2354.05	-.08	60.29	199.77	137.58	19 5 23	1354.0	18.10	44.09
60.00	19 55 56	2115.10	5.80	44.41	205.41	129.95	20 31 11	1115.1	21.20	25.33
70.00	22 5 50	1732.67	13.50	19.07	211.03	121.68	22 34 42	732.7	25.30	356.88
74.49	0 10 52	1357.62	21.60	354.77	215.53	114.13	0 33 29	357.6	29.62	329.69
74.49	0 10 52	1357.62	21.60	354.77	215.53	114.13	0 33 29	357.6	29.62	329.69
74.49	0 10 52	1357.62	21.60	354.77	215.53	114.13	0 33 29	357.6	29.62	329.69
110.00	3 9 12	6067.53	13.50	285.90	211.03	121.68	4 50 19	5067.5	25.30	263.71

DIFFERENTIAL CORRECTIONS

TDE	-.3816	TRA	-.6719	TC3	.0444	BAU	.0837				
RDE	-.2200	RRA	-.0822	RC3	.5012	FAU	.13197				
FDE	.7948	FRA	4.5763	FC3	-9.1831	BSP	2487				
BDE	.4405	BRA	.6769	BC3	.5032	FSP	1553				

MID-COURSE EXECUTION ACCURACY

SGT	1428.1	SGR	526.8	SG3	947.9						
RRT	.5782	RRF	-.7147	RTF	-.7831						
SGB	1522.2	R23	-.2679	R13	-.8028						
SG1	1463.2	SG2	419.5	THA	13.14						

ORBIT DETERMINATION ACCURACY

ST	36.5	SR	18.0	SS	52.9						
CRT	.9105	CRS	.5552	CST	.8469						
LSA	63.4	MSA	20.9	SSA	1.1						
EL1	40.1	EL2	6.8	ALF	24.98						

LAUNCH DATE APR 25 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 436.545 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.456 GAL -1.94 AZL 92.51 HCA 146.26 SMA 186.82 ECC .19728 INC 2.5108 V1 29.608
RP 208.32 LAP -1.39 LOP .44 VP 23.743 GAP 9.28 AZP 87.91 TAL 348.17 TAP 134.43 RCA 149.97 APO 223.68 V2 26.304
RC 93.190 GL -23.89 GP 5.03 ZAL 116.44 ZAP 134.98 ETS 174.83 ZAE 171.91 ETE 126.89 ZAC 105.33 ETC 277.40 LVI -22.16

PLANETOCENTRIC CONIC

C3 12.309 VHL 3.508 DLA -32.35 RAL 345.19 RAD 6639.2 VEL 11.506 PTH 6.55 VHP 4.071 DPA -13.11 RAP 317.13 ECC 1.2026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 29 35	2341.93	.53	59.78	200.08	137.57	19 8 37	1341.9	18.68	43.52
60.00	20 0 49	2099.13	6.50	43.64	205.79	129.86	20 35 48	1099.1	21.82	24.44
70.00	22 15 35	1702.24	14.58	17.38	211.65	121.23	22 43 57	702.2	26.12	354.90
73.60	0 5 51	1373.87	21.92	356.17	215.73	114.41	0 28 45	373.9	30.02	331.03
73.60	0 5 51	1373.87	21.92	356.17	215.73	114.41	0 28 45	373.9	30.02	331.03
73.60	0 5 51	1373.87	21.92	356.17	215.73	114.41	0 28 45	373.9	30.02	331.03
110.00	3 18 57	6037.10	14.58	284.20	211.65	121.23	4 59 34	5037.1	26.12	261.72

DIFFERENTIAL CORRECTIONS

TDE -.3739 TRA -.6319 TC3 -.0083 BAU .0869
RDE -.2141 RRA -.0968 RC3 .5280 FAU .13805
FDE .8167 FRA 4.7832 FC3-9.7092 BSP 2365
BDE .4309 BRA .6392 BC3 .5281 FSP 1640

MID-COURSE EXECUTION ACCURACY

SGT 1365.6 SGR 542.7 SG3 999.0
RRT .5936 RRF -.7523 RTF -.7643
SGB 1469.5 R23 -.3099 R13 -.7911
SG1 1407.0 SG2 423.9 THA 14.63

ORBIT DETERMINATION ACCURACY

ST 35.6 SR 17.7 SS 54.2
CRT .9277 CRS .5712 CST .8334
LSA 63.9 MSA 21.1 SSA 1.1
EL1 39.3 EL2 6.0 ALF 25.41

LAUNCH DATE APR 25 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 440.638 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.433 GAL -1.92 AZL 92.55 HCA 147.51 SMA 186.43 ECC .19557 INC 2.5462 V1 29.608
RP 208.49 LAP -1.37 LOP 1.69 VP 23.691 GAP 9.02 AZP 87.85 TAL 348.20 TAP 135.71 RCA 149.97 APO 222.89 V2 26.284
RC 95.074 GL -24.35 GP 5.32 ZAL 116.36 ZAP 133.20 ETS 174.84 ZAE 170.87 ETE 134.89 ZAC 105.69 ETC 277.30 LVI -22.28

PLANETOCENTRIC CONIC

C3 12.198 VHL 3.493 DLA -32.76 RAL 345.45 RAD 6639.2 VEL 11.501 PTH 6.55 VHP 3.971 DPA -12.98 RAP 316.54 ECC 1.2007

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 33 9	2330.06	1.12	59.29	200.43	137.57	19 11 59	1330.1	19.25	42.96
60.00	20 5 54	2083.20	7.19	42.87	206.23	129.76	20 40 37	1083.2	22.44	23.54
70.00	22 26 32	1668.88	15.75	15.50	212.38	120.71	22 54 20	668.9	26.98	352.69
72.74	0 1 15	1389.30	22.23	357.50	215.98	114.70	0 24 25	389.3	30.42	332.32
72.74	0 1 15	1389.30	22.23	357.50	215.98	114.70	0 24 25	389.3	30.42	332.32
72.74	0 1 15	1389.30	22.23	357.50	215.98	114.70	0 24 25	389.3	30.42	332.32
110.00	3 29 54	6003.74	15.75	282.32	212.38	120.71	5 9 58	5003.7	26.98	259.51

DIFFERENTIAL CORRECTIONS

TDE -.3626 TRA -.5865 TC3 -.0550 BAU .0914
RDE -.2082 RRA -.1122 RC3 .5578 FAU .14471
FDE .8311 FRA 4.9909 FC-10.2708 BSP 2191
BDE .4181 BRA .5972 BC3 .5605 FSP 1721

MID-COURSE EXECUTION ACCURACY

SGT 1290.1 SGR 562.5 SG3 1051.5
RRT .6045 RRF -.7877 RTF -.7435
SGB 1407.4 R23 -.3519 R13 -.7806
SG1 1339.6 SG2 431.5 THA 16.53

ORBIT DETERMINATION ACCURACY

ST 34.3 SR 17.4 SS 55.4
CRT .9444 CRS .5871 CST .8173
LSA 64.0 MSA 21.2 SSA 1.0
EL1 38.2 EL2 5.2 ALF 26.08

LAUNCH DATE APR 25 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 444.741 EARTH TO MARS

RL 150.45 LAL -.00 LOL 214.15 VL 32.412 GAL -1.91 AZL 92.58 HCA 148.75 SMA 186.08 ECC .19400 INC 2.5840 V1 29.608
RP 208.67 LAP -1.34 LOP 2.93 VP 23.639 GAP 8.77 AZP 87.79 TAL 348.22 TAP 136.97 RCA 149.98 APO 222.17 V2 26.264
RC 96.988 GL -24.82 GP 5.64 ZAL 116.29 ZAP 131.38 ETS 174.85 ZAE 169.68 ETE 139.77 ZAC 106.08 ETC 277.19 LVI -22.41

PLANETOCENTRIC CONIC

C3 12.108 VHL 3.480 DLA -33.16 RAL 345.72 RAD 6639.1 VEL 11.497 PTH 6.55 VHP 3.877 DPA -12.83 RAP 315.89 ECC 1.1993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 36 52	2318.48	1.71	58.80	200.83	137.55	19 15 31	1318.5	19.80	42.41
60.00	20 11 13	2067.36	7.88	42.10	206.72	129.65	20 45 40	1067.4	23.04	22.64
70.00	22 39 11	1631.16	17.09	13.35	213.24	120.05	23 6 22	631.2	27.91	350.15
71.92	23 53 10	1404.02	22.54	358.79	216.28	115.00	24 16 34	404.0	30.82	333.55
71.92	23 53 10	1404.02	22.54	358.79	216.28	115.00	24 16 34	404.0	30.82	333.55
71.92	23 53 10	1404.02	22.54	358.79	216.28	115.00	24 16 34	404.0	30.82	333.55
110.00	3 42 33	5966.02	17.05	280.17	213.24	120.05	5 21 59	4966.0	27.91	256.97

DIFFERENTIAL CORRECTIONS

TDE -.3646 TRA -.5509 TC3 -.1539 BAU .0980
RDE -.2038 RRA -.1299 RC3 .5852 FAU .15006
FDE .8765 FRA 5.2322 FC-10.7288 BSP 2163
BDE .4177 BRA .5660 BC3 .6051 FSP 1834

MID-COURSE EXECUTION ACCURACY

SGT 1243.4 SGR 586.3 SG3 1105.6
RRT .5963 RRF -.8204 RTF -.[illegible]51
SGB 1374.7 R23 -.4165 R13 -.7563
SG1 1298.8 SG2 450.6 THA 17.94

ORBIT DETERMINATION ACCURACY

ST 34.1 SR 17.2 SS 57.2
CRT .9626 CRS .6153 CST .8017
LSA 65.3 MSA 21.6 SSA 1.0
EL1 38.0 EL2 4.2 ALF 26.24

LAUNCH DATE APR 25 1971 FLIGHT TIME 182.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 448.854 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.392 GAL -1.89 AZL 92.62 HCA 150.00 SMA 185.75 ECC .19256 INC 2.6246 V1 29.608
RP 208.85 LAP -1.31 LOP 4.18 VP 23.589 GAP 8.52 AZP 87.73 TAL 348.22 TAP 138.22 RCA 149.98 APO 221.51 V2 26.243
RC 98.929 GL -25.29 GP 5.98 ZAL 116.23 ZAP 129.52 ETS 174.87 ZAE 168.36 ETE 143.73 ZAC 106.49 ETC 277.07 LVI -22.56

PLANETOCENTRIC CONIC

C3 12.039 VHL 3.470 DLA -33.57 RAL 346.03 RAD 6639.1 VEL 11.494 PTH 6.54 VHP 3.788 DPA -12.68 RAP 315.20 ECC 1.1981

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 40 46	2307.05	2.28	58.32	201.28	137.53	19 19 13	1307.0	20.34	41.86
60.00	20 16 49	2051.36	8.58	41.31	207.28	129.53	20 51 0	1051.4	23.65	21.72
70.00	22 54 53	1584.96	18.60	10.67	214.31	119.17	23 21 18	585.0	28.97	346.98
71.11	23 49 19	1418.34	22.83	.05	216.64	115.31	24 12 57	418.3	31.21	334.77
71.11	23 49 19	1418.34	22.83	.05	216.64	115.31	24 12 57	418.3	31.21	334.77
71.11	23 49 19	1418.34	22.83	.05	216.64	115.31	24 12 57	418.3	31.21	334.77
110.00	3 58 15	5919.82	18.60	277.49	214.31	119.17	5 36 55	4919.8	28.97	253.80

DIFFERENTIAL CORRECTIONS

TDE -.3591 TRA -.5055 TC3 -.2343 BAU .1062
RDE -.1990 RRA -.1483 RC3 .6170 FAU .15632
FDE .9065 FRA 5.4620 FC-11.2414 BSP 2036
BDE .4106 BRA .5268 BC3 .6600 FSP 1929

MID-COURSE EXECUTION ACCURACY

SGT 1175.5 SGR 614.5 SG3 1160.1
RRT .5809 RRF -.8500 RTF -.6630
SGB 1326.4 R23 -.4743 R13 -.7353
SG1 1238.5 SG2 474.7 THA 19.95

ORBIT DETERMINATION ACCURACY

ST 33.2 SR 17.0 SS 58.6
CRT .9777 CRS .6403 CST .7818
LSA 66.0 MSA 21.8 SSA 1.0
EL1 37.2 EL2 3.2 ALF 26.81

LAUNCH DATE APR 25 1971 FLIGHT TIME 184.00 ARRIVAL DATE OCT 26 1971

DISTANCE 452.976

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.374 GAL -1.89 AZL 92.67 HCA 151.24 SMA 185.45 ECC .19124 INC 2.6683 V1 29.608
RP 209.04 LAP -1.28 LOP 5.42 VP 23.540 GAP 8.28 AZP 87.66 TAL 348.21 TAP 139.45 RCA 149.98 APO 220.91 V2 26.221
RC 100.898 GL -25.79 GP 6.35 ZAL 116.18 ZAP 127.62 ETS 174.89 ZAE 166.93 ETE 146.94 ZAC 106.94 ETC 276.94 LVI -22.71

PLANETOCENTRIC CONIC

C3 11.989 VHL 3.463 DLA -33.99 RAL 346.36 RAD 6639.1 VEL 11.492 PTH 6.54 VHP 3.705 DPA -12.50 RAP 314.47 ECC 1.1973

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 44 51	2295.75	2.85	57.85	201.78	137.51	19 23 6	1295.7	20.87	41.32
60.00	20 22 43	2035.16	9.28	40.52	207.90	129.40	20 56 38	1035.2	24.26	20.78
70.00	23 18 17	1516.20	20.83	6.58	215.80	117.70	23 43 34	516.2	30.39	342.13
70.32	23 45 47	1432.30	23.12	1.28	217.04	115.63	24 9 40	432.3	31.60	335.96
70.32	23 45 47	1432.30	23.12	1.28	217.04	115.63	24 9 40	432.3	31.60	335.96
70.32	23 45 47	1432.30	23.12	1.28	217.04	115.63	24 9 40	432.3	31.60	335.96
110.00	4 21 40	5851.06	20.83	273.41	215.80	117.70	5 59 11	4851.1	30.39	248.95

DIFFERENTIAL CORRECTIONS

TDE -.3533 TRA -.4565 TC3 -.3235 BAU .1164
RDE -.1945 RRA -.1680 RC3 .6503 FAU .16242
FDE .9367 FRA 5.6941 FC-11.7280 BSP 1914
BDE .4033 BRA .4865 BC3 .7263 FSP 2030

MID-COURSE EXECUTION ACCURACY

SGT 1105.4 SGR 647.2 SG3 1214.2
RRT .5491 RRF -.8760 RTF -.6076
SGB 1280.9 R23 -.5335 R13 -.7111
SG1 1175.6 SG2 508.6 THA 22.19

ORBIT DETERMINATION ACCURACY

ST 32.3 SR 16.9 SS 60.1
CRT .9897 CRS .6673 CST .7581
LSA 66.7 MSA 22.1 SSA .9
EL1 36.4 EL2 2.1 ALF 27.47

LAUNCH DATE APR 25 1971 FLIGHT TIME 186.00 ARRIVAL DATE OCT 28 1971

DISTANCE 457.107

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.358 GAL -1.88 AZL 92.72 HCA 152.48 SMA 185.17 ECC .19003 INC 2.7153 V1 29.608
RP 209.24 LAP -1.25 LOP 6.66 VP 23.491 GAP 8.04 AZP 87.59 TAL 348.18 TAP 140.66 RCA 149.98 APO 220.36 V2 26.198
RC 102.893 GL -26.30 GP 6.74 ZAL 116.14 ZAP 125.68 ETS 174.91 ZAE 165.40 ETE 149.55 ZAC 107.41 ETC 276.80 LVI -22.87

PLANETOCENTRIC CONIC

C3 11.961 VHL 3.458 DLA -34.41 RAL 346.71 RAD 6639.0 VEL 11.491 PTH 6.54 VHP 3.627 DPA -12.31 RAP 313.69 ECC 1.1968

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 49 9	2284.50	3.41	57.38	202.34	137.48	19 27 13	1284.5	21.40	40.77
60.00	20 29 1	2018.60	9.99	39.70	208.59	129.25	21 2 39	1018.6	24.87	19.81
69.53	23 42 31	1446.12	23.40	2.51	217.51	115.98	24 6 37	446.1	31.99	337.15
69.53	23 42 31	1446.12	23.40	2.51	217.51	115.98	24 6 37	446.1	31.99	337.15
69.53	23 42 31	1446.12	23.40	2.51	217.51	115.98	24 6 37	446.1	31.99	337.15
69.53	23 42 31	1446.12	23.40	2.51	217.51	115.98	24 6 37	446.1	31.99	337.15
69.53	23 42 31	1446.12	23.40	2.51	217.51	115.98	24 6 37	446.1	31.99	337.15

DIFFERENTIAL CORRECTIONS

TDE -.3473 TRA -.4041 TC3 -.4163 BAU .1284
RDE -.1903 RRA -.1893 RC3 .6865 FAU .16877
FDE .9661 FRA 5.9246 FC-12.2157 BSP 1784
BDE .3960 BRA .4462 BC3 .8028 FSP 2124

MID-COURSE EXECUTION ACCURACY

SGT 1035.5 SGR 685.1 SG3 1268.3
RRT .4977 RRF -.8987 RTF -.5356
SGB 1241.6 R23 -.5904 R13 -.6851
SG1 1111.3 SG2 553.7 THA 24.75

ORBIT DETERMINATION ACCURACY

ST 31.2 SR 16.8 SS 61.4
CRT .9970 CRS .6957 CST .7299
LSA 67.3 MSA 22.4 SSA .9
EL1 35.4 EL2 1.1 ALF 28.20

LAUNCH DATE APR 25 1971 FLIGHT TIME 188.00 ARRIVAL DATE OCT 30 1971

DISTANCE 461.246

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.343 GAL -1.88 AZL 92.77 HCA 153.72 SMA 184.92 ECC .18893 INC 2.7665 V1 29.608
RP 209.44 LAP -1.22 LOP 7.89 VP 23.444 GAP 7.80 AZP 87.52 TAL 348.15 TAP 141.86 RCA 149.98 APO 219.86 V2 26.174
RC 104.913 GL -26.83 GP 7.17 ZAL 116.11 ZAP 123.71 ETS 174.94 ZAE 163.78 ETE 151.68 ZAC 107.92 ETC 276.66 LVI -23.05

PLANETOCENTRIC CONIC

C3 11.953 VHL 3.457 DLA -34.84 RAL 347.10 RAD 6639.0 VEL 11.490 PTH 6.54 VHP 3.554 DPA -12.09 RAP 312.86 ECC 1.1967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 53 43	2273.23	3.98	56.91	202.97	137.45	19 31 36	1273.2	21.93	40.22
60.00	20 35 46	2001.48	10.73	38.86	209.36	129.08	21 9 7	1001.5	25.50	18.80
68.74	23 39 27	1459.96	23.68	3.74	218.04	116.34	24 3 47	460.0	32.39	338.35
68.74	23 39 27	1459.96	23.68	3.74	218.04	116.34	24 3 47	460.0	32.39	338.35
68.74	23 39 27	1459.96	23.68	3.74	218.04	116.34	24 3 47	460.0	32.39	338.35
68.74	23 39 27	1459.96	23.68	3.74	218.04	116.34	24 3 47	460.0	32.39	338.35
68.74	23 39 27	1459.96	23.68	3.74	218.04	116.34	24 3 47	460.0	32.39	338.35

DIFFERENTIAL CORRECTIONS

TDE -.3381 TRA -.3448 TC3 -.5023 BAU .1412
RDE -.1861 RRA -.2117 RC3 .7272 FAU .17571
FDE .9875 FRA 6.1430 FC-12.7260 BSP 1624
BDE .3859 BRA .4046 BC3 .8838 FSP 2203

MID-COURSE EXECUTION ACCURACY

SGT 956.9 SGR 728.5 SG3 1321.6
RRT .4235 RRF -.9182 RTF -.4430
SGB 1204.2 R23 -.6353 R13 -.6657
SG1 1038.8 SG2 609.1 THA 28.35

ORBIT DETERMINATION ACCURACY

ST 29.9 SR 16.7 SS 62.6
CRT .9974 CRS .7238 CST .6943
LSA 67.6 MSA 22.6 SSA .9
EL1 34.2 EL2 1.1 ALF 29.18

LAUNCH DATE APR 25 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 1 1971

DISTANCE 465.390

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.329 GAL -1.88 AZL 92.82 HCA 154.95 SMA 184.69 ECC .18795 INC 2.8222 V1 29.608
RP 209.66 LAP -1.19 LOP 9.13 VP 23.398 GAP 7.57 AZP 87.44 TAL 348.09 TAP 143.04 RCA 149.98 APO 219.41 V2 26.150
RC 106.358 GL -27.38 GP 7.64 ZAL 116.09 ZAP 121.70 ETS 174.98 ZAE 162.07 ETE 153.41 ZAC 108.48 ETC 276.50 LVI -23.29

PLANETOCENTRIC CONIC

C3 11.967 VHL 3.459 DLA -35.29 RAL 347.53 RAD 6639.0 VEL 11.491 PTH 6.54 VHP 3.487 DPA -11.84 RAP 312.00 ECC 1.1970

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 58 35	2261.91	4.55	56.43	203.67	137.41	19 36 17	1261.9	22.46	39.66
60.00	20 43 3	1983.68	11.49	37.97	210.23	128.90	21 16 6	983.7	26.14	17.73
67.95	23 36 39	1473.83	23.95	4.99	218.63	116.73	24 1 12	473.8	32.79	339.56
67.95	23 36 39	1473.83	23.95	4.99	218.63	116.73	24 1 12	473.8	32.79	339.56
67.95	23 36 39	1473.83	23.95	4.99	218.63	116.73	24 1 12	473.8	32.79	339.56
67.95	23 36 39	1473.83	23.95	4.99	218.63	116.73	24 1 12	473.8	32.79	339.56
67.95	23 36 39	1473.83	23.95	4.99	218.63	116.73	24 1 12	473.8	32.79	339.56

DIFFERENTIAL CORRECTIONS

TDE -.3383 TRA -.2920 TC3 -.6289 BAU .1584
RDE -.1837 RRA -.2377 RC3 .7647 FAU .18087
FDE 1.0404 FRA 6.3948 FC-13.0845 BSP 1595
BDE .3850 BRA .3765 BC3 .9901 FSP 2320

MID-COURSE EXECUTION ACCURACY

SGT 924.3 SGR 777.9 SG3 1375.1
RRT .3144 RRF -.9347 RTF -.3205
SGB 1208.1 R23 -.6923 R13 -.6286
SG1 993.9 SG2 686.8 THA 30.57

ORBIT DETERMINATION ACCURACY

ST 29.4 SR 16.9 SS 64.3
CRT .9883 CRS .7588 CST .6594
LSA 68.9 MSA 23.0 SSA .8
EL1 33.8 EL2 2.2 ALF 29.70

LAUNCH DATE APR 25 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 469.541 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.317 GAL -1.88 AZL 92.88 HCA 156.18 SMA 184.49 ECC .18706 INC 2.8832 V1 29.608
RP 209.87 LAP -1.16 LOP 10.36 VP 23.352 GAP 7.35 AZP 87.36 TAL 348.02 TAP 144.21 RCA 149.98 APO 219.00 V2 26.124
RC 109.028 GL -27.96 GP 8.14 ZAL 116.07 ZAP 119.66 ETS 175.04 ZAE 160.29 ETE 154.82 ZAC 109.07 ETC 276.34 LVI -23.47

PLANETOCENTRIC CONIC

C3 12.004 VHL 3.465 DLA -35.75 RAL 347.99 RAD 6639.1 VEL 11.493 PTH 6.54 VHP 3.426 DPA -11.56 RAP 311.09 ECC 1.1976

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 3 49	2250.35	5.12	55.95	204.44	137.37	19 41 19	1250.3	22.99	39.08
60.00	20 51 1	1964.76	12.30	37.03	211.20	128.69	21 23 46	964.8	26.82	16.59
67.15	23 34 1	1487.88	24.23	6.26	219.30	117.14	23 58 49	487.9	33.21	340.80
67.15	23 34 1	1487.88	24.23	6.26	219.30	117.14	23 58 49	487.9	33.21	340.80
67.15	23 34 1	1487.88	24.23	6.26	219.30	117.14	23 58 49	487.9	33.21	340.80
67.15	23 34 1	1487.88	24.23	6.26	219.30	117.14	23 58 49	487.9	33.21	340.80
67.15	23 34 1	1487.88	24.23	6.26	219.30	117.14	23 58 49	487.9	33.21	340.80

DIFFERENTIAL CORRECTIONS

TDE -.3329 TRA -.2297 TC3 -.7399 BAU .1758
RDE -.1811 RRA -.2650 RC3 .8079 FAU .18677
FDE 1.0775 FRA 6.6223 FC-13.4701 BSP 1531
BDE .3789 BRA .3507 BC3 1.0955 FSP 2406

MID-COURSE EXECUTION ACCURACY

SGT 886.0 SGR 833.4 SG3 1426.0
RRT .1768 RRF -.9484 RTF -.1718
SGB 1216.4 R23 -.7162 R13 -.6217
SG1 937.0 SG2 775.7 THA 35.46

ORBIT DETERMINATION ACCURACY

ST 28.4 SR 17.0 SS 65.6
CRT .9670 CRS .7904 CST .6134
LSA 69.7 MSA 23.4 SSA .8
EL1 32.9 EL2 3.7 ALF 30.55

LAUNCH DATE APR 25 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 473.698 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.305 GAL -1.89 AZL 92.95 HCA 157.41 SMA 184.30 ECC .18627 INC 2.9501 V1 29.608
RP 210.10 LAP -1.13 LOP 11.59 VP 23.308 GAP 7.13 AZP 87.28 TAL 347.94 TAP 145.35 RCA 149.97 APO 218.63 V2 26.098
RC 111.121 GL -28.58 GP 8.69 ZAL 116.05 ZAP 117.60 ETS 175.10 ZAE 158.43 ETE 155.97 ZAC 109.71 ETC 276.17 LVI -23.72

PLANETOCENTRIC CONIC

C3 12.065 VHL 3.474 DLA -36.24 RAL 348.50 RAD 6639.1 VEL 11.495 PTH 6.54 VHP 3.369 DPA -11.23 RAP 310.15 ECC 1.1986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 9 28	2238.45	5.72	55.44	205.31	137.31	19 46 46	1238.4	23.54	38.49
60.00	20 59 50	1944.37	13.16	36.00	212.30	128.44	21 32 14	944.4	27.53	15.33
66.33	23 31 32	1502.38	24.50	7.57	220.05	117.59	23 56 34	502.4	33.63	342.09
66.33	23 31 32	1502.38	24.50	7.57	220.05	117.59	23 56 34	502.4	33.63	342.09
66.33	23 31 32	1502.38	24.50	7.57	220.05	117.59	23 56 34	502.4	33.63	342.09
66.33	23 31 32	1502.38	24.50	7.57	220.05	117.59	23 56 34	502.4	33.63	342.09
66.33	23 31 32	1502.38	24.50	7.57	220.05	117.59	23 56 34	502.4	33.63	342.09

DIFFERENTIAL CORRECTIONS

TDE -.3296 TRA -.1661 TC3 -.8630 BAU .1957
RDE -.1793 RRA -.2951 RC3 .8525 FAU .19211
FDE 1.1217 FRA 6.8501 FC-13.7843 BSP 1541
BDE .3752 BRA .3387 BC3 1.2131 FSP 2499

MID-COURSE EXECUTION ACCURACY

SGT 877.8 SGR 895.8 SG3 1474.9
RRT .0137 RRF -.9596 RTF -.0017
SGB 1254.2 R23 -.2860 R13 -.9160
SG1 897.7 SG2 875.9 THA 72.96

ORBIT DETERMINATION ACCURACY

ST 27.7 SR 17.4 SS 67.0
CRT .9311 CRS .8220 CST .5612
LSA 70.6 MSA 23.8 SSA .7
EL1 32.2 EL2 5.4 ALF 31.28

LAUNCH DATE APR 25 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 477.860 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.295 GAL -1.89 AZL 93.02 HCA 158.64 SMA 184.13 ECC .18557 INC 3.0244 V1 29.608
RP 210.33 LAP -1.10 LOP 12.82 VP 23.264 GAP 6.91 AZP 87.18 TAL 347.85 TAP 146.48 RCA 149.96 APO 218.30 V2 26.071
RC 113.239 GL -29.24 GP 9.30 ZAL 116.04 ZAP 115.51 ETS 175.17 ZAE 156.51 ETE 156.89 ZAC 110.41 ETC 276.00 LVI -24.01

PLANETOCENTRIC CONIC

C3 12.153 VHL 3.486 DLA -36.76 RAL 349.06 RAD 6639.1 VEL 11.499 PTH 6.55 VHP 3.319 DPA -10.85 RAP 309.17 ECC 1.2000

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 15 38	2226.03	6.34	54.92	206.28	137.25	19 52 44	1226.0	24.11	37.86
60.00	21 9 44	1921.90	14.11	34.86	213.54	128.15	21 41 46	921.9	28.30	13.93
65.47	23 29 11	1517.40	24.77	8.94	220.89	118.07	23 54 29	517.4	34.07	343.43
65.47	23 29 11	1517.40	24.77	8.94	220.89	118.07	23 54 29	517.4	34.07	343.43
65.47	23 29 11	1517.40	24.77	8.94	220.89	118.07	23 54 29	517.4	34.07	343.43
65.47	23 29 11	1517.40	24.77	8.94	220.89	118.07	23 54 29	517.4	34.07	343.43
65.47	23 29 11	1517.40	24.77	8.94	220.89	118.07	23 54 29	517.4	34.07	343.43

DIFFERENTIAL CORRECTIONS

TDE -.3257 TRA -.0980 TC3 -.9868 BAU .2169
RDE -.1783 RRA -.3281 RC3 .8995 FAU .19702
FDE 1.1694 FRA 7.0690 FC-14.0356 BSP 1610
BDE .3713 BRA .3424 BC3 1.3353 FSP 2590

MID-COURSE EXECUTION ACCURACY

SGT 894.6 SGR 965.5 SG3 1520.6
RRT -.1614 RRF -.9687 RTF .1772
SGB 1316.3 R23 .4342 R13 -.8662
SG1 1010.2 SG2 843.9 THA 122.34

ORBIT DETERMINATION ACCURACY

ST 27.0 SR 17.8 SS 68.3
CRT .8779 CRS .8522 CST .5002
LSA 71.6 MSA 24.2 SSA .7
EL1 31.5 EL2 7.3 ALF 32.06

LAUNCH DATE APR 25 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 482.026 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.286 GAL -1.91 AZL 93.11 HCA 159.86 SMA 183.99 ECC .18495 INC 3.1069 V1 29.608
RP 210.57 LAP -1.07 LOP 14.04 VP 23.220 GAP 6.70 AZP 87.08 TAL 347.73 TAP 147.60 RCA 149.96 APO 218.01 V2 26.044
RC 115.380 GL -29.95 GP 9.97 ZAL 116.02 ZAP 113.40 ETS 175.27 ZAE 154.53 ETE 157.62 ZAC 111.16 ETC 275.82 LVI -24.34

PLANETOCENTRIC CONIC

C3 12.269 VHL 3.503 DLA -37.31 RAL 349.66 RAD 6639.2 VEL 11.504 PTH 6.55 VHP 3.274 DPA -10.42 RAP 308.15 ECC 1.2019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 22 25	2212.89	7.00	54.36	207.36	137.18	19 59 18	1212.9	24.72	37.18
60.00	21 21 5	1896.46	15.18	33.55	214.98	127.79	21 52 42	896.5	29.16	12.32
64.58	23 26 57	1533.15	25.04	10.38	221.84	118.61	23 52 30	533.1	34.54	344.86
64.58	23 26 57	1533.15	25.04	10.38	221.84	118.61	23 52 30	533.1	34.54	344.86
64.58	23 26 57	1533.15	25.04	10.38	221.84	118.61	23 52 30	533.1	34.54	344.86
64.58	23 26 57	1533.15	25.04	10.38	221.84	118.61	23 52 30	533.1	34.54	344.86
64.58	23 26 57	1533.15	25.04	10.38	221.84	118.61	23 52 30	533.1	34.54	344.86

DIFFERENTIAL CORRECTIONS

TDE -.3221 TRA -.0264 TC3-1.1115 BAU .2400
RDE -.1778 RRA -.3640 RC3 .9512 FAU .20201
FDE 1.2118 FRA 7.2704 FC-14.2544 BSP 1736
BDE .3679 BRA .3650 BC3 1.4629 FSP 2662

MID-COURSE EXECUTION ACCURACY

SGT 941.7 SGR 1043.6 SG3 1562.9
RRT -.3307 RRF -.9760 RTF .3474
SGB 1405.7 R23 .4229 R13 -.8800
SG1 1152.5 SG2 804.8 THA 126.36

ORBIT DETERMINATION ACCURACY

ST 26.4 SR 18.4 SS 69.5
CRT .8055 CRS .8794 CST .4284
LSA 72.5 MSA 24.7 SSA .6
EL1 30.8 EL2 9.3 ALF 32.71

LAUNCH DATE APR 25 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 11 1971

DISTANCE 486.197

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.278 GAL -1.92 AZL 93.20 HCA 161.06 SMA 183.85 ECC .18442 INC 3.1994 V1 29.608
RP 210.82 LAP -1.04 LOP 15.26 VP 23.177 GAP 6.49 AZP 86.97 TAL 347.61 TAP 148.69 RCA 149.95 APO 217.76 V2 26.015
RC 117.545 GL -30.73 GP 10.70 ZAL 115.99 ZAP 111.27 ETS 175.38 ZAE 152.50 ETE 158.18 ZAC 111.99 ETC 275.64 LVI -24.73

PLANETOCENTRIC CONIC

C3 12.419 VHL 3.524 DLA -37.90 RAL 350.33 RAD 6639.3 VEL 11.511 PTH 6.56 VHP 3.235 DPA -9.91 RAP 307.11 ECC 1.2044

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 29 57	2198.77	7.70	53.76	208.60	137.10	20 6 36	1198.8	25.36	36.45
60.00	21 34 27	1866.65	16.41	32.00	216.66	127.34	22 5 33	866.6	30.13	10.40
63.63	23 24 49	1549.71	25.32	11.90	222.90	119.20	23 50 39	549.7	35.03	346.38
63.63	23 24 49	1549.71	25.32	11.90	222.90	119.20	23 50 39	549.7	35.03	346.38
63.63	23 24 49	1549.71	25.32	11.90	222.90	119.20	23 50 39	549.7	35.03	346.38
63.63	23 24 49	1549.71	25.32	11.90	222.90	119.20	23 50 39	549.7	35.03	346.38
63.63	23 24 49	1549.71	25.32	11.90	222.90	119.20	23 50 39	549.7	35.03	346.38

DIFFERENTIAL CORRECTIONS

TDE -.3193 TRA .0484 TC3-1.2387 BAU .2648
RDE -.1787 RRA -.4042 RC3 1.0043 FAU .20615
FDE 1.2655 FRA 7.4653 FC-14.3712 BSP 1932
BDE .3659 BRA .4071 BC3 1.5947 FSP 2736

MID-COURSE EXECUTION ACCURACY

SGT 1020.6 SGR 1131.1 SG3 1601.2
RRT -.4765 RRF -.9818 RTF .4921
SGB 1523.4 R23 .3966 R13 -.8986
SG1 1312.7 SG2 773.1 THA 128.90

ORBIT DETERMINATION ACCURACY

ST 26.0 SR 19.2 SS 70.7
CRT .7147 CRS .9046 CST .3499
LSA 73.6 MSA 25.2 SSA .6
EL1 30.2 EL2 11.6 ALF 35.29

LAUNCH DATE APR 25 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 13 1971

DISTANCE 490.370

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.271 GAL -1.94 AZL 93.30 HCA 162.30 SMA 183.74 ECC .18397 INC 3.3040 V1 29.608
RP 211.07 LAP -1.00 LOP 16.48 VP 23.135 GAP 6.28 AZP 86.85 TAL 347.47 TAP 149.77 RCA 149.94 APO 217.54 V2 25.986
RC 119.734 GL -31.57 GP 11.52 ZAL 115.95 ZAP 109.14 ETS 175.51 ZAE 150.40 ETE 158.58 ZAC 112.90 ETC 275.45 LVI -25.19

PLANETOCENTRIC CONIC

C3 12.606 VHL 3.550 DLA -38.56 RAL 351.08 RAD 6639.4 VEL 11.519 PTH 6.57 VHP 3.202 DPA -9.32 RAP 306.04 ECC 1.2075

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 38 27	2183.32	8.47	53.10	210.00	137.00	20 14 51	1183.3	26.05	35.64
60.00	21 50 50	1829.84	17.92	30.06	218.67	126.72	22 21 20	829.8	31.29	7.96
62.62	23 22 47	1567.34	25.61	13.53	224.10	119.87	23 48 54	567.3	35.55	348.01
62.62	23 22 47	1567.34	25.61	13.53	224.10	119.87	23 48 54	567.3	35.55	348.01
62.62	23 22 47	1567.34	25.61	13.53	224.10	119.87	23 48 54	567.3	35.55	348.01
62.62	23 22 47	1567.34	25.61	13.53	224.10	119.87	23 48 54	567.3	35.55	348.01
62.62	23 22 47	1567.34	25.61	13.53	224.10	119.87	23 48 54	567.3	35.55	348.01

DIFFERENTIAL CORRECTIONS

TDE -.3159 TRA .1279 TC3-1.3621 BAU .2911
RDE -.1805 RRA -.4482 RC3 1.0620 FAU .21006
FDE 1.3149 FRA 7.6307 FC-14.4259 BSP 2185
BDE .3639 BRA .4660 BC3 1.7272 FSP 2796

MID-COURSE EXECUTION ACCURACY

SGT 1124.8 SGR 1228.4 SG3 1633.4
RRT -.5971 RRF -.9864 RTF .6105
SGB 1665.5 R23 .3656 R13 -.9166
SG1 1490.3 SG2 743.7 THA 130.80

ORBIT DETERMINATION ACCURACY

ST 25.8 SR 20.1 SS 71.8
CRT .6047 CRS .9261 CST .2607
LSA 74.6 MSA 25.7 SSA .6
EL1 29.6 EL2 14.0 ALF 33.71

LAUNCH DATE APR 25 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 15 1971

DISTANCE 494.547

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.265 GAL -1.96 AZL 93.42 HCA 163.52 SMA 183.64 ECC .18360 INC 3.4231 V1 29.608
RP 211.33 LAP -.97 LOP 17.70 VP 23.093 GAP 6.08 AZP 86.72 TAL 347.32 TAP 150.84 RCA 149.92 APO 217.36 V2 25.957
RC 121.945 GL -32.51 GP 12.45 ZAL 115.89 ZAP 106.99 ETS 175.67 ZAE 148.26 ETE 158.85 ZAC 113.90 ETC 275.27 LVI -25.73

PLANETOCENTRIC CONIC

C3 12.838 VHL 3.583 DLA -39.27 RAL 351.90 RAD 6639.5 VEL 11.529 PTH 6.58 VHP 3.176 DPA -8.62 RAP 304.95 ECC 1.2113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 48 9	2166.07	9.33	52.36	211.62	136.87	20 24 15	1166.1	26.83	34.73
60.00	22 12 29	1780.12	19.92	27.39	221.21	125.78	22 42 9	780.1	32.76	4.58
61.53	23 20 52	1586.22	25.90	15.30	225.46	120.62	23 47 18	586.2	36.12	349.79
61.53	23 20 52	1586.22	25.90	15.30	225.46	120.62	23 47 18	586.2	36.12	349.79
61.53	23 20 52	1586.22	25.90	15.30	225.46	120.62	23 47 18	586.2	36.12	349.79
61.53	23 20 52	1586.22	25.90	15.30	225.46	120.62	23 47 18	586.2	36.12	349.79
61.53	23 20 52	1586.22	25.90	15.30	225.46	120.62	23 47 18	586.2	36.12	349.79

DIFFERENTIAL CORRECTIONS

TDE -.3137 TRA .2102 TC3-1.4853 BAU .3195
RDE -.1840 RRA -.4977 RC3 1.1215 FAU .21297
FDE 1.3701 FRA 7.7805 FC-14.3612 BSP 2486
BDE .3637 BRA .5402 BC3 1.8612 FSP 2844

MID-COURSE EXECUTION ACCURACY

SGT 1254.3 SGR 1337.7 SG3 1659.7
RRT -.6879 RRF -.9899 RTF .6186
SGB 1833.7 R23 .3374 R13 -.9310
SG1 1685.4 SG2 722.5 THA 132.33

ORBIT DETERMINATION ACCURACY

ST 26.0 SR 21.3 SS 72.8
CRT .4812 CRS .9444 CST .1674
LSA 75.7 MSA 26.3 SSA .5
EL1 29.2 EL2 16.6 ALF 33.87

LAUNCH DATE APR 25 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 17 1971

DISTANCE 498.726

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.260 GAL -1.98 AZL 93.56 HCA 164.73 SMA 183.55 ECC .18330 INC 3.5601 V1 29.608
RP 211.60 LAP -.94 LOP 18.91 VP 23.052 GAP 5.88 AZP 86.56 TAL 347.16 TAP 151.89 RCA 149.91 APO 217.20 V2 25.926
RC 124.177 GL -33.55 GP 13.49 ZAL 115.81 ZAP 104.85 ETS 175.86 ZAE 146.06 ETE 158.98 ZAC 115.03 ETC 275.08 LVI -26.38

PLANETOCENTRIC CONIC

C3 13.126 VHL 3.623 DLA -40.07 RAL 352.83 RAD 6639.6 VEL 11.541 PTH 6.59 VHP 3.157 DPA -7.80 RAP 303.83 ECC 1.2160

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 59 25	2146.41	10.31	51.52	213.52	136.71	20 35 11	1146.4	27.70	33.67
60.00	22 48 36	1692.31	23.34	22.47	224.99	123.84	23 16 49	692.3	35.11	350.32
60.33	23 19 1	1606.73	26.20	17.23	227.01	121.47	23 45 47	606.7	36.74	351.75
60.33	23 19 1	1606.73	26.20	17.23	227.01	121.47	23 45 47	606.7	36.74	351.75
60.33	23 19 1	1606.73	26.20	17.23	227.01	121.47	23 45 47	606.7	36.74	351.75
60.33	23 19 1	1606.73	26.20	17.23	227.01	121.47	23 45 47	606.7	36.74	351.75
60.33	23 19 1	1606.73	26.20	17.23	227.01	121.47	23 45 47	606.7	36.74	351.75

DIFFERENTIAL CORRECTIONS

TDE -.3128 TRA .2960 TC3-1.6047 BAU .3500
RDE -.1898 RRA -.5530 RC3 1.1844 FAU .21514
FDE 1.4327 FRA 7.8980 FC-14.1901 BSP 2830
BDE .3658 BRA .6272 BC3 1.9944 FSP 2884

MID-COURSE EXECUTION ACCURACY

SGT 1403.8 SGR 1460.5 SG3 1678.2
RRT -.7553 RRF -.9927 RTF .7635
SGB 2025.8 R23 .3115 R13 -.9428
SG1 1898.0 SG2 708.0 THA 133.50

ORBIT DETERMINATION ACCURACY

ST 26.4 SR 22.8 SS 73.7
CRT .3508 CRS .9596 CST .0740
LSA 77.0 MSA 27.0 SSA .5
EL1 29.0 EL2 19.5 ALF 33.59

LAUNCH DATE APR 25 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 502.907 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.256 GAL -2.00 AZL 93.72 HCA 165.94 SMA 183.40 ECC .18307 INC 3.7202 V1 29.608
RP 211.87 LAP -.90 LOP 20.12 VP 23.011 GAP 5.69 AZP 86.39 TAL 346.98 TAP 152.82 RCA 149.89 APO 217.07 V2 25.896
RC 126.431 GL -34.73 GP 14.68 ZAL 115.68 ZAP 102.71 ETS 176.09 ZAE 143.80 ETE 158.97 ZAC 116.30 ETC 274.90 LVI -27.15

PLANETOCENTRIC CONIC

C3 13.482 VHL 3.672 DLA -40.98 RAL 353.89 RAD 6639.8 VEL 11.556 PTH 6.60 VHP 3.145 DPA -6.83 RAP 302.69 ECC 1.2219

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 12 46	2123.38	11.45	50.52	215.77	136.50	20 48 10	1123.4	28.71	32.40
59.01	23 17 18	1629.09	26.52	19.36	228.80	122.46	23 44 27	629.1	37.42	353.93
59.01	23 17 18	1629.09	26.52	19.36	228.80	122.46	23 44 27	629.1	37.42	353.93
59.01	23 17 18	1629.09	26.52	19.36	228.80	122.46	23 44 27	629.1	37.42	353.93
59.01	23 17 18	1629.09	26.52	19.36	228.80	122.46	23 44 27	629.1	37.42	353.93
59.01	23 17 18	1629.09	26.52	19.36	228.80	122.46	23 44 27	629.1	37.42	353.93
59.01	23 17 18	1629.09	26.52	19.36	228.80	122.46	23 44 27	629.1	37.42	353.93

DIFFERENTIAL CORRECTIONS

TDE -.3108 TRA .3870 TC3-1.7111 BAU .3817
RDE -.1992 RRA -.6168 RC3 1.2478 FAU .21585
FDE 1.5124 FRA 7.9944 FC-13.8606 BSP .3233
BDE .3692 BRA .7282 BC3 2.1177 FSP .2917

MID-COURSE EXECUTION ACCURACY

SGT 1566.6 SGR 1600.5 SG3 1689.1
RRT -.8058 RRF -.9948 RTF .8118
SGB 2239.6 R23 .2861 R13 -.9529
SG1 2128.1 SG2 697.7 THA 134.24

ORBIT DETERMINATION ACCURACY

ST 27.1 SR 24.7 SS 74.7
CRT .2164 CRS .9719 CST -.0190
LSA 78.5 MSA 27.7 SSA .4
EL1 28.8 EL2 22.7 ALF 33.22

LAUNCH DATE APR 25 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 507.090 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.252 GAL -2.03 AZL 93.91 HCA 167.14 SMA 183.43 ECC .18291 INC 3.9088 V1 29.608
RP 212.14 LAP -.87 LOP 21.32 VP 22.970 GAP 5.49 AZP 86.19 TAL 346.79 TAP 153.93 RCA 149.88 APO 216.98 V2 25.864
RC 128.706 GL -36.07 GP 16.05 ZAL 115.50 ZAP 100.59 ETS 176.36 ZAE 141.48 ETE 158.82 ZAC 117.75 ETC 274.73 LVI -28.09

PLANETOCENTRIC CONIC

C3 13.927 VHL 3.732 DLA -42.01 RAL 355.10 RAD 6640.0 VEL 11.575 PTH 6.62 VHP 3.143 DPA -5.67 RAP 301.53 ECC 1.2292

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 29 2	2035.54	12.82	49.29	218.50	136.22	21 3 57	1095.5	29.91	30.83
57.54	23 15 47	1653.74	26.84	21.73	230.90	123.62	23 43 21	653.7	38.17	356.39
57.54	23 15 47	1653.74	26.84	21.73	230.90	123.62	23 43 21	653.7	38.17	356.39
57.54	23 15 47	1653.74	26.84	21.73	230.90	123.62	23 43 21	653.7	38.17	356.39
57.54	23 15 47	1653.74	26.84	21.73	230.90	123.62	23 43 21	653.7	38.17	356.39
57.54	23 15 47	1653.74	26.84	21.73	230.90	123.62	23 43 21	653.7	38.17	356.39
57.54	23 15 47	1653.74	26.84	21.73	230.90	123.62	23 43 21	653.7	38.17	356.39

DIFFERENTIAL CORRECTIONS

TDE -.3099 TRA .4816 TC3-1.8068 BAU .4162
RDE -.2121 RRA -.6888 RC3 1.3162 FAU .21599
FDE 1.5939 FRA 8.0362 FC-13.4262 BSP .3665
BDE .3755 BRA .8405 BC3 2.2354 FSP .2923

MID-COURSE EXECUTION ACCURACY

SGT 1742.2 SGR 1759.8 SG3 1689.0
RRT -.8436 RRF -.9963 RTF .8478
SGB 2476.3 R23 .2625 R13 -.9512
SG1 2377.5 SG2 692.5 THA 134.66

ORBIT DETERMINATION ACCURACY

ST 28.2 SR 26.9 SS 75.5
CRT .0867 CRS .9811 CST -.1071
LSA 80.0 MSA 28.5 SSA .4
EL1 28.8 EL2 26.1 ALF 31.01

LAUNCH DATE APR 25 1971 FLIGHT TIME 212.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 511.273 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.250 GAL -2.06 AZL 94.14 HCA 168.34 SMA 183.38 ECC .18281 INC 4.1351 V1 29.608
RP 212.43 LAP -.83 LOP 22.53 VP 22.930 GAP 5.30 AZP 85.95 TAL 346.58 TAP 154.93 RCA 149.86 APO 216.90 V2 25.832
RC 130.999 GL -37.62 GP 17.66 ZAL 115.24 ZAP 98.49 ETS 176.69 ZAE 139.09 ETE 158.52 ZAC 119.43 ETC 274.57 LVI -29.23

PLANETOCENTRIC CONIC

C3 14.492 VHL 3.807 DLA -43.20 RAL 356.52 RAD 6640.3 VEL 11.599 PTH 6.64 VHP 3.151 DPA -4.28 RAP 300.35 ECC 1.2385

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 49 33	2060.39	14.54	47.73	221.94	135.82	21 23 53	1060.4	31.39	28.80
55.86	23 14 34	1681.16	27.17	24.40	233.38	124.98	23 42 35	681.2	39.01	359.20
55.86	23 14 34	1681.16	27.17	24.40	233.38	124.98	23 42 35	681.2	39.01	359.20
55.86	23 14 34	1681.16	27.17	24.40	233.38	124.98	23 42 35	681.2	39.01	359.20
55.86	23 14 34	1681.16	27.17	24.40	233.38	124.98	23 42 35	681.2	39.01	359.20
55.86	23 14 34	1681.16	27.17	24.40	233.38	124.98	23 42 35	681.2	39.01	359.20
55.86	23 14 34	1681.16	27.17	24.40	233.38	124.98	23 42 35	681.2	39.01	359.20

DIFFERENTIAL CORRECTIONS

TDE -.3089 TRA .5808 TC3-1.8858 BAU .4534
RDE -.2309 RRA -.7718 RC3 1.3861 FAU .21486
FDE 1.6907 FRA 8.0230 FC-12.8235 BSP .4141
BDE .3857 BRA .9659 BC3 2.3404 FSP .2906

MID-COURSE EXECUTION ACCURACY

SGT 1927.6 SGR 1942.8 SG3 1675.9
RRT -.8718 RRF -.9975 RTF .8446
SGB 2736.8 R23 .2406 R13 -.9681
SG1 2647.6 SG2 693.0 THA 134.74

ORBIT DETERMINATION ACCURACY

ST 29.5 SR 29.6 SS 76.1
CRT -.0336 CRS .9860 CST -.1873
LSA 81.7 MSA 29.3 SSA .3
EL1 30.0 EL2 29.0 ALF 131.46

LAUNCH DATE APR 25 1971 FLIGHT TIME 214.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 515.458 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.248 GAL -2.09 AZL 94.41 HCA 169.54 SMA 183.35 ECC .18277 INC 4.4118 V1 29.608
RP 212.72 LAP -.80 LOP 23.73 VP 22.890 GAP 5.12 AZP 85.66 TAL 346.37 TAP 155.91 RCA 149.84 APO 216.86 V2 25.799
RC 133.312 GL -39.45 GP 19.56 ZAL 114.88 ZAP 96.42 ETS 177.08 ZAE 136.61 ETE 158.05 ZAC 121.40 ETC 274.42 LVI -30.65

PLANETOCENTRIC CONIC

C3 15.224 VHL 3.902 DLA -44.60 RAL 358.21 RAD 6640.6 VEL 11.631 PTH 6.67 VHP 3.173 DPA -2.58 RAP 299.14 ECC 1.2505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 17 1	2012.73	16.85	45.57	226.46	135.18	21 50 34	1012.7	33.34	25.93
53.95	23 13 47	1712.14	27.48	27.45	236.36	126.62	23 42 20	712.1	39.93	2.45
53.95	23 13 47	1712.14	27.48	27.45	236.36	126.62	23 42 20	712.1	39.93	2.45
53.95	23 13 47	1712.14	27.48	27.45	236.36	126.62	23 42 20	712.1	39.93	2.45
53.95	23 13 47	1712.14	27.48	27.45	236.36	126.62	23 42 20	712.1	39.93	2.45
53.95	23 13 47	1712.14	27.48	27.45	236.36	126.62	23 42 20	712.1	39.93	2.45
53.95	23 13 47	1712.14	27.48	27.45	236.36	126.62	23 42 20	712.1	39.93	2.45

DIFFERENTIAL CORRECTIONS

TDE -.3076 TRA .6845 TC3-1.9435 BAU .4944
RDE -.2587 RRA -.8685 RC3 1.4573 FAU .21181
FDE 1.8076 FRA 7.9359 FC-12.0450 BSP .4656
BDE .4020 BRA 1.1058 BC3 2.4291 FSP .2860

MID-COURSE EXECUTION ACCURACY

SGT 2120.6 SGR 2155.4 SG3 1646.8
RRT -.8930 RRF -.9983 RTF .8947
SGB 3023.6 R23 .2201 R13 -.9738
SG1 2941.6 SG2 699.4 THA 134.48

ORBIT DETERMINATION ACCURACY

ST 31.0 SR 32.9 SS 76.6
CRT -.1405 CRS .9928 CST -.2574
LSA 83.7 MSA 30.2 SSA .3
EL1 34.4 EL2 29.5 ALF 123.51

LAUNCH DATE APR 25 1971 FLIGHT TIME 216.00 ARRIVAL DATE NOV 27 1971

DISTANCE 519.642

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.246 GAL -2.13 AZL 94.76 HCA 170.74 SMA 183.33 ECC .18279 INC 4.7584 V1 29.608
RP 213.01 LAP -.76 LOP 24.92 VP 22.851 GAP 4.93 AZP 85.30 TAL 346.14 TAP 156.88 RCA 149.82 APO 216.84 V2 25.766
RC 135.643 GL -41.62 GP 21.85 ZAL 114.37 ZAP 94.40 ETS 177.57 ZAE 134.00 ETE 157.38 ZAC 123.75 ETC 274.30 LVI -32.41

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 16.199 VHL 4.025 DLA -46.25 RAL .29 RAD 6641.1 VEL 11.672 PTH 6.71 VHP 3.214 DPA -.49 RAP 297.90 ECC 1.2666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 58 45	1937.02	20.47	42.01	233.05	133.94	22 31 2	937.0	36.28	21.08
51.74	23 13 50	1747.47	27.75	30.97	240.04	128.62	23 42 57	747.5	40.95	6.30
51.74	23 13 50	1747.47	27.75	30.97	240.04	128.62	23 42 57	747.5	40.95	6.30
51.74	23 13 50	1747.47	27.75	30.97	240.04	128.62	23 42 57	747.5	40.95	6.30
51.74	23 13 50	1747.47	27.75	30.97	240.04	128.62	23 42 57	747.5	40.95	6.30
51.74	23 13 50	1747.47	27.75	30.97	240.04	128.62	23 42 57	747.5	40.95	6.30
51.74	23 13 50	1747.47	27.75	30.97	240.04	128.62	23 42 57	747.5	40.95	6.30

DIFFERENTIAL CORRECTIONS

TDE -.3023 TRA .7955 TC3-1.9675 BAU .5390
RDE -.3019 RRA -.9834 RC3 1.5247 FAU .20662
FDE 1.9626 FRA 7.7606 FC-11.0427 BSP .5240
BDE .4272 BRA 1.2648 BC3 2.4891 FSP .2779

MID-COURSE EXECUTION ACCURACY

SGT 2318.5 SGR 2406.2 SG3 1598.0
RRT -.9096 RRF -.9989 RTF .9104
SGB 3341.5 R23 .1999 R13 -.9787
SG1 3265.2 SG2 710.0 THA 133.83

ORBIT DETERMINATION ACCURACY

ST 32.7 SR 37.2 SS 77.1
CRT -.2362 CRS .9961 CST -.3204
LSA 86.3 MSA 31.1 SSA .2
EL1 39.5 EL2 30.0 ALF 120.66

LAUNCH DATE APR 25 1971 FLIGHT TIME 218.00 ARRIVAL DATE NOV 29 1971

DISTANCE 523.826

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.245 GAL -2.17 AZL 95.21 HCA 171.93 SMA 183.31 ECC .18267 INC 5.2049 V1 29.608
RP 213.31 LAP -.73 LOP 26.11 VP 22.812 GAP 4.75 AZP 84.85 TAL 345.90 TAP 157.83 RCA 149.79 APO 216.84 V2 25.732
RC 137.991 GL -44.25 GP 24.66 ZAL 113.67 ZAP 92.45 ETS 178.17 ZAE 131.22 ETE 156.49 ZAC 126.62 ETC 274.22 LVI -34.64

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 17.552 VHL 4.189 DLA -48.23 RAL 2.92 RAD 6641.7 VEL 11.730 PTH 6.76 VHP 3.283 DPA 2.13 RAP 296.62 ECC 1.2869

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.15	23 15 13	1788.65	27.91	35.08	244.66	131.08	23 45 1	788.6	42.04	10.93
49.15	23 15 13	1788.65	27.91	35.08	244.66	131.08	23 45 1	788.6	42.04	10.93
49.15	23 15 13	1788.65	27.91	35.08	244.66	131.08	23 45 1	788.6	42.04	10.93
49.15	23 15 13	1788.65	27.91	35.08	244.66	131.08	23 45 1	788.6	42.04	10.93
49.15	23 15 13	1788.65	27.91	35.08	244.66	131.08	23 45 1	788.6	42.04	10.93
49.15	23 15 13	1788.65	27.91	35.08	244.66	131.08	23 45 1	788.6	42.04	10.93
49.15	23 15 13	1788.65	27.91	35.08	244.66	131.08	23 45 1	788.6	42.04	10.93

DIFFERENTIAL CORRECTIONS

TDE -.2922 TRA .9113 TC3-1.9574 BAU .5906
RDE -.3724 RRA-1.1223 RC3 1.5822 FAU .19840
FDE 2.1790 FRA 7.4653 FC3-9.7861 BSP .5881
BDE .4733 BRA 1.4457 BC3 2.5170 FSP .2660

MID-COURSE EXECUTION ACCURACY

SGT 2520.0 SGR 2706.7 SG3 1523.8
RRT -.9210 RRF -.9993 RTF .9211
SGB 3698.2 R23 .1821 R13 -.9826
SG1 3624.9 SG2 733.0 THA 132.78

ORBIT DETERMINATION ACCURACY

ST 34.5 SR 43.0 SS 77.8
CRT -.3140 CRS .9982 CST -.3701
LSA 89.8 MSA 32.0 SSA .2
EL1 45.7 EL2 30.8 ALF 117.47

LAUNCH DATE APR 25 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 1 1971

DISTANCE 528.009

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.245 GAL -2.21 AZL 95.80 HCA 173.12 SMA 183.31 ECC .18300 INC 5.8028 V1 29.608
RP 213.61 LAP -.69 LOP 27.30 VP 22.773 GAP 4.57 AZP 84.24 TAL 345.66 TAP 158.77 RCA 149.77 APO 216.86 V2 25.697
RC 140.356 GL -47.49 GP 28.17 ZAL 112.67 ZAP 90.61 ETS 178.92 ZAE 128.20 ETE 155.32 ZAC 130.18 ETC 274.19 LVI -37.48

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 19.532 VHL 4.419 DLA -50.62 RAL 6.38 RAD 6642.6 VEL 11.813 PTH 6.83 VHP 3.394 DPA 5.45 RAP 295.27 ECC 1.3214

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.09	23 19 2	1837.69	27.84	39.93	250.68	134.15	23 49 39	837.7	43.12	16.63
46.09	23 19 2	1837.69	27.84	39.93	250.68	134.15	23 49 39	837.7	43.12	16.63
46.09	23 19 2	1837.69	27.84	39.93	250.68	134.15	23 49 39	837.7	43.12	16.63
46.09	23 19 2	1837.69	27.84	39.93	250.68	134.15	23 49 39	837.7	43.12	16.63
46.09	23 19 2	1837.69	27.84	39.93	250.68	134.15	23 49 39	837.7	43.12	16.63
46.09	23 19 2	1837.69	27.84	39.93	250.68	134.15	23 49 39	837.7	43.12	16.63
46.09	23 19 2	1837.69	27.84	39.93	250.68	134.15	23 49 39	837.7	43.12	16.63

DIFFERENTIAL CORRECTIONS

TDE -.2658 TRA 1.0358 TC3-1.8955 BAU .6525
RDE -.4886 RRA-1.2867 RC3 1.6282 FAU .18716
FDE 2.4549 FRA 6.9682 FC3-8.2957 BSP .6562
BDE .5562 BRA 1.6518 BC3 2.4988 FSP .2451

MID-COURSE EXECUTION ACCURACY

SGT 2721.3 SGR 3063.6 SG3 1410.8
RRT -.9305 RRF -.9996 RTF .9500
SGB 4097.7 R23 .1640 R13 -.9861
SG1 4027.0 SG2 758.1 THA 131.36

ORBIT DETERMINATION ACCURACY

ST 36.2 SR 50.6 SS 78.2
CRT -.3884 CRS .9993 CST -.4213
LSA 94.5 MSA 32.6 SSA .1
EL1 53.7 EL2 31.4 ALF 114.34

LAUNCH DATE APR 25 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 3 1971

DISTANCE 532.190

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.246 GAL -2.25 AZL 96.65 HCA 174.30 SMA 183.32 ECC .18318 INC 6.6451 V1 29.608
RP 213.92 LAP -.66 LOP 28.49 VP 22.734 GAP 4.39 AZP 83.39 TAL 345.40 TAP 159.70 RCA 149.74 APO 216.90 V2 25.662
RC 142.739 GL -51.59 GP 32.64 ZAL 111.27 ZAP 88.94 ETS 179.87 ZAE 124.82 ETE 153.83 ZAC 134.69 ETC 274.28 LVI -41.15

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 22.643 VHL 4.760 DLA -53.51 RAL 11.21 RAD 6644.0 VEL 11.943 PTH 6.95 VHP 3.579 DPA 9.74 RAP 293.82 ECC 1.3728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.48	23 27 19	1898.13	27.27	45.70	258.78	138.00	23 58 57	898.1	43.98	23.81
42.48	23 27 19	1898.13	27.27	45.70	258.78	138.00	23 58 57	898.1	43.98	23.81
42.48	23 27 19	1898.13	27.27	45.70	258.78	138.00	23 58 57	898.1	43.98	23.81
42.48	23 27 19	1898.13	27.27	45.70	258.78	138.00	23 58 57	898.1	43.98	23.81
42.48	23 27 19	1898.13	27.27	45.70	258.78	138.00	23 58 57	898.1	43.98	23.81
42.48	23 27 19	1898.13	27.27	45.70	258.78	138.00	23 58 57	898.1	43.98	23.81
42.48	23 27 19	1898.13	27.27	45.70	258.78	138.00	23 58 57	898.1	43.98	23.81

DIFFERENTIAL CORRECTIONS

TDE -.2036 TRA 1.1667 TC3-1.7755 BAU .7338
RDE -.7026 RRA-1.4826 RC3 1.6486 FAU .17155
FDE 2.8419 FRA 6.1998 FC3-6.5561 BSP .7232
BDE .7315 BRA 1.8866 BC3 2.4228 FSP .2134

MID-COURSE EXECUTION ACCURACY

SGT 2914.3 SGR 3490.4 SG3 1246.4
RRT -.9370 RRF -.9998 RTF .9358
SGB 4547.1 R23 .1476 R13 -.9888
SG1 4477.3 SG2 793.6 THA 129.52

ORBIT DETERMINATION ACCURACY

ST 37.6 SR 61.8 SS 78.7
CRT -.4661 CRS .9999 CST -.4806
LSA 101.8 MSA 32.5 SSA .1
EL1 65.1 EL2 31.6 ALF 110.97

LAUNCH DATE APR 25 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 536.367 EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.247	GAL	-2.29	AZL	97.92	HCA	175.48	SMA	183.34	ECC	.18341	INC	7.9234
RP	214.24	LAP	-.62	LOP	29.67	VP	22.695	GAP	4.21	AZP	82.10	TAL	345.13	TAP	180.61	RCA	149.71	APO	216.97
RC	145.138	GL	-36.88	GP	38.41	ZAL	109.27	ZAP	87.55	ETS	181.05	ZAE	120.91	ETE	151.99	ZAC	140.49	ETC	274.57

V1	29.608																		
V2	25.627																		
LVI	-45.91																		

PLANETOCENTRIC CONIC

C3	28.133	VHL	5.304	DLA	-56.93	RAL	18.44	RAD	6646.3	VEL	12.169	PTH	7.13	VHP	3.908	DPA	15.33	RAP	292.24

ECC	1.4630																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.29	23 44 24	1976.25	25.66	52.51	270.20	142.75	24 17 20	976.2	44.08	32.90
38.29	23 44 24	1976.25	25.66	52.51	270.20	142.75	24 17 20	976.2	44.08	32.90
38.29	23 44 24	1976.25	25.66	52.51	270.20	142.75	24 17 20	976.2	44.08	32.90
38.29	23 44 24	1976.25	25.66	52.51	270.20	142.75	24 17 20	976.2	44.08	32.90
38.29	23 44 24	1976.25	25.66	52.51	270.20	142.75	24 17 20	976.2	44.08	32.90
38.29	23 44 24	1976.25	25.66	52.51	270.20	142.75	24 17 20	976.2	44.08	32.90
38.29	23 44 24	1976.25	25.66	52.51	270.20	142.75	24 17 20	976.2	44.08	32.90

DIFFERENTIAL CORRECTIONS

TDE	-.0152	TRA	1.3321	TC3	-1.5464	BAU	.8289												
RDE	-1.1758	RRA	-1.7385	RC3	1.5704	FAU	.14485												
FDE	3.4664	FRA	5.1425	FC3	-4.4574	BSP	8272												
BDE	1.1759	BRA	2.1902	BC3	2.2040	FSP	1772												

MID-COURSE EXECUTION ACCURACY

SGT	3105.8	SGR	4029.1	SG3	1022.4														
RRT	-.9420	RRF	-.9999	RTF	.9399														
SGB	5087.2	R23	.1315	R13	-.9912														
SG1	5017.9	SG2	836.7	THA	127.19														

ORBIT DETERMINATION ACCURACY

ST	39.6	SR	81.9	SS	81.6														
CRT	-.6149	CRS	1.0000	CST	-.6162														
LSA	118.3	MSA	30.5	SSA	.1														
EL1	86.0	EL2	29.8	ALF	108.94														

LAUNCH DATE APR 25 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 540.539 EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.249	GAL	-2.33	AZL	100.09	HCA	176.65	SMA	183.36	ECC	.18369	INC	10.0874
RP	214.55	LAP	-.59	LOP	30.85	VP	22.657	GAP	4.03	AZP	79.93	TAL	344.86	TAP	161.51	RCA	149.68	APO	217.05
RC	147.555	GL	-63.90	GP	45.88	ZAL	106.41	ZAP	86.65	ETS	182.44	ZAE	116.28	ETE	149.80	ZAC	147.95	ETC	275.33

V1	29.608																		
V2	25.591																		
LVI	-51.95																		

PLANETOCENTRIC CONIC

C3	39.507	VHL	6.285	DLA	-60.67	RAL	30.25	RAD	6650.5	VEL	12.625	PTH	7.48	VHP	4.555	DPA	22.61	RAP	290.47

ECC	1.6502																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
33.79	0 23 49	2083.87	21.87	60.17	287.20	148.15	0 58 33	1083.9	42.13	43.92
33.79	0 23 49	2083.87	21.87	60.17	287.20	148.15	0 58 33	1083.9	42.13	43.92
33.79	0 23 49	2083.87	21.87	60.17	287.20	148.15	0 58 33	1083.9	42.13	43.92
33.79	0 23 49	2083.87	21.87	60.17	287.20	148.15	0 58 33	1083.9	42.13	43.92
33.79	0 23 49	2083.87	21.87	60.17	287.20	148.15	0 58 33	1083.9	42.13	43.92
33.79	0 23 49	2083.87	21.87	60.17	287.20	148.15	0 58 33	1083.9	42.13	43.92
33.79	0 23 49	2083.87	21.87	60.17	287.20	148.15	0 58 33	1083.9	42.13	43.92

DIFFERENTIAL CORRECTIONS

TDE	.4917	TRA	1.5169	TC3	-1.2353	BAU	.9923												
RDE	-2.2678	RRA	-2.0047	RC3	1.4154	FAU	.11123												
FDE	4.0919	FRA	3.5614	FC3	-2.4375	BSP	8988												
BDE	2.3205	BRA	2.5139	BC3	1.8787	FSP	1192												

MID-COURSE EXECUTION ACCURACY

SGT	3253.2	SGR	4621.7	SG3	708.5														
RRT	-.9460	RRF	-.9999	RTF	.9426														
SGB	5651.9	R23	.1175	R13	-.9930														
SG1	5584.1	SG2	872.8	THA	124.63														

ORBIT DETERMINATION ACCURACY

ST	48.0	SR	117.6	SS	83.2														
CRT	-.8321	CRS	1.0000	CST	-.8284														
LSA	149.6	MSA	25.7	SSA	.0														
EL1	124.5	EL2	25.1	ALF	109.58														

LAUNCH DATE APR 25 1971 FLIGHT TIME 236.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 561.556 EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.264	GAL	-2.62	AZL	80.94	HCA	182.57	SMA	183.61	ECC	.18590	INC	9.0593
RP	216.21	LAP	-.41	LOP	36.69	VP	22.468	GAP	3.20	AZP	99.05	TAL	343.13	TAP	165.70	RCA	149.48	APO	217.74
RC	159.881	GL	59.83	GP	-51.39	ZAL	109.28	ZAP	82.28	ETS	168.93	ZAE	107.65	ETE	203.97	ZAC	51.01	ETC	272.54

V1	29.608																		
V2	25.405																		
LVI	37.12																		

PLANETOCENTRIC CONIC

C3	34.462	VHL	5.870	DLA	47.92	RAL	316.48	RAD	6648.7	VEL	12.424	PTH	7.33	VHP	5.407	DPA	-72.36	RAP	321.47

ECC	1.3672																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.55	8 13 28	4593.98	-20.16	211.89	207.14	45.55	9 30 2	3594.0	-36.16	191.20
49.55	8 13 28	4593.98	-20.16	211.89	207.14	45.55	9 30 2	3594.0	-36.16	191.20
49.55	8 13 28	4593.98	-20.16	211.89	207.14	45.55	9 30 2	3594.0	-36.16	191.20
49.55	8 13 28	4593.98	-20.16	211.89	207.14	45.55	9 30 2	3594.0	-36.16	191.20
49.55	8 13 28	4593.98	-20.16	211.89	207.14	45.55	9 30 2	3594.0	-36.16	191.20
49.55	8 13 28	4593.98	-20.16	211.89	207.14	45.55	9 30 2	3594.0	-36.16	191.20
49.55	8 13 28	4593.98	-20.16	211.89	207.14	45.55	9 30 2	3594.0	-36.16	191.20

DIFFERENTIAL CORRECTIONS

TDE	3.8066	TRA	.8236	TC3	-1.7460	BAU	1.0628												
RDE	3.8429	RRA	1.7841	RC3	-1.5732	FAU	.06865												
FDE	3.9807	FRA	1.9893	FC3	-1.7247	BSP	11079												
BDE	5.4105	BRA	1.9650	BC3	2.3502	FSP	820												

MID-COURSE EXECUTION ACCURACY

SGT	4411.2	SGR	4922.5	SG3	453.8														
RRT	.9600	RRF	.9994	RTF	.9625														
SGB	6609.8	R23	.1503	R13	.9834														
SG1	6544.2	SG2	929.2	THA	48.26														

ORBIT DETERMINATION ACCURACY

ST	186.8	SR	191.6	SS	93.0														
CRT	.9941	CRS	-.9999	CST	-.9924														
LSA	282.8	MSA	15.7	SSA	.1														
EL1	267.1	EL2	14.5	ALF	45.73														

LAUNCH DATE APR 25 1971 FLIGHT TIME 238.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 565.707 EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.268	GAL	-2.68	AZL	84.31	HCA	183.72	SMA	183.68	ECC	.18643	INC	5.6933
RP	216.56	LAP	-.37	LOP	37.85	VP	22.431	GAP	3.04	AZP	95.68	TAL	342.81	TAP	166.53	RCA	149.44	APO	217.92
RC	162.390	GL	45.35	GP	-42.53	ZAL	115.99	ZAP	79.12	ETS	168.70	ZAE	109.48	ETE	199.33	ZAC	59.90	ETC	272.00

V1	29.608																		
V2	25.366																		
LVI	29.54																		

PLANETOCENTRIC CONIC

C3	20.209	VHL	4.495	DLA	34.73	RAL	324.74	RAD	6642.9	VEL	11.841	PTH	6.86	VHP	4.322	DPA	-64.63	RAP	309.26

ECC	1.3326																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 10 5	3878.47	-45.77	163.98	215.55	75.28	13 14 43	2878.5	-46.41	128.87
60.00	11 47 46	3938.10	-35.85	165.25	211.49	70.20	12 53 24	2938.1	-40.30	135.08
68.94	10 13 30	4218.33	-19.88	179.54	203.32	60.91	11 23 49	3218.3	-30.09	155.53
68.94	10 13 30	4218.33	-19.88	179.54	203.32	60.91	11 23 49	3218.3	-30.09	155.53
68.94	10 13 30	4218.33	-19.88	179.54	203.32	60.91	11 23 49	3218.3	-30.09	155.53
68.94	10 13 30	4218.33	-19.88	179.54	203.32	60.91	11 23 49	3218.3	-30.09	155.53
68.94	10 13 30	4218.33	-19.88	179.54	203.32	60.91	11 23 49	3218.3	-30.09	155.53

DIFFERENTIAL CORRECTIONS

TDE	2.5919	TRA	1.1879	TC3	-2.8955	BAU	.9596												
RDE	2.1753	RRA	1.6842	RC3	-2.0571	FAU	.10673												
FDE	4.6099	FRA	3.7635	FC3	-4.5724	BSP	10357												
BDE	3.3838	BRA	2.0610	BC3	3.5519	FSP	1414												

MID-COURSE EXECUTION ACCURACY

SGT	4591.7	SGR	4234.5	SG3	798.8														
RRT	.9662	RRF	.9997	RTF	.9625														
SGB	6246.2	R23	.1535	R13	.9879														
SG1	6193.5	SG2	809.5	THA	42.60														

ORBIT DETERMINATION ACCURACY

ST	167.5	SR	144.1	SS	114.5														
CRT	.9940	CRS	-.9999	CST	-.9923														
LSA	248.5	MSA	14.3	SSA	.1														
EL1	220.6	EL2	12.0	ALF	40.67														

LAUNCH DATE APR 25 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 21 1971

DISTANCE 569.865

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.272 GAL -2.74 AZL 86.08 HCA 184.86 SMA 183.76 ECC .18701 INC 3.9181 V1 29.608
RP 216.91 LAP -.33 LOP 39.00 VP 22.394 GAP 2.87 AZP 93.90 TAL 342.48 TAP 167.34 RCA 149.39 APO 218.12 V2 25.327
RC 164.912 GL 34.15 GP -35.52 ZAL 120.69 ZAP 76.39 ETS 168.99 ZAE 110.16 ETE 195.55 ZAC 66.94 ETC 271.71 LVI 23.41

PLANETOCENTRIC CONIC

C3 15.401 VHL 3.924 DLA 24.49 RAL 330.00 RAD 6640.7 VEL 11.638 PTH 6.68 VHP 3.840 DPA -58.10 RAP 303.68 ECC 1.2535

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 29 45	3575.25	-47.14	135.16	205.44	97.33	14 29 20	2575.3	-38.88	103.83
60.00	13 37 52	3553.62	-40.29	133.89	206.12	90.90	14 37 5	2553.6	-35.52	103.87
70.00	13 51 26	3513.62	-33.69	130.40	205.87	85.49	14 50 0	2513.6	-32.21	101.80
80.00	14 18 29	3428.77	-28.67	123.27	205.16	81.30	15 15 38	2428.8	-29.40	95.87
90.00	15 18 37	3234.58	-26.41	108.58	204.73	79.51	16 12 31	2234.6	-28.17	81.71
100.00	17 1 21	2903.24	-28.67	84.64	205.16	81.30	17 49 44	1903.2	-29.40	57.24
110.00	18 50 53	2560.44	-33.89	59.32	205.87	85.49	19 33 33	1560.4	-32.21	30.71

DIFFERENTIAL CORRECTIONS

TDE 2.0058 TRA 1.4398 TC3-3.8193 BAU .9053
RDE 1.4269 RRA 1.5070 RC3-2.1785 FAU .13297
FDE 4.6322 FRA 5.1878 FC3-7.4746 BSP 10052
BDE 2.4616 BRA 2.0842 BC3 4.3969 FSP 1883

MID-COURSE EXECUTION ACCURACY

SGT 4785.2 SGR 3620.7 SG3 1056.2
RRT .9703 RRF .9996 RTF .9679
SGB 6000.6 R23 .1637 R13 .9862
SG1 5959.3 SG2 703.0 THA 36.88

ORBIT DETERMINATION ACCURACY

ST 150.5 SR 110.3 SS 119.6
CRT .9947 CRS -.9998 CST -.9926
LSA 221.3 MSA 12.6 SSA .2
EL1 186.4 EL2 9.1 ALF 36.19

LAUNCH DATE APR 25 1971 FLIGHT TIME 242.00 ARRIVAL DATE DEC 23 1971

DISTANCE 574.025

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.277 GAL -2.80 AZL 87.18 HCA 186.01 SMA 183.84 ECC .18762 INC 2.8215 V1 29.608
RP 217.26 LAP -.30 LOP 40.15 VP 22.357 GAP 2.71 AZP 92.81 TAL 342.13 TAP 168.14 RCA 149.34 APO 218.33 V2 25.288
RC 167.446 GL 25.69 GP -30.13 ZAL 123.81 ZAP 74.02 ETS 169.42 ZAE 110.02 ETE 192.54 ZAC 72.34 ETC 271.52 LVI 18.67

PLANETOCENTRIC CONIC

C3 13.413 VHL 3.662 DLA 16.78 RAL 333.71 RAD 6639.8 VEL 11.553 PTH 6.60 VHP 3.594 DPA -52.99 RAP 300.52 ECC 1.2207

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 18 55	3380.89	-43.93	117.60	199.39	110.50	15 15 16	2380.9	-31.47	91.20
60.00	14 39 14	3326.80	-38.33	115.00	201.67	103.54	15 34 40	2326.8	-28.97	88.24
70.00	15 9 17	3238.32	-33.30	109.02	202.85	98.07	16 3 15	2238.3	-26.61	82.37
80.00	15 56 27	3090.53	-29.57	98.29	203.32	94.32	16 47 57	2090.5	-24.81	71.88
90.00	17 8 18	2858.59	-28.14	81.35	203.43	92.94	17 55 56	1858.6	-24.10	55.06
100.00	18 39 18	2565.00	-29.57	59.66	203.32	94.32	19 22 3	1565.0	-24.81	33.25
110.00	20 8 43	2285.14	-33.30	37.94	202.85	98.07	20 46 48	1285.1	-26.61	11.29

DIFFERENTIAL CORRECTIONS

TDE 1.6672 TRA 1.6254 TC3-4.5020 BAU .8903
RDE 1.0261 RRA 1.3230 RC3-2.0943 FAU .15099
FDE 4.4478 FRA 6.1655 FC3-9.7460 BSP 9757
BDE 1.9577 BRA 2.0958 BC3 4.9653 FSP 2181

MID-COURSE EXECUTION ACCURACY

SGT 4973.0 SGR 3098.9 SG3 1226.6
RRT .9725 RRF .9995 RTF .9708
SGB 5859.5 R23 .1744 R13 .9842
SG1 5827.0 SG2 616.1 THA 31.61

ORBIT DETERMINATION ACCURACY

ST 136.5 SR 86.6 SS 117.9
CRT .9961 CRS -.9996 CST -.9934
LSA 199.8 MSA 10.7 SSA .3
EL1 161.5 EL2 6.4 ALF 32.36

LAUNCH DATE APR 25 1971 FLIGHT TIME 244.00 ARRIVAL DATE DEC 25 1971

DISTANCE 578.183

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.283 GAL -2.86 AZL 87.92 HCA 187.15 SMA 183.92 ECC .18828 INC 2.0770 V1 29.608
RP 217.61 LAP -.26 LOP 41.30 VP 22.320 GAP 2.54 AZP 92.06 TAL 341.76 TAP 168.92 RCA 149.29 APO 218.55 V2 25.249
RC 169.902 GL 19.30 GP -25.97 ZAL 125.89 ZAP 71.92 ETS 169.86 ZAE 109.37 ETE 190.18 ZAC 76.52 ETC 271.39 LVI 15.01

PLANETOCENTRIC CONIC

C3 12.521 VHL 3.538 DLA 10.99 RAL 336.52 RAD 6639.3 VEL 11.515 PTH 6.56 VHP 3.459 DPA -49.02 RAP 298.47 ECC 1.2061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 53 6	3247.82	-40.19	107.02	196.83	117.98	15 47 14	2247.8	-25.69	83.81
60.00	15 20 40	3174.48	-35.24	103.27	199.68	110.97	16 13 34	2174.5	-23.54	79.02
70.00	15 59 21	3060.64	-30.81	95.78	201.42	105.52	16 50 22	2060.6	-21.54	71.07
80.00	16 55 7	2885.96	-27.60	83.43	202.32	101.88	17 43 13	1886.0	-20.04	58.57
90.00	18 11 1	2640.99	-26.38	65.70	202.59	100.56	18 55 2	1641.0	-19.47	40.81
100.00	19 37 59	2360.43	-27.60	44.80	202.32	101.88	20 17 19	1360.4	-20.04	19.94
110.00	20 58 47	2107.46	-30.81	24.70	201.42	105.52	21 33 55	1107.5	-21.54	359.99

DIFFERENTIAL CORRECTIONS

TDE 1.4606 TRA 1.7861 TC3-4.9706 BAU .8917
RDE .7916 RRA 1.1620 RC3-1.9163 FAU .16261
FDE 4.2323 FRA 6.8716 FC-11.2435 BSP 9632
BDE 1.6613 BRA 2.1308 BC3 5.3272 FSP 2366

MID-COURSE EXECUTION ACCURACY

SGT 5162.1 SGR 2674.9 SG3 1335.0
RRT .9739 RRF .9992 RTF .9928
SGB 5814.0 R23 .1816 R13 .9825
SG1 5788.7 SG2 541.1 THA 27.03

ORBIT DETERMINATION ACCURACY

ST 126.4 SR 70.3 SS 114.4
CRT .9979 CRS -.9992 CST -.9947
LSA 184.1 MSA 8.8 SSA .4
EL1 144.5 EL2 4.0 ALF 29.05

LAUNCH DATE APR 25 1971 FLIGHT TIME 246.00 ARRIVAL DATE DEC 27 1971

DISTANCE 582.342

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.288 GAL -2.93 AZL 88.46 HCA 188.29 SMA 184.02 ECC .18897 INC 1.5388 V1 29.608
RP 217.97 LAP -.22 LOP 42.44 VP 22.283 GAP 2.38 AZP 91.52 TAL 341.39 TAP 169.69 RCA 149.24 APO 218.79 V2 25.209
RC 172.547 GL 14.41 GP -22.70 ZAL 127.32 ZAP 70.00 ETS 170.27 ZAE 108.41 ETE 188.33 ZAC 79.80 ETC 271.28 LVI 12.15

PLANETOCENTRIC CONIC

C3 12.130 VHL 3.483 DLA 6.61 RAL 338.74 RAD 6639.1 VEL 11.498 PTH 6.55 VHP 3.382 DPA -45.88 RAP 297.00 ECC 1.1996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 30	3153.04	-36.94	100.28	196.07	122.43	16 11 3	2153.0	-21.32	79.02
60.00	15 51 0	3066.56	-32.33	95.59	199.16	115.50	16 42 6	2066.6	-19.33	73.00
70.00	16 35 20	2936.15	-28.21	87.03	201.17	110.10	17 24 16	1936.1	-17.49	63.69
80.00	17 36 23	2744.90	-25.23	73.63	202.27	106.52	18 22 8	1744.9	-16.12	49.93
90.00	18 54 40	2492.31	-24.12	55.41	202.62	105.23	19 36 12	1492.3	-15.60	31.61
100.00	20 19 15	2219.37	-25.23	34.99	202.27	106.52	20 56 15	1219.4	-16.12	11.30
110.00	21 34 46	1982.97	-28.21	15.95	201.17	110.10	22 7 49	983.0	-17.49	352.61

DIFFERENTIAL CORRECTIONS

TDE 1.3264 TRA 1.9301 TC3-5.2991 BAU .9039
RDE .6398 RRA 1.0211 RC3-1.7283 FAU .17108
FDE 4.0049 FRA 7.3070 FC-12.2097 BSP 9587
BDE 1.4727 BRA 2.1835 BC3 5.5738 FSP 2443

MID-COURSE EXECUTION ACCURACY

SGT 5348.2 SGR 2327.3 SG3 1399.0
RRT .9758 RRF .9987 RTF .9752
SGB 5832.6 R23 .1818 R13 .9820
SG1 5813.8 SG2 468.5 THA 23.17

ORBIT DETERMINATION ACCURACY

ST 119.3 SR 58.4 SS 110.0
CRT .9993 CRS -.9985 CST -.9959
LSA 172.3 MSA 7.3 SSA .6
EL1 132.8 EL2 2.0 ALF 26.09

LAUNCH DATE APR 25 1971 FLIGHT TIME 248.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 586.493 EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.294	GAL	-3.00	AZL	88.87	HCA	189.43	SMA	184.11	ECC	.18970	INC	1.1318	V1	29.608
RP	218.33	LAP	-.19	LOP	43.58	VP	22.246	GAP	2.22	AZP	91.12	TAL	341.01	TAP	170.45	RCA	149.19	APO	219.04	V2	25.169
RC	175.114	GL	10.61	GP	-20.09	ZAL	128.37	ZAP	68.24	ETS	170.64	ZAE	107.28	ETE	186.85	ZAC	82.42	ETC	271.20	LVI	9.86

PLANETOCENTRIC CONIC

C3	11.999	VHL	3.464	DLA	3.25	RAL	340.37	RAD	6639.1	VEL	11.492	PTH	6.54	VHP	3.340	DPA	-43.37	RAP	295.90	ECC	1.1975

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 12	3083.61	-34.31	95.74	196.17	125.25	16 29 35	2083.6	-18.02	75.72
60.00	16 14 20	2987.48	-29.89	90.32	199.41	118.40	17 4 7	1987.5	-16.11	68.81
70.00	17 2 44	2845.12	-25.93	80.94	201.56	113.05	17 50 9	1845.1	-14.33	58.53
80.00	18 7 32	2642.20	-23.07	66.77	202.79	109.50	18 51 34	1642.2	-13.02	43.89
90.00	19 27 26	2384.34	-22.00	48.21	203.19	108.23	20 7 11	1384.3	-12.53	25.18
100.00	20 50 24	2116.67	-23.07	28.14	202.79	109.50	21 25 40	1116.7	-13.02	5.25
110.00	22 2 10	1891.94	-25.93	9.85	201.56	113.05	22 33 42	891.9	-14.33	347.44

DIFFERENTIAL CORRECTIONS

TDE	1.2500	TRA	2.0780	TC3	-5.4978	BAU	.9145												
RDE	.5493	RRA	.9133	RC3	-1.5082	FAU	.17237												
FDE	3.8912	FRA	7.6768	FC	-12.4365	BSP	9822												
BDE	1.3654	BRA	2.2698	BC3	5.7009	FSP	2564												

MID-COURSE EXECUTION ACCURACY

SGT	5834.8	SGR	2051.0	SG3	1439.1						
RRT	.9749	RRF	.9980	RTF	.9753						
SGB	5902.6	R23	.1862	R13	.9806						
SG1	5887.0	SG2	429.1	THA	19.97						

ORBIT DETERMINATION ACCURACY

ST	115.7	SR	50.8	SS	108.0						
CRT	.9998	CRS	-.9974	CST	-.9973						
LSA	166.1	MSA	6.0	SSA	.9						
EL1	126.4	EL2	.9	ALF	23.70						

LAUNCH DATE APR 25 1971 FLIGHT TIME 250.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 590.641 EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.300	GAL	-3.07	AZL	89.19	HCA	190.57	SMA	184.22	ECC	.19046	INC	.8123	V1	29.608
RP	218.69	LAP	-.15	LOP	44.72	VP	22.210	GAP	2.06	AZP	90.80	TAL	340.63	TAP	171.19	RCA	149.13	APO	219.30	V2	25.129
RC	177.690	GL	7.59	GP	-17.97	ZAL	129.19	ZAP	66.60	ETS	170.97	ZAE	106.06	ETE	185.67	ZAC	84.55	ETC	271.13	LVI	8.00

PLANETOCENTRIC CONIC

C3	12.013	VHL	3.466	DLA	.63	RAL	342.13	RAD	6639.1	VEL	11.493	PTH	6.54	VHP	3.318	DPA	-41.32	RAP	295.06	ECC	1.1977

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 53 59	3031.66	-32.22	92.55	196.72	127.12	16 44 30	2031.7	-15.51	73.33
60.00	16 32 54	2928.13	-27.91	86.54	200.04	120.34	17 21 42	1928.1	-13.63	65.75
70.00	17 24 24	2776.67	-24.03	76.53	202.30	115.03	18 10 40	1776.7	-11.88	54.75
80.00	18 32 1	2564.93	-21.22	61.77	203.61	111.51	19 14 46	1564.9	-10.58	39.45
90.00	19 53 9	2303.11	-20.17	42.95	204.04	110.25	20 31 32	1303.1	-10.09	20.46
100.00	21 14 53	2039.40	-21.22	23.14	203.61	111.51	21 48 52	1039.4	-10.58	.81
110.00	22 23 50	1823.49	-24.03	5.45	202.30	115.03	22 54 13	823.5	-11.88	343.66

DIFFERENTIAL CORRECTIONS

TDE	1.2046	TRA	2.2220	TC3	-5.6309	BAU	.9284												
RDE	.4885	RRA	.8227	RC3	-1.3081	FAU	.17080												
FDE	3.8179	FRA	7.9553	FC	-12.3088	BSP	10116												
BDE	1.2999	BRA	2.3694	BC3	5.7808	FSP	2664												

MID-COURSE EXECUTION ACCURACY

SGT	5717.9	SGR	1823.2	SG3	1460.1						
RRT	.9730	RRF	.9970	RTF	.9747						
SGB	6001.5	R23	.1905	R13	.9789						
SG1	5988.1	SG2	401.9	THA	17.32						

ORBIT DETERMINATION ACCURACY

ST	113.9	SR	45.3	SS	106.8						
CRT	.9991	CRS	-.9959	CST	-.9984						
LSA	162.5	MSA	5.0	SSA	1.2						
EL1	122.6	EL2	1.8	ALF	21.65						

LAUNCH DATE APR 25 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 594.789 EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.307	GAL	-3.14	AZL	89.44	HCA	191.70	SMA	184.32	ECC	.19126	INC	.5538	V1	29.608
RP	219.06	LAP	-.11	LOP	45.85	VP	22.173	GAP	1.90	AZP	90.54	TAL	340.23	TAP	171.93	RCA	149.07	APO	219.57	V2	25.089
RC	180.275	GL	5.16	GP	-16.21	ZAL	129.87	ZAP	65.05	ETS	171.27	ZAE	104.77	ETE	184.71	ZAC	86.31	ETC	271.07	LVI	6.47

PLANETOCENTRIC CONIC

C3	12.113	VHL	3.480	DLA	-1.45	RAL	343.47	RAD	6639.1	VEL	11.497	PTH	6.55	VHP	3.311	DPA	-39.63	RAP	294.38	ECC	1.1994

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 55	2992.14	-30.57	90.22	197.47	128.42	16 56 47	1992.1	-13.58	71.56
60.00	16 48 2	2882.78	-26.32	83.76	200.86	121.70	17 36 5	1882.8	-11.70	63.47
70.00	17 41 58	2724.15	-22.48	73.24	203.20	116.41	18 27 22	1724.2	-9.95	51.90
80.00	18 51 48	2505.49	-19.69	58.02	204.57	112.91	19 33 34	1505.5	-8.66	36.08
90.00	20 13 55	2240.55	-18.65	39.00	205.02	111.65	20 51 15	1240.5	-8.17	16.87
100.00	21 34 40	1979.96	-19.69	19.39	204.57	112.91	22 7 40	980.0	-8.66	357.45
110.00	22 41 25	1770.97	-22.48	2.16	203.20	116.41	23 10 56	771.0	-9.95	340.81

DIFFERENTIAL CORRECTIONS

TDE	1.1670	TRA	2.3489	TC3	-5.7635	BAU	.9522												
RDE	.4371	RRA	.7365	RC3	-1.1648	FAU	.17201												
FDE	3.6799	FRA	8.0726	FC	-12.2938	BSP	10255												
BDE	1.2462	BRA	2.4616	BC3	5.8800	FSP	2644												

MID-COURSE EXECUTION ACCURACY

SGT	5894.7	SGR	1626.7	SG3	1462.8						
RRT	.9726	RRF	.9956	RTF	.9758						
SGB	6115.0	R23	.1843	R13	.9789						
SG1	6104.1	SG2	365.0	THA	15.08						

ORBIT DETERMINATION ACCURACY

ST	112.4	SR	40.3	SS	103.8						
CRT	.9969	CRS	-.9935	CST	-.9991						
LSA	158.1	MSA	4.7	SSA	1.4						
EL1	119.4	EL2	3.0	ALF	19.70						

LAUNCH DATE APR 25 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 598.932 EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.313	GAL	-3.21	AZL	89.66	HCA	192.82	SMA	184.43	ECC	.19208	INC	.3417	V1	29.608
RP	219.43	LAP	-.08	LOP	46.98	VP	22.137	GAP	1.74	AZP	90.34	TAL	339.83	TAP	172.66	RCA	149.01	APO	219.86	V2	25.048
RC	182.871	GL	3.17	GP	-14.74	ZAL	130.46	ZAP	63.58	ETS	171.53	ZAE	103.46	ETE	183.93	ZAC	87.79	ETC	271.03	LVI	5.18

PLANETOCENTRIC CONIC

C3	12.269	VHL	3.503	DLA	-3.11	RAL	344.67	RAD	6639.2	VEL	11.504	PTH	6.55	VHP	3.314	DPA	-38.20	RAP	293.84	ECC	1.2019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 17 45	2961.82	-29.27	88.49	198.33	129.34	17 7 7	1961.8	-12.09	70.22
60.00	17 0 37	2847.77	-25.05	81.67	201.78	122.67	17 48 5	1847.8	-10.20	61.73
70.00	17 56 32	2683.39	-21.23	70.75	204.18	117.41	18 41 15	1683.4	-8.44	49.71
80.00	19 8 9	2459.13	-18.44	55.15	205.60	113.91	19 49 8	1459.1	-7.13	33.49
90.00	20 31 2	2191.69	-17.40	35.96	206.08	112.65	21 7 34	1191.7	-6.64	14.09
100.00	21 51 1	1933.60	-18.44	16.52	205.60	113.91	22 23 14	933.6	-7.13	354.86
110.00	22 55 58	1730.20	-21.23	359.66	204.18	117.41	23 24 48	730.2	-8.44	338.63

DIFFERENTIAL CORRECTIONS

TDE	1.1479	TRA	2.4769	TC3	-5.8582	BAU	.9758												
RDE	.4008	RRA	.6635	RC3	-1.0357	FAU	.17147												
FDE	3.5770	FRA	8.1496	FC	-12.0991	BSP	10465												
BDE	1.2159	BRA	2.5642	BC3	5.9490	FSP	2626												

MID-COURSE EXECUTION ACCURACY

SGT	6068.9	SGR	1462.1	SG3	1456.8						
RRT	.9713	RRF	.9937	RTF	.9766						
SGB	6242.5	R23	.1769	R13	.9790						
SG1	6233.4	SG2	338.3	THA	13.21						

ORBIT DETERMINATION ACCURACY

ST	112.1	SR	36.6	SS	101.6						
CRT	.9932	CRS	-.9904	CST	-.9995						
LSA	155.5	MSA	4.8	SSA	1.6						
EL1	117.8	EL2	4.0	ALF	18.01						

LAUNCH DATE APR 25 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 6 1972

DISTANCE 603.070

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.320 GAL -3.29 AZL 89.83 HCA 193.95 SMA 184.55 ECC .19294 INC .1652 V1 29.608
RP 219.80 LAP -.04 LOP 48.10 VP 22.101 GAP 1.58 AZP 90.16 TAL 339.43 TAP 173.37 RCA 148.94 APO 220.15 V2 25.007
RC 185.475 GL 1.52 GP -13.49 ZAL 130.99 ZAP 62.18 ETS 171.77 ZAE 102.15 ETE 183.28 ZAC 89.04 ETC 270.99 LVI 4.09

PLANETOCENTRIC CONIC

C3 12.463 VHL 3.530 DLA -4.45 RAL 345.75 RAD 6639.3 VEL 11.512 PTH 6.56 VHP 3.323 DPA -36.99 RAP 293.41 ECC 1.2051

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 58	2938.46	-28.26	87.19	199.24	130.01	17 15 56	1938.5	-10.94	69.20
60.00	17 11 16	2820.60	-24.04	80.08	202.74	123.37	17 58 17	1820.6	-9.03	60.39
70.00	18 8 46	2651.51	-20.21	68.83	205.20	118.13	18 52 58	1651.5	-7.25	48.01
80.00	19 21 52	2422.69	-17.42	52.92	206.66	114.64	20 2 14	1422.7	-5.92	31.46
90.00	20 45 23	2153.18	-16.37	33.60	207.15	113.39	21 21 16	1153.2	-5.42	11.92
100.00	22 4 43	1897.16	-17.42	14.29	206.66	114.64	22 36 21	897.2	-5.92	352.83
110.00	23 8 13	1698.33	-20.21	357.74	205.20	118.13	23 36 31	698.3	-7.25	336.93

DIFFERENTIAL CORRECTIONS

TDE 1.1426 TRA 2.6060 TC3-5.9251 BAU .9991
RDE .3751 RRA .6011 RC3 -.9202 FAU .16943
FDE 3.5038 FRA 8.2029 FC-11.7687 BSP 10725
BDE 1.2026 BRA 2.6745 BC3 5.9961 FSP 2611

MID-COURSE EXECUTION ACCURACY

SGT 6240.0 SGR 1322.9 SG3 1445.0
RRT .9689 RRF .9910 RTF .9770
SGB 6378.6 R23 .1695 R13 .9788
SG1 6370.6 SG2 320.9 THA 11.64

ORBIT DETERMINATION ACCURACY

ST 112.6 SR 33.8 SS 99.9
CRT .9881 CRS -.9865 CST -.9997
LSA 154.2 MSA 5.3 SSA 1.6
EL1 117.5 EL2 5.0 ALF 16.55

LAUNCH DATE APR 25 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 8 1972

DISTANCE 607.204

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.327 GAL -3.36 AZL 89.98 HCA 195.07 SMA 184.66 ECC .19383 INC .0099 V1 29.608
RP 220.18 LAP -.00 LOP 49.22 VP 22.065 GAP 1.42 AZP 90.01 TAL 339.01 TAP 174.08 RCA 148.87 APO 220.46 V2 24.966
RC 188.089 GL .14 GP -12.42 ZAL 131.49 ZAP 60.85 ETS 171.99 ZAE 100.83 ETE 182.73 ZAC 90.12 ETC 270.97 LVI 3.14

PLANETOCENTRIC CONIC

C3 12.685 VHL 3.562 DLA -5.53 RAL 346.73 RAD 6639.4 VEL 11.522 PTH 6.57 VHP 3.337 DPA -35.94 RAP 293.07 ECC 1.2088

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 54	2920.48	-27.47	86.21	200.18	130.51	17 23 34	1920.5	-10.05	68.42
60.00	17 20 23	2799.50	-23.25	78.86	203.72	123.90	18 7 3	1799.5	-8.11	59.36
70.00	18 19 12	2626.54	-19.41	67.34	206.23	118.67	19 2 59	1626.5	-6.31	46.69
80.00	19 33 30	2393.93	-16.60	51.19	207.73	115.18	20 13 24	1393.9	-4.96	29.87
90.00	20 57 34	2122.72	-15.54	31.75	208.23	113.93	21 32 56	1122.7	-4.45	10.21
100.00	22 16 22	1868.41	-16.60	12.56	207.73	115.18	22 47 30	868.4	-4.96	351.23
110.00	23 18 39	1673.36	-19.41	356.26	206.23	118.67	23 46 32	673.4	-6.31	335.61

DIFFERENTIAL CORRECTIONS

TDE 1.1457 TRA 2.7342 TC3-5.9775 BAU 1.0232
RDE .3560 RRA .5461 RC3 -.8201 FAU .16674
FDE 3.4442 FRA 8.2256 FC-11.3796 BSP 10987
BDE 1.1998 BRA 2.7881 BC3 6.0335 FSP 2589

MID-COURSE EXECUTION ACCURACY

SGT 6407.4 SGR 1203.4 SG3 1428.0
RRT .9653 RRF .9876 RTF .9771
SGB 6519.4 R23 .1614 R13 .9786
SG1 6512.1 SG2 309.3 THA 10.30

ORBIT DETERMINATION ACCURACY

ST 113.7 SR 31.6 SS 98.5
CRT .9815 CRS -.9818 CST -.9998
LSA 153.6 MSA 5.9 SSA 1.5
EL1 117.9 EL2 5.8 ALF 15.28

LAUNCH DATE APR 25 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 10 1972

DISTANCE 611.333

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.335 GAL -3.44 AZL 90.12 HCA 196.18 SMA 184.79 ECC .19474 INC .1112 V1 29.608
RP 220.55 LAP .03 LOP 50.33 VP 22.029 GAP 1.26 AZP 89.89 TAL 338.60 TAP 174.78 RCA 148.80 APO 220.77 V2 24.925
RC 190.711 GL -1.03 GP -11.49 ZAL 131.97 ZAP 59.57 ETS 172.19 ZAE 99.53 ETE 182.28 ZAC 91.05 ETC 270.95 LVI 2.31

PLANETOCENTRIC CONIC

C3 12.928 VHL 3.596 DLA -6.43 RAL 347.64 RAD 6639.5 VEL 11.532 PTH 6.58 VHP 3.356 DPA -35.04 RAP 292.80 ECC 1.2128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 41 49	2906.74	-26.86	85.47	201.11	130.87	17 30 16	1906.7	-9.37	67.83
60.00	17 28 17	2783.18	-22.62	77.93	204.70	124.29	18 14 40	1783.2	-7.40	58.57
70.00	18 28 11	2607.02	-18.76	66.19	207.25	119.07	19 11 38	1607.0	-5.57	45.66
80.00	19 43 29	2371.27	-15.93	49.83	208.78	115.59	20 23 1	1371.3	-4.20	28.61
90.00	21 8 0	2098.63	-14.87	30.30	209.29	114.34	21 42 58	1098.6	-3.68	8.86
100.00	22 26 21	1845.75	-15.93	11.20	208.78	115.59	22 57 7	845.7	-4.20	349.98
110.00	23 27 38	1653.84	-18.76	355.11	207.25	119.07	23 55 12	653.8	-5.57	334.56

DIFFERENTIAL CORRECTIONS

TDE 1.1541 TRA 2.8597 TC3-6.0248 BAU 1.0490
RDE .3414 RRA .4968 RC3 -.7354 FAU .16406
FDE 3.3869 FRA 8.2189 FC-10.9867 BSP 11228
BDE 1.2035 BRA 2.9025 BC3 6.0696 FSP 2552

MID-COURSE EXECUTION ACCURACY

SGT 6571.3 SGR 1100.1 SG3 1407.2
RRT .9607 RRF .9830 RTF .9673
SGB 6662.7 R23 .1520 R13 .9784
SG1 6655.9 SG2 301.7 THA 9.16

ORBIT DETERMINATION ACCURACY

ST 115.0 SR 29.7 SS 97.1
CRT .9736 CRS -.9762 CST -.9997
LSA 153.3 MSA 6.6 SSA 1.5
EL1 118.6 EL2 6.6 ALF 14.17

LAUNCH DATE APR 25 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 12 1972

DISTANCE 615.458

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.49 LAL -.00 LOL 214.15 VL 32.342 GAL -3.52 AZL 90.23 HCA 197.30 SMA 184.91 ECC .19569 INC .2276 V1 29.608
RP 220.93 LAP .07 LOP 51.45 VP 21.993 GAP 1.10 AZP 89.78 TAL 338.17 TAP 175.47 RCA 148.73 APO 221.10 V2 24.884
RC 193.341 GL -2.03 GP -10.67 ZAL 132.44 ZAP 58.35 ETS 172.38 ZAE 98.25 ETE 181.89 ZAC 91.87 ETC 270.94 LVI 1.57

PLANETOCENTRIC CONIC

C3 13.187 VHL 3.631 DLA -7.16 RAL 348.49 RAD 6639.6 VEL 11.544 PTH 6.59 VHP 3.378 DPA -34.24 RAP 292.61 ECC 1.2170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 55	2896.41	-26.40	84.92	202.05	131.14	17 36 11	1896.4	-8.85	67.38
60.00	17 35 10	2770.72	-22.14	77.23	205.67	124.57	18 21 21	1770.7	-6.86	57.96
70.00	18 35 59	2591.90	-18.26	65.31	208.25	119.38	19 19 11	1591.9	-5.00	44.86
80.00	19 52 8	2353.54	-15.41	48.78	209.81	115.89	20 31 21	1353.5	-3.61	27.64
90.00	21 17 0	2079.71	-14.33	29.17	210.34	114.64	21 51 40	1079.7	-3.08	7.80
100.00	22 35 0	1828.01	-15.41	10.14	209.81	115.89	23 5 28	828.0	-3.61	349.01
110.00	23 35 26	1638.72	-18.26	354.22	208.25	119.38	24 2 44	638.7	-5.00	333.78

DIFFERENTIAL CORRECTIONS

TDE 1.1699 TRA 2.9877 TC3-6.0552 BAU 1.0739
RDE .3310 RRA .4532 RC3 -.6602 FAU .16068
FDE 3.3419 FRA 8.2032 FC-10.5483 BSP 11497
BDE 1.2158 BRA 3.0219 BC3 6.0910 FSP 2517

MID-COURSE EXECUTION ACCURACY

SGT 6732.0 SGR 1010.9 SG3 1384.2
RRT .9546 RRF .9773 RTF .9773
SGB 6807.5 R23 .1428 R13 .9782
SG1 6800.9 SG2 298.1 THA 8.17

ORBIT DETERMINATION ACCURACY

ST 116.8 SR 28.3 SS 95.9
CRT .9647 CRS -.9699 CST -.9996
LSA 153.5 MSA 7.3 SSA 1.4
EL1 119.9 EL2 7.3 ALF 13.19

LAUNCH DATE APR 25 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 619.577 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.350 GAL -3.61 AZL 90.33 HCA 198.40 SMA 185.04 ECC .19666 INC .3266 V1 29.608
RP 221.31 LAP .10 LOP 52.55 VP 21.958 GAP .94 AZP 89.69 TAL 337.74 TAP 176.15 RCA 148.65 APO 221.43 V2 24.842
RC 195.978 GL -2.89 GP -9.96 ZAL 132.89 ZAP 57.17 ETS 172.55 ZAE 96.98 ETE 181.56 ZAC 92.58 ETC 270.84 LVI .91

PLANETOCENTRIC CONIC

C3 13.461 VHL 3.669 DLA -7.75 RAL 349.28 RAD 6639.8 VEL 11.555 PTH 6.60 VHP 3.402 DPA -33.53 RAP 292.47 ECC 1.2215

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 19	2888.87	-26.06	84.52	202.97	131.33	17 41 28	1888.9	-8.48	67.06
60.00	17 41 15	2761.41	-21.78	76.70	206.63	124.78	18 27 16	1761.4	-6.46	57.51
70.00	18 42 49	2580.39	-17.88	64.64	209.25	119.60	19 25 49	1580.4	-4.56	44.26
80.00	19 59 39	2339.85	-15.00	47.96	210.83	116.12	20 38 39	1339.8	-3.14	26.88
90.00	21 24 50	2065.02	-13.92	28.29	211.37	114.87	21 59 15	1065.0	-2.60	6.98
100.00	22 42 31	1814.32	-15.00	9.33	210.83	116.12	23 12 45	814.3	-3.14	348.25
110.00	23 42 15	1627.21	-17.88	353.55	209.25	119.60	24 9 22	627.2	-4.56	333.18

DIFFERENTIAL CORRECTIONS

TDE 1.1886 TRA 3.1137 TC3-6.0849 BAU 1.1003
RDE .3232 RRA .4135 RC3 -.5963 FAU .15746
FDE 3.2985 FRA 8.1677 FC-10.1268 BSP 11740
BDE 1.2317 BRA 3.1410 BC3 6.1141 FSP 2473

MID-COURSE EXECUTION ACCURACY

SGT 6889.4 SGR 933.2 SG3 1359.1
RRT .9470 RRF .9700 RTF .9773
SGB 6952.3 R23 .1333 R13 .9780
SG1 6945.9 SG2 297.3 THA 7.32

ORBIT DETERMINATION ACCURACY

ST 118.6 SR 27.1 SS 94.7
CRT .9546 CRS -.9627 CST -.9994
LSA 154.0 MSA 8.0 SSA 1.4
EL1 121.4 EL2 7.9 ALF 12.34

LAUNCH DATE APR 25 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 623.692 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.358 GAL -3.69 AZL 90.42 HCA 199.51 SMA 185.17 ECC .19767 INC .4163 V1 29.608
RP 221.69 LAP .14 LOP 53.66 VP 21.922 GAP .78 AZP 89.61 TAL 337.31 TAP 176.82 RCA 148.57 APO 221.77 V2 24.801
RC 198.621 GL -3.64 GP -9.32 ZAL 133.35 ZAP 56.03 ETS 172.71 ZAE 95.74 ETE 181.27 ZAC 93.22 ETC 270.95 LVI .32

PLANETOCENTRIC CONIC

C3 13.747 VHL 3.708 DLA -8.25 RAL 350.03 RAD 6639.9 VEL 11.568 PTH 6.61 VHP 3.428 DPA -32.90 RAP 292.39 ECC 1.2262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 10	2883.61	-25.82	84.25	203.89	131.46	17 46 13	1883.6	-8.22	66.84
60.00	17 46 38	2754.71	-21.52	76.33	207.58	124.93	18 32 33	1754.7	-6.16	57.19
70.00	18 48 49	2571.86	-17.59	64.14	210.22	119.76	19 31 41	1571.9	-4.24	43.81
80.00	20 6 14	2329.51	-14.69	47.35	211.83	116.29	20 45 4	1329.5	-2.80	26.31
90.00	21 31 40	2053.65	-13.60	27.63	212.37	115.04	22 5 54	1053.9	-2.25	6.35
100.00	22 49 6	1803.98	-14.69	8.72	211.83	116.29	23 19 10	804.0	-2.80	347.68
110.00	23 48 16	1618.68	-17.59	353.06	210.22	119.76	24 15 14	618.7	-4.24	332.73

DIFFERENTIAL CORRECTIONS

TDE 1.2136 TRA 3.2426 TC3-6.1006 BAU 1.1256
RDE .3180 RRA .3776 RC3 -.5394 FAU .15382
FDE 3.2633 FRA 8.1251 FC3-9.6866 BSP 12011
BDE 1.2545 BRA 3.2645 BC3 6.1244 FSP 2431

MID-COURSE EXECUTION ACCURACY

SGT 7044.0 SGR 865.5 SG3 1332.9
RRT .9376 RRF .9610 RTF .9772
SGB 7096.9 R23 .1241 R13 .9778
SG1 7090.6 SG2 298.9 THA 6.58

ORBIT DETERMINATION ACCURACY

ST 120.9 SR 26.1 SS 93.6
CRT .9439 CRS -.9550 CST -.9992
LSA 154.8 MSA 8.6 SSA 1.4
EL1 123.4 EL2 8.5 ALF 11.59

LAUNCH DATE APR 25 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 627.801 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.366 GAL -3.78 AZL 90.50 HCA 200.61 SMA 185.31 ECC .19869 INC .4959 V1 29.608
RP 222.07 LAP .17 LOP 54.76 VP 21.887 GAP .62 AZP 89.54 TAL 336.87 TAP 177.48 RCA 148.49 APO 222.13 V2 24.759
RC 201.270 GL -4.28 GP -8.75 ZAL 133.80 ZAP 54.94 ETS 172.85 ZAE 94.52 ETE 181.09 ZAC 93.78 ETC 270.97 LVI -.23

PLANETOCENTRIC CONIC

C3 14.045 VHL 3.748 DLA -8.65 RAL 350.75 RAD 6640.1 VEL 11.580 PTH 6.62 VHP 3.456 DPA -32.33 RAP 292.36 ECC 1.2311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 31	2880.28	-25.67	84.07	204.79	131.54	17 50 32	1880.3	-8.05	66.69
60.00	17 51 26	2750.18	-21.34	76.07	208.51	125.03	18 37 17	1750.2	-5.96	56.97
70.00	18 54 8	2565.83	-17.38	63.80	211.18	119.87	19 36 54	1565.8	-4.01	43.50
80.00	20 12 2	2321.99	-14.46	46.91	212.81	116.41	20 50 44	1322.0	-2.54	25.90
90.00	21 37 41	2045.65	-13.36	27.15	213.36	115.16	22 11 47	1045.7	-1.98	5.89
100.00	22 54 54	1796.46	-14.46	8.28	212.81	116.41	23 24 50	796.5	-2.54	347.27
110.00	23 53 35	1612.65	-17.38	352.71	211.18	119.87	24 20 27	612.7	-4.01	332.41

DIFFERENTIAL CORRECTIONS

TDE 1.2415 TRA 3.3717 TC3-6.1119 BAU 1.1513
RDE .3147 RRA .3448 RC3 -.4899 FAU .15016
FDE 3.2315 FRA 8.0738 FC3-9.2560 BSP 12269
BDE 1.2808 BRA 3.3693 BC3 6.1315 FSP 2385

MID-COURSE EXECUTION ACCURACY

SGT 7195.5 SGR 806.7 SG3 1305.8
RRT .9262 RRF .9500 RTF .9,71
SGB 7240.5 R23 .1153 R13 .9776
SG1 7234.2 SG2 302.6 THA 5.94

ORBIT DETERMINATION ACCURACY

ST 123.2 SR 25.4 SS 92.8
CRT .9325 CRS -.9468 CST -.9989
LSA 155.9 MSA 9.2 SSA 1.4
EL1 125.4 EL2 9.0 ALF 10.92

LAUNCH DATE APR 25 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 631.904 EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.374 GAL -3.86 AZL 90.57 HCA 201.71 SMA 185.45 ECC .19975 INC .5672 V1 29.608
RP 222.46 LAP .21 LOP 55.86 VP 21.852 GAP .46 AZP 89.47 TAL 336.43 TAP 178.14 RCA 148.40 APO 222.49 V2 24.717
RC 203.922 GL -4.85 GP -8.24 ZAL 134.24 ZAP 53.89 ETS 172.99 ZAE 93.32 ETE 180.81 ZAC 94.29 ETC 270.99 LVI -.73

PLANETOCENTRIC CONIC

C3 14.354 VHL 3.789 DLA -8.97 RAL 351.43 RAD 6640.2 VEL 11.594 PTH 6.64 VHP 3.485 DPA -31.81 RAP 292.38 ECC 1.2362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 28	2878.57	-25.59	83.98	205.69	131.58	17 54 27	1878.6	-7.96	66.62
60.00	17 55 45	2747.50	-21.24	75.93	209.44	125.09	18 41 33	1747.5	-5.85	56.84
70.00	18 58 52	2561.93	-17.25	63.57	212.13	119.94	19 41 34	1561.9	-3.86	43.29
80.00	20 17 9	2316.87	-14.31	46.61	213.77	116.49	20 55 46	1316.9	-2.37	25.62
90.00	21 42 59	2039.97	-13.19	26.81	214.33	115.24	22 16 59	1040.0	-1.80	5.58
100.00	23 0 1	1791.33	-14.31	7.98	213.77	116.49	23 29 52	791.3	-2.37	346.99
110.00	0 2 14	1608.75	-17.25	352.49	212.13	119.94	0 29 3	608.8	-3.86	332.21

DIFFERENTIAL CORRECTIONS

TDE 1.2729 TRA 3.5018 TC3-6.1175 BAU 1.1771
RDE .3131 RRA .3148 RC3 -.4460 FAU .14634
FDE 3.2043 FRA 8.0174 FC3-8.8263 BSP 12539
BDE 1.3109 BRA 3.5159 BC3 6.1337 FSP 2345

MID-COURSE EXECUTION ACCURACY

SGT 7344.1 SGR 755.5 SG3 1278.3
RRT .9124 RRF .9368 RTF .9769
SGB 7382.9 R23 .1075 R13 .9773
SG1 7376.5 SG2 307.9 THA 5.37

ORBIT DETERMINATION ACCURACY

ST 125.6 SR 24.8 SS 91.7
CRT .9207 CRS -.9382 CST -.9987
LSA 157.2 MSA 9.8 SSA 1.3
EL1 127.7 EL2 9.5 ALF 10.34

LAUNCH DATE APR 25 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 22 1972

DISTANCE 636.003

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.383 GAL -3.95 AZL 90.63 HCA 202.80 SMA 185.59 ECC .20083 INC .6315 V1 29.608
RP 222.84 LAP .25 LOP 56.95 VP 21.617 GAP .31 AZP 89.42 TAL 335.98 TAP 178.78 RCA 148.31 APO 222.86 V2 24.675
RC 206.578 GL -5.34 GP -7.79 ZAL 134.69 ZAP 52.88 ETS 173.13 ZAE 92.14 ETE 180.62 ZAC 94.75 ETC 271.02 LVI -1.20

PLANETOCENTRIC CONIC

C3 14.673 VHL 3.831 DLA -9.23 RAL 352.09 RAD 6640.4 VEL 11.607 PTH 6.65 VHP 3.515 DPA -31.34 RAP 292.43 ECC 1.2415

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 4	2878.24	-25.58	83.97	206.57	131.59	17 58 2	1878.2	-7.95	66.61
60.00	17 59 39	2746.39	-21.20	75.86	210.34	125.11	18 45 25	1746.4	-5.80	56.78
70.00	19 3 6	2559.84	-17.18	63.45	213.06	119.98	19 45 45	1559.8	-3.78	43.18
80.00	20 21 42	2313.79	-14.21	46.43	214.71	116.54	21 0 15	1313.8	-2.26	25.45
90.00	21 47 39	2036.44	-13.09	26.60	215.28	115.29	22 21 36	1036.4	-1.69	5.38
100.00	23 4 33	1788.26	-14.21	7.80	214.71	116.54	23 34 22	788.3	-2.26	346.82
110.00	0 6 28	1606.66	-17.18	352.37	213.06	119.98	0 33 15	606.7	-3.78	332.10

DIFFERENTIAL CORRECTIONS

TDE 1.3063 TRA 3.6322 TC3-6.1201 BAU 1.2032
RDE .3127 RRA .2869 RC3 -.4077 FAU .14259
FDE 3.1769 FRA 7.9526 FC3-8.4132 BSP 12785
BDE 1.3432 BRA 3.6435 BC3 6.1337 FSP 2295

MID-COURSE EXECUTION ACCURACY

SGT 7489.8 SGR 710.9 SG3 1250.1
RRT .8962 RRF .9212 RTF .9766
SGB 7523.5 R23 .1002 R13 .9770
SG1 7516.9 SG2 314.3 THA 4.87

ORBIT DETERMINATION ACCURACY

ST 128.1 SR 24.3 SS 90.7
CRT .9086 CRS -.9292 CST -.9984
LSA 158.5 MSA 10.4 SSA 1.3
EL1 130.0 EL2 10.0 ALF 9.83

LAUNCH DATE APR 25 1971 FLIGHT TIME 274.00 ARRIVAL DATE JAN 24 1972

DISTANCE 640.095

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.391 GAL -4.04 AZL 90.69 HCA 203.89 SMA 185.73 ECC .20194 INC .6908 V1 29.608
RP 223.23 LAP .28 LOP 58.04 VP 21.782 GAP .15 AZP 89.37 TAL 335.53 TAP 179.42 RCA 148.22 APO 223.23 V2 24.633
RC 209.236 GL -5.77 GP -7.37 ZAL 135.14 ZAP 51.90 ETS 173.25 ZAE 90.98 ETE 180.46 ZAC 95.16 ETC 271.06 LVI -1.64

PLANETOCENTRIC CONIC

C3 15.002 VHL 3.873 DLA -9.43 RAL 352.72 RAD 6640.5 VEL 11.621 PTH 6.66 VHP 3.546 DPA -30.91 RAP 292.53 ECC 1.2469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 22	2879.10	-25.62	84.01	207.44	131.57	18 1 21	1879.1	-7.99	66.64
60.00	18 3 10	2746.64	-21.21	75.86	211.24	125.11	18 48 57	1746.6	-5.81	56.80
70.00	19 6 53	2559.31	-17.16	63.42	213.97	119.99	19 49 32	1559.3	-3.76	43.15
80.00	20 25 44	2312.48	-14.17	46.35	215.64	116.56	21 4 16	1312.5	-2.22	25.38
90.00	21 51 48	2034.77	-13.04	26.50	216.21	115.32	22 25 43	1034.8	-1.63	5.29
100.00	23 8 36	1786.95	-14.17	7.72	215.64	116.56	23 38 23	787.0	-2.22	346.75
110.00	0 10 15	1606.13	-17.16	352.34	213.97	119.99	0 37 1	606.1	-3.76	332.07

DIFFERENTIAL CORRECTIONS

TDE 1.3440 TRA 3.7655 TC3-6.1136 BAU 1.2285
RDE .3136 RRA .2613 RC3 -.3734 FAU .13867
FDE 3.1559 FRA 7.8885 FC3-8.0023 BSP 13058
BDE 1.3802 BRA 3.7746 BC3 6.1250 FSP 2253

MID-COURSE EXECUTION ACCURACY

SGT 7633.2 SGR 672.6 SG3 1222.3
RRT .8773 RRF .9031 RTF .9763
SGB 7662.8 R23 .0937 R13 .9766
SG1 7656.0 SG2 321.8 THA 4.43

ORBIT DETERMINATION ACCURACY

ST 130.8 SR 23.9 SS 89.9
CRT .8967 CRS -.9203 CST -.9982
LSA 160.1 MSA 11.0 SSA 1.3
EL1 132.6 EL2 10.5 ALF 9.38

LAUNCH DATE APR 25 1971 FLIGHT TIME 276.00 ARRIVAL DATE JAN 26 1972

DISTANCE 644.181

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.400 GAL -4.13 AZL 90.74 HCA 204.98 SMA 185.87 ECC .20307 INC .7446 V1 29.608
RP 223.62 LAP .31 LOP 59.13 VP 21.748 GAP -.01 AZP 89.32 TAL 335.08 TAP 180.05 RCA 148.13 APO 223.62 V2 24.591
RC 211.896 GL -6.16 GP -6.99 ZAL 135.59 ZAP 50.96 ETS 173.37 ZAE 89.85 ETE 180.31 ZAC 95.53 ETC 271.10 LVI -2.05

PLANETOCENTRIC CONIC

C3 15.342 VHL 3.917 DLA -9.59 RAL 353.33 RAD 6640.7 VEL 11.636 PTH 6.67 VHP 3.579 DPA -30.51 RAP 292.66 ECC 1.2525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 23	2880.99	-25.70	84.11	208.31	131.52	18 4 24	1881.0	-8.08	66.72
60.00	18 6 22	2748.05	-21.26	75.96	212.13	125.08	18 52 10	1748.1	-5.87	56.86
70.00	19 10 17	2560.13	-17.19	63.47	214.88	119.98	19 52 57	1560.1	-3.79	43.20
80.00	20 29 20	2312.70	-14.18	46.37	216.56	116.55	21 7 52	1312.7	-2.23	25.39
90.00	21 55 29	2034.71	-13.04	26.50	217.13	115.32	22 29 24	1034.7	-1.63	5.28
100.00	23 12 11	1787.17	-14.18	7.73	216.56	116.55	23 41 59	787.2	-2.23	346.76
110.00	0 13 40	1606.94	-17.19	352.38	214.88	119.98	0 40 26	606.9	-3.79	332.11

DIFFERENTIAL CORRECTIONS

TDE 1.3827 TRA 3.8989 TC3-6.1064 BAU 1.2544
RDE .3154 RRA .2372 RC3 -.3432 FAU .13486
FDE 3.1317 FRA 7.8175 FC3-7.6103 BSP 13306
BDE 1.4182 BRA 3.8061 BC3 6.1161 FSP 2204

MID-COURSE EXECUTION ACCURACY

SGT 7773.6 SGR 639.5 SG3 1194.2
RRT .8559 RRF .8822 RTF .9760
SGB 7799.9 R23 .0877 R13 .9763
SG1 7792.9 SG2 329.9 THA 4.03

ORBIT DETERMINATION ACCURACY

ST 133.4 SR 23.7 SS 89.0
CRT .8846 CRS -.9112 CST -.9980
LSA 161.7 MSA 11.5 SSA 1.3
EL1 135.1 EL2 10.9 ALF 8.97

LAUNCH DATE APR 25 1971 FLIGHT TIME 278.00 ARRIVAL DATE JAN 28 1972

DISTANCE 648.262

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.49 LAL -.00 LOL 214.15 VL 32.408 GAL -4.23 AZL 90.79 HCA 206.06 SMA 186.02 ECC .20423 INC .7941 V1 29.608
RP 224.01 LAP .35 LOP 60.21 VP 21.713 GAP -.17 AZP 89.29 TAL 334.62 TAP 180.68 RCA 148.03 APO 224.01 V2 24.550
RC 214.558 GL -6.49 GP -6.65 ZAL 136.04 ZAP 50.04 ETS 173.48 ZAE 88.75 ETE 180.19 ZAC 95.86 ETC 271.15 LVI -2.44

PLANETOCENTRIC CONIC

C3 15.691 VHL 3.961 DLA -9.70 RAL 353.92 RAD 6640.9 VEL 11.651 PTH 6.69 VHP 3.612 DPA -30.14 RAP 292.82 ECC 1.2582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 11	2883.77	-25.83	84.25	209.17	131.45	18 7 14	1883.8	-8.22	66.84
60.00	18 9 18	2750.49	-21.36	76.09	213.01	125.03	18 55 8	1750.5	-5.98	56.98
70.00	19 13 22	2562.12	-17.26	63.58	215.77	119.94	19 56 4	1562.1	-3.87	43.30
80.00	20 32 33	2314.26	-14.23	46.46	217.46	116.53	21 11 7	1314.3	-2.28	25.48
90.00	21 58 46	2036.06	-13.08	26.58	218.04	115.30	22 32 42	1036.1	-1.67	5.36
100.00	23 15 24	1788.73	-14.23	7.83	217.46	116.53	23 45 13	788.7	-2.28	346.84
110.00	0 16 44	1608.94	-17.26	352.50	215.77	119.94	0 43 33	608.9	-3.87	332.22

DIFFERENTIAL CORRECTIONS

TDE 1.4241 TRA 4.0338 TC3-6.0938 BAU 1.2801
RDE .3180 RRA .2147 RC3 -.3163 FAU .13100
FDE 3.1109 FRA 7.7445 FC3-7.2279 BSP 13563
BDE 1.4592 BRA 4.0395 BC3 6.1020 FSP 2159

MID-COURSE EXECUTION ACCURACY

SGT 7911.3 SGR 611.3 SG3 1166.2
RRT .8318 RRF .8587 RTF .9756
SGB 7934.8 R23 .0824 R13 .9759
SG1 7927.6 SG2 338.6 THA 3.68

ORBIT DETERMINATION ACCURACY

ST 136.2 SR 23.5 SS 88.1
CRT .8728 CRS -.9022 CST -.9978
LSA 163.4 MSA 12.0 SSA 1.3
EL1 137.7 EL2 11.3 ALF 8.62

LAUNCH DATE APR 25 1971 FLIGHT TIME 280.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 652.336 EARTH TO MARS

RL	150.49	LAL	-.00	LOL	214.15	VL	32.417	GAL	-4.32	AZL	90.84	HCA	207.14	SMA	186.17	ECC	.20541	INC	.8395
RP	224.40	LAP	.38	LOP	61.29	VP	21.679	GAP	-.33	AZP	89.25	TAL	334.16	TAP	181.30	RCA	147.93	APO	224.41
RC	217.222	GL	-6.79	GP	-6.33	ZAL	136.48	ZAP	49.16	ETS	173.59	ZAE	87.66	ETE	180.07	ZAC	96.17	ETC	271.21

V1	29.608																		
V2	24.508																		
LVI	-2.81																		

PLANETOCENTRIC CONIC

C3	16.051	VHL	4.006	DLA	-9.78	RAL	354.50	RAD	6641.0	VEL	11.666	PTH	6.70	VHP	3.645	DPA	-29.80	RAP	293.02
ECC	1.2642																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT
50.00	17 21 46	2887.34	-25.99	84.44	210.02	131.37	18 9 53	1887.3	-8.40
60.00	18 11 58	2753.82	-21.49	76.28	213.88	124.95	18 57 52	1753.8	-6.12
70.00	19 16 8	2565.15	-17.36	63.76	216.66	119.88	19 58 54	1565.2	-3.98
80.00	20 35 25	2316.98	-14.31	46.62	218.36	116.49	21 14 2	1317.0	-2.37
90.00	22 1 41	2038.65	-13.16	26.73	218.93	115.26	22 35 40	1038.6	-1.76
100.00	23 18 17	1791.45	-14.31	7.99	218.36	116.49	23 48 8	791.5	-2.37
110.00	0 19 31	1611.97	-17.36	352.67	216.66	119.88	0 46 23	612.0	-3.98

INJ 2 LONG
67.00
57.14
43.46
25.63
5.50
346.99
332.38

DIFFERENTIAL CORRECTIONS

TDE	1.4668	TRA	4.1694	TC3	-6.0809	BAU	1.3064				
RDE	.3214	RRA	.1935	RC3	-.2926	FAU	.12726				
FDE	3.0904	FRA	7.6689	FC3	-6.8638	BSP	13803				
BDE	1.5016	BRA	4.1739	BC3	6.0880	FSP	2112				

MID-COURSE EXECUTION ACCURACY

SGT	8046.9	SGR	587.5	SG3	1138.5				
RRT	.8051	RRF	.8328	RTF	.9752				
SGB	8068.3	R23	.0778	R13	.9754				
SG1	8060.8	SG2	347.9	THA	3.37				

ORBIT DETERMINATION ACCURACY

ST	138.9	SR	23.4	SS	87.3
CRT	.8613	CRS	-.8935	CST	-.9975
LSA	165.2	MSA	12.5	SSA	1.3
EL1	140.4	EL2	11.8	ALF	8.30

LAUNCH DATE APR 26 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 14 1971

DISTANCE 319.689

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.53 LAL -.00 LOL 215.13 VL 35.071 GAL -4.33 AZL 91.91 HCA 104.21 SMA 248.85 ECC .40113 INC 1.9082 V1 29.600
RP 207.38 LAP -1.85 LOP 319.34 VP 27.324 GAP 21.72 AZP 89.53 TAL 344.81 TAP 89.02 RCA 149.03 APO 348.66 V2 26.414
RC 56.241 GL -10.65 GP 1.10 ZAL 119.57 ZAP 174.45 ETS 168.40 ZAE 173.55 ETE 109.02 ZAC 101.66 ETC 276.91 LV1 -17.89

PLANETOCENTRIC CONIC

C3 39.700 VHL 6.301 DLA -19.46 RAL 341.21 RAD 6650.6 VEL 12.632 PTH 7.48 VHP 10.793 DPA -17.37 RAP 316.59 ECC 1.6534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 49	2909.99	-27.00	85.65	207.80	130.79	17 52 19	1910.0	-9.53	67.97
60.00	18 6 28	2743.38	-21.08	75.70	212.86	125.18	18 52 11	1743.4	-5.67	56.64
70.00	19 25 41	2510.49	-15.48	60.64	216.69	120.83	20 7 32	1510.5	-1.90	40.60
80.00	21 0 19	2214.35	-11.12	40.68	219.21	117.89	21 37 13	1214.3	1.10	19.99
90.00	22 33 58	1912.24	-9.37	19.38	220.13	116.80	23 5 50	912.2	2.32	358.45
100.00	23 43 11	1688.82	-11.12	2.04	219.21	117.89	24 11 20	688.8	1.10	341.36
110.00	0 29 4	1557.31	-15.48	349.55	216.69	120.83	0 55 1	557.3	-1.90	329.52

DIFFERENTIAL CORRECTIONS

TDE -.5695 TRA-1.2226 TC3 -.0422 BAU .0506
RDE -.5814 RRA .2075 RC3 .0854 FAU .03501
FDE .3161 FRA 1.1179 FC3 -.7635 BSP 2024
BDE .8139 BRA 1.2401 BC3 .0953 FSP 162

MID-COURSE EXECUTION ACCURACY

SGT 1288.9 SGR 575.5 SG3 127.3
RRT .0432 RRF -.0468 RTF -.7208
SGB 1411.6 R23 -.0080 R13 -.7210
SG1 1289.2 SG2 574.8 THA 1.38

ORBIT DETERMINATION ACCURACY

ST 31.4 SR 26.6 SS 20.2
CRT .7568 CRS .5748 CST .9678
LSA 42.6 MSA 16.8 SSA 1.1
EL1 38.6 EL2 14.1 ALF 38.85

LAUNCH DATE APR 26 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 16 1971

DISTANCE 321.840

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.53 LAL -.00 LOL 215.13 VL 34.896 GAL -4.21 AZL 91.92 HCA 105.47 SMA 243.28 ECC .38722 INC 1.9189 V1 29.600
RP 207.27 LAP -1.85 LOP 320.60 VP 27.112 GAP 21.21 AZP 89.49 TAL 344.67 TAP 90.34 RCA 149.08 APO 337.48 V2 26.426
RC 56.362 GL -10.99 GP 1.14 ZAL 119.60 ZAP 173.61 ETS 169.61 ZAE 173.77 ETE 100.91 ZAC 101.64 ETC 277.00 LV1 -18.05

PLANETOCENTRIC CONIC

C3 37.380 VHL 6.114 DLA -19.75 RAL 341.41 RAD 6649.7 VEL 12.541 PTH 7.42 VHP 10.457 DPA -17.21 RAP 316.99 ECC 1.6152

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 53	2888.75	-26.05	84.52	207.10	131.33	17 54 2	1888.7	-8.47	67.06
60.00	18 8 57	2721.01	-20.20	74.46	212.16	125.65	18 54 18	1721.0	-4.69	55.56
70.00	19 28 44	2486.48	-14.64	59.29	216.00	121.21	20 10 11	1486.5	-.98	39.35
80.00	21 3 59	2188.37	-10.28	39.20	218.54	118.19	21 40 28	1188.4	1.98	18.56
90.00	22 37 58	1885.20	-8.54	17.83	219.47	117.06	23 9 24	885.2	3.19	356.94
100.00	23 46 51	1662.64	-10.28	.56	218.54	118.19	24 14 34	662.8	1.98	339.93
110.00	0 32 6	1533.30	-14.64	348.20	216.00	121.21	0 57 40	533.3	-.98	328.26

DIFFERENTIAL CORRECTIONS

TDE -.5660 TRA-1.2139 TC3 -.0324 BAU .0486
RDE -.5631 RRA .1989 RC3 .0917 FAU .03610
FDE .3261 FRA 1.1635 FC3 -.8360 BSP 2086
BDE .7984 BRA 1.2301 BC3 .0972 FSP 176

MID-COURSE EXECUTION ACCURACY

SGT 1320.6 SGR 574.7 SG3 136.1
RRT .0475 RRF -.0512 RTF -.7317
SGB 1440.2 R23 -.0083 R13 -.7319
SG1 1320.9 SG2 573.9 THA 1.46

ORBIT DETERMINATION ACCURACY

ST 32.1 SR 26.6 SS 21.0
CRT .7572 CRS .5713 CST .9667
LSA 43.4 MSA 17.0 SSA 1.1
EL1 39.2 EL2 14.2 ALF 37.90

LAUNCH DATE APR 26 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 18 1971

DISTANCE 324.190

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.53 LAL -.00 LOL 215.13 VL 34.731 GAL -4.08 AZL 91.93 HCA 106.73 SMA 238.26 ECC .37412 INC 1.9297 V1 29.600
RP 207.18 LAP -1.85 LOP 321.87 VP 26.911 GAP 20.71 AZP 89.44 TAL 344.94 TAP 91.67 RCA 149.12 APO 327.40 V2 26.438
RC 56.568 GL -11.33 GP 1.18 ZAL 119.61 ZAP 172.75 ETS 170.54 ZAE 173.88 ETE 92.63 ZAC 101.63 ETC 277.09 LV1 -18.21

PLANETOCENTRIC CONIC

C3 35.241 VHL 5.936 DLA -20.04 RAL 341.60 RAD 6649.0 VEL 12.456 PTH 7.35 VHP 10.133 DPA -17.06 RAP 317.38 ECC 1.5800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 57	2867.55	-25.09	83.41	206.42	131.85	17 55 44	1867.5	-7.41	66.15
60.00	18 11 28	2698.60	-19.30	73.24	211.48	126.09	18 56 27	1698.6	-3.71	54.48
70.00	19 31 51	2462.33	-13.78	57.94	215.33	121.56	20 12 53	1462.3	-.06	38.09
80.00	21 7 46	2162.10	-9.44	37.71	217.89	118.46	21 43 48	1162.1	2.87	17.12
90.00	22 42 7	1857.76	-7.68	16.26	218.83	117.30	23 13 5	857.8	4.07	355.40
100.00	23 50 38	1636.57	-9.44	359.08	217.89	118.46	24 17 55	636.6	2.87	338.49
110.00	0 35 13	1509.15	-13.78	346.86	215.33	121.56	1 0 22	509.2	-.06	327.00

DIFFERENTIAL CORRECTIONS

TDE -.5612 TRA-1.2035 TC3 -.0226 BAU .0475
RDE -.5454 RRA .1904 RC3 .0982 FAU .03725
FDE .3361 FRA 1.2109 FC3 -.9132 BSP 2141
BDE .7826 BRA 1.2184 BC3 .1008 FSP 190

MID-COURSE EXECUTION ACCURACY

SGT 1350.1 SGR 573.6 SG3 145.4
RRT .0518 RRF -.0560 RTF -.7413
SGB 1466.9 R23 -.0092 R13 -.7415
SG1 1350.5 SG2 572.6 THA 1.54

ORBIT DETERMINATION ACCURACY

ST 32.8 SR 26.5 SS 21.7
CRT .7574 CRS .5676 CST .9655
LSA 44.2 MSA 17.2 SSA 1.1
EL1 39.7 EL2 14.3 ALF 37.03

LAUNCH DATE APR 26 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 20 1971

DISTANCE 326.712

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.53 LAL -.00 LOL 215.13 VL 34.576 GAL -3.96 AZL 91.94 HCA 107.99 SMA 233.73 ECC .36177 INC 1.9407 V1 29.600
RP 207.09 LAP -1.85 LOP 323.13 VP 26.719 GAP 20.22 AZP 89.40 TAL 345.03 TAP 93.02 RCA 149.17 APO 318.29 V2 26.448
RC 56.836 GL -11.69 GP 1.22 ZAL 119.60 ZAP 171.88 ETS 171.28 ZAE 173.86 ETE 84.55 ZAC 101.62 ETC 277.17 LV1 -18.36

PLANETOCENTRIC CONIC

C3 33.266 VHL 5.768 DLA -20.36 RAL 341.78 RAD 6648.3 VEL 12.377 PTH 7.29 VHP 9.819 DPA -16.91 RAP 317.75 ECC 1.5475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 1	2846.37	-24.13	82.32	205.76	132.34	17 57 27	1846.4	-6.36	65.25
60.00	18 14 1	2676.15	-18.40	72.04	210.81	126.51	18 58 37	1676.1	-2.72	53.41
70.00	19 35 2	2438.01	-12.91	56.59	214.68	121.90	20 15 40	1438.0	.87	36.82
80.00	21 11 41	2135.49	-8.57	36.21	217.27	118.71	21 47 17	1135.5	3.77	15.66
90.00	22 46 26	1829.88	-6.81	14.68	218.21	117.51	23 16 56	829.9	4.95	353.84
100.00	23 54 33	1609.96	-8.57	357.58	217.27	118.71	24 21 23	610.0	3.77	337.02
110.00	0 38 24	1484.83	-12.91	345.51	214.68	121.90	1 3 9	484.8	.87	325.74

DIFFERENTIAL CORRECTIONS

TDE -.5451 TRA-1.1821 TC3 .0026 BAU .0468
RDE -.5282 RRA .1820 RC3 .1051 FAU .03833
FDE .3498 FRA 1.2640 FC3 -.9976 BSP 2056
BDE .7590 BRA 1.1961 BC3 .1051 FSP 210

MID-COURSE EXECUTION ACCURACY

SGT 1364.6 SGR 572.0 SG3 155.5
RRT .0550 RRF -.0617 RTF -.7611
SGB 1479.7 R23 -.0110 R13 -.7613
SG1 1365.1 SG2 571.0 THA 1.60

ORBIT DETERMINATION ACCURACY

ST 33.0 SR 26.4 SS 22.6
CRT .7541 CRS .5665 CST .9666
LSA 44.6 MSA 17.4 SSA 1.1
EL1 39.7 EL2 14.4 ALF 36.73

LAUNCH DATE APR 26 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 329.390 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 34.429 GAL -3.84 AZL 91.95 HCA 109.26 SMA 229.63 ECC .35016 INC 1.9519 V1 29.600
RP 207.01 LAP -1.84 LOP 324.40 VP 26.530 GAP 19.73 AZP 89.36 TAL 345.12 TAP 94.38 RCA 149.22 APO 310.03 V2 26.457
RC 57.225 GL -12.04 GP 1.26 ZAL 119.57 ZAP 170.99 ETS 171.88 ZAE 173.74 ETE 77.00 ZAC 101.62 ETC 277.25 LVI -18.51

PLANETOCENTRIC CONIC

C3 31.449 VHL 5.608 DLA -20.68 RAL 341.94 RAD 6647.6 VEL 12.303 PTH 7.24 VHP 9.515 DPA -16.76 RAP 318.12 ECC 1.5178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 5	2825.35	-23.16	81.26	205.13	132.80	17 59 11	1825.3	-5.30	64.37
60.00	18 16 36	2653.78	-17.49	76.35	210.18	126.91	19 0 50	1653.8	-1.73	52.34
70.00	19 38 17	2413.68	-12.03	55.26	214.06	122.21	20 18 30	1413.7	1.80	35.55
80.00	21 15 43	2108.71	-7.69	34.71	216.66	118.94	21 50 52	1108.7	4.67	14.18
90.00	22 50 53	1801.72	-5.92	13.09	217.62	117.70	23 20 55	801.7	5.85	352.25
100.00	0 2 31	1583.18	-7.69	356.08	216.66	118.94	0 28 54	583.2	4.67	335.55
110.00	0 41 39	1460.50	-12.03	344.18	214.06	122.21	1 5 59	460.5	1.80	324.47

DIFFERENTIAL CORRECTIONS
TDE -.5455 TRA-1.1775 TC3 .0095 BAU .0474
RDE -.5116 RRA .1737 RC3 .1123 FAU .03971
FDE .3587 FRA 1.3143 FC3-1.0933 BSP 2185
BDE .7478 BRA 1.1903 BC3 .1127 FSP 225

MID-COURSE EXECUTION ACCURACY
SGT 1401.6 SGR 570.1 SG3 166.1
RRT .0609 RRF -.0672 RTF -.7654
SGB 1513.1 R23 -.0114 R13 -.7656
SG1 1402.1 SG2 568.8 THA 1.70

ORBIT DETERMINATION ACCURACY
ST 33.9 SR 26.3 SS 23.3
CRT .7558 CRS .5612 CST .9643
LSA 45.5 MSA 17.5 SSA 1.1
EL1 40.4 EL2 14.4 ALF 35.62

LAUNCH DATE APR 26 1971 FLIGHT TIME 120.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 332.205 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 34.290 GAL -3.73 AZL 91.96 HCA 110.52 SMA 225.90 ECC .33921 INC 1.9632 V1 29.600
RP 206.94 LAP -1.84 LOP 325.66 VP 26.366 GAP 19.26 AZP 89.31 TAL 345.22 TAP 95.75 RCA 149.27 APO 302.52 V2 26.466
RC 57.675 GL -12.41 GP 1.31 ZAL 119.52 ZAP 170.09 ETS 172.37 ZAE 173.54 ETE 70.20 ZAC 101.62 ETC 277.33 LVI -18.66

PLANETOCENTRIC CONIC

C3 29.772 VHL 5.456 DLA -21.02 RAL 342.08 RAD 6646.9 VEL 12.236 PTH 7.18 VHP 9.222 DPA -16.60 RAP 318.46 ECC 1.4900

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 10	2804.44	-22.19	80.22	204.53	133.23	18 0 55	1804.4	-4.26	63.49
60.00	18 19 13	2631.46	-16.57	69.67	209.57	127.28	19 3 4	1631.5	-.75	51.27
70.00	19 41 36	2389.27	-11.14	53.93	213.46	122.50	20 21 25	1389.3	2.73	34.27
80.00	21 19 53	2081.67	-6.80	33.20	216.08	119.14	21 54 35	1081.7	5.57	12.68
90.00	22 55 32	1773.17	-5.02	11.48	217.06	117.87	23 25 5	773.2	6.75	350.64
100.00	0 6 41	1556.14	-6.80	354.57	216.08	119.14	0 32 37	556.1	5.57	334.05
110.00	0 44 58	1436.09	-11.14	342.84	213.46	122.50	1 8 54	436.1	2.73	323.19

DIFFERENTIAL CORRECTIONS
TDE -.5436 TRA-1.1703 TC3 .0190 BAU .0483
RDE -.4954 RRA .1656 RC3 .1198 FAU .04114
FDE .3685 FRA 1.3681 FC3-1.1962 BSP 2283
BDE .7355 BRA 1.1819 BC3 .1213 FSP 242

MID-COURSE EXECUTION ACCURACY
SGT 1435.0 SGR 567.8 SG3 177.5
RRT .0669 RRF -.0732 RTF -.7712
SGB 1543.3 R23 -.0121 R13 -.7714
SG1 1435.6 SG2 566.3 THA 1.80

ORBIT DETERMINATION ACCURACY
ST 34.7 SR 26.2 SS 24.1
CRT .7569 CRS .5561 CST .9623
LSA 46.4 MSA 17.7 SSA 1.2
EL1 41.0 EL2 14.5 ALF 34.64

LAUNCH DATE APR 26 1971 FLIGHT TIME 122.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 335.142 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 34.158 GAL -3.61 AZL 91.97 HCA 111.79 SMA 222.50 ECC .32889 INC 1.9748 V1 29.600
RP 206.87 LAP -1.83 LOP 326.93 VP 26.203 GAP 18.79 AZP 89.27 TAL 345.34 TAP 97.13 RCA 149.32 APO 295.67 V2 26.473
RC 58.203 GL -12.78 GP 1.36 ZAL 119.46 ZAP 169.17 ETS 172.78 ZAE 173.29 ETE 64.25 ZAC 101.62 ETC 277.41 LVI -18.81

PLANETOCENTRIC CONIC

C3 28.223 VHL 5.313 DLA -21.37 RAL 342.22 RAD 6646.3 VEL 12.173 PTH 7.13 VHP 8.938 DPA -16.46 RAP 318.79 ECC 1.4645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 16	2783.67	-21.22	79.20	203.95	133.64	18 2 40	1783.7	-3.21	62.62
60.00	18 21 52	2609.21	-15.65	68.51	208.98	127.63	19 5 21	1609.2	.23	50.21
70.00	19 45 0	2364.81	-10.24	52.60	212.89	122.75	20 24 25	1364.8	3.66	32.99
80.00	21 24 12	2054.38	-5.89	31.68	215.53	119.32	21 58 26	1054.4	6.48	11.17
90.00	23 0 21	1744.24	-4.09	9.86	216.52	118.01	23 29 25	744.2	7.66	348.99
100.00	0 11 0	1528.85	-5.89	353.05	215.53	119.32	0 36 28	528.8	6.48	332.53
110.00	0 48 23	1411.63	-10.24	341.52	212.89	122.76	1 11 54	411.6	3.66	321.91

DIFFERENTIAL CORRECTIONS
TDE -.5400 TRA-1.1610 TC3 .0316 BAU .0496
RDE -.4798 RRA .1575 RC3 .1277 FAU .04264
FDE .3789 FRA 1.4243 FC3-1.3081 BSP 2364
BDE .7223 BRA 1.1717 BC3 .1315 FSP 261

MID-COURSE EXECUTION ACCURACY
SGT 1465.7 SGR 565.2 SG3 189.7
RRT .0732 RRF -.0799 RTF -.7778
SGB 1570.9 R23 -.0131 R13 -.7780
SG1 1466.4 SG2 563.4 THA 1.90

ORBIT DETERMINATION ACCURACY
ST 35.4 SR 26.0 SS 24.8
CRT .7576 CRS .5515 CST .9606
LSA 47.2 MSA 17.8 SSA 1.2
EL1 41.5 EL2 14.5 ALF 33.76

LAUNCH DATE APR 26 1971 FLIGHT TIME 124.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 338.189 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 34.034 GAL -3.50 AZL 91.99 HCA 113.06 SMA 219.39 ECC .31917 INC 1.9866 V1 29.600
RP 206.82 LAP -1.83 LOP 328.20 VP 26.047 GAP 18.33 AZP 89.22 TAL 345.46 TAP 98.52 RCA 149.37 APO 289.41 V2 26.479
RC 58.807 GL -13.15 GP 1.41 ZAL 119.37 ZAP 168.24 ETS 173.12 ZAE 173.00 ETE 59.17 ZAC 101.63 ETC 277.48 LVI -18.95

PLANETOCENTRIC CONIC

C3 26.793 VHL 5.176 DLA -21.73 RAL 342.34 RAD 6645.7 VEL 12.114 PTH 7.09 VHP 8.663 DPA -16.31 RAP 319.11 ECC 1.4409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 23	2763.07	-20.25	78.20	203.39	134.03	18 4 26	1763.1	-2.18	61.75
60.00	18 24 34	2587.06	-14.73	67.37	208.42	127.95	19 7 41	1587.1	1.20	49.15
70.00	19 48 30	2340.32	-9.34	51.28	212.34	123.00	20 27 30	1340.3	4.59	31.71
80.00	21 28 39	2026.85	-4.97	30.16	215.01	119.48	22 2 26	1026.8	7.39	9.63
90.00	23 5 22	1714.92	-3.15	8.21	216.01	118.12	23 33 57	714.9	8.57	347.32
100.00	0 15 27	1501.32	-4.97	351.52	215.01	119.48	0 40 28	501.3	7.39	331.00
110.00	0 51 52	1387.14	-9.34	340.20	212.34	123.00	1 14 59	387.1	4.59	320.63

DIFFERENTIAL CORRECTIONS
TDE -.5353 TRA-1.1511 TC3 .0460 BAU .0514
RDE -.4647 RRA .1495 RC3 .1359 FAU .04422
FDE .3895 FRA 1.4840 FC3-1.4288 BSP 2432
BDE .7088 BRA 1.1608 BC3 .1434 FSP 281

MID-COURSE EXECUTION ACCURACY
SGT 1494.9 SGR 562.2 SG3 202.6
RRT .0798 RRF -.0871 RTF -.7847
SGB 1597.1 R23 -.0142 R13 -.7850
SG1 1495.7 SG2 560.1 THA 2.00

ORBIT DETERMINATION ACCURACY
ST 36.1 SR 25.9 SS 25.6
CRT .7580 CRS .5465 CST .9588
LSA 48.0 MSA 18.0 SSA 1.2
EL1 41.9 EL2 14.5 ALF 32.95

LAUNCH DATE APR 06 1971 FLIGHT TIME 126.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC — DISTANCE 341.338 — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	33.017	GAL	-3.39	AZL	92.00	HCA	114.33	SMA	216.54	ECC	.31000	INC	1.9068	V1	29.600
RP	206.77	LAP	-1.82	LOP	329.46	VP	25.900	GAP	17.88	AZP	89.18	TAL	345.59	TAP	99.92	RCA	149.41	APO	283.67	V2	26.488
RC	59.485	GL	-13.93	GP	1.46	ZAL	119.27	ZAP	167.28	ETS	173.42	ZAE	172.71	ETE	54.88	ZAC	101.64	ETC	277.55	LVI	-19.09

PLANETOCENTRIC CONIC

C3	25.472	VHL	5.047	DLA	-22.10	RAL	342.45	RAD	6645.2	VEL	12.060	PTH	7.04	VHP	8.397	DPA	-16.16	RAP	319.40	ECC	1.4192

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 30	2742.67	-19.28	77.23	202.67	134.38	18 6 13	1742.7	-1.16	60.90
60.00	18 27 18	2565.03	-13.80	66.25	207.89	128.25	19 10 3	1565.0	2.17	48.10
70.00	19 32 4	2315.83	-8.43	49.97	211.82	123.22	20 30 40	1315.8	5.52	30.42
80.00	21 33 16	1999.08	-4.04	28.62	214.52	119.61	22 6 35	999.1	8.31	8.08
90.00	23 10 35	1685.18	-2.20	6.55	215.53	118.20	23 38 40	685.2	9.49	345.62
100.00	0 20 4	1473.55	-4.04	349.99	214.52	119.61	0 44 38	473.6	8.31	329.45
110.00	0 55 26	1362.64	-8.43	338.89	211.82	123.22	1 18 9	362.6	5.52	319.34

DIFFERENTIAL CORRECTIONS

TDE	-.5304	TRA	-1.1404	TC3	.0615	BAU	.0534												
RDE	-.4501	RRA	.1416	RC3	.1444	FAU	.04591												
FDE	.4007	FRA	1.5464	FC3	-1.5603	BSP	2496												
BDE	.6956	BRA	1.1491	BC3	.1569	FSP	304												

MID-COURSE EXECUTION ACCURACY

SGT	1522.7	SGR	558.9	SG3	216.5						
RRT	.0872	RRF	-.0951	RTF	-.7913						
SGB	1622.0	R23	-.0155	R13	-.7916						
SG1	1523.6	SG2	556.5	THA	2.12						

ORBIT DETERMINATION ACCURACY

ST	36.7	SR	25.7	SS	26.8
CRT	.7586	CRS	.5418	CST	.9570
LSA	48.7	MSA	18.1	SSA	1.2
EL1	42.4	EL2	14.9	ALF	32.18

LAUNCH DATE APR 26 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC — DISTANCE 344.570 — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	33.807	GAL	-3.29	AZL	92.01	HCA	115.59	SMA	213.93	ECC	.30137	INC	2.0107	V1	29.600
RP	206.74	LAP	-1.81	LOP	330.73	VP	25.758	GAP	17.44	AZP	89.13	TAL	345.73	TAP	101.33	RCA	149.46	APO	278.40	V2	26.489
RC	60.233	GL	-13.91	GP	1.52	ZAL	119.16	ZAP	166.31	ETS	173.67	ZAE	172.42	ETE	51.31	ZAC	101.66	ETC	277.61	LVI	-19.23

PLANETOCENTRIC CONIC

C3	24.253	VHL	4.925	DLA	-22.47	RAL	342.55	RAD	6644.7	VEL	12.010	PTH	7.00	VHP	8.140	DPA	-16.02	RAP	319.68	ECC	1.3991

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 38	2722.48	-18.31	76.28	202.37	134.72	18 8 1	1722.5	-.14	60.06
60.00	18 30 4	2543.15	-12.87	65.14	207.38	128.53	19 12 27	1543.2	3.13	47.05
70.00	19 55 43	2291.34	-7.51	48.67	211.33	123.42	20 33 55	1291.3	6.45	29.13
80.00	21 38 3	1971.08	-3.09	27.08	214.06	119.71	22 10 54	971.1	9.22	6.50
90.00	23 16 3	1655.02	-1.23	4.87	215.09	118.26	23 43 38	655.0	10.40	343.88
100.00	0 24 51	1445.55	-3.09	348.45	214.06	119.71	0 48 57	445.5	9.22	327.87
110.00	0 59 6	1338.16	-7.51	337.59	211.33	123.42	1 21 24	338.2	6.45	318.05

DIFFERENTIAL CORRECTIONS

TDE	-.5245	TRA	-1.1287	TC3	.0706	BAU	.0358												
RDE	-.4359	RRA	.1338	RC3	.1533	FAU	.04771												
FDE	.4114	FRA	1.6118	FC3	-1.7029	BSP	2552												
BDE	.6820	BRA	1.1366	BC3	.1722	FSP	328												

MID-COURSE EXECUTION ACCURACY

SGT	1548.5	SGR	555.3	SG3	231.2						
RRT	.0951	RRF	-.1037	RTF	-.7978						
SGB	1645.0	R23	-.0168	R13	-.7981						
SG1	1549.5	SG2	552.4	THA	2.24						

ORBIT DETERMINATION ACCURACY

ST	37.2	SR	25.5	SS	27.3
CRT	.7569	CRS	.5365	CST	.9551
LSA	49.5	MSA	18.2	SSA	1.2
EL1	42.7	EL2	14.5	ALF	31.46

LAUNCH DATE APR 26 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC — DISTANCE 347.885 — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	33.703	GAL	-3.19	AZL	92.02	HCA	116.86	SMA	211.53	ECC	.29323	INC	2.0233	V1	29.600
RP	206.71	LAP	-1.80	LOP	332.00	VP	25.625	GAP	17.00	AZP	89.09	TAL	345.88	TAP	102.74	RCA	149.50	APO	273.55	V2	26.492
RC	61.050	GL	-14.30	GP	1.58	ZAL	119.03	ZAP	165.32	ETS	173.89	ZAE	172.15	ETE	48.36	ZAC	101.68	ETC	277.67	LVI	-19.37

PLANETOCENTRIC CONIC

C3	23.126	VHL	4.808	DLA	-22.86	RAL	342.64	RAD	6644.2	VEL	11.963	PTH	6.96	VHP	7.891	DPA	-15.86	RAP	319.93	ECC	1.3806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 48	2702.53	-17.35	75.35	201.90	135.03	18 9 50	1702.5	.86	59.22
60.00	18 32 53	2521.44	-11.95	64.05	206.91	128.78	19 14 55	1521.4	4.09	46.01
70.00	19 59 28	2266.88	-6.59	47.37	210.87	123.59	20 37 15	1266.9	7.36	27.83
80.00	21 43 1	1942.83	-2.14	25.53	213.63	119.79	22 15 24	942.8	10.14	4.90
90.00	23 21 45	1624.38	-.24	3.18	214.68	118.28	23 48 49	624.4	11.33	342.11
100.00	0 29 49	1417.30	-2.14	346.89	213.63	119.79	0 55 26	417.3	10.14	326.27
110.00	1 2 51	1313.70	-6.59	336.29	210.87	123.59	1 24 44	313.7	7.36	316.75

DIFFERENTIAL CORRECTIONS

TDE	-.5188	TRA	-1.1187	TC3	.0987	BAU	.0383												
RDE	-.4282	RRA	.1281	RC3	.1628	FAU	.04981												
FDE	.4227	FRA	1.6806	FC3	-1.8573	BSP	2608												
BDE	.6687	BRA	1.1238	BC3	.1886	FSP	353												

MID-COURSE EXECUTION ACCURACY

SGT	1573.2	SGR	551.4	SG3	246.9						
RRT	.1035	RRF	-.1131	RTF	-.8037						
SGB	1687.0	R23	-.0188	R13	-.8040						
SG1	1574.4	SG2	548.1	THA	2.36						

ORBIT DETERMINATION ACCURACY

ST	37.7	SR	25.3	SS	28.1
CRT	.7594	CRS	.5313	CST	.9531
LSA	50.2	MSA	18.3	SSA	1.2
EL1	43.1	EL2	14.4	ALF	30.78

LAUNCH DATE APR 26 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC — DISTANCE 351.274 — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	33.604	GAL	-3.09	AZL	92.04	HCA	118.13	SMA	209.32	ECC	.28556	INC	2.0360	V1	29.600
RP	206.69	LAP	-1.80	LOP	333.27	VP	25.498	GAP	16.58	AZP	89.04	TAL	346.03	TAP	104.18	RCA	149.54	APO	269.09	V2	26.495
RC	61.933	GL	-14.70	GP	1.65	ZAL	118.89	ZAP	164.31	ETS	174.07	ZAE	171.92	ETE	45.96	ZAC	101.71	ETC	277.73	LVI	-19.50

PLANETOCENTRIC CONIC

C3	22.085	VHL	4.699	DLA	-23.25	RAL	342.73	RAD	6643.8	VEL	11.920	PTH	6.93	VHP	7.650	DPA	-15.74	RAP	320.17	ECC	1.3638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 58	2682.84	-16.40	74.45	201.46	135.31	18 11 41	1682.8	1.85	58.40
60.00	18 35 45	2499.91	-11.03	62.97	206.46	129.01	19 17 25	1499.9	5.03	44.98
70.00	20 3 19	2242.46	-5.67	46.08	210.45	123.74	20 40 42	1242.5	8.28	26.53
80.00	21 48 10	1914.33	-1.17	23.96	213.24	119.84	22 20 4	914.3	11.05	3.28
90.00	23 27 43	1593.23	.76	1.42	214.31	118.27	23 54 16	593.2	12.25	340.29
100.00	0 34 58	1388.80	-1.17	345.33	213.24	119.84	0 58 7	388.8	11.05	324.65
110.00	1 6 42	1289.28	-5.67	335.00	210.45	123.74	1 28 11	289.3	8.28	315.45

DIFFERENTIAL CORRECTIONS

TDE	-.5122	TRA	-1.1043	TC3	.1141	BAU	.0610												
RDE	-.4090	RRA	.1184	RC3	.1721	FAU	.05164												
FDE	.4345	FRA	1.7533	FC3	-2.0241	BSP	2658												
BDE	.6555	BRA	1.1106	BC3	.2065	FSP	381												

MID-COURSE EXECUTION ACCURACY

SGT	1596.5	SGR	547.3	SG3	263.7						
RRT	.1128	RRF	-.1235	RTF	-.8096						
SGB	1687.7	R23	-.0204	R13	-.8099						
SG1	1597.9	SG2	543.3	THA	2.50						

ORBIT DETERMINATION ACCURACY

ST	38.2	SR	25.0	SS	29.0
CRT	.7599	CRS	.5264	CST	.9511
LSA	50.8	MSA	18.5	SSA	1.2
EL1	43.4	EL2	14.3	ALF	30.12

LAUNCH DATE APR 26 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 354.729 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 33.911 GAL -2.99 AZL 92.05 HCA 119.40 SMA 207.28 ECC .27833 INC 2.0491 V1 29.600
RP 206.68 LAP -1.79 LOP 334.64 VP 25.377 GAP 16.16 AZP 88.99 TAL 346.19 TAP 105.59 RCA 149.58 APO 264.97 V2 26.496
RC 62.879 GL -15.09 GP 1.71 ZAL 118.74 ZAP 163.28 ETS 174.24 ZAE 171.72 ETE 44.04 ZAC 101.75 ETC 277.78 LVI -19.63

PLANETOCENTRIC CONIC

C3 21.124 VHL 4.596 DLA -23.65 RAL 342.80 RAD 6643.3 VEL 11.880 PTH 6.89 VHP 7.416 DPA -15.60 RAP 320.38 ECC 1.3476

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 29 10	2663.42	-15.46	73.56	201.04	135.58	18 13 33	1663.4	2.83	57.59
60.00	18 38 40	2478.60	-10.12	61.92	206.04	129.22	19 19 58	1478.6	5.96	43.95
70.00	20 7 16	2218.10	-4.75	44.80	210.05	123.86	20 44 14	1218.1	9.19	25.23
80.00	21 53 32	1885.55	-.20	22.38	212.88	119.86	22 24 57	885.5	11.96	1.63
90.00	23 34 0	1561.50	1.79	359.65	213.98	118.23	24 0 1	561.5	13.18	338.42
100.00	0 40 19	1360.02	-.20	343.75	212.88	119.86	1 2 59	360.0	11.96	323.00
110.00	1 10 38	1264.92	-4.75	333.72	210.05	123.86	1 31 43	264.9	9.19	314.15

DIFFERENTIAL CORRECTIONS

TDE -.5057 TRA-1.0909 TC3 .1329 BAU .0637
RDE -.3962 RRA .1108 RC3 .1820 FAU .05381
FDE .4457 FRA 1.8290 FC3-2.2053 BSP 2703
BDE .6425 BRA 1.0965 BC3 .2254 FSP 410

MID-COURSE EXECUTION ACCURACY

SGT 1617.6 SGR 542.9 SG3 281.5
RRT .1230 RRF -.1347 RTF -.8147
SGB 1706.2 R23 -.0222 R13 -.8152
SG1 1619.1 SG2 538.3 THA 2.66

ORBIT DETERMINATION ACCURACY

ST 38.6 SR 24.8 SS 29.9
CRT .7607 CRS .5208 CST .9487
LSA 51.5 MSA 18.6 SSA 1.2
EL1 43.6 EL2 14.2 ALF 29.51

LAUNCH DATE APR 26 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 358.245 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 33.424 GAL -2.90 AZL 92.06 HCA 120.67 SMA 205.39 ECC .27153 INC 2.0625 V1 29.600
RP 206.67 LAP -1.77 LOP 335.81 VP 25.262 GAP 15.75 AZP 88.95 TAL 346.35 TAP 107.02 RCA 149.62 APO 261.16 V2 26.496
RC 63.888 GL -15.49 GP 1.79 ZAL 118.59 ZAP 162.22 ETS 174.38 ZAE 171.58 ETE 42.55 ZAC 101.79 ETC 277.82 LVI -19.76

PLANETOCENTRIC CONIC

C3 20.235 VHL 4.498 DLA -24.06 RAL 342.88 RAD 6642.9 VEL 11.842 PTH 6.86 VHP 7.191 DPA -15.46 RAP 320.57 ECC 1.3330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 31 23	2644.30	-14.53	72.70	200.66	135.82	18 15 27	1644.3	3.78	56.79
60.00	18 41 37	2457.50	-9.21	60.88	205.66	129.41	19 22 35	1457.5	6.88	42.93
70.00	20 11 19	2193.80	-3.83	43.52	209.69	123.96	20 47 53	1193.8	10.08	23.92
80.00	21 59 6	1856.47	.79	20.79	212.56	119.85	22 30 3	856.5	12.87	359.95
90.00	23 40 36	1529.10	2.83	357.84	213.69	118.15	24 6 5	529.1	14.12	336.50
100.00	0 45 54	1330.94	.79	342.15	212.56	119.85	1 8 5	330.9	12.87	321.32
110.00	1 14 41	1240.62	-3.83	332.44	209.69	123.96	1 35 22	240.6	10.08	312.84

DIFFERENTIAL CORRECTIONS

TDE -.4992 TRA-1.0774 TC3 .1520 BAU .0663
RDE -.3839 RRA .1032 RC3 .1923 FAU .05610
FDE .4578 FRA 1.9093 FC3-2.4001 BSP 2751
BDE .6297 BRA 1.0823 BC3 .2452 FSP 442

MID-COURSE EXECUTION ACCURACY

SGT 1637.5 SGR 538.3 SG3 300.5
RRT .1341 RRF -.1471 RTF -.8198
SGB 1723.7 R23 -.0244 R13 -.8202
SG1 1639.3 SG2 532.9 THA 2.82

ORBIT DETERMINATION ACCURACY

ST 39.0 SR 24.5 SS 30.8
CRT .7617 CRS .5157 CST .9464
LSA 52.1 MSA 18.7 SSA 1.2
EL1 43.8 EL2 14.1 ALF 28.92

LAUNCH DATE APR 26 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 361.617 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 33.341 GAL -2.82 AZL 92.08 HCA 121.94 SMA 203.65 ECC .26512 INC 2.0764 V1 29.600
RP 206.68 LAP -1.76 LOP 337.08 VP 25.151 GAP 15.35 AZP 88.90 TAL 346.51 TAP 108.45 RCA 149.66 APO 257.65 V2 26.496
RC 64.956 GL -15.89 GP 1.86 ZAL 118.42 ZAP 161.14 ETS 174.50 ZAE 171.48 ETE 41.45 ZAC 101.84 ETC 277.86 LVI -19.89

PLANETOCENTRIC CONIC

C3 19.415 VHL 4.406 DLA -24.47 RAL 342.94 RAD 6642.6 VEL 11.808 PTH 6.83 VHP 6.972 DPA -15.33 RAP 320.73 ECC 1.3195

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 38	2625.50	-13.61	71.86	200.30	136.04	18 17 23	1625.5	4.73	56.00
60.00	18 44 38	2436.65	-8.30	59.86	205.31	129.58	19 25 15	1436.7	7.79	41.92
70.00	20 15 28	2169.59	-2.90	42.26	209.36	124.05	20 51 38	1169.6	10.97	22.61
80.00	22 4 55	1827.05	1.78	19.17	212.28	119.81	22 35 22	827.1	13.78	358.24
90.00	23 47 35	1495.92	3.89	355.98	213.45	118.03	24 12 31	495.9	15.05	334.51
100.00	0 51 43	1301.52	1.78	340.54	212.28	119.81	1 13 24	301.5	13.78	319.61
110.00	1 18 51	1216.40	-2.90	331.17	209.36	124.05	1 39 7	216.4	10.97	311.53

DIFFERENTIAL CORRECTIONS

TDE -.4923 TRA-1.0633 TC3 .1701 BAU .0688
RDE -.3720 RRA .0956 RC3 .2030 FAU .05854
FDE .4693 FRA 1.9937 FC3-2.6103 BSP 2788
BDE .6171 BRA 1.0676 BC3 .2649 FSP 475

MID-COURSE EXECUTION ACCURACY

SGT 1655.3 SGR 533.5 SG3 320.7
RRT .1460 RRF -.1604 RTF -.8240
SGB 1739.2 R23 -.0268 R13 -.8245
SG1 1657.4 SG2 527.2 THA 3.00

ORBIT DETERMINATION ACCURACY

ST 39.3 SR 24.3 SS 31.7
CRT .7628 CRS .5100 CST .9437
LSA 52.8 MSA 18.8 SSA 1.3
EL1 44.0 EL2 14.0 ALF 28.36

LAUNCH DATE APR 26 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 365.439 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 33.263 GAL -2.73 AZL 92.09 HCA 123.21 SMA 202.05 ECC .25909 INC 2.0905 V1 29.600
RP 206.70 LAP -1.75 LOP 338.35 VP 25.046 GAP 14.96 AZP 88.85 TAL 346.67 TAP 109.88 RCA 149.70 APO 254.39 V2 26.494
RC 66.082 GL -16.30 GP 1.94 ZAL 118.25 ZAP 160.03 ETS 174.61 ZAE 171.44 ETE 40.72 ZAC 101.90 ETC 277.90 LVI -20.01

PLANETOCENTRIC CONIC

C3 18.658 VHL 4.319 DLA -24.89 RAL 343.01 RAD 6642.2 VEL 11.776 PTH 6.80 VHP 6.761 DPA -15.21 RAP 320.87 ECC 1.3071

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 54	2607.02	-12.70	71.05	199.98	136.25	18 19 21	1607.0	5.65	55.22
60.00	18 47 42	2416.06	-7.41	58.85	204.98	129.73	19 27 58	1416.1	8.68	40.91
70.00	20 19 44	2145.45	-1.98	40.99	209.07	124.10	20 55 30	1145.4	11.86	21.30
80.00	22 11 0	1797.23	2.79	17.53	212.04	119.74	22 40 57	797.2	14.69	356.49
90.00	23 55 0	1461.80	4.98	354.07	213.25	117.87	24 19 22	461.8	15.99	332.45
100.00	0 57 48	1271.72	2.79	338.90	212.04	119.74	1 18 59	271.7	14.69	317.86
110.00	1 23 7	1192.27	-1.98	329.91	209.07	124.10	1 42 59	192.3	11.86	310.21

DIFFERENTIAL CORRECTIONS

TDE -.4852 TRA-1.0485 TC3 .1897 BAU .0714
RDE -.3605 RRA .0881 RC3 .2142 FAU .06117
FDE .4811 FRA 2.0822 FC3-2.8304 BSP 2821
BDE .6044 BRA 1.0522 BC3 .2861 FSP 510

MID-COURSE EXECUTION ACCURACY

SGT 1670.8 SGR 528.6 SG3 342.2
RRT .1591 RRF -.1751 RTF -.8281
SGB 1752.5 R23 -.0295 R13 -.8287
SG1 1673.2 SG2 521.1 THA 3.19

ORBIT DETERMINATION ACCURACY

ST 39.6 SR 24.0 SS 32.6
CRT .7641 CRS .5045 CST .9410
LSA 53.3 MSA 18.9 SSA 1.3
EL1 44.1 EL2 13.9 ALF 27.85

LAUNCH DATE APR 26 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 15 1971

DISTANCE 360.109

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	33.189	GAL	-2.65	AZL	92.11	HCA	124.48	SMA	200.58	ECC	.28340	INC	2.1081	V1	29.600
RP	206.72	LAP	-1.74	LOP	339.62	VP	24.945	GAP	14.58	AZP	88.81	TAL	346.84	TAP	111.32	RCA	149.73	APO	251.38	V2	26.491
RC	67.265	GL	-16.70	GP	2.03	ZAL	118.07	ZAP	158.90	ETS	174.71	ZAE	171.46	ETE	40.36	ZAC	101.96	ETC	277.93	LVI	-20.15

PLANETOCENTRIC CONIC

C3	17.958	VHL	4.238	DLA	-25.30	RAL	343.07	RAD	6641.9	VEL	11.747	PTH	6.78	VHP	6.857	DPA	-15.08	RAP	320.98	ECC	1.2958

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 38 12	2588.85	-11.81	70.25	199.68	136.43	18 21 21	1388.8	6.56	54.45
60.00	18 50 49	2395.71	-6.52	57.86	204.69	129.86	19 30 45	1395.7	9.57	38.91
70.00	20 24 8	2121.36	-1.06	39.74	208.81	124.14	20 59 29	1121.4	12.73	19.98
80.00	22 17 22	1788.93	3.81	15.86	211.85	119.64	22 46 49	786.9	15.59	354.70
90.00	0 6 32	1426.46	8.10	352.08	213.10	117.67	0 30 39	426.5	16.95	330.30
100.00	1 4 10	1041.40	3.81	337.23	211.85	119.64	1 24 52	241.4	15.59	316.07
110.00	1 27 30	1168.17	-1.06	328.65	208.81	124.14	1 46 58	168.2	12.73	308.89

DIFFERENTIAL CORRECTIONS

TDE	-.4704	TRA	-1.0253	TC3	.2239	BAU	.0764
RDE	-.3492	RRA	.0806	RC3	.2259	FAU	.06398
FDE	.4920	FRA	2.1747	FC3	-3.0843	BSP	2760
BDE	.5859	BRA	1.0285	BC3	.3181	FSP	547

MID-COURSE EXECUTION ACCURACY

SGT	1670.9	SGR	523.6	SG3	365.1
RRT	.1736	RRF	-.1910	RTF	-.6366
SGB	1751.0	R23	-.0310	R13	-.8373
SG1	1673.7	SG2	514.8	THA	3.44

ORBIT DETERMINATION ACCURACY

ST	39.2	SR	25.7	SS	33.5
CRT	.7632	CRS	.4983	CST	.9391
LSA	53.5	MSA	19.0	SSA	1.2
EL1	43.7	EL2	13.7	ALF	27.69

LAUNCH DATE APR 26 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 17 1971

DISTANCE 372.821

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	33.120	GAL	-2.57	AZL	92.12	HCA	125.78	SMA	199.17	ECC	.24807	INC	2.1201	V1	29.600
RP	206.75	LAP	-1.72	LOP	340.89	VP	24.849	GAP	14.20	AZP	88.76	TAL	347.00	TAP	112.75	RCA	149.77	APO	248.58	V2	26.487
RC	68.502	GL	-17.11	GP	2.12	ZAL	117.89	ZAP	157.74	ETS	174.79	ZAE	171.54	ETE	40.36	ZAC	102.04	ETC	277.98	LVI	-20.23

PLANETOCENTRIC CONIC

C3	17.314	VHL	4.161	DLA	-25.72	RAL	343.13	RAD	6641.6	VEL	11.719	PTH	6.75	VHP	6.359	DPA	-14.96	RAP	321.06	ECC	1.2849

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 40 31	2571.09	-10.93	69.47	199.41	136.60	18 23 23	1571.1	7.45	53.70
60.00	18 53 59	2375.70	-5.65	56.90	204.44	129.97	19 33 35	1375.7	10.43	38.92
70.00	20 28 38	2097.43	-.15	38.49	208.59	124.15	21 3 35	1097.4	13.59	18.65
80.00	22 24 3	1736.16	4.85	14.16	211.70	119.50	22 53 0	736.2	16.49	352.86
90.00	0 15 24	1389.77	7.26	350.00	213.01	117.41	0 38 34	389.8	17.91	328.03
100.00	1 10 51	1210.63	4.85	338.53	211.70	119.50	1 31 2	210.6	16.49	314.23
110.00	1 32 0	1144.25	-.15	327.41	208.59	124.15	1 51 4	144.2	13.59	307.57

DIFFERENTIAL CORRECTIONS

TDE	-.4674	TRA	-1.0138	TC3	.2315	BAU	.0768
RDE	-.3386	RRA	.0729	RC3	.2377	FAU	.06688
FDE	.5050	FRA	2.2742	FC3	-3.3440	BSP	2831
BDE	.5772	BRA	1.0164	BC3	.3318	FSP	588

MID-COURSE EXECUTION ACCURACY

SGT	1688.9	SGR	518.5	SG3	389.4
RRT	.1890	RRF	-.2085	RTF	-.8369
SGB	1766.7	R23	-.0352	R13	-.8377
SG1	1692.0	SG2	508.2	THA	3.65

ORBIT DETERMINATION ACCURACY

ST	39.7	SR	23.4	SS	34.5
CRT	.7667	CRS	.4936	CST	.9353
LSA	54.3	MSA	19.1	SSA	1.3
EL1	44.0	EL2	13.5	ALF	27.05

LAUNCH DATE APR 26 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 19 1971

DISTANCE 376.972

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	33.055	GAL	-2.50	AZL	92.14	HCA	127.01	SMA	197.89	ECC	.24305	INC	2.1356	V1	29.600
RP	206.79	LAP	-1.71	LOP	342.16	VP	24.757	GAP	13.83	AZP	88.71	TAL	347.17	TAP	114.18	RCA	149.80	APO	245.93	V2	26.483
RC	69.791	GL	-17.32	GP	2.22	ZAL	117.70	ZAP	156.55	ETS	174.86	ZAE	171.67	ETE	40.74	ZAC	102.12	ETC	277.98	LVI	-20.37

PLANETOCENTRIC CONIC

C3	16.720	VHL	4.089	DLA	-26.15	RAL	343.19	RAD	6641.3	VEL	11.694	PTH	6.73	VHP	6.168	DPA	-14.84	RAP	321.11	ECC	1.2752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 42 53	2553.69	-10.07	68.72	199.18	136.75	18 25 27	1553.7	8.32	52.96
60.00	18 57 13	2355.98	-4.78	55.95	204.22	130.06	19 36 29	1356.0	11.27	37.94
70.00	20 33 16	2073.58	.76	37.25	208.41	124.15	21 7 49	1073.6	14.43	17.33
80.00	22 31 7	1704.73	5.90	12.42	211.59	119.32	22 59 31	704.7	17.40	350.96
90.00	0 24 40	1351.17	8.46	347.60	212.98	117.08	0 47 12	351.2	18.88	325.62
100.00	1 17 54	1179.20	5.90	333.79	211.59	119.32	1 37 34	179.2	17.40	312.33
110.00	1 36 38	1120.40	.76	326.16	208.41	124.15	1 55 19	120.4	14.43	306.24

DIFFERENTIAL CORRECTIONS

TDE	-.4623	TRA	-.9991	TC3	.2422	BAU	.0778
RDE	-.3282	RRA	.0832	RC3	.2500	FAU	.06998
FDE	.5181	FRA	2.3784	FC3	-3.6236	BSP	2882
BDE	.5868	BRA	1.0012	BC3	.3480	FSP	632

MID-COURSE EXECUTION ACCURACY

SGT	1700.2	SGR	513.5	SG3	419.2
RRT	.2059	RRF	-.2277	RTF	-.8380
SGB	1776.1	R23	-.0396	R13	-.8390
SG1	1703.8	SG2	501.4	THA	3.90

ORBIT DETERMINATION ACCURACY

ST	40.0	SR	23.0	SS	35.5
CRT	.7701	CRS	.4891	CST	.9316
LSA	54.9	MSA	19.2	SSA	1.3
EL1	44.2	EL2	13.3	ALF	26.55

LAUNCH DATE APR 26 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 21 1971

DISTANCE 380.360

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	32.994	GAL	-2.43	AZL	92.18	HCA	128.28	SMA	196.71	ECC	.23833	INC	2.1516	V1	29.600
RP	206.84	LAP	-1.68	LOP	343.43	VP	24.668	GAP	13.47	AZP	88.67	TAL	347.33	TAP	115.61	RCA	149.83	APO	243.59	V2	26.477
RC	71.130	GL	-17.92	GP	2.32	ZAL	117.52	ZAP	155.33	ETS	174.92	ZAE	171.86	ETE	41.54	ZAC	102.22	ETC	277.99	LVI	-20.48

PLANETOCENTRIC CONIC

C3	16.172	VHL	4.021	DLA	-26.57	RAL	343.25	RAD	6641.1	VEL	11.671	PTH	6.71	VHP	5.984	DPA	-14.73	RAP	321.13	ECC	1.2662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 45 17	2536.67	-9.22	67.99	198.98	136.89	18 27 33	1536.7	9.16	52.23
60.00	19 0 30	2336.57	-3.93	55.02	204.03	130.14	19 39 27	1336.6	12.10	36.97
70.00	20 36 2	2049.62	1.67	36.01	208.27	124.12	21 12 12	1049.8	15.27	15.99
80.00	22 36 35	1672.48	6.97	10.63	211.54	119.11	23 6 26	672.5	18.30	349.00
90.00	0 34 55	1309.98	9.73	345.44	213.01	116.68	0 56 45	310.0	19.89	323.02
100.00	1 25 23	1146.95	6.97	332.00	211.54	119.11	1 44 30	146.9	18.30	310.36
110.00	1 41 24	1096.64	1.67	324.92	208.27	124.12	1 59 41	96.6	15.27	304.91

DIFFERENTIAL CORRECTIONS

TDE	-.4566	TRA	-.9828	TC3	.2516	BAU	.0787
RDE	-.3182	RRA	.0874	RC3	.2627	FAU	.07324
FDE	.5321	FRA	2.4887	FC3	-3.9205	BSP	2912
BDE	.5566	BRA	.9845	BC3	.3638	FSP	678

MID-COURSE EXECUTION ACCURACY

SGT	1707.4	SGR	508.5	SG3	442.5
RRT	.2242	RRF	-.2487	RTF	-.8391
SGB	1781.5	R23	-.0445	R13	-.8402
SG1	1711.5	SG2	494.4	THA	4.17

ORBIT DETERMINATION ACCURACY

ST	40.1	SR	22.7	SS	36.5
CRT	.7740	CRS	.4855	CST	.9278
LSA	55.5	MSA	19.3	SSA	1.3
EL1	44.2	EL2	13.1	ALF	26.11

LAUNCH DATE APR 26 1971 FLIGHT TIME 150.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC DISTANCE 384.182 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.936 GAL -2.36 AZL 92.17 HCA 129.55 SMA 195.61 ECC .23389 INC 2.1683 V1 29.600
RP 206.90 LAP -1.67 LOP 344.69 VP 24.585 GAP 13.12 AZP 88.62 TAL 347.48 TAP 117.03 RCA 149.85 APO 241.36 V2 26.470
RC 72.517 GL -18.33 GP 2.43 ZAL 117.33 ZAP 154.08 ETS 174.98 ZAE 172.11 ETE 42.82 ZAC 102.32 ETC 278.00 LVI -20.59

PLANETOCENTRIC CONIC

C3 15.668 VHL 3.958 DLA -26.99 RAL 343.31 RAD 6640.8 VEL 11.650 PTH 6.69 VHP 5.806 DPA -14.62 RAP 321.11 ECC 1.2579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 47 42	2520.04	-8.40	67.27	198.80	137.01	18 29 42	1520.0	9.99	51.51
60.00	19 3 52	2317.48	-3.09	54.10	203.87	130.20	19 42 29	1317.5	12.91	36.01
70.00	20 42 56	2026.15	2.57	34.77	208.16	124.07	21 16 42	1026.1	16.09	14.65
80.00	22 46 33	1639.20	8.07	8.77	211.53	118.84	23 13 52	639.2	19.21	346.94
90.00	0 46 31	1265.02	11.09	342.84	213.13	116.18	1 7 36	265.0	20.94	320.14
100.00	1 33 21	1113.67	8.07	330.14	211.53	118.84	1 51 55	113.7	19.21	308.31
110.00	1 46 19	1072.96	2.57	323.69	208.16	124.07	2 4 12	73.0	16.09	303.57

DIFFERENTIAL CORRECTIONS

TDE -.4500 TRA -.9648 TC3 .2607 BAU .0795
RDE -.3086 RRA .0495 RC3 .2760 FAU .07669
FDE .5462 FRA 2.6043 FC3-4.2372 BSP 2934
BDE .5456 BRA .9661 BC3 .3796 FSP 729

MID-COURSE EXECUTION ACCURACY

SGT 1709.6 SGR 503.7 SG3 471.4
RRT .2439 RRF -.2715 RTF -.8401
SGB 1782.3 R23 -.0499 R13 -.8414
SG1 1714.4 SG2 487.1 THA 4.47

ORBIT DETERMINATION ACCURACY

ST 40.2 SR 22.4 SS 37.6
CRT .7781 CRS .4821 CST .9239
LSA 56.1 MSA 19.4 SSA 1.3
EL1 44.2 EL2 12.8 ALF 25.74

LAUNCH DATE APR 26 1971 FLIGHT TIME 152.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 388.034 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.882 GAL -2.30 AZL 92.19 HCA 130.81 SMA 194.58 ECC .22973 INC 2.1855 V1 29.600
RP 206.96 LAP -1.65 LOP 345.96 VP 24.504 GAP 12.78 AZP 88.57 TAL 347.64 TAP 118.45 RCA 149.88 APO 239.28 V2 26.462
RC 73.950 GL -18.74 GP 2.55 ZAL 117.15 ZAP 152.80 ETS 175.02 ZAE 172.41 ETE 44.65 ZAC 102.44 ETC 278.00 LVI -20.70

PLANETOCENTRIC CONIC

C3 15.205 VHL 3.899 DLA -27.41 RAL 343.38 RAD 6640.6 VEL 11.630 PTH 6.67 VHP 5.634 DPA -14.51 RAP 321.06 ECC 1.2502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 50 10	2503.80	-7.59	66.58	198.66	137.11	18 31 54	1503.8	10.79	50.81
60.00	19 7 16	2298.72	-2.27	53.20	203.75	130.25	19 45 35	1298.7	13.71	35.06
70.00	20 48 0	2002.54	3.47	33.53	208.10	124.00	21 21 22	1002.5	16.90	13.31
80.00	22 55 7	1604.59	9.20	6.82	211.59	118.53	23 21 52	604.6	20.13	344.78
90.00	1 0 10	1214.03	12.61	339.86	213.36	115.53	1 20 24	214.0	22.06	316.62
100.00	1 41 55	1079.06	9.20	328.19	211.59	118.53	1 59 54	79.1	20.13	306.15
110.00	1 51 22	1049.36	3.47	322.45	208.10	124.00	2 8 51	49.4	16.90	302.22

DIFFERENTIAL CORRECTIONS

TDE -.4428 TRA -.9460 TC3 .2676 BAU .0802
RDE -.2993 RRA .0414 RC3 .2898 FAU .08036
FDE .5593 FRA 2.7265 FC3-4.5753 BSP 2939
BDE .5344 BRA .9469 BC3 .3945 FSP 780

MID-COURSE EXECUTION ACCURACY

SGT 1708.3 SGR 499.2 SG3 502.1
RRT .2650 RRF -.2960 RTF -.8406
SGB 1779.7 R23 -.0562 R13 -.8422
SG1 1713.8 SG2 479.7 THA 4.80

ORBIT DETERMINATION ACCURACY

ST 40.1 SR 22.0 SS 38.6
CRT .7825 CRS .4783 CST .9195
LSA 56.6 MSA 19.6 SSA 1.3
EL1 44.0 EL2 12.5 ALF 25.43

LAUNCH DATE APR 26 1971 FLIGHT TIME 154.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC DISTANCE 391.915 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.831 GAL -2.24 AZL 92.20 HCA 132.08 SMA 193.63 ECC .22583 INC 2.2033 V1 29.600
RP 207.04 LAP -1.64 LOP 347.23 VP 24.426 GAP 12.44 AZP 88.52 TAL 347.78 TAP 119.86 RCA 149.90 APO 237.36 V2 26.454
RC 75.426 GL -19.15 GP 2.67 ZAL 116.97 ZAP 151.48 ETS 175.06 ZAE 172.75 ETE 47.14 ZAC 102.57 ETC 277.99 LVI -20.81

PLANETOCENTRIC CONIC

C3 14.780 VHL 3.844 DLA -27.83 RAL 343.45 RAD 6640.4 VEL 11.612 PTH 6.65 VHP 5.469 DPA -14.41 RAP 320.98 ECC 1.2432

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 52 41	2487.97	-6.80	65.91	198.55	137.20	18 34 9	1488.0	11.58	50.12
60.00	19 10 45	2280.30	-1.46	52.32	203.67	130.28	19 48 45	1280.3	14.48	34.12
70.00	20 53 13	1978.99	4.37	32.30	208.07	123.91	21 26 12	979.0	17.70	11.95
80.00	23 4 25	1568.21	10.37	4.76	211.71	118.15	23 30 33	568.2	21.06	342.48
90.00	1 17 38	1151.29	14.42	336.15	213.76	114.60	1 36 49	151.3	23.33	312.66
100.00	1 51 13	1042.66	10.37	326.13	211.71	118.15	2 8 36	42.7	21.06	303.85
110.00	1 56 35	1025.81	4.37	321.22	208.07	123.91	2 13 41	25.8	17.70	300.87

DIFFERENTIAL CORRECTIONS

TDE -.4355 TRA -.9260 TC3 .2741 BAU .0809
RDE -.2903 RRA .0332 RC3 .3044 FAU .08430
FDE .5735 FRA 2.8552 FC3-4.9378 BSP 2932
BDE .5234 BRA .9266 BC3 .4096 FSP 835

MID-COURSE EXECUTION ACCURACY

SGT 1703.2 SGR 495.0 SG3 534.7
RRT .2881 RRF -.3230 RTF -.8409
SGB 1773.7 R23 -.0632 R13 -.8428
SG1 1709.7 SG2 472.2 THA 5.18

ORBIT DETERMINATION ACCURACY

ST 40.0 SR 21.6 SS 39.7
CRT .7878 CRS .4757 CST .9150
LSA 57.1 MSA 19.7 SSA 1.3
EL1 43.8 EL2 12.2 ALF 25.16

LAUNCH DATE APR 26 1971 FLIGHT TIME 156.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC DISTANCE 395.823 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.783 GAL -2.19 AZL 92.22 HCA 133.34 SMA 192.75 ECC .22217 INC 2.2218 V1 29.600
RP 207.12 LAP -1.62 LOP 348.49 VP 24.351 GAP 12.11 AZP 88.47 TAL 347.93 TAP 121.27 RCA 149.93 APO 235.57 V2 26.444
RC 76.944 GL -19.56 GP 2.80 ZAL 116.80 ZAP 150.13 ETS 175.09 ZAE 173.11 ETE 50.44 ZAC 102.71 ETC 277.98 LVI -20.91

PLANETOCENTRIC CONIC

C3 14.390 VHL 3.793 DLA -28.24 RAL 343.54 RAD 6640.2 VEL 11.595 PTH 6.64 VHP 5.309 DPA -14.31 RAP 320.85 ECC 1.2368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 55 14	2472.56	-6.03	65.26	198.47	137.28	18 36 26	1472.6	12.34	49.44
60.00	19 14 18	2262.22	-.66	51.46	203.62	130.30	19 52 0	1262.2	15.24	33.19
70.00	20 58 36	1955.48	5.26	31.06	208.09	123.79	21 31 12	955.5	18.49	10.58
80.00	23 14 42	1529.35	11.61	2.55	211.91	117.70	23 40 11	529.4	22.02	339.99
90.00	1 49 42	1042.02	17.40	329.52	214.71	112.65	2 7 4	42.0	25.24	305.23
100.00	2 1 29	1003.83	11.61	323.91	211.91	117.70	2 18 13	3.8	22.02	301.36
110.00	2 1 59	1002.30	5.26	319.98	208.09	123.79	2 18 41	2.3	18.49	299.50

DIFFERENTIAL CORRECTIONS

TDE -.4286 TRA -.9051 TC3 .2734 BAU .0809
RDE -.2816 RRA .0247 RC3 .3193 FAU .08833
FDE .5882 FRA 2.9913 FC3-5.3143 BSP 2923
BDE .5128 BRA .9054 BC3 .4204 FSP 894

MID-COURSE EXECUTION ACCURACY

SGT 1694.1 SGR 491.3 SG3 568.9
RRT .3123 RRF -.3517 RTF -.8400
SGB 1763.9 R23 -.0716 R13 -.8423
SG1 1701.6 SG2 464.7 THA 5.59

ORBIT DETERMINATION ACCURACY

ST 39.9 SR 21.3 SS 40.8
CRT .7941 CRS .4740 CST .9100
LSA 57.6 MSA 19.8 SSA 1.3
EL1 43.6 EL2 11.8 ALF 24.92

LAUNCH DATE APR 26 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 1 1971

DISTANCE 399.756

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.738 GAL -2.13 AZL 92.24 HCA 134.61 SMA 191.93 ECC .21874 INC 2.2412 V1 29.600
RP 207.21 LAP -1.60 LOP 349.75 VP 24.279 GAP 11.79 AZP 88.43 TAL 348.06 TAP 122.67 RCA 149.95 APO 233.91 V2 26.433
RC 78.502 GL -19.97 GP 2.94 ZAL 116.63 ZAP 148.74 ETS 175.12 ZAE 173.50 ETE 54.73 ZAC 102.87 ETC 277.96 LVI -21.01

PLANETOCENTRIC CONIC

C3 14.033 VHL 3.746 DLA -28.66 RAL 343.62 RAD 6640.1 VEL 11.580 PTH 6.62 VHP 5.155 DPA -14.21 RAP 320.69 ECC 1.2309

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 57 50	2457.52	-5.27	64.62	198.43	137.35	18 38 47	1457.5	13.07	48.78
60.00	19 17 56	2244.45	.12	50.61	203.60	130.30	19 55 20	1244.4	15.98	32.27
70.00	21 4 11	1931.92	6.15	29.82	208.15	123.66	21 36 23	931.9	19.27	9.20
80.00	23 26 20	1486.72	12.95	.09	212.19	117.14	23 51 7	486.7	23.02	337.22
85.16	1 22 18	1126.29	18.83	336.31	214.98	112.01	1 41 4	126.3	26.26	311.65
100.00	2 13 8	6249.24	12.95	299.36	212.19	117.14	3 57 17	5249.2	23.02	276.50
110.00	2 7 34	6266.78	6.15	296.64	208.15	123.66	3 52 0	5266.6	19.27	276.02

DIFFERENTIAL CORRECTIONS

TDE -.4151 TRA -.8769 TC3 .2880 BAU .0830
RDE -.2730 RRA .0161 RC3 .3356 FAU .09286
FDE .5979 FRA 3.1297 FC3-5.7290 BSP 2830
BDE .4968 BRA .8770 BC3 .4422 FSP 951

MID-COURSE EXECUTION ACCURACY

SGT 1669.1 SGR 488.2 SG3 604.9
RRT .3393 RRF -.3827 RTF -.8424
SGB 1739.0 R23 -.0783 R13 -.8451
SG1 1677.9 SG2 456.8 THA 6.12

ORBIT DETERMINATION ACCURACY

ST 39.2 SR 20.9 SS 41.9
CRT .7987 CRS .4702 CST .9049
LSA 57.6 MSA 19.9 SSA 1.2
EL1 42.9 EL2 11.5 ALF 24.99

LAUNCH DATE APR 26 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 3 1971

DISTANCE 403.710

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.696 GAL -2.09 AZL 92.26 HCA 135.87 SMA 191.17 ECC .21554 INC 2.2614 V1 29.600
RP 207.31 LAP -1.57 LOP 351.02 VP 24.210 GAP 11.48 AZP 88.38 TAL 348.19 TAP 124.06 RCA 149.97 APO 232.38 V2 26.422
RC 80.098 GL -20.38 GP 3.09 ZAL 116.47 ZAP 147.31 ETS 175.14 ZAE 173.87 ETE 60.21 ZAC 103.04 ETC 277.93 LVI -21.11

PLANETOCENTRIC CONIC

C3 13.707 VHL 3.702 DLA -29.07 RAL 343.72 RAD 6639.9 VEL 11.566 PTH 6.61 VHP 5.008 DPA -14.12 RAP 320.49 ECC 1.2256

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 0 28	2442.96	-4.55	64.01	198.42	137.41	18 41 11	1443.0	13.79	48.14
60.00	19 21 37	2227.08	.88	49.78	203.63	130.29	19 58 44	1227.1	16.69	31.37
70.00	21 9 58	1908.43	7.04	28.58	208.25	123.51	21 41 46	908.4	20.03	7.80
80.00	23 40 4	1438.19	14.44	357.25	212.59	116.42	24 4 2	438.2	24.09	334.02
82.99	1 5 3	1178.04	19.22	340.28	214.85	112.23	1 24 41	178.0	26.70	315.56
100.00	2 26 51	6200.70	14.44	296.53	212.59	116.42	4 10 12	5200.7	24.09	273.29
110.00	2 13 20	6243.29	7.04	295.40	208.25	123.51	3 57 23	5243.3	20.03	274.63

DIFFERENTIAL CORRECTIONS

TDE -.4137 TRA -.8586 TC3 .2630 BAU .0805
RDE -.2651 RRA .0069 RC3 .3515 FAU .09715
FDE .6180 FRA 3.2832 FC3-6.1359 BSP 2875
BDE .4914 BRA .8586 BC3 .4391 FSP 1022

MID-COURSE EXECUTION ACCURACY

SGT 1660.9 SGR 486.0 SG3 642.8
RRT .3652 RRF -.4160 RTF -.8363
SGB 1730.6 R23 -.0927 R13 -.8396
SG1 1671.1 SG2 449.7 THA 6.58

ORBIT DETERMINATION ACCURACY

ST 39.3 SR 20.5 SS 43.1
CRT .8093 CRS .4731 CST .8987
LSA 58.5 MSA 20.1 SSA 1.2
EL1 42.9 EL2 11.0 ALF 24.63

LAUNCH DATE APR 26 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 5 1971

DISTANCE 407.667

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.657 GAL -2.04 AZL 92.28 HCA 137.13 SMA 190.46 ECC .21253 INC 2.2825 V1 29.600
RP 207.42 LAP -1.55 LOP 352.28 VP 24.143 GAP 11.17 AZP 88.33 TAL 348.31 TAP 125.44 RCA 149.98 APO 230.94 V2 26.409
RC 81.730 GL -20.79 GP 3.25 ZAL 116.31 ZAP 145.85 ETS 175.16 ZAE 174.20 ETE 67.12 ZAC 103.22 ETC 277.90 LVI -21.21

PLANETOCENTRIC CONIC

C3 13.410 VHL 3.662 DLA -29.47 RAL 343.83 RAD 6639.8 VEL 11.553 PTH 6.60 VHP 4.865 DPA -14.03 RAP 320.24 ECC 1.2207

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 3 10	2428.73	-3.83	63.41	198.43	137.46	18 43 39	1428.7	14.49	47.50
60.00	19 25 24	2209.95	1.64	48.96	203.69	130.27	20 2 14	1210.0	17.40	30.47
70.00	21 15 59	1884.69	7.93	27.32	208.40	123.33	21 47 24	884.7	20.79	6.36
80.00	0 1 57	1376.80	16.27	353.61	213.19	115.39	0 24 53	376.8	25.33	329.88
81.33	0 52 21	1215.43	19.60	343.21	214.75	112.46	1 12 36	215.4	27.14	318.43
100.00	2 44 48	6139.31	16.27	292.89	213.19	115.39	4 27 8	5139.3	25.33	269.15
110.00	2 19 21	6219.55	7.93	294.14	208.40	123.33	4 3 1	5219.5	20.79	273.20

DIFFERENTIAL CORRECTIONS

TDE -.3926 TRA -.8196 TC3 .2921 BAU .0846
RDE -.2567 RRA -.0020 RC3 .3704 FAU .10255
FDE .6189 FRA 3.4260 FC3-6.6206 BSP 2663
BDE .4691 BRA .8196 BC3 .4717 FSP 1075

MID-COURSE EXECUTION ACCURACY

SGT 1610.1 SGR 484.7 SG3 682.3
RRT .3973 RRF -.4510 RTF -.8416
SGB 1681.5 R23 -.0975 R13 -.8456
SG1 1622.5 SG2 441.4 THA 7.37

ORBIT DETERMINATION ACCURACY

ST 37.8 SR 20.1 SS 43.9
CRT .8133 CRS .4669 CST .8925
LSA 58.0 MSA 20.1 SSA 1.2
EL1 41.5 EL2 10.7 ALF 25.13

LAUNCH DATE APR 26 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 7 1971

DISTANCE 411.682

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.620 GAL -2.00 AZL 92.30 HCA 138.39 SMA 189.81 ECC .20974 INC 2.3046 V1 29.600
RP 207.54 LAP -1.53 LOP 353.54 VP 24.078 GAP 10.87 AZP 88.28 TAL 348.41 TAP 126.80 RCA 150.00 APO 229.62 V2 26.395
RC 83.399 GL -21.20 GP 3.42 ZAL 116.17 ZAP 144.35 ETS 175.17 ZAE 174.44 ETE 75.51 ZAC 103.42 ETC 277.85 LVI -21.31

PLANETOCENTRIC CONIC

C3 13.143 VHL 3.625 DLA -29.87 RAL 343.95 RAD 6639.6 VEL 11.542 PTH 6.59 VHP 4.729 DPA -13.94 RAP 319.96 ECC 1.2163

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 5 56	2415.03	-3.14	62.84	198.49	137.50	18 46 11	1415.0	15.15	46.88
60.00	19 29 16	2193.32	2.37	48.17	203.79	130.24	20 5 49	1193.3	18.07	29.58
70.00	21 22 13	1861.03	8.81	26.05	208.60	123.13	21 53 14	861.0	21.53	4.95
79.95	0 42 10	1245.23	19.97	345.58	214.69	112.69	1 2 55	245.2	27.56	320.74
79.95	0 42 10	1245.23	19.97	345.58	214.69	112.69	1 2 55	245.2	27.56	320.74
79.95	0 42 10	1245.23	19.97	345.58	214.69	112.69	1 2 55	245.2	27.56	320.74
110.00	2 25 35	6195.89	8.81	292.88	208.60	123.13	4 8 51	5195.9	21.53	271.77

DIFFERENTIAL CORRECTIONS

TDE -.4003 TRA -.8080 TC3 .2305 BAU .0791
RDE -.2498 RRA -.0124 RC3 .3870 FAU .10685
FDE .6509 FRA 3.6077 FC3-7.0382 BSP 2797
BDE .4718 BRA .8081 BC3 .4504 FSP 1163

MID-COURSE EXECUTION ACCURACY

SGT 1611.6 SGR 484.8 SG3 724.6
RRT .4222 RRF -.4885 RTF -.8277
SGB 1682.9 R23 -.1229 R13 -.8328
SG1 1625.6 SG2 435.7 THA 7.80

ORBIT DETERMINATION ACCURACY

ST 38.6 SR 19.7 SS 45.6
CRT .8295 CRS .4778 CST .8851
LSA 59.5 MSA 20.4 SSA 1.2
EL1 42.2 EL2 10.1 ALF 24.50

LAUNCH DATE APR 26 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 415.695 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.586 GAL -1.96 AZL 92.33 HCA 139.65 SMA 189.20 ECC .20713 INC 2.3278 V1 29.690
RP 207.66 LAP -1.51 LOP 354.80 VP 24.015 GAP 10.58 AZP 88.23 TAL 348.51 TAP 128.16 RCA 150.01 APO 228.39 V2 26.381
RC 85.104 GL -21.61 GP 3.60 ZAL 116.03 ZAP 142.81 ETS 175.19 ZAE 174.55 ETE 85.31 ZAC 103.64 ETC 277.80 LVI -21.40

PLANETOCENTRIC CONIC

C3 12.900 VHL 3.592 DLA -30.27 RAL 344.08 RAD 6639.5 VEL 11.531 PTH 6.58 VHP 4.598 DPA -13.85 RAP 319.63 ECC 1.2123

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 8 45	2401.67	-2.47	62.28	198.59	137.53	18 48 46	1401.7	15.80	46.28
60.00	19 33 13	2176.91	3.09	47.38	203.93	130.20	20 9 30	1176.9	18.74	28.71
70.00	21 28 45	1836.99	9.70	24.76	208.85	122.91	21 59 22	837.0	22.27	3.47
78.72	0 33 29	1270.57	20.33	347.63	214.67	112.93	0 54 39	270.6	27.98	322.73
78.72	0 33 29	1270.57	20.33	347.63	214.67	112.93	0 54 39	270.6	27.98	322.73
78.72	0 33 29	1270.57	20.33	347.63	214.67	112.93	0 54 39	270.6	27.98	322.73
110.00	2 32 8	6171.85	9.70	291.59	208.85	122.91	4 15 0	5171.8	22.27	270.30

DIFFERENTIAL CORRECTIONS

TDE -.3903 TRA -.7765 TC3 .2149 BAU .0793
RDE -.2424 RRA -.0225 RC3 .4064 FAU .11216
FDE .6646 FRA 3.7758 FC3-7.5268 BSP 2698
BDE .4594 BRA .7768 BC3 .4597 FSP 1235

MID-COURSE EXECUTION ACCURACY

SGT 1571.1 SGR 486.3 SG3 767.9
RRT .4522 RRF -.5272 RTF -.8233
SGB 1644.7 R23 -.1399 R13 -.8297
SG1 1587.7 SG2 429.2 THA 8.60

ORBIT DETERMINATION ACCURACY

ST 37.8 SR 19.3 SS 46.7
CRT .8405 CRS .4808 CST .8773
LSA 59.7 MSA 20.5 SSA 1.2
EL1 41.4 EL2 9.6 ALF 24.66

LAUNCH DATE APR 26 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 419.725 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.554 GAL -1.93 AZL 92.35 HCA 140.90 SMA 188.64 ECC .20470 INC 2.3521 V1 29.600
RP 207.80 LAP -1.48 LOP 356.05 VP 23.955 GAP 10.29 AZP 88.17 TAL 348.60 TAP 129.50 RCA 150.03 APO 227.26 V2 26.365
RC 86.843 GL -22.02 GP 3.80 ZAL 115.91 ZAP 141.22 ETS 175.20 ZAE 174.47 ETE 95.97 ZAC 103.88 ETC 277.74 LVI -21.50

PLANETOCENTRIC CONIC

C3 12.683 VHL 3.561 DLA -30.67 RAL 344.23 RAD 6639.4 VEL 11.522 PTH 6.57 VHP 4.473 DPA -13.76 RAP 319.26 ECC 1.2087

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 11 38	2388.73	-1.82	61.74	198.71	137.55	18 51 27	1388.7	16.43	45.69
60.00	19 37 17	2160.85	3.80	46.61	204.11	130.15	20 13 17	1160.8	19.39	27.84
70.00	21 35 37	1812.65	10.60	23.45	209.16	122.66	22 5 49	812.6	23.01	1.96
77.62	0 25 56	1292.76	20.67	349.44	214.69	113.17	0 47 29	292.8	28.39	324.49
77.62	0 25 56	1292.76	20.67	349.44	214.69	113.17	0 47 29	292.8	28.39	324.49
77.62	0 25 56	1292.76	20.67	349.44	214.69	113.17	0 47 29	292.8	28.39	324.49
110.00	2 38 59	6147.51	10.60	290.27	209.16	122.66	4 21 27	5147.5	23.01	268.79

DIFFERENTIAL CORRECTIONS

TDE -.3872 TRA -.7501 TC3 .1723 BAU .0779
RDE -.2335 RRA -.0335 RC3 .4260 FAU .11731
FDE .6868 FRA 3.9604 FC3-8.0075 BSP 2672
BDE .4532 BRA .7508 BC3 .4596 FSP 1317

MID-COURSE EXECUTION ACCURACY

SGT 1539.9 SGR 489.5 SG3 813.4
RRT .4791 RRF -.5672 RTF -.8127
SGB 1615.9 R23 -.1659 R13 -.8209
SG1 1559.2 SG2 424.4 THA 9.36

ORBIT DETERMINATION ACCURACY

ST 37.6 SR 19.0 SS 48.1
CRT .8551 CRS .4894 CST .8685
LSA 60.4 MSA 20.7 SSA 1.2
EL1 41.1 EL2 9.0 ALF 24.60

LAUNCH DATE APR 26 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 423.771 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.524 GAL -1.90 AZL 92.38 HCA 142.16 SMA 188.12 ECC .20243 INC 2.3779 V1 29.600
RP 207.94 LAP -1.46 LOP 357.31 VP 23.896 GAP 10.01 AZP 88.12 TAL 348.68 TAP 130.83 RCA 150.04 APO 226.20 V2 26.349
RC 88.616 GL -22.44 GP 4.01 ZAL 115.79 ZAP 139.60 ETS 175.21 ZAE 174.17 ETE 106.68 ZAC 104.13 ETC 277.67 LVI -21.59

PLANETOCENTRIC CONIC

C3 12.489 VHL 3.534 DLA -31.06 RAL 344.40 RAD 6639.3 VEL 11.514 PTH 6.56 VHP 4.354 DPA -13.67 RAP 318.84 ECC 1.2055

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 14 35	2376.16	-1.19	61.21	198.88	137.56	18 54 12	1376.2	17.04	45.11
60.00	19 41 27	2145.06	4.49	45.85	204.33	130.09	20 17 12	1145.1	20.02	26.98
70.00	21 42 51	1787.78	11.51	22.10	209.52	122.38	22 12 39	787.8	23.74	.40
76.60	0 19 17	1312.57	21.01	351.09	214.75	113.41	0 41 9	312.6	28.80	326.07
76.60	0 19 17	1312.57	21.01	351.09	214.75	113.41	0 41 9	312.6	28.80	326.07
76.60	0 19 17	1312.57	21.01	351.09	214.75	113.41	0 41 9	312.6	28.80	326.07
110.00	2 46 13	6122.63	11.51	288.92	209.52	122.38	4 28 16	5122.6	23.74	267.23

DIFFERENTIAL CORRECTIONS

TDE -.3811 TRA -.7189 TC3 .1344 BAU .0780
RDE -.2289 RRA -.0450 RC3 .4474 FAU .12290
FDE .7077 FRA 4.1506 FC3-8.5193 BSP 2602
BDE .4445 BRA .7203 BC3 .4671 FSP 1402

MID-COURSE EXECUTION ACCURACY

SGT 1497.3 SGR 494.9 SG3 860.9
RRT .5062 RRF -.6081 RTF -.8023
SGB 1577.0 R23 -.1936 R13 -.8130
SG1 1519.9 SG2 420.5 THA 10.29

ORBIT DETERMINATION ACCURACY

ST 37.0 SR 18.6 SS 49.4
CRT .8700 CRS .4989 CST .8591
LSA 61.0 MSA 20.9 SSA 1.2
EL1 40.6 EL2 8.4 ALF 24.74

LAUNCH DATE APR 26 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 427.831 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.496 GAL -1.87 AZL 92.41 HCA 143.41 SMA 187.64 ECC .20033 INC 2.4050 V1 29.600
RP 208.08 LAP -1.43 LOP 358.56 VP 23.839 GAP 9.74 AZP 88.07 TAL 348.74 TAP 132.15 RCA 150.05 APO 225.23 V2 26.332
RC 90.421 GL -22.85 GP 4.23 ZAL 115.69 ZAP 137.93 ETS 175.22 ZAE 173.65 ETE 116.61 ZAC 104.40 ETC 277.59 LVI -21.69

PLANETOCENTRIC CONIC

C3 12.317 VHL 3.510 DLA -31.44 RAL 344.58 RAD 6639.2 VEL 11.506 PTH 6.55 VHP 4.239 DPA -13.58 RAP 318.38 ECC 1.2027

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 17 38	2363.97	-.58	60.70	199.08	137.57	18 57 2	1364.0	17.62	44.55
60.00	19 45 44	2129.54	5.17	45.11	204.59	130.02	20 21 13	1129.5	20.63	26.13
70.00	21 50 32	1762.18	12.44	20.70	209.94	122.07	22 19 55	762.2	24.48	358.78
75.65	0 13 20	1330.63	21.34	352.60	214.85	113.66	0 35 30	330.6	29.19	327.53
75.65	0 13 20	1330.63	21.34	352.60	214.85	113.66	0 35 30	330.6	29.19	327.53
75.65	0 13 20	1330.63	21.34	352.60	214.85	113.66	0 35 30	330.6	29.19	327.53
110.00	2 53 55	6097.03	12.44	287.52	209.94	122.07	4 35 32	5097.0	24.48	265.60

DIFFERENTIAL CORRECTIONS

TDE -.3748 TRA -.6851 TC3 .0884 BAU .0787
RDE -.2224 RRA -.0571 RC3 .4698 FAU .12861
FDE .7280 FRA 4.3461 FC3-9.0397 BSP 2513
BDE .4359 BRA .6875 BC3 .4780 FSP 1488

MID-COURSE EXECUTION ACCURACY

SGT 1448.2 SGR 502.5 SG3 909.6
RRT .5302 RRF -.6487 RTF -.7887
SGB 1532.9 R23 -.2267 R13 -.8029
SG1 1474.7 SG2 418.4 THA 11.35

ORBIT DETERMINATION ACCURACY

ST 36.4 SR 18.2 SS 50.7
CRT .8362 CRS .5099 CST .8481
LSA 61.5 MSA 21.1 SSA 1.1
EL1 40.0 EL2 7.7 ALF 24.94

LAUNCH DATE APR 26 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 17 1971

DISTANCE 431.905

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.470 GAL -1.85 AZL 92.43 HCA 144.66 SMA 187.19 ECC .19839 INC 2.4338 V1 29.600
RP 208.24 LAP -1.41 LOP 359.81 VP 23.784 GAP 9.47 AZP 88.01 TAL 348.79 TAP 133.45 RCA 150.06 APO 224.33 V2 26.313
RC 92.259 GL -23.27 GP 4.47 ZAL 115.60 ZAP 136.22 ETS 175.22 ZAE 172.91 ETE 125.24 ZAC 104.70 ETC 277.51 LVI -21.79

PLANETOCENTRIC CONIC

C3 12.167 VHL 3.488 DLA -31.83 RAL 344.78 RAD 6639.1 VEL 11.500 PTH 6.55 VHP 4.131 DPA -13.48 RAP 317.87 ECC 1.2002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 20 46	2392.13	.02	60.21	199.32	137.58	18 59 58	1352.1	18.19	44.00
60.00	19 50 9	2114.25	5.84	44.37	204.90	129.95	20 25 24	1114.3	21.23	25.28
70.00	21 58 47	1735.57	13.39	19.23	210.42	121.72	22 27 43	735.6	25.22	357.07
74.75	0 7 59	1347.28	21.66	354.02	214.99	113.91	0 30 27	347.3	29.58	328.89
74.75	0 7 59	1347.28	21.66	354.02	214.99	113.91	0 30 27	347.3	29.58	328.89
74.75	0 7 59	1347.28	21.66	354.02	214.99	113.91	0 30 27	347.3	29.58	328.89
110.00	3 2 9	6070.42	13.39	286.06	210.42	121.72	4 43 20	5070.4	25.22	263.69

DIFFERENTIAL CORRECTIONS

TDE -.3683 TRA -.6494 TC3 .0357 BAU .0805
RDE -.2162 RRA -.0699 RC3 .4936 FAU .13453
FDE .7487 FRA 4.5498 FC3-9.5718 BSP 2406
BDE .4271 BRA .6531 BC3 .4949 FSP 1574

MID-COURSE EXECUTION ACCURACY

SGT 1393.8 SGR 512.8 SG3 960.1
RRT .5501 RRF -.6889 RTF -.7718
SGB 1485.1 R23 -.2655 R13 -.7908
SG1 1424.8 SG2 418.9 THA 12.54

ORBIT DETERMINATION ACCURACY

ST 35.6 SR 17.9 SS 52.1
CRT .9031 CRS .5231 CST .8357
LSA 62.0 MSA 21.2 SSA 1.1
EL1 39.3 EL2 7.0 ALF 25.23

LAUNCH DATE APR 26 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 19 1971

DISTANCE 435.990

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.446 GAL -1.83 AZL 92.46 HCA 145.91 SMA 186.78 ECC .19659 INC 2.4643 V1 29.600
RP 208.41 LAP -1.38 LOP 1.06 VP 23.730 GAP 9.21 AZP 87.96 TAL 348.83 TAP 134.74 RCA 150.06 APO 223.50 V2 26.294
RC 94.128 GL -23.70 GP 4.72 ZAL 115.52 ZAP 134.47 ETS 175.23 ZAE 171.97 ETE 132.40 ZAC 105.01 ETC 277.41 LVI -21.88

PLANETOCENTRIC CONIC

C3 12.038 VHL 3.470 DLA -32.21 RAL 345.00 RAD 6639.1 VEL 11.494 PTH 6.54 VHP 4.027 DPA -13.38 RAP 317.31 ECC 1.1981

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 24 0	2340.60	.59	59.73	199.61	137.57	19 3 1	1340.6	18.74	43.46
60.00	19 54 44	2099.15	6.50	43.64	205.25	129.86	20 29 43	1099.1	21.82	24.44
70.00	22 7 44	1707.50	14.39	17.67	210.99	121.31	22 36 11	707.5	25.98	355.24
73.90	0 3 8	1362.95	21.96	355.35	215.18	114.17	0 25 51	362.9	29.97	330.18
73.90	0 3 8	1362.95	21.96	355.35	215.18	114.17	0 25 51	362.9	29.97	330.18
73.90	0 3 8	1362.95	21.96	355.35	215.18	114.17	0 25 51	362.9	29.97	330.18
110.00	3 11 6	6042.36	14.39	284.50	210.99	121.31	4 51 48	5042.4	25.98	262.07

DIFFERENTIAL CORRECTIONS

TDE -.3604 TRA -.6092 TC3 -.0182 BAU .0837
RDE -.2101 RRA -.0834 RC3 .5196 FAU .14086
FDE .7663 FRA 4.7532 FC-10.1303 BSP 2276
BDE .4172 BRA .6148 BC3 .5199 FSP 1661

MID-COURSE EXECUTION ACCURACY

SGT 1329.6 SGR 526.2 SG3 1011.6
RRT .5654 RRF -.7278 RTF -.7512
SGB 1430.0 R23 -.3088 R13 -.7772
SG1 1366.2 SG2 422.4 THA 13.98

ORBIT DETERMINATION ACCURACY

ST 34.7 SR 17.5 SS 53.3
CRT .9206 CRS .5374 CST .8210
LSA 62.4 MSA 21.4 SSA 1.1
EL1 38.4 EL2 6.2 ALF 25.66

LAUNCH DATE APR 26 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 21 1971

DISTANCE 440.088

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.424 GAL -1.81 AZL 92.50 HCA 147.16 SMA 186.40 ECC .19493 INC 2.4969 V1 29.600
RP 208.58 LAP -1.35 LOP 2.31 VP 23.677 GAP 8.95 AZP 87.90 TAL 348.86 TAP 136.02 RCA 150.07 APO 222.74 V2 26.274
RC 96.027 GL -24.13 GP 4.99 ZAL 115.45 ZAP 132.68 ETS 175.25 ZAE 170.87 ETE 138.22 ZAC 105.35 ETC 277.30 LVI -21.99

PLANETOCENTRIC CONIC

C3 11.929 VHL 3.454 DLA -32.59 RAL 345.24 RAD 6639.0 VEL 11.489 PTH 6.54 VHP 3.929 DPA -13.27 RAP 316.70 ECC 1.1963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 27 22	2329.36	1.16	59.26	199.93	137.57	19 6 11	1329.4	19.28	42.93
60.00	19 59 29	2084.16	7.15	42.91	205.66	129.77	20 34 13	1084.2	22.40	23.60
70.00	22 17 36	1677.29	15.45	15.98	211 64	120.84	22 45 34	677.3	26.77	353.25
73.08	23 54 47	1377.70	22.26	356.63	215.41	114.44	24 17 45	377.7	30.34	331.41
73.08	23 54 47	1377.70	22.26	356.63	215.41	114.44	24 17 45	377.7	30.34	331.41
73.08	23 54 47	1377.70	22.26	356.63	215.41	114.44	24 17 45	377.7	30.34	331.41
110.00	3 20 59	6012.15	15.45	282.80	211.64	120.84	5 1 11	5012.1	26.77	260.07

DIFFERENTIAL CORRECTIONS

TDE -.3488 TRA -.5636 TC3 -.0695 BAU .0881
RDE -.2040 RRA -.0976 RC3 .5478 FAU .14756
FDE .7751 FRA 4.9574 FC-10.7093 BSP 2090
BDE .4040 BRA .5720 BC3 .5522 FSP 1740

MID-COURSE EXECUTION ACCURACY

SGT 1252.3 SGR 542.8 SG3 1064.0
RRT .5751 RRF -.7646 RTF -.7775
SGB 1364.9 R23 -.3536 R13 -.7638
SG1 1295.7 SG2 429.2 THA 15.77

ORBIT DETERMINATION ACCURACY

ST 33.4 SR 17.2 SS 54.4
CRT .9377 CRS .5508 CST .8030
LSA 62.5 MSA 21.6 SSA 1.0
EL1 37.1 EL2 5.4 ALF 26.34

LAUNCH DATE APR 26 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 23 1971

DISTANCE 444.194

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.403 GAL -1.80 AZL 92.53 HCA 148.40 SMA 186.06 ECC .19340 INC 2.5316 V1 29.600
RP 208.76 LAP -1.33 LOP 3.55 VP 23.626 GAP 8.70 AZP 87.84 TAL 348.87 TAP 137.27 RCA 150.07 APO 222.04 V2 26.254
RC 97.955 GL -24.57 GP 5.29 ZAL 115.40 ZAP 130.85 ETS 175.26 ZAE 169.63 ETE 142.89 ZAC 105.72 ETC 277.19 LVI -22.09

PLANETOCENTRIC CONIC

C3 11.841 VHL 3.441 DLA -32.97 RAL 345.50 RAD 6639.0 VEL 11.486 PTH 6.53 VHP 3.837 DPA -13.16 RAP 316.05 ECC 1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 30 50	2318.46	1.71	58.80	200.30	137.55	19 9 29	1318.5	19.80	42.41
60.00	20 4 26	2069.36	7.79	42.19	206.11	129.37	20 38 55	1069.4	22.97	22.76
70.00	22 28 43	1644.10	16.60	14.09	212.40	120.28	22 56 8	644.1	27.59	351.03
72.30	23 50 47	1391.82	22.55	357.85	215.69	114.72	24 13 59	391.8	30.71	332.59
72.30	23 50 47	1391.82	22.55	357.85	215.69	114.72	24 13 59	391.8	30.71	332.59
72.30	23 50 47	1391.82	22.55	357.85	215.69	114.72	24 13 59	391.8	30.71	332.59
110.00	3 32 6	5978.96	16.60	280.91	212.40	120.28	5 11 45	4979.0	27.59	257.65

DIFFERENTIAL CORRECTIONS

TDE -.3518 TRA -.5289 TC3 -.1734 BAU .0949
RDE -.1994 RRA -.1141 RC3 .5738 FAU .15296
FDE .8231 FRA 5.2008 FC-11.1835 BSP 2060
BDE .4044 BRA .5410 BC3 .5995 FSP 1857

MID-COURSE EXECUTION ACCURACY

SGT 1208.0 SGR 563.5 SG3 1118.8
RRT .5658 RRF -.7994 RTF -.6853
SGB 1333.0 R23 -.4221 R13 -.7353
SG1 1255.8 SG2 446.9 THA 17.00

ORBIT DETERMINATION ACCURACY

ST 33.3 SR 17.0 SS 56.3
CRT .9571 CRS .5805 CST .7872
LSA 63.9 MSA 21.9 SSA 1.0
EL1 37.1 EL2 4.4 ALF 26.42

LAUNCH DATE APR 26 1971 FLIGHT TIME 182.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 448.311 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.384 GAL -1.79 AZL 92.57 HCA 149.65 SMA 185.74 ECC .19200 INC 2.5688 V1 29.600
RP 208.94 LAP -1.30 LOP 4.60 VP 23.576 GAP 8.45 AZP 87.78 TAL 348.87 TAP 138.52 RCA 150.08 APO 221.40 V2 26.232
RC 99.910 GL -25.02 GP 5.60 ZAL 115.35 ZAP 128.98 ETS 175.28 ZAE 168.27 ETE 146.64 ZAC 106.11 ETC 277.07 LVI -22.21

PLANETOCENTRIC CONIC

C3 11.771 VHL 3.431 DLA -33.35 RAL 345.79 RAD 6638.9 VEL 11.483 PTH 6.53 VHP 3.749 DPA -13.03 RAP 315.36 ECC 1.1937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 34 28	2307.75	2.25	58.35	200.72	137.54	19 12 56	1307.7	20.31	41.90
60.00	20 9 36	2054.51	8.44	41.47	206.62	129.56	20 43 51	1054.5	23.53	21.90
70.00	22 41 51	1605.52	17.91	11.87	213.31	119.58	23 8 37	605.5	28.51	348.40
71.53	23 47 6	1405.47	22.83	359.05	216.02	115.00	24 10 32	405.5	31.08	333.74
71.53	23 47 6	1405.47	22.83	359.05	216.02	115.00	24 10 32	405.5	31.08	333.74
71.53	23 47 6	1405.47	22.83	359.05	216.02	115.00	24 10 32	405.5	31.08	333.74
110.00	3 45 14	5940.37	17.91	278.69	213.31	119.58	5 24 14	4940.4	28.51	255.22

DIFFERENTIAL CORRECTIONS

TDE -.3461 TRA -.4838 TC3 -.2590 BAU .1034
RDE -.1943 RRA -.1311 RC3 .6041 FAU .15929
FDE .8472 FRA 5.4294 FC-11.7157 BSP 1931
BDE .3970 BRA .5013 BC3 .6572 FSP 1954

MID-COURSE EXECUTION ACCURACY

SGT 1140.8 SGR 588.0 SG3 1173.4
RRT .5477 RRF -.8309 RTF -.6383
SGB 1283.5 R23 -.4856 R13 -.7089
SG1 1194.3 SG2 469.9 THA 18.78

ORBIT DETERMINATION ACCURACY

ST 32.3 SR 16.7 SS 57.6
CRT .9732 CRS .6040 CST .7653
LSA 64.5 MSA 22.2 SSA 1.0
EL1 36.2 EL2 3.4 ALF 26.95

LAUNCH DATE APR 26 1971 FLIGHT TIME 184.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 452.437 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.367 GAL -1.78 AZL 92.61 HCA 150.89 SMA 185.44 ECC .19072 INC 2.6088 V1 29.600
RP 209.14 LAP -1.27 LOP 6.04 VP 23.527 GAP 8.21 AZP 87.72 TAL 348.85 TAP 139.74 RCA 150.08 APO 220.81 V2 26.209
RC 101.892 GL -25.48 GP 5.94 ZAL 115.32 ZAP 127.07 ETS 175.30 ZAE 166.80 ETE 149.66 ZAC 106.53 ETC 276.93 LVI -22.33

PLANETOCENTRIC CONIC

C3 11.721 VHL 3.424 DLA -33.74 RAL 346.11 RAD 6638.9 VEL 11.480 PTH 6.53 VHP 3.668 DPA -12.89 RAP 314.61 ECC 1.1929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 38 16	2297.21	2.77	57.91	201.19	137.51	19 16 33	1297.2	20.80	41.39
60.00	20 15 3	2039.58	9.09	40.74	207.19	129.43	20 49 2	1039.6	24.09	21.04
70.00	22 58 43	1556.39	19.54	8.99	214.45	118.58	23 24 40	556.4	29.58	344.98
70.78	23 43 43	1418.83	23.10	.22	216.40	115.30	24 7 22	418.8	31.45	334.87
70.78	23 43 43	1418.83	23.10	.22	216.40	115.30	24 7 22	418.8	31.45	334.87
70.78	23 43 43	1418.83	23.10	.22	216.40	115.30	24 7 22	418.8	31.45	334.87
110.00	4 2 6	5891.25	19.54	275.81	214.45	118.58	5 40 17	4891.2	29.58	251.80

DIFFERENTIAL CORRECTIONS

TDE -.3412 TRA -.4349 TC3 -.3515 BAU .1139
RDE -.1897 RRA -.1492 RC3 .6359 FAU .16557
FDE .8777 FRA 5.6573 FC-12.2296 BSP 1799
BDE .3904 BRA .4598 BC3 .7266 FSP 2053

MID-COURSE EXECUTION ACCURACY

SGT 1072.4 SGR 616.9 SG3 1227.7
RRT .5129 RRF -.8592 RTF -.5768
SGB 1237.2 R23 -.5517 R13 -.6775
SG1 1130.6 SG2 502.3 THA 20.70

ORBIT DETERMINATION ACCURACY

ST 31.4 SR 16.5 SS 59.0
CRT .9868 CRS .6316 CST .7402
LSA 65.1 MSA 22.4 SSA 1.0
EL1 35.4 EL2 2.4 ALF 27.54

LAUNCH DATE APR 26 1971 FLIGHT TIME 186.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 456.570 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.351 GAL -1.77 AZL 92.65 HCA 152.13 SMA 185.18 ECC .18955 INC 2.6519 V1 29.600
RP 209.34 LAP -1.24 LOP 7.28 VP 23.479 GAP 7.97 AZP 87.66 TAL 348.82 TAP 140.95 RCA 150.08 APO 220.28 V2 26.186
RC 103.900 GL -25.95 GP 6.30 ZAL 115.30 ZAP 125.12 ETS 175.33 ZAE 165.23 ETE 152.10 ZAC 106.97 ETC 276.79 LVI -22.46

PLANETOCENTRIC CONIC

C3 11.690 VHL 3.419 DLA -34.13 RAL 346.45 RAD 6638.9 VEL 11.479 PTH 6.53 VHP 3.591 DPA -12.72 RAP 313.83 ECC 1.1924

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 42 16	2286.79	3.30	57.48	201.71	137.49	19 20 23	1286.8	21.29	40.88
60.00	20 20 48	2024.44	9.74	39.99	207.83	129.30	20 54 33	1024.4	24.65	20.16
70.00	23 30 38	1462.36	22.50	3.30	216.37	116.40	23 55 0	462.4	31.36	338.23
70.05	23 40 37	1431.94	23.37	1.38	216.83	115.61	24 4 29	431.9	31.61	335.99
70.05	23 40 37	1431.94	23.37	1.38	216.83	115.61	24 4 29	431.9	31.61	335.99
70.05	23 40 37	1431.94	23.37	1.38	216.83	115.61	24 4 29	431.9	31.61	335.99
110.00	4 34 0	5797.22	22.50	270.12	216.37	116.40	6 10 38	4797.2	31.36	245.06

DIFFERENTIAL CORRECTIONS

TDE -.3359 TRA -.3834 TC3 -.4513 BAU .1262
RDE -.1852 RRA -.1688 RC3 .6700 FAU .17190
FDE .9062 FRA 5.8890 FC-12.7307 BSP 1660
BDE .3836 BRA .4190 BC3 .8078 FSP 2146

MID-COURSE EXECUTION ACCURACY

SGT 1007.3 SGR 650.4 SG3 1282.2
RRT .4558 RRF -.8841 RTF -.[illegible]66
SGB 1199.1 R23 -.6191 R13 -.6399
SG1 1067.3 SG2 546.4 THA 22.64

ORBIT DETERMINATION ACCURACY

ST 30.5 SR 15.4 SS 60.4
CRT .9957 CRS .6605 CST .7103
LSA 65.8 MSA 22.7 SSA .9
EL1 34.6 EL2 1.3 ALF 28.18

LAUNCH DATE APR 26 1971 FLIGHT TIME 188.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 460.712 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.336 GAL -1.77 AZL 92.70 HCA 153.36 SMA 184.93 ECC .18849 INC 2.6987 V1 29.600
RP 209.55 LAP -1.21 LOP 8.51 VP 23.432 GAP 7.74 AZP 87.59 TAL 348.78 TAP 142.14 RCA 150.08 APO 219.79 V2 26.162
RC 105.933 GL -26.44 GP 6.70 ZAL 115.29 ZAP 123.14 ETS 175.36 ZAE 163.58 ETE 154.08 ZAC 107.45 ETC 276.64 LVI -22.60

PLANETOCENTRIC CONIC

C3 11.678 VHL 3.417 DLA -34.53 RAL 346.82 RAD 6638.9 VEL 11.479 PTH 6.53 VHP 3.520 DPA -12.54 RAP 313.00 ECC 1.1922

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 46 29	2276.40	3.82	57.04	202.29	137.46	19 24 26	1276.4	21.78	40.37
60.00	20 26 57	2008.91	10.41	39.23	208.54	129.16	21 0 26	1008.9	25.23	19.24
69.31	23 37 43	1445.08	23.63	2.55	217.32	115.95	24 1 48	445.1	32.18	337.12
69.31	23 37 43	1445.08	23.63	2.55	217.32	115.95	24 1 48	445.1	32.18	337.12
69.31	23 37 43	1445.08	23.63	2.55	217.32	115.95	24 1 48	445.1	32.18	337.12
69.31	23 37 43	1445.08	23.63	2.55	217.32	115.95	24 1 48	445.1	32.18	337.12
69.31	23 37 43	1445.08	23.63	2.55	217.32	115.95	24 1 48	445.1	32.18	337.12

DIFFERENTIAL CORRECTIONS

TDE -.3261 TRA -.3246 TC3 -.5414 BAU .1392
RDE -.1805 RRA -.1894 RC3 .7088 FAU .17894
FDE .9194 FRA 6.1055 FC-13.2654 BSP 1497
BDE .3727 BRA .3758 BC3 .8919 FSP 2226

MID-COURSE EXECUTION ACCURACY

SGT 934.0 SGR 689.0 SG3 1335.6
RRT .3742 RRF -.9057 RTF -.3946
SGB 1160.6 R23 -.6779 R13 -.6037
SG1 992.9 SG2 601.0 THA 25.23

ORBIT DETERMINATION ACCURACY

ST 29.1 SR 16.2 SS 61.5
CRT .9978 CRS .6876 CST .6712
LSA 66.1 MSA 22.8 SSA .9
EL1 33.3 EL2 .9 ALF 29.11

LAUNCH DATE APR 26 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 2 1971

DISTANCE 464.859

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.323 GAL -1.77 AZL 92.75 HCA 154.59 SMA 184.71 ECC .18753 INC 2.7495 V1 29.600
RP 209.76 LAP -1.18 LOP 9.75 VP 23.386 GAP 7.51 AZP 87.52 TAL 348.72 TAP 143.32 RCA 150.07 APO 219.35 V2 26.137
RC 107.990 GL -26.96 GP 7.13 ZAL 115.29 ZAP 121.13 ETS 175.40 ZAE 161.85 ETE 155.69 ZAC 107.97 ETC 276.48 LVI -22.76

PLANETOCENTRIC CONIC

C3 11.687 VHL 3.419 DLA -34.94 RAL 347.23 RAD 6638.9 VEL 11.479 PTH 6.53 VHP 3.454 DPA -12.33 RAP 312.13 ECC 1.1923

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 50 58	2266.04	4.34	56.61	202.93	137.43	19 28 44	1266.0	22.26	39.86
60.00	20 33 31	1992.95	11.09	38.43	209.33	129.00	21 6 44	992.9	25.81	18.29
68.57	23 35 3	1458.22	23.88	3.72	217.88	116.29	23 59 21	458.2	32.55	338.26
68.57	23 35 3	1458.22	23.88	3.72	217.88	116.29	23 59 21	458.2	32.55	338.26
68.57	23 35 3	1458.22	23.88	3.72	217.88	116.29	23 59 21	458.2	32.55	338.26
68.57	23 35 3	1458.22	23.88	3.72	217.88	116.29	23 59 21	458.2	32.55	338.26
68.57	23 35 3	1458.22	23.88	3.72	217.88	116.29	23 59 21	458.2	32.55	338.26

DIFFERENTIAL CORRECTIONS

TDE -.3274 TRA -.2723 TC3 -.6742 BAU .1569
RDE -.1778 RRA -.2132 RC3 .7441 FAU .18408
FDE .9761 FRA 6.3567 FC-13.6359 BSP 1460
BDE .3725 BRA .3458 BC3 1.0041 FSP 2342

MID-COURSE EXECUTION ACCURACY

SGT 907.4 SGR 733.3 SG3 1389.1
RRT .2580 RRF -.9242 RTF -.2628
SGB 1166.6 R23 -.7578 R13 -.5297
SG1 950.7 SG2 676.2 THA 25.12

ORBIT DETERMINATION ACCURACY

ST 28.7 SR 16.3 SS 63.2
CRT .9905 CRS .7255 CST .6355
LSA 67.4 MSA 23.3 SSA .8
EL1 32.9 EL2 1.9 ALF 29.47

LAUNCH DATE APR 26 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 4 1971

DISTANCE 469.012

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.311 GAL -1.78 AZL 92.81 HCA 155.83 SMA 184.51 ECC .18668 INC 2.8051 V1 29.600
RP 209.99 LAP -1.15 LOP 10.98 VP 23.340 GAP 7.29 AZP 87.44 TAL 348.65 TAP 144.46 RCA 150.07 APO 218.96 V2 26.111
RC 110.071 GL -27.50 GP 7.59 ZAL 115.29 ZAP 119.09 ETS 175.46 ZAE 160.05 ETE 157.00 ZAC 108.52 ETC 276.32 LVI -22.94

PLANETOCENTRIC CONIC

C3 11.717 VHL 3.423 DLA -35.36 RAL 347.68 RAD 6638.9 VEL 11.480 PTH 6.53 VHP 3.393 DPA -12.09 RAP 311.22 ECC 1.1928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 55 46	2255.52	4.87	56.16	203.65	137.39	19 33 22	1255.5	22.75	39.34
60.00	20 40 39	1976.15	11.81	37.60	210.21	128.82	21 13 35	976.1	26.41	17.28
67.82	23 32 33	1471.59	24.13	4.91	218.51	116.67	23 57 5	471.6	32.93	339.42
67.82	23 32 33	1471.59	24.13	4.91	218.51	116.67	23 57 5	471.6	32.93	339.42
67.82	23 32 33	1471.59	24.13	4.91	218.51	116.67	23 57 5	471.6	32.93	339.42
67.82	23 32 33	1471.59	24.13	4.91	218.51	116.67	23 57 5	471.6	32.93	339.42
67.82	23 32 33	1471.59	24.13	4.91	218.51	116.67	23 57 5	471.6	32.93	339.42

DIFFERENTIAL CORRECTIONS

TDE -.3220 TRA -.2110 TC3 -.7909 BAU .1746
RDE -.1745 RRA -.2382 RC3 .7854 FAU .19012
FDE 1.0071 FRA 6.5845 FC-14.0482 BSP 1402
BDE .3663 BRA .3182 BC3 1.1146 FSP 2433

MID-COURSE EXECUTION ACCURACY

SGT 878.2 SGR 783.2 SG3 1440.6
RRT .1136 RRF -.9397 RTF -.1062
SGB 1176.7 R23 -.8462 R13 -.4085
SG1 896.3 SG2 762.5 THA 22.36

ORBIT DETERMINATION ACCURACY

ST 27.7 SR 16.4 SS 64.5
CRT .9709 CRS .7582 CST .5861
LSA 68.1 MSA 23.6 SSA .8
EL1 32.0 EL2 3.4 ALF 30.16

LAUNCH DATE APR 26 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 6 1971

DISTANCE 473.171

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.300 GAL -1.79 AZL 92.87 HCA 157.05 SMA 184.33 ECC .18592 INC 2.8660 V1 29.600
RP 210.22 LAP -1.12 LOP 12.20 VP 23.296 GAP 7.07 AZP 87.36 TAL 348.56 TAP 145.62 RCA 150.06 APO 218.60 V2 26.085
RC 112.177 GL -28.07 GP 8.10 ZAL 115.30 ZAP 117.02 ETS 175.52 ZAE 158.19 ETE 158.06 ZAC 109.12 ETC 276.15 LVI -23.15

PLANETOCENTRIC CONIC

C3 11.768 VHL 3.431 DLA -35.81 RAL 348.16 RAD 6638.9 VEL 11.483 PTH 6.53 VHP 3.338 DPA -11.81 RAP 310.28 ECC 1.1937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 0 56	2244.76	5.40	55.71	204.45	137.34	19 38 21	1244.8	23.25	38.80
60.00	20 48 28	1958.27	12.57	36.70	211.19	128.61	21 21 6	958.3	27.04	16.19
67.06	23 30 13	1485.27	24.39	6.14	219.21	117.07	23 54 59	485.3	33.33	340.63
67.06	23 30 13	1485.27	24.39	6.14	219.21	117.07	23 54 59	485.3	33.33	340.63
67.06	23 30 13	1485.27	24.39	6.14	219.21	117.07	23 54 59	485.3	33.33	340.63
67.06	23 30 13	1485.27	24.39	6.14	219.21	117.07	23 54 59	485.3	33.33	340.63
67.06	23 30 13	1485.27	24.39	6.14	219.21	117.07	23 54 59	485.3	33.33	340.63

DIFFERENTIAL CORRECTIONS

TDE -.3188 TRA -.1475 TC3 -.9197 BAU .1947
RDE -.1720 RRA -.2655 RC3 .8276 FAU .19548
FDE 1.0463 FRA 6.8078 FC-14.3806 BSP 1410
BDE .3622 BRA .3038 BC3 1.2372 FSP 2524

MID-COURSE EXECUTION ACCURACY

SGT 879.8 SGR 839.0 SG3 1488.9
RRT -.0531 RRF -.9525 RTF -.[illegible]
SGB 1215.7 R23 -.8508 R13 -.4286
SG1 889.7 SG2 828.5 THA 155.89

ORBIT DETERMINATION ACCURACY

ST 27.0 SR 16.6 SS 65.8
CRT .9360 CRS .7918 CST .5303
LSA 69.0 MSA 24.0 SSA .8
EL1 31.3 EL2 5.0 ALF 30.72

LAUNCH DATE APR 26 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 8 1971

DISTANCE 477.335

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.291 GAL -1.80 AZL 92.93 HCA 158.28 SMA 184.17 ECC .18524 INC 2.9333 V1 29.600
RP 210.45 LAP -1.09 LOP 13.43 VP 23.252 GAP 6.85 AZP 87.27 TAL 348.46 TAP 146.74 RCA 150.06 APO 218.29 V2 26.058
RC 114.307 GL -28.68 GP 8.65 ZAL 115.32 ZAP 114.93 ETS 175.60 ZAE 156.26 ETE 158.92 ZAC 109.76 ETC 275.97 LVI -23.39

PLANETOCENTRIC CONIC

C3 11.844 VHL 3.442 DLA -36.28 RAL 348.69 RAD 6639.0 VEL 11.486 PTH 6.53 VHP 3.288 DPA -11.49 RAP 309.30 ECC 1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 6 32	2233.60	5.96	55.24	205.33	137.29	19 43 46	1233.6	23.77	38.24
60.00	20 57 9	1938.87	13.39	35.72	212.31	128.37	21 29 27	938.9	27.72	14.99
66.27	23 28 0	1499.47	24.64	7.42	219.99	117.51	23 53 0	499.5	33.73	341.88
66.27	23 28 0	1499.47	24.64	7.42	219.99	117.51	23 53 0	499.5	33.73	341.88
66.27	23 28 0	1499.47	24.64	7.42	219.99	117.51	23 53 0	499.5	33.73	341.88
66.27	23 28 0	1499.47	24.64	7.42	219.99	117.51	23 53 0	499.5	33.73	341.88
66.27	23 28 0	1499.47	24.64	7.42	219.99	117.51	23 53 0	499.5	33.73	341.88

DIFFERENTIAL CORRECTIONS

TDE -.3155 TRA -.0807 TC3-1.0492 BAU .2161
RDE -.1700 RRA -.2955 RC3 .8731 FAU .20073
FDE 1.0879 FRA 7.0262 FC-14.6723 BSP 1481
BDE .3584 BRA .3064 BC3 1.3650 FSP 2611

MID-COURSE EXECUTION ACCURACY

SGT 908.4 SGR 902.1 SG3 1535.4
RRT -.2240 RRF -.9630 RTF .2430
SGB 1280.2 R23 .5894 R13 -.7620
SG1 1001.6 SG2 797.4 THA 135.88

ORBIT DETERMINATION ACCURACY

ST 26.4 SR 16.9 SS 67.1
CRT .8832 CRS .8245 CST .4659
LSA 69.9 MSA 24.4 SSA .7
EL1 30.6 EL2 6.8 ALF 31.19

LAUNCH DATE APR 26 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 481.503 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.282 GAL -1.81 AZL 93.01 HCA 159.50 SMA 184.03 ECC .18466 INC 3.0080 V1 29.600
RP 210.70 LAP -1.05 LOP 14.65 VP 23.208 GAP 6.64 AZP 87.18 TAL 348.35 TAP 147.65 RCA 150.05 APO 218.01 V2 26.030
RC 116.460 GL -29.33 GP 9.26 ZAL 115.33 ZAP 112.82 ETS 175.69 ZAE 154.28 ETE 159.60 ZAC 110.46 ETC 275.79 LVI -23.67

PLANETOCENTRIC CONIC

C3 11.946 VHL 3.456 DLA -36.78 RAL 349.26 RAD 6639.0 VEL 11.490 PTH 6.54 VHP 3.244 DPA -11.11 RAP 308.30 ECC 1.1966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 12 40	2221.88	6.55	54.74	206.33	137.23	19 49 42	1221.9	24.30	37.64
60.00	21 6 56	1917.34	14.30	34.62	213.56	128.09	21 38 53	917.3	28.46	13.65
65.44	23 25 54	1514.31	24.89	8.76	220.87	117.99	23 51 8	514.3	34.15	343.21
65.44	23 25 54	1514.31	24.89	8.76	220.87	117.99	23 51 8	514.3	34.15	343.21
65.44	23 25 54	1514.31	24.89	8.76	220.87	117.99	23 51 8	514.3	34.15	343.21
65.44	23 25 54	1514.31	24.89	8.76	220.87	117.99	23 51 8	514.3	34.15	343.21
65.44	23 25 54	1514.31	24.89	8.76	220.87	117.99	23 51 8	514.3	34.15	343.21

DIFFERENTIAL CORRECTIONS

TDE -.3122 TRA -.0101 TC3-1.1811 BAU .2393
RDE -.1687 RRA -.3283 RC3 .9217 FAU .20564
FDE 1.1287 FRA 7.2306 FC-14.9030 BSP 1619
BDE .3548 BRA .3285 BC3 1.4982 FSP 2689

MID-COURSE EXECUTION ACCURACY

SGT 966.9 SGR 972.5 SG3 1578.0
RRT -.3842 RRF -.9714 RTF .4038
SGB 1371.4 R23 .5057 R13 -.8301
SG1 1140.9 SG2 760.9 THA 134.57

ORBIT DETERMINATION ACCURACY

ST 25.9 SR 17.3 SS 68.3
CRT .8104 CRS .8551 CST .3916
LSA 70.8 MSA 24.8 SSA .7
EL1 29.9 EL2 8.8 ALF 31.50

LAUNCH DATE APR 26 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 485.675 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.274 GAL -1.82 AZL 93.09 HCA 160.72 SMA 183.91 ECC .18415 INC 3.0916 V1 29.600
RP 210.95 LAP -1.02 LOP 15.87 VP 23.166 GAP 6.44 AZP 87.08 TAL 348.22 TAP 148.94 RCA 150.04 APO 217.77 V2 26.001
RC 118.637 GL -30.04 GP 9.93 ZAL 115.34 ZAP 110.69 ETS 175.81 ZAE 152.25 ETE 160.13 ZAC 111.22 ETC 275.60 LVI -24.00

PLANETOCENTRIC CONIC

C3 12.077 VHL 3.475 DLA -37.32 RAL 349.89 RAD 6639.1 VEL 11.496 PTH 6.54 VHP 3.205 DPA -10.67 RAP 307.26 ECC 1.1988

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 19 27	2209.35	7.17	54.21	207.44	137.16	19 56 17	1209.4	24.88	37.00
60.00	21 18 12	1892.75	15.33	33.36	215.03	127.74	21 49 44	892.7	29.28	12.08
64.57	23 23 52	1529.97	25.15	10.19	221.85	118.52	23 49 22	530.0	34.60	344.62
64.57	23 23 52	1529.97	25.15	10.19	221.85	118.52	23 49 22	530.0	34.60	344.62
64.57	23 23 52	1529.97	25.15	10.19	221.85	118.52	23 49 22	530.0	34.60	344.62
64.57	23 23 52	1529.97	25.15	10.19	221.85	118.52	23 49 22	530.0	34.60	344.62
64.57	23 23 52	1529.97	25.15	10.19	221.85	118.52	23 49 22	530.0	34.60	344.62

DIFFERENTIAL CORRECTIONS

TDE -.3091 TRA .0643 TC3-1.3140 BAU .2639
RDE -.1682 RRA -.3644 RC3 .9724 FAU .20989
FDE 1.1727 FRA 7.4209 FC-15.0463 BSP 1821
BDE .3519 BRA .3700 BC3 1.6346 FSP 2781

MID-COURSE EXECUTION ACCURACY

SGT 1054.3 SGR 1050.8 SG3 1615.9
RRT -.5204 RRF -.9782 RTF .5383
SGB 1488.5 R23 .4515 R13 -.8685
SG1 1297.8 SG2 728.9 THA 135.18

ORBIT DETERMINATION ACCURACY

ST 25.6 SR 17.9 SS 69.4
CRT .7173 CRS .8832 CST .3087
LSA 71.8 MSA 25.3 SSA .6
EL1 29.3 EL2 10.9 ALF 31.57

LAUNCH DATE APR 26 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 489.850 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.268 GAL -1.84 AZL 93.19 HCA 161.94 SMA 183.80 ECC .18373 INC 3.1860 V1 29.600
RP 211.20 LAP -.99 LOP 17.09 VP 23.123 GAP 6.23 AZP 86.97 TAL 348.08 TAP 150.01 RCA 150.03 APO 217.57 V2 25.972
RC 120.836 GL -30.82 GP 10.68 ZAL 115.34 ZAP 108.56 ETS 175.94 ZAE 150.17 ETE 160.51 ZAC 112.06 ETC 275.41 LVI -24.38

PLANETOCENTRIC CONIC

C3 12.241 VHL 3.499 DLA -37.90 RAL 350.59 RAD 6639.2 VEL 11.503 PTH 6.55 VHP 3.172 DPA -10.15 RAP 306.20 ECC 1.2015

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 27 3	2195.75	7.85	53.63	208.71	137.08	20 3 39	1195.7	25.49	36.29
60.00	21 31 31	1863.65	16.54	31.85	216.74	127.29	22 2 35	863.7	30.23	10.20
63.64	23 21 55	1546.66	25.42	11.71	222.95	119.12	23 47 41	546.7	35.08	346.15
63.64	23 21 55	1546.66	25.42	11.71	222.95	119.12	23 47 41	546.7	35.08	346.15
63.64	23 21 55	1546.66	25.42	11.71	222.95	119.12	23 47 41	546.7	35.08	346.15
63.64	23 21 55	1546.66	25.42	11.71	222.95	119.12	23 47 41	546.7	35.08	346.15
63.64	23 21 55	1546.66	25.42	11.71	222.95	119.12	23 47 41	546.7	35.08	346.15

DIFFERENTIAL CORRECTIONS

TDE -.3068 TRA .1418 TC3-1.4468 BAU .2901
RDE -.1693 RRA -.4050 RC3 1.0250 FAU .21334
FDE 1.2293 FRA 7.6066 FC-15.0883 BSP 2083
BDE .3504 BRA .4291 BC3 1.7729 FSP 2833

MID-COURSE EXECUTION ACCURACY

SGT 1167.7 SGR 1139.3 SG3 1650.1
RRT -.6270 RRF -.9836 RTF .5.22
SGB 1631.4 R23 .4091 R13 -.8951
SG1 1471.6 SG2 704.2 THA 136.13

ORBIT DETERMINATION ACCURACY

ST 25.5 SR 18.8 SS 70.7
CRT .6066 CRS .9090 CST .2219
LSA 73.0 MSA 25.8 SSA .6
EL1 28.8 EL2 13.2 ALF 31.35

LAUNCH DATE APR 26 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 494.028 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.262 GAL -1.86 AZL 93.29 HCA 163.15 SMA 183.70 ECC .18338 INC 3.2930 V1 29.600
RP 211.46 LAP -.95 LOP 18.30 VP 23.082 GAP 6.03 AZP 86.85 TAL 347.92 TAP 151.07 RCA 150.02 APO 217.39 V2 25.942
RC 123.058 GL -31.67 GP 11.51 ZAL 115.32 ZAP 106.42 ETS 176.10 ZAE 148.04 ETE 160.77 ZAC 112.98 ETC 275.22 LVI -24.85

PLANETOCENTRIC CONIC

C3 12.445 VHL 3.528 DLA -38.55 RAL 351.36 RAD 6639.3 VEL 11.512 PTH 6.56 VHP 3.145 DPA -9.54 RAP 305.12 ECC 1.2048

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 35 39	2180.67	8.60	52.99	210.16	136.98	20 11 59	1180.7	26.17	35.50
60.00	21 47 59	1827.32	18.03	29.93	218.80	126.68	22 18 26	827.3	31.36	7.80
62.63	23 20 1	1564.55	25.70	13.36	224.20	119.79	23 46 6	564.5	35.60	347.80
62.63	23 20 1	1564.55	25.70	13.36	224.20	119.79	23 46 6	564.5	35.60	347.80
62.63	23 20 1	1564.55	25.70	13.36	224.20	119.79	23 46 6	564.5	35.60	347.80
62.63	23 20 1	1564.55	25.70	13.36	224.20	119.79	23 46 6	564.5	35.60	347.80
62.63	23 20 1	1564.55	25.70	13.36	224.20	119.79	23 46 6	564.5	35.60	347.80

DIFFERENTIAL CORRECTIONS

TDE -.3043 TRA .2235 TC3-1.5746 BAU .3180
RDE -.1708 RRA -.4493 RC3 1.0834 FAU .21675
FDE 1.2738 FRA 7.7550 FC-15.0789 BSP 2386
BDE .3489 BRA .5018 BC3 1.9113 FSP 2879

MID-COURSE EXECUTION ACCURACY

SGT 1301.5 SGR 1237.7 SG3 1677.3
RRT -.7109 RRF -.9878 RTF .7232
SGB 1796.0 R23 .3709 R13 -.9160
SG1 1661.6 SG2 681.8 THA 137.02

ORBIT DETERMINATION ACCURACY

ST 25.7 SR 19.7 SS 71.5
CRT .4793 CRS .9303 CST .1252
LSA 74.0 MSA 26.3 SSA .5
EL1 28.4 EL2 15.7 ALF 30.39

LAUNCH DATE APR 26 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 18 1971

DISTANCE 498.208

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.53 LAL -.00 LOL 215.13 VL 32.257 GAL -1.89 AZL 93.42 HCA 164.36 SMA 183.62 ECC .18310 INC 3.4156 V1 29.600
RP 211.73 LAP -.92 LOP 19.51 VP 23.040 GAP 5.83 AZP 86.71 TAL 347.75 TAP 152.11 RCA 150.00 APO 217.24 V2 25.911
RC 125.302 GL -32.62 GP 12.46 ZAL 115.29 ZAP 104.29 ETS 176.28 ZAE 145.87 ETE 160.90 ZAC 114.01 ETC 275.03 LVI -25.40

PLANETOCENTRIC CONIC

C3 12.695 VHL 3.563 DLA -39.27 RAL 352.23 RAD 6639.4 VEL 11.522 PTH 6.57 VHP 3.125 DPA -8.82 RAP 304.02 ECC 1.2089

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 45 32	2163.61	9.45	52.26	211.84	136.85	20 21 36	1163.6	26.94	34.59
60.00	22 9 55	1777.56	20.03	27.25	221.40	125.73	22 39 32	777.6	32.84	4.40
61.53	23 18 12	1583.88	25.98	15.16	225.63	120.55	23 44 36	583.9	36.17	349.61
61.53	23 18 12	1583.88	25.98	15.16	225.63	120.55	23 44 36	583.9	36.17	349.61
61.53	23 18 12	1583.88	25.98	15.16	225.63	120.55	23 44 36	583.9	36.17	349.61
61.53	23 18 12	1583.88	25.98	15.16	225.63	120.55	23 44 36	583.9	36.17	349.61
61.53	23 18 12	1583.88	25.98	15.16	225.63	120.55	23 44 36	583.9	36.17	349.61

DIFFERENTIAL CORRECTIONS

TDE -.3032 TRA .3078 TC3-1.7010 BAU .3480
RDE -.1737 RRA -.4989 RC3 1.1448 FAU .21932
FDE 1.3205 FRA 7.8787 FC-14.9562 BSP 2723
BDE .3494 BRA .5863 BC3 2.0504 FSP 2915

MID-COURSE EXECUTION ACCURACY

SGT 1454.6 SGR 1348.2 SG3 1697.4
RRT -.7727 RRF -.9911 RTF .7821
SGB 1983.3 R23 .3391 R13 -.9316
SG1 1868.0 SG2 666.4 THA 137.81

ORBIT DETERMINATION ACCURACY

ST 26.3 SR 20.9 SS 72.3
CRT .3441 CRS .9482 CST .0290
LSA 75.1 MSA 27.0 SSA .5
EL1 28.1 EL2 18.4 ALF 28.20

LAUNCH DATE APR 26 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 20 1971

DISTANCE 502.390

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.53 LAL -.00 LOL 215.13 VL 32.253 GAL -1.91 AZL 93.56 HCA 165.57 SMA 183.56 ECC .18289 INC 3.5580 V1 29.600
RP 212.01 LAP -.89 LOP 20.72 VP 23.000 GAP 5.64 AZP 86.55 TAL 347.57 TAP 153.13 RCA 149.99 APO 217.13 V2 25.880
RC 127.566 GL -33.70 GP 13.53 ZAL 115.22 ZAP 102.16 ETS 176.50 ZAE 143.65 ETE 160.91 ZAC 115.16 ETC 274.65 LVI -26.07

PLANETOCENTRIC CONIC

C3 13.004 VHL 3.606 DLA -40.09 RAL 353.20 RAD 6639.6 VEL 11.536 PTH 6.58 VHP 3.112 DPA -7.96 RAP 302.91 ECC 1.2140

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 57 8	2143.87	10.43	51.41	213.81	136.69	20 32 52	1143.9	27.81	33.53
60.00	22 47 15	1687.19	23.53	22.18	225.32	123.71	23 15 22	687.2	35.23	357.94
60.31	23 16 28	1605.00	26.29	17.14	227.26	121.43	23 43 13	605.0	36.80	351.63
60.31	23 16 28	1605.00	26.29	17.14	227.26	121.43	23 43 13	605.0	36.80	351.63
60.31	23 16 28	1605.00	26.29	17.14	227.26	121.43	23 43 13	605.0	36.80	351.63
60.31	23 16 28	1605.00	26.29	17.14	227.26	121.43	23 43 13	605.0	36.80	351.63
60.31	23 16 28	1605.00	26.29	17.14	227.26	121.43	23 43 13	605.0	36.80	351.63

DIFFERENTIAL CORRECTIONS

TDE -.3028 TRA .3961 TC3-1.8192 BAU .3797
RDE -.1796 RRA -.5553 RC3 1.2081 FAU .22071
FDE 1.3843 FRA 7.9754 FC-14.6937 BSP 3103
BDE .3520 BRA .6821 BC3 2.1838 FSP 2941

MID-COURSE EXECUTION ACCURACY

SGT 1621.7 SGR 1473.2 SG3 1709.5
RRT -.8182 RRF -.9936 RTF .8251
SGB 2191.0 R23 .3113 R13 -.9438
SG1 2090.1 SG2 657.2 THA 138.35

ORBIT DETERMINATION ACCURACY

ST 27.1 SR 22.5 SS 73.2
CRT .2088 CRS .9631 CST -.0613
LSA 76.3 MSA 27.7 SSA .4
EL1 28.1 EL2 21.2 ALF 23.91

LAUNCH DATE APR 26 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 22 1971

DISTANCE 506.574

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.53 LAL -.00 LOL 215.13 VL 32.250 GAL -1.94 AZL 93.73 HCA 166.77 SMA 183.50 ECC .18274 INC 3.7254 V1 29.600
RP 212.29 LAP -.85 LOP 21.93 VP 22.959 GAP 5.45 AZP 86.37 TAL 347.37 TAP 154.14 RCA 149.97 APO 217.04 V2 25.848
RC 129.850 GL -34.92 GP 14.77 ZAL 115.11 ZAP 100.05 ETS 176.77 ZAE 141.38 ETE 160.80 ZAC 116.47 ETC 274.67 LVI -26.89

PLANETOCENTRIC CONIC

C3 13.387 VHL 3.659 DLA -41.02 RAL 354.31 RAD 6639.7 VEL 11.552 PTH 6.60 VHP 3.106 DPA -6.94 RAP 301.77 ECC 1.2203

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 11 1	2120.36	11.59	50.38	216.17	136.48	20 46 22	1120.4	28.84	32.23
58.95	23 14 48	1628.35	26.60	19.35	229.15	122.46	23 41 56	628.3	37.49	353.90
58.95	23 14 48	1628.35	26.60	19.35	229.15	122.46	23 41 56	628.3	37.49	353.90
58.95	23 14 48	1628.35	26.60	19.35	229.15	122.46	23 41 56	628.3	37.49	353.90
58.95	23 14 48	1628.35	26.60	19.35	229.15	122.46	23 41 56	628.3	37.49	353.90
58.95	23 14 48	1628.35	26.60	19.35	229.15	122.46	23 41 56	628.3	37.49	353.90
58.95	23 14 48	1628.35	26.60	19.35	229.15	122.46	23 41 56	628.3	37.49	353.90

DIFFERENTIAL CORRECTIONS

TDE -.3025 TRA .4887 TC3-1.9244 BAU .4132
RDE -.1890 RRA -.6198 RC3 1.2759 FAU .22131
FDE 1.4492 FRA 8.0386 FC-14.3118 BSP 3518
BDE .3561 BRA .7893 BC3 2.3090 FSP 2950

MID-COURSE EXECUTION ACCURACY

SGT 1799.0 SGR 1616.6 SG3 1713.3
RRT -.8529 RRF -.9955 RTF .8377
SGB 2418.7 R23 .2851 R13 -.9539
SG1 2329.2 SG2 652.0 THA 138.58

ORBIT DETERMINATION ACCURACY

ST 28.2 SR 24.3 SS 73.9
CRT .0757 CRS .9747 CST -.1485
LSA 77.7 MSA 28.4 SSA .4
EL1 28.4 EL2 24.1 ALF 13.39

LAUNCH DATE APR 26 1971 FLIGHT TIME 212.00 ARRIVAL DATE NOV 24 1971

DISTANCE 510.758

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.53 LAL -.00 LOL 215.13 VL 32.247 GAL -1.97 AZL 93.93 HCA 167.97 SMA 183.46 ECC .18266 INC 3.9251 V1 29.600
RP 212.57 LAP -.82 LOP 23.13 VP 22.919 GAP 5.26 AZP 86.16 TAL 347.16 TAP 155.14 RCA 149.95 APO 216.97 V2 25.815
RC 132.153 GL -36.33 GP 16.21 ZAL 114.93 ZAP 97.96 ETS 177.08 ZAE 139.05 ETE 160.54 ZAC 117.99 ETC 274.50 LVI -27.89

PLANETOCENTRIC CONIC

C3 13.868 VHL 3.724 DLA -42.10 RAL 355.60 RAD 6640.0 VEL 11.573 PTH 6.62 VHP 3.110 DPA -5.70 RAP 300.62 ECC 1.2282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 28 10	2091.40	13.02	49.11	219.07	136.18	21 3 1	1091.4	30.08	30.60
57.41	23 13 19	1654.29	26.93	21.84	231.38	123.68	23 40 53	654.3	38.27	356.48
57.41	23 13 19	1654.29	26.93	21.84	231.38	123.68	23 40 53	654.3	38.27	356.48
57.41	23 13 19	1654.29	26.93	21.84	231.38	123.68	23 40 53	654.3	38.27	356.48
57.41	23 13 19	1654.29	26.93	21.84	231.38	123.68	23 40 53	654.3	38.27	356.48
57.41	23 13 19	1654.29	26.93	21.84	231.38	123.68	23 40 53	654.3	38.27	356.48
57.41	23 13 19	1654.29	26.93	21.84	231.38	123.68	23 40 53	654.3	38.27	356.48

DIFFERENTIAL CORRECTIONS

TDE -.3029 TRA .5854 TC3-2.0145 BAU .4492
RDE -.2010 RRA -.6936 RC3 1.3460 FAU .22056
FDE 1.5304 FRA 8.0481 FC-13.7688 BSP 3968
BDE .3635 BRA .9077 BC3 2.4228 FSP 2939

MID-COURSE EXECUTION ACCURACY

SGT 1985.5 SGR 1780.3 SG3 1704.6
RRT -.8787 RRF -.9969 RTF .8820
SGB 2666.8 R23 .2617 R13 -.9620
SG1 2585.7 SG2 652.5 THA 138.54

ORBIT DETERMINATION ACCURACY

ST 29.7 SR 26.6 SS 74.5
CRT -.0456 CRS .9835 CST -.2251
LSA 79.2 MSA 29.3 SSA .3
EL1 29.8 EL2 26.5 ALF 168.71

LAUNCH DATE APR 26 1971 FLIGHT TIME 214.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 514.943 EARTH TO MARS

RL 180.53 LAL -.00 LOL 215.13 VL 32.246 GAL -2.01 AZL 94.17 HCA 169.17 SMA 183.43 ECC .18264 INC 4.1679 V1 29.600
RP 212.86 LAP -.78 LOP 24.32 VP 22.879 GAP 5.07 AZP 85.91 TAL 346.94 TAP 156.11 RCA 149.93 APO 216.94 V2 25.782
RC 134.475 GL -37.99 GP 17.91 ZAL 114.67 ZAP 95.90 ETS 177.46 ZAE 136.65 ETE 160.13 ZAC 119.76 ETC 274.34 LVI -29.13

PLANETOCENTRIC CONIC

C3 14.464 VHL 3.806 DLA -43.37 RAL 357.12 RAD 6640.3 VEL 11.599 PTH 6.64 VHP 3.126 DPA -4.20 RAP 299.45 ECC 1.2384

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 50 13	2053.94	14.85	47.44	222.77	135.74	21 24 27	1053.9	31.66	28.42
55.64	23 12 8	1683.45	27.26	24.68	234.05	125.13	23 40 12	683.5	39.15	359.47
55.64	23 12 8	1683.45	27.26	24.68	234.05	125.13	23 40 12	683.5	39.15	359.47
55.64	23 12 8	1683.45	27.26	24.68	234.05	125.13	23 40 12	683.5	39.15	359.47
55.64	23 12 8	1683.45	27.26	24.68	234.05	125.13	23 40 12	683.5	39.15	359.47
55.64	23 12 8	1683.45	27.26	24.68	234.05	125.13	23 40 12	683.5	39.15	359.47
55.64	23 12 8	1683.45	27.26	24.68	234.05	125.13	23 40 12	683.5	39.15	359.47

DIFFERENTIAL CORRECTIONS
TDE -.3024 TRA .6876 TC3-2.0815 BAU .4877
RDE -.2209 RRA -.7811 RC3 1.4177 FAU .21826
FDE 1.6318 FRA 8.0117 FC-13.0454 BSP 4468
BDE .3745 BRA 1.0406 BC3 2.5184 FSP 2909

MID-COURSE EXECUTION ACCURACY
SGT 2178.3 SGR 1972.7 SG3 1684.0
RRT -.8986 RRF -.9979 RTF .9006
SGB 2938.8 R23 .2395 R13 -.9688
SG1 2864.1 SG2 658.2 THA 138.15

ORBIT DETERMINATION ACCURACY
ST 31.3 SR 29.5 SS 75.1
CRT -.1556 CRS .9899 CST -.2936
LSA 81.1 MSA 30.1 SSA .3
EL1 32.8 EL2 27.7 ALF 145.68

LAUNCH DATE APR 26 1971 FLIGHT TIME 216.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 519.128 EARTH TO MARS

RL 180.53 LAL -.00 LOL 215.13 VL 32.244 GAL -2.04 AZL 94.47 HCA 170.36 SMA 183.42 ECC .18268 INC 4.4688 V1 29.600
RP 213.16 LAP -.75 LOP 25.52 VP 22.840 GAP 4.89 AZP 85.59 TAL 346.71 TAP 157.07 RCA 149.91 APO 216.92 V2 25.749
RC 136.814 GL -39.95 GP 19.96 ZAL 114.29 ZAP 93.89 ETS 177.93 ZAE 134.16 ETE 159.54 ZAC 121.87 ETC 274.20 LVI -30.68

PLANETOCENTRIC CONIC

C3 15.294 VHL 3.911 DLA -44.87 RAL 358.96 RAD 6640.7 VEL 11.634 PTH 6.67 VHP 3.157 DPA -2.34 RAP 298.25 ECC 1.2517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 20 35	2001.34	17.40	45.04	227.77	135.01	21 53 56	1001.3	33.80	25.22
53.59	23 11 29	1716.71	27.58	27.96	237.29	126.91	23 40 6	716.7	40.13	2.98
53.59	23 11 29	1716.71	27.58	27.96	237.29	126.91	23 40 6	716.7	40.13	2.98
53.59	23 11 29	1716.71	27.58	27.96	237.29	126.91	23 40 6	716.7	40.13	2.98
53.59	23 11 29	1716.71	27.58	27.96	237.29	126.91	23 40 6	716.7	40.13	2.98
53.59	23 11 29	1716.71	27.58	27.96	237.29	126.91	23 40 6	716.7	40.13	2.98
53.59	23 11 29	1716.71	27.58	27.96	237.29	126.91	23 40 6	716.7	40.13	2.98

DIFFERENTIAL CORRECTIONS
TDE -.3028 TRA .7931 TC3-2.1261 BAU .5306
RDE -.2513 RRA -.8843 RC3 1.4885 FAU .21391
FDE 1.7595 FRA 7.8944 FC-12.1091 BSP 5001
BDE .3935 BRA 1.1878 BC3 2.5954 FSP 2851

MID-COURSE EXECUTION ACCURACY
SGT 2377.0 SGR 2198.2 SG3 1645.3
RRT -.9128 RRF -.9986 RTF .9137
SGB 3237.6 R23 .2203 R13 -.9740
SG1 3166.7 SG2 673.9 THA 137.45

ORBIT DETERMINATION ACCURACY
ST 33.2 SR 33.1 SS 75.5
CRT -.2461 CRS .9943 CST -.3475
LSA 83.3 MSA 31.2 SSA .2
EL1 37.0 EL2 28.8 ALF 135.48

LAUNCH DATE APR 26 1971 FLIGHT TIME 218.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 523.313 EARTH TO MARS

RL 180.53 LAL -.00 LOL 215.13 VL 32.244 GAL -2.08 AZL 94.85 HCA 171.55 SMA 183.41 ECC .18277 INC 4.8531 V1 29.600
RP 213.46 LAP -.71 LOP 26.71 VP 22.800 GAP 4.71 AZP 85.20 TAL 346.47 TAP 158.02 RCA 149.89 APO 216.93 V2 25.714
RC 139.171 GL -42.32 GP 22.47 ZAL 113.74 ZAP 91.95 ETS 178.50 ZAE 131.54 ETE 158.74 ZAC 124.43 ETC 274.10 LVI -32.65

PLANETOCENTRIC CONIC

C3 16.395 VHL 4.049 DLA -46.67 RAL 1.25 RAD 6641.2 VEL 11.681 PTH 6.72 VHP 3.209 DPA -.02 RAP 297.02 ECC 1.2698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	22 10 20	1909.57	21.76	40.67	235.49	133.42	22 42 9	909.6	37.28	19.23
51.19	23 11 46	1755.23	27.84	31.78	241.35	129.10	23 41 1	755.2	41.22	7.19
51.19	23 11 46	1755.23	27.84	31.78	241.35	129.10	23 41 1	755.2	41.22	7.19
51.19	23 11 46	1755.23	27.84	31.78	241.35	129.10	23 41 1	755.2	41.22	7.19
51.19	23 11 46	1755.23	27.84	31.78	241.35	129.10	23 41 1	755.2	41.22	7.19
51.19	23 11 46	1755.23	27.84	31.78	241.35	129.10	23 41 1	755.2	41.22	7.19
51.19	23 11 46	1755.23	27.84	31.78	241.35	129.10	23 41 1	755.2	41.22	7.19

DIFFERENTIAL CORRECTIONS
TDE -.2976 TRA .9069 TC3-2.1287 BAU .5779
RDE -.2995 RRA-1.0078 RC3 1.5560 FAU .20721
FDE 1.9279 FRA 7.6679 FC-10.9416 BSP 5603
BDE .4222 BRA 1.3558 BC3 2.6367 FSP 2749

MID-COURSE EXECUTION ACCURACY
SGT 2578.1 SGR 2466.9 SG3 1583.6
RRT -.9245 RRF -.9992 RTF .9247
SGB 3568.2 R23 .2005 R13 -.9798
SG1 3500.4 SG2 692.4 THA 136.36

ORBIT DETERMINATION ACCURACY
ST 35.2 SR 37.7 SS 76.0
CRT -.3263 CRS .9972 CST -.3961
LSA 86.0 MSA 32.1 SSA .2
EL1 42.1 EL2 29.8 ALF 128.89

LAUNCH DATE APR 26 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 527.496 EARTH TO MARS

RL 180.53 LAL -.00 LOL 215.13 VL 32.244 GAL -2.12 AZL 95.36 HCA 172.74 SMA 183.41 ECC .18292 INC 5.3606 V1 29.600
RP 213.77 LAP -.68 LOP 27.90 VP 22.762 GAP 4.53 AZP 84.68 TAL 346.21 TAP 158.95 RCA 149.86 APO 216.96 V2 25.680
RC 141.545 GL -45.25 GP 25.60 ZAL 112.94 ZAP 90.10 ETS 179.22 ZAE 128.73 ETE 157.67 ZAC 127.61 ETC 274.04 LVI -35.17

PLANETOCENTRIC CONIC

C3 17.969 VHL 4.239 DLA -48.86 RAL 4.22 RAD 6641.9 VEL 11.747 PTH 6.78 VHP 3.295 DPA 2.92 RAP 295.74 ECC 1.2957

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.34	23 13 46	1800.76	27.96	36.32	246.58	131.85	23 43 47	800.8	42.37	12.35
48.34	23 13 46	1800.76	27.96	36.32	246.58	131.85	23 43 47	800.8	42.37	12.35
48.34	23 13 46	1800.76	27.96	36.32	246.58	131.85	23 43 47	800.8	42.37	12.35
48.34	23 13 46	1800.76	27.96	36.32	246.58	131.85	23 43 47	800.8	42.37	12.35
48.34	23 13 46	1800.76	27.96	36.32	246.58	131.85	23 43 47	800.8	42.37	12.35
48.34	23 13 46	1800.76	27.96	36.32	246.58	131.85	23 43 47	800.8	42.37	12.35
48.34	23 13 46	1800.76	27.96	36.32	246.58	131.85	23 43 47	800.8	42.37	12.35

DIFFERENTIAL CORRECTIONS
TDE -.2820 TRA 1.0295 TC3-2.0812 BAU .6321
RDE -.3816 RRA-1.1598 RC3 1.6102 FAU .19691
FDE 2.1684 FRA 7.3016 FC3-9.4870 BSP 6291
BDE .4745 BRA 1.5508 BC3 2.6314 FSP 2601

MID-COURSE EXECUTION ACCURACY
SGT 2780.6 SGR 2794.1 SG3 1492.2
RRT -.9334 RRF -.9995 RTF .9329
SGB 3942.0 R23 .1816 R13 -.9829
SG1 3875.7 SG2 719.5 THA 134.85

ORBIT DETERMINATION ACCURACY
ST 37.1 SR 44.1 SS 76.5
CRT -.3957 CRS .9989 CST -.4389
LSA 90.0 MSA 33.0 SSA .2
EL1 48.7 EL2 30.9 ALF 123.13

LAUNCH DATE APR 26 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 4 1971

DISTANCE 531,678

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	32.245	GAL	-2.16	AZL	96.06	HCA	173.92	SMA	183.42	ECC	.18312	INC	6.0621
RP	214.08	LAP	-.64	LOP	29.08	VP	22.723	GAP	4.35	AZP	83.97	TAL	345.95	TAP	159.87	RCA	149.84	APO	217.01
RC	143.936	GL	-48.94	GP	29.59	ZAL	111.80	ZAP	88.41	ETS	180.12	ZAE	125.62	ETE	156.29	ZAC	131.65	ETC	274.06

V1	29.600																		
V2	25.645																		
LVI	-38.46																		

PLANETOCENTRIC CONIC

C3	20.373	VHL	4.514	DLA	-51.54	RAL	8.27	RAD	6643.0	VEL	11.848	PTH	6.86	VHP	3.436	DPA	6.74	RAP	294.37
ECC	1.3353																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.93	23 18 59	1856.12	27.75	41.75	253.55	135.35	23 49 55	856.1	43.48	18.84
44.93	23 18 59	1856.12	27.75	41.75	253.55	135.35	23 49 55	856.1	43.48	18.84
44.93	23 18 59	1856.12	27.75	41.75	253.55	135.35	23 49 55	856.1	43.48	18.84
44.93	23 18 59	1856.12	27.75	41.75	253.55	135.35	23 49 55	856.1	43.48	18.84
44.93	23 18 59	1856.12	27.75	41.75	253.55	135.35	23 49 55	856.1	43.48	18.84
44.93	23 18 59	1856.12	27.75	41.75	253.55	135.35	23 49 55	856.1	43.48	18.84
44.93	23 18 59	1856.12	27.75	41.75	253.55	135.35	23 49 55	856.1	43.48	18.84

DIFFERENTIAL CORRECTIONS

TDE	-.2452	TRA	1.1585	TC3	-1.9776	BAU	.7014	SGT	2979.1	SGR	3190.1
RDE	-.5260	RRA	-1.3431	RC3	1.6494	FAU	.18316	RRT	-.9398	RRF	-.9997
FDE	2.4914	FRA	6.6952	FC3	-7.7834	BSP	6988	SGB	4364.9	R23	.1637
BDE	.5803	BRA	1.7737	BC3	2.5752	FSP	2348	SG1	4299.0	SG2	755.1

MID-COURSE EXECUTION ACCURACY

SGT	2979.1	SGR	3190.1	SG3	1355.4						
RRT	-.9398	RRF	-.9997	RTF	.9387						
SGB	4364.9	R23	.1637	R13	-.9862						
SG1	4299.0	SG2	755.1	THA	132.92						

ORBIT DETERMINATION ACCURACY

ST	38.8	SR	53.0	SS	76.9
CRT	-.4591	CRS	.9997	CST	-.4609
LSA	95.5	MSA	33.5	SSA	.1
EL1	97.5	EL2	31.8	ALF	117.71

LAUNCH DATE APR 26 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 6 1971

DISTANCE 535,858

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	32.246	GAL	-2.21	AZL	97.10	HCA	175.10	SMA	183.44	ECC	.18336	INC	7.0971
RP	214.39	LAP	-.60	LOP	30.26	VP	22.684	GAP	4.18	AZP	82.93	TAL	345.67	TAP	160.77	RCA	149.81	APO	217.08
RC	146.344	GL	-53.70	GP	34.79	ZAL	110.14	ZAP	86.96	ETS	181.26	ZAE	122.08	ETE	154.53	ZAC	136.88	ETC	274.23

V1	29.600																		
V2	25.609																		
LVI	-42.77																		

PLANETOCENTRIC CONIC

C3	24.408	VHL	4.940	DLA	-54.82	RAL	14.16	RAD	6644.7	VEL	12.016	PTH	7.01	VHP	3.680	DPA	11.76	RAP	292.89
ECC	1.4017																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.87	23 30 32	1926.37	26.82	48.28	263.27	139.79	24 2 38	926.4	44.18	27.17
40.87	23 30 32	1926.37	26.82	48.28	263.27	139.79	24 2 38	926.4	44.18	27.17
40.87	23 30 32	1926.37	26.82	48.28	263.27	139.79	24 2 38	926.4	44.18	27.17
40.87	23 30 32	1926.37	26.82	48.28	263.27	139.79	24 2 38	926.4	44.18	27.17
40.87	23 30 32	1926.37	26.82	48.28	263.27	139.79	24 2 38	926.4	44.18	27.17
40.87	23 30 32	1926.37	26.82	48.28	263.27	139.79	24 2 38	926.4	44.18	27.17
40.87	23 30 32	1926.37	26.82	48.28	263.27	139.79	24 2 38	926.4	44.18	27.17

DIFFERENTIAL CORRECTIONS

TDE	-.1394	TRA	1.3048	TC3	-1.7857	BAU	.7905	SGT	3168.0	SGR	3675.2
RDE	-.8209	RRA	-1.5699	RC3	1.6369	FAU	.16234	RRT	-.9446	RRF	-.9999
FDE	2.9804	FRA	5.7745	FC3	-5.7579	BSP	7789	SGB	4852.2	R23	.1463
BDE	.8327	BRA	2.0414	BC3	2.4225	FSP	1992	SG1	4786.1	SG2	798.4

MID-COURSE EXECUTION ACCURACY

SGT	3168.0	SGR	3675.2	SG3	1157.2						
RRT	-.9446	RRF	-.9999	RTF	.9427						
SGB	4852.2	R23	.1463	R13	-.9891						
SG1	4786.1	SG2	798.4	THA	130.52						

ORBIT DETERMINATION ACCURACY

ST	40.3	SR	67.2	SS	78.1
CRT	-.5495	CRS	1.0000	CST	-.5549
LSA	105.7	MSA	32.8	SSA	.1
EL1	71.7	EL2	31.5	ALF	112.91

LAUNCH DATE APR 26 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 8 1971

DISTANCE 540,032

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	32.248	GAL	-2.25	AZL	98.78	HCA	176.27	SMA	183.47	ECC	.18365	INC	8.7778
RP	214.72	LAP	-.57	LOP	31.44	VP	22.646	GAP	4.00	AZP	81.24	TAL	345.40	TAP	161.67	RCA	149.78	APO	217.17
RC	148.770	GL	-60.03	GP	41.65	ZAL	107.71	ZAP	85.94	ETS	182.66	ZAE	117.87	ETE	152.35	ZAC	143.75	ETC	274.73

V1	29.600										
V2	25.573										
LVI	-48.44										

PLANETOCENTRIC CONIC

C3	32.226	VHL	5.677	DLA	-58.66	RAL	23.55	RAD	6647.9	VEL	12.335	PTH	7.26	VHP	4.143	DPA	18.45	RAP	291.23
ECC	1.5304																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.20	23 55 21	2021.11	24.29	55.98	277.59	145.21	24 29 2	1021.1	43.57	37.80
36.20	23 55 21	2021.11	24.29	55.98	277.59	145.21	24 29 2	1021.1	43.57	37.80
36.20	23 55 21	2021.11	24.29	55.98	277.59	145.21	24 29 2	1021.1	43.57	37.80
36.20	23 55 21	2021.11	24.29	55.98	277.59	145.21	24 29 2	1021.1	43.57	37.80
36.20	23 55 21	2021.11	24.29	55.98	277.59	145.21	24 29 2	1021.1	43.57	37.80
36.20	23 55 21	2021.11	24.29	55.98	277.59	145.21	24 29 2	1021.1	43.57	37.80
36.20	23 55 21	2021.11	24.29	55.98	277.59	145.21	24 29 2	1021.1	43.57	37.80

DIFFERENTIAL CORRECTIONS

TDE	.1767	TRA	1.4878	TC3	-1.4797	BAU	.9116	SGT	3343.0	SGR	4276.2
RDE	-1.5215	RRA	-1.8552	RC3	1.5184	FAU	.13034	RRT	-.9482	RRF	-.9999
FDE	3.6840	FRA	4.4382	FC3	-3.5017	BSP	8807	SGB	5427.8	R23	.1302
BDE	1.5317	BRA	2.3781	BC3	2.1159	FSP	1516	SG1	5361.3	SG2	847.4

MID-COURSE EXECUTION ACCURACY

SGT	3343.0	SGR	4276.2	SG3	880.3						
RRT	-.9482	RRF	-.9999	RTF	.9451						
SGB	5427.8	R23	.1302	R13	-.9914						
SG1	5361.3	SG2	847.4	THA	127.65						

ORBIT DETERMINATION ACCURACY

ST	44.3	SR	93.9	SS	81.1
CRT	-.7285	CRS	1.0000	CST	-.7246
LSA	128.4	MSA	29.4	SSA	.1
EL1	99.8	EL2	28.5	ALF	110.73

LAUNCH DATE APR 26 1971 FLIGHT TIME 238.00 ARRIVAL DATE DEC 20 1971

DISTANCE 565,185

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	32.268	GAL	-2.60	AZL	83.94	HCA	183.32	SMA	183.81	ECC	.18643	INC	6.0567
RP	216.73	LAP	-.35	LOP	38.43	VP	22.420	GAP	3.01	AZP	96.05	TAL	343.34	TAP	166.66	RCA	149.54	APO	218.07
RC	163.649	GL	47.47	GP	-43.76	ZAL	114.59	ZAP	79.10	ETS	168.21	ZAE	108.77	ETE	199.42	ZAC	58.67	ETC	272.09

V1	29.600										
V2	25.347										
LVI	30.58										

PLANETOCENTRIC CONIC

C3	21.315	VHL	4.617	DLA	36.73	RAL	323.81	RAD	6643.4	VEL	11.888	PTH	6.90	VHP	4.430	DPA	-65.72	RAP	310.65
ECC	1.3508																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	11 47 45	3944.12	-44.48	169.76	217.01	70.98	12 53 29	2944.1	-47.16	135.03
60.00	11 13 0	4037.15	-33.32	172.44	211.36	65.88	12 20 18	3037.1	-39.95	143.48
65.51	9 46 52	4288.00	-20.46	185.45	203.83	58.81	10 58 20	3288.0	-31.46	161.63
65.51	9 46 52	4288.00	-20.46	185.45	203.83	58.81	10 58 20	3288.0	-31.46	161.63
65.51	9 46 52	4288.00	-20.46	185.45	203.83	58.81	10 58 20	3288.0	-31.46	161.63
65.51	9 46 52	4288.00	-20.46	185.45	203.83	58.81	10 58 20	3288.0	-31.46	161.63
65.51	9 46 52	4288.00	-20.46	185.45	203.83	58.81	10 58 20	3288.0	-31.46	161.63

DIFFERENTIAL CORRECTIONS

TDE	2.7531	TRA	1.1137	TC3	-2.8154	BAU	.9914	SGT	4626.6	SGR	4291.9
RDE	2.3254	RRA	1.6503	RC3	-2.0439	FAU	.10240	RRT	.9656	RRF	.9997
FDE	4.5270	FRA	3.3927	FC3	-4.1593	BSP	10296	SGB	6310.8	R23	.1560
BDE	3.6037	BRA	1.9909	BC3	3.4791	FSP	1297	SG1	6256.5	SG2	825.7

MID-COURSE EXECUTION ACCURACY

SGT	4626.6	SGR	4291.9	SG3	742.8						
RRT	.9656	RRF	.9997	RTF	.9614						
SGB	6310.8	R23	.1560	R13	.9875						
SG1	6256.5	SG2	825.7	THA	42.77						

ORBIT DETERMINATION ACCURACY

ST	172.8	SR	149.3	SS	111.7
CRT	.9940	CRS	-.9999	CST	-.9924
LSA	253.8	MSA	14.5	SSA	.1
EL1	228.1	EL2	12.4	ALF	40.80

LAUNCH DATE APR 26 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 569.341 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.273 GAL -2.66 AZL 85.97 HCA 184.47 SMA 183.88 ECC .18701 INC 4.0311 V1 29.600
RP 217.08 LAP -.31 LOP 39.58 VP 22.383 GAP 2.84 AZP 94.02 TAL 343.00 TAP 167.46 RCA 149.50 APO 218.27 V2 25.308
RC 166.178 GL 38.13 GP -36.05 ZAL 119.74 ZAP 76.17 ETS 168.62 ZAE 109.64 ETE 195.44 ZAC 66.39 ETC 271.76 LVI 23.85

PLANETOCENTRIC CONIC

C3 15.529 VHL 3.941 DLA 25.46 RAL 329.74 RAD 6640.8 VEL 11.644 PTH 6.68 VHP 3.867 DPA -58.59 RAP 304.21 ECC 1.2556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 20 3	3598.36	-47.32	137.36	206.30	95.64	14 20 1	2598.4	-39.65	105.51
60.00	13 26 17	3581.74	-40.30	136.29	206.72	89.27	14 25 59	2581.7	-36.17	105.97
70.00	13 36 58	3550.26	-33.66	133.24	206.22	83.83	14 36 8	2550.3	-32.69	104.54
80.00	13 59 32	3479.45	-28.10	126.93	205.26	79.46	14 57 31	2479.5	-29.67	99.61
90.00	14 56 11	3296.43	-25.57	112.91	204.69	77.50	15 51 8	2296.4	-28.28	86.23
100.00	16 42 24	2953.92	-28.10	88.30	205.26	79.46	17 31 37	1953.9	-29.67	60.98
110.00	18 36 24	2597.07	-33.66	62.16	206.22	83.83	19 19 42	1597.1	-32.69	33.46

DIFFERENTIAL CORRECTIONS
TDE 2.0561 TRA 1.3913 TC3-3.8635 BAU .9246
RDE 1.4579 RRA 1.4792 RC3-2.2157 FAU .13172
FDE 4.5938 FRA 4.9329 FC3-7.3435 BSP 9973
BDE 2.5205 BRA 2.0307 BC3 4.4537 FSP 1813

MID-COURSE EXECUTION ACCURACY
SGT 4819.5 SGR 3635.4 SG3 1026.7
RRT .9697 RRF .9997 RTF .9671
SGB 6036.9 R23 .1665 R13 .9858
SG1 5994.6 SG2 713.8 THA 36.79

ORBIT DETERMINATION ACCURACY
ST 153.3 SR 111.9 SS 118.5
CRT .9946 CRS -.9998 CST -.9926
LSA 223.4 MSA 12.7 SSA .2
EL1 189.5 EL2 9.4 ALF 36.08

LAUNCH DATE APR 26 1971 FLIGHT TIME 242.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 573.501 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.278 GAL -2.72 AZL 87.16 HCA 185.61 SMA 183.97 ECC .18763 INC 2.8345 V1 29.600
RP 217.43 LAP -.28 LOP 40.73 VP 22.346 GAP 2.68 AZP 92.82 TAL 342.64 TAP 168.25 RCA 149.45 APO 218.49 V2 25.269
RC 168.717 GL 25.95 GP -30.24 ZAL 123.07 ZAP 73.69 ETS 169.17 ZAE 109.59 ETE 192.32 ZAC 72.23 ETC 271.57 LVI 18.72

PLANETOCENTRIC CONIC

C3 13.298 VHL 3.647 DLA 17.08 RAL 333.78 RAD 6639.7 VEL 11.548 PTH 6.59 VHP 3.595 DPA -53.07 RAP 300.79 ECC 1.2189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 13 59	3385.39	-44.03	117.98	199.54	110.23	15 10 24	2385.4	-31.66	91.46
60.00	14 33 53	3332.41	-38.42	115.45	201.79	103.25	15 29 25	2332.4	-29.16	88.60
70.00	15 3 25	3245.46	-33.37	109.57	202.94	97.75	15 57 31	2245.5	-26.80	82.84
80.00	15 50 2	3099.36	-29.62	98.94	203.39	93.98	16 41 42	2099.4	-24.98	72.48
90.00	17 1 37	2868.29	-28.17	82.06	203.49	92.58	17 49 26	1868.3	-24.27	55.72
100.00	18 32 54	2573.83	-29.62	60.31	203.39	93.98	19 15 48	1573.8	-24.98	33.85
110.00	20 2 51	2292.28	-33.37	38.48	202.94	97.75	20 41 4	1292.3	-26.80	11.76

DIFFERENTIAL CORRECTIONS
TDE 1.6770 TRA 1.5928 TC3-4.6083 BAU .9033
RDE 1.0181 RRA 1.2919 RC3-2.1397 FAU .15170
FDE 4.3987 FRA 6.0021 FC3-9.8757 BSP 9706
BDE 1.9619 BRA 2.0508 BC3 5.0808 FSP 2134

MID-COURSE EXECUTION ACCURACY
SGT 5009.3 SGR 3082.7 SG3 1212.6
RRT .9726 RRF .9995 RTF .9707
SGB 5861.9 R23 .1760 R13 .9839
SG1 5849.8 SG2 613.7 THA 31.29

ORBIT DETERMINATION ACCURACY
ST 137.6 SR 66.1 SS 116.8
CRT .9960 CRS -.9997 CST -.9934
LSA 199.7 MSA 10.7 SSA .2
EL1 162.2 EL2 6.5 ALF 32.00

LAUNCH DATE APR 26 1971 FLIGHT TIME 244.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 577.658 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.284 GAL -2.78 AZL 87.95 HCA 186.75 SMA 184.06 ECC .18829 INC 2.0433 V1 29.600
RP 217.79 LAP -.24 LOP 41.87 VP 22.309 GAP 2.52 AZP 92.03 TAL 342.28 TAP 169.03 RCA 149.40 APO 218.71 V2 25.229
RC 171.268 GL 19.13 GP -25.82 ZAL 125.23 ZAP 71.53 ETS 169.72 ZAE 108.97 ETE 189.92 ZAC 76.66 ETC 271.43 LVI 14.82

PLANETOCENTRIC CONIC

C3 12.344 VHL 3.513 DLA 10.91 RAL 336.77 RAD 6639.2 VEL 11.507 PTH 6.56 VHP 3.450 DPA -48.84 RAP 298.64 ECC 1.2031

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 50 28	3243.17	-40.04	106.67	196.79	118.21	15 44 32	2243.2	-25.47	83.56
60.00	15 18 7	3169.56	-35.12	102.91	199.65	111.19	16 10 57	2169.6	-23.35	78.74
70.00	15 56 55	3055.42	-30.72	95.41	201.40	105.72	16 47 51	2055.4	-21.38	70.76
80.00	16 52 47	2880.41	-27.52	83.04	202.31	102.07	17 40 48	1880.4	-19.90	58.22
90.00	18 8 44	2635.30	-26.31	65.30	202.58	100.75	18 52 39	1635.3	-19.33	40.45
100.00	19 35 39	2354.88	-27.52	44.41	202.31	102.07	20 14 54	1354.9	-19.90	19.59
110.00	20 56 22	2102.24	-30.72	24.32	201.40	105.72	21 31 24	1102.2	-21.38	359.67

DIFFERENTIAL CORRECTIONS
TDE 1.4482 TRA 1.7570 TC3-5.1148 BAU .9031
RDE .7715 RRA 1.1283 RC3-1.9452 FAU .16384
FDE 4.1728 FRA 6.7294 FC-11.4908 BSP 9570
BDE 1.6409 BRA 2.0881 BC3 5.4722 FSP 2338

MID-COURSE EXECUTION ACCURACY
SGT 5197.1 SGR 2638.7 SG3 1328.4
RRT .9736 RRF .9992 RTF .9624
SGB 5828.6 R23 .1847 R13 .9820
SG1 5803.7 SG2 539.0 THA 26.55

ORBIT DETERMINATION ACCURACY
ST 126.0 SR 68.9 SS 113.1
CRT .9978 CRS -.9993 CST -.9947
LSA 182.7 MSA 8.8 SSA .4
EL1 143.6 EL2 4.0 ALF 28.64

LAUNCH DATE APR 26 1971 FLIGHT TIME 246.00 ARRIVAL DATE DEC 28 1971

HELIOCENTRIC CONIC DISTANCE 581.816 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.289 GAL -2.85 AZL 88.51 HCA 187.89 SMA 184.15 ECC .18899 INC 1.4827 V1 29.600
RP 218.15 LAP -.20 LOP 43.01 VP 22.272 GAP 2.36 AZP 91.47 TAL 341.91 TAP 169.80 RCA 149.35 APO 218.95 V2 25.189
RC 173.829 GL 14.00 GP -22.41 ZAL 126.68 ZAP 69.60 ETS 170.21 ZAE 108.03 ETE 188.05 ZAC 80.08 ETC 271.33 LVI 11.81

PLANETOCENTRIC CONIC

C3 11.942 VHL 3.456 DLA 6.31 RAL 339.09 RAD 6639.0 VEL 11.490 PTH 6.54 VHP 3.371 DPA -45.56 RAP 297.15 ECC 1.1965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 4	3143.76	-36.60	99.66	196.03	122.83	16 9 28	2143.8	-20.88	78.57
60.00	15 49 54	3056.41	-32.03	94.90	199.14	115.89	16 40 50	2056.4	-18.92	72.45
70.00	16 34 36	2924.92	-27.95	86.26	201.16	110.48	17 23 21	1924.9	-17.11	63.05
80.00	17 36 0	2732.61	-24.99	72.79	202.27	106.89	18 21 33	1732.6	-15.76	49.20
90.00	18 54 25	2479.54	-23.89	54.54	202.63	105.61	19 35 45	1479.5	-15.25	30.84
100.00	20 18 52	2207.08	-24.99	34.16	202.27	106.89	20 55 39	1207.1	-15.76	10.57
110.00	21 34 2	1971.74	-27.95	15.18	201.16	110.48	22 6 54	971.7	-17.11	351.96

DIFFERENTIAL CORRECTIONS
TDE 1.3029 TRA 1.9034 TC3-5.4562 BAU .9147
RDE .6143 RRA .9844 RC3-1.7479 FAU .17317
FDE 3.9232 FRA 7.1724 FC-12.5532 BSP 9522
BDE 1.4405 BRA 2.1429 BC3 5.7293 FSP 2412

MID-COURSE EXECUTION ACCURACY
SGT 5382.3 SGR 2278.8 SG3 1395.1
RRT .9759 RRF .9988 RTF .9753
SGB 5844.8 R23 .1835 R13 .9818
SG1 5826.7 SG2 459.4 THA 22.60

ORBIT DETERMINATION ACCURACY
ST 118.2 SR 56.6 SS 108.2
CRT .9993 CRS -.9986 CST -.9960
LSA 169.8 MSA 7.2 SSA .6
EL1 131.0 EL2 2.0 ALF 25.58

LAUNCH DATE APR 26 1971 FLIGHT TIME 248.00 ARRIVAL DATE DEC 30 1971

DISTANCE 585.966

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.295 GAL -2.92 AZL 88.93 HCA 189.03 SMA 184.25 ECC .18972 INC 1.0642 V1 29.600
RP 218.51 LAP -.17 LOP 44.15 VP 22.236 GAP 2.19 AZP 91.05 TAL 341.52 TAP 170.55 RCA 149.29 APO 219.21 V2 25.149
RC 176.400 GL 10.07 GP -19.72 ZAL 127.72 ZAP 67.83 ETS 170.65 ZAE 106.90 ETE 186.58 ZAC 82.78 ETC 271.24 LVI 9.45

PLANETOCENTRIC CONIC

C3 11.816 VHL 3.437 DLA 2.83 RAL 340.98 RAD 6639.0 VEL 11.485 PTH 6.53 VHP 3.328 DPA -42.97 RAP 296.05 ECC 1.1945

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 27	3072.06	-33.85	95.02	196.20	125.68	16 28 39	2072.1	-17.47	75.18
60.00	16 14 1	2974.75	-29.48	89.50	199.44	118.83	17 3 36	1974.7	-15.58	68.14
70.00	17 2 55	2830.93	-25.55	80.01	201.61	113.47	17 50 6	1830.9	-13.83	57.74
80.00	18 8 10	2626.60	-22.71	65.75	202.85	109.92	18 51 57	1626.6	-12.54	42.98
90.00	19 28 17	2368.10	-21.65	47.15	203.25	108.65	20 7 45	1368.1	-12.05	24.23
100.00	20 51 2	2101.07	-22.71	27.12	202.85	109.92	21 26 3	1101.1	-12.54	4.35
110.00	22 2 21	1877.75	-25.55	8.93	201.61	113.47	22 33 39	877.7	-13.83	346.65

DIFFERENTIAL CORRECTIONS

TDE 1.2229 TRA 2.0554 TC3-5.6482 BAU .9234
RDE .5254 RRA .8784 RC3-1.5070 FAU .17357
FDE 3.8204 FRA 7.5692 FC-12.7173 BSP 9802
BDE 1.3310 BRA 2.2353 BC3 5.8457 FSP 2555

MID-COURSE EXECUTION ACCURACY

SGT 5567.7 SGR 1997.4 SG3 1436.8
RRT .9745 RRF .9981 RTF .9748
SGB 5915.1 R23 .1899 R13 .9799
SG1 5900.0 SG2 423.2 THA 19.37

ORBIT DETERMINATION ACCURACY

ST 114.3 SR 49.0 SS 106.6
CRT .9998 CRS -.9974 CST -.9975
LSA 163.7 MSA 5.7 SSA .9
EL1 124.4 EL2 .9 ALF 23.21

LAUNCH DATE APR 26 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 1 1972

DISTANCE 590.116

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.302 GAL -2.99 AZL 89.26 HCA 190.16 SMA 184.35 ECC .19048 INC .7391 V1 29.600
RP 218.88 LAP -.13 LOP 45.28 VP 22.199 GAP 2.03 AZP 90.73 TAL 341.13 TAP 171.29 RCA 149.24 APO 219.47 V2 25.109
RC 178.981 GL 6.98 GP -17.55 ZAL 128.53 ZAP 66.19 ETS 171.03 ZAE 105.67 ETE 185.42 ZAC 84.96 ETC 271.18 LVI 7.54

PLANETOCENTRIC CONIC

C3 11.837 VHL 3.440 DLA .15 RAL 342.58 RAD 6639.0 VEL 11.485 PTH 6.53 VHP 3.307 DPA -40.88 RAP 295.21 ECC 1.1948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 53 35	3019.03	-31.70	91.79	196.80	127.54	16 43 54	2019.0	-14.90	72.76
60.00	16 33 0	2914.16	-27.43	85.68	200.13	120.77	17 21 34	1914.2	-13.04	65.05
70.00	17 25 4	2761.05	-23.58	75.54	202.40	115.45	18 11 5	1761.1	-11.31	53.69
80.00	18 33 12	2547.72	-20.79	60.68	203.72	111.93	19 15 39	1547.7	-10.03	38.47
90.00	19 54 34	2285.18	-19.75	41.81	204.16	110.66	20 32 39	1285.2	-9.55	19.42
100.00	21 16 4	2022.19	-20.79	22.04	203.72	111.93	21 49 46	1022.2	-10.03	359.84
110.00	22 24 30	1807.87	-23.58	4.46	202.40	115.45	22 54 38	807.9	-11.31	342.81

DIFFERENTIAL CORRECTIONS

TDE 1.1624 TRA 2.1875 TC3-5.8138 BAU .9438
RDE .4560 RRA .7791 RC3-1.3304 FAU .17602
FDE 3.6578 FRA 7.7651 FC-12.8739 BSP 9937
BDE 1.2487 BRA 2.3221 BC3 5.9640 FSP 2566

MID-COURSE EXECUTION ACCURACY

SGT 5746.5 SGR 1760.1 SG3 1453.0
RRT .9747 RRF .9971 RTF .9762
SGB 6010.0 R23 .1854 R13 .9799
SG1 5998.2 SG2 376.8 THA 16.69

ORBIT DETERMINATION ACCURACY

ST 111.3 SR 42.7 SS 103.2
CRT .9990 CRS -.9956 CST -.9984
LSA 157.6 MSA 4.9 SSA 1.2
EL1 119.2 EL2 1.8 ALF 20.97

LAUNCH DATE APR 26 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 3 1972

DISTANCE 594.260

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.308 GAL -3.06 AZL 89.52 HCA 191.29 SMA 184.46 ECC .19128 INC .4806 V1 29.600
RP 219.25 LAP -.09 LOP 46.41 VP 22.163 GAP 1.88 AZP 90.47 TAL 340.74 TAP 172.02 RCA 149.18 APO 219.75 V2 25.068
RC 181.572 GL 4.51 GP -15.77 ZAL 129.19 ZAP 64.65 ETS 171.36 ZAE 104.39 ETE 184.49 ZAC 86.74 ETC 271.13 LVI 5.99

PLANETOCENTRIC CONIC

C3 11.945 VHL 3.456 DLA -1.95 RAL 343.95 RAD 6639.0 VEL 11.490 PTH 6.54 VHP 3.300 DPA -39.16 RAP 294.55 ECC 1.1966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 43	2979.20	-30.02	89.48	197.61	128.82	16 56 23	1979.2	-12.95	70.98
60.00	16 48 22	2868.42	-25.80	82.90	201.01	122.10	17 36 11	1868.4	-11.09	62.75
70.00	17 42 54	2708.06	-21.99	72.25	203.36	116.81	18 28 2	1708.1	-9.36	51.03
80.00	18 53 17	2487.71	-19.22	56.91	204.74	113.30	19 34 44	1487.7	-8.08	35.08
90.00	20 15 37	2222.01	-18.18	37.84	205.20	112.04	20 52 39	1222.0	-7.59	15.81
100.00	21 36 9	1962.18	-19.22	18.28	204.74	113.30	22 8 51	962.2	-8.08	356.45
110.00	22 42 21	1754.88	-21.99	1.17	203.36	116.81	23 11 35	754.9	-9.36	339.95

DIFFERENTIAL CORRECTIONS

TDE 1.1358 TRA 2.3272 TC3-5.9019 BAU .9604
RDE .4137 RRA .7011 RC3-1.1544 FAU .17358
FDE 3.5929 FRA 7.9525 FC-12.5801 BSP 10261
BDE 1.2086 BRA 2.4305 BC3 6.0137 FSP 2626

MID-COURSE EXECUTION ACCURACY

SGT 5923.7 SGR 1568.3 SG3 1458.8
RRT .9727 RRF .9956 RTF .9759
SGB 6127.7 R23 .1852 R13 .9788
SG1 6117.6 SG2 352.7 THA 14.49

ORBIT DETERMINATION ACCURACY

ST 110.7 SR 38.5 SS 102.0
CRT .9965 CRS -.9933 CST -.9982
LSA 155.3 MSA 4.5 SSA 1.5
EL1 117.2 EL2 3.1 ALF 19.12

LAUNCH DATE APR 26 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 5 1972

DISTANCE 598.399

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.315 GAL -3.13 AZL 89.73 HCA 192.41 SMA 184.58 ECC .19211 INC .2659 V1 29.600
RP 219.62 LAP -.06 LOP 47.94 VP 22.127 GAP 1.72 AZP 90.26 TAL 340.33 TAP 172.74 RCA 149.12 APO 220.03 V2 25.028
RC 184.172 GL 2.51 GP -14.30 ZAL 129.77 ZAP 63.20 ETS 171.66 ZAE 103.09 ETE 183.72 ZAC 88.23 ETC 271.08 LVI 4.69

PLANETOCENTRIC CONIC

C3 12.109 VHL 3.480 DLA -3.61 RAL 345.17 RAD 6639.1 VEL 11.497 PTH 6.55 VHP 3.303 DPA -37.73 RAP 294.03 ECC 1.1993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 17 39	2948.95	-28.72	87.77	198.52	129.72	17 6 48	1949.0	-11.46	69.66
60.00	17 1 4	2833.47	-24.52	80.83	201.97	123.04	17 48 18	1833.5	-9.58	61.03
70.00	17 57 34	2667.31	-20.72	69.77	204.39	117.78	18 42 2	1667.3	-7.84	48.85
80.00	19 9 45	2441.34	-17.95	54.06	205.83	114.27	19 50 26	1441.3	-6.54	32.50
90.00	20 32 53	2173.12	-16.91	34.82	206.30	113.01	21 9 6	1173.1	-6.05	13.04
100.00	21 52 37	1915.81	-17.95	15.43	205.83	114.27	22 24 33	915.8	-6.54	353.86
110.00	22 57 1	1714.13	-20.72	358.69	204.39	117.78	23 25 35	714.1	-7.84	337.77

DIFFERENTIAL CORRECTIONS

TDE 1.1242 TRA 2.4643 TC3-5.9652 BAU .9792
RDE .3842 RRA .6348 RC3-1.0034 FAU .16981
FDE 3.5559 FRA 8.0955 FC-12.1409 BSP 10597
BDE 1.1880 BRA 2.5447 BC3 6.0490 FSP 2678

MID-COURSE EXECUTION ACCURACY

SGT 6098.4 SGR 1408.7 SG3 1456.2
RRT .9694 RRF .9936 RTF .9750
SGB 6259.0 R23 .1854 R13 .9774
SG1 6249.9 SG2 337.7 THA 12.66

ORBIT DETERMINATION ACCURACY

ST 111.0 SR 35.3 SS 101.3
CRT .9923 CRS -.9903 CST -.9996
LSA 154.3 MSA 4.6 SSA 1.6
EL1 116.4 EL2 4.2 ALF 17.55

LAUNCH DATE APR 26 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 602.539 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.322 GAL -3.21 AZL 89.91 HCA 193.53 SMA 184.69 ECC .19296 INC .0851 V1 29.600
RP 219.99 LAP -.02 LOP 48.66 VP 22.091 GAP 1.56 AZP 90.09 TAL 339.92 TAP 173.46 RCA 149.05 APO 220.33 V2 24.967
RC 186.781 GL .87 GP -13.05 ZAL 130.30 ZAP 61.82 ETS 171.92 ZAE 101.78 ETE 183.10 ZAC 89.48 ETC 271.05 LVI 3.59

PLANETOCENTRIC CONIC

C3 12.308 VHL 3.508 DLA -4.94 RAL 346.25 RAD 6639.2 VEL 11.506 PTH 6.55 VHP 3.313 DPA -36.82 RAP 293.61 ECC 1.2026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 53	2925.82	-27.70	86.50	199.47	130.36	17 15 39	1925.8	-10.31	68.65
60.00	17 11 44	2806.53	-23.51	79.26	202.97	123.73	17 58 30	1806.5	-8.42	59.70
70.00	18 9 50	2635.66	-19.70	67.88	205.44	118.48	18 53 46	1635.7	-6.65	47.17
80.00	19 23 29	2405.12	-16.92	51.86	206.92	114.97	20 3 34	1405.1	-5.34	30.49
90.00	20 47 15	2134.84	-15.87	32.48	207.41	113.72	21 22 50	1134.8	-4.84	10.89
100.00	22 6 21	1879.60	-16.92	13.23	206.92	114.97	22 37 40	879.6	-5.34	351.85
110.00	23 9 17	1682.49	-19.70	356.80	205.44	118.48	23 37 19	682.5	-6.65	336.09

DIFFERENTIAL CORRECTIONS

TDE 1.1091 TRA 2.5835 TC3-6.0547 BAU 1.0072
RDE .3549 RRA .5689 RC3 -.9023 FAU .17035
FDE 3.4279 FRA 8.0912 FC-11.9828 BSP 10738
BDE 1.1645 BRA 2.6454 BC3 6.1215 FSP 2601

MID-COURSE EXECUTION ACCURACY

SGT 6266.2 SGR 1267.5 SG3 1440.5
RRT .9681 RRF .9908 RTF .9767
SGB 6393.1 R23 .1714 R13 .9784
SG1 6385.5 SG2 311.5 THA 11.11

ORBIT DETERMINATION ACCURACY

ST 110.8 SR 32.2 SS 98.4
CRT .9865 CRS -.9859 CST -.9998
LSA 151.5 MSA 5.2 SSA 1.6
EL1 115.3 EL2 5.1 ALF 16.03

LAUNCH DATE APR 26 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 606.671 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.329 GAL -3.29 AZL 90.06 HCA 194.65 SMA 184.81 ECC .19385 INC .0271 V1 29.600
RP 220.36 LAP .01 LOP 49.78 VP 22.055 GAP 1.40 AZP 89.95 TAL 339.51 TAP 174.16 RCA 148.99 APO 220.64 V2 24.946
RC 189.399 GL -.51 GP -11.98 ZAL 130.80 ZAP 60.50 ETS 172.16 ZAE 100.47 ETE 182.58 ZAC 90.55 ETC 271.03 LVI 2.64

PLANETOCENTRIC CONIC

C3 12.533 VHL 3.540 DLA -6.02 RAL 347.24 RAD 6639.3 VEL 11.515 PTH 6.56 VHP 3.328 DPA -35.48 RAP 293.28 ECC 1.2063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 49	2908.21	-26.92	85.55	200.43	130.83	17 23 17	1908.2	-9.44	67.89
60.00	17 20 49	2785.83	-22.72	78.08	203.98	124.22	18 7 15	1785.8	-7.52	58.69
70.00	18 20 14	2611.13	-18.90	66.43	206.50	118.99	19 3 45	1611.1	-5.73	45.88
80.00	19 35 5	2376.82	-16.10	50.16	208.01	115.49	20 14 42	1376.8	-4.39	28.92
90.00	20 59 23	2104.83	-15.04	30.67	208.52	114.23	21 34 28	1104.8	-3.88	9.20
100.00	22 17 57	1851.29	-16.10	11.53	208.01	115.49	22 48 48	851.3	-4.39	350.29
110.00	23 19 41	1657.95	-18.90	355.35	206.50	118.99	23 47 19	657.9	-5.73	334.79

DIFFERENTIAL CORRECTIONS

TDE 1.1089 TRA 2.7080 TC3-6.1120 BAU 1.0329
RDE .3363 RRA .5147 RC3 -.8038 FAU .16802
FDE 3.3610 FRA 8.1059 FC-11.6063 BSP 10966
BDE 1.1588 BRA 2.7565 BC3 6.1646 FSP 2568

MID-COURSE EXECUTION ACCURACY

SGT 6432.0 SGR 1149.7 SG3 1422.7
RRT .9644 RRF .9871 RTF .9769
SGB 6533.9 R23 .1626 R13 .9782
SG1 6527.0 SG2 299.8 THA 9.80

ORBIT DETERMINATION ACCURACY

ST 111.6 SR 30.0 SS 96.8
CRT .9792 CRS -.9808 CST -.9998
LSA 150.6 MSA 5.9 SSA 1.5
EL1 115.5 EL2 5.9 ALF 14.77

LAUNCH DATE APR 26 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 610.799 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.337 GAL -3.37 AZL 90.18 HCA 195.77 SMA 184.94 ECC .19477 INC .1805 V1 29.600
RP 220.74 LAP .05 LOP 50.89 VP 22.019 GAP 1.24 AZP 89.82 TAL 339.09 TAP 174.85 RCA 148.92 APO 220.96 V2 24.904
RC 192.025 GL -1.66 GP -11.06 ZAL 131.28 ZAP 59.23 ETS 172.37 ZAE 99.17 ETE 182.14 ZAC 91.47 ETC 271.01 LVI 1.82

PLANETOCENTRIC CONIC

C3 12.778 VHL 3.575 DLA -6.89 RAL 348.16 RAD 6639.4 VEL 11.526 PTH 6.57 VHP 3.347 DPA -34.58 RAP 293.04 ECC 1.2103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 41 41	2894.90	-26.33	84.84	201.39	131.16	17 29 56	1894.9	-8.78	67.32
60.00	17 28 40	2769.99	-22.11	77.18	204.98	124.59	18 14 50	1770.0	-6.83	57.93
70.00	18 29 9	2592.13	-18.27	65.32	207.54	119.37	19 12 21	1592.1	-5.01	44.88
80.00	19 44 59	2354.72	-15.44	48.85	209.08	115.87	20 24 14	1354.7	-3.65	27.70
90.00	21 9 43	2081.32	-14.38	29.27	209.60	114.62	21 44 25	1081.3	-3.13	7.89
100.00	22 27 51	1829.19	-15.44	10.21	209.08	115.87	22 58 20	829.2	-3.65	349.07
110.00	23 28 35	1638.95	-18.27	354.24	207.54	119.37	23 55 54	638.9	-5.01	333.79

DIFFERENTIAL CORRECTIONS

TDE 1.1194 TRA 2.8354 TC3-6.1468 BAU 1.0572
RDE .3231 RRA .4673 RC3 -.7173 FAU .16489
FDE 3.3115 FRA 8.1064 FC-11.1712 BSP 11243
BDE 1.1651 BRA 2.8737 BC3 6.1885 FSP 2538

MID-COURSE EXECUTION ACCURACY

SGT 6594.5 SGR 1049.0 SG3 1401.8
RRT .9594 RRF .9823 RTF .9770
SGB 6677.4 R23 .1529 R13 .9780
SG1 6671.0 SG2 292.6 THA 8.69

ORBIT DETERMINATION ACCURACY

ST 113.2 SR 28.3 SS 95.5
CRT .9706 CRS -.9748 CST -.9998
LSA 150.6 MSA 6.6 SSA 1.5
EL1 116.5 EL2 6.6 ALF 13.67

LAUNCH DATE APR 26 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 614.923 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.344 GAL -3.45 AZL 90.30 HCA 196.88 SMA 185.06 ECC .19571 INC .2945 V1 29.600
RP 221.12 LAP .09 LOP 52.00 VP 21.983 GAP 1.08 AZP 89.72 TAL 338.66 TAP 175.54 RCA 148.84 APO 221.28 V2 24.863
RC 194.859 GL -2.65 GP -10.26 ZAL 131.74 ZAP 58.02 ETS 172.57 ZAE 97.89 ETE 181.77 ZAC 92.27 ETC 271.01 LVI 1.09

PLANETOCENTRIC CONIC

C3 13.039 VHL 3.611 DLA -7.60 RAL 349.01 RAD 6639.6 VEL 11.537 PTH 6.58 VHP 3.369 DPA -33.79 RAP 292.86 ECC 1.2146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 44	2885.04	-25.89	84.32	202.34	131.42	17 35 49	1885.0	-8.29	66.90
60.00	17 35 29	2758.04	-21.65	76.51	205.97	124.86	18 21 27	1758.0	-6.31	57.35
70.00	18 36 51	2577.58	-17.78	64.47	208.56	119.65	19 19 49	1577.6	-4.46	44.11
80.00	19 53 31	2337.60	-14.93	47.83	210.14	116.16	20 32 28	1337.6	-3.07	26.76
90.00	21 18 37	2063.03	-13.86	28.18	210.67	114.90	21 53 0	1063.0	-2.54	6.87
100.00	22 36 23	1812.07	-14.93	9.20	210.14	116.16	23 6 35	812.1	-3.07	348.13
110.00	23 36 18	1624.40	-17.78	353.39	208.56	119.65	24 3 22	624.4	-4.46	333.03

DIFFERENTIAL CORRECTIONS

TDE 1.1355 TRA 2.9633 TC3-6.1732 BAU 1.0819
RDE .3136 RRA .4251 RC3 -.6424 FAU .16140
FDE 3.2708 FRA 8.0921 FC-10.7161 BSP 11522
BDE 1.1780 BRA 2.9936 BC3 6.2065 FSP 2505

MID-COURSE EXECUTION ACCURACY

SGT 6754.5 SGR 962.2 SG3 1378.7
RRT .9528 RRF .9761 RTF .9770
SGB 6822.7 R23 .1434 R13 .9778
SG1 6816.5 SG2 289.4 THA 7.74

ORBIT DETERMINATION ACCURACY

ST 115.0 SR 26.9 SS 94.4
CRT .9608 CRS -.9680 CST -.9994
LSA 151.0 MSA 7.4 SSA 1.4
EL1 117.9 EL2 7.3 ALF 12.72

LAUNCH DATE APR 26 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 619.041 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.352 GAL -3.53 AZL 90.39 HCA 197.98 SMA 185.19 ECC .19669 INC .3920 V1 29.600
RP 221.50 LAP .12 LOP 53.11 VP 21.948 GAP .93 AZP 89.63 TAL 338.23 TAP 176.21 RCA 148.77 APO 221.62 V2 24.821
RC 197.299 GL -3.49 GP -9.56 ZAL 132.20 ZAP 56.86 ETS 172.75 ZAE 96.63 ETE 181.45 ZAC 92.97 ETC 271.01 LVI .44

PLANETOCENTRIC CONIC

C3 13.313 VHL 3.649 DLA -8.18 RAL 349.81 RAD 6639.7 VEL 11.549 PTH 6.59 VHP 3.394 DPA -33.09 RAP 292.73 ECC 1.2191

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 4	2877.96	-25.57	83.95	203.28	131.60	17 41 2	1878.0	-7.93	66.60
60.00	17 41 28	2749.25	-21.31	76.02	206.95	125.05	18 27 17	1749.3	-5.92	56.92
70.00	18 43 34	2566.66	-17.41	63.84	209.57	119.86	19 26 21	1566.7	-4.04	43.54
80.00	20 0 55	2324.55	-14.54	47.06	211.17	116.37	20 39 39	1324.6	-2.63	26.04
90.00	21 26 19	2049.01	-13.46	27.34	211.71	115.11	22 0 28	1049.0	-2.09	6.08
100.00	22 43 46	1799.03	-14.54	8.43	211.17	116.37	23 13 45	799.0	-2.63	347.41
110.00	23 43 1	1613.47	-17.41	352.76	209.57	119.86	24 9 54	613.5	-4.04	332.46

DIFFERENTIAL CORRECTIONS

TDE 1.1535 TRA 3.0877 TC3-6.2007 BAU 1.1084
RDE .3065 RRA .3865 RC3 -.5794 FAU .15822
FDE 3.2271 FRA 8.0538 FC-10.2884 BSP 11760
BDE 1.1935 BRA 3.1118 BC3 6.2277 FSP 2459

MID-COURSE EXECUTION ACCURACY

SGT 6910.2 SGR 886.7 SG3 1353.2
RRT .9446 RRF .9683 RTF .9770
SGB 6966.9 R23 .1332 R13 .9777
SG1 6960.9 SG2 288.8 THA 6.92

ORBIT DETERMINATION ACCURACY

ST 116.8 SR 25.8 SS 95.2
CRT .9499 CRS -.9603 CST -.9992
LSA 151.4 MSA 8.1 SSA 1.4
EL1 119.4 EL2 7.9 ALF 11.69

LAUNCH DATE APR 26 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 623.154 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.360 GAL -3.61 AZL 90.48 HCA 199.09 SMA 185.33 ECC .19769 INC .4788 V1 29.600
RP 221.88 LAP .16 LOP 54.21 VP 21.912 GAP .77 AZP 89.55 TAL 337.80 TAP 176.88 RCA 148.69 APO 221.96 V2 24.780
RC 199.945 GL -4.21 GP -8.94 ZAL 132.66 ZAP 55.74 ETS 172.91 ZAE 95.39 ETE 181.18 ZAC 93.59 ETC 271.02 LVI -.15

PLANETOCENTRIC CONIC

C3 13.599 VHL 3.688 DLA -8.65 RAL 350.56 RAD 6639.8 VEL 11.561 PTH 6.61 VHP 3.420 DPA -32.47 RAP 292.67 ECC 1.2238

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 51	2873.18	-25.35	83.70	204.21	131.71	17 45 44	1873.2	-7.69	66.39
60.00	17 46 46	2743.07	-21.07	75.68	207.90	125.19	18 32 29	1743.1	-5.65	56.62
70.00	18 45 28	2558.72	-17.14	63.39	210.56	120.00	19 32 7	1558.7	-3.74	43.12
80.00	20 7 22	2314.87	-14.25	46.49	212.17	116.52	20 45 56	1314.9	-2.30	25.51
90.00	21 33 1	2038.53	-13.15	26.72	212.72	115.26	22 6 59	1038.5	-1.75	5.50
100.00	22 50 13	1789.34	-14.25	7.86	212.17	116.52	23 20 3	789.3	-2.30	346.88
110.00	23 48 54	1605.54	-17.14	352.30	210.56	120.00	24 15 40	605.5	-3.74	332.04

DIFFERENTIAL CORRECTIONS

TDE 1.1774 TRA 3.2147 TC3-6.2163 BAU 1.1342
RDE .3020 RRA .3519 RC3 -.5234 FAU .15453
FDE 3.1943 FRA 8.0126 FC3-9.8373 BSP 12026
BDE 1.2155 BRA 3.2339 BC3 6.2383 FSP 2418

MID-COURSE EXECUTION ACCURACY

SGT 7063.3 SGR 821.6 SG3 1326.8
RRT .9343 RRF .9585 RTF .9769
SGB 7110.9 R23 .1241 R13 .9774
SG1 7104.9 SG2 291.1 THA 6.21

ORBIT DETERMINATION ACCURACY

ST 119.0 SR 24.9 SS 92.2
CRT .9382 CRS -.9521 CST -.9989
LSA 152.3 MSA 8.7 SSA 1.4
EL1 121.3 EL2 8.5 ALF 11.16

LAUNCH DATE APR 26 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC DISTANCE 627.262 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.368 GAL -3.70 AZL 90.56 HCA 200.18 SMA 185.46 ECC .19871 INC .5570 V1 29.600
RP 222.27 LAP .19 LOP 55.31 VP 21.877 GAP .61 AZP 89.48 TAL 337.36 TAP 177.54 RCA 148.61 APO 222.32 V2 24.738
RC 202.595 GL -4.84 GP -8.38 ZAL 133.11 ZAP 54.66 ETS 173.07 ZAE 94.18 ETE 180.95 ZAC 94.15 ETC 271.04 LVI -.69

PLANETOCENTRIC CONIC

C3 13.896 VHL 3.728 DLA -9.03 RAL 351.28 RAD 6640.0 VEL 11.574 PTH 6.62 VHP 3.448 DPA -31.92 RAP 292.65 ECC 1.2287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 8	2870.30	-25.22	83.55	205.12	131.78	17 49 58	1870.3	-7.55	66.27
60.00	17 51 29	2739.06	-20.91	75.46	208.85	125.27	18 37 8	1739.1	-5.48	56.43
70.00	18 54 40	2553.28	-16.96	63.07	211.53	120.10	19 37 13	1553.3	-3.53	42.84
80.00	20 13 1	2308.00	-14.04	46.09	213.16	116.62	20 51 29	1308.0	-2.07	25.13
90.00	21 38 52	2031.00	-12.93	26.28	213.71	115.37	22 12 43	1031.0	-1.51	5.08
100.00	22 55 53	1782.47	-14.04	7.46	213.16	116.62	23 25 35	782.5	-2.07	346.50
110.00	23 54 6	1600.10	-16.96	351.99	211.53	120.10	24 20 46	600.1	-3.53	331.75

DIFFERENTIAL CORRECTIONS

TDE 1.2062 TRA 3.3437 TC3-6.2231 BAU 1.1595
RDE .2994 RRA .3204 RC3 -.4746 FAU .15079
FDE 3.1664 FRA 7.9637 FC3-9.3942 BSP 12299
BDE 1.2428 BRA 3.3590 BC3 6.2412 FSP 2374

MID-COURSE EXECUTION ACCURACY

SGT 7214.0 SGR 765.2 SG3 1299.9
RRT .9219 RRF .9466 RTF .9768
SGB 7254.5 R23 .1150 R13 .9772
SG1 7248.5 SG2 295.0 THA 5.59

ORBIT DETERMINATION ACCURACY

ST 121.4 SR 24.2 SS 91.3
CRT .9261 CRS -.9434 CST -.9986
LSA 153.5 MSA 9.4 SSA 1.3
EL1 123.4 EL2 9.0 ALF 10.52

LAUNCH DATE APR 26 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 631.364 EARTH TO MARS

RL 150.53 LAL -.00 LOL 215.13 VL 32.376 GAL -3.79 AZL 90.63 HCA 201.28 SMA 185.60 ECC .19977 INC .6261 V1 29.600
RP 222.65 LAP .23 LOP 56.40 VP 21.842 GAP .45 AZP 89.42 TAL 336.91 TAP 178.19 RCA 148.52 APO 222.68 V2 24.696
RC 205.250 GL -5.38 GP -7.89 ZAL 133.57 ZAP 53.62 ETS 173.21 ZAE 92.98 ETE 180.75 ZAC 94.64 ETC 271.07 LVI -1.18

PLANETOCENTRIC CONIC

C3 14.203 VHL 3.769 DLA -9.33 RAL 351.96 RAD 6640.1 VEL 11.587 PTH 6.63 VHP 3.477 DPA -31.41 RAP 292.68 ECC 1.2337

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 0	2869.03	-25.16	83.49	206.02	131.81	17 53 49	1869.0	-7.49	66.21
60.00	17 55 42	2736.88	-20.82	75.34	209.77	125.32	18 41 18	1736.9	-5.38	56.32
70.00	18 59 16	2549.95	-16.84	62.88	212.48	120.16	19 41 46	1549.9	-3.40	42.66
80.00	20 18 0	2303.52	-13.90	45.83	214.13	116.69	20 56 23	1303.5	-1.92	24.89
90.00	21 44 1	2025.99	-12.79	25.99	214.69	115.44	22 17 47	1026.0	-1.35	4.80
100.00	23 0 51	1777.99	-13.90	7.20	214.13	116.69	23 30 29	778.0	-1.92	346.25
110.00	0 2 39	1596.76	-16.84	351.80	212.48	120.16	0 29 15	596.8	-3.40	331.58

DIFFERENTIAL CORRECTIONS

TDE 1.2369 TRA 3.4728 TC3-6.2274 BAU 1.1853
RDE .2983 RRA .2915 RC3 -.4316 FAU .14691
FDE 3.1409 FRA 7.9097 FC3-8.9548 BSP 12557
BDE 1.2724 BRA 3.4850 BC3 6.2423 FSP 2330

MID-COURSE EXECUTION ACCURACY

SGT 7361.7 SGR 716.4 SG3 1272.4
RRT .9069 RRF .9322 RTF .9765
SGB 7396.5 R23 .1072 R13 .9769
SG1 7390.4 SG2 300.7 THA 5.05

ORBIT DETERMINATION ACCURACY

ST 123.8 SR 23.7 SS 90.4
CRT .9135 CRS -.9342 CST -.9983
LSA 154.8 MSA 10.0 SSA 1.3
EL1 125.7 EL2 9.5 ALF 9.96

LAUNCH DATE APR 26 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 635.461 EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	32.385	GAL	-3.87	AZL	90.69	HCA	202.37	SMA	185.74	ECC	.20085	INC	.6888	V1	29.600
RP	223.04	LAP	.26	LOP	57.90	VP	21.807	GAP	.29	AZP	89.36	TAL	336.46	TAP	178.83	RCA	148.44	APO	223.05	V2	24.654
RC	207.907	GL	-5.86	GP	-7.44	ZAL	134.02	ZAP	52.62	ETS	173.35	ZAE	91.81	ETE	180.57	ZAC	95.08	ETC	271.10	LVI	-1.64

PLANETOCENTRIC CONIC

C3	14.520	VHL	3.811	DLA	-9.57	RAL	352.62	RAD	6640.3	VEL	11.601	PTH	6.64	VHP	3.507	DPA	-30.96	RAP	292.74	ECC	1.2390

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 32	2869.12	-25.17	83.49	206.91	131.81	17 57 21	1869.1	-7.49	66.22
60.00	17 59 29	2736.25	-20.80	75.30	210.69	125.33	18 45 6	1736.2	-5.36	56.29
70.00	19 3 25	2548.41	-16.79	62.79	213.41	120.19	19 45 51	1548.4	-3.35	42.58
80.00	20 22 23	2301.07	-13.83	45.69	215.08	116.73	21 0 45	1301.1	-1.83	24.75
90.00	21 48 32	2023.11	-12.70	25.82	215.64	115.48	22 22 16	1023.1	-1.26	4.64
100.00	23 5 15	1775.54	-13.83	7.05	215.08	116.73	23 34 51	775.5	-1.83	346.12
110.00	0 6 45	1595.22	-16.79	351.71	213.41	120.19	0 33 20	595.2	-3.35	331.50

DIFFERENTIAL CORRECTIONS

TDE	1.2699	TRA	3.6019	TC3	-6.2285	BAU	1.2115												
RDE	.2983	RRA	.2647	RC3	-.3943	FAU	.14319												
FDE	3.1149	FRA	7.8460	FC3	-8.5373	BSP	12806												
BDE	1.3045	BRA	3.6116	BC3	6.2410	FSP	2282												

MID-COURSE EXECUTION ACCURACY

SGT	7506.2	SGR	674.1	SG3	1244.3						
RRT	.8893	RRF	.9152	RTF	.9763						
SGB	7536.4	R23	.0996	R13	.9766						
SG1	7530.2	SG2	307.4	THA	4.57						

ORBIT DETERMINATION ACCURACY

ST	126.3	SR	23.2	SS	89.5						
CRT	.9007	CRS	-.9248	CST	-.9980						
LSA	156.2	MSA	10.5	SSA	1.3						
EL1	128.0	EL2	10.0	ALF	9.47						

LAUNCH DATE APR 26 1971 FLIGHT TIME 274.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC DISTANCE 639.552 EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	32.393	GAL	-3.97	AZL	90.75	HCA	203.46	SMA	185.89	ECC	.20195	INC	.7457	V1	29.600
RP	223.42	LAP	.30	LOP	58.58	VP	21.773	GAP	.13	AZP	89.32	TAL	336.01	TAP	179.47	RCA	148.35	APO	223.43	V2	24.612
RC	210.566	GL	-6.27	GP	-7.04	ZAL	134.48	ZAP	51.65	ETS	173.48	ZAE	90.67	ETE	180.42	ZAC	95.48	ETC	271.14	LVI	-2.07

PLANETOCENTRIC CONIC

C3	14.847	VHL	3.853	DLA	-9.75	RAL	353.25	RAD	6640.5	VEL	11.615	PTH	6.66	VHP	3.539	DPA	-30.54	RAP	292.85	ECC	1.2443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 45	2870.38	-25.22	83.56	207.78	131.78	18 0 35	1870.4	-7.56	66.27
60.00	18 2 55	2738.96	-20.83	75.34	211.59	125.32	18 48 32	1737.0	-5.39	56.33
70.00	19 7 3	2548.41	-16.79	62.79	214.33	120.19	19 49 31	1548.4	-3.35	42.58
80.00	20 26 17	2300.36	-13.80	45.64	216.01	116.74	21 4 38	1300.4	-1.81	24.71
90.00	21 52 32	2022.08	-12.67	25.76	216.58	115.49	22 26 14	1022.1	-1.22	4.58
100.00	23 9 9	1774.83	-13.80	7.01	216.01	116.74	23 38 44	774.8	-1.81	346.08
110.00	0 10 25	1595.23	-16.79	351.71	214.33	120.19	0 37 0	595.2	-3.35	331.50

DIFFERENTIAL CORRECTIONS

TDE	1.3059	TRA	3.7327	TC3	-6.2236	BAU	1.2374												
RDE	.2996	RRA	.2399	RC3	-.3610	FAU	.13931												
FDE	3.0930	FRA	7.7809	FC3	-8.1234	BSP	13054												
BDE	1.3398	BRA	3.7404	BC3	6.2340	FSP	2233												

MID-COURSE EXECUTION ACCURACY

SGT	7647.8	SGR	637.8	SG3	1216.3						
RRT	.8687	RRF	.8954	RTF	.9760						
SGB	7674.4	R23	.0931	R13	.9762						
SG1	7667.9	SG2	315.1	THA	4.15						

ORBIT DETERMINATION ACCURACY

ST	128.9	SR	22.9	SS	88.6						
CRT	.8879	CRS	-.9153	CST	-.9978						
LSA	157.7	MSA	11.1	SSA	1.3						
EL1	130.5	EL2	10.4	ALF	9.03						

LAUNCH DATE APR 26 1971 FLIGHT TIME 276.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 643.634 EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	32.402	GAL	-4.06	AZL	90.80	HCA	204.54	SMA	186.03	ECC	.20308	INC	.7979	V1	29.600
RP	223.81	LAP	.33	LOP	59.67	VP	21.738	GAP	-.02	AZP	89.27	TAL	335.55	TAP	180.10	RCA	148.25	APO	223.81	V2	24.571
RC	213.227	GL	-6.64	GP	-6.67	ZAL	134.93	ZAP	50.72	ETS	173.60	ZAE	89.54	ETE	180.29	ZAC	95.84	ETC	271.18	LVI	-2.47

PLANETOCENTRIC CONIC

C3	15.183	VHL	3.897	DLA	-9.88	RAL	353.86	RAD	6640.6	VEL	11.629	PTH	6.67	VHP	3.571	DPA	-30.15	RAP	292.99	ECC	1.2499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 42	2872.65	-25.33	83.67	208.65	131.73	18 3 35	1872.7	-7.67	66.37
60.00	18 6 2	2738.81	-20.90	75.44	212.48	125.28	18 51 41	1738.8	-5.47	56.42
70.00	19 10 20	2549.74	-16.84	62.87	215.24	120.16	19 52 50	1549.7	-3.40	42.65
80.00	20 29 45	2301.16	-13.83	45.69	216.93	116.73	21 8 6	1301.2	-1.84	24.76
90.00	21 56 5	2022.64	-12.69	25.79	217.50	115.49	22 29 47	1022.6	-1.24	4.61
100.00	23 12 37	1775.63	-13.83	7.06	216.93	116.73	23 42 12	775.6	-1.84	346.12
110.00	0 13 43	1596.56	-16.84	351.79	215.24	120.16	0 40 19	596.6	-3.40	331.57

DIFFERENTIAL CORRECTIONS

TDE	1.3453	TRA	3.8657	TC3	-6.2130	BAU	1.2629												
RDE	.3018	RRA	.2168	RC3	-.3315	FAU	.13537												
FDE	3.0738	FRA	7.7136	FC3	-7.7189	BSP	13321												
BDE	1.3787	BRA	3.8718	BC3	6.2218	FSP	2192												

MID-COURSE EXECUTION ACCURACY

SGT	7787.7	SGR	607.0	SG3	1188.3						
RRT	.8454	RRF	.8728	RTF	.9756						
SGB	7811.3	R23	.0872	R13	.9758						
SG1	7804.6	SG2	323.5	THA	3.78						

ORBIT DETERMINATION ACCURACY

ST	131.6	SR	22.7	SS	87.8						
CRT	.8754	CRS	-.9059	CST	-.9975						
LSA	159.4	MSA	11.6	SSA	1.3						
EL1	133.1	EL2	10.9	ALF	8.65						

LAUNCH DATE APR 26 1971 FLIGHT TIME 278.00 ARRIVAL DATE JAN 29 1972

HELIOCENTRIC CONIC DISTANCE 647.716 EARTH TO MARS

RL	150.53	LAL	-.00	LOL	215.13	VL	32.411	GAL	-4.15	AZL	90.85	HCA	205.62	SMA	186.18	ECC	.20423	INC	.8455	V1	29.600
RP	224.20	LAP	.37	LOP	60.75	VP	21.704	GAP	-.18	AZP	89.24	TAL	335.09	TAP	180.72	RCA	148.16	APO	224.21	V2	24.529
RC	215.890	GL	-6.96	GP	-6.34	ZAL	135.39	ZAP	49.82	ETS	173.71	ZAE	88.44	ETE	180.17	ZAC	96.16	ETC	271.24	LVI	-2.86

PLANETOCENTRIC CONIC

C3	15.529	VHL	3.941	DLA	-9.98	RAL	354.46	RAD	6640.8	VEL	11.644	PTH	6.68	VHP	3.604	DPA	-29.79	RAP	293.16	ECC	1.2556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 26	2875.80	-25.47	83.84	209.51	131.65	18 6 22	1875.8	-7.83	66.50
60.00	18 8 52	2741.67	-21.01	75.60	213.36	125.22	18 54 34	1741.7	-5.59	56.56
70.00	19 13 18	2552.23	-16.92	63.01	216.13	120.12	19 55 50	1552.2	-3.49	42.78
80.00	20 32 50	2303.28	-13.89	45.81	217.83	116.70	21 11 13	1303.3	-1.91	24.87
90.00	21 59 13	2024.58	-12.74	25.90	218.41	115.46	22 32 57	1024.6	-1.30	4.72
100.00	23 15 42	1777.75	-13.89	7.18	217.83	116.70	23 45 19	777.7	-1.91	346.24
110.00	0 16 40	1599.05	-16.92	351.93	216.13	120.12	0 43 19	599.0	-3.49	331.70

DIFFERENTIAL CORRECTIONS

TDE	1.3858	TRA	3.9990	TC3	-6.2012	BAU	1.2890												
RDE	.3048	RRA	.1952	RC3	-.3055	FAU	.13157												
FDE	3.0545	FRA	7.6420	FC3	-7.3351	BSP	13565												
BDE	1.4189	BRA	4.0038	BC3	6.2087	FSP	2146												

MID-COURSE EXECUTION ACCURACY

SGT	7924.7	SGR	580.9	SG3	1160.5						
RRT	.8192	RRF	.8474	RTF	.9752						
SGB	7945.9	R23	.0820	R13	.9754						
SG1	7939.0	SG2	332.5	THA	3.44						

ORBIT DETERMINATION ACCURACY

ST	134.3	SR	22.6	SS	87.0						
CRT	.8631	CRS	-.8967	CST	-.9973						
LSA	161.2	MSA	12.1	SSA	1.3						
EL1	135.7	EL2	11.3	ALF	8.31						

LAUNCH DATE APR 26 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 31 1972

DISTANCE 551.769 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.53 LAL -.00 LOL 218.13 VL 32.420 GAL -4.25 AZL 90.89 HCA 206.70 SMA 186.33 ECC .20561 INC .8699 V1 29.600
RP 224.59 LAP .40 LOP 61.82 VP 21.670 GAP -.34 AZP 89.20 TAL 334.63 TAP 181.33 RCA 148.03 APO 224.51 V2 24.487
RC 218.554 GL -7.24 GP -6.03 ZAL 135.84 ZAP 48.95 ETS 173.82 ZAE 87.36 ETE 130.06 ZAC 96.46 ETC 271.29 LHI -3.22

PLANETOCENTRIC CONIC

C3 15.885 VHL 3.986 DLA -10.04 RAL 358.03 RAD 8640.9 VEL 11.659 PTH 6.70 VHP 3.637 DRA -29.46 RAP 293.37 ECC 1.2614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 57	2879.72	-25.65	84.04	210.37	131.55	18 8 57	1879.7	-8.02	66.67
60.00	18 11 28	2745.40	-21.16	75.81	214.23	125.14	18 57 23	1745.4	-5.76	56.74
70.00	19 15 58	2555.73	-17.04	63.21	217.02	120.06	19 58 34	1555.7	-3.62	42.97
80.00	20 35 35	2306.54	-13.99	46.01	218.72	116.65	21 14 1	1306.5	-2.02	25.05
90.00	22 2 0	2027.74	-12.84	26.09	219.31	115.42	22 35 47	1027.7	-1.40	4.89
100.00	23 18 26	1781.01	-13.99	7.37	218.72	116.65	23 48 7	781.0	-2.02	346.42
110.00	0 19 21	1602.55	-17.04	352.13	217.02	120.06	0 46 3	602.5	-3.62	331.88

DIFFERENTIAL CORRECTIONS

TDE 1.4302 TRA 4.1362 TC3-6.1798 BAU 1.3138
RDE .3086 RRA .1751 RC3 -.2820 FAU .12755
FDE 3.0386 FRA 7.5735 FC3-6.951J BSP 13834
BDE 1.4631 BRA 4.1399 BC3 6.1863 FSP 2103

MID-COURSE EXECUTION ACCURACY

SGT 8059.7 SGR 559.1 SG3 1133.2
RRT .7906 RRF .8194 RTF .9748
SGB 8079.0 R23 .0773 R13 .9749
SG1 8071.8 SG2 341.9 THA 3.14

ORBIT DETERMINATION ACCURACY

ST 137.2 SR 22.5 SS 86.2
CRT .8514 CRS -.8877 CST -.9971
LSA 163.1 MSA 12.6 SSA 1.3
EL1 138.6 EL2 11.7 ALF 8.01

LAUNCH DATE APR 27 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 15 1971

HELIOCENTRIC CONIC DISTANCE 318.453 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	35.020	GAL	-4.14	AZL	91.91	HCA	103.86	SMA	247.42	ECC	.39703	INC	1.9052
RP	207.32	LAP	-1.85	LOP	318.97	VP	27.274	GAP	21.55	AZP	89.54	TAL	345.37	TAP	89.24	RCA	149.19	APO	345.65
RC	56.291	GL	-10.78	GP	1.04	ZAL	118.73	ZAP	174.28	ETS	169.43	ZAE	173.82	ETE	103.10	ZAC	101.54	ETC	277.00

PLANETOCENTRIC CONIC																			
C3	38.579	VHL	6.211	DLA	-19.53	RAL	341.39	RAD	6650.2	VEL	12.588	PTH	7.45	VHP	10.679	DPA	-17.30	RAP	317.08

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 53	2901.35	-26.62	85.18	207.55	131.01	17 49 14	1901.3	-9.10	67.60
60.00	18 3 38	2734.48	-20.73	75.20	212.61	125.37	18 49 12	1734.5	-5.28	56.21
70.00	19 22 59	2501.21	-15.16	60.11	216.43	120.98	20 4 40	1501.2	-1.55	40.12
80.00	20 57 45	2204.61	-10.80	40.12	218.96	118.00	21 34 30	1204.6	1.43	19.46
90.00	22 31 29	1902.26	-9.07	18.80	219.87	116.90	23 3 11	902.3	2.64	357.89
100.00	23 40 37	1679.08	-10.80	1.49	218.96	118.00	24 8 36	679.1	1.43	340.83
110.00	0 26 21	1548.03	-15.16	349.03	216.43	120.98	0 52 9	548.0	-1.55	329.03

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.5585	TRA	-1.1989	TC3	-.0360	BAU	.0486	SGT	1282.3	SGR	576.8	SG3	129.0	ST	31.2	SR	26.6	SS	20.0
RDE	-.5736	RRA	.2068	RC3	.0871	FAU	.03531	RRT	.0410	RRF	-.0439	RTF	-.7193	CRT	.7560	CRS	.5682	CST	.9661
FDE	.3095	FRA	1.1095	FC3	-.7924	BSP	2009	SGB	1406.1	R23	-.0070	R13	-.7195	LSA	42.4	MSA	16.9	SSA	1.1
BDE	.8006	BRA	1.2166	BC3	.0942	FSP	165	SG1	1282.6	SG2	576.2	THA	1.32	EL1	38.5	EL2	14.1	ALF	39.06

LAUNCH DATE APR 27 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 320.669 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	34.848	GAL	-4.02	AZL	91.92	HCA	105.13	SMA	241.99	ECC	.38332	INC	1.9152
RP	207.22	LAP	-1.85	LOP	321.23	VP	27.064	GAP	21.04	AZP	89.50	TAL	345.44	TAP	90.57	RCA	149.23	APO	334.75
RC	56.455	GL	-11.11	GP	1.07	ZAL	118.75	ZAP	173.43	ETS	170.50	ZAE	173.95	ETE	94.65	ZAC	101.52	ETC	277.09

PLANETOCENTRIC CONIC																			
C3	36.326	VHL	6.027	DLA	-19.82	RAL	341.58	RAD	6649.4	VEL	12.499	PTH	7.39	VHP	10.346	DPA	-17.15	RAP	317.45

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 55	2880.02	-25.66	84.06	206.85	131.55	17 50 55	1880.0	-8.04	66.68
60.00	18 6 6	2711.99	-19.84	73.97	211.90	125.83	18 51 18	1712.0	-4.29	55.13
70.00	19 26 1	2477.05	-14.30	58.76	215.74	121.35	20 7 18	1477.1	-.62	38.85
80.00	21 1 25	2178.44	-9.96	38.64	218.28	118.29	21 37 43	1178.4	2.32	18.02
90.00	22 35 30	1874.99	-8.22	17.25	219.21	117.15	23 6 45	875.0	3.51	356.37
100.00	23 44 18	1652.91	-9.96	.00	218.28	118.29	24 11 51	652.9	2.32	339.39
110.00	0 29 23	1523.87	-14.30	347.68	215.74	121.35	0 54 47	523.9	-.62	327.77

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.5532	TRA	-1.1882	TC3	-.0254	BAU	.0470	SGT	1311.1	SGR	576.1	SG3	137.9	ST	31.9	SR	26.6	SS	20.7
RDE	-.5557	RRA	.1983	RC3	.0934	FAU	.03643	RRT	.0446	RRF	-.0481	RTF	-.7301	CRT	.7558	CRS	.5644	CST	.9651
FDE	.3191	FRA	1.1546	FC3	-.8682	BSP	2063	SGB	1432.1	R23	-.0078	R13	-.7303	LSA	43.1	MSA	17.1	SSA	1.1
BDE	.7840	BRA	1.2046	BC3	.0968	FSP	179	SG1	1311.4	SG2	575.4	THA	1.39	EL1	39.0	EL2	14.2	ALF	38.22

LAUNCH DATE APR 27 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 323.076 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	34.686	GAL	-3.90	AZL	91.93	HCA	106.39	SMA	237.10	ECC	.37041	INC	1.9253
RP	207.13	LAP	-1.85	LOP	322.50	VP	26.865	GAP	20.55	AZP	89.46	TAL	345.52	TAP	91.91	RCA	149.28	APO	324.93
RC	56.701	GL	-11.46	GP	1.11	ZAL	118.75	ZAP	172.58	ETS	171.34	ZAE	173.96	ETE	86.29	ZAC	101.51	ETC	277.18

PLANETOCENTRIC CONIC																			
C3	34.250	VHL	5.852	DLA	-20.12	RAL	341.76	RAD	6648.6	VEL	12.416	PTH	7.32	VHP	10.024	DPA	-17.00	RAP	317.83

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 57	2858.74	-24.69	82.95	206.17	132.05	17 52 36	1858.7	-6.97	65.78
60.00	18 8 36	2689.49	-18.94	72.75	211.21	126.26	18 53 25	1689.5	-3.30	54.05
70.00	19 29 7	2452.77	-13.44	57.41	215.07	121.70	20 10 0	1452.8	.31	37.59
80.00	21 5 14	2151.99	-9.11	37.14	217.63	118.56	21 41 6	1152.0	3.21	16.57
90.00	22 39 40	1847.35	-7.36	15.67	218.57	117.38	23 10 27	847.3	4.40	354.82
100.00	23 48 5	1626.46	-9.11	358.51	217.63	118.56	24 15 12	626.5	3.21	337.93
110.00	0 32 30	1499.59	-13.44	346.33	215.07	121.70	0 57 29	499.6	.31	326.51

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.5486	TRA	-1.1803	TC3	-.0151	BAU	.0483	SGT	1342.9	SGR	575.0	SG3	147.4	ST	32.6	SR	26.5	SS	21.5
RDE	-.5382	RRA	.1900	RC3	.1000	FAU	.03761	RRT	.0481	RRF	-.0526	RTF	-.7299	CRT	.7554	CRS	.5602	CST	.9640
FDE	.3287	FRA	1.2019	FC3	-.9506	BSP	2128	SGB	1460.8	R23	-.0090	R13	-.7400	LSA	43.9	MSA	17.3	SSA	1.1
BDE	.7685	BRA	1.1955	BC3	.1012	FSP	193	SG1	1343.2	SG2	574.1	THA	1.45	EL1	39.5	EL2	14.3	ALF	37.31

LAUNCH DATE APR 27 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 325.650 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	34.532	GAL	-3.78	AZL	91.94	HCA	107.68	SMA	232.68	ECC	.35824	INC	1.9355
RP	207.05	LAP	-1.84	LOP	323.76	VP	26.676	GAP	20.06	AZP	89.41	TAL	345.61	TAP	93.27	RCA	149.33	APO	316.04
RC	57.030	GL	-11.81	GP	1.15	ZAL	118.73	ZAP	171.68	ETS	172.00	ZAE	173.86	ETE	78.39	ZAC	101.50	ETC	277.26

PLANETOCENTRIC CONIC																			
C3	32.334	VHL	5.686	DLA	-20.44	RAL	341.92	RAD	6647.9	VEL	12.339	PTH	7.27	VHP	9.713	DPA	-16.85	RAP	318.20

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 0	2837.51	-23.72	81.87	205.50	132.53	17 54 17	1837.5	-5.91	64.88
60.00	18 11 8	2666.96	-18.02	71.55	210.54	126.68	18 55 34	1667.0	-2.31	52.97
70.00	19 32 18	2428.34	-12.56	56.06	214.41	122.02	20 12 46	1428.3	1.24	36.31
80.00	21 9 9	2125.22	-8.23	35.63	216.99	118.80	21 44 34	1125.2	4.11	15.09
90.00	22 44 0	1819.28	-6.48	14.08	217.94	117.59	23 14 19	819.3	5.29	353.24
100.00	23 52 1	1599.70	-8.23	357.00	216.99	118.80	24 18 40	599.7	4.11	336.46
110.00	0 35 40	1475.16	-12.56	344.98	214.41	122.02	1 0 15	475.2	1.24	325.23

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.5337	TRA	-1.1598	TC3	.0106	BAU	.0465	SGT	1358.2	SGR	573.5	SG3	157.6	ST	32.8	SR	26.4	SS	22.3
RDE	-.5212	RRA	.1818	RC3	.1070	FAU	.03875	RRT	.0515	RRF	-.0579	RTF	-.7591	CRT	.7524	CRS	.5584	CST	.9647
FDE	.3413	FRA	1.2541	FC3	-1.0375	BSP	2053	SGB	1474.3	R23	-.0104	R13	-.7592	LSA	44.3	MSA	17.5	SSA	1.1
BDE	.7460	BRA	1.1740	BC3	.1075	FSP	213	SG1	1358.6	SG2	572.5	THA	1.51	EL1	39.5	EL2	14.4	ALF	36.98

LAUNCH DATE APR 27 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 23 1971

DISTANCE 328.374

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 34.387 GAL -3.66 AZL 91.95 HCA 108.92 SMA 228.67 ECC .34679 INC 1.9459 V1 29.592
RP 206.97 LAP -1.84 LOP 325.03 VP 26.497 GAP 19.58 AZP 89.37 TAL 345.71 TAP 94.63 RCA 149.37 APO 307.98 V2 26.462
RC 57.440 GL -12.17 GP 1.19 ZAL 118.69 ZAP 170.79 ETS 172.54 ZAE 173.67 ETE 71.21 ZAC 101.49 ETC 277.34 LVI -18.56

PLANETOCENTRIC CONIC

C3 30.571 VHL 5.529 DLA -20.77 RAL 342.06 RAD 6647.2 VEL 12.268 PTH 7.21 VHP 9.412 DPA -16.70 RAP 318.56 ECC 1.5031

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 2	2816.45	-22.73	80.81	204.67	132.99	17 55 59	1816.4	-4.86	63.99
60.00	18 13 41	2644.53	-17.11	70.36	209.90	127.06	18 57 45	1644.5	-1.33	51.90
70.00	19 35 32	2403.91	-11.68	54.72	213.78	122.33	20 15 36	1403.9	2.17	35.04
80.00	21 13 11	2098.30	-7.35	34.12	216.39	119.02	21 48 9	1098.3	5.02	13.60
90.00	22 48 28	1790.95	-5.56	12.48	217.35	117.77	23 18 19	790.9	6.19	351.64
100.00	23 56 3	1572.77	-7.35	355.49	216.39	119.02	24 22 16	572.8	5.02	334.97
110.00	0 38 54	1450.73	-11.68	343.64	213.78	122.33	1 3 5	450.7	2.17	323.96

DIFFERENTIAL CORRECTIONS

TDE -.5335 TRA-1.1546 TC3 .0179 BAU .0473
RDE -.5049 RRA .1737 RC3 .1142 FAU .04013
FDE .3500 FRA 1.3047 FC3-1.1365 BSP 2173
BDE .7345 BRA 1.1676 BC3 .1156 FSP 228

MID-COURSE EXECUTION ACCURACY

SGT 1394.1 SGR 571.6 SG3 168.5
RRT .0570 RRF -.0630 RTF -.7636
SGB 1506.7 R23 -.0107 R13 -.7638
SG1 1394.5 SG2 570.5 THA 1.61

ORBIT DETERMINATION ACCURACY

ST 33.7 SR 26.3 SS 23.0
CRT .7538 CRS .5526 CST .9624
LSA 45.2 MSA 17.6 SSA 1.1
EL1 40.2 EL2 14.5 ALF 38.88

LAUNCH DATE APR 27 1971 FLIGHT TIME 120.00 ARRIVAL DATE AUG 25 1971

DISTANCE 331.231

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 34.250 GAL -3.55 AZL 91.96 HCA 110.19 SMA 225.03 ECC .33600 INC 1.9564 V1 29.592
RP 206.90 LAP -1.84 LOP 326.30 VP 26.327 GAP 19.10 AZP 89.32 TAL 345.83 TAP 96.01 RCA 149.42 APO 300.64 V2 26.469
RC 57.930 GL -12.53 GP 1.23 ZAL 118.63 ZAP 169.88 ETS 172.98 ZAE 173.42 ETE 64.89 ZAC 101.49 ETC 277.42 LVI -18.70

PLANETOCENTRIC CONIC

C3 28.944 VHL 5.380 DLA -21.11 RAL 342.20 RAD 6646.6 VEL 12.202 PTH 7.16 VHP 9.121 DPA -16.56 RAP 318.90 ECC 1.4763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1' 5	2795.52	-21.77	79.78	204.26	133.41	17 57 41	1795.5	-3.81	63.11
60.00	18 16 16	2622.17	-16.19	69.19	209.29	127.43	18 59 59	1622.2	-.34	50.83
70.00	19 3(51	2379.43	-10.78	53.39	213.18	122.61	20 18 30	1379.4	3.11	33.76
80.00	21 17 21	2071.12	-6.45	32.61	215.80	119.22	21 51 52	1071.1	5.93	12.10
90.00	22 *3 7	1762.22	-4.67	10.87	216.78	117.92	23 22 29	762.2	7.09	350.02
100.00	0 4 9	1545.59	-6.45	353.98	215.80	119.22	0 29 55	545.6	5.93	333.46
110.00	0 42 13	1426.25	-10.78	342.31	213.18	122.61	1 5 59	426.2	3.11	322.68

DIFFERENTIAL CORRECTIONS

TDE -.5309 TRA-1.1466 TC3 .0292 BAU .0485
RDE -.4890 RRA .1657 RC3 .1218 FAU .04161
FDE .3594 FRA 1.3577 FC3-1.2446 BSP 2266
BDE .7218 BRA 1.1585 BC3 .1253 FSP 246

MID-COURSE EXECUTION ACCURACY

SGT 1426.2 SGR 569.4 SG3 180.0
RRT .0628 RRF -.0688 RTF -.7696
SGB 1535.6 R23 -.0115 R13 -.7698
SG1 1426.7 SG2 568.0 THA 1.71

ORBIT DETERMINATION ACCURACY

ST 34.4 SR 26.2 SS 23.8
CRT .7547 CRS .5475 CST .9604
LSA 46.0 MSA 17.3 SSA 1.2
EL1 40.7 EL2 14.5 ALF 34.94

LAUNCH DATE APR 27 1971 FLIGHT TIME 122.00 ARRIVAL DATE AUG 27 1971

DISTANCE 334.205

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 34.120 GAL -3.44 AZL 91.97 HCA 111.45 SMA 221.70 ECC .32584 INC 1.9671 V1 29.592
RP 206.85 LAP -1.83 LOP 327.56 VP 26.165 GAP 18.64 AZP 89.28 TAL 345.95 TAP 97.40 RCA 149.46 APO 293.94 V2 26.476
RC 58.496 GL -12.90 GP 1.28 ZAL 118.55 ZAP 168.95 ETS 173.35 ZAE 173.12 ETE 59.47 ZAC 101.49 ETC 277.49 LVI -18.84

PLANETOCENTRIC CONIC

C3 27.442 VHL 5.239 DLA -21.46 RAL 342.32 RAD 6646.0 VEL 12.141 PTH 7.11 VHP 8.840 DPA -16.41 RAP 319.22 ECC 1.4516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 9	2774.75	-20.80	78.77	203.68	133.81	17 59 24	1774.7	-2.77	62.24
60.00	18 18 54	2599.90	-15.26	68.03	208.70	127.76	19 2 14	1599.9	.64	49.77
70.00	19 42 14	2354.91	-9.88	52.07	212.60	122.86	20 21 29	1354.9	4.04	32.47
80.00	21 21 40	2043.72	-5.53	31.09	215.25	119.39	21 55 44	1043.7	6.84	10.97
90.00	22 57 57	1733.14	-3.74	9.24	216.24	118.05	23 26 50	733.1	8.00	348.36
100.00	0 0 26	1516.19	-5.53	352.46	215.25	119.39	0 33 46	516.2	6.84	331.94
110.00	0 45 36	1401.73	-9.88	340.99	212.60	122.86	1 8 58	401.7	4.04	321.39

DIFFERENTIAL CORRECTIONS

TDE -.5269 TRA-1.1374 TC3 .0422 BAU .0500
RDE -.4736 RRA .1579 RC3 .1297 FAU .04314
FDE .3689 FRA 1.4137 FC3-1.3609 BSP 2347
BDE .7085 BRA 1.1483 BC3 .1364 FSP 265

MID-COURSE EXECUTION ACCURACY

SGT 1456.2 SGR 566.7 SG3 192.3
RRT .0686 RRF -.0750 RTF -.7762
SGB 1562.6 R23 -.0123 R13 -.7764
SG1 1456.9 SG2 565.2 THA 1.80

ORBIT DETERMINATION ACCURACY

ST 35.1 SR 26.0 SS 24.5
CRT .7551 CRS .5419 CST .9584
LSA 46.8 MSA 17.9 SSA 1.2
EL1 41.2 EL2 14.5 ALF 34.08

LAUNCH DATE APR 27 1971 FLIGHT TIME 124.00 ARRIVAL DATE AUG 29 1971

DISTANCE 337.286

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 33.998 GAL -3.33 AZL 91.98 HCA 112.72 SMA 218.66 ECC .31626 INC 1.9780 V1 29.592
RP 206.80 LAP -1.82 LOP 328.03 VP 26.012 GAP 18.18 AZP 89.24 TAL 346.08 TAP 98.60 RCA 149.51 APO 287.82 V2 26.482
RC 59.13? GL -13.27 GP 1.33 ZAL 118.46 ZAP 168.01 ETS 173.67 ZAE 172.82 ETE 54.88 ZAC 101.49 ETC 277.56 LVI -18.98

PLANETOCENTRIC CONIC

C3 26.056 VHL 5.105 DLA -21.82 RAL 342.43 RAD 6645.4 VEL 12.084 PTH 7.06 VHP 8.568 DPA -16.27 RAP 319.53 ECC 1.4208

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 13	2754.16	-19.82	77.78	203.13	134.18	18 1 7	1754.2	-1.73	61.38
60.00	18 21 34	2577.74	-14.33	66.89	208.14	128.08	19 4 31	1577.7	1.61	48.71
70.00	19 45 42	2330.39	-8.97	50.75	212.05	123.09	20 24 32	1330.4	4.97	31.19
80.00	21 26 7	2016.10	-4.61	29.56	214.72	119.53	21 59 43	1016.1	7.75	9.03
90.00	23 2 59	1703.68	-2.79	7.59	215.72	118.15	23 31 22	703.7	8.92	346.68
100.00	0 12 55	1490.57	-4.61	350.93	214.72	119.53	0 37 46	490.6	7.75	330.40
110.00	0 49 4	1377.21	-8.97	339.67	212.05	123.09	1 12 1	377.2	4.97	320.10

DIFFERENTIAL CORRECTIONS

TDE -.5223 TRA-1.1273 TC3 .0575 BAU .0520
RDE -.4587 RRA .1501 RC3 .1379 FAU .04477
FDE .3792 FRA 1.4729 FC3-1.4875 BSP 2416
BDE .6951 BRA 1.1372 BC3 .1494 FSP 286

MID-COURSE EXECUTION ACCURACY

SGT 1484.9 SGR 563.8 SG3 205.5
RRT .0750 RRF -.0819 RTF -.7830
SGB 1588.3 R23 -.0134 R13 -.7833
SG1 1485.6 SG2 561.9 THA 1.90

ORBIT DETERMINATION ACCURACY

ST 35.7 SR 25.9 SS 25.3
CRT .7555 CRS .5367 CST .9565
LSA 47.5 MSA 18.1 SSA 1.2
EL1 41.7 EL2 14.5 ALF 33.27

LAUNCH DATE APR 27 1971 FLIGHT TIME 126.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 340.463 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 33.883 GAL -3.23 AZL 91.99 HCA 113.99 SMA 215.88 ECC .30724 INC 1.9892 V1 29.592
RP 206.75 LAP -1.82 LOP 330.10 VP 25.866 GAP 17.73 AZP 89.19 TAL 346.22 TAP 100.20 RCA 149.55 APO 282.20 V2 26.487
RC 59.850 GL -13.65 GP 1.38 ZAL 118.35 ZAP 167.05 ETS 173.93 ZAE 172.51 ETE 51.04 ZAC 101.50 ETC 277.62 LVI -19.12

PLANETOCENTRIC CONIC

C3 24.776 VHL 4.978 DLA -22.19 RAL 342.53 RAD 6644.9 VEL 12.031 PTH 7.02 VHP 8.304 DPA -16.13 RAP 319.81 ECC 1.4078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 18	2733.79	-18.85	76.81	202.60	134.53	18 2 52	1733.8	-.71	60.53
60.00	18 24 15	2555.73	-13.41	65.77	207.60	128.37	19 6 51	1555.7	2.58	47.66
70.00	19 49 15	2305.87	-8.06	49.44	211.53	123.30	20 27 41	1305.9	5.90	29.90
80.00	21 30 44	1988.26	-3.67	28.02	214.23	119.65	22 3 52	988.3	8.66	7.47
90.00	23 8 13	1673.83	-1.83	5.92	215.24	118.23	23 36 7	673.8	9.83	344.97
100.00	0 17 32	1462.73	-3.67	349.39	214.23	119.65	0 41 55	462.7	8.66	328.64
110.00	0 52 37	1352.69	-8.06	338.36	211.53	123.30	1 15 10	352.7	5.90	318.81

DIFFERENTIAL CORRECTIONS

TDE -.5168 TRA-1.1161 TC3 .0742 BAU .0544
RDE -.4443 RRA .1424 RC3 .1465 FAU .04651
FDE .3894 FRA 1.5349 FC3-1.6252 BSP 2474
BDE .6815 BRA 1.1252 BC3 .1642 FSP 309

MID-COURSE EXECUTION ACCURACY

SGT 1511.5 SGR 560.5 SG3 219.6
RRT .0818 RRF -.0894 RTF -.7897
SGB 1612.1 R23 -.0146 R13 -.7900
SG1 1512.3 SG2 558.4 THA 2.01

ORBIT DETERMINATION ACCURACY

ST 36.3 SR 25.7 SS 26.1
CRT .7557 CRS .5313 CST .9546
LSA 48.3 MSA 18.2 SSA 1.2
EL1 42.0 EL2 14.5 ALF 32.52

LAUNCH DATE APR 27 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 343.726 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 33.774 GAL -3.12 AZL 92.00 HCA 115.26 SMA 213.32 ECC .29873 INC 2.0005 V1 29.592
RP 206.72 LAP -1.81 LOP 331.37 VP 25.727 GAP 17.29 AZP 89.15 TAL 346.36 TAP 101.62 RCA 149.60 APO 277.05 V2 26.491
RC 60.633 GL -14.03 GP 1.43 ZAL 118.22 ZAP 166.07 ETS 174.16 ZAE 172.22 ETE 47.86 ZAC 101.52 ETC 277.69 LVI -19.25

PLANETOCENTRIC CONIC

C3 23.595 VHL 4.857 DLA -22.57 RAL 342.61 RAD 6644.4 VEL 11.982 PTH 6.98 VHP 8.049 DPA -15.99 RAP 320.08 ECC 1.3883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 24	2713.65	-17.89	75.87	202.10	134.86	18 4 38	1713.7	.30	59.69
60.00	18 27 0	2533.89	-12.48	64.67	207.09	128.64	19 9 14	1533.9	3.54	46.61
70.00	19 52 53	2281.39	-7.14	48.14	211.04	123.49	20 30 54	1281.4	6.82	28.60
80.00	21 35 31	1960.20	-2.73	26.48	213.76	119.74	22 8 11	960.2	9.58	5.89
90.00	23 13 41	1643.56	-.86	4.23	214.80	118.27	23 41 4	643.6	10.75	343.22
100.00	0 22 19	1434.67	-2.73	347.85	213.76	119.74	0 46 13	434.7	9.58	327.26
110.00	0 56 15	1328.21	-7.14	337.06	211.04	123.49	1 18 23	328.2	6.82	317.52

DIFFERENTIAL CORRECTIONS

TDE -.5109 TRA-1.1045 TC3 .0915 BAU .0569
RDE -.4304 RRA .1349 RC3 .1553 FAU .04834
FDE .3996 FRA 1.5998 FC3-1.7736 BSP 2530
BDE .6681 BRA 1.1127 BC3 .1803 FSP 333

MID-COURSE EXECUTION ACCURACY

SGT 1536.8 SGR 556.9 SG3 234.5
RRT .0892 RRF -.0974 RTF -.7960
SGB 1634.6 R23 -.0159 R13 -.7963
SG1 1537.7 SG2 554.4 THA 2.13

ORBIT DETERMINATION ACCURACY

ST 36.8 SR 25.5 SS 26.9
CRT .7559 CRS .5255 CST .9525
LSA 48.9 MSA 18.4 SSA 1.2
EL1 42.4 EL2 14.5 ALF 31.80

LAUNCH DATE APR 27 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 347.067 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 33.671 GAL -3.03 AZL 92.01 HCA 116.52 SMA 210.97 ECC .29072 INC 2.0121 V1 29.592
RP 206.70 LAP -1.80 LOP 332.04 VP 25.595 GAP 16.86 AZP 89.10 TAL 346.51 TAP 103.04 RCA 149.64 APO 272.30 V2 26.494
RC 61.483 GL -14.41 GP 1.49 ZAL 118.09 ZAP 165.07 ETS 174.36 ZAE 171.96 ETE 45.25 ZAC 101.54 ETC 277.74 LVI -19.38

PLANETOCENTRIC CONIC

C3 22.503 VHL 4.744 DLA -22.96 RAL 342.69 RAD 6643.9 VEL 11.937 PTH 6.94 VHP 7.803 DPA -15.85 RAP 320.33 ECC 1.3703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 31	2693.78	-16.93	74.95	201.62	135.16	18 6 24	1693.8	1.30	58.66
60.00	18 29 46	2512.23	-11.56	63.59	206.61	128.88	19 11 39	1512.2	4.49	45.57
70.00	19 56 36	2256.96	-6.22	46.85	210.57	123.65	20 34 13	1257.0	7.74	27.30
80.00	21 40 28	1931.92	-1.77	24.93	213.33	119.81	22 12 40	931.9	10.49	4.28
90.00	23 19 24	1612.83	.13	2.52	214.39	118.28	23 46 16	612.8	11.67	341.43
100.00	0 27 16	1406.39	-1.77	346.29	213.33	119.81	0 50 42	406.4	10.49	325.65
110.00	0 59 59	1303.78	-6.22	335.76	210.57	123.65	1 21 42	303.8	7.74	316.22

DIFFERENTIAL CORRECTIONS

TDE -.5048 TRA-1.0923 TC3 .1097 BAU .0595
RDE -.4169 RRA .1274 RC3 .1645 FAU .05030
FDE .4099 FRA 1.6683 FC3-1.9349 BSP 2579
BDE .6545 BRA 1.0997 BC3 .1978 FSP 359

MID-COURSE EXECUTION ACCURACY

SGT 1560.4 SGR 553.0 SG3 250.5
RRT .0970 RRF -.1062 RTF -.8020
SGB 1655.5 R23 -.0174 R13 -.8023
SG1 1561.5 SG2 550.1 THA 2.25

ORBIT DETERMINATION ACCURACY

ST 37.3 SR 25.3 SS 27.6
CRT .7561 CRS .5195 CST .9504
LSA 49.6 MSA 18.5 SSA 1.2
EL1 42.7 EL2 14.5 ALF 31.14

LAUNCH DATE APR 27 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 350.480 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 33.574 GAL -2.93 AZL 92.02 HCA 117.79 SMA 208.81 ECC .28318 INC 2.0240 V1 29.592
RP 206.68 LAP -1.79 LOP 333.01 VP 25.469 GAP 16.44 AZP 89.06 TAL 346.67 TAP 104.47 RCA 149.68 APO 267.93 V2 26.496
RC 62.398 GL -14.80 GP 1.55 ZAL 117.94 ZAP 164.05 ETS 174.54 ZAE 171.74 ETE 43.13 ZAC 101.56 ETC 277.80 LVI -19.51

PLANETOCENTRIC CONIC

C3 21.495 VHL 4.636 DLA -23.35 RAL 342.76 RAD 6643.5 VEL 11.895 PTH 6.91 VHP 7.564 DPA -15.72 RAP 320.56 ECC 1.3838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 38	2674.17	-15.98	74.05	201.18	135.43	18 8 13	1674.2	2.29	58.04
60.00	18 32 36	2490.79	-10.64	62.52	206.16	129.10	19 14 6	1490.8	5.43	44.54
70.00	20 0 25	2232.60	-5.30	45.56	210.14	123.79	20 37 38	1232.6	8.65	26.01
80.00	21 45 36	1903.41	-.80	23.36	212.94	119.85	22 17 20	903.4	11.40	2.66
90.00	23 25 22	1581.61	1.14	.77	214.01	118.26	23 51 44	581.6	12.60	339.60
100.00	0 32 24	1377.88	-.80	344.73	212.94	119.85	0 55 22	377.9	11.40	324.02
110.00	1 3 47	1279.42	-5.30	334.48	210.14	123.79	1 25 7	279.4	8.65	314.92

DIFFERENTIAL CORRECTIONS

TDE -.4984 TRA-1.0798 TC3 .1290 BAU .0623
RDE -.4039 RRA .1199 RC3 .1741 FAU .05239
FDE .4206 FRA 1.7402 FC3-2.1099 BSP 2632
BDE .6415 BRA 1.0865 BC3 .2167 FSP 386

MID-COURSE EXECUTION ACCURACY

SGT 1583.1 SGR 548.9 SG3 267.5
RRT .1060 RRF -.1160 RTF -.8077
SGB 1675.6 R23 -.0190 R13 -.8081
SG1 1584.3 SG2 545.4 THA 2.39

ORBIT DETERMINATION ACCURACY

ST 37.7 SR 25.1 SS 28.6
CRT .7565 CRS .5137 CST .9481
LSA 50.2 MSA 18.6 SSA 1.2
EL1 43.0 EL2 14.4 ALF 30.48

LAUNCH DATE APR 27 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 8 1971

DISTANCE 353.957

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	33.483	GAL	-2.84	AZL	92.04	HCA	119.06	SMA	206.81	ECC	.27607	INC	2.0361	V1	29.592
RP	206.67	LAP	-1.78	LOP	335.18	VP	25.349	GAP	16.03	AZP	89.01	TAL	348.83	TAP	105.80	RCA	149.72	APO	263.90	V2	26.496
RC	63.376	GL	-15.10	GP	1.61	ZAL	117.78	ZAP	163.00	ETS	174.68	ZAE	171.56	ETE	41.45	ZAC	101.60	ETC	277.85	LVI	-19.63

PLANETOCENTRIC CONIC

C3	20.565	VHL	4.535	DLA	-23.75	RAL	342.83	RAD	6643.1	VEL	11.856	PTH	6.87	VHP	7.333	DPA	-15.59	RAP	320.76	ECC	1.3384

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 47	2684.87	-15.05	73.18	200.76	135.69	18 10 2	1654.9	3.25	57.23
60.00	18 35 28	2469.57	-9.73	61.47	205.74	129.31	19 16 37	1469.6	6.36	43.51
70.00	20 4 19	2208.31	-4.38	44.29	209.74	123.91	20 41 8	1208.3	9.55	24.70
80.00	21 30 56	1874.64	.17	21.78	212.58	119.86	22 22 11	874.6	12.30	1.00
90.00	23 31 39	1549.82	2.16	359.00	213.68	118.20	23 57 29	549.8	13.52	337.73
100.00	0 37 44	1349.11	.17	343.15	212.58	119.86	1 0 13	349.1	12.30	322.37
110.00	1 7 42	1255.13	-4.38	333.20	209.74	123.91	1 28 37	255.1	9.55	313.62

DIFFERENTIAL CORRECTIONS

TDE	-.4916	TRA	-1.0667	TC3	.1481	BAU	.0649
RDE	-.3913	RRA	.1126	RC3	.1840	FAU	.05460
FDE	.4312	FRA	1.0160	FC3	-2.2985	BSP	2677
BDE	.6283	BRA	1.0727	BC3	.2361	FSP	416

MID-COURSE EXECUTION ACCURACY

SGT	1603.8	SGR	544.5	SG3	285.6		
RRT	.1153	RRF	-.1265	RTF	-.8129		
SGB	1693.7	R23	-.0209	R13	-.8133		
SG1	1605.1	SG2	540.4	THA	2.53		

ORBIT DETERMINATION ACCURACY

ST	38.1	SR	24.6	SS	29.5
CRT	.7569	CRS	.5079	CST	.9456
LSA	50.8	HSA	18.8	SSA	1.2
EL1	43.2	EL2	14.3	ALF	29.87

LAUNCH DATE APR 27 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 10 1971

DISTANCE 357.493

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	33.396	GAL	-2.75	AZL	92.05	HCA	120.33	SMA	204.97	ECC	.26938	INC	2.0485	V1	29.592
RP	206.68	LAP	-1.77	LOP	336.45	VP	25.235	GAP	15.62	AZP	88.96	TAL	347.00	TAP	107.33	RCA	149.75	APO	260.18	V2	26.496
RC	64.414	GL	-15.58	GP	1.68	ZAL	117.61	ZAP	161.94	ETS	174.82	ZAE	171.43	ETE	40.15	ZAC	101.63	ETC	277.89	LVI	-19.75

PLANETOCENTRIC CONIC

C3	19.705	VHL	4.439	DLA	-24.16	RAL	342.88	RAD	6642.7	VEL	11.820	PTH	6.84	VHP	7.109	DPA	-15.46	RAP	320.94	ECC	1.3243

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 27 57	2635.88	-14.12	72.33	200.37	135.92	18 11 53	1635.9	4.21	56.44
60.00	18 38 22	2448.60	-8.82	60.44	205.36	129.49	19 19 11	1448.6	7.27	42.50
70.00	20 8 20	2184.12	-3.46	43.02	209.38	124.00	20 44 44	1184.1	10.44	23.40
80.00	21 56 30	1845.60	1.16	20.19	212.25	119.84	22 27 15	845.6	13.21	359.32
90.00	23 38 15	1517.38	3.21	357.19	213.39	118.11	24 3 33	517.4	14.45	335.80
100.00	0 43 17	1320.07	1.16	341.56	212.25	119.84	1 5 17	320.1	13.21	320.69
110.00	1 11 42	1230.94	-3.46	331.93	209.38	124.00	1 32 13	230.9	10.44	312.32

DIFFERENTIAL CORRECTIONS

TDE	-.4846	TRA	-1.0533	TC3	.1679	BAU	.0676
RDE	-.3792	RRA	.1053	RC3	.1942	FAU	.05696
FDE	.4416	FRA	1.0959	FC3	-2.5026	BSP	2718
BDE	.6153	BRA	1.0586	BC3	.2567	FSP	448

MID-COURSE EXECUTION ACCURACY

SGT	1622.9	SGR	539.8	SG3	304.9		
RRT	.1255	RRF	-.1379	RTF	-.8178		
SGB	1710.3	R23	-.0229	R13	-.8163		
SG1	1624.4	SG2	535.0	THA	2.68		

ORBIT DETERMINATION ACCURACY

ST	38.4	SR	24.6	SS	30.4
CRT	.7574	CRS	.5010	CST	.9430
LSA	51.4	HSA	18.9	SSA	1.3
EL1	43.3	EL2	14.2	ALF	29.29

LAUNCH DATE APR 27 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 12 1971

DISTANCE 361.083

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	33.315	GAL	-2.66	AZL	92.06	HCA	121.60	SMA	203.26	ECC	.26308	INC	2.0613	V1	29.592
RP	206.69	LAP	-1.76	LOP	337.72	VP	25.125	GAP	15.22	AZP	88.92	TAL	347.17	TAP	108.77	RCA	149.79	APO	256.73	V2	26.495
RC	65.512	GL	-15.98	GP	1.75	ZAL	117.44	ZAP	160.85	ETS	174.93	ZAE	171.37	ETE	39.22	ZAC	101.68	ETC	277.93	LVI	-19.87

PLANETOCENTRIC CONIC

C3	18.912	VHL	4.349	DLA	-24.57	RAL	342.94	RAD	6642.3	VEL	11.787	PTH	6.81	VHP	6.893	DPA	-15.34	RAP	321.10	ECC	1.3112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 30 8	2617.22	-13.20	71.50	200.01	136.14	18 13 46	1617.2	5.14	55.65
60.00	18 41 19	2427.90	-7.92	59.43	205.00	129.65	19 21 47	1427.9	8.17	41.49
70.00	20 12 26	2160.03	-2.54	41.76	209.05	124.07	20 48 26	1160.0	11.32	22.09
80.00	22 2 17	1818.24	2.15	18.58	211.97	119.79	22 32 33	818.2	14.11	357.61
90.00	23 49 14	1484.18	4.27	355.32	213.14	117.98	24 9 50	484.2	15.38	333.81
100.00	0 49 4	1290.72	2.15	339.95	211.97	119.79	1 10 35	290.7	14.11	318.98
110.00	1 15 48	1206.85	-2.54	330.67	209.05	124.07	1 35 55	206.9	11.32	311.01

DIFFERENTIAL CORRECTIONS

TDE	-.4781	TRA	-1.0369	TC3	.1870	BAU	.0701
RDE	-.3674	RRA	.0980	RC3	.2048	FAU	.05947
FDE	.4331	FRA	1.0794	FC3	-2.7226	BSP	2756
BDE	.6029	BRA	1.0436	BC3	.2773	FSP	482

MID-COURSE EXECUTION ACCURACY

SGT	1639.6	SGR	535.0	SG3	323.4		
RRT	.1371	RRF	-.1507	RTF	-.[illegible]21		
SGB	1724.7	R23	-.0252	R13	-.8226		
SG1	1641.5	SG2	529.3	THA	2.86		

ORBIT DETERMINATION ACCURACY

ST	38.7	SR	24.3	SS	31.3
CRT	.7586	CRS	.4955	CST	.9403
LSA	52.0	HSA	19.0	SSA	1.3
EL1	43.5	EL2	14.1	ALF	28.74

LAUNCH DATE APR 27 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 14 1971

DISTANCE 364.723

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	33.238	GAL	-2.58	AZL	92.07	HCA	122.87	SMA	201.68	ECC	.25714	INC	2.0744	V1	29.592
RP	206.71	LAP	-1.74	LOP	338.99	VP	25.021	GAP	14.83	AZP	88.87	TAL	347.34	TAP	110.21	RCA	149.82	APO	253.54	V2	26.493
RC	66.667	GL	-16.37	GP	1.83	ZAL	117.26	ZAP	159.73	ETS	175.03	ZAE	171.36	ETE	38.64	ZAC	101.73	ETC	277.86	LVI	-19.99

PLANETOCENTRIC CONIC

C3	18.177	VHL	4.264	DLA	-24.98	RAL	342.99	RAD	6642.0	VEL	11.756	PTH	6.78	VHP	6.684	DPA	-15.22	RAP	321.22	ECC	1.2992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 32 21	2598.85	-12.30	70.69	199.68	136.33	18 15 40	1598.8	6.06	54.88
60.00	18 44 20	2407.41	-7.03	58.43	204.67	129.79	19 24 27	1407.4	9.06	40.49
70.00	20 16 39	2135.97	-1.62	40.50	208.75	124.12	20 52 15	1136.0	12.20	20.76
80.00	22 8 20	1786.43	3.16	16.94	211.72	119.71	22 38 7	786.4	15.01	355.85
90.00	23 52 40	1449.92	5.36	353.40	212.93	117.81	24 16 50	449.9	16.32	331.73
100.00	0 55 8	1260.89	3.16	338.31	211.72	119.71	1 16 9	260.9	15.01	317.22
110.00	1 20 1	1182.79	-1.62	329.42	208.75	124.12	1 39 44	182.8	12.20	309.70

DIFFERENTIAL CORRECTIONS

TDE	-.4563	TRA	-1.0097	TC3	.2382	BAU	.0782
RDE	-.3559	RRA	.0909	RC3	.2161	FAU	.06228
FDE	.4410	FRA	2.0648	FC3	-2.9660	BSP	2613
BDE	.5787	BRA	1.0138	BC3	.3216	FSP	516

MID-COURSE EXECUTION ACCURACY

SGT	1630.3	SGR	529.9	SG3	347.2		
RRT	.1493	RRF	-.1643	RTF	-.8357		
SGB	1714.3	R23	-.0255	R13	-.8363		
SG1	1632.4	SG2	523.3	THA	3.10		

ORBIT DETERMINATION ACCURACY

ST	38.0	SR	24.0	SS	32.1
CRT	.7542	CRS	.4870	CST	.9393
LSA	51.6	HSA	19.1	SSA	1.2
EL1	42.7	EL2	14.0	ALF	28.87

LAUNCH DATE APR 27 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 368.408 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 33.166 GAL -2.50 AZL 92.09 HCA 124.14 SMA 200.22 ECC .25156 INC 2.0879 V1 29.592
RP 206.73 LAP -1.73 LOP 340.26 VP 24.922 GAP 14.45 AZP 88.83 TAL 347.50 TAP 111.64 RCA 149.85 APO 250.59 V2 26.489
RC 67.877 GL -16.77 GP 1.91 ZAL 117.08 ZAP 158.59 ETS 175.12 ZAE 171.40 ETE 38.39 ZAC 101.80 ETC 277.99 LVI -20.10

PLANETOCENTRIC CONIC

C3 17.502 VHL 4.184 DLA -25.39 RAL 343.04 RAD 6641.7 VEL 11.727 PTH 6.76 VHP 6.482 DPA -15.10 RAP 321.32 ECC 1.2880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 34 35	2580.93	-11.42	69.90	199.38	136.51	18 17 36	1580.9	6.96	54.12
60.00	18 47 23	2387.32	-6.16	57.46	204.38	129.91	19 27 10	1387.3	9.93	39.50
70.00	20 20 58	2112.16	-.71	39.26	208.49	124.15	20 56 10	1112.2	13.06	19.47
80.00	22 14 39	1756.34	4.17	15.28	211.52	119.59	22 43 55	756.3	15.90	354.07
90.00	0 4 31	1414.71	6.47	351.41	212.78	117.59	0 28 5	414.7	17.26	329.57
100.00	1 1 27	1230.81	4.17	336.65	211.52	119.59	1 21 56	230.8	15.90	315.44
110.00	1 24 20	1158.98	-.71	328.17	208.49	124.15	1 43 39	159.0	13.06	308.39

DIFFERENTIAL CORRECTIONS

TDE -.4565 TRA-1.0016 TC3 .2401 BAU .0773
RDE -.3450 RRA .0835 RC3 .2272 FAU .06504
FDE .4733 FRA 2.1592 FC3-3.2171 BSP 2729
BDE .5722 BRA 1.0051 BC3 .3306 FSP 556

MID-COURSE EXECUTION ACCURACY

SGT 1654.3 SGR 524.8 SG3 370.4
RRT .1628 RRF -.1793 RTF -.8342
SGB 1735.6 R23 -.0293 R13 -.8348
SG1 1656.7 SG2 517.1 THA 3.28

ORBIT DETERMINATION ACCURACY

ST 38.7 SR 23.7 SS 33.0
CRT .7564 CRS .4819 CST .9350
LSA 52.7 MSA 19.2 SSA 1.3
EL1 43.2 EL2 13.8 ALF 26.05

LAUNCH DATE APR 27 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 372.134 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 33.098 GAL -2.43 AZL 92.10 HCA 125.41 SMA 198.87 ECC .24632 INC 2.1018 V1 29.592
RP 206.77 LAP -1.71 LOP 341.52 VP 24.827 GAP 14.08 AZP 88.78 TAL 347.67 TAP 113.08 RCA 149.89 APO 247.86 V2 26.485
RC 69.140 GL -17.17 GP 1.99 ZAL 116.89 ZAP 157.41 ETS 175.19 ZAE 171.51 ETE 38.49 ZAC 101.87 ETC 278.02 LVI -20.21

PLANETOCENTRIC CONIC

C3 16.880 VHL 4.108 DLA -25.81 RAL 343.08 RAD 6641.4 VEL 11.701 PTH 6.73 VHP 6.287 DPA -14.99 RAP 321.39 ECC 1.2778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 36 51	2563.37	-10.55	69.14	199.11	136.67	18 19 34	1563.4	7.83	53.37
60.00	18 50 29	2367.53	-5.29	56.50	204.12	130.01	19 29 56	1367.5	10.78	38.52
70.00	20 25 24	2088.45	.19	38.02	208.26	124.15	21 0 12	1088.5	13.91	18.16
80.00	22 21 17	1725.74	5.20	13.59	211.36	119.44	22 50 3	725.7	16.80	352.23
90.00	0 13 2	1378.04	7.62	349.33	212.68	117.31	0 36 0	378.0	18.21	327.30
100.00	1 8 5	1200.21	5.20	334.98	211.36	119.44	1 28 5	200.2	16.80	313.60
110.00	1 28 46	1135.27	.19	326.94	208.26	124.15	1 47 41	135.3	13.91	307.07

DIFFERENTIAL CORRECTIONS

TDE -.4532 TRA -.9897 TC3 .2476 BAU .0776
RDE -.3345 RRA .0762 RC3 .2388 FAU .06801
FDE .4850 FRA 2.2581 FC3-3.4881 BSP 2803
BDE .5632 BRA .9926 BC3 .3440 FSP 598

MID-COURSE EXECUTION ACCURACY

SGT 1670.7 SGR 519.6 SG3 395.1
RRT .1771 RRF -.1957 RTF -.8343
SGB 1749.6 R23 -.0332 R13 -.8350
SG1 1673.5 SG2 510.5 THA 3.48

ORBIT DETERMINATION ACCURACY

ST 39.1 SR 23.4 SS 34.0
CRT .7617 CRS .4763 CST .9309
LSA 53.4 MSA 19.4 SSA 1.3
EL1 43.5 EL2 13.6 ALF 27.43

LAUNCH DATE APR 27 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 375.899 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 33.034 GAL -2.36 AZL 92.12 HCA 126.68 SMA 197.62 ECC .24139 INC 2.1162 V1 29.592
RP 206.81 LAP -1.70 LOP 342.79 VP 24.736 GAP 13.72 AZP 88.74 TAL 347.84 TAP 114.51 RCA 149.91 APO 245.32 V2 26.480
RC 70.435 GL -17.37 GP 2.08 ZAL 116.70 ZAP 156.21 ETS 175.28 ZAE 171.68 ETE 38.97 ZAC 101.95 ETC 278.03 LVI -20.32

PLANETOCENTRIC CONIC

C3 16.305 VHL 4.038 DLA -26.22 RAL 343.13 RAD 6641.1 VEL 11.677 PTH 6.71 VHP 6.098 DPA -14.88 RAP 321.43 ECC 1.2683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 39 8	2546.20	-9.70	68.40	198.87	136.81	18 21 34	1546.2	8.69	52.64
60.00	18 53 38	2348.05	-4.44	55.57	203.89	130.10	19 32 46	1348.1	11.61	37.55
70.00	20 29 56	2064.87	1.10	36.79	207.07	124.14	21 4 21	1064.9	14.74	16.84
80.00	22 28 16	1694.51	6.24	11.86	211.25	119.26	22 56 30	694.5	17.69	350.34
90.00	0 22 16	1339.45	8.82	347.13	212.65	116.98	0 44 37	339.4	19.18	324.69
100.00	1 15 4	1168.98	6.24	333.22	211.25	119.26	1 34 33	169.0	17.69	311.71
110.00	1 33 19	1111.68	1.10	325.71	208.07	124.14	1 51 50	111.7	14.74	305.76

DIFFERENTIAL CORRECTIONS

TDE -.4478 TRA -.9753 TC3 .2585 BAU .0785
RDE -.3243 RRA .0688 RC3 .2509 FAU .07119
FDE .4968 FRA 2.3624 FC3-3.7800 BSP 2845
BDE .5529 BRA .9777 BC3 .3602 FSP 642

MID-COURSE EXECUTION ACCURACY

SGT 1681.3 SGR 514.4 SG3 421.3
RRT .1928 RRF -.2137 RTF -.8354
SGB 1758.3 R23 -.0374 R13 -.8363
SG1 1684.5 SG2 503.8 THA 3.71

ORBIT DETERMINATION ACCURACY

ST 39.3 SR 23.1 SS 35.0
CRT .7647 CRS .4708 CST .9270
LSA 54.0 MSA 19.5 SSA 1.3
EL1 43.6 EL2 13.4 ALF 26.92

LAUNCH DATE APR 27 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 379.699 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.974 GAL -2.29 AZL 92.13 HCA 127.94 SMA 196.45 ECC .23676 INC 2.1310 V1 29.592
RP 206.87 LAP -1.68 LOP 344.06 VP 24.648 GAP 13.36 AZP 88.69 TAL 348.00 TAP 115.94 RCA 149.94 APO 242.97 V2 26.474
RC 71.818 GL -17.97 GP 2.18 ZAL 116.51 ZAP 154.98 ETS 175.32 ZAE 171.91 ETE 39.86 ZAC 102.04 ETC 278.04 LVI -20.42

PLANETOCENTRIC CONIC

C3 15.776 VHL 3.972 DLA -26.64 RAL 343.18 RAD 6640.9 VEL 11.654 PTH 6.69 VHP 5.916 DPA -14.78 RAP 321.44 ECC 1.2596

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 41 27	2529.43	-8.86	67.68	198.66	136.94	18 23 36	1529.4	9.52	51.92
60.00	18 56 50	2328.92	-3.60	54.65	203.69	130.17	19 35 39	1328.9	12.43	36.59
70.00	20 34 37	2041.40	1.99	35.57	207.92	124.10	21 8 38	1041.4	15.56	15.52
80.00	22 35 40	1662.51	7.30	10.07	211.19	119.03	23 3 22	662.5	18.58	348.38
90.00	0 32 33	1298.25	10.09	344.77	212.68	116.56	0 54 11	298.3	20.17	322.27
100.00	1 22 27	1136.98	7.30	331.44	211.19	119.03	1 41 24	137.0	18.58	309.75
110.00	1 37 59	1088.22	1.99	324.48	207.92	124.10	1 56 7	88.2	15.56	304.44

DIFFERENTIAL CORRECTIONS

TDE -.4419 TRA -.9590 TC3 .2679 BAU .0792
RDE -.3144 RRA .0614 RC3 .2633 FAU .07454
FDE .5093 FRA 2.4719 FC3-4.0903 BSP 2870
BDE .5423 BRA .9609 BC3 .3756 FSP 689

MID-COURSE EXECUTION ACCURACY

SGT 1687.2 SGR 509.2 SG3 449.0
RRT .2099 RRF -.2334 RTF -.8363
SGB 1762.4 R23 -.0422 R13 -.8373
SG1 1690.9 SG2 496.7 THA 3.97

ORBIT DETERMINATION ACCURACY

ST 39.4 SR 22.7 SS 36.0
CRT .7681 CRS .4661 CST .9229
LSA 54.6 MSA 19.6 SSA 1.3
EL1 43.6 EL2 13.2 ALF 26.49

LAUNCH DATE APR 27 1971 FLIGHT TIME 150.00 ARRIVAL DATE SEP 24 1971

DISTANCE 383.532 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.57 LAL -.00 LOL 216.10 VL 32.917 GAL -2.23 AZL 92.15 HCA 129.21 SMA 195.37 ECC .23241 INC 2.1463 V1 29.592
RP 206.93 LAP -1.66 LOP 345.33 VP 24.565 GAP 13.01 AZP 88.64 TAL 348.16 TAP 117.37 RCA 149.97 APO 240.78 V2 26.466
RC 73.228 GL -18.36 GP 2.28 ZAL 116.33 ZAP 153.72 ETS 175.37 ZAE 172.20 ETE 41.24 ZAC 102.14 ETC 278.05 LVI -20.52

PLANETOCENTRIC CONIC

C3 15.289 VHL 3.910 DLA -27.05 RAL 343.23 RAD 6640.7 VEL 11.633 PTH 6.67 VHP 5.740 DPA -14.68 RAP 321.42 ECC 1.2516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 43 47	2513.06	-8.05	66.98	198.48	137.05	18 25 41	1513.1	10.33	51.21
60.00	19 0 5	2310.13	-2.77	53.75	203.53	130.22	19 38 35	1310.1	13.22	35.64
70.00	20 39 25	2018.06	2.88	34.35	207.81	124.05	21 13 3	1018.1	16.37	14.19
80.00	22 43 32	1629.54	8.38	8.23	211.18	118.76	23 10 41	629.5	19.47	346.34
90.00	0 44 9	1253.23	11.45	342.16	212.79	116.04	1 5 2	253.2	21.20	319.38
100.00	1 30 20	1104.01	8.38	329.60	211.18	118.76	1 48 44	104.0	19.47	307.71
110.00	1 42 47	1064.88	2.88	323.26	207.81	124.05	2 0 32	64.9	16.37	303.11

DIFFERENTIAL CORRECTIONS

TDE -.4347 TRA -.9410 TC3 .2776 BAU .0801
RDE -.3048 RRA .0539 RC3 .2763 FAU .07810
FDE .5207 FRA 2.5870 FC3-4.4226 BSP 2884
BDE .5310 BRA .9425 BC3 .3917 FSP 739

MID-COURSE EXECUTION ACCURACY

SGT 1688.2 SGR 504.1 SG3 478.4
RRT .2283 RRF -.2547 RTF -.8373
SGB 1761.8 R23 -.0472 R13 -.8385
SG1 1692.4 SG2 489.5 THA 4.26

ORBIT DETERMINATION ACCURACY

ST 39.4 SR 22.4 SS 37.0
CRT .7716 CRS .4609 CST .9185
LSA 55.1 MSA 19.7 SSA 1.3
EL1 43.4 EL2 12.9 ALF 26.14

LAUNCH DATE APR 27 1971 FLIGHT TIME 152.00 ARRIVAL DATE SEP 26 1971

DISTANCE 387.396 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.57 LAL -.00 LOL 216.10 VL 32.864 GAL -2.16 AZL 92.16 HCA 130.47 SMA 194.37 ECC .22833 INC 2.1621 V1 29.592
RP 207.00 LAP -1.64 LOP 346.59 VP 24.484 GAP 12.67 AZP 88.60 TAL 348.31 TAP 118.79 RCA 149.99 APO 238.75 V2 26.458
RC 74.683 GL -18.76 GP 2.39 ZAL 116.15 ZAP 152.43 ETS 175.41 ZAE 172.53 ETE 43.10 ZAC 102.25 ETC 278.05 LVI -20.62

PLANETOCENTRIC CONIC

C3 14.841 VHL 3.852 DLA -27.46 RAL 343.29 RAD 6640.5 VEL 11.614 PTH 6.66 VHP 5.570 DPA -14.58 RAP 321.36 ECC 1.2442

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 10	2497.12	-7.25	66.30	198.33	137.15	18 27 47	1497.1	11.12	50.52
60.00	19 3 24	2291.70	-1.96	52.87	203.40	130.26	19 41 36	1291.7	14.00	34.71
70.00	20 44 21	1994.85	3.77	33.13	207.73	123.97	21 17 36	994.8	17.17	12.86
80.00	22 51 58	1595.31	9.50	6.30	211.23	118.44	23 18 34	595.3	20.37	344.20
90.00	0 57 52	1202.00	12.96	339.16	213.01	115.36	1 17 54	202.0	22.31	316.03
100.00	1 38 46	1069.78	9.50	327.67	211.23	118.44	1 56 36	69.8	20.37	305.57
110.00	1 47 43	1041.66	3.77	322.05	207.73	123.97	2 5 5	41.7	17.17	301.78

DIFFERENTIAL CORRECTIONS

TDE -.4279 TRA -.9222 TC3 .2836 BAU .0804
RDE -.2956 RRA .0462 RC3 .2897 FAU .08186
FDE .5331 FRA 2.7086 FC3-4.7754 BSP 2891
BDE .5201 BRA .9234 BC3 .4054 FSP 792

MID-COURSE EXECUTION ACCURACY

SGT 1685.9 SGR 499.1 SG3 509.5
RRT .2482 RRF -.2780 RTF -.8375
SGB 1758.2 R23 -.0533 R13 -.8389
SG1 1690.8 SG2 482.1 THA 4.58

ORBIT DETERMINATION ACCURACY

ST 39.4 SR 22.0 SS 38.0
CRT .7760 CRS .4567 CST .9139
LSA 55.5 MSA 19.9 SSA 1.3
EL1 43.3 EL2 12.6 ALF 25.81

LAUNCH DATE APR 27 1971 FLIGHT TIME 154.00 ARRIVAL DATE SEP 28 1971

DISTANCE 391.287 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.57 LAL -.00 LOL 216.10 VL 32.814 GAL -2.11 AZL 92.18 HCA 131.74 SMA 193.44 ECC .22450 INC 2.1786 V1 29.592
RP 207.08 LAP -1.63 LOP 347.86 VP 24.407 GAP 12.34 AZP 88.55 TAL 348.46 TAP 120.20 RCA 150.01 APO 236.87 V2 26.449
RC 76.180 GL -19.16 GP 2.51 ZAL 115.97 ZAP 151.10 ETS 175.44 ZAE 172.91 ETE 45.81 ZAC 102.37 ETC 278.04 LVI -20.71

PLANETOCENTRIC CONIC

C3 14.430 VHL 3.799 DLA -27.87 RAL 343.35 RAD 6640.3 VEL 11.597 PTH 6.64 VHP 5.406 DPA -14.49 RAP 321.26 ECC 1.2375

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 48 35	2481.60	-6.48	65.64	198.21	137.24	18 29 57	1481.6	11.89	49.84
60.00	19 6 46	2273.63	-1.17	52.00	203.31	130.29	19 44 40	1273.6	14.78	33.78
70.00	20 49 26	1971.74	4.64	31.92	207.70	123.87	21 22 17	971.7	17.95	11.55
80.00	23 1 8	1559.39	10.66	4.26	211.33	118.06	23 27 7	559.4	21.28	341.92
90.00	1 15 37	1138.35	14.78	335.37	213.42	114.39	1 34 36	138.3	23.57	311.79
100.00	1 47 56	1033.86	10.66	325.63	211.33	118.06	2 5 9	33.9	21.28	303.29
110.00	1 52 48	1018.55	4.64	320.84	207.70	123.87	2 9 46	18.6	17.95	300.45

DIFFERENTIAL CORRECTIONS

TDE -.4209 TRA -.9025 TC3 .2868 BAU .0806
RDE -.2867 RRA .0384 RC3 .3037 FAU .08582
FDE .5459 FRA 2.8370 FC3-5.1487 BSP 2889
BDE .5093 BRA .9033 BC3 .4177 FSP 849

MID-COURSE EXECUTION ACCURACY

SGT 1679.8 SGR 494.5 SG3 542.4
RRT .2696 RRF -.3033 RTF -.8372
SGB 1751.1 R23 -.0602 R13 -.8389
SG1 1685.6 SG2 474.6 THA 4.93

ORBIT DETERMINATION ACCURACY

ST 39.3 SR 21.6 SS 39.1
CRT .7811 CRS .4532 CST .9090
LSA 56.0 MSA 20.0 SSA 1.3
EL1 43.1 EL2 12.3 ALF 25.53

LAUNCH DATE APR 27 1971 FLIGHT TIME 156.00 ARRIVAL DATE SEP 30 1971

DISTANCE 395.204 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.57 LAL -.00 LOL 216.10 VL 32.767 GAL -2.05 AZL 92.20 HCA 133.00 SMA 192.58 ECC .22092 INC 2.1958 V1 29.592
RP 207.17 LAP -1.61 LOP 349.12 VP 24.333 GAP 12.01 AZP 88.50 TAL 348.60 TAP 121.61 RCA 150.03 APO 235.12 V2 26.439
RC 77.718 GL -19.55 GP 2.63 ZAL 115.79 ZAP 149.73 ETS 175.48 ZAE 173.32 ETE 49.30 ZAC 102.51 ETC 278.02 LVI -20.80

PLANETOCENTRIC CONIC

C3 14.053 VHL 3.749 DLA -28.28 RAL 343.42 RAD 6640.1 VEL 11.581 PTH 6.62 VHP 5.249 DPA -14.41 RAP 321.13 ECC 1.2313

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 51 2	2466.52	-5.72	65.00	198.13	137.31	18 32 9	1466.5	12.63	49.18
60.00	19 10 12	2255.94	-.39	51.16	203.25	130.30	19 47 48	1255.9	15.50	32.87
70.00	20 54 40	1948.72	5.52	30.71	207.70	123.76	21 27 8	948.7	18.72	10.18
80.00	23 11 13	1521.12	11.87	2.07	211.51	117.60	23 36 34	521.1	22.21	339.46
90.00	1 55 39	1003.25	16.40	327.11	214.62	111.86	2 12 22	3.2	25.81	302.54
100.00	1 58 1	6283.63	11.87	301.35	211.51	117.60	3 42 45	5283.6	22.21	278.74
110.00	1 58 2	6283.58	5.52	297.53	207.70	123.76	3 42 46	5283.6	18.72	277.01

DIFFERENTIAL CORRECTIONS

TDE -.4139 TRA -.8812 TC3 .2867 BAU .0805
RDE -.2781 RRA .0304 RC3 .3182 FAU .09000
FDE .5595 FRA 2.9717 FC3-5.5443 BSP 2874
BDE .4987 BRA .8817 BC3 .4283 FSP 909

MID-COURSE EXECUTION ACCURACY

SGT 1668.9 SGR 490.3 SG3 577.1
RRT .2928 RRF -.3308 RTF -.8363
SGB 1739.5 R23 -.0681 R13 -.8383
SG1 1675.6 SG2 467.0 THA 5.33

ORBIT DETERMINATION ACCURACY

ST 39.1 SR 21.3 SS 40.2
CRT .7872 CRS .4508 CST .9037
LSA 56.5 MSA 20.1 SSA 1.3
EL1 42.9 EL2 12.0 ALF 25.31

LAUNCH DATE APR 27 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 399.145 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.723	GAL	-2.01	AZL	92.21	HCA	134.27	SMA	191.78	ECC	.21756	INC	2.2136	V1	29.592
RP	207.26	LAP	-1.58	LOP	350.39	VP	24.262	GAP	11.69	AZP	88.45	TAL	348.74	TAP	123.01	RCA	150.05	APO	233.50	V2	26.428
RC	79.295	GL	-19.95	GP	2.76	ZAL	115.62	ZAP	148.33	ETS	175.50	ZAE	173.74	ETE	53.88	ZAC	102.65	ETC	278.00	LVI	-20.69

PLANETOCENTRIC CONIC

C3	13.708	VHL	3.702	DLA	-28.68	RAL	343.50	RAD	6639.9	VEL	11.566	PTH	6.61	VHP	5.097	DPA	-14.32	RAP	320.95	ECC	1.2256

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 53 32	2451.64	-4.99	64.38	198.07	137.38	18 34 23	1451.8	13.35	48.53
60.00	19 13 41	2238.60	.38	50.33	203.22	130.30	19 51 0	1238.6	16.22	31.97
70.00	21 0 4	1925.73	6.38	29.49	207.75	123.62	21 32 10	925.7	19.47	8.83
80.00	23 22 37	1479.26	13.18	359.65	211.78	117.03	23 47 17	479.3	23.19	336.73
85.01	1 16 56	1125.23	16.98	336.29	214.52	111.92	1 35 22	125.2	26.35	311.59
100.00	2 9 25	6241.77	13.18	298.93	211.78	117.03	3 53 27	5241.8	23.19	276.01
110.00	2 3 26	6260.59	6.38	296.32	207.75	123.62	3 47 47	5260.6	19.47	275.65

DIFFERENTIAL CORRECTIONS

TDE	-.4009	TRA	-.8536	TC3	.2991	BAU	.0822														
RDE	-.2696	RRA	.0223	RC3	.3340	FAU	.09466														
FDE	.5661	FRA	3.1088	FC3	-5.9783	BSP	2784														
BDE	.4831	BRA	.8539	BC3	.4483	FSP	966														

MID-COURSE EXECUTION ACCURACY

SGT	1643.5	SGR	486.6	SG3	613.6						
RRT	.3181	RRF	-.3601	RTF	-.8380						
SGB	1714.0	R23	-.0749	R13	-.8405						
SG1	1651.4	SG2	459.1	THA	5.83						

ORBIT DETERMINATION ACCURACY

ST	38.4	SR	20.9	SS	41.1						
CRT	.7915	CRS	.4450	CST	.8978						
LSA	56.5	MSA	20.3	SSA	1.3						
EL1	42.1	EL2	11.6	ALF	25.36						

LAUNCH DATE APR 27 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 403.108 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.682	GAL	-1.96	AZL	92.23	HCA	135.53	SMA	191.03	ECC	.21442	INC	2.2322	V1	29.592
RP	207.37	LAP	-1.56	LOP	351.65	VP	24.193	GAP	11.38	AZP	88.41	TAL	348.87	TAP	124.39	RCA	150.07	APO	232.00	V2	26.415
RC	80.909	GL	-20.34	GP	2.90	ZAL	115.47	ZAP	146.90	ETS	175.52	ZAE	174.14	ETE	59.78	ZAC	102.82	ETC	277.97	LVI	-20.98

PLANETOCENTRIC CONIC

C3	13.394	VHL	3.660	DLA	-29.08	RAL	343.59	RAD	6639.7	VEL	11.552	PTH	6.60	VHP	4.951	DPA	-14.24	RAP	320.74	ECC	1.2204

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 56 4	2437.66	-4.28	63.79	198.05	137.43	18 36 41	1437.7	14.05	47.90
60.00	19 17 14	2221.70	1.12	49.52	203.23	130.29	19 54 16	1221.7	16.91	31.09
70.00	21 5 38	1902.86	7.24	28.28	207.84	123.47	21 37 21	902.9	20.21	7.47
80.00	23 36 0	1431.80	14.63	356.88	212.16	116.32	23 59 52	431.8	24.22	333.59
82.94	1 0 11	1174.28	19.36	340.06	214.38	112.13	1 19 45	174.3	26.78	315.30
100.00	2 22 48	6194.31	14.63	296.15	212.16	116.32	4 6 2	5194.3	24.22	272.86
110.00	2 9 1	6237.72	7.24	295.11	207.84	123.47	3 52 58	5237.7	20.21	274.29

DIFFERENTIAL CORRECTIONS

TDE	-.3993	TRA	-.8354	TC3	.2732	BAU	.0794														
RDE	-.2617	RRA	.0136	RC3	.3493	FAU	.09904														
FDE	.5849	FRA	3.2628	FC3	-6.4016	BSP	2617														
BDE	.4775	BRA	.8355	BC3	.4434	FSP	1037														

MID-COURSE EXECUTION ACCURACY

SGT	1634.1	SGR	483.6	SG3	652.1						
RRT	.3426	RRF	-.3920	RTF	-.8316						
SGB	1704.2	R23	-.0868	R13	-.8347						
SG1	1643.2	SG2	451.8	THA	6.26						

ORBIT DETERMINATION ACCURACY

ST	38.5	SR	20.5	SS	42.4						
CRT	.8017	CRS	.4471	CST	.8913						
LSA	57.3	MSA	20.4	SSA	1.3						
EL1	42.1	EL2	11.2	ALF	25.00						

LAUNCH DATE APR 27 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 407.092 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.643	GAL	-1.92	AZL	92.25	HCA	136.79	SMA	190.34	ECC	.21149	INC	2.2516	V1	29.592
RP	207.48	LAP	-1.54	LOP	352.91	VP	24.126	GAP	11.08	AZP	88.36	TAL	348.98	TAP	125.77	RCA	150.09	APO	230.60	V2	26.402
RC	82.560	GL	-20.74	GP	3.05	ZAL	115.31	ZAP	145.42	ETS	175.54	ZAE	174.50	ETE	67.29	ZAC	102.99	ETC	277.93	LVI	-21.06

PLANETOCENTRIC CONIC

C3	13.107	VHL	3.620	DLA	-29.47	RAL	343.68	RAD	6639.6	VEL	11.540	PTH	6.59	VHP	4.811	DPA	-14.17	RAP	320.49	ECC	1.2157

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 56 38	2423.86	-3.59	63.21	198.06	137.47	18 39 2	1423.9	14.72	47.28
60.00	19 20 52	2205.11	1.85	48.73	203.28	130.27	19 57 37	1205.1	17.59	30.21
70.00	21 11 25	1879.91	8.10	27.06	207.97	123.29	21 42 45	879.9	20.94	6.09
80.00	23 53 19	1372.44	16.39	353.35	212.72	115.31	24 16 11	372.4	25.41	329.38
81.34	0 47 56	1210.15	19.73	342.87	214.27	112.35	1 8 6	210.1	27.21	318.05
100.00	2 40 6	6134.95	16.39	292.63	212.72	115.31	4 22 21	5135.0	25.41	288.86
110.00	2 14 47	6214.76	8.10	293.89	207.97	123.29	3 58 22	5214.8	20.94	272.91

DIFFERENTIAL CORRECTIONS

TDE	-.3957	TRA	-.8042	TC3	.2791	BAU	.0807														
RDE	-.2537	RRA	.0050	RC3	.3666	FAU	.10423														
FDE	.5916	FRA	3.4128	FC3	-6.8843	BSP	2698														
BDE	.4617	BRA	.8042	BC3	.4608	FSP	1100														

MID-COURSE EXECUTION ACCURACY

SGT	1597.0	SGR	481.4	SG3	692.3						
RRT	.3712	RRF	-.4258	RTF	-.8420						
SGB	1668.0	R23	-.0980	R13	-.8358						
SG1	1607.8	SG2	444.0	THA	6.92						

ORBIT DETERMINATION ACCURACY

ST	37.6	SR	20.1	SS	43.4						
CRT	.8081	CRS	.4435	CST	.8949						
LSA	57.2	MSA	20.5	SSA	1.2						
EL1	41.2	EL2	10.8	ALF	25.20						

LAUNCH DATE APR 27 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 411.093 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.607	GAL	-1.88	AZL	92.27	HCA	138.05	SMA	189.70	ECC	.20875	INC	2.2720	V1	29.592
RP	207.60	LAP	-1.52	LOP	354.17	VP	24.062	GAP	10.78	AZP	88.31	TAL	349.09	TAP	127.14	RCA	150.10	APO	229.30	V2	26.388
RC	84.247	GL	-21.13	GP	3.21	ZAL	115.17	ZAP	143.90	ETS	175.56	ZAE	174.75	ETE	76.50	ZAC	103.18	ETC	277.88	LVI	-21.14

PLANETOCENTRIC CONIC

C3	12.848	VHL	3.584	DLA	-29.86	RAL	343.79	RAD	6639.5	VEL	11.529	PTH	6.58	VHP	4.676	DPA	-14.09	RAP	320.19	ECC	1.2114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 1 16	2410.56	-2.92	62.65	198.10	137.51	18 41 26	1410.6	15.37	46.68
60.00	19 24 33	2188.97	2.56	47.96	203.37	130.23	20 1 2	1189.0	18.25	29.35
70.00	21 17 24	1857.00	8.96	25.84	208.15	123.10	21 48 21	857.0	21.66	4.70
80.00	0 36 1	1245.37	19.92	345.57	214.13	112.71	0 56 47	245.4	27.53	320.74
80.00	0 38 3	1238.92	20.09	345.16	214.20	112.57	0 58 42	238.9	27.62	320.28
100.00	3 18 53	6007.88	19.92	284.84	214.13	112.71	4 59 1	5007.9	27.53	260.01
110.00	2 20 46	6191.86	8.96	292.66	208.15	123.10	4 3 58	5191.9	21.66	271.52

DIFFERENTIAL CORRECTIONS

TDE	-.3860	TRA	-.7842	TC3	.2367	BAU	.0774														
RDE	-.2464	RRA	-.0044	RC3	.3832	FAU	.10892														
FDE	.6143	FRA	3.5834	FC3	-7.3392	BSP	2730														
BDE	.4580	BRA	.7842	BC3	.4504	FSP	1180														

MID-COURSE EXECUTION ACCURACY

SGT	1580.8	SGR	480.3	SG3	734.5						
RRT	.3969	RRF	-.4618	RTF	-.8219						
SGB	1652.1	R23	-.1181	R13	-.8267						
SG1	1593.2	SG2	437.4	THA	7.44						

ORBIT DETERMINATION ACCURACY

ST	37.7	SR	19.7	SS	44.8						
CRT	.8217	CRS	.4498	CST	.8787						
LSA	58.2	MSA	20.7	SSA	1.2						
EL1	41.3	EL2	10.3	ALF	24.87						

LAUNCH DATE APR 27 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 10 1971

HELIOCENTRIC CONIC DISTANCE 415.114 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.573	GAL	-1.84	AZL	92.29	HCA	139.30	SMA	189.11	ECC	.20620	INC	2.2933	V1	29.592
RP	207.73	LAP	-1.50	LOP	355.42	VP	24.000	GAP	10.49	AZP	88.26	TAL	349.19	TAP	128.49	RCA	150.11	APO	228.10	V2	26.373
RC	85.969	GL	-21.32	GP	3.37	ZAL	115.04	ZAP	142.35	ETS	175.57	ZAE	174.85	ETE	87.25	ZAC	103.39	ETC	277.82	LVI	-21.22

PLANETOCENTRIC CONIC

C3	12.613	VHL	3.552	DLA	-30.24	RAL	343.92	RAD	6639.4	VEL	11.519	PTH	6.57	VHP	4.547	DPA	-14.02	RAP	319.85	ECC	1.2076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 3 57	2397.64	-2.27	62.11	198.18	137.53	18 43 54	1397.6	16.00	46.10
60.00	19 28 19	2173.14	3.26	47.20	203.49	130.19	20 4 33	1173.1	18.89	28.50
70.00	21 23 38	1833.89	9.81	24.60	208.37	122.88	21 54 12	833.9	22.37	3.28
78.82	0 29 37	1263.41	20.43	347.14	214.17	112.79	0 50 40	263.4	28.02	322.20
78.82	0 29 37	1263.41	20.43	347.14	214.17	112.79	0 50 40	263.4	28.02	322.20
78.82	0 29 37	1263.41	20.43	347.14	214.17	112.79	0 50 40	263.4	28.02	322.20
110.00	2 27 0	6168.75	9.81	291.42	208.37	122.88	4 9 49	5168.8	22.37	270.10

DIFFERENTIAL CORRECTIONS

TDE	-.3761	TRA	-.7529	TC3	.2204	BAU	.0773												
RDE	-.2391	RRA	-.0139	RC3	.4020	FAU	.11439												
FDE	.6257	FRA	3.7510	FC3	-7.8517	BSP	2633												
BDE	.4456	BRA	.7531	BC3	.4584	FSP	1254												

MID-COURSE EXECUTION ACCURACY

SGT	1539.3	SGR	480.5	SG3	778.5						
RRT	.4260	RRF	-.4996	RTF	-.8172						
SGB	1612.6	R23	-.1346	R13	-.8232						
SG1	1554.0	SG2	430.7	THA	8.21						

ORBIT DETERMINATION ACCURACY

ST	36.9	SR	19.3	SS	45.9						
CRT	.8323	CRS	.4514	CST	.8682						
LSA	58.4	MSA	20.9	SSA	1.2						
EL1	40.5	EL2	9.7	ALF	25.04						

LAUNCH DATE APR 27 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 12 1971

HELIOCENTRIC CONIC DISTANCE 419.150 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.542	GAL	-1.81	AZL	92.32	HCA	140.56	SMA	188.58	ECC	.20383	INC	2.3157	V1	29.592
RP	207.86	LAP	-1.47	LOP	356.68	VP	23.940	GAP	10.21	AZP	88.21	TAL	349.27	TAP	129.83	RCA	150.13	APO	226.99	V2	26.357
RC	87.725	GL	-21.91	GP	3.55	ZAL	114.92	ZAP	140.75	ETS	175.58	ZAE	174.75	ETE	98.82	ZAC	103.62	ETC	277.76	LVI	-21.30

PLANETOCENTRIC CONIC

C3	12.403	VHL	3.522	DLA	-30.62	RAL	344.05	RAD	6639.3	VEL	11.510	PTH	6.56	VHP	4.424	DPA	-13.95	RAP	319.47	ECC	1.2041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 6 41	2385.18	-1.65	61.59	198.30	137.55	18 46 26	1385.2	16.60	45.53
60.00	19 32 11	2157.71	3.93	46.46	203.65	130.14	20 8 8	1157.7	19.51	27.67
70.00	21 30 8	1810.64	10.67	23.34	208.65	122.64	22 0 19	810.6	23.07	1.84
77.75	0 22 19	1284.76	20.77	348.89	214.18	113.01	0 43 44	284.8	28.42	323.89
77.75	0 22 19	1284.76	20.77	348.89	214.18	113.01	0 43 44	284.8	28.42	323.89
77.75	0 22 19	1284.76	20.77	348.89	214.18	113.01	0 43 44	284.8	28.42	323.89
110.00	2 33 30	6145.50	10.67	290.17	208.65	122.64	4 15 56	5145.5	23.07	268.66

DIFFERENTIAL CORRECTIONS

TDE	-.3735	TRA	-.7274	TC3	.1740	BAU	.0755												
RDE	-.2322	RRA	-.0242	RC3	.4207	FAU	.11967												
FDE	.6469	FRA	3.9364	FC3	-8.3531	BSP	2606												
BDE	.4398	BRA	.7278	BC3	.4553	FSP	1339												

MID-COURSE EXECUTION ACCURACY

SGT	1508.4	SGR	482.3	SG3	824.6						
RRT	.4518	RRF	-.5389	RTF	-.8053						
SGB	1583.6	R23	-.1609	R13	-.8131						
SG1	1525.4	SG2	425.5	THA	8.92						

ORBIT DETERMINATION ACCURACY

ST	36.7	SR	18.9	SS	47.3						
CRT	.8471	CRS	.4593	CST	.8590						
LSA	59.1	MSA	21.1	SSA	1.2						
EL1	40.3	EL2	9.2	ALF	24.94						

LAUNCH DATE APR 27 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 14 1971

HELIOCENTRIC CONIC DISTANCE 423.201 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.513	GAL	-1.78	AZL	92.34	HCA	141.61	SMA	188.05	ECC	.20162	INC	2.3393	V1	29.592
RP	208.01	LAP	-1.45	LOP	357.93	VP	23.881	GAP	9.93	AZP	88.16	TAL	349.35	TAP	131.16	RCA	150.14	APO	225.96	V2	26.340
RC	89.514	GL	-22.30	GP	3.75	ZAL	114.82	ZAP	139.11	ETS	175.59	ZAE	174.40	ETE	110.19	ZAC	103.86	ETC	277.69	LVI	-21.38

PLANETOCENTRIC CONIC

C3	12.215	VHL	3.495	DLA	-30.99	RAL	344.21	RAD	6639.2	VEL	11.502	PTH	6.55	VHP	4.306	DPA	-13.68	RAP	319.04	ECC	1.2010

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 9 29	2373.12	-1.04	61.08	198.45	137.57	18 49 2	1373.1	17.18	44.97
60.00	19 36 7	2142.60	4.60	45.74	203.85	130.08	20 11 50	1142.6	20.11	26.85
70.00	21 36 57	1787.02	11.54	22.06	208.98	122.37	22 6 44	787.0	23.76	.36
76.77	0 15 52	1303.86	21.09	350.47	214.22	113.24	0 37 35	303.9	28.80	325.42
76.77	0 15 52	1303.86	21.09	350.47	214.22	113.24	0 37 35	303.9	28.80	325.42
76.77	0 15 52	1303.86	21.09	350.47	214.22	113.24	0 37 35	303.9	28.80	325.42
110.00	2 40 20	6121.87	11.54	288.88	208.98	122.37	4 22 21	5121.9	23.76	267.18

DIFFERENTIAL CORRECTIONS

TDE	-.3679	TRA	-.6965	TC3	.1298	BAU	.0750												
RDE	-.2255	RRA	-.0348	RC3	.4406	FAU	.12518												
FDE	.6663	FRA	4.1250	FC3	-8.6720	BSP	2525												
BDE	.4316	BRA	.6973	BC3	.4594	FSP	1422												

MID-COURSE EXECUTION ACCURACY

SGT	1464.9	SGR	485.8	SG3	872.1						
RRT	.4773	RRF	-.5791	RTF	-.[illegible]32						
SGB	1543.3	R23	-.1891	R13	-.8034						
SG1	1484.7	SG2	421.2	THA	9.79						

ORBIT DETERMINATION ACCURACY

ST	36.2	SR	18.5	SS	48.6						
CRT	.8621	CRS	.4679	CST	.8489						
LSA	59.7	MSA	21.2	SSA	1.2						
EL1	39.7	EL2	8.5	ALF	25.05						

LAUNCH DATE APR 27 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 16 1971

HELIOCENTRIC CONIC DISTANCE 427.266 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.486	GAL	-1.76	AZL	92.36	HCA	143.06	SMA	187.58	ECC	.19957	INC	2.3642	V1	29.592
RP	208.16	LAP	-1.42	LOP	359.19	VP	23.824	GAP	9.65	AZP	88.11	TAL	349.41	TAP	132.47	RCA	150.14	APO	225.02	V2	26.325
RC	91.337	GL	-22.70	GP	3.95	ZAL	114.72	ZAP	137.43	ETS	175.60	ZAE	173.80	ETE	120.43	ZAC	104.12	ETC	277.61	LVI	-21.46

PLANETOCENTRIC CONIC

C3	12.049	VHL	3.471	DLA	-31.35	RAL	344.38	RAD	6639.1	VEL	11.495	PTH	6.54	VHP	4.193	DPA	-13.81	RAP	318.56	ECC	1.1983

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 12 22	2361.46	-.45	60.60	198.63	137.57	18 51 43	1361.5	17.74	44.43
60.00	19 40 10	2127.81	5.24	45.02	204.09	130.02	20 15 38	1127.8	20.70	26.03
70.00	21 44 9	1762.90	12.41	20.74	209.36	122.08	22 13 32	762.9	24.45	358.83
75.86	0 10 7	1321.23	21.41	351.93	214.31	113.47	0 32 8	321.2	29.18	326.82
75.86	0 10 7	1321.23	21.41	351.93	214.31	113.47	0 32 8	321.2	29.18	326.82
75.86	0 10 7	1321.23	21.41	351.93	214.31	113.47	0 32 8	321.2	29.18	326.82
110.00	2 47 31	6097.76	12.41	287.56	209.36	122.08	4 29 9	5097.8	24.45	265.65

DIFFERENTIAL CORRECTIONS

TDE	-.3614	TRA	-.6629	TC3	.0816	BAU	.0756												
RDE	-.2190	RRA	-.0461	RC3	.4621	FAU	.13108												
FDE	.6826	FRA	4.3199	FC3	-9.4184	BSP	2429												
BDE	.4225	BRA	.6645	BC3	.4693	FSP	1508												

MID-COURSE EXECUTION ACCURACY

SGT	1414.6	SGR	491.4	SG3	921.5						
RRT	.5005	RRF	-.6198	RTF	-.7783						
SGB	1497.5	R23	-.2225	R13	-.7919						
SG1	1437.8	SG2	418.6	THA	10.79						

ORBIT DETERMINATION ACCURACY

ST	35.5	SR	18.1	SS	49.9						
CRT	.8780	CRS	.4768	CST	.8369						
LSA	60.1	MSA	21.4	SSA	1.2						
EL1	39.1	EL2	7.9	ALF	25.26						

LAUNCH DATE APR 27 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 431,344 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.460 GAL -1.73 AZL 92.39 HCA 144.31 SMA 187.15 ECC .19767 INC 2.3906 V1 29.592
RP 208.32 LAP -1.39 LOP .44 VP 23.769 GAP 9.39 AZP 88.06 TAL 349.46 TAP 133.77 RCA 150.15 APO 224.14 V2 26.304
RC 93.190 GL -23.10 GP 4.17 ZAL 114.64 ZAP 135.71 ETS 175.61 ZAE 172.99 ETE 129.06 ZAC 104.40 ETC 277.52 LVI -21.53

PLANETOCENTRIC CONIC

C3 11.903 VHL 3.450 DLA -31.72 RAL 344.57 RAD 6639.0 VEL 11.488 PTH 6.54 VHP 4.086 DPA -13.73 RAP 318.04 ECC 1.1959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 15 19	2350.18	.11	60.13	198.85	137.58	18 54 29	1350.2	18.29	43.91
60.00	19 44 20	2113.32	5.88	44.32	204.37	129.94	20 19 33	1113.3	21.27	25.23
70.00	21 51 48	1738.07	13.30	19.37	209.81	121.75	22 20 46	738.1	25.15	357.23
75.01	0 4 56	1337.28	21.71	353.28	214.43	113.71	0 27 13	337.3	29.55	328.12
75.01	0 4 56	1337.28	21.71	353.28	214.43	113.71	0 27 13	337.3	29.55	328.12
75.01	0 4 56	1337.28	21.71	353.28	214.43	113.71	0 27 13	337.3	29.55	328.12
110.00	2 55 10	6072.93	13.30	286.19	209.81	121.75	4 36 23	5072.9	25.15	264.06

DIFFERENTIAL CORRECTIONS

TDE -.3549 TRA -.6272 TC3 .0266 BAU .0773
RDE -.2126 RRA -.0580 RC3 .4850 FAU .13718
FDE .6995 FRA 4.5213 FC3-9.9778 BSP 2325
BDE .4137 BRA .6299 BC3 .4857 FSP 1897

MID-COURSE EXECUTION ACCURACY

SGT 1359.1 SGR 499.5 SG3 972.4
RRT .5199 RRF -.6606 RTF -.7597
SGB 1447.9 R23 -.2620 R13 -.7779
SG1 1386.2 SG2 418.3 THA 11.92

ORBIT DETERMINATION ACCURACY

ST 34.7 SR 17.7 SS 51.2
CRT .8951 CRS .4682 C&T .8233
LSA 60.6 MSA 21.6 SSA 1.1
EL1 38.3 EL2 7.2 ALF 25.54

LAUNCH DATE APR 27 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 435,435 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.437 GAL -1.72 AZL 92.42 HCA 145.56 SMA 186.75 ECC .19592 INC 2.4185 V1 29.592
RP 208.49 LAP -1.37 LOP 1.69 VP 23.716 GAP 9.13 AZP 88.00 TAL 349.50 TAP 135.06 RCA 150.16 APO 223.33 V2 26.284
RC 95.074 GL -23.50 GP 4.41 ZAL 114.57 ZAP 133.95 ETS 175.62 ZAE 171.99 ETE 136.05 ZAC 104.70 ETC 277.41 LVI -21.61

PLANETOCENTRIC CONIC

C3 11.777 VHL 3.432 DLA -32.08 RAL 344.78 RAD 6638.9 VEL 11.483 PTH 6.53 VHP 3.985 DPA -13.66 RAP 317.47 ECC 1.1938

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 18 22	2339.25	.66	59.67	199.11	137.57	18 57 21	1339.3	18.81	43.39
60.00	19 48 37	2099.07	6.50	43.64	204.70	129.66	20 23 36	1099.1	21.82	24.44
70.00	22 0 0	1712.20	14.23	17.93	210.32	121.38	22 28 32	712.2	25.85	355.55
74.19	0 0 17	1352.19	22.01	354.55	214.60	113.95	0 22 49	352.2	29.91	329.35
74.19	0 0 17	1352.19	22.01	354.55	214.60	113.95	0 22 49	352.2	29.91	329.35
74.19	0 0 17	1352.19	22.01	354.55	214.60	113.95	0 22 49	352.2	29.91	329.35
110.00	3 3 22	6047.06	14.23	284.76	210.32	121.38	4 44 9	5047.1	25.85	262.38

DIFFERENTIAL CORRECTIONS

TDE -.3472 TRA -.5875 TC3 -.0321 BAU .0804
RDE -.2065 RRA -.0705 RC3 .5093 FAU .14351
FDE .7148 FRA 4.7246 FC-10.5495 BSP 2186
BDE .4039 BRA .5917 BC3 .5103 FSP 1684

MID-COURSE EXECUTION ACCURACY

SGT 1294.8 SGR 510.2 SG3 1024.2
RRT .5342 RRF -.7004 RTF -.7368
SGB 1391.7 R23 -.3070 R13 -.7618
SG1 1326.5 SG2 421.0 THA 13.25

ORBIT DETERMINATION ACCURACY

ST 33.8 SR 17.4 SS 52.4
CRT .9129 CRS .5012 C&T .8075
LSA 60.9 MSA 21.8 SSA 1.1
EL1 37.4 EL2 6.4 ALF 25.95

LAUNCH DATE APR 27 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 439,536 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.415 GAL -1.70 AZL 92.45 HCA 146.81 SMA 186.38 ECC .19430 INC 2.4483 V1 29.592
RP 208.67 LAP -1.34 LOP 2.93 VP 23.663 GAP 8.87 AZP 87.95 TAL 349.52 TAP 136.33 RCA 150.16 APO 222.59 V2 26.264
RC 96.988 GL -23.90 GP 4.66 ZAL 114.52 ZAP 132.15 ETS 175.64 ZAE 170.83 ETE 141.63 ZAC 105.02 ETC 277.31 LVI -21.69

PLANETOCENTRIC CONIC

C3 11.670 VHL 3.416 DLA -32.43 RAL 345.01 RAD 6638.9 VEL 11.478 PTH 6.53 VHP 3.888 DPA -13.57 RAP 316.86 ECC 1.1921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 21 30	2328.64	1.20	59.23	199.41	137.56	19 0 19	1328.6	19.31	42.89
60.00	19 53 2	2085.02	7.11	42.95	205.07	129.77	20 27 47	1085.0	22.37	23.64
70.00	22 8 55	1684.60	15.19	16.40	210.91	120.96	22 37 0	684.6	26.57	353.75
73.42	23 52 7	1366.32	22.29	353.77	214.82	114.19	24 14 53	366.3	30.26	330.51
73.42	23 52 7	1366.32	22.29	353.77	214.82	114.19	24 14 53	366.3	30.26	330.51
73.42	23 52 7	1366.32	22.29	353.77	214.82	114.19	24 14 53	366.3	30.26	330.51
110.00	3 12 17	6019.66	15.19	283.22	210.91	120.96	4 52 37	5019.7	26.57	260.57

DIFFERENTIAL CORRECTIONS

TDE -.3368 TRA -.5421 TC3 -.0874 BAU .0847
RDE -.2003 RRA -.0836 RC3 .5361 FAU .15032
FDE .7243 FRA 4.9261 FC-11.1513 BSP 1995
BDE .3916 BRA .5485 BC3 .5432 FSP 1763

MID-COURSE EXECUTION ACCURACY

SGT 1217.6 SGR 524.0 SG3 1076.9
RRT .5434 RRF -.7387 RTF -.7700
SGB 1325.5 R23 -.3545 R13 -.7451
SG1 1255.0 SG2 426.8 THA 14.93

ORBIT DETERMINATION ACCURACY

ST 32.5 SR 17.0 SS 53.8
CRT .9308 CRS .5144 C&T .7886
LSA 61.1 MSA 21.9 SSA 1.1
EL1 36.3 EL2 5.6 ALF 26.61

LAUNCH DATE APR 27 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 443,646 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.393 GAL -1.69 AZL 92.48 HCA 148.05 SMA 186.04 ECC .19282 INC 2.4800 V1 29.592
RP 208.85 LAP -1.31 LOP 4.18 VP 23.612 GAP 8.62 AZP 87.90 TAL 349.53 TAP 137.58 RCA 150.17 APO 221.91 V2 26.243
RC 98.929 GL -24.31 GP 4.93 ZAL 114.48 ZAP 130.31 ETS 175.65 ZAE 169.54 ETE 146.03 ZAC 105.36 ETC 277.19 LVI -21.77

PLANETOCENTRIC CONIC

C3 11.583 VHL 3.403 DLA -32.79 RAL 345.26 RAD 6638.8 VEL 11.475 PTH 6.52 VHP 3.797 DPA -13.48 RAP 316.20 ECC 1.1906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 24 45	2318.41	1.71	58.80	199.76	137.55	19 3 24	1318.4	19.80	42.41
60.00	19 57 37	2071.23	7.71	42.28	205.49	129.68	20 32 9	1071.2	22.89	22.66
70.00	22 18 45	1655.41	16.21	14.73	211.58	120.48	22 46 20	655.4	27.32	351.79
72.68	23 48 18	1379.72	22.56	356.93	215.08	114.44	24 11 18	379.7	30.61	331.63
72.68	23 48 18	1379.72	22.56	356.93	215.08	114.44	24 11 18	379.7	30.61	331.63
72.68	23 48 18	1379.72	22.56	356.93	215.08	114.44	24 11 18	379.7	30.61	331.63
110.00	3 22 7	5990.27	16.21	281.56	211.58	120.48	5 1 37	4990.3	27.32	258.61

DIFFERENTIAL CORRECTIONS

TDE -.3392 TRA -.5068 TC3 -.1939 BAU .0920
RDE -.1954 RRA -.0986 RC3 .5613 FAU .15602
FDE .7651 FRA 5.1628 FC-11.6615 BSP 1960
BDE .3914 BRA .5164 BC3 .5939 FSP 1880

MID-COURSE EXECUTION ACCURACY

SGT 1172.0 SGR 541.4 SG3 1131.7
RRT .5324 RRF -.7753 RTF -.6632
SGB 1291.1 R23 -.4269 R13 -.7116
SG1 1212.7 SG2 443.0 THA 16.01

ORBIT DETERMINATION ACCURACY

ST 32.4 SR 16.7 SS 55.2
CRT .9510 CRS .5419 C&T .7706
LSA 62.3 MSA 22.3 SSA 1.0
EL1 36.1 EL2 4.6 ALF 26.64

LAUNCH DATE APR 27 1971 FLIGHT TIME 182.00 ARRIVAL DATE OCT 26 1971

HELIOCENTRIC CONIC DISTANCE 447,767 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.377 GAL -1.66 AZL 92.51 HCA 149.29 SMA 185.73 ECC .19146 INC 2.5140 V1 29.592
RP 209.04 LAP -1.28 LOP 5.42 VP 23.562 GAP 8.38 AZP 87.84 TAL 349.52 TAP 138.82 RCA 150.17 APO 221.29 V2 26.221
RC 100.898 GL -24.73 GP 5.22 ZAL 114.45 ZAP 128.43 ETS 175.67 ZAE 166.13 ETE 149.54 ZAC 105.73 ETC 277.06 LVI -21.85

PLANETOCENTRIC CONIC

C3 11.513 VHL 3.393 DLA -33.14 RAL 345.54 RAD 6638.8 VEL 11.472 PTH 6.52 VHP 3.712 DPA -13.38 RAP 315.50 ECC 1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 28 8	2308.40	2.21	58.38	200.15	137.54	19 6 37	1308.4	20.28	41.93
60.00	20 2 24	2057.49	8.31	41.61	205.96	129.58	20 36 42	1057.5	23.42	22.08
70.00	22 29 58	1822.31	17.34	12.85	212.37	119.90	22 57 0	822.5	28.11	349.56
71.96	23 44 49	1392.68	22.82	358.06	215.38	114.71	24 8 1	392.7	30.96	332.72
71.96	23 44 49	1392.68	22.82	358.06	215.38	114.71	24 8 1	392.7	30.96	332.72
71.96	23 44 49	1392.68	22.82	358.06	215.38	114.71	24 8 1	392.7	30.96	332.72
110.00	3 33 20	5957.36	17.34	279.67	212.37	119.90	5 12 37	4957.4	28.11	256.38

DIFFERENTIAL CORRECTIONS

TDE -.3344 TRA -.4625 TC3 -.2863 BAU .1008
RDE -.1902 RRA -.1143 RC3 .5893 FAU .16220
FDE .7909 FRA 5.3924 FC-12.1967 B8P 1828
BDE .3847 BRA .4764 BC3 .6552 F8P 1980

MID-COURSE EXECUTION ACCURACY

SGT 1107.4 SGR 562.3 SG3 1186.4
RRT .5117 RRF -.8089 RTF -.6108
SGB 1242.0 R23 -.4961 R13 -.6787
SG1 1151.9 SG2 464.5 THA 17.50

ORBIT DETERMINATION ACCURACY

ST 31.5 SR 16.4 S8 56.7
CRT .9884 CR8 .5660 C8T .7478
L8A 63.0 M8A 22.5 S8A 1.0
EL1 35.4 EL2 3.7 ALF 27.11

LAUNCH DATE APR 27 1971 FLIGHT TIME 184.00 ARRIVAL DATE OCT 28 1971

HELIOCENTRIC CONIC DISTANCE 451.896 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.360 GAL -1.67 AZL 92.55 HCA 150.53 SMA 185.44 ECC .19021 INC 2.5505 V1 29.592
RP 209.24 LAP -1.25 LOP 6.66 VP 23.514 GAP 8.14 AZP 87.78 TAL 349.50 TAP 140.04 RCA 150.17 APO 220.72 V2 26.198
RC 102.893 GL -25.16 GP 5.53 ZAL 114.44 ZAP 126.51 ETS 175.70 ZAE 166.62 ETE 152.35 ZAC 106.12 ETC 276.92 LVI -21.94

PLANETOCENTRIC CONIC

C3 11.462 VHL 3.386 DLA -33.50 RAL 345.84 RAD 6638.8 VEL 11.469 PTH 6.52 VHP 3.631 DPA -13.27 RAP 314.75 ECC 1.1886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 31 40	2298.62	2.70	57.97	200.58	137.52	19 9 59	1298.6	20.74	41.46
60.00	20 7 24	2043.78	8.90	40.94	206.49	129.47	20 41 26	1043.8	23.93	21.88
70.00	22 43 21	1583.73	18.64	10.60	213.31	119.15	23 9 45	583.7	29.00	346.89
71.25	23 41 37	1405.30	23.08	359.16	215.74	114.98	24 5 2	405.3	31.30	333.78
71.25	23 41 37	1405.30	23.08	359.16	215.74	114.98	24 5 2	405.3	31.30	333.78
71.25	23 41 37	1405.30	23.08	359.16	215.74	114.98	24 5 2	405.3	31.30	333.78
110.00	3 46 43	5918.58	18.64	277.42	213.31	119.15	5 28 22	4918.6	29.00	253.71

DIFFERENTIAL CORRECTIONS

TDE -.3295 TRA -.4142 TC3 -.3837 BAU .1117
RDE -.1852 RRA -.1309 RC3 .6195 FAU .16861
FDE .8171 FRA 5.6192 FC-12.7352 B8P 1685
BDE .3780 BRA .4344 BC3 .7287 F8P 2077

MID-COURSE EXECUTION ACCURACY

SGT 1041.7 SGR 587.2 SG3 1241.0
RRT .4728 RRF -.8395 RTF -.5425
SGB 1195.8 R23 -.5697 R13 -.6383
SG1 1088.5 SG2 495.2 THA 19.00

ORBIT DETERMINATION ACCURACY

ST 30.6 SR 16.2 S8 58.0
CRT .9833 CR8 .5925 C8T .7207
L8A 63.6 M8A 22.7 S8A 1.0
EL1 34.5 EL2 2.6 ALF 27.64

LAUNCH DATE APR 27 1971 FLIGHT TIME 186.00 ARRIVAL DATE OCT 30 1971

HELIOCENTRIC CONIC DISTANCE 456.032 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.344 GAL -1.67 AZL 92.59 HCA 151.77 SMA 185.18 ECC .18908 INC 2.5899 V1 29.592
RP 209.44 LAP -1.22 LOP 7.89 VP 23.466 GAP 7.90 AZP 87.72 TAL 349.47 TAP 141.24 RCA 150.17 APO 220.20 V2 26.174
RC 104.913 GL -25.60 GP 5.87 ZAL 114.43 ZAP 124.55 ETS 175.73 ZAE 165.03 ETE 154.61 ZAC 106.54 ETC 276.78 LVI -22.04

PLANETOCENTRIC CONIC

C3 11.429 VHL 3.381 DLA -33.86 RAL 346.17 RAD 6638.8 VEL 11.468 PTH 6.52 VHP 3.556 DPA -13.14 RAP 313.96 ECC 1.1881

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 35 22	2289.01	3.19	57.57	201.07	137.49	19 13 31	1289.0	21.19	40.99
60.00	20 12 39	2029.98	9.50	40.27	207.07	129.35	20 46 29	1030.0	24.45	20.46
70.00	23 1 11	1532.20	20.32	7.55	214.52	118.06	23 26 44	532.2	30.08	343.27
70.56	23 38 40	1417.76	23.33	.26	216.14	115.26	24 2 17	417.8	31.63	334.84
70.56	23 38 40	1417.76	23.33	.26	216.14	115.26	24 2 17	417.8	31.63	334.84
70.56	23 38 40	1417.76	23.33	.26	216.14	115.26	24 2 17	417.8	31.63	334.84
110.00	4 4 34	5867.06	20.32	274.37	214.52	118.06	5 42 21	4867.1	30.08	250.09

DIFFERENTIAL CORRECTIONS

TDE -.3241 TRA -.3628 TC3 -.4874 BAU .1244
RDE -.1805 RRA -.1489 RC3 .6517 FAU .17501
FDE .8421 FRA 5.8485 FC-13.2565 B8P 1543
BDE .3709 BRA .3922 BC3 .8138 F8P 2174

MID-COURSE EXECUTION ACCURACY

SGT 979.1 SGR 616.5 SG3 1295.5
RRT .4105 RRF -.8668 RTF -.4942
SGB 1157.0 R23 -.6461 R13 -.5878
SG1 1024.8 SG2 537.1 THA 20.29

ORBIT DETERMINATION ACCURACY

ST 29.6 SR 16.0 S8 59.4
CRT .9938 CR8 .6210 C8T .6886
L8A 64.2 M8A 23.0 S8A .9
EL1 33.6 EL2 1.6 ALF 28.25

LAUNCH DATE APR 27 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 1 1971

HELIOCENTRIC CONIC DISTANCE 460.177 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.330 GAL -1.67 AZL 92.63 HCA 153.01 SMA 184.95 ECC .18806 INC 2.6324 V1 29.592
RP 209.66 LAP -1.19 LOP 9.13 VP 23.419 GAP 7.67 AZP 87.65 TAL 349.42 TAP 142.43 RCA 150.17 APO 219.73 V2 26.150
RC 106.958 GL -26.06 GP 6.23 ZAL 114.44 ZAP 122.56 ETS 175.76 ZAE 163.34 ETE 156.44 ZAC 106.99 ETC 276.62 LVI -22.15

PLANETOCENTRIC CONIC

C3 11.414 VHL 3.378 DLA -34.22 RAL 346.53 RAD 6638.8 VEL 11.467 PTH 6.52 VHP 3.486 DPA -13.00 RAP 313.12 ECC 1.1878

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 39 15	2279.48	3.66	57.17	201.60	137.47	19 17 15	1279.5	21.64	40.52
60.00	20 18 14	2015.96	10.10	39.57	207.72	129.22	20 51 50	1016.0	24.97	19.66
69.87	23 35 57	1430.10	23.57	1.34	216.60	115.56	23 59 47	430.1	31.98	335.89
69.87	23 35 57	1430.10	23.57	1.34	216.60	115.56	23 59 47	430.1	31.98	335.89
69.87	23 35 57	1430.10	23.57	1.34	216.60	115.56	23 59 47	430.1	31.98	335.89
69.87	23 35 57	1430.10	23.57	1.34	216.60	115.56	23 59 47	430.1	31.98	335.89
69.87	23 35 57	1430.10	23.57	1.34	216.60	115.56	23 59 47	430.1	31.98	335.89

DIFFERENTIAL CORRECTIONS

TDE -.3150 TRA -.3044 TC3 -.5825 BAU .1376
RDE -.1754 RRA -.1676 RC3 .6885 FAU .18220
FDE .8519 FRA 6.0602 FC-13.8196 B8P 1373
BDE .3605 BRA .3474 BC3 .9018 F8P 2251

MID-COURSE EXECUTION ACCURACY

SGT 911.0 SGR 650.4 SG3 1349.0
RRT .3212 RRF -.8908 RTF -.3414
SGB 1119.4 R23 -.7200 R13 -.5277
SG1 951.4 SG2 589.8 THA 21.54

ORBIT DETERMINATION ACCURACY

ST 28.3 SR 15.8 S8 60.4
CRT .9979 CR8 .6476 C8T .6462
L8A 64.5 M8A 23.1 S8A .9
EL1 32.4 EL2 .9 ALF 29.07

LAUNCH DATE APR 27 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 464.326 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.317	GAL	-1.67	AZL	92.68	HCA	154.24	SMA	184.73	ECC	.18714	INC	2.6786	V1	29.592
RP	209.87	LAP	-1.16	LOP	10.36	VP	23.373	GAP	7.45	AZP	87.59	TAL	349.36	TAP	143.60	RCA	150.16	APO	219.30	V2	26.124
RC	109.028	GL	-26.54	GP	6.62	ZAL	114.46	ZAP	120.54	ETS	175.81	ZAE	161.59	ETE	157.92	ZAC	107.47	ETC	276.46	LVI	-22.28

PLANETOCENTRIC CONIC

C3	11.418	VHL	3.379	DLA	-34.89	RAL	346.92	RAD	6638.8	VEL	11.467	PTH	6.52	VHP	3.421	DPA	-12.83	RAP	312.25	ECC	1.1879

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 43 23	2270.05	4.14	56.77	202.20	137.44	19 21 13	1270.1	22.08	40.06
60.00	20 24 9	2001.70	10.72	38.87	208.44	129.09	20 57 31	1001.7	25.49	18.81
69.19	23 33 27	1442.50	23.81	2.44	217.13	115.87	23 57 30	442.5	32.32	336.95
69.19	23 33 27	1442.50	23.81	2.44	217.13	115.87	23 57 30	442.5	32.32	336.95
69.19	23 33 27	1442.50	23.81	2.44	217.13	115.87	23 57 30	442.5	32.32	336.95
69.19	23 33 27	1442.50	23.81	2.44	217.13	115.87	23 57 30	442.5	32.32	336.95
69.19	23 33 27	1442.50	23.81	2.44	217.13	115.87	23 57 30	442.5	32.32	336.95

DIFFERENTIAL CORRECTIONS

TDE	-.3163	TRA	-.2533	TC3	-.7226	BAU	.1559
RDE	-.1723	RRA	-.1896	RC3	.7213	FAU	.18722
FDE	.9057	FRA	6.3165	FC-14	1.1952	BSP	1332
BDE	.3602	BRA	.3164	BC3	1.0210	FSP	2370

MID-COURSE EXECUTION ACCURACY

SGT	893.5	SGR	689.5	SG3	1403.0
RRT	.1985	RRF	-.9115	RTF	-.2017
SGB	1128.6	R23	-.8169	R13	-.4050
SG1	916.2	SG2	659.0	THA	18.58

ORBIT DETERMINATION ACCURACY

ST	27.9	SR	15.8	SS	62.1
CRT	.9926	CRS	.6671	CST	.6067
LSA	65.8	MSA	23.5	SSA	.9
EL1	32.0	EL2	1.7	ALF	29.32

LAUNCH DATE APR 27 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 468.482 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.306	GAL	-1.68	AZL	92.73	HCA	155.47	SMA	184.54	ECC	.18631	INC	2.7289	V1	29.592
RP	210.10	LAP	-1.13	LOP	11.59	VP	23.328	GAP	7.23	AZP	87.52	TAL	349.28	TAP	144.75	RCA	150.16	APO	218.92	V2	26.098
RC	111.121	GL	-27.03	GP	7.04	ZAL	114.49	ZAP	118.49	ETS	175.86	ZAE	159.78	ETE	159.12	ZAC	107.98	ETC	276.29	LVI	-22.42

PLANETOCENTRIC CONIC

C3	11.441	VHL	3.383	DLA	-34.98	RAL	347.34	RAD	6638.8	VEL	11.468	PTH	6.52	VHP	3.362	DPA	-12.63	RAP	311.35	ECC	1.1883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 47 46	2260.53	4.61	56.37	202.86	137.41	19 25 26	1260.5	22.52	39.59
60.00	20 30 32	1986.84	11.35	38.13	209.23	128.93	21 3 39	986.8	26.03	17.92
68.50	23 31 7	1455.09	24.04	3.56	217.71	116.21	23 55 22	455.1	32.66	338.04
68.50	23 31 7	1455.09	24.04	3.56	217.71	116.21	23 55 22	455.1	32.66	338.04
68.50	23 31 7	1455.09	24.04	3.56	217.71	116.21	23 55 22	455.1	32.66	338.04
68.50	23 31 7	1455.09	24.04	3.56	217.71	116.21	23 55 22	455.1	32.66	338.04
68.50	23 31 7	1455.09	24.04	3.56	217.71	116.21	23 55 22	455.1	32.66	338.04

DIFFERENTIAL CORRECTIONS

TDE	-.3116	TRA	-.1919	TC3	-.8446	BAU	.1739
RDE	-.1685	RRA	-.2120	RC3	.7605	FAU	.19345
FDE	.9335	FRA	6.5329	FC-14	1.6380	BSP	1270
BDE	.3542	BRA	.2859	BC3	1.1366	FSP	2455

MID-COURSE EXECUTION ACCURACY

SGT	873.2	SGR	733.6	SG3	1453.4
RRT	.0475	RRF	-.9290	RTF	-.0364
SGB	1140.4	R23	-.9186	R13	-.1389
SG1	875.5	SG2	730.8	THA	7.60

ORBIT DETERMINATION ACCURACY

ST	27.1	SR	15.7	SS	63.3
CRT	.9748	CRS	.7208	CST	.5558
LSA	66.5	MSA	23.8	SSA	.8
EL1	31.2	EL2	3.0	ALF	29.84

LAUNCH DATE APR 27 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 472.643 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.295	GAL	-1.69	AZL	92.78	HCA	156.69	SMA	184.37	ECC	.18558	INC	2.7841	V1	29.592
RP	210.33	LAP	-1.10	LOP	12.82	VP	23.283	GAP	7.01	AZP	87.44	TAL	349.19	TAP	145.88	RCA	150.15	APO	218.58	V2	26.071
RC	113.239	GL	-27.56	GP	7.50	ZAL	114.52	ZAP	116.42	ETS	175.93	ZAE	157.90	ETE	160.10	ZAC	108.53	ETC	276.12	LVI	-22.58

PLANETOCENTRIC CONIC

C3	11.485	VHL	3.389	DLA	-35.38	RAL	347.80	RAD	6638.8	VEL	11.470	PTH	6.52	VHP	3.307	DPA	-12.39	RAP	310.40	ECC	1.1890

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 52 28	2250.87	5.10	55.97	203.59	137.37	19 29 59	1250.9	22.97	39.11
60.00	20 37 28	1971.22	12.02	37.35	210.13	128.76	21 10 19	971.2	26.59	16.98
67.79	23 28 57	1467.94	24.27	4.70	218.36	116.57	23 53 25	467.9	33.02	339.16
67.79	23 28 57	1467.94	24.27	4.70	218.36	116.57	23 53 25	467.9	33.02	339.16
67.79	23 28 57	1467.94	24.27	4.70	218.36	116.57	23 53 25	467.9	33.02	339.16
67.79	23 28 57	1467.94	24.27	4.70	218.36	116.57	23 53 25	467.9	33.02	339.16
67.79	23 28 57	1467.94	24.27	4.70	218.36	116.57	23 53 25	467.9	33.02	339.16

DIFFERENTIAL CORRECTIONS

TDE	-.3084	TRA	-.1297	TC3	-.9778	BAU	.1940
RDE	-.1654	RRA	-.2371	RC3	.8005	FAU	.19889
FDE	.9712	FRA	6.7629	FC-14	1.9926	BSP	1284
BDE	.3500	BRA	.2703	BC3	1.2638	FSP	2549

MID-COURSE EXECUTION ACCURACY

SGT	885.3	SGR	783.8	SG3	1503.0
RRT	-.1175	RRF	-.9437	RTF	.1468
SGB	1182.4	R23	.8404	R13	-.4303
SG1	903.6	SG2	762.5	THA	158.05

ORBIT DETERMINATION ACCURACY

ST	26.4	SR	15.8	SS	64.7
CRT	.9416	CRS	.7569	CST	.4978
LSA	67.4	MSA	24.2	SSA	.8
EL1	30.4	EL2	4.6	ALF	30.21

LAUNCH DATE APR 27 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 476.808 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.286	GAL	-1.70	AZL	92.85	HCA	157.92	SMA	184.21	ECC	.18493	INC	2.8450	V1	29.592
RP	210.57	LAP	-1.07	LOP	14.04	VP	23.239	GAP	6.80	AZP	87.36	TAL	349.08	TAP	147.00	RCA	150.15	APO	218.28	V2	26.044
RC	115.380	GL	-28.12	GP	8.01	ZAL	114.56	ZAP	114.33	ETS	176.01	ZAE	155.96	ETE	160.90	ZAC	109.13	ETC	275.94	LVI	-22.77

PLANETOCENTRIC CONIC

C3	11.550	VHL	3.399	DLA	-35.80	RAL	348.30	RAD	6638.8	VEL	11.473	PTH	6.52	VHP	3.258	DPA	-12.12	RAP	309.43	ECC	1.1901

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 57 33	2240.92	5.60	55.55	204.41	137.32	19 34 54	1240.9	23.43	38.61
60.00	20 45 4	1954.49	12.73	36.51	211.12	128.57	21 17 39	954.5	27.18	15.96
67.06	23 26 54	1481.27	24.51	5.89	219.09	116.96	23 51 35	481.3	33.39	340.32
67.06	23 26 54	1481.27	24.51	5.89	219.09	116.96	23 51 35	481.3	33.39	340.32
67.06	23 26 54	1481.27	24.51	5.89	219.09	116.96	23 51 35	481.3	33.39	340.32
67.06	23 26 54	1481.27	24.51	5.89	219.09	116.96	23 51 35	481.3	33.39	340.32
67.06	23 26 54	1481.27	24.51	5.89	219.09	116.96	23 51 35	481.3	33.39	340.32

DIFFERENTIAL CORRECTIONS

TDE	-.3054	TRA	-.0636	TC3	-1.1141	BAU	.2157
RDE	-.1629	RRA	-.2644	RC3	.8430	FAU	.20408
FDE	1.0118	FRA	6.9818	FC-15	2.2970	BSP	1366
BDE	.3462	BRA	.2719	BC3	1.3971	FSP	2637

MID-COURSE EXECUTION ACCURACY

SGT	925.2	SGR	840.1	SG3	1549.6
RRT	-.2829	RRF	-.9559	RTF	.3060
SGB	1249.7	R23	.6596	R13	-.6928
SG1	1006.6	SG2	740.6	THA	144.43

ORBIT DETERMINATION ACCURACY

ST	25.8	SR	16.0	SS	66.0
CRT	.8899	CRS	.7926	CST	.4309
LSA	68.4	MSA	24.5	SSA	.7
EL1	29.7	EL2	6.4	ALF	30.44

LAUNCH DATE APR 27 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 11 1971

DISTANCE 480.978

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.278 GAL -1.71 AZL 92.91 HCA 159.14 SMA 184.08 ECC .18437 INC 2.9123 V1 29.592
RP 210.82 LAP -1.04 LOP 15.26 VP 23.196 GAP 6.59 AZP 87.28 TAL 348.96 TAP 148.10 RCA 150.14 APO 218.02 V2 26.015
RC 117.545 GL -28.72 GP 8.56 ZAL 114.61 ZAP 112.22 ETS 176.10 ZAE 153.98 ETE 161.53 ZAC 109.77 ETC 275.75 LVI -23.00

PLANETOCENTRIC CONIC

C3 11.639 VHL 3.412 DLA -36.25 RAL 348.85 RAD 6638.9 VEL 11.477 PTH 6.53 VHP 3.215 DPA -11.80 RAP 308.43 ECC 1.1915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 3 6	2230.54	6.12	55.11	205.31	137.28	19 40 16	1230.5	23.91	38.08
60.00	20 53 33	1936.22	13.51	35.58	212.25	126.34	21 25 49	936.2	27.81	14.83
66.30	23 24 56	1495.21	24.74	7.13	219.90	117.39	23 49 51	495.2	33.77	341.55
66.30	23 24 56	1495.21	24.74	7.13	219.90	117.39	23 49 51	495.2	33.77	341.55
66.30	23 24 56	1495.21	24.74	7.13	219.90	117.39	23 49 51	495.2	33.77	341.55
66.30	23 24 56	1495.21	24.74	7.13	219.90	117.39	23 49 51	495.2	33.77	341.55
66.30	23 24 56	1495.21	24.74	7.13	219.90	117.39	23 49 51	495.2	33.77	341.55

DIFFERENTIAL CORRECTIONS

TDE -.3025 TRA .0062 TC3-1.2530 BAU .2390
RDE -.1607 RRA -.2936 RC3 .8887 FAU .20904
FDE 1.0471 FRA 7.1822 FC-15.5491 BSP 1515
BDE .3425 BRA .2939 BC3 1.5362 FSP 2715

MID-COURSE EXECUTION ACCURACY

SGT 994.6 SGR 902.7 SG3 1591.7
RRT -.4336 RRF -.9657 RTF .4569
SGB 1343.2 R23 .5588 R13 -.7887
SG1 1140.6 SG2 709.3 THA 141.31

ORBIT DETERMINATION ACCURACY

ST 25.4 SR 16.3 SS 67.1
CRT .8173 CRS .8260 CST .3532
LSA 69.2 MSA 25.0 SSA .7
EL1 29.1 EL2 8.2 ALF 30.40

LAUNCH DATE APR 27 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 13 1971

DISTANCE 485.151

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.270 GAL -1.73 AZL 92.99 HCA 160.36 SMA 183.96 ECC .18390 INC 2.9876 V1 29.592
RP 211.07 LAP -1.00 LOP 16.48 VP 23.154 GAP 6.38 AZP 87.19 TAL 348.83 TAP 149.19 RCA 150.13 APO 217.79 V2 25.986
RC 119.734 GL -29.37 GP 9.17 ZAL 114.65 ZAP 110.10 ETS 176.21 ZAE 151.95 ETE 162.02 ZAC 110.47 ETC 275.56 LVI -23.27

PLANETOCENTRIC CONIC

C3 11.753 VHL 3.428 DLA -36.74 RAL 349.45 RAD 6638.9 VEL 11.482 PTH 6.53 VHP 3.176 DPA -11.42 RAP 307.40 ECC 1.1934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 9 11	2219.52	6.67	54.64	206.33	137.22	19 46 11	1219.5	24.41	37.52
60.00	21 3 8	1915.78	14.37	34.54	213.53	126.07	21 35 4	915.8	28.51	13.55
65.50	23 23 3	1509.91	24.98	8.46	220.81	117.86	23 48 12	509.9	34.18	342.86
65.50	23 23 3	1509.91	24.98	8.46	220.81	117.86	23 48 12	509.9	34.18	342.86
65.50	23 23 3	1509.91	24.98	8.46	220.81	117.86	23 48 12	509.9	34.18	342.86
65.50	23 23 3	1509.91	24.98	8.46	220.81	117.86	23 48 12	509.9	34.18	342.86
65.50	23 23 3	1509.91	24.98	8.46	220.81	117.86	23 48 12	509.9	34.18	342.86

DIFFERENTIAL CORRECTIONS

TDE -.2998 TRA .0794 TC3-1.3917 BAU .2636
RDE -.1592 RRA -.3264 RC3 .9372 FAU .21353
FDE 1.0872 FRA 7.3746 FC-15.7285 BSP 1729
BDE .3394 BRA .3359 BC3 1.6779 FSP 2790

MID-COURSE EXECUTION ACCURACY

SGT 1090.4 SGR 973.2 SG3 1630.5
RRT -.5585 RRF -.9737 RTF .5796
SGB 1461.5 R23 .4911 R13 -.8419
SG1 1293.4 SG2 680.6 THA 140.77

ORBIT DETERMINATION ACCURACY

ST 25.2 SR 16.8 SS 68.2
CRT .7237 CRS .8577 CST .2681
LSA 70.2 MSA 25.4 SSA .6
EL1 28.5 EL2 10.3 ALF 30.01

LAUNCH DATE APR 27 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 15 1971

DISTANCE 489.328

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.264 GAL -1.75 AZL 93.07 HCA 161.57 SMA 183.85 ECC .18349 INC 3.0722 V1 29.592
RP 211.33 LAP -.97 LOP 17.70 VP 23.111 GAP 6.16 AZP 87.08 TAL 348.68 TAP 150.25 RCA 150.12 APO 217.59 V2 25.957
RC 121.945 GL -30.07 GP 9.84 ZAL 114.68 ZAP 107.97 ETS 176.34 ZAE 149.86 ETE 162.36 ZAC 111.23 ETC 275.37 LVI -23.59

PLANETOCENTRIC CONIC

C3 11.897 VHL 3.449 DLA -37.26 RAL 350.11 RAD 6639.0 VEL 11.488 PTH 6.54 VHP 3.144 DPA -10.97 RAP 306.36 ECC 1.1958

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 15 57	2207.62	7.26	54.14	207.47	137.15	19 52 45	1207.6	24.96	36.91
60.00	21 14 14	1892.25	15.35	33.33	215.00	127.73	21 45 46	892.2	29.30	12.05
64.65	23 21 12	1525.56	25.22	9.87	221.83	118.39	23 46 38	525.6	34.61	344.27
64.65	23 21 12	1525.56	25.22	9.87	221.83	118.39	23 46 38	525.6	34.61	344.27
64.65	23 21 12	1525.56	25.22	9.87	221.83	118.39	23 46 38	525.6	34.61	344.27
64.65	23 21 12	1525.56	25.22	9.87	221.83	118.39	23 46 38	525.6	34.61	344.27
64.65	23 21 12	1525.56	25.22	9.87	221.83	118.39	23 46 38	525.6	34.61	344.27

DIFFERENTIAL CORRECTIONS

TDE -.2977 TRA .1559 TC3-1.5311 BAU .2898
RDE -.1589 RRA -.3627 RC3 .9878 FAU .21726
FDE 1.1367 FRA 7.5563 FC-15.8098 BSP 1994
BDE .3374 BRA .3947 BC3 1.8221 FSP 2856

MID-COURSE EXECUTION ACCURACY

SGT 1210.8 SGR 1052.2 SG3 1664.8
RRT -.6559 RRF -.9801 RTF .6.37
SGB 1604.1 R23 .4403 R13 -.8765
SG1 1463.2 SG2 657.2 THA 141.06

ORBIT DETERMINATION ACCURACY

ST 25.2 SR 17.4 SS 69.3
CRT .6115 CRS .8871 CST .1790
LSA 71.3 MSA 25.9 SSA .6
EL1 28.1 EL2 12.4 ALF 29.13

LAUNCH DATE APR 27 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 17 1971

DISTANCE 493.807

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.259 GAL -1.77 AZL 93.17 HCA 162.78 SMA 183.76 ECC .18317 INC 3.1680 V1 29.592
RP 211.60 LAP -.94 LOP 18.91 VP 23.070 GAP 5.98 AZP 86.97 TAL 348.52 TAP 151.30 RCA 150.11 APO 217.42 V2 25.926
RC 124.177 GL -30.65 GP 10.60 ZAL 114.71 ZAP 105.84 ETS 176.49 ZAE 147.78 ETE 162.65 ZAC 112.07 ETC 275.17 LVI -23.98

PLANETOCENTRIC CONIC

C3 12.075 VHL 3.475 DLA -37.64 RAL 350.83 RAD 6639.1 VEL 11.496 PTH 6.54 VHP 3.116 DPA -10.44 RAP 305.29 ECC 1.1987

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 23 34	2194.53	7.91	53.58	208.77	137.07	20 0 9	1194.5	25.55	36.23
60.00	21 27 25	1864.13	16.52	31.87	216.72	127.30	21 58 29	864.1	30.21	10.23
63.73	23 19 24	1542.38	25.48	11.40	222.98	118.98	23 45 7	542.4	35.08	345.79
63.73	23 19 24	1542.38	25.48	11.40	222.98	118.98	23 45 7	542.4	35.08	345.79
63.73	23 19 24	1542.38	25.48	11.40	222.98	118.98	23 45 7	542.4	35.08	345.79
63.73	23 19 24	1542.38	25.48	11.40	222.98	118.98	23 45 7	542.4	35.08	345.79
63.73	23 19 24	1542.38	25.48	11.40	222.98	118.98	23 45 7	542.4	35.08	345.79

DIFFERENTIAL CORRECTIONS

TDE -.2956 TRA .2360 TC3-1.6677 BAU .3175
RDE -.1591 RRA -.4025 RC3 1.0425 FAU .22060
FDE 1.1788 FRA 7.7112 FC-15.8164 BSP 2302
BDE .3358 BRA .4666 BC3 1.9667 FSP 2908

MID-COURSE EXECUTION ACCURACY

SGT 1350.4 SGR 1140.2 SG3 1692.8
RRT -.7312 RRF -.9851 RTF .7456
SGB 1767.4 R23 .3977 R13 -.9020
SG1 1648.6 SG2 637.1 THA 141.55

ORBIT DETERMINATION ACCURACY

ST 25.5 SR 18.2 SS 70.2
CRT .4829 CRS .9123 CST .0833
LSA 72.3 MSA 26.4 SSA .5
EL1 27.7 EL2 14.7 ALF 27.30

LAUNCH DATE APR 27 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC — DISTANCE 497,688 — EARTH TO MARS

RL 180.57 LAL -.00 LOL 216.10 VL 32.284 GAL -1.79 AZL 93.26 HCA 163.99 SMA 183.69 ECC .18291 INC 3.2774 V1 29.592
RP 211.87 LAP -.90 LOP 20.12 VP 23.029 GAP 5.79 AZP 86.85 TAL 348.35 TAP 152.34 RCA 150.09 APO 217.29 V2 25.896
RC 126.431 GL -31.72 GP 11.45 ZAL 114.72 ZAP 103.71 ETS 176.67 ZAE 145.61 ETE 162.77 ZAC 113.01 ETC 274.98 LVI -24.45

PLANETOCENTRIC CONIC

C3 12.293 VHL 3.506 DLA -38.49 RAL 351.63 RAD 6639.2 VEL 11.505 PTH 6.55 VHP 3.095 DPA -9.81 RAP 304.21 ECC 1.2023

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 32 16	2179.63	8.65	52.95	210.26	136.97	20 8 36	1179.8	26.21	35.46
60.00	21 43 46	1826.72	17.97	30.00	218.61	126.70	22 14 15	826.7	31.32	7.89
62.72	23 17 39	1560.56	25.75	13.06	224.28	119.66	23 43 39	560.6	35.60	347.47
62.72	23 17 39	1560.56	25.75	13.06	224.28	119.66	23 43 39	560.6	35.60	347.47
62.72	23 17 39	1560.56	25.75	13.06	224.28	119.66	23 43 39	560.6	35.60	347.47
62.72	23 17 39	1560.56	25.75	13.06	224.28	119.66	23 43 39	560.6	35.60	347.47
62.72	23 17 39	1560.56	25.75	13.06	224.28	119.66	23 43 39	560.6	35.60	347.47

DIFFERENTIAL CORRECTIONS

TDE -.2951 TRA .3189 TC3-1.8016 BAU .3469
RDE -.1610 RRA -.4475 RC3 1.1002 FAU .22315
FDE 1.2309 FRA 7.8509 FC-15.7151 BSP 2641
BDE .3362 BRA .5495 BC3 2.1110 FSP 2952

MID-COURSE EXECUTION ACCURACY

SGT 1507.3 SGR 1239.8 SG3 1715.3
RRT -.7865 RRF -.9890 RTF .7975
SGB 1951.7 R23 .3632 R13 -.9205
SG1 1849.2 SG2 624.1 THA 142.02

ORBIT DETERMINATION ACCURACY

ST 26.2 SR 19.3 SS 71.2
CRT .3474 CRS .9342 CST -.0089
LSA 73.4 MSA 27.0 SSA .5
EL1 27.6 EL2 17.1 ALF 24.06

LAUNCH DATE APR 27 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC — DISTANCE 501,871 — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.250 GAL -1.82 AZL 93.40 HCA 165.20 SMA 183.63 ECC .18272 INC 3.4041 V1 29.592
RP 212.14 LAP -.87 LOP 21.32 VP 22.988 GAP 5.59 AZP 86.71 TAL 348.16 TAP 153.36 RCA 150.08 APO 217.18 V2 25.864
RC 128.706 GL -32.69 GP 12.41 ZAL 114.71 ZAP 101.59 ETS 176.89 ZAE 143.43 ETE 162.79 ZAC 114.05 ETC 274.79 LVI -25.02

PLANETOCENTRIC CONIC

C3 12.561 VHL 3.544 DLA -39.22 RAL 352.54 RAD 6639.3 VEL 11.517 PTH 6.56 VHP 3.081 DPA -9.06 RAP 303.11 ECC 1.2067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 42 21	2162.94	9.49	52.23	211.99	136.85	20 18 24	1162.9	26.97	34.56
60.00	22 5 38	1779.83	19.94	27.37	221.45	125.78	22 35 18	779.8	32.77	4.56
61.61	23 15 53	1580.51	26.03	14.91	225.76	120.44	23 42 13	580.5	36.17	349.33
61.61	23 15 53	1580.51	26.03	14.91	225.76	120.44	23 42 13	580.5	36.17	349.33
61.61	23 15 53	1580.51	26.03	14.91	225.76	120.44	23 42 13	580.5	36.17	349.33
61.61	23 15 53	1580.51	26.03	14.91	225.76	120.44	23 42 13	580.5	36.17	349.33
61.61	23 15 53	1580.51	26.03	14.91	225.76	120.44	23 42 13	580.5	36.17	349.33

DIFFERENTIAL CORRECTIONS

TDE -.2941 TRA .4060 TC3-1.9274 BAU .3777
RDE -.1641 RRA -.4981 RC3 1.1598 FAU .22451
FDE 1.2801 FRA 7.9624 FC-15.4744 BSP 3020
BDE .3368 BRA .6426 BC3 2.2494 FSP 2987

MID-COURSE EXECUTION ACCURACY

SGT 1676.4 SGR 1351.5 SG3 1729.5
RRT -.8287 RRF -.9920 RTF .8368
SGB 2153.4 R23 .3326 R13 -.9350
SG1 2063.9 SG2 614.4 THA 142.34

ORBIT DETERMINATION ACCURACY

ST 27.0 SR 20.5 SS 72.0
CRT .2068 CRS .9521 CST -.1014
LSA 74.6 MSA 27.6 SSA .5
EL1 27.7 EL2 19.6 ALF 18.22

LAUNCH DATE APR 27 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC — DISTANCE 506,055 — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.247 GAL -1.85 AZL 93.55 HCA 166.40 SMA 183.58 ECC .18259 INC 3.5521 V1 29.592
RP 212.43 LAP -.83 LOP 22.53 VP 22.947 GAP 5.40 AZP 86.55 TAL 347.96 TAP 154.36 RCA 150.06 APO 217.10 V2 25.832
RC 130.999 GL -33.80 GP 13.52 ZAL 114.66 ZAP 99.49 ETS 177.14 ZAE 141.20 ETE 162.71 ZAC 115.24 ETC 274.61 LVI -25.72

PLANETOCENTRIC CONIC

C3 12.890 VHL 3.590 DLA -40.06 RAL 353.56 RAD 6639.5 VEL 11.531 PTH 6.58 VHP 3.073 DPA -8.16 RAP 302.00 ECC 1.2121

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 54 16	2143.07	10.47	51.37	214.04	136.68	20 29 59	1143.1	27.85	33.48
60.00	22 42 30	1691.61	23.37	22.43	225.39	123.82	23 10 42	691.6	35.13	358.26
60.36	23 14 10	1602.48	26.33	16.96	227.48	121.35	23 40 52	602.5	36.80	351.42
60.36	23 14 10	1602.48	26.33	16.96	227.48	121.35	23 40 52	602.5	36.80	351.42
60.36	23 14 10	1602.48	26.33	16.96	227.48	121.35	23 40 52	602.5	36.80	351.42
60.36	23 14 10	1602.48	26.33	16.96	227.48	121.35	23 40 52	602.5	36.80	351.42
60.36	23 14 10	1602.48	26.33	16.96	227.48	121.35	23 40 52	602.5	36.80	351.42

DIFFERENTIAL CORRECTIONS

TDE -.2944 TRA .4967 TC3-2.0419 BAU .4104
RDE -.1696 RRA -.5557 RC3 1.2250 FAU .22540
FDE 1.3391 FRA 8.0412 FC-15.1380 BSP 3425
BDE .3397 BRA .7454 BC3 2.3812 FSP 2998

MID-COURSE EXECUTION ACCURACY

SGT 1855.5 SGR 1479.7 SG3 1736.2
RRT -.8605 RRF -.9943 RTF .8662
SGB 2373.3 R23 .3052 R13 -.9466
SG1 2293.6 SG2 610.0 THA 142.43

ORBIT DETERMINATION ACCURACY

ST 28.2 SR 22.1 SS 72.7
CRT .0723 CRS .9665 CST -.1893
LSA 75.9 MSA 28.3 SSA .4
EL1 28.4 EL2 21.9 ALF 8.08

LAUNCH DATE APR 27 1971 FLIGHT TIME 212.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC — DISTANCE 510,240 — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.245 GAL -1.88 AZL 93.73 HCA 167.60 SMA 183.54 ECC .18253 INC 3.7279 V1 29.592
RP 212.72 LAP -.80 LOP 23.73 VP 22.907 GAP 5.22 AZP 86.36 TAL 347.74 TAP 156.34 RCA 150.04 APO 217.05 V2 25.799
RC 133.312 GL -35.07 GP 14.81 ZAL 114.56 ZAP 97.41 ETS 177.44 ZAE 138.93 ETE 162.50 ZAC 116.60 ETC 274.43 LVI -26.59

PLANETOCENTRIC CONIC

C3 13.301 VHL 3.647 DLA -41.02 RAL 354.73 RAD 6639.7 VEL 11.548 PTH 6.59 VHP 3.073 DPA -7.08 RAP 300.88 ECC 1.2189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 8 44	2118.99	11.66	50.32	216.51	136.46	20 44 3	1119.0	28.90	32.16
58.95	23 12 31	1626.92	26.65	19.27	229.48	122.42	23 39 38	626.9	37.52	353.79
58.95	23 12 31	1626.92	26.65	19.27	229.48	122.42	23 39 38	626.9	37.52	353.79
58.95	23 12 31	1626.92	26.65	19.27	229.48	122.42	23 39 38	626.9	37.52	353.79
58.95	23 12 31	1626.92	26.65	19.27	229.48	122.42	23 39 38	626.9	37.52	353.79
58.95	23 12 31	1626.92	26.65	19.27	229.48	122.42	23 39 38	626.9	37.52	353.79
58.95	23 12 31	1626.92	26.65	19.27	229.48	122.42	23 39 38	626.9	37.52	353.79

DIFFERENTIAL CORRECTIONS

TDE -.2948 TRA .5918 TC3-2.1415 BAU .4448
RDE -.1788 RRA -.6221 RC3 1.2924 FAU .22487
FDE 1.4123 FRA 8.0819 FC-14.6371 BSP 3866
BDE .3448 BRA .8587 BC3 2.5013 FSP 2999

MID-COURSE EXECUTION ACCURACY

SGT 2042.9 SGR 1626.6 SG3 1732.6
RRT -.8844 RRF -.9960 RTF .8883
SGB 2611.4 R23 .2808 R13 -.9558
SG1 2538.9 SG2 610.8 THA 142.28

ORBIT DETERMINATION ACCURACY

ST 29.7 SR 24.0 SS 73.3
CRT -.0522 CRS .9777 CST -.2600
LSA 77.4 MSA 29.1 SSA .4
EL1 29.8 EL2 23.9 ALF 173.17

LAUNCH DATE APR 27 1971 FLIGHT TIME 214.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC — DISTANCE 514.426 — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.244 GAL -1.92 AZL 93.94 HCA 168.80 SMA 183.52 ECC .18253 INC 3.9399 V1 29.592
RP 213.01 LAP -.76 LOP 24.92 VP 22.868 GAP 5.03 AZP 86.13 TAL 347.52 TAP 156.31 RCA 150.02 APO 217.02 V2 25.766
RC 135.643 GL -36.56 GP 16.33 ZAL 114.39 ZAP 95.36 ETS 177.81 ZAE 136.61 ETE 162.15 ZAC 118.18 ETC 274.26 LVI -27.66

PLANETOCENTRIC CONIC

C3 13.820 VHL 3.717 DLA -42.16 RAL 356.10 RAD 6640.0 VEL 11.571 PTH 6.61 VHP 3.084 DPA -5.76 RAP 299.74 ECC 1.2274

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 26 50	2088.73	13.15	48.99	219.60	136.15	21 1 39	1088.7	30.20	30.45
57.33	23 11 2	1654.39	26.99	21.90	231.85	123.70	23 38 36	654.4	38.34	356.52
57.33	23 11 2	1654.39	26.99	21.90	231.85	123.70	23 38 36	654.4	38.34	356.52
57.33	23 11 2	1654.39	26.99	21.90	231.85	123.70	23 38 36	654.4	38.34	356.52
57.33	23 11 2	1654.39	26.99	21.90	231.85	123.70	23 38 36	654.4	38.34	356.52
57.33	23 11 2	1654.39	26.99	21.90	231.85	123.70	23 38 36	654.4	38.34	356.52
57.33	23 11 2	1654.39	26.99	21.90	231.85	123.70	23 38 36	654.4	38.34	356.52

DIFFERENTIAL CORRECTIONS

TDE -.2964 TRA .6906 TC3-2.2234 BAU .4820
RDE -.1918 RRA -.6992 RC3 1.3652 FAU .22343
FDE 1.4673 FRA 8.0697 FC-13.9968 BSP 4332
BDE .3530 BRA .9828 BC3 2.6090 FSP 2973

MID-COURSE EXECUTION ACCURACY

SGT 2236.7 SGR 1797.5 SG3 1717.2
RRT -.9029 RRF -.9973 RTF .9053
SGB 2869.5 R23 .2584 R13 -.9633
SG1 2802.4 SG2 616.6 THA 141.86

ORBIT DETERMINATION ACCURACY

ST 31.5 SR 26.4 SS 73.8
CRT -.1635 CRS .9859 CST -.3257
LSA 79.0 MSA 30.0 SSA .3
EL1 32.3 EL2 25.4 ALF 158.70

LAUNCH DATE APR 27 1971 FLIGHT TIME 216.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC — DISTANCE 518.612 — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.243 GAL -1.95 AZL 94.20 HCA 169.99 SMA 183.81 ECC .18258 INC 4.2009 V1 29.592
RP 213.31 LAP -.73 LOP 26.11 VP 22.828 GAP 4.85 AZP 85.86 TAL 347.28 TAP 157.27 RCA 150.00 APO 217.01 V2 25.732
RC 137.991 GL -38.33 GP 18.15 ZAL 114.12 ZAP 93.36 ETS 176.25 ZAE 134.22 ETE 161.63 ZAC 120.06 ETC 274.12 LVI -29.02

PLANETOCENTRIC CONIC

C3 14.492 VHL 3.807 DLA -43.50 RAL 357.73 RAD 6640.3 VEL 11.599 PTH 6.64 VHP 3.106 DPA -4.13 RAP 298.58 ECC 1.2385

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 50 36	2048.59	15.11	47.20	223.59	135.67	21 24 45	1048.6	31.88	28.10
55.45	23 9 52	1685.61	27.33	24.93	234.72	125.27	23 37 58	685.6	39.26	359.72
55.45	23 9 52	1685.61	27.33	24.93	234.72	125.27	23 37 58	685.6	39.26	359.72
55.45	23 9 52	1685.61	27.33	24.93	234.72	125.27	23 37 58	685.6	39.26	359.72
55.45	23 9 52	1685.61	27.33	24.93	234.72	125.27	23 37 58	685.6	39.26	359.72
55.45	23 9 52	1685.61	27.33	24.93	234.72	125.27	23 37 58	685.6	39.26	359.72
55.45	23 9 52	1685.61	27.33	24.93	234.72	125.27	23 37 58	685.6	39.26	359.72

DIFFERENTIAL CORRECTIONS

TDE -.2986 TRA .7937 TC3-2.2809 BAU .5226
RDE -.2117 RRA -.7899 RC3 1.4399 FAU .22028
FDE 1.5804 FRA 7.9881 FC-13.1592 BSP 4832
BDE .3660 BRA 1.1198 BC3 2.6974 FSP 2922

MID-COURSE EXECUTION ACCURACY

SGT 2435.2 SGR 1997.4 SG3 1686.0
RRT -.9169 RRF -.9982 RTF .9181
SGB 3149.6 R23 .2379 R13 -.9695
SG1 3086.1 SG2 629.0 THA 141.14

ORBIT DETERMINATION ACCURACY

ST 33.5 SR 29.3 SS 74.1
CRT -.2581 CRS .9917 CST -.3796
LSA 80.7 MSA 31.0 SSA .3
EL1 35.7 EL2 26.6 ALF 148.61

LAUNCH DATE APR 27 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC — DISTANCE 522.797 — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.243 GAL -1.99 AZL 94.53 HCA 171.18 SMA 183.50 ECC .18269 INC 4.5310 V1 29.592
RP 213.61 LAP -.69 LOP 27.30 VP 22.789 GAP 4.67 AZP 85.52 TAL 347.03 TAP 158.21 RCA 149.98 APO 217.02 V2 25.697
RC 140.356 GL -40.46 GP 20.37 ZAL 113.71 ZAP 91.42 ETS 178.79 ZAE 131.73 ETE 160.93 ZAC 122.34 ETC 273.99 LVI -30.73

PLANETOCENTRIC CONIC

C3 15.391 VHL 3.923 DLA -45.13 RAL 359.74 RAD 6640.7 VEL 11.638 PTH 6.68 VHP 3.146 DPA -2.09 RAP 297.40 ECC 1.2533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 24 29	1989.84	17.96	44.51	229.15	134.83	21 57 39	989.8	34.25	24.50
53.24	23 9 17	1721.67	27.66	28.48	238.27	127.20	23 37 59	721.7	40.32	3.53
53.24	23 9 17	1721.67	27.66	28.48	238.27	127.20	23 37 59	721.7	40.32	3.53
53.24	23 9 17	1721.67	27.66	28.48	238.27	127.20	23 37 59	721.7	40.32	3.53
53.24	23 9 17	1721.67	27.66	28.48	238.27	127.20	23 37 59	721.7	40.32	3.53
53.24	23 9 17	1721.67	27.66	28.48	238.27	127.20	23 37 59	721.7	40.32	3.53
53.24	23 9 17	1721.67	27.66	28.48	238.27	127.20	23 37 59	721.7	40.32	3.53

DIFFERENTIAL CORRECTIONS

TDE -.2979 TRA .9040 TC3-2.3006 BAU .5665
RDE -.2446 RRA -.9000 RC3 1.5124 FAU .21468
FDE 1.7144 FRA 7.8315 FC-12.0782 BSP 5395
BDE .3855 BRA 1.2756 BC3 2.7532 FSP 2843

MID-COURSE EXECUTION ACCURACY

SGT 2636.2 SGR 2237.6 SG3 1636.7
RRT -.9278 RRF -.9989 RTF .9281
SGB 3457.8 R23 .2181 R13 -.9748
SG1 3396.6 SG2 647.8 THA 140.03

ORBIT DETERMINATION ACCURACY

ST 35.6 SR 33.2 SS 74.5
CRT -.3387 CRS .9957 CST -.4248
LSA 83.0 MSA 32.0 SSA .2
EL1 39.9 EL2 27.9 ALF 140.83

LAUNCH DATE APR 27 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC — DISTANCE 526.981 — EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.243 GAL -2.03 AZL 94.96 HCA 172.36 SMA 183.51 ECC .18285 INC 4.9605 V1 29.592
RP 213.92 LAP -.66 LOP 28.49 VP 22.750 GAP 4.49 AZP 85.08 TAL 346.77 TAP 159.13 RCA 149.95 APO 217.06 V2 25.662
RC 142.739 GL -43.08 GP 23.13 ZAL 113.10 ZAP 89.57 ETS 179.46 ZAE 129.09 ETE 159.98 ZAC 125.16 ETC 273.91 LVI -32.95

PLANETOCENTRIC CONIC

C3 16.648 VHL 4.080 DLA -47.12 RAL 2.29 RAD 6641.3 VEL 11.691 PTH 6.73 VHP 3.212 DPA .50 RAP 296.18 ECC 1.2740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	22 26 56	1871.28	23.54	38.77	238.57	132.62	22 58 7	871.3	38.63	16.56
50.60	23 9 53	1763.96	27.91	32.68	242.80	129.64	23 39 17	764.0	41.49	8.18
50.60	23 9 53	1763.96	27.91	32.68	242.80	129.64	23 39 17	764.0	41.49	8.18
50.60	23 9 53	1763.96	27.91	32.68	242.80	129.64	23 39 17	764.0	41.49	8.18
50.60	23 9 53	1763.96	27.91	32.68	242.80	129.64	23 39 17	764.0	41.49	8.18
50.60	23 9 53	1763.96	27.91	32.68	242.80	129.64	23 39 17	764.0	41.49	8.18
50.60	23 9 53	1763.96	27.91	32.68	242.80	129.64	23 39 17	764.0	41.49	8.18

DIFFERENTIAL CORRECTIONS

TDE -.2981 TRA 1.0153 TC3-2.2882 BAU .6207
RDE -.2938 RRA-1.0293 RC3 1.5944 FAU .20831
FDE 1.8600 FRA 7.5147 FC-10.8329 BSP 5919
BDE .4185 BRA 1.4457 BC3 2.7889 FSP 2676

MID-COURSE EXECUTION ACCURACY

SGT 2837.4 SGR 2524.7 SG3 1558.6
RRT -.9362 RRF -.9993 RTF .9358
SGB 3798.0 R23 .1992 R13 -.9793
SG1 3737.8 SG2 673.7 THA 138.56

ORBIT DETERMINATION ACCURACY

ST 37.9 SR 38.0 SS 74.1
CRT -.3996 CRS .9980 CST -.4562
LSA 85.3 MSA 33.2 SSA .2
EL1 44.9 EL2 29.4 ALF 134.73

LAUNCH DATE APR 27 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 531.164 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.244	GAL	-2.08	AZL	95.55	HCA	173.84	SMA	183.52	ECC	.18306	INC	5.5462
RP	214.24	LAP	-.62	LOP	29.67	VP	22.711	GAP	4.32	AZP	84.49	TAL	346.80	TAP	160.04	RCA	149.93	APO	217.12
RC	145.138	GL	-46.36	GP	26.66	ZAL	112.19	ZAP	87.85	ETS	180.32	ZAE	126.23	ETE	158.73	ZAC	128.73	ETC	273.88

V1	29.592																		
V2	25.627																		
LVI	-35.84																		

PLANETOCENTRIC CONIC

C3	18.510	VHL	4.302	DLA	-49.57	RAL	5.69	RAD	6642.2	VEL	11.770	PTH	6.80	VHP	3.318	DPA	3.86	RAP	294.89
ECC	1.3046																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.42	23 12 41	1814.92	27.97	37.74	248.78	132.76	23 42 56	814.9	42.72	14.01
47.42	23 12 41	1814.92	27.97	37.74	248.78	132.76	23 42 56	814.9	42.72	14.01
47.42	23 12 41	1814.92	27.97	37.74	248.78	132.76	23 42 56	814.9	42.72	14.01
47.42	23 12 41	1814.92	27.97	37.74	248.78	132.76	23 42 56	814.9	42.72	14.01
47.42	23 12 41	1814.92	27.97	37.74	248.78	132.76	23 42 56	814.9	42.72	14.01
47.42	23 12 41	1814.92	27.97	37.74	248.78	132.76	23 42 56	814.9	42.72	14.01
47.42	23 12 41	1814.92	27.97	37.74	248.78	132.76	23 42 56	814.9	42.72	14.01

DIFFERENTIAL CORRECTIONS

TDE	-.2760	TRA	1.1444	TC3	-2.1969	BAU	.6783												
RDE	-.3932	RRA	-1.1993	RC3	1.6393	FAU	.19487												
FDE	2.1498	FRA	7.0800	FC3	-9.1141	BSP	6658												
BDE	.4804	BRA	1.6577	BC3	2.7411	FSP	2508												

MID-COURSE EXECUTION ACCURACY

SGT	3038.3	SGR	2886.1	SG3	1448.6						
RRT	-.9422	RRF	-.9996	RTF	.9411						
SGB	4190.6	R23	.1810	R13	-.9831						
SG1	4129.8	SG2	711.5	THA	136.56						

ORBIT DETERMINATION ACCURACY

ST	39.9	SR	45.3	SS	74.9						
CRT	-.4579	CRS	.9994	CST	-.4892						
LSA	90.0	MSA	34.0	SSA	.1						
EL1	51.8	EL2	31.0	ALF	127.13						

LAUNCH DATE APR 27 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 535.345 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.245	GAL	-2.12	AZL	96.38	HCA	174.72	SMA	183.55	ECC	.18332	INC	6.3883
RP	214.55	LAP	-.59	LOP	30.85	VP	22.673	GAP	4.14	AZP	83.64	TAL	346.22	TAP	160.94	RCA	149.90	APO	217.19
RC	147.555	GL	-50.64	GP	31.28	ZAL	110.84	ZAP	86.34	ETS	181.40	ZAE	123.02	ETE	157.10	ZAC	133.38	ETC	273.96

V1	29.592																		
V2	25.591																		
LVI	-39.69																		

PLANETOCENTRIC CONIC

C3	21.513	VHL	4.638	DLA	-52.63	RAL	10.52	RAD	6643.5	VEL	11.896	PTH	6.91	VHP	3.499	DPA	8.31	RAP	293.50
ECC	1.3840																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.57	23 19 55	1878.52	27.55	43.90	257.02	136.79	23 51 13	878.5	43.82	21.52
43.57	23 19 55	1878.52	27.55	43.90	257.02	136.79	23 51 13	878.5	43.82	21.52
43.57	23 19 55	1878.52	27.55	43.90	257.02	136.79	23 51 13	878.5	43.82	21.52
43.57	23 19 55	1878.52	27.55	43.90	257.02	136.79	23 51 13	878.5	43.82	21.52
43.57	23 19 55	1878.52	27.55	43.90	257.02	136.79	23 51 13	878.5	43.82	21.52
43.57	23 19 55	1878.52	27.55	43.90	257.02	136.79	23 51 13	878.5	43.82	21.52
43.57	23 19 55	1878.52	27.55	43.90	257.02	136.79	23 51 13	878.5	43.82	21.52

DIFFERENTIAL CORRECTIONS

TDE	-.2221	TRA	1.2787	TC3	-2.0385	BAU	.7585												
RDE	-.5749	RRA	-1.4019	RC3	1.6733	FAU	.17854												
FDE	2.5196	FRA	6.3199	FC3	-7.1847	BSP	7329												
BDE	.6163	BRA	1.8975	BC3	2.6373	FSP	2185												

MID-COURSE EXECUTION ACCURACY

SGT	3228.5	SGR	3324.8	SG3	1280.2						
RRT	-.9470	RRF	-.9998	RTF	.9453						
SGB	4634.4	R23	.1624	R13	-.9865						
SG1	4572.6	SG2	754.1	THA	134.11						

ORBIT DETERMINATION ACCURACY

ST	41.5	SR	55.7	SS	75.0						
CRT	-.5156	CRS	.9999	CST	-.5273						
LSA	96.3	MSA	34.3	SSA	.1						
EL1	61.5	EL2	32.2	ALF	119.96						

LAUNCH DATE APR 27 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 539.522 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.247	GAL	-2.17	AZL	97.71	HCA	175.69	SMA	183.58	ECC	.18362	INC	7.7072
RP	214.88	LAP	-.55	LOP	32.03	VP	22.635	GAP	3.97	AZP	82.31	TAL	345.94	TAP	161.83	RCA	149.87	APO	217.29
RC	149.988	GL	-56.30	GP	37.46	ZAL	108.83	ZAP	85.21	ETS	182.78	ZAE	119.24	ETE	155.01	ZAC	139.58	ETC	274.27

V1	29.592																		
V2	25.554																		
LVI	-44.66																		

PLANETOCENTRIC CONIC

C3	26.993	VHL	5.195	DLA	-56.38	RAL	17.97	RAD	6645.8	VEL	12.122	PTH	7.09	VHP	3.832	DPA	14.31	RAP	291.95
ECC	1.4442																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.96	23 36 29	1962.28	26.04	51.39	269.00	141.96	24 9 12	962.3	44.18	31.35
38.96	23 36 29	1962.28	26.04	51.39	269.00	141.96	24 9 12	962.3	44.18	31.35
38.96	23 36 29	1962.28	26.04	51.39	269.00	141.96	24 9 12	962.3	44.18	31.35
38.96	23 36 29	1962.28	26.04	51.39	269.00	141.96	24 9 12	962.3	44.18	31.35
38.96	23 36 29	1962.28	26.04	51.39	269.00	141.96	24 9 12	962.3	44.18	31.35
38.96	23 36 29	1962.28	26.04	51.39	269.00	141.96	24 9 12	962.3	44.18	31.35
38.96	23 36 29	1962.28	26.04	51.39	269.00	141.96	24 9 12	962.3	44.18	31.35

DIFFERENTIAL CORRECTIONS

TDE	-.0434	TRA	1.4428	TC3	-1.7587	BAU	.8624												
RDE	-1.0017	RRA	-1.6662	RC3	1.6181	FAU	.15139												
FDE	3.1423	FRA	5.1979	FC3	-4.8555	BSP	8213												
BDE	1.0026	BRA	2.2040	BC3	2.3898	FSP	1766												

MID-COURSE EXECUTION ACCURACY

SGT	3405.8	SGR	3880.8	SG3	1039.1						
RRT	-.9500	RRF	-.9999	RTF	.9473						
SGB	5163.4	R23	.1451	R13	-.9893						
SG1	5099.5	SG2	809.4	THA	131.08						

ORBIT DETERMINATION ACCURACY

ST	43.3	SR	74.4	SS	77.1						
CRT	-.6278	CRS	1.0000	CST	-.6256						
LSA	110.8	MSA	32.6	SSA	.1						
EL1	80.2	EL2	31.2	ALF	113.90						

LAUNCH DATE APR 27 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 543.692 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.250	GAL	-2.22	AZL	100.06	HCA	177.05	SMA	183.62	ECC	.18396	INC	10.0614
RP	215.21	LAP	-.51	LOP	33.20	VP	22.597	GAP	3.80	AZP	79.95	TAL	345.65	TAP	162.70	RCA	149.84	APO	217.40
RC	152.438	GL	-64.08	GP	45.75	ZAL	105.79	ZAP	84.73	ETS	184.40	ZAE	114.64	ETE	152.40	ZAC	147.86	ETC	275.14

V1	29.592										
V2	25.518										
LVI	-51.68										

PLANETOCENTRIC CONIC

C3	39.201	VHL	6.261	DLA	-60.62	RAL	30.81	RAD	6650.4	VEL	12.612	PTH	7.47	VHP	4.530	DPA	22.44	RAP	290.20
ECC	1.6451																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
33.86	0 18 22	2081.64	21.97	60.04	287.67	148.06	0 53 3	1081.6	42.20	43.73
33.86	0 18 22	2081.64	21.97	60.04	287.67	148.06	0 53 3	1081.6	42.20	43.73
33.86	0 18 22	2081.64	21.97	60.04	287.67	148.06	0 53 3	1081.6	42.20	43.73
33.86	0 18 22	2081.64	21.97	60.04	287.67	148.06	0 53 3	1081.6	42.20	43.73
33.86	0 18 22	2081.64	21.97	60.04	287.67	148.06	0 53 3	1081.6	42.20	43.73
33.86	0 18 22	2081.64	21.97	60.04	287.67	148.06	0 53 3	1081.6	42.20	43.73
33.86	0 18 22	2081.64	21.97	60.04	287.67	148.06	0 53 3	1081.6	42.20	43.73

DIFFERENTIAL CORRECTIONS

TDE	.5122	TRA	1.6325	TC3	-1.3637	BAU	1.0461												
RDE	-2.1111	RRA	-1.9572	RC3	1.4577	FAU	.11405												
FDE	3.8495	FRA	3.4748	FC3	-2.5187	BSP	8733												
BDE	2.1723	BRA	2.5487	BC3	1.9961	FSP	1119												

MID-COURSE EXECUTION ACCURACY

SGT	3522.6	SGR	4515.7	SG3	693.2						
RRT	-.9517	RRF	-.9999	RTF	.9474						
SGB	5727.1	R23	.1303	R13	-.9914						
SG1	5661.8	SG2	862.2	THA	127.61						

ORBIT DETERMINATION ACCURACY

ST	51.4	SR	111.1	SS	78.8						
CRT	-.8358	CRS	.9999	CST	-.8295						
LSA	143.0	MSA	27.0	SSA	.0						
EL1	119.5	EL2	26.2	ALF	112.28						

LAUNCH DATE APR 27 1971 FLIGHT TIME 238.00 ARRIVAL DATE DEC 21 1971

DISTANCE 564.661

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.57 LAL -.00 LOL 216.10 VL 32.269 GAL -2.52 AZL 83.48 HCA 182.92 SMA 183.93 ECC .18643 INC 6.5184 V1 29.592
RP 216.91 LAP -.33 LOP 39.00 VP 22.409 GAP 2.98 AZP 96.51 TAL 343.87 TAP 166.79 RCA 149.64 APO 218.22 V2 25.327
RC 164.912 GL 49.97 GP -45.20 ZAL 113.05 ZAP 79.16 ETS 167.70 ZAE 108.00 ETE 199.58 ZAC 57.21 ETC 272.19 LVI 31.80

PLANETOCENTRIC CONIC

C3 22.875 VHL 4.783 DLA 39.06 RAL 322.63 RAD 6644.1 VEL 11.952 PTH 6.95 VHP 4.571 DPA -67.00 RAP 312.41 ECC 1.3765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	11 19 37	4027.35	-42.39	176.68	218.20	65.99	12 26 45	3027.3	-47.57	143.03
60.00	10 18 26	4191.88	-28.53	182.74	209.61	60.24	11 28 18	3191.9	-38.11	156.20
61.84	9 19 49	4358.58	-20.97	191.59	204.47	56.26	10 32 27	3358.6	-32.93	168.09
61.84	9 19 49	4358.58	-20.97	191.59	204.47	56.26	10 32 27	3358.6	-32.93	168.09
61.84	9 19 49	4358.58	-20.97	191.59	204.47	56.26	10 32 27	3358.6	-32.93	168.09
61.84	9 19 49	4358.58	-20.97	191.59	204.47	56.26	10 32 27	3358.6	-32.93	168.09
61.84	9 19 49	4358.58	-20.97	191.59	204.47	56.26	10 32 27	3358.6	-32.93	168.09

DIFFERENTIAL CORRECTIONS

TDE 2.9408 TRA 1.0086 TC3-2.7236 BAU 1.0386
RDE 2.5135 RRA 1.5997 RC3-2.0289 FAU .09784
FDE 4.4021 FRA 2.9690 FC3-3.7028 BSP .9978
BDE 3.8686 BRA 1.8911 BC3 3.3962 FSP .1146

MID-COURSE EXECUTION ACCURACY

SGT 4649.7 SGR 4350.3 SG3 676.7
RRT .9643 RRF .9997 RTF .9593
SGB 6367.5 R23 .1599 R13 .9869
SG1 6310.6 SG2 849.2 THA 43.02

ORBIT DETERMINATION ACCURACY

ST 177.7 SR 155.1 SS 107.6
CRT .9940 CRS -.9999 CST -.9924
LSA 258.8 MSA 14.8 SSA .1
EL1 235.5 EL2 12.8 ALF 41.08

LAUNCH DATE APR 27 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 23 1971

DISTANCE 568.816

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.57 LAL -.00 LOL 216.10 VL 32.274 GAL -2.58 AZL 85.83 HCA 184.07 SMA 184.01 ECC .18702 INC 4.1671 V1 29.592
RP 217.26 LAP -.30 LOP 40.15 VP 22.372 GAP 2.62 AZP 94.16 TAL 343.52 TAP 167.59 RCA 149.60 APO 218.43 V2 25.288
RC 167.446 GL 36.25 GP -36.68 ZAL 118.74 ZAP 75.97 ETS 168.21 ZAE 109.10 ETE 195.35 ZAC 65.76 ETC 271.82 LVI 24.36

PLANETOCENTRIC CONIC

C3 15.722 VHL 3.965 DLA 26.55 RAL 329.40 RAD 6640.9 VEL 11.652 PTH 6.69 VHP 3.901 DPA -59.15 RAP 304.61 ECC 1.2587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 9 14	3625.51	-47.47	139.97	207.29	93.64	14 9 40	2625.5	-40.52	107.52
60.00	13 13 12	3614.95	-40.23	139.11	207.38	87.36	14 13 27	2615.0	-36.88	108.50
70.00	13 20 12	3594.31	-33.28	136.62	206.56	81.86	14 20 6	2594.3	-33.19	107.88
80.00	13 36 19	3543.71	-27.21	131.50	205.27	77.22	14 35 22	2543.7	-29.84	104.38
90.00	14 26 52	3380.35	-24.21	118.68	204.44	74.92	15 23 13	2380.3	-28.16	92.36
100.00	16 19 11	3018.18	-27.21	92.86	205.27	77.22	17 9 29	2018.2	-29.84	65.75
110.00	18 19 38	2641.13	-33.28	65.54	206.56	81.86	19 3 39	1641.1	-33.19	36.80

DIFFERENTIAL CORRECTIONS

TDE 2.1164 TRA 1.3393 TC3-3.8922 BAU .9456
RDE 1.4961 RRA 1.4509 RC3-2.2559 FAU .13044
FDE 4.5496 FRA 4.6621 FC3-7.1827 BSP .9877
BDE 2.5918 BRA 1.9746 BC3 4.4987 FSP .1729

MID-COURSE EXECUTION ACCURACY

SGT 4853.9 SGR 3656.1 SG3 994.1
RRT .9694 RRF .9997 RTF .9666
SGB 6076.8 R23 .1685 R13 .9855
SG1 6033.8 SG2 721.7 THA 36.75

ORBIT DETERMINATION ACCURACY

ST 156.4 SR 113.7 SS 117.2
CRT .9944 CRS -.9999 CST -.9926
LSA 225.7 MSA 12.9 SSA .1
EL1 193.1 EL2 9.7 ALF 35.97

LAUNCH DATE APR 27 1971 FLIGHT TIME 242.00 ARRIVAL DATE DEC 25 1971

DISTANCE 572.974

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.57 LAL -.00 LOL 216.10 VL 32.279 GAL -2.64 AZL 87.15 HCA 185.21 SMA 184.10 ECC .18765 INC 2.8499 V1 29.592
RP 217.61 LAP -.26 LOP 41.30 VP 22.335 GAP 2.65 AZP 92.84 TAL 343.17 TAP 168.37 RCA 149.55 APO 218.64 V2 25.249
RC 169.992 GL 26.22 GP -30.35 ZAL 122.32 ZAP 73.36 ETS 168.92 ZAE 109.15 ETE 192.11 ZAC 72.10 ETC 271.61 LVI 18.77

PLANETOCENTRIC CONIC

C3 13.191 VHL 3.632 DLA 17.40 RAL 333.83 RAD 6639.6 VEL 11.544 PTH 6.59 VHP 3.596 DPA -53.15 RAP 301.06 ECC 1.2171

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 8 55	3390.28	-44.15	118.39	199.69	109.92	15 5 25	2390.3	-31.86	91.75
60.00	14 28 22	3338.48	-38.51	115.94	201.90	102.93	15 24 0	2338.5	-29.36	88.99
70.00	14 57 21	3253.13	-33.44	110.15	203.03	97.41	15 51 35	2253.1	-26.99	83.35
80.00	15 43 24	3108.84	-29.66	99.64	203.46	93.62	16 35 13	2108.8	-25.17	73.12
90.00	16 54 42	2878.69	-28.20	82.82	203.54	92.20	17 42 40	1878.7	-24.45	56.43
100.00	18 26 16	2583.32	-29.66	61.01	203.46	93.62	19 9 19	1583.3	-25.17	34.49
110.00	19 56 48	2299.95	-33.44	39.07	203.03	97.41	20 35 8	1300.0	-26.99	12.27

DIFFERENTIAL CORRECTIONS

TDE 1.6893 TRA 1.5607 TC3-4.7094 BAU .9147
RDE 1.0138 RRA 1.2642 RC3-2.1744 FAU .15136
FDE 4.3634 FRA 5.8333 FC3-9.9472 BSP .9698
BDE 1.9702 BRA 2.0085 BC3 5.1871 FSP .2104

MID-COURSE EXECUTION ACCURACY

SGT 5046.0 SGR 3089.4 SG3 1199.1
RRT .9722 RRF .9996 RTF .9503
SGB 5906.2 R23 .1788 R13 .9835
SG1 5873.9 SG2 816.9 THA 30.98

ORBIT DETERMINATION ACCURACY

ST 138.9 SR 85.9 SS 116.1
CRT .9958 CRS -.9997 CST -.9933
LSA 200.0 MSA 10.8 SSA .2
EL1 163.2 EL2 8.7 ALF 31.70

LAUNCH DATE APR 27 1971 FLIGHT TIME 244.00 ARRIVAL DATE DEC 27 1971

DISTANCE 577.130

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.57 LAL -.00 LOL 216.10 VL 32.284 GAL -2.70 AZL 87.99 HCA 186.35 SMA 184.19 ECC .18831 INC 2.0074 V1 29.592
RP 217.97 LAP -.22 LOP 42.44 VP 22.298 GAP 2.69 AZP 92.00 TAL 342.80 TAP 169.15 RCA 149.50 APO 218.87 V2 25.209
RC 172.847 GL 18.93 GP -25.65 ZAL 124.56 ZAP 71.14 ETS 169.59 ZAE 108.57 ETE 189.64 ZAC 76.82 ETC 271.47 LVI 14.61

PLANETOCENTRIC CONIC

C3 12.168 VHL 3.488 DLA 10.79 RAL 337.01 RAD 6639.1 VEL 11.500 PTH 6.55 VHP 3.441 DPA -48.65 RAP 298.81 ECC 1.2002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 48 0	3237.65	-39.86	106.27	196.73	118.49	15 41 58	2237.6	-25.22	83.28
60.00	15 15 47	3163.69	-34.97	102.47	199.59	111.45	16 8 31	2163.7	-23.13	78.41
70.00	15 54 45	3049.05	-30.60	94.95	201.36	105.97	16 45 34	2049.1	-21.16	70.37
80.00	16 50 46	2873.56	-27.42	82.55	202.27	102.31	17 38 40	1873.6	-19.72	57.79
90.00	18 6 47	2628.22	-26.22	64.80	202.55	100.99	18 50 36	1628.2	-19.16	40.00
100.00	19 33 38	2348.03	-27.42	43.92	202.27	102.31	20 12 46	1348.0	-19.72	19.16
110.00	20 54 11	2095.87	-30.60	23.87	201.36	105.97	21 29 7	1095.9	-21.16	359.29

DIFFERENTIAL CORRECTIONS

TDE 1.4404 TRA 1.7352 TC3-5.2414 BAU .9105
RDE .7518 RRA 1.0962 RC3-1.9661 FAU .16457
FDE 4.1197 FRA 6.6023 FC-11.7113 BSP .9598
BDE 1.6248 BRA 2.0525 BC3 5.5980 FSP .2324

MID-COURSE EXECUTION ACCURACY

SGT 5233.2 SGR 2601.3 SG3 1322.9
RRT .9738 RRF .9993 RTF .9724
SGB 5844.1 R23 .1865 R13 .9818
SG1 5819.8 SG2 532.3 THA 26.06

ORBIT DETERMINATION ACCURACY

ST 126.2 SR 67.6 SS 112.1
CRT .9977 CRS -.9993 CST -.9947
LSA 181.6 MSA 8.7 SSA .4
EL1 143.1 EL2 4.0 ALF 28.16

LAUNCH DATE APR 27 1971 FLIGHT TIME 246.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 581.284 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.290	GAL	-2.77	AZL	88.97	HCA	187.49	SMA	184.29	ECC	.18901	INC	1.4236	V1	29.592
RP	218.33	LAP	-.19	LOP	43.58	VP	22.261	GAP	2.33	AZP	91.41	TAL	342.42	TAP	169.90	RCA	149.45	APO	219.12	V2	25.169
RC	175.114	GL	13.53	GP	-22.08	ZAL	126.02	ZAP	69.19	ETS	170.17	ZAE	107.64	ETE	187.76	ZAC	80.40	ETC	271.37	LVI	11.45

PLANETOCENTRIC CONIC

C3	11.755	VHL	3.428	DLA	5.95	RAL	339.45	RAD	6638.9	VEL	11.482	PTH	6.53	VHP	3.359	DPA	-45.21	RAP	297.29	ECC	1.1935

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 55	3133.27	-36.21	98.96	195.98	123.27	16 8 8	2133.3	-20.39	78.07
60.00	15 49 8	3044.88	-31.69	94.12	199.10	116.33	16 39 53	2044.9	-18.46	71.84
70.00	16 34 17	2912.09	-27.64	85.39	201.14	110.91	17 22 49	1912.1	-16.67	62.31
80.00	17 36 5	2718.51	-24.71	71.84	202.27	107.32	18 21 24	1718.5	-15.34	48.36
90.00	18 54 41	2464.87	-23.61	53.56	202.63	106.03	19 35 46	1464.9	-14.64	29.96
100.00	20 18 57	2192.99	-24.71	33.21	202.27	107.32	20 55 30	1193.0	-15.34	9.73
110.00	21 33 43	1958.91	-27.64	14.31	201.14	110.91	22 6 22	958.9	-16.67	351.23

DIFFERENTIAL CORRECTIONS

TDE	1.2964	TRA	1.8979	TC3	-5.5548	BAU	.9136												
RDE	.6012	RRA	.9607	RC3	-1.7145	FAU	.17041												
FDE	3.9363	FRA	7.1433	FC	-12.5506	BSP	9754												
BDE	1.4290	BRA	2.1272	BC3	5.8134	FSP	2491												

MID-COURSE EXECUTION ACCURACY

SGT	5419.5	SGR	2235.5	SG3	1396.9						
RRT	.9742	RRF	.9989	RTF	.9736						
SGB	5862.4	R23	.1917	R13	.9803						
SG1	5843.7	SG2	468.1	THA	22.04						

ORBIT DETERMINATION ACCURACY

ST	118.6	SR	55.8	SS	108.9						
CRT	.9993	CRS	-.9987	CST	-.9963						
LSA	170.2	MSA	6.9	SSA	.6						
EL1	131.0	EL2	1.9	ALF	25.19						

LAUNCH DATE APR 27 1971 FLIGHT TIME 246.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 585.436 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.296	GAL	-2.84	AZL	89.00	HCA	188.62	SMA	184.39	ECC	.18975	INC	.9934	V1	29.592
RP	218.69	LAP	-.15	LOP	44.72	VP	22.225	GAP	2.17	AZP	90.98	TAL	342.03	TAP	170.65	RCA	149.40	APO	219.37	V2	25.129
RC	177.690	GL	9.46	GP	-19.30	ZAL	127.06	ZAP	67.42	ETS	170.68	ZAE	106.52	ETE	186.31	ZAC	83.19	ETC	271.29	LVI	8.99

PLANETOCENTRIC CONIC

C3	11.634	VHL	3.411	DLA	2.35	RAL	341.41	RAD	6638.9	VEL	11.477	PTH	6.53	VHP	3.315	DPA	-42.53	RAP	296.19	ECC	1.1915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 59	3059.20	-33.34	94.22	196.22	126.15	16 27 58	2059.2	-16.85	74.59
60.00	16 14 4	2960.52	-29.01	88.59	199.47	119.30	17 3 25	1960.5	-14.99	67.41
70.00	17 3 32	2815.03	-25.12	78.98	201.66	113.94	17 50 27	1815.0	-13.26	56.85
80.00	18 9 18	2609.07	-22.30	64.61	202.91	110.39	18 52 48	1609.1	-11.99	41.97
90.00	19 29 39	2349.84	-21.25	45.96	203.32	109.12	20 8 48	1349.8	-11.50	23.16
100.00	20 52 10	2083.54	-22.30	25.98	202.91	110.39	21 26 54	1083.5	-11.99	3.34
110.00	22 2 59	1861.85	-25.12	7.90	201.66	113.94	22 34 0	861.8	-13.26	345.77

DIFFERENTIAL CORRECTIONS

TDE	1.2005	TRA	2.0405	TC3	-5.7774	BAU	.9282												
RDE	.5022	RRA	.8442	RC3	-1.4952	FAU	.17408												
FDE	3.7605	FRA	7.4793	FC	-12.9543	BSP	9882												
BDE	1.3013	BRA	2.2082	BC3	5.9678	FSP	2566												

MID-COURSE EXECUTION ACCURACY

SGT	5600.7	SGR	1940.7	SG3	1435.7						
RRT	.9743	RRF	.9982	RTF	.9746						
SGB	5927.4	R23	.1925	R13	.9795						
SG1	5913.0	SG2	414.1	THA	18.75						

ORBIT DETERMINATION ACCURACY

ST	113.4	SR	47.3	SS	105.4						
CRT	.9998	CRS	-.9975	CST	-.9977						
LSA	161.8	MSA	5.5	SSA	.9						
EL1	122.8	EL2	.9	ALF	22.63						

LAUNCH DATE APR 27 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 589.589 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.303	GAL	-2.91	AZL	89.33	HCA	189.75	SMA	184.49	ECC	.19051	INC	.6621	V1	29.592
RP	219.06	LAP	-.11	LOP	45.85	VP	22.188	GAP	2.01	AZP	90.66	TAL	341.65	TAP	171.39	RCA	149.35	APO	219.64	V2	25.089
RC	180.275	GL	6.30	GP	-17.09	ZAL	127.84	ZAP	65.78	ETS	171.11	ZAE	105.29	ETE	185.16	ZAC	85.41	ETC	271.23	LVI	7.05

PLANETOCENTRIC CONIC

C3	11.663	VHL	3.415	DLA	-.39	RAL	343.04	RAD	6638.9	VEL	11.478	PTH	6.53	VHP	3.295	DPA	-40.39	RAP	295.35	ECC	1.1919

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 53 26	3005.17	-31.12	90.98	196.86	128.00	16 43 33	2005.2	-14.22	72.14
60.00	16 33 28	2898.77	-26.89	84.73	200.22	121.23	17 21 47	1898.8	-12.38	64.27
70.00	17 26 10	2743.79	-23.07	74.46	202.51	115.91	18 11 54	1743.8	-10.68	52.96
80.00	18 34 52	2528.65	-20.30	59.47	203.85	112.38	19 17 1	1528.7	-9.41	37.39
90.00	19 56 29	2265.30	-19.27	40.55	204.28	111.11	20 34 15	1265.3	-8.94	18.28
100.00	21 17 44	2003.12	-20.30	20.84	203.85	112.38	21 51 7	1003.1	-9.41	358.76
110.00	22 25 36	1790.61	-23.07	3.38	202.51	115.91	22 55 27	790.6	-10.68	341.87

DIFFERENTIAL CORRECTIONS

TDE	1.1208	TRA	2.1562	TC3	-5.9903	BAU	.9574												
RDE	.4236	RRA	.7350	RC3	-1.3469	FAU	.18123												
FDE	3.4978	FRA	7.5787	FC	-13.4524	BSP	9793												
BDE	1.1982	BRA	2.2780	BC3	6.1399	FSP	2469												

MID-COURSE EXECUTION ACCURACY

SGT	5776.1	SGR	1694.8	SG3	1447.1						
RRT	.9768	RRF	.9971	RTF	.9781						
SGB	6019.6	R23	.1783	R13	.9812						
SG1	6009.5	SG2	349.1	THA	16.05						

ORBIT DETERMINATION ACCURACY

ST	108.7	SR	40.1	SS	99.7						
CRT	.9988	CRS	-.9993	CST	-.9988						
LSA	152.8	MSA	4.7	SSA	1.1						
EL1	115.9	EL2	1.8	ALF	20.22						

LAUNCH DATE APR 27 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 593.729 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.309	GAL	-2.98	AZL	89.60	HCA	190.88	SMA	184.60	ECC	.19131	INC	.4011	V1	29.592
RP	219.43	LAP	-.08	LOP	46.98	VP	22.152	GAP	1.85	AZP	90.40	TAL	341.24	TAP	172.12	RCA	149.29	APO	219.92	V2	25.048
RC	182.871	GL	3.81	GP	-15.30	ZAL	128.50	ZAP	64.25	ETS	171.48	ZAE	104.02	ETE	184.25	ZAC	87.21	ETC	271.18	LVI	5.47

PLANETOCENTRIC CONIC

C3	11.782	VHL	3.432	DLA	-2.51	RAL	344.44	RAD	6638.9	VEL	11.483	PTH	6.53	VHP	3.289	DPA	-38.66	RAP	294.71	ECC	1.1939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 48	2965.12	-29.42	88.68	197.76	129.24	16 56 13	1965.1	-12.25	70.36
60.00	16 49 2	2852.76	-25.23	81.96	201.16	122.53	17 36 35	1852.8	-10.41	61.98
70.00	17 44 14	2690.45	-21.45	71.17	203.53	117.24	18 29 5	1690.4	-8.70	50.09
80.00	18 55 13	2468.20	-18.69	55.71	204.93	113.72	19 36 21	1468.2	-7.43	33.99
90.00	20 17 49	2201.66	-17.66	36.58	205.39	112.45	20 54 31	1201.7	-6.95	14.66
100.00	21 38 5	1942.68	-18.69	17.08	204.93	113.72	22 10 28	942.7	-7.43	355.36
110.00	22 43 41	1737.27	-21.45	.09	203.53	117.24	23 12 38	737.3	-8.70	339.00

DIFFERENTIAL CORRECTIONS

TDE	1.1017	TRA	2.3058	TC3	-6.0436	BAU	.9687												
RDE	.3900	RRA	.6652	RC3	-1.1400	FAU	.17523												
FDE	3.5059	FRA	7.8367	FC	-12.8762	BSP	10263												
BDE	1.1687	BRA	2.3998	BC3	6.1503	FSP	2610												

MID-COURSE EXECUTION ACCURACY

SGT	5953.0	SGR	1507.1	SG3	1455.8						
RRT	.9726	RRF	.9956	RTF	.9759						
SGB	6140.8	R23	.1862	R13	.9786						
SG1	6131.4	SG2	340.4	THA	13.88						

ORBIT DETERMINATION ACCURACY

ST	108.8	SR	36.6	SS	100.2						
CRT	.9958	CRS	-.9930	CST	-.9994						
LSA	152.3	MSA	4.2	SSA	1.5						
EL1	114.7	EL2	3.2	ALF	18.53						

LAUNCH DATE APR 27 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 6 1972

HELIOCENTRIC CONIC DISTANCE 597.867 EARTH TO MARS

END OF TAPE, CHANGE AND PRESS START

RP 219.80 LAP -.04 LOP 48.10 VP 22.116 GAP 1.70 AZP 90.19 TAL 340.83 TAP 172.83 RCA 149.23 APO 220.21 V2 25.007
RC 185.475 GL 1.80 GP -13.81 ZAL 129.07 ZAP 62.81 ETS 171.81 ZAE 102.71 ETE 183.52 ZAC 88.70 ETC 271.14 LVI 4.16

PLANETOCENTRIC CONIC

C3 11.952 VHL 3.457 DLA -4.17 RAL 345.67 RAD 6639.0 VEL 11.490 PTH 6.54 VHP 3.293 DPA -37.22 RAP 294.20 ECC 1.1967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 17 48	2935.02	-28.11	87.00	198.71	130.11	17 6 43	1935.0	-10.77	69.05
60.00	17 1 49	2817.94	-23.94	79.92	202.18	123.44	17 48 47	1817.9	-8.91	60.26
70.00	17 58 59	2649.81	-20.16	68.72	204.61	118.17	18 43 9	1649.8	-7.18	47.92
80.00	19 11 47	2421.92	-17.40	52.88	206.06	114.65	19 52 9	1421.9	-5.90	31.42
90.00	20 35 10	2152.83	-16.36	33.58	206.54	113.39	21 11 3	1152.8	-5.41	11.90
100.00	21 54 38	1896.39	-17.40	14.25	206.06	114.65	22 26 15	896.4	-5.90	352.78
110.00	22 58 26	1696.63	-20.16	357.64	204.61	118.17	23 26 42	696.6	-7.18	336.84

DIFFERENTIAL CORRECTIONS

TDE 1.0907 TRA 2.4442 TC3-6.0946 BAU .9866
RDE .3614 RRA .5997 RC3 -.9865 FAU .17136
FDE 3.4649 FRA 7.9775 FC-12.4118 BSP 10627
BDE 1.1490 BRA 2.5167 BC3 6.1739 FSP 2658

MID-COURSE EXECUTION ACCURACY

SGT 6125.5 SGR 1347.9 SG3 1451.8
RRT .9694 RRF .9935 RTF .9753
SGB 6272.0 R23 .1849 R13 .9774
SG1 6263.7 SG2 323.5 THA 12.07

ORBIT DETERMINATION ACCURACY

ST 109.2 SR 33.5 SS 99.4
CRT .9912 CRS -.9898 CST -.9997
LSA 151.3 MSA 4.5 SSA 1.6
EL1 114.1 EL2 4.2 ALF 16.93

LAUNCH DATE APR 27 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 8 1972

HELIOCENTRIC CONIC DISTANCE 602.005 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.323 GAL -3.13 AZL 89.98 HCA 193.12 SMA 184.84 ECC .19300 INC .0000 V1 29.592
RP 220.18 LAP -.00 LOP 49.22 VP 22.080 GAP 1.54 AZP 90.02 TAL 340.42 TAP 173.54 RCA 149.16 APO 220.51 V2 24.966
RC 188.089 GL .16 GP -12.57 ZAL 129.59 ZAP 61.44 ETS 172.09 ZAE 101.40 ETE 182.92 ZAC 89.95 ETC 271.11 LVI 3.06

PLANETOCENTRIC CONIC

C3 12.157 VHL 3.487 DLA -5.49 RAL 346.77 RAD 6639.1 VEL 11.499 PTH 6.55 VHP 3.303 DPA -36.01 RAP 293.80 ECC 1.2001

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 2	2912.25	-27.10	85.77	199.70	130.73	17 15 34	1912.2	-9.64	68.06
60.00	17 12 28	2791.39	-22.94	78.40	203.21	124.09	17 59 0	1791.4	-7.76	58.97
70.00	18 11 15	2618.57	-19.15	66.87	205.70	118.84	18 54 53	1618.6	-6.01	46.27
80.00	19 25 30	2386.11	-16.37	50.72	207.19	115.32	20 5 16	1386.1	-4.70	29.43
90.00	20 49 32	2114.96	-15.32	31.28	207.69	114.06	21 24 47	1115.0	-4.21	9.77
100.00	22 8 22	1860.58	-16.37	12.09	207.19	115.32	22 39 22	860.6	-4.70	350.80
110.00	23 10 41	1665.39	-19.15	355.79	205.70	118.84	23 38 26	665.4	-6.01	335.19

DIFFERENTIAL CORRECTIONS

TDE 1.0738 TRA 2.5620 TC3-6.1834 BAU 1.0151
RDE .3343 RRA .5362 RC3 -.8810 FAU .17131
FDE 3.3472 FRA 7.9833 FC-12.1996 BSP 10761
BDE 1.1246 BRA 2.6176 BC3 6.2458 FSP 2591

MID-COURSE EXECUTION ACCURACY

SGT 6292.5 SGR 1209.4 SG3 1436.2
RRT .9674 RRF .9905 RTF .9764
SGB 6407.7 R23 .1730 R13 .9780
SG1 6400.6 SG2 301.1 THA 10.56

ORBIT DETERMINATION ACCURACY

ST 108.9 SR 30.5 SS 96.7
CRT .9847 CRS -.9851 CST -.9998
LSA 148.7 MSA 5.2 SSA 1.6
EL1 112.9 EL2 5.1 ALF 15.46

LAUNCH DATE APR 27 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 10 1972

HELIOCENTRIC CONIC DISTANCE 606.136 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.331 GAL -3.21 AZL 90.13 HCA 194.24 SMA 184.98 ECC .19388 INC .1223 V1 29.592
RP 220.55 LAP .03 LOP 50.33 VP 22.044 GAP 1.38 AZP 89.87 TAL 340.01 TAP 174.24 RCA 149.10 APO 220.82 V2 24.925
RC 190.711 GL -1.20 GP -11.52 ZAL 130.09 ZAP 60.14 ETS 172.35 ZAE 100.10 ETE 182.42 ZAC 91.00 ETC 271.09 LVI 2.12

PLANETOCENTRIC CONIC

C3 12.387 VHL 3.519 DLA -6.95 RAL 347.77 RAD 6639.3 VEL 11.509 PTH 6.56 VHP 3.319 DPA -34.98 RAP 293.49 ECC 1.2039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 55	2895.10	-26.34	84.85	200.69	131.17	17 23 10	1895.1	-8.79	67.33
60.00	17 21 31	2771.18	-22.16	77.25	204.25	124.56	18 7 42	1771.2	-6.88	57.98
70.00	18 21 35	2594.57	-18.35	65.46	206.78	119.32	19 4 49	1594.6	-5.10	45.00
80.00	19 37 1	2358.38	-15.55	49.06	208.31	115.81	20 16 20	1358.4	-3.77	27.90
90.00	21 1 35	2085.54	-14.50	29.52	208.82	114.55	21 36 20	1085.5	-3.26	8.13
100.00	22 19 53	1832.85	-15.55	10.43	208.31	115.81	22 50 26	832.9	-3.77	349.27
110.00	23 21 1	1641.39	-18.35	354.38	206.78	119.32	23 49 22	641.4	-5.10	333.92

DIFFERENTIAL CORRECTIONS

TDE 1.0740 TRA 2.6866 TC3-6.2319 BAU 1.0401
RDE .3169 RRA .4835 RC3 -.7814 FAU .16871
FDE 3.2832 FRA 7.9983 FC-11.7914 BSP 11009
BDE 1.1198 BRA 2.7297 BC3 6.2607 FSP 2561

MID-COURSE EXECUTION ACCURACY

SGT 6456.1 SGR 1093.8 SG3 1417.7
RRT .9633 RRF .9866 RTF .9766
SGB 6548.1 R23 .1636 R13 .9778
SG1 6541.6 SG2 289.6 THA 9.29

ORBIT DETERMINATION ACCURACY

ST 109.8 SR 28.4 SS 95.2
CRT .9765 CRS -.9796 CST -.9997
LSA 147.9 MSA 5.9 SSA 1.5
EL1 113.2 EL2 5.9 ALF 14.23

LAUNCH DATE APR 27 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC DISTANCE 610.263 EARTH TO MARS

RL 150.57 LAL -.00 LOL 216.10 VL 32.338 GAL -3.29 AZL 90.26 HCA 195.35 SMA 185.08 ECC .19480 INC .2930 V1 29.592
RP 220.93 LAP .07 LOP 51.45 VP 22.008 GAP 1.22 AZP 89.75 TAL 339.58 TAP 174.93 RCA 149.03 APO 221.14 V2 24.884
RC 193.341 GL -2.33 GP -10.61 ZAL 130.56 ZAP 58.89 ETS 172.57 ZAE 98.81 ETE 182.00 ZAC 91.91 ETC 271.08 LVI 1.30

PLANETOCENTRIC CONIC

C3 12.634 VHL 3.554 DLA -7.40 RAL 348.68 RAD 6639.4 VEL 11.520 PTH 6.57 VHP 3.339 DPA -34.09 RAP 293.26 ECC 1.2079

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 41 44	2882.31	-25.76	84.18	201.67	131.49	17 29 47	1882.3	-8.15	66.78
60.00	17 29 16	2755.91	-21.57	76.39	205.27	124.91	18 15 12	1755.9	-6.22	57.24
70.00	18 30 23	2576.20	-17.73	64.39	207.84	119.68	19 13 20	1576.2	-4.40	44.04
80.00	19 46 49	2336.95	-14.91	47.79	209.40	116.17	20 25 46	1336.9	-3.05	26.72
90.00	21 11 49	2062.71	-13.85	28.16	209.93	114.90	21 46 11	1062.7	-2.53	6.85
100.00	22 29 41	1811.42	-14.91	9.16	209.40	116.17	22 59 52	811.4	-3.05	348.09
110.00	23 29 50	1623.01	-17.73	353.31	207.84	119.68	23 56 53	623.0	-4.40	332.96

DIFFERENTIAL CORRECTIONS

TDE 1.0824 TRA 2.8112 TC3-6.2697 BAU 1.0655
RDE .3046 RRA .4373 RC3 -.6963 FAU .16571
FDE 3.2337 FRA 7.9944 FC-11.3549 BSP 11260
BDE 1.1244 BRA 2.8450 BC3 6.3082 FSP 2525

MID-COURSE EXECUTION ACCURACY

SGT 6617.5 SGR 995.6 SG3 1396.3
RRT .9578 RRF .9814 RTF .9767
SGB 6691.9 R23 .1537 R13 .9776
SG1 6685.9 SG2 283.1 THA 8.22

ORBIT DETERMINATION ACCURACY

ST 111.1 SR 26.8 SS 93.9
CRT .9669 CRS -.9731 CST -.9995
LSA 147.8 MSA 6.7 SSA 1.4
EL1 114.1 EL2 6.7 ALF 13.16

LAUNCH DATE APR 27 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 614.385 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.346	GAL	-3.37	AZL	90.37	HCA	196.46	SMA	185.21	ECC	.19574	INC	.3651
RP	221.31	LAP	.10	LOP	52.56	VP	21.973	GAP	1.07	AZP	89.65	TAL	339.15	TAP	175.61	RCA	148.96	APO	221.47
RC	195.978	GL	-3.30	GP	-9.82	ZAL	131.03	ZAP	97.70	ETS	172.78	ZAE	97.53	ETE	181.65	ZAC	92.70	ETC	271.08

VI	29.592																		
V2	24.842																		
LVI	.58																		

PLANETOCENTRIC CONIC

C3	12.896	VHL	3.591	DLA	-8.08	RAL	349.53	RAD	6639.5	VEL	11.531	PTH	6.58	VHP	3.361	DPA	-33.32	RAP	293.10

ECC	1.2122																		
INC	2.2																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 42	2872.98	-25.34	83.69	202.64	131.72	17 35 35	1873.0	-7.69	66.38
60.00	17 36 0	2744.55	-21.12	75.76	206.28	125.15	18 21 44	1744.6	-5.72	56.70
70.00	18 37 59	2562.30	-17.26	63.59	208.89	119.94	19 20 41	1562.3	-3.87	43.31
80.00	19 55 12	2320.55	-14.42	46.83	210.47	116.43	20 33 53	1320.5	-2.49	25.82
90.00	21 20 33	2045.17	-13.34	27.12	211.01	115.17	21 54 39	1045.2	-1.97	5.87
100.00	22 38 4	1795.04	-14.42	8.20	210.47	116.43	23 7 59	795.0	-2.49	347.19
110.00	23 37 25	1609.12	-17.26	352.51	208.89	119.94	24 4 14	609.1	-3.87	332.23

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	1.0987	TRA	2.9362	TC3	-6.2911	BAU	1.0900	SGT	6775.6	SGR	911.4	SG3	1372.8	ST	113.0	SR	25.5	SS	92.9
RDE	.2960	RRA	.3964	RC3	-.6223	FAU	.16218	RRT	.9508	RRF	.9747	RTF	.9767	CRT	.9562	CRS	-.9658	CST	-.9992
FDE	3.1945	FRA	7.9790	FC-10	.6872	BSP	11545	SGB	6836.6	R23	.1434	R13	.9775	LSA	148.3	MSA	7.5	SSA	1.4
BDE	1.1379	BRA	2.9648	BC3	6.3218	FSP	2492	SG1	6830.9	SG2	280.1	THA	7.30	EL1	115.6	EL2	7.3	ALF	12.22

LAUNCH DATE APR 27 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 618.502 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.354	GAL	-3.45	AZL	90.46	HCA	197.56	SMA	185.34	ECC	.19672	INC	.4598
RP	221.69	LAP	.14	LOP	53.66	VP	21.938	GAP	.91	AZP	89.56	TAL	338.72	TAP	176.28	RCA	148.88	APO	221.80
RC	198.621	GL	-4.11	GP	-9.14	ZAL	131.50	ZAP	98.55	ETS	172.97	ZAE	98.28	ETE	181.36	ZAC	93.39	ETC	271.08

VI	29.592																		
V2	24.801																		
LVI	-.06																		

PLANETOCENTRIC CONIC

C3	13.171	VHL	3.629	DLA	-8.64	RAL	350.33	RAD	6639.6	VEL	11.543	PTH	6.59	VHP	3.386	DPA	-32.64	RAP	292.99

ECC	1.2168																		
INC	2.2																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 58	2868.43	-25.04	83.35	203.59	131.87	17 40 45	1868.4	-7.36	66.10
60.00	17 41 53	2736.36	-20.80	75.31	207.26	125.33	18 27 29	1736.4	-5.36	56.30
70.00	18 44 34	2552.04	-16.92	63.00	209.90	120.12	19 27 6	1552.0	-3.48	42.77
80.00	20 2 27	2308.23	-14.04	46.10	211.51	116.62	20 40 55	1308.2	-2.08	25.14
90.00	21 28 6	2031.91	-12.96	26.33	212.06	115.36	22 1 58	1031.9	-1.54	5.13
100.00	22 45 19	1782.70	-14.04	7.47	211.51	116.62	23 15 1	782.7	-2.08	346.51
110.00	23 44 0	1598.86	-16.92	351.92	209.90	120.12	24 10 39	598.9	-3.48	331.69

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	1.1162	TRA	3.0616	TC3	-6.3170	BAU	1.1167	SGT	6930.4	SGR	838.7	SG3	1347.1	ST	114.8	SR	24.4	SS	91.7
RDE	.2897	RRA	.3592	RC3	-.5600	FAU	.15890	RRT	.9418	RRF	.9661	RTF	.9767	CRT	.9442	CRS	-.9575	CST	-.9989
FDE	3.1539	FRA	7.9421	FC-10	.4444	BSP	11783	SGB	6980.9	R23	.1332	R13	.9773	LSA	148.6	MSA	8.2	SSA	1.4
BDE	1.1532	BRA	3.0028	BC3	6.3418	FSP	2446	SG1	6975.3	SG2	280.2	THA	6.51	EL1	117.1	EL2	7.9	ALF	11.41

LAUNCH DATE APR 27 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 622.613 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.362	GAL	-3.54	AZL	90.55	HCA	198.66	SMA	185.48	ECC	.19771	INC	.5457
RP	222.07	LAP	.17	LOP	54.76	VP	21.902	GAP	.78	AZP	89.48	TAL	338.28	TAP	176.95	RCA	148.81	APO	222.18
RC	201.270	GL	-4.61	GP	-8.53	ZAL	131.96	ZAP	98.44	ETS	173.14	ZAE	98.05	ETE	181.10	ZAC	93.98	ETC	271.10

VI	29.592																		
V2	24.758																		
LVI	-.03																		

PLANETOCENTRIC CONIC

C3	13.456	VHL	3.668	DLA	-9.08	RAL	351.09	RAD	6639.8	VEL	11.555	PTH	6.60	VHP	3.412	DPA	-32.03	RAP	292.94

ECC	1.2218																		
INC	2.2																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 39	2862.16	-24.85	83.15	204.53	131.97	17 45 21	1862.2	-7.15	66.92
60.00	17 47 4	2730.76	-20.58	75.00	208.23	125.45	18 32 35	1730.8	-5.12	56.03
70.00	18 50 19	2544.77	-16.67	62.59	210.90	120.25	19 32 44	1544.8	-3.21	42.39
80.00	20 8 45	2299.29	-13.77	45.58	212.53	116.76	20 47 4	1299.3	-1.77	24.68
90.00	21 34 38	2022.19	-12.67	25.76	213.08	115.49	22 8 20	1022.2	-1.23	4.58
100.00	22 51 36	1773.76	-13.77	6.95	212.53	116.76	23 21 10	773.8	-1.77	346.02
110.00	23 49 46	1591.59	-16.67	351.50	210.90	120.25	24 16 17	591.6	-3.21	331.31

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	1.1424	TRA	3.1906	TC3	-6.3224	BAU	1.1410	SGT	7083.0	SGR	778.4	SG3	1321.1	ST	117.2	SR	23.7	SS	90.9
RDE	.2861	RRA	.3263	RC3	-.5041	FAU	.15486	RRT	.9305	RRF	.9554	RTF	.9768	CRT	.9318	CRS	-.9487	CST	-.9985
FDE	3.1282	FRA	7.9089	FC3	-9.9635	BSP	12076	SGB	7125.4	R23	.1238	R13	.9770	LSA	149.9	MSA	8.9	SSA	1.3
BDE	1.1777	BRA	3.2072	BC3	6.3425	FSP	2409	SG1	7119.8	SG2	282.9	THA	5.83	EL1	119.3	EL2	8.4	ALF	10.70

LAUNCH DATE APR 27 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 626.720 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.370	GAL	-3.62	AZL	90.62	HCA	199.76	SMA	185.62	ECC	.19874	INC	.6211
RP	222.46	LAP	.21	LOP	55.86	VP	21.867	GAP	.59	AZP	89.42	TAL	337.84	TAP	177.60	RCA	148.73	APO	222.51
RC	203.922	GL	-5.42	GP	-7.99	ZAL	132.42	ZAP	94.36	ETS	173.30	ZAE	93.84	ETE	180.88	ZAC	94.53	ETC	271.12

VI	29.592																		
V2	24.717																		
LVI	-1.16																		

PLANETOCENTRIC CONIC

C3	13.752	VHL	3.708	DLA	-9.43	RAL	351.81	RAD	6639.9	VEL	11.568	PTH	6.61	VHP	3.440	DPA	-31.49	RAP	292.93

ECC	1.2263																		
INC	2.2																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 51	2859.79	-24.74	83.01	205.45	132.03	17 49 31	1859.8	-7.03	65.82
60.00	17 51 40	2727.32	-20.45	74.81	209.18	125.52	18 37 7	1727.3	-4.96	55.86
70.00	18 55 23	2539.98	-16.50	62.31	211.87	120.34	19 37 43	1540.0	-3.02	42.14
80.00	20 14 14	2293.14	-13.58	45.22	213.52	116.65	20 52 27	1293.1	-1.57	24.32
90.00	21 40 19	2015.42	-12.48	25.36	214.08	115.59	22 13 54	1015.4	-1.01	4.21
100.00	22 57 6	1767.61	-13.58	6.59	213.52	116.65	23 26 34	767.6	-1.57	345.68
110.00	23 54 49	1586.80	-16.50	351.23	211.87	120.34	24 21 16	586.8	-3.02	331.06

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	1.1708	TRA	3.3181	TC3	-6.3278	BAU	1.1664	SGT	7232.3	SGR	722.6	SG3	1293.9	ST	119.6	SR	23.0	SS	90.0
RDE	.2842	RRA	.2980	RC3	-.4562	FAU	.15100	RRT	.9168	RRF	.9424	RTF	.9763	CRT	.9187	CRS	-.9395	CST	-.9982
FDE	3.1038	FRA	7.8607	FC3	-9.5063	BSP	12348	SGB	7268.3	R23	.1149	R13	.9767	LSA	151.2	MSA	9.5	SSA	1.3
BDE	1.2048	BRA	3.3313	BC3	6.3442	FSP	2368	SG1	7262.6	SG2	287.4	THA	5.24	EL1	121.5	EL2	9.0	ALF	10.09

LAUNCH DATE APR 27 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 630.821 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.378	GAL	-3.71	AZL	90.69	HCA	200.65	SMA	185.76	ECC	.19979	INC	.6876
RP	222.84	LAP	.25	LOP	56.95	VP	21.832	GAP	.44	AZP	89.36	TAL	337.40	TAP	178.25	RCA	148.65	APO	222.87
RC	206.578	GL	-5.94	GP	-7.51	ZAL	132.88	ZAP	53.35	ETS	173.45	ZAE	92.65	ETE	180.69	ZAC	95.00	ETC	271.15

VI	29.592																		
V2	24.675																		
LVI	-1.64																		

PLANETOCENTRIC CONIC

C3	14.057	VHL	3.749	DLA	-9.71	RAL	352.49	RAD	6640.1	VEL	11.581	PTH	6.62	VHP	3.470	DPA	-31.00	RAP	292.97

ECC	1.2313																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 39	2858.99	-24.71	82.97	206.35	132.05	17 53 18	1859.0	-6.99	65.79
60.00	17 55 46	2725.68	-20.38	74.72	210.12	125.55	18 41 12	1725.7	-4.89	55.79
70.00	18 59 51	2537.27	-16.41	62.16	212.83	120.38	19 42 9	1537.3	-2.92	42.00
80.00	20 19 3	2289.36	-13.47	45.00	214.49	116.90	20 57 12	1289.4	-1.44	24.11
90.00	21 45 17	2011.14	-12.35	25.11	215.06	115.64	22 18 48	1011.1	-.87	3.97
100.00	23 1 55	1763.83	-13.47	6.37	214.49	116.90	23 31 19	763.8	-1.44	345.48
110.00	0 3 14	1584.09	-16.41	351.07	212.83	120.38	0 29 38	584.1	-2.92	330.92

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.1994	TRA	3.4437	TC3	-6.3352	BAU	1.1931	SGT	7377.8	SGR	676.1	SG3	1266.0	ST	121.9	SR	22.5	SS	89.0
RDE	.2834	RRA	.2679	RC3	-.4152	FAU	.14739	RRT	.9003	RRF	.9266	RTF	.9761	CRT	.9051	CRS	-.9296	CST	-.9979
FDE	3.0753	FRA	7.8013	FC3	-9.0772	BSP	12582	SGB	7408.7	R23	.1065	R13	.9765	LSA	152.3	MSA	10.1	SSA	1.3
SDE	1.2324	BRA	3.4541	BC3	6.3468	FSP	2317	SG1	7402.9	SG2	293.2	THA	4.72	EL1	123.6	EL2	9.5	ALF	9.55

LAUNCH DATE APR 27 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 24 1972

HELIOCENTRIC CONIC DISTANCE 634.916 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.387	GAL	-3.80	AZL	90.75	HCA	201.94	SMA	185.90	ECC	.20086	INC	.7484
RP	223.23	LAP	.28	LOP	58.04	VP	21.798	GAP	.28	AZP	89.31	TAL	336.94	TAP	178.89	RCA	148.56	APO	223.24
RC	209.236	GL	-6.40	GP	-7.08	ZAL	133.34	ZAP	52.36	ETS	173.59	ZAE	91.49	ETE	180.53	ZAC	95.43	ETC	271.18

VI	29.592																		
V2	24.633																		
LVI	-2.09																		

PLANETOCENTRIC CONIC

C3	14.371	VHL	3.791	DLA	-9.93	RAL	353.15	RAD	6640.2	VEL	11.594	PTH	6.64	VHP	3.500	DPA	-30.55	RAP	293.05

ECC	1.2365																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 5	2859.54	-24.73	83.00	207.25	132.04	17 56 45	1859.5	-7.01	65.81
60.00	17 59 28	2725.57	-20.38	74.71	211.03	125.55	18 44 53	1725.6	-4.89	55.78
70.00	19 3 50	2536.33	-16.38	62.10	213.77	120.40	19 46 6	1536.3	-2.89	41.95
80.00	20 23 17	2287.58	-13.41	44.90	215.44	116.93	21 1 25	1287.6	-1.38	24.01
90.00	21 49 39	2008.98	-12.29	24.99	216.01	115.67	22 23 7	1009.0	-.80	3.85
100.00	23 6 9	1762.05	-13.41	6.27	215.44	116.93	23 35 31	762.1	-1.38	345.38
110.00	0 7 12	1583.15	-16.38	351.02	213.77	120.40	0 33 35	583.1	-2.89	330.87

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.2328	TRA	3.5726	TC3	-6.3333	BAU	1.2190	SGT	7521.9	SGR	636.3	SG3	1238.2	ST	124.5	SR	22.2	SS	88.2
RDE	.2840	RRA	.2423	RC3	-.3789	FAU	.14360	RRT	.8810	RRF	.9079	RTF	.9759	CRT	.8915	CRS	-.9196	CST	-.9976
FDE	3.0516	FRA	7.7413	FC3	-8.6504	BSP	12838	SGB	7548.7	R23	.0987	R13	.9762	LSA	153.8	MSA	10.7	SSA	1.3
SDE	1.2651	BRA	3.5808	BC3	6.3446	FSP	2270	SG1	7542.8	SG2	300.2	THA	4.27	EL1	126.0	EL2	9.9	ALF	9.08

LAUNCH DATE APR 27 1971 FLIGHT TIME 274.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 639.006 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.396	GAL	-3.89	AZL	90.80	HCA	203.03	SMA	186.05	ECC	.20196	INC	.8035
RP	223.62	LAP	.31	LOP	59.13	VP	21.763	GAP	.12	AZP	89.26	TAL	336.49	TAP	179.52	RCA	148.47	APO	223.62
RC	211.896	GL	-6.79	GP	-6.69	ZAL	133.80	ZAP	51.41	ETS	173.72	ZAE	90.35	ETE	180.39	ZAC	95.81	ETC	271.22

VI	29.592																		
V2	24.592																		
LVI	-2.51																		

PLANETOCENTRIC CONIC

C3	14.695	VHL	3.833	DLA	-10.09	RAL	353.78	RAD	6640.4	VEL	11.608	PTH	6.65	VHP	3.531	DPA	-30.15	RAP	293.16

ECC	1.2418																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 14	2861.24	-24.81	83.08	208.13	132.00	17 59 55	1861.2	-7.10	65.68
60.00	18 2 47	2726.77	-20.42	74.78	211.94	125.53	18 48 14	1726.8	-4.94	55.84
70.00	19 7 22	2536.91	-16.40	62.14	214.69	120.39	19 49 39	1536.9	-2.91	41.98
80.00	20 27 2	2287.53	-13.41	44.90	216.38	116.93	21 5 9	1287.5	-1.38	24.01
90.00	21 53 26	2008.64	-12.28	24.97	216.95	115.68	22 26 57	1008.6	-.79	3.83
100.00	23 9 54	1762.00	-13.41	6.26	216.38	116.93	23 39 16	762.0	-1.38	345.38
110.00	0 10 44	1583.73	-16.40	351.05	214.69	120.39	0 37 8	583.7	-2.91	330.90

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.2701	TRA	3.7032	TC3	-6.3251	BAU	1.2448	SGT	7663.2	SGR	602.6	SG3	1210.4	ST	127.2	SR	21.9	SS	87.6
RDE	.2858	RRA	.2188	RC3	-.3468	FAU	.13962	RRT	.8585	RRF	.8862	RTF	.9756	CRT	.8782	CRS	-.9099	CST	-.9973
FDE	3.0384	FRA	7.6791	FC3	-8.2252	BSP	13104	SGB	7686.9	R23	.0924	R13	.9758	LSA	155.5	MSA	11.2	SSA	1.3
SDE	1.3019	BRA	3.7098	BC3	6.3346	FSP	2228	SG1	7680.7	SG2	308.3	THA	3.87	EL1	128.6	EL2	10.4	ALF	8.87

LAUNCH DATE APR 27 1971 FLIGHT TIME 276.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 643.080 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.404	GAL	-3.98	AZL	90.88	HCA	204.11	SMA	186.19	ECC	.20309	INC	.8538
RP	224.01	LAP	.38	LOP	60.21	VP	21.728	GAP	-.04	AZP	89.22	TAL	336.03	TAP	180.14	RCA	148.38	APO	224.01
RC	214.858	GL	-7.14	GP	-6.34	ZAL	134.26	ZAP	50.49	ETS	173.84	ZAE	89.23	ETE	180.26	ZAC	96.16	ETC	271.27

VI	29.592																		
V2	24.580																		
LVI	-2.91																		

PLANETOCENTRIC CONIC

C3	15.028	VHL	3.877	DLA	-10.20	RAL	354.39	RAD	6640.8	VEL	11.622	PTH	6.66	VHP	3.563	DPA	-29.77	RAP	293.32

ECC	1.2473																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 6	2863.92	-24.93	83.22	209.00	131.93	18 2 50	1863.9	-7.23	66.00
60.00	18 5 48	2729.10	-20.52	74.91	212.63	125.48	18 51 17	1729.1	-5.04	55.95
70.00	19 10 32	2538.79	-16.46	62.24	215.60	120.36	19 52 51	1538.8	-2.98	42.08
80.00	20 30 20	2288.98	-13.45	44.98	217.30	116.91	21 8 29	1289.0	-1.42	24.09
90.00	21 56 51	2009.86	-12.31	25.04	217.88	115.66	22 30 21	1009.9	-.83	3.90
100.00	23 13 12	1763.43	-13.45	6.35	217.30	116.91	23 42 36	763.4	-1.42	345.45
110.00	0 13 54	1585.61	-16.46	351.16	215.60	120.36	0 40 20	585.6	-2.98	331.00

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.3092	TRA	3.8356	TC3	-6.3124	BAU	1.2699	SGT	7802.2	SGR	574.1	SG3	1182.8	ST	129.9	SR	21.8	SS	86.7
RDE	.2864	RRA	.1965	RC3	-.3180	FAU	.13564	RRT	.8330	RRF	.8615	RTF	.9752	CRT	.8652	CRS	-.9001	CST	-.9970
FDE	3.0192	FRA	7.6154	FC3	-7.8138	BSP	13366	SGB	7823.3	R23	.0864	R13	.9754	LSA	157.3	MSA	11.7	SSA	1.3
SDE	1.3406	BRA	3.8406	BC3	6.3204	FSP	2184	SG1	7816.9	SG2	317.0	THA	3.51	EL1	131.3	EL2	10.8	ALF	8.31

LAUNCH DATE APR 27 1971 FLIGHT TIME 278.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 647.167 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.413	GAL	-4.07	AZL	90.90	HCA	205.19	SMA	186.34	ECC	.20424	INC	.8986	V1	29.592
RP	224.40	LAP	.38	LOP	61.29	VP	21.695	GAP	-.20	AZP	89.19	TAL	335.57	TAP	180.76	RCA	148.29	APO	224.40	V2	24.508
RC	217.222	GL	-7.44	GP	-6.02	ZAL	134.72	ZAP	49.60	ETS	173.96	ZAE	88.13	ETE	180.15	ZAC	96.47	ETC	271.32	LVI	-3.28

PLANETOCENTRIC CONIC

C3	15.371	VHL	3.921	DLA	-10.28	RAL	354.99	RAD	6640.7	VEL	11.637	PTH	6.68	VHP	3.596	DPA	-29.42	RAP	293.50	ECC	1.2530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 46	2867.46	-25.09	83.40	209.86	131.85	18 5 33	1867.5	-7.41	66.15
60.00	18 8 32	2732.41	-20.65	75.09	213.71	125.41	18 54 5	1732.4	-5.19	56.11
70.00	19 13 22	2541.80	-16.56	62.42	216.50	120.30	19 55 44	1541.8	-3.09	42.24
80.00	20 33 16	2291.68	-13.54	45.14	218.20	116.87	21 11 28	1291.7	-1.52	24.24
90.00	21 59 49	2012.44	-12.39	25.19	218.78	115.63	22 33 22	1012.4	-.91	4.04
100.00	23 16 8	1766.15	-13.54	6.51	218.20	116.87	23 45 34	766.2	-1.52	345.60
110.00	0 16 44	1588.62	-16.56	351.33	216.50	120.30	0 43 13	588.6	-3.09	331.15

DIFFERENTIAL CORRECTIONS

TDE	1.3490	TRA	3.9676	TC3	-6.3008	BAU	1.2962												
RDE	.2917	RRA	.1758	RC3	-.2931	FAU	.13186												
FDE	3.0001	FRA	7.5458	FC3	-7.4269	BSP	13604												
BDE	1.3602	BRA	3.9719	BC3	6.3076	FSP	2136												

MID-COURSE EXECUTION ACCURACY

SGT	7938.6	SGR	550.2	SG3	1155.1						
RRT	.8046	RRF	.8338	RTF	.9748						
SGB	7957.7	R23	.0811	R13	.9750						
SG1	7951.0	SG2	326.2	THA	3.20						

ORBIT DETERMINATION ACCURACY

ST	132.6	SR	21.7	SS	85.9						
CRT	.8523	CRS	-.8904	CST	-.9968						
LSA	159.0	MSA	12.2	SSA	1.3						
EL1	133.9	EL2	11.2	ALF	7.99						

LAUNCH DATE APR 27 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 651.239 EARTH TO MARS

RL	150.57	LAL	-.00	LOL	216.10	VL	32.422	GAL	-4.17	AZL	90.94	HCA	206.26	SMA	186.50	ECC	.20541	INC	.9417	V1	29.592
RP	224.79	LAP	.42	LOP	62.36	VP	21.661	GAP	-.35	AZP	89.16	TAL	335.11	TAP	181.37	RCA	148.19	APO	224.80	V2	24.466
RC	219.886	GL	-7.71	GP	-5.72	ZAL	135.19	ZAP	48.74	ETS	174.07	ZAE	87.06	ETE	180.05	ZAC	96.75	ETC	271.38	LVI	-3.64

PLANETOCENTRIC CONIC

C3	15.723	VHL	3.965	DLA	-10.32	RAL	355.56	RAD	6640.9	VEL	11.652	PTH	6.69	VHP	3.629	DPA	-29.10	RAP	293.71	ECC	1.2588

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 13	2871.74	-25.28	83.63	210.72	131.75	18 8 4	1871.7	-7.62	66.33
60.00	18 11 2	2736.57	-20.81	75.32	214.59	125.32	18 56 39	1736.6	-5.37	56.31
70.00	19 15 55	2545.80	-16.70	62.64	217.38	120.23	19 58 21	1545.8	-3.25	42.45
80.00	20 35 53	2295.52	-13.66	45.36	219.10	116.81	21 14 8	1295.5	-1.65	24.45
90.00	22 2 27	2016.20	-12.50	25.41	219.68	115.57	22 36 3	1016.2	-1.03	4.25
100.00	23 18 45	1769.99	-13.66	6.73	219.10	116.81	23 48 15	770.0	-1.65	345.81
110.00	0 19 18	1592.62	-16.70	351.56	217.38	120.23	0 45 50	592.6	-3.25	331.36

DIFFERENTIAL CORRECTIONS

TDE	1.3914	TRA	4.1013	TC3	-6.2842	BAU	1.3222												
RDE	.2957	RRA	.1563	RC3	-.2710	FAU	.12810												
FDE	2.9831	FRA	7.4742	FC3	-7.0533	BSP	13847												
BDE	1.4225	BRA	4.1043	BC3	6.2900	FSP	2090												

MID-COURSE EXECUTION ACCURACY

SGT	8072.4	SGR	530.5	SG3	1127.8						
RRT	.7736	RRF	.8035	RTF	.9744						
SGB	8089.8	R23	.0764	R13	.9745						
SG1	8082.9	SG2	335.7	THA	2.92						

ORBIT DETERMINATION ACCURACY

ST	135.4	SR	21.6	SS	85.1						
CRT	.8401	CRS	-.8811	CST	-.9965						
LSA	160.8	MSA	12.7	SSA	1.3						
EL1	136.6	EL2	11.6	ALF	7.70						

LAUNCH DATE APR 28 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 14 1971

HELIOCENTRIC CONIC DISTANCE 315.161 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	35.150	GAL	-4.07	AZL	91.89	HCA	102.26	SMA	251.90	ECC	.40733	INC	1.8930	V1	29.584
RP	207.38	LAP	-1.85	LOP	319.34	VP	27.442	GAP	21.89	AZP	89.60	TAL	345.89	TAP	88.15	RCA	149.29	APO	354.51	V2	26.414
RC	56.241	GL	-10.57	GP	.94	ZAL	117.85	ZAP	174.95	ETS	169.15	ZAE	173.85	ETE	105.36	ZAC	101.44	ETC	277.01	LVI	-17.88

PLANETOCENTRIC CONIC

C3	39.864	VHL	6.314	DLA	-19.32	RAL	341.34	RAD	6650.6	VEL	12.639	PTH	7.49	VHP	10.906	DPA	-17.38	RAP	317.12	ECC	1.6561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 53	2913.96	-27.18	85.86	208.02	130.68	17 44 27	1914.0	-9.72	68.14
60.00	17 38 20	2747.91	-21.26	75.95	213.06	125.08	18 44 8	1747.9	-5.87	56.86
70.00	19 17 17	2515.80	-15.67	60.94	216.88	120.74	19 59 13	1515.8	-2.10	40.88
80.00	20 51 37	2220.60	-11.31	41.03	219.38	117.82	21 28 37	1220.6	.89	20.33
90.00	22 25 6	1919.00	-9.58	19.76	220.29	116.74	22 57 5	919.0	2.10	358.83
100.00	23 34 28	1695.07	-11.31	2.40	219.38	117.82	24 2 43	695.1	.89	341.70
110.00	0 20 40	1562.62	-15.67	349.85	216.88	120.74	0 46 42	562.6	-2.10	329.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5496	TRA	-1.1850	TC3	-.0377	BAU	.0484	SGT	1244.8	SGR	576.3	SG3	122.3	ST	30.2	SR	26.7	SS	19.1
RDE	-.5843	RRA	.2143	RC3	.0827	FAU	.03455	RRT	.0342	RRF	-.0374	RTF	-.7078	CRT	.7538	CRS	.5652	CST	.9659
FDE	.2937	FRA	1.0578	FC3	-.7502	BSP	1923	SGB	1372.6	R23	-.0066	R13	-.7079	LSA	41.4	MSA	16.7	SSA	1.1
BDE	.6021	BRA	1.2043	BC3	.0909	FSP	155	SG1	1245.0	SG2	577.9	THA	1.16	EL1	37.8	EL2	14.0	ALF	40.29

LAUNCH DATE APR 28 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 16 1971

HELIOCENTRIC CONIC DISTANCE 317.231 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	34.970	GAL	-3.95	AZL	91.90	HCA	103.52	SMA	246.01	ECC	.39297	INC	1.9021	V1	29.584
RP	207.27	LAP	-1.85	LOP	320.60	VP	27.224	GAP	21.38	AZP	89.55	TAL	345.95	TAP	89.47	RCA	149.34	APO	342.69	V2	26.426
RC	56.362	GL	-10.90	GP	.97	ZAL	117.88	ZAP	174.10	ETS	170.42	ZAE	174.02	ETE	96.60	ZAC	101.42	ETC	277.10	LVI	-18.03

PLANETOCENTRIC CONIC

C3	37.488	VHL	6.123	DLA	-19.60	RAL	341.54	RAD	6649.8	VEL	12.545	PTH	7.42	VHP	10.564	DPA	-17.24	RAP	317.52	ECC	1.6170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 54	2892.50	-26.22	84.72	207.29	131.24	17 46 7	1892.5	-8.66	67.22
60.00	18 0 46	2725.33	-20.37	74.70	212.33	125.56	18 46 11	1725.3	-4.88	55.77
70.00	19 20 16	2491.63	-14.82	59.57	216.16	121.13	20 1 47	1491.6	-1.18	39.62
80.00	20 55 12	2194.51	-10.48	39.54	218.68	118.12	21 31 46	1194.5	1.78	18.90
90.00	22 29 1	1891.88	-8.74	18.21	219.60	117.00	23 0 33	891.9	2.97	357.31
100.00	23 38 3	1668.98	-10.48	.91	218.68	118.12	24 5 52	669.0	1.78	340.27
110.00	0 23 38	1538.45	-14.82	348.49	216.16	121.13	0 49 16	538.4	-1.18	328.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5451	TRA	-1.1747	TC3	-.0285	BAU	.0467	SGT	1274.0	SGR	576.1	SG3	130.8	ST	30.9	SR	26.7	SS	19.8
RDE	-.5660	RRA	.2059	RC3	.0888	FAU	.03563	RRT	.0376	RRF	-.0409	RTF	-.7184	CRT	.7539	CRS	.5608	CST	.9646
FDE	.3025	FRA	1.1008	FC3	-.8228	BSP	1979	SGB	1399.0	R23	-.0069	R13	-.7185	LSA	42.1	MSA	16.9	SSA	1.1
BDE	.7858	BRA	1.1926	BC3	.0933	FSP	167	SG1	1274.2	SG2	577.6	THA	1.23	EL1	38.3	EL2	14.1	ALF	39.40

LAUNCH DATE APR 28 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 18 1971

HELIOCENTRIC CONIC DISTANCE 319.510 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	34.800	GAL	-3.83	AZL	91.91	HCA	104.79	SMA	240.73	ECC	.37945	INC	1.9113	V1	29.584
RP	207.18	LAP	-1.85	LOP	321.87	VP	27.016	GAP	20.88	AZP	89.51	TAL	346.02	TAP	90.81	RCA	149.38	APO	332.07	V2	26.436
RC	56.568	GL	-11.24	GP	1.00	ZAL	117.88	ZAP	173.24	ETS	171.37	ZAE	174.06	ETE	88.20	ZAC	101.40	ETC	277.18	LVI	-18.18

PLANETOCENTRIC CONIC

C3	38.300	VHL	5.941	DLA	-19.90	RAL	341.72	RAD	6649.0	VEL	12.458	PTH	7.36	VHP	10.235	DPA	-17.09	RAP	317.91	ECC	1.5810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 54	2871.08	-25.25	83.59	206.58	131.76	17 47 46	1871.1	-7.59	66.30
60.00	18 3 13	2702.73	-19.47	73.47	211.62	126.01	18 48 15	1702.7	-3.89	54.68
70.00	19 23 18	2467.32	-13.96	58.22	215.46	121.49	20 4 25	1467.3	-.25	38.35
80.00	20 58 53	2168.14	-9.63	38.05	218.00	118.40	21 35 1	1168.1	2.67	17.45
90.00	22 33 3	1864.36	-7.89	16.64	218.93	117.24	23 4 8	864.4	3.85	355.77
100.00	23 41 48	1642.61	-9.63	359.42	218.00	118.40	24 9 8	642.6	2.67	338.82
110.00	0 26 40	1514.14	-13.96	347.13	215.46	121.49	0 51 54	514.1	-.25	327.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5412	TRA	-1.1669	TC3	-.0178	BAU	.0497	SGT	1305.7	SGR	577.4	SG3	139.8	ST	31.7	SR	26.6	SS	20.8
RDE	-.5483	RRA	.1976	RC3	.0952	FAU	.03676	RRT	.0412	RRF	-.0450	RTF	-.7193	CRT	.7537	CRS	.5570	CST	.9639
FDE	.3120	FRA	1.1459	FC3	-.9016	BSP	2039	SGB	1427.7	R23	-.0077	R13	-.7294	LSA	42.9	MSA	17.1	SSA	1.1
BDE	.7704	BRA	1.1835	BC3	.0968	FSP	182	SG1	1306.0	SG2	578.8	THA	1.30	EL1	38.8	EL2	14.3	ALF	38.46

LAUNCH DATE APR 28 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 321.873 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	34.640	GAL	-3.71	AZL	91.92	HCA	106.05	SMA	238.96	ECC	.38672	INC	1.9207	V1	29.584
RP	207.09	LAP	-1.85	LOP	323.13	VP	26.819	GAP	20.38	AZP	89.47	TAL	346.11	TAP	92.18	RCA	149.43	APO	322.49	V2	26.448
RC	56.886	GL	-11.58	GP	1.04	ZAL	117.87	ZAP	172.37	ETS	172.11	ZAE	173.98	ETE	79.05	ZAC	101.38	ETC	277.27	LVI	-18.32

PLANETOCENTRIC CONIC

C3	33.286	VHL	5.769	DLA	-20.21	RAL	341.89	RAD	6648.3	VEL	12.377	PTH	7.29	VHP	9.916	DPA	-16.94	RAP	318.28	ECC	1.5478

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 55	2849.74	-24.28	82.49	205.89	132.26	17 49 25	1849.7	-6.52	65.40
60.00	18 5 41	2680.14	-18.56	72.25	210.93	126.44	18 50 22	1680.1	-2.89	53.60
70.00	19 26 23	2442.91	-13.09	56.86	214.78	121.83	20 7 6	1442.9	.68	37.07
80.00	21 2 41	2141.51	-8.77	36.59	217.34	118.66	21 38 23	1141.5	3.57	15.99
90.00	22 37 14	1836.52	-7.02	15.06	218.28	117.46	23 7 51	836.5	4.74	354.21
100.00	23 46 33	1615.98	-8.77	357.92	217.34	118.66	24 12 29	616.0	3.57	337.36
110.00	0 29 45	1489.73	-13.09	345.78	214.78	121.83	0 54 35	489.7	.68	325.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5367	TRA	-1.1566	TC3	-.0062	BAU	.0454	SGT	1335.0	SGR	576.4	SG3	149.5	ST	32.4	SR	26.5	SS	21.3
RDE	-.5311	RRA	.1895	RC3	.1019	FAU	.03797	RRT	.0452	RRF	-.0491	RTF	-.7389	CRT	.7539	CRS	.5523	CST	.9621
FDE	.3210	FRA	1.1927	FC3	-.9876	BSP	2108	SGB	1454.1	R23	-.0081	R13	-.7390	LSA	43.6	MSA	17.3	SSA	1.1
BDE	.7550	BRA	1.1720	BC3	.1020	FSP	197	SG1	1335.3	SG2	575.6	THA	1.37	EL1	39.3	EL2	14.4	ALF	37.59

LAUNCH DATE APR 28 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 324.597 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 34.488 GAL -3.60 AZL 91.93 HCA 107.31 SMA 231.64 ECC .39472 INC 1.9301 V1 29.584
RP 207.01 LAP -1.84 LOP 324.40 VP 26.633 GAP 19.90 AZP 89.43 TAL 346.21 TAP 93.52 RCA 149.47 APO 313.81 V2 26.457
RC 57.225 GL -11.93 GP 1.07 ZAL 117.83 ZAP 171.48 ETS 172.70 ZAE 173.80 ETE 72.39 ZAC 101.37 ETC 277.35 LVI -18.46

PLANETOCENTRIC CONIC

C3 31.427 VHL 5.606 DLA -20.53 RAL 342.03 RAD 6647.6 VEL 12.303 PTH 7.24 VHP 9.607 DPA -16.80 RAP 318.64 ECC 1.5172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 55	2828.48	-23.30	81.41	205.23	132.73	17 51 4	1828.5	-5.46	64.50
60.00	18 8 12	2657.53	-17.64	71.05	210.26	126.84	18 52 29	1657.5	-1.90	52.52
70.00	19 29 33	2418.38	-12.20	55.51	214.12	122.15	20 9 51	1418.4	1.62	35.79
80.00	21 6 37	2114.59	-7.88	35.04	216.70	118.89	21 41 51	1114.6	4.47	14.50
90.00	22 41 35	1808.26	-6.13	13.46	217.65	117.66	23 11 43	808.3	5.64	352.62
100.00	23 49 29	1589.06	-7.88	356.40	216.70	118.89	24 15 58	589.1	4.47	335.87
110.00	0 32 55	1465.19	-12.20	344.43	214.12	122.15	0 57 20	465.2	1.62	324.71

DIFFERENTIAL CORRECTIONS

TDE -.5217 TRA-1.1367 TC3 .0192 BAU .0465
RDE -.5144 RRA .1815 RC3 .1089 FAU .03917
FDE .3326 FRA 1.2441 FC3-1.0789 BSP 2043
BDE .7326 BRA 1.1511 BC3 .1106 FSP 216

MID-COURSE EXECUTION ACCURACY

SGT 1350.4 SGR 574.9 SG3 159.8
RRT .0480 RRF -.0540 RTF -.7572
SGB 1467.7 R23 -.0097 R13 -.7573
SG1 1350.8 SG2 574.1 THA 1.43

ORBIT DETERMINATION ACCURACY

ST 32.5 SR 26.5 SS 22.1
CRT .7505 CRS .5496 CST .9627
LSA 44.0 MSA 17.5 SSA 1.1
EL1 39.3 EL2 14.4 ALF 37.27

LAUNCH DATE APR 28 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 327.366 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 34.345 GAL -3.49 AZL 91.94 HCA 108.58 SMA 227.73 ECC .34344 INC 1.9397 V1 29.584
RP 206.94 LAP -1.84 LOP 325.66 VP 26.455 GAP 19.42 AZP 89.38 TAL 346.32 TAP 94.90 RCA 149.52 APO 305.94 V2 26.466
RC 57.675 GL -12.29 GP 1.11 ZAL 117.78 ZAP 170.58 ETS 173.18 ZAE 173.55 ETE 65.70 ZAC 101.36 ETC 277.43 LVI -18.61

PLANETOCENTRIC CONIC

C3 29.717 VHL 5.451 DLA -20.86 RAL 342.17 RAD 6646.9 VEL 12.233 PTH 7.18 VHP 9.310 DPA -16.65 RAP 318.99 ECC 1.4891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 56	2807.36	-22.32	80.36	204.59	133.17	17 52 44	1807.4	-4.40	63.61
60.00	18 10 44	2635.05	-16.72	69.86	209.61	127.22	18 54 39	1635.1	-.91	51.44
70.00	19 32 47	2393.85	-11.31	54.18	213.49	122.44	20 12 40	1393.9	2.56	34.51
80.00	21 10 40	2087.51	-6.99	33.52	216.09	119.10	21 45 27	1087.5	5.38	13.01
90.00	22 46 4	1779.73	-5.23	11.85	217.05	117.83	23 15 44	779.7	6.54	351.01
100.00	23 53 31	1561.98	-6.99	354.89	216.09	119.10	24 19 33	562.0	5.38	334.37
110.00	0 36 9	1440.67	-11.31	343.09	213.49	122.44	1 0 9	440.7	2.56	323.43

DIFFERENTIAL CORRECTIONS

TDE -.5210 TRA-1.1311 TC3 .0278 BAU .0475
RDE -.4983 RRA .1736 RC3 .1162 FAU .04060
FDE .3408 FRA 1.2942 FC3-1.1827 BSP 2161
BDE .7209 BRA 1.1443 BC3 .1194 FSP 232

MID-COURSE EXECUTION ACCURACY

SGT 1385.4 SGR 573.1 SG3 170.8
RRT .0532 RRF -.0588 RTF -.7619
SGB 1499.2 R23 -.0100 R13 -.7620
SG1 1385.8 SG2 572.1 THA 1.52

ORBIT DETERMINATION ACCURACY

ST 33.4 SR 26.3 SS 22.8
CRT .7518 CRS .5435 CST .9602
LSA 44.8 MSA 17.7 SSA 1.2
EL1 40.0 EL2 14.5 ALF 36.19

LAUNCH DATE APR 28 1971 FLIGHT TIME 120.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 330.263 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 34.210 GAL -3.37 AZL 91.95 HCA 109.85 SMA 224.17 ECC .33282 INC 1.9495 V1 29.584
RP 206.87 LAP -1.83 LOP 326.93 VP 26.287 GAP 18.95 AZP 89.34 TAL 346.44 TAP 96.28 RCA 149.56 APO 298.78 V2 26.473
RC 56.203 GL -12.65 GP 1.15 ZAL 117.71 ZAP 169.66 ETS 173.58 ZAE 173.25 ETE 59.92 ZAC 101.36 ETC 277.50 LVI -18.74

PLANETOCENTRIC CONIC

C3 28.139 VHL 5.305 DLA -21.20 RAL 342.29 RAD 6646.3 VEL 12.169 PTH 7.13 VHP 9.021 DPA -16.51 RAP 319.32 ECC 1.4631

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 57	2786.41	-21.35	79.33	203.98	133.59	17 54 24	1786.4	-3.35	62.73
60.00	18 13 18	2612.65	-15.79	68.69	208.99	127.57	18 56 50	1612.7	.08	50.38
70.00	19 36 4	2369.29	-10.41	52.84	212.88	122.71	20 15 34	1369.3	3.49	33.23
80.00	21 14 50	2060.20	-6.08	32.00	215.51	119.29	21 49 10	1060.2	6.29	11.49
90.00	22 50 44	1750.85	-4.31	10.23	216.48	117.98	23 19 55	750.8	7.45	349.37
100.00	0 1 38	1534.68	-6.08	353.37	215.51	119.29	0 27 13	534.7	6.29	332.86
110.00	0 39 27	1416.11	-10.41	341.76	212.88	122.71	1 3 3	416.1	3.49	322.15

DIFFERENTIAL CORRECTIONS

TDE -.5182 TRA-1.1229 TC3 .0398 BAU .0489
RDE -.4826 RRA .1658 RC3 .1238 FAU .04209
FDE .3496 FRA 1.3470 FC3-1.2949 BSP 2249
BDE .7081 BRA 1.1351 BC3 .1300 FSP 249

MID-COURSE EXECUTION ACCURACY

SGT 1416.9 SGR 570.9 SG3 182.6
RRT .0586 RRF -.0642 RTF -.7680
SGB 1527.5 R23 -.0106 R13 -.7682
SG1 1417.3 SG2 569.7 THA 1.61

ORBIT DETERMINATION ACCURACY

ST 34.1 SR 26.2 SS 23.5
CRT .7524 CRS .5378 CST .9581
LSA 45.6 MSA 17.9 SSA 1.2
EL1 40.5 EL2 14.6 ALF 35.26

LAUNCH DATE APR 28 1971 FLIGHT TIME 122.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 333.275 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 34.083 GAL -3.27 AZL 91.96 HCA 111.11 SMA 220.92 ECC .32281 INC 1.9594 V1 29.584
RP 206.82 LAP -1.83 LOP 328.20 VP 26.128 GAP 18.49 AZP 89.29 TAL 346.57 TAP 97.68 RCA 149.60 APO 292.23 V2 26.479
RC 58.807 GL -13.02 GP 1.19 ZAL 117.62 ZAP 168.73 ETS 173.92 ZAE 172.93 ETE 55.02 ZAC 101.35 ETC 277.57 LVI -18.86

PLANETOCENTRIC CONIC

C3 26.684 VHL 5.166 DLA -21.56 RAL 342.40 RAD 6645.7 VEL 12.110 PTH 7.08 VHP 8.743 DPA -16.37 RAP 319.64 ECC 1.4391

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 59	2765.64	-20.37	78.33	203.40	133.98	17 56 4	1765.6	-2.31	61.86
60.00	18 15 53	2590.36	-14.86	67.54	208.40	127.90	18 59 4	1590.4	1.06	49.31
70.00	19 39 27	2344.73	-9.50	51.52	212.30	122.96	20 18 31	1344.7	4.42	31.94
80.00	21 19 9	2032.69	-5.16	30.48	214.95	119.45	21 53 2	1032.7	7.20	9.96
90.00	22 55 35	1721.61	-3.37	8.59	215.93	118.10	23 24 17	721.6	8.36	347.71
100.00	0 5 57	1507.16	-5.16	351.85	214.95	119.45	0 31 4	507.2	7.20	331.33
110.00	0 42 49	1391.54	-9.50	340.44	212.30	122.96	1 6 0	391.5	4.42	320.86

DIFFERENTIAL CORRECTIONS

TDE -.5139 TRA-1.1136 TC3 .0537 BAU .0507
RDE -.4675 RRA .1582 RC3 .1317 FAU .04367
FDE .3587 FRA 1.4028 FC3-1.4167 BSP 2327
BDE .6947 BRA 1.1248 BC3 .1422 FSP 269

MID-COURSE EXECUTION ACCURACY

SGT 1446.4 SGR 568.3 SG3 195.1
RRT .0640 RRF -.0700 RTF -.7746
SGB 1554.0 R23 -.0115 R13 -.7748
SG1 1446.9 SG2 566.9 THA 1.70

ORBIT DETERMINATION ACCURACY

ST 34.8 SR 26.1 SS 24.2
CRT .7526 CRS .5318 CST .9560
LSA 46.4 MSA 18.1 SSA 1.2
EL1 40.9 EL2 14.6 ALF 34.41

LAUNCH DATE APR 26 1971 FLIGHT TIME 124.00 ARRIVAL DATE AUG 30 1971

DISTANCE 336.389

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.862 GAL -3.16 AZL 91.97 HCA 112.38 SMA 217.95 ECC .31338 INC 1.9694 V1 29.584
RP 206.77 LAP -1.82 LOP 329.47 VP 25.976 GAP 18.03 AZP 89.25 TAL 346.70 TAP 99.08 RCA 149.65 APO 286.25 V2 26.485
RC 59.485 GL -13.39 GP 1.24 ZAL 117.52 ZAP 167.78 ETS 174.20 ZAE 172.60 ETE 50.92 ZAC 101.36 ETC 277.64 LVI -19.01

PLANETOCENTRIC CONIC

C3 25.340 VHL 5.034 DLA -21.92 RAL 342.49 RAD 6645.1 VEL 12.054 PTH 7.04 VHP 8.473 DPA -16.23 RAP 319.94 ECC 1.4170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 1	2745.08	-19.39	77.35	202.84	134.34	17 57 46	1745.1	-1.28	61.00
60.00	18 18 31	2568.21	-13.93	66.41	207.83	128.21	19 1 19	1568.2	2.03	48.25
70.00	19 42 54	2320.17	-8.59	50.20	211.74	123.18	20 21 34	1320.2	5.36	30.65
80.00	21 23 36	2004.97	-4.23	28.95	214.42	119.58	21 57 1	1005.0	8.12	8.41
90.00	23 0 38	1692.01	-2.42	6.93	215.42	118.18	23 28 50	692.0	9.28	346.01
100.00	0 10 24	1479.45	-4.23	350.31	214.42	119.58	0 35 3	479.4	8.12	329.78
110.00	0 46 16	1366.99	-8.59	339.12	211.74	123.18	1 9 3	367.0	5.36	319.57

DIFFERENTIAL CORRECTIONS

TDE -.5090 TRA-1.1032 TC3 .0696 BAU .0529
RDE -.4528 RRA .1506 RC3 .1399 FAU .04533
FDE .3681 FRA 1.4612 FC3-1.5487 BSP 2394
BDE .6813 BRA 1.1134 BC3 .1563 FSP 291

MID-COURSE EXECUTION ACCURACY

SGT 1474.0 SGR 565.4 SG3 208.4
RRT .0700 RRF -.0765 RTF -.7813
SGB 1578.7 R23 -.0124 R13 -.7815
SG1 1474.6 SG2 563.7 THA 1.80

ORBIT DETERMINATION ACCURACY

ST 35.4 SR 25.9 SS 25.0
CRT .7528 CRS .5259 CST .9540
LSA 47.1 MSA 18.2 SSA 1.2
EL1 41.4 EL2 14.6 ALF 33.61

LAUNCH DATE APR 28 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 1 1971

DISTANCE 339.596

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.848 GAL -3.06 AZL 91.98 HCA 113.65 SMA 215.22 ECC .30449 INC 1.9797 V1 29.584
RP 206.74 LAP -1.81 LOP 330.73 VP 25.831 GAP 17.59 AZP 89.21 TAL 346.85 TAP 100.50 RCA 149.69 APO 280.75 V2 26.489
RC 60.233 GL -13.76 GP 1.29 ZAL 117.40 ZAP 166.81 ETS 174.44 ZAE 172.29 ETE 47.50 ZAC 101.36 ETC 277.70 LVI -19.14

PLANETOCENTRIC CONIC

C3 24.101 VHL 4.909 DLA -22.30 RAL 342.58 RAD 6644.6 VEL 12.003 PTH 7.00 VHP 8.212 DPA -16.10 RAP 320.22 ECC 1.3966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 3	2724.75	-18.42	76.39	202.31	134.68	17 59 28	1724.8	-.26	60.15
60.00	18 21 11	2546.23	-13.01	65.29	207.29	128.49	19 3 37	1546.2	3.00	47.20
70.00	19 46 25	2295.65	-7.67	48.90	211.22	123.38	20 24 41	1295.6	6.28	29.36
80.00	21 28 13	1977.06	-3.29	27.41	213.92	119.69	22 1 10	977.1	9.03	6.84
90.00	23 5 53	1662.03	-1.45	5.26	214.94	118.25	23 33 35	662.0	10.19	344.29
100.00	0 15 1	1451.53	-3.29	348.78	213.92	119.69	0 39 12	451.5	9.03	328.21
110.00	0 49 47	1342.46	-7.67	337.81	211.22	123.38	1 12 10	342.5	6.28	318.27

DIFFERENTIAL CORRECTIONS

TDE -.5034 TRA-1.0922 TC3 .0872 BAU .0555
RDE -.4387 RRA .1432 RC3 .1485 FAU .04712
FDE .3777 FRA 1.5231 FC3-1.6926 BSP 2455
BDE .6677 BRA 1.1016 BC3 .1722 FSP 314

MID-COURSE EXECUTION ACCURACY

SGT 1500.2 SGR 562.1 SG3 222.8
RRT .0765 RRF -.0835 RTF -.7881
SGB 1602.1 R23 -.0135 R13 -.7883
SG1 1501.0 SG2 560.2 THA 1.91

ORBIT DETERMINATION ACCURACY

ST 35.9 SR 25.7 SS 25.8
CRT .7528 CRS .5199 CST .9519
LSA 47.7 MSA 18.4 SSA 1.2
EL1 41.7 EL2 14.6 ALF 32.87

LAUNCH DATE APR 20 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 3 1971

DISTANCE 342.887

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.741 GAL -2.98 AZL 91.99 HCA 114.92 SMA 212.72 ECC .29612 INC 1.9902 V1 29.584
RP 206.71 LAP -1.80 LOP 332.00 VP 25.694 GAP 17.15 AZP 89.16 TAL 347.00 TAP 101.92 RCA 149.73 APO 275.71 V2 26.492
RC 61.050 GL -14.14 GP 1.34 ZAL 117.26 ZAP 165.82 ETS 174.65 ZAE 172.00 ETE 44.66 ZAC 101.37 ETC 277.76 LVI -19.27

PLANETOCENTRIC CONIC

C3 22.956 VHL 4.791 DLA -22.68 RAL 342.65 RAD 6644.1 VEL 11.956 PTH 6.96 VHP 7.959 DPA -15.96 RAP 320.48 ECC 1.3778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 6	2704.67	-17.46	75.45	201.80	134.99	18 1 11	1704.7	.75	59.31
60.00	18 23 53	2524.43	-12.08	64.20	206.78	128.75	19 5 57	1524.4	3.96	46.16
70.00	19 50 1	2271.18	-6.76	47.60	210.72	123.56	20 27 53	1271.2	7.20	28.06
80.00	21 32 59	1948.95	-2.34	25.86	213.45	119.77	22 5 28	948.9	9.94	5.25
90.00	23 11 21	1631.65	-.47	3.57	214.49	118.28	23 38 33	631.7	11.11	342.53
100.00	0 19 47	1423.42	-2.34	347.23	213.45	119.77	0 43 30	423.4	9.94	326.62
110.00	0 53 24	1318.00	-6.76	336.52	210.72	123.56	1 15 22	318.0	7.20	316.86

DIFFERENTIAL CORRECTIONS

TDE -.4972 TRA-1.0808 TC3 .1052 BAU .0581
RDE -.4250 RRA .1358 RC3 .1573 FAU .04900
FDE .3670 FRA 1.5675 FC3-1.8478 BSP 2509
BDE .6540 BRA 1.0892 BC3 .1893 FSP 338

MID-COURSE EXECUTION ACCURACY

SGT 1524.9 SGR 558.5 SG3 237.9
RRT .0831 RRF -.0910 RTF -.[illegible]43
SGB 1623.9 R23 -.0149 R13 -.7946
SG1 1525.7 SG2 556.3 THA 2.01

ORBIT DETERMINATION ACCURACY

ST 36.4 SR 25.5 SS 26.6
CRT .7526 CRS .5134 CST .9497
LSA 48.4 MSA 18.5 SSA 1.2
EL1 42.0 EL2 14.6 ALF 32.17

LAUNCH DATE APR 28 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 5 1971

DISTANCE 346.254

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.640 GAL -2.86 AZL 92.00 HCA 116.19 SMA 210.42 ECC .28624 INC 2.0009 V1 29.584
RP 206.69 LAP -1.80 LOP 333.27 VP 25.563 GAP 16.72 AZP 89.12 TAL 347.16 TAP 103.35 RCA 149.77 APO 271.07 V2 26.498
RC 61.933 GL -14.52 GP 1.39 ZAL 117.12 ZAP 164.81 ETS 174.83 ZAE 171.75 ETE 42.37 ZAC 101.39 ETC 277.82 LVI -19.39

PLANETOCENTRIC CONIC

C3 21.900 VHL 4.680 DLA -23.07 RAL 342.71 RAD 6643.7 VEL 11.912 PTH 6.92 VHP 7.715 DPA -15.83 RAP 320.72 ECC 1.3604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 10	2684.87	-16.50	74.54	201.32	135.28	18 2 55	1684.9	1.75	58.49
60.00	18 26 37	2502.83	-11.16	63.12	206.30	128.98	19 8 20	1502.8	4.90	45.12
70.00	19 53 43	2246.78	-5.84	46.31	210.26	123.71	20 31 10	1246.8	8.12	26.76
80.00	21 37 56	1920.63	-1.39	24.31	213.01	119.83	22 9 56	920.6	10.85	3.64
90.00	23 17 5	1600.83	.52	1.85	214.07	118.28	23 43 45	600.8	12.03	340.73
100.00	0 24 43	1395.10	-1.39	345.67	213.01	119.83	0 47 59	395.1	10.85	325.01
110.00	0 57 5	1293.60	-5.84	335.23	210.26	123.71	1 18 39	293.6	8.12	315.68

DIFFERENTIAL CORRECTIONS

TDE -.4910 TRA-1.0685 TC3 .1249 BAU .0609
RDE -.4117 RRA .1286 RC3 .1665 FAU .05101
FDE .3966 FRA 1.6556 FC3-2.0165 BSP 2560
BDE .6407 BRA 1.0762 BC3 .2081 FSP 365

MID-COURSE EXECUTION ACCURACY

SGT 1548.2 SGR 554.7 SG3 254.1
RRT .0907 RRF -.0992 RTF -.8005
SGB 1644.5 R23 -.0161 R13 -.8008
SG1 1549.1 SG2 552.0 THA 2.13

ORBIT DETERMINATION ACCURACY

ST 36.9 SR 25.3 SS 27.4
CRT .7527 CRS .5068 CST .9473
LSA 49.0 MSA 18.7 SSA 1.2
EL1 42.3 EL2 14.5 ALF 31.50

LAUNCH DATE APR 28 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 349.689 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.544 GAL -2.77 AZL 92.01 HCA 117.46 SMA 208.30 ECC .28082 INC 2.0118 V1 29.584
RP 206.68 LAP -1.79 LOP 334.54 VP 25.439 GAP 16.30 AZP 89.07 TAL 347.32 TAP 104.78 RCA 149.81 APO 266.79 V2 26.496
RC 62.879 GL -14.90 GP 1.45 ZAL 116.96 ZAP 163.78 ETS 174.99 ZAE 171.55 ETE 40.50 ZAC 101.42 ETC 277.87 LVI -19.51

PLANETOCENTRIC CONIC

C3 20.924 VHL 4.574 DLA -23.46 RAL 342.77 RAD 6643.2 VEL 11.871 PTH 6.88 VHP 7.479 DPA -19.71 RAP 320.94 ECC 1.3444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 15	2665.37	-15.56	73.65	200.88	135.55	18 4 40	1665.4	2.73	57.67
60.00	18 29 24	2481.47	-10.24	62.06	205.85	129.19	19 10 45	1481.5	5.84	44.09
70.00	19 37 30	2222.47	-4.92	45.03	209.82	123.84	20 34 32	1222.5	9.02	25.46
80.00	21 43 3	1892.11	-.42	22.74	212.61	119.86	22 14 35	892.1	11.76	2.01
90.00	23 23 4	1569.53	1.53	.10	213.70	118.24	23 49 13	569.5	12.95	338.89
100.00	0 29 51	1366.58	-.42	344.11	212.61	119.86	0 52 37	366.6	11.76	323.38
110.00	1 0 52	1269.29	-4.92	333.95	209.82	123.84	1 22 1	269.3	9.02	314.38

DIFFERENTIAL CORRECTIONS

TDE -.4642 TRA-1.0557 TC3 .1443 BAU .0637
RDE -.3989 RRA .1214 RC3 .1760 FAU .05315
FDE .4060 FRA 1.7266 FC3-2.1991 BSP 2604
BDE .6273 BRA 1.0627 BC3 .2275 FSP 393

MID-COURSE EXECUTION ACCURACY

SGT 1569.4 SGR 550.5 SG3 271.4
RRT .0987 RRF -.1082 RTF -.8059
SGB 1663.2 R23 -.0177 R13 -.8062
SG1 1570.5 SG2 547.4 THA 2.26

ORBIT DETERMINATION ACCURACY

ST 37.2 SR 25.1 SS 28.2
CRT .7527 CRS .5000 CST .9448
LSA 49.6 MSA 18.8 SSA 1.2
EL1 42.5 EL2 14.5 ALF 30.87

LAUNCH DATE APR 28 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 353.187 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.454 GAL -2.68 AZL 92.02 HCA 118.73 SMA 206.34 ECC .27383 INC 2.0230 V1 29.584
RP 206.67 LAP -1.77 LOP 335.81 VP 25.320 GAP 15.89 AZP 89.03 TAL 347.49 TAP 106.21 RCA 149.84 APO 262.85 V2 26.496
RC 63.888 GL -15.29 GP 1.51 ZAL 116.79 ZAP 162.72 ETS 175.13 ZAE 171.39 ETE 39.03 ZAC 101.44 ETC 277.91 LVI -19.63

PLANETOCENTRIC CONIC

C3 20.023 VHL 4.475 DLA -23.86 RAL 342.82 RAD 6642.8 VEL 11.834 PTH 6.85 VHP 7.250 DPA -19.58 RAP 321.14 ECC 1.3295

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 21	2646.18	-14.62	72.79	200.46	135.80	18 6 27	1646.2	3.69	56.87
60.00	18 32 13	2460.36	-9.33	61.02	205.42	129.39	19 13 13	1460.4	6.76	43.07
70.00	20 1 22	2198.27	-4.00	43.76	209.42	123.95	20 38 0	1198.3	9.92	24.16
80.00	21 48 22	1863.35	.55	21.16	212.25	119.85	22 19 26	863.4	12.66	.35
90.00	23 29 21	1537.67	2.55	358.32	213.36	118.17	23 54 59	537.7	13.87	337.01
100.00	0 35 10	1337.82	.55	342.53	212.25	119.85	0 57 28	337.8	12.66	321.72
110.00	1 4 44	1245.09	-4.00	332.68	209.42	123.95	1 25 29	245.1	9.92	313.08

DIFFERENTIAL CORRECTIONS

TDE -.4773 TRA-1.0427 TC3 .1645 BAU .0664
RDE -.3865 RRA .1143 RC3 .1858 FAU .05543
FDE .4157 FRA 1.8020 FC3-2.3968 BSP 2645
BDE .6141 BRA 1.0490 BC3 .2481 FSP 423

MID-COURSE EXECUTION ACCURACY

SGT 1589.5 SGR 546.0 SG3 289.8
RRT .1075 RRF -.1181 RTF -.8111
SGB 1680.6 R23 -.0195 R13 -.8115
SG1 1590.7 SG2 542.5 THA 2.39

ORBIT DETERMINATION ACCURACY

ST 37.6 SR 24.9 SS 29.0
CRT .7528 CRS .4931 CST .9422
LSA 50.1 MSA 18.9 SSA 1.3
EL1 42.7 EL2 14.4 ALF 30.26

LAUNCH DATE APR 28 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 356.743 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.369 GAL -2.59 AZL 92.03 HCA 119.99 SMA 204.54 ECC .26725 INC 2.0345 V1 29.584
RP 206.68 LAP -1.76 LOP 337.08 VP 25.207 GAP 15.49 AZP 88.98 TAL 347.66 TAP 107.65 RCA 149.88 APO 259.20 V2 26.496
RC 64.956 GL -15.67 GP 1.57 ZAL 116.62 ZAP 161.65 ETS 175.25 ZAE 171.30 ETE 37.91 ZAC 101.48 ETC 277.96 LVI -19.74

PLANETOCENTRIC CONIC

C3 19.192 VHL 4.381 DLA -24.26 RAL 342.87 RAD 6642.5 VEL 11.799 PTH 6.82 VHP 7.029 DPA -19.46 RAP 321.31 ECC 1.3158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 27	2627.32	-13.70	71.94	200.06	136.02	18 8 14	1627.3	4.64	56.08
60.00	18 35 4	2439.53	-8.43	60.00	205.03	129.56	19 15 43	1439.5	7.67	42.06
70.00	20 5 19	2174.19	-3.08	42.50	209.05	124.03	20 41 33	1174.2	10.81	22.86
80.00	21 53 54	1834.35	1.54	19.57	211.92	119.82	22 24 28	834.3	13.56	358.67
90.00	23 35 58	1505.18	3.60	356.50	213.06	118.07	24 1 3	505.2	14.79	335.07
100.00	0 40 42	1308.82	1.54	340.94	211.92	119.82	1 2 31	308.8	13.56	320.03
110.00	1 8 41	1221.01	-3.08	331.41	209.05	124.03	1 29 2	221.0	10.81	311.78

DIFFERENTIAL CORRECTIONS

TDE -.4707 TRA-1.0294 TC3 .1839 BAU .0689
RDE -.3745 RRA .1073 RC3 .1958 FAU .05783
FDE .4256 FRA 1.8813 FC3-2.6089 BSP 2693
BDE .6015 BRA 1.0350 BC3 .2686 FSP 456

MID-COURSE EXECUTION ACCURACY

SGT 1608.1 SGR 541.3 SG3 309.3
RRT .1171 RRF -.1288 RTF -.8.57
SGB 1696.7 R23 -.0214 R13 -.8162
SG1 1609.5 SG2 537.2 THA 2.54

ORBIT DETERMINATION ACCURACY

ST 37.9 SR 24.6 SS 29.9
CRT .7533 CRS .4662 CST .9393
LSA 50.7 MSA 19.1 SSA 1.3
EL1 42.9 EL2 14.3 ALF 29.67

LAUNCH DATE APR 28 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 360.351 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.289 GAL -2.51 AZL 92.05 HCA 121.26 SMA 202.87 ECC .26106 INC 2.0462 V1 29.584
RP 206.70 LAP -1.75 LOP 338.35 VP 25.099 GAP 15.10 AZP 88.94 TAL 347.83 TAP 109.09 RCA 149.91 APO 255.83 V2 26.494
RC 66.082 GL -16.06 GP 1.64 ZAL 116.44 ZAP 160.55 ETS 175.35 ZAE 171.25 ETE 37.12 ZAC 101.52 ETC 277.99 LVI -19.85

PLANETOCENTRIC CONIC

C3 18.424 VHL 4.292 DLA -24.67 RAL 342.91 RAD 6642.1 VEL 11.766 PTH 6.79 VHP 6.815 DPA -19.35 RAP 321.45 ECC 1.3032

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 35	2608.82	-12.79	71.13	199.70	136.23	18 10 4	1608.8	5.56	55.30
60.00	18 37 58	2418.97	-7.54	58.99	204.67	129.71	19 18 17	1419.0	8.56	41.05
70.00	20 9 22	2150.23	-2.17	41.24	208.71	124.09	20 45 12	1150.2	11.68	21.56
80.00	21 59 40	1805.05	2.53	17.96	211.64	119.78	22 29 45	805.1	14.45	356.95
90.00	23 42 57	1471.94	4.66	354.64	212.81	117.92	24 7 29	471.9	15.72	333.07
100.00	0 46 27	1279.53	2.53	339.33	211.64	119.78	1 7 47	279.5	14.45	318.32
110.00	1 12 44	1197.05	-2.17	330.16	208.71	124.09	1 32 41	197.1	11.68	310.48

DIFFERENTIAL CORRECTIONS

TDE -.4635 TRA-1.0150 TC3 .2034 BAU .0713
RDE -.3630 RRA .1003 RC3 .2063 FAU .06041
FDE .4351 FRA 1.9641 FC3-2.8388 BSP 2726
BDE .5887 BRA 1.0199 BC3 .2897 FSP 490

MID-COURSE EXECUTION ACCURACY

SGT 1623.6 SGR 536.4 SG3 330.1
RRT .1275 RRF -.1405 RTF -.8199
SGB 1709.9 R23 -.0236 R13 -.8203
SG1 1625.2 SG2 531.5 THA 2.70

ORBIT DETERMINATION ACCURACY

ST 38.2 SR 24.3 SS 30.8
CRT .7539 CRS .4790 CST .9362
LSA 51.2 MSA 19.2 SSA 1.3
EL1 43.0 EL2 14.2 ALF 29.14

LAUNCH DATE APR 28 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 15 1971

DISTANCE 364.008

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.214 GAL -2.43 AZL 92.06 HCA 122.93 SMA 201.32 ECC .25522 INC 2.0583 V1 29.564
RP 206.72 LAP -1.74 LOP 339.62 VP 24.996 GAP 14.71 AZP 88.89 TAL 348.00 TAP 110.54 RCA 149.94 APO 252.71 V2 26.491
RC 67.265 GL -16.45 GP 1.71 ZAL 116.25 ZAP 159.42 ETS 175.44 ZAE 171.27 ETE 36.66 ZAC 101.57 ETC 278.02 LVI -19.96

PLANETOCENTRIC CONIC

C3 17.714 VHL 4.209 DLA -25.08 RAL 342.94 RAD 6641.8 VEL 11.736 PTH 6.77 VHP 6.608 DPA -15.24 RAP 321.57 ECC 1.2915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 44	2590.63	-11.90	70.33	199.36	136.42	18 11 54	1590.6	6.47	54.53
60.00	18 40 54	2398.67	-6.65	58.01	204.34	129.84	19 20 53	1398.7	9.44	40.06
70.00	20 13 32	2126.35	-1.25	40.00	208.41	124.13	20 48 58	1126.3	12.55	20.25
80.00	22 5 41	1775.33	3.53	16.33	211.38	119.67	22 35 16	775.3	15.34	355.20
90.00	23 50 23	1437.66	5.75	352.71	212.60	117.74	24 14 20	437.7	16.65	330.98
100.00	0 52 29	1249.80	3.53	337.69	211.38	119.67	1 13 18	249.8	15.34	316.57
110.00	1 16 54	1173.16	-1.25	328.92	208.41	124.13	1 36 27	173.2	12.55	309.17

DIFFERENTIAL CORRECTIONS

DDE -.4432 TRA -.9871 TC3 .2527 BAU .0789
RDE -.3516 RRA .0934 RC3 .2174 FAU .06327
FDE .4428 FRA 2.0498 FC3-3.0923 BSP 2591
BDE .5658 BRA .9915 BC3 .3333 FSP 524

MID-COURSE EXECUTION ACCURACY

SGT 1615.8 SGR 531.3 SG3 352.3
RRT .1391 RRF -.1533 RTF -.8330
SGB 1700.9 R23 -.0240 R13 -.8335
SG1 1617.7 SG2 525.6 THA 2.93

ORBIT DETERMINATION ACCURACY

ST 37.5 SR 24.0 SS 31.6
CRT .7496 CRS .4703 CST .9351
LSA 51.0 MSA 19.4 SSA 1.2
EL1 42.2 EL2 14.1 ALF 29.24

LAUNCH DATE APR 28 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 17 1971

DISTANCE 367.708

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.143 GAL -2.38 AZL 92.07 HCA 123.80 SMA 199.90 ECC .24975 INC 2.0707 V1 29.564
RP 206.75 LAP -1.72 LOP 340.89 VP 24.898 GAP 14.33 AZP 88.85 TAL 348.18 TAP 111.98 RCA 149.97 APO 249.82 V2 26.487
RC 68.502 GL -16.84 GP 1.78 ZAL 116.06 ZAP 158.26 ETS 175.52 ZAE 171.36 ETE 36.52 ZAC 101.63 ETC 278.05 LVI -20.06

PLANETOCENTRIC CONIC

C3 17.061 VHL 4.131 DLA -25.49 RAL 342.98 RAD 6641.5 VEL 11.709 PTH 6.74 VHP 6.408 DPA -15.13 RAP 321.66 ECC 1.2808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 30 54	2572.90	-11.02	69.55	199.06	136.58	18 13 47	1572.9	7.36	53.78
60.00	18 43 53	2378.78	-5.78	57.05	204.04	129.95	19 23 32	1378.8	10.29	39.08
70.00	20 17 46	2102.73	-.35	38.77	208.14	124.15	20 52 49	1102.7	13.40	18.95
80.00	22 11 57	1745.37	4.54	14.67	211.18	119.54	22 41 2	745.4	16.23	353.41
90.00	0 2 13	1402.42	6.86	350.72	212.45	117.50	0 25 36	402.4	17.56	328.82
100.00	0 58 45	1219.84	4.54	336.04	211.18	119.54	1 19 5	219.8	16.23	314.78
110.00	1 21 9	1149.54	-.35	327.68	208.14	124.15	1 40 18	149.5	13.40	307.87

DIFFERENTIAL CORRECTIONS

TDE -.4422 TRA -.9782 TC3 .2559 BAU .0782
RDE -.3409 RRA .0864 RC3 .2283 FAU .06612
FDE .4528 FRA 2.1428 FC3-3.3550 BSP 2703
BDE .5563 BRA .9820 BC3 .3429 FSP 565

MID-COURSE EXECUTION ACCURACY

SGT 1637.2 SGR 526.1 SG3 375.8
RRT .1513 RRF -.1671 RTF -.8314
SGB 1719.6 R23 -.0276 R13 -.8320
SG1 1639.3 SG2 519.4 THA 3.09

ORBIT DETERMINATION ACCURACY

ST 38.1 SR 23.7 SS 32.8
CRT .7531 CRS .4634 CST .9304
LSA 51.8 MSA 19.5 SSA 1.3
EL1 42.6 EL2 13.9 ALF 28.46

LAUNCH DATE APR 28 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 19 1971

DISTANCE 371.449

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.076 GAL -2.28 AZL 92.08 HCA 125.07 SMA 198.57 ECC .24460 INC 2.0835 V1 29.564
RP 206.79 LAP -1.71 LOP 342.16 VP 24.804 GAP 13.98 AZP 88.80 TAL 348.35 TAP 113.42 RCA 150.00 APO 247.14 V2 26.483
RC 69.791 GL -17.23 GP 1.86 ZAL 115.87 ZAP 157.08 ETS 175.59 ZAE 171.50 ETE 36.71 ZAC 101.70 ETC 278.07 LVI -20.16

PLANETOCENTRIC CONIC

C3 16.459 VHL 4.057 DLA -25.90 RAL 343.01 RAD 6641.2 VEL 11.683 PTH 6.72 VHP 6.215 DPA -15.02 RAP 321.72 ECC 1.2709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 5	2585.56	-10.16	68.80	198.78	136.74	18 15 41	1555.6	8.22	53.04
60.00	18 46 54	2359.21	-4.93	56.10	203.77	130.05	19 26 14	1359.2	11.13	38.10
70.00	20 22 8	2079.25	.55	37.54	207.91	124.15	20 56 47	1079.2	14.23	17.64
80.00	22 18 32	1714.92	5.56	12.99	211.02	119.38	22 47 7	714.9	17.11	351.58
90.00	0 10 44	1365.73	8.01	348.63	212.34	117.21	0 33 30	365.7	18.52	326.54
100.00	1 5 19	1189.39	5.56	334.36	211.02	119.38	1 25 9	189.4	17.11	312.95
110.00	1 29 30	1126.07	.55	326.46	207.91	124.15	1 44 16	126.1	14.23	306.56

DIFFERENTIAL CORRECTIONS

TDE -.4386 TRA -.9657 TC3 .2648 BAU .0786
RDE -.3305 RRA .0794 RC3 .2397 FAU .06918
FDE .4635 FRA 2.2407 FC3-3.6390 BSP 2769
BDE .5492 BRA .9890 BC3 .3571 FSP 608

MID-COURSE EXECUTION ACCURACY

SGT 1651.9 SGR 520.8 SG3 400.8
RRT .1648 RRF -.1826 RTF -.8317
SGB 1732.0 R23 -.0312 R13 -.8324
SG1 1654.3 SG2 512.9 THA 3.29

ORBIT DETERMINATION ACCURACY

ST 38.4 SR 23.4 SS 33.4
CRT .7562 CRS .4673 CST .9261
LSA 52.5 MSA 19.6 SSA 1.3
EL1 42.8 EL2 13.7 ALF 27.85

LAUNCH DATE APR 28 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 21 1971

DISTANCE 375.227

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 33.013 GAL -2.21 AZL 92.10 HCA 126.34 SMA 197.34 ECC .23976 INC 2.0967 V1 29.564
RP 206.84 LAP -1.69 LOP 343.43 VP 24.713 GAP 13.60 AZP 88.76 TAL 348.51 TAP 114.85 RCA 150.03 APO 244.66 V2 26.477
RC 71.130 GL -17.62 GP 1.95 ZAL 115.68 ZAP 155.87 ETS 175.65 ZAE 171.71 ETE 37.27 ZAC 101.77 ETC 278.09 LVI -20.26

PLANETOCENTRIC CONIC

C3 15.904 VHL 3.988 DLA -26.31 RAL 343.08 RAD 6641.0 VEL 11.660 PTH 6.70 VHP 6.028 DPA -14.93 RAP 321.79 ECC 1.2617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 18	2538.62	-9.32	68.07	198.54	136.87	18 17 36	1538.6	9.07	52.31
60.00	18 49 59	2339.99	-4.08	55.18	203.54	130.13	19 28 59	1340.0	11.96	37.15
70.00	20 26 35	2055.93	1.44	36.32	207.71	124.13	21 0 51	1055.9	15.06	16.34
80.00	22 25 27	1683.69	6.59	11.27	210.90	119.19	22 53 31	683.9	17.98	349.69
90.00	0 20 1	1327.11	9.20	346.43	212.30	116.86	0 42 8	327.1	19.48	324.11
100.00	1 12 15	1158.36	6.59	332.63	210.90	119.19	1 31 33	158.4	17.98	311.06
110.00	1 29 58	1102.75	1.44	325.24	207.71	124.13	1 48 20	102.7	15.06	305.25

DIFFERENTIAL CORRECTIONS

TDE -.4334 TRA -.9514 TC3 .2746 BAU .0792
RDE -.3204 RRA .0724 RC3 .2514 FAU .07243
FDE .4739 FRA 2.3445 FC3-3.9427 BSP 2816
BDE .5390 BRA .9542 BC3 .3723 FSP 653

MID-COURSE EXECUTION ACCURACY

SGT 1661.6 SGR 515.3 SG3 427.4
RRT .1795 RRF -.1993 RTF -.8324
SGB 1739.7 R23 -.0352 R13 -.8332
SG1 1664.4 SG2 506.1 THA 3.51

ORBIT DETERMINATION ACCURACY

ST 38.6 SR 23.1 SS 34.4
CRT .7590 CRS .4508 CST .9217
LSA 53.1 MSA 19.8 SSA 1.3
EL1 42.9 EL2 13.5 ALF 27.33

LAUNCH DATE APR 28 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC — DISTANCE 379.039 — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.954 GAL -2.15 AZL 92.11 HCA 127.60 SMA 196.20 ECC .23822 INC 2.1103 V1 29.584
RP 206.90 LAP -1.67 LOP 344.69 VP 24.627 GAP 15.25 AZP 88.71 TAL 348.68 TAP 116.28 RCA 150.05 APO 242.35 V2 26.470
RC 72.917 GL -18.00 GP 2.03 ZAL 115.49 ZAP 154.63 ETS 175.71 ZAE 171.97 ETE 38.25 ZAC 101.86 ETC 278.09 LVI -20.35

PLANETOCENTRIC CONIC

C3 15.393 VHL 3.923 DLA -26.72 RAL 343.08 RAD 6640.7 VEL 11.638 PTH 6.68 VHP 5.848 DPA -14.83 RAP 321.75 ECC 1.2533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 32	2522.10	-8.50	67.36	198.32	136.99	18 19 34	1522.1	9.89	51.60
60.00	18 53 5	2321.14	-3.26	54.27	203.33	130.19	19 31 47	1321.1	12.76	36.20
70.00	20 31 10	2032.77	2.32	35.11	207.55	124.08	21 5 2	1032.8	15.86	15.03
80.00	22 32 46	1652.14	7.64	9.49	210.83	118.95	23 0 18	652.1	18.86	347.74
90.00	0 30 17	1285.64	10.46	344.05	212.33	116.42	0 51 43	285.8	20.46	321.48
100.00	1 19 34	1126.61	7.64	330.86	210.83	118.95	1 38 20	126.6	18.86	309.11
110.00	1 34 32	1079.59	2.32	324.03	207.55	124.08	1 52 32	79.6	15.86	303.95

DIFFERENTIAL CORRECTIONS

TDE -.4269 TRA -.9347 TC3 .2852 BAU .0789
RDE -.3107 RRA .0653 RC3 .2635 FAU .07589
FDE .4844 FRA 2.4530 FC3-4.2681 BSP 2834
BDE .5280 BRA .9370 BC3 .3883 FSP 701

MID-COURSE EXECUTION ACCURACY

SGT 1665.6 SGR 509.9 SG3 455.6
RRT .1954 RRF -.2177 RTF -.8334
SGB 1741.9 R23 -.0395 R13 -.8344
SG1 1668.9 SG2 499.1 THA 3.76

ORBIT DETERMINATION ACCURACY

ST 38.7 SR 22.7 SS 35.3
CRT .7619 CRS .4446 CST .9172
LSA 53.5 MSA 19.9 SSA 1.3
EL1 42.9 EL2 13.3 ALF 26.92

LAUNCH DATE APR 28 1971 FLIGHT TIME 150.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC — DISTANCE 382.864 — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.898 GAL -2.09 AZL 92.12 HCA 128.87 SMA 195.18 ECC .23095 INC 2.1244 V1 29.584
RP 206.96 LAP -1.65 LOP 345.96 VP 24.544 GAP 12.90 AZP 88.67 TAL 348.84 TAP 117.71 RCA 150.08 APO 240.22 V2 26.462
RC 73.950 GL -18.39 GP 2.13 ZAL 115.30 ZAP 153.36 ETS 175.75 ZAE 172.30 ETE 39.71 ZAC 101.95 ETC 278.10 LVI -20.44

PLANETOCENTRIC CONIC

C3 14.922 VHL 3.863 DLA -27.12 RAL 343.12 RAD 6640.5 VEL 11.618 PTH 6.66 VHP 5.674 DPA -14.74 RAP 321.71 ECC 1.2456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 39 48	2506.02	-7.70	66.68	198.13	137.10	18 21 34	1506.0	10.68	50.90
60.00	18 56 15	2302.65	-2.44	53.39	203.17	130.24	19 34 38	1302.7	13.54	35.26
70.00	20 35 51	2009.78	3.20	33.91	207.43	124.02	21 9 21	1009.8	16.66	13.72
80.00	22 40 32	1619.46	8.71	7.66	210.81	118.67	23 7 32	619.5	19.74	345.71
90.00	0 41 56	1240.66	11.82	341.43	212.44	115.88	1 2 37	240.7	21.48	318.56
100.00	1 27 20	1093.93	8.71	329.03	210.81	118.67	1 45 34	93.9	19.74	307.08
110.00	1 39 13	1056.60	3.20	322.83	207.43	124.02	1 56 50	56.6	16.66	302.64

DIFFERENTIAL CORRECTIONS

TDE -.4208 TRA -.9176 TC3 .2930 BAU .0803
RDE -.3013 RRA .0581 RC3 .2761 FAU .07951
FDE .4963 FRA 2.5686 FC3-4.6131 BSP 2845
BDE .5175 BRA .9195 BC3 .4026 FSP 752

MID-COURSE EXECUTION ACCURACY

SGT 1667.1 SGR 504.5 SG3 485.4
RRT .2128 RRF -.2379 RTF -.8340
SGB 1741.8 R23 -.0445 R13 -.8351
SG1 1670.9 SG2 491.9 THA 4.04

ORBIT DETERMINATION ACCURACY

ST 38.7 SR 22.4 SS 36.4
CRT .7656 CRS .4398 CST .9127
LSA 54.1 MSA 20.0 SSA 1.3
EL1 42.8 EL2 13.0 ALF 26.53

LAUNCH DATE APR 28 1971 FLIGHT TIME 152.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC — DISTANCE 386.758 — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.846 GAL -2.03 AZL 92.14 HCA 130.13 SMA 194.16 ECC .22695 INC 2.1390 V1 29.584
RP 207.04 LAP -1.64 LOP 347.23 VP 24.465 GAP 12.56 AZP 88.62 TAL 349.00 TAP 119.13 RCA 150.10 APO 238.23 V2 26.494
RC 75.426 GL -18.78 GP 2.23 ZAL 115.11 ZAP 152.05 ETS 175.79 ZAE 172.67 ETE 41.75 ZAC 102.06 ETC 278.09 LVI -20.53

PLANETOCENTRIC CONIC

C3 14.489 VHL 3.806 DLA -27.53 RAL 343.17 RAD 6640.3 VEL 11.599 PTH 6.64 VHP 5.506 DPA -14.66 RAP 321.64 ECC 1.2385

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 42 5	2490.37	-6.92	66.01	197.98	137.19	18 23 36	1490.4	11.46	50.22
60.00	18 59 28	2284.56	-1.65	52.53	203.03	130.27	19 37 32	1284.6	14.30	34.34
70.00	20 40 40	1986.96	4.07	32.72	207.35	123.94	21 13 47	987.0	17.43	12.41
80.00	22 48 52	1585.60	9.81	5.75	210.84	118.34	23 15 18	585.6	20.62	343.59
90.00	0 55 47	1189.01	13.34	338.39	212.66	115.17	1 15 36	189.0	22.58	315.17
100.00	1 35 40	1060.07	9.81	327.12	210.84	118.34	1 53 20	60.1	20.62	304.95
110.00	1 44 2	1033.78	4.07	321.63	207.35	123.94	2 1 16	33.8	17.43	301.33

DIFFERENTIAL CORRECTIONS

TDE -.4136 TRA -.8988 TC3 .2993 BAU .0806
RDE -.2922 RRA .0509 RC3 .2891 FAU .08339
FDE .5070 FRA 2.6895 FC3-4.9822 BSP 2845
BDE .5064 BRA .9002 BC3 .4161 FSP 805

MID-COURSE EXECUTION ACCURACY

SGT 1663.4 SGR 499.3 SG3 517.0
RRT .2314 RRF -.2598 RTF -.8342
SGB 1736.7 R23 -.0502 R13 -.8355
SG1 1667.7 SG2 484.5 THA 4.34

ORBIT DETERMINATION ACCURACY

ST 38.6 SR 22.0 SS 37.4
CRT .7695 CRS .4344 CST .9078
LSA 54.5 MSA 20.2 SSA 1.3
EL1 42.6 EL2 12.8 ALF 26.22

LAUNCH DATE APR 28 1971 FLIGHT TIME 154.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC — DISTANCE 390.659 — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.797 GAL -1.97 AZL 92.15 HCA 131.40 SMA 193.25 ECC .22320 INC 2.1541 V1 29.584
RP 207.12 LAP -1.62 LOP 348.49 VP 24.388 GAP 12.23 AZP 88.57 TAL 349.15 TAP 120.55 RCA 150.12 APO 236.39 V2 26.444
RC 76.944 GL -19.16 GP 2.34 ZAL 114.93 ZAP 150.71 ETS 175.82 ZAE 173.09 ETE 44.52 ZAC 102.17 ETC 278.08 LVI -20.61

PLANETOCENTRIC CONIC

C3 14.092 VHL 3.754 DLA -27.93 RAL 343.22 RAD 6640.1 VEL 11.582 PTH 6.63 VHP 5.344 DPA -14.58 RAP 321.53 ECC 1.2319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 44 24	2475.17	-6.16	65.37	197.85	137.27	18 25 40	1475.2	12.21	49.56
60.00	19 2 43	2266.87	-.87	51.68	202.93	130.29	19 40 30	1266.9	15.04	33.43
70.00	20 45 36	1964.29	4.93	31.53	207.30	123.84	21 18 21	964.3	18.20	11.09
80.00	22 57 53	1550.13	10.95	3.73	210.94	117.95	23 23 43	550.1	21.51	341.33
90.00	1 14 0	1123.89	15.19	334.50	213.06	114.15	1 32 43	123.9	23.84	310.82
100.00	1 44 41	1024.60	10.95	325.10	210.94	117.95	2 1 46	24.6	21.51	302.70
110.00	1 48 59	1011.11	4.93	320.44	207.30	123.84	2 5 50	11.1	18.20	300.01

DIFFERENTIAL CORRECTIONS

TDE -.4060 TRA -.8787 TC3 .3011 BAU .0804
RDE -.2833 RRA .0435 RC3 .3026 FAU .08743
FDE .5163 FRA 2.8160 FC3-5.3709 BSP 2839
BDE .4950 BRA .8798 BC3 .4269 FSP 862

MID-COURSE EXECUTION ACCURACY

SGT 1655.0 SGR 494.2 SG3 550.1
RRT .2508 RRF -.2831 RTF -.8335
SGB 1727.2 R23 -.0570 R13 -.8351
SG1 1660.1 SG2 476.9 THA 4.67

ORBIT DETERMINATION ACCURACY

ST 38.4 SR 21.7 SS 38.4
CRT .7738 CRS .4286 CST .9022
LSA 54.8 MSA 20.3 SSA 1.3
EL1 42.3 EL2 12.5 ALF 25.96

LAUNCH DATE APR 28 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 1 1971

DISTANCE 394.585

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.751 GAL -1.92 AZL 92.17 HCA 132.66 SMA 192.41 ECC .21969 INC 2.1698 V1 29.584
RP 207.21 LAP -1.60 LOP 349.75 VP 24.314 GAP 11.91 AZP 88.53 TAL 349.29 TAP 121.95 RCA 150.14 APO 234.68 V2 26.433
RC 78.502 GL -19.54 GP 2.45 ZAL 114.76 ZAP 149.33 ETS 175.85 ZAE 173.54 ETE 48.22 ZAC 102.30 ETC 278.06 LVI -20.69

PLANETOCENTRIC CONIC

C3 13.728 VHL 3.705 DLA -28.32 RAL 343.28 RAD 6639.9 VEL 11.567 PTH 6.61 VHP 5.189 DPA -14.51 RAP 321.39 ECC 1.2259

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 46	2460.42	-5.42	64.74	197.76	137.34	18 27 46	1460.4	12.93	48.91
60.00	19 6 1	2249.58	-.11	50.85	202.86	130.30	19 43 31	1249.6	15.76	32.54
70.00	20 50 41	1941.78	5.78	30.34	207.29	123.72	21 23 3	941.8	18.95	9.78
80.00	23 7 48	1512.42	12.15	1.57	211.10	117.49	23 33 0	512.4	22.42	338.90
88.42	1 40 9	1033.80	18.74	329.49	214.23	111.63	1 57 23	33.8	26.02	304.82
100.00	1 54 36	6274.93	12.15	300.85	211.10	117.49	3 39 11	5274.9	22.42	278.17
110.00	1 54 3	6276.64	5.78	297.17	207.29	123.72	3 38 40	5276.6	18.95	276.60

DIFFERENTIAL CORRECTIONS

TDE -.3992 TRA -.8581 TC3 .2998 BAU .0800
RDE -.2748 RRA .0360 RC3 .3166 FAU .09174
FDE .5276 FRA 2.9511 FC3-5.7855 BSP 2819
BDE .4847 BRA .8589 BC3 .4360 FSP 922

MID-COURSE EXECUTION ACCURACY

SGT 1644.0 SGR 489.5 SG3 585.5
RRT .2725 RRF -.3091 RTF -.8321
SGB 1715.4 R23 -.0647 R13 -.8340
SG1 1649.9 SG2 469.3 THA 5.05

ORBIT DETERMINATION ACCURACY

ST 38.3 SR 21.3 SS 39.5
CRT .7796 CRS .4247 CST .8963
LSA 55.3 MSA 20.5 SSA 1.3
EL1 42.1 EL2 12.1 ALF 25.72

LAUNCH DATE APR 28 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 3 1971

DISTANCE 398.534

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.707 GAL -1.88 AZL 92.19 HCA 133.92 SMA 191.62 ECC .21640 INC 2.1861 V1 29.584
RP 207.31 LAP -1.57 LOP 351.02 VP 24.244 GAP 11.59 AZP 88.48 TAL 349.43 TAP 123.35 RCA 150.16 APO 233.09 V2 26.422
RC 80.098 GL -19.92 GP 2.57 ZAL 114.59 ZAP 147.91 ETS 175.88 ZAE 173.99 ETE 53.10 ZAC 102.44 ETC 278.03 LVI -20.77

PLANETOCENTRIC CONIC

C3 13.395 VHL 3.660 DLA -28.71 RAL 343.34 RAD 6639.7 VEL 11.553 PTH 6.60 VHP 5.039 DPA -14.44 RAP 321.21 ECC 1.2204

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 49 9	2446.12	-4.70	64.14	197.69	137.40	18 29 55	1446.1	13.63	48.28
60.00	19 9 23	2232.67	.64	50.05	202.82	130.30	19 46 35	1232.7	16.46	31.66
70.00	20 55 54	1919.37	6.62	29.16	207.33	123.58	21 27 54	919.4	19.68	8.45
80.00	23 18 58	1471.29	13.43	359.19	211.35	116.92	23 43 30	471.3	23.36	336.21
84.83	1 10 34	1125.03	19.13	336.34	214.04	111.83	1 29 19	125.0	26.45	311.60
100.00	2 5 46	6233.80	13.43	298.46	211.35	116.92	3 49 40	5233.8	23.36	275.48
110.00	1 59 17	6254.23	6.62	295.98	207.33	123.58	3 43 31	5254.2	19.68	275.28

DIFFERENTIAL CORRECTIONS

TDE -.3879 TRA -.8309 TC3 .3065 BAU .0808
RDE -.2664 RRA .0284 RC3 .3315 FAU .09638
FDE .5357 FRA 3.0868 FC3-6.2292 BSP 2734
BDE .4706 BRA .8314 BC3 .4514 FSP 981

MID-COURSE EXECUTION ACCURACY

SGT 1618.3 SGR 485.2 SG3 622.1
RRT .2963 RRF -.3369 RTF -.8328
SGB 1689.4 R23 -.0716 R13 -.8350
SG1 1625.2 SG2 461.4 THA 5.52

ORBIT DETERMINATION ACCURACY

ST 37.6 SR 20.9 SS 40.5
CRT .7846 CRS .4198 CST .8903
LSA 55.3 MSA 20.6 SSA 1.3
EL1 41.4 EL2 11.8 ALF 25.74

LAUNCH DATE APR 28 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 5 1971

DISTANCE 402.505

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.667 GAL -1.83 AZL 92.20 HCA 135.19 SMA 190.90 ECC .21333 INC 2.2032 V1 29.584
RP 207.42 LAP -1.55 LOP 352.28 VP 24.175 GAP 11.29 AZP 88.44 TAL 349.55 TAP 124.74 RCA 150.17 APO 231.62 V2 26.409
RC 81.730 GL -20.30 GP 2.70 ZAL 114.44 ZAP 146.46 ETS 175.90 ZAE 174.43 ETE 59.47 ZAC 102.60 ETC 278.00 LVI -20.84

PLANETOCENTRIC CONIC

C3 13.091 VHL 3.618 DLA -29.09 RAL 343.42 RAD 6639.6 VEL 11.539 PTH 6.59 VHP 4.895 DPA -14.37 RAP 320.98 ECC 1.2155

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 51 34	2432.31	-4.01	63.56	197.66	137.45	18 32 6	1432.3	14.31	47.66
60.00	19 12 47	2216.24	1.36	49.26	202.82	130.28	19 49 43	1216.2	17.14	30.80
70.00	21 1 17	1897.14	7.46	27.98	207.40	123.43	21 32 54	897.1	20.40	7.13
80.00	23 32 2	1424.82	14.84	356.47	211.71	116.21	23 55 47	424.8	24.37	333.12
82.86	0 54 59	1171.29	19.50	339.90	213.69	112.03	1 14 30	171.3	26.87	315.10
100.00	2 18 50	6187.33	14.84	295.74	211.71	116.21	4 1 57	5187.3	24.37	272.40
110.00	2 4 39	6231.99	7.46	294.80	207.40	123.43	3 48 31	5232.0	20.40	273.95

DIFFERENTIAL CORRECTIONS

TDE -.3855 TRA -.8120 TC3 .2821 BAU .0782
RDE -.2586 RRA .0203 RC3 .3463 FAU .10094
FDE .5519 FRA 3.2392 FC3-6.6752 BSP 2760
BDE .4642 BRA .8122 BC3 .4486 FSP 1053

MID-COURSE EXECUTION ACCURACY

SGT 1606.1 SGR 481.4 SG3 661.1
RRT .3196 RRF -.3672 RTF -.8269
SGB 1676.7 R23 -.0846 R13 -.8293
SG1 1614.1 SG2 453.9 THA 5.94

ORBIT DETERMINATION ACCURACY

ST 37.7 SR 20.5 SS 41.7
CRT .7943 CRS .4204 CST .8833
LSA 56.1 MSA 20.8 SSA 1.3
EL1 41.4 EL2 11.3 ALF 25.40

LAUNCH DATE APR 28 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 7 1971

DISTANCE 406.496

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.629 GAL -1.79 AZL 92.22 HCA 136.44 SMA 190.22 ECC .21046 INC 2.2210 V1 29.584
RP 207.54 LAP -1.53 LOP 353.54 VP 24.109 GAP 10.98 AZP 88.39 TAL 349.67 TAP 126.11 RCA 150.19 APO 230.25 V2 26.395
RC 83.399 GL -20.68 GP 2.84 ZAL 114.29 ZAP 144.97 ETS 175.92 ZAE 174.81 ETE 67.67 ZAC 102.76 ETC 277.96 LVI -20.91

PLANETOCENTRIC CONIC

C3 12.815 VHL 3.580 DLA -29.47 RAL 343.51 RAD 6639.5 VEL 11.528 PTH 6.57 VHP 4.756 DPA -14.31 RAP 320.72 ECC 1.2109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 54 1	2418.94	-3.34	63.00	197.66	137.49	18 34 20	1418.9	14.96	47.06
60.00	19 16 15	2200.18	2.07	48.49	202.86	130.26	19 52 55	1200.2	17.80	29.95
70.00	21 6 49	1874.94	8.29	26.80	207.52	123.25	21 38 4	874.9	21.10	5.79
80.00	23 48 48	1367.21	16.54	353.04	212.24	115.21	24 11 35	367.2	25.51	329.22
81.33	0 43 15	1205.49	19.86	342.58	213.77	112.24	1 3 20	205.5	27.28	317.72
100.00	2 35 36	6129.72	16.54	292.31	212.24	115.21	4 17 45	5129.7	25.51	268.50
110.00	2 10 12	6209.80	8.29	293.62	207.52	123.25	3 53 41	5209.8	21.10	272.61

DIFFERENTIAL CORRECTIONS

TDE -.3768 TRA -.7858 TC3 .2710 BAU .0775
RDE -.2507 RRA .0120 RC3 .3623 FAU .10600
FDE .5612 FRA 3.3939 FC3-7.1615 BSP 2697
BDE .4526 BRA .7859 BC3 .4525 FSP 1123

MID-COURSE EXECUTION ACCURACY

SGT 1577.5 SGR 478.4 SG3 702.1
RRT .3451 RRF -.3994 RTF -.8231
SGB 1648.4 R23 -.0965 R13 -.8266
SG1 1586.8 SG2 446.3 THA 6.49

ORBIT DETERMINATION ACCURACY

ST 37.1 SR 20.1 SS 42.8
CRT .8023 CRS .4179 CST .8756
LSA 56.3 MSA 20.9 SSA 1.3
EL1 40.8 EL2 10.9 ALF 25.39

LAUNCH DATE APR 28 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 410.505 EARTH TO MARS

RL 130.61 LAL -.00 LOL 217.07 VL 32.394 GAL -1.75 AZL 92.24 HCA 137.70 SMA 189.59 ECC .20779 INC 2.2396 V1 29.584
RP 207.66 LAP -1.51 LOP 354.80 VP 24.045 GAP 10.69 AZP 88.34 TAL 349.78 TAP 127.48 RCA 150.20 APO 228.99 V2 26.381
RC 85.104 GL -21.05 GP 2.99 ZAL 114.15 ZAP 143.45 ETS 175.93 ZAE 175.07 ETE 77.82 ZAC 102.95 ETC 277.91 LVI -20.98

PLANETOCENTRIC CONIC

C3 12.564 VHL 3.545 DLA -29.84 RAL 343.61 RAD 6639.3 VEL 11.517 PTH 6.56 VHP 4.624 DPA -14.25 RAP 320.41 ECC 1.2068

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 56 31	2406.05	-2.69	62.46	197.69	137.52	18 36 37	1406.1	15.59	46.48
60.00	19 19 46	2184.56	2.75	47.75	202.93	130.22	19 56 11	1184.6	18.43	29.12
70.00	21 12 33	1852.82	9.11	25.61	207.68	123.06	21 43 25	852.8	21.79	4.44
80.00	0 25 55	1257.96	19.59	346.35	213.42	113.00	0 46 53	258.0	27.35	321.63
80.04	0 33 41	1233.14	20.20	344.78	213.69	112.45	0 54 14	233.1	27.67	319.87
100.00	3 8 47	6020.47	19.59	289.63	213.42	113.00	4 49 7	5020.5	27.35	260.91
110.00	2 15 55	6187.68	9.11	292.44	207.68	123.06	3 59 3	5187.7	21.79	271.27

DIFFERENTIAL CORRECTIONS

TDE -.3721 TRA -.7614 TC3 .2408 BAU .0754
RDE -.2433 RRA .0034 RC3 .3786 FAU .11103
FDE .5761 FRA 3.5588 FC3-7.6507 BSP 2668
BDE .4446 BRA .7614 BC3 .4487 FSP 1199

MID-COURSE EXECUTION ACCURACY

SGT 1550.7 SGR 476.2 SG3 744.6
RRT .3703 RRF -.4338 RTF -.8154
SGB 1622.1 R23 -.1135 R13 -.8199
SG1 1561.5 SG2 439.3 THA 7.05

ORBIT DETERMINATION ACCURACY

ST 36.8 SR 19.7 SS 44.0
CRT .8134 CRS .4198 CST .8673
LSA 56.9 MSA 21.1 SSA 1.2
EL1 40.4 EL2 10.4 ALF 28.27

LAUNCH DATE APR 28 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 414.531 EARTH TO MARS

RL 130.61 LAL -.00 LOL 217.07 VL 32.561 GAL -1.72 AZL 92.26 HCA 138.96 SMA 189.01 ECC .20529 INC 2.2590 V1 29.584
RP 207.80 LAP -1.48 LOP 356.05 VP 23.984 GAP 10.40 AZP 88.30 TAL 349.87 TAP 128.83 RCA 150.21 APO 227.82 V2 26.365
RC 86.843 GL -21.42 GP 3.14 ZAL 114.03 ZAP 141.88 ETS 175.95 ZAE 175.16 ETE 89.67 ZAC 103.14 ETC 277.85 LVI -21.04

PLANETOCENTRIC CONIC

C3 12.337 VHL 3.512 DLA -30.21 RAL 343.72 RAD 6639.2 VEL 11.507 PTH 6.55 VHP 4.497 DPA -14.20 RAP 320.06 ECC 1.2030

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 59 4	2393.59	-2.07	61.94	197.76	137.54	18 38 58	1393.6	16.19	45.91
60.00	19 23 22	2169.31	3.42	47.02	203.03	130.18	19 59 31	1169.3	19.05	28.30
70.00	21 18 29	1830.63	9.93	24.42	207.88	122.85	21 48 59	830.6	22.47	3.08
78.90	0 25 31	1256.71	20.54	346.69	213.65	112.65	0 46 28	256.7	28.06	321.71
78.90	0 25 31	1256.71	20.54	346.69	213.65	112.65	0 46 28	256.7	28.06	321.71
78.90	0 25 31	1256.71	20.54	346.69	213.65	112.65	0 46 28	256.7	28.06	321.71
110.00	2 21 51	6165.49	9.93	291.25	207.88	122.85	4 4 36	5165.5	22.47	269.90

DIFFERENTIAL CORRECTIONS

TDE -.3622 TRA -.7301 TC3 .2236 BAU .0751
RDE -.2359 RRA -.0054 RC3 .3965 FAU .11667
FDE .5845 FRA 3.7245 FC3-8.1875 BSP 2557
BDE .4322 BRA .7301 BC3 .4552 FSP 1271

MID-COURSE EXECUTION ACCURACY

SGT 1507.6 SGR 475.2 SG3 769.1
RRT .3982 RRF -.4703 RTF -.8102
SGB 1560.7 R23 -.1295 R13 -.8158
SG1 1520.5 SG2 432.2 THA 7.79

ORBIT DETERMINATION ACCURACY

ST 36.1 SR 19.2 SS 45.1
CRT .8238 CRS .4196 CST .8580
LSA 57.0 MSA 21.2 SSA 1.2
EL1 39.6 EL2 9.9 ALF 25.45

LAUNCH DATE APR 28 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 418.573 EARTH TO MARS

RL 130.61 LAL -.00 LOL 217.07 VL 32.530 GAL -1.69 AZL 92.28 HCA 140.21 SMA 188.48 ECC .20297 INC 2.2795 V1 29.584
RP 207.94 LAP -1.46 LOP 357.31 VP 23.924 GAP 10.12 AZP 88.25 TAL 349.95 TAP 130.17 RCA 150.22 APO 226.73 V2 26.349
RC 88.616 GL -21.80 GP 3.31 ZAL 113.92 ZAP 140.27 ETS 175.96 ZAE 175.00 ETE 102.20 ZAC 103.36 ETC 277.78 LVI -21.10

PLANETOCENTRIC CONIC

C3 12.133 VHL 3.483 DLA -30.57 RAL 343.85 RAD 6639.1 VEL 11.498 PTH 6.55 VHP 4.375 DPA -14.15 RAP 319.68 ECC 1.1997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 1 40	2381.61	-1.47	61.44	197.86	137.56	18 41 21	1381.6	16.77	48.36
60.00	19 27 1	2154.52	4.07	46.31	203.17	130.13	20 2 55	1154.5	19.64	27.50
70.00	21 24 38	1808.45	10.75	23.22	208.13	122.61	21 54 46	808.4	23.13	1.70
77.88	0 18 29	1277.16	20.86	348.36	213.64	112.86	0 39 46	277.2	28.44	323.33
77.88	0 18 29	1277.16	20.86	348.36	213.64	112.86	0 39 46	277.2	28.44	323.33
77.88	0 18 29	1277.16	20.86	348.36	213.64	112.86	0 39 46	277.2	28.44	323.33
110.00	2 28 0	6143.31	10.75	290.05	208.13	122.61	4 10 23	5143.3	23.13	268.53

DIFFERENTIAL CORRECTIONS

TDE -.3604 TRA -.7045 TC3 .1734 BAU .0728
RDE -.2291 RRA -.0130 RC3 .4143 FAU .12202
FDE .6049 FRA 3.9074 FC3-8.7065 BSP 2536
BDE .4270 BRA .7046 BC3 .4491 FSP 1358

MID-COURSE EXECUTION ACCURACY

SGT 1475.5 SGR 475.5 SG3 835.5
RRT .4228 RRF -.5086 RTF -.[illegible]68
SGB 1550.3 R23 -.1554 R13 -.8042
SG1 1490.4 SG2 426.6 THA 8.46

ORBIT DETERMINATION ACCURACY

ST 35.9 SR 18.9 SS 46.4
CRT .8389 CRS .4271 CST .8481
LSA 57.8 MSA 21.5 SSA 1.2
EL1 39.4 EL2 9.3 ALF 25.32

LAUNCH DATE APR 28 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 422.630 EARTH TO MARS

RL 130.61 LAL -.00 LOL 217.07 VL 32.502 GAL -1.66 AZL 92.30 HCA 141.47 SMA 187.98 ECC .20082 INC 2.3011 V1 29.584
RP 208.08 LAP -1.43 LOP 358.56 VP 23.868 GAP 9.84 AZP 88.20 TAL 350.03 TAP 131.49 RCA 150.23 APO 225.73 V2 26.332
RC 90.421 GL -22.17 GP 3.49 ZAL 113.82 ZAP 138.62 ETS 175.97 ZAE 174.59 ETE 114.17 ZAC 103.58 ETC 277.70 LVI -21.16

PLANETOCENTRIC CONIC

C3 11.951 VHL 3.457 DLA -30.92 RAL 343.99 RAD 6639.0 VEL 11.490 PTH 6.54 VHP 4.259 DPA -14.10 RAP 319.22 ECC 1.1967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 4 18	2370.06	-.89	60.96	197.99	137.57	18 43 49	1370.1	17.33	44.83
60.00	19 30 44	2140.09	4.71	45.61	203.36	130.07	20 6 24	1140.1	20.21	26.71
70.00	21 31 3	1786.06	11.57	22.01	208.43	122.36	22 0 49	786.1	23.79	.30
76.94	0 12 16	1295.47	21.18	349.88	213.68	113.08	0 33 51	295.5	28.81	324.79
76.94	0 12 16	1295.47	21.18	349.88	213.68	113.08	0 33 51	295.5	28.81	324.79
76.94	0 12 16	1295.47	21.18	349.88	213.68	113.08	0 33 51	295.5	28.81	324.79
110.00	2 34 25	6120.91	11.57	288.83	208.43	122.36	4 16 26	5120.9	23.79	267.12

DIFFERENTIAL CORRECTIONS

TDE -.3543 TRA -.6735 TC3 .1285 BAU .0722
RDE -.2223 RRA -.0249 RC3 .4334 FAU .12775
FDE .6204 FRA 4.0948 FC3-9.2544 BSP 2448
BDE .4183 BRA .6740 BC3 .4520 FSP 1442

MID-COURSE EXECUTION ACCURACY

SGT 1430.4 SGR 477.4 SG3 883.6
RRT .4474 RRF -.5482 RTF -.7839
SGB 1507.9 R23 -.1832 R13 -.7935
SG1 1447.7 SG2 421.8 THA 9.29

ORBIT DETERMINATION ACCURACY

ST 35.3 SR 18.4 SS 47.7
CRT .8536 CRS .4335 CST .8370
LSA 58.2 MSA 21.6 SSA 1.2
EL1 38.8 EL2 8.7 ALF 25.44

LAUNCH DATE APR 28 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 17 1971

DISTANCE 426.700

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.475	GAL	-1.64	AZL	92.32	HCA	142.72	SMA	187.52	ECC	.19882	INC	2.3238	V1	29.584
RP	208.24	LAP	-1.41	LOP	359.81	VP	23.810	GAP	9.57	AZP	88.15	TAL	350.09	TAP	132.80	RCA	150.24	APO	224.60	V2	26.313
RC	92.259	GL	-22.54	GP	3.68	ZAL	113.73	ZAP	136.92	ETS	175.98	ZAE	173.92	ETE	124.58	ZAC	103.83	ETC	277.62	LVI	-21.22

PLANETOCENTRIC CONIC

C3	11.790	VHL	3.434	DLA	-31.27	RAL	344.15	RAD	6639.0	VEL	11.483	PTH	6.53	VHP	4.148	DPA	-14.04	RAP	318.74	ECC	1.1940

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 7 1	2358.93	-.33	60.49	198.16	137.58	18 46 20	1358.9	17.87	44.31
60.00	19 34 33	2126.03	5.32	44.94	203.57	130.01	20 9 59	1126.0	20.77	25.94
70.00	21 37 46	1763.38	12.39	20.77	208.78	122.08	22 7 9	763.4	24.44	358.86
76.07	0 6 45	1312.05	21.48	351.26	213.75	113.29	0 28 37	312.0	29.16	326.12
76.07	0 6 45	1312.05	21.48	351.26	213.75	113.29	0 28 37	312.0	29.16	326.12
76.07	0 6 45	1312.05	21.48	351.26	213.75	113.29	0 28 37	312.0	29.16	326.12
110.00	2 41 8	6098.23	12.39	287.59	208.78	122.08	4 22 46	5098.2	24.44	265.68

DIFFERENTIAL CORRECTIONS

TDE	-.3488	TRA	-.6400	TC3	.0757	BAU	.0725												
RDE	-.2158	RRA	-.0352	RC3	.4536	FAU	.13371												
FDE	.6364	FRA	4.2864	FC3	-9.8183	BSP	2348												
BDE	.4099	BRA	.6409	BC3	.4599	FSP	1529												

MID-COURSE EXECUTION ACCURACY

SGT	1379.1	SGR	481.0	SG3	933.0						
RRT	.4695	RRF	-.5867	RTF	-.7670						
SGB	1460.6	R23	-.2171	R13	-.7799						
SG1	1399.3	SG2	418.6	THA	10.23						

ORBIT DETERMINATION ACCURACY

ST	34.6	SR	18.0	SS	49.0
CRT	.8699	CRS	.4422	CST	.8243
LSA	58.7	MSA	21.8	SSA	1.2
EL1	38.2	EL2	8.1	ALF	25.63

LAUNCH DATE APR 28 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 19 1971

DISTANCE 430.783

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.450	GAL	-1.62	AZL	92.35	HCA	143.97	SMA	187.10	ECC	.19697	INC	2.3479	V1	29.584
RP	208.41	LAP	-1.38	LOP	1.06	VP	23.755	GAP	9.31	AZP	88.10	TAL	350.13	TAP	134.10	RCA	150.24	APO	223.95	V2	26.294
RC	94.128	GL	-22.92	GP	3.88	ZAL	113.66	ZAP	135.19	ETS	175.99	ZAE	173.03	ETE	133.08	ZAC	104.09	ETC	277.52	LVI	-21.27

PLANETOCENTRIC CONIC

C3	11.648	VHL	3.413	DLA	-31.61	RAL	344.33	RAD	6638.9	VEL	11.477	PTH	6.53	VHP	4.043	DPA	-13.99	RAP	318.21	ECC	1.1917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 9 48	2348.22	.21	60.04	198.36	137.58	18 48 56	1348.2	18.38	43.81
60.00	19 38 26	2112.32	5.92	44.28	203.83	129.94	20 13 39	1112.3	21.31	25.18
70.00	21 44 50	1740.24	13.23	19.49	209.18	121.78	22 13 51	740.2	25.09	357.37
75.25	0 1 46	1327.41	21.77	352.56	213.86	113.51	0 23 53	327.4	29.51	327.37
75.25	0 1 46	1327.41	21.77	352.56	213.86	113.51	0 23 53	327.4	29.51	327.37
75.25	0 1 46	1327.41	21.77	352.56	213.86	113.51	0 23 53	327.4	29.51	327.37
110.00	2 48 13	6075.10	13.23	286.31	209.18	121.78	4 29 28	5075.1	25.09	264.20

DIFFERENTIAL CORRECTIONS

TDE	-.3427	TRA	-.6051	TC3	.0143	BAU	.0740												
RDE	-.2094	RRA	-.0463	RC3	.4748	FAU	.13975												
FDE	.6530	FRA	4.4890	FC-10	.3671	BSP	2232												
BDE	.4016	BRA	.6069	BC3	.4750	FSP	1617												

MID-COURSE EXECUTION ACCURACY

SGT	1324.3	SGR	466.8	SG3	984.3						
RRT	.4875	RRF	-.6294	RTF	-.7460						
SGB	1411.0	R23	-.2579	R13	-.7633						
SG1	1347.7	SG2	417.7	THA	11.25						

ORBIT DETERMINATION ACCURACY

ST	33.9	SR	17.6	SS	50.3
CRT	.8873	CRS	.4529	CST	.8101
LSA	59.2	MSA	22.0	SSA	1.1
EL1	37.5	EL2	7.4	ALF	25.87

LAUNCH DATE APR 28 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 21 1971

DISTANCE 434.878

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.427	GAL	-1.60	AZL	92.37	HCA	145.21	SMA	186.71	ECC	.19527	INC	2.3734	V1	29.584
RP	208.58	LAP	-1.35	LOP	2.31	VP	23.701	GAP	9.05	AZP	88.05	TAL	350.17	TAP	135.38	RCA	150.25	APO	223.16	V2	26.274
RC	96.027	GL	-23.29	GP	4.09	ZAL	113.61	ZAP	133.42	ETS	176.00	ZAE	171.97	ETE	139.80	ZAC	104.38	ETC	277.42	LVI	-21.33

PLANETOCENTRIC CONIC

C3	11.525	VHL	3.395	DLA	-31.95	RAL	344.53	RAD	6638.8	VEL	11.472	PTH	6.52	VHP	3.943	DPA	-13.94	RAP	317.63	ECC	1.1897

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 12 39	2337.88	.73	59.61	198.60	137.57	18 51 37	1337.9	18.87	43.33
60.00	19 42 26	2098.92	6.51	43.63	204.13	129.86	20 17 25	1098.9	21.83	24.43
70.00	21 52 21	1716.42	14.08	18.17	209.64	121.44	22 20 58	716.4	25.74	355.63
74.48	23 53 23	1341.61	22.05	353.77	214.01	113.73	24 15 45	341.6	29.85	328.53
74.48	23 53 23	1341.61	22.05	353.77	214.01	113.73	24 15 45	341.6	29.85	328.53
74.48	23 53 23	1341.61	22.05	353.77	214.01	113.73	24 15 45	341.6	29.85	328.53
110.00	2 58 43	6051.28	14.08	284.99	209.64	121.44	4 36 35	5051.3	25.74	262.65

DIFFERENTIAL CORRECTIONS

TDE	-.3393	TRA	-.5686	TC3	-.0469	BAU	.0771												
RDE	-.2032	RRA	-.0578	RC3	.4980	FAU	.14628												
FDE	.6689	FRA	4.6908	FC-10	.9878	BSP	2097												
BDE	.3921	BRA	.5685	BC3	.5001	FSP	1708												

MID-COURSE EXECUTION ACCURACY

SGT	1239.6	SGR	495.1	SG3	1036.7						
RRT	.5015	RRF	-.6701	RTF	-.7509						
SGB	1353.4	R23	-.3038	R13	-.7447						
SG1	1286.8	SG2	419.3	THA	12.50						

ORBIT DETERMINATION ACCURACY

ST	32.9	SR	17.2	SS	51.8
CRT	.9054	CRS	.4644	CST	.7930
LSA	59.5	MSA	22.2	SSA	1.1
EL1	36.6	EL2	6.6	ALF	26.27

LAUNCH DATE APR 28 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 23 1971

DISTANCE 438.984

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.406	GAL	-1.59	AZL	92.40	HCA	146.46	SMA	186.35	ECC	.19369	INC	2.4005	V1	29.584
RP	208.76	LAP	-1.33	LOP	3.55	VP	23.649	GAP	8.80	AZP	88.00	TAL	350.19	TAP	136.64	RCA	150.25	APO	222.44	V2	26.254
RC	97.955	GL	-23.67	GP	4.33	ZAL	113.56	ZAP	131.60	ETS	176.02	ZAE	170.75	ETE	145.05	ZAC	104.66	ETC	277.30	LVI	-21.38

PLANETOCENTRIC CONIC

C3	11.421	VHL	3.379	DLA	-32.28	RAL	344.75	RAD	6638.8	VEL	11.468	PTH	6.52	VHP	3.848	DPA	-13.88	RAP	317.00	ECC	1.1880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 18 38	2327.00	1.23	59.20	198.88	137.56	18 54 23	1327.9	19.35	42.86
60.00	19 46 33	2088.78	7.08	42.99	204.47	129.78	20 21 19	1088.8	22.34	23.69
70.00	22 0 25	1691.56	14.95	16.78	210.17	121.07	22 28 37	691.6	26.40	354.20
73.75	23 49 21	1354.99	22.32	354.92	214.21	113.95	24 11 56	355.0	30.19	329.63
73.75	23 49 21	1354.99	22.32	354.92	214.21	113.95	24 11 56	355.0	30.19	329.63
73.75	23 49 21	1354.99	22.32	354.92	214.21	113.95	24 11 56	355.0	30.19	329.63
110.00	3 3 47	6026.42	14.95	283.60	210.17	121.07	4 44 14	5026.4	26.40	261.02

DIFFERENTIAL CORRECTIONS

TDE	-.3248	TRA	-.5204	TC3	-.1041	BAU	.0815												
RDE	-.1969	RRA	-.0698	RC3	.5234	FAU	.15329												
FDE	.6712	FRA	4.8896	FC-11	.6202	BSP	1900												
BDE	.3796	BRA	.5251	BC3	.5336	FSP	1787												

MID-COURSE EXECUTION ACCURACY

SGT	1181.9	SGR	506.1	SG3	1089.9						
RRT	.5097	RRF	-.7097	RTF	-.6913						
SGB	1285.7	R23	-.3535	R13	-.7249						
SG1	1213.8	SG2	424.0	THA	14.06						

ORBIT DETERMINATION ACCURACY

ST	31.7	SR	16.8	SS	52.6
CRT	.9235	CRS	.4752	CST	.7724
LSA	59.6	MSA	22.3	SSA	1.1
EL1	35.4	EL2	5.8	ALF	26.93

LAUNCH DATE APR 26 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 443.097 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.387	GAL	-1.58	AZL	92.43	HCA	147.70	SMA	186.02	ECC	.19225	INC	2.4294
RP	208.94	LAP	-1.30	LOP	4.80	VP	23.899	GAP	8.33	AZP	87.95	TAL	350.19	TAP	137.89	RCA	150.26	APO	221.78
RC	99.910	GL	-24.05	GP	4.37	ZAL	113.54	ZAP	129.78	ETS	176.04	ZAE	169.40	ETE	149.16	ZAC	105.00	ETC	277.18

V1	29.584	V2	26.232	LVI	-21.44														

PLANETOCENTRIC CONIC

C3	11.335	VHL	3.367	DLA	-32.61	RAL	344.99	RAD	6638.7	VEL	11.464	PTH	6.51	VHP	3.759	DPA	-13.82	RAP	316.34

ECC	1.1665																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 18 37	2318.33	1.71	58.80	199.20	137.55	18 57 15	1318.3	19.80	42.40
60.00	19 50 46	2072.98	7.64	42.37	204.86	129.69	20 25 21	1073.0	22.83	22.96
70.00	22 9 8	1865.46	15.87	15.31	210.77	120.65	22 36 53	865.5	27.07	352.46
73.05	23 45 43	1367.74	22.57	356.01	214.45	114.18	24 8 31	367.7	30.51	330.69
73.05	23 45 43	1367.74	22.57	356.01	214.45	114.18	24 8 31	367.7	30.51	330.69
73.05	23 45 43	1367.74	22.57	356.01	214.45	114.18	24 8 31	367.7	30.51	330.69
110.00	3 12 30	6000.32	15.87	282.13	210.77	120.65	4 52 31	5000.3	27.07	259.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3277	TRA	-.4864	TC3	-.2203	BAU	.0893	SGT	1139.5	SGR	520.1	SG3	1144.8	ST	31.5	SR	16.5	SS	54.3
RDE	-.1918	RRA	-.0837	RC3	.5463	FAU	.15874	RRT	.4956	RRF	-.7477	RTF	-.6389	CRT	.9446	CRS	.5026	CST	.7537
FDE	.7112	FRA	5.1286	FC-12	12.1246	BSP	1870	SGB	1252.6	R23	-.4307	R13	-.6849	LSA	60.9	MSA	22.6	SSA	1.1
BDE	.3797	BRA	.4935	BC3	.5891	FSP	1910	SG1	1173.2	SG2	438.7	THA	14.87	EL1	35.3	EL2	4.8	ALF	26.88

LAUNCH DATE APR 28 1971 FLIGHT TIME 182.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 447.221 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.369	GAL	-1.57	AZL	92.46	HCA	148.94	SMA	185.72	ECC	.19093	INC	2.4603
RP	209.14	LAP	-1.27	LOP	6.04	VP	23.549	GAP	8.31	AZP	87.89	TAL	350.18	TAP	139.12	RCA	150.26	APO	221.17
RC	101.892	GL	-24.45	GP	4.64	ZAL	113.52	ZAP	127.86	ETS	176.06	ZAE	167.95	ETE	152.41	ZAC	105.35	ETC	277.05

V1	29.584	V2	26.209	LVI	-21.50														

PLANETOCENTRIC CONIC

C3	11.266	VHL	3.356	DLA	-32.93	RAL	345.26	RAD	6638.7	VEL	11.461	PTH	6.51	VHP	3.674	DPA	-13.74	RAP	315.63

ECC	1.1854																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 21 45	2309.02	2.18	58.41	199.56	137.54	19 0 14	1309.0	20.25	41.96
60.00	19 55 12	2060.32	8.19	41.75	205.29	129.60	20 29 32	1060.3	23.31	22.24
70.00	22 18 49	1637.07	16.84	13.69	211.46	120.16	22 46 6	637.1	27.76	350.55
72.37	23 42 25	1379.98	22.82	357.08	214.73	114.42	24 5 25	380.0	30.83	331.70
72.37	23 42 25	1379.98	22.82	357.08	214.73	114.42	24 5 25	380.0	30.83	331.70
72.37	23 42 25	1379.98	22.82	357.08	214.73	114.42	24 5 25	380.0	30.83	331.70
110.00	3 22 11	5971.93	16.84	280.51	211.46	120.16	5 1 43	4971.9	27.76	257.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3232	TRA	-.4416	TC3	-.3145	BAU	.0985	SGT	1075.0	SGR	537.6	SG3	1199.5	ST	30.7	SR	16.2	SS	55.7
RDE	-.1864	RRA	-.0980	RC3	.5731	FAU	.16523	RRT	.4731	RRF	-.7836	RTF	-.5810	CRT	.9631	CRS	.5255	CST	.7290
FDE	.7346	FRA	5.3526	FC-12	12.6973	BSP	1718	SGB	1202.0	R23	-.5046	R13	-.6452	LSA	61.5	MSA	22.8	SSA	1.0
BDE	.3731	BRA	.4524	BC3	.6537	FSP	2005	SG1	1111.2	SG2	458.2	THA	16.12	EL1	34.5	EL2	3.9	ALF	27.32

LAUNCH DATE APR 28 1971 FLIGHT TIME 184.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 451.353 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.353	GAL	-1.57	AZL	92.49	HCA	150.18	SMA	188.44	ECC	.18973	INC	2.4934
RP	209.34	LAP	-1.24	LOP	7.28	VP	23.500	GAP	8.07	AZP	87.84	TAL	350.16	TAP	140.34	RCA	150.26	APO	220.62
RC	103.900	GL	-24.64	GP	5.12	ZAL	113.52	ZAP	125.93	ETS	176.08	ZAE	166.40	ETE	154.99	ZAC	105.71	ETC	278.91

V1	29.584	V2	26.186	LVI	-21.56														

PLANETOCENTRIC CONIC

C3	11.214	VHL	3.349	DLA	-33.26	RAL	345.55	RAD	6638.7	VEL	11.459	PTH	6.51	VHP	3.595	DPA	-13.66	RAP	314.87

ECC	1.1846																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 25 1	2289.98	2.64	58.03	199.96	137.52	19 3 21	1300.0	20.67	41.52
60.00	19 59 46	2047.78	8.73	41.14	205.77	129.50	20 33 54	1047.8	23.78	21.52
70.00	22 29 52	1605.23	17.92	11.85	212.26	119.57	22 56 37	605.2	28.51	348.38
71.72	23 39 25	1391.82	23.06	358.11	215.06	114.66	24 2 37	391.8	31.14	332.70
71.72	23 39 25	1391.82	23.06	358.11	215.06	114.66	24 2 37	391.8	31.14	332.70
71.72	23 39 25	1391.82	23.06	358.11	215.06	114.66	24 2 37	391.8	31.14	332.70
110.00	3 33 14	5940.09	17.92	278.67	212.26	119.57	5 12 14	4940.1	28.51	255.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3185	TRA	-.3940	TC3	-.4170	BAU	.1097	SGT	1012.5	SGR	558.7	SG3	1254.4	ST	29.8	SR	15.9	SS	57.0
RDE	-.1813	RRA	-.1133	RC3	.6014	FAU	.17169	RRT	.4302	RRF	-.8165	RTF	-.5255	CRT	.9793	CRS	.5510	CST	.7001
FDE	.7578	FRA	5.5788	FC-13	12.2550	BSP	1569	SGB	1156.4	R23	-.5852	R13	-.5945	LSA	62.1	MSA	23.0	SSA	1.0
BDE	.3665	BRA	.4100	BC3	.7319	FSP	2102	SG1	1048.9	SG2	486.8	THA	17.16	EL1	33.7	EL2	2.9	ALF	27.80

LAUNCH DATE APR 28 1971 FLIGHT TIME 186.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 455.493 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.338	GAL	-1.56	AZL	92.53	HCA	151.42	SMA	185.19	ECC	.18863	INC	2.5289
RP	209.55	LAP	-1.21	LOP	8.51	VP	23.453	GAP	7.84	AZP	87.78	TAL	350.12	TAP	141.54	RCA	150.26	APO	220.12
RC	105.933	GL	-25.25	GP	5.43	ZAL	113.54	ZAP	123.96	ETS	176.11	ZAE	164.77	ETE	157.06	ZAC	106.11	ETC	276.76

V1	29.584	V2	26.162	LVI	-21.63														

PLANETOCENTRIC CONIC

C3	11.179	VHL	3.343	DLA	-33.59	RAL	345.88	RAD	6638.6	VEL	11.457	PTH	6.51	VHP	3.522	DPA	-13.57	RAP	314.08

ECC	1.1840																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 28 26	2291.16	3.08	57.66	200.41	137.50	19 6 37	1291.2	21.09	41.09
60.00	20 4 33	2035.28	9.27	40.53	206.31	129.40	20 38 29	1035.3	24.25	20.79
70.00	22 43 9	1567.32	19.18	9.63	213.21	118.81	23 9 16	567.3	29.35	345.75
71.08	23 36 42	1403.44	23.29	359.12	215.44	114.91	24 0 5	403.4	31.46	333.68
71.08	23 36 42	1403.44	23.29	359.12	215.44	114.91	24 0 5	403.4	31.46	333.68
71.08	23 36 42	1403.44	23.29	359.12	215.44	114.91	24 0 5	403.4	31.46	333.68
110.00	3 46 31	5902.17	19.18	276.46	213.21	118.81	5 24 53	4902.2	29.35	252.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3138	TRA	-.3432	TC3	-.5269	BAU	.1229	SGT	954.9	SGR	583.7	SG3	1308.8	ST	28.9	SR	15.6	SS	58.3
RDE	-.1762	RRA	-.1295	RC3	.6317	FAU	.17821	RRT	.3619	RRF	-.8464	RTF	-.4075	CRT	.9915	CRS	.5786	CST	.6653
FDE	.7797	FRA	5.8030	FC-13	13.8013	BSP	1421	SGB	1119.1	R23	-.6713	R13	-.5268	LSA	62.7	MSA	23.3	SSA	1.0
BDE	.3599	BRA	.3668	BC3	.8226	FSP	2196	SG1	987.8	SG2	526.0	THA	17.62	EL1	32.8	EL2	1.8	ALF	28.30

LAUNCH DATE APR 28 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 2 1971

DISTANCE 459.640

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.324 GAL -1.56 AZL 92.57 HCA 182.65 SMA 184.96 ECC .18764 INC 2.5474 V1 29.584
RP 209.76 LAP -1.18 LOP 9.75 VP 23.406 GAP 7.61 AZP 87.72 TAL 350.07 TAP 142.72 RCA 150.25 APO 219.67 V2 26.137
RC 107.990 GL -25.67 GP 5.76 ZAL 113.56 ZAP 121.97 ETS 176.15 ZAE 163.06 ETE 158.73 ZAC 106.52 ETC 276.60 LVI -21.70

PLANETOCENTRIC CONIC

C3 11.161 VHL 3.341 DLA -33.92 RAL 346.21 RAD 6638.6 VEL 11.456 PTH 6.51 VHP 3.453 DPA -13.45 RAP 313.24 ECC 1.1837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 32 1	2282.48	3.51	57.30	200.91	137.48	19 10 3	1282.5	21.50	40.67
60.00	20 9 36	2022.69	9.82	39.91	206.90	129.29	20 43 18	1022.7	24.72	20.05
70.00	23 1 18	1815.34	20.86	6.53	214.45	117.68	23 26 34	815.3	30.41	342.07
70.44	23 34 9	1415.11	23.51	.14	215.87	115.18	23 57 44	415.1	31.77	334.66
70.44	23 34 9	1415.11	23.51	.14	215.87	115.18	23 57 44	415.1	31.77	334.66
70.44	23 34 9	1415.11	23.51	.14	215.87	115.18	23 57 44	415.1	31.77	334.66
110.00	4 4 41	5850.20	20.86	273.36	214.45	117.68	5 42 11	4850.2	30.41	248.89

DIFFERENTIAL CORRECTIONS

TDE -.3052 TRA -.2856 TC3 -.6276 BAU .1368
RDE -.1710 RRA -.1466 RC3 .6661 FAU .18546
FDE .7877 FRA 6.0137 FC-14.3862 BSP 1244
BDE .3498 BRA .3210 BC3 .9152 FSP 2271

MID-COURSE EXECUTION ACCURACY

SGT 893.4 SGR 613.1 SG3 1362.8
RRT .2659 RRF -.8729 RTF -.2848
SGB 1083.5 R23 -.7572 R13 -.4378
SG1 918.4 SG2 574.9 THA 17.30

ORBIT DETERMINATION ACCURACY

ST 27.6 SR 15.4 SS 59.3
CRT .9975 CRS .6047 CST .6205
LSA 63.0 MSA 23.4 SSA .9
EL1 31.6 EL2 1.0 ALF 29.04

LAUNCH DATE APR 28 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 4 1971

DISTANCE 463.791

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.311 GAL -1.57 AZL 92.61 HCA 153.88 SMA 184.75 ECC .18675 INC 2.6092 V1 29.584
RP 209.99 LAP -1.15 LOP 10.98 VP 23.360 GAP 7.39 AZP 87.66 TAL 350.00 TAP 143.88 RCA 150.25 APO 219.26 V2 26.111
RC 110.071 GL -26.11 GP 6.11 ZAL 113.60 ZAP 119.94 ETS 176.20 ZAE 161.29 ETE 160.08 ZAC 106.97 ETC 276.44 LVI -21.79

PLANETOCENTRIC CONIC

C3 11.161 VHL 3.341 DLA -34.26 RAL 346.58 RAD 6638.6 VEL 11.456 PTH 6.51 VHP 3.390 DPA -13.32 RAP 312.37 ECC 1.1837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 35 47	2273.96	3.94	56.94	201.46	137.45	19 13 41	1274.0	21.89	40.25
60.00	20 14 55	2010.01	10.36	39.28	207.55	129.17	20 48 25	1010.0	25.19	19.31
69.81	23 31 53	1426.59	23.73	1.15	216.36	115.46	23 55 39	426.6	32.08	335.64
69.81	23 31 53	1426.59	23.73	1.15	216.36	115.46	23 55 39	426.6	32.08	335.64
69.81	23 31 53	1426.59	23.73	1.15	216.36	115.46	23 55 39	426.6	32.08	335.64
69.81	23 31 53	1426.59	23.73	1.15	216.36	115.46	23 55 39	426.6	32.08	335.64
69.81	23 31 53	1426.59	23.73	1.15	216.36	115.46	23 55 39	426.6	32.08	335.64

DIFFERENTIAL CORRECTIONS

TDE -.3070 TRA -.2347 TC3 -.7736 BAU .1554
RDE -.1674 RRA -.1684 RC3 .6969 FAU .19054
FDE .8396 FRA 6.2642 FC-14.7799 BSP 1204
BDE .3497 BRA .2877 BC3 1.0412 FSP 2394

MID-COURSE EXECUTION ACCURACY

SGT 884.0 SGR 647.0 SG3 1415.9
RRT .1376 RRF -.8961 RTF -.1369
SGB 1095.5 R23 -.8563 R13 -.2645
SG1 893.2 SG2 634.2 THA 11.72

ORBIT DETERMINATION ACCURACY

ST 27.3 SR 15.3 SS 61.0
CRT .9944 CRS .6452 CST .5809
LSA 64.3 MSA 23.8 SSA .9
EL1 31.3 EL2 1.4 ALF 29.14

LAUNCH DATE APR 28 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 6 1971

DISTANCE 467.949

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.300 GAL -1.58 AZL 92.65 HCA 155.11 SMA 184.57 ECC .18596 INC 2.6547 V1 29.584
RP 210.22 LAP -1.12 LOP 12.20 VP 23.315 GAP 7.17 AZP 87.59 TAL 349.92 TAP 145.03 RCA 150.25 APO 218.89 V2 26.085
RC 112.177 GL -26.57 GP 6.50 ZAL 113.65 ZAP 117.89 ETS 176.25 ZAE 159.46 ETE 161.19 ZAC 107.45 ETC 276.27 LVI -21.89

PLANETOCENTRIC CONIC

C3 11.178 VHL 3.343 DLA -34.60 RAL 346.99 RAD 6638.6 VEL 11.457 PTH 6.51 VHP 3.331 DPA -13.16 RAP 311.46 ECC 1.1840

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 39 48	2265.42	4.37	56.58	202.07	137.42	19 17 33	1265.4	22.29	39.83
60.00	20 20 37	1996.94	10.92	38.63	208.28	129.04	20 53 54	996.9	25.66	18.53
69.17	23 29 43	1438.37	23.94	2.19	216.91	115.76	23 53 42	438.4	32.39	336.65
69.17	23 29 43	1438.37	23.94	2.19	216.91	115.76	23 53 42	438.4	32.39	336.65
69.17	23 29 43	1438.37	23.94	2.19	216.91	115.76	23 53 42	438.4	32.39	336.65
69.17	23 29 43	1438.37	23.94	2.19	216.91	115.76	23 53 42	438.4	32.39	336.65
69.17	23 29 43	1438.37	23.94	2.19	216.91	115.76	23 53 42	438.4	32.39	336.65

DIFFERENTIAL CORRECTIONS

TDE -.3022 TRA -.1743 TC3 -.9027 BAU .1737
RDE -.1633 RRA -.1671 RC3 .7326 FAU .19648
FDE .8665 FRA 6.4882 FC-15.2170 BSP 1148
BDE .3435 BRA .2557 BC3 1.1626 FSP 2486

MID-COURSE EXECUTION ACCURACY

SGT 874.2 SGR 685.8 SG3 1466.8
RRT -.0157 RRF -.9160 RTF .[illegible]16
SGB 1111.0 R23 .9146 R13 -.0545
SG1 874.4 SG2 685.4 THA 178.17

ORBIT DETERMINATION ACCURACY

ST 26.5 SR 15.2 SS 62.3
CRT .9790 CRS .6802 CST .5259
LSA 65.0 MSA 24.1 SSA .8
EL1 30.4 EL2 2.7 ALF 29.57

LAUNCH DATE APR 28 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 8 1971

DISTANCE 472.112

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.280 GAL -1.59 AZL 92.70 HCA 156.33 SMA 184.40 ECC .18528 INC 2.7045 V1 29.584
RP 210.45 LAP -1.09 LOP 13.43 VP 23.271 GAP 6.95 AZP 87.52 TAL 349.82 TAP 146.15 RCA 150.24 APO 218.58 V2 26.058
RC 114.307 GL -27.05 GP 6.92 ZAL 113.71 ZAP 115.81 ETS 176.32 ZAE 157.56 ETE 162.08 ZAC 107.96 ETC 276.09 LVI -22.02

PLANETOCENTRIC CONIC

C3 11.214 VHL 3.349 DLA -34.96 RAL 347.43 RAD 6638.7 VEL 11.459 PTH 6.51 VHP 3.278 DPA -12.97 RAP 310.52 ECC 1.1846

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 44 4	2256.81	4.80	56.22	202.75	137.39	19 21 41	1256.8	22.69	39.41
60.00	20 26 45	1983.36	11.50	37.96	209.08	128.90	20 59 48	983.4	26.15	17.71
68.53	23 27 44	1450.39	24.16	3.25	217.51	116.08	23 51 54	450.4	32.71	337.68
68.53	23 27 44	1450.39	24.16	3.25	217.51	116.08	23 51 54	450.4	32.71	337.68
68.53	23 27 44	1450.39	24.16	3.25	217.51	116.08	23 51 54	450.4	32.71	337.68
68.53	23 27 44	1450.39	24.16	3.25	217.51	116.08	23 51 54	450.4	32.71	337.68
68.53	23 27 44	1450.39	24.16	3.25	217.51	116.08	23 51 54	450.4	32.71	337.68

DIFFERENTIAL CORRECTIONS

TDE -.2993 TRA -.1123 TC3-1.0396 BAU .1940
RDE -.1597 RRA -.2095 RC3 .7709 FAU .20228
FDE .9000 FRA 6.7091 FC-15.6160 BSP 1167
BDE .3393 BRA .2377 BC3 1.2942 FSP 2575

MID-COURSE EXECUTION ACCURACY

SGT 895.6 SGR 729.8 SG3 1516.2
RRT -.1789 RRF -.9329 RTF .2042
SGB 1155.3 R23 .8206 R13 -.4454
SG1 919.6 SG2 699.2 THA 159.52

ORBIT DETERMINATION ACCURACY

ST 25.9 SR 15.2 SS 63.5
CRT .9479 CRS .7175 CST .4643
LSA 65.9 MSA 24.4 SSA .8
EL1 29.7 EL2 4.2 ALF 29.74

LAUNCH DATE APR 28 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 476.280 EARTH TO MARS
RL 150.61 LAL -.00 LOL 217.07 VL 32.281 GAL -1.60 AZL 92.76 HCA 157.56 SMA 184.25 ECC .18464 INC 2.7592 V1 29.584
RP 210.70 LAP -1.05 LOP 14.65 VP 23.227 GAP 6.74 AZP 87.45 TAL 349.71 TAP 147.27 RCA 150.23 APO 218.27 V2 26.030
RC 116.460 GL -27.56 GP 7.37 ZAL 113.78 ZAP 113.72 ETS 176.39 ZAE 155.62 ETE 162.81 ZAC 108.50 ETC 275.90 LVI -22.16

PLANETOCENTRIC CONIC
C3 11.270 VHL 3.357 DLA -35.34 RAL 347.91 RAD 6638.7 VEL 11.461 PTH 6.51 VHP 3.230 DPA -12.74 RAP 309.55 ECC 1.1855

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 48 40	2248.02	5.24	55.85	203.49	137.36	19 26 8	1248.0	23.10	38.97
60.00	20 33 26	1969.00	12.12	37.24	209.98	128.74	21 6 15	969.0	26.67	16.84
67.86	23 25 52	1462.77	24.37	4.34	218.19	116.43	23 50 14	462.8	33.04	338.75
67.86	23 25 52	1462.77	24.37	4.34	218.19	116.43	23 50 14	462.8	33.04	338.75
67.86	23 25 52	1462.77	24.37	4.34	218.19	116.43	23 50 14	462.8	33.04	338.75
67.86	23 25 52	1462.77	24.37	4.34	218.19	116.43	23 50 14	462.8	33.04	338.75
67.86	23 25 52	1462.77	24.37	4.34	218.19	116.43	23 50 14	462.8	33.04	338.75

DIFFERENTIAL CORRECTIONS
TDE -.2961 TRA -.0467 TC3-1.1823 BAU .2160
RDE -.1565 RRA -.2340 RC3 .8104 FAU .20741
FDE .9336 FRA 6.9232 FC-15.9329 B&P 1262
BDE .3349 BRA .2386 BC3 1.4333 F&P 2661

MID-COURSE EXECUTION ACCURACY
SGT 946.0 SGR 779.1 SG3 1561.9
RRT -.3379 RRF -.9469 RTF .3666
SGB 1225.6 R23 .6841 R13 -.6586
SG1 1019.2 SG2 680.7 THA 150.01

ORBIT DETERMINATION ACCURACY
ST 25.3 SR 15.3 SS 64.7
CRT .8979 CRS .7549 CST .3934
LSA 66.7 MSA 24.7 SSA .8
EL1 29.0 EL2 5.9 ALP 29.75

LAUNCH DATE APR 28 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 480.451 EARTH TO MARS
RL 150.61 LAL -.00 LOL 217.07 VL 32.273 GAL -1.61 AZL 92.82 HCA 158.78 SMA 184.12 ECC .18411 INC 2.8198 V1 29.584
RP 210.95 LAP -1.02 LOP 15.87 VP 23.184 GAP 6.53 AZP 87.37 TAL 349.58 TAP 148.36 RCA 150.22 APO 218.02 V2 26.001
RC 118.637 GL -28.11 GP 7.87 ZAL 113.85 ZAP 111.61 ETS 176.48 ZAE 153.63 ETE 163.39 ZAC 109.09 ETC 275.71 LVI -22.34

PLANETOCENTRIC CONIC
C3 11.347 VHL 3.368 DLA -35.74 RAL 348.43 RAD 6638.7 VEL 11.464 PTH 6.51 VHP 3.187 DPA -12.48 RAP 308.55 ECC 1.1867

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 53 39	2238.91	5.70	55.46	204.32	137.32	19 30 58	1238.9	23.52	38.51
60.00	20 40 47	1953.54	12.77	36.46	210.98	128.55	21 13 20	953.5	27.21	15.90
67.17	23 24 4	1475.75	24.58	5.49	218.95	116.80	23 48 40	475.8	33.39	339.89
67.17	23 24 4	1475.75	24.58	5.49	218.95	116.80	23 48 40	475.8	33.39	339.89
67.17	23 24 4	1475.75	24.58	5.49	218.95	116.80	23 48 40	475.8	33.39	339.89
67.17	23 24 4	1475.75	24.58	5.49	218.95	116.80	23 48 40	475.8	33.39	339.89
67.17	23 24 4	1475.75	24.58	5.49	218.95	116.80	23 48 40	475.8	33.39	339.89

DIFFERENTIAL CORRECTIONS
TDE -.2939 TRA .0218 TC3-1.3279 BAU .2395
RDE -.1537 RRA -.2605 RC3 .8534 FAU .21249
FDE .9687 FRA 7.1237 FC-16.2124 B&P 1425
BDE .3316 BRA .2614 BC3 1.5765 F&P 2735

MID-COURSE EXECUTION ACCURACY
SGT 1025.8 SGR 834.8 SG3 1604.8
RRT -.4771 RRF -.9585 RTF .5055
SGB 1322.6 R23 .5876 R13 -.7593
SG1 1149.0 SG2 655.0 THA 146.75

ORBIT DETERMINATION ACCURACY
ST 25.0 SR 15.4 SS 65.9
CRT .8271 CRS .7916 CST .3146
LSA 67.6 MSA 25.1 SSA .7
EL1 28.4 EL2 7.7 ALP 29.36

LAUNCH DATE APR 28 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 484.626 EARTH TO MARS
RL 150.61 LAL -.00 LOL 217.07 VL 32.266 GAL -1.63 AZL 92.89 HCA 159.99 SMA 184.01 ECC .18365 INC 2.8870 V1 29.584
RP 211.20 LAP -.99 LOP 17.09 VP 23.141 GAP 6.33 AZP 87.29 TAL 349.45 TAP 149.44 RCA 150.22 APO 217.80 V2 25.972
RC 120.836 GL -28.70 GP 8.42 ZAL 113.92 ZAP 109.49 ETS 176.59 ZAE 151.60 ETE 163.84 ZAC 109.73 ETC 275.92 LVI -22.55

PLANETOCENTRIC CONIC
C3 11.447 VHL 3.383 DLA -36.17 RAL 349.00 RAD 6638.8 VEL 11.469 PTH 6.52 VHP 3.149 DPA -12.16 RAP 307.53 ECC 1.1884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 59 6	2229.32	6.18	55.06	205.24	137.27	19 36 16	1229.3	23.96	38.02
60.00	20 49 0	1936.53	13.49	35.60	212.11	128.34	21 21 16	936.5	27.80	14.65
66.44	23 22 20	1489.49	24.80	6.71	219.79	117.22	23 47 10	489.5	33.75	341.09
66.44	23 22 20	1489.49	24.80	6.71	219.79	117.22	23 47 10	489.5	33.75	341.09
66.44	23 22 20	1489.49	24.80	6.71	219.79	117.22	23 47 10	489.5	33.75	341.09
66.44	23 22 20	1489.49	24.80	6.71	219.79	117.22	23 47 10	489.5	33.75	341.09
66.44	23 22 20	1489.49	24.80	6.71	219.79	117.22	23 47 10	489.5	33.75	341.09

DIFFERENTIAL CORRECTIONS
TDE -.2916 TRA .0934 TC3-1.4782 BAU .2642
RDE -.1518 RRA -.2903 RC3 .8975 FAU .21664
FDE 1.0128 FRA 7.3280 FC-16.3847 B&P 1654
BDE .3288 BRA .3049 BC3 1.7268 F&P 2818

MID-COURSE EXECUTION ACCURACY
SGT 1130.8 SGR 897.6 SG3 1644.3
RRT -.5896 RRF -.9680 RTF .6.48
SGB 1443.8 R23 .5187 R13 -.8191
SG1 1298.4 SG2 631.4 THA 145.78

ORBIT DETERMINATION ACCURACY
ST 24.9 SR 15.6 SS 67.1
CRT .7349 CRS .8278 CST .2304
LSA 68.7 MSA 25.5 SSA .7
EL1 27.9 EL2 9.6 ALP 28.65

LAUNCH DATE APR 28 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 488.804 EARTH TO MARS
RL 150.61 LAL -.00 LOL 217.07 VL 32.260 GAL -1.65 AZL 92.96 HCA 161.21 SMA 183.91 ECC .18327 INC 2.9825 V1 29.584
RP 211.46 LAP -.98 LOP 18.30 VP 23.099 GAP 6.13 AZP 87.19 TAL 349.29 TAP 150.50 RCA 150.20 APO 217.62 V2 25.942
RC 123.058 GL -28.34 GP 9.03 ZAL 113.99 ZAP 107.36 ETS 176.72 ZAE 149.54 ETE 164.18 ZAC 110.43 ETC 275.32 LVI -22.81

PLANETOCENTRIC CONIC
C3 11.572 VHL 3.402 DLA -36.64 RAL 349.61 RAD 6638.8 VEL 11.474 PTH 6.52 VHP 3.117 DPA -11.78 RAP 306.50 ECC 1.1908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 5 8	2219.02	6.69	54.62	206.27	137.22	19 42 7	1219.0	24.44	37.50
60.00	20 58 20	1917.33	14.30	34.62	213.39	128.09	21 30 17	917.3	28.46	13.65
65.67	23 20 38	1504.12	25.02	8.01	220.73	117.69	23 45 43	504.1	34.14	342.38
65.67	23 20 38	1504.12	25.02	8.01	220.73	117.69	23 45 43	504.1	34.14	342.38
65.67	23 20 38	1504.12	25.02	8.01	220.73	117.69	23 45 43	504.1	34.14	342.38
65.67	23 20 38	1504.12	25.02	8.01	220.73	117.69	23 45 43	504.1	34.14	342.38
65.67	23 20 38	1504.12	25.02	8.01	220.73	117.69	23 45 43	504.1	34.14	342.38

DIFFERENTIAL CORRECTIONS
TDE -.2893 TRA .1691 TC3-1.6204 BAU .2903
RDE -.1500 RRA -.3223 RC3 .9461 FAU .22076
FDE 1.0470 FRA 7.5011 FC-16.5155 B&P 1927
BDE .3259 BRA .3640 BC3 1.8764 F&P 2880

MID-COURSE EXECUTION ACCURACY
SGT 1236.5 SGR 967.4 SG3 1678.2
RRT -.6801 RRF -.9785 RTF .7013
SGB 1565.7 R23 .4623 R13 -.8606
SG1 1464.3 SG2 608.6 THA 145.62

ORBIT DETERMINATION ACCURACY
ST 25.0 SR 16.2 SS 66.0
CRT .6215 CRS .8600 CST .1367
LSA 69.6 MSA 25.9 SSA .6
EL1 27.5 EL2 11.6 ALP 27.19

LAUNCH DATE APR 28 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 18 1971

DISTANCE 492.984

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.61 LAL -.00 LOL 217.07 VL 32.255 GAL -1.68 AZL 93.05 HCA 162.42 SMA 183.83 ECC .18297 INC 3.0478 V1 29.584
RP 211.73 LAP -.92 LOP 19.51 VP 23.058 GAP 5.93 AZP 87.09 TAL 349.13 TAP 151.54 RCA 150.19 APO 217.46 V2 25.911
RC 125.302 GL -30.04 GP 9.71 ZAL 114.06 ZAP 105.24 ETS 176.87 ZAE 147.44 ETE 164.42 ZAC 111.19 ETC 275.13 LVI -23.12

PLANETOCENTRIC CONIC

C3 11.728 VHL 3.425 DLA -37.15 RAL 350.30 RAD 6638.9 VEL 11.481 PTH 6.53 VHP 3.089 DPA -11.32 RAP 305.44 ECC 1.1930

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 11 52	2207.76	7.25	54.14	207.44	137.15	19 48 40	1207.8	24.95	36.92
60.00	21 9 10	1895.04	15.23	33.48	214.87	127.77	21 40 45	895.0	29.20	12.23
64.83	23 18 59	1519.78	25.25	9.41	221.78	118.21	23 44 19	519.6	34.56	343.78
64.83	23 18 59	1519.78	25.25	9.41	221.78	118.21	23 44 19	519.8	34.56	343.78
64.83	23 18 59	1519.78	25.25	9.41	221.78	118.21	23 44 19	519.8	34.56	343.78
64.83	23 18 59	1519.78	25.25	9.41	221.78	118.21	23 44 19	519.8	34.56	343.78
64.83	23 18 59	1519.78	25.25	9.41	221.78	118.21	23 44 19	519.8	34.56	343.78

DIFFERENTIAL CORRECTIONS

TDE -.2878 TRA .2476 TC3-1.7649 BAU .3178
RDE -.1492 RRA -.3580 RC3 .9974 FAU .22416
FDE 1.0880 FRA 7.6616 FC-16.5479 BSP 2236
BDE .3242 BRA .4353 BC3 2.0272 FSP 2932.

MID-COURSE EXECUTION ACCURACY

SGT 1401.1 SGR 1045.8 SG3 1707.2
RRT -.7481 RRF -.9816 RTF .7651
SGB 1748.4 R23 .4177 R13 -.8894
SG1 1645.5 SG2 591.0 THA 145.81

ORBIT DETERMINATION ACCURACY

ST 25.4 SR 16.8 SS 69.0
CRT .4529 CRS .8896 CST .0427
LSA 70.6 HSA 26.4 SSA .6
EL1 27.2 EL2 13.7 ALF 24.75

LAUNCH DATE APR 28 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 20 1971

DISTANCE 497.166

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.61 LAL -.00 LOL 217.07 VL 32.251 GAL -1.70 AZL 93.15 HCA 163.63 SMA 183.76 ECC .18273 INC 3.1451 V1 29.584
RP 212.01 LAP -.89 LOP 20.72 VP 23.017 GAP 5.74 AZP 86.98 TAL 348.94 TAP 152.57 RCA 150.18 APO 217.33 V2 25.880
RC 127.566 GL -30.82 GP 10.47 ZAL 114.12 ZAP 103.11 ETS 177.04 ZAE 145.30 ETE 164.56 ZAC 112.03 ETC 274.93 LVI -23.51

PLANETOCENTRIC CONIC

C3 11.918 VHL 3.452 DLA -37.72 RAL 351.05 RAD 6639.0 VEL 11.489 PTH 6.54 VHP 3.068 DPA -10.78 RAP 304.38 ECC 1.1961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 19 30	2195.20	7.88	53.61	208.76	137.07	19 56 5	1195.2	25.52	36.27
60.00	21 22 5	1868.19	16.35	32.08	216.60	127.36	21 53 14	868.2	30.08	10.50
63.92	23 17 18	1536.81	25.50	10.95	222.97	118.80	23 42 55	536.8	35.02	345.32
63.92	23 17 18	1536.81	25.50	10.95	222.97	118.80	23 42 55	536.8	35.02	345.32
63.92	23 17 18	1536.81	25.50	10.95	222.97	118.80	23 42 55	536.8	35.02	345.32
63.92	23 17 18	1536.81	25.50	10.95	222.97	118.80	23 42 55	536.8	35.02	345.32
63.92	23 17 18	1536.81	25.50	10.95	222.97	118.80	23 42 55	536.8	35.02	345.32

DIFFERENTIAL CORRECTIONS

TDE -.2870 TRA .3293 TC3-1.9087 BAU .3468
RDE -.1496 RRA -.3983 RC3 1.0504 FAU .22648
FDE 1.1371 FRA 7.8103 FC-16.4534 BSP 2580
BDE .3237 BRA .5168 BC3 2.1769 FSP 2983

MID-COURSE EXECUTION ACCURACY

SGT 1561.2 SGR 1134.1 SG3 1730.6
RRT -.7986 RRF -.9863 RTF .8116
SGB 1929.7 R23 .3817 R13 -.9103
SG1 1840.8 SG2 579.0 THA 146.07

ORBIT DETERMINATION ACCURACY

ST 26.1 SR 17.7 SS 69.9
CRT .3554 CRS .9158 CST -.0485
LSA 71.8 HSA 26.9 SSA .5
EL1 27.2 EL2 15.8 ALF 20.90

LAUNCH DATE APR 28 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 22 1971

DISTANCE 501.350

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.61 LAL -.00 LOL 217.07 VL 32.248 GAL -1.73 AZL 93.26 HCA 164.83 SMA 183.70 ECC .18256 INC 3.2570 V1 29.584
RP 212.29 LAP -.85 LOP 21.93 VP 22.976 GAP 5.55 AZP 86.86 TAL 348.75 TAP 153.58 RCA 150.16 APO 217.24 V2 25.848
RC 129.850 GL -31.70 GP 11.33 ZAL 114.15 ZAP 101.00 ETS 177.24 ZAE 143.14 ETE 164.60 ZAC 112.97 ETC 274.74 LVI -23.99

PLANETOCENTRIC CONIC

C3 12.149 VHL 3.486 DLA -38.37 RAL 351.88 RAD 6639.1 VEL 11.499 PTH 6.55 VHP 3.052 DPA -10.13 RAP 303.30 ECC 1.1999

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 28 16	2180.87	8.59	53.00	210.29	136.98	20 4 37	1180.9	26.16	35.51
60.00	21 38 10	1834.09	17.75	30.29	218.70	126.80	22 8 44	834.1	31.16	8.25
62.91	23 15 38	1555.41	25.76	12.64	224.32	119.48	23 41 33	555.4	35.53	347.02
62.91	23 15 38	1555.41	25.76	12.64	224.32	119.48	23 41 33	555.4	35.53	347.02
62.91	23 15 38	1555.41	25.76	12.64	224.32	119.48	23 41 33	555.4	35.53	347.02
62.91	23 15 38	1555.41	25.76	12.64	224.32	119.48	23 41 33	555.4	35.53	347.02
62.91	23 15 38	1555.41	25.76	12.64	224.32	119.48	23 41 33	555.4	35.53	347.02

DIFFERENTIAL CORRECTIONS

TDE -.2868 TRA .4144 TC3-2.0411 BAU .3773
RDE -.1509 RRA -.4431 RC3 1.1085 FAU .22844
FDE 1.1818 FRA 7.9268 FC-16.2780 BSP 2949
BDE .3241 BRA .6067 BC3 2.3227 FSP 3016

MID-COURSE EXECUTION ACCURACY

SGT 1732.6 SGR 1233.7 SG3 1746.8
RRT -.8374 RRF -.9900 RTF .8470
SGB 2126.9 R23 .3499 R13 -.9287
SG1 2049.1 SG2 570.2 THA 146.23

ORBIT DETERMINATION ACCURACY

ST 27.0 SR 18.7 SS 70.7
CRT .2145 CRS .9376 CST -.1374
LSA 72.9 HSA 27.5 SSA .5
EL1 27.5 EL2 17.9 ALF 14.83

LAUNCH DATE APR 28 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 24 1971

DISTANCE 505.535

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.61 LAL -.00 LOL 217.07 VL 32.245 GAL -1.76 AZL 93.39 HCA 166.03 SMA 183.66 ECC .18245 INC 3.3878 V1 29.584
RP 212.57 LAP -.82 LOP 23.13 VP 22.936 GAP 5.36 AZP 86.71 TAL 348.55 TAP 154.58 RCA 150.15 APO 217.17 V2 25.815
RC 132.183 GL -32.69 GP 12.31 ZAL 114.16 ZAP 98.91 ETS 177.49 ZAE 140.95 ETE 164.54 ZAC 114.04 ETC 274.55 LVI -24.59

PLANETOCENTRIC CONIC

C3 12.433 VHL 3.526 DLA -39.11 RAL 352.82 RAD 6639.3 VEL 11.511 PTH 6.56 VHP 3.043 DPA -9.35 RAP 302.21 ECC 1.2046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 38 32	2164.13	9.43	52.28	212.07	136.86	20 14 36	1164.1	26.91	34.62
60.00	21 59 40	1786.86	19.66	27.75	221.35	125.92	22 29 27	786.9	32.57	5.05
61.78	23 13 55	1575.98	26.04	14.53	225.86	120.27	23 40 11	576.0	36.11	348.93
61.78	23 13 55	1575.98	26.04	14.53	225.86	120.27	23 40 11	576.0	36.11	348.93
61.78	23 13 55	1575.98	26.04	14.53	225.86	120.27	23 40 11	576.0	36.11	348.93
61.78	23 13 55	1575.98	26.04	14.53	225.86	120.27	23 40 11	576.0	36.11	348.93
61.78	23 13 55	1575.98	26.04	14.53	225.86	120.27	23 40 11	576.0	36.11	348.93

DIFFERENTIAL CORRECTIONS

TDE -.2866 TRA .5041 TC3-2.1631 BAU .4087
RDE -.1545 RRA -.4944 RC3 1.1696 FAU .22931
FDE 1.2402 FRA 8.0211 FC-15.9676 BSP 3355
BDE .3256 BRA .7061 BC3 2.4590 FSP 3042

MID-COURSE EXECUTION ACCURACY

SGT 1912.6 SGR 1347.3 SG3 1755.9
RRT -.8670 RRF -.9928 RTF .8740
SGB 2339.5 R23 .3216 R13 -.9397
SG1 2270.1 SG2 565.6 THA 146.20

ORBIT DETERMINATION ACCURACY

ST 28.2 SR 20.0 SS 71.5
CRT .0770 CRS .9557 CST -.2190
LSA 74.3 HSA 28.2 SSA .4
EL1 28.3 EL2 19.9 ALF 6.18

LAUNCH DATE APR 28 1971 FLIGHT TIME 212.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 509.720 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.243	GAL	-1.79	AZL	93.54	HCA	167.23	SMA	183.62	ECC	.18241	INC	3.5416	V1	29.584
RP	212.86	LAP	-.78	LOP	24.32	VP	22.896	GAP	5.17	AZP	86.55	TAL	348.33	TAP	155.56	RCA	150.13	APO	217.12	V2	25.782
RC	134.475	GL	-33.64	GP	13.46	ZAL	114.14	ZAP	96.84	ETS	177.77	ZAE	138.73	ETE	164.37	ZAC	115.25	ETC	274.37	LVI	-25.32

PLANETOCENTRIC CONIC

C3	12.783	VHL	3.575	DLA	-39.96	RAL	353.69	RAD	6639.4	VEL	11.526	PTH	6.57	VHP	3.040	DPA	-8.41	RAP	301.12	ECC	1.2104

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 50 47	2144.08	10.42	51.41	214.20	136.69	20 26 32	1144.1	27.80	33.54
60.00	22 34 47	1704.29	22.88	23.16	225.22	124.13	23 3 12	704.3	34.81	359.19
60.50	23 12 11	1598.94	26.34	16.66	227.66	121.21	23 38 50	598.9	36.76	351.10
60.50	23 12 11	1598.94	26.34	16.66	227.66	121.21	23 38 50	598.9	36.76	351.10
60.50	23 12 11	1598.94	26.34	16.66	227.66	121.21	23 38 50	598.9	36.76	351.10
60.50	23 12 11	1598.94	26.34	16.66	227.66	121.21	23 38 50	598.9	36.76	351.10
60.50	23 12 11	1598.94	26.34	16.66	227.66	121.21	23 38 50	598.9	36.76	351.10

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2876	TRA	.5968	TC3	-2.2737	BAU	.4422	SGT	2100.7	SGR	1477.6	SG3	1755.9	ST	29.8	SR	21.6	SS	72.0
RDE	-.1597	RRA	-.5531	RC3	1.2336	FAU	.22937	RRT	-.8897	RRF	-.9950	RTF	.8944	CRT	-.0515	CRS	.9697	CST	-.2932
FDE	1.2932	FRA	8.0789	FC-	15.5346	BSP	3778	SGB	2568.3	R23	.2967	R13	-.9499	LSA	75.6	MSA	28.9	SSA	.4
BDE	.3289	BRA	.8137	BC3	2.5878	FSP	3043	SG1	2505.3	SG2	565.7	THA	145.99	EL1	29.8	EL2	21.5	ALF	175.53

LAUNCH DATE APR 28 1971 FLIGHT TIME 214.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 513.907 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.242	GAL	-1.83	AZL	93.73	HCA	168.42	SMA	183.60	ECC	.18242	INC	3.7263	V1	29.584
RP	213.16	LAP	-.75	LOP	25.52	VP	22.856	GAP	4.99	AZP	86.35	TAL	348.10	TAP	156.52	RCA	150.11	APO	217.10	V2	25.749
RC	136.814	GL	-35.17	GP	14.80	ZAL	114.05	ZAP	94.80	ETS	178.12	ZAE	136.47	ETE	164.08	ZAC	116.66	ETC	274.19	LVI	-26.24

PLANETOCENTRIC CONIC

C3	13.220	VHL	3.636	DLA	-40.97	RAL	355.13	RAD	6639.7	VEL	11.545	PTH	6.59	VHP	3.046	DPA	-7.26	RAP	300.01	ECC	1.2176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 5 51	2119.33	11.65	50.34	216.79	136.47	20 41 10	1119.3	28.68	32.17
59.02	23 10 30	1624.71	26.67	19.09	229.77	122.33	23 37 34	624.7	37.50	353.59
59.02	23 10 30	1624.71	26.67	19.09	229.77	122.33	23 37 34	624.7	37.50	353.59
59.02	23 10 30	1624.71	26.67	19.09	229.77	122.33	23 37 34	624.7	37.50	353.59
59.02	23 10 30	1624.71	26.67	19.09	229.77	122.33	23 37 34	624.7	37.50	353.59
59.02	23 10 30	1624.71	26.67	19.09	229.77	122.33	23 37 34	624.7	37.50	353.59
59.02	23 10 30	1624.71	26.67	19.09	229.77	122.33	23 37 34	624.7	37.50	353.59

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2898	TRA	.6932	TC3	-2.3679	BAU	.4779	SGT	2294.9	SGR	1626.8	SG3	1745.5	ST	31.6	SR	23.6	SS	72.8
RDE	-.1683	RRA	-.6212	RC3	1.3059	FAU	.22826	RRT	-.9069	RRF	-.9966	RTF	.9098	CRT	-.1649	CRS	.9804	CST	-.3556
FDE	1.3583	FRA	8.0945	FC-	14.9480	BSP	4223	SGB	2814.2	R23	.2746	R13	-.9581	LSA	77.0	MSA	29.7	SSA	.3
BDE	.3351	BRA	.9308	BC3	2.7041	FSP	3024	SG1	2755.5	SG2	571.7	THA	145.54	EL1	32.1	EL2	22.9	ALF	168.49

LAUNCH DATE APR 28 1971 FLIGHT TIME 216.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 518.093 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.241	GAL	-1.87	AZL	93.99	HCA	169.61	SMA	183.59	ECC	.18249	INC	3.9519	V1	29.584
RP	213.46	LAP	-.71	LOP	26.71	VP	22.817	GAP	4.81	AZP	86.11	TAL	347.85	TAP	157.47	RCA	150.09	APO	217.10	V2	25.714
RC	139.171	GL	-36.75	GP	16.41	ZAL	113.88	ZAP	92.80	ETS	178.53	ZAE	134.16	ETE	163.64	ZAC	118.33	ETC	274.04	LVI	-27.41

PLANETOCENTRIC CONIC

C3	13.780	VHL	3.712	DLA	-42.17	RAL	356.58	RAD	6639.9	VEL	11.569	PTH	6.61	VHP	3.083	DPA	-5.84	RAP	298.89	ECC	1.2268

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 25 1	2087.55	13.21	48.94	220.07	136.14	20 59 40	1087.6	30.25	30.38
57.31	23 8 57	1654.00	27.02	21.89	232.30	123.70	23 36 31	654.0	38.36	356.50
57.31	23 8 57	1654.00	27.02	21.89	232.30	123.70	23 36 31	654.0	38.36	356.50
57.31	23 8 57	1654.00	27.02	21.89	232.30	123.70	23 36 31	654.0	38.36	356.50
57.31	23 8 57	1654.00	27.02	21.89	232.30	123.70	23 36 31	654.0	38.36	356.50
57.31	23 8 57	1654.00	27.02	21.89	232.30	123.70	23 36 31	654.0	38.36	356.50
57.31	23 8 57	1654.00	27.02	21.89	232.30	123.70	23 36 31	654.0	38.36	356.50

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2940	TRA	.7930	TC3	-2.4412	BAU	.5169	SGT	2493.6	SGR	1805.2	SG3	1721.1	ST	33.7	SR	26.0	SS	72.7
RDE	-.1808	RRA	-.7003	RC3	1.3829	FAU	.22625	RRT	-.9203	RRF	-.9977	RTF	.9419	CRT	-.2624	CRS	.9880	CST	-.4078
FDE	1.4231	FRA	8.0438	FC-	14.2144	BSP	4684	SGB	3078.5	R23	.2540	R13	-.9649	LSA	78.4	MSA	30.7	SSA	.3
BDE	.3451	BRA	1.0580	BC3	2.8057	FSP	2978	SG1	3022.8	SG2	582.6	THA	144.83	EL1	35.1	EL2	24.1	ALF	157.53

LAUNCH DATE APR 28 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 522.278 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.241	GAL	-1.91	AZL	94.24	HCA	170.80	SMA	183.59	ECC	.18261	INC	4.2350	V1	29.584
RP	213.77	LAP	-.68	LOP	27.80	VP	22.777	GAP	4.63	AZP	85.82	TAL	347.60	TAP	158.40	RCA	150.07	APO	217.12	V2	25.660
RC	141.545	GL	-38.65	GP	18.36	ZAL	113.60	ZAP	90.86	ETS	179.04	ZAE	131.79	ETE	163.04	ZAC	120.34	ETC	273.90	LVI	-28.89

PLANETOCENTRIC CONIC

C3	14.515	VHL	3.810	DLA	-43.62	RAL	358.34	RAD	6640.3	VEL	11.600	PTH	6.64	VHP	3.093	DPA	-4.07	RAP	297.76	ECC	1.2389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 50 45	2044.24	15.33	47.00	224.40	135.61	21 24 50	1044.2	32.06	27.84
55.29	23 7 45	1687.66	27.38	25.15	235.41	125.39	23 35 52	687.7	39.36	359.95
55.29	23 7 45	1687.66	27.38	25.15	235.41	125.39	23 35 52	687.7	39.36	359.95
55.29	23 7 45	1687.66	27.38	25.15	235.41	125.39	23 35 52	687.7	39.36	359.95
55.29	23 7 45	1687.66	27.38	25.15	235.41	125.39	23 35 52	687.7	39.36	359.95
55.29	23 7 45	1687.66	27.38	25.15	235.41	125.39	23 35 52	687.7	39.36	359.95
55.29	23 7 45	1687.66	27.38	25.15	235.41	125.39	23 35 52	687.7	39.36	359.95

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2947	TRA	.9017	TC3	-2.4745	BAU	.5567	SGT	2694.5	SGR	2019.0	SG3	1683.5	ST	35.9	SR	29.3	SS	73.4
RDE	-.2048	RRA	-.7994	RC3	1.4517	FAU	.22058	RRT	-.9301	RRF	-.9986	RTF	.9306	CRT	-.3451	CRS	.9935	CST	-.4495
FDE	1.5508	FRA	7.9641	FC-	13.1562	BSP	5249	SGB	3367.0	R23	.2357	R13	-.9704	LSA	80.8	MSA	31.7	SSA	.2
BDE	.3589	BRA	1.2050	BC3	2.8689	FSP	2945	SG1	3312.5	SG2	603.2	THA	143.73	EL1	38.7	EL2	25.5	ALF	150.26

LAUNCH DATE APR 28 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 526.463 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.242	GAL	-1.95	AZL	94.60	HCA	171.98	SMA	183.60	ECC	.18279	INC	4.5989	V1	29.584
RP	214.08	LAP	-.64	LOP	29.08	VP	22.739	GAP	4.45	AZP	85.45	TAL	347.33	TAP	159.32	RCA	150.04	APO	217.16	V2	25.645
RC	143.936	GL	-40.99	GP	20.79	ZAL	113.15	ZAP	89.01	ETS	179.67	ZAE	129.30	ETE	162.21	ZAC	122.82	ETC	273.79	LVI	-30.61

PLANETOCENTRIC CONIC

C3	15.521	VHL	3.940	DLA	-45.40	RAL	.54	RAD	6640.8	VEL	11.643	PTH	6.68	VHP	3.142	DPA	-1.81	RAP	296.59	ECC	1.2554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 20 56	1977.76	18.53	43.94	230.64	134.64	22 1 54	977.6	34.73	23.74
52.87	23 7 13	1727.07	27.72	29.03	239.32	127.52	23 36 1	727.1	40.50	4.13
52.87	23 7 13	1727.07	27.72	29.03	239.32	127.52	23 36 1	727.1	40.50	4.13
52.87	23 7 13	1727.07	27.72	29.03	239.32	127.52	23 36 1	727.1	40.50	4.13
52.87	23 7 13	1727.07	27.72	29.03	239.32	127.52	23 36 1	727.1	40.50	4.13
52.87	23 7 13	1727.07	27.72	29.03	239.32	127.52	23 36 1	727.1	40.50	4.13
52.87	23 7 13	1727.07	27.72	29.03	239.32	127.52	23 36 1	727.1	40.50	4.13

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY			
TDE	-.2988	TRA	1.0110	TC3	-2.4786	BAU	.6053	SGT	2896.2	SGR	2273.7	SG3 1620.3	ST	38.3	SR	33.2	SS	73.0
RDE	-.2367	RRA	-.9137	RC3	1.5385	FAU	.21550	RRT	-.9386	RRF	-.9991	RTF .9384	CRT	-.4107	CRS	.9968	CST	-.4820
FDE	1.6563	FRA	7.7278	FC-12	.0204	BSP	5753	SGB	3682.1	R23	.2160	R13 -.9755	LSA	82.6	MSA	32.9	SSA	.2
BDE	.3812	BRA	1.3627	BC3	2.9173	FSP	2803	SG1	3628.5	SG2	626.1	THA 142.30	EL1	42.9	EL2	27.1	ALF	144.54

LAUNCH DATE APR 28 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 530.646 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.243	GAL	-1.99	AZL	95.09	HCA	173.16	SMA	183.62	ECC	.18301	INC	5.0875	V1	29.584
RP	214.39	LAP	-.60	LOP	30.26	VP	22.700	GAP	4.28	AZP	84.95	TAL	347.06	TAP	160.22	RCA	150.02	APO	217.23	V2	25.609
RC	146.344	GL	-43.92	GP	23.68	ZAL	112.46	ZAP	87.26	ETS	180.46	ZAE	126.65	ETE	161.10	ZAC	125.95	ETC	273.73	LVI	-33.33

PLANETOCENTRIC CONIC

C3	16.971	VHL	4.120	DLA	-47.62	RAL	3.42	RAD	6641.5	VEL	11.705	PTH	6.74	VHP	3.223	DPA	1.11	RAP	295.37	ECC	1.2793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.95	23 8 11	1774.09	27.96	33.71	244.43	130.25	23 37 45	774.1	41.77	9.34
49.95	23 8 11	1774.09	27.96	33.71	244.43	130.25	23 37 45	774.1	41.77	9.34
49.95	23 8 11	1774.09	27.96	33.71	244.43	130.25	23 37 45	774.1	41.77	9.34
49.95	23 8 11	1774.09	27.96	33.71	244.43	130.25	23 37 45	774.1	41.77	9.34
49.95	23 8 11	1774.09	27.96	33.71	244.43	130.25	23 37 45	774.1	41.77	9.34
49.95	23 8 11	1774.09	27.96	33.71	244.43	130.25	23 37 45	774.1	41.77	9.34
49.95	23 8 11	1774.09	27.96	33.71	244.43	130.25	23 37 45	774.1	41.77	9.34

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY			
TDE	-.2882	TRA	1.1369	TC3	-2.4093	BAU	.6558	SGT	3098.9	SGR	2597.2	SG3 1532.5	ST	40.6	SR	39.2	SS	73.7
RDE	-.3032	RRA	-1.0659	RC3	1.5968	FAU	.20390	RRT	-.9444	RRF	-.9995	RTF .9435	CRT	-.4675	CRS	.9968	CST	-.5099
FDE	1.8896	FRA	7.4184	FC-10	.4014	BSP	6469	SGB	4043.3	R23	.1979	R13 -.9797	LSA	86.4	MSA	34.0	SSA	.2
BDE	.4183	BRA	1.9584	BC3	2.8904	FSP	2686	SG1	3988.5	SG2	663.2	THA 140.32	EL1	48.4	EL2	29.1	ALF	137.15

LAUNCH DATE APR 28 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 534.628 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.245	GAL	-2.04	AZL	95.78	HCA	174.34	SMA	183.65	ECC	.18328	INC	5.7750	V1	29.584
RP	214.72	LAP	-.57	LOP	31.44	VP	22.662	GAP	4.11	AZP	84.25	TAL	346.77	TAP	161.11	RCA	149.99	APO	217.31	V2	25.573
RC	148.770	GL	-47.70	GP	27.92	ZAL	111.39	ZAP	85.71	ETS	181.48	ZAE	123.73	ETE	159.84	ZAC	130.04	ETC	273.75	LVI	-36.70

PLANETOCENTRIC CONIC

C3	19.225	VHL	4.385	DLA	-50.41	RAL	7.39	RAD	6642.5	VEL	11.800	PTH	6.82	VHP	3.357	DPA	5.00	RAP	294.07	ECC	1.3164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.36	23 12 6	1831.97	27.92	39.43	251.38	133.84	23 42 38	832.0	43.08	16.02
46.36	23 12 6	1831.97	27.92	39.43	251.38	133.84	23 42 38	832.0	43.08	16.02
46.36	23 12 6	1831.97	27.92	39.43	251.38	133.84	23 42 38	832.0	43.08	16.02
46.36	23 12 6	1831.97	27.92	39.43	251.38	133.84	23 42 38	832.0	43.08	16.02
46.36	23 12 6	1831.97	27.92	39.43	251.38	133.84	23 42 38	832.0	43.08	16.02
46.36	23 12 6	1831.97	27.92	39.43	251.38	133.84	23 42 38	832.0	43.08	16.02
46.36	23 12 6	1831.97	27.92	39.43	251.38	133.84	23 42 38	832.0	43.08	16.02

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY			
TDE	-.2638	TRA	1.2656	TC3	-2.2806	BAU	.7242	SGT	3294.3	SGR	2995.3	SG3 1395.1	ST	42.7	SR	47.2	SS	73.6
RDE	-.4184	RRA	-1.2498	RC3	1.6546	FAU	.19027	RRT	-.9489	RRF	-.9997	RTF .9574	CRT	-.5119	CRS	.9997	CST	-.5316
FDE	2.1758	FRA	6.8311	FC-10	.5681	BSP	7123	SGB	4452.4	R23	.1794	R13 -.9835	LSA	90.8	MSA	35.0	SSA	.1
BDE	.4946	BRA	1.7787	BC3	2.8176	FSP	2422	SG1	4395.7	SG2	708.1	THA 137.87	EL1	55.5	EL2	31.2	ALF	129.40

LAUNCH DATE APR 28 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 539.006 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.247	GAL	-2.09	AZL	96.82	HCA	175.51	SMA	183.69	ECC	.18359	INC	6.8180	V1	29.584
RP	215.04	LAP	-.53	LOP	32.61	VP	22.623	GAP	3.93	AZP	83.20	TAL	346.48	TAP	161.99	RCA	149.96	APO	217.41	V2	25.536
RC	151.211	GL	-52.72	GP	33.37	ZAL	108.77	ZAP	84.46	ETS	182.80	ZAE	120.36	ETE	157.70	ZAC	135.51	ETC	273.92	LVI	-41.30

PLANETOCENTRIC CONIC

C3	23.126	VHL	4.809	DLA	-53.94	RAL	13.33	RAD	6644.2	VEL	11.963	PTH	6.96	VHP	3.595	DPA	10.28	RAP	292.64	ECC	1.3606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.95	23 22 25	1906.54	27.18	46.51	261.36	138.57	23 54 11	906.5	44.10	24.65
41.95	23 22 25	1906.54	27.18	46.51	261.36	138.57	23 54 11	906.5	44.10	24.65
41.95	23 22 25	1906.54	27.18	46.51	261.36	138.57	23 54 11	906.5	44.10	24.65
41.95	23 22 25	1906.54	27.18	46.51	261.36	138.57	23 54 11	906.5	44.10	24.65
41.95	23 22 25	1906.54	27.18	46.51	261.36	138.57	23 54 11	906.5	44.10	24.65
41.95	23 22 25	1906.54	27.18	46.51	261.36	138.57	23 54 11	906.5	44.10	24.65
41.95	23 22 25	1906.54	27.18	46.51	261.36	138.57	23 54 11	906.5	44.10	24.65

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY			
TDE	-.1679	TRA	1.4190	TC3	-2.0350	BAU	.8106	SGT	3481.3	SGR	3507.2	SG3 1192.9	ST	44.3	SR	60.6	SS	74.6
RDE	-.6755	RRA	-1.4923	RC3	1.6534	FAU	.16798	RRT	-.9523	RRF	-.9999	RTF .9499	CRT	-.5790	CRS	1.0000	CST	-.5611
FDE	2.6690	FRA	5.9273	FC3	-6.2885	BSP	7961	SGB	4941.7	R23	.1604	R13 -.9869	LSA	100.0	MSA	34.7	SSA	.1
BDE	.6961	BRA	2.0593	BC3	2.6220	FSP	2063	SG1	4882.3	SG2	763.5	THA 134.78	EL1	67.8	EL2	32.3	ALF	120.59

LAUNCH DATE APR 28 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 543.182 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.249 GAL -2.13 AZL 98.59 HCA 176.67 SMA 183.73 ECC .18395 INC 8.5861 V1 29.584
RP 215.37 LAP -.50 LOP 33.78 VP 22.585 GAP 3.76 AZP 81.43 TAL 346.19 TAP 162.86 RCA 149.93 APO 217.53 V2 25.499
RC 153.669 GL -59.62 GP 40.87 ZAL 107.25 ZAP 83.77 ETS 184.46 ZAE 116.26 ETE 155.20 ZAC 143.01 ETC 274.46 LVI -47.59

PLANETOCENTRIC CONIC

C3 31.113 VHL 5.578 DLA -58.26 RAL 23.21 RAD 6647.4 VEL 12.290 PTH 7.23 VHP 4.073 DPA 17.62 RAP 291.00 ECC 1.5120

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.68	23 47 21	2009.85	24.67	55.15	276.68	144.62	24 20 51	1009.9	43.74	36.61
36.68	23 47 21	2009.85	24.67	55.15	276.68	144.62	24 20 51	1009.9	43.74	36.61
36.68	23 47 21	2009.85	24.67	55.15	276.68	144.62	24 20 51	1009.9	43.74	36.61
36.68	23 47 21	2009.85	24.67	55.15	276.68	144.62	24 20 51	1009.9	43.74	36.61
36.68	23 47 21	2009.85	24.67	55.15	276.68	144.62	24 20 51	1009.9	43.74	36.61
36.68	23 47 21	2009.85	24.67	55.15	276.68	144.62	24 20 51	1009.9	43.74	36.61
36.68	23 47 21	2009.85	24.67	55.15	276.68	144.62	24 20 51	1009.9	43.74	36.61

DIFFERENTIAL CORRECTIONS

TDE .1446 TRA 1.6017 TC3-1.6555 BAU .9478
RDE-1.3220 RRA-1.7866 RC3 1.5656 FAU .13594
FDE 3.3740 FRA 4.4577 FC3-3.7827 BSP .8727
BDE 1.3299 BRA 2.3994 BC3 2.2785 FSP .1489

MID-COURSE EXECUTION ACCURACY

SGT 3635.0 SGR 4130.7 SG3 887.8
RRT -.9548 RRF -.9999 RTF .9512
SGB 5502.3 R23 .1423 R13 -.9898
SG1 5440.8 SG2 820.3 THA 131.18

ORBIT DETERMINATION ACCURACY

ST 47.6 SR 85.6 SS 76.4
CRT -.7270 CRS .9999 CST -.7194
LSA 120.3 MSA 31.4 SSA .0
EL1 93.4 EL2 30.0 ALF 114.68

LAUNCH DATE APR 28 1971 FLIGHT TIME 238.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 564.135 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.269 GAL -2.43 AZL 82.87 HCA 182.53 SMA 184.05 ECC .18645 INC 7.1318 V1 29.584
RP 217.08 LAP -.31 LOP 39.58 VP 22.398 GAP 2.95 AZP 97.13 TAL 344.40 TAP 166.92 RCA 149.74 APO 218.37 V2 25.308
RC 166.178 GL 52.95 GP -46.94 ZAL 111.32 ZAP 79.33 ETS 187.17 ZAE 107.18 ETE 199.83 ZAC 55.47 ETC 272.32 LVI 33.26

PLANETOCENTRIC CONIC

C3 25.158 VHL 5.016 DLA 41.83 RAL 321.08 RAD 6645.1 VEL 12.047 PTH 7.03 VHP 4.762 DPA -68.51 RAP 314.74 ECC 1.4140

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	10 41 35	4138.77	-38.95	185.13	218.57	60.16	11 50 33	3138.8	-47.16	153.76
57.79	8 51 28	4432.99	-21.31	198.19	205.26	53.11	10 5 21	3433.0	-34.45	175.24
57.79	8 51 28	4432.99	-21.31	198.19	205.26	53.11	10 5 21	3433.0	-34.45	175.24
57.79	8 51 28	4432.99	-21.31	198.19	205.26	53.11	10 5 21	3433.0	-34.45	175.24
57.79	8 51 28	4432.99	-21.31	198.19	205.26	53.11	10 5 21	3433.0	-34.45	175.24
57.79	8 51 28	4432.99	-21.31	198.19	205.26	53.11	10 5 21	3433.0	-34.45	175.24
57.79	8 51 28	4432.99	-21.31	198.19	205.26	53.11	10 5 21	3433.0	-34.45	175.24

DIFFERENTIAL CORRECTIONS

TDE 3.2749 TRA .9636 TC3-2.4613 BAU 1.0405
RDE 2.8381 RRA 1.6069 RC3-1.8739 FAU .08637
FDE 4.3380 FRA 2.6156 FC3-2.9790 BSP 10907
BDE 4.3336 BRA 1.8737 BC3 3.0935 FSP 1094

MID-COURSE EXECUTION ACCURACY

SGT 4719.4 SGR 4484.8 SG3 608.3
RRT .9642 RRF .9996 RTF .9583
SGB 6510.5 R23 .1614 R13 .9867
SG1 6452.1 SG2 869.4 THA 43.49

ORBIT DETERMINATION ACCURACY

ST 188.4 SR 166.3 SS 104.9
CRT .9944 CRS -.9999 CST -.9928
LSA 271.9 MSA 15.0 SSA .1
EL1 250.9 EL2 13.2 ALF 41.41

LAUNCH DATE APR 28 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 568.288 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.274 GAL -2.49 AZL 85.66 HCA 183.67 SMA 184.14 ECC .18704 INC 4.3367 V1 29.584
RP 217.43 LAP -.28 LOP 40.73 VP 22.361 GAP 2.79 AZP 94.33 TAL 344.05 TAP 167.72 RCA 149.70 APO 218.58 V2 25.269
RC 168.717 GL 37.56 GP -37.41 ZAL 117.66 ZAP 75.81 ETS 187.79 ZAE 108.55 ETE 195.29 ZAC 65.02 ETC 271.67 LVI 24.96

PLANETOCENTRIC CONIC

C3 16.005 VHL 4.001 DLA 27.82 RAL 328.96 RAD 6641.0 VEL 11.664 PTH 6.70 VHP 3.944 DPA -59.81 RAP 305.50 ECC 1.2634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 56 56	3658.02	-47.56	143.11	208.47	91.22	13 57 54	2658.0	-41.51	110.01
60.00	12 58 3	3655.05	-40.05	142.50	208.13	85.06	13 58 58	2655.1	-37.66	111.63
70.00	13 0 6	3648.98	-32.68	140.77	206.89	79.48	14 0 55	2649.0	-33.67	112.08
80.00	13 5 35	3631.75	-25.74	137.62	205.04	74.32	14 6 7	2631.8	-29.77	110.92
90.00	13 39 27	3522.24	-21.38	128.11	203.56	71.03	14 38 9	2522.2	-27.27	102.64
100.00	15 48 27	3106.22	-25.74	98.99	205.04	74.32	16 40 13	2106.2	-29.77	72.29
110.00	17 59 33	2695.80	-32.68	69.69	206.89	79.48	18 44 29	1695.8	-33.67	40.99

DIFFERENTIAL CORRECTIONS

TDE 2.2229 TRA 1.3146 TC3-3.8259 BAU .9480
RDE 1.5679 RRA 1.4445 RC3-2.2342 FAU .12543
FDE 4.5686 FRA 4.4389 FC3-6.7849 BSP 10273
BDE 2.7202 BRA 1.9531 BC3 4.4304 FSP 1713

MID-COURSE EXECUTION ACCURACY

SGT 4902.8 SGR 3702.5 SG3 981.9
RRT .9696 RRF .9997 RTF .9664
SGB 6143.8 R23 .1691 R13 .9854
SG1 6100.4 SG2 728.7 THA 36.82

ORBIT DETERMINATION ACCURACY

ST 162.4 SR 117.7 SS 117.4
CRT .9945 CRS -.9999 CST -.9928
LSA 232.0 MSA 13.1 SSA .1
EL1 200.3 EL2 10.0 ALF 35.87

LAUNCH DATE APR 28 1971 FLIGHT TIME 242.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 572.444 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.280 GAL -2.56 AZL 87.13 HCA 184.81 SMA 184.23 ECC .18767 INC 2.8721 V1 29.584
RP 217.79 LAP -.24 LOP 41.87 VP 22.324 GAP 2.63 AZP 98.86 TAL 343.69 TAP 168.50 RCA 149.65 APO 218.80 V2 25.229
RC 171.268 GL 26.52 GP -30.48 ZAL 121.55 ZAP 73.04 ETS 188.66 ZAE 108.71 ETE 191.89 ZAC 71.97 ETC 271.65 LVI 18.83

PLANETOCENTRIC CONIC

C3 13.091 VHL 3.618 DLA 17.74 RAL 333.86 RAD 6639.6 VEL 11.539 PTH. 6.59 VHP 3.599 DPA -53.25 RAP 301.34 ECC 1.2154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 3 40	3395.69	-44.27	118.85	199.84	109.59	15 0 15	2395.7	-32.09	92.07
60.00	14 22 39	3345.13	-38.61	116.48	202.02	102.58	15 18 24	2345.1	-29.58	89.42
70.00	14 51 3	3261.52	-33.51	110.80	203.11	97.04	15 45 24	2261.5	-27.20	83.91
80.00	15 36 28	3119.19	-29.70	100.41	203.51	93.22	16 28 27	2119.2	-25.37	73.83
90.00	16 47 27	2890.05	-28.23	83.65	203.59	91.79	17 35 37	1890.1	-24.65	57.21
100.00	18 19 19	2593.66	-29.70	61.78	203.51	93.22	19 2 33	1593.7	-25.37	35.19
110.00	19 50 29	2308.33	-33.51	39.72	203.11	97.04	20 28 58	1308.3	-27.20	12.83

DIFFERENTIAL CORRECTIONS

TDE 1.7286 TRA 1.5534 TC3-4.7353 BAU .9116
RDE 1.0228 RRA 1.2491 RC3-2.1698 FAU .14868
FDE 4.3837 FRA 5.7177 FC3-9.8329 BSP 10039
BDE 2.0086 BRA 1.9933 BC3 5.2087 FSP 2132

MID-COURSE EXECUTION ACCURACY

SGT 5089.8 SGR 3066.3 SG3 1188.4
RRT .9725 RRF .9996 RTF .9704
SGB 5942.0 R23 .1796 R13 .9834
SG1 5910.2 SG2 614.6 THA 30.73

ORBIT DETERMINATION ACCURACY

ST 142.3 SR 86.8 SS 116.7
CRT .9958 CRS -.9997 CST -.9935
LSA 203.2 MSA 10.9 SSA .2
EL1 166.6 EL2 6.8 ALF 31.33

LAUNCH DATE APR 28 1971 FLIGHT TIME 244.00 ARRIVAL DATE DEC 28 1971

DISTANCE 576.600

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.285	GAL	-2.62	AZL	88.03	HCA	185.94	SMA	184.32	ECC	.18834	INC	1.9664	V1	29.584
RP	218.15	LAP	-.20	LOP	43.01	VP	22.287	GAP	2.47	AZP	91.96	TAL	343.32	TAP	169.26	RCA	149.61	APO	219.04	V2	25.189
RC	173.829	GL	18.67	GP	-25.45	ZAL	123.88	ZAP	70.75	ETS	169.47	ZAE	108.18	ETE	189.36	ZAC	77.01	ETC	271.51	LVI	14.36

PLANETOCENTRIC CONIC

C3 11.985 VHL 3.462 DLA 10.62 RAL 337.27 RAD 6639.1 VEL 11.492 PTH 6.54 VHP 3.432 DPA -48.42 RAP 298.97 ECC 1.1972

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 45 44	3231.10	-39.65	105.78	196.64	118.82	15 39 35	2231.1	-24.93	82.94
60.00	15 13 43	3156.62	-34.79	101.96	199.52	111.76	16 6 19	2156.6	-22.86	78.00
70.00	15 52 54	3041.33	-30.45	94.39	201.29	106.27	16 43 35	2041.3	-20.93	69.90
80.00	16 49 8	2865.16	-27.29	81.96	202.22	102.60	17 36 53	1865.2	-19.49	57.27
90.00	18 5 15	2619.50	-26.11	64.19	202.50	101.27	18 48 55	1619.5	-18.94	39.45
100.00	19 32 0	2339.63	-27.29	43.33	202.22	102.60	20 11 0	1339.6	-19.49	18.64
110.00	20 52 20	2088.15	-30.45	23.31	201.29	106.27	21 27 8	1088.1	-20.93	358.82

DIFFERENTIAL CORRECTIONS

TDE	1.4294	TRA	1.7122	TC3	-5.3751
RDE	.7313	RRA	1.0641	RC3	-1.9840
FDE	4.0669	FRA	6.4831	FC	-11.9381
BDE	1.6056	BRA	2.0159	BC3	5.7296

BAU	.9181				
FAU	.16527				
BSP	.9624				
FSP	.2316				

MID-COURSE EXECUTION ACCURACY

SGT	5268.7	SGR	2561.7	SG3	1318.3
RRT	.9737	RRF	.9994	RTF	.9723
SGB	5858.5	R23	.1890	R13	.9813
SG1	5834.7	SG2	527.4	THA	25.56

ORBIT DETERMINATION ACCURACY

ST	126.1	SR	66.2	SS	111.0
CRT	.9976	CRS	-.9994	CST	-.9947
LSA	180.4	MSA	8.7	SSA	.4
EL1	142.4	EL2	4.0	ALF	27.69

LAUNCH DATE APR 28 1971 FLIGHT TIME 246.00 ARRIVAL DATE DEC 30 1971

DISTANCE 580.754

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.291	GAL	-2.69	AZL	88.64	HCA	187.08	SMA	184.42	ECC	.18904	INC	1.3558	V1	29.584
RP	218.51	LAP	-.17	LOP	44.15	VP	22.250	GAP	2.31	AZP	91.35	TAL	342.94	TAP	170.02	RCA	149.56	APO	219.28	V2	25.149
RC	176.400	GL	12.99	GP	-21.70	ZAL	125.36	ZAP	68.77	ETS	170.15	ZAE	107.26	ETE	187.46	ZAC	80.77	ETC	271.41	LVI	11.04

PLANETOCENTRIC CONIC

C3 11.566 VHL 3.401 DLA 5.52 RAL 339.83 RAD 6638.8 VEL 11.474 PTH 6.52 VHP 3.346 DPA -44.81 RAP 297.42 ECC 1.1903

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 4	3121.29	-35.76	98.17	195.92	123.76	16 7 6	2121.3	-19.82	77.49
60.00	15 48 46	3031.66	-31.29	93.23	199.05	116.82	16 39 17	2031.7	-17.92	71.13
70.00	16 34 26	2897.34	-27.28	84.40	201.11	111.40	17 22 43	1897.3	-16.16	61.47
80.00	17 36 43	2702.25	-24.38	70.75	202.25	107.80	18 21 45	1702.2	-14.86	47.40
90.00	18 55 32	2447.92	-23.29	52.42	202.62	106.51	19 36 20	1447.9	-14.36	28.95
100.00	20 19 35	2176.72	-24.38	32.12	202.25	107.80	20 55 52	1176.7	-14.86	8.77
110.00	21 33 52	1944.16	-27.28	13.32	201.11	111.40	22 6 16	944.2	-16.16	350.39

DIFFERENTIAL CORRECTIONS

TDE	1.2695	TRA	1.8744	TC3	-5.7115
RDE	.5736	RRA	.9229	RC3	-1.7237
FDE	3.8521	FRA	7.0242	FC	-12.8992
BDE	1.3931	BRA	2.0893	BC3	5.9660

BAU	.9225				
FAU	.17232				
BSP	.9726				
FSP	.2470				

MID-COURSE EXECUTION ACCURACY

SGT	5452.7	SGR	2179.1	SG3	1394.4
RRT	.9744	RRF	.9989	RTF	.9737
SGB	5872.0	R23	.1932	R13	.9801
SG1	5854.2	SG2	456.6	THA	21.41

ORBIT DETERMINATION ACCURACY

ST	117.2	SR	53.7	SS	107.1
CRT	.9993	CRS	-.9987	CST	-.9964
LSA	167.5	MSA	6.7	SSA	.6
EL1	128.9	EL2	1.8	ALF	24.62

LAUNCH DATE APR 28 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 1 1972

DISTANCE 584.904

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.298	GAL	-2.76	AZL	89.08	HCA	188.21	SMA	184.52	ECC	.18978	INC	.9138	V1	29.584
RP	218.88	LAP	-.13	LOP	45.28	VP	22.214	GAP	2.15	AZP	90.91	TAL	342.55	TAP	170.76	RCA	149.50	APO	219.54	V2	25.109
RC	178.981	GL	8.77	GP	-18.84	ZAL	126.38	ZAP	66.99	ETS	170.73	ZAE	106.14	ETE	186.02	ZAC	83.65	ETC	271.34	LVI	8.50

PLANETOCENTRIC CONIC

C3 11.453 VHL 3.384 DLA 1.79 RAL 341.85 RAD 6638.8 VEL 11.469 PTH 6.52 VHP 3.302 DPA -42.04 RAP 296.31 ECC 1.1885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 51	3044.85	-32.76	93.34	196.23	126.66	16 27 36	2044.9	-16.15	73.93
60.00	16 14 32	2944.60	-28.47	87.58	199.49	119.82	17 3 36	1944.6	-14.32	66.59
70.00	17 4 39	2797.17	-24.62	77.83	201.70	114.46	17 51 17	1797.2	-12.62	55.87
80.00	18 11 2	2589.34	-21.83	63.33	202.97	110.90	18 54 11	1589.3	-11.36	40.84
90.00	19 31 37	2329.27	-20.78	44.63	203.38	109.62	20 10 27	1329.3	-10.89	21.97
100.00	20 53 53	2063.81	-21.83	24.70	202.97	110.90	21 28 17	1063.8	-11.36	2.21
110.00	22 4 6	1843.99	-24.62	6.75	201.70	114.46	22 34 50	844.0	-12.62	344.79

DIFFERENTIAL CORRECTIONS

TDE	1.1666	TRA	2.0176	TC3	-5.9362
RDE	.4740	RRA	.8052	RC3	-1.4924
FDE	3.6635	FRA	7.3625	FC	-13.3244
BDE	1.2592	BRA	2.1723	BC3	6.1209

BAU	.9372				
FAU	.17627				
BSP	.9846				
FSP	.2541				

MID-COURSE EXECUTION ACCURACY

SGT	5632.4	SGR	1877.3	SG3	1433.6
RRT	.9745	RRF	.9982	RTF	.9548
SGB	5937.0	R23	.1935	R13	.9793
SG1	5923.5	SG2	400.4	THA	18.08

ORBIT DETERMINATION ACCURACY

ST	111.4	SR	45.1	SS	103.4
CRT	.9998	CRS	-.9975	CST	-.9978
LSA	158.5	MSA	5.2	SSA	.9
EL1	120.2	EL2	.9	ALF	22.02

LAUNCH DATE APR 28 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 3 1972

DISTANCE 589.052

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.304	GAL	-2.83	AZL	89.42	HCA	189.34	SMA	184.63	ECC	.19055	INC	.5820	V1	29.584
RP	219.25	LAP	-.09	LOP	46.41	VP	22.178	GAP	1.99	AZP	90.57	TAL	342.15	TAP	171.49	RCA	149.45	APO	219.81	V2	25.068
RC	181.572	GL	5.55	GP	-16.58	ZAL	127.15	ZAP	65.36	ETS	171.22	ZAE	104.92	ETE	184.90	ZAC	85.91	ETC	271.28	LVI	6.51

PLANETOCENTRIC CONIC

C3 11.495 VHL 3.390 DLA -1.00 RAL 343.52 RAD 6638.8 VEL 11.471 PTH 6.52 VHP 3.282 DPA -39.86 RAP 295.49 ECC 1.1892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 53 42	2989.99	-30.48	90.10	196.98	128.48	16 43 32	1990.0	-13.48	71.46
60.00	16 34 21	2881.88	-26.29	83.71	200.33	121.72	17 22 22	1881.9	-11.66	63.43
70.00	17 27 46	2724.79	-22.50	73.28	202.64	116.40	18 13 10	1724.8	-9.98	51.93
80.00	18 37 7	2507.61	-19.75	58.15	203.99	112.86	19 18 55	1507.6	-8.73	36.20
90.00	19 59 1	2243.34	-18.72	39.17	204.43	111.59	20 36 25	1243.3	-8.26	17.03
100.00	21 19 59	1982.08	-19.75	19.52	203.99	112.86	21 53 1	982.1	-8.73	357.57
110.00	22 27 12	1771.61	-22.50	2.20	202.64	116.40	22 56 44	771.6	-9.98	340.85

DIFFERENTIAL CORRECTIONS

TDE	1.1072	TRA	2.1583	TC3	-6.0694
RDE	.4102	RRA	.7096	RC3	-1.2874
FDE	3.5299	FRA	7.5942	FC	-13.3289
BDE	1.1808	BRA	2.2720	BC3	6.2044

BAU	.9535				
FAU	.17698				
BSP	10092				
FSP	2588				

MID-COURSE EXECUTION ACCURACY

SGT	5809.2	SGR	1637.4	SG3	1451.0
RRT	.9740	RRF	.9972	RTF	.9757
SGB	6035.6	R23	.1909	R13	.9789
SG1	6025.0	SG2	357.4	THA	15.41

ORBIT DETERMINATION ACCURACY

ST	108.6	SR	39.1	SS	100.7
CRT	.9985	CRS	-.9955	CST	-.9989
LSA	153.1	MSA	4.3	SSA	1.3
EL1	115.4	EL2	2.0	ALF	19.77

LAUNCH DATE APR 28 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 593.194 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.311 GAL -2.90 AZL 89.68 HCA 190.47 SMA 184.74 ECC .19135 INC .3191 V1 29.584
RP 219.62 LAP -.06 LOP 47.54 VP 22.141 GAP 1.83 AZP 90.32 TAL 341.75 TAP 172.22 RCA 149.39 APO 220.09 V2 25.028
RC 184.172 GL 3.04 GP -14.77 ZAL 127.79 ZAP 63.85 ETS 171.63 ZAE 103.64 ETE 184.02 ZAC 87.73 ETC 271.23 LVI 4.91

PLANETOCENTRIC CONIC

C3 11.623 VHL 3.409 DLA -3.14 RAL 344.95 RAD 6638.9 VEL 11.476 PTH 6.53 VHP 3.277 DPA -38.11 RAP 294.86 ECC 1.1913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 10	2949.81	-28.75	87.82	197.91	129.69	16 56 20	1949.8	-11.50	69.69
60.00	16 50 5	2835.67	-24.60	80.96	201.33	122.99	17 37 21	1835.7	-9.68	61.13
70.00	17 46 1	2671.17	-20.84	70.01	203.72	117.69	18 30 33	1671.2	-7.98	49.06
80.00	18 57 41	2446.81	-18.10	54.39	205.13	114.16	19 38 28	1446.8	-6.73	32.80
90.00	20 20 35	2179.31	-17.07	35.20	205.60	112.89	20 56 54	1179.3	-6.25	13.39
100.00	21 40 33	1921.28	-18.10	15.76	205.13	114.16	22 12 34	921.3	-6.73	354.17
110.00	22 45 28	1717.99	-20.84	358.92	203.72	117.69	23 14 6	718.0	-7.98	337.98

DIFFERENTIAL CORRECTIONS

TDE 1.0710 TRA 2.2918 TC3-6.1642 BAU .9733
RDE .3681 RRA .6310 RC3-1.1099 FAU .17524
FDE 3.4424 FRA 7.7597 FC-13.0527 BSP 10355
BDE 1.1325 BRA 2.3770 BC3 6.2633 FSP 2628

MID-COURSE EXECUTION ACCURACY

SGT 5982.0 SGR 1443.4 SG3 1454.1
RRT .9718 RRF .9956 RTF .9754
SGB 6153.7 R23 .1899 R13 .9779
SG1 6144.7 SG2 331.3 THA 13.24

ORBIT DETERMINATION ACCURACY

ST 107.2 SR 34.8 SS 99.0
CRT .9951 CRS -.9928 CST -.9995
LSA 149.9 MSA 4.0 SSA 1.6
EL1 112.6 EL2 3.3 ALF 17.93

LAUNCH DATE APR 28 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 597.332 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.318 GAL -2.98 AZL 89.89 HCA 191.59 SMA 184.86 ECC .19218 INC .1016 V1 29.584
RP 219.99 LAP -.02 LOP 48.66 VP 22.105 GAP 1.67 AZP 90.11 TAL 341.34 TAP 172.93 RCA 149.33 APO 220.39 V2 24.987
RC 186.781 GL 1.03 GP -13.29 ZAL 128.35 ZAP 62.42 ETS 171.98 ZAE 102.34 ETE 183.31 ZAC 89.21 ETC 271.20 LVI 3.59

PLANETOCENTRIC CONIC

C3 11.802 VHL 3.435 DLA -4.79 RAL 346.19 RAD 6639.0 VEL 11.484 PTH 6.53 VHP 3.282 DPA -36.67 RAP 294.37 ECC 1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 12	2919.97	-27.44	86.18	198.92	130.52	17 6 52	1920.0	-10.02	68.40
60.00	17 2 53	2801.12	-23.31	78.95	202.39	123.86	17 49 35	1801.1	-8.18	59.44
70.00	18 0 49	2630.79	-19.54	67.59	204.84	118.58	18 44 40	1630.8	-6.47	46.91
80.00	19 14 17	2400.76	-16.79	51.60	206.31	115.06	19 54 18	1400.8	-5.19	30.24
90.00	20 37 59	2130.71	-15.76	32.23	206.79	113.79	21 13 30	1130.7	-4.71	10.66
100.00	21 57 9	1875.23	-16.79	12.97	206.31	115.06	22 28 24	875.2	-5.19	351.61
110.00	23 0 15	1677.61	-19.54	356.51	204.84	118.58	23 28 13	677.6	-6.47	335.83

DIFFERENTIAL CORRECTIONS

TDE 1.0508 TRA 2.4212 TC3-6.2354 BAU .9955
RDE .3380 RRA .5637 RC3 -.9652 FAU .17297
FDE 3.3679 FRA 7.8617 FC-12.6885 BSP 10614
BDE 1.1039 BRA 2.4659 BC3 6.3096 FSP 2637

MID-COURSE EXECUTION ACCURACY

SGT 6152.0 SGR 1283.6 SG3 1447.5
RRT .9690 RRF .9933 RTF .9752
SGB 6284.4 R23 .1859 R13 .9771
SG1 6276.8 SG2 310.7 THA 11.46

ORBIT DETERMINATION ACCURACY

ST 106.8 SR 31.6 SS 97.4
CRT .9897 CRS -.9892 CST -.9997
LSA 147.9 MSA 4.5 SSA 1.6
EL1 111.3 EL2 4.3 ALF 16.32

LAUNCH DATE APR 28 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 601.468 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.325 GAL -3.05 AZL 90.06 HCA 192.71 SMA 184.98 ECC .19304 INC .0420 V1 29.584
RP 220.36 LAP .01 LOP 49.78 VP 22.069 GAP 1.52 AZP 89.94 TAL 340.93 TAP 173.63 RCA 149.27 APO 220.69 V2 24.946
RC 189.399 GL -.60 GP -12.06 ZAL 128.87 ZAP 61.07 ETS 172.29 ZAE 101.03 ETE 182.73 ZAC 90.45 ETC 271.17 LVI 2.50

PLANETOCENTRIC CONIC

C3 12.013 VHL 3.466 DLA -6.10 RAL 347.29 RAD 6639.1 VEL 11.493 PTH 6.54 VHP 3.294 DPA -35.47 RAP 293.99 ECC 1.1977

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 25	2897.68	-26.45	84.99	199.94	131.11	17 15 43	1897.7	-8.92	67.44
60.00	17 13 31	2775.07	-22.31	77.47	203.46	124.47	17 59 46	1775.1	-7.05	58.17
70.00	18 13 2	2600.10	-18.53	65.79	205.97	119.21	18 56 22	1600.1	-5.31	45.30
80.00	19 27 57	2365.52	-15.76	49.49	207.47	115.69	20 7 23	1365.5	-4.01	28.30
90.00	20 52 17	2093.41	-14.72	29.99	207.98	114.42	21 27 11	1093.4	-3.52	8.56
100.00	22 10 49	1839.99	-15.76	10.86	207.47	115.69	22 41 29	840.0	-4.01	349.67
110.00	23 12 28	1646.92	-18.53	354.70	205.97	119.21	23 39 55	646.9	-5.31	334.21

DIFFERENTIAL CORRECTIONS

TDE 1.0351 TRA 2.5395 TC3-6.3139 BAU 1.0033
RDE .3131 RRA .5023 RC3 -.8565 FAU .17246
FDE 3.2596 FRA 7.8702 FC-12.4293 BSP 10770
BDE 1.0814 BRA 2.5887 BC3 6.3717 FSP 2575

MID-COURSE EXECUTION ACCURACY

SGT 6317.3 SGR 1147.9 SG3 1431.4
RRT .9666 RRF .9902 RTF .9762
SGB 6420.7 R23 .1738 R13 .9776
SG1 6414.2 SG2 289.6 THA 9.98

ORBIT DETERMINATION ACCURACY

ST 106.6 SR 28.8 SS 94.9
CRT .9823 CRS -.9841 CST -.9997
LSA 145.5 MSA 5.2 SSA 1.5
EL1 110.3 EL2 5.2 ALF 14.87

LAUNCH DATE APR 28 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 605.598 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.332 GAL -3.13 AZL 90.21 HCA 193.82 SMA 185.10 ECC .19392 INC .2038 V1 29.584
RP 220.74 LAP .05 LOP 50.89 VP 22.034 GAP 1.36 AZP 89.80 TAL 340.51 TAP 174.32 RCA 149.21 APO 221.00 V2 24.904
RC 192.025 GL -1.93 GP -11.02 ZAL 129.36 ZAP 59.78 ETS 172.56 ZAE 99.73 ETE 182.26 ZAC 91.49 ETC 271.15 LVI 1.56

PLANETOCENTRIC CONIC

C3 12.246 VHL 3.499 DLA -7.13 RAL 348.29 RAD 6639.2 VEL 11.503 PTH 6.55 VHP 3.310 DPA -34.45 RAP 293.70 ECC 1.2015

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 15	2881.10	-25.71	84.12	200.96	131.52	17 23 16	1881.1	-8.09	66.73
60.00	17 22 29	2755.49	-21.55	76.37	204.53	124.92	18 8 24	1755.5	-6.20	57.22
70.00	18 23 16	2576.77	-17.75	64.43	207.08	119.67	19 6 12	1576.8	-4.42	44.07
80.00	19 39 22	2338.51	-14.96	47.89	208.62	116.14	20 18 21	1338.5	-3.10	26.81
90.00	21 4 13	2064.72	-13.91	28.28	209.14	114.87	21 38 38	1064.7	-2.60	6.96
100.00	22 22 14	1812.98	-14.96	9.25	208.62	116.14	22 52 27	813.0	-3.10	348.18
110.00	23 22 42	1623.59	-17.75	353.35	207.08	119.67	23 49 46	623.6	-4.42	332.99

DIFFERENTIAL CORRECTIONS

TDE 1.0361 TRA 2.6642 TC3-6.3561 BAU 1.0479
RDE .2974 RRA .4516 RC3 -.7560 FAU .16953
FDE 3.2038 FRA 7.8904 FC-11.9849 BSP 11032
BDE 1.0779 BRA 2.7022 BC3 6.4009 FSP 2551

MID-COURSE EXECUTION ACCURACY

SGT 6480.2 SGR 1035.4 SG3 1412.8
RRT .9620 RRF .9859 RTF .9763
SGB 6562.4 R23 .1647 R13 .9774
SG1 6556.4 SG2 279.3 THA 8.76

ORBIT DETERMINATION ACCURACY

ST 107.6 SR 26.8 SS 93.6
CRT .9731 CRS -.9781 CST -.9995
LSA 145.0 MSA 6.0 SSA 1.5
EL1 110.8 EL2 6.0 ALF 13.66

LAUNCH DATE APR 28 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 609.724 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.340 GAL -3.21 AZL 90.33 HCA 194.93 SMA 185.23 ECC .19484 INC .3321 V1 29.584
RP 221.12 LAP .09 LOP 52.00 VP 21.998 GAP 1.20 AZP 89.68 TAL 340.08 TAP 175.01 RCA 149.14 APO 221.32 V2 24.863
RC 194.659 GL -3.05 GP -10.13 ZAL 129.83 ZAP 58.55 ETS 172.80 ZAE 98.44 ETE 181.87 ZAC 92.39 ETC 271.15 LVI .76

PLANETOCENTRIC CONIC

C3 12.496 VHL 3.535 DLA -7.95 RAL 349.21 RAD 6639.3 VEL 11.514 PTH 6.56 VHP 3.330 DPA -33.58 RAP 293.48 ECC 1.2057

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 41 39	2868.92	-25.16	83.48	201.96	131.81	17 29 48	1868.9	-7.48	66.21
60.00	17 30 8	2740.89	-20.98	75.56	205.57	125.23	18 15 49	1740.9	-5.56	56.52
70.00	18 31 57	2559.13	-17.16	63.41	208.16	119.99	19 14 36	1559.1	-3.75	43.14
80.00	19 49 1	2317.87	-14.34	46.67	209.73	116.47	20 27 39	1317.9	-2.40	25.67
90.00	21 14 18	2042.72	-13.27	26.97	210.27	115.20	21 48 20	1042.7	-1.89	5.73
100.00	22 31 52	1792.32	-14.34	8.04	209.73	116.47	23 1 45	792.3	-2.40	347.04
110.00	23 31 23	1605.95	-17.16	352.33	208.16	119.99	23 58 9	606.0	-3.75	332.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0460 TRA 2.7899 TC3-6.3843 BAU 1.0725 SGT 6640.3 SGR 940.1 SG3 1391.0 ST 109.2 SR 25.3 SS 92.4
RDE .2861 RRA .4069 RC3 -.6713 FAU .16635 RRT .9562 RRF .9802 RTF .9764 CRT .9625 CRS -.9711 CST -.9992
FDE 3.1567 FRA 7.8877 FC-11.5247 BSP 11312 SGB 6706.6 R23 .1537 R13 .9773 LSA 145.1 MSA 6.9 SSA 1.4
BDE 1.0844 BRA 2.8194 BC3 6.4195 FSP 2517 SG1 6701.0 SG2 272.8 THA 7.72 EL1 111.9 EL2 6.7 ALF 12.60

LAUNCH DATE APR 28 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 613.844 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.348 GAL -3.29 AZL 90.44 HCA 196.04 SMA 185.36 ECC .19578 INC .4386 V1 29.584
RP 221.50 LAP .12 LOP 53.11 VP 21.963 GAP 1.05 AZP 89.58 TAL 339.65 TAP 175.69 RCA 149.07 APO 221.65 V2 24.821
RC 197.299 GL -3.98 GP -9.36 ZAL 130.30 ZAP 57.37 ETS 173.02 ZAE 97.18 ETE 181.54 ZAC 93.15 ETC 271.15 LVI .05

PLANETOCENTRIC CONIC

C3 12.760 VHL 3.572 DLA -8.61 RAL 350.07 RAD 6639.4 VEL 11.525 PTH 6.57 VHP 3.353 DPA -32.82 RAP 293.33 ECC 1.2100

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 52	2860.19	-24.76	83.03	202.95	132.02	17 35 32	1860.2	-7.05	65.84
60.00	17 36 44	2730.21	-20.56	74.97	206.60	125.46	18 22 14	1730.2	-5.09	56.00
70.00	18 39 23	2546.01	-16.71	62.66	209.22	120.23	19 21 49	1546.0	-3.25	42.46
80.00	19 57 14	2302.31	-13.86	45.76	210.82	116.71	20 35 36	1302.3	-1.88	24.82
90.00	21 22 52	2026.03	-12.79	25.99	211.36	115.44	21 56 38	1026.0	-1.35	4.80
100.00	22 40 6	1776.78	-13.86	7.13	210.82	116.71	23 9 43	776.8	-1.88	346.19
110.00	23 38 49	1592.83	-16.71	351.57	209.22	120.23	24 5 22	592.8	-3.25	331.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0602 TRA 2.9139 TC3-6.4088 BAU 1.0980 SGT 6797.1 SGR 858.8 SG3 1367.0 ST 110.9 SR 24.1 SS 91.3
RDE .2784 RRA .3674 RC3 -.5987 FAU .16281 RRT .9482 RRF .9729 RTF .9763 CRT .9505 CRS -.9631 CST -.9988
FDE 3.1194 FRA 7.8702 FC-11.0468 BSP 11574 SGB 6851.2 R23 .1437 R13 .9770 LSA 145.5 MSA 7.6 SSA 1.4
BDE 1.0961 BRA 2.9370 BC3 6.4367 FSP 2481 SG1 6845.8 SG2 270.9 THA 6.84 EL1 113.3 EL2 7.3 ALF 11.70

LAUNCH DATE APR 28 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 617.960 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.356 GAL -3.38 AZL 90.53 HCA 197.14 SMA 185.50 ECC .19675 INC .5322 V1 29.584
RP 221.88 LAP .16 LOP 54.21 VP 21.927 GAP .89 AZP 89.49 TAL 339.21 TAP 176.35 RCA 149.00 APO 221.99 V2 24.780
RC 199.945 GL -4.77 GP -8.69 ZAL 130.77 ZAP 56.23 ETS 173.21 ZAE 95.93 ETE 181.26 ZAC 93.82 ETC 271.16 LVI -.58

PLANETOCENTRIC CONIC

C3 13.034 VHL 3.610 DLA -9.13 RAL 350.87 RAD 6639.6 VEL 11.537 PTH 6.58 VHP 3.378 DPA -32.16 RAP 293.24 ECC 1.2145

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 1	2854.24	-24.49	82.72	203.91	132.16	17 40 36	1854.2	-6.75	65.59
60.00	17 42 29	2722.69	-20.26	74.56	207.59	125.61	18 27 52	1722.7	-4.76	55.64
70.00	18 45 49	2536.50	-16.38	62.11	210.25	120.40	19 28 5	1536.5	-2.89	41.96
80.00	20 4 18	2290.62	-13.51	45.09	211.87	116.88	20 42 29	1290.8	-1.49	24.19
90.00	21 30 12	2013.64	-12.42	25.26	212.42	115.61	22 3 46	1013.6	-.95	4.11
100.00	22 47 10	1765.30	-13.51	6.46	211.87	116.88	23 16 35	765.3	-1.49	345.56
110.00	23 45 15	1583.32	-16.38	351.0	210.25	120.40	24 11 39	583.3	-2.89	330.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0796 TRA 3.0384 TC3-6.4256 BAU 1.1236 SGT 6950.9 SGR 789.2 SG3 1341.4 ST 112.9 SR 23.1 SS 90.3
RDE .2731 RRA .3319 RC3 -.5371 FAU .15928 RRT .9383 RRF .9635 RTF .9763 CRT .9375 CRS -.9542 CST -.9985
FDE 3.0842 FRA 7.8377 FC-10.5797 BSP 11838 SGB 6995.5 R23 .1329 R13 .9769 LSA 146.2 MSA 8.4 SSA 1.3
BDE 1.1137 BRA 3.0565 BC3 6.4480 FSP 2439 SG1 6990.3 SG2 271.3 THA 6.09 EL1 115.0 EL2 7.9 ALF 10.91

LAUNCH DATE APR 28 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC DISTANCE 622.071 EARTH TO MARS

RL 150.61 LAL -.00 LOL 217.07 VL 32.364 GAL -3.46 AZL 90.61 HCA 198.24 SMA 185.63 ECC .19775 INC .6145 V1 29.584
RP 222.27 LAP .19 LOP 55.31 VP 21.892 GAP .74 AZP 89.42 TAL 338.77 TAP 177.01 RCA 148.92 APO 222.34 V2 24.738
RC 202.595 GL -5.45 GP -8.10 ZAL 131.24 ZAP 55.14 ETS 173.39 ZAE 94.70 ETE 181.02 ZAC 94.41 ETC 271.17 LVI -1.14

PLANETOCENTRIC CONIC

C3 13.319 VHL 3.650 DLA -9.55 RAL 351.62 RAD 6639.7 VEL 11.549 PTH 6.59 VHP 3.405 DPA -31.57 RAP 293.20 ECC 1.2192

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 37	2850.55	-24.32	82.53	204.86	132.24	17 45 7	1850.5	-6.57	65.43
60.00	17 47 33	2717.74	-20.07	74.28	208.57	125.71	18 32 51	1717.7	-4.54	55.40
70.00	18 51 25	2529.97	-16.16	61.74	211.25	120.51	19 33 35	1530.0	-2.64	41.62
80.00	20 10 24	2282.70	-13.26	44.61	212.89	117.00	20 48 27	1282.7	-1.21	23.74
90.00	21 36 33	2004.78	-12.16	24.74	213.45	115.73	22 9 57	1004.8	-.66	3.61
100.00	22 53 16	1757.17	-13.26	5.98	212.89	117.00	23 22 33	757.2	-1.21	345.11
110.00	23 50 51	1576.78	-16.16	350.66	211.25	120.51	24 17 8	576.8	-2.64	330.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1041 TRA 3.1643 TC3-6.4342 BAU 1.1489 SGT 7101.9 SGR 729.6 SG3 1314.9 ST 115.2 SR 22.4 SS 89.4
RDE .2701 RRA .2999 RC3 -.4835 FAU .15548 RRT .9259 RRF .9517 RTF .9762 CRT .9239 CRS -.9447 CST -.9981
FDE 3.0572 FRA 7.7986 FC-10.1065 BSP 12111 SGB 7139.3 R23 .1229 R13 .9767 LSA 147.3 MSA 9.1 SSA 1.3
BDE 1.1367 BRA 3.1785 BC3 6.4524 FSP 2398 SG1 7134.0 SG2 274.4 THA 5.44 EL1 117.1 EL2 8.4 ALF 10.23

LAUNCH DATE APR 28 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 626.176 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.372	GAL	-3.55	AZL	90.69	HCA	199.33	SMA	185.77	ECC	.19877	INC	.6870	V1	29.584
RP	222.65	LAP	.23	LOP	56.40	VP	21.857	GAP	.58	AZP	89.35	TAL	338.33	TAP	177.66	RCA	148.85	APO	222.70	V2	24.696
RC	205.250	GL	-6.03	GP	-7.58	ZAL	131.70	ZAP	84.09	ETS	173.56	ZAE	93.50	ETE	180.82	ZAC	94.93	ETC	271.19	LVI	-1.65

PLANETOCENTRIC CONIC

C3	13.613	VHL	3.690	DLA	-9.87	RAL	352.34	RAD	6639.9	VEL	11.562	PTH	6.61	VHP	3.433	DPA	-31.04	RAP	293.21	ECC	1.2240

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 43	2848.72	-24.24	82.44	205.78	132.28	17 49 11	1848.7	-6.47	65.35
60.00	17 52 1	2714.91	-19.95	74.13	209.53	125.77	18 37 16	1714.9	-4.42	55.27
70.00	18 56 19	2525.89	-16.02	61.51	212.23	120.58	19 36 25	1525.9	-2.49	41.40
80.00	20 15 43	2277.35	-13.10	44.30	213.89	117.07	20 53 40	1277.4	-1.03	23.45
90.00	21 42 2	1998.85	-11.99	24.39	214.46	115.81	22 15 21	998.8	-.47	3.28
100.00	22 58 34	1751.82	-13.10	5.67	213.89	117.07	23 27 46	751.8	-1.03	344.82
110.00	23 55 45	1572.70	-16.02	350.43	212.23	120.58	24 21 58	572.7	-2.49	330.32

DIFFERENTIAL CORRECTIONS

TDE	1.1314	TRA	3.2898	TC3	-6.4403	BAU	1.1748												
RDE	.2687	RRA	.2709	RC3	-.4373	FAU	.15168												
FDE	3.0328	FRA	7.7509	FC3	-9.6463	BSP	12365												
BDE	1.1628	BRA	3.3009	BC3	6.4552	FSP	2351												

MID-COURSE EXECUTION ACCURACY

SGT	7250.0	SGR	678.6	SG3	1287.7						
RRT	.9107	RRF	.9372	RTF	.9760						
SGB	7281.7	R23	.1138	R13	.9764						
SG1	7276.3	SG2	279.3	THA	4.88						

ORBIT DETERMINATION ACCURACY

ST	117.5	SR	21.8	SS	88.6						
CRT	.9097	CRS	-.9346	CST	-.9977						
LSA	148.5	MSA	9.7	SSA	1.3						
EL1	119.2	EL2	8.9	ALF	9.64						

LAUNCH DATE APR 28 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 630.275 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.381	GAL	-3.63	AZL	90.75	HCA	200.43	SMA	185.91	ECC	.19982	INC	.7521	V1	29.584
RP	223.04	LAP	.26	LOP	57.50	VP	21.822	GAP	.42	AZP	89.30	TAL	337.88	TAP	178.31	RCA	148.76	APO	223.06	V2	24.654
RC	207.907	GL	-6.53	GP	-7.12	ZAL	132.17	ZAP	53.08	ETS	173.71	ZAE	92.32	ETE	180.64	ZAC	95.38	ETC	271.22	LVI	-2.12

PLANETOCENTRIC CONIC

C3	13.916	VHL	3.730	DLA	-10.13	RAL	353.02	RAD	6640.0	VEL	11.575	PTH	6.62	VHP	3.462	DPA	-30.56	RAP	293.26	ECC	1.2290

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 24	2848.45	-24.22	82.43	206.69	132.29	17 52 53	1848.4	-6.46	65.34
60.00	17 56 0	2713.87	-19.91	74.07	210.46	125.79	18 41 14	1713.9	-4.38	55.22
70.00	19 0 38	2523.86	-15.95	61.39	213.19	120.61	19 42 42	1523.9	-2.41	41.30
80.00	20 20 21	2274.34	-13.00	44.13	214.87	117.12	20 58 15	1274.3	-.93	23.28
90.00	21 46 48	1995.38	-11.88	24.19	215.44	115.85	22 20 4	995.4	-.36	3.09
100.00	23 3 12	1748.81	-13.00	5.50	214.87	117.12	23 32 21	748.8	-.93	344.65
110.00	0 4 0	1570.68	-15.95	350.31	213.19	120.61	0 30 11	570.7	-2.41	330.22

DIFFERENTIAL CORRECTIONS

TDE	1.1628	TRA	3.4170	TC3	-6.4390	BAU	1.2002												
RDE	.2687	RRA	.2442	RC3	-.3987	FAU	.14772												
FDE	3.0130	FRA	7.6972	FC3	-9.1897	BSP	12631												
BDE	1.1934	BRA	3.4257	BC3	6.4512	FSP	2307												

MID-COURSE EXECUTION ACCURACY

SGT	7395.3	SGR	635.0	SG3	1259.9						
RRT	.8924	RRF	.9197	RTF	.9758						
SGB	7422.5	R23	.1055	R13	.9761						
SG1	7417.0	SG2	285.7	THA	4.39						

ORBIT DETERMINATION ACCURACY

ST	120.1	SR	21.4	SS	87.8						
CRT	.8954	CRS	-.9244	CST	-.9973						
LSA	149.9	MSA	10.3	SSA	1.3						
EL1	121.6	EL2	9.4	ALF	9.13						

LAUNCH DATE APR 28 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC DISTANCE 634.369 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.389	GAL	-3.72	AZL	90.81	HCA	201.51	SMA	186.06	ECC	.20089	INC	.8099	V1	29.584
RP	223.42	LAP	.30	LOP	58.58	VP	21.788	GAP	.27	AZP	89.25	TAL	337.43	TAP	178.94	RCA	148.68	APO	223.43	V2	24.612
RC	210.566	GL	-6.96	GP	-6.70	ZAL	132.64	ZAP	52.11	ETS	173.85	ZAE	91.16	ETE	180.49	ZAC	95.79	ETC	271.26	LVI	-2.86

PLANETOCENTRIC CONIC

C3	14.228	VHL	3.772	DLA	-10.32	RAL	353.68	RAD	6640.2	VEL	11.588	PTH	6.63	VHP	3.493	DPA	-30.13	RAP	293.35	ECC	1.2342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 45	2849.49	-24.27	82.48	207.59	132.27	17 56 14	1849.5	-6.51	65.39
60.00	17 59 34	2714.33	-19.93	74.10	211.38	125.78	18 44 49	1714.3	-4.40	55.24
70.00	19 4 27	2523.58	-15.94	61.38	214.13	120.62	19 46 31	1523.6	-2.40	41.28
80.00	20 24 24	2273.31	-12.97	44.07	215.82	117.13	21 2 17	1273.3	-.89	23.23
90.00	21 50 58	1994.00	-11.84	24.11	216.39	115.87	22 24 12	994.0	-.32	3.01
100.00	23 7 16	1747.78	-12.97	5.44	215.82	117.13	23 36 24	747.8	-.89	344.60
110.00	0 7 49	1570.40	-15.94	350.30	214.13	120.62	0 34 0	570.4	-2.40	330.20

DIFFERENTIAL CORRECTIONS

TDE	1.1943	TRA	3.5430	TC3	-6.4408	BAU	1.2271												
RDE	.2697	RRA	.2196	RC3	-.3621	FAU	.14407												
FDE	2.9895	FRA	7.6362	FC3	-8.7662	BSP	12868												
BDE	1.2244	BRA	3.5498	BC3	6.4510	FSP	2257												

MID-COURSE EXECUTION ACCURACY

SGT	7538.1	SGR	597.8	SG3	1232.1						
RRT	.8710	RRF	.8990	RTF	.9759						
SGB	7561.7	R23	.0978	R13	.9758						
SG1	7556.1	SG2	293.0	THA	3.96						

ORBIT DETERMINATION ACCURACY

ST	122.5	SR	21.1	SS	86.9						
CRT	.8808	CRS	-.9137	CST	-.9970						
LSA	151.3	MSA	10.9	SSA	1.3						
EL1	123.9	EL2	9.9	ALF	8.68						

LAUNCH DATE APR 28 1971 FLIGHT TIME 274.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 638.458 EARTH TO MARS

RL	150.61	LAL	-.00	LOL	217.07	VL	32.398	GAL	-3.81	AZL	90.86	HCA	202.60	SMA	186.20	ECC	.20199	INC	.8630	V1	29.584
RP	223.81	LAP	.33	LOP	59.67	VP	21.753	GAP	.11	AZP	89.20	TAL	336.97	TAP	179.57	RCA	148.59	APO	223.81	V2	24.571
RC	213.227	GL	-7.34	GP	-6.33	ZAL	133.11	ZAP	51.16	ETS	173.98	ZAE	90.02	ETE	180.36	ZAC	96.16	ETC	271.31	LVI	-2.97

PLANETOCENTRIC CONIC

C3	14.549	VHL	3.814	DLA	-10.45	RAL	354.31	RAD	6640.3	VEL	11.602	PTH	6.64	VHP	3.524	DPA	-29.74	RAP	293.48	ECC	1.2394

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 48	2851.65	-24.37	82.59	208.47	132.22	17 59 20	1851.6	-6.62	65.48
60.00	18 2 47	2716.07	-20.00	74.19	212.29	125.75	18 48 3	1716.1	-4.47	55.32
70.00	19 7 51	2524.78	-15.98	61.45	215.05	120.60	19 49 55	1524.8	-2.45	41.35
80.00	20 27 58	2273.96	-12.99	44.11	216.75	117.12	21 5 52	1274.0	-.92	23.26
90.00	21 54 37	1994.40	-11.86	24.13	217.33	115.86	22 27 52	994.4	-.33	3.03
100.00	23 10 50	1748.44	-12.99	5.48	216.75	117.12	23 39 58	748.4	-.92	344.63
110.00	0 11 13	1571.60	-15.98	350.36	215.05	120.60	0 37 25	571.6	-2.45	330.26

DIFFERENTIAL CORRECTIONS

TDE	1.2313	TRA	3.6731	TC3	-6.4302	BAU	1.2524												
RDE	.2719	RRA	.1970	RC3	-.3310	FAU	.14008												
FDE	2.9743	FRA	7.5769	FC3	-8.3355	BSP	13137												
BDE	1.2610	BRA	3.6783	BC3	6.4387	FSP	2216												

MID-COURSE EXECUTION ACCURACY

SGT	7678.6	SGR	566.7	SG3	1204.5						
RRT	.8462	RRF	.8750	RTF	.9752						
SGB	7699.5	R23	.0911	R13	.9754						
SG1	7693.6	SG2	301.3	THA	3.58						

ORBIT DETERMINATION ACCURACY

ST	125.3	SR	20.9	SS	86.2						
CRT	.8668	CRS	-.9034	CST	-.9967						
LSA	153.0	MSA	11.4	SSA	1.3						
EL1	126.6	EL2	10.3	ALF	8.29						

LAUNCH DATE APR 28 1971 FLIGHT TIME 276.00 ARRIVAL DATE JAN 29 1972

DISTANCE 642.539

HELIOCENTRIC CONIC

RL	150.61	LAL	-.00	LOL	217.07	VL	32.407	GAL	-3.90	AZL	90.91	HCA	203.68	SMA	186.35	ECC	.20311	INC	.9110
RP	224.20	LAP	.37	LOP	60.75	VP	21.719	GAP	-.05	AZP	89.17	TAL	336.51	TAP	180.19	RCA	148.50	APO	224.20
RC	215.890	GL	-7.66	GP	-5.99	ZAL	133.58	ZAP	50.25	ETS	174.10	ZAE	88.91	ETE	180.24	ZAC	96.49	ETC	271.35

EARTH TO MARS

V1	29.584	V2	24.529	LVI	-3.36

PLANETOCENTRIC CONIC

C3	14.879	VHL	3.857	DLA	-10.55	RAL	354.92	RAD	6640.5	VEL	11.616	PTH	6.66	VHP	3.556	DPA	-29.38	RAP	293.64	ECC	1.2449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 36	2854.77	-24.51	82.75	209.35	132.15	18 2 10	1854.8	-6.78	65.61
60.00	18 5 41	2718.90	-20.11	74.35	213.19	125.69	18 51 0	1718.9	-4.60	55.46
70.00	19 10 52	2527.25	-16.06	61.59	215.96	120.55	19 52 59	1527.3	-2.54	41.48
80.00	20 31 7	2276.07	-13.06	44.23	217.67	117.09	21 9 3	1276.1	-.99	23.38
90.00	21 57 49	1996.34	-11.91	24.25	218.26	115.84	22 31 5	996.3	-.39	3.14
100.00	23 13 58	1750.54	-13.06	5.60	217.67	117.09	23 43 9	750.5	-.99	344.75
110.00	0 14 14	1574.07	-16.06	350.50	215.96	120.55	0 40 28	574.1	-2.54	330.39

DIFFERENTIAL CORRECTIONS

TDE	1.2689	TRA	3.8025	TC3	-6.4199	BAU	1.2784
RDE	.2748	RRA	.1758	RC3	-.3039	FAU	.13624
FDE	2.9563	FRA	7.5112	FC3	-7.9274	BSP	13381
BDE	1.2983	BRA	3.8066	BC3	6.4271	FSP	2169

MID-COURSE EXECUTION ACCURACY

SGT	7815.9	SGR	540.5	SG3	1176.7		
RRT	.8182	RRF	.8478	RTF	.9748		
SGB	7834.6	R23	.0851	R13	.9750		
SG1	7828.5	SG2	310.2	THA	3.24		

ORBIT DETERMINATION ACCURACY

ST	127.9	SR	20.8	SS	85.4
CRT	.8530	CRS	-.8930	CST	-.9964
LSA	154.7	MSA	11.9	SSA	1.3
EL1	129.1	EL2	10.8	ALF	7.95

LAUNCH DATE APR 28 1971 FLIGHT TIME 278.00 ARRIVAL DATE JAN 31 1972

DISTANCE 646.617

HELIOCENTRIC CONIC

RL	150.61	LAL	-.00	LOL	217.07	VL	32.416	GAL	-4.00	AZL	90.96	HCA	204.75	SMA	186.50	ECC	.20425	INC	.9551
RP	224.59	LAP	.40	LOP	61.82	VP	21.685	GAP	-.21	AZP	89.13	TAL	336.05	TAP	180.80	RCA	148.41	APO	224.60
RC	218.554	GL	-7.94	GP	-5.68	ZAL	134.05	ZAP	49.38	ETS	174.22	ZAE	87.82	ETE	180.14	ZAC	96.79	ETC	271.41

EARTH TO MARS

V1	29.584	V2	24.487	LVI	-3.72

PLANETOCENTRIC CONIC

C3	15.217	VHL	3.901	DLA	-10.60	RAL	355.52	RAD	6640.6	VEL	11.630	PTH	6.67	VHP	3.588	DPA	-29.04	RAP	293.83	ECC	1.2504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 10	2858.72	-24.69	82.95	210.21	132.05	18 4 48	1858.7	-6.97	65.78
60.00	18 8 19	2722.69	-20.26	74.56	214.07	125.61	18 53 41	1722.7	-4.76	55.64
70.00	19 13 34	2530.83	-16.19	61.79	216.86	120.49	19 55 45	1530.8	-2.68	41.66
80.00	20 33 53	2279.43	-13.16	44.42	218.58	117.04	21 11 52	1279.4	-1.10	23.56
90.00	22 0 37	1999.60	-12.01	24.44	219.16	115.80	22 33 57	999.6	-.50	3.32
100.00	23 16 45	1753.90	-13.16	5.79	218.58	117.04	23 45 59	753.9	-1.10	344.93
110.00	0 16 57	1577.65	-16.19	350.71	216.86	120.49	0 43 14	577.6	-2.68	330.58

DIFFERENTIAL CORRECTIONS

TDE	1.3095	TRA	3.9341	TC3	-6.4044	BAU	1.3042
RDE	.2785	RRA	.1560	RC3	-.2799	FAU	.13235
FDE	2.9415	FRA	7.4437	FC3	-7.5294	BSP	13628
BDE	1.3388	BRA	3.9371	BC3	6.4105	FSP	2122

MID-COURSE EXECUTION ACCURACY

SGT	7951.3	SGR	519.0	SG3	1149.1		
RRT	.7871	RRF	.8175	RTF	.9744		
SGB	7968.2	R23	.0798	R13	.9746		
SG1	7961.8	SG2	319.7	THA	2.95		

ORBIT DETERMINATION ACCURACY

ST	130.7	SR	20.8	SS	84.7
CRT	.8398	CRS	-.8831	CST	-.9961
LSA	156.6	MSA	12.4	SSA	1.3
EL1	131.9	EL2	11.2	ALF	7.65

LAUNCH DATE APR 28 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 2 1972

DISTANCE 650.687

HELIOCENTRIC CONIC

RL	150.61	LAL	-.00	LOL	217.07	VL	32.425	GAL	-4.09	AZL	91.00	HCA	205.83	SMA	186.66	ECC	.20542	INC	.9955
RP	224.98	LAP	.43	LOP	62.90	VP	21.651	GAP	-.36	AZP	89.10	TAL	335.58	TAP	181.41	RCA	148.32	APO	225.00
RC	221.219	GL	-8.19	GP	-5.40	ZAL	134.52	ZAP	48.53	ETS	174.33	ZAE	86.75	ETE	180.04	ZAC	97.06	ETC	271.47

EARTH TO MARS

V1	29.584	V2	24.445	LVI	-4.07

PLANETOCENTRIC CONIC

C3	15.565	VHL	3.945	DLA	-10.62	RAL	356.09	RAD	6640.8	VEL	11.645	PTH	6.68	VHP	3.622	DPA	-28.73	RAP	294.05	ECC	1.2562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 32	2863.40	-24.91	83.19	211.07	131.95	18 7 16	1863.4	-7.21	65.98
60.00	18 10 43	2727.31	-20.45	74.81	214.94	125.52	18 56 10	1727.3	-4.96	55.86
70.00	19 16 0	2535.36	-16.34	62.05	217.75	120.42	19 58 15	1535.4	-2.85	41.90
80.00	20 36 20	2283.88	-13.30	44.68	219.47	116.98	21 14 24	1283.9	-1.25	23.81
90.00	22 3 5	2004.01	-12.14	24.70	220.06	115.74	22 36 29	1004.0	-.64	3.57
100.00	23 19 12	1758.36	-13.30	6.05	219.47	116.98	23 48 30	758.4	-1.25	345.18
110.00	0 19 22	1582.18	-16.34	350.97	217.75	120.42	0 45 44	582.2	-2.85	330.82

DIFFERENTIAL CORRECTIONS

TDE	1.3517	TRA	4.0672	TC3	-6.3868	BAU	1.3301
RDE	.2828	RRA	.1374	RC3	-.2588	FAU	.12858
FDE	2.9263	FRA	7.3755	FC3	-7.1515	BSP	13671
BDE	1.3810	BRA	4.0695	BC3	6.3920	FSP	2076

MID-COURSE EXECUTION ACCURACY

SGT	8084.9	SGR	501.6	SG3	1122.1		
RRT	.7535	RRF	.7845	RTF	.9740		
SGB	8100.4	R23	.0751	R13	.9742		
SG1	8093.7	SG2	329.4	THA	2.68		

ORBIT DETERMINATION ACCURACY

ST	133.5	SR	20.8	SS	83.9
CRT	.8272	CRS	-.8734	CST	-.9959
LSA	158.5	MSA	12.8	SSA	1.3
EL1	134.6	EL2	11.6	ALF	7.39

LAUNCH DATE APR 29 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 15 1971

HELIOCENTRIC CONIC DISTANCE 313.883 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	35.097	GAL	-3.86	AZL	91.89	HCA	101.92	SMA	250.36	ECC	.40309	INC	1.8905
RP	207.32	LAP	-1.85	LOP	319.97	VP	27.389	GAP	21.72	AZP	89.61	TAL	346.46	TAP	88.38	RCA	149.45	APO	351.28
RC	56.291	GL	-10.70	GP	.87	ZAL	116.98	ZAP	174.77	ETS	170.26	ZAE	174.07	ETE	98.06	ZAC	101.32	ETC	277.10

V1	29.577	V2	26.420	LVI	-17.98														

PLANETOCENTRIC CONIC

C3	36.734	VHL	6.224	DLA	-19.40	RAL	341.49	RAD	6650.2	VEL	12.594	PTH	7.46	VHP	10.789	DPA	-17.32	RAP	317.58

ECC	1.6375																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 53	2905.01	-26.78	85.38	207.73	130.92	17 41 18	1905.0	-9.28	67.75
60.00	17 55 27	2738.64	-20.89	75.43	212.77	125.28	18 41 5	1736.6	-5.46	56.41
70.00	19 14 33	2506.08	-15.33	60.39	216.59	120.90	19 56 19	1506.1	-1.73	40.37
80.00	20 49 3	2210.34	-10.99	40.45	219.10	117.94	21 25 53	1210.3	1.24	19.77
90.00	22 22 38	1908.45	-9.26	19.16	220.01	116.84	22 54 27	908.5	2.44	358.24
100.00	23 31 55	1684.81	-10.99	1.82	219.10	117.94	24 0 0	684.8	1.24	341.14
110.00	0 17 56	1552.90	-15.33	349.31	216.59	120.90	0 43 49	552.9	-1.73	329.29

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.5381	TRA	-1.1613	TC3	-.0308	BAU	.0465	SGT	1237.6	SGR	579.6	SG3	123.9	ST	30.0	SR	26.7	SS	18.9
RDE	-.5764	RRA	.2132	RC3	.0843	FAU	.03485	RRT	.0320	RRF	-.0345	RTF	-.7063	CRT	.7527	CRS	.5575	CST	.9639
FDE	.2866	FRA	1.0490	FC3	-.7790	BSP	1907	SGB	1366.6	R23	-.0056	R13	-.7064	LSA	41.1	MSA	16.8	SSA	1.1
BDE	.7986	BRA	1.1807	BC3	.0898	FSP	157	SG1	1237.8	SG2	579.2	THA	1.10	EL1	37.7	EL2	14.0	ALF	40.56

LAUNCH DATE APR 29 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 316.022 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	34.920	GAL	-3.76	AZL	91.90	HCA	103.18	SMA	244.63	ECC	.38892	INC	1.8988
RP	207.22	LAP	-1.85	LOP	321.23	VP	27.173	GAP	21.21	AZP	89.57	TAL	346.53	TAP	89.71	RCA	149.49	APO	339.77
RC	56.455	GL	-11.03	GP	.90	ZAL	117.00	ZAP	173.92	ETS	171.37	ZAE	174.14	ETE	90.24	ZAC	101.29	ETC	277.19

V1	29.577	V2	26.432	LVI	-18.09														

PLANETOCENTRIC CONIC

C3	36.427	VHL	6.035	DLA	-19.69	RAL	341.67	RAD	6649.4	VEL	12.503	PTH	7.39	VHP	10.451	DPA	-17.18	RAP	317.97

ECC	1.5995																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 52	2883.45	-25.81	84.24	207.00	131.46	17 42 56	1883.4	-8.21	66.83
60.00	17 57 51	2715.94	-19.99	74.19	212.04	125.75	18 43 7	1715.9	-4.47	55.32
70.00	19 17 31	2481.75	-14.47	59.02	215.86	121.28	19 58 53	1481.7	-.80	39.10
80.00	20 52 39	2184.04	-10.14	38.95	218.39	118.23	21 29 3	1184.0	2.13	18.33
90.00	22 26 34	1881.09	-8.41	17.59	219.31	117.10	22 57 55	881.1	3.32	356.71
100.00	23 35 31	1658.51	-10.14	.32	218.39	118.23	24 3 9	658.5	2.13	339.70
110.00	0 20 54	1528.57	-14.47	347.94	215.86	121.28	0 46 22	528.6	-.80	328.02

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.5341	TRA	-1.1505	TC3	-.0193	BAU	.0451	SGT	1266.2	SGR	579.4	SG3	132.6	ST	30.8	SR	26.7	SS	19.6
RDE	-.5584	RRA	.2050	RC3	.0905	FAU	.03597	RRT	.0361	RRF	-.0381	RTF	-.7179	CRT	.7531	CRS	.5535	CST	.9625
FDE	.2955	FRA	1.0917	FC3	-.8548	BSP	1993	SGB	1392.5	R23	-.0054	R13	-.7180	LSA	41.9	MSA	17.0	SSA	1.1
BDE	.7727	BRA	1.1687	BC3	.0925	FSP	170	SG1	1266.5	SG2	578.9	THA	1.20	EL1	38.2	EL2	14.1	ALF	39.66

LAUNCH DATE APR 29 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 318.363 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	34.752	GAL	-3.64	AZL	91.91	HCA	104.45	SMA	239.48	ECC	.37560	INC	1.9073
RP	207.13	LAP	-1.85	LOP	322.50	VP	26.968	GAP	20.71	AZP	89.52	TAL	346.61	TAP	91.06	RCA	149.53	APO	329.43
RC	56.701	GL	-11.37	GP	.93	ZAL	116.99	ZAP	175.05	ETS	172.21	ZAE	174.09	ETE	81.68	ZAC	101.27	ETC	277.27

V1	29.577	V2	26.443	LVI	-18.23														

PLANETOCENTRIC CONIC

C3	34.304	VHL	5.857	DLA	-19.99	RAL	341.84	RAD	6648.6	VEL	12.418	PTH	7.33	VHP	10.124	DPA	-17.03	RAP	318.35

ECC	1.5846																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 51	2861.95	-24.64	83.12	206.28	131.98	17 44 33	1861.9	-7.13	65.91
60.00	18 0 17	2693.23	-19.09	72.95	211.32	126.19	18 45 11	1693.2	-3.47	54.23
70.00	19 20 33	2457.30	-13.60	57.66	215.16	121.63	20 1 30	1457.3	.13	37.82
80.00	20 56 21	2157.48	-9.29	37.45	217.71	118.50	21 32 18	1157.5	3.03	16.87
90.00	22 30 38	1853.36	-7.55	16.01	218.64	117.33	23 1 31	853.4	4.21	355.15
100.00	23 39 13	1631.95	-9.29	358.81	217.71	118.50	24 6 25	631.9	3.03	338.23
110.00	0 23 55	1504.12	-13.60	346.58	215.16	121.63	0 48 59	504.1	.13	326.74

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.5298	TRA	-1.1433	TC3	-.0102	BAU	.0447	SGT	1298.1	SGR	578.8	SG3	141.8	ST	31.5	SR	26.6	SS	20.3
RDE	-.5410	RRA	.1968	RC3	.0968	FAU	.03712	RRT	.0385	RRF	-.0416	RTF	-.7172	CRT	.7525	CRS	.5487	CST	.9618
FDE	.3041	FRA	1.1364	FC3	-.9368	BSP	2020	SGB	1421.3	R23	-.0067	R13	-.7273	LSA	42.6	MSA	17.2	SSA	1.1
BDE	.7572	BRA	1.1601	BC3	.0975	FSP	184	SG1	1298.3	SG2	578.2	THA	1.23	EL1	38.7	EL2	14.3	ALF	38.73

LAUNCH DATE APR 29 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 320.860 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	34.594	GAL	-3.53	AZL	91.92	HCA	105.71	SMA	234.83	ECC	.36305	INC	1.9159
RP	207.05	LAP	-1.84	LOP	323.76	VP	26.774	GAP	20.22	AZP	89.48	TAL	346.71	TAP	92.42	RCA	149.57	APO	320.09
RC	57.030	GL	-11.71	GP	.96	ZAL	116.96	ZAP	172.17	ETS	172.86	ZAE	173.93	ETE	73.75	ZAC	101.26	ETC	277.35

V1	29.577	V2	26.453	LVI	-18.37														

PLANETOCENTRIC CONIC

C3	32.349	VHL	5.688	DLA	-20.30	RAL	341.99	RAD	6647.9	VEL	12.340	PTH	7.27	VHP	9.808	DPA	-16.89	RAP	318.72

ECC	1.5324																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 50	2840.54	-23.86	82.02	205.59	132.47	17 46 10	1840.5	-6.06	65.01
60.00	18 2 45	2670.55	-18.17	71.74	210.62	126.61	18 47 15	1670.5	-2.47	53.14
70.00	19 23 38	2432.76	-12.72	56.30	214.47	121.97	20 4 11	1432.8	1.07	36.54
80.00	21 0 10	2130.66	-8.41	35.94	217.04	118.75	21 35 40	1130.7	3.93	15.39
90.00	22 34 50	1825.29	-6.67	14.42	217.98	117.55	23 5 15	825.3	5.10	353.58
100.00	23 43 1	1605.14	-8.41	357.31	217.04	118.75	24 9 47	605.1	3.93	336.76
110.00	0 27 0	1479.58	-12.72	345.22	214.47	121.97	0 51 40	479.6	1.07	325.46

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.5243	TRA	-1.1334	TC3	.0023	BAU	.0448	SGT	1327.0	SGR	577.8	SG3	151.6	ST	32.1	SR	26.6	SS	21.0
RDE	-.5241	RRA	.1890	RC3	.1037	FAU	.03837	RRT	.0418	RRF	-.0457	RTF	-.7372	CRT	.7519	CRS	.5439	CST	.9601
FDE	.3129	FRA	1.1831	FC3	-1.0269	BSP	2092	SGB	1447.3	R23	-.0076	R13	-.7373	LSA	43.3	MSA	17.4	SSA	1.1
BDE	.7413	BRA	1.1491	BC3	.1037	FSP	200	SG1	1327.3	SG2	577.1	THA	1.29	EL1	39.1	EL2	14.4	ALF	37.90

LAUNCH DATE APR 29 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 23 1971

DISTANCE 323.554

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.65 LAL -.00 LOL 218.04 VL 34.445 GAL -3.42 AZL 91.92 HCA 106.97 SMA 230.62 ECC .35124 INC 1.9246 V1 29.577
RP 206.97 LAP -1.84 LOP 325.03 VP 26.589 GAP 19.74 AZP 89.44 TAL 346.81 TAP 93.79 RCA 149.62 APO 311.62 V2 26.462
RC 57.440 GL -12.06 GP 1.00 ZAL 116.92 ZAP 171.27 ETS 173.39 ZAE 173.68 ETE 66.68 ZAC 101.24 ETC 277.43 LVI -18.51

PLANETOCENTRIC CONIC

C3 30.546 VHL 5.527 DLA -20.63 RAL 342.13 RAD 6647.2 VEL 12.267 PTH 7.21 VHP 9.502 DPA -16.75 RAP 319.08 ECC 1.5027

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 48	2819.21	-22.88	80.95	204.93	132.93	17 47 47	1819.2	-5.00	64.11
60.00	18 5 14	2647.88	-17.25	70.53	209.95	127.01	18 49 22	1647.9	-1.48	52.06
70.00	19 26 47	2408.12	-11.83	54.95	213.81	122.28	20 6 55	1408.1	2.01	35.26
80.00	21 4 6	2103.58	-7.52	34.42	216.40	118.98	21 39 9	1103.6	4.84	13.69
90.00	22 39 11	1796.82	-5.77	12.81	217.35	117.73	23 9 8	796.8	6.00	351.97
100.00	23 46 58	1578.05	-7.52	355.79	216.40	118.98	24 13 16	578.0	4.84	335.26
110.00	0 30 9	1454.94	-11.83	343.87	213.81	122.28	0 54 24	454.9	2.01	324.18

DIFFERENTIAL CORRECTIONS

TDE -.5101 TRA-1.1141 TC3 .0277 BAU .0466
RDE -.5076 RRA .1811 RC3 .1107 FAU .03960
FDE .3235 FRA 1.2335 FC3-1.1224 BSP 2040
BDE .7197 BRA 1.1287 BC3 .1142 FSP 218

MID-COURSE EXECUTION ACCURACY

SGT 1342.9 SGR 576.3 SG3 162.1
RRT .0445 RRF -.0502 RTF -.7548
SGB 1461.4 R23 -.0090 R13 -.7550
SG1 1343.2 SG2 575.6 THA 1.34

ORBIT DETERMINATION ACCURACY

ST 32.3 SR 26.5 SS 21.8
CRT .7487 CRS .5404 CST .9603
LSA 43.7 MSA 17.6 SSA 1.1
EL1 39.2 EL2 14.5 ALF 37.55

LAUNCH DATE APR 29 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 25 1971

DISTANCE 326.367

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.65 LAL -.00 LOL 218.04 VL 34.304 GAL -3.31 AZL 91.93 HCA 108.24 SMA 226.80 ECC .34013 INC 1.9334 V1 29.577
RP 206.90 LAP -1.84 LOP 326.30 VP 26.414 GAP 19.26 AZP 89.39 TAL 346.93 TAP 95.17 RCA 149.66 APO 303.94 V2 26.469
RC 57.930 GL -12.41 GP 1.03 ZAL 116.85 ZAP 170.36 ETS 173.82 ZAE 173.38 ETE 60.54 ZAC 101.23 ETC 277.51 LVI -18.65

PLANETOCENTRIC CONIC

C3 28.888 VHL 5.375 DLA -20.96 RAL 342.25 RAD 6646.6 VEL 12.200 PTH 7.16 VHP 9.207 DPA -16.61 RAP 319.42 ECC 1.4754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 47	2798.09	-21.89	79.90	204.29	133.36	17 49 25	1798.1	-3.94	63.22
60.00	18 7 44	2625.35	-16.32	69.35	209.30	127.38	18 51 29	1625.3	-.48	50.98
70.00	19 30 0	2383.51	-10.93	53.61	213.17	122.56	20 9 44	1383.5	2.95	33.97
80.00	21 8 9	2076.35	-6.62	32.90	215.78	119.18	21 42 45	1076.3	5.75	12.39
90.00	22 43 42	1768.11	-4.86	11.20	216.74	117.89	23 13 10	768.1	6.91	350.35
100.00	23 51 1	1550.82	-6.62	354.27	215.78	119.18	24 16 51	550.8	5.75	333.75
110.00	0 33 22	1430.33	-10.93	342.53	213.17	122.56	0 57 13	430.3	2.95	322.89

DIFFERENTIAL CORRECTIONS

TDE -.5088 TRA-1.1081 TC3 .0381 BAU .0479
RDE -.4917 RRA .1734 RC3 .1181 FAU .04106
FDE .3311 FRA 1.2831 FC3-1.2305 BSP 2151
BDE .7076 BRA 1.1216 BC3 .1241 FSP 235

MID-COURSE EXECUTION ACCURACY

SGT 1376.9 SGR 574.5 SG3 173.2
RRT .0494 RRF -.0546 RTF -.7601
SGB 1492.0 R23 -.0092 R13 -.7603
SG1 1377.3 SG2 573.7 THA 1.43

ORBIT DETERMINATION ACCURACY

ST 33.1 SR 26.4 SS 22.5
CRT .7496 CRS .5336 CST .9578
LSA 44.5 MSA 17.8 SSA 1.2
EL1 39.7 EL2 14.5 ALF 36.51

LAUNCH DATE APR 29 1971 FLIGHT TIME 120.00 ARRIVAL DATE AUG 27 1971

DISTANCE 329.303

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.65 LAL -.00 LOL 218.04 VL 34.171 GAL -3.20 AZL 91.94 HCA 109.51 SMA 223.32 ECC .32966 INC 1.9423 V1 29.577
RP 206.85 LAP -1.83 LOP 327.56 VP 26.248 GAP 18.79 AZP 89.35 TAL 347.06 TAP 96.56 RCA 149.70 APO 296.94 V2 26.476
RC 58.496 GL -12.77 GP 1.07 ZAL 116.77 ZAP 169.44 ETS 174.17 ZAE 173.05 ETE 55.32 ZAC 101.22 ETC 277.58 LVI -18.78

PLANETOCENTRIC CONIC

C3 27.359 VHL 5.231 DLA -21.31 RAL 342.35 RAD 6646.0 VEL 12.137 PTH 7.11 VHP 8.922 DPA -16.47 RAP 319.75 ECC 1.4503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 46	2777.13	-20.91	78.88	203.68	133.77	17 51 3	1777.1	-2.89	62.34
60.00	18 10 16	2602.92	-15.39	68.19	208.68	127.72	18 53 39	1602.9	.50	49.91
70.00	19 33 17	2358.88	-10.03	52.28	212.56	122.82	20 12 36	1358.9	3.89	32.68
80.00	21 12 19	2048.91	-5.71	31.38	215.19	119.36	21 46 28	1048.9	6.66	10.86
90.00	22 48 23	1739.05	-3.93	9.57	216.17	118.03	23 17 22	739.1	7.82	348.70
100.00	23 55 11	1523.39	-5.71	352.75	215.19	119.36	24 20 35	523.4	6.66	332.23
110.00	0 36 39	1405.70	-10.03	341.20	212.56	122.82	1 0 5	405.7	3.89	321.60

DIFFERENTIAL CORRECTIONS

TDE -.5055 TRA-1.0996 TC3 .0505 BAU .0496
RDE -.4764 RRA .1659 RC3 .1257 FAU .04259
FDE .3392 FRA 1.3335 FC3-1.3478 BSP 2236
BDE .6946 BRA 1.1121 BC3 .1355 FSP 253

MID-COURSE EXECUTION ACCURACY

SGT 1407.5 SGR 572.4 SG3 185.1
RRT .0543 RRF -.0596 RTF -.7661
SGB 1519.4 R23 -.0098 R13 -.7662
SG1 1407.9 SG2 571.4 THA 1.51

ORBIT DETERMINATION ACCURACY

ST 33.8 SR 26.3 SS 23.2
CRT .7500 CRS .5272 CST .9555
LSA 45.2 MSA 18.0 SSA 1.2
EL1 40.2 EL2 14.6 ALF 35.60

LAUNCH DATE APR 29 1971 FLIGHT TIME 122.00 ARRIVAL DATE AUG 29 1971

DISTANCE 332.351

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.65 LAL -.00 LOL 218.04 VL 34.045 GAL -3.09 AZL 91.95 HCA 110.78 SMA 220.14 ECC .31980 INC 1.9514 V1 29.577
RP 206.80 LAP -1.82 LOP 328.83 VP 26.090 GAP 18.34 AZP 89.31 TAL 347.19 TAP 97.97 RCA 149.74 APO 290.54 V2 26.482
RC 59.137 GL -13.14 GP 1.11 ZAL 116.67 ZAP 168.50 ETS 174.47 ZAE 172.71 ETE 50.94 ZAC 101.22 ETC 277.65 LVI -18.91

PLANETOCENTRIC CONIC

C3 25.948 VHL 5.094 DLA -21.67 RAL 342.45 RAD 6645.4 VEL 12.079 PTH 7.06 VHP 8.646 DPA -16.33 RAP 320.06 ECC 1.4270

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 45	2756.37	-19.93	77.88	203.09	134.15	17 52 41	1756.4	-1.84	61.47
60.00	18 12 50	2580.62	-14.46	67.04	208.08	128.04	18 55 51	1580.6	1.49	48.85
70.00	19 36 38	2334.26	-9.11	50.96	211.97	123.06	20 15 33	1334.3	4.82	31.39
80.00	21 16 38	2021.29	-4.78	29.85	214.63	119.51	21 50 20	1021.3	7.58	9.32
90.00	22 53 15	1709.65	-2.99	7.92	215.62	118.13	23 21 45	709.7	8.73	347.02
100.00	0 3 26	1495.76	-4.78	351.22	214.63	119.51	0 28 22	495.8	7.58	330.69
110.00	0 40 1	1381.08	-9.11	339.88	211.97	123.06	1 3 2	381.1	4.82	320.31

DIFFERENTIAL CORRECTIONS

TDE -.5008 TRA-1.0901 TC3 .0663 BAU .0518
RDE -.4615 RRA .1584 RC3 .1337 FAU .04423
FDE .3478 FRA 1.3910 FC3-1.4757 BSP 2305
BDE .6810 BRA 1.1015 BC3 .1492 FSP 273

MID-COURSE EXECUTION ACCURACY

SGT 1436.1 SGR 569.8 SG3 197.9
RRT .0594 RRF -.0651 RTF -.7730
SGB 1545.1 R23 -.0106 R13 -.7732
SG1 1436.6 SG2 568.6 THA 1.60

ORBIT DETERMINATION ACCURACY

ST 34.4 SR 26.1 SS 23.9
CRT .7499 CRS .5208 CST .9534
LSA 45.9 MSA 18.2 SSA 1.2
EL1 40.7 EL2 14.6 ALF 34.77

LAUNCH DATE APR 29 1971 FLIGHT TIME 124.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 335.497 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	33.926	GAL	-2.99	AZL	91.96	HCA	112.04	SMA	217.24	ECC	.31052	INC	1.9606	V1	29.577
RP	206.75	LAP	-1.82	LOP	330.10	VP	25.940	GAP	17.88	AZP	89.26	TAL	347.34	TAP	99.38	RCA	149.78	APO	284.69	V2	26.487
RC	59.850	GL	-13.50	GP	1.15	ZAL	116.55	ZAP	167.54	ETS	174.73	ZAE	172.37	ETE	47.28	ZAC	101.22	ETC	277.72	LVI	-19.03

PLANETOCENTRIC CONIC

C3	24.647	VHL	4.965	DLA	-22.04	RAL	342.53	RAD	6644.8	VEL	12.026	PTH	7.02	VHP	8.378	DPA	-16.20	RAP	320.35	ECC	1.4056

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 44	2735.84	-18.95	76.91	202.53	134.50	17 54 20	1735.8	-.81	60.62
60.00	18 15 26	2558.47	-13.52	65.91	207.51	128.33	18 58 4	1558.5	2.46	47.79
70.00	19 40 4	2309.67	-8.20	49.64	211.42	123.27	20 18 34	1309.7	5.75	30.10
80.00	21 21 6	1993.47	-3.85	28.31	214.09	119.63	21 54 19	993.5	8.49	7.76
90.00	22 58 19	1679.91	-2.03	6.26	215.10	118.21	23 26 19	679.9	9.65	345.32
100.00	0 7 54	1467.95	-3.85	349.68	214.09	119.63	0 32 22	467.9	8.49	329.13
110.00	0 43 26	1356.49	-8.20	338.56	211.42	123.27	1 6 3	356.5	5.75	319.01

DIFFERENTIAL CORRECTIONS

TDE	-.4953	TRA	-1.0797	TC3	.0833	BAU	.0542
RDE	-.4470	RRA	.1511	RC3	.1419	FAU	.04594
FDE	.3559	FRA	1.4492	FC3	-1.6138	BSP	2368
BDE	.6672	BRA	1.0902	BC3	.1646	FSP	295

MID-COURSE EXECUTION ACCURACY

SGT	1463.1	SGR	566.9	SG3	211.5		
RRT	.0648	RRF	-.0708	RTF	-.7798		
SGB	1569.1	R23	-.0115	R13	-.7800		
SG1	1463.6	SG2	565.5	THA	1.69		

ORBIT DETERMINATION ACCURACY

ST	35.0	SR	26.0	SS	24.7
CRT	.7496	CRS	.5136	CST	.9511
LSA	46.5	MSA	18.4	SSA	1.2
EL1	41.0	EL2	14.6	ALF	34.00

LAUNCH DATE APR 29 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 338.734 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	33.814	GAL	-2.89	AZL	91.97	HCA	113.31	SMA	214.57	ECC	.30177	INC	1.9701	V1	29.577
RP	206.72	LAP	-1.81	LOP	331.37	VP	25.797	GAP	17.44	AZP	89.22	TAL	347.49	TAP	100.80	RCA	149.82	APO	279.32	V2	26.491
RC	60.633	GL	-13.87	GP	1.20	ZAL	116.42	ZAP	166.56	ETS	174.94	ZAE	172.06	ETE	44.24	ZAC	101.22	ETC	277.78	LVI	-19.16

PLANETOCENTRIC CONIC

C3	23.446	VHL	4.842	DLA	-22.41	RAL	342.60	RAD	6644.3	VEL	11.976	PTH	6.97	VHP	8.120	DPA	-16.07	RAP	320.62	ECC	1.3859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 44	2715.56	-17.98	75.96	201.99	134.83	17 56 0	1715.6	.21	59.77
60.00	18 18 4	2536.52	-12.59	64.80	206.97	128.61	19 0 20	1536.5	3.43	46.74
70.00	19 43 34	2285.15	-7.28	48.34	210.89	123.46	20 21 39	1285.1	6.68	28.80
80.00	21 25 42	1965.49	-2.90	26.77	213.59	119.73	21 58 28	965.5	9.40	6.19
90.00	23 3 35	1649.80	-1.06	4.58	214.61	118.26	23 31 4	649.8	10.56	343.58
100.00	0 12 30	1439.96	-2.90	348.14	213.59	119.73	0 36 30	440.0	9.40	327.55
110.00	0 46 56	1331.96	-7.28	337.26	210.89	123.46	1 9 8	332.0	6.68	317.72

DIFFERENTIAL CORRECTIONS

TDE	-.4897	TRA	-1.0687	TC3	.1009	BAU	.0568
RDE	-.4331	RRA	.1439	RC3	.1504	FAU	.04775
FDE	.3648	FRA	1.5101	FC3	-1.7631	BSP	2430
BDE	.6538	BRA	1.0783	BC3	.1811	FSP	319

MID-COURSE EXECUTION ACCURACY

SGT	1488.8	SGR	563.7	SG3	225.9		
RRT	.0707	RRF	-.0773	RTF	-.7863		
SGB	1591.9	R23	-.0125	R13	-.7865		
SG1	1489.4	SG2	562.1	THA	1.79		

ORBIT DETERMINATION ACCURACY

ST	35.5	SR	25.8	SS	25.4
CRT	.7495	CRS	.5070	CST	.9488
LSA	47.2	MSA	18.5	SSA	1.2
EL1	41.4	EL2	14.6	ALF	33.25

LAUNCH DATE APR 29 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 342.052 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	33.709	GAL	-2.79	AZL	91.98	HCA	114.58	SMA	212.12	ECC	.29354	INC	1.9797	V1	29.577
RP	206.70	LAP	-1.80	LOP	332.64	VP	25.661	GAP	17.01	AZP	89.18	TAL	347.65	TAP	102.23	RCA	149.86	APO	274.39	V2	26.494
RC	61.483	GL	-14.25	GP	1.24	ZAL	116.28	ZAP	165.58	ETS	175.13	ZAE	171.78	ETE	41.74	ZAC	101.23	ETC	277.84	LVI	-19.28

PLANETOCENTRIC CONIC

C3	22.337	VHL	4.726	DLA	-22.79	RAL	342.66	RAD	6643.9	VEL	11.930	PTH	6.93	VHP	7.870	DPA	-15.94	RAP	320.87	ECC	1.3678

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 45	2695.55	-17.02	75.03	201.49	135.13	17 57 40	1695.5	1.21	58.93
60.00	18 20 43	2514.77	-11.67	63.71	206.45	128.85	19 2 38	1514.8	4.38	45.69
70.00	19 47 9	2260.69	-6.36	47.04	210.39	123.63	20 24 49	1260.7	7.60	27.50
80.00	21 30 28	1937.32	-1.95	25.22	213.12	119.80	22 2 46	937.3	10.31	4.59
90.00	23 9 4	1619.30	-.08	2.88	214.16	118.28	23 36 3	619.3	11.48	341.81
100.00	0 17 16	1411.79	-1.95	346.59	213.12	119.80	0 40 48	411.8	10.31	325.98
110.00	0 50 31	1307.51	-6.36	335.96	210.39	123.63	1 12 16	307.5	7.60	316.42

DIFFERENTIAL CORRECTIONS

TDE	-.4835	TRA	-1.0569	TC3	.1199	BAU	.0595
RDE	-.4196	RRA	.1367	RC3	.1592	FAU	.04970
FDE	.3734	FRA	1.5741	FC3	-1.9260	BSP	2484
BDE	.6402	BRA	1.0657	BC3	.1993	FSP	344

MID-COURSE EXECUTION ACCURACY

SGT	1512.6	SGR	560.1	SG3	241.4		
RRT	.0771	RRF	-.0844	RTF	-.[illegible]24		
SGB	1613.0	R23	-.0137	R13	-.7927		
SG1	1513.3	SG2	558.2	THA	1.89		

ORBIT DETERMINATION ACCURACY

ST	36.0	SR	25.6	SS	26.2
CRT	.7492	CRS	.5000	CST	.9464
LSA	47.8	MSA	18.7	SSA	1.2
EL1	41.6	EL2	14.6	ALF	32.56

LAUNCH DATE APR 29 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 345.443 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	33.609	GAL	-2.70	AZL	91.99	HCA	115.85	SMA	209.87	ECC	.28578	INC	1.9895	V1	29.577
RP	206.68	LAP	-1.79	LOP	333.91	VP	25.532	GAP	16.58	AZP	89.13	TAL	347.81	TAP	103.66	RCA	149.89	APO	269.85	V2	26.496
RC	62.398	GL	-14.62	GP	1.29	ZAL	116.12	ZAP	164.54	ETS	175.30	ZAE	171.55	ETE	39.70	ZAC	101.25	ETC	277.89	LVI	-19.39

PLANETOCENTRIC CONIC

C3	21.315	VHL	4.617	DLA	-23.18	RAL	342.71	RAD	6643.4	VEL	11.888	PTH	6.90	VHP	7.628	DPA	-15.82	RAP	321.11	ECC	1.3508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 46	2675.83	-16.06	74.13	201.01	135.41	17 59 22	1675.8	2.20	58.11
60.00	18 23 25	2493.25	-10.75	62.64	205.97	129.08	19 4 58	1493.2	5.32	44.66
70.00	19 50 48	2236.34	-5.44	45.76	209.92	123.77	20 28 5	1236.3	8.51	26.20
80.00	21 35 24	1908.97	-.99	23.67	212.68	119.84	22 7 13	909.0	11.22	2.97
90.00	23 14 48	1588.38	.92	1.15	213.74	118.27	23 41 16	588.4	12.40	340.00
100.00	0 22 12	1383.44	-.99	345.03	212.68	119.84	0 45 16	383.4	11.22	324.34
110.00	0 54 10	1283.15	-5.44	334.68	209.92	123.77	1 15 34	283.2	8.51	315.12

DIFFERENTIAL CORRECTIONS

TDE	-.4769	TRA	-1.0448	TC3	.1397	BAU	.0623
RDE	-.4066	RRA	.1297	RC3	.1683	FAU	.05174
FDE	.3822	FRA	1.6417	FC3	-2.1017	BSP	2535
BDE	.6267	BRA	1.0528	BC3	.2188	FSP	371

MID-COURSE EXECUTION ACCURACY

SGT	1535.1	SGR	556.3	SG3	257.8		
RRT	.0839	RRF	-.0920	RTF	-.7985		
SGB	1632.7	R23	-.0150	R13	-.7987		
SG1	1535.9	SG2	554.0	THA	2.00		

ORBIT DETERMINATION ACCURACY

ST	36.4	SR	25.4	SS	27.0
CRT	.7489	CRS	.4927	CST	.9439
LSA	48.4	MSA	18.8	SSA	1.2
EL1	41.9	EL2	14.6	ALF	31.90

LAUNCH DATE APR 29 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 8 1971

DISTANCE 348.902

EARTH TO MARS

HELIOCENTRIC CONIC
RL 150.65 LAL -.00 LOL 218.04 VL 33.515 GAL -2.61 AZL 92.00 HCA 117.12 SMA 207.80 ECC .27848 INC 1.9995 V1 29.577
RP 206.67 LAP -1.78 LOP 335.18 VP 25.409 GAP 16.17 AZP 89.09 TAL 347.98 TAP 105.10 RCA 149.93 APO 265.67 V2 26.496
RC 63.376 GL -15.00 GP 1.34 ZAL 115.95 ZAP 163.50 ETS 175.44 ZAE 171.36 ETE 38.06 ZAC 101.27 ETC 277.94 LVI -19.51

PLANETOCENTRIC CONIC
C3 20.370 VHL 4.513 DLA -23.58 RAL 342.75 RAD 6643.0 VEL 11.848 PTH 6.86 VHP 7.394 DPA -15.70 RAP 321.32 ECC 1.3352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 47	2656.43	-15.12	73.25	200.55	135.67	18 1 4	1656.4	3.18	57.30
60.00	18 26 9	2471.98	-9.83	61.59	205.51	129.28	19 7 21	1472.0	6.25	43.63
70.00	19 54 33	2212.09	-4.52	44.48	209.48	123.89	20 31 25	1212.1	9.41	24.91
80.00	21 40 31	1880.43	-.02	22.10	212.28	119.86	22 11 52	880.4	12.12	1.34
90.00	23 20 48	1556.98	1.93	359.40	213.36	118.22	23 46 45	557.0	13.31	338.15
100.00	0 27 19	1354.90	-.02	343.47	212.28	119.86	0 49 54	354.9	12.12	322.70
110.00	0 57 55	1256.91	-4.52	333.40	209.48	123.89	1 18 54	258.9	9.41	313.82

DIFFERENTIAL CORRECTIONS
TDE -.4700 TRA-1.0319 TC3 .1603 BAU .0652
RDE -.3940 RRA .1228 RC3 .1777 FAU .05396
FDE .3907 FRA 1.7124 FC3-2.2931 BSP 2580
BDE .6133 BRA 1.0392 BC3 .2394 FSP 399

MID-COURSE EXECUTION ACCURACY
SGT 1555.6 SGR 552.1 SG3 275.3
RRT .0914 RRF -.1004 RTF -.8039
SGB 1650.7 R23 -.0165 R13 -.8042
SG1 1556.6 SG2 549.4 THA 2.12

ORBIT DETERMINATION ACCURACY
ST 36.7 SR 25.1 SS 27.8
CRT .7487 CRS .4851 CST .9411
LSA 48.9 MSA 19.0 SSA 1.3
EL1 42.1 EL2 14.6 ALF 31.28

LAUNCH DATE APR 29 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 10 1971

DISTANCE 352.421

EARTH TO MARS

HELIOCENTRIC CONIC
RL 150.65 LAL -.00 LOL 218.04 VL 33.426 GAL -2.52 AZL 92.01 HCA 118.39 SMA 205.88 ECC .27161 INC 2.0098 V1 29.577
RP 206.68 LAP -1.77 LOP 336.45 VP 25.292 GAP 15.76 AZP 89.04 TAL 348.15 TAP 106.54 RCA 149.96 APO 261.80 V2 26.496
RC 64.414 GL -15.38 GP 1.40 ZAL 115.78 ZAP 162.44 ETS 175.56 ZAE 171.23 ETE 36.77 ZAC 101.29 ETC 277.98 LVI -19.62

PLANETOCENTRIC CONIC
C3 19.499 VHL 4.416 DLA -23.97 RAL 342.79 RAD 6642.6 VEL 11.812 PTH 6.83 VHP 7.167 DPA -15.58 RAP 321.50 ECC 1.3209

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 50	2637.36	-14.19	72.39	200.13	135.91	18 2 47	1637.4	4.13	56.50
60.00	18 28 54	2450.99	-8.92	60.56	205.08	129.47	19 9 45	1451.0	7.17	42.61
70.00	19 58 22	2187.98	-3.60	43.22	209.07	123.99	20 34 50	1188.0	10.30	23.61
80.00	21 45 49	1851.69	.95	20.52	211.91	119.84	22 16 41	851.7	13.02	359.68
90.00	23 27 6	1525.05	2.96	357.61	213.02	118.14	23 52 31	525.1	14.23	336.26
100.00	0 32 37	1326.16	.95	341.89	211.91	119.84	0 54 43	326.2	13.02	321.04
110.00	1 1 44	1234.80	-3.60	332.14	209.07	123.99	1 22 19	234.8	10.30	312.53

DIFFERENTIAL CORRECTIONS
TDE -.4637 TRA-1.0190 TC3 .1806 BAU .0678
RDE -.3818 RRA .1160 RC3 .1674 FAU .05629
FDE .3998 FRA 1.7871 FC3-2.4994 BSP 2621
BDE .6007 BRA 1.0256 BC3 .2602 FSP 430

MID-COURSE EXECUTION ACCURACY
SGT 1575.3 SGR 547.6 SG3 294.0
RRT .0999 RRF -.1096 RTF -.8089
SGB 1667.7 R23 -.0180 R13 -.8092
SG1 1576.3 SG2 544.5 THA 2.26

ORBIT DETERMINATION ACCURACY
ST 37.1 SR 24.9 SS 28.6
CRT .7489 CRS .4777 CST .9382
LSA 49.5 MSA 19.1 SSA 1.3
EL1 42.3 EL2 14.5 ALF 30.66

LAUNCH DATE APR 29 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 12 1971

DISTANCE 355.996

EARTH TO MARS

HELIOCENTRIC CONIC
RL 150.65 LAL -.00 LOL 218.04 VL 33.342 GAL -2.44 AZL 92.02 HCA 119.66 SMA 204.12 ECC .26514 INC 2.0202 V1 29.577
RP 206.69 LAP -1.76 LOP 337.72 VP 25.180 GAP 15.36 AZP 89.00 TAL 348.33 TAP 107.98 RCA 150.00 APO 258.24 V2 26.495
RC 65.512 GL -15.76 GP 1.46 ZAL 115.59 ZAP 161.35 ETS 175.67 ZAE 171.16 ETE 35.80 ZAC 101.32 ETC 278.02 LVI -19.72

PLANETOCENTRIC CONIC
C3 18.695 VHL 4.324 DLA -24.38 RAL 342.82 RAD 6642.3 VEL 11.778 PTH 6.80 VHP 6.948 DPA -15.47 RAP 321.67 ECC 1.3077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 53	2618.65	-13.27	71.56	199.73	136.12	18 4 32	1618.7	5.07	55.71
60.00	18 31 42	2430.29	-8.03	59.54	204.69	129.63	19 12 13	1430.3	8.07	41.60
70.00	20 2 17	2164.01	-2.69	41.96	208.70	124.06	20 38 21	1164.0	11.18	22.31
80.00	21 51 20	1822.71	1.93	18.93	211.58	119.80	22 21 42	822.7	13.91	357.99
90.00	23 33 43	1492.49	4.00	355.79	212.72	118.02	23 58 35	492.5	15.15	334.31
100.00	0 38 8	1297.19	1.93	340.30	211.58	119.80	0 59 45	297.2	13.91	319.36
110.00	1 5 39	1210.83	-2.69	330.88	208.70	124.06	1 25 50	210.8	11.18	311.23

DIFFERENTIAL CORRECTIONS
TDE -.4568 TRA-1.0055 TC3 .2009 BAU .0704
RDE -.3700 RRA .1092 RC3 .1973 FAU .05877
FDE .4087 FRA 1.8657 FC3-2.7217 BSP 2662
BDE .5879 BRA 1.0114 BC3 .2816 FSP 463

MID-COURSE EXECUTION ACCURACY
SGT 1592.6 SGR 542.9 SG3 313.9
RRT .1089 RRF -.1196 RTF -.8135
SGB 1682.6 R23 -.0197 R13 -.8139
SG1 1593.9 SG2 539.3 THA 2.40

ORBIT DETERMINATION ACCURACY
ST 37.4 SR 24.6 SS 29.4
CRT .7491 CRS .4701 CST .9351
LSA 50.0 MSA 19.3 SSA 1.3
EL1 42.4 EL2 14.4 ALF 30.09

LAUNCH DATE APR 29 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 14 1971

DISTANCE 359.622

EARTH TO MARS

HELIOCENTRIC CONIC
RL 150.65 LAL -.00 LOL 218.04 VL 33.264 GAL -2.36 AZL 92.03 HCA 120.93 SMA 202.48 ECC .25906 INC 2.0310 V1 29.577
RP 206.71 LAP -1.74 LOP 338.99 VP 25.073 GAP 14.97 AZP 88.96 TAL 348.50 TAP 109.43 RCA 150.03 APO 254.94 V2 26.493
RC 66.667 GL -16.14 GP 1.52 ZAL 115.41 ZAP 160.24 ETS 175.76 ZAE 171.15 ETE 35.14 ZAC 101.36 ETC 278.05 LVI -19.82

PLANETOCENTRIC CONIC
C3 17.952 VHL 4.237 DLA -24.78 RAL 342.85 RAD 6641.9 VEL 11.746 PTH 6.78 VHP 6.737 DPA -15.36 RAP 321.80 ECC 1.2954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 57	2600.31	-12.37	70.75	199.37	136.32	18 6 17	1600.3	5.99	54.94
60.00	18 34 33	2409.90	-7.14	58.55	204.32	129.77	19 14 43	1409.9	8.95	40.61
70.00	20 6 17	2140.20	-1.78	40.72	208.36	124.11	20 41 57	1140.2	12.05	21.01
80.00	21 57 4	1793.21	2.92	17.33	211.28	119.73	22 26 57	793.2	14.80	356.27
90.00	23 40 43	1459.19	5.06	353.92	212.47	117.86	24 5 2	459.2	16.07	332.29
100.00	0 43 51	1267.96	2.92	338.69	211.28	119.73	1 4 59	268.0	14.80	317.64
110.00	1 9 39	1187.02	-1.78	329.64	208.36	124.11	1 29 26	187.0	12.05	309.93

DIFFERENTIAL CORRECTIONS
TDE -.4497 TRA -.9917 TC3 .2206 BAU .0727
RDE -.3586 RRA .1025 RC3 .2076 FAU .06142
FDE .4169 FRA 1.9486 FC3-2.9619 BSP 2700
BDE .5752 BRA .9969 BC3 .3029 FSP 499

MID-COURSE EXECUTION ACCURACY
SGT 1608.2 SGR 538.0 SG3 335.1
RRT .1183 RRF -.1304 RTF -.8175
SGB 1695.8 R23 -.0218 R13 -.8179
SG1 1609.6 SG2 533.7 THA 2.55

ORBIT DETERMINATION ACCURACY
ST 37.6 SR 24.4 SS 30.3
CRT .7493 CRS .4617 CST .9317
LSA 50.4 MSA 19.4 SSA 1.3
EL1 42.5 EL2 14.3 ALF 29.55

LAUNCH DATE APR 29 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 363.295 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	33.189	GAL	-2.28	AZL	92.04	HCA	122.20	SMA	200.97	ECC	.25333	INC	2.0421	V1	29.577
RP	206.73	LAP	-1.73	LOP	340.26	VP	24.971	GAP	14.58	AZP	88.91	TAL	348.68	TAP	110.88	RCA	150.06	APO	251.88	V2	26.489
RC	67.877	GL	-16.52	GP	1.58	ZAL	115.21	ZAP	159.10	ETS	175.85	ZAE	171.20	ETE	34.79	ZAC	101.41	ETC	278.08	LVI	-19.92

PLANETOCENTRIC CONIC

C3	17.266	VHL	4.155	DLA	-25.19	RAL	342.87	RAD	6641.6	VEL	11.717	PTH	6.75	VHP	6.532	DPA	-15.26	RAP	321.91	ECC	1.2842

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 2	2582.31	-11.49	69.96	199.02	136.50	18 8 4	1582.3	6.89	54.17
60.00	18 37 25	2389.78	-6.26	57.58	203.98	129.89	19 17 15	1389.8	9.82	39.62
70.00	20 10 22	2116.49	-.88	39.48	208.05	124.14	20 45 39	1116.5	12.90	19.71
80.00	22 3 3	1763.86	3.92	15.69	211.03	119.62	22 32 26	763.9	15.68	354.52
90.00	23 48 9	1424.87	6.15	351.89	212.25	117.66	24 11 54	424.9	16.99	330.20
100.00	0 49 50	1238.33	3.92	337.06	211.03	119.62	1 10 29	238.3	15.68	315.88
110.00	1 13 45	1163.31	-.88	328.40	208.05	124.14	1 33 8	163.3	12.90	308.63

DIFFERENTIAL CORRECTIONS

TDE	-.4297	TRA	-.9643	TC3	.2685	BAU	.0799														
RDE	-.3475	RRA	.0959	RC3	.2184	FAU	.06434														
FDE	.4226	FRA	2.0324	FC3	-3.2263	BSP	2574														
BDE	.5526	BRA	.9690	BC3	.3461	FSP	533														

MID-COURSE EXECUTION ACCURACY

SGT	1599.9	SGR	532.8	SG3	357.5						
RRT	.1286	RRF	-.1421	RTF	-.8299						
SGB	1686.3	R23	-.0225	R13	-.8304						
SG1	1601.5	SG2	527.8	THA	2.75						

ORBIT DETERMINATION ACCURACY

ST	36.9	SR	24.1	SS	31.0						
CRT	.7446	CRS	.4515	CST	.9301						
LSA	50.2	MSA	19.6	SSA	1.3						
EL1	41.7	EL2	14.2	ALF	29.66						

LAUNCH DATE APR 29 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 367.010 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	33.120	GAL	-2.21	AZL	92.05	HCA	123.46	SMA	199.57	ECC	.24795	INC	2.0534	V1	29.577
RP	206.77	LAP	-1.71	LOP	341.52	VP	24.873	GAP	14.21	AZP	88.87	TAL	348.86	TAP	112.32	RCA	150.08	APO	249.05	V2	26.485
RC	69.140	GL	-16.90	GP	1.65	ZAL	115.02	ZAP	157.94	ETS	175.92	ZAE	171.32	ETE	34.74	ZAC	101.46	ETC	278.11	LVI	-20.02

PLANETOCENTRIC CONIC

C3	16.635	VHL	4.079	DLA	-25.59	RAL	342.89	RAD	6641.3	VEL	11.691	PTH	6.73	VHP	6.334	DPA	-15.16	RAP	321.99	ECC	1.2738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 27 8	2564.78	-10.62	69.20	198.71	136.66	18 9 53	1564.8	7.76	53.43
60.00	18 40 20	2370.10	-5.40	56.63	203.68	130.00	19 19 50	1370.1	10.67	38.65
70.00	20 14 33	2093.07	.02	38.26	207.78	124.15	20 49 26	1093.1	13.74	18.41
80.00	22 9 16	1734.02	4.92	14.05	210.82	119.49	22 38 10	734.0	16.56	352.73
90.00	0 0 0	1389.59	7.26	349.99	212.10	117.41	0 23 10	389.6	17.91	328.02
100.00	0 56 4	1208.49	4.92	335.41	210.82	119.49	1 16 13	208.5	16.56	314.10
110.00	1 17 55	1139.89	.02	327.18	207.78	124.15	1 36 55	139.9	13.74	307.33

DIFFERENTIAL CORRECTIONS

TDE	-.4286	TRA	-.9557	TC3	.2732	BAU	.0793														
RDE	-.3369	RRA	.0892	RC3	.2291	FAU	.06730														
FDE	.4325	FRA	2.1262	FC3	-3.5024	BSP	2674														
BDE	.5453	BRA	.9598	BC3	.3566	FSP	574														

MID-COURSE EXECUTION ACCURACY

SGT	1621.2	SGR	527.5	SG3	381.5						
RRT	.1403	RRF	-.1552	RTF	-.8287						
SGB	1704.9	R23	-.0258	R13	-.8292						
SG1	1623.1	SG2	521.6	THA	2.92						

ORBIT DETERMINATION ACCURACY

ST	37.5	SR	23.8	SS	32.0						
CRT	.7480	CRS	.4445	CST	.9253						
LSA	51.0	MSA	19.7	SSA	1.3						
EL1	42.1	EL2	14.0	ALF	28.86						

LAUNCH DATE APR 29 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 370.765 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	33.054	GAL	-2.14	AZL	92.07	HCA	124.73	SMA	198.27	ECC	.24290	INC	2.0851	V1	29.577
RP	206.81	LAP	-1.70	LOP	342.79	VP	24.780	GAP	13.84	AZP	88.82	TAL	349.03	TAP	113.76	RCA	150.11	APO	246.43	V2	26.480
RC	70.455	GL	-17.28	GP	1.73	ZAL	114.82	ZAP	156.74	ETS	175.98	ZAE	171.50	ETE	35.01	ZAC	101.52	ETC	278.12	LVI	-20.11

PLANETOCENTRIC CONIC

C3	16.053	VHL	4.007	DLA	-26.00	RAL	342.91	RAD	6641.0	VEL	11.666	PTH	6.70	VHP	6.143	DPA	-15.06	RAP	322.04	ECC	1.2642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 29 15	2547.66	-9.77	68.46	198.43	136.80	18 11 43	1547.7	8.62	52.70
60.00	18 43 17	2350.77	-4.56	55.70	203.41	130.09	19 22 27	1350.8	11.50	37.68
70.00	20 18 50	2069.84	.91	37.05	207.54	124.14	20 53 19	1069.8	14.57	17.12
80.00	22 15 48	1703.72	5.93	12.37	210.65	119.32	22 44 12	703.7	17.43	350.90
90.00	0 8 32	1352.84	8.41	347.90	211.99	117.10	0 31 5	352.8	18.84	325.73
100.00	1 2 36	1170.19	5.93	333.74	210.65	119.32	1 22 14	170.2	17.43	312.27
110.00	1 22 12	1116.65	.91	325.97	207.54	124.14	1 40 49	116.7	14.57	306.04

DIFFERENTIAL CORRECTIONS

TDE	-.4250	TRA	-.9430	TC3	.2818	BAU	.0795														
RDE	-.3266	RRA	.0825	RC3	.2402	FAU	.07044														
FDE	.4415	FRA	2.2234	FC3	-3.7986	BSP	2743														
BDE	.5360	BRA	.9466	BC3	.3703	FSP	618														

MID-COURSE EXECUTION ACCURACY

SGT	1634.4	SGR	522.0	SG3	406.9						
RRT	.1529	RRF	-.1694	RTF	-.8287						
SGB	1715.7	R23	-.0291	R13	-.8293						
SG1	1636.5	SG2	515.2	THA	3.10						

ORBIT DETERMINATION ACCURACY

ST	37.8	SR	23.4	SS	32.9						
CRT	.7508	CRS	.4370	CST	.9209						
LSA	51.6	MSA	19.9	SSA	1.3						
EL1	42.3	EL2	13.8	ALF	28.26						

LAUNCH DATE APR 29 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 374.556 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.992	GAL	-2.07	AZL	92.08	HCA	126.00	SMA	197.07	ECC	.23815	INC	2.0772	V1	29.577
RP	206.87	LAP	-1.68	LOP	344.06	VP	24.691	GAP	13.49	AZP	88.78	TAL	349.20	TAP	115.20	RCA	150.14	APO	244.00	V2	26.474
RC	71.818	GL	-17.66	GP	1.81	ZAL	114.63	ZAP	155.52	ETS	176.04	ZAE	171.74	ETE	35.64	ZAC	101.60	ETC	278.14	LVI	-20.20

PLANETOCENTRIC CONIC

C3	15.516	VHL	3.939	DLA	-26.40	RAL	342.93	RAD	6640.8	VEL	11.643	PTH	6.68	VHP	5.959	DPA	-14.97	RAP	322.06	ECC	1.2554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 31 23	2530.97	-8.94	67.74	198.18	136.93	18 13 34	1531.0	9.45	51.98
60.00	18 46 16	2331.81	-3.72	54.79	203.17	130.16	19 25 8	1331.8	12.30	36.74
70.00	20 23 12	2046.79	1.79	35.85	207.33	124.11	20 57 19	1046.8	15.38	15.82
80.00	22 22 39	1672.88	6.96	10.65	210.52	119.11	22 50 32	672.9	18.29	349.02
90.00	0 17 50	1314.14	9.60	345.68	211.94	116.73	0 39 44	314.1	19.79	323.28
100.00	1 9 27	1147.36	6.96	332.02	210.52	119.11	1 28 35	147.4	18.29	310.39
110.00	1 26 34	1093.61	1.79	324.76	207.33	124.11	1 44 48	93.6	15.38	304.74

DIFFERENTIAL CORRECTIONS

TDE	-.4196	TRA	-.9283	TC3	.2904	BAU	.0797														
RDE	-.3167	RRA	.0758	RC3	.2516	FAU	.07372														
FDE	.4511	FRA	2.3260	FC3	-4.1130	BSP	2775														
BDE	.5257	BRA	.9314	BC3	.3842	FSP	663														

MID-COURSE EXECUTION ACCURACY

SGT	1642.3	SGR	516.4	SG3	433.7						
RRT	.1661	RRF	-.1850	RTF	-.8292						
SGB	1721.6	R23	-.0330	R13	-.8299						
SG1	1644.8	SG2	508.4	THA	3.31						

ORBIT DETERMINATION ACCURACY

ST	38.0	SR	23.1	SS	33.8						
CRT	.7533	CRS	.4301	CST	.9160						
LSA	52.1	MSA	20.0	SSA	1.3						
EL1	42.3	EL2	13.6	ALF	27.76						

LAUNCH DATE APR 29 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC — DISTANCE 378.380

EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.934 GAL -2.01 AZL 92.09 HCA 127.26 SMA 195.95 ECC .23370 INC 2.0896 V1 29.577
RP 206.93 LAP -1.66 LOP 345.33 VP 24.605 GAP 13.13 AZP 88.73 TAL 349.37 TAP 116.63 RCA 150.16 APO 241.75 V2 26.466
RC 73.228 GL -18.04 GP 1.89 ZAL 114.43 ZAP 154.26 ETS 176.09 ZAE 172.05 ETE 36.69 ZAC 101.68 ETC 278.14 LVI -20.28

PLANETOCENTRIC CONIC

C3 15.022 VHL 3.876 DLA -26.80 RAL 342.96 RAD 6640.5 VEL 11.622 PTH 6.66 VHP 5.780 DPA -14.89 RAP 322.05 ECC 1.2472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 33	2514.71	-8.13	67.05	197.96	137.04	18 15 27	1514.7	10.25	51.28
60.00	18 49 17	2313.24	-2.91	53.90	202.96	130.21	19 27 51	1313.2	13.09	35.80
70.00	20 27 41	2023.95	2.66	34.65	207.17	124.06	21 1 24	1023.9	16.17	14.53
80.00	22 29 54	1641.37	8.00	8.89	210.45	118.86	22 57 15	641.4	19.15	347.08
90.00	0 28 8	1272.74	10.86	343.29	211.96	116.27	0 49 21	272.7	20.76	320.64
100.00	1 16 42	1115.84	8.00	330.26	210.45	118.86	1 35 18	115.8	19.15	308.45
110.00	1 31 3	1070.77	2.66	323.57	207.17	124.06	1 48 54	70.8	16.17	303.45

DIFFERENTIAL CORRECTIONS

TDE -.4132 TRA -.9118 TC3 .3009 BAU .0803
RDE -.3071 RRA .0691 RC3 .2633 FAU .07727
FDE .4602 FRA 2.4342 FC3-4.4530 BSP 2797
BDE .5148 BRA .9145 BC3 .3999 FSP 712

MID-COURSE EXECUTION ACCURACY

SGT 1645.6 SGR 510.8 SG3 462.3
RRT .1809 RRF -.2020 RTF -.8301
SGB 1723.1 R23 -.0371 R13 -.8309
SG1 1648.5 SG2 501.5 THA 3.54

ORBIT DETERMINATION ACCURACY

ST 38.0 SR 22.8 SS 34.7
CRT .7560 CRS .4229 CST .9111
LSA 52.6 MSA 20.2 SSA 1.3
EL1 42.2 EL2 13.4 ALF 27.34

LAUNCH DATE APR 29 1971 FLIGHT TIME 150.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC — DISTANCE 382.236

EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.879 GAL -1.95 AZL 92.10 HCA 128.53 SMA 194.92 ECC .22952 INC 2.1025 V1 29.577
RP 207.00 LAP -1.64 LOP 346.59 VP 24.523 GAP 12.79 AZP 88.69 TAL 349.53 TAP 118.06 RCA 150.18 APO 239.65 V2 26.458
RC 74.683 GL -18.41 GP 1.98 ZAL 114.24 ZAP 152.98 ETS 176.13 ZAE 172.41 ETE 38.22 ZAC 101.76 ETC 278.14 LVI -20.36

PLANETOCENTRIC CONIC

C3 14.568 VHL 3.817 DLA -27.20 RAL 342.99 RAD 6640.3 VEL 11.603 PTH 6.64 VHP 5.609 DPA -14.81 RAP 322.00 ECC 1.2397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 43	2498.91	-7.34	66.37	197.77	137.14	18 17 22	1498.9	11.04	50.60
60.00	18 52 21	2295.08	-2.11	53.03	202.78	130.25	19 30 36	1295.1	13.86	34.88
70.00	20 32 15	2001.32	3.52	33.47	207.04	123.99	21 5 37	1001.3	16.95	13.24
80.00	22 37 35	1608.99	9.06	7.07	210.42	118.57	23 4 24	609.0	20.01	345.06
90.00	0 39 53	1227.28	12.22	340.64	212.07	115.70	1 0 20	227.3	21.77	317.69
100.00	1 24 23	1083.46	9.06	328.44	210.42	118.57	1 42 26	83.5	20.01	306.43
110.00	1 35 38	1048.13	3.52	322.39	207.04	123.99	1 53 6	48.1	16.95	302.15

DIFFERENTIAL CORRECTIONS

TDE -.4064 TRA -.8943 TC3 .3093 BAU .0807
RDE -.2978 RRA .0623 RC3 .2755 FAU .08104
FDE .4694 FRA 2.5482 FC3-4.8160 BSP 2803
BDE .5039 BRA .8965 BC3 .4142 FSP 764

MID-COURSE EXECUTION ACCURACY

SGT 1645.1 SGR 505.1 SG3 492.6
RRT .1969 RRF -.2208 RTF -.8305
SGB 1720.9 R23 -.0418 R13 -.8315
SG1 1648.4 SG2 494.3 THA 3.80

ORBIT DETERMINATION ACCURACY

ST 38.0 SR 22.4 SS 35.7
CRT .7591 CRS .4162 CST .9061
LSA 53.0 MSA 20.3 SSA 1.3
EL1 42.1 EL2 13.2 ALF 26.97

LAUNCH DATE APR 29 1971 FLIGHT TIME 152.00 ARRIVAL DATE SEP 28 1971

HELIOCENTRIC CONIC — DISTANCE 386.120

EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.828 GAL -1.89 AZL 92.12 HCA 129.80 SMA 193.96 ECC .22559 INC 2.1158 V1 29.577
RP 207.08 LAP -1.63 LOP 347.86 VP 24.444 GAP 12.46 AZP 88.65 TAL 349.69 TAP 119.49 RCA 150.20 APO 237.71 V2 26.449
RC 76.180 GL -18.79 GP 2.07 ZAL 114.05 ZAP 151.66 ETS 176.17 ZAE 172.82 ETE 40.37 ZAC 101.86 ETC 278.13 LVI -20.44

PLANETOCENTRIC CONIC

C3 14.150 VHL 3.762 DLA -27.60 RAL 343.02 RAD 6640.1 VEL 11.585 PTH 6.63 VHP 5.443 DPA -14.74 RAP 321.92 ECC 1.2329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 55	2483.57	-6.58	65.72	197.60	137.23	18 19 19	1483.6	11.79	49.93
60.00	18 55 27	2277.34	-1.33	52.18	202.63	130.28	19 33 25	1277.3	14.61	33.97
70.00	20 36 57	1978.90	4.37	32.29	206.94	123.91	21 9 55	978.9	17.71	11.94
80.00	22 45 48	1575.47	10.14	5.18	210.44	118.23	23 12 4	575.5	20.88	342.95
90.00	0 53 56	1174.96	13.74	337.56	212.29	114.96	1 13 31	175.0	22.86	314.24
100.00	1 32 36	1049.95	10.14	326.54	210.44	118.23	1 50 6	49.9	20.88	304.31
110.00	1 40 19	1025.71	4.37	321.2[illegible]	206.94	123.91	1 57 24	25.7	17.71	300.86

DIFFERENTIAL CORRECTIONS

TDE -.3992 TRA -.8754 TC3 .3142 BAU .0806
RDE -.2888 RRA .0355 RC3 .2880 FAU .08497
FDE .4782 FRA 2.6680 FC3-5.1985 BSP 2801
BDE .4927 BRA .8771 BC3 .4263 FSP 818

MID-COURSE EXECUTION ACCURACY

SGT 1639.8 SGR 499.5 SG3 524.5
RRT .2139 RRF -.2409 RTF -.8304
SGB 1714.2 R23 -.0472 R13 -.8316
SG1 1643.7 SG2 486.9 THA 4.09

ORBIT DETERMINATION ACCURACY

ST 37.9 SR 22.0 SS 36.7
CRT .7626 CRS .4095 CST .9006
LSA 53.3 MSA 20.5 SSA 1.3
EL1 41.9 EL2 12.9 ALF 26.67

LAUNCH DATE APR 29 1971 FLIGHT TIME 154.00 ARRIVAL DATE SEP 30 1971

HELIOCENTRIC CONIC — DISTANCE 390.031

EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.780 GAL -1.84 AZL 92.13 HCA 131.06 SMA 193.08 ECC .22192 INC 2.1296 V1 29.577
RP 207.17 LAP -1.61 LOP 349.12 VP 24.369 GAP 12.13 AZP 88.60 TAL 349.84 TAP 120.90 RCA 150.22 APO 235.91 V2 26.439
RC 77.718 GL -19.16 GP 2.17 ZAL 113.87 ZAP 150.30 ETS 176.20 ZAE 173.28 ETE 43.28 ZAC 101.97 ETC 278.12 LVI -20.51

PLANETOCENTRIC CONIC

C3 13.766 VHL 3.710 DLA -27.98 RAL 343.06 RAD 6639.9 VEL 11.568 PTH 6.61 VHP 5.283 DPA -14.68 RAP 321.80 ECC 1.2266

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 40 9	2468.70	-5.83	65.09	197.47	137.30	18 21 18	1468.7	12.53	49.27
60.00	18 58 36	2260.02	-.57	51.35	202.52	130.30	19 36 16	1260.0	15.33	33.08
70.00	20 41 44	1956.69	5.21	31.13	206.89	123.80	21 14 21	956.7	18.45	10.65
80.00	22 54 41	1540.44	11.26	3.18	210.53	117.84	23 20 22	540.4	21.75	340.71
90.00	1 12 50	1107.62	15.64	333.52	212.71	113.87	1 31 17	107.6	24.14	309.72
100.00	1 41 29	1014.91	11.26	324.55	210.53	117.84	1 58 24	14.9	21.75	302.08
110.00	1 45 7	1003.51	5.21	320.04	206.89	123.80	2 1 50	3.5	18.45	299.57

DIFFERENTIAL CORRECTIONS

TDE -.3919 TRA -.8558 TC3 .3158 BAU .0803
RDE -.2801 RRA .0485 RC3 .3010 FAU .08914
FDE .4859 FRA 2.7948 FC3-5.6059 BSP 2797
BDE .4817 BRA .8572 BC3 .4362 FSP 878

MID-COURSE EXECUTION ACCURACY

SGT 1631.3 SGR 494.1 SG3 558.3
RRT .2321 RRF -.2628 RTF -.8295
SGB 1704.4 R23 -.0535 R13 -.8309
SG1 1635.7 SG2 479.3 THA 4.40

ORBIT DETERMINATION ACCURACY

ST 37.7 SR 21.7 SS 37.7
CRT .7667 CRS .4025 CST .8944
LSA 53.7 MSA 20.7 SSA 1.3
EL1 41.6 EL2 12.6 ALF 26.40

LAUNCH DATE APR 29 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 393.966 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.734	GAL	-1.79	AZL	92.14	HCA	132.32	SMA	192.24	ECC	.21848	INC	2.1438	V1	29.577
RP	207.26	LAP	-1.58	LOP	350.39	VP	24.296	GAP	11.81	AZP	88.56	TAL	349.98	TAP	122.31	RCA	150.24	APO	234.24	V2	26.428
RC	79.295	GL	-19.52	GP	2.27	ZAL	113.70	ZAP	148.91	ETS	176.23	ZAE	173.77	ETE	47.18	ZAC	102.10	ETC	278.10	LVI	-20.57

PLANETOCENTRIC CONIC

C3	13.415	VHL	3.663	DLA	-28.37	RAL	343.10	RAD	6639.8	VEL	11.553	PTH	6.60	VHP	5.129	DPA	-14.61	RAP	321.65	ECC	1.2208

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 42 24	2454.30	-5.11	64.49	197.37	137.37	18 23 18	1454.3	13.23	48.64
60.00	19 1 47	2243.14	.18	50.55	202.44	130.30	19 39 10	1243.1	16.03	32.21
70.00	20 46 40	1934.69	6.05	29.97	206.87	123.68	21 18 54	934.7	19.18	9.36
80.00	23 4 26	1503.27	12.43	1.04	210.68	117.36	23 29 29	503.3	22.63	338.30
87.66	1 29 13	1049.21	18.90	330.68	213.73	111.56	1 46 42	49.2	26.13	305.97
100.00	1 51 14	6265.78	12.43	300.32	210.68	117.36	3 35 39	5265.8	22.63	277.58
110.00	1 50 2	6269.55	6.05	296.79	206.87	123.68	3 34 31	5269.5	19.18	276.18

DIFFERENTIAL CORRECTIONS

TDE	-.3853	TRA	-.8347	TC3	.3121	BAU	.0794												
RDE	-.2716	RRA	.0414	RC3	.3143	FAU	.09350												
FDE	.4963	FRA	2.9275	FC3	-6.0343	BSP	2776												
BDE	.4714	BRA	.8358	BC3	.4430	FSP	938												

MID-COURSE EXECUTION ACCURACY

SGT	1618.0	SGR	488.9	SG3	593.8						
RRT	.2521	RRF	-.2870	RTF	-.8276						
SGB	1690.2	R23	-.0609	R13	-.8293						
SG1	1623.1	SG2	471.6	THA	4.76						

ORBIT DETERMINATION ACCURACY

ST	37.5	SR	21.3	SS	38.8						
CRT	.7724	CRS	.3982	CST	.8882						
LSA	54.1	MSA	20.8	SSA	1.3						
EL1	41.3	EL2	12.3	ALF	26.16						

LAUNCH DATE APR 29 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 397.924 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.692	GAL	-1.75	AZL	92.16	HCA	133.58	SMA	191.47	ECC	.21526	INC	2.1587	V1	29.577
RP	207.37	LAP	-1.56	LOP	351.65	VP	24.225	GAP	11.50	AZP	88.51	TAL	350.12	TAP	123.70	RCA	150.25	APO	232.69	V2	26.415
RC	80.909	GL	-19.69	GP	2.38	ZAL	113.54	ZAP	147.49	ETS	176.25	ZAE	174.26	ETE	52.40	ZAC	102.23	ETC	278.07	LVI	-20.64

PLANETOCENTRIC CONIC

C3	13.093	VHL	3.618	DLA	-28.75	RAL	343.16	RAD	6639.6	VEL	11.540	PTH	6.59	VHP	4.981	DPA	-14.56	RAP	321.45	ECC	1.2155

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 44 40	2440.36	-4.41	63.90	197.29	137.42	18 25 21	1440.4	13.92	48.02
60.00	19 5 0	2226.68	.90	49.76	202.40	130.29	19 42 7	1226.7	16.71	31.35
70.00	20 51 42	1912.86	6.87	28.81	206.89	123.54	21 23 35	912.9	19.89	8.07
80.00	23 15 23	1462.84	13.69	358.70	210.91	116.80	23 39 46	462.8	23.55	335.65
84.62	1 4 11	1125.64	19.27	336.44	213.54	111.75	1 22 56	125.6	26.55	311.67
100.00	2 2 11	6225.35	13.69	297.97	210.91	116.80	3 45 56	5225.3	23.55	274.93
110.00	1 55 4	6247.72	6.87	295.64	206.89	123.54	3 39 12	5247.7	19.89	274.89

DIFFERENTIAL CORRECTIONS

TDE	-.3744	TRA	-.8090	TC3	.3164	BAU	.0798												
RDE	-.2633	RRA	.0343	RC3	.3285	FAU	.09829												
FDE	.5018	FRA	3.0637	FC3	-6.4989	BSP	2697												
BDE	.4577	BRA	.8098	BC3	.4561	FSP	998												

MID-COURSE EXECUTION ACCURACY

SGT	1593.4	SGR	484.0	SG3	631.2						
RRT	.2739	RRF	-.3131	RTF	-.8275						
SGB	1665.2	R23	-.0680	R13	-.8296						
SG1	1599.4	SG2	463.7	THA	5.19						

ORBIT DETERMINATION ACCURACY

ST	36.9	SR	20.9	SS	39.7						
CRT	.7768	CRS	.3913	CST	.8815						
LSA	54.1	MSA	21.0	SSA	1.3						
EL1	40.7	EL2	11.9	ALF	26.16						

LAUNCH DATE APR 29 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 401.902 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.653	GAL	-1.70	AZL	92.17	HCA	134.84	SMA	190.76	ECC	.21226	INC	2.1743	V1	29.577
RP	207.48	LAP	-1.54	LOP	352.91	VP	24.158	GAP	11.19	AZP	88.47	TAL	350.25	TAP	125.09	RCA	150.27	APO	231.25	V2	26.402
RC	82.560	GL	-20.25	GP	2.50	ZAL	113.38	ZAP	146.02	ETS	176.27	ZAE	174.73	ETE	59.31	ZAC	102.38	ETC	278.03	LVI	-20.70

PLANETOCENTRIC CONIC

C3	12.800	VHL	3.578	DLA	-29.12	RAL	343.23	RAD	6639.5	VEL	11.527	PTH	6.57	VHP	4.839	DPA	-14.51	RAP	321.21	ECC	1.2107

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 59	2426.95	-3.74	63.34	197.25	137.46	18 27 26	1427.0	14.57	47.42
60.00	19 8 16	2210.72	1.60	49.00	202.39	130.27	19 45 6	1210.7	17.37	30.51
70.00	20 56 52	1891.27	7.68	27.67	206.95	123.38	21 28 23	891.3	20.58	6.77
80.00	23 28 10	1417.27	15.07	356.02	211.25	116.08	23 51 47	417.3	24.52	332.62
82.76	0 49 29	1168.96	19.63	339.79	213.38	111.94	1 8 58	169.0	26.95	314.95
100.00	2 14 58	6179.78	15.07	295.30	211.25	116.08	3 57 57	5179.8	24.52	271.89
110.00	2 0 14	6226.13	7.68	294.49	206.95	123.38	3 44 1	5226.1	20.58	273.60

DIFFERENTIAL CORRECTIONS

TDE	-.3717	TRA	-.7892	TC3	.2905	BAU	.0769												
RDE	-.2555	RRA	.0267	RC3	.3426	FAU	.10292												
FDE	.5186	FRA	3.2139	FC3	-6.9613	BSP	2703												
BDE	.4510	BRA	.7896	BC3	.4492	FSP	1069												

MID-COURSE EXECUTION ACCURACY

SGT	1578.1	SGR	479.5	SG3	670.4						
RRT	.2956	RRF	-.3414	RTF	-.8208						
SGB	1649.3	R23	-.0803	R13	-.8234						
SG1	1585.0	SG2	456.1	THA	5.60						

ORBIT DETERMINATION ACCURACY

ST	36.8	SR	20.5	SS	40.9						
CRT	.7863	CRS	.3907	CST	.8739						
LSA	54.8	MSA	21.2	SSA	1.3						
EL1	40.5	EL2	11.5	ALF	25.84						

LAUNCH DATE APR 29 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 405.900 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.618	GAL	-1.67	AZL	92.19	HCA	136.10	SMA	190.10	ECC	.20945	INC	2.1905	V1	29.577
RP	207.60	LAP	-1.52	LOP	354.17	VP	24.092	GAP	10.89	AZP	88.42	TAL	350.36	TAP	126.46	RCA	150.28	APO	229.91	V2	26.388
RC	84.247	GL	-20.61	GP	2.63	ZAL	113.24	ZAP	144.52	ETS	176.29	ZAE	175.13	ETE	66.31	ZAC	102.53	ETC	277.98	LVI	-20.75

PLANETOCENTRIC CONIC

C3	12.532	VHL	3.540	DLA	-29.46	RAL	343.30	RAD	6639.3	VEL	11.515	PTH	6.56	VHP	4.703	DPA	-14.46	RAP	320.94	ECC	1.2063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 49 19	2414.00	-3.09	62.79	197.24	137.50	18 29 33	1414.0	15.20	46.84
60.00	19 11 34	2195.18	2.29	48.26	202.41	130.25	19 48 9	1195.2	18.00	29.68
70.00	21 2 11	1869.82	8.48	26.52	207.04	123.21	21 33 21	869.8	21.26	5.48
80.00	23 44 27	1361.16	16.72	352.67	211.75	115.10	24 7 8	361.2	25.62	326.81
81.31	0 38 17	1201.43	19.98	342.34	213.25	112.14	0 58 18	201.4	27.35	317.44
100.00	2 31 15	6123.67	16.72	291.95	211.75	115.10	4 13 19	5123.7	25.62	268.09
110.00	2 5 33	6204.67	8.48	293.35	207.04	123.21	3 48 58	5204.7	21.26	272.30

DIFFERENTIAL CORRECTIONS

TDE	-.3650	TRA	-.7648	TC3	.2714	BAU	.0752												
RDE	-.2478	RRA	.0190	RC3	.3576	FAU	.10799												
FDE	.5254	FRA	3.3688	FC3	-7.4597	BSP	2658												
BDE	.4412	BRA	.7650	BC3	.4489	FSP	1141												

MID-COURSE EXECUTION ACCURACY

SGT	1551.6	SGR	475.6	SG3	711.7						
RRT	.3189	RRF	-.3719	RTF	-.8155						
SGB	1622.9	R23	-.0929	R13	-.8187						
SG1	1559.7	SG2	448.5	THA	6.09						

ORBIT DETERMINATION ACCURACY

ST	36.4	SR	20.1	SS	42.0						
CRT	.7950	CRS	.3883	CST	.8657						
LSA	55.1	MSA	21.3	SSA	1.3						
EL1	40.1	EL2	11.1	ALF	25.75						

LAUNCH DATE APR 29 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 10 1971

DISTANCE 409.916

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.581 GAL -1.63 AZL 92.21 HCA 137.36 SMA 189.49 ECC .20684 INC 2.2074 V1 29.577
RP 207.73 LAP -1.50 LOP 355.42 VP 24.029 GAP 10.60 AZP 88.38 TAL 350.47 TAP 127.83 RCA 150.29 APO 228.68 V2 26.373
RC 85.969 GL -20.97 GP 2.76 ZAL 113.11 ZAP 142.98 ETS 176.30 ZAE 175.39 ETE 79.57 ZAC 102.71 ETC 277.93 LVI -20.80

PLANETOCENTRIC CONIC

C3 12.290 VHL 3.506 DLA -29.84 RAL 343.39 RAD 6639.2 VEL 11.505 PTH 6.55 VHP 4.572 DPA -14.42 RAP 320.62 ECC 1.2023

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 51 41	2401.54	-2.47	62.27	197.26	137.53	18 31 43	1401.5	15.81	46.26
60.00	19 14 35	2180.10	2.95	47.53	202.46	130.21	19 51 15	1180.1	18.61	28.88
70.00	21 7 39	1848.50	9.27	25.38	207.18	123.02	21 38 27	848.5	21.92	4.18
80.00	0 19 14	1259.30	19.55	346.44	212.82	113.03	0 40 13	259.3	27.33	321.73
80.07	0 29 5	1227.85	20.32	344.44	213.16	112.33	0 49 33	227.9	27.73	319.49
100.00	3 2 6	6021.81	19.55	285.71	212.82	113.03	4 42 28	5021.8	27.33	261.00
110.00	2 11 1	6183.36	9.27	292.21	207.18	123.02	3 54 4	5183.4	21.92	271.00

DIFFERENTIAL CORRECTIONS

TDE -.3587 TRA -.7385 TC3 .2450 BAU .0734
RDE -.2404 RRA .0110 RC3 .3732 FAU .11322
FDE .5364 FRA 3.5303 FC3-7.9757 BSP 2607
BDE .4318 BRA .7386 BC3 .4464 FSP 1218

MID-COURSE EXECUTION ACCURACY

SGT 1519.7 SGR 472.5 SG3 754.6
RRT .3431 RRF -.4046 RTF -.8084
SGB 1591.4 R23 -.1082 R13 -.8125
SG1 1529.1 SG2 441.1 THA 6.64

ORBIT DETERMINATION ACCURACY

ST 36.0 SR 19.7 SS 43.2
CRT .8052 CRS .3880 CST .8567
LSA 55.5 MSA 21.5 SSA 1.3
EL1 39.6 EL2 10.6 ALF 25.71

LAUNCH DATE APR 29 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 12 1971

DISTANCE 413.949

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.549 GAL -1.60 AZL 92.23 HCA 138.61 SMA 188.92 ECC .20440 INC 2.2251 V1 29.577
RP 207.86 LAP -1.47 LOP 356.68 VP 23.967 GAP 10.31 AZP 88.33 TAL 350.56 TAP 129.18 RCA 150.30 APO 227.53 V2 26.357
RC 87.725 GL -21.32 GP 2.91 ZAL 112.99 ZAP 141.39 ETS 176.31 ZAE 175.45 ETE 92.63 ZAC 102.89 ETC 277.87 LVI -20.85

PLANETOCENTRIC CONIC

C3 12.070 VHL 3.474 DLA -30.19 RAL 343.49 RAD 6639.1 VEL 11.496 PTH 6.54 VHP 4.447 DPA -14.38 RAP 320.26 ECC 1.1986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 54 6	2389.53	-1.86	61.77	197.31	137.55	18 33 55	1389.5	16.39	45.72
60.00	19 18 19	2165.44	3.59	46.83	202.55	130.17	19 54 25	1165.4	19.20	28.09
70.00	21 13 17	1827.24	10.06	24.24	207.36	122.81	21 43 44	827.2	22.57	2.87
78.98	0 21 14	1250.34	20.64	346.26	213.11	112.53	0 42 5	250.3	28.10	321.25
78.98	0 21 14	1250.34	20.64	346.26	213.11	112.53	0 42 5	250.3	28.10	321.25
78.98	0 21 14	1250.34	20.64	346.26	213.11	112.53	0 42 5	250.3	28.10	321.25
110.00	2 16 39	6162.10	10.06	291.06	207.36	122.81	3 59 21	5162.1	22.57	269.69

DIFFERENTIAL CORRECTIONS

TDE -.3481 TRA -.7071 TC3 .2272 BAU .0729
RDE -.2330 RRA .0028 RC3 .3901 FAU .11900
FDE .5410 FRA 3.6949 FC3-8.5350 BSP 2476
BDE .4188 BRA .7071 BC3 .4515 FSP 1287

MID-COURSE EXECUTION ACCURACY

SGT 1474.6 SGR 470.3 SG3 799.7
RRT .3693 RRF -.4394 RTF -.8030
SGB 1547.8 R23 -.1235 R13 -.8082
SG1 1485.8 SG2 433.8 THA 7.35

ORBIT DETERMINATION ACCURACY

ST 35.1 SR 19.2 SS 44.2
CRT .8148 CRS .3852 CST .8466
LSA 55.6 MSA 21.6 SSA 1.2
EL1 38.7 EL2 10.1 ALF 25.92

LAUNCH DATE APR 29 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 14 1971

DISTANCE 417.996

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.519 GAL -1.57 AZL 92.24 HCA 139.87 SMA 188.39 ECC .20214 INC 2.2437 V1 29.577
RP 208.01 LAP -1.45 LOP 357.93 VP 23.908 GAP 10.03 AZP 88.28 TAL 350.64 TAP 130.51 RCA 150.31 APO 226.48 V2 26.340
RC 89.514 GL -21.67 GP 3.06 ZAL 112.89 ZAP 139.77 ETS 176.33 ZAE 175.24 ETE 106.16 ZAC 103.09 ETC 277.79 LVI -20.89

PLANETOCENTRIC CONIC

C3 11.873 VHL 3.446 DLA -30.53 RAL 343.61 RAD 6639.0 VEL 11.487 PTH 6.54 VHP 4.327 DPA -14.35 RAP 319.85 ECC 1.1954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 56 33	2378.05	-1.29	61.29	197.40	137.56	18 36 11	1378.0	16.95	45.20
60.00	19 21 47	2151.29	4.22	46.15	202.68	130.12	19 57 38	1151.3	19.77	27.32
70.00	21 19 5	1806.12	10.84	23.10	207.59	122.59	21 49 11	806.1	23.20	1.56
78.00	0 14 27	1269.94	20.96	347.86	213.09	112.72	0 35 37	269.9	28.46	322.79
78.00	0 14 27	1269.94	20.96	347.86	213.09	112.72	0 35 37	269.9	28.46	322.79
78.00	0 14 27	1269.94	20.96	347.86	213.09	112.72	0 35 37	269.9	28.46	322.79
110.00	2 22 28	6140.98	10.84	289.92	207.59	122.59	4 4 49	5141.0	23.20	268.38

DIFFERENTIAL CORRECTIONS

TDE -.3475 TRA -.6824 TC3 .1713 BAU .0701
RDE -.2262 RRA -.0060 RC3 .4067 FAU .12441
FDE .5616 FRA 3.8774 FC3-9.0710 BSP 2461
BDE .4147 BRA .6824 BC3 .4414 FSP 1377

MID-COURSE EXECUTION ACCURACY

SGT 1443.3 SGR 469.2 SG3 846.4
RRT .3924 RRF -.4765 RTF -.[illegible]77
SGB 1517.7 R23 -.1495 R13 -.7945
SG1 1456.1 SG2 427.8 THA 7.96

ORBIT DETERMINATION ACCURACY

ST 35.0 SR 18.8 SS 45.6
CRT .8305 CRS .3930 CST .8361
LSA 56.4 MSA 21.8 SSA 1.2
EL1 38.6 EL2 9.5 ALF 25.73

LAUNCH DATE APR 29 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 16 1971

DISTANCE 422.058

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.491 GAL -1.54 AZL 92.26 HCA 141.12 SMA 187.91 ECC .20004 INC 2.2633 V1 29.577
RP 208.16 LAP -1.42 LOP 359.19 VP 23.850 GAP 9.76 AZP 88.24 TAL 350.71 TAP 131.83 RCA 150.32 APO 225.50 V2 26.323
RC 91.337 GL -22.03 GP 3.22 ZAL 112.79 ZAP 138.11 ETS 176.34 ZAE 174.75 ETE 118.61 ZAC 103.31 ETC 277.71 LVI -20.94

PLANETOCENTRIC CONIC

C3 11.697 VHL 3.420 DLA -30.86 RAL 343.75 RAD 6638.9 VEL 11.479 PTH 6.53 VHP 4.212 DPA -14.32 RAP 319.40 ECC 1.1925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 59 3	2367.00	-.73	60.83	197.52	137.57	18 38 30	1367.0	17.48	44.69
60.00	19 25 17	2137.53	4.82	45.49	202.84	130.06	20 0 55	1137.5	20.31	26.57
70.00	21 25 7	1784.93	11.61	21.94	207.86	122.35	21 54 52	784.9	23.82	-.23
77.10	0 8 30	1287.38	21.26	349.30	213.11	112.92	0 29 57	287.4	28.81	324.18
77.10	0 8 30	1287.38	21.26	349.30	213.11	112.92	0 29 57	287.4	28.81	324.18
77.10	0 8 30	1287.38	21.26	349.30	213.11	112.92	0 29 57	287.4	28.81	324.18
110.00	2 28 29	6119.79	11.61	288.77	207.86	122.35	4 10 29	5119.8	23.62	267.05

DIFFERENTIAL CORRECTIONS

TDE -.3415 TRA -.6514 TC3 .1225 BAU .0691
RDE -.2194 RRA -.0151 RC3 .4247 FAU .13026
FDE .5739 FRA 4.0626 FC3-9.6407 BSP 2370
BDE .4059 BRA .6516 BC3 .4420 FSP 1462

MID-COURSE EXECUTION ACCURACY

SGT 1396.6 SGR 469.4 SG3 894.9
RRT .4151 RRF -.5149 RTF -.7731
SGB 1473.4 R23 -.1775 R13 -.7820
SG1 1411.5 SG2 422.6 THA 8.73

ORBIT DETERMINATION ACCURACY

ST 34.4 SR 18.4 SS 46.8
CRT .8450 CRS .3975 CST .8239
LSA 56.8 MSA 22.0 SSA 1.2
EL1 38.0 EL2 8.9 ALF 25.85

LAUNCH DATE APR 29 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 426.134 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.465	GAL	-1.52	AZL	92.28	HCA	142.37	SMA	187.46	ECC	.19809	INC	2.2839	V1	29.577
RP	208.32	LAP	-1.39	LOP	.44	VP	23.794	GAP	9.49	AZP	88.19	TAL	350.77	TAP	133.14	RCA	150.33	APO	224.60	V2	26.304
RC	93.190	GL	-22.38	GP	3.40	ZAL	112.72	ZAP	136.40	ETS	176.35	ZAE	173.99	ETE	129.01	ZAC	103.54	ETC	277.62	LVI	-20.97

PLANETOCENTRIC CONIC

C3	11.541	VHL	3.397	DLA	-31.19	RAL	343.90	RAD	6638.8	VEL	11.473	PTH	6.52	VHP	4.104	DPA	-14.29	RAP	318.90	ECC	1.1899

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 1 35	2356.41	-.20	60.39	197.67	137.58	18 40 52	1356.4	17.99	44.20
60.00	19 28 51	2124.20	5.40	44.85	203.04	130.00	20 4 16	1124.2	20.84	25.83
70.00	21 31 22	1763.65	12.38	20.78	208.17	122.09	22 0 46	763.7	24.43	358.87
76.27	0 3 11	1303.24	21.54	350.63	213.17	113.11	0 24 54	303.2	29.15	325.45
76.27	0 3 11	1303.24	21.54	350.63	213.17	113.11	0 24 54	303.2	29.15	325.45
76.27	0 3 11	1303.24	21.54	350.63	213.17	113.11	0 24 54	303.2	29.15	325.45
110.00	2 34 44	6098.51	12.38	287.60	208.17	122.09	4 16 23	5098.5	24.43	265.70

DIFFERENTIAL CORRECTIONS

TDE	-.3363	TRA	-.6185	TC3	.0644	BAU	.0691												
RDE	-.2128	RRA	-.0247	RC3	.4435	FAU	.13623												
FDE	.5887	FRA	4.2538	FC-10	.2194	BSP	2271												
BDE	.3980	BRA	.6190	BC3	.4482	FSP	1550												

MID-COURSE EXECUTION ACCURACY

SGT	1345.6	SGR	471.2	SG3	944.6						
RRT	.4357	RRF	-.5546	RTF	-.7541						
SGB	1425.8	R23	-.2118	R13	-.7661						
SG1	1362.9	SG2	418.8	THA	9.59						

ORBIT DETERMINATION ACCURACY

ST	33.7	SR	18.0	SS	48.1						
CRT	.8615	CRS	.4052	CST	.8104						
LSA	57.3	MSA	22.2	SSA	1.2						
EL1	37.3	EL2	8.2	ALF	26.01						

LAUNCH DATE APR 29 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 430.221 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.441	GAL	-1.50	AZL	92.31	HCA	143.62	SMA	187.05	ECC	.19629	INC	2.3057	V1	29.577
RP	208.49	LAP	-1.37	LOP	1.69	VP	23.740	GAP	9.23	AZP	88.14	TAL	350.81	TAP	134.43	RCA	150.33	APO	223.76	V2	26.284
RC	95.074	GL	-22.73	GP	3.58	ZAL	112.66	ZAP	134.65	ETS	176.36	ZAE	173.03	ETE	137.23	ZAC	103.79	ETC	277.53	LVI	-21.01

PLANETOCENTRIC CONIC

C3	11.403	VHL	3.377	DLA	-31.51	RAL	344.07	RAD	6638.8	VEL	11.467	PTH	6.52	VHP	4.000	DPA	-14.26	RAP	318.36	ECC	1.1877

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 4 12	2346.26	.31	59.96	197.85	137.58	18 43 18	1346.3	18.47	43.72
60.00	19 32 30	2111.27	5.97	44.23	203.27	129.93	20 7 41	1111.3	21.35	25.12
70.00	21 37 54	1742.14	13.16	19.60	208.54	121.80	22 6 56	742.1	25.04	357.50
75.50	23 54 31	1317.75	21.82	351.85	213.27	113.31	24 16 29	317.8	29.48	326.63
75.50	23 54 31	1317.75	21.82	351.85	213.27	113.31	24 16 29	317.8	29.48	326.63
75.50	23 54 31	1317.75	21.82	351.85	213.27	113.31	24 16 29	317.8	29.48	326.63
110.00	2 41 16	6077.00	13.16	286.42	208.54	121.80	4 22 33	5077.0	25.04	264.32

DIFFERENTIAL CORRECTIONS

TDE	-.3308	TRA	-.5831	TC3	.0027	BAU	.0707												
RDE	-.2065	RRA	-.0348	RC3	.4637	FAU	.14256												
FDE	.6032	FRA	4.4508	FC-10	.8238	BSP	2148												
BDE	.3899	BRA	.5841	BC3	.4637	FSP	1639												

MID-COURSE EXECUTION ACCURACY

SGT	1289.0	SGR	475.0	SG3	996.2						
RRT	.4533	RRF	-.5955	RTF	-.7311						
SGB	1373.7	R23	-.2524	R13	-.7474						
SG1	1308.9	SG2	416.9	THA	10.57						

ORBIT DETERMINATION ACCURACY

ST	33.0	SR	17.6	SS	49.4						
CRT	.8792	CRS	.4147	CST	.7950						
LSA	57.7	MSA	22.4	SSA	1.2						
EL1	36.6	EL2	7.5	ALF	26.24						

LAUNCH DATE APR 29 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 434.320 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.418	GAL	-1.49	AZL	92.33	HCA	144.87	SMA	186.67	ECC	.19463	INC	2.3287	V1	29.577
RP	208.67	LAP	-1.34	LOP	2.93	VP	23.687	GAP	8.97	AZP	88.10	TAL	350.84	TAP	135.71	RCA	150.34	APO	223.00	V2	26.284
RC	96.988	GL	-23.08	GP	3.78	ZAL	112.61	ZAP	132.87	ETS	176.37	ZAE	171.89	ETE	143.58	ZAC	104.06	ETC	277.42	LVI	-21.04

PLANETOCENTRIC CONIC

C3	11.283	VHL	3.359	DLA	-31.82	RAL	344.26	RAD	6638.7	VEL	11.462	PTH	6.51	VHP	3.902	DPA	-14.23	RAP	317.77	ECC	1.1857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 8 51	2336.52	.80	59.56	196.08	137.57	18 45 48	1336.5	18.94	43.26
60.00	19 36 13	2098.71	6.52	43.62	203.55	129.86	20 11 12	1098.7	21.84	24.42
70.00	21 44 46	1720.26	13.94	18.38	208.95	121.50	22 13 26	720.3	25.64	356.08
74.77	23 50 17	1331.23	22.08	353.00	213.41	113.51	24 12 28	331.2	29.80	327.73
74.77	23 50 17	1331.23	22.08	353.00	213.41	113.51	24 12 28	331.2	29.80	327.73
74.77	23 50 17	1331.23	22.08	353.00	213.41	113.51	24 12 28	331.2	29.80	327.73
110.00	2 48 8	6099.11	13.94	285.21	208.95	121.50	4 29 4	5055.1	25.64	262.90

DIFFERENTIAL CORRECTIONS

TDE	-.3236	TRA	-.5448	TC3	-.0688	BAU	.0738												
RDE	-.2001	RRA	-.0458	RC3	.4881	FAU	.14906												
FDE	.6122	FRA	4.6538	FC-11	.4368	BSP	2011												
BDE	.3804	BRA	.5467	BC3	.4898	FSP	1730												

MID-COURSE EXECUTION ACCURACY

SGT	1225.8	SGR	480.7	SG3	1049.0						
RRT	.4648	RRF	-.6365	RTF	-.[illegible]28						
SGB	1316.7	R23	-.3006	R13	-.7249						
SG1	1248.6	SG2	417.8	THA	11.65						

ORBIT DETERMINATION ACCURACY

ST	32.1	SR	17.1	SS	50.6						
CRT	.8973	CRS	.4237	CST	.7765						
LSA	58.1	MSA	22.6	SSA	1.1						
EL1	35.7	EL2	6.8	ALF	26.62						

LAUNCH DATE APR 29 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 438.430 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.398	GAL	-1.48	AZL	92.35	HCA	146.11	SMA	186.32	ECC	.19310	INC	2.3533	V1	29.577
RP	208.85	LAP	-1.31	LOP	4.18	VP	23.635	GAP	8.72	AZP	88.05	TAL	350.86	TAP	136.97	RCA	150.34	APO	222.30	V2	26.243
RC	98.829	GL	-23.44	GP	3.99	ZAL	112.58	ZAP	131.04	ETS	176.39	ZAE	170.61	ETE	148.46	ZAC	104.34	ETC	277.30	LVI	-21.07

PLANETOCENTRIC CONIC

C3	11.181	VHL	3.344	DLA	-32.13	RAL	344.47	RAD	6638.6	VEL	11.457	PTH	6.51	VHP	3.808	DPA	-14.19	RAP	317.14	ECC	1.1840

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 9 36	2327.15	1.27	59.17	198.33	137.56	18 48 23	1327.2	19.39	42.82
60.00	19 40 2	2086.47	7.05	43.02	203.86	129.78	20 14 48	1086.5	22.31	23.73
70.00	21 52 3	1697.73	14.74	17.12	209.43	121.16	22 20 21	697.7	26.24	354.60
74.08	23 46 28	1343.86	22.34	354.08	213.58	113.72	24 8 52	343.9	30.11	328.76
74.08	23 46 28	1343.86	22.34	354.08	213.58	113.72	24 8 52	343.9	30.11	328.76
74.08	23 46 28	1343.86	22.34	354.08	213.58	113.72	24 8 52	343.9	30.11	328.76
110.00	2 55 25	6032.58	14.74	283.95	209.43	121.16	4 35 58	5032.6	26.24	261.43

DIFFERENTIAL CORRECTIONS

TDE	-.3130	TRA	-.4992	TC3	-.1241	BAU	.0783												
RDE	-.1937	RRA	-.0564	RC3	.5092	FAU	.15632												
FDE	.6140	FRA	4.8472	FC-12	.1036	BSP	1798												
BDE	.3681	BRA	.5023	BC3	.5241	FSP	1806												

MID-COURSE EXECUTION ACCURACY

SGT	1146.6	SGR	489.0	SG3	1102.5						
RRT	.4726	RRF	-.6770	RTF	-.6697						
SGB	1246.5	R23	-.3518	R13	-.7015						
SG1	1173.2	SG2	421.2	THA	13.12						

ORBIT DETERMINATION ACCURACY

ST	30.8	SR	16.7	SS	51.6						
CRT	.9159	CRS	.4324	CST	.7537						
LSA	58.1	MSA	22.6	SSA	1.1						
EL1	34.5	EL2	6.0	ALF	27.29						

LAUNCH DATE APR 29 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 26 1971

DISTANCE 442.547

HELIOCENTRIC CONIC

RL 150.65 LAL -.00 LOL 218.04 VL 32.379 GAL -1.47 AZL 92.38 HCA 147.35 SMA 186.00 ECC .19171 INC 2.3793 V1 29.577
RP 209.04 LAP -1.28 LOP 5.42 VP 23.585 GAP 8.48 AZP 88.00 TAL 350.86 TAP 138.21 RCA 150.34 APO 221.65 V2 26.221
RC 100.898 GL -23.79 GP 4.21 ZAL 112.57 ZAP 129.18 ETS 176.41 ZAE 169.22 ETE 152.24 ZAC 104.64 ETC 277.17 LVI -21.10

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.097 VHL 3.331 DLA -32.43 RAL 344.70 RAD 6638.6 VEL 11.454 PTH 6.50 VHP 3.721 DPA -14.15 RAP 316.47 ECC 1.1826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 12 25	2318.25	1.72	58.79	198.63	137.55	18 51 3	1318.2	19.81	42.40
60.00	19 43 56	2074.65	7.56	42.45	204.21	129.70	20 18 31	1074.6	22.76	23.06
70.00	21 59 47	1674.52	15.55	15.82	209.96	120.80	22 27 42	674.5	26.84	353.07
73.42	23 43 3	1355.81	22.58	355.10	213.81	113.92	24 5 39	355.8	30.41	329.75
73.42	23 43 3	1355.81	22.58	355.10	213.81	113.92	24 5 39	355.8	30.41	329.75
73.42	23 43 3	1355.81	22.58	355.10	213.81	113.92	24 5 39	355.8	30.41	329.75
110.00	3 3 10	6009.38	15.55	282.64	209.96	120.80	4 43 19	5009.4	26.84	259.89

DIFFERENTIAL CORRECTIONS

TDE -.3174 TRA -.4663 TC3 -.2473 BAU .0868
RDE -.1886 RRA -.0692 RC3 .5303 FAU .16175
FDE .6568 FRA 5.0883 FC-12.6196 BSP 1762
BDE .3692 BRA .4714 BC3 .5851 FSP 1929

MID-COURSE EXECUTION ACCURACY

SGT 1108.1 SGR 500.0 SG3 1157.5
RRT .4565 RRF -.7165 RTF -.6119
SGB 1215.7 R23 -.4326 R13 -.6548
SG1 1135.5 SG2 434.1 THA 13.67

ORBIT DETERMINATION ACCURACY

ST 30.8 SR 16.4 SS 53.3
CRT .9381 CRS .4609 CST .7349
LSA 59.4 MSA 23.0 SSA 1.1
EL1 34.5 EL2 5.1 ALF 27.13

LAUNCH DATE APR 29 1971 FLIGHT TIME 182.00 ARRIVAL DATE OCT 28 1971

DISTANCE 446.674

HELIOCENTRIC CONIC

RL 150.65 LAL -.00 LOL 218.04 VL 32.361 GAL -1.46 AZL 92.41 HCA 148.59 SMA 185.70 ECC .19042 INC 2.4072 V1 29.577
RP 209.24 LAP -1.25 LOP 6.66 VP 23.535 GAP 8.24 AZP 87.95 TAL 350.84 TAP 139.43 RCA 150.34 APO 221.07 V2 26.198
RC 102.893 GL -24.15 GP 4.46 ZAL 112.57 ZAP 127.27 ETS 176.43 ZAE 167.72 ETE 155.21 ZAC 104.97 ETC 277.04 LVI -21.14

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.028 VHL 3.321 DLA -32.73 RAL 344.96 RAD 6638.6 VEL 11.451 PTH 6.50 VHP 3.638 DPA -14.11 RAP 315.75 ECC 1.1815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 15 19	2309.63	2.15	58.43	198.96	137.54	18 53 49	1309.6	20.22	41.99
60.00	19 47 58	2063.03	8.07	41.88	204.61	129.62	20 22 21	1063.0	23.21	22.39
70.00	22 8 12	1649.88	16.40	14.42	210.57	120.38	22 35 42	649.9	27.45	351.42
72.79	23 39 58	1367.27	22.81	356.10	214.07	114.14	24 2 45	367.3	30.71	330.70
72.79	23 39 58	1367.27	22.81	356.10	214.07	114.14	24 2 45	367.3	30.71	330.70
72.79	23 39 58	1367.27	22.81	356.10	214.07	114.14	24 2 45	367.3	30.71	330.70
110.00	3 11 34	5984.74	16.40	281.24	210.57	120.38	4 51 19	4984.7	27.45	258.24

DIFFERENTIAL CORRECTIONS

TDE -.3123 TRA -.4213 TC3 -.3446 BAU .0964
RDE -.1830 RRA -.0821 RC3 .5555 FAU .16843
FDE .6727 FRA 5.3066 FC-13.2226 BSP 1607
BDE .3619 BRA .4293 BC3 .6537 FSP 2026

MID-COURSE EXECUTION ACCURACY

SGT 1043.8 SGR 513.9 SG3 1212.5
RRT .4309 RRF -.7542 RTF -.5476
SGB 1163.5 R23 -.5110 R13 -.6070
SG1 1072.3 SG2 451.4 THA 14.63

ORBIT DETERMINATION ACCURACY

ST 29.9 SR 16.0 SS 54.6
CRT .9573 CRS .4806 CST .7074
LSA 59.9 MSA 23.2 SSA 1.1
EL1 33.7 EL2 4.1 ALF 27.56

LAUNCH DATE APR 29 1971 FLIGHT TIME 184.00 ARRIVAL DATE OCT 30 1971

DISTANCE 450.809

HELIOCENTRIC CONIC

RL 150.65 LAL -.00 LOL 218.04 VL 32.345 GAL -1.46 AZL 92.44 HCA 149.83 SMA 185.44 ECC .18926 INC 2.4371 V1 29.577
RP 209.44 LAP -1.22 LOP 7.89 VP 23.487 GAP 8.00 AZP 87.89 TAL 350.81 TAP 140.64 RCA 150.34 APO 220.53 V2 26.174
RC 104.913 GL -24.52 GP 4.71 ZAL 112.58 ZAP 125.33 ETS 176.46 ZAE 166.14 ETE 157.55 ZAC 105.31 ETC 276.90 LVI -21.17

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.976 VHL 3.313 DLA -33.03 RAL 345.23 RAD 6638.5 VEL 11.448 PTH 6.50 VHP 3.561 DPA -14.05 RAP 314.99 ECC 1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 18 20	2301.33	2.57	58.09	199.33	137.52	18 56 41	1301.3	20.61	41.59
60.00	19 52 9	2051.63	8.56	41.33	205.05	129.53	20 26 20	1051.6	23.64	21.74
70.00	22 17 29	1623.25	17.32	12.89	211.26	119.91	22 44 32	623.3	28.09	349.61
72.18	23 37 11	1378.33	23.03	357.05	214.38	114.35	24 0 9	378.3	30.99	331.62
72.18	23 37 11	1378.33	23.03	357.05	214.38	114.35	24 0 9	378.3	30.99	331.62
72.18	23 37 11	1378.33	23.03	357.05	214.38	114.35	24 0 9	378.3	30.99	331.62
110.00	3 20 51	5958.11	17.32	279.72	211.26	119.91	5 0 9	4958.1	28.09	256.43

DIFFERENTIAL CORRECTIONS

TDE -.3088 TRA -.3744 TC3 -.4566 BAU .1084
RDE -.1777 RRA -.0960 RC3 .5811 FAU .17465
FDE .6980 FRA 5.9318 FC-13.7756 BSP 1455
BDE .3563 BRA .3866 BC3 .7391 FSP 2125

MID-COURSE EXECUTION ACCURACY

SGT 986.5 SGR 531.0 SG3 1266.8
RRT .3829 RRF -.7894 RTF -.5430
SGB 1120.4 R23 -.5991 R13 -.5426
SG1 1013.5 SG2 477.5 THA 15.07

ORBIT DETERMINATION ACCURACY

ST 29.1 SR 15.7 SS 56.0
CRT .9749 CRS .5065 CST .6773
LSA 60.7 MSA 23.4 SSA 1.0
EL1 32.9 EL2 3.1 ALF 27.95

LAUNCH DATE APR 29 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 1 1971

DISTANCE 454.952

HELIOCENTRIC CONIC

RL 150.65 LAL -.00 LOL 218.04 VL 32.331 GAL -1.46 AZL 92.47 HCA 151.06 SMA 185.19 ECC .18820 INC 2.4692 V1 29.577
RP 209.66 LAP -1.19 LOP 9.13 VP 23.439 GAP 7.77 AZP 87.84 TAL 350.77 TAP 141.83 RCA 150.34 APO 220.05 V2 26.150
RC 106.958 GL -24.90 GP 4.99 ZAL 112.61 ZAP 123.36 ETS 176.49 ZAE 164.48 ETE 159.43 ZAC 105.67 ETC 276.74 LVI -21.21

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.939 VHL 3.307 DLA -33.32 RAL 345.54 RAD 6638.5 VEL 11.447 PTH 6.50 VHP 3.488 DPA -13.99 RAP 314.19 ECC 1.1800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 21 28	2293.28	2.97	57.75	199.75	137.51	18 59 42	1293.3	20.99	41.20
60.00	19 56 29	2040.36	9.05	40.78	205.54	129.44	20 30 29	1040.4	24.06	21.09
70.00	22 28 3	1593.41	18.32	11.16	212.05	119.34	22 54 37	593.4	28.78	347.56
71.59	23 34 40	1389.15	23.24	358.00	214.73	114.58	23 57 49	389.2	31.28	332.52
71.59	23 34 40	1389.15	23.24	358.00	214.73	114.58	23 57 49	389.2	31.28	332.52
71.59	23 34 40	1389.15	23.24	358.00	214.73	114.58	23 57 49	389.2	31.28	332.52
110.00	3 31 25	5928.27	18.32	277.99	212.05	119.34	5 10 14	4928.3	28.78	254.38

DIFFERENTIAL CORRECTIONS

TDE -.3038 TRA -.3239 TC3 -.5706 BAU .1221
RDE -.1725 RRA -.1108 RC3 .6094 FAU .18126
FDE .7155 FRA 5.7527 FC-14.3449 BSP 1303
BDE .3494 BRA .3423 BC3 .8348 FSP 2223

MID-COURSE EXECUTION ACCURACY

SGT 932.9 SGR 551.8 SG3 1321.2
RRT .3094 RRF -.8218 RTF -.3560
SGB 1083.9 R23 -.6915 R13 -.4568
SG1 955.0 SG2 512.6 THA 14.69

ORBIT DETERMINATION ACCURACY

ST 28.2 SR 15.3 SS 57.2
CRT .9886 CRS .5323 CST .6400
LSA 61.2 MSA 23.6 SSA 1.0
EL1 32.0 EL2 2.0 ALF 28.41

LAUNCH DATE APR 29 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 459.101 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.318 GAL -1.46 AZL 92.50 HCA 152.29 SMA 184.97 ECC .18724 INC 2.5038 V1 29.577
RP 209.87 LAP -1.16 LOP 10.36 VP 23.393 GAP 7.55 AZP 87.78 TAL 350.72 TAP 143.01 RCA 150.34 APO 219.61 V2 26.124
RC 109.028 GL -25.29 GP 5.29 ZAL 112.66 ZAP 121.36 ETS 176.52 ZAE 162.74 ETE 160.95 ZAC 106.06 ETC 276.58 LVI -21.25

PLANETOCENTRIC CONIC

C3 10.919 VHL 3.304 DLA -33.62 RAL 345.87 RAD 6638.5 VEL 11.446 PTH 6.50 VHP 3.421 DPA -13.91 RAP 313.34 ECC 1.1797

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 24 45	2285.43	3.37	57.42	200.21	137.49	19 2 51	1285.4	21.36	40.82
60.00	20 1 2	2029.13	9.54	40.22	206.08	129.34	20 34 51	1029.1	24.48	20.43
70.00	22 40 44	1557.83	19.49	9.07	212.99	118.62	23 6 42	557.8	29.55	345.08
71.01	23 32 21	1399.91	23.45	358.93	215.13	114.81	23 55 41	399.9	31.56	333.43
71.01	23 32 21	1399.91	23.45	358.93	215.13	114.81	23 55 41	399.9	31.56	333.43
71.01	23 32 21	1399.91	23.45	358.93	215.13	114.81	23 55 41	399.9	31.56	333.43
110.00	3 44 6	5892.69	19.49	275.90	212.99	118.62	5 22 19	4892.7	29.55	251.90

DIFFERENTIAL CORRECTIONS

TDE -.2963 TRA -.2672 TC3 -.6781 BAU .1362
RDE -.1671 RRA -.1262 RC3 .6412 FAU .18852
FDE .7245 FRA 5.9611 FC-14.9479 BSP 1125
BDE .3402 BRA .2955 BC3 .9333 FSP 2297

MID-COURSE EXECUTION ACCURACY

SGT 880.1 SGR 576.7 SG3 1375.0
RRT .2073 RRF -.8512 RTF -.2232
SGB 1052.2 R23 -.7838 R13 -.3355
SG1 893.5 SG2 555.7 THA 12.73

ORBIT DETERMINATION ACCURACY

ST 27.0 SR 15.0 SS 58.2
CRT .9966 CRS .5583 CST .5931
LSA 61.5 MSA 23.7 SSA .9
EL1 30.9 EL2 1.1 ALF 29.04

LAUNCH DATE APR 29 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 463.255 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.306 GAL -1.47 AZL 92.54 HCA 153.52 SMA 184.77 ECC .18638 INC 2.5414 V1 29.577
RP 210.10 LAP -1.13 LOP 11.59 VP 23.347 GAP 7.32 AZP 87.72 TAL 350.64 TAP 144.17 RCA 150.33 APO 219.21 V2 26.098
RC 111.121 GL -25.69 GP 5.61 ZAL 112.72 ZAP 119.33 ETS 176.57 ZAE 160.95 ETE 162.17 ZAC 106.47 ETC 276.41 LVI -21.31

PLANETOCENTRIC CONIC

C3 10.915 VHL 3.304 DLA -33.92 RAL 346.23 RAD 6638.5 VEL 11.446 PTH 6.50 VHP 3.359 DPA -13.81 RAP 312.47 ECC 1.1798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 28 12	2277.79	3.75	57.10	200.72	137.46	19 6 10	1277.8	21.72	40.44
60.00	20 5 48	2017.94	10.02	39.67	206.68	129.24	20 39 26	1017.9	24.89	19.77
70.00	22 57 45	1509.89	21.03	6.20	214.19	117.55	23 22 55	509.9	30.51	341.68
70.43	23 30 16	1410.61	23.65	359.86	215.59	115.06	23 53 47	410.6	31.84	334.33
70.43	23 30 16	1410.61	23.65	359.86	215.59	115.06	23 53 47	410.6	31.84	334.33
70.43	23 30 16	1410.61	23.65	359.86	215.59	115.06	23 53 47	410.6	31.84	334.33
110.00	4 1 7	5844.78	21.03	273.03	214.19	117.55	5 38 32	4844.8	30.51	248.50

DIFFERENTIAL CORRECTIONS

TDE -.2981 TRA -.2165 TC3 -.6280 BAU .1554
RDE -.1632 RRA -.1441 RC3 .6700 FAU .19374
FDE .7736 FRA 6.2076 FC-15.3669 BSP 1078
BDE .3398 BRA .2601 BC3 1.0651 FSP 2420

MID-COURSE EXECUTION ACCURACY

SGT 878.2 SGR 605.6 SG3 1428.2
RRT .0759 RRF -.8773 RTF -.0695
SGB 1066.8 R23 -.8679 R13 -.1283
SG1 880.5 SG2 602.3 THA 5.64

ORBIT DETERMINATION ACCURACY

ST 26.7 SR 14.9 SS 59.9
CRT .9958 CRS .5991 CST .5513
LSA 62.8 MSA 24.1 SSA .9
EL1 30.6 EL2 1.2 ALF 29.03

LAUNCH DATE APR 29 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 467.416 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.295 GAL -1.47 AZL 92.59 HCA 154.75 SMA 184.98 ECC .18562 INC 2.5821 V1 29.577
RP 210.33 LAP -1.10 LOP 12.82 VP 23.302 GAP 7.11 AZP 87.66 TAL 350.56 TAP 145.31 RCA 150.33 APO 219.66 V2 26.071
RC 113.238 GL -26.10 GP 5.96 ZAL 112.79 ZAP 117.27 ETS 176.62 ZAE 159.09 ETE 163.18 ZAC 106.91 ETC 276.24 LVI -21.37

PLANETOCENTRIC CONIC

C3 10.927 VHL 3.306 DLA -34.23 RAL 346.62 RAD 6638.5 VEL 11.446 PTH 6.50 VHP 3.302 DPA -13.69 RAP 311.58 ECC 1.1798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 31 50	2270.18	4.13	56.78	201.29	137.44	19 9 41	1270.2	22.07	40.07
60.00	20 10 52	2006.54	10.51	39.11	207.34	129.13	20 44 19	1006.5	25.31	19.10
69.85	23 28 20	1421.50	23.84	.81	216.10	115.33	23 52 1	421.5	32.12	338.26
69.85	23 28 20	1421.50	23.84	.81	216.10	115.33	23 52 1	421.5	32.12	338.26
69.85	23 28 20	1421.50	23.84	.81	216.10	115.33	23 52 1	421.5	32.12	338.26
69.85	23 28 20	1421.50	23.84	.81	216.10	115.33	23 52 1	421.5	32.12	338.26
69.85	23 28 20	1421.50	23.84	.81	216.10	115.33	23 52 1	421.5	32.12	338.26

DIFFERENTIAL CORRECTIONS

TDE -.2936 TRA -.1572 TC3 -.9626 BAU .1742
RDE -.1586 RRA -.1626 RC3 .7036 FAU .19990
FDE .7938 FRA 6.4273 FC-16.8376 BSP 1027
BDE .3337 BRA .2262 BC3 1.1923 FSP 2509

MID-COURSE EXECUTION ACCURACY

SGT 879.0 SGR 636.9 SG3 1479.2
RRT -.0779 RRF -.8998 RTF .[illegible]11
SGB 1086.6 R23 .8629 R13 -.1768
SG1 881.9 SG2 634.8 THA 173.25

ORBIT DETERMINATION ACCURACY

ST 25.9 SR 14.7 SS 61.1
CRT .9830 CRS .6332 CST .4929
LSA 63.4 MSA 24.3 SSA .9
EL1 29.7 EL2 2.4 ALF 29.30

LAUNCH DATE APR 29 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 471.580 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.285 GAL -1.49 AZL 92.63 HCA 155.97 SMA 184.43 ECC .18495 INC 2.6266 V1 29.577
RP 210.57 LAP -1.07 LOP 14.04 VP 23.258 GAP 6.89 AZP 87.60 TAL 350.45 TAP 146.43 RCA 150.32 APO 218.54 V2 26.044
RC 115.380 GL -26.54 GP 6.34 ZAL 112.87 ZAP 115.19 ETS 176.69 ZAE 157.19 ETE 163.99 ZAC 107.38 ETC 276.05 LVI -21.45

PLANETOCENTRIC CONIC

C3 10.937 VHL 3.310 DLA -34.55 RAL 347.04 RAD 6638.5 VEL 11.447 PTH 6.50 VHP 3.250 DPA -13.54 RAP 310.62 ECC 1.1803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 35 43	2262.62	4.51	56.46	201.91	137.41	19 13 25	1262.6	22.42	39.69
60.00	20 16 17	1994.83	11.01	38.53	208.06	129.02	20 49 32	994.8	25.74	18.40
69.27	23 26 32	1432.62	24.03	1.78	216.66	115.61	23 50 25	432.6	32.41	336.20
69.27	23 26 32	1432.62	24.03	1.78	216.66	115.61	23 50 25	432.6	32.41	336.20
69.27	23 26 32	1432.62	24.03	1.78	216.66	115.61	23 50 25	432.6	32.41	336.20
69.27	23 26 32	1432.62	24.03	1.78	216.66	115.61	23 50 25	432.6	32.41	336.20
69.27	23 26 32	1432.62	24.03	1.78	216.66	115.61	23 50 25	432.6	32.41	336.20

DIFFERENTIAL CORRECTIONS

TDE -.2916 TRA -.0962 TC3-1.1075 BAU .1950
RDE -.1547 RRA -.1828 RC3 .7388 FAU .20564
FDE .8294 FRA 6.6449 FC-16.2486 BSP 1058
BDE .3301 BRA .2065 BC3 1.3313 FSP 2595

MID-COURSE EXECUTION ACCURACY

SGT 912.8 SGR 677.2 SG3 1528.1
RRT -.2358 RRF -.9194 RTF .2688
SGB 1136.5 R23 .7966 R13 -.4621
SG1 939.8 SG2 639.2 THA 161.05

ORBIT DETERMINATION ACCURACY

ST 25.4 SR 14.6 SS 62.3
CRT .9549 CRS .6727 CST .4300
LSA 64.3 MSA 24.6 SSA .8
EL1 29.1 EL2 3.8 ALF 29.26

LAUNCH DATE APR 29 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 11 1971

DISTANCE 475.750

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.277	GAL	-1.50	AZL	92.68	HCA	157.20	SMA	184.29	ECC	.18436	INC	2.6755	V1	29.577
RP	210.82	LAP	-1.04	LOP	15.26	VP	23.214	GAP	6.68	AZP	87.53	TAL	350.34	TAP	147.53	RCA	150.32	APO	218.27	V2	26.015
RC	117.545	GL	-27.01	GP	6.75	ZAL	112.96	ZAP	113.09	ETS	176.76	ZAE	155.24	ETE	164.65	ZAC	107.88	ETC	275.87	LVI	-21.55

PLANETOCENTRIC CONIC

C3	11.004	VHL	3.317	DLA	-34.88	RAL	347.50	RAD	6638.6	VEL	11.449	PTH	6.50	VHP	3.203	DPA	-13.37	RAP	309.65	ECC	1.1811

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 39 52	2254.94	4.89	56.14	202.59	137.38	19 17 27	1254.9	22.78	39.31
60.00	20 22 8	1982.60	11.54	37.92	208.87	128.89	20 55 10	982.6	26.18	17.67
68.67	23 24 53	1444.04	24.22	2.78	217.29	115.91	23 48 57	444.0	32.70	337.18
68.67	23 24 53	1444.04	24.22	2.78	217.29	115.91	23 48 57	444.0	32.70	337.18
68.67	23 24 53	1444.04	24.22	2.78	217.29	115.91	23 48 57	444.0	32.70	337.18
68.67	23 24 53	1444.04	24.22	2.78	217.29	115.91	23 48 57	444.0	32.70	337.18
68.67	23 24 53	1444.04	24.22	2.78	217.29	115.91	23 48 57	444.0	32.70	337.18

DIFFERENTIAL CORRECTIONS

TDE	-.2891	TRA	-.0317	TC3	-1.2572	BAU	.2173
RDE	-.1511	RRA	-.2048	RC3	.7754	FAU	.21077
FDE	.8630	FRA	6.8590	FC	-16.5825	BSP	1170
BDE	.3262	BRA	.2073	BC3	1.4771	FSP	2680

MID-COURSE EXECUTION ACCURACY

SGT	974.4	SGR	720.2	SG3	1573.9
RRT	-.3846	RRF	-.9357	RTF	.4207
SGB	1211.7	R23	.6887	R13	-.6368
SG1	1039.0	SG2	623.5	THA	154.30

ORBIT DETERMINATION ACCURACY

ST	25.0	SR	14.6	SS	63.6
CRT	.9080	CRS	.7124	CST	.3580
LSA	65.2	MSA	24.9	SSA	.6
EL1	28.5	EL2	5.4	ALF	29.03

LAUNCH DATE APR 29 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 13 1971

DISTANCE 479.922

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.269	GAL	-1.52	AZL	92.73	HCA	158.41	SMA	184.17	ECC	.18385	INC	2.7297	V1	29.577
RP	211.07	LAP	-1.00	LOP	16.48	VP	23.171	GAP	6.48	AZP	87.46	TAL	350.21	TAP	148.62	RCA	150.31	APO	218.03	V2	25.986
RC	119.734	GL	-27.50	GP	7.19	ZAL	113.06	ZAP	110.98	ETS	176.85	ZAE	153.24	ETE	165.18	ZAC	108.42	ETC	275.67	LVI	-21.68

PLANETOCENTRIC CONIC

C3	11.070	VHL	3.327	DLA	-35.24	RAL	347.99	RAD	6638.6	VEL	11.452	PTH	6.50	VHP	3.160	DPA	-13.15	RAP	308.66	ECC	1.1822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 44 20	2247.05	5.29	55.81	203.35	137.35	19 21 47	1247.0	23.15	38.92
60.00	20 28 30	1969.60	12.09	37.27	209.76	128.74	21 1 20	969.6	26.64	16.88
68.04	23 23 19	1455.97	24.41	3.83	218.00	116.24	23 47 34	456.0	33.01	338.21
68.04	23 23 19	1455.97	24.41	3.83	218.00	116.24	23 47 34	456.0	33.01	338.21
68.04	23 23 19	1455.97	24.41	3.83	218.00	116.24	23 47 34	456.0	33.01	338.21
68.04	23 23 19	1455.97	24.41	3.83	218.00	116.24	23 47 34	456.0	33.01	338.21
68.04	23 23 19	1455.97	24.41	3.83	218.00	116.24	23 47 34	456.0	33.01	338.21

DIFFERENTIAL CORRECTIONS

TDE	-.2864	TRA	.0361	TC3	-1.4089	BAU	.2408
RDE	-.1479	RRA	-.2289	RC3	.8138	FAU	.21540
FDE	.8996	FRA	7.0666	FC	-16.8454	BSP	1356
BDE	.3223	BRA	.2317	BC3	1.6271	FSP	2764

MID-COURSE EXECUTION ACCURACY

SGT	1062.1	SGR	768.8	SG3	1616.5
RRT	-.5129	RRF	-.9493	RTF	.5475
SGB	1311.1	R23	.6006	R13	-.7386
SG1	1164.9	SG2	601.7	THA	151.33

ORBIT DETERMINATION ACCURACY

ST	24.7	SR	14.7	SS	64.8
CRT	.8398	CRS	.7524	CST	.2782
LSA	66.2	MSA	25.2	SSA	.7
EL1	27.9	EL2	7.1	ALF	28.49

LAUNCH DATE APR 29 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 15 1971

DISTANCE 484.099

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.262	GAL	-1.54	AZL	92.79	HCA	159.63	SMA	184.06	ECC	.18342	INC	2.7896	V1	29.577
RP	211.33	LAP	-.97	LOP	17.70	VP	23.129	GAP	6.28	AZP	87.38	TAL	350.06	TAP	149.69	RCA	150.30	APO	217.82	V2	25.957
RC	121.945	GL	-28.03	GP	7.68	ZAL	113.16	ZAP	108.86	ETS	176.95	ZAE	151.21	ETE	165.60	ZAC	109.01	ETC	275.48	LVI	-21.84

PLANETOCENTRIC CONIC

C3	11.157	VHL	3.340	DLA	-35.61	RAL	348.53	RAD	6638.6	VEL	11.456	PTH	6.51	VHP	3.123	DPA	-12.89	RAP	307.65	ECC	1.1836

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 49 12	2238.80	5.70	55.46	204.19	137.31	19 26 31	1238.8	23.53	38.50
60.00	20 35 33	1955.51	12.69	36.56	210.76	128.58	21 8 8	955.5	27.14	16.02
67.39	23 21 47	1468.61	24.61	4.93	218.77	116.60	23 46 15	468.6	33.33	339.30
67.39	23 21 47	1468.61	24.61	4.93	218.77	116.60	23 46 15	468.6	33.33	339.30
67.39	23 21 47	1468.61	24.61	4.93	218.77	116.60	23 46 15	468.6	33.33	339.30
67.39	23 21 47	1468.61	24.61	4.93	218.77	116.60	23 46 15	468.6	33.33	339.30
67.39	23 21 47	1468.61	24.61	4.93	218.77	116.60	23 46 15	468.6	33.33	339.30

DIFFERENTIAL CORRECTIONS

TDE	-.2842	TRA	.1068	TC3	-1.5619	BAU	.2657
RDE	-.1449	RRA	-.2550	RC3	.8565	FAU	.22014
FDE	.9298	FRA	7.2570	FC	-17.0822	BSP	1594
BDE	.3190	BRA	.2764	BC3	1.7813	FSP	2838

MID-COURSE EXECUTION ACCURACY

SGT	1173.5	SGR	823.7	SG3	1655.7
RRT	-.6176	RRF	-.9606	RTF	.6484
SGB	1433.8	R23	.5310	R13	-.8035
SG1	1311.3	SG2	579.8	THA	150.17

ORBIT DETERMINATION ACCURACY

ST	24.7	SR	14.8	SS	65.8
CRT	.7495	CRS	.7904	CST	.1898
LSA	67.1	MSA	25.6	SSA	.7
EL1	27.4	EL2	8.8	ALF	27.37

LAUNCH DATE APR 29 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 17 1971

DISTANCE 488.277

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.257	GAL	-1.56	AZL	92.86	HCA	160.84	SMA	183.97	ECC	.18307	INC	2.8566	V1	29.577
RP	211.60	LAP	-.94	LOP	18.91	VP	23.087	GAP	6.08	AZP	87.30	TAL	349.91	TAP	150.75	RCA	150.29	APO	217.64	V2	25.926
RC	124.177	GL	-28.61	GP	8.23	ZAL	113.27	ZAP	106.74	ETS	177.07	ZAE	149.15	ETE	165.92	ZAC	109.64	ETC	275.28	LVI	-22.03

PLANETOCENTRIC CONIC

C3	11.266	VHL	3.357	DLA	-36.02	RAL	349.12	RAD	6638.7	VEL	11.461	PTH	6.51	VHP	3.091	DPA	-12.57	RAP	306.63	ECC	1.1854

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 54 33	2230.01	6.14	55.09	205.12	137.27	19 31 43	1230.0	23.93	38.06
60.00	20 43 27	1939.87	13.35	35.77	211.89	128.39	21 15 47	939.9	27.69	15.05
66.70	23 20 16	1482.13	24.80	6.12	219.64	117.00	23 44 58	482.1	33.67	340.48
66.70	23 20 16	1482.13	24.80	6.12	219.64	117.00	23 44 58	482.1	33.67	340.48
66.70	23 20 16	1482.13	24.80	6.12	219.64	117.00	23 44 58	482.1	33.67	340.48
66.70	23 20 16	1482.13	24.80	6.12	219.64	117.00	23 44 58	482.1	33.67	340.48
66.70	23 20 16	1482.13	24.80	6.12	219.64	117.00	23 44 58	482.1	33.67	340.48

DIFFERENTIAL CORRECTIONS

TDE	-.2824	TRA	.1808	TC3	-1.7151	BAU	.2918
RDE	-.1426	RRA	-.2839	RC3	.9008	FAU	.22405
FDE	.9677	FRA	7.4398	FC	-17.2166	BSP	1876
BDE	.3163	BRA	.3365	BC3	1.9373	FSP	2905

MID-COURSE EXECUTION ACCURACY

SGT	1305.2	SGR	885.4	SG3	1690.6
RRT	-.6988	RRF	-.9697	RTF	.7245
SGB	1577.2	R23	.4762	R13	-.8473
SG1	1474.1	SG2	560.8	THA	149.83

ORBIT DETERMINATION ACCURACY

ST	24.8	SR	15.2	SS	66.8
CRT	.6386	CRS	.8274	CST	.0986
LSA	68.1	MSA	26.0	SSA	.6
EL1	27.0	EL2	10.7	ALF	25.58

LAUNCH DATE APR 29 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 492.459 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.252 GAL -1.58 AZL 92.93 HCA 162.05 SNA 183.89 ECC .18278 INC 2.9322 V1 29.577
RP 211.67 LAP -.90 LOP 20.12 VP 23.045 GAP 5.88 AZP 87.21 TAL 349.73 TAP 151.78 RCA 150.28 APO 217.50 V2 25.896
RC 126.431 GL -29.24 GP 8.83 ZAL 113.37 ZAP 104.62 ETS 177.21 ZAE 147.06 ETE 166.14 ZAC 110.32 ETC 275.08 LVI -22.28

PLANETOCENTRIC CONIC

C3 11.402 VHL 3.377 DLA -36.47 RAL 349.76 RAD 6638.8 VEL 11.467 PTH 6.52 VHP 3.064 DPA -12.19 RAP 305.59 ECC 1.1876

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 0 30	2220.46	6.62	54.68	206.16	137.22	19 37 30	1220.5	24.37	37.57
60.00	20 52 28	1922.07	14.10	34.87	213.17	128.15	21 24 30	922.1	28.30	13.94
65.95	23 18 45	1496.67	25.01	7.41	220.61	117.46	23 43 42	496.7	34.04	341.75
65.95	23 18 45	1496.67	25.01	7.41	220.61	117.46	23 43 42	496.7	34.04	341.75
65.95	23 18 45	1496.67	25.01	7.41	220.61	117.46	23 43 42	496.7	34.04	341.75
65.95	23 18 45	1496.67	25.01	7.41	220.61	117.46	23 43 42	496.7	34.04	341.75
65.95	23 18 45	1496.67	25.01	7.41	220.61	117.46	23 43 42	496.7	34.04	341.75

DIFFERENTIAL CORRECTIONS

TDE -.2812 TRA .2580 TC3-1.0680 BAU .3193
RDE -.1409 RRA -.3156 RC3 .9481 FAU .22738
FDE 1.0067 FRA 7.6012 FC-17.2655 BSP 2191
BDE .3145 BRA .4076 BC3 2.0948 FSP 2964

MID-COURSE EXECUTION ACCURACY

SGT 1454.4 SGR 954.2 SG3 1719.6
RRT -.7609 RRF -.9770 RTF .7816
SGB 1739.5 R23 .4315 R13 -.8785
SG1 1651.9 SG2 545.1 THA 149.85

ORBIT DETERMINATION ACCURACY

ST 25.3 SR 15.6 SS 67.7
CRT .5114 CRS .8615 CST .0063
LSA 69.1 MSA 26.4 SSA .6
EL1 26.9 EL2 12.6 ALF 22.78

LAUNCH DATE APR 29 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 496.642 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.248 GAL -1.61 AZL 93.02 HCA 163.26 SNA 183.82 ECC .18257 INC 3.0180 V1 29.577
RP 212.14 LAP -.87 LOP 21.32 VP 23.004 GAP 5.69 AZP 87.11 TAL 349.55 TAP 152.80 RCA 150.26 APO 217.38 V2 25.864
RC 128.706 GL -29.94 GP 9.51 ZAL 113.47 ZAP 102.50 ETS 177.38 ZAE 144.94 ETE 166.28 ZAC 111.08 ETC 274.88 LVI -22.60

PLANETOCENTRIC CONIC

C3 11.567 VHL 3.401 DLA -36.97 RAL 350.46 RAD 6638.8 VEL 11.474 PTH 6.52 VHP 3.042 DPA -11.73 RAP 304.53 ECC 1.1904

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 7 10	2209.86	7.15	54.23	207.34	137.16	19 44 0	1209.9	24.85	37.03
60.00	21 2 58	1901.20	14.98	33.80	214.64	127.86	21 34 39	901.2	29.00	12.62
65.13	23 17 15	1512.41	25.23	8.81	221.69	117.97	23 42 27	512.4	34.44	343.15
65.13	23 17 15	1512.41	25.23	8.81	221.69	117.97	23 42 27	512.4	34.44	343.15
65.13	23 17 15	1512.41	25.23	8.81	221.69	117.97	23 42 27	512.4	34.44	343.15
65.13	23 17 15	1512.41	25.23	8.81	221.69	117.97	23 42 27	512.4	34.44	343.15
65.13	23 17 15	1512.41	25.23	8.81	221.69	117.97	23 42 27	512.4	34.44	343.15

DIFFERENTIAL CORRECTIONS

TDE -.2805 TRA .3382 TC3-2.0170 BAU .3480
RDE -.1398 RRA -.3508 RC3 .9989 FAU .23016
FDE 1.0456 FRA 7.7453 FC-17.2269 BSP 2531
BDE .3134 BRA .4873 BC3 2.2507 FSP 3004

MID-COURSE EXECUTION ACCURACY

SGT 1616.7 SGR 1031.7 SG3 1743.3
RRT -.8083 RRF -.9828 RTF .8243
SGB 1917.9 R23 .3941 R13 -.9017
SG1 1842.3 SG2 533.0 THA 149.94

ORBIT DETERMINATION ACCURACY

ST 26.0 SR 16.2 SS 68.6
CRT .3734 CRS .8920 CST -.0848
LSA 70.1 MSA 26.9 SSA .6
EL1 27.0 EL2 14.5 ALF 18.64

LAUNCH DATE APR 29 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 500.826 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.245 GAL -1.64 AZL 93.12 HCA 164.46 SNA 183.77 ECC .18242 INC 3.1186 V1 29.577
RP 212.43 LAP -.83 LOP 22.53 VP 22.964 GAP 5.50 AZP 87.00 TAL 349.35 TAP 153.81 RCA 150.25 APO 217.29 V2 25.832
RC 130.999 GL -30.72 GP 10.27 ZAL 113.55 ZAP 100.40 ETS 177.57 ZAE 142.80 ETE 166.33 ZAC 111.93 ETC 274.69 LVI -22.99

PLANETOCENTRIC CONIC

C3 11.767 VHL 3.430 DLA -37.53 RAL 351.24 RAD 6638.9 VEL 11.482 PTH 6.53 VHP 3.026 DPA -11.18 RAP 303.48 ECC 1.1937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 14 48	2197.82	7.75	53.72	208.69	137.09	19 51 25	1197.8	25.40	36.40
60.00	21 15 32	1875.80	16.03	32.48	216.37	127.48	21 46 48	875.8	29.84	10.99
64.22	23 15 41	1529.68	25.47	10.35	222.92	118.56	23 41 10	529.7	34.90	344.69
64.22	23 15 41	1529.68	25.47	10.35	222.92	118.56	23 41 10	529.7	34.90	344.69
64.22	23 15 41	1529.68	25.47	10.35	222.92	118.56	23 41 10	529.7	34.90	344.69
64.22	23 15 41	1529.68	25.47	10.35	222.92	118.56	23 41 10	529.7	34.90	344.69
64.22	23 15 41	1529.68	25.47	10.35	222.92	118.56	23 41 10	529.7	34.90	344.69

DIFFERENTIAL CORRECTIONS

TDE -.2799 TRA .4221 TC3-2.1583 BAU .3778
RDE -.1397 RRA -.3906 RC3 1.0530 FAU .23216
FDE 1.0852 FRA 7.8723 FC-17.0808 BSP 2900
BDE .3128 BRA .5751 BC3 2.4015 FSP 3042

MID-COURSE EXECUTION ACCURACY

SGT 1709.2 SGR 1119.5 SG3 1761.3
RRT -.8448 RRF -.9873 RTF .8567
SGB 2110.6 R23 .3617 R13 -.9197
SG1 2044.5 SG2 524.3 THA 149.96

ORBIT DETERMINATION ACCURACY

ST 27.0 SR 17.0 SS 69.4
CRT .2299 CRS .9184 CST -.1728
LSA 71.3 MSA 27.4 SSA .5
EL1 27.4 EL2 16.3 ALF 12.83

LAUNCH DATE APR 29 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 505.012 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.243 GAL -1.67 AZL 93.23 HCA 165.66 SNA 183.73 ECC .18233 INC 3.2310 V1 29.577
RP 212.72 LAP -.80 LOP 23.73 VP 22.924 GAP 5.31 AZP 86.87 TAL 349.14 TAP 154.80 RCA 150.23 APO 217.23 V2 25.799
RC 133.312 GL -31.61 GP 11.14 ZAL 113.62 ZAP 98.31 ETS 177.80 ZAE 140.64 ETE 166.30 ZAC 112.87 ETC 274.49 LVI -23.48

PLANETOCENTRIC CONIC

C3 12.011 VHL 3.466 DLA -38.18 RAL 352.11 RAD 6639.1 VEL 11.493 PTH 6.54 VHP 3.015 DPA -10.51 RAP 302.41 ECC 1.1977

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 23 37	2183.86	8.45	53.13	210.25	137.00	20 0 1	1183.9	26.03	35.67
60.00	21 31 13	1843.34	17.37	30.78	218.47	126.96	22 1 56	843.3	30.87	8.86
63.20	23 14 1	1548.86	25.72	12.08	224.31	119.25	23 39 50	548.9	35.41	346.44
63.20	23 14 1	1548.86	25.72	12.08	224.31	119.25	23 39 50	548.9	35.41	346.44
63.20	23 14 1	1548.86	25.72	12.08	224.31	119.25	23 39 50	548.9	35.41	346.44
63.20	23 14 1	1548.86	25.72	12.08	224.31	119.25	23 39 50	548.9	35.41	346.44
63.20	23 14 1	1548.86	25.72	12.08	224.31	119.25	23 39 50	548.9	35.41	346.44

DIFFERENTIAL CORRECTIONS

TDE -.2801 TRA .5094 TC3-2.2912 BAU .4089
RDE -.1411 RRA -.4355 RC3 1.1110 FAU .23332
FDE 1.1345 FRA 7.9724 FC-16.8174 BSP 3291
BDE .3137 BRA .6702 BC3 2.5463 FSP 3061

MID-COURSE EXECUTION ACCURACY

SGT 1970.9 SGR 1219.2 SG3 1771.8
RRT -.8724 RRF -.9908 RTF .8810
SGB 2317.5 R23 .3340 R13 -.9334
SG1 2258.4 SG2 520.1 THA 149.88

ORBIT DETERMINATION ACCURACY

ST 28.3 SR 18.1 SS 70.1
CRT .0910 CRS .9407 CST -.2513
LSA 72.5 MSA 28.0 SSA .5
EL1 28.4 EL2 17.9 ALF 5.54

LAUNCH DATE APR 29 1971 FLIGHT TIME 212.00 ARRIVAL DATE NOV 27 1971

DISTANCE 509.198

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.241 GAL -1.70 AZL 93.37 HCA 166.86 SMA 183.70 ECC .18230 INC 3.3649 V1 29.577
RP 213.01 LAP -.76 LOP 24.92 VP 22.884 GAP 5.13 AZP 86.72 TAL 348.91 TAP 155.77 RCA 150.22 APO 217.19 V2 25.766
RC 135.643 GL -32.63 GP 12.15 ZAL 113.65 ZAP 96.25 ETS 178.07 ZAE 138.46 ETE 166.17 ZAC 113.95 ETC 274.31 LVI -24.10

PLANETOCENTRIC CONIC

C3 12.309 VHL 3.508 DLA -38.93 RAL 353.08 RAD 6639.2 VEL 11.506 PTH 6.55 VHP 3.011 DPA -9.70 RAP 301.34 ECC 1.2026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 34 3	2167.26	9.27	52.41	212.08	136.68	20 10 10	1167.3	26.77	34.79
60.00	21 52 3	1798.43	19.19	28.38	221.11	126.14	22 22 4	798.4	32.23	5.84
62.05	23 12 19	1570.18	26.00	14.03	225.92	120.06	23 38 29	570.2	35.99	348.40
62.05	23 12 19	1570.18	26.00	14.03	225.92	120.06	23 38 29	570.2	35.99	348.40
62.05	23 12 19	1570.18	26.00	14.03	225.92	120.06	23 38 29	570.2	35.99	348.40
62.05	23 12 19	1570.18	26.00	14.03	225.92	120.06	23 38 29	570.2	35.99	348.40
62.05	23 12 19	1570.18	26.00	14.03	225.92	120.06	23 38 29	570.2	35.99	348.40

DIFFERENTIAL CORRECTIONS

TDE -.2829 TRA .5985 TC3-2.4174 BAU .4423
RDE -.1433 RRA -.4865 RC3 1.1742 FAU .23377
FDE 1.1739 FRA 8.0375 FC-16.4417 BSP 3684
BDE .3171 BRA .7713 BC3 2.6875 FSP 3066

MID-COURSE EXECUTION ACCURACY

SGT 2160.9 SGR 1332.9 SG3 1773.8
RRT -.8932 RRF -.9935 RTF .8990
SGB 2539.0 R23 .3109 R13 -.9439
SG1 2484.9 SG2 521.2 THA 149.67

ORBIT DETERMINATION ACCURACY

ST 29.9 SR 19.3 SS 70.5
CRT -.0374 CRS .9584 CST -.3204
LSA 73.6 MSA 28.8 SSA .4
EL1 29.9 EL2 19.3 ALF 177.63

LAUNCH DATE APR 29 1971 FLIGHT TIME 214.00 ARRIVAL DATE NOV 29 1971

DISTANCE 513.385

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.240 GAL -1.74 AZL 93.53 HCA 168.05 SMA 183.69 ECC .18233 INC 3.5255 V1 29.577
RP 213.31 LAP -.73 LOP 26.11 VP 22.844 GAP 4.95 AZP 86.55 TAL 348.68 TAP 156.73 RCA 150.20 APO 217.18 V2 25.732
RC 137.991 GL -33.82 GP 13.33 ZAL 113.64 ZAP 94.22 ETS 178.39 ZAE 136.26 ETE 165.93 ZAC 115.20 ETC 274.13 LVI -24.87

PLANETOCENTRIC CONIC

C3 12.678 VHL 3.561 DLA -39.81 RAL 354.20 RAD 6639.4 VEL 11.522 PTH 6.57 VHP 3.013 DPA -8.71 RAP 300.27 ECC 1.2087

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 46 39	2147.00	10.28	51.54	214.29	136.72	20 22 26	1147.0	27.67	33.70
60.00	22 24 56	1722.90	22.17	24.21	224.87	124.56	22 53 39	722.9	34.33	.54
60.72	23 10 31	1594.27	26.31	16.25	227.79	121.03	23 37 6	594.3	36.66	350.67
60.72	23 10 31	1594.27	26.31	16.25	227.79	121.03	23 37 6	594.3	36.66	350.67
60.72	23 10 31	1594.27	26.31	16.25	227.79	121.03	23 37 6	594.3	36.66	350.67
60.72	23 10 31	1594.27	26.31	16.25	227.79	121.03	23 37 6	594.3	36.66	350.67
60.72	23 10 31	1594.27	26.31	16.25	227.79	121.03	23 37 6	594.3	36.66	350.67

DIFFERENTIAL CORRECTIONS

TDE -.2837 TRA .6945 TC3-2.5178 BAU .4756
RDE -.1493 RRA -.5472 RC3 1.2383 FAU .23237
FDE 1.2420 FRA 8.0906 FC-15.8671 BSP 4139
BDE .3206 BRA .8842 BC3 2.8058 FSP 3074

MID-COURSE EXECUTION ACCURACY

SGT 2353.7 SGR 1466.1 SG3 1768.4
RRT -.9097 RRF -.9955 RTF .9135
SGB 2773.0 R23 .2890 R13 -.9528
SG1 2722.6 SG2 526.2 THA 149.19

ORBIT DETERMINATION ACCURACY

ST 31.7 SR 21.0 SS 71.3
CRT -.1571 CRS .9726 CST -.3819
LSA 75.2 MSA 29.5 SSA .4
EL1 32.0 EL2 20.6 ALF 169.80

LAUNCH DATE APR 29 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 1 1971

DISTANCE 517.571

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.240 GAL -1.78 AZL 93.72 HCA 169.24 SMA 183.68 ECC .18241 INC 3.7198 V1 29.577
RP 213.61 LAP -.69 LOP 27.30 VP 22.805 GAP 4.77 AZP 86.34 TAL 348.43 TAP 157.67 RCA 150.18 APO 217.19 V2 25.697
RC 140.356 GL -35.22 GP 14.74 ZAL 113.56 ZAP 92.23 ETS 178.77 ZAE 134.02 ETE 165.56 ZAC 116.67 ETC 273.96 LVI -25.86

PLANETOCENTRIC CONIC

C3 13.144 VHL 3.625 DLA -40.87 RAL 355.50 RAD 6639.6 VEL 11.542 PTH 6.59 VHP 3.025 DPA -7.48 RAP 299.19 ECC 1.2163

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 2 20	2121.47	11.54	50.43	217.00	136.49	20 37 42	1121.5	28.79	32.29
59.17	23 8 44	1621.62	26.66	18.81	230.02	122.20	23 35 46	621.6	37.44	353.30
59.17	23 8 44	1621.62	26.66	18.81	230.02	122.20	23 35 46	621.6	37.44	353.30
59.17	23 8 44	1621.62	26.66	18.81	230.02	122.20	23 35 46	621.6	37.44	353.30
59.17	23 8 44	1621.62	26.66	18.81	230.02	122.20	23 35 46	621.6	37.44	353.30
59.17	23 8 44	1621.62	26.66	18.81	230.02	122.20	23 35 46	621.6	37.44	353.30
59.17	23 8 44	1621.62	26.66	18.81	230.02	122.20	23 35 46	621.6	37.44	353.30

DIFFERENTIAL CORRECTIONS

TDE -.2883 TRA .7919 TC3-2.6046 BAU .5125
RDE -.1575 RRA -.6171 RC3 1.3120 FAU .23071
FDE 1.3016 FRA 8.0811 FC-15.1959 BSP 4587
BDE .3285 BRA 1.0039 BC3 2.9164 FSP 3047

MID-COURSE EXECUTION ACCURACY

SGT 2552.1 SGR 1621.7 SG3 1751.2
RRT -.9224 RRF -.9970 RTF .9045
SGB 3023.8 R23 .2695 R13 -.9600
SG1 2975.6 SG2 537.3 THA 148.48

ORBIT DETERMINATION ACCURACY

ST 33.8 SR 23.0 SS 71.6
CRT -.2577 CRS .9828 CST -.4311
LSA 76.6 MSA 30.4 SSA .3
EL1 34.7 EL2 21.7 ALF 163.36

LAUNCH DATE APR 29 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 3 1971

DISTANCE 521.757

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.240 GAL -1.82 AZL 93.96 HCA 170.42 SMA 183.69 ECC .18255 INC 3.9611 V1 29.577
RP 213.92 LAP -.66 LOP 28.49 VP 22.766 GAP 4.59 AZP 86.09 TAL 348.17 TAP 158.59 RCA 150.15 APO 217.22 V2 25.662
RC 142.739 GL -36.90 GP 16.44 ZAL 113.40 ZAP 90.29 ETS 179.24 ZAE 131.73 ETE 165.05 ZAC 118.43 ETC 273.82 LVI -27.13

PLANETOCENTRIC CONIC

C3 13.746 VHL 3.708 DLA -42.15 RAL 357.06 RAD 6639.9 VEL 11.568 PTH 6.61 VHP 3.047 DPA -5.95 RAP 298.10 ECC 1.2262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 22 41	2087.93	13.19	48.96	220.49	136.14	20 57 29	1087.9	30.23	30.40
57.35	23 7 4	1653.06	27.03	21.81	232.73	123.66	23 34 37	653.1	38.35	356.41
57.35	23 7 4	1653.06	27.03	21.81	232.73	123.66	23 34 37	653.1	38.35	356.41
57.35	23 7 4	1653.06	27.03	21.81	232.73	123.66	23 34 37	653.1	38.35	356.41
57.35	23 7 4	1653.06	27.03	21.81	232.73	123.66	23 34 37	653.1	38.35	356.41
57.35	23 7 4	1653.06	27.03	21.81	232.73	123.66	23 34 37	653.1	38.35	356.41
57.35	23 7 4	1653.06	27.03	21.81	232.73	123.66	23 34 37	653.1	38.35	356.41

DIFFERENTIAL CORRECTIONS

TDE -.2937 TRA .8942 TC3-2.6623 BAU .5520
RDE -.1709 RRA -.7008 RC3 1.3903 FAU .22747
FDE 1.3759 FRA 8.0156 FC-14.3259 BSP 5062
BDE .3398 BRA 1.1361 BC3 3.0035 FSP 2990

MID-COURSE EXECUTION ACCURACY

SGT 2752.6 SGR 1807.1 SG3 1720.4
RRT -.9323 RRF -.9981 RTF .9331
SGB 3292.8 R23 .2511 R13 -.9660
SG1 3245.8 SG2 554.4 THA 147.47

ORBIT DETERMINATION ACCURACY

ST 36.1 SR 25.6 SS 71.8
CRT -.3428 CRS .9901 CST -.4711
LSA 78.3 MSA 31.4 SSA .3
EL1 37.9 EL2 23.0 ALF 157.81

LAUNCH DATE APR 29 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 525.942 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.241 GAL -1.86 AZL 94.27 HCA 171.61 SMA 183.70 ECC .18273 INC 4.2688 V1 29.577
RP 214.24 LAP -.62 LOP 29.67 VP 22.727 GAP 4.41 AZP 85.78 TAL 347.90 TAP 159.51 RCA 150.13 APO 217.27 V2 25.627
RC 145.136 GL -38.97 GP 18.55 ZAL 113.09 ZAP 88.43 ETS 179.82 ZAE 129.37 ETE 164.34 ZAC 120.59 ETC 273.69 LVI -28.77

PLANETOCENTRIC CONIC

C3 14.554 VHL 3.815 DLA -43.72 RAL 358.96 RAD 6640.3 VEL 11.602 PTH 6.64 VHP 3.084 DPA -4.01 RAP 296.98 ECC 1.2395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 50 42	2040.63	15.49	46.85	225.21	135.57	21 24 43	1040.8	32.20	27.64
55.15	23 5 45	1689.68	27.41	25.36	236.10	125.50	23 33 55	689.7	39.43	.16
55.15	23 5 45	1689.68	27.41	25.36	236.10	125.50	23 33 55	689.7	39.43	.16
55.15	23 5 45	1689.68	27.41	25.36	236.10	125.50	23 33 55	689.7	39.43	.16
55.15	23 5 45	1689.68	27.41	25.36	236.10	125.50	23 33 55	689.7	39.43	.16
55.15	23 5 45	1689.68	27.41	25.36	236.10	125.50	23 33 55	689.7	39.43	.16
55.15	23 5 45	1689.68	27.41	25.36	236.10	125.50	23 33 55	689.7	39.43	.16

DIFFERENTIAL CORRECTIONS
TDE -.2997 TRA 1.0017 TC3-2.6834 BAU .5956
RDE -.1925 RRA -.8027 RC3 1.4735 FAU .22249
FDE 1.4684 FRA 7.8710 FC-13.2350 BSP 5567
BDE .3562 BRA 1.2836 BC3 3.0613 FSP 2899

MID-COURSE EXECUTION ACCURACY
SGT 2954.2 SGR 2032.1 SG3 1671.7
RRT -.9401 RRF -.9988 RTF .9400
SGB 3585.6 R23 .2330 R13 -.9713
SG1 3538.7 SG2 578.4 THA 146.08

ORBIT DETERMINATION ACCURACY
ST 38.6 SR 26.9 SS 71.8
CRT -.4126 CRS .9949 CST -.5023
LSA 80.1 MSA 32.6 SSA .2
EL1 41.6 EL2 24.5 ALF 152.66

LAUNCH DATE APR 29 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 530.126 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.242 GAL -1.91 AZL 94.68 HCA 172.78 SMA 183.72 ECC .18297 INC 4.6754 V1 29.577
RP 214.55 LAP -.59 LOP 30.85 VP 22.688 GAP 4.24 AZP 85.36 TAL 347.62 TAP 160.40 RCA 150.11 APO 217.34 V2 25.591
RC 147.555 GL -41.55 GP 21.23 ZAL 112.59 ZAP 86.67 ETS 180.56 ZAE 126.90 ETE 163.39 ZAC 123.32 ETC 273.60 LVI -30.93

PLANETOCENTRIC CONIC

C3 15.688 VHL 3.961 DLA -45.69 RAL 1.40 RAD 6640.9 VEL 11.650 PTH 6.69 VHP 3.145 DPA -1.49 RAP 295.83 ECC 1.2582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 34 19	1964.40	19.17	43.31	232.29	134.42	22 7 3	964.4	35.24	22.88
52.49	23 5 17	1733.18	27.77	29.64	240.45	127.86	23 34 10	733.2	40.68	4.80
52.49	23 5 17	1733.18	27.77	29.64	240.45	127.86	23 34 10	733.2	40.68	4.80
52.49	23 5 17	1733.18	27.77	29.64	240.45	127.86	23 34 10	733.2	40.68	4.80
52.49	23 5 17	1733.18	27.77	29.64	240.45	127.86	23 34 10	733.2	40.68	4.80
52.49	23 5 17	1733.18	27.77	29.64	240.45	127.86	23 34 10	733.2	40.68	4.80
52.49	23 5 17	1733.18	27.77	29.64	240.45	127.86	23 34 10	733.2	40.68	4.80

DIFFERENTIAL CORRECTIONS
TDE -.3018 TRA 1.1178 TC3-2.6492 BAU .6441
RDE -.2320 RRA -.9307 RC3 1.5531 FAU .21426
FDE 1.6211 FRA 7.6222 FC-11.8239 BSP 6148
BDE .3806 BRA 1.4546 BC3 3.0709 FSP 2777

MID-COURSE EXECUTION ACCURACY
SGT 3154.9 SGR 2311.0 SG3 1598.7
RRT -.9459 RRF -.9993 RTF .9451
SGB 3910.7 R23 .2154 R13 -.9756
SG1 3862.5 SG2 612.2 THA 144.24

ORBIT DETERMINATION ACCURACY
ST 41.1 SR 33.5 SS 71.9
CRT -.4672 CRS .9978 CST -.5243
LSA 82.7 MSA 33.9 SSA .2
EL1 45.9 EL2 26.5 ALF 146.97

LAUNCH DATE APR 29 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 534.308 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.244 GAL -1.95 AZL 95.24 HCA 173.96 SMA 183.75 ECC .18325 INC 5.2375 V1 29.577
RP 214.88 LAP -.55 LOP 32.03 VP 22.650 GAP 4.07 AZP 84.79 TAL 347.33 TAP 161.29 RCA 150.08 APO 217.43 V2 25.554
RC 149.988 GL -44.87 GP 24.73 ZAL 111.79 ZAP 85.06 ETS 181.51 ZAE 124.23 ETE 162.11 ZAC 126.86 ETC 273.57 LVI -33.84

PLANETOCENTRIC CONIC

C3 17.391 VHL 4.170 DLA -48.20 RAL 4.68 RAD 6641.7 VEL 11.723 PTH 6.75 VHP 3.243 DPA 1.85 RAP 294.61 ECC 1.2862

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.19	23 6 43	1786.08	27.99	34.90	246.29	130.98	23 36 29	786.1	42.08	10.70
49.19	23 6 43	1786.08	27.99	34.90	246.29	130.98	23 36 29	786.1	42.08	10.70
49.19	23 6 43	1786.08	27.99	34.90	246.29	130.98	23 36 29	786.1	42.08	10.70
49.19	23 6 43	1786.08	27.99	34.90	246.29	130.98	23 36 29	786.1	42.08	10.70
49.19	23 6 43	1786.08	27.99	34.90	246.29	130.98	23 36 29	786.1	42.08	10.70
49.19	23 6 43	1786.08	27.99	34.90	246.29	130.98	23 36 29	786.1	42.08	10.70
49.19	23 6 43	1786.08	27.99	34.90	246.29	130.98	23 36 29	786.1	42.08	10.70

DIFFERENTIAL CORRECTIONS
TDE -.2938 TRA 1.2439 TC3-2.5448 BAU .7022
RDE -.3038 RRA-1.0941 RC3 1.6265 FAU .20254
FDE 1.8417 FRA 7.2000 FC-10.0824 BSP 6793
BDE .4226 BRA 1.6566 BC3 3.0202 FSP 2585

MID-COURSE EXECUTION ACCURACY
SGT 3352.7 SGR 2664.5 SG3 1489.8
RRT -.9506 RRF -.9996 RTF .9492
SGB 4282.6 R23 .1968 R13 -.9801
SG1 4232.2 SG2 655.1 THA 141.85

ORBIT DETERMINATION ACCURACY
ST 43.5 SR 39.8 SS 71.8
CRT -.5114 CRS .9994 CST -.5417
LSA 86.1 MSA 35.1 SSA .1
EL1 51.4 EL2 29.0 ALF 140.00

LAUNCH DATE APR 29 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 538.488 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.246 GAL -2.00 AZL 96.07 HCA 175.13 SMA 183.79 ECC .18358 INC 6.0653 V1 29.577
RP 215.21 LAP -.51 LOP 33.20 VP 22.612 GAP 3.90 AZP 84.95 TAL 347.03 TAP 162.16 RCA 150.05 APO 217.53 V2 25.518
RC 152.438 GL -49.28 GP 29.46 ZAL 110.32 ZAP 83.71 ETS 182.74 ZAE 121.22 ETE 160.38 ZAC 131.61 ETC 273.65 LVI -37.84

PLANETOCENTRIC CONIC

C3 20.202 VHL 4.495 DLA -51.42 RAL 9.43 RAD 6642.9 VEL 11.841 PTH 6.86 VHP 3.414 DPA 6.43 RAP 293.29 ECC 1.3328

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.08	23 12 17	1853.07	27.80	41.48	254.55	135.18	23 43 10	853.1	43.46	18.50
45.08	23 12 17	1853.07	27.80	41.48	254.55	135.18	23 43 10	853.1	43.46	18.50
45.08	23 12 17	1853.07	27.80	41.48	254.55	135.18	23 43 10	853.1	43.46	18.50
45.08	23 12 17	1853.07	27.80	41.48	254.55	135.18	23 43 10	853.1	43.46	18.50
45.08	23 12 17	1853.07	27.80	41.48	254.55	135.18	23 43 10	853.1	43.46	18.50
45.08	23 12 17	1853.07	27.80	41.48	254.55	135.18	23 43 10	853.1	43.46	18.50
45.08	23 12 17	1853.07	27.80	41.48	254.55	135.18	23 43 10	853.1	43.46	18.50

DIFFERENTIAL CORRECTIONS
TDE -.2640 TRA 1.3720 TC3-2.3638 BAU .7852
RDE -.4429 RRA-1.2970 RC3 1.6922 FAU .18723
FDE 2.1505 FRA 6.4493 FC3-8.0234 BSP 7325
BDE .5156 BRA 1.8880 BC3 2.9071 FSP 2232

MID-COURSE EXECUTION ACCURACY
SGT 3534.9 SGR 3108.5 SG3 1319.9
RRT -.9537 RRF -.9998 RTF .9515
SGB 4707.3 R23 .1784 R13 -.9838
SG1 4653.3 SG2 710.5 THA 138.85

ORBIT DETERMINATION ACCURACY
ST 45.4 SR 48.8 SS 71.1
CRT -.5435 CRS .9999 CST -.5528
LSA 90.5 MSA 36.1 SSA .1
EL1 58.6 EL2 31.7 ALF 131.21

LAUNCH DATE APR 29 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 13 1971

DISTANCE 542.665

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.249 GAL -2.05 AZL 97.41 HCA 176.29 SMA 183.64 ECC .18395 INC 7.4101 V1 29.577
RP 215.54 LAP -.48 LOP 34.37 VP 22.574 GAP 3.73 AZP 82.60 TAL 346.73 TAP 163.02 RCA 150.02 APO 217.66 V2 25.480
RC 154.904 GL -55.34 GP 36.06 ZAL 108.49 ZAP 82.82 ETS 184.36 ZAE 117.62 ETE 158.06 ZAC 138.22 ETC 273.97 LVI -43.44

PLANETOCENTRIC CONIC

C3 25.557 VHL 5.055 DLA -55.56 RAL 17.02 RAD 6645.2 VEL 12.063 PTH 7.05 VHP 3.742 DPA 12.87 RAP 291.78 ECC 1.4206

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.95	23 27 35	1943.09	26.49	49.76	267.03	140.82	23 59 58	943.1	44.22	29.14
39.95	23 27 35	1943.09	26.49	49.76	267.03	140.82	23 59 58	943.1	44.22	29.14
39.95	23 27 35	1943.09	26.49	49.76	267.03	140.82	23 59 58	943.1	44.22	29.14
39.95	23 27 35	1943.09	26.49	49.76	267.03	140.82	23 59 58	943.1	44.22	29.14
39.95	23 27 35	1943.09	26.49	49.76	267.03	140.82	23 59 58	943.1	44.22	29.14
39.95	23 27 35	1943.09	26.49	49.76	267.03	140.82	23 59 58	943.1	44.22	29.14
39.95	23 27 35	1943.09	26.49	49.76	267.03	140.82	23 59 58	943.1	44.22	29.14

DIFFERENTIAL CORRECTIONS

TDE -.1174 TRA 1.5261 TC3-2.0334 BAU .9041
RDE -.7910 RRA-1.5564 RC3 1.6932 FAU .16225
FDE 2.7040 FRA 5.2371 FC3-5.4963 BSP 7848
BDE .7997 BRA 2.1798 BC3 2.6460 FSP 1710

MID-COURSE EXECUTION ACCURACY

SGT 3687.9 SGR 3669.5 SG3 1059.8
RRT -.9563 RRF -.9999 RTF .9533
SGB 5202.5 R23 .1583 R13 -.9873
SG1 5145.4 SG2 768.6 THA 135.15

ORBIT DETERMINATION ACCURACY

ST 46.5 SR 64.8 SS 71.1
CRT -.6162 CRS 1.0000 CST -.6099
LSA 101.0 MSA 35.0 SSA .1
EL1 72.8 EL2 32.6 ALF 120.57

LAUNCH DATE APR 29 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 15 1971

DISTANCE 546.831

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.253 GAL -2.10 AZL 99.97 HCA 177.45 SMA 183.89 ECC .18435 INC 9.9696 V1 29.577
RP 215.87 LAP -.44 LOP 35.53 VP 22.536 GAP 3.56 AZP 80.04 TAL 346.42 TAP 163.87 RCA 149.99 APO 217.80 V2 25.443
RC 157.385 GL -64.05 GP 45.39 ZAL 105.25 ZAP 82.84 ETS 186.27 ZAE 113.07 ETE 154.99 ZAC 147.52 ETC 274.95 LVI -51.26

PLANETOCENTRIC CONIC

C3 38.542 VHL 6.208 DLA -60.47 RAL 30.99 RAD 6650.2 VEL 12.587 PTH 7.45 VHP 4.489 DPA 22.05 RAP 290.02 ECC 1.6343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.04	0 11 39	2076.53	22.18	59.72	287.62	147.84	0 46 15	1076.5	42.34	43.26
34.04	0 11 39	2076.53	22.18	59.72	287.62	147.84	0 46 15	1076.5	42.34	43.26
34.04	0 11 39	2076.53	22.18	59.72	287.62	147.84	0 46 15	1076.5	42.34	43.26
34.04	0 11 39	2076.53	22.18	59.72	287.62	147.84	0 46 15	1076.5	42.34	43.26
34.04	0 11 39	2076.53	22.18	59.72	287.62	147.84	0 46 15	1076.5	42.34	43.26
34.04	0 11 39	2076.53	22.18	59.72	287.62	147.84	0 46 15	1076.5	42.34	43.26
34.04	0 11 39	2076.53	22.18	59.72	287.62	147.84	0 46 15	1076.5	42.34	43.26

DIFFERENTIAL CORRECTIONS

TDE .4716 TRA 1.7214 TC3-1.5267 BAU 1.1043
RDE-1.9142 RRA-1.8995 RC3 1.5039 FAU .11767
FDE 3.5847 FRA 3.4205 FC3-2.6430 BSP 8319
BDE 1.9714 BRA 2.5634 BC3 2.1430 FSP 1056

MID-COURSE EXECUTION ACCURACY

SGT 3764.3 SGR 4388.1 SG3 684.3
RRT -.9547 RRF -.9998 RTF .9493
SGB 5781.4 R23 .1447 R13 -.9895
SG1 5717.2 SG2 859.4 THA 130.42

ORBIT DETERMINATION ACCURACY

ST 53.1 SR 103.2 SS 74.2
CRT -.8228 CRS .9999 CST -.8128
LSA 134.7 MSA 28.7 SSA .0
EL1 112.7 EL2 27.6 ALF 114.50

LAUNCH DATE APR 29 1971 FLIGHT TIME 238.00 ARRIVAL DATE DEC 23 1971

DISTANCE 563.608

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.270 GAL -2.35 AZL 82.03 HCA 182.13 SMA 184.18 ECC .18647 INC 7.9664 V1 29.577
RP 217.26 LAP -.30 LOP 40.15 VP 22.386 GAP 2.92 AZP 97.97 TAL 344.93 TAP 167.06 RCA 149.83 APO 218.52 V2 25.288
RC 167.446 GL 56.58 GP -49.05 ZAL 109.34 ZAP 79.66 ETS 166.63 ZAE 106.26 ETE 200.22 ZAC 53.34 ETC 272.49 LVI 35.03

PLANETOCENTRIC CONIC

C3 28.702 VHL 5.357 DLA 45.15 RAL 318.98 RAD 6646.5 VEL 12.192 PTH 7.15 VHP 5.035 DPA -70.30 RAP 318.02 ECC 1.4724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	9 41 54	4306.99	-32.64	196.23	216.40	53.24	10 53 41	3307.0	-44.57	169.11
53.20	8 20 49	4514.79	-21.28	205.49	206.20	49.18	9 36 3	3514.8	-35.90	183.49
53.20	8 20 49	4514.79	-21.28	205.49	206.20	49.18	9 36 3	3514.8	-35.90	183.49
53.20	8 20 49	4514.79	-21.28	205.49	206.20	49.18	9 36 3	3514.8	-35.90	183.49
53.20	8 20 49	4514.79	-21.28	205.49	206.20	49.18	9 36 3	3514.8	-35.90	183.49
53.20	8 20 49	4514.79	-21.28	205.49	206.20	49.18	9 36 3	3514.8	-35.90	183.49
53.20	8 20 49	4514.79	-21.28	205.49	206.20	49.18	9 36 3	3514.8	-35.90	183.49

DIFFERENTIAL CORRECTIONS

TDE 3.9780 TRA .7617 TC3-2.3235 BAU 1.1423
RDE 3.1764 RRA 1.4673 RC3-1.8609 FAU .08169
FDE 4.0467 FRA 2.0446 FC3-2.4641 BSP 9740
BDE 4.7845 BRA 1.6710 BC3 2.9768 FSP 836

MID-COURSE EXECUTION ACCURACY

SGT 4709.0 SGR 4539.1 SG3 513.4
RRT .9623 RRF .9995 RTF .9947
SGB 6540.5 R23 .1683 R13 -.9856
SG1 6478.6 SG2 897.5 THA 43.91

ORBIT DETERMINATION ACCURACY

ST 192.1 SR 173.2 SS 96.3
CRT .9944 CRS -.9999 CST -.9926
LSA 275.8 MSA 15.2 SSA .1
EL1 258.3 EL2 13.7 ALF 42.02

LAUNCH DATE APR 29 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 25 1971

DISTANCE 567.758

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.275 GAL -2.41 AZL 85.45 HCA 183.27 SMA 184.26 ECC .18707 INC 4.5370 V1 29.577
RP 217.61 LAP -.26 LOP 41.30 VP 22.349 GAP 2.76 AZP 94.54 TAL 344.58 TAP 167.85 RCA 149.79 APO 218.73 V2 25.249
RC 169.992 GL 39.11 GP -38.29 ZAL 116.50 ZAP 75.70 ETS 167.32 ZAE 107.96 ETE 195.28 ZAC 64.14 ETC 271.94 LVI 25.70

PLANETOCENTRIC CONIC

C3 16.419 VHL 4.052 DLA 29.29 RAL 328.37 RAD 6641.2 VEL 11.682 PTH 6.72 VHP 3.998 DPA -60.61 RAP 306.31 ECC 1.2702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 42 37	3697.75	-47.55	146.95	209.88	88.26	13 44 15	2697.8	-42.64	113.16
60.00	12 40 2	3704.66	-39.68	146.67	208.98	82.26	13 41 47	2704.7	-38.49	115.58
70.00	12 34 56	3719.71	-31.68	146.04	207.13	76.51	13 36 56	2719.7	-34.04	117.56
80.00	12 15 29	3780.98	-22.61	147.60	204.07	69.97	13 18 30	2781.0	-28.82	121.90
82.02	11 42 32	3886.65	-18.31	153.59	202.25	66.73	12 47 19	2886.6	-26.31	129.18
100.00	14 58 21	3255.45	-22.61	108.97	204.07	69.97	15 52 36	2255.5	-28.82	83.27
110.00	17 34 22	2766.53	-31.68	74.96	207.13	76.51	18 20 29	1766.5	-34.04	46.48

DIFFERENTIAL CORRECTIONS

TDE 2.2263 TRA 1.1635 TC3-4.0080 BAU 1.0270
RDE 1.5780 RRA 1.3589 RC3-2.4136 FAU .13123
FDE 4.3590 FRA 3.9626 FC3-6.9197 BSP 8883
BDE 2.7288 BRA 1.7890 BC3 4.6787 FSP 1430

MID-COURSE EXECUTION ACCURACY

SGT 4900.9 SGR 3695.9 SG3 909.1
RRT .9680 RRF .9997 RTF .9645
SGB 6138.3 R23 .1744 R13 .9845
SG1 6092.8 SG2 745.5 THA 36.77

ORBIT DETERMINATION ACCURACY

ST 160.0 SR 116.4 SS 111.6
CRT .9939 CRS -.9999 CST -.9922
LSA 226.8 MSA 13.4 SSA .1
EL1 197.6 EL2 10.4 ALF 35.98

LAUNCH DATE APR 29 1971 FLIGHT TIME 242.00 ARRIVAL DATE DEC 27 1971

HELIOCENTRIC CONIC DISTANCE 571.912 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.280	GAL	-2.48	AZL	87.11	HCA	184.40	SMA	184.36	ECC	.18770	INC	2.8920	V1	29.877
RP	217.97	LAP	-.22	LOP	42.44	VP	22.313	GAP	2.60	AZP	92.89	TAL	344.22	TAP	168.62	RCA	149.75	APO	218.96	V2	25.209
RC	172.547	GL	26.85	GP	-30.63	ZAL	120.75	ZAP	72.72	ETS	168.39	ZAE	108.27	ETE	191.68	ZAC	71.82	ETC	271.70	LVI	18.91

PLANETOCENTRIC CONIC

C3	13.001	VHL	3.606	DLA	18.10	RAL	333.86	RAD	6639.6	VEL	11.536	PTH	6.58	VHP	3.602	DPA	-53.35	RAP	301.63	ECC	1.2140

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 58 12	3401.74	-44.41	119.37	200.00	109.21	14 54 54	2401.7	-32.33	92.44
60.00	14 16 41	3352.53	-38.72	117.08	202.14	102.18	15 12 33	2352.5	-29.82	89.90
70.00	14 44 27	3270.80	-33.58	111.51	203.19	96.62	15 38 57	2270.8	-27.43	84.54
80.00	15 29 10	3130.62	-29.74	101.26	203.56	92.77	16 21 21	2130.6	-25.58	74.61
90.00	16 39 48	2902.60	-28.25	84.56	203.63	91.33	17 28 11	1902.6	-24.86	58.06
100.00	18 12 2	2605.09	-29.74	62.63	203.56	92.77	18 55 27	1605.1	-25.58	35.97
110.00	19 43 53	2317.61	-33.58	40.43	203.19	96.62	20 22 30	1317.6	-27.43	13.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7242	TRA	1.4991	TC3	-4.8889	BAU	.9346	SGT	5120.2	SGR	3047.5	SG3	1171.0	ST	142.2	SR	85.9	SS	114.8
RDE	1.0103	RRA	1.2118	RC3	-2.2383	FAU	.15068	RRT	.9720	RRF	.9997	RTF	.9697	CRT	.9955	CRS	-.9998	CST	-.9933
FDE	4.3047	FRA	5.4999	FC	-10.0339	BSP	9768	SGB	5958.5	R23	.1831	R13	.9828	LSA	201.6	MSA	11.0	SSA	.2
BDE	1.9984	BRA	1.9276	BC3	5.3769	FSP	2052	SG1	5926.3	SG2	619.0	THA	30.42	EL1	165.9	EL2	6.9	ALF	31.08

LAUNCH DATE APR 29 1971 FLIGHT TIME 244.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 576.067 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.286	GAL	-2.54	AZL	88.08	HCA	185.54	SMA	184.45	ECC	.18838	INC	1.9198	V1	29.577
RP	218.33	LAP	-.19	LOP	43.58	VP	22.276	GAP	2.44	AZP	91.91	TAL	343.84	TAP	169.38	RCA	149.71	APO	219.20	V2	25.169
RC	175.114	GL	18.37	GP	-25.21	ZAL	123.20	ZAP	70.35	ETS	169.36	ZAE	107.79	ETE	189.07	ZAC	77.25	ETC	271.55	LVI	14.09

PLANETOCENTRIC CONIC

C3	11.803	VHL	3.436	DLA	10.40	RAL	337.53	RAD	6639.0	VEL	11.484	PTH	6.53	VHP	3.421	DPA	-48.16	RAP	299.12	ECC	1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 43 42	3223.33	-39.39	105.22	196.51	119.20	15 37 26	2223.3	-24.57	82.54
60.00	15 11 57	3148.15	-34.58	101.34	199.41	112.14	16 4 25	2148.2	-22.54	77.52
70.00	15 51 26	3031.97	-30.27	93.73	201.20	106.63	16 41 58	2032.0	-20.64	69.34
80.00	16 47 58	2854.91	-27.14	81.24	202.15	102.95	17 35 33	1854.9	-19.22	56.63
90.00	18 4 13	2608.63	-25.96	63.44	202.43	101.62	18 47 41	1608.6	-18.68	38.78
100.00	19 30 50	2329.38	-27.14	42.61	202.15	102.95	20 9 39	1329.4	-19.22	18.00
110.00	20 50 53	2078.79	-30.27	22.64	201.20	106.63	21 25 32	1078.8	-20.64	358.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4194	TRA	1.6886	TC3	-5.5169	BAU	.9260	SGT	5304.7	SGR	2519.2	SG3	1314.6	ST	125.7	SR	64.7	SS	109.9
RDE	.7093	RRA	1.0309	RC3	-2.0015	FAU	.16622	RRT	.9736	RRF	.9994	RTF	.9721	CRT	.9976	CRS	-.9994	CST	-.9948
FDE	4.0121	FRA	6.3672	FC	-12.1919	BSP	9636	SGB	5872.5	R23	.1914	R13	.9809	LSA	178.9	MSA	8.6	SSA	.3
BDE	1.5832	BRA	1.9785	BC3	5.8687	FSP	2306	SG1	5849.2	SG2	521.6	THA	25.03	EL1	141.4	EL2	4.0	ALF	27.21

LAUNCH DATE APR 29 1971 FLIGHT TIME 246.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 580.220 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.292	GAL	-2.61	AZL	88.72	HCA	186.67	SMA	184.55	ECC	.18908	INC	1.2790	V1	29.577
RP	218.69	LAP	-.15	LOP	44.72	VP	22.239	GAP	2.28	AZP	91.27	TAL	343.46	TAP	170.13	RCA	149.66	APO	219.45	V2	25.129
RC	177.690	GL	12.37	GP	-21.27	ZAL	124.69	ZAP	68.34	ETS	170.16	ZAE	106.88	ETE	187.16	ZAC	81.20	ETC	271.46	LVI	10.56

PLANETOCENTRIC CONIC

C3	11.376	VHL	3.373	DLA	5.01	RAL	340.22	RAD	6638.7	VEL	11.466	PTH	6.52	VHP	3.332	DPA	-44.36	RAP	297.53	ECC	1.1872

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 14 37	3107.63	-35.24	97.28	195.84	124.31	16 6 24	2107.6	-19.17	76.84
60.00	15 48 51	3016.52	-30.82	92.22	198.99	117.37	16 39 8	2016.5	-17.30	70.33
70.00	16 35 8	2880.37	-26.85	83.26	201.06	111.94	17 23 9	1880.4	-15.57	60.51
80.00	17 36 0	2683.50	-23.98	69.50	202.23	108.34	18 22 44	1683.5	-14.29	46.30
90.00	18 57 4	2428.36	-22.91	51.11	202.60	107.05	19 37 32	1428.4	-13.80	27.78
100.00	20 20 52	2157.97	-23.98	30.86	202.23	108.34	20 56 50	1158.0	-14.29	7.66
110.00	21 34 35	1927.19	-26.85	12.18	201.06	111.94	22 6 42	927.2	-15.57	349.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2374	TRA	1.8499	TC3	-5.8802	BAU	.9320	SGT	5486.7	SGR	2119.4	SG3	1393.7	ST	115.4	SR	51.6	SS	105.5
RDE	.5456	RRA	.8652	RC3	-1.7252	FAU	.17405	RRT	.9740	RRF	.9990	RTF	.9733	CRT	.9993	CRS	-.9987	CST	-.9966
FDE	3.7723	FRA	6.9214	FC	-13.2452	BSP	9681	SGB	5881.8	R23	.1967	R13	.9794	LSA	164.5	MSA	6.5	SSA	.6
BDE	1.3523	BRA	2.0508	BC3	6.1281	FSP	2458	SG1	5864.7	SG2	449.2	THA	20.75	EL1	126.4	EL2	1.7	ALF	24.08

LAUNCH DATE APR 29 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 584.371 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.299	GAL	-2.68	AZL	89.17	HCA	187.80	SMA	184.66	ECC	.18982	INC	.8255	V1	29.577
RP	219.06	LAP	-.11	LOP	45.85	VP	22.203	GAP	2.12	AZP	90.82	TAL	343.07	TAP	170.87	RCA	149.61	APO	219.71	V2	25.089
RC	180.275	GL	8.00	GP	-18.31	ZAL	125.69	ZAP	66.36	ETS	170.82	ZAE	105.76	ETE	185.73	ZAC	84.17	ETC	271.38	LVI	7.95

PLANETOCENTRIC CONIC

C3	11.275	VHL	3.358	DLA	1.15	RAL	342.32	RAD	6638.7	VEL	11.461	PTH	6.51	VHP	3.288	DPA	-41.50	RAP	296.42	ECC	1.1856

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 6	3028.80	-32.10	92.38	196.25	127.22	16 27 35	2028.8	-15.37	73.20
60.00	16 15 28	2926.74	-27.86	86.46	199.52	120.38	17 4 15	1926.7	-13.57	65.68
70.00	17 6 22	2777.08	-24.05	76.55	201.75	115.02	17 52 39	1777.1	-11.89	54.77
80.00	18 13 25	2567.09	-21.28	61.91	203.04	111.45	18 56 12	1567.1	-10.65	39.57
90.00	19 34 19	2306.05	-20.24	43.14	203.46	110.18	20 12 45	1306.1	-10.18	20.63
100.00	20 56 17	2041.57	-21.28	23.28	203.04	111.45	21 30 19	1041.6	-10.65	.94
110.00	22 5 48	1823.90	-24.05	5.47	201.75	115.02	22 36 12	823.9	-11.89	343.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1267	TRA	1.9932	TC3	-6.1055	BAU	.9472	SGT	5663.9	SGR	1808.4	SG3	1431.9	ST	109.0	SR	42.6	SS	101.0
RDE	.4438	RRA	.7641	RC3	-1.4862	FAU	.17887	RRT	.9748	RRF	.9983	RTF	.9751	CRT	.9997	CRS	-.9974	CST	-.9980
FDE	3.5536	FRA	7.2433	FC	-13.7341	BSP	9783	SGB	5945.6	R23	.1943	R13	.9792	LSA	154.5	MSA	4.9	SSA	.9
BDE	1.2110	BRA	2.1346	BC3	6.2838	FSP	2508	SG1	5933.1	SG2	385.2	THA	17.36	EL1	117.0	EL2	1.0	ALF	21.36

LAUNCH DATE APR 29 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 4 1972

DISTANCE 588.516

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.305 GAL -2.75 AZL 89.51 HCA 188.93 SMA 184.77 ECC .19059 INC .4854 V1 29.577
RP 219.43 LAP -.08 LOP 46.98 VP 22.167 GAP 1.97 AZP 90.49 TAL 342.67 TAP 171.60 RCA 149.55 APO 219.98 V2 25.048
RC 182.871 GL 4.72 GP -16.02 ZAL 126.44 ZAP 64.94 ETS 171.36 ZAE 104.54 ETE 184.63 ZAC 86.47 ETC 271.33 LVI 5.91

PLANETOCENTRIC CONIC

C3 11.331 VHL 3.366 DLA -1.70 RAL 344.02 RAD 6638.7 VEL 11.464 PTH 6.51 VHP 3.269 DPA -39.28 RAP 295.61 ECC 1.1865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 54 18	2973.22	-29.76	89.14	197.08	129.00	16 43 51	1973.2	-12.65	70.72
60.00	16 35 40	2863.16	-25.61	82.58	200.44	122.25	17 23 23	1863.2	-10.86	62.49
70.00	17 29 54	2703.67	-21.86	71.98	202.77	116.92	18 14 58	1703.7	-9.20	50.79
80.00	18 40 1	2484.16	-19.12	56.69	204.14	113.38	19 21 25	1484.2	-7.96	34.89
90.00	20 2 14	2218.85	-18.10	37.64	204.59	112.11	20 39 13	1218.9	-7.49	15.63
100.00	21 22 52	1958.64	-19.12	18.06	204.14	113.38	21 55 31	958.6	-7.96	356.25
110.00	22 29 21	1750.49	-21.86	.90	202.77	116.92	22 58 31	750.5	-9.20	339.71

DIFFERENTIAL CORRECTIONS

TDE 1.0608 TRA 2.1305 TC3-6.2443 BAU .9654
RDE .3817 RRA .6690 RC3-1.2722 FAU .17958
FDE 3.4148 FRA 7.4729 FC-13.7205 BSP 9993
BDE 1.1274 BRA 2.2330 BC3 6.3725 FSP 2554

MID-COURSE EXECUTION ACCURACY

SGT 5839.0 SGR 1566.3 SG3 1448.4
RRT .9738 RRF .9972 RTF .9755
SGB 6045.4 R23 .1929 R13 .9785
SG1 6035.6 SG2 344.4 THA 14.69

ORBIT DETERMINATION ACCURACY

ST 105.6 SR 36.7 SS 98.3
CRT .9980 CRS -.9953 CST -.9991
LSA 148.8 MSA 3.9 SSA 1.4
EL1 111.8 EL2 2.2 ALF 19.15

LAUNCH DATE APR 29 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 6 1972

DISTANCE 592.657

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.312 GAL -2.82 AZL 89.77 HCA 190.05 SMA 184.88 ECC .19139 INC .2215 V1 29.577
RP 219.80 LAP -.04 LOP 48.10 VP 22.131 GAP 1.81 AZP 90.23 TAL 342.26 TAP 172.31 RCA 149.50 APO 220.27 V2 25.007
RC 185.475 GL 2.19 GP -14.20 ZAL 127.06 ZAP 63.44 ETS 171.81 ZAE 103.26 ETE 183.78 ZAC 88.29 ETC 271.29 LVI 4.30

PLANETOCENTRIC CONIC

C3 11.471 VHL 3.387 DLA -3.84 RAL 345.47 RAD 6638.8 VEL 11.470 PTH 6.52 VHP 3.265 DPA -37.51 RAP 295.00 ECC 1.1888

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 53	2933.09	-28.02	86.90	198.09	130.16	16 56 46	1933.1	-10.67	68.97
60.00	16 51 33	2816.96	-23.90	79.87	201.51	123.47	17 38 30	1817.0	-8.87	60.21
70.00	17 48 19	2650.01	-20.17	68.74	203.92	118.17	18 32 29	1650.0	-7.19	47.93
80.00	19 0 45	2423.27	-17.44	52.96	205.35	114.63	19 41 8	1423.3	-5.94	31.49
90.00	20 23 59	2154.70	-16.41	33.69	205.83	113.36	20 59 53	1154.7	-5.47	12.01
100.00	21 43 36	1897.74	-17.44	14.33	205.35	114.63	22 15 14	897.7	-5.94	352.86
110.00	22 47 46	1696.83	-20.17	357.65	203.92	118.17	23 16 2	696.8	-7.19	336.85

DIFFERENTIAL CORRECTIONS

TDE 1.0270 TRA 2.2678 TC3-6.3193 BAU .9833
RDE .3424 RRA .5924 RC3-1.0868 FAU .17725
FDE 3.3376 FRA 7.6465 FC-13.3775 BSP 10308
BDE 1.0826 BRA 2.3439 BC3 6.4120 FSP 2602

MID-COURSE EXECUTION ACCURACY

SGT 6010.5 SGR 1373.5 SG3 1451.1
RRT .9715 RRF .9955 RTF .9752
SGB 6165.4 R23 .1915 R13 .9775
SG1 6157.2 SG2 317.9 THA 12.55

ORBIT DETERMINATION ACCURACY

ST 104.5 SR 32.7 SS 96.8
CRT .9940 CRS -.9924 CST -.9996
LSA 146.1 MSA 3.8 SSA 1.6
EL1 109.4 EL2 3.4 ALF 17.28

LAUNCH DATE APR 29 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 8 1972

DISTANCE 596.794

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.319 GAL -2.90 AZL 89.98 HCA 191.17 SMA 185.00 ECC .19222 INC .0000 V1 29.577
RP 220.18 LAP -.00 LOP 49.22 VP 22.095 GAP 1.65 AZP 90.02 TAL 341.85 TAP 173.02 RCA 149.44 APO 220.56 V2 24.966
RC 188.089 GL .19 GP -12.73 ZAL 127.61 ZAP 62.03 ETS 172.19 ZAE 101.96 ETE 183.10 ZAC 89.77 ETC 271.25 LVI 2.99

PLANETOCENTRIC CONIC

C3 11.658 VHL 3.414 DLA -5.48 RAL 346.72 RAD 6638.9 VEL 11.478 PTH 6.53 VHP 3.271 DPA -36.08 RAP 294.53 ECC 1.1919

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 56	2903.69	-26.72	85.31	199.14	130.95	17 7 19	1903.7	-9.21	67.70
60.00	17 4 21	2782.87	-22.61	77.91	202.63	124.29	17 50 44	1782.9	-7.39	58.55
70.00	18 3 7	2610.10	-18.87	66.37	205.10	119.01	18 46 37	1610.1	-5.69	45.82
80.00	19 17 21	2377.68	-16.12	50.21	206.58	115.48	19 56 59	1377.7	-4.42	28.97
90.00	20 41 23	2106.55	-15.09	30.78	207.07	114.20	21 16 29	1106.6	-3.94	9.30
100.00	22 0 13	1852.16	-16.12	11.58	206.58	115.48	22 31 5	852.2	-4.42	350.34
110.00	23 2 33	1656.92	-18.87	355.29	205.10	119.01	23 30 10	656.9	-5.69	334.74

DIFFERENTIAL CORRECTIONS

TDE 1.0066 TRA 2.3967 TC3-6.3820 BAU 1.0054
RDE .3142 RRA .5267 RC3 -.9392 FAU .17471
FDE 3.2659 FRA 7.7458 FC-12.9738 BSP 10580
BDE 1.0545 BRA 2.4539 BC3 6.4507 FSP 2612

MID-COURSE EXECUTION ACCURACY

SGT 6178.2 SGR 1215.5 SG3 1443.2
RRT .9684 RRF .9931 RTF .9750
SGB 6296.7 R23 .1871 R13 .9768
SG1 6289.6 SG2 297.7 THA 10.81

ORBIT DETERMINATION ACCURACY

ST 104.2 SR 29.6 SS 95.3
CRT .9876 CRS -.9883 CST -.9997
LSA 144.1 MSA 4.5 SSA 1.6
EL1 108.2 EL2 4.5 ALF 15.68

LAUNCH DATE APR 29 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 10 1972

DISTANCE 600.929

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.327 GAL -2.98 AZL 90.15 HCA 192.29 SMA 185.12 ECC .19306 INC .1416 V1 29.577
RP 220.55 LAP .03 LOP 50.33 VP 22.059 GAP 1.50 AZP 89.85 TAL 341.43 TAP 173.72 RCA 149.38 APO 220.87 V2 24.925
RC 190.711 GL -1.41 GP -11.51 ZAL 128.12 ZAP 60.69 ETS 172.52 ZAE 100.66 ETE 182.55 ZAC 90.99 ETC 271.23 LVI 1.90

PLANETOCENTRIC CONIC

C3 11.875 VHL 3.446 DLA -6.76 RAL 347.83 RAD 6639.0 VEL 11.487 PTH 6.54 VHP 3.284 DPA -34.89 RAP 294.16 ECC 1.1954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 5	2882.02	-25.75	84.16	200.20	131.50	17 16 7	1882.0	-8.14	66.77
60.00	17 14 54	2757.50	-21.63	76.48	203.74	124.87	18 0 52	1757.5	-6.28	57.32
70.00	18 15 14	2580.13	-17.87	64.62	206.26	119.60	18 58 14	1580.1	-4.55	44.25
80.00	19 30 55	2343.19	-15.10	48.16	207.78	116.07	20 9 58	1343.2	-3.26	27.07
90.00	20 55 35	2070.01	-14.06	28.59	208.29	114.79	21 30 5	1070.0	-2.77	7.26
100.00	22 13 47	1817.67	-15.10	9.53	207.78	116.07	22 44 4	817.7	-3.26	348.44
110.00	23 14 40	1626.95	-17.87	353.54	206.26	119.60	23 41 47	626.9	-4.55	333.16

DIFFERENTIAL CORRECTIONS

TDE .9942 TRA 2.5184 TC3-6.4434 BAU 1.0313
RDE .2918 RRA .4680 RC3 -.8269 FAU .17349
FDE 3.1719 FRA 7.7663 FC-12.6483 BSP 10793
BDE 1.0362 BRA 2.5615 BC3 6.4962 FSP 2566

MID-COURSE EXECUTION ACCURACY

SGT 6342.9 SGR 1083.6 SG3 1427.3
RRT .9656 RRF .9897 RTF .9759
SGB 6434.8 R23 .1750 R13 .9772
SG1 6428.6 SG2 278.0 THA 9.38

ORBIT DETERMINATION ACCURACY

ST 104.3 SR 27.0 SS 93.1
CRT .9792 CRS -.9828 CST -.9996
LSA 142.3 MSA 5.3 SSA 1.5
EL1 107.6 EL2 5.3 ALF 14.25

LAUNCH DATE APR 29 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC DISTANCE 605.058 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.334 GAL -3.05 AZL 90.29 HCA 193.40 SMA 186.25 ECC .19397 INC .2886 V1 29.577
RP 220.93 LAP .07 LOP 51.45 VP 22.023 GAP 1.34 AZP 89.71 TAL 341.01 TAP 174.41 RCA 149.32 APO 221.18 V2 24.884
RC 193.341 GL -2.72 GP -10.48 ZAL 128.60 ZAP 59.42 ETS 172.80 ZAE 99.36 ETE 182.11 ZAC 92.02 ETC 271.22 LVI .98

PLANETOCENTRIC CONIC

C3 12.112 VHL 3.480 DLA -7.76 RAL 348.83 RAD 6639.1 VEL 11.497 PTH 6.55 VHP 3.301 DPA -33.89 RAP 293.89 ECC 1.1993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 49	2866.14	-25.03	83.34	201.25	131.88	17 23 35	1866.1	-7.34	66.09
60.00	17 23 45	2738.67	-20.89	75.44	204.83	125.28	18 9 24	1738.7	-5.46	56.41
70.00	18 25 19	2557.63	-17.11	63.32	207.40	120.02	19 7 57	1557.6	-3.70	43.07
80.00	19 42 10	2317.07	-14.31	46.62	208.95	116.49	20 20 47	1317.1	-2.38	25.63
90.00	21 7 21	2042.24	-13.26	26.94	209.48	115.21	21 41 23	1042.2	-1.87	5.70
100.00	22 25 2	1791.53	-14.31	7.99	208.95	116.49	22 54 53	791.5	-2.38	347.00
110.00	23 24 46	1604.45	-17.11	352.24	207.40	120.02	23 51 30	604.4	-3.70	331.98

DIFFERENTIAL CORRECTIONS

TDE .9943 TRA 2.6411 TC3-6.4839 BAU 1.0565
RDE .2772 RRA .4185 RC3 -.7279 FAU .17064
FDE 3.1150 FRA 7.7787 FC-12.1965 BSP 11040
BDE 1.0322 BRA 2.6740 BC3 6.5246 FSP 2534

MID-COURSE EXECUTION ACCURACY

SGT 6504.1 SGR 974.0 SG3 1407.6
RRT .9606 RRF .9850 RTF .9760
SGB 6576.7 R23 .1649 R13 .9770
SG1 6571.2 SG2 267.9 THA 8.20

ORBIT DETERMINATION ACCURACY

ST 105.2 SR 25.1 SS 91.8
CRT .9688 CRS -.9762 CST -.9992
LSA 141.7 MSA 6.2 SSA 1.4
EL1 108.0 EL2 6.1 ALF 13.05

LAUNCH DATE APR 29 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 609.182 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.342 GAL -3.13 AZL 90.41 HCA 194.51 SMA 185.38 ECC .19488 INC .4116 V1 29.577
RP 221.31 LAP .10 LOP 52.56 VP 21.987 GAP 1.19 AZP 89.60 TAL 340.58 TAP 175.09 RCA 149.25 APO 221.51 V2 24.842
RC 195.978 GL -3.81 GP -9.61 ZAL 129.08 ZAP 58.21 ETS 173.06 ZAE 98.08 ETE 181.74 ZAC 92.89 ETC 271.21 LVI .19

PLANETOCENTRIC CONIC

C3 12.365 VHL 3.516 DLA -8.55 RAL 349.75 RAD 6639.2 VEL 11.508 PTH 6.56 VHP 3.322 DPA -33.03 RAP 293.69 ECC 1.2035

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 27	2854.66	-24.51	82.74	202.27	132.15	17 30 2	1854.7	-6.77	68.80
60.00	17 31 16	2724.85	-20.35	74.67	205.89	125.57	18 16 41	1724.9	-4.86	58.75
70.00	18 33 50	2540.87	-16.53	62.36	208.50	120.32	19 16 11	1540.9	-3.06	42.19
80.00	19 51 37	2297.39	-13.71	45.47	210.09	116.78	20 29 54	1297.4	-1.71	24.59
90.00	21 17 13	2021.21	-12.65	25.70	210.63	115.51	21 50 54	1021.2	-1.19	4.53
100.00	22 34 29	1771.86	-13.71	6.84	210.09	116.78	23 4 1	771.9	-1.71	345.92
110.00	23 33 17	1587.69	-16.53	351.28	208.50	120.32	23 59 44	587.7	-3.06	331.11

DIFFERENTIAL CORRECTIONS

TDE 1.0032 TRA 2.7649 TC3-6.5103 BAU 1.0615
RDE .2672 RRA .3757 RC3 -.6441 FAU .16729
FDE 3.0715 FRA 7.7768 FC-11.7128 BSP 11312
BDE 1.0381 BRA 2.7903 BC3 6.5421 FSP 2501

MID-COURSE EXECUTION ACCURACY

SGT 6662.6 SGR 882.0 SG3 1385.3
RRT .9539 RRF .9788 RTF .9761
SGB 6720.7 R23 .1541 R13 .9768
SG1 6715.6 SG2 262.6 THA 7.21

ORBIT DETERMINATION ACCURACY

ST 106.8 SR 23.7 SS 90.6
CRT .9568 CRS -.9684 CST -.9988
LSA 141.8 MSA 7.1 SSA 1.3
EL1 109.1 EL2 6.7 ALF 12.03

LAUNCH DATE APR 29 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 613.302 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.350 GAL -3.21 AZL 90.52 HCA 195.62 SMA 185.51 ECC .19583 INC .5162 V1 29.577
RP 221.69 LAP .14 LOP 53.66 VP 21.982 GAP 1.03 AZP 89.50 TAL 340.15 TAP 175.76 RCA 149.18 APO 221.84 V2 24.801
RC 198.621 GL -4.71 GP -8.87 ZAL 129.36 ZAP 57.04 ETS 173.28 ZAE 98.82 ETE 181.43 ZAC 93.64 ETC 271.22 LVI -.51

PLANETOCENTRIC CONIC

C3 12.629 VHL 3.554 DLA -9.17 RAL 350.60 RAD 6639.4 VEL 11.520 PTH 6.57 VHP 3.345 DPA -32.30 RAP 293.56 ECC 1.2078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 12	2846.63	-24.14	82.33	203.27	132.33	17 35 39	1846.6	-6.37	69.26
60.00	17 37 43	2714.95	-19.96	74.13	206.93	125.77	18 22 58	1715.0	-4.42	58.27
70.00	18 41 6	2528.61	-16.11	61.66	209.57	120.53	19 23 14	1528.6	-2.59	41.55
80.00	19 59 38	2282.78	-13.26	44.62	211.18	117.00	20 37 40	1282.8	-1.21	23.75
90.00	21 25 34	2005.52	-12.18	24.78	211.73	115.72	21 58 59	1005.5	-.69	3.65
100.00	22 42 30	1757.25	-13.26	5.99	211.18	117.00	23 11 47	757.2	-1.21	349.11
110.00	23 40 32	1575.43	-16.11	350.58	209.57	120.53	24 6 48	575.4	-2.59	330.46

DIFFERENTIAL CORRECTIONS

TDE 1.0187 TRA 2.8869 TC3-6.5288 BAU 1.1066
RDE .2606 RRA .3377 RC3 -.5731 FAU .16373
FDE 3.0377 FRA 7.7580 FC-11.2233 BSP 11580
BDE 1.0515 BRA 2.9086 BC3 6.5539 FSP 2464

MID-COURSE EXECUTION ACCURACY

SGT 6818.4 SGR 804.1 SG3 1361.0
RRT .9452 RRF .9706 RTF .9761
SGB 6865.6 R23 .1429 R13 .9767
SG1 6860.6 SG2 260.9 THA 6.37

ORBIT DETERMINATION ACCURACY

ST 108.6 SR 22.6 SS 89.7
CRT .9435 CRS -.9597 CST -.9984
LSA 142.4 MSA 7.9 SSA 1.3
EL1 110.7 EL2 7.3 ALF 11.15

LAUNCH DATE APR 29 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 617.416 EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.358 GAL -3.30 AZL 90.61 HCA 196.72 SMA 185.65 ECC .19679 INC .6061 V1 29.577
RP 222.07 LAP .17 LOP 54.76 VP 21.917 GAP .87 AZP 89.42 TAL 339.71 TAP 176.43 RCA 149.11 APO 222.18 V2 24.759
RC 201.270 GL -5.47 GP -8.22 ZAL 130.03 ZAP 55.92 ETS 173.48 ZAE 95.57 ETE 181.17 ZAC 94.29 ETC 271.23 LVI -1.12

PLANETOCENTRIC CONIC

C3 12.904 VHL 3.592 DLA -9.66 RAL 351.40 RAD 6639.5 VEL 11.531 PTH 6.58 VHP 3.370 DPA -31.65 RAP 293.49 ECC 1.2124

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 15	2841.35	-23.90	82.07	204.24	132.45	17 40 36	1841.4	-6.11	65.04
60.00	17 43 19	2708.19	-19.69	73.76	207.94	125.90	18 28 28	1708.2	-4.13	54.94
70.00	18 47 21	2519.96	-15.81	61.17	210.61	120.68	19 29 20	1520.0	-2.26	41.09
80.00	20 6 29	2272.24	-12.94	44.01	212.25	117.15	20 44 21	1272.2	-.86	23.17
90.00	21 32 41	1994.12	-11.85	24.12	212.80	115.87	22 5 55	994.1	-.32	3.02
100.00	22 49 20	1746.71	-12.94	5.38	212.25	117.15	23 18 27	746.7	-.86	344.54
110.00	23 46 47	1566.78	-15.81	350.09	210.61	120.68	24 12 54	566.8	-2.26	330.01

DIFFERENTIAL CORRECTIONS

TDE 1.0366 TRA 3.0109 TC3-6.5466 BAU 1.1329
RDE .2560 RRA .3035 RC3 -.5132 FAU .16019
FDE 3.0016 FRA 7.7231 FC-10.7472 BSP 11835
BDE 1.0677 BRA 3.0261 BC3 6.5667 FSP 2418

MID-COURSE EXECUTION ACCURACY

SGT 6970.4 SGR 737.5 SG3 1334.8
RRT .9341 RRF .9601 RTF .9760
SGB 7009.3 R23 .1319 R13 .9765
SG1 7004.4 SG2 262.0 THA 5.65

ORBIT DETERMINATION ACCURACY

ST 110.6 SR 21.7 SS 88.6
CRT .9290 CRS -.9498 CST -.9979
LSA 143.1 MSA 8.6 SSA 1.3
EL1 112.4 EL2 7.9 ALF 10.39

LAUNCH DATE APR 29 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 20 1972

DISTANCE 621.525

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.366 GAL -3.38 AZL 90.69 HCA 197.81 SMA 185.78 ECC .19779 INC .6855 V1 29.577
RP 222.46 LAP .21 LOP 55.86 VP 21.882 GAP .72 AZP 89.35 TAL 339.27 TAP 177.08 RCA 149.04 APO 222.53 V2 24.717
RC 203.922 GL -6.12 GP -7.65 ZAL 130.50 ZAP 54.85 ETS 173.66 ZAE 94.35 ETE 180.94 ZAC 94.85 ETC 271.25 LVI -1.67

PLANETOCENTRIC CONIC

C3 13.188 VHL 3.632 DLA -10.05 RAL 352.16 RAD 6639.6 VEL 11.544 PTH 6.59 VHP 3.397 DPA -31.08 RAP 293.46 ECC 1.2170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 43	2838.30	-23.76	81.91	205.19	132.52	17 45 1	1838.3	-5.95	64.91
60.00	17 48 14	2703.96	-19.52	73.53	208.92	125.99	18 33 18	1704.0	-3.94	54.74
70.00	18 52 45	2514.25	-15.61	60.85	211.62	120.77	19 34 40	1514.3	-2.04	40.80
80.00	20 12 22	2265.04	-12.71	43.59	213.27	117.24	20 50 7	1265.0	-.61	22.77
90.00	21 38 47	1986.22	-11.61	23.66	213.84	115.97	22 11 53	986.2	-.07	2.58
100.00	22 55 14	1739.51	-12.71	4.96	213.27	117.24	23 24 13	739.5	-.61	344.14
110.00	23 52 12	1561.07	-15.61	349.77	211.62	120.77	24 18 13	561.1	-2.04	329.71

DIFFERENTIAL CORRECTIONS

TDE 1.0916 TRA 3.1358 TC3-6.5521 BAU 1.1581
RDE .2539 RRA .2731 RC3 -.4611 FAU .15628
FDE 2.9801 FRA 7.6854 FC-10.2595 BSP 12109
BDE 1.0915 BRA 3.1476 BC3 6.5683 FSP 2378

MID-COURSE EXECUTION ACCURACY

SGT 7120.2 SGR 681.2 SG3 1308.3
RRT .9202 RRF .9469 RTF .9758
SGB 7152.7 R23 .1219 R13 .9763
SG1 7147.8 SG2 265.7 THA 5.04

ORBIT DETERMINATION ACCURACY

ST 112.9 SR 21.1 SS 87.8
CRT .9141 CRS -.9396 CST -.9974
LSA 144.3 MSA 9.3 SSA 1.3
EL1 114.5 EL2 8.4 ALF 9.74

LAUNCH DATE APR 29 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 22 1972

DISTANCE 625.629

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.374 GAL -3.47 AZL 90.76 HCA 198.91 SMA 185.92 ECC .19681 INC .7553 V1 29.577
RP 222.84 LAP .25 LOP 56.95 VP 21.847 GAP .56 AZP 89.28 TAL 338.82 TAP 177.73 RCA 148.96 APO 222.89 V2 24.675
RC 206.578 GL -6.67 GP -7.15 ZAL 130.97 ZAP 53.81 ETS 173.83 ZAE 93.16 ETE 180.76 ZAC 95.35 ETC 271.27 LVI -2.17

PLANETOCENTRIC CONIC

C3 13.480 VHL 3.672 DLA -10.34 RAL 352.87 RAD 6639.8 VEL 11.556 PTH 6.60 VHP 3.426 DPA -30.57 RAP 293.48 ECC 1.2219

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 42	2837.07	-23.70	81.85	206.13	132.54	17 48 59	1837.1	-5.89	64.86
60.00	17 52 33	2701.82	-19.43	73.42	209.88	126.03	18 37 35	1701.8	-3.85	54.64
70.00	18 57 29	2510.96	-15.50	60.66	212.60	120.82	19 39 19	1511.0	-1.92	40.62
80.00	20 17 28	2260.58	-12.57	43.33	214.28	117.31	20 55 8	1260.6	-.46	22.53
90.00	21 44 3	1981.21	-11.46	23.36	214.85	116.03	22 17 4	981.2	.10	2.30
100.00	23 0 20	1735.05	-12.57	4.70	214.28	117.31	23 29 15	735.0	-.46	343.90
110.00	0 0 51	1557.78	-15.50	349.58	212.60	120.82	0 26 49	557.8	-1.92	329.54

DIFFERENTIAL CORRECTIONS

TDE 1.0878 TRA 3.2596 TC3-6.5576 BAU 1.1842
RDE .2530 RRA .2453 RC3 -.4165 FAU .15248
FDE 2.9549 FRA 7.6367 FC3-9.7926 BSP 12363
BDE 1.1169 BRA 3.2688 BC3 6.5708 FSP 2333

MID-COURSE EXECUTION ACCURACY

SGT 7266.7 SGR 633.1 SG3 1280.7
RRT .9031 RRF .9306 RTF .9757
SGB 7294.3 R23 .1124 R13 .9760
SG1 7289.2 SG2 271.0 THA 4.50

ORBIT DETERMINATION ACCURACY

ST 115.2 SR 20.6 SS 86.9
CRT .8986 CRS -.9286 CST -.9970
LSA 145.5 MSA 9.3 SSA 1.3
EL1 116.7 EL2 8.9 ALF 9.18

LAUNCH DATE APR 29 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 24 1972

DISTANCE 629.727

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.383 GAL -3.56 AZL 90.82 HCA 200.00 SMA 186.07 ECC .19985 INC .8173 V1 29.577
RP 223.23 LAP .28 LOP 58.04 VP 21.812 GAP .41 AZP 89.23 TAL 338.37 TAP 178.37 RCA 148.88 APO 223.25 V2 24.633
RC 209.236 GL -7.14 GP -6.70 ZAL 131.45 ZAP 52.81 ETS 173.98 ZAE 91.98 ETE 180.59 ZAC 95.79 ETC 271.30 LVI -2.62

PLANETOCENTRIC CONIC

C3 13.781 VHL 3.712 DLA -10.57 RAL 353.55 RAD 6639.9 VEL 11.569 PTH 6.61 VHP 3.455 DPA -30.11 RAP 293.54 ECC 1.2268

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 17	2837.37	-23.71	81.86	207.04	132.54	17 52 34	1837.4	-5.91	64.87
60.00	17 56 24	2701.43	-19.42	73.40	210.82	126.04	18 41 25	1701.4	-3.83	54.62
70.00	19 1 37	2509.69	-15.45	60.59	213.56	120.84	19 43 27	1509.7	-1.87	40.56
80.00	20 21 53	2258.42	-12.51	43.21	215.25	117.33	20 59 32	1258.4	-.39	22.41
90.00	21 48 36	1978.64	-11.39	23.21	215.83	116.06	22 21 35	978.6	.18	2.16
100.00	23 4 45	1732.89	-12.51	4.58	215.25	117.33	23 33 38	732.9	-.39	343.78
110.00	0 4 59	1556.51	-15.45	349.51	213.56	120.84	0 30 56	556.5	-1.87	329.48

DIFFERENTIAL CORRECTIONS

TDE 1.1175 TRA 3.3839 TC3-6.5604 BAU 1.2107
RDE .2535 RRA .2198 RC3 -.3781 FAU .14874
FDE 2.9344 FRA 7.5821 FC3-9.3442 BSP 12603
BDE 1.1459 BRA 3.3911 BC3 6.5713 FSP 2283

MID-COURSE EXECUTION ACCURACY

SGT 7411.3 SGR 592.5 SG3 1253.1
RRT .8827 RRF .9110 RTF .9754
SGB 7434.9 R23 .1038 R13 .9757
SG1 7429.8 SG2 277.7 THA 4.04

ORBIT DETERMINATION ACCURACY

ST 117.7 SR 20.2 SS 86.1
CRT .8630 CRS -.9175 CST -.9966
LSA 146.8 MSA 10.5 SSA 1.3
EL1 119.0 EL2 9.4 ALF 8.69

LAUNCH DATE APR 29 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 26 1972

DISTANCE 633.820

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.65 LAL -.00 LOL 218.04 VL 32.392 GAL -3.64 AZL 90.87 HCA 201.08 SMA 186.21 ECC .20092 INC .8734 V1 29.577
RP 223.62 LAP .31 LOP 59.13 VP 21.778 GAP .25 AZP 89.18 TAL 337.92 TAP 179.00 RCA 148.80 APO 223.63 V2 24.592
RC 211.896 GL -7.55 GP -6.31 ZAL 131.92 ZAP 51.85 ETS 174.13 ZAE 90.83 ETE 180.45 ZAC 96.18 ETC 271.34 LVI -3.05

PLANETOCENTRIC CONIC

C3 14.090 VHL 3.754 DLA -10.73 RAL 354.21 RAD 6640.1 VEL 11.582 PTH 6.63 VHP 3.486 DPA -29.70 RAP 293.65 ECC 1.2319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 31	2838.94	-23.79	81.94	207.94	132.50	17 55 50	1838.9	-5.98	64.94
60.00	17 59 50	2702.50	-19.46	73.46	211.74	126.02	18 44 52	1702.5	-3.88	54.67
70.00	19 5 16	2510.12	-15.47	60.62	214.50	120.84	19 47 6	1510.1	-1.89	40.58
80.00	20 25 45	2258.19	-12.50	43.19	216.20	117.34	21 3 23	1258.2	-.38	22.40
90.00	21 52 33	1978.11	-11.37	23.18	216.78	116.07	22 25 31	978.1	.20	2.13
100.00	23 8 36	1732.66	-12.50	4.56	216.20	117.34	23 37 29	732.7	-.38	343.77
110.00	0 8 38	1556.93	-15.47	349.53	214.50	120.84	0 34 35	556.9	-1.89	329.50

DIFFERENTIAL CORRECTIONS

TDE 1.1516 TRA 3.5114 TC3-6.5528 BAU 1.2361
RDE .2552 RRA .1965 RC3 -.3441 FAU .14473
FDE 2.9187 FRA 7.5276 FC3-8.8923 BSP 12872
BDE 1.1795 BRA 3.5169 BC3 6.5619 FSP 2242

MID-COURSE EXECUTION ACCURACY

SGT 7553.1 SGR 558.3 SG3 1225.5
RRT .8587 RRF .8878 RTF .9751
SGB 7573.7 R23 .0962 R13 .9754
SG1 7568.4 SG2 285.5 THA 3.64

ORBIT DETERMINATION ACCURACY

ST 120.3 SR 20.0 SS 85.4
CRT .8678 CRS -.9063 CST -.9963
LSA 148.5 MSA 11.1 SSA 1.3
EL1 121.6 EL2 9.8 ALF 8.27

LAUNCH DATE APR 29 1971 FLIGHT TIME 274.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 637.907 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.400	GAL	-3.73	AZL	90.92	HCA	202.17	SMA	186.36	ECC	.20201	INC	.9243
RP	224.01	LAP	.35	LOP	60.21	VP	21.743	GAP	.10	AZP	89.14	TAL	337.46	TAP	179.62	RCA	148.71	APO	224.01
RC	214.558	GL	-7.90	GP	-5.95	ZAL	132.40	ZAP	50.92	ETS	174.26	ZAE	89.70	ETE	180.33	ZAC	96.53	ETC	271.39

V1	29.577	V2	24.550	LVI	-3.44														

PLANETOCENTRIC CONIC

C3	14.408	VHL	3.796	DLA	-10.84	RAL	354.84	RAD	6640.2	VEL	11.596	PTH	6.64	VHP	3.517	DPA	-29.32	RAP	293.78

ECC	1.2371																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 28	2841.61	-23.91	82.08	208.82	132.44	17 58 50	1841.6	-6.12	68.05
60.00	18 2 54	2704.82	-19.55	73.58	212.65	125.97	18 47 59	1704.8	-3.98	54.78
70.00	19 8 30	2511.99	-15.53	60.72	215.43	120.81	19 50 22	1512.0	-1.96	40.68
80.00	20 29 7	2259.62	-12.54	43.28	217.14	117.32	21 6 47	1259.6	-.43	22.48
90.00	21 56 0	1979.33	-11.41	23.25	217.72	116.05	22 28 59	979.3	.16	2.19
100.00	23 11 59	1734.09	-12.54	4.65	217.14	117.32	23 40 53	734.1	-.43	343.84
110.00	0 11 52	1558.81	-15.53	349.64	215.43	120.81	0 37 51	558.8	-1.96	329.60

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.1889	TRA	3.6404	TC3	-6.5390	BAU	1.2610	SGT	7692.0	SGR	529.9	SG3	1197.8	ST	123.1	SR	19.9	SS	84.8
RDE	.2579	RRA	.1750	RC3	-.3141	FAU	.14061	RRT	.8310	RRF	.8611	RTF	.9748	CRT	.8532	CRS	-.8955	CST	-.9959
FDE	2.9070	FRA	7.4696	FC3	-8.4488	BSP	13142	SGB	7710.3	R23	.0896	R13	.9750	LSA	150.3	MSA	11.6	SSA	1.3
BDE	1.2166	BRA	3.6446	BC3	6.5466	FSP	2198	SG1	7704.7	SG2	294.2	THA	3.28	EL1	124.3	EL2	10.3	ALF	7.90

LAUNCH DATE APR 29 1971 FLIGHT TIME 276.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 641.988 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.409	GAL	-3.83	AZL	90.97	HCA	203.24	SMA	186.51	ECC	.20313	INC	.9699
RP	224.40	LAP	.38	LOP	61.29	VP	21.709	GAP	-.06	AZP	89.11	TAL	337.00	TAP	180.24	RCA	148.63	APO	224.40
RC	217.222	GL	-8.20	GP	-5.63	ZAL	132.88	ZAP	50.02	ETS	174.38	ZAE	88.60	ETE	180.22	ZAC	96.84	ETC	271.44

V1	29.577	V2	24.508	LVI	-3.62														

PLANETOCENTRIC CONIC

C3	14.734	VHL	3.838	DLA	-10.91	RAL	355.45	RAD	6640.4	VEL	11.610	PTH	6.65	VHP	3.549	DPA	-28.97	RAP	293.95

ECC	1.2425																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 10	2845.20	-24.07	82.26	209.70	132.36	18 1 35	1845.2	-6.30	65.20
60.00	18 5 41	2708.20	-19.69	73.76	213.54	125.90	18 50 49	1708.2	-4.13	54.95
70.00	19 11 22	2515.10	-15.64	60.90	216.33	120.76	19 53 17	1515.1	-2.08	40.84
80.00	20 32 4	2262.45	-12.63	43.44	218.05	117.28	21 9 47	1262.5	-.53	22.63
90.00	21 58 59	1982.04	-11.49	23.41	218.64	116.02	22 32 1	982.0	.07	2.34
100.00	23 14 56	1736.93	-12.63	4.81	218.05	117.28	23 43 53	736.9	-.53	344.00
110.00	0 14 44	1561.92	-15.64	349.82	216.33	120.76	0 40 46	561.9	-2.08	329.76

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.2261	TRA	3.7689	TC3	-6.5301	BAU	1.2875	SGT	7829.8	SGR	506.5	SG3	1170.6	ST	125.8	SR	19.8	SS	84.1
RDE	.2613	RRA	.1549	RC3	-.2885	FAU	.13684	RRT	.8001	RRF	.8310	RTF	.9744	CRT	.8387	CRS	-.8847	CST	-.9956
FDE	2.8926	FRA	7.4076	FC3	-8.0407	BSP	13382	SGB	7846.2	R23	.0837	R13	.9746	LSA	152.1	MSA	12.1	SSA	1.3
BDE	1.2537	BRA	3.7721	BC3	6.5365	FSP	2152	SG1	7840.3	SG2	303.5	THA	2.97	EL1	126.9	EL2	10.7	ALF	7.58

LAUNCH DATE APR 29 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 646.063 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.418	GAL	-3.92	AZL	91.01	HCA	204.32	SMA	186.66	ECC	.20427	INC	1.0118
RP	224.79	LAP	.42	LOP	62.36	VP	21.675	GAP	-.22	AZP	89.08	TAL	336.53	TAP	180.85	RCA	148.54	APO	224.79
RC	219.886	GL	-8.46	GP	-5.33	ZAL	133.36	ZAP	49.15	ETS	174.50	ZAE	87.51	ETE	180.13	ZAC	97.13	ETC	271.50

V1	29.577	V2	24.468	LVI	-4.17														

PLANETOCENTRIC CONIC

C3	15.068	VHL	3.882	DLA	-10.94	RAL	356.04	RAD	6640.6	VEL	11.624	PTH	6.66	VHP	3.581	DPA	-28.68	RAP	294.16

ECC	1.2480																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 39	2849.59	-24.28	82.49	210.56	132.26	18 4 8	1849.6	-6.52	68.39
60.00	18 8 12	2712.50	-19.86	74.00	214.43	125.82	18 53 24	1712.5	-4.31	55.15
70.00	19 13 55	2519.28	-15.79	61.13	217.23	120.69	19 55 54	1519.3	-2.24	41.06
80.00	20 34 40	2266.51	-12.76	43.68	218.96	117.22	21 12 27	1266.5	-.66	22.85
90.00	22 1 36	1986.03	-11.61	23.64	219.55	115.97	22 34 42	986.0	-.08	2.57
100.00	23 17 32	1740.98	-12.76	5.04	218.96	117.22	23 46 33	741.0	-.66	344.22
110.00	0 17 17	1566.10	-15.79	350.05	217.23	120.69	0 43 23	566.1	-2.24	329.98

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.2661	TRA	3.8991	TC3	-6.5134	BAU	1.3132	SGT	7963.9	SGR	487.5	SG3	1143.1	ST	128.5	SR	19.8	SS	83.4
RDE	.2653	RRA	.1361	RC3	-.2656	FAU	.13293	RRT	.7659	RRF	.7975	RTF	.9740	CRT	.8250	CRS	-.8743	CST	-.9954
FDE	2.8784	FRA	7.3419	FC3	-7.6372	BSP	13632	SGB	7978.8	R23	.0784	R13	.9741	LSA	154.0	MSA	12.6	SSA	1.3
BDE	1.2936	BRA	3.9015	BC3	6.5186	FSP	2108	SG1	7972.6	SG2	313.1	THA	2.69	EL1	129.6	EL2	11.1	ALF	7.30

LAUNCH DATE APR 29 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 3 1972

HELIOCENTRIC CONIC DISTANCE 650.132 EARTH TO MARS

RL	150.65	LAL	-.00	LOL	218.04	VL	32.427	GAL	-4.01	AZL	91.05	HCA	205.39	SMA	186.82	ECC	.20543	INC	1.0503
RP	225.18	LAP	.45	LOP	63.43	VP	21.642	GAP	-.38	AZP	89.05	TAL	336.06	TAP	181.45	RCA	148.44	APO	225.20
RC	222.951	GL	-8.69	GP	-5.07	ZAL	133.84	ZAP	48.31	ETS	174.60	ZAE	86.45	ETE	180.04	ZAC	97.38	ETC	271.56

V1	29.577	V2	24.424	LVI	-4.51														

PLANETOCENTRIC CONIC

C3	15.412	VHL	3.926	DLA	-10.94	RAL	356.62	RAD	6640.7	VEL	11.639	PTH	6.68	VHP	3.614	DPA	-28.35	RAP	294.39

ECC	1.2836																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 56	2854.69	-24.51	82.75	211.42	132.15	18 6 31	1854.7	-6.77	65.61
60.00	18 10 29	2717.60	-20.06	74.28	215.30	125.72	18 55 47	1717.6	-4.54	55.40
70.00	19 16 12	2524.39	-15.96	61.42	218.11	120.60	19 58 17	1524.4	-2.43	41.33
80.00	20 36 57	2271.62	-12.92	43.97	219.85	117.15	21 14 49	1271.6	-.84	23.13
90.00	22 3 53	1991.15	-11.76	23.94	220.44	115.91	22 37 4	991.1	-.23	2.85
100.00	23 19 49	1746.09	-12.92	5.34	219.85	117.15	23 48 55	746.1	-.84	344.50
110.00	0 19 34	1571.20	-15.96	350.34	218.11	120.60	0 45 46	571.2	-2.43	330.24

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.3089	TRA	4.0318	TC3	-6.4932	BAU	1.3368	SGT	8096.9	SGR	472.7	SG3	1116.3	ST	131.4	SR	19.9	SS	82.7
RDE	.2700	RRA	.1184	RC3	-.2455	FAU	.12905	RRT	.7292	RRF	.7615	RTF	.9735	CRT	.8122	CRS	-.8646	CST	-.9951
FDE	2.8674	FRA	7.2771	FC3	-7.2493	BSP	13881	SGB	8110.7	R23	.0739	R13	.9737	LSA	156.0	MSA	13.0	SSA	1.3
BDE	1.3365	BRA	4.0335	BC3	6.4978	FSP	2063	SG1	8104.2	SG2	323.2	THA	2.44	EL1	132.4	EL2	11.5	ALF	7.06

LAUNCH DATE APR 30 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 16 1971

DISTANCE 312.620

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 35.045 GAL -3.68 AZL 91.89 HCA 101.58 SMA 248.85 ECC .39887 INC 1.8878 V1 29.569
RP 207.27 LAP -1.85 LOP 320.60 VP 27.336 GAP 21.55 AZP 89.62 TAL 347.04 TAP 88.62 RCA 149.59 APO 348.11 V2 26.426
RC 36.362 GL -10.82 GP .81 ZAL 116.09 ZAP 174.59 ETS 171.32 ZAE 174.22 ETE 92.43 ZAC 101.19 ETC 277.19 LVI -18.01

PLANETOCENTRIC CONIC

C3 37.635 VHL 6.135 DLA -19.49 RAL 341.61 RAD 6649.8 VEL 12.551 PTH 7.42 VHP 10.673 DPA -17.26 RAP 318.03 ECC 1.6194

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 50	2895.85	-26.37	84.89	207.43	131.15	17 38 6	1895.9	-8.82	67.36
60.00	17 52 32	2729.13	-20.52	74.91	212.46	125.48	18 38 1	1729.1	-5.04	55.95
70.00	19 11 49	2496.07	-14.98	59.82	216.28	121.06	19 53 25	1496.1	-1.35	39.85
80.00	20 46 30	2199.72	-10.65	39.84	218.79	118.06	21 23 10	1199.7	1.60	19.19
90.00	22 20 11	1897.51	-8.92	18.53	219.71	116.95	22 51 49	897.5	2.79	357.63
100.00	23 29 22	1674.19	-10.65	1.21	218.79	118.06	23 57 16	674.2	1.60	340.56
110.00	0 15 11	1542.89	-14.98	348.74	216.28	121.06	0 40 54	542.9	-1.35	328.76

DIFFERENTIAL CORRECTIONS

TDE -.5267 TRA-1.1387 TC3 -.0242 BAU .0449
RDE -.5687 RRA .2121 RC3 .0860 FAU .03515
FDE .2799 FRA 1.0402 FC3 -.8086 BSP 1901
BDE .7751 BRA 1.1583 BC3 .0893 FSP 159

MID-COURSE EXECUTION ACCURACY

SGT 1231.1 SGR 580.8 SG3 125.6
RRT .0294 RRF -.0319 RTF -.7048
SGB 1361.2 R23 -.0052 R13 -.7048
SG1 1231.2 SG2 580.5 THA 1.02

ORBIT DETERMINATION ACCURACY

ST 29.9 SR 26.7 SS 18.7
CRT .7512 CRS .5501 CST .9621
LSA 40.9 MSA 16.8 SSA 1.1
EL1 37.5 EL2 14.0 ALF 40.83

LAUNCH DATE APR 30 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 18 1971

DISTANCE 314.827

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 34.870 GAL -3.57 AZL 91.90 HCA 102.84 SMA 243.27 ECC .38491 INC 1.8955 V1 29.569
RP 207.18 LAP -1.85 LOP 321.87 VP 27.123 GAP 21.05 AZP 89.58 TAL 347.12 TAP 89.96 RCA 149.63 APO 336.90 V2 26.438
RC 36.568 GL -11.16 GP .83 ZAL 116.09 ZAP 173.73 ETS 172.28 ZAE 174.19 ETE 83.59 ZAC 101.17 ETC 277.28 LVI -18.15

PLANETOCENTRIC CONIC

C3 35.396 VHL 5.949 DLA -19.78 RAL 341.78 RAD 6649.0 VEL 12.462 PTH 7.36 VHP 10.338 DPA -17.12 RAP 318.42 ECC 1.5825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 51 47	2874.20	-25.40	83.75	206.69	131.69	17 39 42	1874.2	-7.75	66.44
60.00	17 54 55	2706.31	-19.61	73.66	211.72	125.94	18 40 2	1706.3	-4.04	54.85
70.00	19 14 46	2471.57	-14.11	58.45	215.55	121.43	19 55 58	1471.6	-.41	38.57
80.00	20 50 6	2173.20	-9.79	38.34	218.08	118.35	21 26 19	1173.2	2.50	17.73
90.00	22 24 8	1869.89	-8.06	16.95	219.01	117.20	22 55 18	869.9	3.68	356.08
100.00	23 32 58	1647.68	-9.79	359.70	218.08	118.35	24 0 26	647.7	2.50	339.10
110.00	0 18 9	1518.39	-14.11	347.37	215.55	121.43	0 43 27	518.4	-.41	327.49

DIFFERENTIAL CORRECTIONS

TDE -.5286 TRA-1.1258 TC3 -.0248 BAU .0451
RDE -.5510 RRA .2041 RC3 .0921 FAU .03623
FDE .2889 FRA 1.0823 FC3 -.8862 BSP 1763
BDE .7636 BRA 1.1442 BC3 .0954 FSP 171

MID-COURSE EXECUTION ACCURACY

SGT 1260.0 SGR 580.7 SG3 134.3
RRT .0359 RRF -.0353 RTF -.7080
SGB 1387.4 R23 -.0031 R13 -.7081
SG1 1260.2 SG2 580.2 THA 1.20

ORBIT DETERMINATION ACCURACY

ST 30.8 SR 26.7 SS 19.4
CRT .7557 CRS .5466 CST .9592
LSA 41.8 MSA 17.0 SSA 1.1
EL1 38.2 EL2 14.1 ALF 39.69

LAUNCH DATE APR 30 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 20 1971

DISTANCE 317.227

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 34.705 GAL -3.46 AZL 91.90 HCA 104.11 SMA 238.25 ECC .37177 INC 1.9032 V1 29.569
RP 207.09 LAP -1.85 LOP 323.13 VP 26.920 GAP 20.55 AZP 89.54 TAL 347.21 TAP 91.32 RCA 149.67 APO 326.82 V2 26.448
RC 36.856 GL -11.49 GP .86 ZAL 116.08 ZAP 172.85 ETS 173.01 ZAE 174.05 ETE 75.28 ZAC 101.15 ETC 277.36 LVI -18.29

PLANETOCENTRIC CONIC

C3 33.336 VHL 5.774 DLA -20.09 RAL 341.94 RAD 6648.3 VEL 12.379 PTH 7.30 VHP 10.014 DPA -16.97 RAP 318.80 ECC 1.5486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 44	2852.62	-24.41	82.64	205.97	132.20	17 41 17	1852.6	-6.67	65.52
60.00	17 57 20	2683.50	-18.69	72.43	211.00	126.38	18 42 3	1683.5	-3.04	53.76
70.00	19 17 47	2446.98	-13.23	57.09	214.84	121.78	19 58 34	1447.0	.53	37.29
80.00	20 53 49	2146.44	-8.93	36.82	217.39	118.61	21 29 35	1146.4	3.40	16.26
90.00	22 28 13	1841.93	-7.19	15.36	218.32	117.42	22 58 55	841.9	4.57	354.51
100.00	23 36 41	1620.91	-8.93	358.19	217.39	118.61	24 3 42	620.9	3.40	337.63
110.00	0 21 10	1493.80	-13.23	346.01	214.84	121.78	0 46 3	493.8	.53	326.20

DIFFERENTIAL CORRECTIONS

TDE -.5170 TRA-1.1198 TC3 -.0006 BAU .0440
RDE -.5338 RRA .1961 RC3 .0987 FAU .03749
FDE .2959 FRA 1.1268 FC3 -.9736 BSP 2020
BDE .7431 BRA 1.1369 BC3 .0987 FSP 187

MID-COURSE EXECUTION ACCURACY

SGT 1289.7 SGR 580.1 SG3 143.7
RRT .0354 RRF -.0382 RTF -.7064
SGB 1414.2 R23 -.0060 R13 -.7265
SG1 1289.9 SG2 579.7 THA 1.14

ORBIT DETERMINATION ACCURACY

ST 31.2 SR 26.7 SS 20.1
CRT .7504 CRS .5397 CST .9592
LSA 42.3 MSA 17.3 SSA 1.1
EL1 38.5 EL2 14.3 ALF 39.08

LAUNCH DATE APR 30 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 22 1971

DISTANCE 319.798

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 34.549 GAL -3.34 AZL 91.91 HCA 105.37 SMA 233.72 ECC .35942 INC 1.9110 V1 29.569
RP 207.01 LAP -1.84 LOP 324.40 VP 26.728 GAP 20.06 AZP 89.49 TAL 347.31 TAP 92.68 RCA 149.71 APO 317.72 V2 26.457
RC 37.225 GL -11.84 GP .89 ZAL 116.04 ZAP 171.96 ETS 173.59 ZAE 173.82 ETE 67.82 ZAC 101.13 ETC 277.44 LVI -18.42

PLANETOCENTRIC CONIC

C3 31.440 VHL 5.607 DLA -20.41 RAL 342.08 RAD 6647.6 VEL 12.303 PTH 7.24 VHP 9.701 DPA -16.84 RAP 319.16 ECC 1.5174

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 41	2831.15	-23.43	81.55	205.28	132.67	17 42 52	1831.1	-5.59	64.61
60.00	17 59 46	2660.73	-17.77	71.21	210.30	126.79	18 44 7	1660.7	-2.04	52.67
70.00	19 20 52	2422.32	-12.34	55.73	214.15	122.10	20 1 14	1422.3	1.47	36.00
80.00	20 57 38	2119.45	-8.04	35.31	216.72	118.85	21 32 58	1119.4	4.31	14.77
90.00	22 32 27	1813.64	-6.30	13.76	217.66	117.63	23 2 40	813.6	5.47	352.92
100.00	23 40 30	1593.92	-8.04	356.68	216.72	118.85	24 7 4	593.9	4.31	336.14
110.00	0 24 14	1469.13	-12.34	344.65	214.15	122.10	0 48 43	469.1	1.47	324.92

DIFFERENTIAL CORRECTIONS

TDE -.5119 TRA-1.1106 TC3 .0121 BAU .0446
RDE -.5171 RRA .1884 RC3 .1055 FAU .03877
FDE .3042 FRA 1.1728 FC3-1.0676 BSP 2076
BDE .7277 BRA 1.1264 BC3 .1062 FSP 203

MID-COURSE EXECUTION ACCURACY

SGT 1319.0 SGR 579.1 SG3 153.7
RRT .0385 RRF -.0420 RTF -.7360
SGB 1440.6 R23 -.0069 R13 -.7361
SG1 1319.3 SG2 578.6 THA 1.20

ORBIT DETERMINATION ACCURACY

ST 31.8 SR 26.6 SS 20.7
CRT .7498 CRS .5344 CST .9578
LSA 42.9 MSA 17.5 SSA 1.2
EL1 38.9 EL2 14.4 ALF 38.22

LAUNCH DATE APR 30 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 322.519 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 34.401 GAL -3.23 AZL 91.92 HCA 106.64 SMA 229.61 ECC .34778 INC 1.9189 V1 29.569
RP 206.94 LAP -1.84 LOP 325.66 VP 26.545 GAP 19.58 AZP 89.45 TAL 347.43 TAP 94.06 RCA 149.75 APO 309.46 V2 26.466
RC 57.675 GL -12.19 GP .92 ZAL 118.98 ZAP 171.06 ETS 174.05 ZAE 173.52 ETE 61.32 ZAC 101.11 ETC 277.52 LVI -18.55

PLANETOCENTRIC CONIC

C3 29.692 VHL 5.449 DLA -20.74 RAL 342.20 RAD 6646.9 VEL 12.232 PTH 7.18 VHP 9.398 DPA -16.70 RAP 319.51 ECC 1.4887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 38	2809.79	-22.44	80.48	204.61	133.12	17 44 27	1809.8	-4.53	63.71
60.00	18 2 13	2638.00	-16.84	70.02	209.62	127.17	18 46 11	1638.0	-1.04	51.59
70.00	19 24 0	2397.58	-11.45	54.38	213.48	122.40	20 3 58	1397.6	2.41	34.71
80.00	21 1 35	2092.20	-7.14	33.78	216.07	119.07	21 36 27	1092.2	5.22	13.26
90.00	22 36 50	1784.98	-5.39	12.15	217.02	117.80	23 6 35	785.0	6.36	351.30
100.00	23 44 27	1566.67	-7.14	355.15	216.07	119.07	24 10 33	566.7	5.22	334.63
110.00	0 27 23	1444.39	-11.45	343.30	213.48	122.40	0 51 27	444.4	2.41	323.62

DIFFERENTIAL CORRECTIONS

TDE -.4985 TRA-1.0923 TC3 .0373 BAU .0471
RDE -.5010 RRA .1807 RC3 .1126 FAU .04004
FDE .3141 FRA 1.2229 FC3-1.1675 BSP 2037
BDE .7068 BRA 1.1072 BC3 .1186 FSP 222

MID-COURSE EXECUTION ACCURACY

SGT 1336.0 SGR 577.8 SG3 164.4
RRT .0409 RRF -.0461 RTF -.7530
SGB 1455.5 R23 -.0083 R13 -.7531
SG1 1336.2 SG2 577.2 THA 1.25

ORBIT DETERMINATION ACCURACY

ST 32.0 SR 26.5 SS 21.5
CRT .7466 CRS .5303 CST .9579
LSA 43.3 MSA 17.7 SSA 1.1
EL1 39.0 EL2 14.5 ALF 37.85

LAUNCH DATE APR 30 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 325.375 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 34.262 GAL -3.13 AZL 91.93 HCA 107.90 SMA 225.88 ECC .33683 INC 1.9269 V1 29.569
RP 206.87 LAP -1.83 LOP 326.93 VP 26.372 GAP 19.11 AZP 89.41 TAL 347.55 TAP 95.46 RCA 149.79 APO 301.96 V2 26.473
RC 58.203 GL -12.54 GP .95 ZAL 115.90 ZAP 170.14 ETS 174.43 ZAE 173.17 ETE 55.76 ZAC 101.10 ETC 277.59 LVI -18.66

PLANETOCENTRIC CONIC

C3 28.084 VHL 5.299 DLA -21.08 RAL 342.30 RAD 6646.2 VEL 12.167 PTH 7.13 VHP 9.105 DPA -16.56 RAP 319.84 ECC 1.4622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 34	2788.64	-21.45	79.44	203.97	133.55	17 46 3	1788.6	-3.46	62.82
60.00	18 4 42	2615.42	-15.91	68.84	208.97	127.53	18 48 18	1615.4	-.05	50.51
70.00	19 27 13	2372.88	-10.54	53.04	212.84	122.68	20 6 45	1372.9	3.35	33.42
80.00	21 5 38	2064.82	-6.24	32.26	215.45	119.26	21 40 3	1064.8	6.14	11.75
90.00	22 41 22	1756.06	-4.47	10.52	216.41	117.95	23 10 38	756.1	7.29	349.67
100.00	23 48 30	1539.29	-6.24	353.63	215.45	119.26	24 14 10	539.3	6.14	333.11
110.00	0 30 38	1419.69	-10.54	341.96	212.84	122.68	0 54 14	419.7	3.35	322.33

DIFFERENTIAL CORRECTIONS

TDE -.4964 TRA-1.0853 TC3 .0484 BAU .0486
RDE -.4854 RRA .1732 RC3 .1199 FAU .04194
FDE .3212 FRA 1.2719 FC3-1.2805 BSP 2138
BDE .6942 BRA 1.0990 BC3 .1294 FSP 239

MID-COURSE EXECUTION ACCURACY

SGT 1368.2 SGR 576.0 SG3 175.7
RRT .0454 RRF -.0503 RTF -.7582
SGB 1484.5 R23 -.0086 R13 -.7583
SG1 1368.5 SG2 575.3 THA 1.33

ORBIT DETERMINATION ACCURACY

ST 32.8 SR 26.4 SS 22.2
CRT .7472 CRS .5232 CST .9553
LSA 44.1 MSA 17.9 SSA 1.2
EL1 39.5 EL2 14.6 ALF 36.85

LAUNCH DATE APR 30 1971 FLIGHT TIME 120.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 328.350 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 34.131 GAL -3.02 AZL 91.94 HCA 109.17 SMA 222.48 ECC .32653 INC 1.9351 V1 29.569
RP 206.82 LAP -1.83 LOP 328.20 VP 26.208 GAP 18.64 AZP 89.36 TAL 347.69 TAP 96.86 RCA 149.83 APO 295.12 V2 26.479
RC 58.807 GL -12.89 GP .99 ZAL 115.80 ZAP 169.21 ETS 174.75 ZAE 172.82 ETE 51.09 ZAC 101.09 ETC 277.66 LVI -18.81

PLANETOCENTRIC CONIC

C3 26.602 VHL 5.158 DLA -21.43 RAL 342.39 RAD 6645.7 VEL 12.108 PTH 7.08 VHP 8.823 DPA -16.43 RAP 320.16 ECC 1.4378

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 31	2767.68	-20.46	78.43	203.35	133.94	17 47 38	1767.7	-2.41	61.95
60.00	18 7 13	2592.97	-14.97	67.67	208.34	127.86	18 50 26	1593.0	.94	49.44
70.00	19 30 29	2348.18	-9.63	51.71	212.22	122.93	20 9 37	1348.2	4.29	32.12
80.00	21 9 49	2037.25	-5.32	30.73	214.85	119.42	21 43 47	1037.3	7.05	10.21
90.00	22 46 4	1726.83	-3.54	8.88	215.83	118.08	23 14 51	726.8	8.20	348.00
100.00	23 52 41	1511.73	-5.32	352.10	214.85	119.42	24 17 53	511.7	7.05	331.58
110.00	0 33 51	1395.00	-9.63	340.62	212.22	122.93	0 57 6	395.0	4.29	321.04

DIFFERENTIAL CORRECTIONS

TDE -.4930 TRA-1.0771 TC3 .0622 BAU .0505
RDE -.4702 RRA .1658 RC3 .1276 FAU .04312
FDE .3290 FRA 1.3242 FC3-1.4032 BSP 2224
BDE .6813 BRA 1.0898 BC3 .1419 FSP 258

MID-COURSE EXECUTION ACCURACY

SGT 1398.6 SGR 573.9 SG3 187.8
RRT .0500 RRF -.0551 RTF -.7644
SGB 1511.8 R23 -.0091 R13 -.7645
SG1 1399.0 SG2 573.0 THA 1.41

ORBIT DETERMINATION ACCURACY

ST 33.5 SR 26.3 SS 22.9
CRT .7474 CRS .5164 CST .9529
LSA 44.8 MSA 18.1 SSA 1.2
EL1 40.0 EL2 14.6 ALF 35.94

LAUNCH DATE APR 30 1971 FLIGHT TIME 122.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 331.432 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 34.007 GAL -2.92 AZL 91.94 HCA 110.44 SMA 219.37 ECC .31682 INC 1.9434 V1 29.569
RP 206.77 LAP -1.82 LOP 329.47 VP 26.052 GAP 18.19 AZP 89.32 TAL 347.83 TAP 98.27 RCA 149.87 APO 288.88 V2 26.485
RC 59.485 GL -13.25 GP 1.02 ZAL 115.69 ZAP 168.26 ETS 175.01 ZAE 172.46 ETE 47.19 ZAC 101.08 ETC 277.73 LVI -18.93

PLANETOCENTRIC CONIC

C3 25.235 VHL 5.023 DLA -21.79 RAL 342.47 RAD 6645.1 VEL 12.050 PTH 7.04 VHP 8.549 DPA -16.30 RAP 320.47 ECC 1.4153

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 27	2746.94	-19.48	77.43	202.76	134.31	17 49 14	1746.9	-1.37	61.08
60.00	18 9 45	2570.66	-14.04	66.53	207.74	128.17	18 52 35	1570.7	1.92	48.37
70.00	19 33 49	2323.52	-8.71	50.38	211.63	123.15	20 12 32	1323.5	5.23	30.82
80.00	21 14 9	2009.51	-4.39	29.20	214.29	119.56	21 47 38	1009.5	7.97	8.66
90.00	22 50 57	1697.26	-2.59	7.23	215.28	118.17	23 19 14	697.3	9.11	346.31
100.00	0 0 56	1483.98	-4.39	350.57	214.29	119.56	0 25 40	484.0	7.97	330.03
110.00	0 37 11	1370.34	-8.71	339.30	211.63	123.15	1 0 1	370.3	5.23	319.74

DIFFERENTIAL CORRECTIONS

TDE -.4877 TRA-1.0667 TC3 .0787 BAU .0529
RDE -.4556 RRA .1586 RC3 .1355 FAU .04477
FDE .3363 FRA 1.3788 FC3-1.5361 BSP 2290
BDE .6671 BRA 1.0785 BC3 .1567 FSP 278

MID-COURSE EXECUTION ACCURACY

SGT 1425.7 SGR 571.4 SG3 200.7
RRT .0547 RRF -.0599 RTF -.7712
SGB 1535.9 R23 -.0097 R13 -.7714
SG1 1426.1 SG2 570.4 THA 1.49

ORBIT DETERMINATION ACCURACY

ST 34.1 SR 26.1 SS 23.6
CRT .7470 CRS .5087 CST .9504
LSA 45.4 MSA 18.3 SSA 1.2
EL1 40.4 EL2 14.7 ALF 35.15

LAUNCH DATE APR 30 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 1 1971

DISTANCE 334.611

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 33.890 GAL -2.82 AZL 91.95 HCA 111.71 SMA 216.53 ECC .30768 INC 1.9518 V1 29.569
RP 206.74 LAP -1.81 LOP 330.73 VP 25.904 GAP 17.74 AZP 89.28 TAL 347.98 TAP 99.69 RCA 149.91 APO 283.16 V2 26.489
RC 60.233 GL -13.62 GP 1.06 ZAL 115.56 ZAP 167.29 ETS 175.24 ZAE 172.13 ETE 43.94 ZAC 101.08 ETC 277.79 LVI -19.05

PLANETOCENTRIC CONIC

C3 23.974 VHL 4.896 DLA -22.16 RAL 342.54 RAD 6644.6 VEL 11.998 PTH 8.99 VHP 8.284 DPA -16.17 RAP 320.75 ECC 1.3946

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 24	2726.44	-18.50	76.47	202.20	134.65	17 50 51	1726.4	-.34	60.22
60.00	18 12 18	2548.54	-13.10	65.41	207.17	128.46	18 54 47	1548.5	2.90	47.31
70.00	19 37 13	2298.91	-7.80	49.07	211.07	123.36	20 15 32	1298.9	6.16	29.53
80.00	21 18 36	1981.61	-3.45	27.66	213.75	119.68	21 51 38	981.6	8.88	7.09
90.00	22 56 2	1667.37	-1.63	5.56	214.76	118.24	23 23 49	667.4	10.03	344.59
100.00	0 5 24	1456.08	-3.45	349.03	213.75	119.68	0 29 40	456.1	8.88	328.46
110.00	0 40 35	1345.73	-7.80	337.99	211.07	123.36	1 3 1	345.7	6.16	318.45

DIFFERENTIAL CORRECTIONS

TDE -.4825 TRA-1.0568 TC3 .0959 BAU .0554
RDE -.4414 RRA .1515 RC3 .1437 FAU .04651
FDE .3445 FRA 1.4367 FC3-1.6795 BSP 2352
BDE .6540 BRA 1.0676 BC3 .1728 FSP 300

MID-COURSE EXECUTION ACCURACY

SGT 1452.7 SGR 568.5 SG3 214.5
RRT .0597 RRF -.0654 RTF -.7780
SGB 1560.0 R23 -.0106 R13 -.7782
SG1 1453.2 SG2 567.3 THA 1.58

ORBIT DETERMINATION ACCURACY

ST 34.6 SR 26.0 SS 24.3
CRT .7467 CRS .5018 CST .9481
LSA 46.1 MSA 18.5 SSA 1.2
EL1 40.7 EL2 14.7 ALF 34.36

LAUNCH DATE APR 30 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 3 1971

DISTANCE 337.877

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 33.780 GAL -2.72 AZL 91.96 HCA 112.97 SMA 213.93 ECC .29908 INC 1.9604 V1 29.569
RP 206.71 LAP -1.80 LOP 332.00 VP 25.763 GAP 17.30 AZP 89.23 TAL 348.14 TAP 101.11 RCA 149.95 APO 277.91 V2 26.492
RC 61.050 GL -13.99 GP 1.10 ZAL 115.42 ZAP 166.30 ETS 175.44 ZAE 171.82 ETE 41.25 ZAC 101.08 ETC 277.85 LVI -19.17

PLANETOCENTRIC CONIC

C3 22.811 VHL 4.776 DLA -22.53 RAL 342.59 RAD 6644.1 VEL 11.950 PTH 6.95 VHP 8.028 DPA -16.04 RAP 321.02 ECC 1.3754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 22	2706.21	-17.53	75.52	201.66	134.97	17 52 28	1706.2	.68	59.38
60.00	18 14 54	2526.62	-12.17	64.31	206.62	128.72	18 57 0	1526.6	3.86	46.26
70.00	19 40 42	2274.38	-6.88	47.77	210.54	123.54	20 18 36	1274.4	7.08	28.23
80.00	21 23 13	1953.54	-2.50	26.11	213.24	119.76	21 55 46	953.5	9.79	5.51
90.00	23 1 19	1637.12	-.65	3.87	214.27	118.27	23 28 36	637.1	10.95	342.85
100.00	0 10 0	1428.01	-2.50	347.48	213.24	119.76	0 33 48	428.0	9.79	326.88
110.00	0 44 4	1321.20	-6.88	336.69	210.54	123.54	1 6 5	321.2	7.08	317.15

DIFFERENTIAL CORRECTIONS

TDE -.4763 TRA-1.0452 TC3 .1152 BAU .0582
RDE -.4277 RRA .1445 RC3 .1522 FAU .04841
FDE .3522 FRA 1.4971 FC3-1.8372 BSP 2409
BDE .6402 BRA 1.0552 BC3 .1909 FSP 324

MID-COURSE EXECUTION ACCURACY

SGT 1477.0 SGR 565.3 SG3 229.2
RRT .0652 RRF -.0714 RTF -.7845
SGB 1581.5 R23 -.0115 R13 -.7847
SG1 1477.5 SG2 563.9 THA 1.67

ORBIT DETERMINATION ACCURACY

ST 35.1 SR 25.8 SS 25.0
CRT .7462 CRS .4941 CST .9455
LSA 46.6 MSA 18.7 SSA 1.2
EL1 41.0 EL2 14.7 ALF 33.66

LAUNCH DATE APR 30 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 5 1971

DISTANCE 341.221

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 33.676 GAL -2.63 AZL 91.97 HCA 114.24 SMA 211.53 ECC .29098 INC 1.9691 V1 29.569
RP 206.69 LAP -1.80 LOP 333.27 VP 25.628 GAP 16.87 AZP 89.19 TAL 348.30 TAP 102.55 RCA 149.98 APO 273.08 V2 26.495
RC 61.933 GL -14.35 GP 1.15 ZAL 115.26 ZAP 165.29 ETS 175.60 ZAE 171.56 ETE 39.04 ZAC 101.09 ETC 277.91 LVI -19.28

PLANETOCENTRIC CONIC

C3 21.739 VHL 4.662 DLA -22.92 RAL 342.64 RAD 6643.6 VEL 11.905 PTH 6.91 VHP 7.781 DPA -15.92 RAP 321.26 ECC 1.3578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 19	2686.28	-16.57	74.60	201.15	135.26	17 54 5	1686.3	1.68	58.55
60.00	18 17 31	2504.92	-11.25	63.22	206.10	128.96	18 59 16	1504.9	4.81	45.22
70.00	19 44 15	2249.95	-5.95	46.48	210.03	123.69	20 21 45	1249.9	8.00	26.93
80.00	21 27 58	1925.32	-1.55	24.56	212.77	119.82	22 0 4	925.3	10.70	3.91
90.00	23 6 49	1606.50	.34	2.16	213.81	118.28	23 33 35	606.5	11.86	341.06
100.00	0 14 46	1399.79	-1.55	345.93	212.77	119.82	0 38 6	399.8	10.70	325.28
110.00	0 47 37	1296.77	-5.95	335.39	210.03	123.69	1 9 14	296.8	8.00	313.85

DIFFERENTIAL CORRECTIONS

TDE -.4700 TRA-1.0336 TC3 .1355 BAU .0611
RDE -.4144 RRA .1376 RC3 .1610 FAU .05041
FDE .3599 FRA 1.3608 FC3-2.0076 BSP 2455
BDE .6266 BRA 1.0428 BC3 .2104 FSP 349

MID-COURSE EXECUTION ACCURACY

SGT 1500.4 SGR 561.8 SG3 244.9
RRT .0711 RRF -.0779 RTF -.7908
SGB 1602.2 R23 -.0126 R13 -.7910
SG1 1501.1 SG2 560.1 THA 1.77

ORBIT DETERMINATION ACCURACY

ST 35.5 SR 25.6 SS 25.8
CRT .7456 CRS .4861 CST .9429
LSA 47.2 MSA 18.8 SSA 1.2
EL1 41.3 EL2 14.7 ALF 32.97

LAUNCH DATE APR 30 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 7 1971

DISTANCE 344.637

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 33.578 GAL -2.54 AZL 91.98 HCA 115.51 SMA 209.33 ECC .28335 INC 1.9780 V1 29.569
RP 206.68 LAP -1.79 LOP 334.54 VP 25.501 GAP 16.44 AZP 89.15 TAL 348.47 TAP 103.99 RCA 150.02 APO 268.64 V2 26.496
RC 62.879 GL -14.73 GP 1.19 ZAL 115.10 ZAP 164.26 ETS 175.75 ZAE 171.35 ETE 37.23 ZAC 101.10 ETC 277.96 LVI -19.39

PLANETOCENTRIC CONIC

C3 20.749 VHL 4.555 DLA -23.31 RAL 342.68 RAD 6643.2 VEL 11.864 PTH 6.88 VHP 7.541 DPA -15.80 RAP 321.48 ECC 1.3415

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 17	2666.66	-15.62	73.71	200.66	135.53	17 55 44	1666.7	2.66	57.73
60.00	18 20 10	2483.48	-10.33	62.16	205.61	129.18	19 1 33	1483.5	5.75	44.19
70.00	19 47 52	2225.64	-5.03	45.20	209.56	123.83	20 24 58	1225.6	8.91	25.63
80.00	21 32 54	1896.93	-.58	23.01	212.33	119.85	22 4 31	896.9	11.60	2.28
90.00	23 12 34	1575.46	1.34	.43	213.39	118.25	23 38 49	575.5	12.78	339.24
100.00	0 19 42	1371.40	-.58	344.37	212.33	119.85	0 42 33	371.4	11.60	323.65
110.00	0 51 14	1272.45	-5.03	334.11	209.56	123.83	1 12 27	272.5	8.91	314.55

DIFFERENTIAL CORRECTIONS

TDE -.4631 TRA-1.0213 TC3 .1556 BAU .0640
RDE -.4016 RRA .1308 RC3 .1700 FAU .05252
FDE .3675 FRA 1.6275 FC3-2.1915 BSP 2506
BDE .6130 BRA 1.0296 BC3 .2306 FSP 376

MID-COURSE EXECUTION ACCURACY

SGT 1521.9 SGR 557.9 SG3 261.6
RRT .0773 RRF -.0849 RTF -.7966
SGB 1620.9 R23 -.0138 R13 -.7968
SG1 1522.6 SG2 556.0 THA 1.87

ORBIT DETERMINATION ACCURACY

ST 35.9 SR 25.4 SS 26.6
CRT .7450 CRS .4778 CST .9401
LSA 47.7 MSA 19.0 SSA 1.3
EL1 41.5 EL2 14.7 ALF 32.33

LAUNCH DATE APR 30 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 348.117 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 33.485 GAL -2.45 AZL 91.99 HCA 116.78 SMA 207.30 ECC .27617 INC 1.9872 V1 29.569
RP 206.67 LAP -1.77 LOP 335.81 VP 25.379 GAP 16.03 AZP 89.10 TAL 348.65 TAP 105.43 RCA 150.05 APO 264.55 V2 26.496
RC 63.888 GL -15.10 GP 1.24 ZAL 114.92 ZAP 163.21 ETS 175.88 ZAE 171.18 ETE 35.78 ZAC 101.11 ETC 278.00 LVI -19.50

PLANETOCENTRIC CONIC

C3 19.835 VHL 4.454 DLA -23.70 RAL 342.70 RAD 6642.8 VEL 11.826 PTH 6.84 VHP 7.310 DPA -15.69 RAP 321.69 ECC 1.3264

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 16	2647.37	-14.68	72.84	200.21	135.78	17 57 23	1647.4	3.63	56.92
60.00	18 22 50	2462.32	-9.41	61.11	205.15	129.37	19 3 53	1462.3	6.67	43.16
70.00	19 51 54	2201.46	-4.12	43.93	209.12	123.93	20 28 16	1201.5	9.80	24.33
80.00	21 38 0	1868.38	.38	21.44	211.92	119.86	22 9 8	868.4	12.50	.64
90.00	23 18 35	1543.97	2.35	358.67	213.01	118.19	23 44 19	544.0	13.69	337.38
100.00	0 24 48	1342.85	.38	342.81	211.92	119.86	0 47 11	342.9	12.50	322.01
110.00	0 54 57	1248.28	-4.12	332.84	209.12	123.93	1 15 45	248.3	9.80	313.25

DIFFERENTIAL CORRECTIONS

TDE -.4565 TRA-1.0086 TC3 .1766 BAU .0667
RDE -.3892 RRA .1241 RC3 .1793 FAU .05476
FDE .3754 FRA 1.6978 FC3-2.3903 BSP 2550
BDE .5999 BRA 1.0164 BC3 .2516 FSP 406

MID-COURSE EXECUTION ACCURACY

SGT 1542.3 SGR 553.7 SG3 279.4
RRT .0843 RRF -.0926 RTF -.8020
SGB 1638.6 R23 -.0152 R13 -.8022
SG1 1543.1 SG2 551.5 THA 1.99

ORBIT DETERMINATION ACCURACY

ST 36.3 SR 25.2 SS 27.3
CRT .7447 CRS .4697 CST .9371
LSA 48.2 MSA 19.2 SSA 1.3
EL1 41.6 EL2 14.6 ALF 31.70

LAUNCH DATE APR 30 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 351.657 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 33.398 GAL -2.36 AZL 92.00 HCA 118.05 SMA 205.43 ECC .26942 INC 1.9965 V1 29.569
RP 206.68 LAP -1.76 LOP 337.08 VP 25.263 GAP 15.63 AZP 89.06 TAL 348.82 TAP 106.88 RCA 150.08 APO 260.77 V2 26.496
RC 64.956 GL -15.47 GP 1.29 ZAL 114.74 ZAP 162.14 ETS 175.99 ZAE 171.08 ETE 34.65 ZAC 101.14 ETC 278.05 LVI -19.60

PLANETOCENTRIC CONIC

C3 18.992 VHL 4.358 DLA -24.10 RAL 342.73 RAD 6642.4 VEL 11.790 PTH 6.81 VHP 7.085 DPA -15.58 RAP 321.66 ECC 1.3126

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 15	2628.44	-13.75	71.99	199.78	136.01	17 59 3	1628.4	4.58	56.12
60.00	18 25 33	2441.45	-8.51	60.09	204.72	129.54	19 6 15	1441.4	7.58	42.15
70.00	19 55 21	2177.44	-3.20	42.67	208.71	124.02	20 31 39	1177.4	10.69	23.04
80.00	21 43 17	1839.64	1.36	19.86	211.55	119.83	22 13 57	839.6	13.39	358.98
90.00	23 24 53	1511.95	3.38	356.88	212.67	118.09	23 50 5	511.9	14.60	338.47
100.00	0 30 5	1314.12	1.36	341.23	211.55	119.83	0 51 59	314.1	13.39	320.34
110.00	0 58 43	1224.26	-3.20	331.59	208.71	124.02	1 19 8	224.3	10.69	311.96

DIFFERENTIAL CORRECTIONS

TDE -.4496 TRA -.9956 TC3 .1977 BAU .0694
RDE -.3772 RRA .1175 RC3 .1888 FAU .05719
FDE .3832 FRA 1.7715 FC3-2.6068 BSP 2594
BDE .5869 BRA 1.0025 BC3 .2734 FSP 437

MID-COURSE EXECUTION ACCURACY

SGT 1560.5 SGR 549.3 SG3 298.4
RRT .0919 RRF -.1011 RTF -.8068
SGB 1654.3 R23 -.0167 R13 -.8070
SG1 1561.4 SG2 546.6 THA 2.11

ORBIT DETERMINATION ACCURACY

ST 36.6 SR 24.9 SS 28.1
CRT .7444 CRS .4612 CST .9339
LSA 48.7 MSA 19.3 SSA 1.3
EL1 41.8 EL2 14.6 ALF 31.11

LAUNCH DATE APR 30 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 355.251 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 33.316 GAL -2.28 AZL 92.01 HCA 119.32 SMA 203.70 ECC .26307 INC 2.0060 V1 29.569
RP 206.70 LAP -1.75 LOP 336.35 VP 25.192 GAP 15.23 AZP 89.02 TAL 349.00 TAP 108.33 RCA 150.11 APO 257.28 V2 26.494
RC 66.082 GL -15.85 GP 1.34 ZAL 114.58 ZAP 161.04 ETS 176.09 ZAE 171.03 ETE 33.82 ZAC 101.17 ETC 278.08 LVI -19.70

PLANETOCENTRIC CONIC

C3 18.214 VHL 4.268 DLA -24.50 RAL 342.74 RAD 6642.0 VEL 11.757 PTH 6.78 VHP 6.869 DPA -15.48 RAP 322.02 ECC 1.2998

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 14	2609.88	-12.84	71.17	199.38	136.22	18 0 44	1609.9	5.51	55.34
60.00	18 28 18	2420.89	-7.62	59.09	204.32	129.70	19 8 39	1420.9	8.48	41.15
70.00	19 59 13	2153.60	-2.29	41.42	208.33	124.09	20 35 6	1153.6	11.56	21.74
80.00	21 48 46	1810.70	2.34	18.27	211.21	119.77	22 18 57	810.7	14.28	357.28
90.00	23 31 32	1479.31	4.42	355.05	212.36	117.96	23 56 11	479.3	15.51	333.51
100.00	0 35 34	1285.18	2.34	339.64	211.21	119.77	0 56 59	285.2	14.28	316.65
110.00	1 2 35	1200.42	-2.29	330.34	208.33	124.09	1 22 35	200.4	11.56	310.66

DIFFERENTIAL CORRECTIONS

TDE -.4426 TRA -.9819 TC3 .2190 BAU .0720
RDE -.3656 RRA .1110 RC3 .1986 FAU .05975
FDE .3910 FRA 1.8493 FC3-2.8402 BSP 2629
BDE .5741 BRA .9882 BC3 .2957 FSP 470

MID-COURSE EXECUTION ACCURACY

SGT 1576.9 SGR 544.5 SG3 318.6
RRT .1002 RRF -.1104 RTF -.8113
SGB 1668.3 R23 -.0183 R13 -.8116
SG1 1578.0 SG2 541.4 THA 2.25

ORBIT DETERMINATION ACCURACY

ST 36.8 SR 24.7 SS 28.9
CRT .7443 CRS .4527 CST .9306
LSA 49.2 MSA 19.5 SSA 1.3
EL1 41.9 EL2 14.5 ALF 30.84

LAUNCH DATE APR 30 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 358.894 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 33.238 GAL -2.21 AZL 92.02 HCA 120.59 SMA 202.10 ECC .25709 INC 2.0158 V1 29.569
RP 206.72 LAP -1.74 LOP 339.62 VP 25.046 GAP 14.84 AZP 88.97 TAL 349.19 TAP 109.77 RCA 150.14 APO 254.05 V2 26.491
RC 67.265 GL -16.22 GP 1.40 ZAL 114.35 ZAP 159.92 ETS 176.17 ZAE 171.05 ETE 33.27 ZAC 101.20 ETC 278.11 LVI -19.79

PLANETOCENTRIC CONIC

C3 17.496 VHL 4.183 DLA -24.90 RAL 342.76 RAD 6641.7 VEL 11.727 PTH 6.76 VHP 6.659 DPA -15.38 RAP 322.14 ECC 1.2879

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 15	2591.71	-11.95	70.37	199.01	136.41	18 2 26	1591.7	6.42	54.57
60.00	18 31 4	2400.68	-6.74	58.11	203.95	129.83	19 11 5	1400.7	9.35	40.16
70.00	20 3 9	2129.94	-1.39	40.19	207.98	124.13	20 38 39	1129.9	12.42	20.45
80.00	21 54 29	1781.54	3.32	16.67	210.91	119.69	22 24 10	781.5	15.16	355.56
90.00	23 38 32	1445.93	5.49	353.17	212.11	117.79	24 2 38	445.9	16.42	331.49
100.00	0 41 16	1256.01	3.32	338.04	210.91	119.69	1 2 12	256.0	15.16	316.93
110.00	1 6 32	1176.76	-1.39	329.10	207.98	124.13	1 26 8	176.8	12.42	309.37

DIFFERENTIAL CORRECTIONS

TDE -.4351 TRA -.9679 TC3 .2385 BAU .0741
RDE -.3544 RRA .1046 RC3 .2086 FAU .06243
FDE .3976 FRA 1.9317 FC3-3.0891 BSP 2663
BDE .5612 BRA .9736 BC3 .3169 FSP 507

MID-COURSE EXECUTION ACCURACY

SGT 1591.1 SGR 539.5 SG3 340.0
RRT .1087 RRF -.1200 RTF -.8152
SGB 1680.1 R23 -.0202 R13 -.8156
SG1 1592.3 SG2 535.9 THA 2.38

ORBIT DETERMINATION ACCURACY

ST 37.0 SR 24.4 SS 29.7
CRT .7441 CRS .4430 CST .9267
LSA 49.6 MSA 19.7 SSA 1.3
EL1 41.9 EL2 14.4 ALF 30.02

LAUNCH DATE APR 30 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC — DISTANCE 362.583

EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	33.165	GAL	-2.13	AZL	92.03	HCA	121.86	SMA	200.61	ECC	.25146	INC	2.0258	V1	29.569
RP	206.75	LAP	-1.72	LOP	340.89	VP	24.945	GAP	14.46	AZP	88.93	TAL	349.37	TAP	111.23	RCA	150.17	APO	251.06	V2	26.487
RC	68.502	GL	-16.59	GP	1.46	ZAL	114.15	ZAP	158.77	ETS	176.25	ZAE	171.14	ETE	33.01	ZAC	101.24	ETC	278.14	LVI	-19.88

PLANETOCENTRIC CONIC

C3	16.833	VHL	4.103	DLA	-25.30	RAL	342.76	RAD	6641.4	VEL	11.699	PTH	6.73	VHP	6.457	DPA	-15.28	RAP	322.24	ECC	1.2770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 16	2573.90	-11.07	69.60	198.66	136.58	18 4 10	1573.9	7.31	53.82
60.00	18 33 53	2380.76	-5.67	57.14	203.61	129.94	19 13 33	1380.8	10.21	39.17
70.00	20 7 11	2106.42	-.49	38.96	207.67	124.15	20 42 18	1106.4	13.26	19.15
80.00	22 0 26	1752.00	4.32	15.04	210.66	119.57	22 29 38	752.0	16.03	353.81
90.00	23 46 0	1411.54	6.57	351.23	211.89	117.57	24 9 31	411.5	17.34	329.38
100.00	0 47 13	1226.47	4.32	336.41	210.66	119.57	1 7 40	226.5	16.03	315.18
110.00	1 10 34	1153.23	-.49	327.88	207.67	124.15	1 29 47	153.2	13.26	308.07

DIFFERENTIAL CORRECTIONS

TDE	-.4167	TRA	-.9420	TC3	.2846	BAU	.0808
RDE	-.3435	RRA	.0983	RC3	.2192	FAU	.06542
FDE	.4031	FRA	2.0153	FC3	-3.3644	BSP	2552
BDE	.5400	BRA	.9471	BC3	.3592	FSP	542

MID-COURSE EXECUTION ACCURACY

SGT	1584.4	SGR	534.3	SG3	362.8
RRT	.1184	RRF	-.1310	RTF	-.8270
SGB	1672.1	R23	-.0209	R13	-.8275
SG1	1585.8	SG2	530.0	THA	2.57

ORBIT DETERMINATION ACCURACY

ST	36.4	SR	24.1	SS	30.5
CRT	.7397	CRS	.4325	CST	.9249
LSA	49.4	MSA	19.8	SSA	1.3
EL1	41.2	EL2	14.3	ALF	30.09

LAUNCH DATE APR 30 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC — DISTANCE 366.313

EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	33.096	GAL	-2.06	AZL	92.04	HCA	123.13	SMA	199.24	ECC	.24619	INC	2.0362	V1	29.569
RP	206.79	LAP	-1.71	LOP	342.16	VP	24.849	GAP	14.09	AZP	88.89	TAL	349.55	TAP	112.67	RCA	150.19	APO	248.29	V2	26.483
RC	69.791	GL	-16.96	GP	1.52	ZAL	113.95	ZAP	157.60	ETS	176.31	ZAE	171.29	ETE	33.04	ZAC	101.29	ETC	278.16	LVI	-19.97

PLANETOCENTRIC CONIC

C3	16.223	VHL	4.028	DLA	-25.70	RAL	342.77	RAD	6641.1	VEL	11.673	PTH	6.71	VHP	6.261	DPA	-15.19	RAP	322.31	ECC	1.2670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 18	2556.58	-10.21	68.84	198.35	136.73	18 5 54	1556.6	8.17	53.08
60.00	18 36 43	2361.30	-5.02	56.20	203.30	130.04	19 16 4	1361.3	11.04	38.21
70.00	20 11 18	2083.21	.39	37.75	207.39	124.15	20 46 1	1083.2	14.09	17.86
80.00	22 6 37	1722.28	5.31	13.40	210.44	119.42	22 35 19	722.3	16.90	352.02
90.00	23 53 56	1376.18	7.68	349.23	211.73	117.30	24 16 52	376.2	18.26	327.19
100.00	0 53 25	1196.75	5.31	334.76	210.44	119.42	1 13 21	196.7	16.90	313.39
110.00	1 14 40	1130.03	.39	326.67	207.39	124.15	1 33 30	130.0	14.09	306.78

DIFFERENTIAL CORRECTIONS

TDE	-.4148	TRA	-.9323	TC3	.2903	BAU	.0803
RDE	-.3330	RRA	.0919	RC3	.2296	FAU	.06845
FDE	.4104	FRA	2.1073	FC3	-3.6529	BSP	2639
BDE	.5319	BRA	.9368	BC3	.3701	FSP	583

MID-COURSE EXECUTION ACCURACY

SGT	1602.9	SGR	528.8	SG3	387.0
RRT	.1289	RRF	-.1428	RTF	-.8257
SGB	1687.9	R23	-.0239	R13	-.8262
SG1	1604.5	SG2	523.9	THA	2.73

ORBIT DETERMINATION ACCURACY

ST	36.9	SR	23.8	SS	31.4
CRT	.7425	CRS	.4235	CST	.9195
LSA	50.1	MSA	20.0	SSA	1.3
EL1	41.5	EL2	14.1	ALF	29.34

LAUNCH DATE APR 30 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC — DISTANCE 370.082

EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	33.032	GAL	-1.99	AZL	92.05	HCA	124.39	SMA	197.97	ECC	.24123	INC	2.0468	V1	29.569
RP	206.84	LAP	-1.69	LOP	343.43	VP	24.757	GAP	13.73	AZP	88.84	TAL	349.72	TAP	114.12	RCA	150.22	APO	245.73	V2	26.477
RC	71.130	GL	-17.33	GP	1.59	ZAL	113.75	ZAP	156.39	ETS	176.37	ZAE	171.51	ETE	33.38	ZAC	101.35	ETC	278.18	LVI	-20.05

PLANETOCENTRIC CONIC

C3	15.661	VHL	3.957	DLA	-26.10	RAL	342.78	RAD	6640.8	VEL	11.649	PTH	6.69	VHP	6.072	DPA	-15.11	RAP	322.35	ECC	1.2577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 20	2539.70	-9.37	68.12	198.06	136.86	18 7 40	1539.7	9.01	52.36
60.00	18 39 35	2342.21	-4.18	55.29	203.02	130.12	19 18 37	1342.2	11.86	37.26
70.00	20 15 30	2060.22	1.27	36.55	207.15	124.13	20 49 50	1060.2	14.90	16.58
80.00	22 13 6	1692.14	6.32	11.72	210.26	119.24	22 41 18	692.1	17.75	350.20
90.00	0 6 25	1339.34	8.83	347.13	211.62	116.98	0 28 44	339.3	19.18	324.88
100.00	0 59 53	1166.61	6.32	333.09	210.26	119.24	1 19 20	166.6	17.75	311.57
110.00	1 18 52	1107.04	1.27	325.47	207.15	124.13	1 37 19	107.0	14.90	305.50

DIFFERENTIAL CORRECTIONS

TDE	-.4112	TRA	-.9201	TC3	.2987	BAU	.0803
RDE	-.3229	RRA	.0855	RC3	.2403	FAU	.07166
FDE	.4196	FRA	2.2051	FC3	-3.9611	BSP	2708
BDE	.5229	BRA	.9241	BC3	.3834	FSP	628

MID-COURSE EXECUTION ACCURACY

SGT	1615.9	SGR	523.3	SG3	412.9
RRT	.1406	RRF	-.1561	RTF	-.8258
SGB	1698.5	R23	-.0270	R13	-.8264
SG1	1617.8	SG2	517.5	THA	2.90

ORBIT DETERMINATION ACCURACY

ST	37.2	SR	23.5	SS	32.3
CRT	.7451	CRS	.4161	CST	.9147
LSA	50.7	MSA	20.2	SSA	1.3
EL1	41.7	EL2	14.0	ALF	28.71

LAUNCH DATE APR 30 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC — DISTANCE 373.886

EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.971	GAL	-1.93	AZL	92.06	HCA	125.66	SMA	196.80	ECC	.23657	INC	2.0577	V1	29.569
RP	206.90	LAP	-1.67	LOP	344.69	VP	24.668	GAP	13.37	AZP	88.80	TAL	349.90	TAP	115.56	RCA	150.24	APO	243.35	V2	26.470
RC	72.517	GL	-17.70	GP	1.66	ZAL	113.55	ZAP	155.16	ETS	176.42	ZAE	171.79	ETE	34.07	ZAC	101.42	ETC	278.19	LVI	-20.13

PLANETOCENTRIC CONIC

C3	15.143	VHL	3.891	DLA	-26.50	RAL	342.79	RAD	6640.6	VEL	11.627	PTH	6.67	VHP	5.890	DPA	-15.03	RAP	322.36	ECC	1.2492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 27 24	2523.25	-8.56	67.41	197.80	136.98	18 9 27	1523.3	9.83	51.65
60.00	18 42 29	2323.53	-3.36	54.39	202.77	130.18	19 21 13	1323.5	12.66	36.32
70.00	20 19 47	2037.46	2.14	35.36	206.94	124.09	20 53 44	1037.5	15.70	15.30
80.00	22 19 54	1661.49	7.33	10.02	210.13	119.02	22 47 35	661.5	18.61	348.32
90.00	0 15 45	1300.51	10.02	344.90	211.57	116.58	0 37 26	300.5	20.12	322.42
100.00	1 6 41	1135.96	7.33	331.39	210.13	119.02	1 25 37	136.0	18.61	309.69
110.00	1 23 9	1084.28	2.14	324.28	206.94	124.09	1 41 13	84.3	15.70	304.21

DIFFERENTIAL CORRECTIONS

TDE	-.4055	TRA	-.9047	TC3	.3089	BAU	.0806
RDE	-.3132	RRA	.0792	RC3	.2514	FAU	.07510
FDE	.4273	FRA	2.3057	FC3	-4.2934	BSP	2736
BDE	.5124	BRA	.9082	BC3	.3983	FSP	674

MID-COURSE EXECUTION ACCURACY

SGT	1621.7	SGR	517.6	SG3	440.1
RRT	.1531	RRF	-.1706	RTF	-.8262
SGB	1702.3	R23	-.0306	R13	-.8268
SG1	1623.9	SG2	510.8	THA	3.10

ORBIT DETERMINATION ACCURACY

ST	37.3	SR	23.1	SS	33.2
CRT	.7474	CRS	.4079	CST	.9096
LSA	51.1	MSA	20.3	SSA	1.3
EL1	41.7	EL2	13.8	ALF	28.24

LAUNCH DATE APR 30 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 377.722 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.914	GAL	-1.87	AZL	92.07	HCA	126.93	SMA	195.70	ECC	.23220	INC	2.0690	V1	29.569
RP	206.96	LAP	-1.65	LOP	345.96	VP	24.384	GAP	13.02	AZP	88.76	TAL	350.07	TAP	116.99	RCA	150.26	APO	241.15	V2	26.462
RC	73.950	GL	-18.07	GP	1.74	ZAL	113.35	ZAP	153.89	ETS	176.47	ZAE	172.13	ETE	35.17	ZAC	101.49	ETC	278.19	LVI	-20.20

PLANETOCENTRIC CONIC

C3	14.666	VHL	3.830	DLA	-26.90	RAL	342.80	RAD	6640.4	VEL	11.607	PTH	6.65	VHP	5.714	DPA	-14.96	RAP	322.34	ECC	1.2414

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 29 28	2507.27	-7.76	66.73	197.57	137.09	18 11 15	1507.3	10.62	50.96
60.00	18 45 25	2305.26	-2.56	53.51	202.56	130.23	19 23 50	1305.3	13.43	35.40
70.00	20 24 9	2014.94	3.00	34.18	206.76	124.04	20 57 44	1014.9	16.48	14.02
80.00	22 27 4	1630.21	8.36	8.27	210.05	118.77	22 54 14	630.2	19.45	346.38
90.00	0 26 8	1238.89	11.28	342.49	211.58	116.11	0 47 7	238.9	21.08	319.74
100.00	1 13 51	1104.68	8.36	329.63	210.05	118.77	1 32 16	104.7	19.45	307.75
110.00	1 27 31	1061.76	3.00	323.10	206.76	124.04	1 45 13	61.8	16.48	302.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3990	TRA	-.8887	TC3	.3181	BAU	.0809	SGT	1624.4	SGR	511.7	SG3	469.1	ST	37.3	SR	22.8	SS	34.1
RDE	-.3037	RRA	.0728	RC3	.2627	FAU	.07870	RRT	.1663	RRF	-.1861	RTF	-.8268	CRT	.7496	CRS	.3994	CST	.9044
FDE	.4348	FRA	2.4140	FC3	-4.6457	BSP	2757	SGB	1703.1	R23	-.0344	R13	-.8276	LSA	51.5	MSA	20.5	SSA	1.3
BDE	.3015	BRA	.8917	BC3	.4125	FSP	724	SG1	1626.9	SG2	503.8	THA	3.32	EL1	41.6	EL2	13.5	ALF	27.81

LAUNCH DATE APR 30 1971 FLIGHT TIME 150.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC DISTANCE 381.589 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.860	GAL	-1.81	AZL	92.08	HCA	128.19	SMA	194.69	ECC	.22810	INC	2.0606	V1	29.569
RP	207.04	LAP	-1.64	LOP	347.23	VP	24.502	GAP	12.68	AZP	88.71	TAL	350.23	TAP	118.42	RCA	150.28	APO	239.10	V2	26.454
RC	75.426	GL	-18.43	GP	1.82	ZAL	113.16	ZAP	152.59	ETS	176.51	ZAE	172.53	ETE	36.78	ZAC	101.58	ETC	278.18	LVI	-20.27

PLANETOCENTRIC CONIC

C3	14.227	VHL	3.772	DLA	-27.29	RAL	342.82	RAD	6640.2	VEL	11.588	PTH	6.63	VHP	5.544	DPA	-14.89	RAP	322.28	ECC	1.2341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 31 34	2491.76	-6.99	66.07	197.37	137.18	18 13 5	1491.8	11.39	50.28
60.00	18 48 23	2287.42	-1.77	52.66	202.37	130.27	19 26 30	1287.4	14.18	34.49
70.00	20 28 37	1992.68	3.85	33.02	206.62	123.96	21 1 50	992.7	17.24	12.74
80.00	22 34 40	1598.11	9.41	6.46	210.01	118.47	23 1 18	598.1	20.30	344.38
90.00	0 38 1	1213.01	12.64	339.80	211.69	115.51	0 58 14	213.0	22.08	316.75
100.00	1 21 27	1072.58	9.41	327.83	210.01	118.47	1 39 20	72.6	20.30	305.74
110.00	1 31 59	1039.50	3.85	321.93	206.62	123.96	1 49 19	39.5	17.24	301.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3920	TRA	-.8714	TC3	.3247	BAU	.0809	SGT	1622.7	SGR	505.8	SG3	499.8	ST	37.2	SR	22.4	SS	35.0
RDE	-.2945	RRA	.0664	RC3	.2743	FAU	.08253	RRT	.1804	RRF	-.2030	RTF	-.8268	CRT	.7520	CRS	.3907	CST	.8986
FDE	.4414	FRA	2.5272	FC3	-5.0223	BSP	2757	SGB	1699.7	R23	-.0390	R13	-.8277	LSA	51.8	MSA	20.7	SSA	1.3
BDE	.4903	BRA	.8739	BC3	.4251	FSP	776	SG1	1625.5	SG2	496.6	THA	3.55	EL1	41.4	EL2	13.3	ALF	27.46

LAUNCH DATE APR 30 1971 FLIGHT TIME 152.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC DISTANCE 385.483 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.810	GAL	-1.76	AZL	92.09	HCA	129.46	SMA	193.75	ECC	.22426	INC	2.0927	V1	29.569
RP	207.12	LAP	-1.62	LOP	348.49	VP	24.424	GAP	12.35	AZP	88.67	TAL	350.39	TAP	119.65	RCA	150.30	APO	237.20	V2	26.444
RC	76.944	GL	-18.79	GP	1.90	ZAL	112.97	ZAP	151.26	ETS	176.54	ZAE	172.99	ETE	39.01	ZAC	101.67	ETC	278.17	LVI	-20.34

PLANETOCENTRIC CONIC

C3	13.623	VHL	3.718	DLA	-27.67	RAL	342.84	RAD	6640.0	VEL	11.571	PTH	6.62	VHP	5.380	DPA	-14.83	RAP	322.19	ECC	1.2275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 40	2476.73	-6.24	65.43	197.20	137.26	18 14 57	1476.7	12.13	49.63
60.00	18 51 23	2270.03	-1.01	51.83	202.22	130.29	19 29 13	1270.0	14.91	33.60
70.00	20 33 11	1970.68	4.68	31.86	206.52	123.87	21 6 1	970.7	17.98	11.47
80.00	22 42 46	1564.95	10.48	4.58	210.03	118.12	23 8 51	564.9	21.14	342.28
90.00	0 52 22	1159.73	14.18	336.65	211.91	114.73	1 11 41	159.7	23.16	313.23
100.00	1 29 34	1039.42	10.48	325.95	210.03	118.12	1 46 54	39.4	21.14	303.64
110.00	1 36 33	1017.49	4.68	320.78	206.52	123.87	1 53 30	17.5	17.98	300.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3849	TRA	-.8529	TC3	.3307	BAU	.0808	SGT	1617.1	SGR	499.9	SG3	532.4	ST	37.1	SR	22.1	SS	36.0
RDE	-.2856	RRA	.0599	RC3	.2864	FAU	.08661	RRT	.1964	RRF	-.2217	RTF	-.8268	CRT	.7553	CRS	.3829	CST	.8927
FDE	.4487	FRA	2.6471	FC3	-5.4245	BSP	2752	SGB	1692.6	R23	-.0439	R13	-.8279	LSA	52.2	MSA	20.8	SSA	1.3
BDE	.4793	BRA	.8550	BC3	.4375	FSP	831	SG1	1620.3	SG2	489.2	THA	3.82	EL1	41.1	EL2	13.0	ALF	27.15

LAUNCH DATE APR 30 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 1 1971

HELIOCENTRIC CONIC DISTANCE 389.403 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.763	GAL	-1.71	AZL	92.11	HCA	130.72	SMA	192.88	ECC	.22066	INC	2.1052	V1	29.569
RP	207.21	LAP	-1.60	LOP	349.75	VP	24.349	GAP	12.03	AZP	88.63	TAL	350.54	TAP	121.26	RCA	150.32	APO	235.44	V2	26.433
RC	78.502	GL	-19.15	GP	2.00	ZAL	112.79	ZAP	149.89	ETS	176.57	ZAE	173.49	ETE	42.06	ZAC	101.77	ETC	278.15	LVI	-20.40

PLANETOCENTRIC CONIC

C3	13.453	VHL	3.668	DLA	-28.05	RAL	342.87	RAD	6639.8	VEL	11.555	PTH	6.60	VHP	5.222	DPA	-14.78	RAP	322.06	ECC	1.2214

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 48	2462.19	-5.51	64.82	197.06	137.33	18 16 50	1462.2	12.85	48.99
60.00	18 54 24	2253.11	-.26	51.02	202.10	130.30	19 31 57	1253.1	15.62	32.72
70.00	20 37 50	1948.94	5.51	30.72	206.45	123.76	21 10 19	948.9	18.71	10.20
80.00	22 51 32	1530.34	11.58	2.60	210.10	117.71	23 17 2	530.3	21.99	340.06
90.00	1 12 18	1089.02	16.15	332.40	212.35	113.54	1 30 27	89.0	24.46	308.46
100.00	1 38 19	1004.81	11.58	323.97	210.10	117.71	1 55 4	4.8	21.99	301.43
110.00	1 41 12	6283.79	5.51	297.54	206.45	123.76	3 25 56	5283.8	18.71	277.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3784	TRA	-.8330	TC3	.3283	BAU	.0798	SGT	1606.6	SGR	494.1	SG3	566.3	ST	36.9	SR	21.7	SS	37.0
RDE	-.2770	RRA	.0534	RC3	.2986	FAU	.09080	RRT	.2132	RRF	-.2421	RTF	-.8251	CRT	.7598	CRS	.3764	CST	.8863
FDE	.4567	FRA	2.7720	FC3	-5.8434	BSP	2746	SGB	1680.9	R23	-.0500	R13	-.8263	LSA	52.5	MSA	21.0	SSA	1.3
BDE	.4690	BRA	.8347	BC3	.4437	FSP	892	SG1	1610.4	SG2	481.6	THA	4.12	EL1	40.9	EL2	12.7	ALF	26.87

LAUNCH DATE APR 30 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 3 1971

DISTANCE 393.347

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.718 GAL -1.66 AZL 92.12 HCA 131.98 SMA 192.07 ECC .21730 INC 2.1181 V1 29.569
RP 207.31 LAP -1.57 LOP 351.02 VP 24.277 GAP 11.71 AZP 88.58 TAL 350.69 TAP 122.67 RCA 150.33 APO 233.80 V2 26.422
RC 80.098 GL -19.50 GP 2.09 ZAL 112.62 ZAP 148.49 ETS 176.59 ZAE 174.01 ETE 46.20 ZAC 101.89 ETC 278.13 LVI -20.45

PLANETOCENTRIC CONIC

C3 13.113 VHL 3.621 DLA -28.42 RAL 342.90 RAD 6639.6 VEL 11.540 PTH 6.59 VHP 5.071 DPA -14.73 RAP 321.89 ECC 1.2158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 57	2448.15	-4.81	64.23	196.95	137.39	18 18 45	1448.2	13.53	48.37
60.00	18 57 27	2236.65	.46	50.24	202.01	130.30	19 34 44	1236.6	16.30	31.87
70.00	20 42 35	1927.46	6.32	29.59	206.42	123.63	21 14 43	927.5	19.42	8.93
80.00	23 1 7	1493.68	12.73	.49	210.24	117.24	23 26 0	493.7	22.86	337.68
87.04	1 19 17	1061.10	19.06	331.62	213.21	111.49	1 36 58	61.1	26.25	306.87
100.00	1 47 54	6256.19	12.73	299.76	210.24	117.24	3 32 11	5256.2	22.86	276.95
110.00	1 45 57	6262.32	6.32	296.41	206.42	123.63	3 30 20	5262.3	19.42	275.76

DIFFERENTIAL CORRECTIONS

TDE -.3717 TRA -.8126 TC3 .3238 BAU .0787
RDE -.2687 RRA .0467 RC3 .3113 FAU .09530
FDE .4645 FRA 2.9049 FC3-6.2919 BSP 2718
BDE .4587 BRA .8140 BC3 .4492 FSP 952

MID-COURSE EXECUTION ACCURACY

SGT 1593.2 SGR 488.5 SG3 602.4
RRT .2314 RRF -.2644 RTF -.8229
SGB 1666.4 R23 -.0571 R13 -.8244
SG1 1597.6 SG2 473.9 THA 4.45

ORBIT DETERMINATION ACCURACY

ST 36.7 SR 21.3 SS 38.0
CRT .7649 CRS .3702 CST .8795
LSA 52.9 MSA 21.2 SSA 1.3
EL1 40.6 EL2 12.4 ALF 26.63

LAUNCH DATE APR 30 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 5 1971

DISTANCE 397.313

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.677 GAL -1.62 AZL 92.13 HCA 133.24 SMA 191.32 ECC .21415 INC 2.1316 V1 29.569
RP 207.42 LAP -1.55 LOP 352.28 VP 24.207 GAP 11.40 AZP 88.54 TAL 350.82 TAP 124.06 RCA 150.35 APO 232.29 V2 26.409
RC 81.730 GL -19.85 GP 2.19 ZAL 112.45 ZAP 147.05 ETS 176.61 ZAE 174.54 ETE 51.79 ZAC 102.02 ETC 278.10 LVI -20.50

PLANETOCENTRIC CONIC

C3 12.803 VHL 3.578 DLA -28.79 RAL 342.95 RAD 6639.5 VEL 11.527 PTH 6.57 VHP 4.925 DPA -14.69 RAP 321.69 ECC 1.2107

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 40 7	2434.60	-4.13	63.66	196.87	137.44	18 20 41	1434.6	14.20	47.76
60.00	19 0 33	2220.64	1.17	49.47	201.95	130.29	19 37 33	1220.6	16.96	31.03
70.00	20 47 27	1906.22	7.12	28.46	206.43	123.49	21 19 13	906.2	20.10	7.67
80.00	23 11 52	1453.90	13.96	358.18	210.45	116.66	23 36 6	453.9	23.75	335.06
84.38	0 57 31	1126.91	19.42	336.60	213.01	111.68	1 16 17	126.9	26.65	311.79
100.00	1 58 39	6216.41	13.96	297.45	210.45	116.66	3 42 16	5216.4	23.75	274.33
110.00	1 50 49	6241.08	7.12	295.28	206.43	123.49	3 34 50	5241.1	20.10	274.49

DIFFERENTIAL CORRECTIONS

TDE -.3612 TRA -.7870 TC3 .3255 BAU .0787
RDE -.2605 RRA .0400 RC3 .3247 FAU .10015
FDE .4683 FRA 3.0397 FC3-6.7725 BSP 2642
BDE .4454 BRA .7880 BC3 .4597 FSP 1013

MID-COURSE EXECUTION ACCURACY

SGT 1567.3 SGR 483.0 SG3 640.2
RRT .2513 RRF -.2886 RTF -.8223
SGB 1640.0 R23 -.0639 R13 -.8241
SG1 1572.4 SG2 466.0 THA 4.86

ORBIT DETERMINATION ACCURACY

ST 36.1 SR 20.9 SS 39.0
CRT .7692 CRS .3621 CST .8721
LSA 52.9 MSA 21.4 SSA 1.3
EL1 39.9 EL2 12.1 ALF 26.63

LAUNCH DATE APR 30 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 7 1971

DISTANCE 401.299

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.638 GAL -1.58 AZL 92.15 HCA 134.50 SMA 190.62 ECC .21121 INC 2.1456 V1 29.569
RP 207.54 LAP -1.53 LOP 353.54 VP 24.140 GAP 11.09 AZP 88.50 TAL 350.94 TAP 125.45 RCA 150.36 APO 230.88 V2 26.395
RC 83.399 GL -20.20 GP 2.30 ZAL 112.30 ZAP 145.57 ETS 176.63 ZAE 175.04 ETE 59.31 ZAC 102.15 ETC 278.05 LVI -20.55

PLANETOCENTRIC CONIC

C3 12.519 VHL 3.538 DLA -29.14 RAL 343.00 RAD 6639.3 VEL 11.515 PTH 6.56 VHP 4.784 DPA -14.65 RAP 321.44 ECC 1.2060

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 42 18	2421.58	-3.47	63.11	196.82	137.48	18 22 40	1421.6	14.83	47.18
60.00	19 3 40	2205.16	1.85	48.73	201.93	130.27	19 40 25	1205.2	17.59	30.21
70.00	20 52 25	1885.28	7.90	27.35	206.47	123.34	21 23 50	885.3	20.77	6.41
80.00	23 24 22	1409.20	15.31	355.54	210.77	115.95	23 47 51	409.2	24.69	332.07
82.65	0 43 44	1167.25	19.77	339.72	212.84	111.86	1 3 11	167.3	27.04	314.84
100.00	2 11 10	6171.71	15.31	294.82	210.77	115.95	3 54 2	5171.7	24.69	271.35
110.00	1 55 47	6220.14	7.90	294.17	206.47	123.34	3 39 27	5220.1	20.77	273.24

DIFFERENTIAL CORRECTIONS

TDE -.3585 TRA -.7672 TC3 .2988 BAU .0755
RDE -.2527 RRA .0330 RC3 .3380 FAU .10493
FDE .4801 FRA 3.1886 FC3-7.2563 BSP 2652
BDE .4386 BRA .7679 BC3 .4512 FSP 1088

MID-COURSE EXECUTION ACCURACY

SGT 1550.9 SGR 478.0 SG3 679.9
RRT .2714 RRF -.3151 RTF -.8150
SGB 1622.8 R23 -.0755 R13 -.8174
SG1 1556.8 SG2 458.3 THA 5.24

ORBIT DETERMINATION ACCURACY

ST 36.0 SR 20.5 SS 40.2
CRT .7784 CRS .3603 CST .8639
LSA 53.5 MSA 21.5 SSA 1.3
EL1 39.8 EL2 11.6 ALF 26.30

LAUNCH DATE APR 30 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 9 1971

DISTANCE 405.304

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.602 GAL -1.54 AZL 92.16 HCA 135.76 SMA 189.97 ECC .20847 INC 2.1603 V1 29.569
RP 207.68 LAP -1.51 LOP 354.80 VP 24.075 GAP 10.80 AZP 88.45 TAL 351.06 TAP 126.82 RCA 150.37 APO 229.58 V2 26.381
RC 85.104 GL -20.54 GP 2.42 ZAL 112.16 ZAP 144.05 ETS 176.65 ZAE 175.46 ETE 69.27 ZAC 102.30 ETC 278.01 LVI -20.59

PLANETOCENTRIC CONIC

C3 12.261 VHL 3.502 DLA -29.49 RAL 343.07 RAD 6639.2 VEL 11.504 PTH 6.55 VHP 4.650 DPA -14.62 RAP 321.15 ECC 1.2018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 44 31	2409.05	-2.84	62.59	196.80	137.51	18 24 41	1409.1	15.44	46.61
60.00	19 6 49	2190.14	2.51	48.01	201.94	130.24	19 43 19	1190.1	18.20	29.41
70.00	20 57 30	1864.56	8.68	26.24	206.55	123.16	21 28 34	864.6	21.42	5.16
80.00	23 40 16	1354.34	16.92	352.26	211.24	114.98	24 2 50	354.3	25.75	328.34
81.26	0 33 3	1197.94	20.11	342.13	212.71	112.04	0 53 1	197.9	27.42	317.20
100.00	2 27 3	6116.85	16.92	291.54	211.24	114.98	4 9 0	5116.8	25.75	267.62
110.00	2 0 52	6199.42	8.68	293.07	206.55	123.16	3 44 11	5199.4	21.42	271.98

DIFFERENTIAL CORRECTIONS

TDE -.3514 TRA -.7419 TC3 .2776 BAU .0735
RDE -.2451 RRA .0258 RC3 .3521 FAU .11003
FDE .4876 FRA 3.3411 FC3-7.7692 BSP 2586
BDE .4284 BRA .7424 BC3 .4483 FSP 1157

MID-COURSE EXECUTION ACCURACY

SGT 1521.1 SGR 473.3 SG3 721.3
RRT .2928 RRF -.3433 RTF -.8093
SGB 1593.0 R23 -.0874 R13 -.8122
SG1 1528.0 SG2 450.5 THA 5.70

ORBIT DETERMINATION ACCURACY

ST 35.6 SR 20.1 SS 41.2
CRT .7867 CRS .3565 CST .8550
LSA 53.8 MSA 21.7 SSA 1.3
EL1 39.3 EL2 11.2 ALF 26.25

LAUNCH DATE APR 30 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 409.326 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.568	GAL	-1.51	AZL	92.18	HCA	137.02	SMA	189.38	ECC	.20591	INC	2.1755	V1	29.569
RP	207.80	LAP	-1.48	LOP	356.05	VP	24.012	GAP	10.51	AZP	88.41	TAL	351.16	TAP	128.18	RCA	150.38	APO	228.37	V2	26.365
RC	86.843	GL	-20.88	GP	2.54	ZAL	112.04	ZAP	142.49	ETS	176.66	ZAE	175.72	ETE	81.82	ZAC	102.47	ETC	277.95	LVI	-20.62

PLANETOCENTRIC CONIC

C3	12.027	VHL	3.468	DLA	-29.83	RAL	343.15	RAD	6639.1	VEL	11.494	PTH	6.54	VHP	4.521	DPA	-14.59	RAP	320.82	ECC	1.1979

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 46	2397.03	-2.24	62.08	196.81	137.54	18 26 43	1397.0	16.03	46.07
60.00	19 10 0	2175.62	3.15	47.32	201.98	130.20	19 46 15	1175.6	18.79	28.64
70.00	21 2 42	1844.07	9.44	25.14	206.67	122.98	21 33 26	844.1	22.06	3.91
80.00	0 13 39	1256.91	19.61	346.29	212.24	112.97	0 34 36	256.9	27.36	321.56
80.08	0 24 15	1223.02	20.44	344.13	212.61	112.22	0 44 38	223.0	27.79	319.14
100.00	2 56 31	6019.42	19.61	285.56	212.24	112.97	4 36 50	5019.4	27.36	260.83
110.00	2 6 4	6178.93	9.44	291.97	206.67	122.98	3 49 3	5178.9	22.06	270.73

DIFFERENTIAL CORRECTIONS

TDE	-.3456	TRA	-.7165	TC3	.2496	BAU	.0713
RDE	-.2377	RRA	.0184	RC3	.3669	FAU	.11550
FDE	.4961	FRA	3.5019	FC3	-8.3145	BSP	2538
BDE	.4194	BRA	.7167	BC3	.4437	FSP	1236

MID-COURSE EXECUTION ACCURACY

SGT	1489.3	SGR	469.2	SG3	765.1		
RRT	.3154	RRF	-.3743	RTF	-.8013		
SGB	1561.5	R23	-.1023	R13	-.8050		
SG1	1497.4	SG2	442.9	THA	6.22		

ORBIT DETERMINATION ACCURACY

ST	35.1	SR	19.6	SS	42.4
CRT	.7968	CRS	.3545	CST	.8452
LSA	54.2	MSA	21.9	SSA	1.3
EL1	38.8	EL2	10.8	ALF	26.18

LAUNCH DATE APR 30 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 413.366 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.536	GAL	-1.48	AZL	92.19	HCA	138.27	SMA	188.82	ECC	.20354	INC	2.1915	V1	29.569
RP	207.94	LAP	-1.46	LOP	357.31	VP	23.951	GAP	10.22	AZP	88.36	TAL	351.26	TAP	129.53	RCA	150.39	APO	227.25	V2	26.349
RC	88.616	GL	-21.21	GP	2.67	ZAL	111.92	ZAP	140.90	ETS	176.68	ZAE	175.73	ETE	96.26	ZAC	102.64	ETC	277.88	LVI	-20.66

PLANETOCENTRIC CONIC

C3	11.814	VHL	3.437	DLA	-30.17	RAL	343.24	RAD	6639.0	VEL	11.485	PTH	6.53	VHP	4.397	DPA	-14.57	RAP	320.44	ECC	1.1944

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 49 3	2385.49	-1.66	61.60	196.85	137.55	18 28 48	1385.5	16.59	45.54
60.00	19 13 13	2161.56	3.77	46.65	202.05	130.15	19 49 14	1161.6	19.36	27.68
70.00	21 8 2	1823.74	10.19	24.05	206.83	122.78	21 38 26	823.7	22.68	2.65
79.04	0 16 45	1244.41	20.75	345.86	212.54	112.40	0 37 29	244.4	28.14	320.81
79.04	0 16 45	1244.41	20.75	345.86	212.54	112.40	0 37 29	244.4	28.14	320.81
79.04	0 16 45	1244.41	20.75	345.86	212.54	112.40	0 37 29	244.4	28.14	320.81
110.00	2 11 24	6158.60	10.19	290.87	206.83	122.78	3 54 3	5158.6	22.68	269.48

DIFFERENTIAL CORRECTIONS

TDE	-.3352	TRA	-.6842	TC3	.2305	BAU	.0706
RDE	-.2304	RRA	.0109	RC3	.3828	FAU	.12143
FDE	.4997	FRA	3.6621	FC3	-8.8981	BSP	2407
BDE	.4067	BRA	.6843	BC3	.4468	FSP	1307

MID-COURSE EXECUTION ACCURACY

SGT	1441.4	SGR	466.0	SG3	810.3		
RRT	.3402	RRF	-.4075	RTF	-.7951		
SGB	1514.8	R23	-.1168	R13	-.7999		
SG1	1451.0	SG2	435.3	THA	6.90		

ORBIT DETERMINATION ACCURACY

ST	34.2	SR	19.2	SS	43.4
CRT	.8064	CRS	.3511	CST	.8344
LSA	54.2	MSA	22.0	SSA	1.2
EL1	37.9	EL2	10.3	ALF	26.43

LAUNCH DATE APR 30 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 417.419 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.507	GAL	-1.45	AZL	92.21	HCA	139.52	SMA	188.31	ECC	.20133	INC	2.2083	V1	29.569
RP	208.08	LAP	-1.43	LOP	358.56	VP	23.892	GAP	9.95	AZP	88.32	TAL	351.33	TAP	130.88	RCA	150.40	APO	226.22	V2	26.332
RC	90.421	GL	-21.55	GP	2.81	ZAL	111.83	ZAP	139.26	ETS	176.69	ZAE	175.44	ETE	110.74	ZAC	102.83	ETC	277.81	LVI	-20.68

PLANETOCENTRIC CONIC

C3	11.624	VHL	3.409	DLA	-30.49	RAL	343.35	RAD	6638.9	VEL	11.476	PTH	6.53	VHP	4.279	DPA	-14.86	RAP	320.03	ECC	1.1913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 51 21	2374.50	-1.11	61.14	196.92	137.57	18 30 56	1374.5	17.12	45.04
60.00	19 16 28	2148.04	4.36	46.00	202.16	130.10	19 52 16	1148.0	19.90	27.14
70.00	21 13 30	1803.67	10.93	22.96	207.03	122.56	21 43 34	803.7	23.27	1.40
78.10	0 10 15	1263.04	21.05	347.39	212.52	112.58	0 31 18	263.0	28.49	322.28
78.10	0 10 15	1263.04	21.05	347.39	212.52	112.58	0 31 18	263.0	28.49	322.28
78.10	0 10 15	1263.04	21.05	347.39	212.52	112.58	0 31 18	263.0	28.49	322.28
110.00	2 16 53	6138.53	10.93	289.79	207.03	122.56	3 59 11	5138.5	23.27	268.23

DIFFERENTIAL CORRECTIONS

TDE	-.3346	TRA	-.6612	TC3	.1681	BAU	.0672
RDE	-.2233	RRA	.0026	RC3	.3981	FAU	.12683
FDE	.5167	FRA	3.8484	FC3	-9.4459	BSP	2368
BDE	.4024	BRA	.6613	BC3	.4321	FSP	1398

MID-COURSE EXECUTION ACCURACY

SGT	1411.5	SGR	463.5	SG3	857.8		
RRT	.3603	RRF	-.4425	RTF	-.[illegible]82		
SGB	1485.7	R23	-.1430	R13	-.7844		
SG1	1422.3	SG2	429.1	THA	7.43		

ORBIT DETERMINATION ACCURACY

ST	34.1	SR	18.8	SS	44.8
CRT	.8214	CRS	.3565	CST	.8230
LSA	55.0	MSA	22.3	SSA	1.2
EL1	37.7	EL2	9.7	ALF	26.19

LAUNCH DATE APR 30 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 421.486 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.480	GAL	-1.43	AZL	92.23	HCA	140.78	SMA	187.84	ECC	.19928	INC	2.2260	V1	29.569
RP	208.24	LAP	-1.41	LOP	359.81	VP	23.835	GAP	9.68	AZP	88.28	TAL	351.40	TAP	132.18	RCA	150.41	APO	225.27	V2	26.313
RC	92.239	GL	-21.88	GP	2.96	ZAL	111.74	ZAP	137.58	ETS	176.70	ZAE	174.86	ETE	123.48	ZAC	103.04	ETC	277.72	LVI	-20.70

PLANETOCENTRIC CONIC

C3	11.453	VHL	3.384	DLA	-30.80	RAL	343.48	RAD	6638.8	VEL	11.469	PTH	6.52	VHP	4.167	DPA	-14.55	RAP	319.56	ECC	1.1885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 53 42	2363.96	-.58	60.70	197.02	137.57	18 33 6	1364.0	17.62	44.55
60.00	19 19 46	2134.97	4.93	45.37	202.31	130.05	19 55 21	1135.0	20.42	26.43
70.00	21 19 8	1783.69	11.66	21.88	207.27	122.33	21 48 52	783.7	23.86	.15
77.25	0 4 33	1279.62	21.33	348.76	212.53	112.76	0 25 52	279.6	28.82	323.60
77.25	0 4 33	1279.62	21.33	348.76	212.53	112.76	0 25 52	279.6	28.82	323.60
77.25	0 4 33	1279.62	21.33	348.76	212.53	112.76	0 25 52	279.6	28.82	323.60
110.00	2 22 31	6118.54	11.66	288.70	207.27	122.33	4 4 29	5118.5	23.86	266.97

DIFFERENTIAL CORRECTIONS

TDE	-.3298	TRA	-.6301	TC3	.1154	BAU	.0659
RDE	-.2168	RRA	-.0057	RC3	.4148	FAU	.13276
FDE	.5296	FRA	4.0294	FC3	-10.0352	BSP	2300
BDE	.3946	BRA	.6301	BC3	.4305	FSP	1486

MID-COURSE EXECUTION ACCURACY

SGT	1363.9	SGR	462.2	SG3	906.2		
RRT	.3820	RRF	-.4796	RTF	-.7616		
SGB	1440.1	R23	-.1705	R13	-.7698		
SG1	1376.4	SG2	423.3	THA	8.15		

ORBIT DETERMINATION ACCURACY

ST	33.6	SR	18.4	SS	46.0
CRT	.8367	CRS	.3614	CST	.8102
LSA	55.4	MSA	22.4	SSA	1.2
EL1	37.2	EL2	9.1	ALF	26.28

LAUNCH DATE APR 30 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 19 1971

DISTANCE 425.566

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.454	GAL	-1.41	AZL	92.24	HCA	142.02	SMA	187.40	ECC	.19739	INC	2.2445	V1	29.569
RP	208.41	LAP	-1.38	LOP	1.06	VP	23.779	GAP	9.41	AZP	88.23	TAL	351.45	TAP	133.48	RCA	150.41	APO	224.39	V2	26.294
RC	94.128	GL	-22.21	GP	3.11	ZAL	111.68	ZAP	135.86	ETS	176.71	ZAE	174.02	ETE	133.67	ZAC	103.25	ETC	277.63	LVI	-20.72

PLANETOCENTRIC CONIC

C3	11.301	VHL	3.362	DLA	-31.11	RAL	343.62	RAD	6638.7	VEL	11.462	PTH	6.51	VHP	4.060	DPA	-14.53	RAP	319.06	ECC	1.1860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 56 5	2353.91	-.07	60.28	197.16	137.58	18 35 19	1353.9	18.11	44.08
60.00	19 23 6	2122.36	5.48	44.76	202.48	129.99	19 58 28	1122.4	20.91	25.73
70.00	21 24 57	1763.76	12.38	20.79	207.56	122.09	21 54 21	763.8	24.43	358.68
76.46	23 55 35	1294.56	21.61	350.01	212.58	112.94	24 17 9	294.6	29.14	324.80
76.46	23 55 35	1294.56	21.61	350.01	212.58	112.94	24 17 9	294.6	29.14	324.80
76.46	23 55 35	1294.56	21.61	350.01	212.58	112.94	24 17 9	294.6	29.14	324.80
110.00	2 28 19	6098.62	12.38	287.61	207.56	122.09	4 9 58	5098.6	24.43	265.71

DIFFERENTIAL CORRECTIONS

TDE	-.3239	TRA	-.5974	TC3	.0554	BAU	.0659
RDE	-.2101	RRA	-.0145	RC3	.4324	FAU	.13891
FDE	.5381	FRA	4.2193	FC	-10.6411	BSP	2188
BDE	.3861	BRA	.5976	BC3	.4359	FSP	1573

MID-COURSE EXECUTION ACCURACY

SGT	1311.6	SGR	462.2	SG3	956.6
RRT	.4007	RRF	-.5181	RTF	-.7411
SGB	1390.7	R23	-.2043	R13	-.7521
SG1	1326.1	SG2	418.8	THA	8.93

ORBIT DETERMINATION ACCURACY

ST	32.9	SR	17.9	SS	47.2
CRT	.8525	CRS	.3653	CST	.7949
LSA	55.8	MSA	22.6	SSA	1.2
EL1	36.5	EL2	8.4	ALF	26.46

LAUNCH DATE APR 30 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 21 1971

DISTANCE 429.658

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.431	GAL	-1.39	AZL	92.26	HCA	143.27	SMA	187.00	ECC	.19563	INC	2.2641	V1	29.569
RP	208.58	LAP	-1.35	LOP	2.31	VP	23.725	GAP	9.15	AZP	88.18	TAL	351.49	TAP	134.77	RCA	150.42	APO	223.58	V2	26.274
RC	96.027	GL	-22.54	GP	3.28	ZAL	111.62	ZAP	134.10	ETS	176.72	ZAE	172.97	ETE	141.46	ZAC	103.49	ETC	277.53	LVI	-20.74

PLANETOCENTRIC CONIC

C3	11.168	VHL	3.342	DLA	-31.41	RAL	343.78	RAD	6638.6	VEL	11.457	PTH	6.51	VHP	3.958	DPA	-14.53	RAP	318.51	ECC	1.1838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 58 31	2344.32	.41	59.88	197.33	137.57	18 37 35	1344.3	18.57	43.63
60.00	19 26 29	2110.20	6.01	44.17	202.70	129.93	20 1 40	1110.2	21.39	25.06
70.00	21 30 58	1743.82	13.10	19.69	207.89	121.83	22 0 2	743.8	24.99	357.60
75.73	23 51 5	1308.26	21.87	351.16	212.66	113.12	24 12 53	308.3	29.45	325.90
75.73	23 51 5	1308.26	21.87	351.16	212.66	113.12	24 12 53	308.3	29.45	325.90
75.73	23 51 5	1308.26	21.87	351.16	212.66	113.12	24 12 53	308.3	29.45	325.90
110.00	2 34 20	6078.68	13.10	286.51	207.89	121.83	4 15 39	5078.7	24.99	264.43

DIFFERENTIAL CORRECTIONS

TDE	-.3186	TRA	-.5621	TC3	-.0102	BAU	.0674
RDE	-.2037	RRA	-.0237	RC3	.4512	FAU	.14540
FDE	.5501	FRA	4.4138	FC	-11.2715	BSP	2067
BDE	.3782	BRA	.5626	BC3	.4513	FSP	1664

MID-COURSE EXECUTION ACCURACY

SGT	1254.5	SGR	463.9	SG3	1008.6
RRT	.4168	RRF	-.5584	RTF	-.7155
SGB	1337.5	R23	-.2453	R13	-.7305
SG1	1271.1	SG2	416.2	THA	9.83

ORBIT DETERMINATION ACCURACY

ST	32.1	SR	17.5	SS	48.4
CRT	.8704	CRS	.3732	CST	.7782
LSA	56.2	MSA	22.8	SSA	1.2
EL1	35.8	EL2	7.7	ALF	26.69

LAUNCH DATE APR 30 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 23 1971

DISTANCE 433.761

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.409	GAL	-1.38	AZL	92.28	HCA	144.52	SMA	186.63	ECC	.19402	INC	2.2848	V1	29.569
RP	208.76	LAP	-1.33	LOP	3.55	VP	23.672	GAP	8.90	AZP	88.14	TAL	351.52	TAP	136.04	RCA	150.42	APO	222.84	V2	26.254
RC	97.955	GL	-22.87	GP	3.46	ZAL	111.59	ZAP	132.30	ETS	176.73	ZAE	171.77	ETE	147.35	ZAC	103.74	ETC	277.42	LVI	-20.75

PLANETOCENTRIC CONIC

C3	11.051	VHL	3.324	DLA	-31.70	RAL	343.96	RAD	6638.6	VEL	11.452	PTH	6.50	VHP	3.861	DPA	-14.52	RAP	317.91	ECC	1.1819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 0 59	2335.17	.87	59.50	197.53	137.57	18 39 55	1335.2	19.00	43.20
60.00	19 29 56	2098.47	6.53	43.61	202.94	129.86	20 4 55	1098.5	21.85	24.40
70.00	21 37 14	1723.76	13.82	18.58	208.26	121.55	22 5 57	723.8	25.54	356.31
75.05	23 47 5	1320.93	22.12	352.23	212.78	113.30	24 9 6	320.9	29.75	326.93
75.05	23 47 5	1320.93	22.12	352.23	212.78	113.30	24 9 6	320.9	29.75	326.93
75.05	23 47 5	1320.93	22.12	352.23	212.78	113.30	24 9 6	320.9	29.75	326.93
110.00	2 40 36	6058.62	13.82	285.40	208.26	121.55	4 21 35	5058.6	25.54	263.13

DIFFERENTIAL CORRECTIONS

TDE	-.3122	TRA	-.5236	TC3	-.0831	BAU	.0707
RDE	-.1974	RRA	-.0334	RC3	.4709	FAU	.15194
FDE	.5584	FRA	4.6120	FC	-11.9027	BSP	1914
BDE	.3694	BRA	.5247	BC3	.4782	FSP	1751

MID-COURSE EXECUTION ACCURACY

SGT	1190.7	SGR	467.3	SG3	1061.1
RRT	.4269	RRF	-.5990	RTF	-.6932
SGB	1279.1	R23	-.2944	R13	-.7040
SG1	1209.6	SG2	415.9	THA	10.80

ORBIT DETERMINATION ACCURACY

ST	31.3	SR	17.0	SS	49.6
CRT	.8891	CRS	.3814	CST	.7985
LSA	56.6	MSA	23.0	SSA	1.2
EL1	34.9	EL2	7.0	ALF	27.04

LAUNCH DATE APR 30 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 25 1971

DISTANCE 437.875

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.389	GAL	-1.36	AZL	92.31	HCA	145.76	SMA	186.29	ECC	.19253	INC	2.3088	V1	29.569
RP	208.94	LAP	-1.30	LOP	4.80	VP	23.620	GAP	8.65	AZP	88.09	TAL	351.53	TAP	137.29	RCA	150.42	APO	222.15	V2	26.232
RC	99.910	GL	-23.19	GP	3.65	ZAL	111.57	ZAP	130.46	ETS	176.75	ZAE	170.43	ETE	151.82	ZAC	104.00	ETC	277.30	LVI	-20.76

PLANETOCENTRIC CONIC

C3	10.951	VHL	3.309	DLA	-31.98	RAL	344.16	RAD	6638.5	VEL	11.447	PTH	6.50	VHP	3.770	DPA	-14.51	RAP	317.27	ECC	1.1802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 3 32	2326.43	1.31	59.13	197.76	137.56	18 42 18	1326.4	19.42	42.79
60.00	19 33 27	2087.12	7.02	43.06	203.23	129.79	20 8 15	1087.1	22.29	23.76
70.00	21 43 47	1703.39	14.54	17.44	208.68	121.25	22 12 10	703.4	26.09	354.97
74.40	23 43 29	1332.80	22.36	353.25	212.94	113.49	24 5 42	332.8	30.03	327.90
74.40	23 43 29	1332.80	22.36	353.25	212.94	113.49	24 5 42	332.8	30.03	327.90
74.40	23 43 29	1332.80	22.36	353.25	212.94	113.49	24 5 42	332.8	30.03	327.90
110.00	2 47 9	6038.25	14.54	284.27	208.68	121.25	4 27 48	5038.3	26.09	261.80

DIFFERENTIAL CORRECTIONS

TDE	-.3019	TRA	-.4785	TC3	-.1480	BAU	.0754
RDE	-.1909	RRA	-.0433	RC3	.4930	FAU	.15923
FDE	.5579	FRA	4.8026	FC	-12.5874	BSP	1700
BDE	.3572	BRA	.4804	BC3	.5148	FSP	1829

MID-COURSE EXECUTION ACCURACY

SGT	1112.1	SGR	472.9	SG3	1114.7
RRT	.4321	RRF	-.6401	RTF	-.6457
SGB	1208.4	R23	-.3484	R13	-.6752
SG1	1133.7	SG2	418.3	THA	12.08

ORBIT DETERMINATION ACCURACY

ST	30.0	SR	16.6	SS	50.6
CRT	.9081	CRS	.3880	CST	.7340
LSA	56.6	MSA	23.0	SSA	1.1
EL1	33.7	EL2	6.2	ALF	27.71

LAUNCH DATE APR 30 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 441.996 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.371	GAL	-1.36	AZL	92.33	HCA	147.00	SMA	185.98	ECC	.19118	INC	2.3303	V1	29.569
RP	209.14	LAP	-1.27	LOP	6.04	VP	23.570	GAP	8.41	AZP	88.05	TAL	351.53	TAP	138.53	RCA	150.42	APO	221.53	V2	26.209
RC	101.892	GL	-23.52	GP	3.86	ZAL	111.57	ZAP	128.59	ETS	176.77	ZAE	168.99	ETE	155.25	ZAC	104.29	ETC	277.17	LVI	-20.76

PLANETOCENTRIC CONIC

C3	10.868	VHL	3.297	DLA	-32.26	RAL	344.38	RAD	6636.5	VEL	11.444	PTH	6.49	VHP	3.684	DPA	-14.49	RAP	316.58	ECC	1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 6 8	2318.17	1.72	58.79	198.04	137.55	18 44 47	1318.2	19.81	42.39
60.00	19 37 3	2076.24	7.50	42.53	203.55	129.72	20 11 39	1076.2	22.70	23.15
70.00	21 50 39	1682.79	15.26	16.29	209.16	120.93	22 18 42	682.8	26.62	353.61
73.79	23 40 19	1343.91	22.58	354.20	213.15	113.67	24 2 43	343.9	30.31	328.81
73.79	23 40 19	1343.91	22.58	354.20	213.15	113.67	24 2 43	343.9	30.31	328.81
73.79	23 40 19	1343.91	22.58	354.20	213.15	113.67	24 2 43	343.9	30.31	328.81
110.00	2 54 1	6017.65	15.26	283.11	209.16	120.93	4 34 19	5017.6	26.62	260.44

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3064	TRA	-.4457	TC3	-.2759	BAU	.0846	SGT	1075.0	SGR	480.7	SG3	1169.6	ST	30.0	SR	16.2	SS	52.3
RDE	-.1857	RRA	-.0550	RC3	.5124	FAU	.16467	RRT	.4140	RRF	-.6806	RTF	-.5821	CRT	.9309	CRS	.4155	CST	.7138
FDE	.5983	FRA	5.0416	FC-13.1175		BSP	1659	SGB	1177.6	R23	-.4312	R13	-.6214	LSA	57.9	MSA	23.4	SSA	1.1
BDE	.3583	BRA	.4491	BC3	.5820	FSP	1955	SG1	1096.7	SG2	428.9	THA	12.41	EL1	33.7	EL2	5.3	ALF	27.49

LAUNCH DATE APR 30 1971 FLIGHT TIME 182.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 446.126 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.354	GAL	-1.35	AZL	92.36	HCA	148.24	SMA	185.68	ECC	.18993	INC	2.3553	V1	29.569
RP	209.34	LAP	-1.24	LOP	7.28	VP	23.521	GAP	8.17	AZP	88.00	TAL	351.51	TAP	139.75	RCA	150.42	APO	220.96	V2	26.186
RC	103.900	GL	-23.86	GP	4.07	ZAL	111.58	ZAP	126.68	ETS	176.79	ZAE	167.45	ETE	157.92	ZAC	104.59	ETC	277.03	LVI	-20.77

PLANETOCENTRIC CONIC

C3	10.800	VHL	3.286	DLA	-32.53	RAL	344.63	RAD	6638.5	VEL	11.441	PTH	6.49	VHP	3.603	DPA	-14.48	RAP	315.86	ECC	1.1777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 8 49	2310.24	2.12	58.46	198.35	137.54	18 47 20	1310.2	20.19	42.02
60.00	19 40 44	2065.65	7.96	42.01	203.92	129.64	20 15 9	1065.7	23.11	22.54
70.00	21 57 58	1661.38	16.01	15.07	209.69	120.58	22 25 40	661.4	27.17	352.19
73.21	23 37 27	1354.56	22.80	355.12	213.39	113.86	24 0 2	354.6	30.58	329.69
73.21	23 37 27	1354.56	22.80	355.12	213.39	113.86	24 0 2	354.6	30.58	329.69
73.21	23 37 27	1354.56	22.80	355.12	213.39	113.86	24 0 2	354.6	30.58	329.69
110.00	3 1 20	5996.24	16.01	281.90	209.69	120.58	4 41 17	4996.2	27.17	259.01

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3025	TRA	-.4020	TC3	-.3831	BAU	.0950	SGT	1016.1	SGR	491.2	SG3	1224.4	ST	29.2	SR	15.8	SS	53.6
RDE	-.1800	RRA	-.0668	RC3	.5350	FAU	.17113	RRT	.3843	RRF	-.7199	RTF	-.5097	CRT	.9512	CRS	.4353	CST	.6855
FDE	.6163	FRA	5.2610	FC-13.7179		BSP	1500	SGB	1128.6	R23	-.5150	R13	-.5628	LSA	58.5	MSA	23.6	SSA	1.1
BDE	.3520	BRA	.4075	BC3	.6580	FSP	2051	SG1	1037.5	SG2	444.1	THA	12.93	EL1	32.9	EL2	4.3	ALF	27.84

LAUNCH DATE APR 30 1971 FLIGHT TIME 184.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 450.264 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.338	GAL	-1.35	AZL	92.38	HCA	149.47	SMA	185.43	ECC	.18880	INC	2.3820	V1	29.569
RP	209.55	LAP	-1.21	LOP	8.51	VP	23.473	GAP	7.93	AZP	87.95	TAL	351.48	TAP	140.95	RCA	150.42	APO	220.44	V2	26.162
RC	105.933	GL	-24.20	GP	4.31	ZAL	111.62	ZAP	124.73	ETS	176.81	ZAE	165.83	ETE	160.04	ZAC	104.91	ETC	276.88	LVI	-20.78

PLANETOCENTRIC CONIC

C3	10.748	VHL	3.278	DLA	-32.80	RAL	344.90	RAD	6638.4	VEL	11.438	PTH	6.49	VHP	3.527	DPA	-14.45	RAP	315.09	ECC	1.1769

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 11 36	2302.66	2.50	58.14	198.69	137.53	18 49 58	1302.7	20.55	41.65
60.00	19 44 31	2055.35	8.40	41.51	204.32	129.56	20 18 46	1055.3	23.50	21.95
70.00	22 5 51	1638.89	16.78	13.79	210.29	120.19	22 33 10	638.9	27.72	350.67
72.65	23 34 53	1364.86	23.00	356.00	213.68	114.05	23 57 38	364.9	30.84	330.55
72.65	23 34 53	1364.86	23.00	356.00	213.68	114.05	23 57 38	364.9	30.84	330.55
72.65	23 34 53	1364.86	23.00	356.00	213.68	114.05	23 57 38	364.9	30.84	330.55
110.00	3 9 14	5973.75	16.78	280.62	210.29	120.19	4 48 47	4973.7	27.72	257.50

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2988	TRA	-.3550	TC3	-.4938	BAU	.1073	SGT	960.5	SGR	504.9	SG3	1279.5	ST	28.4	SR	15.5	SS	54.9
RDE	-.1745	RRA	-.0792	RC3	.5597	FAU	.17795	RRT	.3343	RRF	-.7576	RTF	-.4.80	CRT	.9699	CRS	.4582	CST	.6523
FDE	.6352	FRA	5.4785	FC-14.3340		BSP	1333	SGB	1085.1	R23	-.6062	R13	-.4868	LSA	59.1	MSA	23.7	SSA	1.0
BDE	.3461	BRA	.3638	BC3	.7464	FSP	2146	SG1	979.7	SG2	466.5	THA	12.95	EL1	32.1	EL2	3.3	ALF	28.19

LAUNCH DATE APR 30 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 454.409 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.324	GAL	-1.35	AZL	92.41	HCA	150.71	SMA	185.20	ECC	.18778	INC	2.4107	V1	29.569
RP	209.76	LAP	-1.18	LOP	9.75	VP	23.426	GAP	7.71	AZP	87.90	TAL	351.43	TAP	142.14	RCA	150.42	APO	219.97	V2	26.137
RC	107.990	GL	-24.54	GP	4.56	ZAL	111.66	ZAP	122.75	ETS	176.84	ZAE	164.14	ETE	161.72	ZAC	105.24	ETC	276.72	LVI	-20.79

PLANETOCENTRIC CONIC

C3	10.710	VHL	3.273	DLA	-33.07	RAL	345.19	RAD	6638.4	VEL	11.437	PTH	6.49	VHP	3.456	DPA	-14.42	RAP	314.28	ECC	1.1763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 14 28	2295.38	2.87	57.84	199.08	137.51	18 52 44	1295.4	20.89	41.30
60.00	19 48 26	2045.27	8.84	41.02	204.77	129.48	20 22 31	1045.3	23.88	21.37
70.00	22 14 30	1614.74	17.60	12.40	210.97	119.75	22 41 25	614.7	28.29	349.03
72.11	23 32 35	1374.83	23.20	356.87	214.01	114.25	23 55 30	374.8	31.10	331.38
72.11	23 32 35	1374.83	23.20	356.67	214.01	114.25	23 55 30	374.8	31.10	331.38
72.11	23 32 35	1374.83	23.20	356.87	214.01	114.25	23 55 30	374.8	31.10	331.38
110.00	3 17 52	5949.60	17.60	279.22	210.97	119.75	4 57 2	4949.6	28.29	255.85

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2949	TRA	-.3051	TC3	-.6140	BAU	.1215	SGT	913.3	SGR	521.6	SG3	1333.9	ST	27.5	SR	15.1	SS	56.2
RDE	-.1692	RRA	-.0926	RC3	.5856	FAU	.18455	RRT	.2565	RRF	-.7928	RTF	-.3017	CRT	.9852	CRS	.4843	CST	.6138
FDE	.6553	FRA	5.6978	FC-14.9182		BSP	1179	SGB	1051.8	R23	-.7022	R13	-.3818	LSA	59.7	MSA	23.9	SSA	1.0
BDE	.3400	BRA	.3188	BC3	.8484	FSP	2246	SG1	927.1	SG2	496.7	THA	11.75	EL1	31.3	EL2	2.3	ALF	28.56

LAUNCH DATE APR 30 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 4 1971

DISTANCE 458.561

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.311 GAL -1.36 AZL 92.44 HCA 151.94 SMA 184.98 ECC .18685 INC 2.4416 V1 29.569
RP 209.99 LAP -1.15 LOP 10.98 VP 23.379 GAP 7.48 AZP 87.85 TAL 351.37 TAP 143.31 RCA 130.42 APO 219.55 V2 26.111
RC 110.071 GL -24.89 GP 4.82 ZAL 111.72 ZAP 120.73 ETS 176.88 ZAE 162.38 ETE 163.09 ZAC 105.60 ETC 276.56 LVI -20.80

PLANETOCENTRIC CONIC

C3 10.687 VHL 3.269 DLA -33.33 RAL 345.81 RAD 6638.4 VEL 11.436 PTH 6.49 VHP 3.390 DPA -14.37 RAP 313.44 ECC 1.1759

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 17 28	2288.33	3.22	57.54	199.51	137.49	18 55 37	1288.3	21.22	40.96
60.00	19 52 31	2035.33	9.27	40.53	205.26	129.40	20 26 26	1035.3	24.25	20.79
70.00	22 24 16	1587.65	18.51	10.84	211.74	119.23	22 50 43	587.8	28.91	347.18
71.58	23 30 30	1384.72	23.38	357.72	214.38	114.46	23 53 35	384.7	31.35	332.20
71.58	23 30 30	1384.72	23.38	357.72	214.38	114.46	23 53 35	384.7	31.35	332.20
71.58	23 30 30	1384.72	23.38	357.72	214.38	114.46	23 53 35	384.7	31.35	332.20
110.00	3 27 38	5922.71	18.51	277.66	211.74	119.23	5 6 21	4922.7	28.91	254.00

DIFFERENTIAL CORRECTIONS

TDE -.2676 TRA -.2491 TC3 -.7283 BAU .1362
RDE -.1637 RRA -.1065 RC3 .6145 FAU .19174
FDE .6601 FRA 5.9027 FC-15.5319 BSP 999
BDE .3309 BRA .2709 BC3 .9529 FSP 2319

MID-COURSE EXECUTION ACCURACY

SGT 868.3 SGR 541.8 SG3 1387.2
RRT .1487 RRF -.8250 RTF -.1590
SGB 1023.5 R23 -.7928 R13 -.2314
SG1 874.3 SG2 532.2 THA 8.45

ORBIT DETERMINATION ACCURACY

ST 26.4 SR 14.7 SS 57.2
CRT .9951 CRS .5079 CST .5634
LSA 60.0 MSA 24.0 SSA 1.0
EL1 30.2 EL2 1.3 ALF 29.11

LAUNCH DATE APR 30 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 6 1971

DISTANCE 462.718

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.300 GAL -1.36 AZL 92.48 HCA 153.17 SMA 184.79 ECC .18603 INC 2.4751 V1 29.569
RP 210.22 LAP -1.12 LOP 12.20 VP 23.334 GAP 7.26 AZP 87.79 TAL 351.29 TAP 144.46 RCA 130.41 APO 219.17 V2 26.085
RC 112.177 GL -25.26 GP 5.11 ZAL 111.80 ZAP 118.70 ETS 176.92 ZAE 160.56 ETE 164.19 ZAC 105.98 ETC 276.39 LVI -20.82

PLANETOCENTRIC CONIC

C3 10.680 VHL 3.268 DLA -33.60 RAL 345.86 RAD 6638.4 VEL 11.435 PTH 6.49 VHP 3.329 DPA -14.30 RAP 312.56 ECC 1.1758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 20 36	2281.55	3.56	57.26	199.98	137.47	18 58 38	1281.6	21.54	40.63
60.00	19 56 46	2025.55	9.69	40.05	205.81	129.31	20 30 32	1025.6	24.61	20.22
70.00	22 35 40	1556.66	19.53	9.00	212.64	118.59	23 1 37	556.7	29.58	345.00
71.06	23 28 40	1394.50	23.56	358.57	214.81	114.67	23 51 54	394.5	31.60	333.02
71.06	23 28 40	1394.50	23.56	358.57	214.81	114.67	23 51 54	394.5	31.60	333.02
71.06	23 28 40	1394.50	23.56	358.57	214.81	114.67	23 51 54	394.5	31.60	333.02
110.00	3 39 3	5891.52	19.53	275.83	212.64	118.59	5 17 14	4891.5	29.58	251.82

DIFFERENTIAL CORRECTIONS

TDE -.2892 TRA -.1991 TC3 -.8836 BAU .1559
RDE -.1594 RRA -.1226 RC3 .6411 FAU .19704
FDE .7060 FRA 6.1491 FC-15.9724 BSP 950
BDE .3302 BRA .2338 BC3 1.0916 FSP 2442

MID-COURSE EXECUTION ACCURACY

SGT 875.4 SGR 566.0 SG3 1440.7
RRT .0160 RRF -.8542 RTF -.0016
SGB 1042.4 R23 -.8542 R13 -.0114
SG1 875.4 SG2 565.8 THA 1.02

ORBIT DETERMINATION ACCURACY

ST 26.1 SR 14.5 SS 58.8
CRT .9967 CRS .5483 CST .5197
LSA 61.3 MSA 24.4 SSA .9
EL1 29.9 EL2 1.0 ALF 29.00

LAUNCH DATE APR 30 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 8 1971

DISTANCE 466.880

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.290 GAL -1.37 AZL 92.51 HCA 154.39 SMA 184.62 ECC .18530 INC 2.5114 V1 29.569
RP 210.45 LAP -1.09 LOP 13.43 VP 23.289 GAP 7.05 AZP 87.73 TAL 351.20 TAP 145.59 RCA 130.41 APO 218.83 V2 26.058
RC 114.307 GL -25.64 GP 5.42 ZAL 111.89 ZAP 116.64 ETS 176.98 ZAE 158.69 ETE 165.09 ZAC 106.39 ETC 276.21 LVI -20.85

PLANETOCENTRIC CONIC

C3 10.686 VHL 3.269 DLA -33.87 RAL 346.23 RAD 6638.4 VEL 11.436 PTH 6.49 VHP 3.273 DPA -14.22 RAP 311.65 ECC 1.1759

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 23 54	2274.88	3.9[illegible]	56.98	200.50	137.45	19 1 49	1274.9	21.85	40.30
60.00	20 1 15	2015.70	10.12	39.56	206.40	129.22	20 34 51	1015.7	24.98	19.64
70.00	22 50 25	1516.05	20.84	6.57	213.73	117.69	23 15 41	516.1	30.39	342.12
70.54	23 26 58	1404.41	23.74	359.42	215.28	114.90	23 50 23	404.4	31.85	333.85
70.54	23 26 58	1404.41	23.74	359.42	215.28	114.90	23 50 23	404.4	31.85	333.85
70.54	23 26 58	1404.41	23.74	359.42	215.28	114.90	23 50 23	404.4	31.85	333.85
110.00	3 53 47	5850.91	20.84	273.40	213.73	117.69	5 31 18	4850.9	30.39	248.94

DIFFERENTIAL CORRECTIONS

TDE -.2858 TRA -.1404 TC3-1.0247 BAU .1751
RDE -.1547 RRA -.1391 RC3 .6719 FAU .20321
FDE .7273 FRA 6.3616 FC-16.4610 BSP 910
BDE .3248 BRA .1976 BC3 1.2254 FSP 2530

MID-COURSE EXECUTION ACCURACY

SGT 887.2 SGR 593.9 SG3 1490.9
RRT -.1360 RRF -.8799 RTF [illegible]
SGB 1067.7 R23 .8424 R13 -.2589
SG1 893.7 SG2 584.1 THA 170.87

ORBIT DETERMINATION ACCURACY

ST 25.4 SR 14.3 SS 59.9
CRT .9868 CRS .5828 CST .4590
LSA 61.9 MSA 24.6 SSA .9
EL1 29.1 EL2 2.0 ALF 29.11

LAUNCH DATE APR 30 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 10 1971

DISTANCE 471.047

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.280 GAL -1.39 AZL 92.55 HCA 155.61 SMA 184.47 ECC .18465 INC 2.5510 V1 29.569
RP 210.70 LAP -1.05 LOP 14.65 VP 23.245 GAP 6.83 AZP 87.68 TAL 351.09 TAP 146.71 RCA 130.40 APO 218.53 V2 26.030
RC 116.460 GL -26.03 GP 5.76 ZAL 112.00 ZAP 114.55 ETS 177.04 ZAE 156.78 ETE 165.82 ZAC 106.82 ETC 276.02 LVI -20.89

PLANETOCENTRIC CONIC

C3 10.711 VHL 3.273 DLA -34.15 RAL 346.64 RAD 6638.4 VEL 11.437 PTH 6.49 VHP 3.222 DPA -14.12 RAP 310.71 ECC 1.1763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 27 24	2268.29	4.23	56.70	201.07	137.43	19 5 12	1268.3	22.16	39.97
60.00	20 6 1	2008.72	10.55	39.07	207.06	129.13	20 39 27	1005.7	25.34	19.05
70.00	23 20 25	1429.79	23.47	1.27	215.59	115.55	23 44 14	429.8	31.88	335.84
70.01	23 25 26	1414.46	23.91	.30	215.81	115.14	23 49 1	414 5	32.10	334.70
70.01	23 25 26	1414.46	23.91	.30	215.81	115.14	23 49 1	414.5	32.10	334.70
70.01	23 25 26	1414.46	23.91	.30	215.81	115.14	23 49 1	414.5	32.10	334.70
110.00	4 23 47	5764.64	23.47	268.09	215.59	115.55	5 59 52	4764.6	31.88	242.66

DIFFERENTIAL CORRECTIONS

TDE -.2834 TRA -.0802 TC3-1.1764 BAU .1963
RDE -.1504 RRA -.1573 RC3 .7035 FAU .20870
FDE .7590 FRA 6.5814 FC-16.8684 BSP 962
BDE .3208 BRA .1766 BC3 1.3707 FSP 2619

MID-COURSE EXECUTION ACCURACY

SGT 931.6 SGR 626.2 SG3 1539.5
RRT -.2871 RRF -.9022 RTF .3302
SGB 1122.5 R23 .7655 R13 -.4834
SG1 959.6 SG2 582.3 THA 162.42

ORBIT DETERMINATION ACCURACY

ST 25.0 SR 14.1 SS 61.2
CRT .9619 CRS .6225 CST .3938
LSA 62.8 MSA 24.8 SSA .8
EL1 28.5 EL2 3.4 ALF 28.96

LAUNCH DATE APR 30 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 475.218 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.272	GAL	-1.40	AZL	92.59	HCA	156.83	SMA	184.33	ECC	.18409	INC	2.5945	V1	29.569
RP	210.95	LAP	-1.02	LOP	15.87	VP	23.201	GAP	6.63	AZP	87.61	TAL	350.97	TAP	147.81	RCA	150.40	APO	218.26	V2	26.001
RC	118.637	GL	-26.45	GP	6.13	ZAL	112.11	ZAP	112.46	ETS	177.11	ZAE	154.81	ETE	166.42	ZAC	107.27	ETC	275.63	LVI	-20.95

PLANETOCENTRIC CONIC

C3	10.750	VHL	3.279	DLA	-34.44	RAL	347.07	RAD	6638.4	VEL	11.439	PTH	6.49	VHP	3.176	DPA	-13.98	RAP	309.75	ECC	1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 31 7	2261.69	4.56	56.42	201.70	137.41	19 8 49	1261.7	22.47	39.65
60.00	20 11 7	1995.42	10.99	38.56	207.79	129.02	20 44 23	995.4	25.72	18.44
69.48	23 24 0	1424.89	24.07	1.20	216.40	115.40	23 47 45	424.9	32.36	335.58
69.48	23 24 0	1424.89	24.07	1.20	216.40	115.40	23 47 45	424.9	32.36	335.58
69.48	23 24 0	1424.89	24.07	1.20	216.40	115.40	23 47 45	424.9	32.36	335.58
69.48	23 24 0	1424.89	24.07	1.20	216.40	115.40	23 47 45	424.9	32.36	335.58
69.48	23 24 0	1424.89	24.07	1.20	216.40	115.40	23 47 45	424.9	32.36	335.58

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2810	TRA	-.0163	TC3-1.3315	BAU .2187	SGT	1002.3	SGR	663.0	SG3	1584.9	ST	24.6	SR	14.0	SS	62.4
RDE	-.1464	RRA	-.1768	RC3 .7373	FAU .21392	RRT	-.4267	RRF	-.9214	RTF	.4725	CRT	.9185	CRS	.6637	CST	.3200
FDE	.7919	FRA	6.7899	FC-17.2272	BSP 1100	SGB	1201.7	R23	.6743	R13	-.6340	LSA	63.7	MSA	25.1	SSA	.8
BDE	.3168	BRA	.1776	BC3 1.5220	FSP 2705	SG1	1059.4	SG2	567.3	THA	157.44	EL1	27.9	EL2	4.9	ALF	28.55

LAUNCH DATE APR 30 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 479.392 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.265	GAL	-1.42	AZL	92.64	HCA	158.05	SMA	184.21	ECC	.18361	INC	2.6423	V1	29.569
RP	211.20	LAP	-.99	LOP	17.09	VP	23.158	GAP	6.42	AZP	87.55	TAL	350.84	TAP	148.89	RCA	150.39	APO	218.03	V2	25.972
RC	120.836	GL	-26.89	GP	6.52	ZAL	112.23	ZAP	110.34	ETS	177.19	ZAE	152.81	ETE	166.90	ZAC	107.76	ETC	275.64	LVI	-21.02

PLANETOCENTRIC CONIC

C3	10.807	VHL	3.287	DLA	-34.74	RAL	347.55	RAD	6638.5	VEL	11.441	PTH	6.49	VHP	3.135	DPA	-13.81	RAP	308.77	ECC	1.1779

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 35 7	2254.96	4.89	56.14	202.39	137.38	19 12 42	1255.0	22.78	39.31
60.00	20 16 38	1984.63	11.45	38.02	208.59	128.91	20 49 43	984.6	26.11	17.79
68.93	23 22 39	1435.79	24.24	2.14	217.05	115.69	23 46 35	435.8	32.62	336.51
68.93	23 22 39	1435.79	24.24	2.14	217.05	115.69	23 46 35	435.8	32.62	336.51
68.93	23 22 39	1435.79	24.24	2.14	217.05	115.69	23 46 35	435.8	32.62	336.51
68.93	23 22 39	1435.79	24.24	2.14	217.05	115.69	23 46 35	435.8	32.62	336.51
68.93	23 22 39	1435.79	24.24	2.14	217.05	115.69	23 46 35	435.8	32.62	336.51

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2789	TRA	.0501	TC3-1.4905	BAU .2426	SGT	1099.1	SGR	704.9	SG3	1627.4	ST	24.4	SR	14.0	SS	63.5
RDE	-.1426	RRA	-.1982	RC3 .7732	FAU .21879	RRT	-.5449	RRF	-.9375	RTF	.5881	CRT	.8541	CRS	.7048	CST	.2375
FDE	.8209	FRA	6.9927	FC-17.5264	BSP 1304	SGB	1305.7	R23	.5957	R13	-.7298	LSA	64.6	MSA	25.4	SSA	.8
BDE	.3132	BRA	.2044	BC3 1.6791	FSP 2785	SG1	1185.0	SG2	548.2	THA	155.05	EL1	27.4	EL2	6.5	ALF	27.72

LAUNCH DATE APR 30 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 483.570 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.259	GAL	-1.44	AZL	92.70	HCA	159.27	SMA	184.11	ECC	.18320	INC	2.6954	V1	29.569
RP	211.46	LAP	-.95	LOP	18.30	VP	23.116	GAP	6.22	AZP	87.48	TAL	350.69	TAP	149.95	RCA	150.38	APO	217.84	V2	25.942
RC	123.058	GL	-27.37	GP	6.96	ZAL	112.36	ZAP	108.23	ETS	177.29	ZAE	150.78	ETE	167.28	ZAC	108.29	ETC	275.44	LVI	-21.13

PLANETOCENTRIC CONIC

C3	10.832	VHL	3.299	DLA	-35.07	RAL	348.06	RAD	6638.5	VEL	11.444	PTH	6.49	VHP	3.099	DPA	-13.61	RAP	307.76	ECC	1.1791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 39 27	2248.00	5.24	55.85	203.15	137.36	19 16 55	1248.0	23.10	38.97
60.00	20 22 41	1973.08	11.94	37.44	209.48	128.78	20 55 34	973.1	26.52	17.09
68.35	23 21 22	1447.29	24.41	3.14	217.77	116.00	23 45 29	447.3	32.90	337.49
68.35	23 21 22	1447.29	24.41	3.14	217.77	116.00	23 45 29	447.3	32.90	337.49
68.35	23 21 22	1447.29	24.41	3.14	217.77	116.00	23 45 29	447.3	32.90	337.49
68.35	23 21 22	1447.29	24.41	3.14	217.77	116.00	23 45 29	447.3	32.90	337.49
68.35	23 21 22	1447.29	24.41	3.14	217.77	116.00	23 45 29	447.3	32.90	337.49

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2771	TRA	.1199	TC3-1.6511	BAU .2676	SGT	1217.8	SGR	752.2	SG3	1666.1	ST	24.4	SR	14.0	SS	64.6
RDE	-.1393	RRA	-.2215	RC3 .8111	FAU .22310	RRT	-.6398	RRF	-.9509	RTF	.6178	CRT	.7677	CRS	.7472	CST	.1913
FDE	.8578	FRA	7.1857	FC-17.7488	BSP 1560	SGB	1431.4	R23	.5317	R13	-.7936	LSA	65.6	MSA	25.7	SSA	.7
BDE	.3101	BRA	.2518	BC3 1.8396	FSP 2859	SG1	1329.9	SG2	529.4	THA	154.02	EL1	27.0	EL2	8.1	ALF	26.39

LAUNCH DATE APR 30 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC DISTANCE 487.750 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.253	GAL	-1.46	AZL	92.75	HCA	160.48	SMA	184.02	ECC	.18187	INC	2.7544	V1	29.569
RP	211.73	LAP	-.92	LOP	19.51	VP	23.074	GAP	6.02	AZP	87.40	TAL	350.52	TAP	151.00	RCA	150.37	APO	217.67	V2	25.911
RC	125.302	GL	-27.88	GP	7.44	ZAL	112.50	ZAP	106.11	ETS	177.40	ZAE	148.72	ETE	167.57	ZAC	108.86	ETC	275.24	LVI	-21.27

PLANETOCENTRIC CONIC

C3	10.978	VHL	3.313	DLA	-35.42	RAL	348.62	RAD	6638.5	VEL	11.448	PTH	6.50	VHP	3.067	DPA	-13.35	RAP	306.75	ECC	1.1807

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 44 11	2240.63	5.61	55.54	204.00	137.32	19 21 31	1240.6	23.44	38.60
60.00	20 29 22	1980.45	12.48	36.81	210.47	128.64	21 2 3	980.4	26.97	16.32
67.73	23 20 5	1459.62	24.58	4.21	218.57	116.34	23 44 24	459.6	33.20	338.55
67.73	23 20 5	1459.62	24.58	4.21	218.57	116.34	23 44 24	459.6	33.20	338.55
67.73	23 20 5	1459.62	24.58	4.21	218.57	116.34	23 44 24	459.6	33.20	338.55
67.73	23 20 5	1459.62	24.58	4.21	218.57	116.34	23 44 24	459.6	33.20	338.55
67.73	23 20 5	1459.62	24.58	4.21	218.57	116.34	23 44 24	459.6	33.20	338.55

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2756	TRA	.1924	TC3-1.8122	BAU .2939	SGT	1355.0	SGR	805.5	SG3	1700.6	ST	24.7	SR	14.2	SS	65.5
RDE	-.1362	RRA	-.2468	RC3 .8524	FAU .22725	RRT	-.7145	RRF	-.9620	RTF	.7464	CRT	.6602	CRS	.7873	CST	.0595
FDE	.8881	FRA	7.3621	FC-17.9215	BSP 1849	SGB	1576.3	R23	.4787	R13	-.8386	LSA	66.5	MSA	26.0	SSA	.7
BDE	.3074	BRA	.3130	BC3 2.0027	FSP 2922	SG1	1490.8	SG2	512.2	THA	153.64	EL1	26.7	EL2	9.8	ALF	24.29

LAUNCH DATE APR 30 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC DISTANCE 491.932 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.249 GAL -1.49 AZL 92.82 HCA 161.68 SMA 183.95 ECC .18261 INC 2.8211 V1 29.569
RP 212.01 LAP -.89 LOP 20.72 VP 23.033 GAP 5.83 AZP 87.32 TAL 350.35 TAP 152.03 RCA 150.36 APO 217.54 V2 25.880
RC 127.566 GL -28.45 GP 7.97 ZAL 112.64 ZAP 103.99 ETS 177.53 ZAE 146.64 ETE 167.79 ZAC 109.48 ETC 275.04 LVI -21.46

PLANETOCENTRIC CONIC

C3 11.095 VHL 3.331 DLA -35.80 RAL 349.22 RAD 6638.6 VEL 11.453 PTH 6.50 VHP 3.041 DPA -13.04 RAP 308.72 ECC 1.1826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 49 24	2232.68	6.01	55.20	204.94	137.29	19 26 37	1232.7	28.31	38.19
60.00	20 36 54	1946.29	13.08	36.09	211.58	128.47	21 9 21	946.3	27.46	15.45
67.07	23 18 47	1472.88	24.76	5.36	219.45	116.73	23 43 20	472.9	33.52	339.69
67.07	23 18 47	1472.88	24.76	5.36	219.45	116.73	23 43 20	472.9	33.52	339.69
67.07	23 18 47	1472.88	24.76	5.36	219.45	116.73	23 43 20	472.9	33.52	339.69
67.07	23 18 47	1472.88	24.76	5.36	219.45	116.73	23 43 20	472.9	33.52	339.69
67.07	23 18 47	1472.88	24.76	5.36	219.45	116.73	23 43 20	472.9	33.52	339.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2741 TRA .2686 TC3-1.9701 BAU .3210 SGT 1506.5 SGR 865.7 SG3 1730.6 ST 25.2 SR 14.5 SS 66.5
RDE -.1340 RRA -.2750 RC3 .8957 FAU .23055 RRT -.7720 RRF -.9709 RTF .7977 CRT .5352 CRS .8269 CST -.0302
FDE .9320 FRA 7.5298 FC-17.9891 BSP 2175 SGB 1737.5 R23 .4350 R13 -.8713 LSA 67.6 MSA 26.4 SSA .6
BDE .3051 BRA .3844 BC3 2.1641 FSP 2985 SG1 1664.6 SG2 498.0 THA 153.52 EL1 26.6 EL2 11.6 ALF 21.36

LAUNCH DATE APR 30 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 496.116 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.245 GAL -1.51 AZL 92.90 HCA 162.89 SMA 183.89 ECC .18241 INC 2.8964 V1 29.569
RP 212.29 LAP -.85 LOP 21.93 VP 22.992 GAP 5.64 AZP 87.23 TAL 350.15 TAP 153.04 RCA 150.34 APO 217.43 V2 25.848
RC 129.850 GL -29.07 GP 8.57 ZAL 112.77 ZAP 101.88 ETS 177.69 ZAE 144.53 ETE 167.92 ZAC 110.16 ETC 274.84 LVI -21.70

PLANETOCENTRIC CONIC

C3 11.239 VHL 3.352 DLA -36.23 RAL 349.88 RAD 6638.7 VEL 11.460 PTH 6.51 VHP 3.019 DPA -12.66 RAP 304.68 ECC 1.1850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 55 14	2223.89	6.45	54.83	205.99	137.24	19 32 18	1223.9	24.21	37.75
60.00	20 45 32	1929.99	13.77	35.27	212.85	128.26	21 17 42	930.0	28.03	14.44
66.34	23 17 28	1487.33	24.95	6.62	220.44	117.17	23 42 15	487.3	33.87	340.95
66.34	23 17 28	1487.33	24.95	6.62	220.44	117.17	23 42 15	487.3	33.87	340.95
66.34	23 17 28	1487.33	24.95	6.62	220.44	117.17	23 42 15	487.3	33.87	340.95
66.34	23 17 28	1487.33	24.95	6.62	220.44	117.17	23 42 15	487.3	33.87	340.95
66.34	23 17 28	1487.33	24.95	6.62	220.44	117.17	23 42 15	487.3	33.87	340.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2733 TRA .3474 TC3-2.1270 BAU .3496 SGT 1671.5 SGR 933.0 SG3 1754.6 ST 25.9 SR 14.9 SS 67.3
RDE -.1319 RRA -.3060 RC3 .9426 FAU .23341 RRT -.8164 RRF -.9780 RTF .8364 CRT .3978 CRS .8620 CST -.1204
FDE .9649 FRA 7.6735 FC-17.9803 BSP 2517 SGB 1914.3 R23 .3984 R13 -.8956 LSA 68.6 MSA 26.8 SSA .6
BDE .3035 BRA .4630 BC3 2.3265 FSP 3030 SG1 1851.5 SG2 486.4 THA 153.53 EL1 26.8 EL2 13.2 ALF 17.19

LAUNCH DATE APR 30 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 500.301 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.242 GAL -1.54 AZL 92.98 HCA 164.09 SMA 183.84 ECC .18228 INC 2.9827 V1 29.569
RP 212.57 LAP -.82 LOP 23.13 VP 22.951 GAP 5.45 AZP 87.13 TAL 349.95 TAP 154.04 RCA 150.33 APO 217.35 V2 25.815
RC 132.153 GL -29.77 GP 9.24 ZAL 112.90 ZAP 99.78 ETS 177.87 ZAE 142.41 ETE 167.98 ZAC 110.91 ETC 274.64 LVI -22.01

PLANETOCENTRIC CONIC

C3 11.412 VHL 3.378 DLA -36.72 RAL 350.61 RAD 6638.8 VEL 11.467 PTH 6.52 VHP 3.002 DPA -12.19 RAP 303.64 ECC 1.1878

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 1 50	2213.97	6.94	54.41	207.18	137.19	19 38 44	1214.0	24.67	37.24
60.00	20 55 38	1910.68	14.58	34.28	214.32	128.00	21 27 28	910.7	28.68	13.23
65.54	23 16 4	1503.18	25.16	8.02	221.56	117.67	23 41 7	503.2	34.26	342.34
65.54	23 16 4	1503.18	25.16	8.02	221.56	117.67	23 41 7	503.2	34.26	342.34
65.54	23 16 4	1503.18	25.16	8.02	221.56	117.67	23 41 7	503.2	34.26	342.34
65.54	23 16 4	1503.18	25.16	8.02	221.56	117.67	23 41 7	503.2	34.26	342.34
65.54	23 16 4	1503.18	25.16	8.02	221.56	117.67	23 41 7	503.2	34.26	342.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2727 TRA .4297 TC3-2.2771 BAU .3789 SGT 1845.9 SGR 1009.8 SG3 1774.0 ST 26.9 SR 15.6 SS 68.2
RDE -.1311 RRA -.3414 RC3 .9913 FAU .23513 RRT -.8499 RRF -.9837 RTF .8549 CRT .2553 CRS .8943 CST -.2029
FDE 1.0128 FRA 7.8147 FC-17.8375 BSP 2887 SGB 2104.1 R23 .3685 R13 -.9137 LSA 69.9 MSA 27.3 SSA .5
BDE .3025 BRA .5488 BC3 2.4835 FSP 3072 SG1 2048.7 SG2 479.4 THA 153.50 EL1 27.4 EL2 14.8 ALF 11.93

LAUNCH DATE APR 30 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 504.487 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.240 GAL -1.58 AZL 93.08 HCA 165.29 SMA 183.81 ECC .18221 INC 3.0822 V1 29.569
RP 212.86 LAP -.78 LOP 24.32 VP 22.911 GAP 5.27 AZP 87.02 TAL 349.73 TAP 155.02 RCA 150.31 APO 217.30 V2 25.782
RC 134.475 GL -30.55 GP 10.01 ZAL 113.02 ZAP 97.70 ETS 178.08 ZAE 140.28 ETE 167.97 ZAC 111.75 ETC 274.44 LVI -22.40

PLANETOCENTRIC CONIC

C3 11.621 VHL 3.409 DLA -37.27 RAL 351.41 RAD 6638.9 VEL 11.476 PTH 6.53 VHP 2.990 DPA -11.63 RAP 302.60 ECC 1.1913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 9 25	2202.49	7.52	53.92	208.55	137.12	19 46 8	1202.5	25.19	36.64
60.00	21 7 46	1886.92	15.57	33.06	216.04	127.65	21 39 13	886.9	29.47	11.71
64.64	23 14 33	1520.85	25.39	9.58	222.81	118.26	23 39 53	520.9	34.70	343.91
64.64	23 14 33	1520.85	25.39	9.58	222.81	118.26	23 39 53	520.9	34.70	343.91
64.64	23 14 33	1520.85	25.39	9.58	222.81	118.26	23 39 53	520.9	34.70	343.91
64.64	23 14 33	1520.85	25.39	9.58	222.81	118.26	23 39 53	520.9	34.70	343.91
64.64	23 14 33	1520.85	25.39	9.58	222.81	118.26	23 39 53	520.9	34.70	343.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2731 TRA .5150 TC3-2.4198 BAU .4096 SGT 2028.8 SGR 1096.2 SG3 1785.4 ST 28.3 SR 16.3 SS 68.8
RDE -.1305 RRA -.3803 RC3 1.0456 FAU .23658 RRT -.8765 RRF -.9861 RTF .8874 CRT .1136 CRS .9210 CST -.2812
FDE 1.0474 FRA 7.9160 FC-17.6238 BSP 3268 SGB 2306.0 R23 .3415 R13 -.9283 LSA 70.9 MSA 27.8 SSA .5
BDE .3026 BRA .6402 BC3 2.6361 FSP 3095 SG1 2256.7 SG2 474.4 THA 153.39 EL1 28.4 EL2 16.2 ALF 5.57

LAUNCH DATE APR 30 1971 FLIGHT TIME 212.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 508.674 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.239	GAL	-1.61	AZL	93.20	HCA	166.48	SMA	183.78	ECC	.18220	INC	3.1984	V1	29.569
RP	213.16	LAP	-.75	LOP	25.52	VP	22.671	GAP	5.08	AZP	86.89	TAL	349.50	TAP	155.99	RCA	150.30	APO	217.27	V2	25.749
RC	136.814	GL	-31.45	GP	10.89	ZAL	113.11	ZAP	95.65	ETS	178.33	ZAE	138.13	ETE	167.87	ZAC	112.70	ETC	274.25	LVI	-22.91

PLANETOCENTRIC CONIC

C3	11.876	VHL	3.446	DLA	-37.92	RAL	352.30	RAD	6639.0	VEL	11.487	PTH	6.54	VHP	2.984	DPA	-10.94	RAP	301.56	ECC	1.1954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 18 17	2188.91	8.19	53.34	210.14	137.03	19 54 46	1188.9	25.80	35.94
60.00	21 22 55	1856.36	16.84	31.47	218.12	127.17	21 53 52	856.4	30.46	9.72
63.61	23 12 54	1540.59	25.64	11.35	224.25	118.95	23 38 35	540.6	35.21	345.69
63.61	23 12 54	1540.59	25.64	11.35	224.25	118.95	23 38 35	540.6	35.21	345.69
63.61	23 12 54	1540.59	25.64	11.35	224.25	118.95	23 38 35	540.6	35.21	345.69
63.61	23 12 54	1540.59	25.64	11.35	224.25	118.95	23 38 35	540.6	35.21	345.69
63.61	23 12 54	1540.59	25.64	11.35	224.25	118.95	23 38 35	540.6	35.21	345.69

DIFFERENTIAL CORRECTIONS

TDE	-.2750	TRA	.6028	TC3	-2.5541	BAU	.4418
RDE	-.1314	RRA	-.4252	RC3	1.1041	FAU	.23712
FDE	1.0895	FRA	7.9999	FC	-17.2858	BSP	3659
BDE	.3048	BRA	.7376	BC3	2.7826	FSP	3106

MID-COURSE EXECUTION ACCURACY

SGT	2218.6	SGR	1195.7	SG3	1790.6
RRT	-.8965	RRF	-.9915	RTF	.9040
SGB	2520.3	R23	.3194	R13	-.9393
SG1	2475.1	SG2	474.9	THA	153.14

ORBIT DETERMINATION ACCURACY

ST	29.9	SR	17.4	SS	69.4
CRT	-.0182	CRS	.9435	CST	-.3475
LSA	72.1	MSA	28.4	SSA	.4
EL1	29.9	EL2	17.4	ALF	179.08

LAUNCH DATE APR 30 1971 FLIGHT TIME 214.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 512.861 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.238	GAL	-1.65	AZL	93.34	HCA	167.67	SMA	183.77	ECC	.18224	INC	3.3366	V1	29.569
RP	213.46	LAP	-.71	LOP	26.71	VP	22.632	GAP	4.90	AZP	86.74	TAL	349.26	TAP	156.94	RCA	150.28	APO	217.26	V2	25.714
RC	139.171	GL	-32.50	GP	11.92	ZAL	113.17	ZAP	93.62	ETS	178.62	ZAE	135.97	ETE	167.68	ZAC	113.80	ETC	274.07	LVI	-23.85

PLANETOCENTRIC CONIC

C3	12.187	VHL	3.491	DLA	-38.68	RAL	353.32	RAD	6639.2	VEL	11.501	PTH	6.55	VHP	2.984	DPA	-10.10	RAP	300.51	ECC	1.2006

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 28 51	2172.43	9.01	52.64	212.01	136.92	20 5 4	1172.4	26.54	35.07
60.00	21 43 2	1814.07	18.56	29.22	220.74	126.44	22 13 16	814.1	31.77	6.90
62.43	23 11 8	1562.87	25.93	13.37	225.92	119.78	23 37 11	562.9	35.80	347.73
62.43	23 11 8	1562.87	25.93	13.37	225.92	119.78	23 37 11	562.9	35.80	347.73
62.43	23 11 8	1562.87	25.93	13.37	225.92	119.78	23 37 11	562.9	35.80	347.73
62.43	23 11 8	1562.87	25.93	13.37	225.92	119.78	23 37 11	562.9	35.80	347.73
62.43	23 11 8	1562.87	25.93	13.37	225.92	119.78	23 37 11	562.9	35.80	347.73

DIFFERENTIAL CORRECTIONS

TDE	-.2770	TRA	.6953	TC3	-2.6696	BAU	.4747
RDE	-.1344	RRA	-.4773	RC3	1.1663	FAU	.23648
FDE	1.1446	FRA	8.0591	FC	-16.7949	BSP	4084
BDE	.3079	BRA	.8434	BC3	2.9133	FSP	3111

MID-COURSE EXECUTION ACCURACY

SGT	2412.1	SGR	1311.0	SG3	1787.7
RRT	-.9122	RRF	-.9941	RTF	.9171
SGB	2745.3	R23	.2991	R13	-.9484
SG1	2703.2	SG2	479.4	THA	152.70

ORBIT DETERMINATION ACCURACY

ST	31.7	SR	18.7	SS	70.0
CRT	-.1397	CRS	.9617	CST	-.4051
LSA	73.5	MSA	29.1	SSA	.4
EL1	31.9	EL2	18.4	ALF	172.91

LAUNCH DATE APR 30 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 517.048 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.238	GAL	-1.69	AZL	93.50	HCA	168.86	SMA	183.77	ECC	.18234	INC	3.5033	V1	29.569
RP	213.77	LAP	-.68	LOP	27.90	VP	22.793	GAP	4.72	AZP	86.56	TAL	349.01	TAP	157.87	RCA	150.26	APO	217.28	V2	25.680
RC	141.545	GL	-33.73	GP	13.14	ZAL	113.18	ZAP	91.64	ETS	178.98	ZAE	133.78	ETE	167.38	ZAC	115.08	ETC	273.90	LVI	-24.38

PLANETOCENTRIC CONIC

C3	12.575	VHL	3.546	DLA	-39.60	RAL	354.49	RAD	6639.3	VEL	11.517	PTH	6.56	VHP	2.992	DPA	-9.06	RAP	299.47	ECC	1.2070

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 41 48	2151.90	10.03	51.75	214.29	136.76	20 17 40	1151.9	27.46	33.96
60.00	22 13 36	1745.55	21.29	25.48	224.37	125.06	22 42 42	745.5	33.73	2.16
61.05	23 9 15	1588.22	26.25	15.70	227.88	120.78	23 35 43	588.2	36.50	350.10
61.05	23 9 15	1588.22	26.25	15.70	227.88	120.78	23 35 43	588.2	36.50	350.10
61.05	23 9 15	1588.22	26.25	15.70	227.88	120.78	23 35 43	588.2	36.50	350.10
61.05	23 9 15	1588.22	26.25	15.70	227.88	120.78	23 35 43	588.2	36.50	350.10
61.05	23 9 15	1588.22	26.25	15.70	227.88	120.78	23 35 43	588.2	36.50	350.10

DIFFERENTIAL CORRECTIONS

TDE	-.2808	TRA	.7912	TC3	-2.7675	BAU	.5095
RDE	-.1387	RRA	-.5379	RC3	1.2355	FAU	.23500
FDE	1.1883	FRA	8.0764	FC	-16.1788	BSP	4521
BDE	.3132	BRA	.9368	BC3	3.0307	FSP	3091

MID-COURSE EXECUTION ACCURACY

SGT	2609.7	SGR	1445.8	SG3	1775.2
RRT	-.9248	RRF	-.9960	RTF	.9178
SGB	2983.4	R23	.2801	R13	-.9560
SG1	2943.3	SG2	487.6	THA	152.04

ORBIT DETERMINATION ACCURACY

ST	33.8	SR	20.3	SS	70.3
CRT	-.2484	CRS	.9752	CST	-.4561
LSA	74.9	MSA	29.9	SSA	.3
EL1	34.4	EL2	19.4	ALF	167.45

LAUNCH DATE APR 30 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 521.234 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.239	GAL	-1.73	AZL	93.71	HCA	170.05	SMA	183.78	ECC	.18249	INC	3.7083	V1	29.569
RP	214.08	LAP	-.64	LOP	29.08	VP	22.754	GAP	4.55	AZP	86.35	TAL	348.75	TAP	158.79	RCA	150.24	APO	217.32	V2	25.645
RC	143.036	GL	-35.21	GP	14.61	ZAL	113.11	ZAP	89.71	ETS	179.41	ZAE	131.58	ETE	166.96	ZAC	116.61	ETC	273.74	LVI	-25.44

PLANETOCENTRIC CONIC

C3	13.069	VHL	3.615	DLA	-40.71	RAL	355.86	RAD	6639.6	VEL	11.539	PTH	6.58	VHP	3.008	DPA	-7.75	RAP	298.42	ECC	1.2151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 58 9	2125.46	11.34	50.61	217.13	136.52	20 33 35	1125.5	28.62	32.52
59.41	23 7 16	1617.48	26.61	18.42	230.23	122.02	23 34 13	617.5	37.32	352.90
59.41	23 7 16	1617.48	26.61	18.42	230.23	122.02	23 34 13	617.5	37.32	352.90
59.41	23 7 16	1617.48	26.61	18.42	230.23	122.02	23 34 13	617.5	37.32	352.90
59.41	23 7 16	1617.48	26.61	18.42	230.23	122.02	23 34 13	617.5	37.32	352.90
59.41	23 7 16	1617.48	26.61	18.42	230.23	122.02	23 34 13	617.5	37.32	352.90
59.41	23 7 16	1617.48	26.61	18.42	230.23	122.02	23 34 13	617.5	37.32	352.90

DIFFERENTIAL CORRECTIONS

TDE	-.2867	TRA	.8907	TC3	-2.8418	BAU	.5469
RDE	-.1464	RRA	-.6101	RC3	1.3124	FAU	.23261
FDE	1.2418	FRA	8.0472	FC	-15.4091	BSP	4971
BDE	.3219	BRA	1.0796	BC3	3.1302	FSP	3048

MID-COURSE EXECUTION ACCURACY

SGT	2810.0	SGR	1606.7	SG3	1751.7
RRT	-.9346	RRF	-.9974	RTF	.9360
SGB	3236.9	R23	.2624	R13	-.9623
SG1	3197.7	SG2	502.0	THA	151.10

ORBIT DETERMINATION ACCURACY

ST	36.1	SR	22.4	SS	70.5
CRT	-.3397	CRS	.9851	CST	-.4961
LSA	76.4	MSA	30.9	SSA	.3
EL1	37.3	EL2	20.4	ALF	162.79

LAUNCH DATE APR 30 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 525.420 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.240 GAL -1.77 AZL 93.97 HCA 171.23 SMA 183.79 ECC .18269 INC 3.9676 V1 29.569
RP 214.39 LAP -.60 LOP 30.26 VP 22.715 GAP 4.37 AZP 86.08 TAL 348.47 TAP 159.70 RCA 150.22 APO 217.37 V2 25.609
RC 146.344 GL -37.02 GP 16.43 ZAL 112.94 ZAP 87.84 ETS 179.94 ZAE 129.32 ETE 166.37 ZAC 118.48 ETC 273.61 LVI -26.82

PLANETOCENTRIC CONIC

C3 13.718 VHL 3.704 DLA -42.08 RAL 357.52 RAD 6639.9 VEL 11.566 PTH 6.61 VHP 3.036 DPA -6.10 RAP 297.38 ECC 1.2258

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 19 47	2089.87	13.10	49.04	220.84	136.16	20 54 37	1089.9	30.15	30.51
57.44	23 5 22	1651.50	27.01	21.66	233.13	123.58	23 32 54	651.5	38.30	356.25
57.44	23 5 22	1651.50	27.01	21.66	233.13	123.58	23 32 54	651.5	38.30	356.25
57.44	23 5 22	1651.50	27.01	21.66	233.13	123.58	23 32 54	651.5	38.30	356.25
57.44	23 5 22	1651.50	27.01	21.66	233.13	123.58	23 32 54	651.5	38.30	356.25
57.44	23 5 22	1651.50	27.01	21.66	233.13	123.58	23 32 54	651.5	38.30	356.25
57.44	23 5 22	1651.50	27.01	21.66	233.13	123.58	23 32 54	651.5	38.30	356.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2918 TRA .9974 TC3-2.8761 BAU .5860 SGT 3010.7 SGR 1802.1 SG3 1714.2 ST 38.6 SR 25.2 SS 70.8
RDE -.1611 RRA -.6990 RC3 1.3919 FAU .22796 RRT -.9423 RRF -.9984 RTF .9426 CRT -.4160 CRS .9919 CST -.5275
FDE 1.3281 FRA 7.9688 FC-14.3866 BSP 5484 SGB 3508.8 R23 .2455 R13 -.9677 LSA 78.3 MSA 31.9 SSA .2
BDE .3334 BRA 1.2180 BC3 3.1952 FSP 2995 SG1 3469.6 SG2 523.4 THA 149.82 EL1 40.7 EL2 21.8 ALF 158.31

LAUNCH DATE APR 30 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 529.604 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.241 GAL -1.82 AZL 94.31 HCA 172.40 SMA 183.82 ECC .18294 INC 4.3046 V1 29.569
RP 214.72 LAP -.57 LOP 31.44 VP 22.676 GAP 4.20 AZP 85.73 TAL 348.18 TAP 160.59 RCA 150.19 APO 217.45 V2 25.573
RC 148.770 GL -39.27 GP 18.73 ZAL 112.61 ZAP 86.06 ETS 180.61 ZAE 126.99 ETE 165.57 ZAC 120.82 ETC 273.50 LVI -28.65

PLANETOCENTRIC CONIC

C3 14.607 VHL 3.822 DLA -43.80 RAL 359.59 RAD 6640.3 VEL 11.604 PTH 6.65 VHP 3.081 DPA -3.96 RAP 296.26 ECC 1.2404

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 50 29	2038.23	15.62	46.73	226.01	135.53	21 24 27	1038.2	32.31	27.48
55.04	23 3 53	1691.70	27.43	25.55	236.82	125.60	23 32 4	691.7	39.48	.37
55.04	23 3 53	1691.70	27.43	25.55	236.82	125.60	23 32 4	691.7	39.48	.37
55.04	23 3 53	1691.70	27.43	25.55	236.82	125.60	23 32 4	691.7	39.48	.37
55.04	23 3 53	1691.70	27.43	25.55	236.82	125.60	23 32 4	691.7	39.48	.37
55.04	23 3 53	1691.70	27.43	25.55	236.82	125.60	23 32 4	691.7	39.48	.37
55.04	23 3 53	1691.70	27.43	25.55	236.82	125.60	23 32 4	691.7	39.48	.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3036 TRA 1.1038 TC3-2.8814 BAU .6332 SGT 3211.6 SGR 2041.5 SG3 1654.7 ST 41.4 SR 28.6 SS 70.4
RDE -.1823 RRA -.8058 RC3 1.4866 FAU .22292 RRT -.9481 RRF -.9990 RTF .9475 CRT -.4710 CRS .9962 CST -.5460
FDE 1.4067 FRA 7.7683 FC-13.2118 BSP 5943 SGB 3805.5 R23 .2293 R13 -.9724 LSA 79.9 MSA 33.3 SSA .2
BDE .3542 BRA 1.3666 BC3 3.2423 FSP 2866 SG1 3765.0 SG2 553.9 THA 148.16 EL1 44.5 EL2 23.5 ALF 154.31

LAUNCH DATE APR 30 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 533.786 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.243 GAL -1.87 AZL 94.76 HCA 173.58 SMA 183.86 ECC .18323 INC 4.7645 V1 29.569
RP 215.04 LAP -.53 LOP 32.61 VP 22.638 GAP 4.03 AZP 85.27 TAL 347.89 TAP 161.46 RCA 150.17 APO 217.54 V2 25.536
RC 151.211 GL -42.17 GP 21.73 ZAL 112.04 ZAP 84.41 ETS 181.47 ZAE 124.52 ETE 164.47 ZAC 123.86 ETC 273.43 LVI -31.12

PLANETOCENTRIC CONIC

C3 15.901 VHL 3.988 DLA -46.01 RAL 2.32 RAD 6641.0 VEL 11.660 PTH 6.70 VHP 3.154 DPA -1.11 RAP 295.12 ECC 1.2617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 41 15	1948.40	19.93	42.55	234.18	134.14	22 13 43	948.4	35.85	21.84
52.06	23 3 26	1740.27	27.81	30.34	241.70	128.26	23 32 27	740.3	40.86	5.57
52.06	23 3 26	1740.27	27.81	30.34	241.70	128.26	23 32 27	740.3	40.86	5.57
52.06	23 3 26	1740.27	27.81	30.34	241.70	128.26	23 32 27	740.3	40.86	5.57
52.06	23 3 26	1740.27	27.81	30.34	241.70	128.26	23 32 27	740.3	40.86	5.57
52.06	23 3 26	1740.27	27.81	30.34	241.70	128.26	23 32 27	740.3	40.86	5.57
52.06	23 3 26	1740.27	27.81	30.34	241.70	128.26	23 32 27	740.3	40.86	5.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2998 TRA 1.2321 TC3-2.7918 BAU .6797 SGT 3411.8 SGR 2352.7 SG3 1572.3 ST 44.0 SR 33.9 SS 71.0
RDE -.2310 RRA -.9522 RC3 1.5580 FAU .21120 RRT -.9524 RRF -.9995 RTF .9511 CRT -.5212 CRS .9987 CST -.5643
FDE 1.6089 FRA 7.5149 FC-11.4986 BSP 6644 SGB 4144.3 R23 .2124 R13 -.9766 LSA 83.3 MSA 34.6 SSA .2
BDE .3785 BRA 1.5572 BC3 3.1971 FSP 2763 SG1 4101.2 SG2 596.4 THA 145.88 EL1 49.2 EL2 25.9 ALF 148.38

LAUNCH DATE APR 30 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 537.966 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.246 GAL -1.92 AZL 95.43 HCA 174.74 SMA 183.90 ECC .18357 INC 5.4238 V1 29.569
RP 215.37 LAP -.50 LOP 33.78 VP 22.600 GAP 3.86 AZP 84.60 TAL 347.58 TAP 162.33 RCA 150.14 APO 217.66 V2 25.499
RC 153.669 GL -45.99 GP 25.77 ZAL 111.09 ZAP 82.97 ETS 182.61 ZAE 121.82 ETE 162.98 ZAC 127.93 ETC 273.45 LVI -34.53

PLANETOCENTRIC CONIC

C3 17.947 VHL 4.236 DLA -48.89 RAL 6.14 RAD 6641.9 VEL 11.746 PTH 6.77 VHP 3.276 DPA 2.78 RAP 293.89 ECC 1.2954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.29	23 5 32	1800.83	27.99	36.35	248.49	131.88	23 35 33	800.8	42.41	12.38
48.29	23 5 32	1800.83	27.99	36.35	248.49	131.88	23 35 33	800.8	42.41	12.38
48.29	23 5 32	1800.83	27.99	36.35	248.49	131.88	23 35 33	800.8	42.41	12.38
48.29	23 5 32	1800.83	27.99	36.35	248.49	131.88	23 35 33	800.8	42.41	12.38
48.29	23 5 32	1800.83	27.99	36.35	248.49	131.88	23 35 33	800.8	42.41	12.38
48.29	23 5 32	1800.83	27.99	36.35	248.49	131.88	23 35 33	800.8	42.41	12.38
48.29	23 5 32	1800.83	27.99	36.35	248.49	131.88	23 35 33	800.8	42.41	12.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2979 TRA 1.3543 TC3-2.6517 BAU .7492 SGT 3601.7 SGR 2744.7 SG3 1437.6 ST 46.5 SR 40.8 SS 70.0
RDE -.3108 RRA-1.1301 RC3 1.6488 FAU .19925 RRT -.9556 RRF -.9997 RTF .9536 CRT -.5489 CRS .9997 CST -.5675
FDE 1.8157 FRA 6.9515 FC3-9.6117 BSP 7158 SGB 4528.3 R23 .1948 R13 -.9806 LSA 86.2 MSA 36.2 SSA .1
BDE .4305 BRA 1.7639 BC3 3.1225 FSP 2477 SG1 4481.4 SG2 650.1 THA 143.03 EL1 54.6 EL2 29.0 ALF 141.77

LAUNCH DATE APR 30 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 14 1971

HELIOCENTRIC CONIC DISTANCE 542.145 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.249	GAL	-1.97	AZL	96.46	HCA	175.91	SMA	183.95	ECC	.18395	INC	6.4571	V1	29.569
RP	215.71	LAP	-.46	LOP	34.95	VP	22.562	GAP	3.70	AZP	83.56	TAL	347.27	TAP	183.18	RCA	150.11	APO	217.79	V2	25.461
RC	156.143	GL	-51.26	GP	31.43	ZAL	109.52	ZAP	81.90	ETS	184.13	ZAE	118.67	ETE	160.92	ZAC	133.61	ETC	273.61	LVI	-39.37

PLANETOCENTRIC CONIC

C3	21.603	VHL	4.648	DLA	-52.70	RAL	12.00	RAD	6643.5	VEL	11.900	PTH	6.91	VHP	3.500	DPA	8.29	RAP	292.51	ECC	1.3555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.48	23 13 47	1880.11	27.53	44.05	258.59	136.89	23 45 7	880.1	43.83	21.70
43.48	23 13 47	1880.11	27.53	44.05	258.59	136.89	23 45 7	880.1	43.83	21.70
43.48	23 13 47	1880.11	27.53	44.05	258.59	136.89	23 45 7	880.1	43.83	21.70
43.48	23 13 47	1880.11	27.53	44.05	258.59	136.89	23 45 7	880.1	43.83	21.70
43.48	23 13 47	1880.11	27.53	44.05	258.59	136.89	23 45 7	880.1	43.83	21.70
43.48	23 13 47	1880.11	27.53	44.05	258.59	136.89	23 45 7	880.1	43.83	21.70
43.48	23 13 47	1880.11	27.53	44.05	258.59	136.89	23 45 7	880.1	43.83	21.70

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2229	TRA	1.5134	TC3	-2.3464	BAU	.8349	SGT	3783.1	SGR	3268.6	SG3	1232.4	ST	48.3	SR	52.8	SS	69.9
RDE	-.5093	RRA	-1.3752	RC3	1.6885	FAU	.17805	RRT	-.9594	RRF	-.9999	RTF	.9569	CRT	-.5978	CRS	1.0000	CST	-.5968
FDE	2.2484	FRA	6.0562	FC3	-7.1353	BSP	7941	SGB	4999.5	R23	.1718	R13	-.9850	LSA	93.0	MSA	36.4	SSA	.1
BDE	.5559	BRA	2.0449	BC3	2.8908	FSP	2090	SG1	4949.7	SG2	704.3	THA	139.35	EL1	63.8	EL2	31.8	ALF	131.06

LAUNCH DATE APR 30 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 546.314 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.252	GAL	-2.02	AZL	98.30	HCA	177.07	SMA	184.01	ECC	.18437	INC	8.3005	V1	29.569
RP	216.04	LAP	-.42	LOP	36.11	VP	22.524	GAP	3.53	AZP	81.71	TAL	346.95	TAP	184.02	RCA	150.08	APO	217.93	V2	25.424
RC	158.631	GL	-58.82	GP	39.65	ZAL	106.92	ZAP	81.57	ETS	186.10	ZAE	114.73	ETE	158.08	ZAC	141.83	ETC	274.18	LVI	-46.40

PLANETOCENTRIC CONIC

C3	29.585	VHL	5.439	DLA	-57.61	RAL	22.29	RAD	6646.8	VEL	12.228	PTH	7.18	VHP	3.982	DPA	16.37	RAP	290.90	ECC	1.4869

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.46	23 37 55	1993.18	25.18	53.86	274.93	143.71	24 11 8	993.2	43.94	34.79
37.46	23 37 55	1993.18	25.18	53.86	274.93	143.71	24 11 8	993.2	43.94	34.79
37.46	23 37 55	1993.18	25.18	53.86	274.93	143.71	24 11 8	993.2	43.94	34.79
37.46	23 37 55	1993.18	25.18	53.86	274.93	143.71	24 11 8	993.2	43.94	34.79
37.46	23 37 55	1993.18	25.18	53.86	274.93	143.71	24 11 8	993.2	43.94	34.79
37.46	23 37 55	1993.18	25.18	53.86	274.93	143.71	24 11 8	993.2	43.94	34.79
37.46	23 37 55	1993.18	25.18	53.86	274.93	143.71	24 11 8	993.2	43.94	34.79

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.0881	TRA	1.7216	TC3	-1.8528	BAU	.9603	SGT	3941.1	SGR	3995.9	SG3	918.5	ST	51.1	SR	78.4	SS	73.4
RDE	-1.1268	RRA	-1.7354	RC3	1.5689	FAU	.13858	RRT	-.9590	RRF	-.9999	RTF	.9548	CRT	-.7196	CRS	.9999	CST	-.7077
FDE	3.1097	FRA	4.6280	FC3	-4.0552	BSP	9100	SGB	5612.5	R23	.1552	R13	-.9878	LSA	114.1	MSA	33.7	SSA	.0
BDE	1.1303	BRA	2.4444	BC3	2.4278	FSP	1583	SG1	5554.7	SG2	803.2	THA	134.59	EL1	88.1	EL2	31.8	ALF	119.23

LAUNCH DATE APR 30 1971 FLIGHT TIME 238.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 563.078 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.270	GAL	-2.27	AZL	80.80	HCA	181.73	SMA	184.30	ECC	.18650	INC	9.1901	V1	29.569
RP	217.43	LAP	-.28	LOP	40.73	VP	22.375	GAP	2.89	AZP	99.19	TAL	345.46	TAP	187.19	RCA	149.93	APO	218.67	V2	25.269
RC	168.717	GL	61.08	GP	-51.65	ZAL	107.03	ZAP	80.22	ETS	166.14	ZAE	105.25	ETE	200.81	ZAC	50.72	ETC	272.74	LVI	37.19

PLANETOCENTRIC CONIC

C3	34.660	VHL	5.887	DLA	49.24	RAL	316.02	RAD	6648.8	VEL	12.432	PTH	7.34	VHP	5.447	DPA	-72.41	RAP	322.95	ECC	1.5704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.85	7 46 14	4609.43	-20.52	213.80	207.22	44.19	9 3 3	3609.4	-36.97	193.42
47.85	7 46 14	4609.43	-20.52	213.80	207.22	44.19	9 3 3	3609.4	-36.97	193.42
47.85	7 46 14	4609.43	-20.52	213.80	207.22	44.19	9 3 3	3609.4	-36.97	193.42
47.85	7 46 14	4609.43	-20.52	213.80	207.22	44.19	9 3 3	3609.4	-36.97	193.42
47.85	7 46 14	4609.43	-20.52	213.80	207.22	44.19	9 3 3	3609.4	-36.97	193.42
47.85	7 46 14	4609.43	-20.52	213.80	207.22	44.19	9 3 3	3609.4	-36.97	193.42
47.85	7 46 14	4609.43	-20.52	213.80	207.22	44.19	9 3 3	3609.4	-36.97	193.42

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	4.1072	TRA	.5673	TC3	-2.0239	BAU	1.2256	SGT	4729.8	SGR	4669.3	SG3	408.5	ST	200.3	SR	186.3	SS	86.6
RDE	3.7755	RRA	1.3881	RC3	-1.7029	FAU	.06986	RRT	.9606	RRF	.9992	RTF	.9502	CRT	.9946	CRS	-.9999	CST	-.9927
FDE	3.7149	FRA	1.5099	FC3	-1.7448	BSP	9521	SGB	6646.4	R23	.1764	R13	.9841	LSA	286.5	MSA	15.4	SSA	.1
BDE	5.5788	BRA	1.4995	BC3	2.6450	FSP	651	SG1	6580.6	SG2	932.7	THA	44.62	EL1	273.2	EL2	14.2	ALF	42.92

LAUNCH DATE APR 30 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 567.225 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.276	GAL	-2.33	AZL	85.19	HCA	182.87	SMA	184.39	ECC	.18710	INC	4.8098	V1	29.569
RP	217.79	LAP	-.24	LOP	41.67	VP	22.338	GAP	2.73	AZP	94.81	TAL	345.11	TAP	187.98	RCA	149.89	APO	218.89	V2	25.229
RC	171.268	GL	41.00	GP	-39.36	ZAL	115.23	ZAP	75.66	ETS	166.81	ZAE	107.34	ETE	195.31	ZAC	63.06	ETC	272.01	LVI	26.61

PLANETOCENTRIC CONIC

C3	17.021	VHL	4.126	DLA	31.07	RAL	327.61	RAD	6641.5	VEL	11.707	PTH	6.74	VHP	4.070	DPA	-61.58	RAP	307.31	ECC	1.2801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 25 23	3747.86	-47.34	151.78	211.57	84.56	13 27 51	2747.9	-43.92	117.29
60.00	12 17 38	3768.53	-38.96	151.95	209.89	78.74	13 20 26	2768.5	-39.34	120.79
70.00	12 0 33	3819.01	-29.88	153.21	207.08	72.62	13 4 12	2819.0	-34.12	125.31
76.55	10 54 27	4025.84	-19.12	164.35	202.51	65.02	12 1 33	3025.8	-27.74	139.95
76.55	10 54 27	4025.84	-19.12	164.35	202.51	65.02	12 1 33	3025.8	-27.74	139.95
76.55	10 54 27	4025.84	-19.12	164.35	202.51	65.02	12 1 33	3025.8	-27.74	139.95
110.00	16 59 59	2865.82	-29.88	82.13	207.08	72.62	17 47 45	1865.8	-34.12	54.23

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	2.4098	TRA	1.1547	TC3	-3.8078	BAU	1.0135	SGT	4957.6	SGR	3782.6	SG3	868.0	ST	169.7	SR	123.9	SS	113.1
RDE	1.7171	RRA	1.3776	RC3	-2.3099	FAU	.12126	RRT	.9679	RRF	.9997	RTF	.9640	CRT	.9942	CRS	-.9999	CST	-.9926
FDE	4.4380	FRA	3.7543	FC3	-6.1674	BSP	9777	SGB	6235.8	R23	.1750	R13	.9844	LSA	238.2	MSA	13.7	SSA	.1
BDE	2.9590	BRA	1.7975	BC3	4.4557	FSP	1467	SG1	6189.2	SG2	761.4	THA	37.10	EL1	209.9	EL2	10.8	ALF	36.07

LAUNCH DATE APR 30 1971 FLIGHT TIME 242.00 ARRIVAL DATE DEC 28 1971

DISTANCE 571.378

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.69 LAL -.00 LOL 219.02 VL 32.281 GAL -2.39 AZL 87.08 HCA 184.00 SMA 184.48 ECC .18774 INC 2.9211 V1 29.569
RP 218.15 LAP -.20 LOP 43.01 VP 22.301 GAP 2.57 AZP 92.92 TAL 344.75 TAP 168.75 RCA 149.85 APO 219.12 V2 25.189
RC 173.829 GL 27.23 GP -30.80 ZAL 119.94 ZAP 72.41 ETS 168.12 ZAE 107.83 ETE 191.47 ZAC 71.64 ETC 271.74 LVI 19.01

PLANETOCENTRIC CONIC

C3 12.923 VHL 3.595 DLA 18.50 RAL 333.83 RAD 6639.5 VEL 11.532 PTH 6.58 VHP 3.607 DPA -53.48 RAP 301.93 ECC 1.2127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 52 28	3408.69	-44.56	119.97	200.18	108.77	14 49 17	2408.7	-32.62	92.86
60.00	14 10 23	3360.98	-38.84	117.76	202.27	101.73	15 6 24	2361.0	-30.09	90.45
70.00	14 37 26	3281.34	-33.66	112.33	203.28	96.15	15 32 8	2281.3	-27.69	85.25
80.00	15 21 23	3143.59	-29.78	102.22	203.62	92.27	16 13 47	2143.6	-25.82	75.49
90.00	16 31 38	2916.83	-28.27	85.60	203.66	90.81	17 20 15	1916.8	-25.09	59.04
100.00	18 4 15	2618.06	-29.78	63.59	203.62	92.27	18 47 53	1618.1	-25.82	36.86
110.00	19 36 53	2328.16	-33.66	41.24	203.28	96.15	20 15 41	1328.2	-27.69	14.17

DIFFERENTIAL CORRECTIONS

TDE 1.7539 TRA 1.4761 TC3-4.9464 BAU .9388
RDE 1.0167 RRA 1.1930 RC3-2.2499 FAU .14875
FDE 4.3023 FRA 5.3592 FC3-9.9649 BSP 9944
BDE 2.0273 BRA 1.8979 BC3 5.4341 FSP 2052

MID-COURSE EXECUTION ACCURACY

SGT 5159.1 SGR 3043.4 SG3 1157.5
RRT .9717 RRF .9997 RTF .9693
SGB 5989.9 R23 .1856 R13 .9824
SG1 5957.4 SG2 622.8 THA 30.19

ORBIT DETERMINATION ACCURACY

ST 144.7 SR 86.5 SS 114.9
CRT .9954 CRS -.9998 CST -.9934
LSA 203.7 MSA 11.1 SSA .2
EL1 168.4 EL2 7.1 ALF 30.80

LAUNCH DATE APR 30 1971 FLIGHT TIME 244.00 ARRIVAL DATE DEC 30 1971

DISTANCE 575.532

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.69 LAL -.00 LOL 219.02 VL 32.287 GAL -2.46 AZL 88.13 HCA 185.14 SMA 184.58 ECC .18842 INC 1.8692 V1 29.569
RP 218.51 LAP -.17 LOP 44.15 VP 22.265 GAP 2.41 AZP 91.86 TAL 344.37 TAP 169.50 RCA 149.80 APO 219.36 V2 25.149
RC 176.400 GL 17.99 GP -24.93 ZAL 122.51 ZAP 69.94 ETS 169.27 ZAE 107.40 ETE 188.77 ZAC 77.52 ETC 271.59 LVI 13.77

PLANETOCENTRIC CONIC

C3 11.617 VHL 3.408 DLA 10.10 RAL 337.81 RAD 6638.9 VEL 11.476 PTH 6.53 VHP 3.410 DPA -47.85 RAP 299.25 ECC 1.1912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 42 0	3214.05	-39.08	104.55	196.36	119.65	15 35 35	2214.1	-24.15	82.06
60.00	15 10 36	3137.97	-34.32	100.61	199.28	112.57	16 2 54	2138.0	-22.14	76.95
70.00	15 50 28	3020.64	-30.05	92.92	201.09	107.05	16 40 49	2020.6	-20.28	68.66
80.00	16 47 22	2842.41	-26.95	80.36	202.05	103.37	17 34 45	1842.4	-18.88	55.86
90.00	18 3 47	2595.80	-25.78	62.53	202.35	102.04	18 47 3	1595.8	-18.35	37.97
100.00	19 30 14	2316.88	-26.95	41.73	202.05	103.37	20 8 51	1316.9	-18.88	17.23
110.00	20 49 55	2067.46	-30.05	21.84	201.09	107.05	21 24 22	1067.5	-20.28	357.58

DIFFERENTIAL CORRECTIONS

TDE 1.4136 TRA 1.6815 TC3-5.6121 BAU .9247
RDE .6924 RRA 1.0042 RC3-1.9889 FAU .16501
FDE 3.9963 FRA 6.3023 FC-12.2977 BSP 9862
BDE 1.5741 BRA 1.9585 BC3 5.9541 FSP 2346

MID-COURSE EXECUTION ACCURACY

SGT 5341.0 SGR 2476.5 SG3 1313.8
RRT .9735 RRF .9995 RTF .9719
SGB 5887.2 R23 .1940 R13 .9805
SG1 5864.5 SG2 516.2 THA 24.50

ORBIT DETERMINATION ACCURACY

ST 126.5 SR 63.7 SS 109.9
CRT .9976 CRS -.9995 CST -.9949
LSA 179.0 MSA 8.5 SSA .3
EL1 141.6 EL2 4.0 ALF 26.68

LAUNCH DATE APR 30 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 1 1972

DISTANCE 579.684

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.69 LAL -.00 LOL 219.02 VL 32.294 GAL -2.53 AZL 88.80 HCA 186.27 SMA 184.69 ECC .18913 INC 1.1966 V1 29.569
RP 218.88 LAP -.13 LOP 45.28 VP 22.228 GAP 2.25 AZP 91.19 TAL 343.98 TAP 170.25 RCA 149.76 APO 219.61 V2 25.109
RC 178.981 GL 11.65 GP -20.78 ZAL 124.00 ZAP 67.89 ETS 170.20 ZAE 106.51 ETE 186.84 ZAC 81.68 ETC 271.50 LVI 10.06

PLANETOCENTRIC CONIC

C3 11.186 VHL 3.345 DLA 4.40 RAL 340.64 RAD 6638.6 VEL 11.457 PTH 6.51 VHP 3.317 DPA -43.84 RAP 297.62 ECC 1.1841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 14 36	3091.95	-34.63	96.27	195.75	124.93	16 6 8	2091.9	-18.42	76.10
60.00	15 49 30	2999.09	-30.27	91.08	198.92	117.99	16 39 29	1999.1	-16.59	69.41
70.00	16 36 32	2860.78	-26.35	81.97	201.02	112.56	17 24 12	1860.8	-14.89	59.40
80.00	17 40 4	2661.79	-23.51	68.06	202.20	108.96	18 24 26	1661.8	-13.63	45.03
90.00	18 59 25	2405.70	-22.45	49.61	202.59	107.67	19 39 31	1405.7	-13.15	26.44
100.00	20 22 56	2136.27	-23.51	29.42	202.20	108.96	20 58 32	1136.3	-13.63	6.39
110.00	21 35 58	1907.60	-26.35	10.88	201.02	112.56	22 7 46	907.6	-14.89	348.32

DIFFERENTIAL CORRECTIONS

TDE 1.2123 TRA 1.8360 TC3-8.0142 BAU .9350
RDE .5183 RRA .8488 RC3-1.7092 FAU .17474
FDE 3.7064 FRA 6.8468 FC-13.5236 BSP 9784
BDE 1.3184 BRA 2.0245 BC3 6.2524 FSP 2473

MID-COURSE EXECUTION ACCURACY

SGT 5520.0 SGR 2054.8 SG3 1394.6
RRT .9741 RRF .9991 RTF .9734
SGB 5890.0 R23 .1985 R13 .9791
SG1 5873.8 SG2 436.6 THA 20.05

ORBIT DETERMINATION ACCURACY

ST 114.3 SR 49.5 SS 104.2
CRT .9994 CRS -.9988 CST -.9967
LSA 162.3 MSA 6.2 SSA .6
EL1 124.5 EL2 1.6 ALF 23.42

LAUNCH DATE APR 30 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 3 1972

DISTANCE 583.833

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.69 LAL -.00 LOL 219.02 VL 32.300 GAL -2.60 AZL 89.27 HCA 187.40 SMA 184.79 ECC .18987 INC .7344 V1 29.569
RP 219.25 LAP -.09 LOP 46.41 VP 22.192 GAP 2.10 AZP 90.73 TAL 343.58 TAP 170.98 RCA 149.71 APO 219.88 V2 25.068
RC 181.372 GL 7.13 GP -17.72 ZAL 124.98 ZAP 66.11 ETS 170.94 ZAE 105.39 ETE 185.42 ZAC 84.75 ETC 271.43 LVI 7.34

PLANETOCENTRIC CONIC

C3 11.100 VHL 3.332 DLA .41 RAL 342.81 RAD 6638.6 VEL 11.454 PTH 6.50 VHP 3.274 DPA -40.89 RAP 296.51 ECC 1.1827

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 51	3010.81	-31.35	91.31	196.27	127.82	16 28 1	2010.8	-14.49	72.39
60.00	16 17 0	2906.66	-27.16	85.22	199.56	121.00	17 5 26	1906.7	-12.72	64.67
70.00	17 8 45	2754.44	-23.39	75.13	201.81	115.63	17 54 40	1751.4	-11.07	53.53
80.00	18 16 37	2541.96	-20.64	60.31	203.12	112.06	18 58 58	1542.0	-9.84	38.14
90.00	19 37 51	2279.81	-19.62	41.47	203.55	110.79	20 15 51	1279.8	-9.38	19.12
100.00	20 59 28	2016.44	-20.64	21.68	203.12	112.06	21 33 5	1016.4	-9.84	359.51
110.00	22 8 12	1801.25	-23.39	4.04	201.81	115.63	22 38 13	801.3	-11.07	342.45

DIFFERENTIAL CORRECTIONS

TDE 1.1016 TRA 1.9889 TC3-6.2147 BAU .9469
RDE .4196 RRA .7288 RC3-1.4462 FAU .17835
FDE 3.5058 FRA 7.1982 FC-13.9097 BSP 9978
BDE 1.1788 BRA 2.1182 BC3 6.3807 FSP 2555

MID-COURSE EXECUTION ACCURACY

SGT 5695.3 SGR 1737.8 SG3 1434.1
RRT .9744 RRF .9983 RTF .9748
SGB 5954.5 R23 .1975 R13 .9786
SG1 5942.7 SG2 374.3 THA 16.63

ORBIT DETERMINATION ACCURACY

ST 107.9 SR 40.7 SS 100.2
CRT .9996 CRS -.9974 CST -.9983
LSA 152.7 MSA 4.5 SSA 1.0
EL1 115.3 EL2 1.0 ALF 20.67

LAUNCH DATE APR 30 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 587.978 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.307 GAL -2.67 AZL 89.61 HCA 188.52 SMA 184.91 ECC .19064 INC .3917 V1 29.869
RP 219.62 LAP -.06 LOP 47.54 VP 22.156 GAP 1.94 AZP 90.39 TAL 343.18 TAP 171.70 RCA 149.65 APO 220.16 V2 25.028
RC 184.172 GL 3.79 GP -13.40 ZAL 125.71 ZAP 64.51 ETS 171.54 ZAE 104.16 ETE 184.36 ZAC 87.08 ETC 271.38 LVI 5.26

PLANETOCENTRIC CONIC

C3 11.173 VHL 3.343 DLA -2.48 RAL 344.95 RAD 6638.6 VEL 11.457 PTH 6.51 VHP 3.256 DPA -38.63 RAP 295.72 ECC 1.1839

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 20	2954.69	-28.97	88.09	197.21	129.55	16 44 34	1954.7	-11.74	69.91
60.00	16 37 32	2842.42	-24.85	81.35	200.58	122.81	17 24 55	1842.4	-9.97	61.47
70.00	17 32 42	2680.21	-21.13	70.55	202.93	117.48	18 17 22	1680.2	-8.32	49.54
80.00	18 43 39	2458.07	-18.41	55.08	204.32	113.93	19 24 37	1458.1	-7.10	33.43
90.00	20 6 14	2191.57	-17.39	35.95	204.78	112.66	20 42 46	1191.6	-6.64	14.09
100.00	21 26 31	1932.54	-18.41	16.45	204.32	113.93	21 58 43	932.5	-7.10	354.80
110.00	22 32 8	1727.03	-21.13	359.47	202.93	117.48	23 0 55	727.0	-8.32	338.46

DIFFERENTIAL CORRECTIONS

TDE 1.0293 TRA 2.1225 TC3-6.3581 BAU .9873
RDE .3578 RRA .6323 RC3-1.2298 FAU .17939
FDE 3.3550 FRA 7.4152 FC-13.9004 BSP 10139
BDE 1.0897 BRA 2.2147 BC3 6.4759 FSP 2586

MID-COURSE EXECUTION ACCURACY

SGT 5868.6 SGR 1493.0 SG3 1449.1
RRT .9732 RRF .9972 RTF .9751
SGB 6055.6 R23 .1963 R13 .9779
SG1 6046.4 SG2 333.1 THA 13.95

ORBIT DETERMINATION ACCURACY

ST 104.0 SR 34.7 SS 97.2
CRT .9975 CRS -.9952 CST -.9993
LSA 146.4 MSA 3.6 SSA 1.5
EL1 109.6 EL2 2.4 ALF 18.44

LAUNCH DATE APR 30 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 592.117 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.314 GAL -2.74 AZL 89.87 HCA 189.64 SMA 185.02 ECC .19145 INC .1251 V1 29.569
RP 219.99 LAP -.02 LOP 48.66 VP 22.120 GAP 1.79 AZP 90.13 TAL 342.77 TAP 172.41 RCA 149.60 APO 220.44 V2 24.987
RC 186.781 GL 1.26 GP -13.57 ZAL 126.31 ZAP 63.02 ETS 172.03 ZAE 102.88 ETE 183.53 ZAC 88.91 ETC 271.34 LVI 3.64

PLANETOCENTRIC CONIC

C3 11.325 VHL 3.365 DLA -4.62 RAL 346.01 RAD 6638.7 VEL 11.463 PTH 6.51 VHP 3.253 DPA -36.86 RAP 295.13 ECC 1.1864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 9 0	2914.85	-27.22	85.91	198.28	130.66	16 57 35	1914.8	-9.77	68.18
60.00	16 53 30	2796.50	-23.13	78.69	201.72	123.97	17 40 6	1796.5	-7.98	59.21
70.00	17 51 13	2626.79	-19.41	67.36	204.15	118.67	18 34 59	1626.8	-6.32	46.70
80.00	19 4 29	2397.36	-16.69	51.39	205.60	115.12	19 44 27	1397.4	-5.08	30.06
90.00	20 28 6	2127.58	-15.67	32.05	206.09	113.84	21 3 34	1127.6	-4.61	10.48
100.00	21 47 21	1871.83	-16.69	12.76	205.60	115.12	22 18 33	871.8	-5.08	351.42
110.00	22 50 39	1673.61	-19.41	356.27	204.15	118.67	23 18 33	673.6	-6.32	335.62

DIFFERENTIAL CORRECTIONS

TDE .9924 TRA 2.2576 TC3-6.4304 BAU .9863
RDE .3205 RRA .5568 RC3-1.0406 FAU .17854
FDE 3.2833 FRA 7.5898 FC-13.4951 BSP 10436
BDE 1.0429 BRA 2.3253 BC3 6.5141 FSP 2639

MID-COURSE EXECUTION ACCURACY

SGT 6038.0 SGR 1301.1 SG3 1450.4
RRT .9701 RRF .9954 RTF .9742
SGB 6176.6 R23 .1971 R13 .9763
SG1 6168.8 SG2 309.2 THA 11.84

ORBIT DETERMINATION ACCURACY

ST 102.6 SR 30.8 SS 95.8
CRT .9926 CRS -.9921 CST -.9997
LSA 143.6 MSA 3.7 SSA 1.7
EL1 107.1 EL2 3.6 ALF 16.62

LAUNCH DATE APR 30 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 596.254 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.321 GAL -2.82 AZL 90.08 HCA 190.76 SMA 185.14 ECC .19228 INC .0542 V1 29.569
RP 220.36 LAP .01 LOP 49.76 VP 22.084 GAP 1.63 AZP 89.93 TAL 342.36 TAP 173.12 RCA 149.54 APO 220.74 V2 24.946
RC 189.399 GL -.72 GP -12.11 ZAL 126.84 ZAP 61.63 ETS 172.43 ZAE 101.58 ETE 182.89 ZAC 90.38 ETC 271.31 LVI 2.33

PLANETOCENTRIC CONIC

C3 11.521 VHL 3.394 DLA -6.24 RAL 347.27 RAD 6638.8 VEL 11.472 PTH 6.52 VHP 3.261 DPA -35.43 RAP 294.67 ECC 1.1896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 20 0	2886.07	-25.93	84.38	199.39	131.40	17 8 6	1886.1	-8.34	66.94
60.00	17 6 15	2763.06	-21.85	76.79	202.89	124.75	17 52 18	1763.1	-6.53	57.59
70.00	18 5 56	2587.56	-18.12	65.05	205.38	119.46	18 49 4	1587.6	-4.83	44.64
80.00	19 21 1	2352.48	-15.38	48.71	206.88	115.91	20 0 14	1352.5	-3.57	27.58
90.00	20 45 26	2080.14	-14.35	29.19	207.38	114.63	21 20 6	1080.1	-3.09	7.82
100.00	22 3 53	1826.95	-15.38	10.08	206.88	115.91	22 34 20	826.9	-3.57	348.95
110.00	23 5 22	1634.36	-18.12	353.97	205.38	119.46	23 32 37	634.4	-4.83	333.55

DIFFERENTIAL CORRECTIONS

TDE .9646 TRA 2.3765 TC3-6.5106 BAU 1.0125
RDE .2910 RRA .4895 RC3 -.9043 FAU .17588
FDE 3.1730 FRA 7.6461 FC-13.2156 BSP 10616
BDE 1.0075 BRA 2.4284 BC3 6.5731 FSP 2603

MID-COURSE EXECUTION ACCURACY

SGT 6204.7 SGR 1144.1 SG3 1439.9
RRT .9678 RRF .9928 RTF .9749
SGB 6309.3 R23 .1879 R13 .9765
SG1 6303.0 SG2 283.7 THA 10.14

ORBIT DETERMINATION ACCURACY

ST 101.7 SR 27.8 SS 93.4
CRT .9851 CRS -.9874 CST -.9996
LSA 140.7 MSA 4.6 SSA 1.6
EL1 105.3 EL2 4.6 ALF 14.98

LAUNCH DATE APR 30 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 600.388 EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.328 GAL -2.90 AZL 90.24 HCA 191.88 SMA 185.27 ECC .19314 INC .2425 V1 29.569
RP 220.74 LAP .05 LOP 50.89 VP 22.048 GAP 1.48 AZP 89.76 TAL 341.94 TAP 173.81 RCA 149.48 APO 221.05 V2 24.904
RC 192.025 GL -2.29 GP -10.91 ZAL 127.35 ZAP 60.31 ETS 172.78 ZAE 100.28 ETE 182.37 ZAC 91.58 ETC 271.29 LVI 1.26

PLANETOCENTRIC CONIC

C3 11.745 VHL 3.427 DLA -7.48 RAL 348.38 RAD 6638.9 VEL 11.482 PTH 6.53 VHP 3.274 DPA -34.26 RAP 294.33 ECC 1.1933

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 29 3	2865.19	-24.99	83.29	200.48	131.90	17 16 49	1865.2	-7.30	66.05
60.00	17 16 41	2738.54	-20.89	75.43	204.03	125.28	18 2 19	1738.5	-5.46	56.41
70.00	18 17 54	2558.52	-17.14	63.37	206.58	120.01	19 0 33	1558.5	-3.73	43.11
80.00	19 34 25	2318.97	-14.37	46.73	208.12	116.46	20 13 4	1319.0	-2.44	25.73
90.00	20 59 28	2044.59	-13.33	27.08	208.64	115.17	21 33 32	1044.6	-1.95	5.84
100.00	22 17 17	1793.51	-14.37	8.10	208.12	116.46	22 47 11	793.5	-2.44	347.10
110.00	23 17 21	1605.34	-17.14	352.29	206.58	120.01	23 44 6	605.3	-3.73	332.03

DIFFERENTIAL CORRECTIONS

TDE .9543 TRA 2.5012 TC3-6.5591 BAU 1.0373
RDE .2707 RRA .4329 RC3 -.7905 FAU .17415
FDE 3.0875 FRA 7.6680 FC-12.8373 BSP 10856
BDE .9920 BRA 2.5384 BC3 6.6066 FSP 2561

MID-COURSE EXECUTION ACCURACY

SGT 6367.5 SGR 1015.6 SG3 1423.0
RRT .9645 RRF .9891 RTF .9757
SGB 6448.0 R23 .1754 R13 .9769
SG1 6442.5 SG2 265.1 THA 8.76

ORBIT DETERMINATION ACCURACY

ST 102.0 SR 25.2 SS 91.4
CRT .9754 CRS -.9813 CST -.9993
LSA 139.2 MSA 5.5 SSA 1.4
EL1 105.0 EL2 5.4 ALF 13.56

LAUNCH DATE APR 30 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 13 1972

DISTANCE 604.515

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.336	GAL	-2.97	AZL	90.38	HCA	192.99	SMA	185.39	ECC	.19402	INC	.3799
RP	221.12	LAP	.09	LOP	52.00	VP	22.012	GAP	1.32	AZP	89.63	TAL	341.51	TAP	174.50	RCA	149.42	APO	221.36
RC	194.659	GL	-3.57	GP	-9.91	ZAL	127.83	ZAP	59.06	ETS	173.08	ZAE	98.99	ETE	181.95	ZAC	92.58	ETC	271.28

V1	29.569
V2	24.863
LVI	.36

PLANETOCENTRIC CONIC

C3 11.987 VHL 3.462 DLA -8.45 RAL 349.38 RAD 6639.1 VEL 11.492 PTH 6.54 VHP 3.292 DPA -33.28 RAP 294.08 ECC 1.1973

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 36 40	2850.14	-24.30	82.51	201.55	132.25	17 24 10	1850.1	-6.54	65.41
60.00	17 25 22	2720.64	-20.18	74.44	205.15	125.65	18 10 42	1720.6	-4.67	55.54
70.00	18 27 48	2537.04	-16.40	62.14	207.74	120.39	19 10 5	1537.0	-2.91	41.99
80.00	19 45 28	2293.94	-13.61	45.27	209.32	116.84	20 23 42	1293.9	-1.59	24.36
90.00	21 11 0	2017.94	-12.55	25.51	209.85	115.55	21 44 38	1017.9	-1.09	4.35
100.00	22 28 20	1768.41	-13.61	6.64	209.32	116.84	22 57 48	768.4	-1.59	345.73
110.00	23 27 15	1583.85	-16.40	351.06	207.74	120.39	23 53 39	583.9	-2.91	330.90

DIFFERENTIAL CORRECTIONS

TDE	.9536	TRA	2.6221	TC3	-6.5983
RDE	.2577	RRA	.3854	RC3	-.6929
FDE	3.0359	FRA	7.6809	FC	-12.3604
BDE	.9878	BRA	2.6503	BC3	6.6345

BAU	1.0632
FAU	.17114
BSP	11102
FSP	2533

MID-COURSE EXECUTION ACCURACY

SGT	6527.7	SGR	909.9	SG3	1402.8		
RRT	.9587	RRF	.9839	RTF	.9757		
SGB	6590.8	R23	.1656	R13	.9765		
SG1	6585.8	SG2	256.6	THA	7.62		

ORBIT DETERMINATION ACCURACY

ST	103.0	SR	23.4	SS	90.1
CRT	.9634	CRS	-.9740	CST	-.9988
LSA	138.7	MSA	6.5	SSA	1.3
EL1	105.4	EL2	6.1	ALF	12.41

LAUNCH DATE APR 30 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 15 1972

DISTANCE 608.638

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.344	GAL	-3.05	AZL	90.50	HCA	194.09	SMA	185.52	ECC	.19494	INC	.4974
RP	221.50	LAP	.12	LOP	53.11	VP	21.977	GAP	1.17	AZP	89.52	TAL	341.08	TAP	175.17	RCA	149.36	APO	221.69
RC	197.299	GL	-4.62	GP	-9.06	ZAL	128.31	ZAP	57.86	ETS	173.34	ZAE	97.71	ETE	181.60	ZAC	93.43	ETC	271.28

V1	29.569
V2	24.821
LVI	-.42

PLANETOCENTRIC CONIC

C3 12.241 VHL 3.499 DLA -9.20 RAL 350.30 RAD 6639.2 VEL 11.503 PTH 6.55 VHP 3.313 DPA -32.45 RAP 293.90 ECC 1.2015

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 43 9	2839.49	-23.81	81.97	202.60	132.49	17 30 29	1839.5	-6.01	64.96
60.00	17 32 42	2707.73	-19.67	73.74	206.23	125.91	18 17 50	1707.7	-4.11	54.92
70.00	18 36 7	2521.30	-15.86	61.25	208.86	120.65	19 18 8	1521.3	-2.31	41.16
80.00	19 54 40	2275.37	-13.03	44.19	210.47	117.10	20 32 36	1275.4	-.96	23.34
90.00	21 20 37	1998.07	-11.96	24.35	211.01	115.82	21 53 55	998.1	-.45	3.24
100.00	22 37 32	1749.84	-13.03	5.56	210.47	117.10	23 6 42	749.8	-.96	344.71
110.00	23 35 33	1568.12	-15.86	350.17	208.86	120.65	24 1 41	568.1	-2.31	330.08

DIFFERENTIAL CORRECTIONS

TDE	.9610	TRA	2.7430	TC3	-6.6266
RDE	.2486	RRA	.3440	RC3	-.6121
FDE	2.9906	FRA	7.6715	FC	-11.8789
BDE	.9927	BRA	2.7645	BC3	6.6548

BAU	1.0891
FAU	.16797
BSP	11350
FSP	2491

MID-COURSE EXECUTION ACCURACY

SGT	6684.7	SGR	821.5	SG3	1379.8		
RRT	.9512	RRF	.9769	RTF	.9757		
SGB	6735.0	R23	.1539	R13	.9764		
SG1	6730.3	SG2	251.8	THA	6.68		

ORBIT DETERMINATION ACCURACY

ST	104.4	SR	22.1	SS	89.0
CRT	.9497	CRS	-.9653	CST	-.9983
LSA	138.7	MSA	7.4	SSA	1.3
EL1	106.5	EL2	6.8	ALF	11.41

LAUNCH DATE APR 30 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 17 1972

DISTANCE 612.756

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.352	GAL	-3.14	AZL	90.60	HCA	195.20	SMA	185.66	ECC	.19588	INC	.5980
RP	221.88	LAP	.16	LOP	54.21	VP	21.942	GAP	1.01	AZP	89.42	TAL	340.65	TAP	175.84	RCA	149.29	APO	222.02
RC	199.945	GL	-5.48	GP	-8.34	ZAL	128.79	ZAP	56.71	ETS	173.57	ZAE	96.46	ETE	181.32	ZAC	94.15	ETC	271.29

V1	29.569
V2	24.780
LVI	-1.09

PLANETOCENTRIC CONIC

C3 12.507 VHL 3.536 DLA -9.78 RAL 351.15 RAD 6639.3 VEL 11.514 PTH 6.56 VHP 3.337 DPA -31.74 RAP 293.78 ECC 1.2058

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 46	2832.26	-23.48	81.61	203.61	132.65	17 35 58	1832.3	-5.65	64.66
60.00	17 38 58	2698.73	-19.31	73.25	207.28	126.09	18 23 57	1698.7	-3.71	54.49
70.00	18 43 9	2510.05	-15.46	60.61	209.94	120.84	19 24 59	1510.0	-1.88	40.58
80.00	20 2 26	2261.86	-12.61	43.41	211.57	117.29	20 40 8	1261.9	-.51	22.60
90.00	21 28 42	1983.52	-11.53	23.50	212.13	116.00	22 1 46	983.5	.02	2.43
100.00	22 45 18	1736.34	-12.61	4.78	211.57	117.29	23 14 14	736.3	-.51	343.97
110.00	23 42 35	1556.66	-15.46	349.53	209.94	120.84	24 8 32	556.9	-1.88	329.49

DIFFERENTIAL CORRECTIONS

TDE	.9758	TRA	2.6651	TC3	-6.6438
RDE	.2429	RRA	.3076	RC3	-.5433
FDE	2.9567	FRA	7.6306	FC	-11.3780
BDE	1.0055	BRA	2.8816	BC3	6.6660

BAU	1.1146
FAU	.16437
BSP	11616
FSP	2452

MID-COURSE EXECUTION ACCURACY

SGT	6838.8	SGR	747.1	SG3	1354.9		
RRT	.9413	RRF	.9677	RTF	.9757		
SGB	6879.4	R23	.1422	R13	.9762		
SG1	6874.9	SG2	250.8	THA	5.88		

ORBIT DETERMINATION ACCURACY

ST	106.3	SR	21.1	SS	88.0
CRT	.9348	CRS	-.9555	CST	-.9977
LSA	139.3	MSA	8.2	SSA	1.3
EL1	108.1	EL2	7.4	ALF	10.56

LAUNCH DATE APR 30 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 19 1972

DISTANCE 616.870

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.360	GAL	-3.22	AZL	90.69	HCA	196.29	SMA	185.79	ECC	.19684	INC	.6850
RP	222.27	LAP	.19	LOP	55.31	VP	21.906	GAP	.86	AZP	89.34	TAL	340.21	TAP	176.50	RCA	149.22	APO	222.37
RC	202.595	GL	-6.21	GP	-7.72	ZAL	129.26	ZAP	55.61	ETS	173.78	ZAE	95.22	ETE	181.08	ZAC	94.77	ETC	271.30

V1	29.569
V2	24.738
LVI	-1.69

PLANETOCENTRIC CONIC

C3 12.781 VHL 3.575 DLA -10.24 RAL 351.94 RAD 6639.4 VEL 11.526 PTH 6.57 VHP 3.363 DPA -31.11 RAP 293.72 ECC 1.2103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 40	2827.73	-23.27	81.38	204.59	132.75	17 40 48	1827.7	-5.42	64.47
60.00	17 44 24	2692.81	-19.07	72.93	208.29	126.20	18 29 17	1692.8	-3.45	54.21
70.00	18 49 10	2502.37	-15.20	60.18	210.98	120.96	19 30 53	1502.4	-1.59	40.18
80.00	20 9 1	2252.41	-12.32	42.86	212.64	117.41	20 46 34	1252.4	-.19	22.08
90.00	21 35 33	1973.24	-11.22	22.90	213.20	116.13	22 8 26	973.2	.35	1.85
100.00	22 51 53	1726.88	-12.32	4.23	212.64	117.41	23 20 40	726.9	-.19	343.45
110.00	23 48 37	1549.18	-15.20	349.10	210.98	120.96	24 14 26	549.2	-1.59	329.09

DIFFERENTIAL CORRECTIONS

TDE	.9950	TRA	2.9870	TC3	-6.6555
RDE	.2393	RRA	.2751	RC3	-.4849
FDE	2.9264	FRA	7.6176	FC	-10.8778
BDE	1.0234	BRA	2.9996	BC3	6.6731

BAU	1.1402
FAU	.16059
BSP	11880
FSP	2410

MID-COURSE EXECUTION ACCURACY

SGT	6989.4	SGR	684.2	SG3	1328.4		
RRT	.9287	RRF	.9558	RTF	.9756		
SGB	7022.9	R23	.1309	R13	.9760		
SG1	7018.3	SG2	252.6	THA	5.20		

ORBIT DETERMINATION ACCURACY

ST	108.3	SR	20.3	SS	87.0
CRT	.9189	CRS	-.9448	CST	-.9972
LSA	140.2	MSA	8.9	SSA	1.2
EL1	109.9	EL2	7.9	ALF	9.84

LAUNCH DATE APR 30 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 620.977 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.368	GAL	-3.30	AZL	90.76	HCA	197.39	SMA	185.93	ECC	.19784	INC	.7612	V1	29.569
RP	222.65	LAP	.23	LOP	56.40	VP	21.872	GAP	.70	AZP	89.27	TAL	339.76	TAP	177.15	RCA	149.15	APO	222.72	V2	24.696
RC	205.250	GL	-6.82	GP	-7.17	ZAL	129.74	ZAP	54.55	ETS	173.96	ZAE	94.01	ETE	180.87	ZAC	95.31	ETC	271.32	LVI	-2.22

PLANETOCENTRIC CONIC

C3	13.063	VHL	3.614	DLA	-10.59	RAL	352.69	RAD	6639.6	VEL	11.538	PTH	6.58	VHP	3.390	DPA	-30.56	RAP	293.71	ECC	1.2150

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 0	2828.38	-23.16	81.26	205.54	132.80	17 45 5	1825.4	-5.31	64.37
60.00	17 49 8	2689.39	-18.93	72.75	209.28	126.27	18 33 57	1689.4	-3.30	54.04
70.00	18 54 22	2497.58	-15.03	59.91	212.00	121.04	19 36 0	1497.6	-1.41	39.93
80.00	20 14 40	2246.23	-12.12	42.50	213.67	117.50	20 52 6	1246.2	.02	21.74
90.00	21 41 23	1966.43	-11.02	22.50	214.24	116.21	22 14 10	966.4	.57	1.47
100.00	22 57 32	1720.71	-12.12	3.67	213.67	117.50	23 26 12	720.7	.02	343.11
110.00	23 53 49	1544.40	-15.03	348.63	212.00	121.04	24 19 33	544.4	-1.41	328.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0210	TRA	3.1121	TC3	-6.6565	BAU	1.1650	SGT	7138.7	SGR	631.6	SG3	1302.1	ST	110.8	SR	19.8	SS	86.4
RDE	.2380	RRA	.2463	RC3	-.4346	FAU	.15655	RRT	.9129	RRF	.9408	RTF	.9754	CRT	.9027	CRS	-.9337	CST	-.9967
FDE	2.9098	FRA	7.5846	FC-1	0.3747	BSP	12168	SGB	7166.6	R23	.1206	R13	.9758	LSA	141.5	MSA	9.6	SSA	1.2
BDE	1.0484	BRA	3.1218	BC3	6.6707	FSP	2372	SG1	7162.0	SG2	256.9	THA	4.62	EL1	112.2	EL2	8.4	ALF	9.21

LAUNCH DATE APR 30 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 625.080 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.377	GAL	-3.39	AZL	90.83	HCA	198.48	SMA	186.08	ECC	.19885	INC	.8280	V1	29.569
RP	223.04	LAP	.26	LOP	57.50	VP	21.837	GAP	.35	AZP	89.21	TAL	339.31	TAP	177.79	RCA	149.08	APO	223.08	V2	24.654
RC	207.907	GL	-7.34	GP	-6.69	ZAL	130.22	ZAP	53.53	ETS	174.13	ZAE	92.81	ETE	180.70	ZAC	95.79	ETC	271.35	LVI	-2.70

PLANETOCENTRIC CONIC

C3	13.354	VHL	3.654	DLA	-10.85	RAL	353.41	RAD	6639.7	VEL	11.551	PTH	6.60	VHP	3.419	DPA	-30.08	RAP	293.75	ECC	1.2198

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 51	2824.82	-23.14	81.23	206.48	132.81	17 48 55	1824.8	-5.28	64.34
60.00	17 53 17	2688.01	-18.88	72.67	210.24	126.29	18 38 5	1688.0	-3.24	53.98
70.00	18 58 53	2495.16	-14.94	59.77	212.98	121.07	19 40 28	1495.2	-1.31	39.80
80.00	20 19 31	2242.76	-12.01	42.30	214.67	117.54	20 56 54	1242.8	.14	21.55
90.00	21 46 24	1962.46	-10.90	22.27	215.25	116.26	22 19 6	962.5	.70	1.25
100.00	23 2 23	1717.23	-12.01	3.67	214.67	117.54	23 31 0	717.2	.14	342.92
110.00	0 2 15	1541.98	-14.94	348.69	212.98	121.07	0 27 57	542.0	-1.31	328.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0490	TRA	3.2357	TC3	-6.6573	BAU	1.1906	SGT	7284.4	SGR	586.9	SG3	1274.7	ST	113.2	SR	19.4	SS	85.7
RDE	.2380	RRA	.2199	RC3	-.3918	FAU	.15260	RRT	.8935	RRF	.9224	RTF	.9752	CRT	.8861	CRS	-.9220	CST	-.9962
FDE	2.8921	FRA	7.5380	FC3	-9.8928	BSP	12432	SGB	7308.0	R23	.1111	R13	.9755	LSA	142.9	MSA	10.2	SSA	1.2
BDE	1.0757	BRA	3.2432	BC3	6.6688	FSP	2328	SG1	7303.3	SG2	262.9	THA	4.12	EL1	114.5	EL2	8.9	ALF	8.68

LAUNCH DATE APR 30 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC DISTANCE 629.176 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.385	GAL	-3.48	AZL	90.89	HCA	199.57	SMA	186.22	ECC	.19989	INC	.8674	V1	29.569
RP	223.42	LAP	.30	LOP	58.58	VP	21.802	GAP	.39	AZP	89.16	TAL	338.86	TAP	178.43	RCA	149.00	APO	223.45	V2	24.612
RC	210.566	GL	-7.79	GP	-6.27	ZAL	130.70	ZAP	52.54	ETS	174.28	ZAE	91.65	ETE	180.55	ZAC	96.21	ETC	271.38	LVI	-3.14

PLANETOCENTRIC CONIC

C3	13.652	VHL	3.695	DLA	-11.04	RAL	354.09	RAD	6639.8	VEL	11.564	PTH	6.61	VHP	3.448	DPA	-29.64	RAP	293.82	ECC	1.2247

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 18	2825.73	-23.18	81.28	207.39	132.79	17 52 24	1825.7	-5.32	64.38
60.00	17 56 58	2688.33	-18.89	72.69	211.19	126.29	18 41 46	1688.3	-3.25	53.99
70.00	19 2 49	2494.71	-14.93	59.75	213.94	121.08	19 44 24	1494.7	-1.30	39.78
80.00	20 23 42	2241.53	-11.98	42.23	215.65	117.56	21 1 4	1241.5	.18	21.48
90.00	21 50 42	1960.87	-10.85	22.18	216.23	116.28	22 23 23	960.9	.75	1.16
100.00	23 6 34	1716.00	-11.98	3.60	215.65	117.56	23 35 10	716.0	.18	342.85
110.00	0 6 12	1541.53	-14.93	348.67	213.94	121.08	0 31 53	541.5	-1.30	328.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0795	TRA	3.3598	TC3	-6.6568	BAU	1.2167	SGT	7428.3	SGR	549.6	SG3	1247.2	ST	115.8	SR	19.1	SS	84.9
RDE	.2391	RRA	.1958	RC3	-.3552	FAU	.14881	RRT	.8704	RRF	.9001	RTF	.9750	CRT	.8695	CRS	-.9102	CST	-.9987
FDE	2.8750	FRA	7.4853	FC3	-9.4368	BSP	12685	SGB	7448.6	R23	.1023	R13	.9752	LSA	144.4	MSA	10.8	SSA	1.2
BDE	1.1056	BRA	3.3655	BC3	6.6663	FSP	2281	SG1	7443.7	SG2	270.0	THA	3.69	EL1	117.0	EL2	9.3	ALF	8.22

LAUNCH DATE APR 30 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 633.268 EARTH TO MARS

RL	150.69	LAL	-.00	LOL	219.02	VL	32.394	GAL	-3.57	AZL	90.94	HCA	200.65	SMA	186.37	ECC	.20096	INC	.9400	V1	29.569
RP	223.81	LAP	.33	LOP	59.67	VP	21.788	GAP	.24	AZP	89.12	TAL	338.40	TAP	179.06	RCA	148.92	APO	223.82	V2	24.571
RC	213.227	GL	-8.17	GP	-5.89	ZAL	131.19	ZAP	51.59	ETS	174.42	ZAE	90.50	ETE	180.42	ZAC	96.58	ETC	271.42	LVI	-3.55

PLANETOCENTRIC CONIC

C3	13.958	VHL	3.736	DLA	-11.18	RAL	354.74	RAD	6640.0	VEL	11.577	PTH	6.62	VHP	3.479	DPA	-29.24	RAP	293.94	ECC	1.2297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 25	2827.88	-23.28	81.39	208.29	132.74	17 55 33	1827.9	-5.43	64.47
60.00	18 0 15	2690.06	-18.96	72.78	212.11	126.25	18 45 5	1690.1	-3.33	54.08
70.00	19 6 17	2495.91	-14.97	59.82	214.88	121.06	19 47 53	1495.9	-1.34	39.84
80.00	20 27 20	2242.19	-12.00	42.27	216.60	117.55	21 4 42	1242.2	.16	21.52
90.00	21 54 24	1961.27	-10.86	22.20	217.19	116.27	22 27 6	961.3	.74	1.19
100.00	23 10 12	1716.66	-12.00	3.64	216.60	117.55	23 38 49	716.7	.16	342.89
110.00	0 9 39	1542.73	-14.97	348.73	214.88	121.06	0 35 22	542.7	-1.34	328.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1105	TRA	3.4833	TC3	-6.6553	BAU	1.2434	SGT	7568.3	SGR	518.3	SG3	1219.1	ST	118.2	SR	18.9	SS	84.1
RDE	.2411	RRA	.1735	RC3	-.3234	FAU	.14499	RRT	.8433	RRF	.8738	RTF	.9747	CRT	.8529	CRS	-.8980	CST	-.9954
FDE	2.8549	FRA	7.4264	FC3	-8.9930	BSP	12918	SGB	7586.1	R23	.0945	R13	.9749	LSA	145.9	MSA	11.3	SSA	1.2
BDE	1.1364	BRA	3.4876	BC3	6.6631	FSP	2232	SG1	7581.0	SG2	278.1	THA	3.31	EL1	119.3	EL2	9.8	ALF	7.83

LAUNCH DATE APR 30 1971 FLIGHT TIME 274.00 ARRIVAL DATE JAN 29 1972

HELIOCENTRIC CONIC — DISTANCE 637.354 — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.403 GAL -3.66 AZL 90.99 HCA 201.73 SMA 186.52 ECC .20204 INC .9879 V1 29.569
RP 224.20 LAP .37 LOP 60.75 VP 21.734 GAP .08 AZP 89.08 TAL 337.94 TAP 179.68 RCA 148.83 APO 224.20 V2 24.529
RC 215.890 GL -8.49 GP -5.55 ZAL 131.67 ZAP 50.68 ETS 174.55 ZAE 89.38 ETE 180.31 ZAC 96.91 ETC 271.47 LVI -3.93

PLANETOCENTRIC CONIC

C3 14.272 VHL 3.778 DLA -11.26 RAL 355.37 RAD 6640.2 VEL 11.590 PTH 6.63 VHP 3.510 DPA -28.88 RAP 294.08 ECC 1.2349

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 15	2831.09	-23.42	81.55	209.18	132.68	17 58 26	1831.1	-5.59	64.61
60.00	18 3 11	2693.00	-19.08	72.94	213.01	126.20	18 48 4	1693.0	-3.46	54.22
70.00	19 9 20	2498.51	-15.06	59.96	215.80	121.02	19 50 58	1498.5	-1.44	39.97
80.00	20 30 30	2244.45	-12.07	42.40	217.53	117.52	21 7 54	1244.4	.08	21.64
90.00	21 57 37	1963.37	-10.93	22.33	218.12	116.25	22 30 20	963.4	.67	1.30
100.00	23 13 21	1718.92	-12.07	3.77	217.53	117.52	23 42 0	718.9	.08	343.04
110.00	0 12 42	1545.33	-15.06	348.88	215.80	121.02	0 38 27	545.3	-1.44	328.89

DIFFERENTIAL CORRECTIONS

TDE 1.1464 TRA 3.6099 TC3-6.6455 BAU 1.2692
RDE .2442 RRA .1530 RC3 -.2954 FAU .14105
FDE 2.8435 FRA 7.3690 FC3-8.5557 BSP 13169
BDE 1.1721 BRA 3.6132 BC3 6.6521 FSP 2186

MID-COURSE EXECUTION ACCURACY

SGT 7707.0 SGR 492.9 SG3 1191.7
RRT .8123 RRF .8438 RTF .9743
SGB 7722.7 R23 .0879 R13 .9745
SG1 7717.4 SG2 287.1 THA 2.98

ORBIT DETERMINATION ACCURACY

ST 120.9 SR 18.9 SS 83.5
CRT .8373 CRS -.8865 CST -.9950
LSA 147.7 MSA 11.9 SSA 1.2
EL1 122.0 EL2 10.2 ALF 7.49

LAUNCH DATE APR 30 1971 FLIGHT TIME 276.00 ARRIVAL DATE JAN 31 1972

HELIOCENTRIC CONIC — DISTANCE 641.432 — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.412 GAL -3.75 AZL 91.03 HCA 202.81 SMA 186.67 ECC .20316 INC 1.0313 V1 29.569
RP 224.59 LAP .40 LOP 61.82 VP 21.700 GAP -.07 AZP 89.05 TAL 337.48 TAP 180.29 RCA 148.75 APO 224.59 V2 24.487
RC 218.554 GL -8.77 GP -5.25 ZAL 132.16 ZAP 49.79 ETS 174.68 ZAE 88.28 ETE 180.21 ZAC 97.21 ETC 271.52 LVI -4.29

PLANETOCENTRIC CONIC

C3 14.594 VHL 3.820 DLA -11.30 RAL 355.98 RAD 6640.3 VEL 11.604 PTH 6.65 VHP 3.542 DPA -28.54 RAP 294.26 ECC 1.2402

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 51	2835.18	-23.61	81.75	210.05	132.59	18 1 6	1835.2	-5.80	64.78
60.00	18 5 49	2696.97	-19.24	73.16	213.91	126.12	18 50 46	1697.0	-3.63	54.41
70.00	19 12 2	2502.31	-15.19	60.18	216.71	120.96	19 53 44	1502.3	-1.59	40.17
80.00	20 33 15	2248.08	-12.18	42.61	218.44	117.47	21 10 43	1248.1	-.04	21.84
90.00	22 0 23	1966.92	-11.03	22.53	219.04	116.20	22 33 10	966.9	.56	1.50
100.00	23 16 6	1722.55	-12.18	3.98	218.44	117.47	23 44 49	722.5	-.04	343.21
110.00	0 15 24	1549.13	-15.19	349.09	216.71	120.96	0 41 13	549.1	-1.59	329.09

DIFFERENTIAL CORRECTIONS

TDE 1.1841 TRA 3.7374 TC3-6.6322 BAU 1.2951
RDE .2479 RRA .1339 RC3 -.2711 FAU .13716
FDE 2.8305 FRA 7.3069 FC3-8.1364 BSP 13417
BDE 1.2098 BRA 3.7398 BC3 6.6378 FSP 2141

MID-COURSE EXECUTION ACCURACY

SGT 7842.7 SGR 472.3 SG3 1184.2
RRT .7777 RRF .8100 RTF .9740
SGB 7856.9 R23 .0819 R13 .9741
SG1 7851.3 SG2 296.6 THA 2.69

ORBIT DETERMINATION ACCURACY

ST 123.7 SR 18.8 SS 82.8
CRT .8224 CRS -.8753 CST -.9947
LSA 149.5 MSA 12.3 SSA 1.2
EL1 124.6 EL2 10.6 ALF 7.19

LAUNCH DATE APR 30 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 2 1972

HELIOCENTRIC CONIC — DISTANCE 645.507 — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.421 GAL -3.84 AZL 91.07 HCA 203.68 SMA 186.82 ECC .20429 INC 1.0711 V1 29.569
RP 224.98 LAP .43 LOP 62.90 VP 21.666 GAP -.23 AZP 89.02 TAL 337.02 TAP 180.90 RCA 148.66 APO 224.99 V2 24.445
RC 221.219 GL -9.01 GP -4.97 ZAL 132.65 ZAP 48.93 ETS 174.79 ZAE 87.20 ETE 180.12 ZAC 97.47 ETC 271.58 LVI -4.64

PLANETOCENTRIC CONIC

C3 14.925 VHL 3.863 DLA -11.31 RAL 356.57 RAD 6640.5 VEL 11.618 PTH 6.66 VHP 3.574 DPA -28.24 RAP 294.48 ECC 1.2456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 13	2840.05	-23.84	82.00	210.91	132.48	18 3 33	1840.1	-6.04	64.99
60.00	18 8 12	2701.81	-19.43	73.42	214.79	126.03	18 53 14	1701.8	-3.85	54.64
70.00	19 14 25	2507.14	-15.36	60.45	217.60	120.88	19 56 12	1507.1	-1.77	40.42
80.00	20 35 39	2252.88	-12.33	42.89	219.34	117.41	21 13 12	1252.9	-.20	22.11
90.00	22 2 48	1971.70	-11.18	22.81	219.94	116.15	22 35 39	971.7	.40	1.77
100.00	23 18 31	1727.35	-12.33	4.26	219.34	117.41	23 47 18	727.3	-.20	343.47
110.00	0 17 47	1553.95	-15.36	349.37	217.60	120.88	0 43 41	554.0	-1.77	329.34

DIFFERENTIAL CORRECTIONS

TDE 1.2250 TRA 3.8673 TC3-6.6142 BAU 1.3207
RDE .2523 RRA .1161 RC3 -.2496 FAU .13322
FDE 2.8210 FRA 7.2455 FC3-7.7277 BSP 13674
BDE 1.2507 BRA 3.8693 BC3 6.6189 FSP 2098

MID-COURSE EXECUTION ACCURACY

SGT 7977.1 SGR 456.2 SG3 1137.2
RRT .7400 RRF .7731 RTF .9735
SGB 7990.1 R23 .0788 R13 .9737
SG1 7984.2 SG2 306.6 THA 2.43

ORBIT DETERMINATION ACCURACY

ST 126.5 SR 18.9 SS 82.2
CRT .8084 CRS -.8647 CST -.9944
LSA 151.5 MSA 12.8 SSA 1.2
EL1 127.5 EL2 11.0 ALF 6.94

LAUNCH DATE APR 30 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 4 1972

HELIOCENTRIC CONIC — DISTANCE 649.574 — EARTH TO MARS

RL 150.69 LAL -.00 LOL 219.02 VL 32.430 GAL -3.94 AZL 91.11 HCA 204.95 SMA 186.98 ECC .20544 INC 1.1075 V1 29.569
RP 225.37 LAP .47 LOP 63.96 VP 21.632 GAP -.39 AZP 89.00 TAL 336.55 TAP 181.50 RCA 148.57 APO 225.39 V2 24.403
RC 223.884 GL -9.21 GP -4.72 ZAL 133.14 ZAP 48.10 ETS 174.90 ZAE 86.15 ETE 180.04 ZAC 97.71 ETC 271.65 LVI -4.96

PLANETOCENTRIC CONIC

C3 15.264 VHL 3.907 DLA -11.28 RAL 357.14 RAD 6640.7 VEL 11.632 PTH 6.67 VHP 3.607 DPA -27.95 RAP 294.72 ECC 1.2512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 25	2845.58	-24.09	82.28	211.77	132.36	18 5 51	1845.6	-6.32	65.22
60.00	18 10 22	2707.43	-19.66	73.72	215.66	125.92	18 55 29	1707.4	-4.09	54.91
70.00	19 16 33	2512.85	-15.56	60.77	218.48	120.79	19 58 26	1512.8	-1.99	40.72
80.00	20 37 45	2258.69	-12.51	43.22	220.23	117.33	21 15 23	1258.7	-.40	22.42
90.00	22 4 53	1977.56	-11.35	23.15	220.83	116.08	22 37 50	977.6	.21	2.10
100.00	23 20 36	1733.16	-12.51	4.59	220.23	117.33	23 49 30	733.2	-.40	343.79
110.00	0 19 55	1559.67	-15.56	349.69	218.48	120.79	0 45 55	559.7	-1.99	329.64

DIFFERENTIAL CORRECTIONS

TDE 1.2677 TRA 3.9986 TC3-6.5928 BAU 1.3462
RDE .2573 RRA .0994 RC3 -.2307 FAU .12932
FDE 2.8121 FRA 7.1813 FC3-7.3346 BSP 13923
BDE 1.2935 BRA 3.9999 BC3 6.5969 FSP 2054

MID-COURSE EXECUTION ACCURACY

SGT 8108.7 SGR 443.9 SG3 1110.5
RRT .6998 RRF .7337 RTF .9731
SGB 8120.8 R23 .0723 R13 .9732
SG1 8114.7 SG2 316.8 THA 2.20

ORBIT DETERMINATION ACCURACY

ST 129.4 SR 19.0 SS 81.6
CRT .7954 CRS -.8547 CST -.9942
LSA 153.6 MSA 13.2 SSA 1.2
EL1 130.3 EL2 11.4 ALF 6.71

LAUNCH DATE MAY 1 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 15 1971

HELIOCENTRIC CONIC DISTANCE 309.314 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 35.176 GAL -3.60 AZL 91.88 HCA 99.98 SMA 253.42 ECC .40930 INC 1.8781 V1 29.562
RP 207.32 LAP -1.85 LOP 319.97 VP 27.506 GAP 21.89 AZP 89.67 TAL 347.56 TAP 87.54 RCA 149.70 APO 357.15 V2 26.420
RC 56.291 GL -10.63 GP .71 ZAL 115.16 ZAP 175.25 ETS 171.23 ZAE 174.28 ETE 94.74 ZAC 101.10 ETC 277.20 LVI -17.93

PLANETOCENTRIC CONIC

C3 38.932 VHL 6.240 DLA -19.30 RAL 341.84 RAD 6650.3 VEL 12.602 PTH 7.46 VHP 10.901 DPA -17.34 RAP 318.09 ECC 1.6407

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 48	2908.31	-26.93	85.56	207.67	130.83	17 33 17	1908.3	-9.44	67.90
60.00	17 47 13	2742.32	-21.04	75.64	212.90	125.20	18 32 56	1742.3	-5.62	56.99
70.00	19 6 9	2510.31	-15.47	60.63	216.71	120.83	19 47 59	1510.3	-1.89	40.59
80.00	20 40 26	2215.21	-11.14	40.72	219.21	117.88	21 17 21	1215.2	1.07	20.04
90.00	22 13 55	1913.67	-9.42	19.46	220.12	116.79	22 45 48	913.7	2.27	358.53
100.00	23 23 18	1689.68	-11.14	2.09	219.21	117.88	23 51 28	689.7	1.07	341.41
110.00	0 9 31	1557.12	-15.47	349.54	216.71	120.83	0 35 28	557.1	-1.89	329.51

DIFFERENTIAL CORRECTIONS

TDE -.5196 TRA-1.1256 TC3 -.0260 BAU .0446
RDE -.5790 RRA .2190 RC3 .0816 FAU .03439
FDE .2648 FRA .9907 FC3 -.7648 BSP 1816
BDE .7780 BRA 1.1467 BC3 .0856 FSP 149

MID-COURSE EXECUTION ACCURACY

SGT 1195.0 SGR 581.8 SG3 119.1
RRT .0245 RRF -.0263 RTF -.6927
SGB 1329.1 R23 -.0041 R13 -.6927
SG1 1195.1 SG2 581.5 THA .90

ORBIT DETERMINATION ACCURACY

ST 29.0 SR 26.8 SS 17.8
CRT .7500 CRS .5465 CST .9613
LSA 40.0 MSA 16.6 SSA 1.1
EL1 36.9 EL2 13.9 ALF 42.01

LAUNCH DATE MAY 1 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 311.373 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 34.993 GAL -3.49 AZL 91.88 HCA 101.24 SMA 247.36 ECC .39467 INC 1.8849 V1 29.562
RP 207.22 LAP -1.85 LOP 321.23 VP 27.283 GAP 21.38 AZP 89.63 TAL 347.63 TAP 88.87 RCA 149.73 APO 344.99 V2 26.432
RC 56.455 GL -10.95 GP .74 ZAL 115.18 ZAP 174.40 ETS 172.34 ZAE 174.29 ETE 85.64 ZAC 101.07 ETC 277.28 LVI -18.07

PLANETOCENTRIC CONIC

C3 36.568 VHL 6.047 DLA -19.59 RAL 341.71 RAD 6649.5 VEL 12.508 PTH 7.39 VHP 10.557 DPA -17.20 RAP 318.48 ECC 1.6018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 44	2886.50	-25.95	84.40	207.10	131.39	17 34 51	1886.5	-8.36	66.96
60.00	17 49 35	2719.39	-20.13	74.37	212.13	125.68	18 34 54	1719.4	-4.62	55.48
70.00	19 9 3	2485.76	-14.61	59.25	215.95	121.22	19 50 29	1485.8	-.96	39.31
80.00	20 43 57	2188.73	-10.30	39.22	218.47	118.18	21 20 26	1188.7	1.97	18.58
90.00	22 17 45	1886.15	-8.57	17.88	219.39	117.05	22 49 12	886.1	3.16	356.99
100.00	23 26 49	1663.20	-10.30	.58	218.47	118.18	23 54 32	663.2	1.97	339.95
110.00	0 12 25	1532.58	-14.61	348.16	215.95	121.22	0 37 58	532.6	-.96	328.23

DIFFERENTIAL CORRECTIONS

TDE -.5148 TRA-1.1158 TC3 -.0163 BAU .0435
RDE -.5611 RRA .2110 RC3 .0876 FAU .03549
FDE .2725 FRA 1.0306 FC3 -.8403 BSP 1876
BDE .7614 BRA 1.1356 BC3 .0891 FSP 162

MID-COURSE EXECUTION ACCURACY

SGT 1223.7 SGR 582.1 SG3 127.4
RRT .0268 RRF -.0291 RTF -.7034
SGB 1355.1 R23 -.0047 R13 -.7034
SG1 1223.9 SG2 581.8 THA .94

ORBIT DETERMINATION ACCURACY

ST 29.6 SR 26.8 SS 18.5
CRT .7496 CRS .5417 CST .9600
LSA 40.6 MSA 16.9 SSA 1.1
EL1 37.4 EL2 14.0 ALF 41.14

LAUNCH DATE MAY 1 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 313.644 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 34.820 GAL -3.38 AZL 91.89 HCA 102.50 SMA 241.93 ECC .38092 INC 1.8919 V1 29.562
RP 207.13 LAP -1.85 LOP 322.50 VP 27.072 GAP 20.88 AZP 89.59 TAL 347.72 TAP 90.22 RCA 149.77 APO 334.08 V2 26.443
RC 56.701 GL -11.28 GP .76 ZAL 115.17 ZAP 173.53 ETS 173.16 ZAE 174.17 ETE 76.99 ZAC 101.04 ETC 277.37 LVI -18.20

PLANETOCENTRIC CONIC

C3 34.395 VHL 5.865 DLA -19.69 RAL 341.87 RAD 6648.7 VEL 12.422 PTH 7.33 VHP 10.225 DPA -17.06 RAP 318.87 ECC 1.5861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 40	2864.75	-24.97	83.26	206.36	131.91	17 36 24	1864.8	-7.27	66.03
60.00	17 51 57	2696.45	-19.22	73.13	211.38	126.13	18 36 53	1696.4	-3.61	54.38
70.00	19 12 0	2461.10	-13.74	57.87	215.21	121.58	19 53 1	1461.1	-.01	38.02
80.00	20 47 34	2162.00	-9.43	37.70	217.75	118.46	21 23 36	1162.0	2.87	17.12
90.00	22 21 44	1858.28	-7.70	16.29	218.68	117.29	22 52 42	858.3	4.05	355.43
100.00	23 30 26	1636.47	-9.43	359.07	217.75	118.46	23 57 43	636.5	2.87	338.48
110.00	0 15 22	1507.92	-13.74	346.79	215.21	121.58	0 40 30	507.9	-.01	326.94

DIFFERENTIAL CORRECTIONS

TDE -.5117 TRA-1.1046 TC3 -.0075 BAU .0433
RDE -.5436 RRA .2031 RC3 .0938 FAU .03663
FDE .2804 FRA 1.0726 FC3 -.9221 BSP 1956
BDE .7466 BRA 1.1231 BC3 .0941 FSP 176

MID-COURSE EXECUTION ACCURACY

SGT 1251.8 SGR 582.0 SG3 136.2
RRT .0307 RRF -.0321 RTF -.7124
SGB 1380.4 R23 -.0041 R13 -.7125
SG1 1251.9 SG2 581.6 THA 1.04

ORBIT DETERMINATION ACCURACY

ST 30.3 SR 26.7 SS 19.1
CRT .7506 CRS .5368 CST .9580
LSA 41.3 MSA 17.1 SSA 1.1
EL1 37.9 EL2 14.2 ALF 40.21

LAUNCH DATE MAY 1 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 316.103 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 34.657 GAL -3.27 AZL 91.90 HCA 103.77 SMA 237.04 ECC .38798 INC 1.8989 V1 29.562
RP 207.05 LAP -1.84 LOP 323.76 VP 26.872 GAP 20.39 AZP 89.55 TAL 347.82 TAP 91.59 RCA 149.81 APO 324.26 V2 26.453
RC 57.030 GL -11.62 GP .79 ZAL 115.14 ZAP 172.65 ETS 173.79 ZAE 173.95 ETE 69.13 ZAC 101.02 ETC 277.45 LVI -18.34

PLANETOCENTRIC CONIC

C3 32.397 VHL 5.692 DLA -20.20 RAL 342.01 RAD 6647.9 VEL 12.342 PTH 7.27 VHP 9.904 DPA -16.92 RAP 319.24 ECC 1.5332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 35	2843.10	-23.98	82.15	205.64	132.41	17 37 58	1843.1	-6.19	65.12
60.00	17 54 20	2673.54	-18.29	71.90	210.66	126.56	18 38 54	1673.5	-2.60	53.28
70.00	19 15 1	2436.37	-12.85	56.30	214.50	121.92	19 55 37	1436.4	.93	36.73
80.00	20 51 18	2135.04	-6.55	36.18	217.05	118.72	21 26 53	1135.0	3.78	15.63
90.00	22 25 50	1830.08	-6.82	14.69	217.99	117.51	22 56 20	830.1	4.95	353.85
100.00	23 34 10	1609.51	-8.55	357.55	217.05	118.72	24 0 59	609.5	3.78	337.00
110.00	0 18 23	1483.19	-12.85	345.42	214.50	121.92	0 43 6	483.2	.93	325.65

DIFFERENTIAL CORRECTIONS

TDE -.5046 TRA-1.0983 TC3 .0086 BAU .0436
RDE -.5267 RRA .1953 RC3 .1004 FAU .03788
FDE .2876 FRA 1.1167 FC3-1.0122 BSP 2001
BDE .7294 BRA 1.1156 BC3 .1008 FSP 190

MID-COURSE EXECUTION ACCURACY

SGT 1282.9 SGR 581.5 SG3 145.8
RRT .0317 RRF -.0349 RTF -.7251
SGB 1408.5 R23 -.0060 R13 -.7252
SG1 1283.1 SG2 581.1 THA 1.03

ORBIT DETERMINATION ACCURACY

ST 30.9 SR 26.7 SS 19.8
CRT .7479 CRS .5303 CST .9571
LSA 41.9 MSA 17.4 SSA 1.1
EL1 38.3 EL2 14.3 ALF 39.40

LAUNCH DATE MAY 1 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC — DISTANCE 318.725 — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 34.504 GAL -3.16 AZL 91.91 HCA 105.03 SMA 232.62 ECC .35581 INC 1.9059 V1 29.562
RP 206.97 LAP -1.84 LOP 325.03 VP 26.682 GAP 19.90 AZP 89.51 TAL 347.93 TAP 92.96 RCA 149.85 APO 315.38 V2 26.462
RC 57.440 GL -11.96 GP .81 ZAL 115.08 ZAP 171.75 ETS 174.30 ZAE 173.65 ETE 62.25 ZAC 101.00 ETC 277.53 LVI -18.47

PLANETOCENTRIC CONIC

C3 30.556 VHL 5.528 DLA -20.52 RAL 342.13 RAD 6647.2 VEL 12.267 PTH 7.21 VHP 9.594 DPA -16.78 RAP 319.59 ECC 1.5029

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 29	2821.58	-22.99	81.07	204.94	132.88	17 39 31	1821.6	-5.12	64.21
60.00	17 56 45	2650.69	-17.36	70.68	209.95	126.96	18 40 55	1650.7	-1.60	52.19
70.00	19 18 5	2411.59	-11.96	55.14	213.80	122.23	19 58 16	1411.6	1.88	35.44
80.00	20 55 8	2107.86	-7.66	34.66	216.38	118.95	21 30 16	1107.9	4.70	14.13
90.00	22 30 5	1801.57	-5.92	13.08	217.32	117.70	23 0 7	801.6	5.85	352.24
100.00	23 38 0	1582.33	-7.66	356.03	216.38	118.95	24 4 22	582.3	4.70	335.50
110.00	0 21 27	1458.41	-11.96	344.06	213.80	122.23	0 45 46	458.4	1.88	324.36

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.4992 TRA-1.0874 TC3 .0227 BAU .0448 — SGT 1310.2 SGR 580.5 SG3 155.9 — ST 31.5 SR 26.6 SS 20.5
RDE -.5103 RRA .1877 RC3 .1072 FAU .03920 — RRT .0350 RRF -.0383 RTF -.7346 — CRT .7475 CRS .5242 CST .9553
FDE .2950 FRA 1.1619 FC3-1.1107 BSP 2055 — SGB 1433.1 R23 -.0064 R13 -.7347 — LSA 42.6 MSA 17.6 SSA 1.2
BDE .7139 BRA 1.1035 BC3 .1096 FSP 206 — SG1 1310.4 SG2 580.1 THA 1.10 — EL1 38.7 EL2 14.4 ALF 38.59

LAUNCH DATE MAY 1 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 25 1971

HELIOCENTRIC CONIC — DISTANCE 321.493 — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 34.358 GAL -3.05 AZL 91.91 HCA 106.30 SMA 228.61 ECC .34434 INC 1.9131 V1 29.562
RP 206.90 LAP -1.84 LOP 326.30 VP 26.501 GAP 19.42 AZP 89.46 TAL 348.05 TAP 94.35 RCA 149.89 APO 307.33 V2 26.469
RC 57.930 GL -12.31 GP .84 ZAL 115.01 ZAP 170.84 ETS 174.70 ZAE 173.31 ETE 56.36 ZAC 100.98 ETC 277.60 LVI -18.59

PLANETOCENTRIC CONIC

C3 28.863 VHL 5.372 DLA -20.85 RAL 342.24 RAD 6646.6 VEL 12.199 PTH 7.16 VHP 9.294 DPA -16.65 RAP 319.94 ECC 1.4750

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 24	2800.19	-21.99	80.01	204.27	133.32	17 41 4	1800.2	-4.04	63.31
60.00	17 59 11	2627.91	-16.42	69.49	209.27	127.34	18 42 58	1627.9	-.60	51.10
70.00	19 21 13	2386.75	-11.05	53.79	213.13	122.52	20 0 59	1386.7	2.83	34.14
80.00	20 59 5	2080.45	-6.76	33.13	215.72	119.15	21 33 45	1080.4	5.61	12.61
90.00	22 34 29	1772.70	-5.00	11.46	216.68	117.87	23 4 2	772.7	6.76	350.61
100.00	23 41 57	1554.92	-6.76	354.50	215.72	119.15	24 7 52	554.9	5.61	333.98
110.00	0 24 35	1433.57	-11.05	342.71	213.13	122.52	0 48 28	433.6	2.83	323.06

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.4867 TRA-1.0700 TC3 .0476 BAU .0478 — SGT 1327.9 SGR 579.2 SG3 166.7 — ST 31.8 SR 26.5 SS 21.2
RDE -.4944 RRA .1803 RC3 .1144 FAU .04052 — RRT .0374 RRF -.0422 RTF -.7508 — CRT .7444 CRS .5194 CST .9551
FDE .3042 FRA 1.2113 FC3-1.2153 BSP 2026 — SGB 1448.7 R23 -.0075 R13 -.7509 — LSA 42.9 MSA 17.8 SSA 1.2
BDE .6938 BRA 1.0851 BC3 .1239 FSP 225 — SG1 1328.1 SG2 578.7 THA 1.15 — EL1 38.8 EL2 14.5 ALF 38.19

LAUNCH DATE MAY 1 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 27 1971

HELIOCENTRIC CONIC — DISTANCE 324.391 — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 34.221 GAL -2.95 AZL 91.92 HCA 107.57 SMA 224.97 ECC .33357 INC 1.9204 V1 29.562
RP 206.85 LAP -1.83 LOP 327.56 VP 26.331 GAP 18.95 AZP 89.42 TAL 348.18 TAP 95.75 RCA 149.93 APO 300.01 V2 26.476
RC 58.496 GL -12.66 GP .87 ZAL 114.92 ZAP 169.91 ETS 175.03 ZAE 172.94 ETE 51.38 ZAC 100.96 ETC 277.67 LVI -18.72

PLANETOCENTRIC CONIC

C3 27.305 VHL 5.225 DLA -21.20 RAL 342.33 RAD 6645.9 VEL 12.135 PTH 7.10 VHP 9.004 DPA -16.52 RAP 320.26 ECC 1.4494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 18	2779.03	-21.00	78.97	203.62	133.73	17 42 37	1779.0	-2.98	62.42
60.00	18 1 38	2605.29	-15.49	68.31	208.61	127.68	18 45 3	1605.3	.40	50.02
70.00	19 24 24	2361.97	-10.14	52.45	212.48	122.79	20 3 46	1362.0	3.77	32.84
80.00	21 3 9	2052.92	-5.84	31.60	215.10	119.33	21 37 22	1052.9	6.53	11.09
90.00	22 39 3	1743.59	-4.07	9.82	216.07	118.01	23 8 6	743.6	7.68	348.96
100.00	23 46 1	1527.39	-5.84	352.97	215.10	119.33	24 11 28	527.4	6.53	332.45
110.00	0 27 48	1408.79	-10.14	341.37	212.48	122.79	0 51 15	408.8	3.77	321.76

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.4840 TRA-1.0631 TC3 .0596 BAU .0495 — SGT 1359.7 SGR 577.5 SG3 178.2 — ST 32.5 SR 26.4 SS 21.8
RDE -.4791 RRA .1730 RC3 .1218 FAU .04204 — RRT .0412 RRF -.0459 RTF -.7562 — CRT .7445 CRS .5115 CST .9524
FDE .3106 FRA 1.2601 FC3-1.3329 BSP 2125 — SGB 1477.2 R23 -.0079 R13 -.7563 — LSA 43.7 MSA 18.0 SSA 1.2
BDE .6810 BRA 1.0771 BC3 .1355 FSP 242 — SG1 1359.9 SG2 576.9 THA 1.22 — EL1 39.3 EL2 14.6 ALF 37.21

LAUNCH DATE MAY 1 1971 FLIGHT TIME 120.00 ARRIVAL DATE AUG 29 1971

HELIOCENTRIC CONIC — DISTANCE 327.404 — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 34.092 GAL -2.85 AZL 91.93 HCA 108.83 SMA 221.65 ECC .32342 INC 1.9277 V1 29.562
RP 206.80 LAP -1.82 LOP 328.83 VP 26.168 GAP 18.49 AZP 89.38 TAL 348.32 TAP 97.16 RCA 149.96 APO 293.33 V2 26.482
RC 59.137 GL -13.02 GP .90 ZAL 114.81 ZAP 168.97 ETS 175.31 ZAE 172.56 ETE 47.23 ZAC 100.95 ETC 277.74 LVI -18.84

PLANETOCENTRIC CONIC

C3 25.868 VHL 5.086 DLA -21.55 RAL 342.41 RAD 6645.4 VEL 12.076 PTH 7.06 VHP 8.724 DPA -16.39 RAP 320.57 ECC 1.4257

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 12	2758.07	-20.01	77.96	203.01	134.11	17 44 10	1758.1	-1.93	61.54
60.00	18 4 6	2582.81	-14.55	67.15	207.98	128.01	18 47 9	1582.8	1.39	48.95
70.00	19 27 39	2337.21	-9.22	51.12	211.86	123.03	20 6 36	1337.2	4.71	31.54
80.00	21 7 20	2025.22	-4.91	30.07	214.50	119.49	21 41 5	1025.2	7.45	9.54
90.00	22 43 46	1714.17	-3.13	8.17	215.48	118.12	23 12 20	714.2	8.59	347.28
100.00	23 50 12	1499.69	-4.91	351.43	214.50	119.49	24 15 12	499.7	7.45	330.91
110.00	0 31 1	1384.03	-9.22	340.03	211.86	123.03	0 54 5	384.0	4.71	320.46

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.4800 TRA-1.0542 TC3 .0749 BAU .0517 — SGT 1388.7 SGR 575.4 SG3 190.5 — ST 33.1 SR 26.3 SS 22.5
RDE -.4642 RRA .1658 RC3 .1294 FAU .04366 — RRT .0456 RRF -.0501 RTF -.7627 — CRT .7445 CRS .5037 CST .9497
FDE .3174 FRA 1.3119 FC3-1.4612 BSP 2204 — SGB 1503.2 R23 -.0082 R13 -.7628 — LSA 44.3 MSA 18.2 SSA 1.2
BDE .6678 BRA 1.0671 BC3 .1495 FSP 262 — SG1 1389.0 SG2 574.7 THA 1.31 — EL1 39.7 EL2 14.7 ALF 36.34

LAUNCH DATE MAY 1 1971 FLIGHT TIME 122.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 330.520 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	33.970	GAL	-2.75	AZL	91.94	HCA	110.10	SMA	216.61	ECC	.31387	INC	1.9352
RP	206.75	LAP	-1.82	LOP	330.10	VP	26.014	GAP	18.04	AZP	89.33	TAL	348.47	TAP	98.58	RCA	150.00	APO	287.23
RC	59.850	GL	-13.37	GP	.94	ZAL	114.69	ZAP	168.01	ETS	175.55	ZAE	172.21	ETE	43.76	ZAC	100.94	ETC	277.81

V1	29.962	V2	26.487	LVI	-18.98														

PLANETOCENTRIC CONIC

C3	24.844	VHL	4.984	DLA	-21.92	RAL	342.47	RAD	6644.8	VEL	12.022	PTH	7.01	VHP	8.453	DPA	-16.26	RAP	320.87

ECC	1.4039																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 6	2737.35	-19.02	76.98	202.41	134.47	17 45 44	1737.4	-.89	60.88
60.00	18 6 36	2560.51	-13.61	66.02	207.38	128.31	18 49 17	1560.5	2.37	47.88
70.00	19 30 58	2312.51	-8.30	49.79	211.27	123.25	20 9 30	1312.5	5.65	30.25
80.00	21 11 39	1997.37	-3.98	28.53	213.93	119.62	21 44 57	997.4	8.36	7.98
90.00	22 48 40	1684.44	-2.18	6.51	214.92	118.20	23 16 45	684.4	9.51	345.58
100.00	23 54 31	1471.84	-3.98	349.90	213.93	119.62	24 19 3	471.8	8.36	329.35
110.00	0 34 20	1359.33	-8.30	338.71	211.27	123.25	0 56 59	359.3	5.65	319.16

DIFFERENTIAL CORRECTIONS

TDE	-.4750	TRA	-1.0442	TC3	.0916	BAU	.0542												

MID-COURSE EXECUTION ACCURACY

SGT	1415.7	SGR	572.9	SG3	203.6														

ORBIT DETERMINATION ACCURACY

ST	33.7	SR	26.2	SS	23.2														

RDE	-.4498	RRA	.1587	RC3	.1373	FAU	.04536												

RRT	.0500	RRF	-.0548	RTF	-.7693														

CRT	.7441	CRS	.4960	CST	.9471														

FDE	.3245	FRA	1.3663	FC3	-1.6001	BSP	2272												

SGB	1527.3	R23	-.0088	R13	-.7694														

LSA	44.9	MSA	18.4	SSA	1.2														

BDE	.6542	BRA	1.0561	BC3	.1651	FSP	282												

SG1	1416.1	SG2	572.1	THA	1.38														

EL1	40.1	EL2	14.7	ALF	35.53														

LAUNCH DATE MAY 1 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 333.730 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	33.855	GAL	-2.65	AZL	91.94	HCA	111.37	SMA	215.84	ECC	.30488	INC	1.9428
RP	206.72	LAP	-1.81	LOP	331.37	VP	25.867	GAP	17.59	AZP	89.29	TAL	348.63	TAP	100.00	RCA	150.03	APO	281.64
RC	60.633	GL	-13.73	GP	.97	ZAL	114.55	ZAP	167.03	ETS	175.75	ZAE	171.88	ETE	40.88	ZAC	100.94	ETC	277.87

V1	29.862	V2	26.491	LVI	-19.07														

PLANETOCENTRIC CONIC

C3	23.324	VHL	4.829	DLA	-22.29	RAL	342.52	RAD	6644.3	VEL	11.971	PTH	6.97	VHP	8.191	DPA	-16.14	RAP	321.15

ECC	1.3838																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 1	2718.90	-18.05	76.02	201.84	134.80	17 47 17	1716.9	.14	59.82
60.00	18 9 8	2538.41	-12.67	64.90	206.80	128.58	18 51 26	1538.4	3.34	46.83
70.00	19 34 21	2287.88	-7.38	48.48	210.70	123.44	20 12 29	1287.9	6.58	28.94
80.00	21 16 7	1969.37	-3.03	26.98	213.39	119.72	21 48 56	969.4	9.28	6.40
90.00	22 53 46	1654.38	-1.21	4.83	214.40	118.26	23 21 21	654.4	10.42	343.85
100.00	0 2 55	1443.84	-3.03	348.35	213.39	119.72	0 26 59	443.8	9.28	327.77
110.00	0 37 43	1334.70	-7.38	337.40	210.70	123.44	0 59 58	334.7	6.58	317.86

DIFFERENTIAL CORRECTIONS

TDE	-.4691	TRA	-1.0334	TC3	.1103	BAU	.0569												

MID-COURSE EXECUTION ACCURACY

SGT	1441.1	SGR	570.1	SG3	217.7														

ORBIT DETERMINATION ACCURACY

ST	34.2	SR	26.0	SS	23.9														

RDE	-.4358	RRA	.1518	RC3	.1455	FAU	.04717												

RRT	.0545	RRF	-.0598	RTF	-.7761														

CRT	.7434	CRS	.4881	CST	.9446														

FDE	.3318	FRA	1.4234	FC3	-1.7510	BSP	2328												

SGB	1549.8	R23	-.0097	R13	-.7762														

LSA	45.5	MSA	18.6	SSA	1.2														

BDE	.6403	BRA	1.0445	BC3	.1826	FSP	305												

SG1	1441.5	SG2	569.1	THA	1.46														

EL1	40.4	EL2	14.7	ALF	34.79														

LAUNCH DATE MAY 1 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 337.025 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	33.746	GAL	-2.55	AZL	91.95	HCA	112.64	SMA	213.29	ECC	.29641	INC	1.9505
RP	206.70	LAP	-1.80	LOP	332.64	VP	25.728	GAP	17.15	AZP	89.25	TAL	348.80	TAP	101.44	RCA	150.07	APO	276.51
RC	61.483	GL	-14.10	GP	1.01	ZAL	114.39	ZAP	166.03	ETS	175.92	ZAE	171.58	ETE	38.50	ZAC	100.94	ETC	277.92

V1	29.562	V2	26.494	LVI	-19.18														

PLANETOCENTRIC CONIC

C3	22.198	VHL	4.711	DLA	-22.67	RAL	342.56	RAD	6643.8	VEL	11.924	PTH	6.93	VHP	7.937	DPA	-16.02	RAP	321.40

ECC	1.3653																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 55	2696.73	-17.08	75.09	201.30	135.11	17 48 52	1696.7	1.15	58.98
60.00	18 11 41	2516.53	-11.74	63.80	206.25	128.83	18 53 37	1516.5	4.30	45.78
70.00	19 37 48	2263.36	-6.46	47.18	210.17	123.61	20 15 31	1263.4	7.50	27.64
80.00	21 20 43	1941.22	-2.08	25.44	212.88	119.79	21 53 5	941.2	10.19	4.81
90.00	22 59 5	1623.99	-.23	3.14	213.91	118.28	23 26 9	624.0	11.34	342.08
100.00	0 7 31	1415.70	-2.08	346.81	212.88	119.79	0 31 7	415.7	10.19	326.18
110.00	0 41 10	1310.17	-6.46	336.10	210.17	123.61	1 3 0	310.2	7.50	316.56

DIFFERENTIAL CORRECTIONS

TDE	-.4633	TRA	-1.0223	TC3	.1300	BAU	.0598												

MID-COURSE EXECUTION ACCURACY

SGT	1465.5	SGR	566.9	SG3	232.6														

ORBIT DETERMINATION ACCURACY

ST	34.7	SR	25.8	SS	24.6														

RDE	-.4224	RRA	.1450	RC3	.1539	FAU	.04909												

RRT	.0597	RRF	-.0653	RTF	-.7825														

CRT	.7428	CRS	.4799	CST	.9418														

FDE	.3389	FRA	1.4633	FC3	-1.9146	BSP	2388												

SGB	1571.3	R23	-.0105	R13	-.7827														

LSA	46.1	MSA	18.8	SSA	1.2														

BDE	.6269	BRA	1.0326	BC3	.2015	FSP	329												

SG1	1465.9	SG2	565.7	THA	1.56														

EL1	40.6	EL2	14.8	ALF	34.07														

LAUNCH DATE MAY 1 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 340.395 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	33.644	GAL	-2.46	AZL	91.96	HCA	113.91	SMA	210.95	ECC	.28844	INC	1.9585
RP	206.68	LAP	-1.79	LOP	333.91	VP	25.595	GAP	16.73	AZP	89.21	TAL	348.97	TAP	102.88	RCA	150.10	APO	271.79
RC	62.398	GL	-14.46	GP	1.05	ZAL	114.23	ZAP	165.02	ETS	176.07	ZAE	171.34	ETE	36.54	ZAC	100.94	ETC	277.98

V1	29.562	V2	26.496	LVI	-19.28														

PLANETOCENTRIC CONIC

C3	21.160	VHL	4.600	DLA	-23.05	RAL	342.59	RAD	6643.4	VEL	11.881	PTH	6.89	VHP	7.692	DPA	-15.91	RAP	321.64

ECC	1.3482																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 50	2676.88	-16.12	74.18	200.79	135.40	17 50 26	1676.9	2.15	58.15
60.00	18 14 15	2494.91	-10.82	62.72	205.73	129.06	18 55 50	1494.9	5.25	44.74
70.00	19 41 19	2238.95	-5.54	45.90	209.66	123.76	20 18 38	1239.0	8.41	26.34
80.00	21 25 29	1912.94	-1.13	23.88	212.40	119.84	21 57 22	912.9	11.09	3.20
90.00	23 4 36	1593.24	.76	1.42	213.45	118.27	23 31 9	593.2	12.25	340.29
100.00	0 12 17	1387.42	-1.13	345.25	212.40	119.84	0 35 24	387.4	11.09	324.57
110.00	0 44 41	1285.77	-5.54	334.81	209.66	123.76	1 6 7	285.8	8.41	315.26

DIFFERENTIAL CORRECTIONS

TDE	-.4566	TRA	-1.0103	TC3	.1509	BAU	.0628												

MID-COURSE EXECUTION ACCURACY

SGT	1487.7	SGR	563.4	SG3	248.5														

ORBIT DETERMINATION ACCURACY

ST	35.1	SR	25.6	SS	25.4														

RDE	-.4093	RRA	.1384	RC3	.1626	FAU	.05114												

RRT	.0651	RRF	-.0713	RTF	-.7887														

CRT	.7420	CRS	.4714	CST	.9390														

FDE	.3459	FRA	1.5461	FC3	-2.0923	BSP	2436												

SGB	1590.8	R23	-.0115	R13	-.7889														

LSA	46.6	MSA	19.0	SSA	1.2														

BDE	.6132	BRA	1.0198	BC3	.2218	FSP	355												

SG1	1488.2	SG2	562.0	THA	1.65														

EL1	40.9	EL2	14.8	ALF	33.41														

LAUNCH DATE MAY 1 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 8 1971

DISTANCE 343.834

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.72 LAL -.00 LOL 219.99 VL 33.547 GAL -2.37 AZL 91.97 HCA 115.18 SMA 208.79 ECC .28095 INC 1.9665 V1 29.562
RP 206.67 LAP -1.78 LOP 335.18 VP 25.469 GAP 16.31 AZP 89.16 TAL 349.14 TAP 104.32 RCA 150.13 APO 267.45 V2 26.496
RC 63.376 GL -14.83 GP 1.09 ZAL 114.05 ZAP 163.98 ETS 176.20 ZAE 171.14 ETE 34.94 ZAC 100.95 ETC 278.03 LVI -19.39

PLANETOCENTRIC CONIC

C3 20.202 VHL 4.495 DLA -23.44 RAL 342.61 RAD 6642.9 VEL 11.841 PTH 6.86 VHP 7.455 DPA -15.79 RAP 321.86 ECC 1.3325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 44	2657.36	-15.17	73.29	200.30	135.66	17 52 2	1657.4	3.13	57.34
60.00	18 16 51	2473.55	-9.90	61.67	205.24	129.27	18 58 5	1473.6	6.18	43.71
70.00	19 44 54	2214.69	-4.62	44.62	209.18	123.88	20 21 49	1214.7	9.31	25.05
80.00	21 30 24	1884.52	-.16	22.32	211.95	119.86	22 1 49	884.5	11.99	1.57
90.00	23 10 22	1562.08	1.77	359.68	213.03	118.23	23 36 24	562.1	13.17	338.45
100.00	0 17 12	1359.00	-.16	343.69	211.95	119.86	0 39 51	359.0	11.99	322.94
110.00	0 48 17	1261.51	-4.62	333.54	209.18	123.88	1 9 18	261.5	9.31	313.96

DIFFERENTIAL CORRECTIONS

TDE -.4497 TRA -.9983 TC3 .1726 BAU .0657
RDE -.3967 RRA .1318 RC3 .1715 FAU .05332
FDE .3527 FRA 1.6127 FC3-2.2852 BSP 2483
BDE .5997 BRA 1.0070 BC3 .2433 FSP 383

MID-COURSE EXECUTION ACCURACY

SGT 1508.9 SGR 559.5 SG3 265.5
RRT .0708 RRF -.0778 RTF -.7947
SGB 1609.3 R23 -.0126 R13 -.7949
SG1 1509.5 SG2 557.9 THA 1.74

ORBIT DETERMINATION ACCURACY

ST 35.4 SR 25.4 SS 26.1
CRT .7411 CRS .4622 CST .9360
LSA 47.1 MSA 19.2 SSA 1.3
EL1 41.0 EL2 14.7 ALF 32.77

LAUNCH DATE MAY 1 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 10 1971

DISTANCE 347.337

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.72 LAL -.00 LOL 219.99 VL 33.456 GAL -2.29 AZL 91.97 HCA 116.45 SMA 206.81 ECC .27389 INC 1.9747 V1 29.562
RP 206.68 LAP -1.77 LOP 336.45 VP 25.348 GAP 15.90 AZP 89.12 TAL 349.32 TAP 105.77 RCA 150.16 APO 263.45 V2 26.496
RC 64.414 GL -15.19 GP 1.13 ZAL 113.86 ZAP 162.92 ETS 176.31 ZAE 171.01 ETE 33.66 ZAC 100.96 ETC 278.07 LVI -19.49

PLANETOCENTRIC CONIC

C3 19.318 VHL 4.395 DLA -23.83 RAL 342.63 RAD 6642.5 VEL 11.804 PTH 6.83 VHP 7.226 DPA -15.69 RAP 322.05 ECC 1.3179

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 40	2638.19	-14.23	72.43	199.84	135.90	17 53 38	1638.2	4.09	56.53
60.00	18 19 29	2452.50	-8.99	60.63	204.77	129.45	19 0 22	1452.5	7.10	42.69
70.00	19 48 34	2190.59	-3.70	43.36	208.73	123.98	20 25 5	1190.6	10.20	23.75
80.00	21 35 30	1855.96	.80	20.76	211.54	119.85	22 6 26	856.0	12.89	359.92
90.00	23 16 24	1530.48	2.78	357.92	212.64	118.15	23 41 55	530.5	14.08	336.58
100.00	0 22 17	1330.43	.80	342.13	211.54	119.85	0 44 28	330.4	12.89	321.29
110.00	0 51 56	1237.41	-3.70	332.27	208.73	123.98	1 12 34	237.4	10.20	312.67

DIFFERENTIAL CORRECTIONS

TDE -.4430 TRA -.9857 TC3 .1935 BAU .0684
RDE -.3845 RRA .1254 RC3 .1807 FAU .05562
FDE .3592 FRA 1.6825 FC3-2.4928 BSP 2525
BDE .5866 BRA .9937 BC3 .2648 FSP 413

MID-COURSE EXECUTION ACCURACY

SGT 1528.3 SGR 555.4 SG3 283.5
RRT .0771 RRF -.0846 RTF -.7998
SGB 1626.1 R23 -.0137 R13 -.8000
SG1 1529.0 SG2 553.5 THA 1.85

ORBIT DETERMINATION ACCURACY

ST 35.7 SR 25.2 SS 26.9
CRT .7405 CRS .4527 CST .9325
LSA 47.5 MSA 19.4 SSA 1.3
EL1 41.2 EL2 14.7 ALF 32.15

LAUNCH DATE MAY 1 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 12 1971

DISTANCE 350.896

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.72 LAL -.00 LOL 219.99 VL 33.370 GAL -2.21 AZL 91.98 HCA 117.72 SMA 204.97 ECC .26725 INC 1.9831 V1 29.562
RP 206.69 LAP -1.76 LOP 337.72 VP 25.234 GAP 15.49 AZP 89.08 TAL 349.51 TAP 107.22 RCA 150.19 APO 259.75 V2 26.495
RC 65.512 GL -15.56 GP 1.18 ZAL 113.67 ZAP 161.84 ETS 176.41 ZAE 170.93 ETE 32.67 ZAC 100.98 ETC 278.11 LVI -19.58

PLANETOCENTRIC CONIC

C3 18.503 VHL 4.301 DLA -24.23 RAL 342.64 RAD 6642.2 VEL 11.770 PTH 6.80 VHP 7.004 DPA -15.58 RAP 322.22 ECC 1.3045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 35	2619.40	-13.31	71.59	199.41	136.11	17 55 15	1619.4	5.03	55.74
60.00	18 22 8	2431.76	-8.09	59.62	204.34	129.62	19 2 40	1431.8	8.00	41.68
70.00	19 52 18	2166.68	-2.79	42.10	208.32	124.05	20 28 25	1166.7	11.08	22.45
80.00	21 40 46	1827.23	1.78	19.18	211.17	119.81	22 11 13	827.2	13.77	358.25
90.00	23 22 44	1498.36	3.81	356.12	212.29	118.04	23 47 42	498.4	14.98	334.66
100.00	0 27 34	1301.71	1.78	340.55	211.17	119.81	0 49 15	301.7	13.77	319.62
110.00	0 55 41	1213.50	-2.79	331.01	208.32	124.05	1 15 54	213.5	11.08	311.37

DIFFERENTIAL CORRECTIONS

TDE -.4357 TRA -.9728 TC3 .2151 BAU .0710
RDE -.3727 RRA .1190 RC3 .1900 FAU .05809
FDE .3655 FRA 1.7561 FC3-2.7178 BSP 2566
BDE .5734 BRA .9801 BC3 .2870 FSP 444

MID-COURSE EXECUTION ACCURACY

SGT 1546.1 SGR 550.9 SG3 302.8
RRT .0837 RRF -.0921 RTF -.8047
SGB 1641.3 R23 -.0151 R13 -.8049
SG1 1546.9 SG2 548.7 THA 1.95

ORBIT DETERMINATION ACCURACY

ST 36.0 SR 25.0 SS 27.6
CRT .7397 CRS .4428 CST .9290
LSA 47.9 MSA 19.6 SSA 1.3
EL1 41.3 EL2 14.6 ALF 31.57

LAUNCH DATE MAY 1 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 14 1971

DISTANCE 354.508

EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.72 LAL -.00 LOL 219.99 VL 33.289 GAL -2.13 AZL 91.99 HCA 118.98 SMA 203.28 ECC .26101 INC 1.9917 V1 29.562
RP 206.71 LAP -1.74 LOP 338.99 VP 25.124 GAP 15.10 AZP 89.03 TAL 349.69 TAP 108.68 RCA 150.22 APO 256.34 V2 26.493
RC 66.667 GL -15.93 GP 1.23 ZAL 113.47 ZAP 160.73 ETS 176.50 ZAE 170.92 ETE 31.96 ZAC 101.01 ETC 278.14 LVI -19.67

PLANETOCENTRIC CONIC

C3 17.751 VHL 4.213 DLA -24.63 RAL 342.64 RAD 6641.8 VEL 11.738 PTH 6.77 VHP 6.790 DPA -15.49 RAP 322.36 ECC 1.2921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 31	2601.01	-12.41	70.78	199.01	136.31	17 56 52	1601.0	5.95	54.97
60.00	18 24 49	2411.36	-7.20	58.62	203.93	129.76	19 5 1	1411.4	8.89	40.68
70.00	19 56 7	2142.97	-1.89	40.86	207.94	124.11	20 31 50	1143.0	11.95	21.16
80.00	21 46 14	1798.32	2.75	17.59	210.83	119.74	22 16 12	798.3	14.65	356.56
90.00	23 29 23	1465.62	4.86	354.28	211.99	117.89	23 53 49	465.6	15.89	332.68
100.00	0 33 2	1272.80	2.75	338.96	210.83	119.74	0 54 15	272.8	14.65	317.92
110.00	0 59 29	1189.78	-1.89	329.78	207.94	124.11	1 19 19	189.8	11.95	310.08

DIFFERENTIAL CORRECTIONS

TDE -.4286 TRA -.9592 TC3 .2364 BAU .0734
RDE -.3614 RRA .1128 RC3 .1996 FAU .06072
FDE .3717 FRA 1.8332 FC3-2.9613 BSP 2602
BDE .5606 BRA .9658 BC3 .3094 FSP 478

MID-COURSE EXECUTION ACCURACY

SGT 1561.7 SGR 546.1 SG3 323.3
RRT .0912 RRF -.1005 RTF -.8089
SGB 1654.4 R23 -.0166 R13 -.8092
SG1 1562.6 SG2 543.5 THA 2.08

ORBIT DETERMINATION ACCURACY

ST 36.2 SR 24.7 SS 28.4
CRT .7393 CRS .4329 CST .9251
LSA 48.4 MSA 19.7 SSA 1.3
EL1 41.4 EL2 14.6 ALF 31.02

LAUNCH DATE MAY 1 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 358.169 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	33.213	GAL	-2.05	AZL	92.00	HCA	120.25	SMA	201.71	ECC	.25514	INC	2.0005	V1	29.862
RP	206.73	LAP	-1.73	LOP	340.26	VP	25.020	GAP	14.71	AZP	88.99	TAL	349.88	TAP	110.13	RCA	150.25	APO	253.18	V2	26.489
RC	67.877	GL	-16.29	GP	1.28	ZAL	113.27	ZAP	159.60	ETS	176.57	ZAE	170.97	ETE	31.50	ZAC	101.04	ETC	278.17	LVI	-19.76

PLANETOCENTRIC CONIC

C3	17.057	VHL	4.130	DLA	-25.03	RAL	342.64	RAD	6641.5	VEL	11.709	PTH	6.74	VHP	6.582	DPA	-15.40	RAP	322.48	ECC	1.2607

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 28	2383.02	-11.52	69.99	198.63	136.49	17 58 31	1383.0	6.85	54.21
60.00	18 27 32	2391.33	-6.33	57.65	203.56	129.88	19 7 23	1391.3	9.75	39.70
70.00	20 0 0	2119.47	-.99	39.64	207.59	124.14	20 35 20	1119.5	12.80	19.87
80.00	21 51 55	1769.22	3.74	15.99	210.53	119.64	22 21 24	769.2	15.52	354.83
90.00	23 36 25	1432.16	5.92	352.40	211.73	117.70	24 0 17	432.2	16.79	330.64
100.00	0 38 42	1243.69	3.74	337.36	210.53	119.64	0 58 26	243.7	15.52	316.20
110.00	1 3 22	1166.29	-.99	328.56	207.59	124.14	1 22 49	166.3	12.80	308.79

DIFFERENTIAL CORRECTIONS

TDE	-.4215	TRA	-.9450	TC3	.2575	BAU	.0757												
RDE	-.3503	RRA	.1066	RC3	.2094	FAU	.06354												
FDE	.3777	FRA	1.9137	FC3	-3.2250	BSP	2632												
BDE	.5481	BRA	.9510	BC3	.3319	FSP	514												

MID-COURSE EXECUTION ACCURACY

SGT	1574.9	SGR	541.1	SG3	345.1						
RRT	.0995	RRF	-.1097	RTF	-.8126						
SGB	1665.3	R23	-.0183	R13	-.8129						
SG1	1576.0	SG2	538.1	THA	2.22						

ORBIT DETERMINATION ACCURACY

ST	36.4	SR	24.4	SS	29.2						
CRT	.7392	CRS	.4229	C3T	.9210						
LSA	48.7	MSA	19.9	SSA	1.3						
EL1	41.4	EL2	14.5	ALF	30.49						

LAUNCH DATE MAY 1 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 361.874 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	33.141	GAL	-1.98	AZL	92.01	HCA	121.52	SMA	200.26	ECC	.24962	INC	2.0096	V1	29.562
RP	206.77	LAP	-1.71	LOP	341.52	VP	24.920	GAP	14.34	AZP	88.95	TAL	350.06	TAP	111.58	RCA	150.27	APO	250.25	V2	26.485
RC	69.140	GL	-16.66	GP	1.33	ZAL	113.06	ZAP	158.43	ETS	176.64	ZAE	171.09	ETE	31.32	ZAC	101.08	ETC	278.20	LVI	-19.84

PLANETOCENTRIC CONIC

C3	16.416	VHL	4.052	DLA	-25.43	RAL	342.63	RAD	6641.2	VEL	11.681	PTH	6.72	VHP	6.382	DPA	-15.31	RAP	322.57	ECC	1.2702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 25	2383.41	-10.65	69.23	198.28	136.65	18 0 10	1383.4	7.73	53.48
60.00	18 30 16	2371.62	-5.47	56.70	203.21	129.99	19 9 48	1371.6	10.60	38.72
70.00	20 3 58	2096.14	-.10	38.42	207.27	124.15	20 38 54	1096.1	13.63	18.58
80.00	21 57 50	1739.78	4.73	14.36	210.26	119.52	22 26 50	739.8	16.39	353.08
90.00	23 43 54	1397.68	7.01	350.45	211.51	117.47	24 7 12	397.7	17.70	328.52
100.00	0 44 38	1214.25	4.73	335.73	210.26	119.52	1 4 52	214.2	16.39	314.44
110.00	1 7 20	1142.96	-.10	327.34	207.27	124.15	1 26 23	143.0	13.63	307.50

DIFFERENTIAL CORRECTIONS

TDE	-.4035	TRA	-.9200	TC3	.3027	BAU	.0821												
RDE	-.3396	RRA	.1006	RC3	.2197	FAU	.06660												
FDE	.3817	FRA	1.9975	FC3	-3.5124	BSP	2528												
BDE	.5274	BRA	.9255	BC3	.3740	FSP	551												

MID-COURSE EXECUTION ACCURACY

SGT	1568.7	SGR	535.8	SG3	368.3						
RRT	.1080	RRF	-.1196	RTF	-.8241						
SGB	1657.7	R23	-.0191	R13	-.8245						
SG1	1570.0	SG2	532.3	THA	2.39						

ORBIT DETERMINATION ACCURACY

ST	35.8	SR	24.1	SS	29.9						
CRT	.7342	CRS	.4109	C3T	.9187						
LSA	48.5	MSA	20.1	SSA	1.3						
EL1	40.7	EL2	14.4	ALF	30.57						

LAUNCH DATE MAY 1 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 365.618 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	33.074	GAL	-1.91	AZL	92.02	HCA	122.79	SMA	198.92	ECC	.24444	INC	2.0188	V1	29.562
RP	206.81	LAP	-1.70	LOP	342.79	VP	24.824	GAP	13.97	AZP	88.91	TAL	350.24	TAP	113.03	RCA	150.30	APO	247.54	V2	26.480
RC	70.455	GL	-17.02	GP	1.39	ZAL	112.85	ZAP	157.25	ETS	176.70	ZAE	171.27	ETE	31.41	ZAC	101.12	ETC	278.21	LVI	-19.92

PLANETOCENTRIC CONIC

C3	15.827	VHL	3.978	DLA	-25.82	RAL	342.63	RAD	6640.9	VEL	11.656	PTH	6.69	VHP	6.188	DPA	-15.23	RAP	322.63	ECC	1.2605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 22	2548.32	-9.80	68.49	197.96	136.80	18 1 50	1548.3	8.58	52.73
60.00	18 33 2	2352.39	-4.63	55.77	202.89	130.08	19 12 14	1352.4	11.43	37.76
70.00	20 8 0	2073.16	.78	37.22	206.98	124.15	20 42 33	1073.2	14.45	17.30
80.00	22 3 59	1710.17	5.72	12.73	210.04	119.36	22 32 29	710.2	17.24	351.29
90.00	23 51 52	1362.21	8.12	348.43	211.34	117.18	24 14 34	362.2	18.61	326.32
100.00	0 50 46	1184.64	5.72	334.09	210.04	119.36	1 10 31	184.6	17.24	312.66
110.00	1 11 22	1119.98	.78	326.14	206.98	124.15	1 30 2	120.0	14.45	306.22

DIFFERENTIAL CORRECTIONS

TDE	-.4012	TRA	-.9104	TC3	.3073	BAU	.0812												
RDE	-.3293	RRA	.0945	RC3	.2297	FAU	.06967												
FDE	.3878	FRA	2.0809	FC3	-3.8110	BSP	2613												
BDE	.5190	BRA	.9193	BC3	.3837	FSP	593												

MID-COURSE EXECUTION ACCURACY

SGT	1586.0	SGR	530.3	SG3	392.9						
RRT	.1172	RRF	-.1302	RTF	-.8226						
SGB	1672.3	R23	-.0221	R13	-.8230						
SG1	1587.4	SG2	526.2	THA	2.52						

ORBIT DETERMINATION ACCURACY

ST	36.2	SR	23.8	SS	30.8						
CRT	.7366	CRS	.4009	C3T	.9130						
LSA	49.1	MSA	20.3	SSA	1.3						
EL1	40.9	EL2	14.3	ALF	29.82						

LAUNCH DATE MAY 1 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 369.400 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	33.010	GAL	-1.85	AZL	92.03	HCA	124.06	SMA	197.68	ECC	.23958	INC	2.0284	V1	29.562
RP	206.87	LAP	-1.68	LOP	344.06	VP	24.733	GAP	13.61	AZP	88.86	TAL	350.42	TAP	114.48	RCA	150.32	APO	245.04	V2	26.474
RC	71.818	GL	-17.38	GP	1.45	ZAL	112.65	ZAP	156.03	ETS	176.75	ZAE	171.53	ETE	31.80	ZAC	101.18	ETC	278.23	LVI	-19.99

PLANETOCENTRIC CONIC

C3	15.284	VHL	3.909	DLA	-26.22	RAL	342.62	RAD	6640.7	VEL	11.633	PTH	6.67	VHP	6.002	DPA	-15.15	RAP	322.66	ECC	1.2515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 20	2531.67	-8.98	67.77	197.67	136.92	18 3 32	1531.7	9.41	52.01
60.00	18 35 49	2333.56	-3.80	54.87	202.61	130.15	19 14 43	1333.6	12.23	36.82
70.00	20 12 7	2050.42	1.65	36.04	206.73	124.12	20 46 17	1050.4	15.25	16.03
80.00	22 10 24	1680.18	6.71	11.06	209.86	119.16	22 38 25	680.2	18.09	349.47
90.00	0 4 24	1325.23	9.26	346.32	211.23	116.84	0 26 29	325.2	19.52	323.99
100.00	0 57 12	1154.65	6.71	332.43	209.86	119.16	1 16 27	154.6	18.09	310.64
110.00	1 15 29	1097.24	1.65	324.95	206.73	124.12	1 33 47	97.2	15.25	304.95

DIFFERENTIAL CORRECTIONS

TDE	-.3970	TRA	-.8971	TC3	.3157	BAU	.0810												
RDE	-.3194	RRA	.0884	RC3	.2401	FAU	.07294												
FDE	.3949	FRA	2.1842	FC3	-4.1318	BSP	2664												
BDE	.5095	BRA	.9014	BC3	.3966	FSP	637												

MID-COURSE EXECUTION ACCURACY

SGT	1596.0	SGR	524.6	SG3	418.9						
RRT	.1277	RRF	-.1423	RTF	-.8224						
SGB	1680.0	R23	-.0249	R13	-.8229						
SG1	1597.5	SG2	519.8	THA	2.69						

ORBIT DETERMINATION ACCURACY

ST	36.5	SR	23.5	SS	31.7						
CRT	.7389	CRS	.3921	C3T	.9077						
LSA	49.6	MSA	20.5	SSA	1.3						
EL1	41.0	EL2	14.1	ALF	29.23						

LAUNCH DATE MAY 1 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 24 1971

DISTANCE 373.217

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.950 GAL -1.78 AZL 92.04 HCA 125.32 SMA 196.52 ECC .23501 INC 2.0382 V1 29.562
RP 206.93 LAP -1.66 LOP 345.33 VP 24.645 GAP 13.26 AZP 88.82 TAL 350.60 TAP 115.92 RCA 150.34 APO 242.71 V2 26.466
RC 73.228 GL -17.74 GP 1.52 ZAL 112.44 ZAP 154.78 ETS 176.80 ZAE 171.85 ETE 32.54 ZAC 101.24 ETC 278.23 LVI -20.06

PLANETOCENTRIC CONIC

C3 14.783 VHL 3.845 DLA -26.61 RAL 342.62 RAD 6640.4 VEL 11.612 PTH 6.65 VHP 5.821 DPA -15.09 RAP 322.66 ECC 1.2433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 19	2515.49	-8.17	67.08	197.40	137.04	18 5 14	1515.5	10.21	51.32
60.00	18 38 38	2315.15	-2.99	53.99	202.36	130.21	19 17 13	1315.2	13.01	35.90
70.00	20 16 19	2027.96	2.50	34.86	206.52	124.07	20 50 7	1028.0	16.03	14.76
80.00	22 17 9	1649.72	7.72	9.36	209.72	118.93	22 44 39	649.7	18.93	347.59
90.00	0 13 48	1286.21	10.45	344.07	211.18	116.43	0 35 14	286.2	20.45	321.50
100.00	1 3 57	1124.19	7.72	330.73	209.72	118.93	1 22 41	124.2	18.93	308.96
110.00	1 19 41	1074.78	2.50	323.78	206.52	124.07	1 37 36	74.8	16.03	303.67

DIFFERENTIAL CORRECTIONS

TDE -.3914 TRA -.8826 TC3 .3253 BAU .0812
RDE -.3098 RRA .0824 RC3 .2507 FAU .07646
FDE .4010 FRA 2.2863 FC3-4.4776 BSP 2705
BDE .4992 BRA .8865 BC3 .4107 FSP 687

MID-COURSE EXECUTION ACCURACY

SGT 1602.2 SGR 518.7 SG3 446.7
RRT .1389 RRF -.1552 RTF -.8227
SGB 1684.1 R23 -.0281 R13 -.8233
SG1 1604.0 SG2 513.1 THA 2.87

ORBIT DETERMINATION ACCURACY

ST 36.6 SR 23.2 SS 32.5
CRT .7407 CRS .3824 CST .9020
LSA 50.1 MSA 20.7 SSA 1.3
EL1 41.0 EL2 13.9 ALF 28.74

LAUNCH DATE MAY 1 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 26 1971

DISTANCE 377.065

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.894 GAL -1.73 AZL 92.05 HCA 126.59 SMA 195.46 ECC .23073 INC 2.0483 V1 29.562
RP 207.00 LAP -1.64 LOP 346.59 VP 24.561 GAP 12.91 AZP 88.78 TAL 350.77 TAP 117.36 RCA 150.36 APO 240.55 V2 26.458
RC 74.683 GL -18.09 GP 1.59 ZAL 112.24 ZAP 153.50 ETS 176.84 ZAE 172.23 ETE 33.70 ZAC 101.31 ETC 278.23 LVI -20.12

PLANETOCENTRIC CONIC

C3 14.322 VHL 3.784 DLA -26.99 RAL 342.62 RAD 6640.2 VEL 11.592 PTH 6.63 VHP 5.647 DPA -15.02 RAP 322.62 ECC 1.2357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 18	2499.79	-7.39	66.41	197.17	137.14	18 6 58	1499.8	10.99	50.63
60.00	18 41 28	2297.20	-2.20	53.13	202.13	130.25	19 19 46	1297.2	13.77	34.99
70.00	20 20 35	2005.78	3.35	33.70	206.33	124.01	20 54 1	1005.8	16.79	13.49
80.00	22 24 15	1618.67	8.74	7.62	209.63	118.66	22 51 14	618.7	19.76	345.67
90.00	0 24 17	1244.26	11.71	341.64	211.19	115.92	0 45 1	244.3	21.40	318.79
100.00	1 11 3	1093.14	8.74	328.99	209.63	118.66	1 29 16	93.1	19.76	307.03
110.00	1 23 57	1052.60	3.35	322.62	206.33	124.01	1 41 30	52.6	16.79	302.41

DIFFERENTIAL CORRECTIONS

TDE -.3848 TRA -.8659 TC3 .3348 BAU .0813
RDE -.3004 RRA .0764 RC3 .2615 FAU .08017
FDE .4066 FRA 2.3918 FC3-4.8457 BSP 2713
BDE .4882 BRA .8693 BC3 .4248 FSP 736

MID-COURSE EXECUTION ACCURACY

SGT 1602.5 SGR 512.7 SG3 476.0
RRT .1511 RRF -.1695 RTF -.8232
SGB 1682.6 R23 -.0316 R13 -.8238
SG1 1604.6 SG2 506.2 THA 3.07

ORBIT DETERMINATION ACCURACY

ST 36.5 SR 22.8 SS 33.4
CRT .7427 CRS .3728 CST .8962
LSA 50.4 MSA 20.8 SSA 1.3
EL1 40.9 EL2 13.7 ALF 28.34

LAUNCH DATE MAY 1 1971 FLIGHT TIME 150.00 ARRIVAL DATE SEP 28 1971

DISTANCE 380.942

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.842 GAL -1.67 AZL 92.06 HCA 127.85 SMA 194.46 ECC .22671 INC 2.0588 V1 29.562
RP 207.08 LAP -1.63 LOP 347.86 VP 24.481 GAP 12.57 AZP 88.74 TAL 350.94 TAP 118.79 RCA 150.38 APO 238.55 V2 26.449
RC 76.180 GL -18.44 GP 1.66 ZAL 112.05 ZAP 152.19 ETS 176.87 ZAE 172.67 ETE 35.37 ZAC 101.39 ETC 278.22 LVI -20.18

PLANETOCENTRIC CONIC

C3 13.898 VHL 3.728 DLA -27.38 RAL 342.62 RAD 6640.0 VEL 11.574 PTH 6.62 VHP 5.480 DPA -14.97 RAP 322.55 ECC 1.2287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 27 19	2484.58	-6.63	65.76	196.96	137.22	18 8 43	1484.6	11.74	49.97
60.00	18 44 20	2279.70	-1.43	52.29	201.94	130.28	19 22 20	1279.7	14.51	34.09
70.00	20 24 56	1983.90	4.18	32.56	206.19	123.93	20 58 0	983.9	17.54	12.23
80.00	22 31 46	1586.86	9.77	5.82	209.59	118.35	22 58 13	586.9	20.59	343.67
90.00	0 36 20	1197.80	13.08	338.91	211.29	115.30	0 56 18	197.8	22.40	315.75
100.00	1 18 33	1061.33	9.77	327.19	209.59	118.35	1 36 15	61.3	20.59	305.03
110.00	1 28 18	1030.72	4.18	321.47	206.19	123.93	1 45 29	30.7	17.54	301.15

DIFFERENTIAL CORRECTIONS

TDE -.3785 TRA -.8493 TC3 .3397 BAU .0809
RDE -.2914 RRA .0703 RC3 .2726 FAU .08406
FDE .4133 FRA 2.5063 FC3-5.2360 BSP 2715
BDE .4777 BRA .8522 BC3 .4356 FSP 789

MID-COURSE EXECUTION ACCURACY

SGT 1601.0 SGR 506.6 SG3 507.2
RRT .1641 RRF -.1850 RTF -.8230
SGB 1679.3 R23 -.0358 R13 -.8237
SG1 1603.4 SG2 499.0 THA 3.29

ORBIT DETERMINATION ACCURACY

ST 36.5 SR 22.5 SS 34.4
CRT .7452 CRS .3641 CST .8903
LSA 50.8 MSA 21.0 SSA 1.3
EL1 40.7 EL2 13.4 ALF 27.95

LAUNCH DATE MAY 1 1971 FLIGHT TIME 152.00 ARRIVAL DATE SEP 30 1971

DISTANCE 384.846

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.792 GAL -1.62 AZL 92.07 HCA 129.12 SMA 193.54 ECC .22295 INC 2.0696 V1 29.562
RP 207.17 LAP -1.61 LOP 349.12 VP 24.403 GAP 12.24 AZP 88.69 TAL 351.10 TAP 120.22 RCA 150.39 APO 236.69 V2 26.439
RC 77.718 GL -18.79 GP 1.74 ZAL 111.86 ZAP 150.85 ETS 176.90 ZAE 173.17 ETE 37.69 ZAC 101.48 ETC 278.21 LVI -20.23

PLANETOCENTRIC CONIC

C3 13.509 VHL 3.675 DLA -27.75 RAL 342.63 RAD 6639.8 VEL 11.557 PTH 6.60 VHP 5.318 DPA -14.92 RAP 322.45 ECC 1.2223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 29 20	2469.88	-5.89	65.14	196.78	137.30	18 10 29	1469.9	12.47	49.33
60.00	18 47 13	2262.68	-.68	51.48	201.78	130.30	19 24 56	1262.7	15.22	33.22
70.00	20 29 22	1962.32	5.00	31.42	206.07	123.83	21 2 4	962.3	18.26	10.98
80.00	22 39 46	1554.03	10.83	3.96	209.59	118.00	23 5 40	554.0	21.41	341.58
90.00	0 51 7	1143.15	14.65	335.66	211.52	114.46	1 10 10	143.2	23.48	312.12
100.00	1 26 34	1028.50	10.83	325.32	209.59	118.00	1 43 43	28.5	21.41	302.95
110.00	1 32 44	1009.14	5.00	320.34	206.07	123.83	1 49 33	9.1	18.26	299.90

DIFFERENTIAL CORRECTIONS

TDE -.3717 TRA -.8301 TC3 .3434 BAU .0805
RDE -.2826 RRA .0643 RC3 .2840 FAU .08823
FDE .4194 FRA 2.6227 FC3-5.6542 BSP 2708
BDE .4669 BRA .8326 BC3 .4456 FSP 845

MID-COURSE EXECUTION ACCURACY

SGT 1593.0 SGR 500.5 SG3 539.9
RRT .1787 RRF -.2023 RTF -.8221
SGB 1669.8 R23 -.0406 R13 -.8231
SG1 1595.8 SG2 491.6 THA 3.55

ORBIT DETERMINATION ACCURACY

ST 36.3 SR 22.1 SS 35.3
CRT .7485 CRS .3558 CST .8840
LSA 51.0 MSA 21.2 SSA 1.3
EL1 40.4 EL2 13.2 ALF 27.65

LAUNCH DATE MAY 1 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 388.776 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.746	GAL	-1.57	AZL	92.08	HCA	130.38	SMA	192.69	ECC	.21943	INC	2.0808	V1	29.862
RP	207.26	LAP	-1.58	LOP	350.39	VP	24.329	GAP	11.92	AZP	88.65	TAL	351.25	TAP	121.63	RCA	150.41	APO	234.97	V2	26.428
RC	79.295	GL	-19.13	GP	1.82	ZAL	111.68	ZAP	149.47	ETS	176.93	ZAE	173.70	ETE	40.88	ZAC	101.57	ETC	278.19	LVI	-20.28

PLANETOCENTRIC CONIC

C3	13.151	VHL	3.626	DLA	-28.12	RAL	342.65	RAD	6639.6	VEL	11.542	PTH	6.59	VHP	5.162	DPA	-14.88	RAP	322.31	ECC	1.2164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 31 21	2455.68	-5.18	64.54	196.63	137.36	18 12 17	1455.7	13.17	48.70
60.00	18 50 8	2246.15	.04	50.69	201.65	130.30	19 27 34	1246.1	15.91	32.36
70.00	20 33 52	1941.06	5.81	30.30	206.00	123.72	21 6 13	941.1	18.97	9.73
80.00	22 46 24	1519.82	11.91	2.00	209.66	117.58	23 13 44	519.8	22.24	339.38
90.00	1 12 43	1067.04	16.74	331.05	212.01	113.13	1 30 30	67.0	24.83	306.95
100.00	1 35 12	6282.34	11.91	301.27	209.66	117.58	3 19 54	5282.3	22.24	276.65
110.00	1 37 14	6275.92	5.81	297.13	206.00	123.72	3 21 50	5275.9	18.97	276.56

DIFFERENTIAL CORRECTIONS

TDE	-.3643	TRA	-.8105	TC3	.3425	BAU	.0796
RDE	-.2741	RRA	.0581	RC3	.2957	FAU	.09258
FDE	.4238	FRA	2.7475	FC3	-6.0947	BSP	2695
BDE	.4559	BRA	.8126	BC3	.4525	FSP	906

MID-COURSE EXECUTION ACCURACY

SGT	1581.5	SGR	494.4	SG3	574.5		
RRT	.1936	RRF	-.2207	RTF	-.8206		
SGB	1657.0	R23	-.0463	R13	-.8218		
SG1	1584.7	SG2	484.0	THA	3.82		

ORBIT DETERMINATION ACCURACY

ST	36.1	SR	21.7	SS	36.3
CRT	.7520	CRS	.3465	CST	.8768
LSA	51.3	MSA	21.4	SSA	1.3
EL1	40.1	EL2	12.9	ALF	27.40

LAUNCH DATE MAY 1 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 392.728 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.702	GAL	-1.53	AZL	92.09	HCA	131.64	SMA	191.90	ECC	.21613	INC	2.0924	V1	29.562
RP	207.37	LAP	-1.56	LOP	351.65	VP	24.257	GAP	11.61	AZP	88.61	TAL	351.39	TAP	123.03	RCA	150.42	APO	233.37	V2	26.415
RC	80.909	GL	-19.47	GP	1.91	ZAL	111.51	ZAP	148.05	ETS	176.95	ZAE	174.27	ETE	45.25	ZAC	101.68	ETC	278.16	LVI	-20.32

PLANETOCENTRIC CONIC

C3	12.824	VHL	3.581	DLA	-28.48	RAL	342.67	RAD	6639.5	VEL	11.528	PTH	6.57	VHP	5.012	DPA	-14.85	RAP	322.13	ECC	1.2110

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 24	2442.01	-4.90	63.97	196.51	137.41	18 14 6	1442.0	13.84	48.09
60.00	18 53 3	2230.11	.75	49.93	201.55	130.30	19 30 13	1230.1	16.57	31.53
70.00	20 38 28	1920.12	6.60	29.20	205.95	123.59	21 10 28	920.1	19.65	8.90
80.00	22 57 50	1483.67	13.05	359.91	209.78	117.10	23 22 34	483.7	23.09	337.02
86.49	1 9 46	1071.36	19.21	332.44	212.67	111.43	1 27 37	71.4	26.37	307.65
100.00	1 44 38	6246.18	13.05	299.18	209.78	117.10	3 28 44	5246.2	23.09	276.30
110.00	1 41 50	6254.98	6.60	296.02	205.95	121 59	3 26 5	5255.0	19.65	278.32

DIFFERENTIAL CORRECTIONS

TDE	-.3583	TRA	-.7899	TC3	.3361	BAU	.0781
RDE	-.2659	RRA	.0519	RC3	.3076	FAU	.09717
FDE	.4308	FRA	2.8786	FC3	-6.5598	BSP	2664
BDE	.4462	BRA	.7916	BC3	.4556	FSP	967

MID-COURSE EXECUTION ACCURACY

SGT	1566.4	SGR	488.3	SG3	611.0		
RRT	.2106	RRF	-.2413	RTF	-.8179		
SGB	1640.8	R23	-.0527	R13	-.8192		
SG1	1570.2	SG2	476.2	THA	4.14		

ORBIT DETERMINATION ACCURACY

ST	35.9	SR	21.3	SS	37.3
CRT	.7573	CRS	.3399	CST	.8694
LSA	51.6	MSA	21.6	SSA	1.3
EL1	39.8	EL2	12.5	ALF	27.16

LAUNCH DATE MAY 1 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 396.702 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.662	GAL	-1.49	AZL	92.10	HCA	132.90	SMA	191.16	ECC	.21305	INC	2.1045	V1	29.562
RP	207.48	LAP	-1.54	LOP	352.91	VP	24.188	GAP	11.30	AZP	88.57	TAL	351.53	TAP	124.43	RCA	150.44	APO	231.89	V2	26.402
RC	82.560	GL	-19.80	GP	2.00	ZAL	111.35	ZAP	146.59	ETS	176.97	ZAE	174.84	ETE	51.26	ZAC	101.80	ETC	278.12	LVI	-20.36

PLANETOCENTRIC CONIC

C3	12.523	VHL	3.539	DLA	-28.83	RAL	342.70	RAD	6639.3	VEL	11.515	PTH	6.56	VHP	4.868	DPA	-14.82	RAP	321.91	ECC	1.2081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 28	2428.84	-3.84	63.42	196.42	137.46	18 15 57	1428.8	14.48	47.80
60.00	18 56 0	2214.58	1.43	49.18	201.49	130.28	19 32 55	1214.6	17.21	30.71
70.00	20 43 8	1899.48	7.37	28.10	205.95	123.44	21 14 48	899.5	20.32	7.27
80.00	23 8 23	1444.52	14.25	357.63	209.98	116.52	23 32 28	444.5	23.95	334.44
84.14	0 30 35	1128.74	18.57	336.80	212.46	111.61	1 9 23	128.7	26.76	311.94
100.00	1 55 11	6207.03	14.25	298.90	209.98	116.52	3 38 38	5207.0	23.95	273.71
110.00	1 46 31	6234.34	7.37	294.93	205.95	123.44	3 30 25	5234.3	20.32	274.09

DIFFERENTIAL CORRECTIONS

TDE	-.3491	TRA	-.7655	TC3	.3329	BAU	.0773
RDE	-.2578	RRA	.0456	RC3	.3201	FAU	.10208
FDE	.4348	FRA	3.0141	FC3	-7.0569	BSP	2599
BDE	.4340	BRA	.7669	BC3	.4618	FSP	1032

MID-COURSE EXECUTION ACCURACY

SGT	1541.6	SGR	482.4	SG3	649.3		
RRT	.2287	RRF	-.2637	RTF	-.8162		
SGB	1615.4	R23	-.0596	R13	-.8179		
SG1	1546.0	SG2	468.3	THA	4.51		

ORBIT DETERMINATION ACCURACY

ST	35.3	SR	20.9	SS	38.3
CRT	.7619	CRS	.3319	CST	.8617
LSA	51.7	MSA	21.7	SSA	1.3
EL1	39.2	EL2	12.2	ALF	27.11

LAUNCH DATE MAY 1 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 400.696 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.624	GAL	-1.45	AZL	92.12	HCA	134.16	SMA	190.48	ECC	.21018	INC	2.1170	V1	29.562
RP	207.60	LAP	-1.52	LOP	354.17	VP	24.121	GAP	11.00	AZP	88.52	TAL	351.65	TAP	125.81	RCA	150.45	APO	230.52	V2	26.388
RC	84.247	GL	-20.13	GP	2.10	ZAL	111.20	ZAP	145.10	ETS	176.99	ZAE	175.37	ETE	59.50	ZAC	101.93	ETC	278.08	LVI	-20.39

PLANETOCENTRIC CONIC

C3	12.250	VHL	3.500	DLA	-29.18	RAL	342.75	RAD	6639.2	VEL	11.503	PTH	6.55	VHP	4.730	DPA	-14.80	RAP	321.65	ECC	1.2016

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 32	2416.23	-3.20	62.89	196.36	137.49	18 17 49	1416.2	15.09	46.94
60.00	18 58 59	2199.58	2.09	48.47	201.45	130.26	19 35 38	1199.6	17.82	29.92
70.00	20 47 54	1879.21	8.13	27.02	205.98	123.29	21 19 13	879.2	20.96	6.05
80.00	23 20 39	1400.61	15.57	355.03	210.28	115.80	23 44 0	400.6	24.86	331.49
82.51	0 37 42	1166.09	19.91	339.69	212.29	111.78	0 57 8	166.1	27.13	314.78
100.00	2 7 27	6163.12	15.57	294.31	210.28	115.80	3 50 10	5163.1	24.86	270.77
110.00	1 51 16	6214.07	8.13	293.85	205.98	123.29	3 34 50	5214.1	20.96	272.87

DIFFERENTIAL CORRECTIONS

TDE	-.3452	TRA	-.7451	TC3	.3072	BAU	.0742
RDE	-.2501	RRA	.0391	RC3	.3327	FAU	.10703
FDE	.4420	FRA	3.1604	FC3	-7.5642	BSP	2593
BDE	.4263	BRA	.7462	BC3	.4528	FSP	1104

MID-COURSE EXECUTION ACCURACY

SGT	1522.3	SGR	476.7	SG3	689.4		
RRT	.2467	RRF	-.2878	RTF	-.8089		
SGB	1595.1	R23	-.0704	R13	-.8110		
SG1	1527.2	SG2	460.5	THA	4.86		

ORBIT DETERMINATION ACCURACY

ST	35.2	SR	20.5	SS	39.4
CRT	.7701	CRS	.3270	CST	.8524
LSA	52.2	MSA	21.9	SSA	1.3
EL1	39.0	EL2	11.8	ALF	26.83

LAUNCH DATE MAY 1 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 10 1971

DISTANCE 404.708

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.588 GAL -1.41 AZL 92.13 HCA 135.42 SMA 189.85 ECC .20750 INC 2.1302 V1 29.562
RP 207.73 LAP -1.50 LOP 355.43 VP 24.057 GAP 10.70 AZP 88.48 TAL 351.77 TAP 127.18 RCA 150.46 APO 229.25 V2 26.373
RC 85.969 GL -20.46 GP 2.20 ZAL 111.06 ZAP 143.57 ETS 177.00 ZAE 175.79 ETE 70.62 ZAC 102.07 ETC 278.03 LVI -20.42

PLANETOCENTRIC CONIC

C3 12.000 VHL 3.464 DLA -29.51 RAL 342.81 RAD 6639.1 VEL 11.493 PTH 6.54 VHP 4.597 DPA -14.78 RAP 321.35 ECC 1.1975

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 59 38	2404.11	-2.60	62.38	196.33	137.52	18 19 42	1404.1	15.68	46.39
60.00	19 1 58	2185.07	2.73	47.77	201.45	130.22	19 38 23	1185.1	18.41	29.14
70.00	20 52 45	1859.20	8.88	25.96	206.04	123.12	21 23 44	859.2	21.59	4.83
80.00	23 36 13	1346.78	17.13	351.81	210.73	114.83	23 58 39	346.8	25.89	327.82
81.20	0 27 34	1194.97	20.24	341.97	212.14	111.95	0 47 29	195.0	27.50	316.99
100.00	2 23 0	6109.29	17.13	291.08	210.73	114.83	4 4 50	5109.3	25.89	267.10
110.00	1 56 7	6194.06	8.88	292.78	206.04	123.12	3 39 21	5194.1	21.59	271.66

DIFFERENTIAL CORRECTIONS

TDE -.3349 TRA -.7162 TC3 .2979 BAU .0733
RDE -.2425 RRA .0328 RC3 .3463 FAU .11256
FDE .4441 FRA 5.3065 FC3-8.1203 BSP 2484
BDE .4134 BRA .7170 BC3 .4568 FSP 1172

MID-COURSE EXECUTION ACCURACY

SGT 1484.0 SGR 471.4 SG3 731.5
RRT .2678 RRF -.3145 RTF -.8056
SGB 1557.1 R23 -.0795 R13 -.8082
SG1 1489.9 SG2 452.4 THA 5.36

ORBIT DETERMINATION ACCURACY

ST 34.4 SR 20.1 SS 40.3
CRT .7766 CRS .3198 CST .8429
LSA 52.2 MSA 22.1 SSA 1.3
EL1 38.2 EL2 11.4 ALF 26.97

LAUNCH DATE MAY 1 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 12 1971

DISTANCE 408.737

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.555 GAL -1.38 AZL 92.14 HCA 136.67 SMA 189.27 ECC .20501 INC 2.1438 V1 29.562
RP 207.86 LAP -1.47 LOP 356.68 VP 23.995 GAP 10.42 AZP 88.44 TAL 351.87 TAP 128.54 RCA 150.47 APO 228.07 V2 26.357
RC 87.725 GL -20.78 GP 2.31 ZAL 110.94 ZAP 142.00 ETS 177.02 ZAE 176.03 ETE 84.72 ZAC 102.22 ETC 277.97 LVI -20.44

PLANETOCENTRIC CONIC

C3 11.774 VHL 3.431 DLA -29.83 RAL 342.88 RAD 6638.9 VEL 11.483 PTH 6.53 VHP 4.470 DPA -14.77 RAP 321.01 ECC 1.1938

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 41 45	2392.55	-2.02	61.90	196.33	137.54	18 21 38	1392.6	16.24	45.86
60.00	19 4 59	2171.14	3.34	47.10	201.48	130.19	19 41 10	1171.1	18.97	28.40
70.00	20 57 41	1839.58	9.60	24.90	206.14	122.93	21 28 21	839.6	22.19	3.63
80.00	0 8 47	1251.96	19.75	345.98	211.68	112.86	0 29 39	252.0	27.43	321.21
80.08	0 19 13	1218.62	20.55	343.86	212.04	112.12	0 39 32	218.6	27.85	318.83
100.00	2 51 39	6014.47	19.75	285.25	211.68	112.86	4 31 53	5014.5	27.43	260.48
110.00	2 1 4	6174.44	9.60	291.73	206.14	122.93	3 43 58	5174.4	22.19	270.46

DIFFERENTIAL CORRECTIONS

TDE -.3324 TRA -.6944 TC3 .2536 BAU .0693
RDE -.2352 RRA .0257 RC3 .3598 FAU .11789
FDE .4527 FRA 3.4694 FC3-8.6686 BSP 2469
BDE .4072 BRA .6949 BC3 .4401 FSP 1253

MID-COURSE EXECUTION ACCURACY

SGT 1457.8 SGR 466.4 SG3 775.5
RRT .2867 RRF -.3428 RTF -.7935
SGB 1530.6 R23 -.0960 R13 -.7968
SG1 1464.6 SG2 444.8 THA 5.77

ORBIT DETERMINATION ACCURACY

ST 34.2 SR 19.7 SS 41.5
CRT .7879 CRS .3179 CST .8318
LSA 52.7 MSA 22.3 SSA 1.3
EL1 37.9 EL2 10.9 ALF 26.72

LAUNCH DATE MAY 1 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 14 1971

DISTANCE 412.782

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.524 GAL -1.35 AZL 92.16 HCA 137.93 SMA 188.73 ECC .20269 INC 2.1581 V1 29.562
RP 208.01 LAP -1.45 LOP 357.93 VP 23.934 GAP 10.14 AZP 88.40 TAL 351.96 TAP 129.88 RCA 150.47 APO 226.98 V2 26.340
RC 89.514 GL -21.10 GP 2.43 ZAL 110.83 ZAP 140.39 ETS 177.03 ZAE 175.99 ETE 100.65 ZAC 102.39 ETC 277.90 LVI -20.45

PLANETOCENTRIC CONIC

C3 11.569 VHL 3.401 DLA -30.15 RAL 342.96 RAD 6638.8 VEL 11.474 PTH 6.52 VHP 4.349 DPA -14.77 RAP 320.62 ECC 1.1904

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 43 54	2381.48	-1.46	61.43	196.36	137.56	18 23 35	1381.5	16.78	45.36
60.00	19 0 1	2157.67	3.94	46.46	201.53	130.14	19 43 59	1157.7	19.51	27.67
70.00	21 2 44	1820.17	10.32	23.86	206.28	122.74	21 33 4	820.2	22.78	2.43
79.08	0 12 3	1238.86	20.85	345.49	211.96	112.28	0 32 42	238.9	28.19	320.41
79.08	0 12 3	1238.86	20.85	345.49	211.96	112.28	0 32 42	238.9	28.19	320.41
79.08	0 12 3	1238.86	20.85	345.49	211.96	112.28	0 32 42	238.9	28.19	320.41
110.00	2 6 6	6155.03	10.32	290.68	206.28	122.74	3 48 41	5135.0	22.78	269.26

DIFFERENTIAL CORRECTIONS

TDE -.3222 TRA -.6621 TC3 .2300 BAU .0679
RDE -.2279 RRA .0187 RC3 .3742 FAU .12380
FDE .4545 FRA 3.6278 FC3-9.2642 BSP 2329
BDE .3946 BRA .6624 BC3 .4392 FSP 1325

MID-COURSE EXECUTION ACCURACY

SGT 1408.1 SGR 462.1 SG3 820.8
RRT .3091 RRF -.3736 RTF -.[illegible]62
SGB 1482.0 R23 -.1100 R13 -.7905
SG1 1416.1 SG2 437.0 THA 6.40

ORBIT DETERMINATION ACCURACY

ST 33.3 SR 19.2 SS 42.8
CRT .7973 CRS .3132 CST .8202
LSA 52.7 MSA 22.5 SSA 1.3
EL1 37.0 EL2 10.4 ALF 27.00

LAUNCH DATE MAY 1 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 16 1971

DISTANCE 416.840

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.496 GAL -1.33 AZL 92.17 HCA 139.18 SMA 188.23 ECC .20054 INC 2.1732 V1 29.562
RP 208.16 LAP -1.42 LOP 359.19 VP 23.876 GAP 9.86 AZP 88.36 TAL 352.03 TAP 131.21 RCA 150.48 APO 225.98 V2 26.323
RC 91.337 GL -21.41 GP 2.56 ZAL 110.74 ZAP 138.74 ETS 177.04 ZAE 175.61 ETE 115.95 ZAC 102.57 ETC 277.82 LVI -20.46

PLANETOCENTRIC CONIC

C3 11.385 VHL 3.374 DLA -30.45 RAL 343.06 RAD 6638.7 VEL 11.466 PTH 6.52 VHP 4.233 DPA -14.77 RAP 320.19 ECC 1.1874

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 4	2370.98	-.93	60.99	196.42	137.57	18 25 35	1371.0	17.29	44.87
60.00	19 11 4	2144.80	4.50	45.84	201.63	130.09	19 46 49	1144.8	20.03	26.97
70.00	21 7 52	1801.15	11.02	22.83	206.46	122.53	21 37 53	801.2	23.35	1.25
78.20	0 5 54	1256.37	21.14	346.93	211.93	112.45	0 26 50	256.4	28.51	321.79
78.20	0 5 54	1256.37	21.14	346.93	211.93	112.45	0 26 50	256.4	28.51	321.79
78.20	0 5 54	1256.37	21.14	346.93	211.93	112.45	0 26 50	256.4	28.51	321.79
110.00	2 11 14	6136.01	11.02	289.65	206.46	122.53	3 53 30	5136.0	23.35	268.07

DIFFERENTIAL CORRECTIONS

TDE -.3222 TRA -.6394 TC3 .1649 BAU .0642
RDE -.2211 RRA .0112 RC3 .3884 FAU .12938
FDE .4698 FRA 3.8121 FC3-9.8389 BSP 2316
BDE .3908 BRA .6395 BC3 .4220 FSP 1419

MID-COURSE EXECUTION ACCURACY

SGT 1377.8 SGR 458.4 SG3 868.8
RRT .3276 RRF -.4067 RTF -.7675
SGB 1452.0 R23 -.1354 R13 -.7732
SG1 1386.8 SG2 430.3 THA 6.89

ORBIT DETERMINATION ACCURACY

ST 33.2 SR 18.8 SS 43.9
CRT .8127 CRS .3178 CST .8079
LSA 53.5 MSA 22.7 SSA 1.3
EL1 36.9 EL2 9.9 ALF 26.72

LAUNCH DATE MAY 1 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 420.913 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.469	GAL	-1.31	AZL	92.19	HCA	140.43	SMA	187.77	ECC	.19854	INC	2.1888
RP	208.32	LAP	-1.38	LOP	.44	VP	23.619	GAP	9.59	AZP	88.31	TAL	352.10	TAP	132.53	RCA	150.49	APO	225.05
RC	93.190	GL	-21.72	GP	2.69	ZAL	110.67	ZAP	137.05	ETS	177.05	ZAE	174.93	ETE	128.71	ZAC	102.76	ETC	277.73

V1	29.562																		
V2	26.304																		
LVI	-20.47																		

PLANETOCENTRIC CONIC

C3	11.219	VHL	3.350	DLA	-30.75	RAL	343.18	RAD	6638.7	VEL	11.459	PTH	6.51	VHP	4.122	DPA	-14.78	RAP	319.72

V1	29.562																		
V2	26.284																		
LVI	-20.47																		

PLANETOCENTRIC CONIC

C3	11.072	VHL	3.327	DLA	-31.04	RAL	343.31	RAD	6638.6	VEL	11.452	PTH	6.50	VHP	4.016	DPA	-14.79	RAP	319.20

V1	29.562																		
V2	26.264																		
LVI	-20.46																		

PLANETOCENTRIC CONIC

C3	10.942	VHL	3.308	DLA	-31.31	RAL	343.47	RAD	6638.5	VEL	11.447	PTH	6.50	VHP	3.916	DPA	-14.80	RAP	318.64

V1	29.562																		
V2	26.244																		
LVI	-20.45																		

PLANETOCENTRIC CONIC

C3	10.829	VHL	3.291	DLA	-31.58	RAL	343.64	RAD	6638.5	VEL	11.442	PTH	6.49	VHP	3.821	DPA	-14.81	RAP	318.03

V1	29.562																		
V2	26.224																		
LVI	-20.44																		

LAUNCH DATE MAY 1 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 424.998 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.444	GAL	-1.29	AZL	92.21	HCA	141.68	SMA	187.34	ECC	.19670	INC	2.2055
RP	208.49	LAP	-1.37	LOP	1.69	VP	23.763	GAP	9.33	AZP	88.27	TAL	352.15	TAP	133.82	RCA	150.49	APO	224.19
RC	95.074	GL	-22.03	GP	2.83	ZAL	110.61	ZAP	135.31	ETS	177.06	ZAE	173.99	ETE	138.46	ZAC	102.97	ETC	277.63

V1	29.562																		
V2	26.284																		
LVI	-20.47																		

PLANETOCENTRIC CONIC

C3	11.072	VHL	3.327	DLA	-31.04	RAL	343.31	RAD	6638.6	VEL	11.452	PTH	6.50	VHP	4.016	DPA	-14.79	RAP	319.20

LAUNCH DATE MAY 1 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 26 1971

DISTANCE 437.319

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.381 GAL -1.25 AZL 92.26 HCA 145.41 SMA 186.26 ECC .19198 INC 2.2610 V1 29.562
RP 209.04 LAP -1.28 LOP 5.42 VP 23.606 GAP 8.57 AZP 88.14 TAL 352.21 TAP 137.62 RCA 150.50 APO 222.02 V2 26.221
RC 100.898 GL -22.95 GP 3.31 ZAL 110.53 ZAP 129.88 ETS 177.10 ZAE 170.20 ETE 155.09 ZAC 103.67 ETC 277.29 LVI -20.44

PLANETOCENTRIC CONIC

C3 10.731 VHL 3.276 DLA -31.84 RAL 343.83 RAD 6638.4 VEL 11.438 PTH 6.49 VHP 3.732 DPA -14.83 RAP 317.38 ECC 1.1766

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 57 24	2325.74	1.34	59.11	197.18	137.56	18 36 10	1325.7	19.45	42.75
60.00	19 26 50	2087.75	6.99	43.09	202.59	129.79	20 1 37	1087.7	22.26	23.80
70.00	21 35 35	1708.66	14.35	17.74	207.93	121.33	22 4 4	708.7	25.95	355.32
74.72	23 40 24	1321.85	22.38	352.42	212.29	113.27	24 2 26	321.9	29.96	327.05
74.72	23 40 24	1321.85	22.38	352.42	212.29	113.27	24 2 26	321.9	29.96	327.05
74.72	23 40 24	1321.85	22.38	352.42	212.29	113.27	24 2 26	321.9	29.96	327.05
110.00	2 38 58	6043.52	14.35	284.56	207.93	121.33	4 19 41	5043.5	25.95	262.14

DIFFERENTIAL CORRECTIONS

TDE -.2915 TRA -.4586 TC3 -.1753 BAU .0726
RDE -.1885 RRA -.0307 RC3 .4750 FAU .16204
FDE .5011 FRA 4.7569 FC-13.0723 BSP 1601
BDE .3472 BRA .4597 BC3 .5063 FSP 1852

MID-COURSE EXECUTION ACCURACY

SGT 1079.3 SGR 457.8 SG3 1126.6
RRT .3889 RRF -.5987 RTF -.6190
SGB 1172.4 R23 -.3423 R13 -.6457
SG1 1096.4 SG2 415.2 THA 10.96

ORBIT DETERMINATION ACCURACY

ST 29.2 SR 16.5 SS 49.6
CRT .9001 CRS .3415 CST .7123
LSA 55.1 MSA 23.4 SSA 1.1
EL1 32.9 EL2 6.4 ALF 28.17

LAUNCH DATE MAY 1 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 28 1971

DISTANCE 441.443

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.363 GAL -1.25 AZL 92.28 HCA 146.65 SMA 185.96 ECC .19066 INC 2.2819 V1 29.562
RP 209.24 LAP -1.25 LOP 6.66 VP 23.556 GAP 8.33 AZP 88.09 TAL 352.20 TAP 138.85 RCA 150.50 APO 221.41 V2 26.198
RC 102.893 GL -23.25 GP 3.50 ZAL 110.55 ZAP 127.99 ETS 177.12 ZAE 168.72 ETE 158.15 ZAC 103.93 ETC 277.15 LVI -20.42

PLANETOCENTRIC CONIC

C3 10.650 VHL 3.263 DLA -32.09 RAL 344.04 RAD 6638.4 VEL 11.434 PTH 6.49 VHP 3.647 DPA -14.84 RAP 316.69 ECC 1.1753

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 59 48	2318.12	1.72	58.79	197.43	137.55	18 38 26	1318.1	19.81	42.39
60.00	19 30 6	2077.81	7.43	42.60	202.88	129.73	20 4 44	1077.8	22.64	23.24
70.00	21 41 40	1690.42	15.00	16.71	208.35	121.05	22 9 50	690.4	26.43	354.12
74.16	23 37 29	1332.11	22.58	353.30	212.48	113.43	23 59 41	332.1	30.21	327.89
74.16	23 37 29	1332.11	22.58	353.30	212.48	113.43	23 59 41	332.1	30.21	327.89
74.16	23 37 29	1332.11	22.58	353.30	212.48	113.43	23 59 41	332.1	30.21	327.89
110.00	2 45 2	6025.28	15.00	283.54	208.35	121.05	4 25 27	5025.3	26.43	260.94

DIFFERENTIAL CORRECTIONS

TDE -.2965 TRA -.4260 TC3 -.3065 BAU .0827
RDE -.1831 RRA -.0412 RC3 .4931 FAU .16779
FDE .5393 FRA 4.9917 FC-13.6400 BSP 1551
BDE .3485 BRA .4280 BC3 .5806 FSP 1975

MID-COURSE EXECUTION ACCURACY

SGT 1044.3 SGR 462.9 SG3 1182.0
RRT .3692 RRF -.6401 RTF -.5492
SGB 1142.3 R23 -.4264 R13 -.5842
SG1 1060.9 SG2 423.4 THA 11.08

ORBIT DETERMINATION ACCURACY

ST 29.2 SR 16.1 SS 51.3
CRT .9237 CRS .3680 CST .6906
LSA 56.4 MSA 23.8 SSA 1.1
EL1 32.9 EL2 5.5 ALF 27.88

LAUNCH DATE MAY 1 1971 FLIGHT TIME 182.00 ARRIVAL DATE OCT 30 1971

DISTANCE 445.577

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.346 GAL -1.24 AZL 92.30 HCA 147.89 SMA 185.68 ECC .18946 INC 2.3041 V1 29.562
RP 209.44 LAP -1.22 LOP 7.89 VP 23.507 GAP 8.10 AZP 88.05 TAL 352.18 TAP 140.07 RCA 150.50 APO 220.86 V2 26.174
RC 104.913 GL -23.56 GP 3.69 ZAL 110.58 ZAP 126.07 ETS 177.14 ZAE 167.14 ETE 160.54 ZAC 104.21 ETC 277.01 LVI -20.40

PLANETOCENTRIC CONIC

C3 10.582 VHL 3.253 DLA -32.34 RAL 344.28 RAD 6638.3 VEL 11.431 PTH 6.48 VHP 3.568 DPA -14.85 RAP 315.96 ECC 1.1742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 2 16	2310.87	2.09	58.48	197.72	137.54	18 40 47	1310.9	20.16	42.04
60.00	19 33 27	2068.21	7.84	42.14	203.21	129.66	20 7 55	1068.2	23.01	22.69
70.00	21 48 2	1671.84	15.64	15.67	208.83	120.75	22 15 54	671.8	26.90	352.89
73.63	23 34 53	1341.86	22.78	354.14	212.70	113.59	23 57 15	341.9	30.46	328.69
73.63	23 34 53	1341.86	22.78	354.14	212.70	113.59	23 57 15	341.9	30.46	328.69
73.63	23 34 53	1341.86	22.78	354.14	212.70	113.59	23 57 15	341.9	30.46	328.69
110.00	2 51 24	6006.69	15.64	282.49	208.83	120.75	4 31 31	5006.7	26.90	259.71

DIFFERENTIAL CORRECTIONS

TDE -.2929 TRA -.3819 TC3 -.4169 BAU .0936
RDE -.1774 RRA -.0317 RC3 .5139 FAU .17442
FDE .5560 FRA 5.2027 FC-14.2693 BSP 1388
BDE .3425 BRA .3854 BC3 .6617 FSP 2075

MID-COURSE EXECUTION ACCURACY

SGT 986.7 SGR 470.1 SG3 1236.4
RRT .3371 RRF -.6807 RTF -.5490
SGB 1093.0 R23 -.5125 R13 -.5152
SG1 1002.4 SG2 435.7 THA 11.28

ORBIT DETERMINATION ACCURACY

ST 28.4 SR 15.7 SS 52.5
CRT .9449 CRS .3864 CST .6604
LSA 56.9 MSA 23.9 SSA 1.1
EL1 32.2 EL2 4.5 ALF 28.19

LAUNCH DATE MAY 1 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 1 1971

DISTANCE 449.718

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.331 GAL -1.24 AZL 92.33 HCA 149.12 SMA 185.43 ECC .18837 INC 2.3278 V1 29.562
RP 209.66 LAP -1.19 LOP 9.13 VP 23.459 GAP 7.87 AZP 88.00 TAL 352.15 TAP 141.27 RCA 150.50 APO 220.36 V2 26.150
RC 106.958 GL -23.87 GP 3.90 ZAL 110.62 ZAP 124.11 ETS 177.16 ZAE 165.48 ETE 162.42 ZAC 104.50 ETC 276.86 LVI -20.38

PLANETOCENTRIC CONIC

C3 10.530 VHL 3.245 DLA -32.58 RAL 344.54 RAD 6638.3 VEL 11.429 PTH 6.48 VHP 3.494 DPA -14.85 RAP 315.18 ECC 1.1733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 4 48	2304.01	2.43	58.20	198.04	137.53	18 43 13	1304.0	20.48	41.72
60.00	19 36 52	2058.97	8.25	41.69	203.58	129.59	20 11 11	1059.0	23.36	22.16
70.00	21 54 45	1652.81	16.30	14.59	209.35	120.43	22 22 18	652.8	27.38	351.61
73.12	23 32 33	1351.28	22.97	354.95	212.97	113.76	23 55 5	351.3	30.69	329.47
73.12	23 32 33	1351.28	22.97	354.95	212.97	113.76	23 55 5	351.3	30.69	329.47
73.12	23 32 33	1351.28	22.97	354.95	212.97	113.76	23 55 5	351.3	30.69	329.47
110.00	2 58 7	5987.67	16.30	281.41	209.35	120.43	4 37 55	4987.7	27.38	258.44

DIFFERENTIAL CORRECTIONS

TDE -.2897 TRA -.3364 TC3 -.5364 BAU .1067
RDE -.1718 RRA -.0630 RC3 .5360 FAU .18111
FDE .5718 FRA 5.4223 FC-14.8904 BSP 1225
BDE .3368 BRA .3423 BC3 .7583 FSP 2175

MID-COURSE EXECUTION ACCURACY

SGT 937.9 SGR 480.0 SG3 1291.6
RRT .2824 RRF -.7202 RTF -.3681
SGB 1053.6 R23 -.6067 R13 -.4243
SG1 950.6 SG2 454.3 THA 10.70

ORBIT DETERMINATION ACCURACY

ST 27.7 SR 15.3 SS 53.8
CRT .9645 CRS .4071 CST .6251
LSA 57.6 MSA 24.1 SSA 1.1
EL1 31.4 EL2 3.6 ALF 28.47

LAUNCH DATE MAY 1 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 453.866 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.318	GAL	-1.25	AZL	92.35	HCA	150.35	SMA	185.20	ECC	.18738	INC	2.3533
RP	209.87	LAP	-1.16	LOP	10.36	VP	23.412	GAP	7.64	AZP	87.95	TAL	352.08	TAP	142.45	RCA	150.50	APO	219.90
RC	109.028	GL	-24.18	GP	4.12	ZAL	110.68	ZAP	122.12	ETS	177.19	ZAE	163.76	ETE	163.93	ZAC	104.82	ETC	276.70

V1	29.562																		
RCA	150.50	APO	219.90	V2	26.124														
ZAC	104.82	ETC	276.70	LVI	-20.36														

PLANETOCENTRIC CONIC

C3	10.491	VHL	3.239	DLA	-32.81	RAL	344.82	RAD	6638.3	VEL	11.427	PTH	6.48	VHP	3.424	DPA	-14.84	RAP	314.37
ECC	1.1727																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 7 26	2297.47	2.76	57.92	198.40	137.52	18 45 43	1297.5	20.79	41.40
60.00	19 40 24	2050.04	8.63	41.25	203.99	129.52	20 14 34	1050.0	23.70	21.65
70.00	22 1 55	1633.03	16.98	13.46	209.93	120.09	22 29 8	633.0	27.86	350.28
72.63	23 30 30	1360.42	23.14	355.73	213.27	113.93	23 53 10	360.4	30.92	330.22
72.63	23 30 30	1360.42	23.14	355.73	213.27	113.93	23 53 10	360.4	30.92	330.22
72.63	23 30 30	1360.42	23.14	355.73	213.27	113.93	23 53 10	360.4	30.92	330.22
110.00	3 5 18	5967.89	16.98	280.28	209.93	120.09	4 44 45	4967.9	27.86	257.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2862	TRA	-.2872	TC3	-.6626	BAU	.1216	SGT	897.7	SGR	492.7	SG3	1345.8	ST	26.9	SR	14.9	SS	55.1
RDE	-.1664	RRA	-.0751	RC3	.5591	FAU	.18760	RRT	.2013	RRF	-.7578	RTF	-.2433	CRT	.9813	CRS	.4319	CST	.5847
FDE	.5910	FRA	5.6412	FC-15.4808		BSP	1050	SGB	1024.1	R23	-.7015	R13	-.3013	LSA	58.2	MSA	24.3	SSA	1.0
BDE	.3310	BRA	.2969	BC3	.8670	FSP	2266	SG1	905.4	SG2	478.6	THA	8.77	EL1	30.6	EL2	2.5	ALF	28.77

LAUNCH DATE MAY 1 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 458.020 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.305	GAL	-1.25	AZL	92.38	HCA	151.58	SMA	184.99	ECC	.18649	INC	2.3806
RP	210.10	LAP	-1.13	LOP	11.59	VP	23.365	GAP	7.42	AZP	87.91	TAL	352.03	TAP	143.61	RCA	150.50	APO	219.49
RC	111.121	GL	-24.50	GP	4.36	ZAL	110.76	ZAP	120.10	ETS	177.22	ZAE	161.98	ETE	165.14	ZAC	105.15	ETC	276.53

V1	29.562																		
RCA	150.50	APO	219.49	V2	26.098														
ZAC	105.15	ETC	276.53	LVI	-20.34														

PLANETOCENTRIC CONIC

C3	10.466	VHL	3.235	DLA	-33.04	RAL	345.13	RAD	6638.3	VEL	11.426	PTH	6.48	VHP	3.360	DPA	-14.83	RAP	313.52
ECC	1.1722																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 10 9	2291.22	3.08	57.66	198.79	137.50	18 48 21	1291.2	21.09	41.10
60.00	19 44 2	2041.34	9.01	40.82	204.44	129.45	20 18 4	1041.3	24.03	21.14
70.00	22 9 42	1612.00	17.70	12.24	210.58	119.70	22 36 34	612.0	28.36	348.84
72.15	23 28 41	1369.34	23.31	356.50	213.62	114.11	23 51 30	369.3	31.15	330.96
72.15	23 28 41	1369.34	23.31	356.50	213.62	114.11	23 51 30	369.3	31.15	330.96
72.15	23 28 41	1369.34	23.31	356.50	213.62	114.11	23 51 30	369.3	31.15	330.96
110.00	3 13 4	5946.85	17.70	279.07	210.58	119.70	4 52 11	4946.9	28.36	255.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2793	TRA	-.2318	TC3	-.7818	BAU	.1367	SGT	860.4	SGR	508.7	SG3	1399.3	ST	25.8	SR	14.5	SS	56.0
RDE	-.1607	RRA	-.0875	RC3	.5858	FAU	.19499	RRT	.0903	RRF	-.7932	RTF	-.0922	CRT	.9930	CRS	.4535	CST	.5315
FDE	.5939	FRA	5.8408	FC-16.1287		BSP	880	SGB	999.5	R23	-.7828	R13	-.1297	LSA	58.5	MSA	24.3	SSA	1.0
BDE	.3222	BRA	.2477	BC3	.9769	FSP	2348	SG1	862.3	SG2	505.5	THA	4.66	EL1	29.6	EL2	1.5	ALF	29.25

LAUNCH DATE MAY 1 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 462.179 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.294	GAL	-1.26	AZL	92.41	HCA	152.61	SMA	184.81	ECC	.18569	INC	2.4102
RP	210.33	LAP	-1.10	LOP	12.82	VP	23.320	GAP	7.20	AZP	87.86	TAL	351.94	TAP	144.75	RCA	150.49	APO	219.13
RC	113.239	GL	-24.83	GP	4.62	ZAL	110.86	ZAP	118.06	ETS	177.26	ZAE	160.14	ETE	166.12	ZAC	105.50	ETC	276.36

V1	29.562																		
RCA	150.49	APO	219.13	V2	26.071														
ZAC	105.50	ETC	276.36	LVI	-20.33														

PLANETOCENTRIC CONIC

C3	10.456	VHL	3.234	DLA	-33.28	RAL	345.46	RAD	6638.3	VEL	11.426	PTH	6.48	VHP	3.301	DPA	-14.80	RAP	312.64
ECC	1.1721																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 13 0	2285.28	3.37	57.41	199.23	137.49	18 51 5	1285.3	21.36	40.81
60.00	19 47 49	2032.90	9.37	40.41	204.94	129.38	20 21 42	1032.9	24.34	20.65
70.00	22 18 16	1589.27	18.46	10.92	211.31	119.26	22 44 45	589.3	28.87	347.27
71.69	23 27 5	1378.15	23.47	357.26	214.02	114.29	23 50 4	378.2	31.36	331.70
71.69	23 27 5	1378.15	23.47	357.26	214.02	114.29	23 50 4	378.2	31.36	331.70
71.69	23 27 5	1378.15	23.47	357.26	214.02	114.29	23 50 4	378.2	31.36	331.70
110.00	3 21 38	5924.12	18.46	277.74	211.31	119.26	5 0 22	4924.1	28.87	254.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2816	TRA	-.1021	TC3	-.9451	BAU	.1572	SGT	878.4	SGR	527.7	SG3	1451.2	ST	25.6	SR	14.2	SS	57.6
RDE	-.1562	RRA	-.1018	RC3	.6094	FAU	.20013	RRT	-.0422	RRF	-.8255	RTF	.[illegible]86	CRT	.9970	CRS	.4939	CST	.4864
FDE	.6399	FRA	6.0791	FC-16.5702		BSP	825	SGB	1024.7	R23	.8214	R13	-.0881	LSA	59.8	MSA	24.6	SSA	1.0
BDE	.3220	BRA	.2086	BC3	1.1246	FSP	2463	SG1	878.8	SG2	527.0	THA	177.73	EL1	29.3	EL2	1.0	ALF	28.99

LAUNCH DATE MAY 1 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 466.343 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.284	GAL	-1.27	AZL	92.44	HCA	154.03	SMA	184.64	ECC	.18499	INC	2.4423
RP	210.57	LAP	-1.07	LOP	14.04	VP	23.275	GAP	6.99	AZP	87.80	TAL	351.85	TAP	145.88	RCA	150.49	APO	218.80
RC	115.380	GL	-25.17	GP	4.89	ZAL	110.97	ZAP	115.99	ETS	177.31	ZAE	158.25	ETE	166.92	ZAC	105.87	ETC	276.18

V1	29.562																		
RCA	150.49	APO	218.80	V2	26.044														
ZAC	105.87	ETC	276.18	LVI	-20.32														

PLANETOCENTRIC CONIC

C3	10.460	VHL	3.234	DLA	-33.51	RAL	345.82	RAD	6638.3	VEL	11.426	PTH	6.48	VHP	3.246	DPA	-14.75	RAP	311.73
ECC	1.1721																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 15 58	2279.51	3.66	57.17	199.71	137.47	18 53 58	1279.5	21.64	40.53
60.00	19 51 46	2024.51	9.74	40.00	205.48	129.30	20 25 30	1024.5	24.65	20.16
70.00	22 28 6	1563.32	19.31	9.40	212.14	118.73	22 54 9	563.3	29.44	345.47
71.23	23 25 40	1387.05	23.62	358.02	214.46	114.49	23 48 47	387.0	31.58	332.44
71.23	23 25 40	1387.05	23.62	358.02	214.46	114.49	23 48 47	387.0	31.58	332.44
71.23	23 25 40	1387.05	23.62	358.02	214.46	114.49	23 48 47	387.0	31.58	332.44
110.00	3 31 28	5898.18	19.31	276.22	212.14	118.73	5 9 46	4898.2	29.44	252.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2787	TRA	-.1248	TC3	-1.0941	BAU	.1770	SGT	902.8	SGR	550.5	SG3	1501.6	ST	25.0	SR	13.9	SS	58.8
RDE	-.1514	RRA	-.1166	RC3	.6368	FAU	.20607	RRT	-.1878	RRF	-.8546	RTF	.2344	CRT	.9901	CRS	.5295	CST	.4260
FDE	.6660	FRA	6.2956	FC-17.0567		BSP	806	SGB	1057.4	R23	.7967	R13	-.3183	LSA	60.5	MSA	24.8	SSA	.9
BDE	.3172	BRA	.1708	BC3	1.2660	FSP	2557	SG1	911.9	SG2	535.3	THA	169.98	EL1	28.6	EL2	1.7	ALF	28.97

LAUNCH DATE MAY 1 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 11 1971

HELIOCENTRIC CONIC DISTANCE 470.512 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.275	GAL	-1.28	AZL	92.48	HCA	155.25	SMA	184.50	ECC	.18437	INC	2.4772	V1	29.562
RP	210.82	LAP	-1.04	LOP	15.26	VP	23.231	GAP	6.78	AZP	87.75	TAL	351.73	TAP	146.99	RCA	150.48	APO	218.51	V2	26.015
RC	117.545	GL	-25.52	GP	5.19	ZAL	111.09	ZAP	113.90	ETS	177.37	ZAE	156.32	ETE	167.58	ZAC	106.26	ETC	275.99	LVI	-20.33

PLANETOCENTRIC CONIC

C3	10.478	VHL	3.237	DLA	-33.75	RAL	346.22	RAD	6638.3	VEL	11.427	PTH	6.48	VHP	3.196	DPA	-14.69	RAP	310.80	ECC	1.1724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 19 6	2273.88	3.95	56.94	200.24	137.45	18 57 0	1273.9	21.90	40.25
60.00	19 55 56	2016.13	10.10	39.58	206.08	129.23	20 29 32	1016.1	24.96	19.67
70.00	22 40 0	1531.76	20.34	7.52	213.12	118.05	23 5 32	531.8	30.09	343.24
70.76	23 24 23	1396.10	23.77	358.80	214.96	114.69	23 47 39	396.1	31.80	333.19
70.76	23 24 23	1396.10	23.77	358.80	214.96	114.69	23 47 39	396.1	31.80	333.19
70.76	23 24 23	1396.10	23.77	358.80	214.96	114.69	23 47 39	396.1	31.80	333.19
110.00	3 43 22	5866.61	20.34	274.34	213.12	118.05	5 21 9	4866.6	30.09	250.06

DIFFERENTIAL CORRECTIONS

TDE	-.2765	TRA	-.0649	TC3	-1.2505	BAU	.1985
RDE	-.1467	RRA	-.1326	RC3	.6660	FAU	.21180
FDE	.6906	FRA	6.5038	FC	-17.5002	BSP	883
BDE	.3130	BRA	.1476	BC3	1.4168	FSP	2643

MID-COURSE EXECUTION ACCURACY

SGT	956.1	SGR	577.1	SG3	1549.3
RRT	-.3316	RRF	-.8804	RTF	.3884
SGB	1116.7	R23	.7275	R13	-.5061
SG1	983.3	SG2	529.3	THA	163.90

ORBIT DETERMINATION ACCURACY

ST	24.6	SR	13.7	SS	60.0
CRT	.9689	CRS	.5671	CST	.3569
LSA	61.3	MSA	25.0	SSA	.9
EL1	28.0	EL2	3.0	ALF	28.67

LAUNCH DATE MAY 1 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 13 1971

HELIOCENTRIC CONIC DISTANCE 474.684 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.268	GAL	-1.30	AZL	92.52	HCA	156.47	SMA	184.37	ECC	.18384	INC	2.5156	V1	29.562
RP	211.07	LAP	-1.00	LOP	16.48	VP	23.188	GAP	6.57	AZP	87.69	TAL	351.61	TAP	148.08	RCA	150.47	APO	218.26	V2	25.986
RC	119.734	GL	-25.90	GP	5.51	ZAL	111.23	ZAP	111.80	ETS	177.44	ZAE	154.35	ETE	168.11	ZAC	106.67	ETC	275.79	LVI	-20.34

PLANETOCENTRIC CONIC

C3	10.510	VHL	3.242	DLA	-34.00	RAL	346.64	RAD	6638.3	VEL	11.428	PTH	6.48	VHP	3.151	DPA	-14.59	RAP	309.84	ECC	1.1730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 22 26	2268.31	4.22	56.70	200.81	137.43	19 0 15	1268.3	22.16	39.98
60.00	20 0 21	2007.61	10.46	39.16	206.73	129.14	20 33 49	1007.6	25.27	19.16
70.00	22 56 33	1486.77	21.75	4.80	214.36	117.00	23 21 20	486.8	30.94	340.01
70.30	23 23 13	1405.42	23.92	359.60	215.50	114.91	23 46 38	405.4	32.02	333.97
70.30	23 23 13	1405.42	23.92	359.60	215.50	114.91	23 46 38	405.4	32.02	333.97
70.30	23 23 13	1405.42	23.92	359.60	215.50	114.91	23 46 38	405.4	32.02	333.97
110.00	3 59 55	5821.63	21.75	271.62	214.36	117.00	5 36 57	4821.6	30.94	246.83

DIFFERENTIAL CORRECTIONS

TDE	-.2744	TRA	-.0024	TC3	-1.4125	BAU	.2213
RDE	-.1424	RRA	-.1501	RC3	.6961	FAU	.21684
FDE	.7220	FRA	6.7159	FC	-17.8610	BSP	1048
BDE	.3092	BRA	.1501	BC3	1.5747	FSP	2731

MID-COURSE EXECUTION ACCURACY

SGT	1036.3	SGR	607.8	SG3	1594.8
RRT	-.4599	RRF	-.9028	RTF	.5183
SGB	1201.4	R23	.6506	R13	-.6365
SG1	1085.3	SG2	515.4	THA	160.28

ORBIT DETERMINATION ACCURACY

ST	24.3	SR	13.5	SS	61.2
CRT	.9300	CRS	.6089	CST	.2821
LSA	62.3	MSA	25.3	SSA	.8
EL1	27.4	EL2	4.4	ALF	28.10

LAUNCH DATE MAY 1 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 15 1971

HELIOCENTRIC CONIC DISTANCE 478.860 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.261	GAL	-1.32	AZL	92.56	HCA	157.69	SMA	184.25	ECC	.18338	INC	2.5575	V1	29.562
RP	211.33	LAP	-.97	LOP	17.70	VP	23.145	GAP	6.37	AZP	87.63	TAL	351.47	TAP	149.16	RCA	150.47	APO	218.04	V2	25.957
RC	121.945	GL	-26.29	GP	5.86	ZAL	111.38	ZAP	109.69	ETS	177.51	ZAE	152.35	ETE	169.54	ZAC	107.12	ETC	275.60	LVI	-20.38

PLANETOCENTRIC CONIC

C3	10.558	VHL	3.249	DLA	-34.25	RAL	347.09	RAD	6638.3	VEL	11.430	PTH	6.48	VHP	3.111	DPA	-14.47	RAP	308.86	ECC	1.1738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 26 0	2262.70	4.51	56.47	201.45	137.41	19 3 42	1262.7	22.42	39.70
60.00	20 5 7	1998.80	10.84	38.72	207.45	129.06	20 38 25	998.8	25.60	18.64
69.82	23 22 8	1415.16	24.06	.43	216.10	115.15	23 45 43	415.2	32.24	334.79
69.82	23 22 8	1415.16	24.06	.43	216.10	115.15	23 45 43	415.2	32.24	334.79
69.82	23 22 8	1415.16	24.06	.43	216.10	115.15	23 45 43	415.2	32.24	334.79
69.82	23 22 8	1415.16	24.06	.43	216.10	115.15	23 45 43	415.2	32.24	334.79
69.82	23 22 8	1415.16	24.06	.43	216.10	115.15	23 45 43	415.2	32.24	334.79

DIFFERENTIAL CORRECTIONS

TDE	-.2724	TRA	.0632	TC3	-1.5777	BAU	.2453
RDE	-.1382	RRA	-.1688	RC3	.7290	FAU	.22185
FDE	.7487	FRA	6.9114	FC	-18.1905	BSP	1274
BDE	.3055	BRA	.1802	BC3	1.7380	FSP	2805

MID-COURSE EXECUTION ACCURACY

SGT	1140.3	SGR	643.0	SG3	1636.8
RRT	-.5690	RRF	-.9220	RTF	.6137
SGB	1309.1	R23	.5802	R13	-.7266
SG1	1210.6	SG2	498.0	THA	158.37

ORBIT DETERMINATION ACCURACY

ST	24.2	SR	13.3	SS	62.2
CRT	.8706	CRS	.6510	CST	.1988
LSA	63.1	MSA	25.5	SSA	.8
EL1	27.0	EL2	5.9	ALF	27.08

LAUNCH DATE MAY 1 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 17 1971

HELIOCENTRIC CONIC DISTANCE 483.039 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.255	GAL	-1.34	AZL	92.60	HCA	158.90	SMA	184.16	ECC	.18300	INC	2.6041	V1	29.562
RP	211.60	LAP	-.94	LOP	18.91	VP	23.103	GAP	6.17	AZP	87.57	TAL	351.31	TAP	150.21	RCA	150.46	APO	217.86	V2	25.926
RC	124.177	GL	-26.71	GP	6.25	ZAL	111.54	ZAP	107.58	ETS	177.60	ZAE	150.31	ETE	168.89	ZAC	107.59	ETC	275.40	LVI	-20.44

PLANETOCENTRIC CONIC

C3	10.623	VHL	3.259	DLA	-34.53	RAL	347.58	RAD	6638.4	VEL	11.433	PTH	6.48	VHP	3.076	DPA	-14.32	RAP	307.86	ECC	1.1748

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 29 50	2256.96	4.79	56.22	202.14	137.39	19 7 26	1257.0	22.69	39.41
60.00	20 10 16	1989.51	11.24	38.26	208.24	128.96	20 43 26	989.5	25.93	18.08
69.31	23 21 6	1425.46	24.20	1.31	216.77	115.41	23 44 52	425.5	32.48	335.66
69.31	23 21 6	1425.46	24.20	1.31	216.77	115.41	23 44 52	425.5	32.48	335.66
69.31	23 21 6	1425.46	24.20	1.31	216.77	115.41	23 44 52	425.5	32.48	335.66
69.31	23 21 6	1425.46	24.20	1.31	216.77	115.41	23 44 52	425.5	32.48	335.66
69.31	23 21 6	1425.46	24.20	1.31	216.77	115.41	23 44 52	425.5	32.48	335.66

DIFFERENTIAL CORRECTIONS

TDE	-.2709	TRA	.1316	TC3	-1.7439	BAU	.2704
RDE	-.1345	RRA	-.1895	RC3	.7637	FAU	.22629
FDE	.7858	FRA	7.1066	FC	-18.4411	BSP	1546
BDE	.3024	BRA	.2307	BC3	1.9038	FSP	2880

MID-COURSE EXECUTION ACCURACY

SGT	1264.1	SGR	683.5	SG3	1676.1
RRT	-.6551	RRF	-.9382	RTF	.7041
SGB	1431.0	R23	.5215	R13	-.7687
SG1	1353.0	SG2	481.6	THA	157.46

ORBIT DETERMINATION ACCURACY

ST	24.2	SR	13.3	SS	63.4
CRT	.7895	CRS	.6963	CST	.1134
LSA	64.1	MSA	25.8	SSA	.7
EL1	26.6	EL2	7.4	ALF	25.58

LAUNCH DATE MAY 1 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 487.220 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.250	GAL	-1.36	AZL	92.66	HCA	160.11	SMA	184.08	ECC	.18269	INC	2.6557
RP	211.87	LAP	-.90	LOP	20.12	VP	23.061	GAP	5.97	AZP	87.50	TAL	351.14	TAP	151.25	RCA	150.45	APO	217.70
RC	126.431	GL	-27.17	GP	6.67	ZAL	111.70	ZAP	105.46	ETS	177.71	ZAE	148.25	ETE	169.16	ZAC	108.10	ETC	275.19

VI	29.562																		
V2	25.896																		
LVI	-20.52																		

PLANETOCENTRIC CONIC

C3	10.706	VHL	3.272	DLA	-34.82	RAL	348.11	RAD	6638.4	VEL	11.437	PTH	6.49	VHP	3.045	DPA	-14.12	RAP	306.65

ECC	1.1782																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 33 59	2250.94	5.10	55.97	202.91	137.37	19 11 30	1250.9	22.97	39.11
60.00	20 15 56	1979.48	11.67	37.76	209.12	128.85	20 48 55	979.5	26.29	17.48
68.78	23 20 6	1436.47	24.35	2.25	217.51	115.70	23 44 2	436.5	32.73	336.59
68.78	23 20 6	1436.47	24.35	2.25	217.51	115.70	23 44 2	436.5	32.73	336.59
68.78	23 20 6	1436.47	24.35	2.25	217.51	115.70	23 44 2	436.5	32.73	336.59
68.78	23 20 6	1436.47	24.35	2.25	217.51	115.70	23 44 2	436.5	32.73	336.59
68.78	23 20 6	1436.47	24.35	2.25	217.51	115.70	23 44 2	436.5	32.73	336.59

DIFFERENTIAL CORRECTIONS

TDE	-.2695	TRA	.2032	TC3	-1.9127	BAU	.2968
RDE	-.1307	RRA	-.2113	RC3	.8013	FAU	.23045
FDE	.8099	FRA	7.2897	FC	-18.6360	BSP	1844
BDE	.2995	BRA	.2932	BC3	2.0738	FSP	2937

MID-COURSE EXECUTION ACCURACY

SGT	1406.2	SGR	728.4	SG3	1708.8		
RRT	-.7261	RRF	-.9516	RTF	.7664		
SGB	1583.6	R23	.4712	R13	-.8340		
SG1	1513.7	SG2	465.3	THA	157.10		

ORBIT DETERMINATION ACCURACY

ST	24.5	SR	13.3	SS	64.2
CRT	.6872	CRS	.7387	CST	.0212
LSA	64.9	MSA	26.1	SSA	.7
EL1	26.4	EL2	9.0	ALF	23.29

LAUNCH DATE MAY 1 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 491.403 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.246	GAL	-1.39	AZL	92.71	HCA	161.32	SMA	184.01	ECC	.18245	INC	2.7139
RP	212.14	LAP	-.87	LOP	21.32	VP	23.020	GAP	5.78	AZP	87.43	TAL	350.96	TAP	152.28	RCA	150.44	APO	217.58
RC	128.706	GL	-27.66	GP	7.14	ZAL	111.87	ZAP	103.35	ETS	177.83	ZAE	146.17	ETE	169.35	ZAC	108.65	ETC	274.99

VI	29.562																		
V2	25.864																		
LVI	-20.65																		

PLANETOCENTRIC CONIC

C3	10.808	VHL	3.288	DLA	-35.15	RAL	348.68	RAD	6638.5	VEL	11.441	PTH	6.49	VHP	3.019	DPA	-13.87	RAP	305.84

ECC	1.1779																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 38 34	2244.49	5.42	55.70	203.75	137.34	19 15 58	1244.5	23.26	38.79
60.00	20 22 14	1968.38	12.14	37.21	210.10	128.73	20 55 2	968.4	26.69	16.81
68.20	23 19 4	1448.42	24.50	3.28	218.32	116.03	23 43 12	448.4	33.00	337.61
68.20	23 19 4	1448.42	24.50	3.28	218.32	116.03	23 43 12	448.4	33.00	337.61
68.20	23 19 4	1448.42	24.50	3.28	218.32	116.03	23 43 12	448.4	33.00	337.61
68.20	23 19 4	1448.42	24.50	3.28	218.32	116.03	23 43 12	448.4	33.00	337.61
68.20	23 19 4	1448.42	24.50	3.28	218.32	116.03	23 43 12	448.4	33.00	337.61

DIFFERENTIAL CORRECTIONS

TDE	-.2682	TRA	.2779	TC3	-2.0783	BAU	.3239
RDE	-.1279	RRA	-.2361	RC3	.8406	FAU	.23377
FDE	.8543	FRA	7.4402	FC	-18.7254	BSP	2173
BDE	.2972	BRA	.3647	BC3	2.2419	FSP	3000

MID-COURSE EXECUTION ACCURACY

SGT	1560.9	SGR	780.1	SG3	1739.4		
RRT	-.7795	RRF	-.9627	RTF	.8121		
SGB	1745.0	R23	.4307	R13	-.8666		
SG1	1685.3	SG2	452.6	THA	156.96		

ORBIT DETERMINATION ACCURACY

ST	25.1	SR	13.5	SS	65.2
CRT	.5667	CRS	.7833	CST	-.0656
LSA	66.1	MSA	26.4	SSA	.7
EL1	26.5	EL2	10.5	ALF	20.31

LAUNCH DATE MAY 1 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 495.588 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.242	GAL	-1.42	AZL	92.78	HCA	162.52	SMA	183.95	ECC	.18227	INC	2.7793
RP	212.43	LAP	-.83	LOP	22.53	VP	22.979	GAP	5.59	AZP	87.35	TAL	350.76	TAP	153.28	RCA	150.42	APO	217.48
RC	130.999	GL	-28.21	GP	7.66	ZAL	112.04	ZAP	101.24	ETS	177.97	ZAE	144.08	ETE	169.48	ZAC	109.26	ETC	274.79

VI	29.562																		
V2	25.832																		
LVI	-20.82																		

PLANETOCENTRIC CONIC

C3	10.932	VHL	3.306	DLA	-35.51	RAL	349.30	RAD	6638.5	VEL	11.446	PTH	6.50	VHP	2.997	DPA	-13.56	RAP	304.82

ECC	1.1799																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 43 38	2237.40	5.77	55.40	204.70	137.31	19 20 55	1237.4	23.59	38.43
60.00	20 29 21	1955.80	12.68	36.57	211.20	128.58	21 1 57	955.8	27.13	16.04
67.57	23 18 0	1461.37	24.66	4.39	219.22	116.39	23 42 22	461.4	33.29	338.71
67.57	23 18 0	1461.37	24.66	4.39	219.22	116.39	23 42 22	461.4	33.29	338.71
67.57	23 18 0	1461.37	24.66	4.39	219.22	116.39	23 42 22	461.4	33.29	338.71
67.57	23 18 0	1461.37	24.66	4.39	219.22	116.39	23 42 22	461.4	33.29	338.71
67.57	23 18 0	1461.37	24.66	4.39	219.22	116.39	23 42 22	461.4	33.29	338.71

DIFFERENTIAL CORRECTIONS

TDE	-.2578	TRA	.3547	TC3	-2.2446	BAU	.3525
RDE	-.1252	RRA	-.2633	RC3	.8826	FAU	.23643
FDE	.8874	FRA	7.5881	FC	-18.7237	BSP	2513
BDE	.2956	BRA	.4417	BC3	2.4119	FSP	3046

MID-COURSE EXECUTION ACCURACY

SGT	1728.7	SGR	837.8	SG3	1763.5		
RRT	-.8209	RRF	-.9716	RTF	.8463		
SGB	1921.0	R23	.3976	R13	-.8906		
SG1	1869.4	SG2	442.5	THA	156.94		

ORBIT DETERMINATION ACCURACY

ST	25.9	SR	13.8	SS	66.0
CRT	.4335	CRS	.8238	CST	-.1517
LSA	67.1	MSA	26.8	SSA	.6
EL1	26.8	EL2	12.0	ALF	16.32

LAUNCH DATE MAY 1 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 499.774 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.240	GAL	-1.45	AZL	92.85	HCA	163.72	SMA	183.91	ECC	.18216	INC	2.8542
RP	212.72	LAP	-.80	LOP	23.73	VP	22.939	GAP	5.40	AZP	87.26	TAL	350.55	TAP	154.27	RCA	150.41	APO	217.41
RC	133.312	GL	-28.82	GP	8.24	ZAL	112.21	ZAP	99.15	ETS	178.14	ZAE	141.97	ETE	169.55	ZAC	109.92	ETC	274.59

VI	29.562																		
V2	25.799																		
LVI	-21.05																		

PLANETOCENTRIC CONIC

C3	11.082	VHL	3.329	DLA	-35.92	RAL	349.98	RAD	6638.6	VEL	11.453	PTH	6.50	VHP	2.980	DPA	-13.18	RAP	303.80

ECC	1.1824																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 49 20	2229.41	6.17	55.06	205.75	137.27	19 26 29	1229.4	23.96	38.03
60.00	20 37 33	1941.10	13.30	35.83	212.45	128.40	21 9 54	941.1	27.64	15.13
66.87	23 16 50	1475.76	24.84	5.63	220.23	116.82	23 41 25	475.8	33.63	339.95
66.87	23 16 50	1475.76	24.84	5.63	220.23	116.82	23 41 25	475.8	33.63	339.95
66.87	23 16 50	1475.76	24.84	5.63	220.23	116.82	23 41 25	475.8	33.63	339.95
66.87	23 16 50	1475.76	24.84	5.63	220.23	116.82	23 41 25	475.8	33.63	339.95
66.87	23 16 50	1475.76	24.84	5.63	220.23	116.82	23 41 25	475.8	33.63	339.95

DIFFERENTIAL CORRECTIONS

TDE	-.2667	TRA	.4357	TC3	-2.4020	BAU	.3815
RDE	-.1233	RRA	-.2940	RC3	.9273	FAU	.23828
FDE	.9310	FRA	7.7294	FC	-18.6149	BSP	2882
BDE	.2939	BRA	.5256	BC3	2.5748	FSP	3087

MID-COURSE EXECUTION ACCURACY

SGT	1904.1	SGR	903.6	SG3	1783.3		
RRT	-.8534	RRF	-.9787	RTF	.8726		
SGB	2107.6	R23	.3689	R13	-.9094		
SG1	2062.2	SG2	434.9	THA	156.86		

ORBIT DETERMINATION ACCURACY

ST	26.9	SR	14.2	SS	66.9
CRT	.2912	CRS	.8618	CST	-.2326
LSA	68.3	MSA	27.1	SSA	.6
EL1	27.4	EL2	13.4	ALF	11.50

LAUNCH DATE MAY 1 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 27 1971

DISTANCE 503.960

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.238 GAL -1.49 AZL 92.94 HCA 164.92 SMA 183.88 ECC .18211 INC 2.9400 V1 29.562
RP 213.01 LAP -.76 LOP 24.92 VP 22.899 GAP 5.22 AZP 87.16 TAL 350.33 TAP 155.25 RCA 150.39 APO 217.37 V2 25.766
RC 135.643 GL -29.51 GP 8.91 ZAL 112.37 ZAP 97.08 ETS 178.33 ZAE 139.86 ETE 169.55 ZAC 110.66 ETC 274.39 LVI -21.36

PLANETOCENTRIC CONIC

C3 11.261 VHL 3.356 DLA -36.38 RAL 350.72 RAD 6638.7 VEL 11.461 PTH 6.51 VHP 2.968 DPA -12.72 RAP 302.78 ECC 1.1853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 55 49	2220.20	6.63	54.67	206.95	137.22	19 32 50	1220.2	24.38	37.56
60.00	20 47 11	1923.45	14.05	34.93	213.89	128.17	21 19 14	923.4	28.25	14.03
66.09	23 15 30	1491.86	25.04	7.03	221.37	117.31	23 40 22	491.9	34.00	341.35
66.09	23 15 30	1491.86	25.04	7.03	221.37	117.31	23 40 22	491.9	34.00	341.35
66.09	23 15 30	1491.86	25.04	7.03	221.37	117.31	23 40 22	491.9	34.00	341.35
66.09	23 15 30	1491.86	25.04	7.03	221.37	117.31	23 40 22	491.9	34.00	341.35
66.09	23 15 30	1491.86	25.04	7.03	221.37	117.31	23 40 22	491.9	34.00	341.35

DIFFERENTIAL CORRECTIONS

TDE -.2675 TRA .5184 TC3-2.5558 BAU .4120
RDE -.1216 RRA -.3276 RC3 .9776 FAU .23999
FDE .9609 FRA 7.8328 FC-18.4492 BSP .3250
BDE .2938 BRA .6132 BC3 2.7364 FSP .3110

MID-COURSE EXECUTION ACCURACY

SGT 2088.0 SGR 977.9 SG3 1795.7
RRT -.8789 RRF -.9844 RTF .8930
SGB 2305.6 R23 .3442 R13 -.9241
SG1 2265.2 SG2 430.1 THA 156.74

ORBIT DETERMINATION ACCURACY

ST 28.3 SR 14.7 SS 67.4
CRT .1501 CRS .8942 CST -.3070
LSA 69.3 MSA 27.6 SSA .5
EL1 28.4 EL2 14.5 ALF 6.06

LAUNCH DATE MAY 1 1971 FLIGHT TIME 212.00 ARRIVAL DATE NOV 29 1971

DISTANCE 508.148

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.237 GAL -1.52 AZL 93.04 HCA 166.11 SMA 183.86 ECC .18211 INC 3.0402 V1 29.562
RP 213.31 LAP -.73 LOP 26.11 VP 22.859 GAP 5.04 AZP 87.05 TAL 350.10 TAP 156.21 RCA 150.38 APO 217.35 V2 25.732
RC 137.991 GL -30.30 GP 9.67 ZAL 112.51 ZAP 95.03 ETS 178.56 ZAE 137.74 ETE 169.48 ZAC 111.49 ETC 274.20 LVI -21.76

PLANETOCENTRIC CONIC

C3 11.478 VHL 3.388 DLA -36.93 RAL 351.55 RAD 6638.8 VEL 11.470 PTH 6.52 VHP 2.961 DPA -12.14 RAP 301.76 ECC 1.1889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 3 20	2209.31	7.18	54.21	208.33	137.16	19 40 10	1209.3	24.88	37.00
60.00	20 58 49	1901.49	14.97	33.81	215.59	127.87	21 30 30	901.5	28.99	12.64
65.19	23 14 1	1509.88	25.26	8.62	222.65	117.89	23 39 11	509.9	34.44	342.94
65.19	23 14 1	1509.88	25.26	8.62	222.65	117.89	23 39 11	509.9	34.44	342.94
65.19	23 14 1	1509.88	25.26	8.62	222.65	117.89	23 39 11	509.9	34.44	342.94
65.19	23 14 1	1509.88	25.26	8.62	222.65	117.89	23 39 11	509.9	34.44	342.94
65.19	23 14 1	1509.88	25.26	8.62	222.65	117.89	23 39 11	509.9	34.44	342.94

DIFFERENTIAL CORRECTIONS

TDE -.2686 TRA .6048 TC3-2.6983 BAU .4432
RDE -.1212 RRA -.3667 RC3 1.0301 FAU .24033
FDE 1.0057 FRA 7.9319 FC-18.1272 BSP .3641
BDE .2947 BRA .7073 BC3 2.8883 FSP .3130

MID-COURSE EXECUTION ACCURACY

SGT 2277.4 SGR 1063.5 SG3 1802.8
RRT -.8983 RRF -.9887 RTF .9082
SGB 2513.5 R23 .3240 R13 -.9353
SG1 2476.5 SG2 429.7 THA 156.49

ORBIT DETERMINATION ACCURACY

ST 29.9 SR 15.5 SS 66.1
CRT .0142 CRS .9228 CST -.3710
LSA 70.6 MSA 28.2 SSA .5
EL1 29.9 EL2 15.5 ALF .58

LAUNCH DATE MAY 1 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 1 1971

DISTANCE 512.335

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.238 GAL -1.56 AZL 93.16 HCA 167.30 SMA 183.85 ECC .18217 INC 3.1583 V1 29.562
RP 213.61 LAP -.69 LOP 27.30 VP 22.819 GAP 4.86 AZP 86.92 TAL 349.85 TAP 157.15 RCA 150.36 APO 217.35 V2 25.697
RC 140.356 GL -31.21 GP 10.56 ZAL 112.63 ZAP 93.02 ETS 178.83 ZAE 135.61 ETE 169.34 ZAC 112.45 ETC 274.02 LVI -22.28

PLANETOCENTRIC CONIC

C3 11.741 VHL 3.426 DLA -37.58 RAL 352.47 RAD 6638.9 VEL 11.481 PTH 6.53 VHP 2.959 DPA -11.44 RAP 300.74 ECC 1.1932

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 12 12	2196.12	7.83	53.65	209.94	137.08	19 48 48	1196.1	25.48	36.31
60.00	21 13 22	1872.96	16.15	32.33	217.64	127.44	21 44 35	873.0	29.93	10.81
64.15	23 12 22	1530.25	25.51	10.42	224.13	118.58	23 37 53	530.2	34.95	344.76
64.15	23 12 22	1530.25	25.51	10.42	224.13	118.58	23 37 53	530.2	34.95	344.76
64.15	23 12 22	1530.25	25.51	10.42	224.13	118.58	23 37 53	530.2	34.95	344.76
64.15	23 12 22	1530.25	25.51	10.42	224.13	118.58	23 37 53	530.2	34.95	344.76
64.15	23 12 22	1530.25	25.51	10.42	224.13	118.58	23 37 53	530.2	34.95	344.76

DIFFERENTIAL CORRECTIONS

TDE -.2714 TRA .6940 TC3-2.8290 BAU .4759
RDE -.1215 RRA -.4111 RC3 1.0899 FAU .24043
FDE 1.0417 FRA 7.9958 FC-17.7287 BSP .4038
BDE .2974 BRA .8066 BC3 3.0317 FSP .3131

MID-COURSE EXECUTION ACCURACY

SGT 2471.5 SGR 1162.5 SG3 1802.5
RRT -.9139 RRF -.9921 RTF .9205
SGB 2731.3 R23 .3052 R13 -.9446
SG1 2696.8 SG2 432.6 THA 156.09

ORBIT DETERMINATION ACCURACY

ST 31.7 SR 16.5 SS 68.6
CRT -.1114 CRS .9458 CST -.4272
LSA 71.8 MSA 28.8 SSA .4
EL1 31.8 EL2 16.4 ALF 175.46

LAUNCH DATE MAY 1 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 3 1971

DISTANCE 516.522

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.237 GAL -1.60 AZL 93.30 HCA 168.48 SMA 183.88 ECC .18228 INC 3.3003 V1 29.562
RP 213.92 LAP -.66 LOP 28.49 VP 22.780 GAP 4.68 AZP 86.77 TAL 349.59 TAP 158.08 RCA 150.34 APO 217.37 V2 25.662
RC 142.739 GL -32.28 GP 11.61 ZAL 112.72 ZAP 91.04 ETS 179.15 ZAE 133.48 ETE 169.10 ZAC 113.56 ETC 273.84 LVI -22.95

PLANETOCENTRIC CONIC

C3 12.064 VHL 3.473 DLA -38.36 RAL 353.52 RAD 6639.1 VEL 11.495 PTH 6.54 VHP 2.963 DPA -10.56 RAP 299.73 ECC 1.1985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 22 54	2179.77	8.65	52.95	211.85	136.97	19 59 14	1179.8	26.21	35.45
60.00	21 32 38	1833.46	17.77	30.26	220.23	126.78	22 3 11	833.5	31.18	8.21
62.93	23 10 28	1553.65	25.80	12.52	225.85	119.43	23 36 22	553.7	35.55	346.88
62.93	23 10 28	1553.65	25.80	12.52	225.85	119.43	23 36 22	553.7	35.55	346.88
62.93	23 10 28	1553.65	25.80	12.52	225.85	119.43	23 36 22	553.7	35.55	346.88
62.93	23 10 28	1553.65	25.80	12.52	225.85	119.43	23 36 22	553.7	35.55	346.88
62.93	23 10 28	1553.65	25.80	12.52	225.85	119.43	23 36 22	553.7	35.55	346.88

DIFFERENTIAL CORRECTIONS

TDE -.2738 TRA .7885 TC3-2.9369 BAU .5088
RDE -.1244 RRA -.4641 RC3 1.1514 FAU .23861
FDE 1.0974 FRA 8.0496 FC-17.1231 BSP .4476
BDE .3008 BRA .9149 BC3 3.1545 FSP .3136

MID-COURSE EXECUTION ACCURACY

SGT 2667.8 SGR 1278.6 SG3 1794.7
RRT -.9259 RRF -.9946 RTF .9299
SGB 2958.4 R23 .2889 R13 -.9520
SG1 2925.4 SG2 440.5 THA 155.48

ORBIT DETERMINATION ACCURACY

ST 33.7 SR 17.9 SS 69.2
CRT -.2255 CRS .9643 CST -.4748
LSA 73.3 MSA 29.5 SSA .4
EL1 34.1 EL2 17.3 ALF 170.78

LAUNCH DATE MAY 1 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 520.708 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.237	GAL	-1.64	AZL	93.47	HCA	169.67	SMA	183.87	ECC	.18245	INC	3.4732	V1	29.562
RP	214.24	LAP	-.62	LOP	29.67	VP	22.741	GAP	4.51	AZP	86.58	TAL	349.32	TAP	156.99	RCA	150.32	APO	217.41	V2	25.627
RC	145.138	GL	-33.57	GP	12.88	ZAL	112.74	ZAP	89.11	ETS	179.54	ZAE	131.33	ETE	168.76	ZAC	114.88	ETC	273.68	LVI	-23.83

PLANETOCENTRIC CONIC

C3	12.469	VHL	3.531	DLA	-39.30	RAL	354.74	RAD	6639.3	VEL	11.513	PTH	6.56	VHP	2.975	DPA	-9.47	RAP	298.72	ECC	1.2052

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 36 10	2158.93	9.69	52.06	214.19	136.81	20 12 9	1158.9	27.14	34.34
60.00	22 1 7	1771.28	20.28	26.90	223.76	125.61	22 30 38	771.3	33.02	3.97
61.48	23 8 22	1580.62	26.13	14.98	227.90	120.47	23 34 43	580.6	36.27	349.38
61.48	23 8 22	1580.62	26.13	14.98	227.90	120.47	23 34 43	580.6	36.27	349.38
61.48	23 8 22	1580.62	26.13	14.98	227.90	120.47	23 34 43	580.6	36.27	349.38
61.48	23 8 22	1580.62	26.13	14.98	227.90	120.47	23 34 43	580.6	36.27	349.38
61.48	23 8 22	1580.62	26.13	14.98	227.90	120.47	23 34 43	580.6	36.27	349.38

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2809	TRA	.8837	TC3	-3.0312	BAU	.5451	SGT	2867.7	SGR	1416.2	SG3	1776.6	ST	36.1	SR	19.6	SS	69.3
RDE	-.1280	RRA	-.5251	RC3	1.2265	FAU	.23725	RRT	-.9356	RRF	-.9964	RTF	.9378	CRT	-.3211	CRS	.9776	CST	-.5127
FDE	1.1334	FRA	8.0385	FC	-16.4720	BSP	4887	SGB	3198.3	R23	.2730	R13	-.9584	LSA	74.6	MSA	30.4	SSA	.3
BDE	.3087	BRA	1.0279	BC3	3.2699	FSP	3093	SG1	3166.1	SG2	452.9	THA	154.65	EL1	36.8	EL2	18.2	ALF	166.89

LAUNCH DATE MAY 1 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 524.894 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.239	GAL	-1.69	AZL	93.69	HCA	170.85	SMA	183.89	ECC	.18266	INC	3.6900	V1	29.562
RP	214.55	LAP	-.59	LOP	30.85	VP	22.703	GAP	4.34	AZP	86.36	TAL	349.04	TAP	159.89	RCA	150.30	APO	217.48	V2	25.591
RC	147.555	GL	-35.13	GP	14.43	ZAL	112.69	ZAP	87.24	ETS	180.02	ZAE	129.16	ETE	168.27	ZAC	116.48	ETC	273.53	LVI	-24.97

PLANETOCENTRIC CONIC

C3	12.992	VHL	3.604	DLA	-40.48	RAL	356.19	RAD	6639.6	VEL	11.535	PTH	6.58	VHP	2.996	DPA	-8.07	RAP	297.70	ECC	1.2138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 53 13	2131.46	11.05	50.87	217.17	136.58	20 28 45	1131.5	28.35	32.85
59.74	23 6 8	1612.03	26.52	17.90	230.39	121.78	23 33 0	612.0	37.14	352.36
59.74	23 6 8	1612.03	26.52	17.90	230.39	121.78	23 33 0	612.0	37.14	352.36
59.74	23 6 8	1612.03	26.52	17.90	230.39	121.78	23 33 0	612.0	37.14	352.36
59.74	23 6 8	1612.03	26.52	17.90	230.39	121.78	23 33 0	612.0	37.14	352.36
59.74	23 6 8	1612.03	26.52	17.90	230.39	121.78	23 33 0	612.0	37.14	352.36
59.74	23 6 8	1612.03	26.52	17.90	230.39	121.78	23 33 0	612.0	37.14	352.36

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2877	TRA	.9861	TC3	-3.0876	BAU	.5821	SGT	3067.6	SGR	1582.5	SG3	1746.8	ST	38.6	SR	21.8	SS	69.5
RDE	-.1362	RRA	-.6005	RC3	1.3033	FAU	.23330	RRT	-.9431	RRF	-.9977	RTF	.9438	CRT	-.4036	CRS	.9873	CST	-.5436
FDE	1.1949	FRA	8.0007	FC	-15.5469	BSP	5357	SGB	3451.7	R23	.2582	R13	-.9638	LSA	76.3	MSA	31.4	SSA	.3
BDE	.3183	BRA	1.1546	BC3	3.3514	FSP	3053	SG1	3419.3	SG2	472.1	THA	153.51	EL1	39.9	EL2	19.3	ALF	163.14

LAUNCH DATE MAY 1 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 529.078 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.240	GAL	-1.73	AZL	93.97	HCA	172.02	SMA	183.92	ECC	.18292	INC	3.9697	V1	29.562
RP	214.88	LAP	-.95	LOP	32.03	VP	22.664	GAP	4.16	AZP	86.07	TAL	348.75	TAP	160.77	RCA	150.28	APO	217.56	V2	25.554
RC	149.988	GL	-37.08	GP	16.38	ZAL	112.51	ZAP	85.44	ETS	180.62	ZAE	126.94	ETE	167.61	ZAC	118.47	ETC	273.41	LVI	-26.49

PLANETOCENTRIC CONIC

C3	13.691	VHL	3.700	DLA	-41.96	RAL	357.98	RAD	6639.9	VEL	11.565	PTH	6.61	VHP	3.029	DPA	-8.28	RAP	296.67	ECC	1.2253

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 16 18	2093.47	12.92	49.20	221.13	136.20	20 51 11	1093.5	30.00	30.72
57.60	23 3 54	1649.20	26.96	21.42	233.50	123.47	23 31 23	649.2	38.21	356.01
57.60	23 3 54	1649.20	26.96	21.42	233.50	123.47	23 31 23	649.2	38.21	356.01
57.60	23 3 54	1649.20	26.96	21.42	233.50	123.47	23 31 23	649.2	38.21	356.01
57.60	23 3 54	1649.20	26.96	21.42	233.50	123.47	23 31 23	649.2	38.21	356.01
57.60	23 3 54	1649.20	26.96	2..42	233.50	123.47	23 31 23	649.2	38.21	356.01
57.60	23 3 54	1649.20	26.96	21.42	233.50	123.47	23 31 23	649.2	38.21	356.01

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2941	TRA	1.0965	TC3	-3.0975	BAU	.6212	SGT	3267.3	SGR	1789.9	SG3	1703.3	ST	41.3	SR	24.7	SS	69.8
RDE	-.1314	RRA	-.6950	RC3	1.3873	FAU	.22767	RRT	-.9492	RRF	-.9986	RTF	.9489	CRT	-.4723	CRS	.9937	CST	-.5681
FDE	1.2827	FRA	7.9080	FC	-14.3963	BSP	5884	SGB	3725.5	R23	.2425	R13	-.9687	LSA	78.3	MSA	32.5	SSA	.2
BDE	.3308	BRA	1.2982	BC3	3.3940	FSP	2989	SG1	3692.0	SG2	498.3	THA	151.97	EL1	43.4	EL2	20.7	ALF	159.29

LAUNCH DATE MAY 1 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 533.260 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.243	GAL	-1.78	AZL	94.34	HCA	173.19	SMA	183.96	ECC	.18322	INC	4.3438	V1	29.562
RP	215.21	LAP	-.91	LOP	33.20	VP	22.626	GAP	4.00	AZP	85.69	TAL	348.45	TAP	161.64	RCA	150.25	APO	217.66	V2	25.518
RC	152.438	GL	-39.57	GP	18.90	ZAL	112.14	ZAP	83.76	ETS	181.40	ZAE	124.64	ETE	166.71	ZAC	121.04	ETC	273.32	LVI	-28.55

PLANETOCENTRIC CONIC

C3	14.678	VHL	3.831	DLA	-43.87	RAL	.24	RAD	6640.4	VEL	11.607	PTH	6.65	VHP	3.083	DPA	-3.89	RAP	295.60	ECC	1.2416

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 50 11	2036.31	15.71	46.64	226.82	135.51	21 24 7	1036.3	32.39	27.37
54.94	23 2 7	1693.84	27.42	25.74	237.56	125.70	23 30 21	693.8	39.51	.58
54.94	23 2 7	1693.84	27.42	25.74	237.56	125.70	23 30 21	693.8	39.51	.58
54.94	23 2 7	1693.84	27.42	25.74	237.56	125.70	23 30 21	693.8	39.51	.58
54.94	23 2 7	1693.84	27.42	25.74	237.56	125.70	23 30 21	693.8	39.51	.58
54.94	23 2 7	1693.84	27.42	25.74	237.56	125.70	23 30 21	693.8	39.51	.58
54.94	23 2 7	1693.84	27.42	25.74	237.56	125.70	23 30 21	693.8	39.51	.58

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2998	TRA	1.2158	TC3	-3.0487	BAU	.6645	SGT	3467.0	SGR	2053.7	SG3	1638.1	ST	44.1	SR	28.8	SS	70.1
RDE	-.1794	RRA	-.8168	RC3	1.4734	FAU	.21908	RRT	-.9537	RRF	-.9992	RTF	.9526	CRT	-.5249	CRS	.9974	CST	-.5843
FDE	1.4130	FRA	7.7267	FC	-12.9219	BSP	6482	SGB	4029.6	R23	.2271	R13	-.9731	LSA	80.9	MSA	33.8	SSA	.2
BDE	.3494	BRA	1.4647	BC3	3.3861	FSP	2899	SG1	3993.8	SG2	535.9	THA	149.94	EL1	47.5	EL2	22.8	ALF	154.98

LAUNCH DATE MAY 1 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 13 1971

HELIOCENTRIC CONIC DISTANCE 537.441 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.245 GAL -1.83 AZL 94.87 HCA 174.36 SMA 184.00 ECC .18357 INC 4.8695 V1 29.582
RP 215.54 LAP -.48 LOP 34.37 VP 22.588 GAP 3.83 AZP 85.15 TAL 348.14 TAP 162.50 RCA 150.23 APO 217.78 V2 25.480
RC 154.904 GL -42.86 GP 22.30 ZAL 111.47 ZAP 82.24 ETS 182.42 ZAE 122.18 ETE 165.45 ZAC 124.47 ETC 273.28 LVI -31.40

PLANETOCENTRIC CONIC

C3 16.177 VHL 4.022 DLA -46.39 RAL 3.33 RAD 6641.1 VEL 11.671 PTH 8.71 VHP 3.170 DPA -.64 RAP 294.46 ECC 1.2662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 50 54	1927.33	20.93	41.54	236.48	133.76	22 23 1	927.3	36.64	20.43
51.56	23 1 42	1748.85	27.83	31.17	243.12	128.74	23 30 51	748.9	41.07	6.50
51.56	23 1 42	1748.85	27.83	31.17	243.12	128.74	23 30 51	748.9	41.07	6.50
51.56	23 1 42	1748.85	27.83	31.17	243.12	128.74	23 30 51	748.9	41.07	6.50
51.56	23 1 42	1748.85	27.83	31.17	243.12	128.74	23 30 51	748.9	41.07	6.50
51.56	23 1 42	1748.85	27.83	31.17	243.12	128.74	23 30 51	748.9	41.07	6.50
51.56	23 1 42	1748.85	27.83	31.17	243.12	128.74	23 30 51	748.9	41.07	6.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3067 TRA 1.3391 TC3-2.9351 BAU .7201 SGT 3662.6 SGR 2394.0 SG3 1535.5 ST 47.0 SR 34.2 SS 69.5
RDE -.2270 RRA -.9717 RC3 1.5718 FAU .20884 RRT -.9574 RRF -.9996 RTF .9556 CRT -.5608 CRS .9993 CST -.5912
FDE 1.5644 FRA 7.3438 FC-11.1765 BSP 7045 SGB 4375.6 R23 .2099 R13 -.9773 LSA 83.4 MSA 35.4 SSA .1
BDE .3816 BRA 1.6545 BC3 3.3295 FSP 2695 SG1 4336.5 SG2 583.9 THA 147.30 EL1 52.3 EL2 25.5 ALF 149.97

LAUNCH DATE MAY 1 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE 541.621 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.249 GAL -1.88 AZL 95.67 HCA 175.52 SMA 184.06 ECC .18396 INC 5.6641 V1 29.562
RP 215.87 LAP -.44 LOP 35.53 VP 22.550 GAP 3.66 AZP 84.35 TAL 347.82 TAP 163.35 RCA 150.20 APO 217.92 V2 25.443
RC 157.385 GL -47.37 GP 27.06 ZAL 110.31 ZAP 81.01 ETS 183.81 ZAE 119.41 ETE 163.70 ZAC 129.26 ETC 273.35 LVI -35.48

PLANETOCENTRIC CONIC

C3 18.710 VHL 4.325 DLA -49.77 RAL 7.88 RAD 6642.3 VEL 11.778 PTH 6.80 VHP 3.324 DPA 3.98 RAP 293.20 ECC 1.3079

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.17	23 4 53	1819.41	27.94	38.17	251.21	133.03	23 35 12	819.4	42.80	14.52
47.17	23 4 53	1819.41	27.94	38.17	251.21	133.03	23 35 12	819.4	42.80	14.52
47.17	23 4 53	1819.41	27.94	38.17	251.21	133.03	23 35 12	819.4	42.80	14.52
47.17	23 4 53	1819.41	27.94	38.17	251.21	133.03	23 35 12	819.4	42.80	14.52
47.17	23 4 53	1819.41	27.94	38.17	251.21	133.03	23 35 12	819.4	42.80	14.52
47.17	23 4 53	1819.41	27.94	38.17	251.21	133.03	23 35 12	819.4	42.80	14.52
47.17	23 4 53	1819.41	27.94	38.17	251.21	133.03	23 35 12	819.4	42.80	14.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3075 TRA 1.4595 TC3-2.7384 BAU .8056 SGT 3839.3 SGR 2832.3 SG3 1366.5 ST 49.4 SR 41.5 SS 66.9
RDE -.3138 RRA-1.1638 RC3 1.6955 FAU .19778 RRT -.9611 RRF -.9998 RTF .9589 CRT -.5817 CRS 1.0000 CST -.5892
FDE 1.7363 FRA 6.5801 FC3-9.1517 BSP 7367 SGB 4771.0 R23 .1884 R13 -.9819 LSA 85.3 MSA 36.9 SSA .1
BDE .4394 BRA 1.8667 BC3 3.2209 FSP 2270 SG1 4728.5 SG2 635.0 THA 143.91 EL1 57.7 EL2 28.9 ALF 143.46

LAUNCH DATE MAY 1 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 545.793 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.252 GAL -1.94 AZL 97.01 HCA 176.68 SMA 184.12 ECC .18439 INC 7.0139 V1 29.562
RP 216.21 LAP -.41 LOP 36.69 VP 22.512 GAP 3.50 AZP 83.00 TAL 347.50 TAP 164.18 RCA 150.17 APO 218.07 V2 25.405
RC 159.881 GL -53.85 GP 34.06 ZAL 108.31 ZAP 80.36 ETS 185.69 ZAE 116.05 ETE 161.19 ZAC 136.26 ETC 273.66 LVI -41.52

PLANETOCENTRIC CONIC

C3 23.768 VHL 4.875 DLA -54.36 RAL 15.48 RAD 6644.5 VEL 11.990 PTH 6.99 VHP 3.635 DPA 10.83 RAP 291.74 ECC 1.3912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.43	23 17 43	1916.43	26.99	47.38	264.04	139.16	23 49 39	916.4	44.12	25.99
41.43	23 17 43	1916.43	26.99	47.38	264.04	139.16	23 49 39	916.4	44.12	25.99
41.43	23 17 43	1916.43	26.99	47.38	264.04	139.16	23 49 39	916.4	44.12	25.99
41.43	23 17 43	1916.43	26.99	47.38	264.04	139.16	23 49 39	916.4	44.12	25.99
41.43	23 17 43	1916.43	26.99	47.38	264.04	139.16	23 49 39	916.4	44.12	25.99
41.43	23 17 43	1916.43	26.99	47.38	264.04	139.16	23 49 39	916.4	44.12	25.99
41.43	23 17 43	1916.43	26.99	47.38	264.04	139.16	23 49 39	916.4	44.12	25.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1592 TRA 1.6575 TC3-2.2784 BAU .8948 SGT 4018.0 SGR 3485.0 SG3 1119.7 ST 51.1 SR 58.5 SS 69.5
RDE -.6360 RRA-1.4862 RC3 1.6549 FAU .16400 RRT -.9615 RRF -.9999 RTF .5581 CRT -.6395 CRS .9999 CST -.6292
FDE 2.4446 FRA 5.5609 FC3-5.9734 BSP 8578 SGB 5318.8 R23 .1704 R13 -.9853 LSA 97.5 MSA 36.9 SSA .1
BDE .6556 BRA 2.2263 BC3 2.8160 FSP 1926 SG1 5268.4 SG2 730.4 THA 139.22 EL1 70.5 EL2 32.6 ALF 129.02

LAUNCH DATE MAY 1 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 549.956 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.256 GAL -1.99 AZL 99.79 HCA 177.83 SMA 184.18 ECC .18485 INC 9.7849 V1 29.562
RP 216.56 LAP -.37 LOP 37.85 VP 22.475 GAP 3.33 AZP 80.22 TAL 347.17 TAP 165.00 RCA 150.14 APO 218.23 V2 25.366
RC 162.390 GL -63.72 GP 44.69 ZAL 104.81 ZAP 80.93 ETS 188.04 ZAE 111.57 ETE 157.59 ZAC 146.84 ETC 274.73 LVI -50.57

PLANETOCENTRIC CONIC

C3 37.361 VHL 6.112 DLA -60.16 RAL 30.61 RAD 6649.7 VEL 12.540 PTH 7.42 VHP 4.423 DPA 21.32 RAP 289.95 ECC 1.6149

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.40	0 3 13	2066.98	22.57	59.10	286.81	147.40	0 37 40	1067.0	42.58	42.34
34.40	0 3 13	2066.98	22.57	59.10	286.81	147.40	0 37 40	1067.0	42.58	42.34
34.40	0 3 13	2066.98	22.57	59.10	286.81	147.40	0 37 40	1067.0	42.58	42.34
34.40	0 3 13	2066.98	22.57	59.10	286.81	147.40	0 37 40	1067.0	42.58	42.34
34.40	0 3 13	2066.98	22.57	59.10	286.81	147.40	0 37 40	1067.0	42.58	42.34
34.40	0 3 13	2066.98	22.57	59.10	286.81	147.40	0 37 40	1067.0	42.58	42.34
34.40	0 3 13	2066.98	22.57	59.10	286.81	147.40	0 37 40	1067.0	42.58	42.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4430 TRA 1.8653 TC3-1.6532 BAU 1.1098 SGT 4075.2 SGR 4318.0 SG3 698.7 ST 56.7 SR 97.3 SS 72.0
RDE-1.7344 RRA-1.8923 RC3 1.4844 FAU .11675 RRT -.9588 RRF -.9998 RTF .9524 CRT -.8175 CRS .9997 CST -.8036
FDE 3.4088 FRA 3.5304 FC3-2.7054 BSP 9020 SGB 5937.4 R23 .1563 R13 -.9877 LSA 130.1 MSA 30.8 SSA .0
BDE 1.7900 BRA 2.6571 BC3 2.2218 FSP 1140 SG1 5876.0 SG2 851.2 THA 133.27 EL1 108.8 EL2 29.2 ALF 117.64

LAUNCH DATE MAY 1 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 27 1971

HELIOCENTRIC CONIC DISTANCE 566.690 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.276 GAL -2.25 AZL 84.83 HCA 182.47 SMA 184.51 ECC .18715 INC 5.1683 V1 29.562
RP 217.97 LAP -.22 LOP 42.44 VP 22.326 GAP 2.70 AZP 95.17 TAL 345.65 TAP 168.11 RCA 149.98 APO 219.05 V2 25.209
RC 172.547 GL 43.35 GP -40.71 ZAL 113.79 ZAP 75.71 ETS 166.24 ZAE 106.66 ETE 195.43 ZAC 61.70 ETC 272.10 LVI 27.75

PLANETOCENTRIC CONIC

C3 17.931 VHL 4.235 DLA 33.26 RAL 326.58 RAD 6641.9 VEL 11.746 PTH 6.77 VHP 4.169 DPA -62.80 RAP 308.61 ECC 1.2951

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 3 43	3813.19	-46.73	157.97	213.60	79.82	13 7 16	2813.2	-45.33	122.95
60.00	11 48 7	3854.86	-37.58	158.87	210.76	74.23	12 52 21	2854.9	-40.07	128.01
70.00	11 2 24	3990.43	-25.81	164.88	205.88	66.82	12 8 54	2990.4	-32.98	138.54
71.71	10 14 1	4138.95	-19.99	173.42	202.91	62.85	11 23 0	3139.0	-29.42	149.10
71.71	10 14 1	4138.95	-19.99	173.42	202.91	62.85	11 23 0	3139.0	-29.42	149.10
71.71	10 14 1	4138.95	-19.99	173.42	202.91	62.85	11 23 0	3139.0	-29.42	149.10
110.00	16 1 50	3037.25	-25.81	93.80	205.88	66.82	16 52 28	2037.3	-32.98	67.46

DIFFERENTIAL CORRECTIONS

TDE 2.6074 TRA 1.1072 TC3-3.6199 BAU 1.0208
RDE 1.8763 RRA 1.3765 RC3-2.2423 FAU .11318
FDE 4.4443 FRA 3.4408 FC3-5.4647 BSP 10267
BDE 3.2124 BRA 1.7666 BC3 4.2582 FSP 1415

MID-COURSE EXECUTION ACCURACY

SGT 5005.6 SGR 3674.7 SG3 813.2
RRT .9678 RRF .9997 RTF .9632
SGB 6330.0 R23 .1758 R13 .9843
SG1 6282.1 SG2 777.7 THA 37.51

ORBIT DETERMINATION ACCURACY

ST 178.5 SR 131.3 SS 112.4
CRT .9944 CRS -.9999 CST -.9928
LSA 248.1 NSA 13.9 SSA .1
EL1 221.3 EL2 11.2 ALF 36.29

LAUNCH DATE MAY 1 1971 FLIGHT TIME 242.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 570.842 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.282 GAL -2.31 AZL 87.04 HCA 183.60 SMA 184.61 ECC .18779 INC 2.9524 V1 29.562
RP 218.33 LAP -.19 LOP 43.58 VP 22.290 GAP 2.54 AZP 92.95 TAL 345.28 TAP 168.88 RCA 149.94 APO 219.28 V2 25.169
RC 175.114 GL 27.66 GP -30.99 ZAL 119.11 ZAP 72.11 ETS 167.83 ZAE 107.38 ETE 191.27 ZAC 71.44 ETC 271.78 LVI 19.14

PLANETOCENTRIC CONIC

C3 12.861 VHL 3.586 DLA 18.94 RAL 333.76 RAD 6639.5 VEL 11.530 PTH 6.58 VHP 3.613 DPA -53.64 RAP 302.24 ECC 1.2117

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 46 23	3416.84	-44.74	120.67	200.38	108.25	14 43 20	2416.8	-32.95	93.35
60.00	14 3 40	3370.82	-38.97	118.57	202.42	101.20	14 59 51	2370.8	-30.41	91.09
70.00	14 29 55	3293.57	-33.75	113.27	203.37	95.60	15 24 48	2293.6	-27.98	86.08
80.00	15 12 58	3158.61	-29.81	103.33	203.67	91.68	16 5 36	2158.6	-26.09	76.53
90.00	16 22 45	2933.33	-28.28	86.81	203.70	90.21	17 11 38	1933.3	-25.34	60.18
100.00	17 55 50	2633.08	-29.81	64.70	203.67	91.68	18 39 43	1633.1	-26.09	37.90
110.00	19 29 21	2340.39	-33.75	42.19	203.37	95.60	20 8 21	1340.4	-27.98	15.00

DIFFERENTIAL CORRECTIONS

TDE 1.7476 TRA 1.4122 TC3-5.1115 BAU .9662
RDE 1.0032 RRA 1.1522 RC3-2.3346 FAU .15147
FDE 4.2060 FRA 5.1161 FC-10.4961 BSP 9575
BDE 2.0150 BRA 1.8226 BC3 5.6194 FSP 1946

MID-COURSE EXECUTION ACCURACY

SGT 5189.0 SGR 3026.7 SG3 1137.4
RRT .9714 RRF .9997 RTF .9689
SGB 6007.2 R23 .1882 R13 .9819
SG1 5974.7 SG2 624.1 THA 29.90

ORBIT DETERMINATION ACCURACY

ST 144.2 SR 85.3 SS 112.5
CRT .9951 CRS -.9998 CST -.9931
LSA 201.5 NSA 11.2 SSA .2
EL1 167.4 EL2 7.2 ALF 30.55

LAUNCH DATE MAY 1 1971 FLIGHT TIME 244.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 574.995 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.288 GAL -2.38 AZL 88.19 HCA 184.73 SMA 184.71 ECC .18847 INC 1.8092 V1 29.562
RP 218.69 LAP -.15 LOP 44.72 VP 22.253 GAP 2.39 AZP 91.80 TAL 344.90 TAP 169.63 RCA 149.90 APO 219.52 V2 25.129
RC 177.690 GL 17.52 GP -24.59 ZAL 121.82 ZAP 69.51 ETS 169.21 ZAE 107.02 ETE 188.46 ZAC 77.85 ETC 271.63 LVI 13.40

PLANETOCENTRIC CONIC

C3 11.426 VHL 3.380 DLA 9.72 RAL 338.11 RAD 6638.8 VEL 11.468 PTH 6.52 VHP 3.397 DPA -47.49 RAP 299.36 ECC 1.1880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 40 43	3202.90	-38.70	103.75	196.18	120.18	15 34 6	2202.9	-23.64	81.50
60.00	15 9 45	3125.66	-33.99	99.73	199.12	113.10	16 1 50	2125.7	-21.67	76.25
70.00	15 50 8	3006.85	-29.77	91.94	200.96	107.57	16 40 14	2006.8	-19.83	67.84
80.00	16 47 30	2827.13	-26.70	79.29	201.94	103.88	17 34 37	1827.1	-18.46	54.92
90.00	18 4 8	2579.83	-25.55	61.42	202.24	102.55	18 47 7	1579.8	-17.94	36.97
100.00	19 30 22	2301.60	-26.70	40.66	201.94	103.88	20 8 43	1301.6	-18.46	16.28
110.00	20 49 34	2053.66	-29.77	20.86	200.96	107.57	21 23 48	1053.7	-19.83	356.75

DIFFERENTIAL CORRECTIONS

TDE 1.4032 TRA 1.6697 TC3-5.7281 BAU .9259
RDE .6706 RRA .9734 RC3-1.9827 FAU .16479
FDE 3.9617 FRA 6.2286 FC-12.4859 BSP 10018
BDE 1.5552 BRA 1.9328 BC3 6.0616 FSP 2369

MID-COURSE EXECUTION ACCURACY

SGT 5375.7 SGR 2427.2 SG3 1313.4
RRT .9734 RRF .9995 RTF .9618
SGB 5898.2 R23 .1963 R13 .9801
SG1 5876.3 SG2 508.4 THA 23.92

ORBIT DETERMINATION ACCURACY

ST 126.6 SR 62.2 SS 109.3
CRT .9976 CRS -.9995 CST -.9951
LSA 178.3 NSA 8.4 SSA .3
EL1 141.0 EL2 3.9 ALF 26.12

LAUNCH DATE MAY 1 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 579.145 EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.298 GAL -2.45 AZL 88.90 HCA 185.86 SMA 184.82 ECC .18918 INC 1.1010 V1 29.562
RP 219.06 LAP -.11 LOP 45.85 VP 22.217 GAP 2.23 AZP 91.10 TAL 344.50 TAP 170.37 RCA 149.85 APO 219.78 V2 25.089
RC 180.275 GL 10.80 GP -20.20 ZAL 123.31 ZAP 67.44 ETS 170.28 ZAE 106.14 ETE 186.50 ZAC 82.25 ETC 271.54 LVI 9.47

PLANETOCENTRIC CONIC

C3 10.996 VHL 3.316 DLA 3.67 RAL 341.10 RAD 6638.6 VEL 11.449 PTH 6.50 VHP 3.301 DPA -43.25 RAP 297.69 ECC 1.1810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 10	3073.87	-33.92	95.13	195.66	125.61	16 6 23	2073.9	-17.55	75.26
60.00	15 50 51	2978.93	-29.61	89.77	198.84	118.69	16 40 30	1978.9	-15.75	68.36
70.00	16 38 45	2838.05	-25.74	80.48	200.97	113.26	17 26 3	1838.1	-14.08	58.13
80.00	17 43 5	2636.57	-22.94	66.40	202.18	109.65	18 27 1	1636.6	-12.85	43.56
90.00	19 2 47	2379.35	-21.89	47.88	202.57	108.36	19 42 27	1379.4	-12.38	24.89
100.00	20 25 57	2111.04	-22.94	27.77	202.18	109.65	21 1 8	1111.0	-12.85	4.93
110.00	21 38 11	1884.87	-25.74	9.39	200.97	113.26	22 9 36	884.9	-14.08	347.05

DIFFERENTIAL CORRECTIONS

TDE 1.1772 TRA 1.8215 TC3-6.1701 BAU .9404
RDE .4884 RRA .8095 RC3-1.6869 FAU .17589
FDE 3.6310 FRA 6.7737 FC-13.8477 BSP 9823
BDE 1.2745 BRA 1.9932 BC3 6.3971 FSP 2483

MID-COURSE EXECUTION ACCURACY

SGT 5552.3 SGR 1982.7 SG3 1396.5
RRT .9738 RRF .9991 RTF .9731
SGB 5895.7 R23 .2018 R13 .9785
SG1 5880.3 SG2 425.8 THA 19.28

ORBIT DETERMINATION ACCURACY

ST 112.3 SR 47.2 SS 102.7
CRT .9995 CRS -.9988 CST -.9970
LSA 159.2 NSA 5.9 SSA .6
EL1 121.8 EL2 1.4 ALF 22.77

LAUNCH DATE MAY 1 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 4 1972

DISTANCE 583.294

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.301 GAL -2.52 AZL 89.37 HCA 186.99 SMA 184.93 ECC .18993 INC .6258 V1 29.562
RP 219.43 LAP -.08 LOP 46.98 VP 22.181 GAP 2.07 AZP 90.62 TAL 344.11 TAP 171.10 RCA 149.80 APO 220.05 V2 25.048
RC 182.871 GL 6.13 GP -17.05 ZAL 124.25 ZAP 65.66 ETS 171.11 ZAE 105.01 ETE 185.10 ZAC 85.41 ETC 271.48 LVI 6.65

PLANETOCENTRIC CONIC

C3 10.930 VHL 3.306 DLA -.45 RAL 343.33 RAD 6638.5 VEL 11.446 PTH 6.50 VHP 3.256 DPA -40.20 RAP 296.58 ECC 1.1799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 39 8	2990.53	-30.50	90.13	196.32	128.47	16 28 59	1990.5	-13.50	71.49
60.00	16 19 12	2883.96	-26.36	83.83	199.62	121.66	17 7 16	1884.0	-11.75	63.53
70.00	17 11 58	2728.77	-22.62	73.53	201.90	116.30	17 57 27	1728.8	-10.12	52.14
80.00	18 20 44	2513.43	-19.90	58.52	203.23	112.73	19 2 38	1513.4	-8.92	36.53
90.00	19 42 23	2249.99	-18.89	39.59	203.66	111.45	20 19 53	1250.0	-8.46	17.41
100.00	21 3 36	1987.90	-19.90	19.88	203.23	112.73	21 36 44	987.9	-8.92	357.90
110.00	22 11 24	1775.59	-22.62	2.44	201.90	116.30	22 41 0	775.6	-10.12	341.06

DIFFERENTIAL CORRECTIONS

TDE 1.0485 TRA 1.9623 TC3-6.4031 BAU .9586
RDE .3856 RRA .6835 RC3-1.4282 FAU .18169
FDE 3.3716 FRA 7.0832 FC-14.3911 BSP 9866
BDE 1.1171 BRA 2.0779 BC3 6.5604 FSP 2515

MID-COURSE EXECUTION ACCURACY

SGT 5726.5 SGR 1655.7 SG3 1433.8
RRT .9746 RRF .9984 RTF .9750
SGB 5961.1 R23 .1984 R13 .9785
SG1 5950.4 SG2 356.7 THA 15.80

ORBIT DETERMINATION ACCURACY

ST 104.4 SR 37.9 SS 97.3
CRT .9995 CRS -.9973 CST -.9985
LSA 147.6 MSA 4.1 SSA 1.0
EL1 111.0 EL2 1.2 ALF 19.93

LAUNCH DATE MAY 1 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 6 1972

DISTANCE 587.436

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.308 GAL -2.59 AZL 89.72 HCA 188.11 SMA 185.04 ECC .19070 INC .2823 V1 29.562
RP 219.80 LAP -.04 LOP 48.10 VP 22.144 GAP 1.92 AZP 90.28 TAL 343.70 TAP 171.81 RCA 149.75 APO 220.33 V2 25.007
RC 185.475 GL 2.76 GP -14.70 ZAL 124.95 ZAP 64.07 ETS 171.76 ZAE 103.79 ETE 184.07 ZAC 87.77 ETC 271.43 LVI 4.55

PLANETOCENTRIC CONIC

C3 11.021 VHL 3.320 DLA -3.37 RAL 345.11 RAD 6638.6 VEL 11.450 PTH 6.50 VHP 3.242 DPA -37.91 RAP 295.81 ECC 1.1814

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 56 52	2934.18	-28.07	86.96	197.36	130.13	16 45 46	1934.2	-10.73	69.01
60.00	16 40 2	2819.39	-24.00	80.01	200.75	123.40	17 27 1	1819.4	-8.98	60.33
70.00	17 36 15	2654.08	-20.30	68.98	203.12	118.08	18 20 29	1654.1	-7.34	48.15
80.00	18 48 9	2428.93	-17.60	53.30	204.53	114.52	19 28 38	1428.9	-6.13	31.81
90.00	20 11 10	2161.09	-16.58	34.08	205.00	113.24	20 47 11	1161.1	-5.67	12.37
100.00	21 31 1	1903.41	-17.60	14.67	204.53	114.52	22 2 44	903.4	-6.13	353.17
110.00	22 35 41	1700.90	-20.30	357.90	203.12	118.08	23 4 2	700.9	-7.34	337.07

DIFFERENTIAL CORRECTIONS

TDE .9871 TRA 2.1094 TC3-6.4909 BAU .9721
RDE .3320 RRA .5930 RC3-1.1817 FAU .17952
FDE 3.2810 FRA 7.3565 FC-14.1014 BSP 10215
BDE 1.0414 BRA 2.1912 BC3 6.5976 FSP 2615

MID-COURSE EXECUTION ACCURACY

SGT 5897.1 SGR 1412.5 SG3 1449.6
RRT .9720 RRF .9972 RTF .9741
SGB 6063.9 R23 .2018 R13 .9767
SG1 6055.3 SG2 323.1 THA 13.14

ORBIT DETERMINATION ACCURACY

ST 101.4 SR 32.5 SS 95.7
CRT .9966 CRS -.9950 CST -.9995
LSA 143.2 MSA 3.2 SSA 1.6
EL1 106.5 EL2 2.6 ALF 17.74

LAUNCH DATE MAY 1 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 8 1972

DISTANCE 591.578

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.315 GAL -2.66 AZL 89.98 HCA 189.23 SMA 185.16 ECC .19150 INC .0198 V1 29.562
RP 220.18 LAP -.00 LOP 49.22 VP 22.108 GAP 1.76 AZP 90.02 TAL 343.29 TAP 172.52 RCA 149.70 APO 220.62 V2 24.966
RC 188.089 GL .23 GP -12.88 ZAL 125.53 ZAP 62.60 ETS 172.29 ZAE 102.50 ETE 183.28 ZAC 89.60 ETC 271.39 LVI 2.92

PLANETOCENTRIC CONIC

C3 11.187 VHL 3.345 DLA -5.50 RAL 346.58 RAD 6638.6 VEL 11.457 PTH 6.51 VHP 3.241 DPA -36.14 RAP 295.23 ECC 1.1841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 10 33	2894.84	-26.33	84.84	198.51	131.18	16 58 48	1894.8	-8.77	67.32
60.00	16 55 59	2773.98	-22.27	77.41	201.96	124.50	17 42 13	1774.0	-7.00	58.12
70.00	17 54 46	2601.16	-18.57	65.85	204.41	119.19	18 38 7	1601.2	-5.35	45.35
80.00	19 9 1	2368.69	-15.86	49.68	205.88	115.63	19 48 30	1368.7	-4.12	28.47
90.00	20 33 3	2097.54	-14.84	30.24	206.38	114.35	21 8 1	1097.5	-3.65	8.80
100.00	21 51 53	1843.16	-15.86	11.05	205.88	115.63	22 22 36	843.2	-4.12	349.84
110.00	22 54 12	1647.98	-18.57	354.77	204.41	119.19	23 21 40	648.0	-5.35	334.27

DIFFERENTIAL CORRECTIONS

TDE .9369 TRA 2.2307 TC3-6.5981 BAU .9984
RDE .2898 RRA .5117 RC3-1.0178 FAU .18112
FDE 3.1184 FRA 7.4334 FC-14.0166 BSP 10340
BDE .9806 BRA 2.2886 BC3 6.6761 FSP 2564

MID-COURSE EXECUTION ACCURACY

SGT 6065.7 SGR 1218.8 SG3 1445.9
RRT .9715 RRF .9952 RTF .9759
SGB 6167.0 R23 .1903 R13 .9776
SG1 6180.5 SG2 283.5 THA 11.07

ORBIT DETERMINATION ACCURACY

ST 99.0 SR 28.1 SS 92.1
CRT .9907 CRS -.9910 CST -.9997
LSA 138.1 MSA 3.7 SSA 1.6
EL1 102.8 EL2 3.7 ALF 15.75

LAUNCH DATE MAY 1 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 10 1972

DISTANCE 595.712

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.72 LAL -.00 LOL 219.99 VL 32.323 GAL -2.74 AZL 90.18 HCA 190.35 SMA 185.28 ECC .19234 INC .1787 V1 29.562
RP 220.55 LAP .03 LOP 50.33 VP 22.073 GAP 1.61 AZP 89.82 TAL 342.87 TAP 173.22 RCA 149.65 APO 220.92 V2 24.925
RC 190.711 GL -1.71 GP -11.44 ZAL 126.05 ZAP 61.23 ETS 172.72 ZAE 101.20 ETE 182.67 ZAC 91.04 ETC 271.37 LVI 1.63

PLANETOCENTRIC CONIC

C3 11.394 VHL 3.375 DLA -7.08 RAL 347.84 RAD 6638.8 VEL 11.466 PTH 6.52 VHP 3.250 DPA -34.74 RAP 294.61 ECC 1.1875

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 28	2866.97	-25.07	83.38	199.66	131.86	17 9 15	1867.0	-7.39	66.13
60.00	17 8 38	2741.51	-21.01	75.59	203.18	125.22	17 54 19	1741.5	-5.59	56.55
70.00	18 9 21	2562.97	-17.29	63.63	205.69	119.92	18 52 4	1563.0	-3.90	43.35
80.00	19 25 24	2324.89	-14.55	47.08	207.22	116.36	20 4 9	1324.9	-2.64	26.06
90.00	20 50 14	2051.18	-13.52	27.47	207.73	115.08	21 24 25	1051.2	-2.16	6.20
100.00	22 8 16	1799.36	-14.55	8.45	207.22	116.36	22 38 16	799.4	-2.64	347.43
110.00	23 8 48	1609.79	-17.29	352.55	205.69	119.92	23 35 37	609.8	-3.90	332.26

DIFFERENTIAL CORRECTIONS

TDE .9201 TRA 2.3623 TC3-6.6326 BAU 1.0188
RDE .2673 RRA .4510 RC3 -.8629 FAU .17705
FDE 3.0734 FRA 7.5482 FC-13.4531 BSP 10669
BDE .9582 BRA 2.4050 BC3 6.6885 FSP 2594

MID-COURSE EXECUTION ACCURACY

SGT 6230.2 SGR 1067.8 SG3 1436.4
RRT .9671 RRF .9924 RTF .9750
SGB 6321.1 R23 .1877 R13 .9763
SG1 6315.4 SG2 267.9 THA 9.43

ORBIT DETERMINATION ACCURACY

ST 99.1 SR 25.5 SS 91.3
CRT .9818 CRS -.9861 CST -.9994
LSA 137.0 MSA 4.8 SSA 1.5
EL1 102.2 EL2 4.7 ALF 14.20

LAUNCH DATE MAY 1 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC DISTANCE 599.841 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.330	GAL	-2.82	AZL	90.34	HCA	191.46	SMA	185.41	ECC	.19320	INC	.3387	V1	29.562
RP	220.93	LAP	.07	LOP	51.45	VP	22.037	GAP	1.45	AZP	89.66	TAL	342.45	TAP	173.90	RCA	149.59	APO	221.23	V2	24.884
RC	193.341	GL	-3.25	GP	-10.26	ZAL	126.55	ZAP	59.93	ETS	173.08	ZAE	99.91	ETE	182.19	ZAC	92.22	ETC	271.35	LVI	.57

PLANETOCENTRIC CONIC

C3	11.625	VHL	3.409	DLA	-8.26	RAL	348.95	RAD	6638.9	VEL	11.476	PTH	6.53	VHP	3.264	DPA	-33.59	RAP	294.49	ECC	1.1913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 23	2847.12	-24.16	82.36	200.80	132.32	17 17 50	1847.1	-6.39	65.29
60.00	17 18 53	2718.12	-20.08	74.31	204.37	125.71	18 4 11	1718.1	-4.56	55.42
70.00	18 21 7	2535.16	-16.34	68.04	206.93	120.42	19 3 22	1535.2	-2.84	41.89
80.00	19 38 34	2292.69	-13.57	45.20	208.49	116.85	20 16 47	1292.7	-1.55	24.29
90.00	21 4 1	2016.98	-12.52	25.46	209.02	115.56	21 37 38	1017.0	-1.06	4.29
100.00	22 21 26	1767.16	-13.57	6.56	208.49	116.85	22 50 53	767.2	-1.55	345.66
110.00	23 20 33	1581.98	-16.34	350.95	206.93	120.42	23 46 55	582.0	-2.84	330.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9162	TRA	2.4905	TC3	-6.6558	BAU	1.0407	SGT	6391.9	SGR	945.8	SG3	1421.3	ST	100.0	SR	23.6	SS	90.9
RDE	.2527	RRA	.4001	RC3	-.7370	FAU	.17209	RRT	.9608	RRF	.9882	RTF	.9735	CRT	.9704	CRS	-.9800	CST	-.9988
FDE	3.0558	FRA	7.6296	FC-	12.8160	BSP	10997	SGB	6461.5	R23	.1851	R13	.9746	LSA	137.0	MSA	6.0	SSA	1.3
BDE	.9504	BRA	2.5224	BC3	6.6964	FSP	2621	SG1	6456.2	SG2	259.7	THA	8.10	EL1	102.6	EL2	5.6	ALF	12.92

LAUNCH DATE MAY 1 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 603.970 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.338	GAL	-2.90	AZL	90.48	HCA	192.57	SMA	185.54	ECC	.19408	INC	.4765	V1	29.562
RP	221.31	LAP	.10	LOP	52.56	VP	22.001	GAP	1.30	AZP	89.53	TAL	342.02	TAP	174.59	RCA	149.53	APO	221.55	V2	24.842
RC	195.978	GL	-4.48	GP	-9.29	ZAL	127.04	ZAP	58.69	ETS	173.39	ZAE	98.62	ETE	181.80	ZAC	93.19	ETC	271.35	LVI	-.31

PLANETOCENTRIC CONIC

C3	11.869	VHL	3.445	DLA	-9.19	RAL	349.95	RAD	6639.0	VEL	11.487	PTH	6.54	VHP	3.283	DPA	-32.64	RAP	294.25	ECC	1.1953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 49	2833.02	-23.51	81.64	201.89	132.63	17 25 2	1833.0	-5.69	64.69
60.00	17 27 21	2701.27	-19.41	73.39	205.50	126.04	18 12 23	1701.3	-3.82	54.61
70.00	18 30 46	2514.85	-15.63	60.88	208.11	120.76	19 12 41	1514.8	-2.07	40.83
80.00	19 49 19	2268.92	-12.83	43.82	209.71	117.19	20 27 8	1268.9	-.75	22.99
90.00	21 15 16	1991.63	-11.77	23.97	210.25	115.90	21 48 28	991.6	-.24	2.88
100.00	22 32 11	1743.40	-12.83	5.18	209.71	117.19	23 1 15	743.4	-.75	344.35
110.00	23 30 12	1561.67	-15.63	349.80	208.11	120.76	23 56 14	561.7	-2.07	329.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9083	TRA	2.6026	TC3	-6.7146	BAU	1.0705	SGT	6550.8	SGR	842.1	SG3	1397.7	ST	100.4	SR	21.7	SS	88.2
RDE	.2374	RRA	.3510	RC3	-.6547	FAU	.17201	RRT	.9565	RRF	.9824	RTF	.9754	CRT	.9565	CRS	-.9709	CST	-.9983
FDE	2.9429	FRA	7.5785	FC-	12.5458	BSP	11145	SGB	6604.7	R23	.1647	R13	.9762	LSA	135.2	MSA	6.8	SSA	1.3
BDE	.9388	BRA	2.6262	BC3	6.7465	FSP	2522	SG1	6600.2	SG2	243.8	THA	7.02	EL1	102.5	EL2	6.2	ALF	11.70

LAUNCH DATE MAY 1 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 608.092 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.346	GAL	-2.98	AZL	90.59	HCA	193.67	SMA	185.67	ECC	.19500	INC	.5881	V1	29.562
RP	221.69	LAP	.14	LOP	53.66	VP	21.966	GAP	1.15	AZP	89.43	TAL	341.59	TAP	175.26	RCA	149.46	APO	221.87	V2	24.801
RC	198.621	GL	-5.48	GP	-8.48	ZAL	127.52	ZAP	57.51	ETS	173.66	ZAE	97.35	ETE	181.48	ZAC	94.00	ETC	271.35	LVI	-1.06

PLANETOCENTRIC CONIC

C3	12.126	VHL	3.482	DLA	-9.90	RAL	350.86	RAD	6639.1	VEL	11.498	PTH	6.55	VHP	3.305	DPA	-31.84	RAP	294.09	ECC	1.1996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 8	2823.33	-23.07	81.16	202.94	132.84	17 31 11	1823.3	-5.20	64.28
60.00	17 34 28	2689.45	-18.93	72.75	206.60	126.27	18 19 18	1689.4	-3.30	54.09
70.00	18 38 48	2500.32	-15.12	60.06	209.25	120.99	19 20 28	1500.3	-1.51	40.07
80.00	19 58 14	2251.68	-12.29	42.82	210.87	117.42	20 35 45	1251.7	-.16	22.04
90.00	21 24 34	1973.13	-11.22	22.89	211.43	116.13	21 57 27	973.1	.36	1.85
100.00	22 41 5	1726.15	-12.29	4.19	210.87	117.42	23 9 52	726.1	-.16	343.41
110.00	23 38 14	1547.13	-15.12	348.98	209.25	120.99	24 4 1	547.1	-1.51	328.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9151	TRA	2.7210	TC3	-6.7424	BAU	1.0970	SGT	6706.1	SGR	757.9	SG3	1373.9	ST	101.8	SR	20.5	SS	87.1
RDE	.2297	RRA	.3114	RC3	-.5761	FAU	.16869	RRT	.9478	RRF	.9744	RTF	.9754	CRT	.9407	CRS	-.9611	CST	-.9979
FDE	2.9011	FRA	7.5664	FC-	12.0436	BSP	11377	SGB	6748.8	R23	.1530	R13	.9760	LSA	135.3	MSA	7.8	SSA	1.2
BDE	.9435	BRA	2.7388	BC3	6.7670	FSP	2478	SG1	6744.5	SG2	240.3	THA	6.12	EL1	103.6	EL2	6.8	ALF	10.75

LAUNCH DATE MAY 1 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 612.209 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.354	GAL	-3.06	AZL	90.69	HCA	194.77	SMA	185.81	ECC	.19593	INC	.6857	V1	29.562
RP	222.07	LAP	.17	LOP	54.76	VP	21.931	GAP	.99	AZP	89.34	TAL	341.15	TAP	175.92	RCA	149.40	APO	222.21	V2	24.759
RC	201.270	GL	-6.31	GP	-7.79	ZAL	128.00	ZAP	56.38	ETS	173.89	ZAE	96.09	ETE	181.21	ZAC	94.70	ETC	271.35	LVI	-1.71

PLANETOCENTRIC CONIC

C3	12.392	VHL	3.520	DLA	-10.44	RAL	351.71	RAD	6639.3	VEL	11.509	PTH	6.56	VHP	3.330	DPA	-31.15	RAP	294.00	ECC	1.2039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 34	2817.01	-22.77	80.84	203.96	132.98	17 36 31	1817.0	-4.89	64.01
60.00	17 40 32	2681.46	-18.61	72.32	207.65	126.41	18 25 13	1681.5	-2.95	53.66
70.00	18 45 34	2490.22	-14.77	59.50	210.33	121.15	19 27 5	1490.2	-1.13	39.54
80.00	20 5 41	2239.45	-11.91	42.11	211.99	117.58	20 43 0	1239.5	.25	21.37
90.00	21 32 20	1959.91	-10.82	22.13	212.55	116.29	22 5 0	959.9	.78	1.11
100.00	22 48 33	1713.92	-11.91	3.48	211.99	117.58	23 17 7	713.9	.25	342.74
110.00	23 45 1	1537.04	-14.77	348.41	210.33	121.15	24 10 38	537.0	-1.13	328.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9332	TRA	2.8446	TC3	-6.7480	BAU	1.1211	SGT	6858.7	SGR	687.9	SG3	1348.7	ST	104.0	SR	19.6	SS	86.4
RDE	.2253	RRA	.2770	RC3	-.5091	FAU	.16472	RRT	.9365	RRF	.9639	RTF	.9753	CRT	.9242	CRS	-.9504	CST	-.9969
FDE	2.8777	FRA	7.5489	FC-	11.5077	BSP	11682	SGB	6893.1	R23	.1407	R13	.9758	LSA	136.3	MSA	8.6	SSA	1.2
BDE	.9600	BRA	2.8580	BC3	6.7672	FSP	2446	SG1	6889.0	SG2	240.2	THA	5.37	EL1	105.5	EL2	7.4	ALF	9.93

LAUNCH DATE MAY 1 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 616.320 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.362	GAL	-3.14	AZL	90.77	HCA	195.87	SMA	185.94	ECC	.19690	INC	.7678	V1	29.562
RP	222.46	LAP	.21	LOP	55.86	VP	21.896	GAP	.84	AZP	89.26	TAL	340.71	TAP	176.58	RCA	149.33	APO	222.56	V2	24.717
RC	203.922	GL	-6.99	GP	-7.19	ZAL	128.48	ZAP	55.30	ETS	174.10	ZAE	94.86	ETE	180.99	ZAC	95.29	ETC	271.37	LVI	-2.28

PLANETOCENTRIC CONIC

C3 12.665 VHL 3.559 DLA -10.85 RAL 352.49 RAD 6639.4 VEL 11.521 PTH 6.57 VHP 3.356 DPA -30.55 RAP 293.95 ECC 1.2084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 17	2813.32	-22.60	80.66	204.95	133.05	17 41 11	1813.3	-4.70	63.86
60.00	17 45 44	2676.50	-18.41	72.06	208.67	126.51	18 30 21	1676.5	-2.73	53.43
70.00	18 51 20	2483.63	-14.54	59.13	211.38	121.25	19 32 44	1483.6	-.87	39.20
80.00	20 11 59	2231.22	-11.65	41.64	213.06	117.69	20 49 10	1231.2	.53	20.92
90.00	21 38 51	1950.91	-10.55	21.60	213.63	116.39	22 11 22	950.9	1.07	.61
100.00	22 54 50	1705.69	-11.65	3.01	213.06	117.69	23 23 16	705.7	.53	342.29
110.00	23 50 47	1530.45	-14.54	348.04	211.38	121.25	24 16 17	530.5	-.87	328.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9514	TRA	2.9641	TC3	-6.7626	BAU	1.1477	SGT	7009.0	SGR	629.1	SG3	1322.2	ST	106.0	SR	18.9	SS	85.4
RDE	.2227	RRA	.2462	RC3	-.4539	FAU	.16109	RRT	.9220	RRF	.9502	RTF	.9752	CRT	.9062	CRS	-.9385	CST	-.9962
FDE	2.8488	FRA	7.5139	FC	-11.0113	BSP	11930	SGB	7037.1	R23	.1290	R13	.9756	LSA	137.1	MSA	9.3	SSA	1.2
BDE	.9771	BRA	2.9743	BC3	6.7779	FSP	2401	SG1	7032.9	SG2	242.8	THA	4.74	EL1	107.4	EL2	7.9	ALF	9.24

LAUNCH DATE MAY 1 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 620.427 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.370	GAL	-3.23	AZL	90.84	HCA	196.96	SMA	186.08	ECC	.19789	INC	.8397	V1	29.562
RP	222.84	LAP	.25	LOP	56.95	VP	21.861	GAP	.68	AZP	89.20	TAL	340.26	TAP	177.22	RCA	149.26	APO	222.91	V2	24.675
RC	206.578	GL	-7.57	GP	-6.67	ZAL	128.97	ZAP	54.25	ETS	174.28	ZAE	93.66	ETE	180.80	ZAC	95.81	ETC	271.39	LVI	-2.79

PLANETOCENTRIC CONIC

C3 12.946 VHL 3.598 DLA -11.16 RAL 353.24 RAD 6639.5 VEL 11.533 PTH 6.58 VHP 3.383 DPA -30.02 RAP 293.96 ECC 1.2131

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 27	2811.76	-22.53	80.58	205.91	133.08	17 45 19	1811.8	-4.62	63.79
60.00	17 50 16	2673.97	-18.31	71.92	209.66	126.55	18 34 50	1674.0	-2.62	53.31
70.00	18 56 17	2479.87	-14.40	58.92	212.40	121.31	19 37 37	1479.9	-.73	39.00
80.00	20 17 19	2226.20	-11.49	41.35	214.09	117.75	20 54 26	1226.2	.70	20.64
90.00	21 44 23	1945.30	-10.38	21.28	214.67	116.45	22 16 49	945.3	1.25	.30
100.00	23 0 11	1700.67	-11.49	2.72	214.09	117.75	23 28 32	700.7	.70	342.01
110.00	23 55 43	1526.69	-14.40	347.83	212.40	121.31	24 21 10	526.7	-.73	327.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9752	TRA	3.0845	TC3	-6.7698	BAU	1.1738	SGT	7156.0	SGR	580.0	SG3	1295.0	ST	108.3	SR	18.5	SS	84.7
RDE	.2219	RRA	.2185	RC3	-.4068	FAU	.15729	RRT	.9037	RRF	.9328	RTF	.9751	CRT	.8881	CRS	-.9261	CST	-.9956
FDE	2.8292	FRA	7.4716	FC	-10.5183	BSP	12180	SGB	7179.5	R23	.1183	R13	.9754	LSA	138.3	MSA	10.0	SSA	1.2
BDE	1.0001	BRA	3.0922	BC3	6.7820	FSP	2353	SG1	7175.2	SG2	247.7	THA	4.19	EL1	109.5	EL2	8.4	ALF	8.66

LAUNCH DATE MAY 1 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 24 1972

HELIOCENTRIC CONIC DISTANCE 624.528 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.379	GAL	-3.31	AZL	90.90	HCA	198.05	SMA	186.23	ECC	.19890	INC	.9033	V1	29.562
RP	223.23	LAP	.28	LOP	58.04	VP	21.826	GAP	.53	AZP	89.14	TAL	339.81	TAP	177.86	RCA	149.19	APO	223.27	V2	24.633
RC	209.236	GL	-8.05	GP	-6.22	ZAL	129.45	ZAP	53.25	ETS	174.45	ZAE	92.47	ETE	180.64	ZAC	96.25	ETC	271.42	LVI	-3.25

PLANETOCENTRIC CONIC

C3 13.234 VHL 3.638 DLA -11.39 RAL 353.95 RAD 6639.7 VEL 11.546 PTH 6.59 VHP 3.412 DPA -29.56 RAP 294.01 ECC 1.2178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 9	2811.93	-22.54	80.59	206.84	133.08	17 49 1	1811.9	-4.63	63.80
60.00	17 54 14	2673.43	-18.29	71.89	210.62	126.56	18 38 47	1673.4	-2.60	53.28
70.00	19 0 33	2478.42	-14.35	58.84	213.38	121.33	19 41 52	1478.4	-.68	38.93
80.00	20 21 54	2223.82	-11.42	41.22	215.09	117.78	20 58 57	1223.8	.78	20.51
90.00	21 49 6	1942.49	-10.30	21.12	215.67	116.48	22 21 28	942.5	1.34	.14
100.00	23 4 45	1698.29	-11.42	2.59	215.09	117.78	23 33 4	698.3	.78	341.88
110.00	0 3 56	1525.24	-14.35	347.75	213.38	121.33	0 29 21	525.2	-.68	327.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0040	TRA	3.2085	TC3	-6.7667	BAU	1.1990	SGT	7301.5	SGR	539.2	SG3	1268.0	ST	110.8	SR	18.1	SS	84.1
RDE	.2226	RRA	.1938	RC3	-.3659	FAU	.15320	RRT	.8814	RRF	.9115	RTF	.9748	CRT	.8702	CRS	-.9134	CST	-.9951
FDE	2.8154	FRA	7.4311	FC	-10.0219	BSP	12457	SGB	7321.4	R23	.1086	R13	.9751	LSA	139.9	MSA	10.6	SSA	1.2
BDE	1.0284	BRA	3.2144	BC3	6.7766	FSP	2312	SG1	7317.0	SG2	254.2	THA	3.73	EL1	112.0	EL2	8.9	ALF	8.16

LAUNCH DATE MAY 1 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 628.623 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.387	GAL	-3.40	AZL	90.96	HCA	199.14	SMA	186.37	ECC	.19994	INC	.9587	V1	29.562
RP	223.62	LAP	.31	LOP	59.13	VP	21.792	GAP	.38	AZP	89.09	TAL	339.35	TAP	178.49	RCA	149.11	APO	223.64	V2	24.592
RC	211.896	GL	-8.46	GP	-5.81	ZAL	129.95	ZAP	52.28	ETS	174.60	ZAE	91.31	ETE	180.51	ZAC	96.65	ETC	271.46	LVI	-3.68

PLANETOCENTRIC CONIC

C3 13.530 VHL 3.678 DLA -11.55 RAL 354.62 RAD 6639.8 VEL 11.558 PTH 6.60 VHP 3.442 DPA -29.14 RAP 294.09 ECC 1.2227

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 28	2813.51	-22.61	80.67	207.76	133.05	17 52 21	1813.5	-4.71	63.87
60.00	17 57 43	2674.52	-18.33	71.95	211.56	126.54	18 42 18	1674.5	-2.65	53.33
70.00	19 4 16	2478.87	-14.37	58.86	214.34	121.32	19 45 35	1478.9	-.69	38.95
80.00	20 25 49	2223.62	-11.41	41.21	216.06	117.78	21 2 53	1223.6	.79	20.50
90.00	21 53 7	1941.98	-10.28	21.09	216.65	116.49	22 25 29	942.0	1.36	.11
100.00	23 8 41	1698.09	-11.41	2.57	216.06	117.78	23 36 59	698.1	.79	341.87
110.00	0 7 39	1525.69	-14.37	347.78	214.34	121.32	0 33 4	525.7	-.69	327.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0321	TRA	3.3287	TC3	-6.7702	BAU	1.2261	SGT	7443.0	SGR	505.2	SG3	1239.9	ST	113.2	SR	17.9	SS	83.3
RDE	.2242	RRA	.1709	RC3	-.3315	FAU	.14947	RRT	.8546	RRF	.8858	RTF	.9746	CRT	.8519	CRS	-.9004	CST	-.9946
FDE	2.7966	FRA	7.3745	FC3	-9.5641	BSP	12679	SGB	7460.1	R23	.0999	R13	.9748	LSA	141.3	MSA	11.1	SSA	1.2
BDE	1.0562	BRA	3.3331	BC3	6.7783	FSP	2260	SG1	7455.5	SG2	261.9	THA	3.32	EL1	114.3	EL2	9.3	ALF	7.74

LAUNCH DATE MAY 1 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 632.713 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.396	GAL	-3.49	AZL	91.01	HCA	200.22	SMA	186.52	ECC	.20100	INC	1.0093	V1	29.562
RP	224.01	LAP	.38	LOP	60.21	VP	21.758	GAP	.22	AZP	89.05	TAL	338.90	TAP	179.12	RCA	149.03	APO	224.01	V2	24.550
RC	214.558	GL	-8.81	GP	-5.46	ZAL	130.44	ZAP	51.34	ETS	174.74	ZAE	90.17	ETE	180.39	ZAC	97.00	ETC	271.50	LVI	-4.07

PLANETOCENTRIC CONIC

C3	13.832	VHL	3.719	DLA	-11.65	RAL	355.27	RAD	6640.0	VEL	11.571	PTH	6.62	VHP	3.472	DPA	-28.76	RAP	294.22	ECC	1.2276

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 27	2816.29	-22.74	80.61	208.66	132.99	17 55 23	1816.3	-4.85	63.98
60.00	18 0 50	2676.98	-18.43	72.08	212.48	126.50	18 45 27	1677.0	-2.76	53.45
70.00	19 7 31	2480.92	-14.44	58.98	215.28	121.29	19 48 52	1480.9	-.77	39.06
80.00	20 29 12	2225.25	-11.46	41.30	217.01	117.76	21 6 17	1225.2	.73	20.59
90.00	21 56 33	1943.41	-10.32	21.17	217.60	116.47	22 28 56	943.4	1.31	.19
100.00	23 12 3	1699.72	-11.46	2.67	217.01	117.76	23 40 23	699.7	.73	341.96
110.00	0 10 53	1527.74	-14.44	347.89	215.28	121.29	0 36 21	527.7	-.77	327.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0674	TRA	3.4547	TC3	-6.7598	BAU	1.2513	SGT	7583.9	SGR	477.8	SG3	1212.7	ST	116.0	SR	17.8	SS	82.8
RDE	.2270	RRA	.1501	RC3	-.3013	FAU	.14546	RRT	.8237	RRF	.8558	RTF	.9743	CRT	.8351	CRS	-.8880	CST	-.9943
FDE	2.7885	FRA	7.3235	FC3	-9.1042	BSP	12957	SGB	7598.9	R23	.0921	R13	.9745	LSA	143.1	MSA	11.7	SSA	1.2
BDE	1.0913	BRA	3.4579	BC3	6.7665	FSP	2220	SG1	7594.1	SG2	270.5	THA	2.97	EL1	117.0	EL2	9.7	ALF	7.37

LAUNCH DATE MAY 1 1971 FLIGHT TIME 274.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 636.798 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.405	GAL	-3.58	AZL	91.05	HCA	201.30	SMA	186.67	ECC	.20208	INC	1.0543	V1	29.562
RP	224.40	LAP	.38	LOP	61.29	VP	21.724	GAP	.07	AZP	89.02	TAL	338.43	TAP	179.74	RCA	148.95	APO	224.40	V2	24.508
RC	217.222	GL	-9.11	GP	-5.14	ZAL	130.93	ZAP	50.43	ETS	174.87	ZAE	89.06	ETE	180.29	ZAC	97.31	ETC	271.55	LVI	-4.44

PLANETOCENTRIC CONIC

C3	14.143	VHL	3.761	DLA	-11.70	RAL	355.90	RAD	6640.1	VEL	11.585	PTH	6.63	VHP	3.503	DPA	-28.42	RAP	294.38	ECC	1.2328

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 9	2820.07	-22.92	80.99	209.54	132.91	17 58 9	1820.1	-5.04	64.14
60.00	18 3 36	2680.59	-18.58	72.27	213.39	126.43	18 48 17	1680.6	-2.91	53.62
70.00	19 10 22	2484.31	-14.56	59.17	216.19	121.24	19 51 46	1484.3	-.90	39.23
80.00	20 32 7	2228.42	-11.56	41.48	217.93	117.72	21 9 15	1228.4	.63	20.76
90.00	21 59 30	1946.47	-10.42	21.35	218.53	116.44	22 31 57	946.5	1.22	.36
100.00	23 14 59	1702.89	-11.56	2.85	217.93	117.72	23 43 21	702.9	.63	342.13
110.00	0 13 44	1531.13	-14.56	348.08	216.19	121.24	0 39 15	531.1	-.90	328.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1036	TRA	3.5806	TC3	-6.7467	BAU	1.2767	SGT	7721.0	SGR	455.6	SG3	1185.3	ST	118.8	SR	17.8	SS	82.2
RDE	.2306	RRA	.1308	RC3	-.2748	FAU	.14132	RRT	.7885	RRF	.8216	RTF	.9738	CRT	.8188	CRS	-.8759	CST	-.9939
FDE	2.7800	FRA	7.2694	FC3	-8.6509	BSP	13212	SGB	7734.5	R23	.0858	R13	.9740	LSA	145.0	MSA	12.2	SSA	1.2
BDE	1.1274	BRA	3.5830	BC3	6.7523	FSP	2176	SG1	7729.4	SG2	279.9	THA	2.67	EL1	119.7	EL2	10.2	ALF	7.06

LAUNCH DATE MAY 1 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 640.875 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.414	GAL	-3.67	AZL	91.10	HCA	202.38	SMA	186.83	ECC	.20319	INC	1.0953	V1	29.562
RP	224.79	LAP	.42	LOP	62.36	VP	21.690	GAP	-.09	AZP	88.99	TAL	337.97	TAP	180.35	RCA	148.87	APO	224.79	V2	24.466
RC	219.886	GL	-9.36	GP	-4.85	ZAL	131.43	ZAP	49.56	ETS	174.99	ZAE	87.96	ETE	180.20	ZAC	97.59	ETC	271.61	LVI	-4.79

PLANETOCENTRIC CONIC

C3	14.460	VHL	3.803	DLA	-11.72	RAL	356.51	RAD	6640.3	VEL	11.598	PTH	6.64	VHP	3.535	DPA	-28.10	RAP	294.57	ECC	1.2380

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 37	2824.71	-23.13	81.23	210.41	132.81	18 0 42	1824.7	-5.27	64.34
60.00	18 6 5	2685.18	-18.76	72.52	214.27	126.35	18 50 50	1685.2	-3.12	53.84
70.00	19 12 52	2488.85	-14.72	59.42	217.09	121.17	19 54 21	1488.8	-1.07	39.47
80.00	20 34 38	2232.89	-11.70	41.74	218.84	117.67	21 11 51	1232.9	.48	21.01
90.00	22 2 2	1950.93	-10.55	21.61	219.44	116.39	22 34 33	950.9	1.07	.61
100.00	23 17 30	1707.37	-11.70	3.11	218.84	117.67	23 45 57	707.4	.48	342.38
110.00	0 16 14	1535.67	-14.72	348.34	217.09	121.17	0 41 50	535.7	-1.07	328.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1420	TRA	3.7075	TC3	-6.7322	BAU	1.3024	SGT	7656.5	SGR	438.1	SG3	1158.0	ST	121.6	SR	17.9	SS	81.6
RDE	.2347	RRA	.1128	RC3	-.2521	FAU	.13740	RRT	.7496	RRF	.7836	RTF	.9735	CRT	.8035	CRS	-.8643	CST	-.9936
FDE	2.7706	FRA	7.2093	FC3	-8.2258	BSP	13464	SGB	7668.7	R23	.0798	R13	.9736	LSA	147.0	MSA	12.6	SSA	1.2
BDE	1.1658	BRA	3.7092	BC3	6.7369	FSP	2131	SG1	7663.3	SG2	289.7	THA	2.40	EL1	122.4	EL2	10.6	ALF	6.79

LAUNCH DATE MAY 1 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 3 1972

HELIOCENTRIC CONIC DISTANCE 644.948 EARTH TO MARS

RL	150.72	LAL	-.00	LOL	219.99	VL	32.423	GAL	-3.76	AZL	91.13	HCA	203.45	SMA	186.98	ECC	.20432	INC	1.1321	V1	29.562
RP	225.18	LAP	.45	LOP	63.43	VP	21.656	GAP	-.24	AZP	88.96	TAL	337.50	TAP	180.95	RCA	148.78	APO	225.19	V2	24.424
RC	222.551	GL	-9.57	GP	-4.59	ZAL	131.93	ZAP	48.71	ETS	175.10	ZAE	86.89	ETE	180.12	ZAC	97.84	ETC	271.67	LVI	-5.11

PLANETOCENTRIC CONIC

C3	14.786	VHL	3.845	DLA	-11.70	RAL	357.09	RAD	6640.4	VEL	11.612	PTH	6.65	VHP	3.567	DPA	-27.81	RAP	294.79	ECC	1.2433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 53	2830.08	-23.38	81.50	211.27	132.70	18 3 3	1830.1	-5.54	64.57
60.00	18 8 20	2690.62	-18.98	72.81	215.15	126.24	18 53 10	1690.6	-3.35	54.10
70.00	19 15 5	2494.36	-14.92	59.73	217.98	121.09	19 56 39	1494.4	-1.28	39.76
80.00	20 36 49	2238.49	-11.88	42.06	219.74	117.59	21 14 6	1238.5	.29	21.32
90.00	22 4 13	1956.57	-10.72	21.93	220.34	116.33	22 36 49	956.6	.89	.92
100.00	23 19 41	1712.97	-11.88	3.43	219.74	117.59	23 48 14	713.0	.29	342.68
110.00	0 18 27	1541.18	-14.92	348.65	217.98	121.09	0 44 8	541.2	-1.28	328.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1801	TRA	3.8342	TC3	-6.7200	BAU	1.3292	SGT	7989.9	SGR	424.8	SG3	1131.1	ST	124.3	SR	18.0	SS	80.9
RDE	.2394	RRA	.0959	RC3	-.2325	FAU	.13375	RRT	.7079	RRF	.7425	RTF	.9731	CRT	.7867	CRS	-.8531	CST	-.9933
FDE	2.7578	FRA	7.1458	FC3	-7.8309	BSP	13686	SGB	8001.2	R23	.0745	R13	.9732	LSA	148.8	MSA	13.0	SSA	1.2
BDE	1.2042	BRA	3.8354	BC3	6.7240	FSP	2081	SG1	7995.6	SG2	299.9	THA	2.16	EL1	125.1	EL2	11.0	ALF	6.56

LAUNCH DATE MAY 1 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 5 1972

DISTANCE 649.014 EARTH TO MARS

HELIOCENTRIC CONIC

RL	190.72	LAL	-.00	LOL	219.99	VL	32.432	GAL	-3.86	AZL	91.17	HCA	204.51	SMA	187.14	ECC	.20547	INC	1.1663	VI	29.582
RP	225.57	LAP	.48	LOP	64.50	VP	21.623	GAP	-.40	AZP	88.94	TAL	337.03	TAP	181.55	RCA	148.69	APO	225.59	VZ	24.382
RC	225.217	GL	-9.75	GP	-4.36	ZAL	132.43	ZAP	47.89	ETS	175.21	ZAE	85.84	ETE	180.05	ZAC	98.06	ETC	271.74	LVI	-5.43

PLANETOCENTRIC CONIC

C3	15.121	VHL	3.889	DLA	-11.65	RAL	357.67	RAD	6640.6	VEL	11.626	PTH	6.67	VHP	3.600	DPA	-27.54	RAP	295.04	ECC	1.2488

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 59	2836.08	-23.66	81.80	212.12	132.57	18 5 15	1836.1	-5.84	64.82
60.00	18 10 22	2696.78	-19.23	73.15	216.02	126.13	18 55 18	1696.8	-3.62	54.40
70.00	19 17 3	2500.73	-15.14	60.09	218.86	120.99	19 58 43	1500.7	-1.53	40.09
80.00	20 38 43	2245.06	-12.09	42.44	220.62	117.51	21 16 8	1245.1	.06	21.68
90.00	22 6 5	1963.23	-10.92	22.32	221.22	116.25	22 38 48	963.2	.68	1.30
100.00	23 21 35	1719.53	-12.09	3.81	220.62	117.51	23 50 15	719.5	.06	343.05
110.00	0 20 25	1547.54	-15.14	349.00	218.86	120.99	0 46 13	547.5	-1.53	329.01

DIFFERENTIAL CORRECTIONS

TDE	1.2237	TRA	3.9651	TC3	-6.6961	BAU	1.3543
RDE	.2447	RRA	.0801	RC3	-.2149	FAU	.12976
FDE	2.7533	FRA	7.0855	FC3	-7.4295	BSP	13951
BDE	1.2479	BRA	3.9659	BC3	6.6996	FSP	2042

MID-COURSE EXECUTION ACCURACY

SGT	8121.3	SGR	415.3	SG3	1104.7		
RRT	.6640	RRF	.6993	RTF	.9726		
SGB	8131.9	R23	.0703	R13	.9727		
SG1	8125.9	SG2	310.4	THA	1.95		

ORBIT DETERMINATION ACCURACY

ST	127.3	SR	18.1	SS	80.4
CRT	.7758	CRS	-.8431	CST	-.9931
LSA	151.0	MSA	13.5	SSA	1.2
EL1	128.0	EL2	11.4	ALF	6.35

LAUNCH DATE MAY 2 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 16 1971

HELIOCENTRIC CONIC DISTANCE 308.009 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	35.121	GAL	-3.41	AZL	91.88	HCA	99.64	SMA	251.79	ECC	.40492	INC	1.8758
RP	207.27	LAP	-1.85	LOP	320.60	VP	27.450	GAP	21.72	AZP	89.69	TAL	348.15	TAP	87.79	RCA	149.84	APO	353.75
RC	56.362	GL	-10.75	GP	.65	ZAL	114.24	ZAP	175.07	ETS	172.37	ZAE	174.38	ETE	87.85	ZAC	100.98	ETC	277.29

V1	29.554																		
V2	26.426																		
LVI	-17.99																		

PLANETOCENTRIC CONIC

C3	37.828	VHL	6.150	DLA	-19.41	RAL	341.63	RAD	6649.9	VEL	12.558	PTH	7.43	VHP	10.783	DPA	-17.27	RAP	318.54

ECC	1.6225																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 41 41	2898.87	-26.51	85.05	207.53	131.07	17 30 0	1898.9	-8.97	67.49
60.00	17 44 15	2732.48	-20.65	75.09	212.56	125.41	18 29 48	1732.5	-5.19	56.11
70.00	19 3 22	2499.88	-15.11	60.04	216.37	121.00	19 45 2	1499.9	-1.49	40.05
80.00	20 37 53	2204.09	-10.79	40.09	218.87	118.01	21 14 37	1204.1	1.45	19.43
90.00	22 11 29	1902.17	-9.06	18.80	219.78	116.90	22 43 11	902.2	2.64	357.89
100.00	23 20 45	1678.56	-10.79	1.46	218.87	118.01	23 48 43	678.6	1.45	340.80
110.00	0 6 45	1546.70	-15.11	348.96	216.37	121.00	0 32 31	546.7	-1.49	328.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5076	TRA	-1.1040	TC3	-.0184	BAU	.0431	SGT	1188.7	SGR	583.0	SG3	120.7	ST	28.7	SR	26.8	SS	17.6
RDE	-.5712	RRA	.2176	RC3	.0831	FAU	.03470	RRT	.0216	RRF	-.0238	RTF	-.6916	CRT	.7480	CRS	.5363	CST	.9594
FDE	.2579	FRA	.9815	FC3	-.7942	BSP	1804	SGB	1324.0	R23	-.0041	R13	-.6916	LSA	39.7	MSA	16.7	SSA	1.1
BDE	.7642	BRA	1.1252	BC3	.0851	FSP	152	SG1	1188.8	SG2	582.8	THA	.80	EL1	36.8	EL2	13.9	ALF	42.32

LAUNCH DATE MAY 2 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 18 1971

HELIOCENTRIC CONIC DISTANCE 310.140 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	34.941	GAL	-3.30	AZL	91.88	HCA	100.90	SMA	245.90	ECC	.39051	INC	1.8820
RP	207.18	LAP	-1.85	LOP	321.87	VP	27.230	GAP	21.21	AZP	89.64	TAL	348.23	TAP	89.13	RCA	149.87	APO	341.92
RC	56.568	GL	-11.08	GP	.67	ZAL	114.24	ZAP	174.20	ETS	173.31	ZAE	174.29	ETE	78.87	ZAC	100.95	ETC	277.37

V1	29.554																		
V2	26.438																		
LVI	-18.12																		

PLANETOCENTRIC CONIC

C3	35.533	VHL	5.961	DLA	-19.70	RAL	341.79	RAD	6649.1	VEL	12.467	PTH	7.36	VHP	10.442	DPA	-17.14	RAP	318.93

ECC	1.5848																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 43 35	2876.96	-25.52	83.90	206.76	131.62	17 31 32	1877.0	-7.88	66.55
60.00	17 46 35	2709.41	-19.73	73.83	211.78	125.88	18 31 45	1709.4	-4.18	55.00
70.00	19 6 16	2475.16	-14.24	58.65	215.60	121.38	19 47 31	1475.2	-.55	38.76
80.00	20 41 26	2177.38	-9.93	38.57	218.13	118.30	21 17 44	1177.4	2.36	17.96
90.00	22 15 21	1874.39	-8.20	17.21	219.05	117.16	22 46 35	874.4	3.53	356.33
100.00	23 24 17	1651.85	-9.93	359.94	218.13	118.30	23 51 49	651.9	2.36	339.33
110.00	0 9 38	1521.97	-14.24	347.57	215.60	121.38	0 35 0	522.0	-.55	327.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5028	TRA	-1.0948	TC3	-.0082	BAU	.0425	SGT	1217.7	SGR	583.3	SG3	129.1	ST	29.4	SR	26.8	SS	18.2
RDE	-.5536	RRA	.2097	RC3	.0892	FAU	.03581	RRT	.0236	RRF	-.0262	RTF	-.7023	CRT	.7473	CRS	.5327	CST	.9579
FDE	.2649	FRA	1.0213	FC3	-.8726	BSP	1854	SGB	1350.2	R23	-.0047	R13	-.7023	LSA	40.3	MSA	16.9	SSA	1.1
BDE	.7478	BRA	1.1147	BC3	.0896	FSP	164	SG1	1217.8	SG2	583.1	THA	.84	EL1	37.2	EL2	14.1	ALF	41.45

LAUNCH DATE MAY 2 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 312.475 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	34.771	GAL	-3.19	AZL	91.89	HCA	102.17	SMA	240.61	ECC	.37696	INC	1.8882
RP	207.09	LAP	-1.85	LOP	323.13	VP	27.021	GAP	20.72	AZP	89.60	TAL	348.33	TAP	90.49	RCA	149.91	APO	331.30
RC	56.856	GL	-11.41	GP	.69	ZAL	114.22	ZAP	173.32	ETS	174.01	ZAE	174.08	ETE	70.62	ZAC	100.92	ETC	277.45

V1	29.554																		
V2	26.448																		
LVI	-18.28																		

PLANETOCENTRIC CONIC

C3	33.425	VHL	5.781	DLA	-20.00	RAL	341.93	RAD	6648.3	VEL	12.383	PTH	7.30	VHP	10.113	DPA	-17.00	RAP	319.31

ECC	1.5501																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 45 28	2855.12	-24.53	82.77	206.01	132.14	17 33 4	1855.1	-6.79	65.62
60.00	17 48 56	2686.36	-18.81	72.58	211.03	126.32	18 33 42	1686.4	-3.17	53.90
70.00	19 9 13	2450.35	-13.35	57.28	214.86	121.73	19 50 3	1450.3	.40	37.46
80.00	20 45 3	2150.43	-9.06	37.05	217.40	118.57	21 20 53	1150.4	3.27	16.48
90.00	22 19 20	1846.26	-7.33	15.61	218.33	117.39	22 50 7	846.3	4.43	354.76
100.00	23 27 55	1624.90	-9.06	358.42	217.40	118.57	23 55 0	624.9	3.27	337.65
110.00	0 12 35	1497.16	-13.35	346.19	214.86	121.73	0 37 33	497.2	.40	326.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4991	TRA	-1.0854	TC3	.0046	BAU	.0427	SGT	1247.0	SGR	583.3	SG3	138.2	ST	30.1	SR	26.8	SS	18.9
RDE	-.5364	RRA	.2020	RC3	.0955	FAU	.03702	RRT	.0270	RRF	-.0288	RTF	-.7131	CRT	.7475	CRS	.5267	CST	.9559
FDE	.2719	FRA	1.0627	FC3	-.9588	BSP	1937	SGB	1376.7	R23	-.0042	R13	-.7131	LSA	41.0	MSA	17.2	SSA	1.1
BDE	.7327	BRA	1.1040	BC3	.0956	FSP	179	SG1	1247.1	SG2	583.0	THA	.93	EL1	37.7	EL2	14.2	ALF	40.53

LAUNCH DATE MAY 2 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 314.990 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	34.610	GAL	-3.08	AZL	91.89	HCA	103.43	SMA	235.84	ECC	.36421	INC	1.8944
RP	207.01	LAP	-1.84	LOP	324.40	VP	26.823	GAP	20.22	AZP	89.56	TAL	348.43	TAP	91.86	RCA	149.94	APO	321.74
RC	57.225	GL	-11.75	GP	.71	ZAL	114.17	ZAP	172.43	ETS	174.55	ZAE	173.79	ETE	63.34	ZAC	100.89	ETC	277.53

V1	29.554																		
V2	26.457																		
LVI	-18.38																		

PLANETOCENTRIC CONIC

C3	31.486	VHL	5.611	DLA	-20.32	RAL	342.06	RAD	6647.6	VEL	12.305	PTH	7.24	VHP	9.795	DPA	-16.87	RAP	319.67

ECC	1.5182																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 21	2833.41	-23.53	81.66	205.29	132.62	17 34 35	1833.4	-5.71	64.71
60.00	17 51 18	2663.36	-17.88	71.35	210.30	126.74	18 35 41	1663.4	-2.16	52.80
70.00	19 12 13	2425.48	-12.46	55.90	214.14	122.06	19 52 39	1425.5	1.35	36.16
80.00	20 48 47	2123.27	-8.17	35.52	216.70	118.82	21 24 10	1123.3	4.18	14.98
90.00	22 23 28	1817.83	-6.43	14.00	217.64	117.60	22 53 46	817.8	5.34	353.16
100.00	23 31 39	1597.74	-8.17	356.89	216.70	118.82	23 58 16	597.7	4.18	336.35
110.00	0 15 35	1472.29	-12.46	344.82	214.14	122.06	0 40 8	472.3	1.35	325.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4928	TRA	-1.0749	TC3	.0179	BAU	.0436	SGT	1274.1	SGR	582.8	SG3	147.8	ST	30.7	SR	26.7	SS	19.5
RDE	-.5198	RRA	.1945	RC3	.1021	FAU	.03827	RRT	.0290	RRF	-.0316	RTF	-.7233	CRT	.7463	CRS	.5204	CST	.9544
FDE	.2790	FRA	1.1061	FC3	-1.0523	BSP	1987	SGB	1401.0	R23	-.0051	R13	-.7234	LSA	41.6	MSA	17.4	SSA	1.2
BDE	.7162	BRA	1.0923	BC3	.1036	FSP	194	SG1	1274.2	SG2	582.5	THA	.96	EL1	38.1	EL2	14.3	ALF	39.75

LAUNCH DATE MAY 2 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 317.662 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	34.458	GAL	-2.97	AZL	91.90	HCA	104.70	SMA	231.53	ECC	.35221	INC	1.9007
RP	206.94	LAP	-1.84	LOP	325.66	VP	26.635	GAP	19.74	AZP	89.52	TAL	348.55	TAP	93.25	RCA	148.98	APO	313.07
RC	57.675	GL	-12.09	GP	.74	ZAL	114.10	ZAP	171.53	ETS	174.98	ZAE	173.44	ETE	57.10	ZAC	100.87	ETC	277.61

V1	29.554																		
V2	26.466																		
LVI	-18.50																		

PLANETOCENTRIC CONIC

C3	29.701	VHL	5.450	DLA	-20.65	RAL	342.16	RAD	6646.9	VEL	12.233	PTH	7.18	VHP	9.487	DPA	-16.74	RAP	320.02
ECC	1.4688																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 14	2811.79	-22.53	80.58	204.58	133.08	17 36 6	1811.8	-4.63	63.80
60.00	17 53 41	2640.39	-16.94	70.14	209.58	127.13	18 37 41	1640.4	-1.15	51.70
70.00	19 15 17	2400.52	-11.55	54.54	213.44	122.37	19 55 17	1400.5	2.30	34.86
80.00	20 52 38	2095.84	-7.26	33.99	216.02	119.04	21 27 34	1095.8	5.10	13.47
90.00	22 27 45	1789.02	-5.52	12.37	216.96	117.78	22 57 34	789.0	6.25	351.53
100.00	23 35 30	1570.31	-7.26	355.36	216.02	119.04	24 1 40	570.3	5.10	334.83
110.00	0 18 39	1447.34	-11.55	343.46	213.44	122.37	0 42 46	447.3	2.30	323.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4754	TRA	-1.0532	TC3	.0489	BAU	.0474	SGT	1285.6	SGR	581.9	SG3	158.1	ST	30.7	SR	26.7	SS	20.3
RDE	-.5036	RRA	.1870	RC3	.1090	FAU	.03951	RRT	.0299	RRF	-.0350	RTF	-.7449	CRT	.7411	CRS	.5164	CST	.9554
FDE	.2884	FRA	1.1538	FC3	-1.1517	BSP	1901	SGB	1411.1	R23	-.0071	R13	-.7450	LSA	41.8	MSA	17.7	SSA	1.1
BDE	.6926	BRA	1.0697	BC3	.1195	FSP	213	SG1	1285.7	SG2	581.6	THA	.97	EL1	38.0	EL2	14.5	ALF	39.66

LAUNCH DATE MAY 2 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 320.476 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	34.315	GAL	-2.87	AZL	91.91	HCA	105.98	SMA	227.62	ECC	.34094	INC	1.9071
RP	206.87	LAP	-1.83	LOP	326.93	VP	26.458	GAP	19.26	AZP	89.48	TAL	348.68	TAP	94.65	RCA	150.02	APO	305.22
RC	58.203	GL	-12.43	GP	.76	ZAL	114.02	ZAP	170.61	ETS	175.33	ZAE	173.06	ETE	51.81	ZAC	100.85	ETC	277.68

V1	29.554																		
V2	26.473																		
LVI	-18.63																		

PLANETOCENTRIC CONIC

C3	28.061	VHL	5.297	DLA	-20.98	RAL	342.25	RAD	6646.2	VEL	12.166	PTH	7.13	VHP	9.190	DPA	-16.61	RAP	320.35
ECC	1.4618																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 51 6	2790.42	-21.53	79.53	203.91	133.51	17 37 36	1790.4	-3.55	62.90
60.00	17 56 5	2617.60	-16.00	68.95	208.90	127.50	18 39 43	1617.6	-.14	50.61
70.00	19 18 24	2375.64	-10.64	53.19	212.76	122.65	19 57 59	1375.6	3.25	33.56
80.00	20 56 35	2068.33	-6.35	32.46	215.36	119.24	21 31 3	1068.3	6.02	11.94
90.00	22 32 10	1760.01	-4.60	10.74	216.32	117.93	23 1 30	760.0	7.16	349.89
100.00	23 39 27	1542.81	-6.35	353.82	215.36	119.24	24 5 10	542.8	6.02	333.31
110.00	0 21 46	1422.46	-10.64	342.11	212.76	122.65	0 45 28	422.5	3.25	322.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4751	TRA	-1.0484	TC3	.0579	BAU	.0487	SGT	1320.1	SGR	580.6	SG3	169.0	ST	31.5	SR	26.6	SS	20.9
RDE	-.4880	RRA	.1798	RC3	.1161	FAU	.04099	RRT	.0338	RRF	-.0382	RTF	-.7485	CRT	.7421	CRS	.5080	CST	.9521
FDE	.2941	FRA	1.1996	FC3	-1.2647	BSP	2020	SGB	1442.2	R23	-.0068	R13	-.7486	LSA	42.6	MSA	17.9	SSA	1.2
BDE	.6811	BRA	1.0637	BC3	.1297	FSP	229	SG1	1320.3	SG2	580.2	THA	1.05	EL1	38.6	EL2	14.6	ALF	38.53

LAUNCH DATE MAY 2 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 323.414 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	34.180	GAL	-2.77	AZL	91.91	HCA	107.23	SMA	224.07	ECC	.33033	INC	1.9137
RP	206.82	LAP	-1.83	LOP	328.20	VP	26.289	GAP	18.80	AZP	89.43	TAL	348.82	TAP	96.05	RCA	150.05	APO	298.08
RC	58.807	GL	-12.78	GP	.79	ZAL	113.91	ZAP	169.67	ETS	175.62	ZAE	172.67	ETE	47.39	ZAC	100.83	ETC	277.75

V1	29.554																		
V2	26.479																		
LVI	-18.74																		

PLANETOCENTRIC CONIC

C3	26.550	VHL	5.153	DLA	-21.33	RAL	342.33	RAD	6645.6	VEL	12.104	PTH	7.08	VHP	8.903	DPA	-16.48	RAP	320.68
ECC	1.4370																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 58	2769.25	-20.54	78.50	203.26	133.91	17 39 7	1769.3	-2.49	62.01
60.00	17 58 30	2594.95	-15.06	67.78	208.24	127.84	18 41 45	1595.0	.86	49.53
70.00	19 21 34	2350.79	-9.73	51.85	212.11	122.90	20 0 45	1350.8	4.19	32.26
80.00	21 0 39	2040.66	-5.43	30.92	214.73	119.40	21 34 40	1040.7	6.94	10.40
90.00	22 36 45	1730.70	-3.66	9.10	215.70	118.06	23 5 36	730.7	8.08	348.22
100.00	23 43 31	1515.13	-5.43	352.29	214.73	119.40	24 8 46	515.1	6.94	331.77
110.00	0 24 56	1397.60	-9.73	340.76	212.11	122.90	0 48 14	397.6	4.19	321.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4718	TRA	-1.0409	TC3	.0710	BAU	.0506	SGT	1350.7	SGR	579.0	SG3	180.8	ST	32.2	SR	26.5	SS	21.5
RDE	-.4729	RRA	.1726	RC3	.1235	FAU	.04256	RRT	.0373	RRF	-.0416	RTF	-.7541	CRT	.7420	CRS	.4994	CST	.9492
FDE	.2999	FRA	1.2481	FC3	-1.3878	BSP	2110	SGB	1469.6	R23	-.0072	R13	-.7542	LSA	43.2	MSA	18.1	SSA	1.2
BDE	.6680	BRA	1.0351	BC3	.1425	FSP	246	SG1	1350.9	SG2	578.5	THA	1.12	EL1	39.0	EL2	14.6	ALF	37.59

LAUNCH DATE MAY 2 1971 FLIGHT TIME 120.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 326.464 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	34.053	GAL	-2.67	AZL	91.92	HCA	108.50	SMA	220.83	ECC	.32034	INC	1.9202
RP	206.77	LAP	-1.82	LOP	329.47	VP	26.128	GAP	18.34	AZP	89.39	TAL	348.97	TAP	97.47	RCA	150.09	APO	291.56
RC	59.485	GL	-13.13	GP	.82	ZAL	113.79	ZAP	168.72	ETS	175.86	ZAE	172.29	ETE	43.70	ZAC	100.81	ETC	277.82

V1	29.554																		
V2	26.485																		
LVI	-18.86																		

PLANETOCENTRIC CONIC

C3	25.159	VHL	5.016	DLA	-21.69	RAL	342.39	RAD	6645.1	VEL	12.047	PTH	7.03	VHP	8.626	DPA	-16.36	RAP	320.98
ECC	1.4141																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 50	2748.31	-19.55	77.50	202.64	134.29	17 40 38	1748.3	-1.44	61.14
60.00	18 0 57	2572.46	-14.11	66.62	207.61	128.15	18 43 49	1572.5	1.85	48.46
70.00	19 24 48	2325.97	-8.81	50.51	211.48	123.13	20 3 34	1326.0	5.14	30.95
80.00	21 4 51	2012.83	-4.50	29.38	214.13	119.55	21 38 24	1012.8	7.86	8.85
90.00	22 41 30	1701.09	-2.71	7.44	215.11	118.16	23 9 51	701.1	9.00	346.53
100.00	23 47 43	1487.30	-4.50	350.75	214.13	119.55	24 12 30	487.3	7.86	330.22
110.00	0 28 10	1372.79	-8.81	339.43	211.48	123.13	0 51 3	372.8	5.14	319.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4678	TRA	-1.0318	TC3	.0875	BAU	.0530	SGT	1379.1	SGR	576.9	SG3	193.3	ST	32.8	SR	26.4	SS	22.2
RDE	-.4583	RRA	.1657	RC3	.1312	FAU	.04422	RRT	.0415	RRF	-.0454	RTF	-.7608	CRT	.7418	CRS	.4911	CST	.9463
FDE	.3063	FRA	1.2996	FC3	-1.5216	BSP	2190	SGB	1494.9	R23	-.0072	R13	-.7609	LSA	43.9	MSA	18.3	SSA	1.2
BDE	.6549	BRA	1.0450	BC3	.1577	FSP	266	SG1	1379.4	SG2	576.3	THA	1.20	EL1	39.4	EL2	14.7	ALF	36.72

LAUNCH DATE MAY 2 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 329.615 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 33.933 GAL -2.57 AZL 91.93 HCA 109.77 SMA 217.86 ECC .31094 INC 1.9269 V1 29.554
RP 206.74 LAP -1.81 LOP 330.73 VP 25.976 GAP 17.89 AZP 89.35 TAL 349.13 TAP 98.89 RCA 150.12 APO 285.60 V2 26.489
RC 60.233 GL -13.49 GP .85 ZAL 113.66 ZAP 167.75 ETS 176.06 ZAE 171.94 ETE 40.64 ZAC 100.80 ETC 277.88 LVI -18.97

PLANETOCENTRIC CONIC

C3 23.877 VHL 4.886 DLA -22.06 RAL 342.44 RAD 6644.5 VEL 11.994 PTH 6.99 VHP 8.358 DPA -16.23 RAP 321.27 ECC 1.3928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 41	2727.63	-18.56	76.52	202.04	134.63	17 42 9	1727.6	-.40	60.27
60.00	18 3 25	2550.17	-13.17	65.49	207.00	128.44	18 45 55	1550.2	2.83	47.39
70.00	19 28 5	2301.24	-7.88	49.19	210.89	123.34	20 6 27	1301.2	6.07	29.65
80.00	21 9 11	1984.86	-3.56	27.84	213.55	119.66	21 42 16	984.9	8.77	7.28
90.00	22 46 26	1671.18	-1.75	5.77	214.55	118.23	23 14 17	671.2	9.91	344.81
100.00	23 52 3	1459.33	-3.56	349.21	213.55	119.66	24 16 22	459.3	8.77	328.65
110.00	0 31 28	1348.06	-7.88	338.11	210.89	123.34	0 53 56	348.1	6.07	318.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4622 TRA-1.0216 TC3 .1055 BAU .0557 SGT 1405.3 SGR 574.5 SG3 206.6 ST 33.3 SR 26.2 SS 22.8
RDE -.4441 RRA .1588 RC3 .1390 FAU .04597 RRT .0452 RRF -.0496 RTF -.7675 CRT .7410 CRS .4825 CST .9436
FDE .3125 FRA 1.3531 FC3-1.6667 BSP 2252 SGB 1518.2 R23 -.0080 R13 -.7676 LSA 44.4 MSA 18.6 SSA 1.2
BDE .6410 BRA 1.0339 BC3 .1745 FSP 287 SG1 1405.6 SG2 573.8 THA 1.27 EL1 39.7 EL2 14.8 ALF 35.95

LAUNCH DATE MAY 2 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC DISTANCE 332.855 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 33.819 GAL -2.48 AZL 91.93 HCA 111.03 SMA 215.15 ECC .30210 INC 1.9337 V1 29.554
RP 206.71 LAP -1.80 LOP 332.00 VP 25.831 GAP 17.44 AZP 89.31 TAL 349.29 TAP 100.33 RCA 150.15 APO 280.14 V2 26.492
RC 61.050 GL -13.85 GP .88 ZAL 113.50 ZAP 166.77 ETS 176.24 ZAE 171.62 ETE 38.09 ZAC 100.80 ETC 277.94 LVI -19.08

PLANETOCENTRIC CONIC

C3 22.695 VHL 4.764 DLA -22.43 RAL 342.48 RAD 6644.0 VEL 11.945 PTH 6.95 VHP 8.098 DPA -16.12 RAP 321.54 ECC 1.3735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 33	2707.22	-17.58	75.57	201.47	134.95	17 43 40	1707.2	.63	59.42
60.00	18 5 54	2528.10	-12.24	64.38	206.42	128.70	18 48 2	1528.1	3.80	46.33
70.00	19 31 27	2276.60	-6.96	47.89	210.32	123.52	20 9 24	1276.6	7.00	28.35
80.00	21 13 39	1956.76	-2.61	26.29	213.01	119.75	21 46 15	956.8	9.69	5.69
90.00	22 51 33	1640.96	-.77	4.08	214.02	118.27	23 18 54	641.0	10.83	343.07
100.00	0 0 26	1431.23	-2.61	347.66	213.01	119.75	0 24 18	431.2	9.69	327.06
110.00	0 34 49	1323.42	-6.96	336.80	210.32	123.52	0 56 53	323.4	7.00	317.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4562 TRA-1.0108 TC3 .1243 BAU .0584 SGT 1429.9 SGR 571.7 SG3 220.8 ST 33.8 SR 26.1 SS 23.8
RDE -.4304 RRA .1521 RC3 .1472 FAU .04780 RRT .0494 RRF -.0541 RTF -.7740 CRT .7401 CRS .4735 CST .9407
FDE .3186 FRA 1.4095 FC3-1.8235 BSP 2309 SGB 1540.0 R23 -.0086 R13 -.7741 LSA 45.0 MSA 18.8 SSA 1.2
BDE .6272 BRA 1.0222 BC3 .1926 FSP 310 SG1 1430.3 SG2 570.9 THA 1.35 EL1 40.0 EL2 14.8 ALF 35.22

LAUNCH DATE MAY 2 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC DISTANCE 336.177 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 33.712 GAL -2.39 AZL 91.94 HCA 112.30 SMA 212.66 ECC .29377 INC 1.9406 V1 29.554
RP 206.69 LAP -1.80 LOP 333.27 VP 25.693 GAP 17.01 AZP 89.26 TAL 349.47 TAP 101.77 RCA 150.18 APO 275.13 V2 26.495
RC 61.933 GL -14.21 GP .91 ZAL 113.34 ZAP 165.76 ETS 176.39 ZAE 171.34 ETE 35.97 ZAC 100.79 ETC 277.99 LVI -19.18

PLANETOCENTRIC CONIC

C3 21.605 VHL 4.648 DLA -22.81 RAL 342.50 RAD 6643.5 VEL 11.900 PTH 6.91 VHP 7.847 DPA -16.00 RAP 321.79 ECC 1.3556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 24	2687.13	-16.61	74.64	200.93	135.25	17 45 11	1687.1	1.63	58.58
60.00	18 8 24	2506.28	-11.30	63.29	205.86	128.95	18 50 11	1506.3	4.75	45.28
70.00	19 34 52	2252.08	-6.04	46.59	209.78	123.68	20 12 24	1252.1	7.92	27.04
80.00	21 18 15	1928.54	-1.65	24.74	212.49	119.82	21 50 24	928.5	10.60	4.09
90.00	22 56 53	1610.42	.21	2.38	213.53	118.28	23 23 43	610.4	11.74	341.29
100.00	0 5 3	1403.02	-1.65	346.11	212.49	119.82	0 28 26	403.0	10.60	325.46
110.00	0 38 15	1298.90	-6.04	335.51	209.78	123.68	0 59 53	298.9	7.92	315.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4500 TRA -.9995 TC3 .1455 BAU .0615 SGT 1453.5 SGR 568.5 SG3 236.0 ST 34.2 SR 25.9 SS 24.2
RDE -.4172 RRA .1455 RC3 .1555 FAU .04980 RRT .0541 RRF -.0591 RTF -.7805 CRT .7392 CRS .4642 CST .9376
FDE .3247 FRA 1.4688 FC3-1.9954 BSP 2366 SGB 1560.7 R23 -.0093 R13 -.7806 LSA 45.5 MSA 19.0 SSA 1.2
BDE .6137 BRA 1.0101 BC3 .2130 FSP 335 SG1 1453.8 SG2 567.6 THA 1.43 EL1 40.3 EL2 14.8 ALF 34.52

LAUNCH DATE MAY 2 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 339.572 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 33.611 GAL -2.30 AZL 91.95 HCA 113.57 SMA 210.37 ECC .28594 INC 1.9476 V1 29.554
RP 206.68 LAP -1.79 LOP 334.54 VP 25.562 GAP 16.59 AZP 89.22 TAL 349.64 TAP 103.22 RCA 150.22 APO 270.52 V2 26.496
RC 62.879 GL -14.57 GP .95 ZAL 113.18 ZAP 164.74 ETS 176.52 ZAE 171.12 ETE 34.23 ZAC 100.79 ETC 278.04 LVI -19.28

PLANETOCENTRIC CONIC

C3 20.600 VHL 4.539 DLA -23.19 RAL 342.52 RAD 6643.1 VEL 11.858 PTH 6.87 VHP 7.604 DPA -15.89 RAP 322.01 ECC 1.3390

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 16	2667.37	-15.65	73.74	200.41	135.53	17 46 43	1667.4	2.63	57.76
60.00	18 10 56	2484.72	-10.38	62.22	205.34	129.16	18 52 21	1484.7	5.70	44.25
70.00	19 38 22	2227.71	-5.11	45.30	209.26	123.81	20 15 29	1227.7	8.83	25.74
80.00	21 23 0	1900.21	-.69	23.19	212.01	119.85	21 54 41	900.2	11.50	2.47
90.00	23 2 26	1579.53	1.21	.66	213.07	118.26	23 28 45	579.5	12.66	339.48
100.00	0 9 48	1374.68	-.69	344.55	212.01	119.85	0 32 43	374.7	11.50	323.84
110.00	0 41 44	1274.53	-5.11	334.22	209.26	123.81	1 2 58	274.5	8.83	314.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4433 TRA -.9876 TC3 .1666 BAU .0644 SGT 1475.0 SGR 565.0 SG3 252.1 ST 34.6 SR 25.7 SS 24.9
RDE -.4044 RRA .1391 RC3 .1641 FAU .05189 RRT .0589 RRF -.0644 RTF -.7865 CRT .7382 CRS .4546 CST .9344
FDE .3307 FRA 1.5312 FC3-2.1809 BSP 2411 SGB 1579.6 R23 -.0102 R13 -.7866 LSA 45.9 MSA 19.2 SSA 1.3
BDE .6001 BRA .9973 BC3 .2339 FSP 361 SG1 1475.5 SG2 563.9 THA 1.51 EL1 40.5 EL2 14.8 ALF 33.86

LAUNCH DATE MAY 2 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 343.035 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 33.516 GAL -2.21 AZL 91.95 HCA 114.84 SMA 208.26 ECC .27857 INC 1.9548 V1 29.554
RP 206.67 LAP -1.77 LOP 335.81 VP 25.437 GAP 16.17 AZP 89.18 TAL 349.82 TAP 104.67 RCA 150.24 APO 266.27 V2 26.496
RC 63.888 GL -14.93 GP .99 ZAL 112.97 ZAP 163.69 ETS 176.64 ZAE 170.95 ETE 32.81 ZAC 100.80 ETC 278.09 LVI -19.38

PLANETOCENTRIC CONIC

C3 19.674 VHL 4.436 DLA -23.58 RAL 342.52 RAD 6642.7 VEL 11.819 PTH 6.84 VHP 7.370 DPA -15.79 RAP 322.22 ECC 1.3238

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 7	2647.96	-14.71	72.87	199.92	135.78	17 48 15	1648.0	3.60	56.94
60.00	18 13 29	2463.47	-9.46	61.17	204.84	129.36	18 54 33	1463.5	6.62	43.22
70.00	19 41 55	2203.51	-4.20	44.03	208.78	123.93	20 18 38	1203.5	9.73	24.45
80.00	21 27 55	1871.75	.27	21.62	211.56	119.86	21 59 7	871.8	12.40	.84
90.00	23 8 13	1548.24	2.21	358.91	212.64	118.20	23 34 2	548.2	13.57	337.64
100.00	0 14 43	1346.23	.27	342.99	211.56	119.86	0 37 9	346.2	12.40	322.20
110.00	0 45 17	1250.33	-4.20	332.95	208.78	123.93	1 6 7	250.3	9.73	313.36

DIFFERENTIAL CORRECTIONS

TDE -.4361 TRA -.9758 TC3 .1890 BAU .0674
RDE -.3920 RRA .1328 RC3 .1729 FAU .05414
FDE .3362 FRA 1.5972 FC3-2.3824 BSP 2458
BDE .5864 BRA .9847 BC3 .2561 FSP 389

MID-COURSE EXECUTION ACCURACY

SGT 1495.6 SGR 561.2 SG3 269.4
RRT .0638 RRF -.0701 RTF -.7923
SGB 1597.5 R23 -.0113 R13 -.7925
SG1 1496.1 SG2 559.9 THA 1.60

ORBIT DETERMINATION ACCURACY

ST 34.9 SR 25.5 SS 25.6
CRT .7368 CRS .4441 CST .9310
LSA 46.3 MSA 19.4 SSA 1.3
EL1 40.6 EL2 14.8 ALF 33.24

LAUNCH DATE MAY 2 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 346.559 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 33.427 GAL -2.13 AZL 91.96 HCA 116.11 SMA 206.32 ECC .27163 INC 1.9622 V1 29.554
RP 206.68 LAP -1.76 LOP 337.08 VP 25.318 GAP 15.76 AZP 89.14 TAL 350.01 TAP 106.12 RCA 150.27 APO 262.36 V2 26.496
RC 64.956 GL -15.29 GP 1.02 ZAL 112.78 ZAP 162.62 ETS 176.74 ZAE 170.84 ETE 31.68 ZAC 100.81 ETC 278.13 LVI -19.47

PLANETOCENTRIC CONIC

C3 18.819 VHL 4.338 DLA -23.98 RAL 342.52 RAD 6642.3 VEL 11.783 PTH 6.81 VHP 7.143 DPA -15.69 RAP 322.40 ECC 1.3097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 59	2628.92	-13.78	72.02	199.45	136.00	17 49 48	1628.9	4.56	56.14
60.00	18 16 4	2442.53	-8.56	60.14	204.37	129.53	18 56 47	1442.5	7.54	42.20
70.00	19 45 32	2179.50	-3.28	42.77	208.33	124.01	20 21 52	1179.5	10.61	23.15
80.00	21 33 0	1843.17	1.24	20.06	211.15	119.83	22 3 43	843.2	13.28	359.18
90.00	23 14 17	1516.52	3.23	357.14	212.25	118.11	23 39 33	516.5	14.47	335.75
100.00	0 19 48	1317.65	1.24	341.42	211.15	119.83	0 41 45	317.6	13.28	320.55
110.00	0 48 54	1226.32	-3.28	331.69	208.33	124.01	1 9 21	226.3	10.61	312.07

DIFFERENTIAL CORRECTIONS

TDE -.4287 TRA -.9628 TC3 .2113 BAU .0701
RDE -.3800 RRA .1266 RC3 .1819 FAU .05652
FDE .3415 FRA 1.6658 FC3-2.6003 BSP 2498
BDE .5729 BRA .9711 BC3 .2788 FSP 419

MID-COURSE EXECUTION ACCURACY

SGT 1513.6 SGR 557.0 SG3 287.7
RRT .0693 RRF -.0764 RTF -.7975
SGB 1612.9 R23 -.0126 R13 -.7977
SG1 1514.2 SG2 555.5 THA 1.69

ORBIT DETERMINATION ACCURACY

ST 35.2 SR 25.2 SS 26.4
CRT .7355 CRS .4336 CST .9274
LSA 46.7 MSA 19.6 SSA 1.3
EL1 40.7 EL2 14.8 ALF 32.67

LAUNCH DATE MAY 2 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 350.138 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 33.342 GAL -2.05 AZL 91.97 HCA 117.38 SMA 204.52 ECC .26511 INC 1.9697 V1 29.554
RP 206.70 LAP -1.75 LOP 338.35 VP 25.204 GAP 15.36 AZP 89.09 TAL 350.20 TAP 107.58 RCA 150.30 APO 258.74 V2 26.494
RC 66.082 GL -15.65 GP 1.07 ZAL 112.58 ZAP 161.52 ETS 176.83 ZAE 170.79 ETE 30.81 ZAC 100.83 ETC 278.17 LVI -19.56

PLANETOCENTRIC CONIC

C3 18.031 VHL 4.246 DLA -24.37 RAL 342.51 RAD 6641.9 VEL 11.750 PTH 6.78 VHP 6.923 DPA -15.59 RAP 322.56 ECC 1.2967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 51	2610.28	-12.86	71.19	199.02	136.21	17 51 21	1610.3	5.49	55.36
60.00	18 18 40	2421.94	-7.66	59.14	203.93	129.69	18 59 2	1421.9	8.43	41.20
70.00	19 49 14	2155.70	-2.37	41.53	207.91	124.08	20 25 9	1155.7	11.48	21.86
80.00	21 38 16	1814.46	2.21	18.48	210.77	119.78	22 8 30	814.5	14.16	357.50
90.00	23 20 38	1484.28	4.27	355.33	211.90	117.98	23 45 22	484.3	15.38	333.81
100.00	0 25 3	1288.93	2.21	339.85	210.77	119.78	0 46 32	288.9	14.16	318.87
110.00	0 52 36	1202.52	-2.37	330.45	207.91	124.08	1 12 38	202.5	11.48	310.77

DIFFERENTIAL CORRECTIONS

TDE -.4222 TRA -.9500 TC3 .2332 BAU .0727
RDE -.3684 RRA .1205 RC3 .1910 FAU .05905
FDE .3479 FRA 1.7380 FC3-2.8352 BSP 2532
BDE .5604 BRA .9576 BC3 .3014 FSP 451

MID-COURSE EXECUTION ACCURACY

SGT 1531.0 SGR 552.6 SG3 307.3
RRT .0759 RRF -.0835 RTF -.7923
SGB 1627.7 R23 -.0137 R13 -.8025
SG1 1531.7 SG2 550.7 THA 1.80

ORBIT DETERMINATION ACCURACY

ST 35.5 SR 25.0 SS 27.1
CRT .7351 CRS .4240 CST .9237
LSA 47.2 MSA 19.8 SSA 1.3
EL1 40.8 EL2 14.7 ALF 32.07

LAUNCH DATE MAY 2 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 353.769 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 33.263 GAL -1.97 AZL 91.98 HCA 118.65 SMA 202.86 ECC .25898 INC 1.9773 V1 29.554
RP 206.72 LAP -1.74 LOP 339.62 VP 25.096 GAP 14.97 AZP 89.05 TAL 350.39 TAP 109.04 RCA 150.33 APO 255.40 V2 26.491
RC 67.265 GL -16.01 GP 1.11 ZAL 112.37 ZAP 160.41 ETS 176.90 ZAE 170.81 ETE 30.19 ZAC 100.85 ETC 278.20 LVI -19.64

PLANETOCENTRIC CONIC

C3 17.304 VHL 4.160 DLA -24.77 RAL 342.50 RAD 6641.6 VEL 11.719 PTH 6.75 VHP 6.711 DPA -15.50 RAP 322.70 ECC 1.2848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 43	2592.06	-11.97	70.39	198.61	136.40	17 52 55	1592.1	6.40	54.59
60.00	18 21 17	2401.71	-6.78	58.16	203.52	129.82	19 1 19	1401.7	9.31	40.21
70.00	19 52 59	2132.12	-1.47	40.30	207.53	124.13	20 28 31	1132.1	12.34	20.57
80.00	21 43 42	1785.59	3.18	16.89	210.43	119.70	22 13 28	785.6	15.04	355.80
90.00	23 27 19	1451.43	5.31	353.48	211.60	117.82	23 51 30	451.4	16.28	331.82
100.00	0 30 30	1260.06	3.18	338.26	210.43	119.70	0 51 30	260.1	15.04	317.17
110.00	0 56 21	1178.94	-1.47	329.22	207.53	124.13	1 16 0	178.9	12.34	309.49

DIFFERENTIAL CORRECTIONS

TDE -.4149 TRA -.9363 TC3 .2546 BAU .0749
RDE -.3572 RRA .1145 RC3 .2003 FAU .06173
FDE .3526 FRA 1.8152 FC3-3.0885 BSP 2565
BDE .5475 BRA .9432 BC3 .3240 FSP 486

MID-COURSE EXECUTION ACCURACY

SGT 1545.5 SGR 547.8 SG3 328.1
RRT .0825 RRF -.0909 RTF -.8064
SGB 1639.7 R23 -.0149 R13 -.8066
SG1 1546.2 SG2 545.6 THA 1.91

ORBIT DETERMINATION ACCURACY

ST 35.6 SR 24.7 SS 27.9
CRT .7343 CRS .4127 CST .9193
LSA 47.5 MSA 20.0 SSA 1.3
EL1 40.8 EL2 14.7 ALF 31.53

LAUNCH DATE MAY 2 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 357.446 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	33.188	GAL	-1.90	AZL	91.99	HCA	119.92	SMA	201.33	ECC	.25322	INC	1.9851	V1	29.554
RP	206.75	LAP	-1.72	LOP	340.89	VP	24.993	GAP	14.59	AZP	89.01	TAL	350.58	TAP	110.49	RCA	150.35	APO	252.31	V2	26.487
RC	68.502	GL	-16.36	GP	1.16	ZAL	112.16	ZAP	159.26	ETS	176.97	ZAE	170.90	ETE	29.82	ZAC	100.88	ETC	278.23	LVI	-19.72

PLANETOCENTRIC CONIC

C3	16.634	VHL	4.078	DLA	-25.16	RAL	342.49	RAD	6641.3	VEL	11.691	PTH	6.72	VHP	6.506	DPA	-15.42	RAP	322.81	ECC	1.2737

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 36	2574.26	-11.09	69.61	198.23	136.57	17 54 30	1574.3	7.29	53.83
60.00	18 23 56	2381.86	-5.92	57.20	203.14	129.94	19 3 38	1381.9	10.16	39.23
70.00	19 56 49	2108.80	-.58	39.08	207.17	124.15	20 31 57	1108.8	13.18	19.28
80.00	21 49 22	1756.54	4.16	15.29	210.12	119.59	22 18 38	756.5	15.90	354.08
90.00	23 34 22	1417.85	6.37	351.59	211.33	117.61	23 58 0	417.9	17.17	329.77
100.00	0 36 9	1231.01	4.16	336.66	210.12	119.59	0 56 40	231.0	15.90	315.45
110.00	1 0 11	1155.62	-.58	328.00	207.17	124.15	1 19 26	155.6	13.18	308.20

DIFFERENTIAL CORRECTIONS

TDE	-.4074	TRA	-.9224	TC3	.2746	BAU	.0769														
RDE	-.3464	RRA	.1086	RC3	.2098	FAU	.06458														
FDE	.3569	FRA	1.8956	FC3	-3.3612	BSP	2599														
BDE	.5348	BRA	.9288	BC3	.3456	FSP	523														

MID-COURSE EXECUTION ACCURACY

SGT	1558.1	SGR	542.7	SG3	350.2																
RRT	.0894	RRF	-.0988	RTF	-.8098																
SGB	1649.9	R23	-.0166	R13	-.8101																
SG1	1559.0	SG2	540.2	THA	2.03																

ORBIT DETERMINATION ACCURACY

ST	35.8	SR	24.5	SS	28.6																
CRT	.7336	CRS	.4009	C3T	.9146																
LSA	47.8	MSA	20.2	SSA	1.3																
EL1	40.8	EL2	14.6	ALF	31.02																

LAUNCH DATE MAY 2 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC DISTANCE 361.166 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	33.117	GAL	-1.83	AZL	91.99	HCA	121.19	SMA	199.91	ECC	.24780	INC	1.9932	V1	29.554
RP	206.79	LAP	-1.71	LOP	342.16	VP	24.894	GAP	14.21	AZP	88.97	TAL	350.76	TAP	111.95	RCA	150.37	APO	249.45	V2	26.483
RC	69.791	GL	-16.72	GP	1.21	ZAL	111.94	ZAP	158.09	ETS	177.03	ZAE	171.05	ETE	29.70	ZAC	100.91	ETC	278.25	LVI	-19.79

PLANETOCENTRIC CONIC

C3	16.014	VHL	4.002	DLA	-25.56	RAL	342.47	RAD	6641.0	VEL	11.664	PTH	6.70	VHP	6.308	DPA	-15.34	RAP	322.88	ECC	1.2636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 28	2556.87	-10.23	68.86	197.87	136.72	17 56 5	1556.9	8.16	53.09
60.00	18 26 36	2362.37	-5.06	56.26	202.79	130.04	19 5 58	1362.4	11.00	38.26
70.00	20 0 43	2085.67	.30	37.88	206.85	124.15	20 35 28	1085.7	14.00	18.00
80.00	21 55 15	1727.19	5.15	13.67	209.85	119.45	22 24 2	727.2	16.75	352.32
90.00	23 41 53	1383.26	7.46	349.63	211.11	117.36	24 4 57	383.3	18.07	327.63
100.00	0 42 3	1201.66	5.15	335.04	209.85	119.45	1 2 4	201.7	16.75	313.69
110.00	1 4 5	1132.49	.30	326.79	206.85	124.15	1 22 57	132.5	14.00	306.92

DIFFERENTIAL CORRECTIONS

TDE	-.3910	TRA	-.8982	TC3	.3181	BAU	.0828														
RDE	-.3359	RRA	.1028	RC3	.2197	FAU	.06772														
FDE	.3606	FRA	1.9785	FC3	-3.6609	BSP	2507														
BDE	.5154	BRA	.9041	BC3	.3866	FSP	561														

MID-COURSE EXECUTION ACCURACY

SGT	1552.5	SGR	537.4	SG3	373.7																
RRT	.0975	RRF	-.1081	RTF	-.8207																
SGB	1642.9	R23	-.0174	R13	-.8210																
SG1	1553.5	SG2	534.5	THA	2.19																

ORBIT DETERMINATION ACCURACY

ST	35.2	SR	24.2	SS	29.4																
CRT	.7291	CRS	.3890	C3T	.9121																
LSA	47.7	MSA	20.4	SSA	1.3																
EL1	40.2	EL2	14.5	ALF	31.06																

LAUNCH DATE MAY 2 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC DISTANCE 364.925 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	33.051	GAL	-1.76	AZL	92.00	HCA	122.45	SMA	198.60	ECC	.24272	INC	2.0014	V1	29.554
RP	206.84	LAP	-1.69	LOP	343.43	VP	24.799	GAP	13.85	AZP	88.93	TAL	350.95	TAP	113.40	RCA	150.39	APO	246.80	V2	26.477
RC	71.130	GL	-17.07	GP	1.26	ZAL	111.73	ZAP	156.89	ETS	177.08	ZAE	171.27	ETE	29.84	ZAC	100.95	ETC	278.26	LVI	-19.86

PLANETOCENTRIC CONIC

C3	15.445	VHL	3.930	DLA	-25.95	RAL	342.45	RAD	6640.7	VEL	11.640	PTH	6.68	VHP	6.117	DPA	-15.27	RAP	322.93	ECC	1.2542

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 21	2540.01	-9.39	68.13	197.55	136.86	17 57 41	1540.0	9.00	52.37
60.00	18 29 17	2343.38	-4.23	55.34	202.47	130.12	19 8 20	1343.4	11.81	37.32
70.00	20 4 40	2062.93	1.17	36.69	206.56	124.14	20 39 3	1062.9	14.81	16.73
80.00	22 1 22	1697.69	6.13	12.03	209.63	119.28	22 29 39	697.7	17.60	350.54
90.00	23 49 54	1347.65	8.57	347.60	210.94	117.05	24 12 22	347.6	18.97	325.40
100.00	0 48 9	1172.17	6.13	333.40	209.63	119.28	1 7 42	172.2	17.60	311.90
110.00	1 8 2	1109.74	1.17	325.61	206.56	124.14	1 26 32	109.7	14.81	305.65

DIFFERENTIAL CORRECTIONS

TDE	-.3682	TRA	-.8880	TC3	.3232	BAU	.0818														
RDE	-.3258	RRA	.0970	RC3	.2294	FAU	.07087														
FDE	.3652	FRA	2.0685	FC3	-3.9723	BSP	2587														
BDE	.5068	BRA	.8933	BC3	.3964	FSP	603														

MID-COURSE EXECUTION ACCURACY

SGT	1567.7	SGR	531.8	SG3	398.6																
RRT	.1058	RRF	-.1176	RTF	-.8190																
SGB	1655.5	R23	-.0200	R13	-.8194																
SG1	1568.9	SG2	528.5	THA	2.32																

ORBIT DETERMINATION ACCURACY

ST	35.6	SR	23.9	SS	30.2																
CRT	.7311	CRS	.3777	C3T	.9058																
LSA	48.2	MSA	20.6	SSA	1.3																
EL1	40.4	EL2	14.4	ALF	30.34																

LAUNCH DATE MAY 2 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC DISTANCE 368.720 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.988	GAL	-1.70	AZL	92.01	HCA	123.72	SMA	197.38	ECC	.23795	INC	2.0100	V1	29.554
RP	206.90	LAP	-1.67	LOP	344.69	VP	24.709	GAP	13.49	AZP	88.88	TAL	351.13	TAP	114.85	RCA	150.41	APO	244.35	V2	26.470
RC	72.517	GL	-17.42	GP	1.31	ZAL	111.52	ZAP	155.66	ETS	177.13	ZAE	171.56	ETE	30.28	ZAC	101.00	ETC	278.27	LVI	-19.92

PLANETOCENTRIC CONIC

C3	14.921	VHL	3.863	DLA	-26.34	RAL	342.43	RAD	6640.5	VEL	11.618	PTH	6.66	VHP	5.932	DPA	-15.21	RAP	322.95	ECC	1.2456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 15	2523.61	-8.57	67.43	197.25	136.98	17 59 19	1523.6	9.81	51.67
60.00	18 31 59	2324.82	-3.42	54.45	202.18	130.18	19 10 44	1324.8	12.60	36.38
70.00	20 8 42	2040.46	2.03	35.52	206.30	124.10	20 42 42	1040.5	15.60	15.47
80.00	22 7 45	1667.85	7.12	10.37	209.44	119.07	22 35 32	667.9	18.43	348.71
90.00	0 2 29	1310.48	9.71	345.47	210.83	116.69	0 24 20	310.5	19.88	323.05
100.00	0 54 32	1142.32	7.12	331.74	209.44	119.07	1 13 35	142.3	18.43	310.08
110.00	1 12 4	1087.28	2.03	324.43	206.30	124.10	1 30 11	87.3	15.60	304.38

DIFFERENTIAL CORRECTIONS

TDE	-.3635	TRA	-.8750	TC3	.3336	BAU	.0819														
RDE	-.3160	RRA	.0912	RC3	.2394	FAU	.07429														
FDE	.3702	FRA	2.1640	FC3	-4.3107	BSP	2631														
BDE	.4969	BRA	.8798	BC3	.4106	FSP	648														

MID-COURSE EXECUTION ACCURACY

SGT	1577.2	SGR	526.0	SG3	425.2																
RRT	.1152	RRF	-.1284	RTF	-.8191																
SGB	1662.6	R23	-.0226	R13	-.8195																
SG1	1578.5	SG2	522.1	THA	2.47																

ORBIT DETERMINATION ACCURACY

ST	35.8	SR	23.5	SS	31.0																
CRT	.7327	CRS	.3669	C3T	.8999																
LSA	48.6	MSA	20.8	SSA	1.3																
EL1	40.4	EL2	14.2	ALF	29.76																

LAUNCH DATE MAY 2 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 25 1971

DISTANCE 372.549

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.930 GAL -1.64 AZL 92.02 HCA 124.99 SMA 196.25 ECC .23347 INC 2.0187 V1 29.554
RP 206.96 LAP -1.65 LOP 345.96 VP 24.622 GAP 13.14 AZP 88.84 TAL 351.31 TAP 116.30 RCA 150.43 APO 242.07 V2 26.462
RC 73.950 GL -17.77 GP 1.37 ZAL 111.31 ZAP 154.40 ETS 177.17 ZAE 171.92 ETE 31.06 ZAC 101.06 ETC 278.28 LVI -19.98

PLANETOCENTRIC CONIC

C3 14.437 VHL 3.800 DLA -26.72 RAL 342.41 RAD 6640.3 VEL 11.597 PTH 6.64 VHP 5.754 DPA -15.15 RAP 322.94 ECC 1.2376

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 9	2507.70	-7.78	66.75	196.98	137.09	18 0 57	1507.7	10.60	50.98
60.00	18 34 43	2306.71	-2.62	53.58	201.92	130.23	19 13 9	1306.7	13.37	35.47
70.00	20 12 48	2018.31	2.87	34.36	206.08	124.05	20 46 26	1018.3	16.36	14.21
80.00	22 14 26	1637.58	8.12	8.68	209.30	118.83	22 41 43	637.6	19.26	346.84
90.00	0 11 59	1271.18	10.91	343.20	210.77	116.25	0 33 10	271.2	20.80	320.54
100.00	1 1 13	1112.05	8.12	330.05	209.30	118.83	1 19 45	112.1	19.26	308.21
110.00	1 16 10	1065.12	2.87	323.28	206.08	124.05	1 33 55	65.1	16.36	303.12

DIFFERENTIAL CORRECTIONS

TDE -.3776 TRA -.8601 TC3 .3441 BAU .0821
RDE -.3065 RRA .0855 RC3 .2496 FAU .07791
FDE .3746 FRA 2.2643 FC3-4.6720 BSP 2656
BDE .4864 BRA .8643 BC3 .4251 FSP 697

MID-COURSE EXECUTION ACCURACY

SGT 1581.4 SGR 520.1 SG3 453.4
RRT .1254 RRF -.1401 RTF -.8195
SGB 1664.7 R23 -.0254 R13 -.8200
SG1 1582.9 SG2 515.5 THA 2.64

ORBIT DETERMINATION ACCURACY

ST 35.8 SR 23.2 SS 31.9
CRT .7341 CRS .3560 CST .8938
LSA 49.0 NSA 21.0 SSA 1.3
EL1 40.3 EL2 14.0 ALF 29.29

LAUNCH DATE MAY 2 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 27 1971

DISTANCE 376.408

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.875 GAL -1.59 AZL 92.03 HCA 126.25 SMA 195.21 ECC .22928 INC 2.0277 V1 29.554
RP 207.04 LAP -1.64 LOP 347.23 VP 24.539 GAP 12.80 AZP 88.80 TAL 351.49 TAP 117.74 RCA 150.45 APO 239.96 V2 26.454
RC 75.426 GL -18.11 GP 1.43 ZAL 111.11 ZAP 153.11 ETS 177.20 ZAE 172.34 ETE 32.26 ZAC 101.12 ETC 278.27 LVI -20.03

PLANETOCENTRIC CONIC

C3 13.992 VHL 3.741 DLA -27.10 RAL 342.40 RAD 6640.0 VEL 11.578 PTH 6.62 VHP 5.582 DPA -15.10 RAP 322.90 ECC 1.2303

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 3	2492.29	-7.01	66.09	196.74	137.18	18 2 35	1492.3	11.36	50.31
60.00	18 37 27	2289.08	-1.85	52.74	201.69	130.27	19 15 36	1289.1	14.11	34.57
70.00	20 16 58	1996.47	3.70	33.22	205.89	123.98	20 50 14	996.5	17.11	12.96
80.00	22 21 27	1606.76	9.13	6.95	209.20	118.55	22 48 14	606.8	20.07	344.92
90.00	0 22 35	1228.81	12.17	340.73	210.78	115.72	0 43 4	228.8	21.74	317.79
100.00	1 8 15	1081.23	9.13	328.31	209.20	118.55	1 26 16	81.2	20.07	306.29
110.00	1 20 20	1043.29	3.70	322.13	205.89	123.98	1 37 43	43.3	17.11	301.87

DIFFERENTIAL CORRECTIONS

TDE -.3710 TRA -.8440 TC3 .3514 BAU .0818
RDE -.2973 RRA .0798 RC3 .2599 FAU .08168
FDE .3784 FRA 2.3702 FC3-5.0540 BSP 2670
BDE .4754 BRA .8478 BC3 .4371 FSP 748

MID-COURSE EXECUTION ACCURACY

SGT 1581.4 SGR 513.9 SG3 483.1
RRT .1358 RRF -.1527 RTF -.8194
SGB 1662.8 R23 -.0288 R13 -.8200
SG1 1583.2 SG2 508.6 THA 2.82

ORBIT DETERMINATION ACCURACY

ST 35.8 SR 22.9 SS 32.8
CRT .7356 CRS .3447 CST .8874
LSA 49.3 NSA 21.2 SSA 1.3
EL1 40.2 EL2 13.8 ALF 28.89

LAUNCH DATE MAY 2 1971 FLIGHT TIME 150.00 ARRIVAL DATE SEP 29 1971

DISTANCE 380.296

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.823 GAL -1.53 AZL 92.04 HCA 127.52 SMA 194.24 ECC .22534 INC 2.0370 V1 29.554
RP 207.12 LAP -1.62 LOP 348.49 VP 24.459 GAP 12.46 AZP 88.76 TAL 351.65 TAP 119.17 RCA 150.47 APO 238.01 V2 26.444
RC 76.944 GL -18.45 GP 1.50 ZAL 110.91 ZAP 151.78 ETS 177.24 ZAE 172.82 ETE 33.98 ZAC 101.20 ETC 278.26 LVI -20.08

PLANETOCENTRIC CONIC

C3 13.583 VHL 3.686 DLA -27.47 RAL 342.39 RAD 6639.8 VEL 11.561 PTH 6.61 VHP 5.416 DPA -15.05 RAP 322.82 ECC 1.2235

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 58	2477.40	-6.27	65.46	196.52	137.26	18 4 15	1477.4	12.10	49.66
60.00	18 40 13	2271.93	-1.09	51.92	201.49	130.29	19 18 5	1271.9	14.83	33.69
70.00	20 21 12	1974.98	4.52	32.09	205.73	123.89	20 54 7	975.0	17.84	11.72
80.00	22 28 53	1575.22	10.15	5.16	209.15	118.23	22 55 9	575.2	20.88	342.93
90.00	0 34 54	1181.52	13.55	337.95	210.89	115.06	0 54 36	181.5	22.73	314.68
100.00	1 15 41	1049.69	10.15	326.53	209.15	118.23	1 33 11	49.7	20.88	304.30
110.00	1 24 34	1021.80	4.52	321.01	205.73	123.89	1 41 36	21.8	17.84	300.63

DIFFERENTIAL CORRECTIONS

TDE -.3643 TRA -.8262 TC3 .3363 BAU .0812
RDE -.2864 RRA .0742 RC3 .2703 FAU .08568
FDE .3824 FRA 2.4806 FC3-5.4608 BSP 2670
BDE .4647 BRA .8295 BC3 .4472 FSP 802

MID-COURSE EXECUTION ACCURACY

SGT 1576.5 SGR 507.6 SG3 514.4
RRT .1477 RRF -.1667 RTF -.8188
SGB 1656.2 R23 -.0325 R13 -.8195
SG1 1578.5 SG2 501.4 THA 3.03

ORBIT DETERMINATION ACCURACY

ST 35.7 SR 22.5 SS 33.8
CRT .7379 CRS .3343 CST .8806
LSA 49.5 NSA 21.4 SSA 1.3
EL1 40.0 EL2 13.6 ALF 28.55

LAUNCH DATE MAY 2 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 1 1971

DISTANCE 384.210

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.774 GAL -1.48 AZL 92.05 HCA 128.78 SMA 193.34 ECC .22166 INC 2.0466 V1 29.554
RP 207.21 LAP -1.60 LOP 349.76 VP 24.383 GAP 12.14 AZP 88.72 TAL 351.81 TAP 120.59 RCA 150.48 APO 236.19 V2 26.433
RC 78.502 GL -18.78 GP 1.57 ZAL 110.72 ZAP 150.42 ETS 177.26 ZAE 173.36 ETE 36.39 ZAC 101.28 ETC 278.25 LVI -20.12

PLANETOCENTRIC CONIC

C3 13.207 VHL 3.634 DLA -27.84 RAL 342.39 RAD 6639.7 VEL 11.544 PTH 6.59 VHP 5.256 DPA -15.02 RAP 322.70 ECC 1.2174

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 53	2463.03	-5.55	64.85	196.34	137.33	18 5 56	1463.0	12.80	49.02
60.00	18 42 59	2255.29	-.36	51.13	201.32	130.30	19 20 34	1255.3	15.53	32.84
70.00	20 25 29	1953.85	5.32	30.98	205.61	123.79	20 58 3	953.8	18.55	10.49
80.00	22 36 48	1542.73	11.19	3.31	209.14	117.86	23 2 31	542.7	21.69	340.86
90.00	0 50 17	1124.95	15.16	334.57	211.13	114.16	1 9 2	124.9	23.62	310.89
100.00	1 23 36	1017.20	11.19	324.68	209.14	117.86	1 40 33	17.2	21.69	302.22
110.00	1 28 52	1000.67	5.32	319.89	205.61	123.79	1 45 32	.7	18.55	299.40

DIFFERENTIAL CORRECTIONS

TDE -.3580 TRA -.8079 TC3 .3572 BAU .0802
RDE -.2798 RRA .0685 RC3 .2810 FAU .08989
FDE .3877 FRA 2.5975 FC3-5.8926 BSP 2658
BDE .4544 BRA .8108 BC3 .4545 FSP 858

MID-COURSE EXECUTION ACCURACY

SGT 1568.7 SGR 501.2 SG3 547.6
RRT .1605 RRF -.1823 RTF -.8175
SGB 1646.9 R23 -.0371 R13 -.8183
SG1 1571.0 SG2 494.0 THA 3.26

ORBIT DETERMINATION ACCURACY

ST 35.5 SR 22.1 SS 34.6
CRT .7410 CRS .3255 CST .8739
LSA 49.8 NSA 21.6 SSA 1.3
EL1 39.7 EL2 13.3 ALF 28.22

LAUNCH DATE MAY 2 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 3 1971

HELIOCENTRIC CONIC DISTANCE 388.149 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.729	GAL	-1.44	AZL	92.06	HCA	130.04	SMA	192.50	ECC	.21821	INC	2.0565	V1	29.554
RP	207.31	LAP	-1.57	LOP	351.02	VP	24.309	GAP	11.82	AZP	88.68	TAL	351.97	TAP	122.01	RCA	150.50	APO	234.51	V2	26.422
RC	80.098	GL	-19.11	GP	1.64	ZAL	110.54	ZAP	149.03	ETS	177.29	ZAE	173.94	ETE	39.72	ZAC	101.37	ETC	278.22	LVI	-20.16

PLANETOCENTRIC CONIC

C3	12.862	VHL	3.586	DLA	-28.19	RAL	342.39	RAD	6639.5	VEL	11.530	PTH	6.58	VHP	5.103	DPA	-14.99	RAP	322.55	ECC	1.2117

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 49	2449.18	-4.86	64.27	196.18	137.39	18 7 38	1449.2	13.48	48.41
60.00	18 45 46	2239.16	.35	50.36	201.18	130.30	19 23 5	1239.2	16.19	32.00
70.00	20 29 51	1933.08	6.11	29.88	205.52	123.67	21 2 4	933.1	19.23	9.26
80.00	22 45 19	1508.93	12.26	1.37	209.19	117.44	23 10 28	508.9	22.50	338.67
90.00	1 14 54	1039.12	17.48	329.34	211.71	112.59	1 32 13	39.1	25.28	305.03
100.00	1 32 6	6271.44	12.26	300.65	209.19	117.44	3 16 38	5271.4	22.50	277.95
110.00	1 33 13	6267.94	6.11	296.71	205.52	123.67	3 17 41	5267.9	19.23	276.09

DIFFERENTIAL CORRECTIONS

TDE	-.3509	TRA	-.7884	TC3	.3558	BAU	.0791												
RDE	-.2714	RRA	.0027	RC3	.2920	FAU	.09443												
FDE	.3903	FRA	2.7207	FC3	-6.3559	BSP	2637												
BDE	.4436	BRA	.7909	BC3	.4603	FSP	918												

MID-COURSE EXECUTION ACCURACY

SGT	1556.2	SGR	494.8	SG3	582.8						
RRT	.1741	RRF	-.1991	RTF	-.8156						
SGB	1632.9	R23	-.0424	R13	-.8166						
SG1	1558.8	SG2	486.4	THA	3.51						

ORBIT DETERMINATION ACCURACY

ST	35.3	SR	21.7	SS	35.5						
CRT	.7443	CRS	.3149	CST	.8660						
LSA	50.0	MSA	21.8	SSA	1.3						
EL1	39.4	EL2	13.0	ALF	27.97						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 392.111 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.686	GAL	-1.39	AZL	92.07	HCA	131.30	SMA	191.73	ECC	.21499	INC	2.0668	V1	29.554
RP	207.42	LAP	-1.55	LOP	352.28	VP	24.238	GAP	11.51	AZP	88.64	TAL	352.11	TAP	123.41	RCA	150.51	APO	232.95	V2	26.409
RC	81.730	GL	-19.44	GP	1.72	ZAL	110.37	ZAP	147.60	ETS	177.31	ZAE	174.54	ETE	44.37	ZAC	101.47	ETC	278.19	LVI	-20.19

PLANETOCENTRIC CONIC

C3	12.545	VHL	3.542	DLA	-28.54	RAL	342.40	RAD	6639.3	VEL	11.516	PTH	6.56	VHP	4.955	DPA	-14.97	RAP	322.36	ECC	1.2065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 45	2435.81	-4.19	63.71	196.05	137.44	18 9 21	1435.8	14.14	47.82
60.00	18 48 34	2223.49	1.04	49.61	201.07	130.29	19 25 38	1223.5	16.84	31.18
70.00	20 34 17	1912.58	6.88	28.80	205.46	123.54	21 6 10	912.6	19.90	8.05
80.00	22 54 39	1473.04	13.37	359.29	209.30	116.95	23 19 12	473.0	23.32	336.32
85.95	1 0 22	1080.91	19.37	333.20	212.11	111.38	1 18 23	80.9	26.49	308.37
100.00	1 41 26	6235.55	13.37	298.57	209.30	116.95	3 25 22	5235.6	23.32	275.60
110.00	1 37 40	6247.44	6.88	295.62	205.46	123.54	3 2. 47	5247.4	19.90	274.87

DIFFERENTIAL CORRECTIONS

TDE	-.3307	TRA	-.7535	TC3	.3926	BAU	.0833												
RDE	-.2630	RRA	.0572	RC3	.3040	FAU	.09967												
FDE	.3829	FRA	2.8372	FC3	-6.8786	BSP	2437												
BDE	.4225	BRA	.7557	BC3	.4965	FSP	970												

MID-COURSE EXECUTION ACCURACY

SGT	1513.0	SGR	488.4	SG3	619.6						
RRT	.1912	RRF	-.2177	RTF	-.8237						
SGB	1589.9	R23	-.0435	R13	-.8248						
SG1	1516.2	SG2	478.4	THA	3.92						

ORBIT DETERMINATION ACCURACY

ST	33.9	SR	21.3	SS	36.2						
CRT	.7415	CRS	.2978	CST	.8590						
LSA	49.3	MSA	21.9	SSA	1.3						
EL1	38.0	EL2	12.8	ALF	28.56						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 396.092 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.647	GAL	-1.35	AZL	92.08	HCA	132.56	SMA	191.01	ECC	.21198	INC	2.0776	V1	29.554
RP	207.54	LAP	-1.53	LOP	353.54	VP	24.169	GAP	11.20	AZP	88.59	TAL	352.24	TAP	124.80	RCA	150.52	APO	231.50	V2	26.395
RC	83.399	GL	-19.75	GP	1.80	ZAL	110.21	ZAP	146.13	ETS	177.32	ZAE	175.14	ETE	50.84	ZAC	101.58	ETC	278.15	LVI	-20.21

PLANETOCENTRIC CONIC

C3	12.256	VHL	3.501	DLA	-28.88	RAL	342.43	RAD	6639.2	VEL	11.504	PTH	6.55	VHP	4.813	DPA	-14.96	RAP	322.13	ECC	1.2017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 30 43	2423.11	-3.55	63.18	195.95	137.48	18 11 6	1423.1	14.76	47.25
60.00	18 51 23	2208.50	1.70	48.89	201.00	130.27	19 28 11	1208.5	17.46	30.39
70.00	20 38 46	1892.66	7.63	27.74	205.44	123.39	21 10 19	892.7	20.54	6.86
80.00	23 4 58	1434.71	14.54	357.05	209.49	116.37	23 28 53	434.7	24.16	333.78
83.88	0 43 28	1130.87	19.72	337.02	211.89	111.54	1 2 19	130.9	26.86	312.12
100.00	1 51 46	6197.23	14.54	296.32	209.49	116.37	3 35 3	5197.2	24.16	273.06
110.00	1 42 8	6227.52	7.63	294.56	205.44	123.39	3 25 56	5227.5	20.54	273.68

DIFFERENTIAL CORRECTIONS

TDE	-.3360	TRA	-.7441	TC3	.3395	BAU	.0759												
RDE	-.2553	RRA	.0511	RC3	.3147	FAU	.10404												
FDE	.3964	FRA	2.9852	FC3	-7.3494	BSP	2549												
BDE	.4220	BRA	.7459	BC3	.4629	FSP	1049												

MID-COURSE EXECUTION ACCURACY

SGT	1514.4	SGR	482.0	SG3	656.2						
RRT	.2047	RRF	-.2375	RTF	-.8296						
SGB	1589.2	R23	-.0552	R13	-.8111						
SG1	1517.9	SG2	470.7	THA	4.12						

ORBIT DETERMINATION ACCURACY

ST	34.5	SR	20.9	SS	37.5						
CRT	.7535	CRS	.2970	CST	.8492						
LSA	50.4	MSA	22.2	SSA	1.3						
EL1	38.4	EL2	12.4	ALF	27.68						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 400.092 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.609	GAL	-1.32	AZL	92.09	HCA	133.82	SMA	190.35	ECC	.20918	INC	2.0887	V1	29.554
RP	207.66	LAP	-1.51	LOP	354.80	VP	24.103	GAP	10.90	AZP	88.55	TAL	352.36	TAP	126.18	RCA	150.53	APO	230.16	V2	26.381
RC	85.104	GL	-20.07	GP	1.89	ZAL	110.07	ZAP	144.62	ETS	177.34	ZAE	175.70	ETE	59.94	ZAC	101.71	ETC	278.10	LVI	-20.23

PLANETOCENTRIC CONIC

C3	11.992	VHL	3.463	DLA	-29.21	RAL	342.47	RAD	6639.1	VEL	11.492	PTH	6.54	VHP	4.676	DPA	-14.95	RAP	321.86	ECC	1.1974

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 32 40	2410.91	-2.94	62.66	195.88	137.51	18 12 51	1410.9	15.35	46.70
60.00	18 54 12	2194.01	2.34	48.20	200.95	130.24	19 30 46	1194.0	18.05	29.62
70.00	20 43 19	1873.07	8.36	26.70	205.46	123.24	21 14 32	873.1	21.16	5.68
80.00	23 17 0	1391.55	15.83	354.49	209.77	115.65	23 40 11	391.6	25.04	330.88
82.36	0 31 27	1165.40	20.05	339.70	211.71	111.70	0 50 53	165.4	27.22	314.75
100.00	2 3 47	6154.06	15.83	293.77	209.77	115.65	3 46 22	5154.1	25.04	270.16
110.00	1 46 41	6207.93	8.36	293.52	205.46	123.24	3 30 9	5207.9	21.16	272.50

DIFFERENTIAL CORRECTIONS

TDE	-.3325	TRA	-.7240	TC3	.3141	BAU	.0726												
RDE	-.2477	RRA	.0450	RC3	.3264	FAU	.10919												
FDE	.4037	FRA	3.1320	FC3	-7.8826	BSP	2529												
BDE	.4146	BRA	.7254	BC3	.4530	FSP	1121												

MID-COURSE EXECUTION ACCURACY

SGT	1494.5	SGR	475.8	SG3	699.3						
RRT	.2215	RRF	-.2600	RTF	-.8023						
SGB	1568.4	R23	-.0650	R13	-.8041						
SG1	1498.6	SG2	462.7	THA	4.46						

ORBIT DETERMINATION ACCURACY

ST	34.4	SR	20.5	SS	38.6						
CRT	.7617	CRS	.2924	CST	.8398						
LSA	50.9	MSA	22.4	SSA	1.3						
EL1	38.2	EL2	12.0	ALF	27.39						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 404.112 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.575	GAL	-1.29	AZL	92.10	HCA	135.08	SMA	189.73	ECC	.20656	INC	2.1003	V1	29.554
RP	207.80	LAP	-1.48	LOP	356.05	VP	24.039	GAP	10.61	AZP	88.51	TAL	352.48	TAP	127.55	RCA	150.54	APO	228.92	V2	26.365
RC	88.643	GL	-20.38	GP	1.99	ZAL	109.93	ZAP	143.08	ETS	177.35	ZAE	176.13	ETE	72.48	ZAC	101.84	ETC	278.05	LVI	-20.24

PLANETOCENTRIC CONIC

C3	11.750	VHL	3.428	DLA	-29.53	RAL	342.51	RAD	6638.9	VEL	11.482	PTH	6.53	VHP	4.546	DPA	-14.95	RAP	321.54	ECC	1.1934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 34 39	2399.19	-2.35	62.17	195.84	137.53	18 14 38	1399.2	15.92	46.17
60.00	18 57 2	2180.00	2.96	47.53	200.93	130.21	19 33 22	1180.0	18.61	28.87
70.00	20 47 57	1853.76	9.08	25.66	205.51	123.07	21 18 51	853.8	21.76	4.50
80.00	23 32 18	1338.52	17.37	351.31	210.20	114.67	23 54 36	338.5	26.04	327.26
81.12	0 21 53	1192.44	20.36	341.83	211.56	111.86	0 41 45	192.4	27.58	316.82
100.00	2 19 6	6101.03	17.37	290.58	210.20	114.67	4 0 47	5101.0	26.04	266.53
110.00	1 51 19	6188.62	9.08	292.49	205.51	123.07	3 34 28	5188.6	21.76	271.33

DIFFERENTIAL CORRECTIONS

TDE	-.3154	TRA	-.6880	TC3	.3245	BAU	.0738
RDE	-.2400	RRA	.0392	RC3	.3395	FAU	.11520
FDE	.3923	FRA	3.2651	FC3	-8.4874	BSP	2330
BDE	.3963	BRA	.6891	BC3	.4696	FSP	1178

MID-COURSE EXECUTION ACCURACY

SGT	1440.2	SGR	469.8	SG3	741.4
RRT	.2418	RRF	-.2839	RTF	-.8035
SGB	1514.9	R23	-.0702	R13	-.8058
SG1	1445.2	SG2	454.3	THA	5.01

ORBIT DETERMINATION ACCURACY

ST	33.0	SR	20.1	SS	39.3
CRT	.7641	CRS	.2759	CST	.8283
LSA	50.3	MSA	22.5	SSA	1.3
EL1	36.8	EL2	11.6	ALF	27.97

LAUNCH DATE MAY 2 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 408.147 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.542	GAL	-1.26	AZL	92.11	HCA	136.33	SMA	189.16	ECC	.20413	INC	2.1124	V1	29.554
RP	207.94	LAP	-1.46	LOP	357.31	VP	23.977	GAP	10.33	AZP	88.47	TAL	352.58	TAP	128.91	RCA	150.55	APO	227.77	V2	26.349
RC	88.616	GL	-20.68	GP	2.08	ZAL	109.82	ZAP	141.49	ETS	177.36	ZAE	176.34	ETE	88.42	ZAC	101.98	ETC	277.98	LVI	-20.25

PLANETOCENTRIC CONIC

C3	11.532	VHL	3.396	DLA	-29.84	RAL	342.57	RAD	6638.8	VEL	11.472	PTH	6.52	VHP	4.420	DPA	-14.96	RAP	321.19	ECC	1.1898

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 36 38	2388.12	-1.79	61.71	195.83	137.55	18 16 27	1388.1	16.46	45.66
60.00	18 59 53	2166.67	3.54	46.89	200.95	130.17	19 35 59	1166.7	19.15	28.15
70.00	20 52 37	1835.04	9.77	24.66	205.59	122.89	21 23 12	835.0	22.33	3.35
80.00	0 4 34	1244.67	19.94	345.52	211.12	112.70	0 25 19	244.7	27.54	320.69
80.06	0 13 59	1214.61	20.66	343.61	211.44	112.02	0 34 13	214.6	27.91	318.54
100.00	2 47 26	6007.18	19.94	284.80	211.12	112.70	4 27 33	5007.2	27.54	259.96
110.00	1 55 59	6169.90	9.77	291.48	205.59	122.89	3 38 49	5169.9	22.33	270.18

DIFFERENTIAL CORRECTIONS

TDE	-.3207	TRA	-.6729	TC3	.2524	BAU	.0667
RDE	-.2330	RRA	.0327	RC3	.3510	FAU	.12013
FDE	.4120	FRA	3.4352	FC3	-9.0184	BSP	2399
BDE	.3964	BRA	.6737	BC3	.4323	FSP	1271

MID-COURSE EXECUTION ACCURACY

SGT	1426.6	SGR	464.1	SG3	785.5
RRT	.2573	RRF	-.3102	RTF	-.7842
SGB	1500.2	R23	-.0895	R13	-.7872
SG1	1432.2	SG2	446.7	THA	5.30

ORBIT DETERMINATION ACCURACY

ST	33.4	SR	19.7	SS	40.7
CRT	.7800	CRS	.2820	CST	.8176
LSA	51.4	MSA	22.8	SSA	1.3
EL1	37.2	EL2	11.1	ALF	27.28

LAUNCH DATE MAY 2 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 412.198 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.512	GAL	-1.23	AZL	92.13	HCA	137.58	SMA	188.63	ECC	.20186	INC	2.1250	V1	29.554
RP	208.08	LAP	-1.43	LOP	358.56	VP	23.917	GAP	10.05	AZP	88.43	TAL	352.66	TAP	130.25	RCA	150.55	APO	226.71	V2	26.332
RC	90.421	GL	-20.98	GP	2.19	ZAL	109.71	ZAP	139.87	ETS	177.37	ZAE	176.22	ETE	105.90	ZAC	102.14	ETC	277.91	LVI	-20.25

PLANETOCENTRIC CONIC

C3	11.334	VHL	3.367	DLA	-30.14	RAL	342.65	RAD	6638.7	VEL	11.464	PTH	6.51	VHP	4.301	DPA	-14.97	RAP	320.79	ECC	1.1865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 38 39	2377.52	-1.26	61.27	195.84	137.56	18 18 16	1377.5	16.97	45.17
60.00	19 2 44	2153.81	4.11	46.27	200.99	130.13	19 38 38	1153.8	19.67	27.46
70.00	20 57 22	1816.56	10.45	23.66	205.71	122.70	21 27 38	816.6	22.89	2.21
79.12	0 7 10	1233.66	20.95	345.15	211.36	112.17	0 27 44	233.7	28.23	320.03
79.12	0 7 10	1233.66	20.95	345.15	211.36	112.17	0 27 44	233.7	28.23	320.03
79.12	0 7 10	1233.66	20.95	345.15	211.36	112.17	0 27 44	233.7	28.23	320.03
110.00	2 0 44	6151.42	10.45	290.49	205.71	122.70	3 43 16	5151.4	22.89	269.03

DIFFERENTIAL CORRECTIONS

TDE	-.3094	TRA	-.6404	TC3	.2317	BAU	.0655
RDE	-.2257	RRA	.0263	RC3	.3646	FAU	.12639
FDE	.4077	FRA	3.5918	FC3	-9.6547	BSP	2252
BDE	.3830	BRA	.6410	BC3	.4321	FSP	1344

MID-COURSE EXECUTION ACCURACY

SGT	1374.8	SGR	458.8	SG3	831.9
RRT	.2779	RRF	-.3387	RTF	-.7972
SGB	1449.3	R23	-.1022	R13	-.7810
SG1	1381.3	SG2	438.6	THA	5.89

ORBIT DETERMINATION ACCURACY

ST	32.4	SR	19.2	SS	41.6
CRT	.7881	CRS	.2729	CST	.8044
LSA	51.2	MSA	22.9	SSA	1.3
EL1	36.2	EL2	10.6	ALF	27.63

LAUNCH DATE MAY 2 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 416.262 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.484	GAL	-1.21	AZL	92.14	HCA	136.83	SMA	188.15	ECC	.19977	INC	2.1383	V1	29.554
RP	208.24	LAP	-1.41	LOP	359.81	VP	23.859	GAP	9.78	AZP	88.39	TAL	352.74	TAP	131.57	RCA	150.56	APO	225.73	V2	26.313
RC	92.259	GL	-21.27	GP	2.30	ZAL	109.63	ZAP	138.20	ETS	177.38	ZAE	175.73	ETE	121.75	ZAC	102.31	ETC	277.83	LVI	-20.24

PLANETOCENTRIC CONIC

C3	11.156	VHL	3.340	DLA	-30.42	RAL	342.74	RAD	6638.6	VEL	11.456	PTH	6.51	VHP	4.187	DPA	-14.99	RAP	320.35	ECC	1.1836

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 40 40	2367.52	-.76	60.85	195.89	137.57	18 20 8	1367.5	17.45	44.71
60.00	19 5 35	2141.59	4.64	45.69	201.07	130.08	19 41 17	1141.6	20.15	26.79
70.00	21 2 10	1798.60	11.11	22.69	205.86	122.50	21 32 8	798.6	23.42	1.09
78.29	0 1 19	1250.18	21.23	346.50	211.31	112.32	0 22 10	250.2	28.54	321.33
78.29	0 1 19	1250.18	21.23	346.50	211.31	112.32	0 22 10	250.2	28.54	321.33
78.29	0 1 19	1250.18	21.23	346.50	211.31	112.32	0 22 10	250.2	28.54	321.33
110.00	2 5 32	6133.46	11.11	289.51	205.86	122.50	3 47 46	5133.5	23.42	267.91

DIFFERENTIAL CORRECTIONS

TDE	-.3113	TRA	-.6184	TC3	.1563	BAU	.0609
RDE	-.2190	RRA	.0194	RC3	.3773	FAU	.13187
FDE	.4247	FRA	3.7737	FC3	-10.2335	BSP	2239
BDE	.3806	BRA	.6187	BC3	.4084	FSP	1437

MID-COURSE EXECUTION ACCURACY

SGT	1345.2	SGR	454.0	SG3	879.5
RRT	.2937	RRF	-.3693	RTF	-.7550
SGB	1419.8	R23	-.1276	R13	-.7600
SG1	1352.6	SG2	431.7	THA	6.31

ORBIT DETERMINATION ACCURACY

ST	32.5	SR	18.8	SS	43.0
CRT	.8046	CRS	.2790	CST	.7916
LSA	52.1	MSA	23.1	SSA	1.3
EL1	36.1	EL2	10.0	ALF	27.25

LAUNCH DATE MAY 2 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 420.339 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.458	GAL	-1.19	AZL	92.15	HCA	140.08	SMA	187.70	ECC	.19782	INC	2.1522	V1	29.554
RP	208.41	LAP	-1.38	LOP	1.06	VP	23.802	GAP	9.51	AZP	88.35	TAL	352.80	TAP	132.88	RCA	150.56	APO	224.83	V2	26.294
RC	94.128	GL	-21.56	GP	2.42	ZAL	109.56	ZAP	136.50	ETS	177.39	ZAE	174.94	ETE	134.19	ZAC	102.48	ETC	277.73	LVI	-20.23

PLANETOCENTRIC CONIC

C3	10.996	VHL	3.316	DLA	-30.70	RAL	342.85	RAD	6638.6	VEL	11.449	PTH	6.50	VHP	4.078	DPA	-15.02	RAP	319.87	ECC	1.1810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 42 43	2358.02	-.28	60.45	195.97	137.58	18 22 1	1358.0	17.91	44.27
60.00	19 8 28	2129.88	5.15	45.12	201.18	130.03	19 43 58	1129.9	20.62	26.15
70.00	21 7 3	1780.96	11.76	21.73	206.05	122.30	21 36 44	781.0	23.94	359.97
77.53	23 52 16	1264.84	21.49	347.72	211.30	112.47	24 13 21	264.8	28.83	322.50
77.53	23 52 16	1264.84	21.49	347.72	211.30	112.47	24 13 21	264.8	28.83	322.50
77.53	23 52 16	1264.84	21.49	347.72	211.30	112.47	24 13 21	264.8	28.83	322.50
110.00	2 10 25	6115.81	11.76	288.55	206.05	122.30	3 52 21	5115.8	23.94	288.80

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3068	TRA	-.5884	TC3	.0977	BAU	.0593	SGT	1297.4	SGR	450.0	SG3	929.2	ST	31.9	SR	18.3	SS	44.2
RDE	-.2123	RRA	.0124	RC3	.3913	FAU	.13807	RRT	.3113	RRF	-.4024	RTF	-.7352	CRT	.8195	CRS	.2807	CST	.7769
FDE	.4330	FRA	3.9537	FC-10.8712		BSP	2138	SGB	1373.2	R23	-.1535	R13	-.7418	LSA	52.5	MSA	23.3	SSA	1.3
BDE	.3731	BRA	.5885	BC3	.4034	FSP	1526	SG1	1305.8	SG2	424.9	THA	6.90	EL1	35.6	EL2	9.4	ALF	27.32

LAUNCH DATE MAY 2 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 424.429 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.434	GAL	-1.17	AZL	92.17	HCA	141.33	SMA	187.28	ECC	.19603	INC	2.1668	V1	29.554
RP	208.58	LAP	-1.35	LOP	2.31	VP	23.747	GAP	9.25	AZP	88.31	TAL	352.84	TAP	134.18	RCA	150.57	APO	223.99	V2	26.274
RC	96.027	GL	-21.85	GP	2.55	ZAL	109.51	ZAP	134.75	ETS	177.40	ZAE	173.91	ETE	143.29	ZAC	102.68	ETC	277.63	LVI	-20.21

PLANETOCENTRIC CONIC

C3	10.853	VHL	3.294	DLA	-30.96	RAL	342.98	RAD	6638.5	VEL	11.443	PTH	6.49	VHP	3.974	DPA	-15.05	RAP	319.34	ECC	1.1788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 44 47	2349.05	.17	60.08	196.08	137.58	18 23 56	1349.0	18.34	43.85
60.00	19 11 21	2118.72	5.64	44.59	201.32	129.97	19 46 40	1118.7	21.06	25.53
70.00	21 12 0	1763.67	12.38	20.78	206.28	122.09	21 41 24	763.7	24.43	358.88
76.83	23 47 46	1277.96	21.73	348.81	211.33	112.62	24 9 4	278.0	29.11	323.54
76.83	23 47 46	1277.96	21.73	348.81	211.33	112.62	24 9 4	278.0	29.11	323.54
76.83	23 47 46	1277.96	21.73	348.81	211.33	112.62	24 9 4	278.0	29.11	323.54
110.00	2 15 22	6098.53	12.38	287.60	206.28	122.09	3 57 1	5098.5	24.43	265.70

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3021	TRA	-.5552	TC3	.0296	BAU	.0591	SGT	1242.8	SGR	446.8	SG3	979.5	ST	31.2	SR	17.9	SS	45.3
RDE	-.2057	RRA	.0052	RC3	.4060	FAU	.14442	RRT	.3265	RRF	-.4374	RTF	-.7093	CRT	.8361	CRS	.2832	CST	.7593
FDE	.4397	FRA	4.1348	FC-11.5202		BSP	2008	SGB	1320.7	R23	-.1861	R13	-.7182	LSA	52.9	MSA	23.5	SSA	1.2
BDE	.3655	BRA	.5553	BC3	.4070	FSP	1610	SG1	1252.5	SG2	419.1	THA	7.54	EL1	34.9	EL2	8.8	ALF	27.48

LAUNCH DATE MAY 2 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 428.530 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.412	GAL	-1.16	AZL	92.18	HCA	142.58	SMA	186.90	ECC	.19437	INC	2.1823	V1	29.554
RP	208.76	LAP	-1.33	LOP	3.55	VP	23.694	GAP	8.99	AZP	88.27	TAL	352.88	TAP	135.45	RCA	150.57	APO	223.23	V2	26.254
RC	97.955	GL	-22.13	GP	2.68	ZAL	109.48	ZAP	132.97	ETS	177.41	ZAE	172.71	ETE	149.86	ZAC	102.88	ETC	277.52	LVI	-20.18

PLANETOCENTRIC CONIC

C3	10.727	VHL	3.275	DLA	-31.22	RAL	343.12	RAD	6638.4	VEL	11.438	PTH	6.49	VHP	3.876	DPA	-15.08	RAP	318.76	ECC	1.1765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 53	2340.58	.60	59.73	196.21	137.57	18 25 54	1340.6	18.75	43.46
60.00	19 14 15	2108.10	6.11	44.07	201.49	129.91	19 49 23	1108.1	21.47	24.94
70.00	21 17 3	1746.73	12.99	19.85	206.54	121.87	21 46 9	746.7	24.91	357.79
76.19	23 43 49	1289.90	21.96	349.82	211.39	112.76	24 5 19	289.9	29.38	324.50
76.19	23 43 49	1289.90	21.96	349.82	211.39	112.76	24 5 19	289.9	29.38	324.50
76.19	23 43 49	1289.90	21.96	349.82	211.39	112.76	24 5 19	289.9	29.38	324.50
110.00	2 20 25	6081.58	12.99	286.67	206.54	121.87	4 1 47	5081.6	24.91	264.61

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2974	TRA	-.5210	TC3	-.0472	BAU	.0608	SGT	1186.3	SGR	444.6	SG3	1031.7	ST	30.5	SR	17.4	SS	46.5
RDE	-.1993	RRA	-.0024	RC3	.4213	FAU	.15090	RRT	.3378	RRF	-.4743	RTF	-.6771	CRT	.8540	CRS	.2874	CST	.7399
FDE	.4467	FRA	4.3266	FC-12.1788		BSP	1889	SGB	1266.9	R23	-.2268	R13	-.6893	LSA	53.3	MSA	23.7	SSA	1.2
BDE	.3580	BRA	.5210	BC3	.4239	FSP	1708	SG1	1197.1	SG2	414.7	THA	8.21	EL1	34.2	EL2	8.1	ALF	27.67

LAUNCH DATE MAY 2 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 432.641 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.391	GAL	-1.15	AZL	92.20	HCA	143.82	SMA	186.55	ECC	.19284	INC	2.1985	V1	29.554
RP	208.94	LAP	-1.30	LOP	4.80	VP	23.642	GAP	8.74	AZP	88.23	TAL	352.90	TAP	136.71	RCA	150.57	APO	222.52	V2	26.232
RC	99.910	GL	-22.41	GP	2.82	ZAL	109.47	ZAP	131.14	ETS	177.42	ZAE	171.37	ETE	154.66	ZAC	103.10	ETC	277.41	LVI	-20.15

PLANETOCENTRIC CONIC

C3	10.617	VHL	3.258	DLA	-31.46	RAL	343.29	RAD	6638.4	VEL	11.433	PTH	6.48	VHP	3.783	DPA	-15.12	RAP	318.15	ECC	1.1747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 49 1	2332.61	1.00	59.39	196.38	137.57	18 27 54	1332.6	19.13	43.08
60.00	19 17 11	2098.00	6.55	43.58	201.69	129.86	19 52 9	1098.0	21.86	24.38
70.00	21 22 11	1730.07	13.59	18.93	206.84	121.64	21 51 1	730.1	25.37	356.72
75.60	23 40 19	1300.84	22.18	350.74	211.48	112.91	24 2 0	300.8	29.64	325.39
75.60	23 40 19	1300.84	22.18	350.74	211.48	112.91	24 2 0	300.8	29.64	325.39
75.60	23 40 19	1300.84	22.18	350.74	211.48	112.91	24 2 0	300.8	29.64	325.39
110.00	2 25 33	6064.93	13.59	285.75	206.84	121.64	4 6 38	5064.9	25.37	263.54

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2922	TRA	-.4833	TC3	-.1299	BAU	.0648	SGT	1124.1	SGR	443.7	SG3	1084.6	ST	29.7	SR	17.0	SS	47.7
RDE	-.1929	RRA	-.0104	RC3	.4375	FAU	.15760	RRT	.3438	RRF	-.5130	RTF	-.6366	CRT	.8733	CRS	.2933	CST	.7175
FDE	.4531	FRA	4.5193	FC-12.8519		BSP	1728	SGB	1208.5	R23	-.2766	R13	-.6533	LSA	53.6	MSA	23.8	SSA	1.2
BDE	.3501	BRA	.4834	BC3	.4563	FSP	1797	SG1	1136.0	SG2	412.3	THA	8.91	EL1	33.4	EL2	7.4	ALF	27.98

LAUNCH DATE MAY 2 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 436.762 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.372	GAL	-1.14	AZL	92.22	HCA	145.06	SMA	186.23	ECC	.19144	INC	2.2158	V1	29.554
RP	209.14	LAP	-1.27	LOP	6.04	VP	23.591	GAP	8.50	AZP	88.18	TAL	352.90	TAP	137.96	RCA	150.58	APO	221.88	V2	26.209
RC	101.892	GL	-22.69	GP	2.97	ZAL	109.47	ZAP	129.28	ETS	177.44	ZAE	169.93	ETE	158.23	ZAC	103.33	ETC	277.28	LVI	-20.11

PLANETOCENTRIC CONIC

C3	10.321	VHL	3.244	DLA	-31.70	RAL	343.47	RAD	6638.3	VEL	11.429	PTH	6.48	VHP	3.695	DPA	-15.15	RAP	317.49	ECC	1.1732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 51 11	2325.10	1.37	59.08	198.58	137.56	18 29 56	1325.1	19.48	42.72
60.00	19 20 8	2088.38	6.97	43.12	201.93	129.80	19 54 57	1088.4	22.24	23.83
70.00	21 27 27	1713.61	14.18	18.01	207.17	121.40	21 56 0	713.6	25.81	355.64
75.04	23 37 13	1311.03	22.39	351.61	211.61	113.05	23 59 4	311.0	29.88	326.21
75.04	23 37 13	1311.03	22.39	351.61	211.61	113.05	23 59 4	311.0	29.88	326.21
75.04	23 37 13	1311.03	22.39	351.61	211.61	113.05	23 59 4	311.0	29.88	326.21
110.00	2 30 49	6048.47	14.18	284.84	207.17	121.40	4 11 37	5048.5	25.81	262.47

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2814	TRA	-.4386	TC3	-.2012	BAU	.0701	SGT	1045.7	SGR	444.2	SG3	1138.8	ST	28.4	SR	16.5	SS	48.6
RDE	-.1864	RRA	-.0184	RC3	.4558	FAU	.16518	RRT	.3443	RRF	-.5531	RTF	-.5899	CRT	.8921	CRS	.2918	CST	.6876
FDE	.4412	FRA	4.7036	FC-13.5918		BSP	1493	SGB	1136.1	R23	-.3323	R13	-.6136	LSA	53.5	MSA	23.8	SSA	1.2
BDE	.3375	BRA	.4390	BC3	.4982	FSP	1870	SG1	1058.8	SG2	411.8	THA	9.82	EL1	32.1	EL2	6.6	ALF	28.71

LAUNCH DATE MAY 2 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 440.890 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.355	GAL	-1.13	AZL	92.23	HCA	146.30	SMA	185.93	ECC	.19017	INC	2.2342	V1	29.554
RP	209.34	LAP	-1.24	LOP	7.28	VP	23.541	GAP	8.26	AZP	88.14	TAL	352.89	TAP	139.18	RCA	150.58	APO	221.29	V2	26.186
RC	103.900	GL	-22.97	GP	3.14	ZAL	109.50	ZAP	127.38	ETS	177.45	ZAE	168.40	ETE	160.94	ZAC	103.57	ETC	277.14	LVI	-20.07

PLANETOCENTRIC CONIC

C3	10.441	VHL	3.231	DLA	-31.93	RAL	343.68	RAD	6638.3	VEL	11.425	PTH	6.48	VHP	3.612	DPA	-15.19	RAP	316.79	ECC	1.1718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 53 23	2318.13	1.72	58.79	196.81	137.55	18 32 1	1318.1	19.81	42.39
60.00	19 23 7	2079.36	7.36	42.68	202.20	129.74	19 57 46	1079.4	22.58	23.32
70.00	21 32 47	1697.56	14.74	17.12	207.55	121.16	22 1 5	697.6	26.24	354.59
74.53	23 34 34	1320.38	22.58	352.41	211.79	113.19	23 56 34	320.4	30.11	326.97
74.53	23 34 34	1320.38	22.58	352.41	211.79	113.19	23 56 34	320.4	30.11	326.97
74.53	23 34 34	1320.38	22.58	352.41	211.79	113.19	23 56 34	320.4	30.11	326.97
110.00	2 36 10	6032.41	14.74	283.94	207.55	121.16	4 16 42	5032.4	26.24	261.41

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2883	TRA	-.4076	TC3	-.3412	BAU	.0813	SGT	1017.4	SGR	446.6	SG3	1194.4	ST	28.6	SR	16.1	SS	50.4
RDE	-.1811	RRA	-.0280	RC3	.4717	FAU	.17077	RRT	.3230	RRF	-.5947	RTF	-.5132	CRT	.9168	CRS	.3226	CST	.6879
FDE	.4885	FRA	4.9426	FC-14.1592		BSP	1444	SGB	1111.1	R23	-.4167	R13	-.5433	LSA	55.0	MSA	24.1	SSA	1.1
BDE	.3405	BRA	.4086	BC3	.5822	FSP	1999	SG1	1029.7	SG2	417.6	THA	9.68	EL1	32.3	EL2	5.7	ALF	28.25

LAUNCH DATE MAY 2 1971 FLIGHT TIME 182.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 445.026 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.339	GAL	-1.13	AZL	92.25	HCA	147.53	SMA	185.67	ECC	.18900	INC	2.2537	V1	29.554
RP	209.55	LAP	-1.21	LOP	8.51	VP	23.492	GAP	8.03	AZP	88.10	TAL	352.86	TAP	140.39	RCA	150.58	APO	220.76	V2	26.162
RC	105.933	GL	-23.25	GP	3.31	ZAL	109.54	ZAP	125.44	ETS	177.47	ZAE	166.78	ETE	163.05	ZAC	103.83	ETC	276.99	LVI	-20.03

PLANETOCENTRIC CONIC

C3	10.375	VHL	3.221	DLA	-32.14	RAL	343.91	RAD	6638.2	VEL	11.422	PTH	6.47	VHP	3.534	DPA	-15.22	RAP	316.05	ECC	1.1707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 55 39	2311.55	2.05	58.51	197.07	137.54	18 34 10	1311.5	20.13	42.08
60.00	19 26 8	2070.73	7.74	42.26	202.50	129.68	20 0 39	1070.7	22.91	22.83
70.00	21 38 19	1681.49	15.31	16.21	207.96	120.91	22 6 21	681.5	26.66	353.53
74.04	23 32 14	1329.23	22.76	353.16	212.00	113.33	23 54 23	329.2	30.33	327.70
74.04	23 32 14	1329.23	22.76	353.16	212.00	113.33	23 54 23	329.2	30.33	327.70
74.04	23 32 14	1329.23	22.76	353.16	212.00	113.33	23 54 23	329.2	30.33	327.70
110.00	2 41 41	6016.35	15.31	283.04	207.96	120.91	4 21 58	5016.4	26.66	260.35

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2845	TRA	-.3639	TC3	-.4583	BAU	.0931	SGT	963.2	SGR	450.5	SG3	1246.2	ST	27.8	SR	15.6	SS	51.5
RDE	-.1752	RRA	-.0374	RC3	.4902	FAU	.17738	RRT	.2869	RRF	-.6354	RTF	-.4442	CRT	.9383	CRS	.3364	CST	.6343
FDE	.4979	FRA	5.1489	FC-14.8016		BSP	1274	SGB	1063.4	R23	-.5039	R13	-.4622	LSA	55.5	MSA	24.3	SSA	1.1
BDE	.3341	BRA	.3658	BC3	.6711	FSP	2096	SG1	973.9	SG2	426.9	THA	9.48	EL1	31.5	EL2	4.8	ALF	28.55

LAUNCH DATE MAY 2 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 449.170 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.324	GAL	-1.13	AZL	92.27	HCA	148.77	SMA	185.42	ECC	.18795	INC	2.2745	V1	29.554
RP	209.76	LAP	-1.18	LOP	9.75	VP	23.444	GAP	7.80	AZP	88.05	TAL	352.82	TAP	141.59	RCA	150.57	APO	220.27	V2	26.137
RC	107.990	GL	-23.53	GP	3.49	ZAL	109.60	ZAP	123.48	ETS	177.49	ZAE	165.10	ETE	164.70	ZAC	104.10	ETC	276.84	LVI	-19.98

PLANETOCENTRIC CONIC

C3	10.322	VHL	3.213	DLA	-32.35	RAL	344.16	RAD	6638.2	VEL	11.420	PTH	6.47	VHP	3.461	DPA	-15.25	RAP	315.27	ECC	1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 57 58	2305.38	2.36	58.25	197.37	137.53	18 36 23	1305.4	20.42	41.78
60.00	19 29 13	2062.53	8.09	41.86	202.84	129.62	20 3 35	1062.5	23.23	22.36
70.00	21 44 2	1665.43	15.87	15.30	208.42	120.65	22 11 48	665.4	27.07	352.46
73.59	23 30 11	1337.69	22.93	353.89	212.24	113.48	23 52 28	337.7	30.54	328.39
73.59	23 30 11	1337.69	22.93	353.89	212.24	113.48	23 52 28	337.7	30.54	328.39
73.59	23 30 11	1337.69	22.93	353.89	212.24	113.48	23 52 28	337.7	30.54	328.39
110.00	2 47 25	6000.29	15.87	282.13	208.42	120.65	4 27 25	5000.3	27.07	259.28

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2816	TRA	-.3186	TC3	-.5807	BAU	.1067	SGT	918.6	SGR	457.1	SG3	1303.7	ST	27.1	SR	15.2	SS	52.8
RDE	-.1695	RRA	-.0475	RC3	.5102	FAU	.18425	RRT	.2308	RRF	-.6766	RTF	-.3153	CRT	.9589	CRS	.3556	CST	.5973
FDE	.5131	FRA	5.3639	FC-15.4537		BSP	1103	SGB	1026.0	R23	-.5967	R13	-.3585	LSA	56.1	MSA	24.5	SSA	1.1
BDE	.3287	BRA	.3221	BC3	.7730	FSP	2195	SG1	926.4	SG2	441.0	THA	8.49	EL1	30.8	EL2	3.8	ALF	28.78

LAUNCH DATE MAY 2 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 483.321 EARTH TO MARS

RL 180.76 LAL -.00 LOL 220.96 VL 32.311 GAL -1.14 AZL 92.30 HCA 150.00 SNA 188.20 ECC .18699 INC 2.2969 V1 29.884
RP 209.99 LAP -1.15 LOP 10.96 VP 23.387 GAP 7.57 AZP 88.01 TAL 352.76 TAP 142.76 RCA 150.57 APO 219.84 V2 26.111
RC 110.071 GL -23.81 GP 3.69 ZAL 109.68 ZAP 121.48 ETS 177.82 ZAE 161.38 ETE 166.03 ZAC 104.38 ETC 276.68 LVI -19.83

PLANETOCENTRIC CONIC

C3 10.282 VHL 3.207 DLA -32.86 RAL 344.43 RAD 6638.2 VEL 11.418 PTH 6.47 VHP 3.394 DPA -15.27 RAP 314.45 ECC 1.1892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 0 21	2299.59	2.66	98.01	197.70	137.92	18 38 40	1299.6	20.69	41.50
60.00	19 32 21	2054.71	8.43	41.48	203.21	129.86	20 6 36	1054.7	23.52	21.92
70.00	21 90 1	1649.22	16.43	14.38	208.93	120.37	22 17 30	649.2	27.47	351.37
73.15	23 28 23	1345.86	23.09	354.59	212.53	113.62	23 50 49	345.9	30.74	329.06
73.15	23 28 23	1345.86	23.09	354.59	212.53	113.62	23 90 49	345.9	30.74	329.06
73.15	23 28 23	1345.86	23.09	354.59	212.53	113.62	23 50 49	345.9	30.74	329.06
110.00	2 53 23	5984.07	16.43	281.21	208.93	120.37	4 33 7	4984.1	27.47	258.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2781 TRA -.2697 TC3 -.7145 BAU .1223 SGT 885.2 SGR 465.6 SG3 1356.9 ST 26.3 SR 14.8 SS 54.0
RDE -.1639 RRA -.0581 RC3 .5307 FAU .19087 RRT .1455 RRF -.7160 RTF -.1804 CRT .9769 CRS .3768 CST .5534
FDE .5266 FRA 5.5762 FC-16.0536 BSP 934 SGB 1000.2 R23 -.6865 R13 -.2178 LSA 56.7 MSA 24.6 SSA 1.1
BDE .3228 BRA .2758 BC3 .8900 FSP 2295 SG1 888.8 SG2 458.8 THA 5.98 EL1 30.0 EL2 2.8 ALF 29.03

LAUNCH DATE MAY 2 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 457.478 EARTH TO MARS

RL 180.76 LAL -.00 LOL 220.96 VL 32.299 GAL -1.15 AZL 92.32 HCA 151.23 SNA 185.00 ECC .18613 INC 2.3209 V1 29.884
RP 210.22 LAP -1.12 LOP 12.20 VP 23.351 GAP 7.38 AZP 87.97 TAL 352.69 TAP 143.92 RCA 150.57 APO 219.44 V2 26.085
RC 112.177 GL -24.10 GP 3.90 ZAL 109.77 ZAP 119.45 ETS 177.55 ZAE 161.54 ETE 167.09 ZAC 104.69 ETC 276.51 LVI -19.89

PLANETOCENTRIC CONIC

C3 10.256 VHL 3.202 DLA -32.76 RAL 344.73 RAD 6638.2 VEL 11.417 PTH 6.47 VHP 3.331 DPA -15.29 RAP 313.60 ECC 1.1888

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 2 49	2294.11	2.93	97.78	198.07	137.51	18 41 3	1294.1	20.95	41.24
60.00	19 35 35	2047.19	8.76	41.11	203.62	129.50	20 9 42	1047.2	23.81	21.48
70.00	21 56 19	1632.56	17.00	13.43	209.48	120.08	22 23 31	632.6	27.87	350.24
72.73	23 26 52	1353.75	23.24	355.26	212.86	113.77	23 49 26	353.7	30.94	329.71
72.73	23 26 52	1353.75	23.24	355.26	212.86	113.77	23 49 26	353.7	30.94	329.71
72.73	23 26 52	1353.75	23.24	355.26	212.86	113.77	23 49 26	353.7	30.94	329.71
110.00	2 59 41	5967.42	17.00	280.25	209.48	120.08	4 39 8	4967.4	27.87	257.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2720 TRA -.2152 TC3 -.8368 BAU .1379 SGT 857.3 SGR 477.5 SG3 1410.8 ST 25.3 SR 14.3 SS 54.9
RDE -.1582 RRA -.0691 RC3 .5548 FAU .19020 RRT .0347 RRF -.7545 RTF -.0234 CRT .9904 CRS .3972 CST .4988
FDE .5309 FRA 5.7734 FC-16.7310 BSP 786 SGB 981.4 R23 -.7537 R13 -.0352 LSA 57.1 MSA 24.6 SSA 1.0
BDE .3147 BRA .2260 BC3 1.0056 FSP 2368 SG1 857.6 SG2 477.1 THA 1.60 EL1 29.0 EL2 1.7 ALF 29.42

LAUNCH DATE MAY 2 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 461.638 EARTH TO MARS

RL 180.76 LAL -.00 LOL 220.96 VL 32.288 GAL -1.16 AZL 92.35 HCA 152.45 SNA 184.83 ECC .18537 INC 2.3467 V1 29.884
RP 210.45 LAP -1.09 LOP 13.43 VP 23.306 GAP 7.14 AZP 87.92 TAL 352.60 TAP 145.08 RCA 150.56 APO 219.09 V2 26.058
RC 114.307 GL -24.40 GP 4.12 ZAL 109.89 ZAP 117.40 ETS 177.59 ZAE 159.60 ETE 167.98 ZAC 105.01 ETC 276.33 LVI -19.84

PLANETOCENTRIC CONIC

C3 10.243 VHL 3.200 DLA -32.98 RAL 345.05 RAD 6638.2 VEL 11.417 PTH 6.47 VHP 3.273 DPA -15.29 RAP 312.72 ECC 1.1886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 5 22	2289.00	3.19	97.57	198.47	137.49	18 43 31	1289.0	21.19	40.99
60.00	19 38 54	2040.02	9.07	40.76	204.07	129.44	20 12 54	1040.0	24.07	21.07
70.00	22 2 59	1615.42	17.58	12.44	210.10	119.76	22 29 54	615.4	28.28	349.07
72.32	23 25 33	1361.57	23.38	355.93	213.23	113.92	23 48 14	361.6	31.12	330.36
72.32	23 25 33	1361.57	23.38	355.93	213.23	113.92	23 48 14	361.6	31.12	330.36
72.32	23 25 33	1361.57	23.38	355.93	213.23	113.92	23 48 14	361.6	31.12	330.36
110.00	3 6 21	5950.27	17.58	279.26	210.10	119.76	4 45 32	4950.3	28.28	235.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2742 TRA -.1665 TC3-1.0093 BAU .1591 SGT 885.8 SGR 491.7 SG3 1462.2 ST 25.1 SR 14.0 SS 56.5
RDE -.1534 RRA -.0819 RC3 .5757 FAU .20325 RRT -.0945 RRF -.7899 RTF -.1[illegible]65 CRT .9966 CRS .4348 CST .4508
FDE .5705 FRA 6.0106 FC-17.1784 BSP 708 SGB 1013.1 R23 .7741 R13 -.1687 LSA 58.3 MSA 24.9 SSA 1.0
BDE .3142 BRA .1856 BC3 1.1620 FSP 2484 SG1 887.8 SG2 488.8 THA 178.69 EL1 28.7 EL2 1.0 ALF 29.06

LAUNCH DATE MAY 2 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 465.805 EARTH TO MARS

RL 180.76 LAL -.00 LOL 220.96 VL 32.279 GAL -1.17 AZL 92.37 HCA 153.67 SNA 184.67 ECC .18470 INC 2.3748 V1 29.884
RP 210.70 LAP -1.08 LOP 14.68 VP 23.262 GAP 6.92 AZP 87.87 TAL 352.50 TAP 146.17 RCA 150.56 APO 218.78 V2 26.030
RC 116.460 GL -24.70 GP 4.36 ZAL 110.02 ZAP 115.33 ETS 177.63 ZAE 157.78 ETE 168.67 ZAC 105.35 ETC 276.14 LVI -19.80

PLANETOCENTRIC CONIC

C3 10.243 VHL 3.200 DLA -33.16 RAL 346.40 RAD 6638.2 VEL 11.417 PTH 6.47 VHP 3.220 DPA -15.28 RAP 311.81 ECC 1.1886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 8 2	2284.10	3.43	97.36	198.92	137.48	18 46 6	1284.1	21.42	40.75
60.00	19 42 22	2033.01	9.37	40.41	204.57	129.38	20 16 15	1033.0	24.34	20.66
70.00	22 10 15	1597.05	18.20	11.37	210.78	119.41	22 36 52	597.1	28.70	347.81
71.92	23 24 24	1369.39	23.51	356.60	213.64	114.08	23 47 14	369.4	31.31	331.01
71.92	23 24 24	1369.39	23.51	356.60	213.64	114.08	23 47 14	369.4	31.31	331.01
71.92	23 24 24	1369.39	23.51	356.60	213.64	114.08	23 47 14	369.4	31.31	331.01
110.00	3 13 37	5931.91	18.20	278.20	210.78	119.41	4 52 29	4931.9	28.70	254.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2718 TRA -.1096 TC3-1.1639 BAU .1793 SGT 920.1 SGR 509.3 SG3 1511.8 ST 24.6 SR 13.6 SS 57.6
RDE -.1484 RRA -.0949 RC3 .6003 FAU .20926 RRT -.2334 RRF -.8827 RTF .2981 CRT .9928 CRS .4687 CST .3860
FDE .5949 FRA 6.2193 FC-17.6666 BSP 712 SGB 1051.7 R23 .7429 R13 -.3698 LSA 59.0 MSA 25.1 SSA .9
BDE .3096 BRA .1450 BC3 1.3098 FSP 2573 SG1 930.8 SG2 489.8 THA 180.78 EL1 28.1 EL2 1.4 ALF 28.91

LAUNCH DATE MAY 2 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 12 1971

DISTANCE 469.975 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.76 LAL -.00 LOL 220.96 VL 32.271 GAL -1.18 AZL 92.41 HCA 154.89 SMA 184.53 ECC .18411 INC 2.4053 V1 29.554
RP 210.95 LAP -1.02 LOP 15.87 VP 23.218 GAP 6.72 AZP 87.82 TAL 352.38 TAP 147.28 RCA 150.55 APO 218.50 V2 26.001
RC 116.637 GL -25.01 GP 4.62 ZAL 110.16 ZAP 113.24 ETS 177.68 ZAE 155.83 ETE 169.25 ZAC 105.70 ETC 275.95 LVI -19.77

PLANETOCENTRIC CONIC

C3 10.256 VHL 3.202 DLA -33.36 RAL 345.78 RAD 6638.2 VEL 11.417 PTH 6.47 VHP 3.171 DPA -15.25 RAP 310.87 ECC 1.1688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 10 50	2279.39	3.67	57.17	199.40	137.47	18 48 50	1279.4	21.64	40.52
60.00	19 45 59	2026.12	9.67	40.08	205.10	129.32	20 19 45	1026.1	24.59	20.25
70.00	22 18 19	1576.89	18.87	10.20	211.53	119.01	22 44 36	576.9	29.15	346.41
71.53	23 23 25	1377.31	23.63	357.27	214.10	114.25	23 46 22	377.3	31.49	331.66
71.53	23 23 25	1377.31	23.63	357.27	214.10	114.25	23 46 22	377.3	31.49	331.66
71.53	23 23 25	1377.31	23.63	357.27	214.10	114.25	23 46 22	377.3	31.49	331.66
110.00	3 21 41	5911.75	18.87	277.02	211.53	119.01	5 0 13	4911.8	29.15	253.24

DIFFERENTIAL CORRECTIONS

TDE -.2701 TRA -.0504 TC3-1.3247 BAU .2009
RDE -.1437 RRA -.1089 RC3 .6269 FAU .21523
FDE .6249 FRA 6.4235 FC-18.1687 BSP 825
BDE .3060 BRA .1201 BC3 1.4655 FSP 2663

MID-COURSE EXECUTION ACCURACY

SGT 982.4 SGR 530.8 SG3 1559.9
RRT -.3666 RRF -.8526 RTF .4424
SGB 1116.6 R23 .6816 R13 -.5308
SG1 1007.5 SG2 481.6 THA 165.39

ORBIT DETERMINATION ACCURACY

ST 24.3 SR 13.3 SS 58.8
CRT .9756 CRS .5074 CST .3196
LSA 59.9 MSA 25.2 SSA .9
EL1 27.6 EL2 2.6 ALF 28.48

LAUNCH DATE MAY 2 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 14 1971

DISTANCE 474.149 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.76 LAL -.00 LOL 220.96 VL 32.263 GAL -1.20 AZL 92.44 HCA 156.11 SMA 184.40 ECC .18360 INC 2.4386 V1 29.554
RP 211.20 LAP -.99 LOP 17.09 VP 23.175 GAP 6.51 AZP 87.77 TAL 352.25 TAP 148.36 RCA 150.55 APO 218.26 V2 25.972
RC 120.836 GL -25.34 GP 4.91 ZAL 110.32 ZAP 111.14 ETS 177.74 ZAE 153.85 ETE 169.72 ZAC 106.08 ETC 275.76 LVI -19.75

PLANETOCENTRIC CONIC

C3 10.282 VHL 3.207 DLA -33.56 RAL 346.18 RAD 6638.2 VEL 11.418 PTH 6.47 VHP 3.127 DPA -15.20 RAP 309.91 ECC 1.1692

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 13 48	2274.82	3.90	56.97	199.93	137.45	18 51 43	1274.8	21.85	40.30
60.00	19 49 48	2019.25	9.96	39.74	205.69	129.26	20 23 28	1019.2	24.85	19.85
70.00	22 27 35	1553.73	19.63	8.83	212.39	118.53	22 53 28	553.7	29.64	344.79
71.13	23 22 33	1385.46	23.75	357.96	214.61	114.43	23 45 39	385.5	31.67	332.34
71.13	23 22 33	1385.46	23.75	357.96	214.61	114.43	23 45 39	385.5	31.67	332.34
71.13	23 22 33	1385.46	23.75	357.96	214.61	114.43	23 45 39	385.5	31.67	332.34
110.00	3 30 57	5888.59	19.63	275.65	212.39	118.53	5 9 6	4888.6	29.64	251.62

DIFFERENTIAL CORRECTIONS

TDE -.2682 TRA .0115 TC3-1.4940 BAU .2242
RDE -.1390 RRA -.1241 RC3 .6538 FAU .22030
FDE .6512 FRA 6.6226 FC-18.5479 BSP 1020
BDE .3021 BRA .1246 BC3 1.6308 FSP 2745

MID-COURSE EXECUTION ACCURACY

SGT 1071.6 SGR 555.3 SG3 1603.6
RRT -.4861 RRF -.8786 RTF .5625
SGB 1206.9 R23 .6138 R13 -.6475
SG1 1112.8 SG2 467.3 THA 162.72

ORBIT DETERMINATION ACCURACY

ST 24.0 SR 13.1 SS 59.9
CRT .9415 CRS .5475 CST .2425
LSA 60.7 MSA 25.4 SSA .9
EL1 27.1 EL2 3.9 ALF 27.75

LAUNCH DATE MAY 2 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 16 1971

DISTANCE 478.326 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.76 LAL -.00 LOL 220.96 VL 32.257 GAL -1.22 AZL 92.48 HCA 157.33 SMA 184.30 ECC .18317 INC 2.4753 V1 29.554
RP 211.46 LAP -.95 LOP 18.30 VP 23.132 GAP 6.31 AZP 87.72 TAL 352.10 TAP 149.43 RCA 150.54 APO 218.06 V2 25.942
RC 123.058 GL -25.69 GP 5.21 ZAL 110.49 ZAP 109.03 ETS 177.81 ZAE 151.84 ETE 170.11 ZAC 106.48 ETC 275.56 LVI -19.74

PLANETOCENTRIC CONIC

C3 10.323 VHL 3.213 DLA -33.77 RAL 346.62 RAD 6638.2 VEL 11.420 PTH 6.47 VHP 3.088 DPA -15.12 RAP 308.94 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 16 57	2270.29	4.13	56.78	200.51	137.44	18 54 47	1270.3	22.07	40.07
60.00	19 53 52	2012.25	10.26	39.39	206.34	129.19	20 27 25	1012.3	25.10	19.44
70.00	22 38 52	1525.11	20.55	7.12	213.39	117.90	23 4 17	525.1	30.22	342.76
70.72	23 21 47	1393.92	23.87	358.68	215.17	114.63	23 45 1	393.9	31.86	333.04
70.72	23 21 47	1393.92	23.87	358.68	215.17	114.63	23 45 1	393.9	31.86	333.04
70.72	23 21 47	1393.92	23.87	358.68	215.17	114.63	23 45 1	393.9	31.86	333.04
110.00	3 42 14	5859.97	20.55	273.94	213.39	117.90	5 19 54	4860.0	30.22	249.59

DIFFERENTIAL CORRECTIONS

TDE -.2663 TRA .0738 TC3-1.6655 BAU .2484
RDE -.1346 RRA -.1407 RC3 .6825 FAU .22498
FDE .6806 FRA 6.8227 FC-18.8673 BSP 1270
BDE .2984 BRA .1598 BC3 1.7999 FSP 2826

MID-COURSE EXECUTION ACCURACY

SGT 1182.1 SGR 584.0 SG3 1645.4
RRT -.5859 RRF -.9015 RTF .6265
SGB 1316.5 R23 .5525 R13 -.7298
SG1 1238.7 SG2 451.6 THA 161.28

ORBIT DETERMINATION ACCURACY

ST 23.9 SR 12.8 SS 61.0
CRT .8880 CRS .5909 CST .1603
LSA 61.6 MSA 25.6 SSA .8
EL1 26.6 EL2 5.3 ALF 26.63

LAUNCH DATE MAY 2 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 18 1971

DISTANCE 482.506 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.76 LAL -.00 LOL 220.96 VL 32.251 GAL -1.24 AZL 92.52 HCA 158.54 SMA 184.21 ECC .18281 INC 2.5156 V1 29.554
RP 211.73 LAP -.92 LOP 19.51 VP 23.090 GAP 6.11 AZP 87.66 TAL 351.94 TAP 150.48 RCA 150.53 APO 217.88 V2 25.911
RC 125.302 GL -26.06 GP 5.55 ZAL 110.67 ZAP 106.92 ETS 177.90 ZAE 149.80 ETE 170.42 ZAC 106.90 ETC 275.36 LVI -19.75

PLANETOCENTRIC CONIC

C3 10.379 VHL 3.222 DLA -34.00 RAL 347.09 RAD 6638.2 VEL 11.422 PTH 6.47 VHP 3.054 DPA -15.02 RAP 307.95 ECC 1.1708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 20 19	2265.71	4.35	56.59	201.15	137.42	18 58 5	1265.7	22.28	39.85
60.00	19 58 15	2004.99	10.58	39.03	207.05	129.12	20 31 40	1005.0	25.37	19.01
70.00	22 54 35	1483.74	21.85	4.61	214.65	116.93	23 19 18	483.7	30.99	339.79
70.29	23 21 3	1402.95	23.99	359.44	215.78	114.84	23 44 26	402.9	32.05	333.79
70.29	23 21 3	1402.95	23.99	359.44	215.78	114.84	23 44 26	402.9	32.05	333.79
70.29	23 21 3	1402.95	23.99	359.44	215.78	114.84	23 44 26	402.9	32.05	333.79
110.00	3 57 57	5818.60	21.85	271.43	214.65	116.93	5 34 55	4818.6	30.99	246.61

DIFFERENTIAL CORRECTIONS

TDE -.2650 TRA .1431 TC3-1.8401 BAU .2738
RDE -.1304 RRA -.1586 RC3 .7134 FAU .22937
FDE .7115 FRA 7.0097 FC-19.1334 BSP 1555
BDE .2953 BRA .2136 BC3 1.9735 FSP 2891

MID-COURSE EXECUTION ACCURACY

SGT 1312.2 SGR 617.1 SG3 1683.6
RRT -.6670 RRF -.9211 RTF .7288
SGB 1450.1 R23 .4996 R13 -.7889
SG1 1382.9 SG2 436.3 THA 160.57

ORBIT DETERMINATION ACCURACY

ST 24.1 SR 12.7 SS 62.0
CRT .8135 CRS .6364 CST .0741
LSA 62.6 MSA 25.8 SSA .8
EL1 26.4 EL2 6.7 ALF 24.95

LAUNCH DATE MAY 2 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC DISTANCE 486.688 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.246 GAL -1.27 AZL 92.56 HCA 159.74 SMA 184.13 ECC .18252 INC 2.5605 V1 29.554
RP 212.01 LAP -.89 LOP 20.72 VP 23.048 GAP 5.92 AZP 87.60 TAL 351.77 TAP 151.51 RCA 150.52 APO 217.74 V2 25.880
RC 127.566 GL -26.46 GP 5.91 ZAL 110.87 ZAP 104.80 ETS 177.99 ZAE 147.74 ETE 170.66 ZAC 107.36 ETC 275.15 LVI -19.79

PLANETOCENTRIC CONIC

C3 10.450 VHL 3.233 DLA -34.24 RAL 347.59 RAD 6638.3 VEL 11.426 PTH 6.48 VHP 3.024 DPA -14.87 RAP 306.95 ECC 1.1720

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 23 58	2260.97	4.59	56.39	201.84	137.41	19 1 39	1261.0	22.50	39.61
60.00	20 3 1	1997.25	10.91	38.65	207.82	129.04	20 36 18	997.3	25.65	18.55
69.84	23 20 21	1412.62	24.11	.26	216.46	115.08	23 43 54	412.6	32.26	334.60
69.84	23 20 21	1412.62	24.11	.26	216.46	115.08	23 43 54	412.6	32.26	334.60
69.84	23 20 21	1412.62	24.11	.26	216.46	115.08	23 43 54	412.6	32.26	334.60
69.84	23 20 21	1412.62	24.11	.26	216.46	115.08	23 43 54	412.6	32.26	334.60
69.84	23 20 21	1412.62	24.11	.26	216.46	115.08	23 43 54	412.6	32.26	334.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2635 TRA .2133 TC3-2.0142 BAU .3001 SGT 1457.1 SGR 655.0 SG3 1717.5 ST 24.4 SR 12.6 SS 63.0
RDE -.1266 RRA -.1781 RC3 .7464 FAU .23328 RRT -.7316 RRF -.9377 RTF .7836 CRT .7182 CRS .6840 CST -.0125
FDE .7481 FRA 7.1848 FC-19.3263 BSP 1866 SGB 1597.6 R23 .4552 R13 -.8322 LSA 63.6 MSA 26.1 SSA .7
BDE .2923 BRA .2779 BC3 2.1481 FSP 2962 SG1 1540.8 SG2 422.3 THA 160.25 EL1 26.2 EL2 8.2 ALF 22.68

LAUNCH DATE MAY 2 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 490.872 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.243 GAL -1.30 AZL 92.61 HCA 160.95 SMA 184.07 ECC .18230 INC 2.6104 V1 29.554
RP 212.29 LAP -.85 LOP 21.93 VP 23.007 GAP 5.73 AZP 87.53 TAL 351.58 TAP 152.53 RCA 150.51 APO 217.62 V2 25.848
RC 129.850 GL -26.89 GP 6.32 ZAL 111.06 ZAP 102.69 ETS 178.10 ZAE 145.67 ETE 170.84 ZAC 107.85 ETC 274.95 LVI -19.85

PLANETOCENTRIC CONIC

C3 10.538 VHL 3.246 DLA -34.50 RAL 348.13 RAD 6638.3 VEL 11.429 PTH 6.48 VHP 2.998 DPA -14.69 RAP 305.95 ECC 1.1734

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 27 56	2255.94	4.84	56.18	202.61	137.39	19 5 32	1255.9	22.73	39.36
60.00	20 8 16	1988.81	11.27	38.23	208.69	128.95	20 41 25	988.8	25.96	18.04
69.36	23 19 39	1423.04	24.23	1.14	217.21	115.35	23 43 22	423.0	32.48	335.47
69.36	23 19 39	1423.04	24.23	1.14	217.21	115.35	23 43 22	423.0	32.48	335.47
69.36	23 19 39	1423.04	24.23	1.14	217.21	115.35	23 43 22	423.0	32.48	335.47
69.36	23 19 39	1423.04	24.23	1.14	217.21	115.35	23 43 22	423.0	32.48	335.47
69.36	23 19 39	1423.04	24.23	1.14	217.21	115.35	23 43 22	423.0	32.48	335.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2630 TRA .2858 TC3-2.1911 BAU .3278 SGT 1616.8 SGR 697.8 SG3 1746.1 ST 25.0 SR 12.6 SS 63.8
RDE -.1229 RRA -.1992 RC3 .7821 FAU .23681 RRT -.7826 RRF -.9514 RTF .8249 CRT .6054 CRS .7301 CST -.0989
FDE .7789 FRA 7.3381 FC-19.4543 BSP 2188 SGB 1760.9 R23 .4185 R13 -.8641 LSA 64.5 MSA 26.4 SSA .7
BDE .2903 BRA .3484 BC3 2.3266 FSP 3012 SG1 1712.5 SG2 410.1 THA 160.15 EL1 26.4 EL2 9.5 ALF 19.63

LAUNCH DATE MAY 2 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 495.058 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.240 GAL -1.33 AZL 92.67 HCA 162.15 SMA 184.02 ECC .18215 INC 2.6668 V1 29.554
RP 212.57 LAP -.82 LOP 23.13 VP 22.966 GAP 5.54 AZP 87.46 TAL 351.38 TAP 153.53 RCA 150.50 APO 217.54 V2 25.815
RC 132.153 GL -27.37 GP 6.77 ZAL 111.27 ZAP 100.59 ETS 178.23 ZAE 143.58 ETE 170.96 ZAC 108.38 ETC 274.74 LVI -19.96

PLANETOCENTRIC CONIC

C3 10.646 VHL 3.263 DLA -34.80 RAL 348.72 RAD 6638.4 VEL 11.434 PTH 6.49 VHP 2.977 DPA -14.45 RAP 304.95 ECC 1.1782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 32 19	2250.44	5.12	55.95	203.45	137.37	19 9 50	1250.4	22.99	39.09
60.00	20 14 8	1979.32	11.68	37.75	209.64	128.85	20 47 7	979.3	26.30	17.47
68.82	23 18 52	1434.54	24.37	2.11	218.03	115.65	23 42 47	434.5	32.72	336.44
68.82	23 18 52	1434.54	24.37	2.11	218.03	115.65	23 42 47	434.5	32.72	336.44
68.82	23 18 52	1434.54	24.37	2.11	218.03	115.65	23 42 47	434.5	32.72	336.44
68.82	23 18 52	1434.54	24.37	2.11	218.03	115.65	23 42 47	434.5	32.72	336.44
68.82	23 18 52	1434.54	24.37	2.11	218.03	115.65	23 42 47	434.5	32.72	336.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2621 TRA .3615 TC3-2.3637 BAU .3561 SGT 1785.6 SGR 746.5 SG3 1770.7 ST 25.9 SR 12.7 SS 64.6
RDE -.1196 RRA -.2227 RC3 .8201 FAU .23959 RRT -.8229 RRF -.9627 RTF .8562 CRT .6767 CRS .7756 CST -.1028
FDE .8120 FRA 7.4865 FC-19.4841 BSP 2533 SGB 1935.4 R23 .3877 R13 -.8883 LSA 65.5 MSA 26.7 SSA .6
BDE .2881 BRA .4246 BC3 2.5019 FSP 3062 SG1 1893.6 SG2 399.9 THA 160.09 EL1 26.7 EL2 10.8 ALF 15.87

LAUNCH DATE MAY 2 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 499.244 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.237 GAL -1.36 AZL 92.73 HCA 163.35 SMA 183.98 ECC .18205 INC 2.7312 V1 29.554
RP 212.86 LAP -.78 LOP 24.32 VP 22.926 GAP 5.36 AZP 87.38 TAL 351.16 TAP 154.51 RCA 150.49 APO 217.47 V2 25.782
RC 134.475 GL -27.90 GP 7.27 ZAL 111.47 ZAP 98.51 ETS 178.38 ZAE 141.49 ETE 171.03 ZAC 108.96 ETC 274.54 LVI -20.12

PLANETOCENTRIC CONIC

C3 10.774 VHL 3.282 DLA -35.13 RAL 349.36 RAD 6638.4 VEL 11.440 PTH 6.49 VHP 2.960 DPA -14.15 RAP 303.94 ECC 1.1773

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 37 13	2244.26	5.43	55.69	204.39	137.34	19 14 37	1244.3	23.28	38.78
60.00	20 20 48	1968.38	12.14	37.21	210.72	128.73	20 53 37	968.4	26.69	16.81
68.23	23 17 59	1447.29	24.51	3.19	218.95	116.00	23 42 7	447.3	32.99	337.52
68.23	23 17 59	1447.29	24.51	3.19	218.95	116.00	23 42 7	447.3	32.99	337.52
68.23	23 17 59	1447.29	24.51	3.19	218.95	116.00	23 42 7	447.3	32.99	337.52
68.23	23 17 59	1447.29	24.51	3.19	218.95	116.00	23 42 7	447.3	32.99	337.52
68.23	23 17 59	1447.29	24.51	3.19	218.95	116.00	23 42 7	447.3	32.99	337.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2612 TRA .4405 TC3-2.5305 BAU .3849 SGT 1962.6 SGR 801.6 SG3 1789.7 ST 26.9 SR 13.0 SS 65.5
RDE -.1171 RRA -.2492 RC3 .8588 FAU .24096 RRT -.8540 RRF -.9718 RTF .8793 CRT .3384 CRS .8203 CST -.2586
FDE .8591 FRA 7.6312 FC-19.3615 BSP 2899 SGB 2120.0 R23 .3634 R13 -.9063 LSA 66.8 MSA 27.0 SSA .6
BDE .2863 BRA .5062 BC3 2.6723 FSP 3109 SG1 2083.3 SG2 393.0 THA 160.03 EL1 27.4 EL2 12.0 ALF 11.54

LAUNCH DATE MAY 2 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 503.432 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.236 GAL -1.39 AZL 92.80 HCA 164.54 SMA 183.95 ECC .18202 INC 2.8046 V1 29.554
RP 213.16 LAP -.75 LOP 25.52 VP 22.886 GAP 5.17 AZP 87.30 TAL 350.93 TAP 153.48 RCA 150.47 APO 217.44 V2 25.749
RC 136.814 GL -28.49 GP 7.85 ZAL 111.68 ZAP 96.45 ETS 178.55 ZAE 139.39 ETE 171.05 ZAC 109.80 ETC 274.34 LVI -20.35

PLANETOCENTRIC CONIC

C3 10.929 VHL 3.306 DLA -35.52 RAL 350.05 RAD 6638.5 VEL 11.446 PTH 6.50 VHP 2.947 DPA -13.77 RAP 302.94 ECC 1.1799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 42 45	2237.11	5.79	55.39	205.45	137.31	19 20 2	1237.1	25.61	38.42
60.00	20 28 31	1955.37	12.70	36.55	211.95	128.58	21 1 6	955.4	27.15	16.01
67.56	23 16 57	1461.60	24.67	4.41	219.97	116.40	23 41 19	461.6	33.30	338.73
67.56	23 16 57	1461.60	24.67	4.41	219.97	116.40	23 41 19	461.6	33.30	338.73
67.56	23 16 57	1461.60	24.67	4.41	219.97	116.40	23 41 19	461.6	33.30	338.73
67.56	23 16 57	1461.60	24.67	4.41	219.97	116.40	23 41 19	461.6	33.30	338.73
67.56	23 16 57	1461.60	24.67	4.41	219.97	116.40	23 41 19	461.6	33.30	338.73

DIFFERENTIAL CORRECTIONS

TDE -.2618 TRA .5213 TC3-2.6935 BAU .4152
RDE -.1143 RRA -.2784 RC3 .9050 FAU .24305
FDE .8831 FRA 7.7438 FC-19.2534 BSP 3261
BDE .2858 BRA .5910 BC3 2.8414 FSP 3129

MID-COURSE EXECUTION ACCURACY

SGT 2146.9 SGR 865.3 SG3 1804.7
RRT -.8794 RRF -.9791 RTF .8982
SGB 2314.7 R23 .3409 R13 -.9211
SG1 2282.0 SG2 387.5 THA 159.88

ORBIT DETERMINATION ACCURACY

ST 28.3 SR 13.3 SS 66.1
CRT .1971 CRS .8587 CST -.3316
LSA 67.8 NSA 27.4 SSA .5
EL1 28.4 EL2 13.0 ALF 6.73

LAUNCH DATE MAY 2 1971 FLIGHT TIME 212.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 507.619 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.235 GAL -1.43 AZL 92.89 HCA 165.73 SMA 183.94 ECC .18204 INC 2.8901 V1 29.554
RP 213.46 LAP -.71 LOP 26.71 VP 22.846 GAP 4.99 AZP 87.20 TAL 350.69 TAP 156.43 RCA 150.46 APO 217.42 V2 25.714
RC 139.171 GL -29.17 GP 8.50 ZAL 111.87 ZAP 94.41 ETS 178.76 ZAE 137.29 ETE 171.00 ZAC 110.33 ETC 274.15 LVI -20.65

PLANETOCENTRIC CONIC

C3 11.113 VHL 3.334 DLA -35.97 RAL 350.81 RAD 6638.6 VEL 11.454 PTH 6.50 VHP 2.940 DPA -13.30 RAP 301.95 ECC 1.1829

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 49 6	2228.65	6.21	55.03	206.64	137.27	19 26 14	1228.7	23.99	37.99
60.00	20 37 38	1939.48	13.37	35.75	213.36	128.38	21 9 57	939.5	27.70	15.03
66.79	23 15 45	1477.74	24.86	5.80	221.12	116.88	23 40 22	477.7	33.66	340.12
66.79	23 15 45	1477.74	24.86	5.80	221.12	116.88	23 40 22	477.7	33.66	340.12
66.79	23 15 45	1477.74	24.86	5.80	221.12	116.88	23 40 22	477.7	33.66	340.12
66.79	23 15 45	1477.74	24.86	5.80	221.12	116.88	23 40 22	477.7	33.66	340.12
66.79	23 15 45	1477.74	24.86	5.80	221.12	116.88	23 40 22	477.7	33.66	340.12

DIFFERENTIAL CORRECTIONS

TDE -.2621 TRA .6062 TC3-2.8446 BAU .4457
RDE -.1131 RRA -.3117 RC3 .9518 FAU .24329
FDE .9312 FRA 7.8450 FC-18.9528 BSP 3650
BDE .2855 BRA .6816 BC3 2.9996 FSP 3152

MID-COURSE EXECUTION ACCURACY

SGT 2336.0 SGR 937.3 SG3 1811.9
RRT -.8988 RRF -.9848 RTF .9122
SGB 2517.0 R23 .3230 R13 -.9323
SG1 2487.3 SG2 386.0 THA 159.66

ORBIT DETERMINATION ACCURACY

ST 29.8 SR 13.9 SS 66.8
CRT .0591 CRS .8944 CST -.3923
LSA 69.1 NSA 27.8 SSA .5
EL1 29.8 EL2 13.9 ALF 2.02

LAUNCH DATE MAY 2 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 511.807 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.235 GAL -1.47 AZL 92.99 HCA 166.92 SMA 183.94 ECC .18211 INC 2.9900 V1 29.554
RP 213.77 LAP -.68 LOP 27.90 VP 22.807 GAP 4.82 AZP 87.09 TAL 350.44 TAP 157.37 RCA 150.44 APO 217.43 V2 25.680
RC 141.545 GL -29.96 GP 9.26 ZAL 112.04 ZAP 92.40 ETS 179.00 ZAE 135.20 ETE 170.90 ZAC 111.15 ETC 273.96 LVI -21.05

PLANETOCENTRIC CONIC

C3 11.335 VHL 3.367 DLA -36.50 RAL 351.65 RAD 6638.7 VEL 11.464 PTH 6.51 VHP 2.937 DPA -12.72 RAP 300.96 ECC 1.1865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 56 30	2218.39	6.72	54.60	208.02	137.21	19 33 28	1218.4	24.46	37.46
60.00	20 48 42	1919.39	14.22	34.73	215.03	128.12	21 20 41	919.4	28.39	13.77
65.89	23 14 15	1496.24	25.07	7.41	222.43	117.45	23 39 12	496.2	34.09	341.73
65.89	23 14 15	1496.24	25.07	7.41	222.43	117.45	23 39 12	496.2	34.09	341.73
65.89	23 14 15	1496.24	25.07	7.41	222.43	117.45	23 39 12	496.2	34.09	341.73
65.89	23 14 15	1496.24	25.07	7.41	222.43	117.45	23 39 12	496.2	34.09	341.73
65.89	23 14 15	1496.24	25.07	7.41	222.43	117.45	23 39 12	496.2	34.09	341.73

DIFFERENTIAL CORRECTIONS

TDE -.2646 TRA .6927 TC3-2.9876 BAU .4777
RDE -.1118 RRA -.3494 RC3 1.0070 FAU .24383
FDE .9597 FRA 7.9162 FC-18.6238 BSP 4030
BDE .2872 BRA .7758 BC3 3.1527 FSP 3148

MID-COURSE EXECUTION ACCURACY

SGT 2529.8 SGR 1021.4 SG3 1814.0
RRT -.9146 RRF -.9892 RTF .9238
SGB 2728.2 R23 .3062 R13 -.9418
SG1 2700.7 SG2 387.0 THA 159.29

ORBIT DETERMINATION ACCURACY

ST 31.6 SR 14.7 SS 67.2
CRT -.0712 CRS .9235 CST -.4473
LSA 70.2 NSA 28.4 SSA .4
EL1 31.6 EL2 14.6 ALF 177.60

LAUNCH DATE MAY 2 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 515.994 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.235 GAL -1.51 AZL 93.11 HCA 168.11 SMA 183.94 ECC .18224 INC 3.1094 V1 29.554
RP 214.08 LAP -.64 LOP 29.08 VP 22.768 GAP 4.64 AZP 86.96 TAL 350.18 TAP 158.29 RCA 150.42 APO 217.46 V2 25.645
RC 143.936 GL -30.88 GP 10.15 ZAL 112.19 ZAP 90.43 ETS 179.29 ZAE 133.10 ETE 170.71 ZAC 112.10 ETC 273.79 LVI -21.59

PLANETOCENTRIC CONIC

C3 11.604 VHL 3.406 DLA -37.15 RAL 352.60 RAD 6638.9 VEL 11.475 PTH 6.52 VHP 2.939 DPA -12.00 RAP 299.98 ECC 1.1910

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 5 19	2205.64	7.36	54.05	209.64	137.14	19 42 5	1205.6	25.05	36.81
60.00	21 2 35	1893.01	15.32	33.37	217.05	127.74	21 34 8	893.0	29.27	12.10
64.84	23 12 30	1517.48	25.32	9.27	223.94	118.14	23 37 47	517.5	34.59	343.60
64.84	23 12 30	1517.48	25.32	9.27	223.94	118.14	23 37 47	517.5	34.59	343.60
64.84	23 12 30	1517.48	25.32	9.27	223.94	118.14	23 37 47	517.5	34.59	343.60
64.84	23 12 30	1517.48	25.32	9.27	223.94	118.14	23 37 47	517.5	34.59	343.60
64.84	23 12 30	1517.48	25.32	9.27	223.94	118.14	23 37 47	517.5	34.59	343.60

DIFFERENTIAL CORRECTIONS

TDE -.2687 TRA .7823 TC3-3.1156 BAU .5108
RDE -.1118 RRA -.3935 RC3 1.0656 FAU .24283
FDE .9961 FRA 7.9674 FC-18.1166 BSP 4423
BDE .2910 BRA .8757 BC3 3.2928 FSP 3142

MID-COURSE EXECUTION ACCURACY

SGT 2726.7 SGR 1118.8 SG3 1807.8
RRT -.9265 RRF -.9925 RTF .9324
SGB 2947.3 R23 .2928 R13 -.9490
SG1 2921.0 SG2 392.9 THA 158.78

ORBIT DETERMINATION ACCURACY

ST 33.7 SR 15.6 SS 67.6
CRT -.1885 CRS .9475 CST -.4917
LSA 71.5 NSA 29.1 SSA .4
EL1 33.8 EL2 15.3 ALF 173.70

LAUNCH DATE MAY 2 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 520.181 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.236 GAL -1.55 AZL 93.25 HCA 169.29 SMA 183.96 ECC .18242 INC 3.2545 V1 29.554
RP 214.39 LAP -.60 LOP 30.26 VP 22.729 GAP 4.47 AZP 86.80 TAL 349.90 TAP 159.19 RCA 150.40 APO 217.51 V2 25.609
RC 146.344 GL -31.98 GP 11.22 ZAL 112.30 ZAP 88.50 ETS 179.64 ZAE 131.00 ETE 170.44 ZAC 113.23 ETC 273.62 LVI -22.29

PLANETOCENTRIC CONIC

C3 11.937 VHL 3.455 DLA -37.94 RAL 353.69 RAD 6639.0 VEL 11.490 PTH 6.54 VHP 2.947 DPA -11.10 RAP 299.01 ECC 1.1964

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 16 6	2189.43	8.17	53.36	211.58	137.04	19 52 36	1189.4	25.78	35.96
60.00	21 20 58	1856.30	16.84	31.46	219.59	127.17	21 51 54	856.3	30.46	9.72
63.58	23 10 25	1542.08	25.62	11.46	225.71	119.00	23 36 7	542.1	35.21	345.81
63.58	23 10 25	1542.08	25.62	11.46	225.71	119.00	23 36 7	542.1	35.21	345.81
63.58	23 10 25	1542.08	25.62	11.46	225.71	119.00	23 36 7	542.1	35.21	345.81
63.58	23 10 25	1542.08	25.62	11.46	225.71	119.00	23 36 7	542.1	35.21	345.81
63.58	23 10 25	1542.08	25.62	11.46	225.71	119.00	23 36 7	542.1	35.21	345.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2732 TRA .8770 TC3-3.2191 BAU .5446 SGT 2924.7 SGR 1235.5 SG3 1795.2 ST 35.9 SR 17.0 SS 68.0
RDE -.1133 RRA -.4458 RC3 1.1326 FAU .24128 RRT -.9366 RRF -.9950 RTF .9399 CRT -.2956 CRS .9662 CST -.5313
FDE 1.0338 FRA 7.9943 FC-17.4994 BSP 4845 SGB 3175.0 R23 .2784 R13 -.9555 LSA 72.9 MSA 29.8 SSA .3
BDE .2958 BRA .9838 BC3 3.4125 FSP 3126 SG1 3149.4 SG2 402.1 THA 158.04 EL1 36.3 EL2 16.0 ALF 170.12

LAUNCH DATE MAY 2 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 524.366 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.237 GAL -1.60 AZL 93.43 HCA 170.46 SMA 183.98 ECC .18264 INC 3.4342 V1 29.554
RP 214.72 LAP -.57 LOP 31.44 VP 22.690 GAP 4.30 AZP 86.61 TAL 349.62 TAP 160.08 RCA 150.38 APO 217.59 V2 25.573
RC 148.770 GL -33.31 GP 12.53 ZAL 112.35 ZAP 86.63 ETS 180.06 ZAE 128.90 ETE 170.05 ZAC 114.59 ETC 273.47 LVI -23.22

PLANETOCENTRIC CONIC

C3 12.358 VHL 3.515 DLA -38.93 RAL 354.96 RAD 6639.2 VEL 11.508 PTH 6.56 VHP 2.962 DPA -9.94 RAP 298.03 ECC 1.2034

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 29 40	2168.25	9.22	52.46	213.99	136.89	20 5 49	1168.2	26.73	34.84
60.00	21 47 38	1799.64	19.14	28.45	223.02	126.17	22 17 37	799.6	32.20	5.92
62.06	23 8 1	1570.95	25.97	14.07	227.84	120.08	23 34 12	570.9	35.97	348.46
62.06	23 8 1	1570.95	25.97	14.07	227.84	120.08	23 34 12	570.9	35.97	348.46
62.06	23 8 1	1570.95	25.97	14.07	227.84	120.08	23 34 12	570.9	35.97	348.46
62.06	23 8 1	1570.95	25.97	14.07	227.84	120.08	23 34 12	570.9	35.97	348.46
62.06	23 8 1	1570.95	25.97	14.07	227.84	120.08	23 34 12	570.9	35.97	348.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2818 TRA .9736 TC3-3.3018 BAU .5809 SGT 3124.1 SGR 1375.2 SG3 1771.5 ST 38.4 SR 18.6 SS 68.1
RDE -.1170 RRA -.5081 RC3 1.2083 FAU .23869 RRT -.9440 RRF -.9968 RTF .9455 CRT -.3828 CRS .9798 CST -.5594
FDE 1.0749 FRA 7.9743 FC-16.7217 BSP 5258 SGB 3413.4 R23 .2662 R13 -.9607 LSA 74.3 MSA 30.7 SSA .3
BDE .3051 BRA 1.0982 BC3 3.5160 FSP 3083 SG1 3387.7 SG2 418.4 THA 157.07 EL1 39.2 EL2 16.9 ALF 167.04

LAUNCH DATE MAY 2 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 528.550 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.240 GAL -1.65 AZL 93.66 HCA 171.64 SMA 184.02 ECC .18291 INC 3.6638 V1 29.554
RP 215.04 LAP -.53 LOP 32.61 VP 22.652 GAP 4.13 AZP 86.37 TAL 349.32 TAP 160.96 RCA 150.36 APO 217.67 V2 25.536
RC 151.211 GL -34.98 GP 14.16 ZAL 112.30 ZAP 84.82 ETS 180.60 ZAE 126.77 ETE 169.52 ZAC 116.27 ETC 273.33 LVI -24.46

PLANETOCENTRIC CONIC

C3 12.908 VHL 3.593 DLA -40.18 RAL 356.48 RAD 6639.5 VEL 11.532 PTH 6.58 VHP 2.987 DPA -8.46 RAP 297.05 ECC 1.2124

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 47 28	2139.60	10.64	51.22	217.09	136.65	20 23 7	1139.6	28.00	33.29
60.00	22 43 10	1667.49	24.27	21.04	228.98	123.22	23 10 57	667.5	35.70	356.48
60.18	23 5 22	1605.07	26.39	17.22	230.47	121.46	23 32 7	605.1	36.90	351.68
60.18	23 5 22	1605.07	26.39	17.22	230.47	121.46	23 32 7	605.1	36.90	351.68
60.18	23 5 22	1605.07	26.39	17.22	230.47	121.46	23 32 7	605.1	36.90	351.68
60.18	23 5 22	1605.07	26.39	17.22	230.47	121.46	23 32 7	605.1	36.90	351.68
60.18	23 5 22	1605.07	26.39	17.22	230.47	121.46	23 32 7	605.1	36.90	351.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2893 TRA 1.0793 TC3-3.3378 BAU .6175 SGT 3322.6 SGR 1549.1 SG3 1737.6 ST 41.1 SR 21.0 SS 68.4
RDE -.1254 RRA -.5869 RC3 1.2899 FAU .23399 RRT -.9501 RRF -.9980 RTF .9502 CRT -.4589 CRS .9893 CST -.5835
FDE 1.1416 FRA 7.9306 FC-15.6929 BSP 5740 SGB 3666.0 R23 .2530 R13 -.9654 LSA 76.1 MSA 31.7 SSA .2
BDE .3153 BRA 1.2286 BC3 3.5783 FSP 3035 SG1 3639.3 SG2 441.1 THA 155.73 EL1 42.4 EL2 18.0 ALF 163.82

LAUNCH DATE MAY 2 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 532.733 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.242 GAL -1.69 AZL 93.97 HCA 172.81 SMA 184.06 ECC .18323 INC 3.9660 V1 29.554
RP 215.37 LAP -.50 LOP 33.78 VP 22.614 GAP 3.96 AZP 86.06 TAL 349.02 TAP 161.83 RCA 150.33 APO 217.78 V2 25.499
RC 153.669 GL -37.09 GP 16.27 ZAL 112.11 ZAP 83.11 ETS 181.28 ZAE 124.60 ETE 168.79 ZAC 118.41 ETC 273.22 LVI -26.14

PLANETOCENTRIC CONIC

C3 13.664 VHL 3.696 DLA -41.80 RAL 358.39 RAD 6639.9 VEL 11.564 PTH 6.61 VHP 3.026 DPA -6.49 RAP 296.05 ECC 1.2249

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 12 9	2098.82	12.66	49.44	221.33	136.26	20 47 8	1098.8	29.77	31.02
57.84	23 2 40	1646.02	26.88	21.08	233.83	123.30	23 30 6	646.0	38.08	355.68
57.84	23 2 40	1646.02	26.88	21.08	233.83	123.30	23 30 6	646.0	38.08	355.68
57.84	23 2 40	1646.02	26.88	21.08	233.83	123.30	23 30 6	646.0	38.08	355.68
57.84	23 2 40	1646.02	26.88	21.08	233.83	123.30	23 30 6	646.0	38.08	355.68
57.84	23 2 40	1646.02	26.88	21.08	233.83	123.30	23 30 6	646.0	38.08	355.68
57.84	23 2 40	1646.02	26.88	21.08	233.83	123.30	23 30 6	646.0	38.08	355.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3032 TRA 1.1875 TC3-3.3353 BAU .6597 SGT 3520.9 SGR 1768.1 SG3 1685.7 ST 44.0 SR 24.0 SS 68.3
RDE -.1392 RRA -.6854 RC3 1.3854 FAU .22823 RRT -.9545 RRF -.9989 RTF .9536 CRT -.5149 CRS .9951 CST -.5968
FDE 1.2112 FRA 7.7981 FC-14.4605 BSP 6216 SGB 3939.9 R23 .2404 R13 -.9695 LSA 78.0 MSA 33.1 SSA .2
BDE .3336 BRA 1.3711 BC3 3.6116 FSP 2950 SG1 3911.2 SG2 474.4 THA 153.98 EL1 46.1 EL2 19.6 ALF 160.69

LAUNCH DATE MAY 2 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 14 1971

HELIOCENTRIC CONIC DISTANCE 536.913 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.245	GAL	-1.75	AZL	94.38	HCA	173.97	SMA	184.11	ECC	.18358	INC	4.3843	V1	29.854
RP	215.71	LAP	-.46	LOP	34.85	VP	22.576	GAP	3.78	AZP	85.64	TAL	348.70	TAP	162.68	RCA	150.31	APO	217.91	V2	25.461
RC	156.143	GL	-39.88	GP	19.08	ZAL	111.69	ZAP	81.53	ETS	182.18	ZAE	122.33	ETE	167.77	ZAC	121.26	ETC	273.16	LVI	-28.47

PLANETOCENTRIC CONIC

C3	14.768	VHL	3.843	DLA	-43.94	RAL	.90	RAD	6640.4	VEL	11.611	PTH	6.65	VHP	3.088	DPA	-3.82	RAP	295.00	ECC	1.2430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 49 54	2034.79	15.79	46.58	227.66	135.49	21 23 49	1034.8	32.45	27.27
54.85	23 0 28	1696.17	27.40	25.94	238.34	125.80	23 28 44	696.2	39.54	.80
54.85	23 0 28	1696.17	27.40	25.94	238.34	125.80	23 28 44	696.2	39.54	.80
54.85	23 0 28	1696.17	27.40	25.94	238.34	125.80	23 28 44	696.2	39.54	.80
54.85	23 0 28	1696.17	27.40	25.94	238.34	125.80	23 28 44	696.2	39.54	.80
54.85	23 0 28	1696.17	27.40	25.94	238.34	125.80	23 28 44	696.2	39.54	.80
54.85	23 0 28	1696.17	27.40	25.94	238.34	125.80	23 28 44	696.2	39.54	.80

DIFFERENTIAL CORRECTIONS

TDE	-.3123	TRA	1.3113	TC3	-3.2460	BAU	.7047												
RDE	-.1668	RRA	-.8171	RC3	1.4842	FAU	.21890												
FDE	1.3261	FRA	7.5740	FC	-12.8329	BSP	6807												
BDE	.3541	BRA	1.5451	BC3	3.5692	FSP	2823												

MID-COURSE EXECUTION ACCURACY

SGT	3716.7	SGR	2055.7	SG3	1609.8						
RRT	-.9586	RRF	-.9994	RTF	.9570						
SGB	4247.4	R23	.2243	R13	-.9739						
SG1	4215.9	SG2	515.8	THA	151.60						

ORBIT DETERMINATION ACCURACY

ST	47.1	SR	28.3	SS	68.2						
CRT	-.5634	CRS	.9983	CST	-.6098						
LSA	80.5	MSA	34.5	SSA	.2						
EL1	50.4	EL2	21.8	ALF	156.64						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 541.094 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.248	GAL	-1.80	AZL	95.00	HCA	175.14	SMA	184.16	ECC	.18398	INC	4.9991	V1	29.554
RP	216.04	LAP	-.42	LOP	36.11	VP	22.538	GAP	3.63	AZP	85.02	TAL	348.38	TAP	163.52	RCA	150.28	APO	218.05	V2	25.424
RC	158.631	GL	-43.68	GP	23.00	ZAL	110.88	ZAP	80.17	ETS	183.41	ZAE	119.86	ETE	166.33	ZAC	125.21	ETC	273.16	LVI	-31.82

PLANETOCENTRIC CONIC

C3	16.539	VHL	4.067	DLA	-46.86	RAL	4.47	RAD	6641.3	VEL	11.687	PTH	6.72	VHP	3.194	DPA	-.03	RAP	293.85	ECC	1.2722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	22 6 4	1894.92	22.45	39.95	239.55	133.12	22 37 39	894.9	37.81	18.22
50.93	23 0 5	1759.53	27.85	32.20	244.78	129.35	23 29 25	759.5	41.32	7.66
50.93	23 0 5	1759.53	27.85	32.20	244.78	129.35	23 29 25	759.5	41.32	7.66
50.93	23 0 5	1759.53	27.85	32.20	244.78	129.35	23 29 25	759.5	41.32	7.66
50.93	23 0 5	1759.53	27.85	32.20	244.78	129.35	23 29 25	759.5	41.32	7.66
50.93	23 0 5	1759.53	27.85	32.20	244.78	129.35	23 29 25	759.5	41.32	7.66
50.93	23 0 5	1759.53	27.85	32.20	244.78	129.35	23 29 25	759.5	41.32	7.66

DIFFERENTIAL CORRECTIONS

TDE	-.3198	TRA	1.4417	TC3	-3.0675	BAU	.7657												
RDE	-.2162	RRA	-.9869	RC3	1.6073	FAU	.20870												
FDE	1.4594	FRA	7.0768	FC	-10.9240	BSP	7352												
BDE	.3860	BRA	1.7471	BC3	3.4630	FSP	2546												

MID-COURSE EXECUTION ACCURACY

SGT	3905.5	SGR	2436.6	SG3	1486.0						
RRT	-.9631	RRF	-.9997	RTF	.9611						
SGB	4603.3	R23	.2022	R13	-.9791						
SG1	4569.0	SG2	560.2	THA	148.47						

ORBIT DETERMINATION ACCURACY

ST	50.1	SR	34.1	SS	66.8						
CRT	-.5986	CRS	.9997	CST	-.6172						
LSA	82.8	MSA	35.8	SSA	.1						
EL1	55.3	EL2	24.8	ALF	151.61						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 545.267 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.252	GAL	-1.85	AZL	96.00	HCA	176.29	SMA	184.23	ECC	.18442	INC	5.9935	V1	29.554
RP	216.39	LAP	-.39	LOP	37.27	VP	22.500	GAP	3.46	AZP	84.02	TAL	348.05	TAP	164.34	RCA	150.25	APO	218.20	V2	25.385
RC	161.134	GL	-49.14	GP	28.78	ZAL	109.43	ZAP	79.24	ETS	185.13	ZAE	116.99	ETE	164.22	ZAC	131.00	ETC	273.30	LVI	-36.84

PLANETOCENTRIC CONIC

C3	19.818	VHL	4.452	DLA	-50.93	RAL	10.10	RAD	6642.8	VEL	11.825	PTH	6.84	VHP	3.395	DPA	5.61	RAP	292.54	ECC	1.3262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.70	23 5 7	1844.01	27.81	40.55	254.74	134.56	23 35 51	844.0	43.24	17.38
45.70	23 5 7	1844.01	27.81	40.55	254.74	134.56	23 35 51	844.0	43.24	17.38
45.70	23 5 7	1844.01	27.81	40.55	254.74	134.56	23 35 51	844.0	43.24	17.38
45.70	23 5 7	1844.01	27.81	40.55	254.74	134.56	23 35 51	844.0	43.24	17.38
45.70	23 5 7	1844.01	27.81	40.55	254.74	134.56	23 35 51	844.0	43.24	17.38
45.70	23 5 7	1844.01	27.81	40.55	254.74	134.56	23 35 51	844.0	43.24	17.38
45.70	23 5 7	1844.01	27.81	40.55	254.74	134.56	23 35 51	844.0	43.24	17.38

DIFFERENTIAL CORRECTIONS

TDE	-.2933	TRA	1.5891	TC3	-2.7421	BAU	.8528												
RDE	-.3501	RRA	-1.2379	RC3	1.6857	FAU	.18768												
FDE	1.8356	FRA	6.2724	FC	-8.1987	BSP	7948												
BDE	.4629	BRA	2.0144	BC3	3.2188	FSP	2177												

MID-COURSE EXECUTION ACCURACY

SGT	4078.4	SGR	2975.7	SG3	1290.0						
RRT	-.9635	RRF	-.9998	RTF	.9606						
SGB	5048.6	R23	.1869	R13	-.9823						
SG1	5006.7	SG2	648.9	THA	144.20						

ORBIT DETERMINATION ACCURACY

ST	52.3	SR	44.4	SS	66.2						
CRT	-.6103	CRS	1.0000	CST	-.6061						
LSA	87.6	MSA	37.9	SSA	.1						
EL1	61.9	EL2	29.8	ALF	142.54						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 549.436 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.257	GAL	-1.91	AZL	97.88	HCA	177.45	SMA	184.30	ECC	.18489	INC	7.8827	V1	29.554
RP	216.73	LAP	-.35	LOP	38.43	VP	22.463	GAP	3.30	AZP	82.12	TAL	347.71	TAP	165.16	RCA	150.22	APO	218.37	V2	25.347
RC	163.649	GL	-57.45	GP	37.79	ZAL	106.76	ZAP	79.25	ETS	187.52	ZAE	113.26	ETE	161.07	ZAC	140.00	ETC	273.87	LVI	-44.66

PLANETOCENTRIC CONIC

C3	27.317	VHL	5.246	DLA	-56.58	RAL	20.62	RAD	6646.0	VEL	12.144	PTH	7.11	VHP	3.863	DPA	14.49	RAP	290.92	ECC	1.4529

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.71	23 26 44	1968.40	25.85	51.84	271.97	142.27	23 59 32	968.4	44.10	31.98
38.71	23 26 44	1968.40	25.85	51.84	271.97	142.27	23 59 32	968.4	44.10	31.98
38.71	23 26 44	1968.40	25.85	51.84	271.97	142.27	23 59 32	968.4	44.10	31.98
38.71	23 26 44	1968.40	25.85	51.84	271.97	142.27	23 59 32	968.4	44.10	31.98
38.71	23 26 44	1968.40	25.85	51.84	271.97	142.27	23 59 32	968.4	44.10	31.98
38.71	23 26 44	1968.40	25.85	51.84	271.97	142.27	23 59 32	968.4	44.10	31.98
38.71	23 26 44	1968.40	25.85	51.84	271.97	142.27	23 59 32	968.4	44.10	31.98

DIFFERENTIAL CORRECTIONS

TDE	-.0207	TRA	1.8162	TC3	-2.1170	BAU	.9766												
RDE	-.8801	RRA	-1.6341	RC3	1.6019	FAU	.14598												
FDE	2.7269	FRA	4.8260	FC	-4.5927	BSP	9173												
BDE	.8804	BRA	2.4431	BC3	2.6548	FSP	1651												

MID-COURSE EXECUTION ACCURACY

SGT	4231.5	SGR	3774.9	SG3	980.9						
RRT	-.9630	RRF	-.9998	RTF	.9584						
SGB	5670.6	R23	.1679	R13	-.9858						
SG1	5618.6	SG2	766.2	THA	138.39						

ORBIT DETERMINATION ACCURACY

ST	54.1	SR	68.4	SS	89.1						
CRT	-.6967	CRS	.9997	CST	-.6792						
LSA	105.2	MSA	36.3	SSA	.0						
EL1	80.8	EL2	32.9	ALF	125.64						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 28 1971

HELIOCENTRIC CONIC DISTANCE 566.152 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.277	GAL	-2.17	AZL	84.33	HCA	182.06	SMA	184.64	ECC	.18720	INC	5.6699	V1	29.554
RP	218.15	LAP	-.20	LOP	43.01	VP	22.315	GAP	2.67	AZP	95.66	TAL	346.18	TAP	168.25	RCA	150.07	APO	219.20	V2	25.189
RC	173.829	GL	46.36	GP	-42.45	ZAL	112.13	ZAP	75.91	ETS	165.61	ZAE	105.91	ETE	195.66	ZAC	59.95	ETC	272.21	LVI	29.24

PLANETOCENTRIC CONIC

C3	19.368	VHL	4.401	DLA	36.04	RAL	325.15	RAD	6642.6	VEL	11.806	PTH	6.83	VHP	4.311	DPA	-64.37	RAP	310.38	ECC	1.3188

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	11 34 44	3902.71	-45.33	166.14	215.87	73.66	12 39 47	2902.7	-46.73	131.12
60.00	11 4 51	3982.65	-34.77	168.54	211.10	68.19	12 11 14	2982.7	-40.23	136.87
66.66	9 34 47	4246.84	-20.90	182.42	203.51	59.95	10 45 33	3246.8	-31.41	158.30
66.66	9 34 47	4246.84	-20.90	182.42	203.51	59.95	10 45 33	3246.8	-31.41	158.30
66.66	9 34 47	4246.84	-20.90	182.42	203.51	59.95	10 45 33	3246.8	-31.41	158.30
66.66	9 34 47	4246.84	-20.90	182.42	203.51	59.95	10 45 33	3246.8	-31.41	158.30
66.66	9 34 47	4246.84	-20.90	182.42	203.51	59.95	10 45 33	3246.8	-31.41	158.30

DIFFERENTIAL CORRECTIONS

TDE	2.9326	TRA	1.1021	TC3	-3.2467	BAU	.9936	SGT	5088.4	SGR	4035.4	SG3	750.8
RDE	2.1458	RRA	1.4218	RC3	-2.0450	FAU	.09861	RRT	.9678	RRF	.9997	RTF	.9625
FDE	4.5138	FRA	3.1623	FC3	-4.4076	BSP	11743	SGB	6494.4	R23	.1757	R13	.9843
BDE	3.6338	BRA	1.7989	BC3	3.8371	FSP	1440	SG1	6444.6	SG2	802.6	THA	38.21

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	192.8	SR	143.9	SS	113.1						
CRT	.9947	CRS	-.9999	CST	-.9933						
LSA	265.4	MSA	14.3	SSA	.1						
EL1	240.3	EL2	11.8	ALF	36.69						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 242.00 ARRIVAL DATE DEC 30 1971

HELIOCENTRIC CONIC DISTANCE 570.303 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.283	GAL	-2.23	AZL	87.00	HCA	183.20	SMA	184.74	ECC	.18785	INC	3.0012	V1	29.554
RP	218.51	LAP	-.17	LOP	44.15	VP	22.278	GAP	2.51	AZP	93.00	TAL	345.81	TAP	169.01	RCA	150.03	APO	219.44	V2	25.149
RC	176.400	GL	28.16	GP	-31.23	ZAL	118.24	ZAP	71.82	ETS	167.53	ZAE	106.93	ETE	191.09	ZAC	71.19	ETC	271.83	LVI	19.30

PLANETOCENTRIC CONIC

C3	12.818	VHL	3.580	DLA	19.44	RAL	333.65	RAD	6639.5	VEL	11.528	PTH	6.57	VHP	3.622	DPA	-53.84	RAP	302.58	ECC	1.2109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 39 50	3426.74	-44.95	121.54	200.63	107.61	14 36 57	2426.7	-33.35	93.96
60.00	13 56 22	3382.70	-39.12	119.54	202.59	100.56	14 52 45	2382.7	-30.78	91.87
70.00	14 21 39	3308.26	-33.84	114.41	203.49	94.93	15 16 47	2308.3	-28.33	87.08
80.00	15 3 38	3176.65	-29.84	104.67	203.73	90.98	15 56 35	2176.7	-26.41	77.78
90.00	16 12 52	2953.17	-28.28	88.26	203.74	89.48	17 2 5	1953.2	-25.64	61.56
100.00	17 46 30	2651.12	-29.84	66.04	203.73	90.98	18 30 41	1651.1	-26.41	39.15
110.00	19 21 5	2355.08	-33.84	43.32	203.49	94.93	20 0 20	1355.1	-28.33	16.00

DIFFERENTIAL CORRECTIONS

TDE	1.8083	TRA	1.4097	TC3	-5.0859	BAU	.9571	SGT	5230.7	SGR	3034.8	SG3	1123.6
RDE	1.0256	RRA	1.1460	RC3	-2.3088	FAU	.14683	RRT	.9716	RRF	.9998	RTF	.9689
FDE	4.2519	FRA	5.0131	FC3	-9.9173	BSP	10088	SGB	6047.3	R23	.1888	R13	.9818
BDE	2.0788	BRA	1.8168	BC3	5.5854	FSP	1994	SG1	6015.0	SG2	624.4	THA	29.76

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	149.2	SR	87.1	SS	113.8						
CRT	.9951	CRS	-.9999	CST	-.9933						
LSA	206.5	MSA	11.4	SSA	.1						
EL1	172.6	EL2	7.4	ALF	30.23						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC DISTANCE 574.455 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.289	GAL	-2.30	AZL	88.27	HCA	184.33	SMA	184.84	ECC	.18853	INC	1.7325	V1	29.554
RP	218.88	LAP	-.13	LOP	45.28	VP	22.242	GAP	2.36	AZP	91.73	TAL	345.43	TAP	169.75	RCA	149.99	APO	219.69	V2	25.109
RC	178.981	GL	16.94	GP	-24.18	ZAL	121.12	ZAP	69.08	ETS	169.18	ZAE	106.64	ETE	188.13	ZAC	78.25	ETC	271.67	LVI	12.97

PLANETOCENTRIC CONIC

C3	11.230	VHL	3.351	DLA	9.23	RAL	338.43	RAD	6638.7	VEL	11.459	PTH	6.51	VHP	3.382	DPA	-47.06	RAP	299.44	ECC	1.1848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 39 58	3189.38	-38.24	102.79	195.96	120.81	15 33 7	2189.4	-23.01	80.82
60.00	15 9 33	3110.64	-33.58	98.66	198.92	113.73	16 1 24	2110.6	-21.08	75.42
70.00	15 50 35	2989.94	-29.42	90.75	200.80	108.19	16 40 24	1989.9	-19.28	66.83
80.00	16 48 33	2808.32	-26.39	77.98	201.80	104.50	17 35 22	1808.3	-17.94	53.76
90.00	18 5 27	2560.14	-25.25	60.05	202.11	103.17	18 48 8	1560.1	-17.43	35.76
100.00	19 31 25	2282.79	-26.39	39.35	201.80	104.50	20 9 28	1282.8	-17.94	15.13
110.00	20 50 1	2036.76	-29.42	19.67	200.80	108.19	21 23 58	1036.8	-19.28	355.75

DIFFERENTIAL CORRECTIONS

TDE	1.3605	TRA	1.6324	TC3	-5.9388	BAU	.9413	SGT	5408.3	SGR	2365.3	SG3	1311.5
RDE	.6350	RRA	.9312	RC3	-2.0098	FAU	.16793	RRT	.9731	RRF	.9996	RTF	.9714
FDE	3.8529	FRA	6.1023	FC3	-12.9456	BSP	9824	SGB	5902.9	R23	.1999	R13	.9794
BDE	1.5014	BRA	1.8793	BC3	6.2697	FSP	2327	SG1	5881.6	SG2	501.3	THA	23.23

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	123.9	SR	59.5	SS	106.9						
CRT	.9975	CRS	-.9996	CST	-.9950						
LSA	173.9	MSA	8.2	SSA	.3						
EL1	137.4	EL2	3.8	ALF	25.60						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC DISTANCE 578.604 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.296	GAL	-2.37	AZL	89.01	HCA	185.45	SMA	184.95	ECC	.18925	INC	.9910	V1	29.554
RP	219.25	LAP	-.09	LOP	46.41	VP	22.205	GAP	2.20	AZP	90.99	TAL	345.03	TAP	170.48	RCA	149.95	APO	219.95	V2	25.068
RC	181.572	GL	9.80	GP	-19.54	ZAL	122.60	ZAP	66.97	ETS	170.41	ZAE	105.77	ETE	186.15	ZAC	82.91	ETC	271.58	LVI	8.79

PLANETOCENTRIC CONIC

C3	10.807	VHL	3.287	DLA	2.80	RAL	341.60	RAD	6638.5	VEL	11.441	PTH	6.49	VHP	3.284	DPA	-42.56	RAP	297.73	ECC	1.1778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 16 25	3052.88	-33.08	93.83	195.58	126.38	16 7 18	2052.9	-16.54	74.30
60.00	15 53 2	2955.46	-28.84	88.26	198.78	119.47	16 42 18	1955.5	-14.77	67.15
70.00	16 41 59	2811.52	-25.02	78.75	200.94	114.04	17 28 50	1811.5	-13.14	56.66
80.00	17 47 16	2607.07	-22.25	64.48	202.17	110.44	18 30 43	1607.1	-11.92	41.86
90.00	19 7 23	2348.52	-21.22	45.87	202.57	109.15	19 46 32	1348.5	-11.46	23.09
100.00	20 30 8	2081.54	-22.25	25.85	202.17	110.44	21 4 49	1081.5	-11.92	3.22
110.00	21 41 25	1858.34	-25.02	7.67	200.94	114.04	22 12 23	858.3	-13.14	345.58

DIFFERENTIAL CORRECTIONS

TDE	1.1334	TRA	1.8050	TC3	-6.3376	BAU	.9466	SGT	5584.3	SGR	1901.4	SG3	1399.7
RDE	.4546	RRA	.7671	RC3	-1.6631	FAU	.17763	RRT	.9736	RRF	.9992	RTF	.9729
FDE	3.5358	FRA	6.7057	FC3	-14.2302	BSP	9832	SGB	5899.2	R23	.2049	R13	.9779
BDE	1.2212	BRA	1.9612	BC3	6.5522	FSP	2488	SG1	5884.8	SG2	412.0	THA	18.43

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	109.7	SR	44.4	SS	100.7						
CRT	.9995	CRS	-.9988	CST	-.9973						
LSA	155.3	MSA	5.5	SSA	.6						
EL1	118.3	EL2	1.3	ALF	22.05						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 582.753 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.303	GAL	-2.44	AZL	89.49	HCA	186.56	SMA	185.06	ECC	.18999	INC	.5082	V1	29.554
RP	219.62	LAP	-.06	LOP	47.54	VP	22.169	GAP	2.05	AZP	90.50	TAL	344.63	TAP	171.21	RCA	149.90	APO	220.22	V2	25.028
RC	184.172	GL	5.00	GP	-16.29	ZAL	123.50	ZAP	65.19	ETS	171.33	ZAE	104.64	ETE	184.77	ZAC	86.16	ETC	271.52	LVI	5.66

PLANETOCENTRIC CONIC

C3	10.765	VHL	3.281	DLA	-1.45	RAL	343.90	RAD	6638.4	VEL	11.439	PTH	6.49	VHP	3.242	DPA	-39.42	RAP	296.64	ECC	1.1772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 41 6	2967.59	-29.52	88.82	196.39	129.17	16 30 33	1967.6	-12.38	70.47
60.00	16 22 13	2858.22	-25.43	82.29	199.71	122.38	17 9 51	1858.2	-10.65	62.25
70.00	17 16 9	2699.59	-21.73	71.73	202.02	117.02	18 1 9	1699.6	-9.04	50.58
80.00	18 26 0	2480.91	-19.04	56.49	203.37	113.45	19 7 21	1480.9	-7.85	34.70
90.00	19 48 6	2215.97	-18.03	37.46	203.82	112.16	20 25 2	1216.0	-7.40	15.47
100.00	21 8 52	1955.38	-19.04	17.86	203.37	113.45	21 41 27	955.4	-7.85	356.07
110.00	22 15 36	1746.41	-21.73	.65	202.02	117.02	22 44 42	746.4	-9.04	339.49

DIFFERENTIAL CORRECTIONS

TDE	1.0052	TRA	1.9527	TC3	-6.5405	BAU	.9621												
RDE	.3547	RRA	.6402	RC3	-1.3825	FAU	.18303												
FDE	3.2755	FRA	7.0197	FC	-14.7187	BSP	9952												
BDE	1.0660	BRA	2.0549	BC3	6.6850	FSP	2526												

MID-COURSE EXECUTION ACCURACY

SGT	5756.5	SGR	1567.7	SG3	1436.3						
RRT	.9747	RRF	.9984	RTF	.9752						
SGB	5966.1	R23	.1995	R13	.9783						
SG1	5956.5	SG2	338.6	THA	14.92						

ORBIT DETERMINATION ACCURACY

ST	101.8	SR	35.3	SS	95.3						
CRT	.9992	CRS	-.9972	CST	-.9988						
LSA	143.8	MSA	3.7	SSA	1.1						
EL1	107.7	EL2	1.3	ALF	19.09						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 586.894 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.310	GAL	-2.51	AZL	89.84	HCA	187.70	SMA	185.18	ECC	.19077	INC	.1578	V1	29.554
RP	219.99	LAP	-.02	LOP	48.66	VP	22.133	GAP	1.89	AZP	90.16	TAL	344.22	TAP	171.92	RCA	149.85	APO	220.50	V2	24.987
RC	186.781	GL	1.60	GP	-13.92	ZAL	124.17	ZAP	63.61	ETS	172.04	ZAE	103.41	ETE	183.78	ZAC	88.54	ETC	271.48	LVI	3.76

PLANETOCENTRIC CONIC

C3	10.878	VHL	3.298	DLA	-4.38	RAL	345.70	RAD	6638.5	VEL	11.444	PTH	6.49	VHP	3.228	DPA	-37.11	RAP	295.88	ECC	1.1790

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 0	2911.37	-27.06	85.72	197.55	130.75	16 47 32	1911.4	-9.60	68.03
60.00	16 43 15	2793.71	-23.03	78.53	200.96	124.04	17 29 48	1793.7	-7.86	59.08
70.00	17 40 40	2624.86	-19.35	67.24	203.36	118.71	18 24 25	1624.9	-6.24	46.60
80.00	18 53 41	2396.26	-16.66	51.33	204.79	115.14	19 33 37	1396.3	-5.04	30.00
90.00	20 17 11	2126.86	-15.65	32.00	205.27	113.86	20 52 38	1126.9	-4.59	10.44
100.00	21 36 33	1870.73	-16.66	12.70	204.79	115.14	22 7 44	870.7	-5.04	351.36
110.00	22 40 7	1671.67	-19.35	356.16	203.36	118.71	23 7 58	671.7	-6.24	335.52

DIFFERENTIAL CORRECTIONS

TDE	.9331	TRA	2.0903	TC3	-6.6480	BAU	.9809												
RDE	.3017	RRA	.5481	RC3	-1.1384	FAU	.18190												
FDE	3.1588	FRA	7.2620	FC	-14.4763	BSP	10189												
BDE	.9807	BRA	2.1610	BC3	6.7448	FSP	2596												

MID-COURSE EXECUTION ACCURACY

SGT	5926.4	SGR	1323.1	SG3	1449.3						
RRT	.9719	RRF	.9971	RTF	.9742						
SGB	6072.3	R23	.2028	R13	.9765						
SG1	6064.7	SG2	304.5	THA	12.27						

ORBIT DETERMINATION ACCURACY

ST	98.0	SR	29.9	SS	93.1						
CRT	.9953	CRS	-.9945	CST	-.9996						
LSA	138.4	MSA	3.0	SSA	1.7						
EL1	102.4	EL2	2.8	ALF	16.90						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 591.032 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.317	GAL	-2.58	AZL	90.09	HCA	188.82	SMA	185.30	ECC	.19157	INC	.0788	V1	29.554
RP	220.36	LAP	.01	LOP	49.78	VP	22.097	GAP	1.74	AZP	89.91	TAL	343.81	TAP	172.62	RCA	149.80	APO	220.80	V2	24.946
RC	189.399	GL	-.90	GP	-12.12	ZAL	124.73	ZAP	62.17	ETS	172.60	ZAE	102.13	ETE	183.03	ZAC	90.35	ETC	271.45	LVI	2.14

PLANETOCENTRIC CONIC

C3	11.060	VHL	3.326	DLA	-6.47	RAL	347.18	RAD	6638.6	VEL	11.452	PTH	6.50	VHP	3.229	DPA	-35.36	RAP	295.33	ECC	1.1820

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 38	2872.98	-25.34	83.69	198.77	131.72	17 0 31	1873.0	-7.68	66.38
60.00	16 59 8	2749.29	-21.31	76.02	202.25	125.05	17 44 58	1749.3	-5.93	56.92
70.00	17 59 7	2572.96	-17.63	64.21	204.73	119.74	18 42 0	1573.0	-4.28	43.87
80.00	19 14 28	2337.05	-14.92	47.80	206.23	116.17	19 53 25	1337.0	-3.05	26.73
90.00	20 38 59	2064.33	-13.90	28.25	206.73	114.88	21 13 24	1064.3	-2.58	6.94
100.00	21 57 20	1811.52	-14.92	9.17	206.23	116.17	22 27 31	811.5	-3.05	348.10
110.00	22 58 33	1619.78	-17.63	353.12	204.73	119.74	23 25 33	619.8	-4.28	332.79

DIFFERENTIAL CORRECTIONS

TDE	.8914	TRA	2.2199	TC3	-6.7132	BAU	1.0026												
RDE	.2671	RRA	.4733	RC3	-.9535	FAU	.17992												
FDE	3.0615	FRA	7.3968	FC	-14.0839	BSP	10438												
BDE	.9306	BRA	2.2698	BC3	6.7806	FSP	2612												

MID-COURSE EXECUTION ACCURACY

SGT	6092.0	SGR	1134.7	SG3	1445.9						
RRT	.9689	RRF	.9950	RTF	.9740						
SGB	6196.7	R23	.1995	R13	.9756						
SG1	6190.6	SG2	276.3	THA	10.25						

ORBIT DETERMINATION ACCURACY

ST	96.3	SR	26.1	SS	91.1						
CRT	.9877	CRS	-.9904	CST	-.9995						
LSA	135.1	MSA	4.0	SSA	1.5						
EL1	99.7	EL2	3.9	ALF	15.02						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 595.167 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.324	GAL	-2.66	AZL	90.29	HCA	189.93	SMA	185.42	ECC	.19240	INC	.2879	V1	29.554
RP	220.74	LAP	.05	LOP	50.89	VP	22.061	GAP	1.59	AZP	89.71	TAL	343.39	TAP	173.32	RCA	149.75	APO	221.10	V2	24.904
RC	192.025	GL	-2.80	GP	-10.70	ZAL	125.24	ZAP	60.82	ETS	173.05	ZAE	100.83	ETE	182.46	ZAC	91.77	ETC	271.43	LVI	.87

PLANETOCENTRIC CONIC

C3	11.277	VHL	3.358	DLA	-8.01	RAL	348.44	RAD	6638.7	VEL	11.461	PTH	6.51	VHP	3.239	DPA	-33.98	RAP	294.93	ECC	1.1856

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 23	2846.25	-24.12	82.31	199.98	132.34	17 10 49	1846.2	-6.35	65.25
60.00	17 11 35	2718.05	-20.08	74.30	203.51	125.71	17 56 53	1718.1	-4.56	55.42
70.00	18 13 28	2536.10	-16.37	62.09	206.06	120.40	18 55 44	1536.1	-2.88	41.94
80.00	19 30 36	2294.64	-13.63	45.31	207.60	116.82	20 8 50	1294.6	-1.62	24.40
90.00	20 55 54	2019.39	-12.59	25.60	208.13	115.53	21 29 34	1019.4	-1.14	4.43
100.00	22 13 28	1769.11	-13.63	6.68	207.60	116.82	22 42 57	769.1	-1.62	345.77
110.00	23 12 54	1582.92	-16.37	351.01	206.06	120.40	23 39 17	582.9	-2.88	330.86

DIFFERENTIAL CORRECTIONS

TDE	.8663	TRA	2.3411	TC3	-6.7695	BAU	1.0279												
RDE	.2427	RRA	.4104	RC3	-.8157	FAU	.17858												
FDE	2.9604	FRA	7.4437	FC	-13.7106	BSP	10661												
BDE	.8996	BRA	2.3768	BC3	6.8185	FSP	2579												

MID-COURSE EXECUTION ACCURACY

SGT	6255.0	SGR	985.7	SG3	1432.3						
RRT	.9659	RRF	.9918	RTF	.9747						
SGB	6332.2	R23	.1885	R13	.9758						
SG1	6327.2	SG2	252.5	THA	8.67						

ORBIT DETERMINATION ACCURACY

ST	95.8	SR	23.3	SS	88.9						
CRT	.9769	CRS	-.9843	CST	-.9990						
LSA	132.6	MSA	5.2	SSA	1.3						
EL1	98.4	EL2	4.8	ALF	13.39						

LAUNCH DATE MAY 2 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 599.295 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.332 GAL -2.74 AZL 90.45 HCA 191.04 SMA 185.55 ECC .19326 INC .4482 V1 29.554
RP 221.12 LAP .09 LOP 52.00 VP 22.026 GAP 1.43 AZP 89.56 TAL 342.96 TAP 174.00 RCA 149.69 APO 221.41 V2 24.863
RC 194.659 GL -4.28 GP -9.56 ZAL 125.73 ZAP 50.55 ETS 173.42 ZAE 99.53 ETE 182.01 ZAC 92.91 ETC 271.41 LVI -.16

PLANETOCENTRIC CONIC

C3 11.514 VHL 3.393 DLA -9.15 RAL 349.54 RAD 6638.8 VEL 11.472 PTH 6.52 VHP 3.255 DPA -32.86 RAP 294.64 ECC 1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 32 5	2827.61	-23.26	81.37	201.14	132.75	17 19 13	1827.6	-5.42	64.46
60.00	17 21 35	2696.01	-19.20	73.10	204.73	126.14	18 6 31	1696.0	-3.59	54.36
70.00	18 24 55	2509.76	-15.45	60.60	207.32	120.84	19 6 45	1509.8	-1.87	40.56
80.00	19 43 25	2264.02	-12.68	43.53	208.91	117.26	20 21 9	1264.0	-.58	22.72
90.00	21 9 21	1986.81	-11.63	23.69	209.45	115.96	21 42 27	986.8	-.09	2.61
100.00	22 26 17	1738.49	-12.68	4.90	208.91	117.26	22 55 16	738.5	-.58	344.09
110.00	23 24 22	1556.58	-15.45	349.51	207.32	120.84	23 50 18	556.6	-1.87	329.48

DIFFERENTIAL CORRECTIONS
TDE .8678 TRA 2.4729 TC3-6.7716 BAU 1.0478
RDE .2304 RRA .3620 RC3 -.6917 FAU .17316
FDE 2.9546 FRA 7.5285 FC-13.0199 BSP 11039
BDE .8978 BRA 2.4993 BC3 6.8068 FSP 2608

MID-COURSE EXECUTION ACCURACY
SGT 6415.1 SGR 868.9 SG3 1416.4
RRT .9590 RRF .9871 RTF .9734
SGB 6473.7 R23 .1841 R13 .9743
SG1 6469.1 SG2 244.2 THA 7.41

ORBIT DETERMINATION ACCURACY
ST 97.2 SR 21.6 SS 88.8
CRT .9636 CRS -.9773 CST -.9981
LSA 133.2 MSA 6.4 SSA 1.2
EL1 99.4 EL2 5.6 ALF 12.11

LAUNCH DATE MAY 2 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 603.422 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.340 GAL -2.82 AZL 90.58 HCA 192.15 SMA 185.68 ECC .19415 INC .5769 V1 29.554
RP 221.50 LAP .12 LOP 53.11 VP 21.990 GAP 1.28 AZP 89.43 TAL 342.53 TAP 174.68 RCA 149.63 APO 221.73 V2 24.821
RC 197.299 GL -5.45 GP -8.63 ZAL 126.22 ZAP 50.33 ETS 173.74 ZAE 98.25 ETE 181.64 ZAC 93.84 ETC 271.41 LVI -1.01

PLANETOCENTRIC CONIC

C3 11.762 VHL 3.430 DLA -10.01 RAL 350.53 RAD 6638.9 VEL 11.482 PTH 6.53 VHP 3.275 DPA -31.95 RAP 294.42 ECC 1.1936

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 18	2814.71	-22.67	80.73	202.25	133.02	17 26 13	1814.7	-4.77	63.92
60.00	17 29 46	2680.49	-18.57	72.27	205.89	126.43	18 14 27	1680.5	-2.91	53.62
70.00	18 34 15	2490.93	-14.79	59.54	208.52	121.14	19 15 46	1490.9	-1.15	39.58
80.00	19 53 49	2241.86	-11.99	42.25	210.15	117.55	20 31 11	1241.9	.17	21.50
90.00	21 20 13	1963.11	-10.92	22.31	210.70	116.25	21 52 56	963.1	.68	1.29
100.00	22 36 41	1716.33	-11.99	3.62	210.15	117.55	23 5 17	716.3	.17	342.87
110.00	23 33 41	1537.75	-14.79	348.45	208.52	121.14	23 59 19	537.7	-1.15	328.50

DIFFERENTIAL CORRECTIONS
TDE .8585 TRA 2.5816 TC3-6.8340 BAU 1.0789
RDE .2173 RRA .3156 RC3 -.6112 FAU .17284
FDE 2.8498 FRA 7.4778 FC-12.7214 BSP 11165
BDE .8855 BRA 2.6009 BC3 6.8613 FSP 2512

MID-COURSE EXECUTION ACCURACY
SGT 6573.5 SGR 770.8 SG3 1392.4
RRT .9533 RRF .9803 RTF .9750
SGB 6618.6 R23 .1646 R13 .9756
SG1 6614.5 SG2 231.3 THA 6.39

ORBIT DETERMINATION ACCURACY
ST 97.5 SR 19.9 SS 86.3
CRT .9470 CRS -.9670 CST -.9973
LSA 131.5 MSA 7.3 SSA 1.2
EL1 99.3 EL2 6.3 ALF 10.96

LAUNCH DATE MAY 2 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 607.543 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.348 GAL -2.90 AZL 90.69 HCA 193.25 SMA 185.81 ECC .19506 INC .6846 V1 29.554
RP 221.88 LAP .16 LOP 54.21 VP 21.955 GAP 1.13 AZP 89.33 TAL 342.09 TAP 175.35 RCA 149.57 APO 222.06 V2 24.780
RC 199.945 GL -6.40 GP -7.85 ZAL 126.70 ZAP 57.17 ETS 174.01 ZAE 96.98 ETE 181.35 ZAC 94.62 ETC 271.41 LVI -1.74

PLANETOCENTRIC CONIC

C3 12.021 VHL 3.467 DLA -10.66 RAL 351.44 RAD 6639.1 VEL 11.493 PTH 6.54 VHP 3.297 DPA -31.18 RAP 294.28 ECC 1.1978

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 45 24	2806.13	-22.27	80.30	203.32	133.20	17 32 10	1806.1	-4.34	63.56
60.00	17 36 37	2669.91	-18.14	71.70	206.99	126.62	18 21 7	1669.9	-2.44	53.11
70.00	18 41 57	2477.60	-14.33	58.80	209.67	121.34	19 23 15	1477.8	-.65	38.89
80.00	20 2 21	2226.16	-11.49	41.35	211.32	117.75	20 39 27	1226.2	.70	20.64
90.00	21 29 7	1946.21	-10.41	21.33	211.88	116.44	22 1 33	946.2	1.22	.35
100.00	22 45 13	1700.63	-11.49	2.72	211.32	117.75	23 13 33	700.6	.70	342.01
110.00	23 41 24	1524.62	-14.33	347.72	209.67	121.34	24 6 48	524.6	-.65	327.81

DIFFERENTIAL CORRECTIONS
TDE .8673 TRA 2.7001 TC3-6.8552 BAU 1.1050
RDE .2109 RRA .2781 RC3 -.5360 FAU .16949
FDE 2.8123 FRA 7.4628 FC-12.2065 BSP 11419
BDE .8925 BRA 2.7144 BC3 6.8761 FSP 2469

MID-COURSE EXECUTION ACCURACY
SGT 6726.0 SGR 691.6 SG3 1368.1
RRT .9434 RRF .9711 RTF .9750
SGB 6763.4 R23 .1512 R13 .9756
SG1 6759.6 SG2 228.3 THA 5.54

ORBIT DETERMINATION ACCURACY
ST 99.1 SR 18.8 SS 85.3
CRT .9290 CRS -.9558 CST -.9964
LSA 131.8 MSA 8.2 SSA 1.1
EL1 100.7 EL2 6.9 ALF 10.04

LAUNCH DATE MAY 2 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC DISTANCE 611.658 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.356 GAL -2.98 AZL 90.78 HCA 194.35 SMA 185.95 ECC .19600 INC .7756 V1 29.554
RP 222.27 LAP .19 LOP 55.31 VP 21.920 GAP .97 AZP 89.25 TAL 341.65 TAP 176.00 RCA 149.51 APO 222.40 V2 24.738
RC 202.595 GL -7.18 GP -7.19 ZAL 127.19 ZAP 56.06 ETS 174.24 ZAE 95.73 ETE 181.11 ZAC 95.28 ETC 271.42 LVI -2.36

PLANETOCENTRIC CONIC

C3 12.286 VHL 3.505 DLA -11.15 RAL 352.27 RAD 6639.2 VEL 11.505 PTH 6.55 VHP 3.322 DPA -30.52 RAP 294.20 ECC 1.2022

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 37	2800.83	-22.02	80.04	204.34	133.31	17 37 18	1800.8	-4.08	63.34
60.00	17 42 24	2663.09	-17.87	71.34	208.05	126.75	18 26 48	1663.1	-2.14	52.78
70.00	18 48 25	2469.04	-14.02	58.31	210.76	121.47	19 29 34	1469.0	-.32	38.44
80.00	20 9 26	2215.41	-11.15	40.74	212.44	117.88	20 46 21	1215.4	1.07	20.05
90.00	21 36 29	1934.54	-10.05	20.66	213.01	116.57	22 8 44	934.5	1.60	359.70
100.00	22 52 18	1689.89	-11.15	2.11	212.44	117.88	23 20 28	689.9	1.07	341.42
110.00	23 47 51	1515.85	-14.02	347.23	210.76	121.47	24 13 7	515.9	-.32	327.35

DIFFERENTIAL CORRECTIONS
TDE .8828 TRA 2.8194 TC3-6.8663 BAU 1.1305
RDE .2075 RRA .2455 RC3 -.4724 FAU .16551
FDE 2.7882 FRA 7.4410 FC-11.6624 BSP 11682
BDE .9069 BRA 2.8301 BC3 6.8825 FSP 2429

MID-COURSE EXECUTION ACCURACY
SGT 6878.8 SGR 626.1 SG3 1342.1
RRT .9299 RRF .9587 RTF .9748
SGB 6907.2 R23 .1391 R13 .9752
SG1 6903.4 SG2 229.5 THA 4.84

ORBIT DETERMINATION ACCURACY
ST 101.1 SR 18.0 SS 84.5
CRT .9097 CRS -.9436 CST -.9956
LSA 132.7 MSA 9.1 SSA 1.1
EL1 102.4 EL2 7.4 ALF 9.27

LAUNCH DATE MAY 2 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 615.769 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.364 GAL -3.06 AZL 90.85 HCA 195.45 SMA 186.09 ECC .19696 INC .8539 V1 29.554
RP 222.65 LAP .23 LOP 56.40 VP 21.885 GAP .82 AZP 89.18 TAL 341.21 TAP 176.65 RCA 149.44 APO 222.74 V2 24.696
RC 205.250 GL -7.82 GP -6.63 ZAL 127.68 ZAP 54.99 ETS 174.45 ZAE 94.51 ETE 180.91 ZAC 95.84 ETC 271.44 LVI -2.90

PLANETOCENTRIC CONIC

C3 12.559 VHL 3.544 DLA -11.52 RAL 353.05 RAD 6639.3 VEL 11.517 PTH 6.56 VHP 3.349 DPA -29.95 RAP 294.18 ECC 1.2067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 8	2788.10	-21.89	79.90	205.33	133.36	17 41 46	1798.1	-3.94	63.22
60.00	17 47 22	2659.21	-17.71	71.13	209.07	126.81	18 31 41	1659.2	-1.97	52.60
70.00	18 53 52	2463.69	-13.83	58.01	211.81	121.54	19 34 56	1463.7	-.11	38.16
80.00	20 15 22	2208.57	-10.93	40.35	213.50	117.96	20 52 11	1208.6	1.30	19.67
90.00	21 42 39	1926.99	-9.82	20.22	214.09	116.65	22 14 46	927.0	1.84	359.27
100.00	22 58 14	1683.04	-10.93	1.71	213.50	117.96	23 26 17	683.0	1.30	341.04
110.00	23 53 19	1510.51	-13.83	346.93	211.81	121.54	24 18 29	510.5	-.11	327.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9032 TRA 2.9387 TC3-6.8757 BAU 1.1566 SGT 7027.9 SGR 571.9 SG3 1315.5 ST 103.3 SR 17.5 SS 83.7
RDE .2059 RRA .2165 RC3 -.4201 FAU .16179 RRT .9128 RRF .9425 RTF .9748 CRT .8899 CRS -.9304 CST -.9949
FDE 2.7661 FRA 7.4066 FC-11.1529 BSP 11945 SGB 7051.2 R23 .1267 R13 .9751 LSA 133.8 MSA 9.8 SSA 1.1
BDE .9263 BRA 2.9466 BC3 6.8885 FSP 2385 SG1 7047.3 SG2 232.9 THA 4.25 EL1 104.5 EL2 7.9 ALF 6.62

LAUNCH DATE MAY 2 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 619.874 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.372 GAL -3.15 AZL 90.92 HCA 196.54 SMA 186.23 ECC .19795 INC .9224 V1 29.554
RP 223.04 LAP .26 LOP 57.50 VP 21.851 GAP .67 AZP 89.12 TAL 340.76 TAP 177.30 RCA 149.37 APO 223.10 V2 24.654
RC 207.907 GL -8.35 GP -6.14 ZAL 128.17 ZAP 53.96 ETS 174.63 ZAE 93.31 ETE 180.74 ZAC 96.32 ETC 271.47 LVI -3.39

PLANETOCENTRIC CONIC

C3 12.837 VHL 3.583 DLA -11.78 RAL 353.79 RAD 6639.5 VEL 11.529 PTH 6.58 VHP 3.376 DPA -29.46 RAP 294.20 ECC 1.2113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 7	2797.40	-21.86	79.87	206.29	133.37	17 45 44	1797.4	-3.90	63.19
60.00	17 51 39	2657.67	-17.65	71.05	210.06	126.84	18 35 57	1657.7	-1.91	52.53
70.00	18 58 32	2461.08	-13.74	57.87	212.82	121.58	19 39 33	1461.1	-.01	38.02
80.00	20 20 23	2204.85	-10.81	40.13	214.53	118.00	20 57 8	1204.9	1.43	19.47
90.00	21 47 49	1922.76	-9.69	19.98	215.12	116.70	22 19 52	922.8	1.98	359.04
100.00	23 3 15	1679.32	-10.81	1.50	214.53	118.00	23 31 14	679.3	1.43	340.84
110.00	0 1 54	1507.90	-13.74	346.79	212.82	121.58	0 27 2	507.9	-.01	326.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9298 TRA 3.0611 TC3-6.8728 BAU 1.1813 SGT 7174.3 SGR 527.2 SG3 1288.5 ST 105.9 SR 17.1 SS 83.1
RDE .2061 RRA .1908 RC3 -.3750 FAU .15762 RRT .8914 RRF .9221 RTF .9746 CRT .8703 CRS -.9168 CST -.9943
FDE 2.7536 FRA 7.3715 FC-10.6296 BSP 12232 SGB 7193.7 R23 .1157 R13 .9748 LSA 135.3 MSA 10.4 SSA 1.1
BDE .9524 BRA 3.0671 BC3 6.8830 FSP 2345 SG1 7189.7 SG2 238.4 THA 3.75 EL1 106.9 EL2 8.4 ALF 8.07

LAUNCH DATE MAY 2 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC DISTANCE 623.973 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.381 GAL -3.23 AZL 90.98 HCA 197.63 SMA 186.38 ECC .19896 INC .9817 V1 29.554
RP 223.42 LAP .30 LOP 58.58 VP 21.816 GAP .51 AZP 89.06 TAL 340.31 TAP 177.93 RCA 149.30 APO 223.46 V2 24.612
RC 210.566 GL -8.80 GP -5.71 ZAL 128.67 ZAP 52.97 ETS 174.80 ZAE 92.13 ETE 180.59 ZAC 96.75 ETC 271.50 LVI -3.83

PLANETOCENTRIC CONIC

C3 13.123 VHL 3.623 DLA -11.97 RAL 354.49 RAD 6639.6 VEL 11.541 PTH 6.59 VHP 3.405 DPA -29.02 RAP 294.26 ECC 1.2160

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 38	2798.37	-21.91	79.92	207.22	133.36	17 49 16	1798.4	-3.95	63.23
60.00	17 55 24	2658.05	-17.66	71.07	211.02	126.83	18 39 42	1658.0	-1.92	52.54
70.00	19 2 32	2460.69	-13.72	57.85	213.80	121.59	19 43 32	1460.7	.00	38.00
80.00	20 24 38	2203.68	-10.77	40.07	215.53	118.01	21 1 21	1203.7	1.47	19.41
90.00	21 52 11	1921.22	-9.65	19.89	216.12	116.71	22 24 12	921.2	2.03	358.95
100.00	23 7 30	1678.15	-10.77	1.44	215.53	118.01	23 35 26	678.2	1.47	340.77
110.00	0 5 54	1507.51	-13.72	346.77	213.80	121.59	0 31 1	507.5	.00	326.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9569 TRA 3.1807 TC3-6.8739 BAU 1.2074 SGT 7317.0 SGR 490.3 SG3 1260.5 ST 108.3 SR 16.9 SS 82.4
RDE .2074 RRA .1672 RC3 -.3373 FAU .15372 RRT .8652 RRF .8969 RTF .9744 CRT .8504 CRS -.9027 CST -.9938
FDE 2.7372 FRA 7.3214 FC-10.1416 BSP 12475 SGB 7333.4 R23 .1056 R13 .9746 LSA 136.7 MSA 11.0 SSA 1.1
BDE .9791 BRA 3.1851 BC3 6.8822 FSP 2295 SG1 7329.3 SG2 245.5 THA 3.32 EL1 109.3 EL2 8.8 ALF 7.61

LAUNCH DATE MAY 2 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 628.068 EARTH TO MARS

RL 150.76 LAL -.00 LOL 220.96 VL 32.390 GAL -3.32 AZL 91.03 HCA 198.71 SMA 186.53 ECC .19999 INC 1.0340 V1 29.554
RP 223.81 LAP .33 LOP 59.67 VP 21.782 GAP .36 AZP 89.02 TAL 339.85 TAP 178.56 RCA 149.22 APO 223.83 V2 24.571
RC 213.227 GL -9.17 GP -5.34 ZAL 129.17 ZAP 52.01 ETS 174.95 ZAE 90.97 ETE 180.47 ZAC 97.12 ETC 271.54 LVI -4.24

PLANETOCENTRIC CONIC

C3 13.415 VHL 3.663 DLA -12.09 RAL 355.16 RAD 6639.8 VEL 11.553 PTH 6.60 VHP 3.435 DPA -28.62 RAP 294.36 ECC 1.2208

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 47	2800.69	-22.01	80.03	208.14	133.31	17 52 27	1800.7	-4.07	63.33
60.00	17 58 41	2659.98	-17.74	71.18	211.95	126.80	18 43 1	1660.0	-2.01	52.64
70.00	19 5 59	2462.13	-13.77	57.93	214.75	121.57	19 47 1	1462.1	-.05	38.08
80.00	20 28 15	2204.62	-10.80	40.12	216.49	118.00	21 5 0	1204.6	1.43	19.46
90.00	21 55 53	1921.92	-9.67	19.93	217.09	116.70	22 27 55	921.9	2.01	358.99
100.00	23 11 7	1679.09	-10.80	1.49	216.49	118.00	23 39 6	679.1	1.43	340.83
110.00	0 9 21	1508.95	-13.77	346.85	214.75	121.57	0 34 30	509.0	-.05	326.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9872 TRA 3.3022 TC3-6.8724 BAU 1.2337 SGT 7459.1 SGR 460.5 SG3 1233.2 ST 110.9 SR 16.8 SS 81.8
RDE .2097 RRA .1459 RC3 -.3050 FAU .14982 RRT .8340 RRF .8669 RTF .9741 CRT .8313 CRS -.8889 CST -.9933
FDE 2.7258 FRA 7.2725 FC3-9.6689 BSP 12726 SGB 7473.3 R23 .0969 R13 .9743 LSA 138.4 MSA 11.5 SSA 1.2
BDE 1.0092 BRA 3.3055 BC3 6.8792 FSP 2251 SG1 7469.0 SG2 253.7 THA 2.95 EL1 111.8 EL2 9.3 ALF 7.22

LAUNCH DATE MAY 2 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 29 1972

HELIOCENTRIC CONIC DISTANCE 632.156 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.399	GAL	-3.41	AZL	91.08	HCA	199.79	SMA	186.68	ECC	.20105	INC	1.0809	V1	29.854
RP	224.20	LAP	.37	LOP	60.75	VP	21.748	GAP	.21	AZP	88.98	TAL	339.39	TAP	179.18	RCA	149.15	APO	224.21	V2	24.529
RC	215.890	GL	-9.48	GP	-5.00	ZAL	129.67	ZAP	51.08	ETS	175.08	ZAE	89.84	ETE	180.36	ZAC	97.44	ETC	271.59	LVI	-4.61

PLANETOCENTRIC CONIC

C3	13.713	VHL	3.703	DLA	-12.16	RAL	355.81	RAD	6639.9	VEL	11.566	PTH	6.61	VHP	3.466	DPA	-28.27	RAP	294.50	ECC	1.2257

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 36	2804.14	-22.17	80.20	209.03	133.24	17 55 21	1804.1	-4.24	63.47
60.00	18 1 36	2663.22	-17.87	71.35	212.87	126.74	18 45 59	1663.2	-2.15	52.79
70.00	19 8 59	2465.10	-13.88	58.09	215.68	121.52	19 50 4	1465.1	-.17	38.23
80.00	20 31 21	2207.30	-10.89	40.27	217.43	117.97	21 8 8	1207.3	1.34	19.60
90.00	21 59 1	1924.47	-9.75	20.08	218.03	116.68	22 31 5	924.5	1.92	359.13
100.00	23 14 12	1681.78	-10.89	1.64	217.43	117.97	23 42 14	681.8	1.34	340.97
110.00	0 12 21	1511.92	-13.88	347.01	215.68	121.52	0 37 33	511.9	-.17	327.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0206	TRA	3.4249	TC3	-6.8648	BAU	1.2596	SGT	7597.8	SGR	436.5	SG3	1205.6	ST	113.6	SR	16.7	SS	81.2
RDE	.2129	RRA	.1263	RC3	-.2771	FAU	.14586	RRT	.7981	RRF	.8319	RTF	.9738	CRT	.8131	CRS	-.8755	CST	-.9929
FDE	2.7161	FRA	7.2185	FC3	-9.2080	BSP	12981	SGB	7610.3	R23	.0893	R13	.9740	LSA	140.1	MSA	12.0	SSA	1.2
BDE	1.0426	BRA	3.4272	BC3	6.8704	FSP	2205	SG1	7605.8	SG2	262.8	THA	2.63	EL1	114.4	EL2	9.7	ALF	6.88

LAUNCH DATE MAY 2 1971 FLIGHT TIME 274.00 ARRIVAL DATE JAN 31 1972

HELIOCENTRIC CONIC DISTANCE 636.239 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.407	GAL	-3.50	AZL	91.12	HCA	200.87	SMA	186.83	ECC	.20213	INC	1.1230	V1	29.554
RP	224.59	LAP	.40	LOP	61.82	VP	21.714	GAP	.05	AZP	88.95	TAL	338.93	TAP	179.79	RCA	149.07	APO	224.59	V2	24.487
RC	218.554	GL	-9.75	GP	-4.70	ZAL	130.18	ZAP	50.19	ETS	175.21	ZAE	88.73	ETE	180.27	ZAC	97.73	ETC	271.64	LVI	-4.96

PLANETOCENTRIC CONIC

C3	14.019	VHL	3.744	DLA	-12.18	RAL	356.43	RAD	6640.1	VEL	11.579	PTH	6.62	VHP	3.497	DPA	-27.94	RAP	294.67	ECC	1.2307

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 10	2808.54	-22.38	80.42	209.91	133.15	17 57 59	1808.5	-4.46	63.66
60.00	18 4 11	2667.56	-18.05	71.58	213.77	126.67	18 48 39	1667.6	-2.34	53.00
70.00	19 11 36	2469.35	-14.03	58.33	216.59	121.46	19 52 46	1469.4	-.33	38.45
80.00	20 34 0	2211.46	-11.02	40.51	218.35	117.92	21 10 51	1211.5	1.20	19.83
90.00	22 1 41	1928.58	-9.87	20.32	218.95	116.64	22 33 49	928.6	1.79	359.36
100.00	23 16 51	1685.93	-11.02	1.88	218.35	117.92	23 44 57	685.9	1.20	341.20
110.00	0 14 59	1516.17	-14.03	347.25	216.59	121.46	0 40 15	516.2	-.33	327.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0573	TRA	3.5500	TC3	-6.8522	BAU	1.2852	SGT	7735.1	SGR	418.0	SG3	1178.6	ST	116.4	SR	16.8	SS	80.8
RDE	.2169	RRA	.1083	RC3	-.2528	FAU	.14180	RRT	.7578	RRF	.7926	RTF	.9734	CRT	.7963	CRS	-.8630	CST	-.9925
FDE	2.7116	FRA	7.1667	FC3	-8.7563	BSP	13235	SGB	7746.4	R23	.0829	R13	.9735	LSA	142.1	MSA	12.5	SSA	1.2
BDE	1.0793	BRA	3.5516	BC3	6.8569	FSP	2162	SG1	7741.6	SG2	272.5	THA	2.35	EL1	117.2	EL2	10.1	ALF	6.60

LAUNCH DATE MAY 2 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 2 1972

HELIOCENTRIC CONIC DISTANCE 640.315 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.417	GAL	-3.59	AZL	91.16	HCA	201.94	SMA	186.98	ECC	.20323	INC	1.1610	V1	29.554
RP	224.98	LAP	.43	LOP	62.90	VP	21.680	GAP	-.10	AZP	88.92	TAL	338.46	TAP	180.40	RCA	148.98	APO	224.98	V2	24.445
RC	221.219	GL	-9.97	GP	-4.44	ZAL	130.68	ZAP	49.33	ETS	175.32	ZAE	87.65	ETE	180.19	ZAC	97.99	ETC	271.69	LVI	-5.29

PLANETOCENTRIC CONIC

C3	14.333	VHL	3.786	DLA	-12.16	RAL	357.03	RAD	6640.2	VEL	11.593	PTH	6.64	VHP	3.526	DPA	-27.64	RAP	294.87	ECC	1.2359

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 31	2813.76	-22.62	80.68	210.78	133.04	18 0 25	1813.8	-4.72	63.88
60.00	18 6 30	2672.83	-18.26	71.86	214.65	126.57	18 51 3	1672.8	-2.57	53.25
70.00	19 13 54	2474.68	-14.22	58.63	217.49	121.38	19 55 9	1474.7	-.53	38.73
80.00	20 36 16	2216.87	-11.20	40.82	219.25	117.86	21 13 13	1216.9	1.02	20.13
90.00	22 3 56	1934.02	-10.04	20.63	219.86	116.58	22 36 10	934.0	1.62	359.67
100.00	23 19 8	1691.34	-11.20	2.19	219.25	117.86	23 47 19	691.3	1.02	341.50
110.00	0 17 16	1521.50	-14.22	347.54	217.49	121.38	0 42 38	521.5	-.53	327.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0961	TRA	3.6758	TC3	-6.8361	BAU	1.3107	SGT	7869.5	SGR	404.0	SG3	1151.5	ST	119.3	SR	16.9	SS	80.2
RDE	.2215	RRA	.0914	RC3	-.2317	FAU	.13779	RRT	.7139	RRF	.7496	RTF	.9730	CRT	.7807	CRS	-.8511	CST	-.9923
FDE	2.7064	FRA	7.1096	FC3	-8.3226	BSP	13489	SGB	7879.9	R23	.0773	R13	.9731	LSA	144.2	MSA	12.9	SSA	1.2
BDE	1.1183	BRA	3.6770	BC3	6.8401	FSP	2118	SG1	7874.8	SG2	282.7	THA	2.10	EL1	120.0	EL2	10.5	ALF	6.36

LAUNCH DATE MAY 2 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 4 1972

HELIOCENTRIC CONIC DISTANCE 644.387 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.426	GAL	-3.68	AZL	91.20	HCA	203.01	SMA	187.14	ECC	.20435	INC	1.1954	V1	29.554
RP	225.37	LAP	.47	LOP	63.96	VP	21.646	GAP	-.26	AZP	88.90	TAL	337.99	TAP	181.00	RCA	148.90	APO	225.38	V2	24.403
RC	223.884	GL	-10.16	GP	-4.20	ZAL	131.19	ZAP	48.49	ETS	175.43	ZAE	86.58	ETE	180.12	ZAC	98.22	ETC	271.76	LVI	-5.61

PLANETOCENTRIC CONIC

C3	14.654	VHL	3.828	DLA	-12.11	RAL	357.62	RAD	6640.4	VEL	11.606	PTH	6.65	VHP	3.560	DPA	-27.37	RAP	295.10	ECC	1.2412

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 39	2819.66	-22.90	80.97	211.63	132.92	18 2 39	1819.7	-5.02	64.13
60.00	18 8 36	2678.89	-18.51	72.18	215.52	126.46	18 53 14	1678.9	-2.84	53.54
70.00	19 15 55	2480.94	-14.44	58.98	218.37	121.29	19 57 16	1480.9	-.77	39.06
80.00	20 38 13	2223.33	-11.40	41.19	220.14	117.78	21 15 17	1223.3	.80	20.48
90.00	22 5 52	1940.58	-10.24	21.01	220.74	116.51	22 38 12	940.6	1.41	.03
100.00	23 21 5	1697.80	-11.40	2.56	220.14	117.78	23 49 23	697.8	.80	341.85
110.00	0 19 18	1527.76	-14.44	347.89	218.37	121.29	0 44 45	527.8	-.77	327.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1354	TRA	3.8021	TC3	-6.8207	BAU	1.3369	SGT	8002.0	SGR	393.9	SG3	1124.7	ST	122.1	SR	17.0	SS	79.7
RDE	.2266	RRA	.0756	RC3	-.2136	FAU	.13397	RRT	.6674	RRF	.7038	RTF	.9725	CRT	.7660	CRS	-.8398	CST	-.9920
FDE	2.6985	FRA	7.0488	FC3	-7.9146	BSP	13726	SGB	8011.7	R23	.0723	R13	.9726	LSA	146.1	MSA	13.4	SSA	1.2
BDE	1.1578	BRA	3.8028	BC3	6.8240	FSP	2073	SG1	8006.3	SG2	293.2	THA	1.88	EL1	122.8	EL2	10.9	ALF	6.16

LAUNCH DATE MAY 2 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 6 1972

HELIOCENTRIC CONIC DISTANCE 648.451 EARTH TO MARS

RL	150.76	LAL	-.00	LOL	220.96	VL	32.435	GAL	-3.78	AZL	91.23	HCA	204.08	SNA	107.30	ECC	.20550
RP	225.78	LAP	.50	LOP	65.03	VP	21.613	GAP	-.41	AZP	88.88	TAL	337.52	TAP	101.59	RCA	148.81
RC	226.550	GL	-10.31	GP	-3.98	ZAL	131.70	ZAP	47.69	ETS	175.53	ZAE	85.54	ETE	180.06	ZAC	98.42

INC	1.2268	V1	29.854														
APO	225.79	V2	24.361														
ETC	271.82	LVI	-8.91														

PLANETOCENTRIC CONIC

C3	14.983	VHL	3.871	DLA	-12.04	RAL	358.19	RAD	6640.5	VEL	11.620	PTH	6.66	VHP	3.593	DPA	-27.11
RAP	295.36	ECC	1.2466														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 38	2826.16	-23.20	81.30	212.48	132.78	18 4 44	1826.2	-5.35	64.40
60.00	18 10 29	2685.63	-18.78	72.54	216.39	126.34	18 55 14	1685.6	-3.14	53.86
70.00	19 17 42	2488.00	-14.69	59.37	219.24	121.18	19 59 10	1488.0	-1.04	39.43
80.00	20 39 54	2230.71	-11.63	41.61	221.01	117.69	21 17 5	1230.7	.55	20.89
90.00	22 7 29	1948.11	-10.47	21.44	221.62	116.42	22 39 57	948.1	1.16	.45
100.00	23 22 46	1705.18	-11.63	2.98	221.01	117.69	23 51 11	705.2	.55	342.26
110.00	0 21 4	1534.82	-14.69	348.29	219.24	121.18	0 46 39	534.8	-1.04	328.34

DIFFERENTIAL CORRECTIONS

TDE	1.1774	TRA	3.9304	TC3	-6.7994	BAU	1.3626										
RDE	.2322	RRA	.0607	RC3	-.1977	FAU	.13008										
FDE	2.6929	FRA	6.9688	FC3	-7.5161	BSP	13969										
BDE	1.2001	BRA	3.9308	BC3	6.8022	FSP	2029										

MID-COURSE EXECUTION ACCURACY

SGT	8132.0	SGR	387.3	SG3	1098.4												
RRT	.6195	RRF	.6565	RTF	.9721												
SGB	8141.2	R23	.0681	R13	.9721												
SG1	8135.6	SG2	303.9	THA	1.69												

ORBIT DETERMINATION ACCURACY

ST	125.0	SR	17.2	SS	79.1												
CRT	.7529	CRS	-.8295	CST	-.9918												
LSA	148.3	MSA	13.7	SSA	1.2												
EL1	125.6	EL2	11.3	ALF	5.98												

LAUNCH DATE MAY 3 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 15 1971

HELIOCENTRIC CONIC DISTANCE 304.746 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	35.256	GAL	-3.32	AZL	91.87	HCA	98.04	SMA	256.60	ECC	.41568	INC	1.8680
RP	207.32	LAP	-1.85	LOP	319.97	VP	27.624	GAP	22.06	AZP	89.74	TAL	348.68	TAP	86.72	RCA	149.94	APO	363.27
RC	56.291	GL	-10.56	GP	.56	ZAL	113.29	ZAP	175.73	ETS	172.36	ZAE	174.46	ETE	90.17	ZAC	100.89	ETC	277.29

V1	29.547	V2	26.420	LVI	-17.91														

PLANETOCENTRIC CONIC

C3	39.181	VHL	6.259	DLA	-19.24	RAL	341.53	RAD	6650.4	VEL	12.612	PTH	7.47	VHP	11.015	DPA	-17.35	RAP	318.60

ECC	1.8448																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 36 37	2911.32	-27.06	85.72	207.96	130.75	17 25 9	1911.3	-9.59	68.02
60.00	17 38 57	2745.59	-21.17	75.82	212.99	125.13	18 24 42	1745.6	-5.76	56.75
70.00	18 57 44	2513.95	-15.60	60.83	216.79	120.77	19 39 38	1513.9	-2.03	40.78
80.00	20 31 53	2219.29	-11.27	40.96	219.29	117.83	21 8 53	1219.3	.94	20.26
90.00	22 5 17	1917.99	-9.55	19.71	220.19	116.75	22 37 15	918.0	2.13	358.77
100.00	23 14 45	1693.77	-11.27	2.33	219.29	117.83	23 42 59	693.8	.94	341.63
110.00	0 1 7	1560.77	-15.60	349.75	216.79	120.77	0 27 7	560.8	-2.03	329.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5014	TRA	-1.0912	TC3	-.0207	BAU	.0427	SGT	1153.4	SGR	583.3	SG3	114.3	ST	27.9	SR	26.8	SS	16.8
RDE	-.5815	RRA	.2240	RC3	.0788	FAU	.03395	RRT	.0178	RRF	-.0191	RTF	-.6786	CRT	.7473	CRS	.5348	CST	.9584
FDE	.2437	FRA	.9340	FC3	-.7501	BSP	1735	SGB	1292.5	R23	-.0029	R13	-.6787	LSA	38.8	MSA	16.4	SSA	1.1
BDE	.7678	BRA	1.1139	BC3	.0815	FSP	142	SG1	1153.5	SG2	583.2	THA	.69	EL1	36.2	EL2	13.7	ALF	43.48

LAUNCH DATE MAY 3 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 306.721 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	35.067	GAL	-3.21	AZL	91.87	HCA	99.30	SMA	250.19	ECC	.40057	INC	1.8734
RP	207.22	LAP	-1.85	LOP	321.23	VP	27.394	GAP	21.55	AZP	89.70	TAL	348.75	TAP	88.05	RCA	149.97	APO	350.41
RC	56.455	GL	-10.88	GP	.58	ZAL	113.29	ZAP	174.87	ETS	173.45	ZAE	174.40	ETE	80.90	ZAC	100.85	ETC	277.38

V1	29.547	V2	26.432	LVI	-18.08														

PLANETOCENTRIC CONIC

C3	36.756	VHL	6.063	DLA	-19.52	RAL	341.70	RAD	6649.5	VEL	12.516	PTH	7.40	VHP	10.665	DPA	-17.21	RAP	318.99

ECC	1.8049																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 38 30	2889.24	-26.07	84.54	207.17	131.32	17 26 40	1889.2	-8.50	67.08
60.00	17 41 15	2722.40	-20.25	74.54	212.19	125.62	18 26 37	1722.4	-4.75	55.63
70.00	19 0 35	2489.16	-14.73	59.44	216.00	121.17	19 42 4	1489.2	-1.09	39.49
80.00	20 35 20	2192.60	-10.42	39.44	218.52	118.14	21 11 53	1192.6	1.84	18.80
90.00	22 9 4	1890.27	-8.70	18.12	219.43	117.02	22 40 34	890.3	3.02	357.22
100.00	23 18 12	1667.07	-10.42	.60	218.52	118.14	23 45 59	667.1	1.84	340.17
110.00	0 3 57	1535.98	-14.73	348.35	216.00	121.17	0 29 33	536.0	-1.09	328.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4965	TRA	-1.0819	TC3	-.0107	BAU	.0419	SGT	1182.0	SGR	584.1	SG3	122.4	ST	28.6	SR	26.8	SS	17.4
RDE	-.5636	RRA	.2162	RC3	.0847	FAU	.03503	RRT	.0195	RRF	-.0213	RTF	-.6899	CRT	.7466	CRS	.5293	CST	.9569
FDE	.2505	FRA	.9719	FC3	-.8252	BSP	1794	SGB	1318.5	R23	-.0035	R13	-.6899	LSA	39.5	MSA	16.7	SSA	1.1
BDE	.7511	BRA	1.1033	BC3	.0853	FSP	154	SG1	1182.1	SG2	584.0	THA	.73	EL1	36.6	EL2	13.9	ALF	42.62

LAUNCH DATE MAY 3 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 308.921 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	34.889	GAL	-3.10	AZL	91.88	HCA	100.56	SMA	244.45	ECC	.38637	INC	1.8788
RP	207.13	LAP	-1.85	LOP	322.50	VP	27.176	GAP	21.05	AZP	89.66	TAL	348.84	TAP	89.41	RCA	150.00	APO	338.90
RC	56.701	GL	-11.21	GP	.60	ZAL	113.28	ZAP	174.00	ETS	174.23	ZAE	174.21	ETE	72.28	ZAC	100.82	ETC	277.46

V1	29.547	V2	26.443	LVI	-18.17														

PLANETOCENTRIC CONIC

C3	34.530	VHL	5.876	DLA	-19.82	RAL	341.84	RAD	6648.7	VEL	12.427	PTH	7.33	VHP	10.327	DPA	-17.08	RAP	319.37

ECC	1.5683																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 22	2867.22	-25.08	83.39	206.39	131.86	17 28 10	1867.2	-7.40	66.14
60.00	17 43 33	2699.20	-19.33	73.28	211.41	126.08	18 28 33	1699.2	-3.73	54.51
70.00	19 3 28	2464.26	-13.85	58.05	215.24	121.54	19 44 33	1464.3	-.13	38.19
80.00	20 38 53	2165.66	-9.55	37.91	217.77	118.42	21 14 59	1165.7	2.75	17.32
90.00	22 12 57	1862.21	-7.82	16.52	218.69	117.26	22 43 59	862.2	3.92	355.65
100.00	23 21 45	1640.13	-9.55	359.28	217.77	118.42	23 49 5	640.1	2.75	338.69
110.00	0 6 51	1511.08	-13.85	346.96	215.24	121.54	0 32 2	511.1	-.13	327.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4920	TRA	-1.0718	TC3	.0008	BAU	.0419	SGT	1209.9	SGR	584.6	SG3	131.0	ST	29.2	SR	26.8	SS	18.0
RDE	-.5462	RRA	.2065	RC3	.0908	FAU	.03618	RRT	.0220	RRF	-.0233	RTF	-.7009	CRT	.7463	CRS	.5228	CST	.9549
FDE	.2569	FRA	1.0114	FC3	-.9070	BSP	1839	SGB	1343.7	R23	-.0032	R13	-.7009	LSA	40.1	MSA	17.0	SSA	1.1
BDE	.7351	BRA	1.0918	BC3	.0908	FSP	167	SG1	1210.0	SG2	584.4	THA	.79	EL1	37.1	EL2	14.1	ALF	41.75

LAUNCH DATE MAY 3 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 311.318 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	34.722	GAL	-3.00	AZL	91.88	HCA	101.83	SMA	239.30	ECC	.37303	INC	1.8843
RP	207.05	LAP	-1.84	LOP	323.76	VP	26.970	GAP	20.55	AZP	89.61	TAL	348.94	TAP	90.77	RCA	150.04	APO	328.57
RC	57.030	GL	-11.54	GP	.62	ZAL	113.24	ZAP	173.11	ETS	174.82	ZAE	173.93	ETE	64.60	ZAC	100.79	ETC	277.54

V1	29.547	V2	26.453	LVI	-18.30														

PLANETOCENTRIC CONIC

C3	32.485	VHL	5.700	DLA	-20.12	RAL	341.97	RAD	6648.0	VEL	12.345	PTH	7.27	VHP	10.001	DPA	-16.95	RAP	319.74

ECC	1.5348																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 14	2845.31	-24.08	82.27	205.64	132.36	17 29 39	1845.3	-6.30	65.21
60.00	17 45 53	2676.04	-18.39	72.03	210.65	126.51	18 30 29	1676.0	-2.71	53.40
70.00	19 6 25	2439.30	-12.96	56.67	214.49	121.88	19 47 4	1439.3	.82	36.89
80.00	20 42 32	2138.49	-8.67	36.38	217.04	118.68	21 18 10	1138.5	3.67	15.82
90.00	22 16 59	1833.83	-6.94	14.91	217.97	117.48	22 47 32	833.8	4.83	354.06
100.00	23 25 24	1612.97	-8.67	357.75	217.04	118.68	23 52 16	613.0	3.67	337.19
110.00	0 9 47	1486.12	-12.96	345.58	214.49	121.88	0 34 33	486.1	.82	325.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4857	TRA	-1.0626	TC3	.0140	BAU	.0426	SGT	1238.1	SGR	584.5	SG3	140.1	ST	29.8	SR	26.8	SS	18.6
RDE	-.5293	RRA	.2009	RC3	.0971	FAU	.03739	RRT	.0233	RRF	-.0254	RTF	-.7117	CRT	.7447	CRS	.5158	CST	.9533
FDE	.2631	FRA	1.0522	FC3	-.9964	BSP	1900	SGB	1369.1	R23	-.0041	R13	-.7118	LSA	40.7	MSA	17.2	SSA	1.1
BDE	.7184	BRA	1.0814	BC3	.0981	FSP	181	SG1	1238.2	SG2	584.3	THA	.81	EL1	37.5	EL2	14.2	ALF	40.96

LAUNCH DATE MAY 3 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC DISTANCE 313.888 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 34.563 GAL -2.89 AZL 91.89 HCA 103.09 SMA 234.66 ECC .36047 INC 1.8898 V1 29.547
RP 206.97 LAP -1.84 LOP 325.03 VP 26.775 GAP 20.06 AZP 89.57 TAL 349.08 TAP 92.15 RCA 150.07 APO 319.25 V2 26.462
RC 57.440 GL -11.87 GP .64 ZAL 113.18 ZAP 172.21 ETS 175.28 ZAE 173.58 ETE 57.98 ZAC 100.76 ETC 277.62 LVI -10.42

PLANETOCENTRIC CONIC

C3 30.605 VHL 5.532 DLA -20.45 RAL 342.08 RAD 6647.2 VEL 12.269 PTH 7.21 VHP 9.686 DPA -16.82 RAP 320.10 ECC 1.8037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 5	2823.54	-23.08	81.17	204.91	132.84	17 31 8	1823.5	-5.21	64.29
60.00	17 48 13	2652.96	-17.45	70.80	209.92	126.92	18 32 26	1653.0	-1.70	52.30
70.00	19 9 24	2414.30	-12.05	55.29	213.76	122.20	19 49 39	1414.3	1.77	35.58
80.00	20 46 16	2111.13	-7.77	34.84	216.33	118.92	21 21 28	1111.1	4.59	14.31
90.00	22 21 8	1805.15	-6.03	13.28	217.27	117.68	22 51 13	805.2	5.74	352.44
100.00	23 29 8	1585.60	-7.77	356.21	216.33	118.92	23 55 34	585.6	4.59	335.68
110.00	0 12 47	1461.12	-12.05	344.21	213.76	122.20	0 37 8	461.1	1.77	324.50

DIFFERENTIAL CORRECTIONS

TDE -.4606 TRA-1.0529 TC3 .0286 BAU .0440
RDE -.5130 RRA .1935 RC3 .1038 FAU .03871
FDE .2696 FRA 1.0950 FC3-1.0951 BSP 1962
BDE .7029 BRA 1.0705 BC3 .1076 FSP 197

MID-COURSE EXECUTION ACCURACY

SGT 1266.2 SGR 584.1 SG3 149.9
RRT .0258 RRF -.0281 RTF -.7218
SGB 1394.4 R23 -.0044 R13 -.7219
SG1 1266.3 SG2 583.9 THA .87

ORBIT DETERMINATION ACCURACY

ST 30.4 SR 26.8 SS 19.2
CRT .7439 CRS .5090 CST .9514
LSA 41.3 MSA 17.5 SSA 1.2
EL1 37.9 EL2 14.4 ALF 40.12

LAUNCH DATE MAY 3 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 25 1971

HELIOCENTRIC CONIC DISTANCE 316.610 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 34.414 GAL -2.79 AZL 91.90 HCA 104.36 SMA 230.46 ECC .34866 INC 1.8954 V1 29.547
RP 206.90 LAP -1.84 LOP 326.30 VP 26.589 GAP 19.58 AZP 89.53 TAL 349.19 TAP 93.55 RCA 150.11 APO 310.81 V2 26.469
RC 57.930 GL -12.21 GP .66 ZAL 113.10 ZAP 171.30 ETS 175.64 ZAE 173.20 ETE 52.38 ZAC 100.74 ETC 277.69 LVI -10.54

PLANETOCENTRIC CONIC

C3 28.874 VHL 5.373 DLA -20.78 RAL 342.17 RAD 6646.6 VEL 12.199 PTH 7.16 VHP 9.382 DPA -16.69 RAP 320.44 ECC 1.4752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 45 55	2801.89	-22.07	80.09	204.21	133.29	17 32 37	1801.9	-4.13	63.38
60.00	17 50 35	2629.93	-16.51	69.59	209.20	127.30	18 34 25	1629.9	-.68	51.20
70.00	19 12 27	2389.24	-11.14	53.92	213.05	122.50	19 52 16	1389.2	2.73	34.27
80.00	20 50 8	2083.53	-6.86	33.30	215.64	119.13	21 24 52	1083.5	5.51	12.78
90.00	22 25 26	1776.12	-5.11	11.65	216.59	117.85	22 55 2	776.1	6.66	350.80
100.00	23 33 0	1558.00	-6.86	354.67	215.64	119.13	23 58 58	558.0	5.51	334.15
110.00	0 15 49	1436.05	-11.14	342.84	213.05	122.50	0 39 45	436.1	2.73	323.19

DIFFERENTIAL CORRECTIONS

TDE -.4642 TRA-1.0327 TC3 .0582 BAU .0483
RDE -.4971 RRA .1863 RC3 .1107 FAU .03998
FDE .2784 FRA 1.1422 FC3-1.1987 BSP 1895
BDE .6802 BRA 1.0494 BC3 .1251 FSP 216

MID-COURSE EXECUTION ACCURACY

SGT 1279.1 SGR 583.3 SG3 160.4
RRT .0262 RRF -.0312 RTF -.7421
SGB 1405.8 R23 -.0066 R13 -.7422
SG1 1279.2 SG2 583.0 THA .87

ORBIT DETERMINATION ACCURACY

ST 30.4 SR 26.7 SS 19.9
CRT .7387 CRS .5044 CST .9523
LSA 41.5 MSA 17.8 SSA 1.1
EL1 37.8 EL2 14.5 ALF 39.99

LAUNCH DATE MAY 3 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 27 1971

HELIOCENTRIC CONIC DISTANCE 319.467 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 34.273 GAL -2.69 AZL 91.90 HCA 105.63 SMA 226.65 ECC .33756 INC 1.9010 V1 29.547
RP 206.85 LAP -1.83 LOP 327.56 VP 26.413 GAP 19.11 AZP 89.49 TAL 349.32 TAP 94.95 RCA 150.14 APO 303.15 V2 26.476
RC 58.496 GL -12.56 GP .68 ZAL 113.00 ZAP 170.37 ETS 175.94 ZAE 172.79 ETE 47.68 ZAC 100.71 ETC 277.76 LVI -10.66

PLANETOCENTRIC CONIC

C3 27.284 VHL 5.223 DLA -21.12 RAL 342.24 RAD 6645.9 VEL 12.134 PTH 7.10 VHP 9.088 DPA -16.57 RAP 320.77 ECC 1.4490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 45	2780.50	-21.07	79.04	203.53	133.70	17 34 5	1780.5	-3.06	62.48
60.00	17 52 57	2607.10	-15.56	68.40	208.51	127.66	18 36 24	1607.1	.32	50.11
70.00	19 15 33	2364.27	-10.22	52.57	212.37	122.77	19 54 57	1364.3	3.68	32.96
80.00	20 54 6	2055.85	-5.94	31.76	214.98	119.31	21 28 22	1055.9	6.43	11.25
90.00	22 29 53	1746.89	-4.18	10.01	215.94	117.99	22 59 0	746.9	7.57	349.15
100.00	23 36 58	1530.32	-5.94	353.13	214.98	119.31	24 2 28	530.3	6.43	332.62
110.00	0 18 55	1411.09	-10.22	341.49	212.37	122.77	0 42 26	411.1	3.68	321.88

DIFFERENTIAL CORRECTIONS

TDE -.4631 TRA-1.0267 TC3 .0691 BAU .0498
RDE -.4818 RRA .1792 RC3 .1178 FAU .04151
FDE .2833 FRA 1.1874 FC3-1.3171 BSP 2007
BDE .6682 BRA 1.0422 BC3 .1366 FSP 232

MID-COURSE EXECUTION ACCURACY

SGT 1311.7 SGR 582.1 SG3 171.5
RRT .0300 RRF -.0340 RTF -.7463
SGB 1435.1 R23 -.0061 R13 -.7463
SG1 1311.9 SG2 581.7 THA .95

ORBIT DETERMINATION ACCURACY

ST 31.2 SR 26.6 SS 20.5
CRT .7395 CRS .4931 CST .9487
LSA 42.2 MSA 18.0 SSA 1.2
EL1 38.3 EL2 14.6 ALF 38.91

LAUNCH DATE MAY 3 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 29 1971

HELIOCENTRIC CONIC DISTANCE 322.446 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 34.140 GAL -2.59 AZL 91.91 HCA 106.89 SMA 223.18 ECC .32712 INC 1.9068 V1 29.547
RP 206.80 LAP -1.82 LOP 328.83 VP 26.246 GAP 18.64 AZP 89.45 TAL 349.47 TAP 96.37 RCA 150.17 APO 296.18 V2 26.482
RC 59.137 GL -12.90 GP .70 ZAL 112.88 ZAP 169.43 ETS 176.19 ZAE 172.39 ETE 43.76 ZAC 100.69 ETC 277.83 LVI -10.77

PLANETOCENTRIC CONIC

C3 25.821 VHL 5.081 DLA -21.47 RAL 342.31 RAD 6645.3 VEL 12.074 PTH 7.06 VHP 8.803 DPA -16.44 RAP 321.08 ECC 1.4249

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 34	2739.33	-20.07	78.02	202.88	134.09	17 35 33	1739.3	-1.99	61.60
60.00	17 55 20	2564.42	-14.61	67.24	207.85	127.99	18 38 25	1564.4	1.32	49.03
70.00	19 18 42	2339.34	-9.30	51.23	211.72	123.01	19 57 42	1339.3	4.63	31.66
80.00	20 58 11	2028.02	-5.01	30.22	214.34	119.47	21 31 59	1028.0	7.36	9.70
90.00	22 34 29	1717.37	-3.23	8.35	215.32	118.11	23 3 7	717.4	8.49	347.46
100.00	23 41 3	1502.50	-5.01	351.59	214.34	119.47	24 6 5	502.5	7.36	331.07
110.00	0 22 5	1386.16	-9.30	340.15	211.72	123.01	0 45 11	386.2	4.63	320.57

DIFFERENTIAL CORRECTIONS

TDE -.4599 TRA-1.0187 TC3 .0842 BAU .0521
RDE -.4669 RRA .1723 RC3 .1252 FAU .04311
FDE .2866 FRA 1.2354 FC3-1.4455 BSP 2096
BDE .6553 BRA 1.0331 BC3 .1509 FSP 250

MID-COURSE EXECUTION ACCURACY

SGT 1341.5 SGR 580.5 SG3 183.4
RRT .0337 RRF -.0371 RTF -.7523
SGB 1461.7 R23 -.0060 R13 -.7524
SG1 1341.7 SG2 580.0 THA 1.03

ORBIT DETERMINATION ACCURACY

ST 31.9 SR 26.5 SS 21.2
CRT .7395 CRS .4860 CST .9454
LSA 42.8 MSA 18.2 SSA 1.2
EL1 38.8 EL2 14.7 ALF 37.98

LAUNCH DATE MAY 3 1971 FLIGHT TIME 120.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 325.532 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	34.014	GAL	-2.49	AZL	91.91	HCA	108.16	SMA	220.01	ECC	.31729	INC	1.9126
RP	206.75	LAP	-1.82	LOP	330.10	VP	26.088	GAP	18.18	AZP	89.40	TAL	349.63	TAP	97.79	RCA	150.20	APO	289.82
RC	59.850	GL	-13.25	GP	.73	ZAL	112.75	ZAP	168.47	ETS	176.40	ZAE	172.01	ETE	40.50	ZAC	100.68	ETC	277.89

V1	29.547	V2	26.487	LVI	-18.88
---	---	---	---	---	---

PLANETOCENTRIC CONIC

C3	24.473	VHL	4.947	DLA	-21.83	RAL	342.35	RAD	6644.8	VEL	12.019	PTH	7.01	VHP	8.528	DPA	-16.32	RAP	321.38
V1	29.547	V2	26.487	LVI	-18.88
---	---	---	---	---	---

ECC	1.4028																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 51 23	2738.41	-19.07	77.03	202.25	134.46	17 37 2	1738.4	-.94	60.72
60.00	17 57 45	2561.93	-13.67	66.09	207.21	128.29	18 40 27	1561.9	2.31	47.95
70.00	19 21 55	2314.48	-8.38	49.90	211.09	123.23	20 0 30	1314.5	5.57	30.35
80.00	21 2 23	2000.06	-4.07	28.68	213.73	119.60	21 35 43	1000.1	8.28	8.13
90.00	22 39 16	1687.57	-2.28	6.69	214.72	118.20	23 7 23	687.6	9.41	345.76
100.00	23 45 15	1474.54	-4.07	350.04	213.73	119.60	24 9 49	474.5	8.28	329.50
110.00	0 25 18	1361.29	-8.38	338.82	211.09	123.23	0 47 59	361.3	5.57	319.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4550	TRA	-1.0096	TC3	.1005	BAU	.0545	SGT	1369.1	SGR	578.4	SG3	196.0	ST	32.4	SR	26.4	SS	21.8
RDE	-.4525	RRA	.1655	RC3	.1328	FAU	.04480	RRT	.0368	RRF	-.0404	RTF	-.7586	CRT	.7386	CRS	.4765	CST	.9423
FDE	.2938	FRA	1.2860	FC3	-1.5847	BSP	2172	SGB	1486.3	R23	-.0065	R13	-.7586	LSA	43.4	MSA	18.5	SSA	1.2
BDE	.6417	BRA	1.0231	BC3	.1666	FSP	270	SG1	1369.3	SG2	578.0	THA	1.08	EL1	39.1	EL2	14.7	ALF	37.16

LAUNCH DATE MAY 3 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 328.715 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	33.896	GAL	-2.40	AZL	91.92	HCA	109.43	SMA	217.12	ECC	.30804	INC	1.9185
RP	206.72	LAP	-1.81	LOP	331.37	VP	25.937	GAP	17.74	AZP	89.36	TAL	349.79	TAP	99.22	RCA	150.24	APO	284.00
RC	60.633	GL	-13.60	GP	.76	ZAL	112.60	ZAP	167.49	ETS	176.57	ZAE	171.67	ETE	37.78	ZAC	100.66	ETC	277.95

V1	29.547	V2	26.491	LVI	-18.98
---	---	---	---	---	---

PLANETOCENTRIC CONIC

C3	23.232	VHL	4.820	DLA	-22.20	RAL	342.38	RAD	6644.2	VEL	11.967	PTH	6.97	VHP	8.263	DPA	-16.21	RAP	321.66
V1	29.547	V2	26.491	LVI	-18.98
---	---	---	---	---	---

ECC	1.3823																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 12	2717.76	-18.09	76.06	201.65	134.79	17 38 30	1717.8	.10	59.86
60.00	18 0 10	2539.65	-12.73	64.96	206.60	128.57	18 42 30	1539.7	3.29	46.89
70.00	19 25 12	2289.71	-7.45	48.58	210.49	123.43	20 3 21	1289.7	6.51	29.04
80.00	21 6 43	1971.98	-3.12	27.13	213.16	119.71	21 39 35	972.0	9.19	6.55
90.00	22 44 13	1657.48	-1.31	5.01	214.16	118.25	23 11 51	657.5	10.33	344.02
100.00	23 49 35	1446.45	-3.12	348.50	213.16	119.71	24 13 41	446.5	9.19	327.92
110.00	0 28 34	1336.53	-7.45	337.50	210.49	123.43	0 50 50	336.5	6.51	317.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4492	TRA	-.9996	TC3	.1196	BAU	.0573	SGT	1394.8	SGR	576.1	SG3	209.6	ST	32.9	SR	26.2	SS	22.4
RDE	-.4386	RRA	.1588	RC3	.1406	FAU	.04659	RRT	.0402	RRF	-.0442	RTF	-.7655	CRT	.7375	CRS	.4673	CST	.9395
FDE	.2996	FRA	1.3395	FC3	-1.7363	BSP	2234	SGB	1509.1	R23	-.0071	R13	-.7655	LSA	43.9	MSA	18.7	SSA	1.2
BDE	.6278	BRA	1.0121	BC3	.1846	FSP	292	SG1	1395.0	SG2	575.5	THA	1.15	EL1	39.4	EL2	14.8	ALF	36.40

LAUNCH DATE MAY 3 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 331.985 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	33.784	GAL	-2.31	AZL	91.92	HCA	110.70	SMA	214.47	ECC	.29934	INC	1.9244
RP	206.70	LAP	-1.80	LOP	332.64	VP	25.794	GAP	17.30	AZP	89.32	TAL	349.96	TAP	100.66	RCA	150.27	APO	278.66
RC	61.483	GL	-13.96	GP	.78	ZAL	112.43	ZAP	166.50	ETS	176.72	ZAE	171.36	ETE	35.52	ZAC	100.65	ETC	278.01

V1	29.547	V2	26.494	LVI	-19.08
---	---	---	---	---	---

PLANETOCENTRIC CONIC

C3	22.088	VHL	4.700	DLA	-22.58	RAL	342.40	RAD	6643.8	VEL	11.920	PTH	6.93	VHP	8.006	DPA	-16.09	RAP	321.92
V1	29.547	V2	26.494	LVI	-19.08
---	---	---	---	---	---

ECC	1.3635																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 1	2697.42	-17.11	75.12	201.08	135.10	17 39 58	1697.4	1.12	59.01
60.00	18 2 37	2517.62	-11.79	63.85	206.01	128.82	18 44 35	1517.6	4.25	45.83
70.00	19 28 32	2265.07	-6.53	47.27	209.91	123.60	20 6 17	1265.1	7.43	27.74
80.00	21 11 11	1943.79	-2.17	25.58	212.61	119.79	21 43 35	943.8	10.11	4.96
90.00	22 49 22	1627.10	-.33	3.31	213.63	118.28	23 16 29	627.1	11.25	342.26
100.00	23 54 3	1418.26	-2.17	346.95	212.61	119.79	24 17 41	418.3	10.11	326.33
110.00	0 31 54	1311.89	-6.52	336.19	209.91	123.60	0 53 46	311.9	7.43	316.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4431	TRA	-.9887	TC3	.1403	BAU	.0604	SGT	1418.9	SGR	573.3	SG3	224.1	ST	33.4	SR	26.1	SS	23.1
RDE	-.4252	RRA	.1523	RC3	.1487	FAU	.04852	RRT	.0441	RRF	-.0483	RTF	-.7721	CRT	.7364	CRS	.4573	CST	.9362
FDE	.3048	FRA	1.3954	FC3	-1.9017	BSP	2291	SGB	1530.4	R23	-.0076	R13	-.7722	LSA	44.4	MSA	18.9	SSA	1.2
BDE	.6141	BRA	1.0004	BC3	.2044	FSP	315	SG1	1419.2	SG2	572.6	THA	1.22	EL1	39.7	EL2	14.8	ALF	35.68

LAUNCH DATE MAY 3 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 335.334 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	33.679	GAL	-2.22	AZL	91.93	HCA	111.97	SMA	212.03	ECC	.29116	INC	1.9306
RP	206.68	LAP	-1.79	LOP	333.91	VP	25.658	GAP	16.87	AZP	89.28	TAL	350.14	TAP	102.11	RCA	150.30	APO	273.76
RC	62.398	GL	-14.31	GP	.81	ZAL	112.26	ZAP	165.48	ETS	176.86	ZAE	171.11	ETE	33.64	ZAC	100.65	ETC	278.06

V1	29.547	V2	26.496	LVI	-19.18
---	---	---	---	---	---

PLANETOCENTRIC CONIC

C3	21.033	VHL	4.586	DLA	-22.96	RAL	342.41	RAD	6643.3	VEL	11.876	PTH	6.89	VHP	7.757	DPA	-15.99	RAP	322.16
V1	29.547	V2	26.496	LVI	-19.18
---	---	---	---	---	---

ECC	1.3462																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 49	2677.41	-16.14	74.20	200.53	135.39	17 41 26	1677.4	2.12	58.18
60.00	18 5 5	2495.86	-10.86	62.77	205.45	129.05	18 46 41	1495.9	5.21	44.78
70.00	19 31 55	2240.57	-5.60	45.98	209.37	123.75	20 9 16	1240.6	8.35	26.43
80.00	21 15 47	1915.50	-1.21	24.02	212.09	119.84	21 47 43	915.5	11.01	3.35
90.00	22 54 43	1596.40	.66	1.60	213.13	118.27	23 21 20	596.4	12.16	340.47
100.00	0 2 35	1389.97	-1.21	345.39	212.09	119.84	0 25 45	390.0	11.01	324.72
110.00	0 35 17	1287.39	-5.60	334.90	209.37	123.75	0 56 45	287.4	8.35	315.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4365	TRA	-.9773	TC3	.1611	BAU	.0633	SGT	1441.3	SGR	570.2	SG3	239.5	ST	33.8	SR	25.9	SS	23.8
RDE	-.4122	RRA	.1460	RC3	.1570	FAU	.05053	RRT	.0480	RRF	-.0526	RTF	-.7783	CRT	.7350	CRS	.4468	CST	.9328
FDE	.3098	FRA	1.4543	FC3	-2.0799	BSP	2341	SGB	1550.0	R23	-.0083	R13	-.7784	LSA	44.8	MSA	19.1	SSA	1.3
BDE	.6004	BRA	.9881	BC3	.2249	FSP	340	SG1	1441.7	SG2	569.4	THA	1.29	EL1	39.9	EL2	14.9	ALF	35.01

LAUNCH DATE MAY 3 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 8 1971

HELIOCENTRIC CONIC DISTANCE 338.754 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	33.579	GAL	-2.13	AZL	91.94	HCA	113.24	SMA	209.79	ECC	.28346	INC	1.9368	V1	29.547
RP	206.67	LAP	-1.78	LOP	335.18	VP	25.528	GAP	16.45	AZP	89.24	TAL	350.33	TAP	103.56	RCA	150.32	APO	269.26	V2	26.496
RC	63.376	GL	-14.67	GP	.85	ZAL	112.07	ZAP	164.44	ETS	176.97	ZAE	170.90	ETE	32.09	ZAC	100.64	ETC	278.11	LVI	-19.27

PLANETOCENTRIC CONIC

C3	20.061	VHL	4.479	DLA	-23.35	RAL	342.41	RAD	6642.9	VEL	11.835	PTH	6.85	VHP	7.517	DPA	-15.88	RAP	322.38	ECC	1.3302

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 37	2657.75	-15.19	73.31	200.01	135.65	17 42 55	1657.7	3.11	57.35
60.00	18 7 34	2474.39	-9.93	61.71	204.92	129.26	18 48 48	1474.4	6.15	43.75
70.00	19 35 23	2216.24	-4.68	44.70	208.85	123.87	20 12 19	1216.2	9.25	25.13
80.00	21 20 32	1887.11	-.25	22.47	211.60	119.86	21 52 0	887.1	11.91	1.72
90.00	23 0 18	1565.36	1.86	359.87	212.67	118.24	23 26 23	565.4	13.07	338.65
100.00	0 7 20	1361.58	-.25	343.83	211.60	119.86	0 30 2	361.6	11.91	323.09
110.00	0 38 45	1263.06	-4.68	333.62	208.85	123.87	0 59 48	263.1	9.25	314.05

DIFFERENTIAL CORRECTIONS

TDE	-.4298	TRA	-.9654	TC3	.1840	BAU	.0664
RDE	-.3996	RRA	.1398	RC3	.1654	FAU	.05270
FDE	.3149	FRA	1.5159	FC3	-2.2743	BSP	2383
BDE	.5868	BRA	.9755	BC3	.2474	FSP	367

MID-COURSE EXECUTION ACCURACY

SGT	1462.4	SGR	566.7	SG3	255.9
RRT	.0525	RRF	-.0575	RTF	-.7845
SGB	1568.4	R23	-.0090	R13	-.7846
SG1	1462.8	SG2	565.8	THA	1.37

ORBIT DETERMINATION ACCURACY

ST	34.1	SR	25.7	SS	24.5
CRT	.7338	CRS	.4364	CST	.9293
LSA	45.2	MSA	19.4	SSA	1.3
EL1	40.0	EL2	14.9	ALF	34.37

LAUNCH DATE MAY 3 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 10 1971

HELIOCENTRIC CONIC DISTANCE 342.240 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	33.486	GAL	-2.05	AZL	91.94	HCA	114.51	SMA	207.73	ECC	.27622	INC	1.9431	V1	29.547
RP	206.68	LAP	-1.77	LOP	336.45	VP	25.405	GAP	16.03	AZP	89.19	TAL	350.51	TAP	105.02	RCA	150.35	APO	265.11	V2	26.496
RC	64.414	GL	-15.02	GP	.88	ZAL	111.87	ZAP	163.39	ETS	177.07	ZAE	170.76	ETE	30.83	ZAC	100.65	ETC	278.15	LVI	-19.36

PLANETOCENTRIC CONIC

C3	19.165	VHL	4.378	DLA	-23.74	RAL	342.40	RAD	6642.5	VEL	11.798	PTH	6.82	VHP	7.285	DPA	-15.79	RAP	322.58	ECC	1.3154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 26	2638.46	-14.24	72.44	199.51	135.89	17 44 24	1638.5	4.08	56.54
60.00	18 10 4	2453.24	-9.02	60.67	204.42	129.45	18 50 57	1453.2	7.07	42.72
70.00	19 38 54	2192.11	-3.76	43.44	208.37	123.97	20 15 26	1192.1	10.15	23.83
80.00	21 25 27	1858.62	.71	20.90	211.15	119.85	21 56 26	858.6	12.81	.08
90.00	23 6 7	1533.93	2.67	358.11	212.24	118.16	23 31 41	533.9	13.98	336.79
100.00	0 12 15	1333.09	.71	342.27	211.15	119.85	0 34 28	333.1	12.81	321.45
110.00	0 42 16	1238.93	-3.76	332.35	208.37	123.97	1 2 55	238.9	10.15	312.75

DIFFERENTIAL CORRECTIONS

TDE	-.4227	TRA	-.9531	TC3	.2062	BAU	.0691
RDE	-.3874	RRA	.1337	RC3	.1740	FAU	.05498
FDE	.3196	FRA	1.5808	FC3	-2.4836	BSP	2425
BDE	.5734	BRA	.9624	BC3	.2698	FSP	395

MID-COURSE EXECUTION ACCURACY

SGT	1481.8	SGR	562.9	SG3	273.4
RRT	.0571	RRF	-.0626	RTF	-.7900
SGB	1585.1	R23	-.0099	R13	-.7901
SG1	1482.2	SG2	561.8	THA	1.45

ORBIT DETERMINATION ACCURACY

ST	34.4	SR	25.5	SS	25.2
CRT	.7324	CRS	.4253	CST	.9255
LSA	45.6	MSA	19.6	SSA	1.3
EL1	40.2	EL2	14.9	ALF	33.76

LAUNCH DATE MAY 3 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 12 1971

HELIOCENTRIC CONIC DISTANCE 345.785 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	33.397	GAL	-1.97	AZL	91.95	HCA	115.78	SMA	205.83	ECC	.26940	INC	1.9495	V1	29.547
RP	206.69	LAP	-1.76	LOP	337.72	VP	25.287	GAP	15.63	AZP	89.15	TAL	350.70	TAP	106.48	RCA	150.38	APO	261.28	V2	26.495
RC	65.512	GL	-15.38	GP	.91	ZAL	111.66	ZAP	162.31	ETS	177.16	ZAE	170.68	ETE	29.82	ZAC	100.66	ETC	278.19	LVI	-19.45

PLANETOCENTRIC CONIC

C3	18.339	VHL	4.282	DLA	-24.13	RAL	342.39	RAD	6642.1	VEL	11.763	PTH	6.79	VHP	7.060	DPA	-15.69	RAP	322.75	ECC	1.3018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 14	2619.57	-13.32	71.60	199.04	136.11	17 45 53	1619.6	5.02	55.75
60.00	18 12 35	2432.44	-8.12	59.65	203.95	129.61	18 53 8	1432.4	7.97	41.71
70.00	19 42 28	2168.19	-2.85	42.18	207.91	124.05	20 18 36	1168.2	11.03	22.54
80.00	21 30 31	1830.03	1.68	19.33	210.74	119.81	22 1 1	830.0	13.69	358.41
90.00	23 12 12	1502.07	3.70	356.33	211.85	118.06	23 37 14	502.1	14.88	334.88
100.00	0 17 19	1304.50	1.68	340.70	210.74	119.81	0 39 4	304.5	13.69	319.78
110.00	0 45 50	1215.01	-2.85	331.10	207.91	124.05	1 6 6	215.0	11.03	311.45

DIFFERENTIAL CORRECTIONS

TDE	-.4156	TRA	-.9406	TC3	.2292	BAU	.0719
RDE	-.3756	RRA	.1277	RC3	.1828	FAU	.05745
FDE	.3238	FRA	1.6489	FC3	-2.7123	BSP	2471
BDE	.5602	BRA	.9492	BC3	.2932	FSP	426

MID-COURSE EXECUTION ACCURACY

SGT	1499.8	SGR	558.7	SG3	292.1
RRT	.0621	RRF	-.0682	RTF	-.[illegible]49
SGB	1600.5	R23	-.0109	R13	-.7951
SG1	1500.2	SG2	557.5	THA	1.54

ORBIT DETERMINATION ACCURACY

ST	34.7	SR	25.3	SS	25.9
CRT	.7311	CRS	.4137	CST	.9214
LSA	46.0	MSA	19.8	SSA	1.3
EL1	40.2	EL2	14.9	ALF	33.17

LAUNCH DATE MAY 3 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 14 1971

HELIOCENTRIC CONIC DISTANCE 349.383 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	33.314	GAL	-1.89	AZL	91.96	HCA	117.04	SMA	204.07	ECC	.26300	INC	1.9561	V1	29.547
RP	206.71	LAP	-1.74	LOP	338.99	VP	25.175	GAP	15.23	AZP	89.11	TAL	350.90	TAP	107.94	RCA	150.40	APO	257.75	V2	26.493
RC	66.667	GL	-15.73	GP	.95	ZAL	111.45	ZAP	161.20	ETS	177.23	ZAE	170.66	ETE	29.06	ZAC	100.67	ETC	278.23	LVI	-19.53

PLANETOCENTRIC CONIC

C3	17.577	VHL	4.192	DLA	-24.52	RAL	342.36	RAD	6641.7	VEL	11.731	PTH	6.76	VHP	6.843	DPA	-15.60	RAP	322.90	ECC	1.2893

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 8	2601.09	-12.41	70.78	198.60	136.21	17 47 23	1601.1	5.95	54.97
60.00	18 15 8	2412.00	-7.23	58.65	203.51	129.76	18 55 20	1412.0	8.86	40.71
70.00	19 46 7	2144.51	-1.95	40.95	207.49	124.10	20 21 51	1144.5	11.89	21.25
80.00	21 35 46	1801.32	2.65	17.76	210.35	119.75	22 5 47	801.3	14.56	356.73
90.00	23 18 35	1469.71	4.73	354.51	211.50	117.91	23 43 5	469.7	15.78	332.93
100.00	0 22 34	1275.80	2.65	339.12	210.35	119.75	0 43 50	275.8	14.56	318.10
110.00	0 49 29	1191.33	-1.95	329.86	207.49	124.10	1 9 20	191.3	11.89	310.16

DIFFERENTIAL CORRECTIONS

TDE	-.4083	TRA	-.9273	TC3	.2519	BAU	.0744
RDE	-.3643	RRA	.1219	RC3	.1917	FAU	.06007
FDE	.3278	FRA	1.7204	FC3	-2.9586	BSP	2506
BDE	.5472	BRA	.9353	BC3	.3165	FSP	459

MID-COURSE EXECUTION ACCURACY

SGT	1515.3	SGR	554.2	SG3	311.9
RRT	.0676	RRF	-.0744	RTF	-.7995
SGB	1613.5	R23	-.0120	R13	-.7996
SG1	1515.9	SG2	552.8	THA	1.63

ORBIT DETERMINATION ACCURACY

ST	34.9	SR	25.0	SS	26.6
CRT	.7299	CRS	.4017	CST	.9170
LSA	46.3	MSA	20.0	SSA	1.3
EL1	40.3	EL2	14.8	ALF	32.62

LAUNCH DATE MAY 3 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 353.031 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 33.236 GAL -1.82 AZL 91.96 HCA 118.31 SMA 202.45 ECC .25698 INC 1.9628 V1 29.547
RP 206.73 LAP -1.73 LOP 340.26 VP 25.068 GAP 14.84 AZP 89.07 TAL 351.09 TAP 109.40 RCA 150.43 APO 254.48 V2 26.489
RC 67.877 GL -16.08 GP .99 ZAL 111.24 ZAP 160.07 ETS 177.30 ZAE 170.71 ETE 28.52 ZAC 100.69 ETC 278.26 LVI -19.60

PLANETOCENTRIC CONIC

C3 16.874 VHL 4.108 DLA -24.91 RAL 342.33 RAD 6641.4 VEL 11.701 PTH 6.73 VHP 6.633 DPA -15.52 RAP 323.03 ECC 1.2777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 50	2583.05	-11.52	69.99	198.19	136.49	17 48 53	1583.0	6.85	54.21
60.00	18 17 41	2391.95	-6.36	57.68	203.09	129.88	18 57 33	1391.9	9.73	39.73
70.00	19 49 49	2121.09	-1.05	39.72	207.09	124.14	20 25 10	1121.1	12.74	19.96
80.00	21 41 12	1772.49	3.63	16.17	210.01	119.66	22 10 44	772.5	15.43	355.03
90.00	23 25 18	1436.73	5.78	352.66	211.19	117.73	23 49 15	436.7	16.67	330.92
100.00	0 28 0	1246.96	3.63	337.54	210.01	119.66	0 48 47	247.0	15.43	316.40
110.00	0 53 11	1167.91	-1.05	328.64	207.09	124.14	1 12 39	167.9	12.74	308.88

DIFFERENTIAL CORRECTIONS

TDE -.4014 TRA -.9141 TC3 .2722 BAU .0763
RDE -.3533 RRA .1161 RC3 .2008 FAU .06277
FDE .3322 FRA 1.7968 FC3-3.2202 BSP 2540
BDE .5347 BRA .9215 BC3 .3382 FSP 495

MID-COURSE EXECUTION ACCURACY

SGT 1529.7 SGR 549.5 SG3 332.9
RRT .0734 RRF -.0809 RTF -.8034
SGB 1625.3 R23 -.0132 R13 -.8036
SG1 1530.3 SG2 547.8 THA 1.73

ORBIT DETERMINATION ACCURACY

ST 35.0 SR 24.8 SS 27.3
CRT .7290 CRS .3901 CST .9125
LSA 46.7 MSA 20.2 SSA 1.3
EL1 40.3 EL2 14.7 ALF 32.07

LAUNCH DATE MAY 3 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 356.725 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 33.162 GAL -1.75 AZL 91.97 HCA 119.58 SMA 200.95 ECC .25133 INC 1.9697 V1 29.547
RP 206.77 LAP -1.71 LOP 341.52 VP 24.965 GAP 14.46 AZP 89.03 TAL 351.28 TAP 110.87 RCA 150.45 APO 251.46 V2 26.485
RC 69.140 GL -16.43 GP 1.03 ZAL 111.02 ZAP 158.92 ETS 177.36 ZAE 170.83 ETE 28.22 ZAC 100.71 ETC 278.28 LVI -19.67

PLANETOCENTRIC CONIC

C3 16.227 VHL 4.028 DLA -25.31 RAL 342.30 RAD 6641.1 VEL 11.673 PTH 6.71 VHP 6.430 DPA -15.45 RAP 323.13 ECC 1.2670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 38	2565.45	-10.65	69.23	197.80	136.65	17 50 24	1565.5	7.73	53.46
60.00	18 20 16	2372.30	-5.50	56.73	202.71	129.99	18 59 48	1372.3	10.57	38.75
70.00	19 53 35	2097.94	-.17	38.52	206.73	124.15	20 28 33	1097.9	13.57	18.68
80.00	21 46 50	1743.50	4.60	14.57	209.70	119.53	22 15 53	743.5	16.28	353.30
90.00	23 32 24	1403.02	6.84	350.75	210.92	117.51	23 55 47	403.0	17.56	328.85
100.00	0 33 37	1217.97	4.60	335.94	209.70	119.53	0 53 55	218.0	16.28	314.67
110.00	0 56 57	1144.76	-.17	327.43	206.73	124.15	1 16 2	144.8	13.57	307.60

DIFFERENTIAL CORRECTIONS

TDE -.3940 TRA -.9002 TC3 .2943 BAU .0784
RDE -.3427 RRA .1104 RC3 .2100 FAU .06574
FDE .3358 FRA 1.8764 FC3-3.5076 BSP 2566
BDE .5222 BRA .9070 BC3 .3615 FSP 531

MID-COURSE EXECUTION ACCURACY

SGT 1541.5 SGR 544.4 SG3 355.5
RRT .0800 RRF -.0883 RTF -.8071
SGB 1634.8 R23 -.0147 R13 -.8073
SG1 1542.2 SG2 542.4 THA 1.85

ORBIT DETERMINATION ACCURACY

ST 35.2 SR 24.5 SS 28.0
CRT .7281 CRS .3778 CST .9076
LSA 47.0 MSA 20.4 SSA 1.3
EL1 40.3 EL2 14.7 ALF 31.57

LAUNCH DATE MAY 3 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 360.460 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 33.093 GAL -1.68 AZL 91.98 HCA 120.85 SMA 199.56 ECC .24601 INC 1.9768 V1 29.547
RP 206.81 LAP -1.70 LOP 342.79 VP 24.868 GAP 14.09 AZP 88.99 TAL 351.48 TAP 112.33 RCA 150.47 APO 248.66 V2 26.480
RC 70.455 GL -16.78 GP 1.08 ZAL 110.80 ZAP 157.73 ETS 177.41 ZAE 171.02 ETE 28.15 ZAC 100.74 ETC 278.30 LVI -19.74

PLANETOCENTRIC CONIC

C3 15.629 VHL 3.953 DLA -25.70 RAL 342.27 RAD 6640.8 VEL 11.648 PTH 6.69 VHP 6.234 DPA -15.38 RAP 323.19 ECC 1.2572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 27	2548.29	-9.80	68.49	197.44	136.80	17 51 55	1548.3	8.59	52.73
60.00	18 22 51	2353.04	-4.66	55.81	202.35	130.08	19 2 4	1353.0	11.40	37.80
70.00	19 57 25	2075.04	.71	37.32	206.40	124.15	20 32 0	1075.0	14.38	17.41
80.00	21 52 41	1714.24	5.58	12.95	209.42	119.38	22 21 15	714.2	17.13	351.54
90.00	23 39 58	1368.27	7.93	348.78	210.70	117.23	24 2 46	368.3	18.46	326.69
100.00	0 39 29	1188.71	5.58	334.32	209.42	119.38	0 59 18	188.7	17.13	312.91
110.00	1 0 47	1121.85	.71	326.24	206.40	124.15	1 19 29	121.9	14.38	306.33

DIFFERENTIAL CORRECTIONS

TDE -.3775 TRA -.8762 TC3 .3365 BAU .0839
RDE -.3323 RRA .1050 RC3 .2195 FAU .06896
FDE .3364 FRA 1.9566 FC3-3.8199 BSP 2479
BDE .5029 BRA .8825 BC3 .4018 FSP 569

MID-COURSE EXECUTION ACCURACY

SGT 1535.0 SGR 539.0 SG3 379.2
RRT .0867 RRF -.0962 RTF -.8172
SGB 1626.9 R23 -.0155 R13 -.8174
SG1 1535.8 SG2 536.7 THA 1.99

ORBIT DETERMINATION ACCURACY

ST 34.6 SR 24.2 SS 28.7
CRT .7231 CRS .3630 CST .9040
LSA 46.7 MSA 20.7 SSA 1.3
EL1 39.6 EL2 14.6 ALF 31.64

LAUNCH DATE MAY 3 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 364.233 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 33.028 GAL -1.62 AZL 91.98 HCA 122.12 SMA 198.28 ECC .24103 INC 1.9840 V1 29.547
RP 206.87 LAP -1.68 LOP 344.06 VP 24.774 GAP 13.73 AZP 88.94 TAL 351.67 TAP 113.78 RCA 150.49 APO 246.07 V2 26.474
RC 71.818 GL -17.12 GP 1.12 ZAL 110.58 ZAP 156.52 ETS 177.46 ZAE 171.28 ETE 28.33 ZAC 100.78 ETC 278.31 LVI -19.80

PLANETOCENTRIC CONIC

C3 15.079 VHL 3.883 DLA -26.08 RAL 342.24 RAD 6640.6 VEL 11.625 PTH 6.66 VHP 6.045 DPA -15.32 RAP 323.23 ECC 1.2482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 15	2531.66	-8.98	67.77	197.11	136.92	17 53 27	1531.7	9.41	52.01
60.00	18 25 28	2334.30	-3.83	54.91	202.02	130.15	19 4 22	1334.3	12.20	36.86
70.00	20 1 17	2052.53	1.57	36.15	206.11	124.12	20 35 30	1052.5	15.17	16.15
80.00	21 58 46	1684.86	6.56	11.32	209.19	119.19	22 26 50	684.9	17.96	349.75
90.00	23 48 2	1332.47	9.04	346.73	210.53	116.91	24 10 14	332.5	19.35	324.45
100.00	0 45 33	1159.33	6.56	332.69	209.19	119.19	1 4 53	159.3	17.96	311.12
110.00	1 4 40	1099.35	1.57	325.06	206.11	124.12	1 22 59	99.4	15.17	305.06

DIFFERENTIAL CORRECTIONS

TDE -.3748 TRA -.8661 TC3 .3424 BAU .0830
RDE -.3224 RRA .0994 RC3 .2288 FAU .07220
FDE .3406 FRA 2.0472 FC3-4.1456 BSP 2553
BDE .4943 BRA .8718 BC3 .4118 FSP 613

MID-COURSE EXECUTION ACCURACY

SGT 1549.5 SGR 533.4 SG3 404.6
RRT .0942 RRF -.1048 RTF -.8157
SGB 1638.8 R23 -.0178 R13 -.8160
SG1 1550.5 SG2 530.7 THA 2.10

ORBIT DETERMINATION ACCURACY

ST 34.9 SR 23.9 SS 29.5
CRT .7248 CRS .3514 CST .8975
LSA 47.2 MSA 20.9 SSA 1.3
EL1 39.8 EL2 14.5 ALF 30.92

LAUNCH DATE MAY 3 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC DISTANCE 368.041 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.967 GAL -1.56 AZL 91.99 HCA 123.38 SMA 197.09 ECC .23635 INC 1.9915 V1 29.547
RP 206.93 LAP -1.66 LOP 345.33 VP 24.685 GAP 13.37 AZP 88.90 TAL 351.85 TAP 115.23 RCA 150.51 APO 243.67 V2 26.466
RC 73.228 GL -17.46 GP 1.17 ZAL 110.36 ZAP 155.28 ETS 177.50 ZAE 171.61 ETE 28.81 ZAC 100.83 ETC 278.32 LVI -19.85

PLANETOCENTRIC CONIC

C3 14.572 VHL 3.817 DLA -26.46 RAL 342.21 RAD 6640.3 VEL 11.603 PTH 6.64 VHP 5.863 DPA -15.26 RAP 323.24 ECC 1.2398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 4	2515.53	-8.17	67.08	196.81	137.04	17 55 0	1515.5	10.21	51.32
60.00	18 28 5	2316.02	-3.03	54.03	201.73	130.21	19 6 41	1316.0	12.97	35.94
70.00	20 5 14	2030.35	2.41	34.99	205.85	124.08	20 39 4	1030.4	15.95	14.89
80.00	22 5 6	1655.17	7.54	9.66	209.00	118.97	22 32 41	655.2	18.78	347.93
90.00	0 0 42	1295.06	10.18	344.58	210.41	116.52	0 22 17	295.1	20.24	322.07
100.00	0 51 54	1129.64	7.54	331.03	209.00	118.97	1 10 43	129.6	18.78	309.30
110.00	1 6 36	1077.17	2.41	323.91	205.85	124.08	1 26 33	77.2	15.95	303.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3701 TRA -.8532 TC3 .3511 BAU .0827 SGT 1557.8 SGR 527.5 SG3 431.5 ST 35.1 SR 23.6 SS 30.4
RDE -.3128 RRA .0940 RC3 .2383 FAU .07566 RRT .1024 RRF -.1142 RTF -.8154 CRT .7261 CRS .3395 CST .8910
FDE .3441 FRA 2.1419 FC3-4.4952 BSP 2594 SGB 1644.7 R23 -.0202 R13 -.8158 LSA 47.6 MSA 21.1 SSA 1.3
BDE .4845 BRA .8584 BC3 .4243 FSP 659 SG1 1558.9 SG2 524.4 THA 2.24 EL1 39.8 EL2 14.3 ALF 30.34

LAUNCH DATE MAY 3 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC DISTANCE 371.882 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.909 GAL -1.50 AZL 92.00 HCA 124.65 SMA 195.99 ECC .23196 INC 1.9992 V1 29.547
RP 207.00 LAP -1.64 LOP 346.59 VP 24.599 GAP 13.03 AZP 88.86 TAL 352.03 TAP 116.68 RCA 150.52 APO 241.45 V2 26.458
RC 74.683 GL -17.79 GP 1.22 ZAL 110.15 ZAP 154.01 ETS 177.53 ZAE 172.01 ETE 29.62 ZAC 100.88 ETC 278.32 LVI -19.90

PLANETOCENTRIC CONIC

C3 14.106 VHL 3.756 DLA -26.84 RAL 342.18 RAD 6640.1 VEL 11.583 PTH 6.63 VHP 5.687 DPA -15.22 RAP 323.22 ECC 1.2321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 53	2499.90	-7.39	66.42	196.53	137.14	17 56 33	1499.9	10.99	50.64
60.00	18 30 43	2298.22	-2.25	53.18	201.46	130.25	19 9 1	1296.2	13.73	35.04
70.00	20 9 14	2008.52	3.25	33.85	205.62	124.02	20 42 42	1008.5	16.70	13.65
80.00	22 11 44	1625.08	8.53	7.98	208.85	118.72	22 38 49	625.1	19.59	346.07
90.00	0 10 18	1255.41	11.38	342.28	210.35	116.06	0 31 13	255.4	21.15	319.52
100.00	0 58 31	1099.56	8.53	329.35	208.85	118.72	1 16 51	99.6	19.59	307.43
110.00	1 12 36	1055.34	3.25	322.76	205.62	124.02	1 30 12	55.3	16.70	302.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3646 TRA -.8377 TC3 .3599 BAU .0824 SGT 1560.0 SGR 521.5 SG3 459.8 ST 35.1 SR 23.3 SS 31.2
RDE -.3035 RRA .0886 RC3 .2479 FAU .07935 RRT .1117 RRF -.1249 RTF -.8152 CRT .7279 CRS .3285 CST .8845
FDE .3479 FRA 2.2397 FC3-4.8700 BSP 2611 SGB 1644.9 R23 -.0227 R13 -.8156 LSA 47.9 MSA 21.3 SSA 1.3
BDE .4744 BRA .8423 BC3 .4370 FSP 706 SG1 1561.3 SG2 517.8 THA 2.40 EL1 39.7 EL2 14.1 ALF 29.87

LAUNCH DATE MAY 3 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 28 1971

HELIOCENTRIC CONIC DISTANCE 375.753 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.855 GAL -1.44 AZL 92.01 HCA 125.91 SMA 194.96 ECC .22785 INC 2.0070 V1 29.547
RP 207.08 LAP -1.63 LOP 347.86 VP 24.517 GAP 12.69 AZP 88.82 TAL 352.21 TAP 118.12 RCA 150.54 APO 239.38 V2 26.449
RC 76.180 GL -18.12 GP 1.28 ZAL 109.94 ZAP 152.70 ETS 177.56 ZAE 172.47 ETE 30.85 ZAC 100.94 ETC 278.31 LVI -19.94

PLANETOCENTRIC CONIC

C3 13.676 VHL 3.698 DLA -27.21 RAL 342.15 RAD 6639.9 VEL 11.565 PTH 6.61 VHP 5.517 DPA -15.18 RAP 323.16 ECC 1.2251

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 42	2484.80	-6.64	65.77	196.28	137.22	17 58 7	1484.8	11.73	49.98
60.00	18 33 21	2280.91	-1.49	52.35	201.22	130.28	19 11 22	1280.9	14.45	34.16
70.00	20 13 17	1987.05	4.06	32.72	205.42	123.94	20 46 24	987.0	17.43	12.41
80.00	22 18 41	1594.49	9.53	6.25	208.75	118.43	22 45 16	594.5	20.39	344.15
90.00	0 21 6	1212.44	12.65	339.77	210.37	115.50	0 41 18	212.4	22.09	316.72
100.00	1 5 29	1068.96	9.53	327.62	208.75	118.43	1 23 18	69.0	20.39	305.52
110.00	1 16 40	1033.87	4.06	321.64	205.42	123.94	1 33 53	33.9	17.43	301.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3578 TRA -.8216 TC3 .3680 BAU .0821 SGT 1550.8 SGR 515.2 SG3 490.1 ST 35.1 SR 22.9 SS 32.1
RDE -.2944 RRA .0832 RC3 .2576 FAU .08328 RRT .1210 RRF -.1362 RTF -.8151 CRT .7289 CRS .3198 CST .8775
FDE .3489 FRA 2.3446 FC3-5.2718 BSP 2623 SGB 1641.7 R23 -.0258 R13 -.8156 LSA 48.1 MSA 21.5 SSA 1.4
BDE .4634 BRA .8258 BC3 .4492 FSP 758 SG1 1560.2 SG2 510.9 THA 2.57 EL1 39.5 EL2 13.9 ALF 29.49

LAUNCH DATE MAY 3 1971 FLIGHT TIME 150.00 ARRIVAL DATE SEP 30 1971

HELIOCENTRIC CONIC DISTANCE 379.651 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.804 GAL -1.39 AZL 92.02 HCA 127.18 SMA 194.01 ECC .22400 INC 2.0152 V1 29.547
RP 207.17 LAP -1.61 LOP 349.12 VP 24.437 GAP 12.36 AZP 88.78 TAL 352.37 TAP 119.55 RCA 150.55 APO 237.47 V2 26.439
RC 77.718 GL -18.45 GP 1.34 ZAL 109.75 ZAP 151.36 ETS 177.59 ZAE 172.99 ETE 32.62 ZAC 101.01 ETC 278.30 LVI -19.98

PLANETOCENTRIC CONIC

C3 13.281 VHL 3.644 DLA -27.57 RAL 342.13 RAD 6639.7 VEL 11.548 PTH 6.59 VHP 5.353 DPA -15.14 RAP 323.07 ECC 1.2186

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 31	2470.22	-5.91	65.16	196.06	137.30	17 59 42	1470.2	12.45	49.34
60.00	18 36 0	2264.13	-.75	51.55	201.02	130.30	19 13 44	1264.1	15.16	33.29
70.00	20 17 24	1965.97	4.86	31.61	205.25	123.85	20 50 10	966.0	18.14	11.19
80.00	22 26 3	1563.23	10.53	4.48	208.69	118.10	22 52 6	563.2	21.19	342.17
90.00	0 33 46	1164.04	14.05	336.91	210.48	114.80	0 53 10	164.0	23.08	313.51
100.00	1 12 50	1037.70	10.53	325.85	208.69	118.10	1 30 8	37.7	21.19	303.53
110.00	1 20 46	1012.78	4.86	320.53	205.25	123.85	1 37 39	12.8	18.14	300.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3516 TRA -.8046 TC3 .3719 BAU .0813 SGT 1554.2 SGR 508.7 SG3 522.1 ST 35.0 SR 22.6 SS 33.0
RDE -.2857 RRA .0779 RC3 .2675 FAU .08738 RRT .1316 RRF -.1487 RTF -.8143 CRT .7311 CRS .3047 CST .8703
FDE .3530 FRA 2.4554 FC3-5.6959 BSP 2625 SGB 1635.4 R23 -.0292 R13 -.8148 LSA 48.4 MSA 21.7 SSA 1.4
BDE .4531 BRA .8083 BC3 .4581 FSP 815 SG1 1555.8 SG2 503.8 THA 2.76 EL1 39.3 EL2 13.7 ALF 29.12

LAUNCH DATE MAY 3 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 383.575 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.757 GAL -1.35 AZL 92.02 HCA 128.44 SMA 193.13 ECC .22040 INC 2.0236 V1 29.547
RP 207.26 LAP -1.58 LOP 350.39 VP 24.361 GAP 12.03 AZP 88.74 TAL 352.54 TAP 120.98 RCA 150.57 APO 235.70 V2 26.428
RC 79.295 GL -18.77 GP 1.40 ZAL 109.56 ZAP 148.99 ETS 177.61 ZAE 173.56 ETE 35.10 ZAC 101.08 ETC 278.28 LVI -20.01

PLANETOCENTRIC CONIC

C3 12.918 VHL 3.594 DLA -27.93 RAL 342.11 RAD 6639.5 VEL 11.532 PTH 6.58 VHP 5.195 DPA -15.12 RAP 322.94 ECC 1.2126

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 21	2456.19	-5.21	64.57	195.87	137.36	18 1 17	1456.2	13.14	48.72
60.00	18 38 40	2247.88	-.03	50.77	200.84	130.30	19 16 8	1247.9	15.83	32.45
70.00	20 21 34	1945.29	5.65	30.53	205.12	123.74	20 53 59	945.3	18.83	9.98
80.00	22 33 52	1531.06	11.56	2.64	208.67	117.72	22 59 23	531.1	21.98	340.10
90.00	0 50 1	1104.64	15.72	333.34	210.74	113.82	1 8 26	104.6	24.19	309.52
100.00	1 20 39	1005.53	11.56	324.01	208.67	117.72	1 37 25	5.5	21.98	301.47
110.00	1 24 56	6280.14	5.65	297.35	205.12	123.74	3 9 36	5280.1	18.83	276.81

DIFFERENTIAL CORRECTIONS

TDE -.3445 TRA -.7862 TC3 .3727 BAU .0802
RDE -.2772 RRA .0725 RC3 .2774 FAU .09171
FDE .3539 FRA 2.5718 FC3-6.1465 BSP 2607
BDE .4422 BRA .7895 BC3 .4646 FSP 872

MID-COURSE EXECUTION ACCURACY

SGT 1544.5 SGR 502.1 SG3 555.7
RRT .1424 RRF -.1620 RTF -.8129
SGB 1624.1 R23 -.0332 R13 -.8136
SG1 1546.4 SG2 496.4 THA 2.95

ORBIT DETERMINATION ACCURACY

ST 34.7 SR 22.2 SS 33.8
CRT .7332 CRS .2921 CST .8622
LSA 48.6 MSA 22.0 SSA 1.4
EL1 39.0 EL2 13.5 ALF 28.84

LAUNCH DATE MAY 3 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 387.522 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.712 GAL -1.30 AZL 92.03 HCA 129.70 SMA 192.32 ECC .21703 INC 2.0323 V1 29.547
RP 207.37 LAP -1.56 LOP 351.65 VP 24.288 GAP 11.72 AZP 88.70 TAL 352.69 TAP 122.39 RCA 150.58 APO 234.05 V2 26.415
RC 80.909 GL -19.08 GP 1.46 ZAL 109.38 ZAP 148.58 ETS 177.63 ZAE 174.18 ETE 38.58 ZAC 101.17 ETC 278.25 LVI -20.03

PLANETOCENTRIC CONIC

C3 12.585 VHL 3.548 DLA -28.27 RAL 342.11 RAD 6639.4 VEL 11.518 PTH 6.57 VHP 5.044 DPA -15.11 RAP 322.78 ECC 1.2071

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 11	2442.71	-4.53	64.00	195.70	137.41	18 2 54	1442.7	13.80	48.12
60.00	18 41 20	2232.18	.66	50.02	200.69	130.30	19 18 32	1232.2	16.48	31.63
70.00	20 25 46	1925.03	6.41	29.46	205.02	123.62	20 57 51	925.0	19.49	8.79
80.00	22 42 15	1497.66	12.61	.72	208.71	117.29	23 7 13	497.7	22.76	337.94
90.00	1 23 46	6277.29	18.75	304.14	211.61	111.56	3 8 23	5277.3	26.00	279.46
100.00	1 29 3	6260.17	12.61	299.99	208.71	117.29	3 13 23	5260.2	22.76	277.21
110.00	1 29 8	6259.88	6.41	296.28	205.02	123.62	3 13 28	5259.9	19.49	275.61

DIFFERENTIAL CORRECTIONS

TDE -.3381 TRA -.7662 TC3 .3693 BAU .0788
RDE -.2689 RRA .0672 RC3 .2876 FAU .09633
FDE .3562 FRA 2.6918 FC3-6.6265 BSP 2585
BDE .4320 BRA .7692 BC3 .4681 FSP 933

MID-COURSE EXECUTION ACCURACY

SGT 1530.1 SGR 495.5 SG3 591.1
RRT .1549 RRF -.1773 RTF -.8103
SGB 1608.4 R23 -.0379 R13 -.8111
SG1 1532.3 SG2 488.8 THA 3.20

ORBIT DETERMINATION ACCURACY

ST 34.5 SR 21.8 SS 34.8
CRT .7369 CRS .2819 CST .8539
LSA 48.8 MSA 22.2 SSA 1.4
EL1 38.6 EL2 13.2 ALF 28.59

LAUNCH DATE MAY 3 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 391.492 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.670 GAL -1.26 AZL 92.04 HCA 130.96 SMA 191.56 ECC .21387 INC 2.0414 V1 29.547
RP 207.48 LAP -1.54 LOP 352.91 VP 24.218 GAP 11.41 AZP 88.66 TAL 352.83 TAP 123.79 RCA 150.59 APO 232.53 V2 26.402
RC 82.560 GL -19.39 GP 1.53 ZAL 109.20 ZAP 147.14 ETS 177.65 ZAE 174.83 ETE 43.51 ZAC 101.26 ETC 278.22 LVI -20.05

PLANETOCENTRIC CONIC

C3 12.279 VHL 3.504 DLA -28.61 RAL 342.11 RAD 6639.2 VEL 11.505 PTH 6.55 VHP 4.898 DPA -15.10 RAP 322.58 ECC 1.2021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 1	2429.73	-3.88	63.45	195.56	137.46	18 4 31	1429.7	14.44	47.54
60.00	18 44 0	2216.96	1.33	49.30	200.57	130.28	19 20 57	1217.0	17.11	30.84
70.00	20 30 2	1905.10	7.16	28.40	204.95	123.48	21 1 47	905.1	20.14	7.60
80.00	22 51 26	1462.26	13.71	358.66	208.81	116.79	23 15 49	462.3	23.56	335.61
85.47	0 51 15	1089.32	19.53	333.88	211.53	111.33	1 9 24	89.3	26.61	309.02
100.00	1 38 14	6224.77	13.71	297.94	208.81	116.79	3 21 59	5224.8	23.56	274.89
110.00	1 33 24	6239.96	7.16	295.23	204.95	123.48	3 17 24	5240.0	20.14	274.43

DIFFERENTIAL CORRECTIONS

TDE -.3192 TRA -.7333 TC3 .4000 BAU .0819
RDE -.2607 RRA .0620 RC3 .2986 FAU .10164
FDE .3468 FRA 2.8077 FC3-7.1661 BSP 2396
BDE .4122 BRA .7359 BC3 .4992 FSP 984

MID-COURSE EXECUTION ACCURACY

SGT 1488.8 SGR 488.7 SG3 628.4
RRT .1695 RRF -.1937 RTF -.8170
SGB 1567.0 R23 -.0396 R13 -.8180
SG1 1491.4 SG2 480.8 THA 3.56

ORBIT DETERMINATION ACCURACY

ST 33.2 SR 21.4 SS 35.4
CRT .7340 CRS .2628 CST .8457
LSA 48.1 MSA 22.4 SSA 1.3
EL1 37.3 EL2 12.9 ALF 29.14

LAUNCH DATE MAY 3 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 395.481 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.632 GAL -1.22 AZL 92.05 HCA 132.22 SMA 190.86 ECC .21093 INC 2.0507 V1 29.547
RP 207.60 LAP -1.52 LOP 354.17 VP 24.150 GAP 11.10 AZP 88.62 TAL 352.96 TAP 125.18 RCA 150.60 APO 231.12 V2 26.388
RC 84.247 GL -19.70 GP 1.60 ZAL 109.05 ZAP 145.66 ETS 177.67 ZAE 175.47 ETE 50.54 ZAC 101.37 ETC 278.17 LVI -20.06

PLANETOCENTRIC CONIC

C3 12.000 VHL 3.464 DLA -28.94 RAL 342.13 RAD 6639.1 VEL 11.493 PTH 6.54 VHP 4.758 DPA -15.10 RAP 322.33 ECC 1.1975

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 51	2417.42	-3.26	62.94	195.46	137.49	18 6 9	1417.4	15.04	46.99
60.00	18 46 40	2202.45	1.97	48.60	200.49	130.26	19 23 22	1202.4	17.70	30.07
70.00	20 34 20	1885.80	7.88	27.38	204.92	123.34	21 5 45	885.8	20.76	6.45
80.00	23 1 36	1424.49	14.85	356.45	208.99	116.20	23 25 20	424.5	24.37	333.10
83.61	0 36 9	1133.41	19.86	337.26	211.30	111.48	0 55 3	133.4	26.97	312.33
100.00	1 48 23	6187.00	14.85	295.72	208.99	116.20	3 31 30	5187.0	24.37	272.37
110.00	1 37 42	6220.66	7.88	294.20	204.92	123.34	3 21 23	5220.7	20.76	273.27

DIFFERENTIAL CORRECTIONS

TDE -.3241 TRA -.7229 TC3 .3486 BAU .0747
RDE -.2531 RRA .0564 RC3 .3085 FAU .10621
FDE .3598 FRA 2.9543 FC3-7.6626 BSP 2489
BDE .4112 BRA .7251 BC3 .4656 FSP 1063

MID-COURSE EXECUTION ACCURACY

SGT 1487.4 SGR 482.0 SG3 667.6
RRT .1819 RRF -.2118 RTF -.8030
SGB 1563.5 R23 -.0501 R13 -.8042
SG1 1490.3 SG2 473.0 THA 3.75

ORBIT DETERMINATION ACCURACY

ST 33.7 SR 21.0 SS 36.7
CRT .7458 CRS .2624 CST .8359
LSA 49.1 MSA 22.6 SSA 1.3
EL1 37.7 EL2 12.5 ALF 28.28

LAUNCH DATE MAY 3 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 10 1971

DISTANCE 399.489

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.595 GAL -1.19 AZL 92.06 HCA 133.48 SMA 190.21 ECC .20819 INC 2.0605 V1 29.547
RP 207.73 LAP -1.50 LOP 355.43 VP 24.084 GAP 10.81 AZP 88.58 TAL 353.08 TAP 126.56 RCA 150.61 APO 229.81 V2 26.373
RC 85.969 GL -19.99 GP 1.68 ZAL 108.91 ZAP 144.14 ETS 177.68 ZAE 176.05 ETE 60.69 ZAC 101.48 ETC 278.12 LVI -20.07

PLANETOCENTRIC CONIC

C3 11.745 VHL 3.427 DLA -29.25 RAL 342.15 RAD 6638.9 VEL 11.482 PTH 6.53 VHP 4.623 DPA -15.11 RAP 322.05 ECC 1.1933

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 27 42	2405.64	-2.67	62.44	195.38	137.52	18 7 48	1405.6	15.61	46.46
60.00	18 49 20	2188.47	2.58	47.93	200.43	130.23	19 25 49	1188.5	18.27	29.33
70.00	20 38 40	1866.90	8.59	26.37	204.92	123.18	21 9 47	866.9	21.35	5.30
80.00	23 13 24	1382.04	16.11	353.93	209.25	115.48	23 36 26	382.0	25.23	330.24
82.20	0 25 0	1165.13	20.18	339.74	211.11	111.63	0 44 25	165.1	27.32	314.75
100.00	2 0 12	6144.55	16.11	293.20	209.25	115.48	3 42 37	5144.5	25.23	269.51
110.00	1 42 2	6201.76	8.59	293.19	204.92	123.18	3 25 24	5201.8	21.35	272.13

DIFFERENTIAL CORRECTIONS

TDE -.3203 TRA -.7027 TC3 .3199 BAU .0710
RDE -.2455 RRA .0508 RC3 .3192 FAU .11142
FDE .3633 FRA 3.0995 FC3-8.2129 BSP 2463
BDE .4035 BRA .7046 BC3 .4519 FSP 1136

MID-COURSE EXECUTION ACCURACY

SGT 1465.6 SGR 475.3 SG3 709.0
RRT .1962 RRF -.2315 RTF -.7947
SGB 1540.7 R23 -.0593 R13 -.7962
SG1 1468.9 SG2 465.0 THA 4.05

ORBIT DETERMINATION ACCURACY

ST 33.5 SR 20.6 SS 37.7
CRT .7535 CRS .2551 CST .6252
LSA 49.5 MSA 22.8 SSA 1.3
EL1 37.4 EL2 12.1 ALF 28.01

LAUNCH DATE MAY 3 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 12 1971

DISTANCE 403.514

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.561 GAL -1.16 AZL 92.07 HCA 134.73 SMA 189.61 ECC .20564 INC 2.0706 V1 29.547
RP 207.86 LAP -1.47 LOP 356.68 VP 24.021 GAP 10.52 AZP 88.54 TAL 353.19 TAP 127.93 RCA 150.62 APO 228.60 V2 26.357
RC 87.725 GL -20.28 GP 1.76 ZAL 108.78 ZAP 142.58 ETS 177.69 ZAE 176.48 ETE 74.96 ZAC 101.61 ETC 278.06 LVI -20.06

PLANETOCENTRIC CONIC

C3 11.513 VHL 3.393 DLA -29.55 RAL 342.19 RAD 6638.8 VEL 11.471 PTH 6.52 VHP 4.495 DPA -15.12 RAP 321.73 ECC 1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 29 34	2394.41	-2.11	61.97	195.33	137.54	18 9 28	1394.4	16.15	45.95
60.00	18 52 1	2175.07	3.17	47.29	200.40	130.20	19 28 16	1175.1	18.81	28.61
70.00	20 43 3	1848.46	9.28	25.38	204.96	123.02	21 13 51	848.5	21.92	4.18
80.00	23 28 21	1330.20	17.60	350.80	209.65	114.51	23 50 31	330.2	26.18	326.68
81.04	0 16 2	1190.23	20.48	341.72	210.95	111.78	0 35 52	190.2	27.65	316.68
100.00	2 15 9	6092.71	17.60	290.07	209.65	114.51	3 56 42	5092.7	26.18	265.96
110.00	1 46 25	6183.32	9.28	292.20	204.96	123.02	3 29 28	5183.3	21.92	271.00

DIFFERENTIAL CORRECTIONS

TDE -.3149 TRA -.6780 TC3 .2873 BAU .0674
RDE -.2382 RRA .0452 RC3 .3301 FAU .11679
FDE .3665 FRA 3.2453 FC3-8.7822 BSP 2411
BDE .3948 BRA .6795 BC3 .4376 FSP 1213

MID-COURSE EXECUTION ACCURACY

SGT 1432.8 SGR 468.6 SG3 751.2
RRT .2114 RRF -.2530 RTF -.7853
SGB 1507.4 R23 -.0697 R13 -.7872
SG1 1436.6 SG2 456.8 THA 4.40

ORBIT DETERMINATION ACCURACY

ST 33.1 SR 20.2 SS 38.8
CRT .7622 CRS .2489 CST .8139
LSA 49.7 MSA 23.0 SSA 1.3
EL1 37.0 EL2 11.7 ALF 27.92

LAUNCH DATE MAY 3 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 14 1971

DISTANCE 407.556

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.529 GAL -1.13 AZL 92.08 HCA 135.99 SMA 189.05 ECC .20327 INC 2.0812 V1 29.547
RP 208.01 LAP -1.45 LOP 357.94 VP 23.959 GAP 10.24 AZP 88.50 TAL 353.29 TAP 129.28 RCA 150.62 APO 227.48 V2 26.340
RC 89.514 GL -20.57 GP 1.85 ZAL 108.67 ZAP 140.98 ETS 177.70 ZAE 176.63 ETE 93.09 ZAC 101.74 ETC 277.99 LVI -20.05

PLANETOCENTRIC CONIC

C3 11.301 VHL 3.362 DLA -29.85 RAL 342.24 RAD 6638.7 VEL 11.462 PTH 6.51 VHP 4.371 DPA -15.15 RAP 321.36 ECC 1.1860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 31 26	2383.75	-1.57	61.53	195.31	137.56	18 11 9	1383.8	16.67	45.46
60.00	18 54 41	2162.25	3.73	46.68	200.40	130.16	19 30 43	1162.3	19.33	27.92
70.00	20 47 28	1830.49	9.94	24.41	205.02	122.84	21 17 58	830.5	22.47	3.07
80.00	0 1 11	1234.51	20.20	344.88	210.58	112.46	0 21 45	234.5	27.68	319.97
80.04	0 8 34	1210.93	20.78	343.38	210.83	111.92	0 28 45	210.9	27.97	318.28
100.00	2 44 3	5997.02	20.20	284.16	210.58	112.46	4 24 0	4997.0	27.68	259.24
110.00	1 50 50	6165.35	9.94	291.24	205.02	122.84	3 33 35	5165.3	22.47	269.89

DIFFERENTIAL CORRECTIONS

TDE -.3091 TRA -.6524 TC3 .2524 BAU .0642
RDE -.2310 RRA .0395 RC3 .3414 FAU .12254
FDE .3689 FRA 3.4012 FC3-9.3871 BSP 2330
BDE .3859 BRA .6536 BC3 .4246 FSP 1290

MID-COURSE EXECUTION ACCURACY

SGT 1396.3 SGR 462.2 SG3 796.1
RRT .2277 RRF -.2766 RTF -.7749
SGB 1470.8 R23 -.0820 R13 -.7774
SG1 1400.7 SG2 448.7 THA 4.80

ORBIT DETERMINATION ACCURACY

ST 32.6 SR 19.7 SS 39.8
CRT .7715 CRS .2430 CST .8017
LSA 50.0 MSA 23.2 SSA 1.3
EL1 36.4 EL2 11.2 ALF 27.89

LAUNCH DATE MAY 3 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 16 1971

DISTANCE 411.613

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.500 GAL -1.11 AZL 92.09 HCA 137.24 SMA 188.54 ECC .20106 INC 2.0922 V1 29.547
RP 208.16 LAP -1.42 LOP 359.19 VP 23.900 GAP 9.96 AZP 88.48 TAL 353.38 TAP 130.62 RCA 150.63 APO 226.44 V2 26.323
RC 91.337 GL -20.85 GP 1.95 ZAL 108.57 ZAP 139.33 ETS 177.71 ZAE 176.40 ETE 112.07 ZAC 101.89 ETC 277.92 LVI -20.04

PLANETOCENTRIC CONIC

C3 11.109 VHL 3.333 DLA -30.13 RAL 342.31 RAD 6638.6 VEL 11.454 PTH 6.50 VHP 4.253 DPA -15.18 RAP 320.95 ECC 1.1828

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 18	2373.63	-1.06	61.11	195.31	137.57	18 12 52	1373.6	17.16	45.00
60.00	18 57 21	2150.00	4.27	46.09	200.43	130.11	19 33 11	1150.0	19.82	27.25
70.00	20 51 55	1812.95	10.59	23.47	205.12	122.66	21 22 8	812.9	23.00	1.98
79.15	0 2 6	1228.83	21.05	344.83	210.74	112.06	0 22 35	228.8	28.28	319.68
79.15	0 2 6	1228.83	21.05	344.83	210.74	112.06	0 22 35	228.8	28.28	319.68
79.15	0 2 6	1228.83	21.05	344.83	210.74	112.06	0 22 35	228.8	28.28	319.68
110.00	1 55 18	6147.81	10.59	290.29	205.12	122.66	3 37 45	5147.8	23.00	268.81

DIFFERENTIAL CORRECTIONS

TDE -.2979 TRA -.6194 TC3 .2307 BAU .0627
RDE -.2238 RRA .0337 RC3 .3538 FAU .12896
FDE .3633 FRA 3.5539 FC-10.0494 BSP 2159
BDE .3726 BRA .6203 BC3 .4224 FSP 1358

MID-COURSE EXECUTION ACCURACY

SGT 1342.1 SGR 456.2 SG3 842.8
RRT .2464 RRF -.3027 RTF -.7673
SGB 1417.5 R23 -.0937 R13 -.7705
SG1 1347.4 SG2 440.4 THA 5.36

ORBIT DETERMINATION ACCURACY

ST 31.6 SR 19.3 SS 40.8
CRT .7795 CRS .2330 CST .7877
LSA 49.8 MSA 23.3 SSA 1.3
EL1 35.4 EL2 10.8 ALF 26.29

LAUNCH DATE MAY 3 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 415.682 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.473	GAL	-1.09	AZL	92.10	HCA	138.49	SMA	188.06	ECC	.19902	INC	2.1036	VI	29.947
RP	208.32	LAP	-1.38	LOP	.44	VP	23.842	GAP	9.69	AZP	88.42	TAL	353.45	TAP	131.94	RCA	150.63	APO	225.49	V2	26.304
RC	93.190	GL	-21.12	GP	2.04	ZAL	108.50	ZAP	137.66	ETS	177.72	ZAE	175.79	ETE	128.04	ZAC	102.04	ETC	277.83	LVI	-20.01

PLANETOCENTRIC CONIC

C3	10.937	VHL	3.307	DLA	-30.39	RAL	342.40	RAD	6638.5	VEL	11.447	PTH	6.80	VHP	4.141	DPA	-15.22	RAP	320.80	ECC	1.1880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 11	2364.13	-.59	60.71	195.35	137.57	18 14 35	1364.1	17.62	44.56
60.00	19 0 1	2138.42	4.78	45.53	200.50	130.06	19 35 40	1138.4	20.28	26.62
70.00	20 56 24	1796.03	11.21	22.55	205.25	122.48	21 26 20	796.0	23.50	.92
78.37	23 52 41	1244.16	21.31	346.09	210.68	112.20	24 13 26	244.2	28.56	320.89
78.37	23 52 41	1244.16	21.31	346.09	210.68	112.20	24 13 26	244.2	28.56	320.89
78.37	23 52 41	1244.16	21.31	346.09	210.68	112.20	24 13 26	244.2	28.56	320.89
110.00	1 59 46	6130.89	11.21	289.37	205.25	122.48	3 41 57	5130.9	23.50	287.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3000	TRA	-.5981	TC3	.1495	BAU	.0577	SGT	1312.6	SGR	450.3	SG3	890.7	ST	31.6	SR	18.8	SS	42.1
RDE	-.2171	RRA	.0274	RC3	.3651	FAU	.13452	RRT	.2592	RRF	-.3301	RTF	-.7423	CRT	.7959	CRS	.2364	CST	.7732
FDE	.3760	FRA	3.7340	FC-10.6476		BSP	2152	SGB	1387.7	R23	-.1183	R13	-.7466	LSA	50.7	NSA	23.6	SSA	1.3
BDE	.3703	BRA	.5987	BC3	.3945	FSP	1453	SG1	1318.4	SG2	433.0	THA	5.70	EL1	35.4	EL2	10.2	ALF	27.87

LAUNCH DATE MAY 3 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 419.765 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.447	GAL	-1.07	AZL	92.12	HCA	139.74	SMA	187.62	ECC	.19713	INC	2.1159	VI	29.947
RP	208.49	LAP	-1.37	LOP	1.69	VP	23.786	GAP	9.43	AZP	88.38	TAL	353.51	TAP	133.24	RCA	150.64	APO	224.61	V2	26.284
RC	95.074	GL	-21.39	GP	2.15	ZAL	108.44	ZAP	135.94	ETS	177.73	ZAE	174.89	ETE	139.80	ZAC	102.21	ETC	277.74	LVI	-19.98

PLANETOCENTRIC CONIC

C3	10.782	VHL	3.284	DLA	-30.65	RAL	342.50	RAD	6638.4	VEL	11.440	PTH	6.49	VHP	4.034	DPA	-15.26	RAP	320.00	ECC	1.1774

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 5	2355.15	-.14	60.33	195.41	137.58	18 16 20	1355.2	18.05	44.14
60.00	19 2 41	2127.40	5.26	45.00	200.59	130.01	19 38 9	1127.4	20.71	26.01
70.00	21 0 54	1779.55	11.81	21.65	205.42	122.28	21 30 34	779.5	23.98	359.88
77.66	23 47 52	1257.80	21.56	347.22	210.66	112.33	24 8 50	257.8	28.84	321.97
77.66	23 47 52	1257.80	21.56	347.22	210.66	112.33	24 8 50	257.8	28.84	321.97
77.66	23 47 52	1257.80	21.56	347.22	210.66	112.33	24 8 50	257.8	28.84	321.97
110.00	2 4 17	6114.41	11.81	288.47	205.42	122.28	3 46 11	5114.4	23.98	286.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2961	TRA	-.5680	TC3	.0832	BAU	.0557	SGT	1283.8	SGR	445.1	SG3	940.0	ST	31.1	SR	18.4	SS	43.2
RDE	-.2104	RRA	.0211	RC3	.3774	FAU	.14067	RRT	.2738	RRF	-.3603	RTF	-.7191	CRT	.8112	CRS	.2376	CST	.7573
FDE	.3833	FRA	3.9103	FC-11.2945		BSP	2046	SGB	1339.9	R23	-.1436	R13	-.7248	LSA	51.1	NSA	23.8	SSA	1.3
BDE	.3633	BRA	.5684	BC3	.3865	FSP	1543	SG1	1270.4	SG2	425.8	THA	6.21	EL1	34.8	EL2	9.6	ALF	27.93

LAUNCH DATE MAY 3 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 423.859 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.424	GAL	-1.05	AZL	92.13	HCA	140.98	SMA	187.22	ECC	.19538	INC	2.1287	VI	29.947
RP	208.67	LAP	-1.34	LOP	2.93	VP	23.731	GAP	9.17	AZP	88.35	TAL	353.55	TAP	134.53	RCA	150.64	APO	223.80	V2	26.264
RC	96.988	GL	-21.66	GP	2.26	ZAL	108.40	ZAP	134.18	ETS	177.73	ZAE	173.77	ETE	148.06	ZAC	102.39	ETC	277.63	LVI	-19.94

PLANETOCENTRIC CONIC

C3	10.644	VHL	3.262	DLA	-30.90	RAL	342.62	RAD	6638.4	VEL	11.434	PTH	6.48	VHP	3.932	DPA	-15.31	RAP	319.46	ECC	1.1752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 39 0	2346.72	.29	59.98	195.50	137.58	18 18 7	1346.7	18.45	43.74
60.00	19 5 21	2118.97	5.72	44.50	200.71	129.96	19 40 38	1117.0	21.12	25.43
70.00	21 5 27	1763.55	12.39	20.77	205.61	122.09	21 34 51	763.6	24.44	358.87
77.01	23 43 40	1269.98	21.79	348.24	210.68	112.46	24 4 50	270.0	29.10	322.94
77.01	23 43 40	1269.98	21.79	348.24	210.68	112.46	24 4 50	270.0	29.10	322.94
77.01	23 43 40	1269.98	21.79	348.24	210.68	112.46	24 4 50	270.0	29.10	322.94
110.00	2 8 49	6098.41	12.39	287.60	205.61	122.09	3 50 28	5098.4	24.44	285.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2914	TRA	-.5363	TC3	.0118	BAU	.0556	SGT	1211.0	SGR	440.4	SG3	991.4	ST	30.4	SR	17.9	SS	44.4
RDE	-.2039	RRA	.0145	RC3	.3905	FAU	.14718	RRT	.2860	RRF	-.3926	RTF	-.7709	CRT	.8271	CRS	.2368	CST	.7582
FDE	.3853	FRA	4.0940	FC-11.9712		BSP	1930	SGB	1288.6	R23	-.1752	R13	-.6986	LSA	51.4	NSA	24.0	SSA	1.3
BDE	.3556	BRA	.5365	BC3	.3907	FSP	1634	SG1	1218.5	SG2	419.4	THA	6.74	EL1	34.1	EL2	9.0	ALF	28.07

LAUNCH DATE MAY 3 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 427.964 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.402	GAL	-1.04	AZL	92.14	HCA	142.23	SMA	186.85	ECC	.19377	INC	2.1421	VI	29.947
RP	208.85	LAP	-1.31	LOP	4.18	VP	23.678	GAP	8.92	AZP	88.31	TAL	353.58	TAP	135.81	RCA	150.64	APO	223.06	V2	26.243
RC	98.929	GL	-21.92	GP	2.38	ZAL	108.37	ZAP	132.38	ETS	177.74	ZAE	172.50	ETE	153.89	ZAC	102.58	ETC	277.52	LVI	-19.90

PLANETOCENTRIC CONIC

C3	10.521	VHL	3.244	DLA	-31.13	RAL	342.75	RAD	6638.3	VEL	11.429	PTH	6.48	VHP	3.836	DPA	-15.36	RAP	318.88	ECC	1.1732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 40 56	2338.82	.68	59.65	195.63	137.57	18 19 55	1338.8	18.83	43.37
60.00	19 8 1	2107.11	6.15	44.02	200.86	129.91	19 43 8	1107.1	21.51	24.89
70.00	21 10 2	1748.04	12.95	19.92	205.84	121.88	21 39 10	748.0	24.87	357.88
76.42	23 40 0	1280.92	22.01	349.16	210.73	112.59	24 1 21	280.9	29.35	323.82
76.42	23 40 0	1280.92	22.01	349.16	210.73	112.59	24 1 21	280.9	29.35	323.82
76.42	23 40 0	1280.92	22.01	349.16	210.73	112.59	24 1 21	280.9	29.35	323.82
110.00	2 13 24	6082.90	12.95	286.75	205.84	121.88	3 54 47	5082.9	24.87	284.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2877	TRA	-.5024	TC3	-.0671	BAU	.0576	SGT	1155.3	SGR	436.7	SG3	1044.2	ST	29.8	SR	17.4	SS	45.6
RDE	-.1975	RRA	.0076	RC3	.4042	FAU	.15388	RRT	.2964	RRF	-.4278	RTF	-.6559	CRT	.8456	CRS	.2417	CST	.7183
FDE	.3939	FRA	4.2832	FC-12.6618		BSP	1801	SGB	1235.1	R23	-.2141	R13	-.6864	LSA	51.9	NSA	24.1	SSA	1.2
BDE	.3490	BRA	.5024	BC3	.4098	FSP	1730	SG1	1163.6	SG2	414.1	THA	7.33	EL1	33.5	EL2	8.3	ALF	28.22

LAUNCH DATE MAY 3 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 26 1971

DISTANCE 432.079

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.382 GAL -1.03 AZL 92.16 HCA 143.47 SMA 186.51 ECC .19229 INC 2.1563 V1 29.547
RP 209.04 LAP -1.28 LOP 5.42 VP 23.626 GAP 8.67 AZP 88.27 TAL 353.59 TAP 137.06 RCA 150.65 APO 222.37 V2 26.221
RC 100.898 GL -22.18 GP 2.50 ZAL 108.37 ZAP 130.54 ETS 177.75 ZAE 171.10 ETE 158.10 ZAC 102.78 ETC 277.40 LVI -19.84

PLANETOCENTRIC CONIC

C3 10.414 VHL 3.227 DLA -31.35 RAL 342.91 RAD 6638.3 VEL 11.424 PTH 6.48 VHP 3.744 DPA -15.42 RAP 318.25 ECC 1.1714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 42 54	2331.43	1.06	59.34	195.78	137.57	18 21 45	1331.4	19.18	43.02
60.00	19 10 42	2097.82	6.56	43.57	201.04	129.85	19 45 39	1097.8	21.87	24.37
70.00	21 14 39	1732.98	13.49	19.09	206.11	121.68	21 43 32	733.0	25.29	356.90
75.87	23 36 46	1291.02	22.21	350.01	210.81	112.72	23 58 17	291.0	29.58	324.63
75.87	23 36 46	1291.02	22.21	350.01	210.81	112.72	23 58 17	291.0	29.58	324.63
75.87	23 36 46	1291.02	22.21	350.01	210.81	112.72	23 58 17	291.0	29.58	324.63
110.00	2 18 1	6067.84	13.49	285.91	206.11	121.68	3 59 9	5067.8	25.29	263.73

DIFFERENTIAL CORRECTIONS

TDE -.2821 TRA -.4638 TC3 -.1533 BAU .0621
RDE -.1911 RRA .0006 RC3 .4186 FAU .16089
FDE .3958 FRA 4.4678 FC-13.3585 BSP 1630
BDE .3407 BRA .4638 BC3 .4458 FSP 1819

MID-COURSE EXECUTION ACCURACY

SGT 1091.1 SGR 433.8 SG3 1096.7
RRT .3000 RRF -.4643 RTF -.6106
SGB 1174.2 R23 -.2627 R13 -.6250
SG1 1100.1 SG2 410.4 THA 7.91

ORBIT DETERMINATION ACCURACY

ST 28.9 SR 17.0 SS 46.7
CRT .8650 CRS .2445 CST .6935
LSA 52.1 MSA 24.2 SSA 1.2
EL1 32.7 EL2 7.5 ALF 28.58

LAUNCH DATE MAY 3 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 28 1971

DISTANCE 436.204

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.364 GAL -1.03 AZL 92.17 HCA 144.71 SMA 186.20 ECC .19093 INC 2.1712 V1 29.547
RP 209.24 LAP -1.25 LOP 6.66 VP 23.575 GAP 8.43 AZP 88.23 TAL 353.59 TAP 138.30 RCA 150.65 APO 221.75 V2 26.198
RC 102.893 GL -22.43 GP 2.63 ZAL 108.38 ZAP 128.66 ETS 177.76 ZAE 169.61 ETE 161.23 ZAC 102.99 ETC 277.27 LVI -19.79

PLANETOCENTRIC CONIC

C3 10.321 VHL 3.213 DLA -31.56 RAL 343.09 RAD 6638.2 VEL 11.420 PTH 6.47 VHP 3.658 DPA -15.48 RAP 317.58 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 44 53	2324.53	1.40	59.06	195.96	137.56	18 23 38	1324.5	19.51	42.70
60.00	19 13 23	2089.05	6.94	43.15	201.25	129.80	19 48 12	1089.0	22.21	23.87
70.00	21 19 19	1718.32	14.01	18.28	206.40	121.47	21 47 57	718.3	25.69	355.95
75.36	23 33 59	1300.16	22.40	350.79	210.93	112.84	23 55 39	300.2	29.80	325.37
75.36	23 33 59	1300.16	22.40	350.79	210.93	112.84	23 55 39	300.2	29.80	325.37
75.36	23 33 59	1300.16	22.40	350.79	210.93	112.84	23 55 39	300.2	29.80	325.37
110.00	2 22 41	6053.18	14.01	285.10	206.40	121.47	4 3 35	5053.2	25.69	262.78

DIFFERENTIAL CORRECTIONS

TDE -.2727 TRA -.4198 TC3 -.2303 BAU .0679
RDE -.1847 RRA -.0066 RC3 .4349 FAU .16837
FDE .3847 FRA 4.6483 FC-14.1229 BSP 1395
BDE .3294 BRA .4199 BC3 .4921 FSP 1893

MID-COURSE EXECUTION ACCURACY

SGT 1015.2 SGR 432.1 SG3 1151.0
RRT .2986 RRF -.5030 RTF -.5575
SGB 1103.4 R23 -.3183 R13 -.5778
SG1 1025.0 SG2 406.5 THA 8.62

ORBIT DETERMINATION ACCURACY

ST 27.7 SR 16.5 SS 47.6
CRT .8846 CRS .2423 CST .6615
LSA 52.1 MSA 24.2 SSA 1.2
EL1 31.5 EL2 6.8 ALF 29.26

LAUNCH DATE MAY 3 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 30 1971

DISTANCE 440.335

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.347 GAL -1.02 AZL 92.19 HCA 145.95 SMA 185.91 ECC .18969 INC 2.1871 V1 29.547
RP 209.44 LAP -1.22 LOP 7.90 VP 23.526 GAP 8.19 AZP 88.19 TAL 353.57 TAP 139.52 RCA 150.65 APO 221.18 V2 26.174
RC 104.913 GL -22.69 GP 2.77 ZAL 108.42 ZAP 126.75 ETS 177.78 ZAE 168.04 ETE 163.59 ZAC 103.22 ETC 277.12 LVI -19.72

PLANETOCENTRIC CONIC

C3 10.242 VHL 3.200 DLA -31.76 RAL 343.29 RAD 6638.2 VEL 11.417 PTH 6.47 VHP 3.577 DPA -15.54 RAP 316.87 ECC 1.1686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 54	2318.20	1.72	58.79	196.17	137.55	18 25 32	1318.2	19.81	42.40
60.00	19 16 4	2080.92	7.29	42.76	201.50	129.75	19 50 45	1080.9	22.52	23.41
70.00	21 24 0	1704.28	14.51	17.49	206.73	121.26	21 52 25	704.3	26.06	355.03
74.90	23 31 35	1308.65	22.57	351.51	211.08	112.96	23 53 24	308.6	30.01	326.06
74.90	23 31 35	1308.65	22.57	351.51	211.08	112.96	23 53 24	308.6	30.01	326.06
74.90	23 31 35	1308.65	22.57	351.51	211.08	112.96	23 53 24	308.6	30.01	326.06
110.00	2 27 22	6039.14	14.51	284.32	206.73	121.26	4 8 2	5039.1	26.06	261.86

DIFFERENTIAL CORRECTIONS

TDE -.2794 TRA -.3883 TC3 -.3787 BAU .0804
RDE -.1792 RRA -.0150 RC3 .4486 FAU .17386
FDE .4258 FRA 4.8768 FC-14.6957 BSP 1342
BDE .3319 BRA .3886 BC3 .5871 FSP 2022

MID-COURSE EXECUTION ACCURACY

SGT 988.7 SGR 431.7 SG3 1205.0
RRT .2733 RRF -.5430 RTF -.4412
SGB 1078.9 R23 -.4018 R13 -.4960
SG1 997.2 SG2 411.7 THA 8.21

ORBIT DETERMINATION ACCURACY

ST 27.9 SR 16.1 SS 49.2
CRT .9097 CRS .2699 CST .6384
LSA 53.4 MSA 24.6 SSA 1.2
EL1 31.6 EL2 5.9 ALF 28.75

LAUNCH DATE MAY 3 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 1 1971

DISTANCE 444.475

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.331 GAL -1.02 AZL 92.20 HCA 147.18 SMA 185.68 ECC .18857 INC 2.2041 V1 29.547
RP 209.66 LAP -1.19 LOP 9.13 VP 23.477 GAP 7.96 AZP 88.15 TAL 353.54 TAP 140.72 RCA 150.65 APO 220.66 V2 26.150
RC 106.958 GL -22.94 GP 2.92 ZAL 108.48 ZAP 124.61 ETS 177.79 ZAE 166.39 ETE 165.43 ZAC 103.46 ETC 276.98 LVI -19.65

PLANETOCENTRIC CONIC

C3 10.177 VHL 3.190 DLA -31.95 RAL 343.51 RAD 6638.1 VEL 11.414 PTH 6.47 VHP 3.501 DPA -15.60 RAP 316.12 ECC 1.1675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 48 57	2312.28	2.02	58.54	196.42	137.54	18 27 30	1312.3	20.09	42.11
60.00	19 18 47	2073.25	7.63	42.38	201.77	129.69	19 53 20	1073.2	22.82	22.98
70.00	21 28 46	1690.51	14.99	16.72	207.10	121.05	21 56 57	690.5	26.42	354.13
74.47	23 29 31	1316.57	22.74	352.19	211.28	113.08	23 51 28	316.6	30.20	326.71
74.47	23 29 31	1316.57	22.74	352.19	211.28	113.08	23 51 28	316.6	30.20	326.71
74.47	23 29 31	1316.57	22.74	352.19	211.28	113.08	23 51 28	316.6	30.20	326.71
110.00	2 32 9	6025.37	14.99	283.54	207.10	121.05	4 12 34	5025.4	26.42	260.95

DIFFERENTIAL CORRECTIONS

TDE -.2756 TRA -.3465 TC3 -.5002 BAU .0929
RDE -.1732 RRA -.0235 RC3 .4649 FAU .18055
FDE .4314 FRA 5.0914 FC-15.3598 BSP 1165
BDE .3255 BRA .3473 BC3 .6829 FSP 2120

MID-COURSE EXECUTION ACCURACY

SGT 940.7 SGR 432.7 SG3 1260.4
RRT .2355 RRF -.5836 RTF -.3762
SGB 1035.5 R23 -.4862 R13 -.4057
SG1 947.6 SG2 417.5 THA 7.68

ORBIT DETERMINATION ACCURACY

ST 27.1 SR 15.6 SS 50.5
CRT .9312 CRS .2807 CST .6040
LSA 54.0 MSA 24.7 SSA 1.1
EL1 30.9 EL2 5.0 ALF 29.00

LAUNCH DATE MAY 3 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 448.621 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.317	GAL	-1.03	AZL	92.22	HCA	148.41	SMA	185.42	ECC	.18754	INC	2.2222	V1	29.547
RP	209.87	LAP	-1.16	LOP	10.36	VP	23.430	GAP	7.73	AZP	88.11	TAL	353.49	TAP	141.91	RCA	150.64	APO	220.19	V2	26.124
RC	109.028	GL	-23.19	GP	3.08	ZAL	108.55	ZAP	122.83	ETS	177.81	ZAE	164.67	ETE	166.87	ZAC	103.71	ETC	276.82	LVI	-19.58

PLANETOCENTRIC CONIC

C3	10.124	VHL	3.182	DLA	-32.14	RAL	343.78	RAD	6638.1	VEL	11.411	PTH	6.46	VHP	3.430	DPA	-15.65	RAP	315.34	ECC	1.1866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 51 3	2306.80	2.29	58.31	196.69	137.53	18 29 30	1306.8	20.35	41.85
60.00	19 21 31	2066.05	7.94	42.03	202.08	129.64	19 55 57	1066.1	23.09	22.57
70.00	21 33 37	1677.06	15.46	15.96	207.50	120.84	22 1 34	677.1	26.77	353.23
74.06	23 27 47	1324.00	22.89	352.82	211.51	113.20	23 49 51	324.0	30.39	327.31
74.06	23 27 47	1324.00	22.89	352.82	211.51	113.20	23 49 51	324.0	30.39	327.31
74.06	23 27 47	1324.00	22.89	352.82	211.51	113.20	23 49 51	324.0	30.39	327.31
110.00	2 37 0	6011.91	15.46	282.79	207.50	120.84	4 17 12	5011.9	26.77	260.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2740	TRA	-.3014	TC3	-.6300	BAU	.1074	SGT	902.7	SGR	435.9	SG3	1314.8	ST	26.5	SR	15.1	SS	51.7
RDE	-.1676	RRA	-.0324	RC3	.4823	FAU	.18731	RRT	.1779	RRF	-.6256	RTF	-.2576	CRT	.9530	CRS	.3012	CST	.5668
FDE	.4519	FRA	5.3000	FC-16.0177		BSP	984	SGB	1002.5	R23	-.5750	R13	-.2879	LSA	54.7	MSA	24.8	SSA	1.1
BDE	.3212	BRA	.3031	BC3	.7934	FSP	2217	SG1	907.0	SG2	427.0	THA	6.32	EL1	30.2	EL2	4.0	ALF	29.14

LAUNCH DATE MAY 3 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 452.774 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.305	GAL	-1.03	AZL	92.24	HCA	149.64	SMA	185.21	ECC	.18662	INC	2.2414	V1	29.547
RP	210.10	LAP	-1.13	LOP	11.59	VP	23.383	GAP	7.51	AZP	88.07	TAL	353.43	TAP	143.08	RCA	150.64	APO	219.77	V2	26.098
RC	111.121	GL	-23.44	GP	3.25	ZAL	108.65	ZAP	120.82	ETS	177.83	ZAE	162.90	ETE	168.02	ZAC	103.97	ETC	276.65	LVI	-19.51

PLANETOCENTRIC CONIC

C3	10.084	VHL	3.176	DLA	-32.31	RAL	344.02	RAD	6638.1	VEL	11.410	PTH	6.46	VHP	3.364	DPA	-15.71	RAP	314.52	ECC	1.1660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 53 13	2301.74	2.55	58.10	197.00	137.52	18 31 34	1301.7	20.59	41.61
60.00	19 24 18	2059.30	8.23	41.70	202.42	129.59	19 58 38	1059.3	23.35	22.18
70.00	21 38 35	1663.84	15.92	15.21	207.94	120.62	22 6 19	663.8	27.11	352.35
73.68	23 26 18	1331.13	23.03	353.43	211.77	113.32	23 48 29	331.1	30.56	327.90
73.68	23 26 18	1331.13	23.03	353.43	211.77	113.32	23 48 29	331.1	30.56	327.90
73.68	23 26 18	1331.13	23.03	353.43	211.77	113.32	23 48 29	331.1	30.56	327.90
110.00	2 41 57	5998.70	15.92	282.04	207.94	120.62	4 21 56	4998.7	27.11	259.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2714	TRA	-.2532	TC3	-.7685	BAU	.1237	SGT	877.7	SGR	441.0	SG3	1368.4	ST	25.8	SR	14.7	SS	52.9
RDE	-.1620	RRA	-.0418	RC3	.5007	FAU	.19406	RRT	.0933	RRF	-.6669	RTF	-.1153	CRT	.9722	CRS	.3208	CST	.5210
FDE	.4655	FRA	5.5063	FC-16.6605		BSP	807	SGB	982.3	R23	-.6551	R13	-.1357	LSA	55.3	MSA	24.9	SSA	1.1
BDE	.3161	BRA	.2566	BC3	.9172	FSP	2310	SG1	879.0	SG2	438.5	THA	3.58	EL1	29.5	EL2	3.0	ALF	29.28

LAUNCH DATE MAY 3 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 456.933 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.293	GAL	-1.04	AZL	92.26	HCA	150.87	SMA	185.01	ECC	.18580	INC	2.2622	V1	29.547
RP	210.33	LAP	-1.10	LOP	12.82	VP	23.337	GAP	7.29	AZP	88.02	TAL	353.35	TAP	144.23	RCA	150.64	APO	219.39	V2	26.071
RC	113.239	GL	-23.70	GP	3.44	ZAL	108.76	ZAP	118.79	ETS	177.86	ZAE	161.07	ETE	168.95	ZAC	104.25	ETC	276.48	LVI	-19.43

PLANETOCENTRIC CONIC

C3	10.056	VHL	3.171	DLA	-32.48	RAL	344.31	RAD	6638.1	VEL	11.408	PTH	6.46	VHP	3.302	DPA	-15.75	RAP	313.66	ECC	1.1655

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 55 26	2297.02	2.78	57.91	197.34	137.51	18 33 43	1297.0	20.81	41.38
60.00	19 27 9	2052.92	8.51	41.39	202.79	129.54	20 1 22	1052.9	23.59	21.81
70.00	21 43 42	1650.69	16.38	14.47	208.42	120.40	22 11 13	650.7	27.43	351.47
73.31	23 25 2	1338.07	23.16	354.02	212.08	113.44	23 47 20	338.1	30.73	328.46
73.31	23 25 2	1338.07	23.16	354.02	212.08	113.44	23 47 20	338.1	30.73	328.46
73.31	23 25 2	1338.07	23.16	354.02	212.08	113.44	23 47 20	338.1	30.73	328.46
110.00	2 47 4	5985.55	16.38	281.29	208.42	120.40	4 26 50	4985.6	27.43	258.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2653	TRA	-.1992	TC3	-.8996	BAU	.1398	SGT	858.6	SGR	448.5	SG3	1420.9	ST	24.8	SR	14.2	SS	55.8
RDE	-.1562	RRA	-.0514	RC3	.5215	FAU	.20140	RRT	-.0169	RRF	-.7074	RTF	-.[illegible]73	CRT	.9872	CRS	.3369	CST	.4623
FDE	.4646	FRA	5.6958	FC-17.3395		BSP	631	SGB	968.7	R23	.7063	R13	-.0518	LSA	55.6	MSA	24.9	SSA	1.0
BDE	.3078	BRA	.2057	BC3	1.0399	FSP	2383	SG1	858.7	SG2	448.4	THA	179.31	EL1	28.5	EL2	2.0	ALF	29.64

LAUNCH DATE MAY 3 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 461.096 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.283	GAL	-1.05	AZL	92.28	HCA	152.09	SMA	184.84	ECC	.18507	INC	2.2846	V1	29.547
RP	210.57	LAP	-1.07	LOP	14.04	VP	23.292	GAP	7.07	AZP	87.98	TAL	353.26	TAP	145.36	RCA	150.64	APO	219.05	V2	26.044
RC	115.380	GL	-23.96	GP	3.63	ZAL	108.89	ZAP	116.74	ETS	177.89	ZAE	159.19	ETE	169.71	ZAC	104.53	ETC	276.30	LVI	-19.35

PLANETOCENTRIC CONIC

C3	10.041	VHL	3.169	DLA	-32.65	RAL	344.62	RAD	6638.1	VEL	11.408	PTH	6.46	VHP	3.246	DPA	-15.78	RAP	312.78	ECC	1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 57 43	2292.71	3.00	57.72	197.71	137.50	18 35 56	1292.7	21.02	41.17
60.00	19 30 3	2046.96	8.77	41.10	203.21	129.50	20 4 10	1047.0	23.81	21.47
70.00	21 48 59	1637.69	16.82	13.72	208.95	120.17	22 16 16	637.7	27.75	350.59
72.97	23 24 3	1344.71	23.28	354.59	212.42	113.56	23 46 28	344.7	30.89	329.01
72.97	23 24 3	1344.71	23.28	354.59	212.42	113.56	23 46 28	344.7	30.89	329.01
72.97	23 24 3	1344.71	23.28	354.59	212.42	113.56	23 46 28	344.7	30.89	329.01
110.00	2 52 21	5972.55	16.82	280.55	208.95	120.17	4 31 53	4972.5	27.75	257.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2684	TRA	-.1508	TC3	-1.0740	BAU	.1614	SGT	896.5	SGR	458.4	SG3	1472.3	ST	24.8	SR	13.8	SS	55.3
RDE	-.1513	RRA	-.0625	RC3	.5402	FAU	.20668	RRT	-.1380	RRF	-.7461	RTF	.2040	CRT	.9956	CRS	.3755	CST	.4156
FDE	.5102	FRA	5.9266	FC-17.8207		BSP	598	SGB	1006.9	R23	.7144	R13	-.2383	LSA	56.8	MSA	25.2	SSA	1.0
BDE	.3081	BRA	.1633	BC3	1.2022	FSP	2503	SG1	899.5	SG2	452.5	THA	174.59	EL1	28.4	EL2	1.1	ALF	29.14

LAUNCH DATE MAY 3 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 11 1971

DISTANCE 465.264

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.274 GAL -1.06 AZL 92.31 HCA 183.32 SMA 184.68 ECC .18442 INC 2.3088 V1 28.547
RP 210.82 LAP -1.04 LOP 19.26 VP 23.248 GAP 6.86 AZP 87.94 TAL 353.15 TAP 146.47 RCA 150.63 APO 218.75 V2 26.015
RC 117.545 GL -24.23 GP 3.84 ZAL 109.03 ZAP 114.66 ETS 177.93 ZAE 157.27 ETE 170.33 ZAC 104.84 ETC 276.11 LVI -19.28

PLANETOCENTRIC CONIC

C3 10.037 VHL 3.168 DLA -32.81 RAL 344.98 RAD 6638.1 VEL 11.408 PTH 6.46 VHP 3.184 DPA -15.81 RAP 311.87 ECC 1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 0 6	2288.65	3.20	57.55	198.12	137.49	18 38 15	1268.7	21.21	40.97
60.00	19 33 3	2041.25	9.01	40.82	203.65	129.45	20 7 4	1041.3	26.03	21.14
70.00	21 54 32	1824.38	17.28	12.96	209.52	119.93	22 21 36	624.4	28.07	349.69
72.63	23 23 13	1351.42	23.39	355.16	212.81	113.69	23 45 44	351.4	31.04	329.56
72.63	23 23 13	1351.42	23.39	355.16	212.81	113.69	23 45 44	351.4	31.04	329.56
72.63	23 23 13	1351.42	23.39	355.16	212.81	113.69	23 45 44	351.4	31.04	329.56
110.00	2 57 54	5959.24	17.28	279.78	209.52	119.93	4 37 13	4959.2	28.07	236.51

DIFFERENTIAL CORRECTIONS

TDE -.2656 TRA -.0949 TC3-1.2367 BAU .1822
RDE -.1460 RRA -.0740 RC3 .5614 FAU .21248
FDE .5261 FRA 6.1313 FC-18.3275 BSP 640
BDE .3031 BRA .1203 BC3 1.3582 FSP 2590

MID-COURSE EXECUTION ACCURACY

SGT 941.5 SGR 470.8 SG3 1520.8
RRT -.2693 RRF -.7823 RTF .3590
SGB 1052.7 R23 .6802 R13 -.4159
SG1 952.5 SG2 448.1 THA 170.12

ORBIT DETERMINATION ACCURACY

ST 24.2 SR 13.4 SS 56.4
CRT .9948 CRS .4046 CST .3490
LSA 57.5 MSA 25.3 SSA 1.0
EL1 27.7 EL2 1.2 ALF 28.92

LAUNCH DATE MAY 3 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 13 1971

DISTANCE 469.436

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.266 GAL -1.08 AZL 92.34 HCA 154.53 SMA 184.56 ECC .18386 INC 2.3351 V1 29.547
RP 211.07 LAP -1.00 LOP 16.48 VP 23.204 GAP 6.66 AZP 87.89 TAL 353.03 TAP 147.56 RCA 150.62 APO 218.49 V2 25.986
RC 119.734 GL -24.50 GP 4.07 ZAL 109.20 ZAP 112.57 ETS 177.98 ZAE 155.31 ETE 170.83 ZAC 105.16 ETC 275.92 LVI -19.21

PLANETOCENTRIC CONIC

C3 10.046 VHL 3.170 DLA -32.97 RAL 345.32 RAD 6638.1 VEL 11.408 PTH 6.46 VHP 3.147 DPA -15.81 RAP 310.93 ECC 1.1653

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 2 35	2284.85	3.39	57.40	198.57	137.48	18 40 40	1284.9	21.38	40.79
60.00	19 36 10	2035.77	9.25	40.55	204.14	129.40	20 10 6	1035.8	24.23	20.82
70.00	22 0 26	1810.61	17.74	12.16	210.14	119.67	22 27 16	610.6	28.39	348.75
72.30	23 22 35	1358.05	23.49	355.72	213.24	113.83	23 45 13	358.0	31.19	330.10
72.30	23 22 35	1358.05	23.49	355.72	213.24	113.83	23 45 13	358.0	31.19	330.10
72.30	23 22 35	1358.05	23.49	355.72	213.24	113.83	23 45 13	358.0	31.19	330.10
110.00	3 3 48	5945.47	17.74	278.99	210.14	119.67	4 42 53	4945.5	28.39	255.57

DIFFERENTIAL CORRECTIONS

TDE -.2642 TRA -.0367 TC3-1.4066 BAU .2045
RDE -.1411 RRA -.0862 RC3 .5840 FAU .21807
FDE .5532 FRA 6.3298 FC-18.7927 BSP 792
BDE .2995 BRA .0937 BC3 1.5230 FSP 2676

MID-COURSE EXECUTION ACCURACY

SGT 1014.5 SGR 486.4 SG3 1567.0
RRT -.3924 RRF -.8160 RTF .4927
SGB 1125.1 R23 .6258 R13 -.5562
SG1 1036.4 SG2 437.9 THA 166.98

ORBIT DETERMINATION ACCURACY

ST 23.9 SR 13.1 SS 57.5
CRT .9815 CRS .4409 CST .2791
LSA 58.3 MSA 25.4 SSA .9
EL1 27.2 EL2 2.2 ALF 28.37

LAUNCH DATE MAY 3 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 15 1971

DISTANCE 473.612

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.259 GAL -1.10 AZL 92.36 HCA 155.75 SMA 184.44 ECC .18338 INC 2.3636 V1 29.547
RP 211.33 LAP -.97 LOP 17.70 VP 23.161 GAP 6.46 AZP 87.84 TAL 352.89 TAP 148.64 RCA 150.62 APO 218.26 V2 25.957
RC 121.945 GL -24.79 GP 4.31 ZAL 109.38 ZAP 110.47 ETS 178.03 ZAE 153.32 ETE 171.25 ZAC 105.49 ETC 275.72 LVI -19.15

PLANETOCENTRIC CONIC

C3 10.067 VHL 3.173 DLA -33.13 RAL 345.71 RAD 6638.1 VEL 11.409 PTH 6.46 VHP 3.105 DPA -15.80 RAP 309.98 ECC 1.1657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 5 12	2281.24	3.58	57.24	199.06	137.47	18 43 13	1281.2	21.55	40.61
60.00	19 39 26	2030.42	9.48	40.29	204.68	129.36	20 13 16	1030.4	24.43	20.51
70.00	22 6 49	1595.95	18.24	11.31	210.83	119.39	22 33 25	596.0	28.72	347.74
71.97	23 22 1	1365.00	23.59	356.30	213.71	113.97	23 44 46	365.0	31.33	330.67
71.97	23 22 1	1365.00	23.59	356.30	213.71	113.97	23 44 46	365.0	31.33	330.67
71.97	23 22 1	1365.00	23.59	356.30	213.71	113.97	23 44 46	365.0	31.33	330.67
110.00	3 10 11	5930.81	18.24	278.13	210.83	119.39	4 49 2	4930.8	28.72	254.56

DIFFERENTIAL CORRECTIONS

TDE -.2629 TRA .0237 TC3-1.5815 BAU .2280
RDE -.1362 RRA -.0995 RC3 .6081 FAU .22335
FDE .5816 FRA 6.9293 FC-19.2072 BSP 1014
BDE .2961 BRA .1022 BC3 1.6944 FSP 2764

MID-COURSE EXECUTION ACCURACY

SGT 1111.4 SGR 505.4 SG3 1611.6
RRT -.3010 RRF -.8467 RTF .5007
SGB 1220.9 R23 .5684 R13 -.6599
SG1 1144.6 SG2 424.7 THA 165.06

ORBIT DETERMINATION ACCURACY

ST 23.6 SR 12.7 SS 58.6
CRT .9530 CRS .4806 CST .2034
LSA 59.2 MSA 25.6 SSA .9
EL1 26.8 EL2 3.4 ALF 27.90

LAUNCH DATE MAY 3 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 17 1971

DISTANCE 477.790

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.253 GAL -1.12 AZL 92.40 HCA 156.96 SMA 184.34 ECC .18297 INC 2.3951 V1 29.547
RP 211.60 LAP -.94 LOP 18.91 VP 23.119 GAP 6.26 AZP 87.80 TAL 352.74 TAP 149.70 RCA 150.61 APO 218.07 V2 25.926
RC 124.177 GL -25.09 GP 4.57 ZAL 109.57 ZAP 108.36 ETS 178.09 ZAE 151.30 ETE 171.59 ZAC 105.85 ETC 275.52 LVI -19.10

PLANETOCENTRIC CONIC

C3 10.101 VHL 3.178 DLA -33.30 RAL 346.13 RAD 6638.1 VEL 11.410 PTH 6.46 VHP 3.087 DPA -15.77 RAP 309.01 ECC 1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 7 58	2277.75	3.75	57.10	199.59	137.46	18 45 56	1277.7	21.72	40.44
60.00	19 42 53	2025.10	9.71	40.02	205.26	129.31	20 16 38	1025.1	24.63	20.19
70.00	22 13 53	1579.84	18.77	10.37	211.59	119.07	22 40 12	579.8	29.08	346.62
71.64	23 21 36	1372.15	23.68	356.90	214.23	114.13	23 44 28	372.2	31.48	331.26
71.64	23 21 36	1372.15	23.68	356.90	214.23	114.13	23 44 28	372.2	31.48	331.26
71.64	23 21 36	1372.15	23.68	356.90	214.23	114.13	23 44 28	372.2	31.48	331.26
110.00	3 17 15	5914.70	18.77	277.19	211.59	119.07	4 55 50	4914.7	29.08	253.44

DIFFERENTIAL CORRECTIONS

TDE -.2613 TRA .0871 TC3-1.7608 BAU .2527
RDE -.1315 RRA -.1138 RC3 .6330 FAU .22788
FDE .6094 FRA 6.7218 FC-19.5311 BSP 1285
BDE .2926 BRA .1433 BC3 1.8711 FSP 2836

MID-COURSE EXECUTION ACCURACY

SGT 1228.8 SGR 527.6 SG3 1651.9
RRT -.5934 RRF -.8738 RTF .6853
SGB 1337.3 R23 .5149 R13 -.7358
SG1 1272.9 SG2 410.0 THA 164.00

ORBIT DETERMINATION ACCURACY

ST 23.8 SR 12.4 SS 59.6
CRT .9063 CRS .5230 CST .1214
LSA 60.1 MSA 25.7 SSA .8
EL1 26.4 EL2 4.7 ALF 26.25

LAUNCH DATE MAY 3 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 481.971 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.247	GAL	-1.14	AZL	92.43	HCA	158.17	SMA	184.25	ECC	.18264	INC	2.4295
RP	211.87	LAP	-.90	LOP	20.12	VP	23.077	GAP	6.06	AZP	87.74	TAL	352.57	TAP	150.75	RCA	150.60	APO	217.91
RC	126.431	GL	-25.41	GP	4.86	ZAL	109.78	ZAP	106.24	ETS	178.17	ZAE	149.26	ETE	171.86	ZAC	106.23	ETC	275.31

V1	29.547	V2	25.896	LVI	-19.07														

PLANETOCENTRIC CONIC

C3	10.148	VHL	3.186	DLA	-33.48	RAL	346.58	RAD	6638.1	VEL	11.412	PTH	6.46	VHP	3.033	DPA	-15.71	RAP	308.03

ECC	1.1670																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 10 55	2274.29	3.92	56.95	200.17	137.45	18 48 49	1274.3	21.88	40.27
60.00	19 46 33	2019.68	9.94	39.76	205.89	129.26	20 20 13	1019.7	24.83	19.88
70.00	22 21 57	1561.32	19.38	9.28	212.45	118.69	22 47 58	561.3	29.48	345.32
71.29	23 21 14	1379.72	23.77	357.53	214.80	114.29	23 44 14	379.7	31.63	331.88
71.29	23 21 14	1379.72	23.77	357.53	214.80	114.29	23 44 14	379.7	31.63	331.88
71.29	23 21 14	1379.72	23.77	357.53	214.80	114.29	23 44 14	379.7	31.63	331.88
110.00	3 25 19	5896.17	19.38	276.10	212.45	118.69	5 3 35	4896.2	29.48	252.15

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2607	TRA	.1526	TC3	-1.9421	BAU	.2783	SGT	1363.5	SGR	554.3	SG3	1690.4	ST	24.0	SR	12.2	SS	60.7
RDE	-.1272	RRA	-.1293	RC3	.6608	FAU	.23260	RRT	-.6688	RRF	-.8979	RTF	.7497	CRT	.8406	CRS	.5698	CST	.0397
FDE	.6443	FRA	6.9035	FC	-19.8435	BSP	1576	SGB	1471.9	R23	.4694	R13	-.7913	LSA	61.1	MSA	26.0	SSA	.8
BDE	.2901	BRA	.2000	BC3	2.0514	FSP	2904	SG1	1417.5	SG2	396.4	THA	163.46	EL1	26.3	EL2	6.0	ALF	24.48

LAUNCH DATE MAY 3 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 486.155 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.243	GAL	-1.17	AZL	92.47	HCA	159.38	SMA	184.18	ECC	.18237	INC	2.4679
RP	212.14	LAP	-.87	LOP	21.32	VP	23.035	GAP	5.87	AZP	87.69	TAL	352.39	TAP	151.77	RCA	150.59	APO	217.77
RC	128.706	GL	-25.75	GP	5.17	ZAL	110.00	ZAP	104.13	ETS	178.25	ZAE	147.20	ETE	172.08	ZAC	106.63	ETC	275.11

V1	29.547	V2	25.864	LVI	-19.06														

PLANETOCENTRIC CONIC

C3	10.209	VHL	3.195	DLA	-33.66	RAL	347.07	RAD	6638.1	VEL	11.415	PTH	6.47	VHP	3.004	DPA	-15.61	RAP	307.04

ECC	1.1680																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 14 5	2270.77	4.10	56.81	200.80	137.44	18 51 56	1270.8	22.04	40.10
60.00	19 50 32	2014.00	10.19	39.48	206.58	129.21	20 24 6	1014.0	25.04	19.54
70.00	22 31 35	1538.67	20.11	7.93	213.42	118.20	22 57 14	538.7	29.95	343.73
70.93	23 20 54	1387.83	23.86	358.20	215.43	114.48	23 44 2	387.8	31.79	332.55
70.93	23 20 54	1387.83	23.86	358.20	215.43	114.48	23 44 2	387.8	31.79	332.55
70.93	23 20 54	1387.83	23.86	358.20	215.43	114.48	23 44 2	387.8	31.79	332.55
110.00	3 34 57	5873.53	20.11	274.76	213.42	118.20	5 12 51	4873.5	29.95	250.55

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2591	TRA	.2215	TC3	-2.1251	BAU	.3049	SGT	1512.5	SGR	584.4	SG3	1723.3	ST	24.4	SR	12.0	SS	61.6
RDE	-.1229	RRA	-.1462	RC3	.6890	FAU	.23611	RRT	-.7306	RRF	-.9182	RTF	.7986	CRT	.7538	CRS	.6175	CST	-.0469
FDE	.6746	FRA	7.0793	FC	-20.0223	BSP	1894	SGB	1621.5	R23	.4306	R13	-.8323	LSA	62.1	MSA	26.1	SSA	.8
BDE	.2867	BRA	.2654	BC3	2.2340	FSP	2970	SG1	1575.6	SG2	383.1	THA	163.21	EL1	26.2	EL2	7.4	ALF	22.20

LAUNCH DATE MAY 3 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 490.340 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.239	GAL	-1.20	AZL	92.51	HCA	160.58	SMA	184.13	ECC	.18217	INC	2.5108
RP	212.43	LAP	-.83	LOP	22.53	VP	22.994	GAP	5.68	AZP	87.63	TAL	352.20	TAP	152.78	RCA	150.58	APO	217.67
RC	130.999	GL	-26.12	GP	5.52	ZAL	110.22	ZAP	102.03	ETS	178.35	ZAE	145.13	ETE	172.25	ZAC	107.06	ETC	274.90

V1	29.547	V2	25.832	LVI	-19.08														

PLANETOCENTRIC CONIC

C3	10.285	VHL	3.207	DLA	-33.87	RAL	347.58	RAD	6638.2	VEL	11.418	PTH	6.47	VHP	2.979	DPA	-15.48	RAP	306.05

ECC	1.1693																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 17 31	2267.08	4.29	56.65	201.49	137.43	18 55 18	1267.1	22.22	39.91
60.00	19 54 53	2007.88	10.45	39.17	207.34	129.15	20 28 20	1007.9	25.26	19.18
70.00	22 44 7	1508.00	21.09	6.09	214.59	117.51	23 9 15	508.0	30.55	341.54
70.53	23 20 33	1396.71	23.96	358.94	216.11	114.69	23 43 50	396.7	31.96	333.28
70.53	23 20 33	1396.71	23.96	358.94	216.11	114.69	23 43 50	396.7	31.96	333.28
70.53	23 20 33	1396.71	23.96	358.94	216.11	114.69	23 43 50	396.7	31.96	333.28
110.00	3 47 29	5842.85	21.09	272.91	214.59	117.51	5 24 52	4842.9	30.55	248.36

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2576	TRA	.2934	TC3	-2.3047	BAU	.3320	SGT	1672.0	SGR	619.7	SG3	1783.0	ST	25.0	SR	11.9	SS	62.5
RDE	-.1189	RRA	-.1646	RC3	.7205	FAU	.23966	RRT	-.7807	RRF	-.9356	RTF	.8165	CRT	.6479	CRS	.6674	CST	-.1313
FDE	.7100	FRA	7.2395	FC	-20.1730	BSP	2232	SGB	1783.2	R23	.3972	R13	-.8640	LSA	63.1	MSA	26.3	SSA	.7
BDE	.2837	BRA	.3364	BC3	2.4147	FSP	3026	SG1	1744.1	SG2	371.2	THA	163.07	EL1	26.3	EL2	8.6	ALF	19.29

LAUNCH DATE MAY 3 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 494.526 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.237	GAL	-1.23	AZL	92.56	HCA	161.78	SMA	184.08	ECC	.18203	INC	2.5586
RP	212.72	LAP	-.80	LOP	23.73	VP	22.953	GAP	5.49	AZP	87.57	TAL	351.99	TAP	153.77	RCA	150.57	APO	217.59
RC	133.312	GL	-26.53	GP	5.90	ZAL	110.46	ZAP	99.94	ETS	178.46	ZAE	143.05	ETE	172.36	ZAC	107.52	ETC	274.70

V1	29.547	V2	25.799	LVI	-19.12														

PLANETOCENTRIC CONIC

C3	10.378	VHL	3.221	DLA	-34.10	RAL	348.14	RAD	6638.2	VEL	11.422	PTH	6.47	VHP	2.958	DPA	-15.31	RAP	305.06

ECC	1.1708																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 21 17	2263.07	4.49	56.48	202.25	137.41	18 59 0	1263.1	22.40	39.72
60.00	19 59 41	2001.07	10.74	38.84	208.18	129.08	20 33 2	1001.1	25.51	18.77
70.00	23 5 13	1452.03	22.81	2.66	216.22	116.14	23 29 25	452.0	31.53	337.48
70.10	23 20 8	1406.55	24.06	359.76	216.87	114.93	23 43 35	406.6	32.15	334.10
70.10	23 20 8	1406.55	24.06	359.76	216.87	114.93	23 43 35	406.6	32.15	334.10
70.10	23 20 8	1406.55	24.06	359.76	216.87	114.93	23 43 35	406.6	32.15	334.10
110.00	4 8 35	5786.89	22.81	269.48	216.22	116.14	5 45 2	4786.9	31.53	244.30

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2573	TRA	.3669	TC3	-2.4874	BAU	.3606	SGT	1843.6	SGR	659.2	SG3	1775.9	ST	25.9	SR	11.9	SS	63.5
RDE	-.1151	RRA	-.1846	RC3	.7532	FAU	.24217	RRT	-.8199	RRF	-.9500	RTF	.8642	CRT	.5287	CRS	.7170	CST	-.2097
FDE	.7445	FRA	7.3810	FC	-20.2016	BSP	2569	SGB	1958.0	R23	.3716	R13	-.8869	LSA	64.1	MSA	26.6	SSA	.7
BDE	.2819	BRA	.4107	BC3	2.5990	FSP	3073	SG1	1924.3	SG2	361.6	THA	163.04	EL1	26.7	EL2	9.7	ALF	15.78

LAUNCH DATE MAY 3 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 27 1971

DISTANCE 498.713

HELIOCENTRIC CONIC

RL 150.80 LAL -.00 LOL 221.93 VL 32.235 GAL -1.26 AZL 92.61 HCA 162.98 SMA 184.05 ECC .18196 INC 2.6130 V1 29.547
RP 213.01 LAP -.76 LOP 24.92 VP 22.913 GAP 5.31 AZP 87.50 TAL 351.77 TAP 154.75 RCA 150.56 APO 217.54 V2 25.766
RC 135.643 GL -26.98 GP 6.33 ZAL 110.70 ZAP 97.86 ETS 178.59 ZAE 140.96 ETE 172.43 ZAC 108.03 ETC 274.50 LVI -19.22

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.489 VHL 3.239 DLA -34.36 RAL 348.74 RAD 6638.3 VEL 11.427 PTH 6.48 VHP 2.941 DPA -15.08 RAP 304.08 ECC 1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 25 27	2258.57	4.71	56.29	203.09	137.40	19 3 5	1258.6	22.61	39.49
60.00	20 5 5	1993.26	11.08	38.45	209.12	129.00	20 38 19	993.3	25.80	18.31
69.61	23 19 38	1417.49	24.17	.67	217.70	115.20	23 43 15	417.5	32.36	335.00
69.61	23 19 38	1417.49	24.17	.67	217.70	115.20	23 43 15	417.5	32.36	335.00
69.61	23 19 38	1417.49	24.17	.67	217.70	115.20	23 43 15	417.5	32.36	335.00
69.61	23 19 38	1417.49	24.17	.67	217.70	115.20	23 43 15	417.5	32.36	335.00
69.61	23 19 38	1417.49	24.17	.67	217.70	115.20	23 43 15	417.5	32.36	335.00

DIFFERENTIAL CORRECTIONS

TDE -.2568 TRA .4436 TC3-2.6646 BAU .3897
RDE -.1118 RRA -.2070 RC3 .7888 FAU .24413
FDE .7815 FRA 7.5174 FC-20.1501 BSP 2923
BDE .2800 BRA .4896 BC3 2.7789 FSP 3109

MID-COURSE EXECUTION ACCURACY

SGT 2022.2 SGR 704.9 SG3 1795.4
RRT -.8515 RRF -.9618 RTF .8857
SGB 2141.6 R23 .3501 R13 -.9048
SG1 2112.1 SG2 353.9 THA 162.98

ORBIT DETERMINATION ACCURACY

ST 26.9 SR 11.9 SS 64.1
CRT .3967 CRS .7661 CST -.2837
LSA 65.2 MSA 26.9 SSA .6
EL1 27.4 EL2 10.8 ALF 11.82

LAUNCH DATE MAY 3 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 29 1971

DISTANCE 502.901

HELIOCENTRIC CONIC

RL 150.80 LAL -.00 LOL 221.93 VL 32.234 GAL -1.30 AZL 92.68 HCA 164.17 SMA 184.03 ECC .18194 INC 2.6751 V1 29.547
RP 213.31 LAP -.73 LOP 26.11 VP 22.873 GAP 5.13 AZP 87.43 TAL 351.54 TAP 155.71 RCA 150.55 APO 217.51 V2 25.732
RC 137.991 GL -27.49 GP 6.82 ZAL 110.94 ZAP 95.80 ETS 178.75 ZAE 138.88 ETE 172.46 ZAC 108.58 ETC 274.30 LVI -19.36

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.621 VHL 3.259 DLA -34.67 RAL 349.38 RAD 6638.4 VEL 11.433 PTH 6.48 VHP 2.929 DPA -14.79 RAP 303.10 ECC 1.1748

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 30 8	2253.35	4.97	56.07	204.02	137.38	19 7 41	1253.3	22.85	39.23
60.00	20 11 16	1984.03	11.47	37.99	210.17	128.90	20 44 20	984.0	26.13	17.75
69.06	23 18 57	1429.91	24.29	1.71	218.62	115.53	23 42 47	429.9	32.61	336.04
69.06	23 18 57	1429.91	24.29	1.71	218.62	115.53	23 42 47	429.9	32.61	336.04
69.06	23 18 57	1429.91	24.29	1.71	218.62	115.53	23 42 47	429.9	32.61	336.04
69.06	23 18 57	1429.91	24.29	1.71	218.62	115.53	23 42 47	429.9	32.61	336.04
69.06	23 18 57	1429.91	24.29	1.71	218.62	115.53	23 42 47	429.9	32.61	336.04

DIFFERENTIAL CORRECTIONS

TDE -.2568 TRA .5228 TC3-2.8361 BAU .4195
RDE -.1088 RRA -.2318 RC3 .8281 FAU .24567
FDE .8204 FRA 7.6330 FC-20.0246 BSP 3286
BDE .2789 BRA .5719 BC3 2.9545 FSP 3140

MID-COURSE EXECUTION ACCURACY

SGT 2206.8 SGR 757.3 SG3 1809.5
RRT -.8767 RRF -.9713 RTF .9024
SGB 2333.1 R23 .3321 R13 -.9189
SG1 2306.9 SG2 348.4 THA 162.85

ORBIT DETERMINATION ACCURACY

ST 28.3 SR 12.1 SS 64.8
CRT .2598 CRS .8127 CST -.3497
LSA 66.3 MSA 27.2 SSA .6
EL1 28.5 EL2 11.6 ALF 7.66

LAUNCH DATE MAY 3 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 1 1971

DISTANCE 507.089

HELIOCENTRIC CONIC

RL 150.80 LAL -.00 LOL 221.93 VL 32.233 GAL -1.34 AZL 92.75 HCA 165.36 SMA 184.02 ECC .18197 INC 2.7470 V1 29.547
RP 213.61 LAP -.69 LOP 27.30 VP 22.833 GAP 4.95 AZP 87.34 TAL 351.29 TAP 156.65 RCA 150.53 APO 217.50 V2 25.697
RC 140.356 GL -28.06 GP 7.37 ZAL 111.17 ZAP 93.77 ETS 178.93 ZAE 136.80 ETE 172.43 ZAC 109.21 ETC 274.10 LVI -19.57

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.778 VHL 3.283 DLA -35.02 RAL 350.09 RAD 6638.4 VEL 11.440 PTH 6.49 VHP 2.921 DPA -14.42 RAP 302.13 ECC 1.1774

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 35 27	2247.10	5.29	55.81	205.06	137.35	19 12 54	1247.1	23.14	38.92
60.00	20 18 27	1972.79	11.95	37.43	211.36	128.78	20 51 20	972.8	26.53	17.07
68.42	23 18 5	1444.05	24.44	2.90	219.65	115.91	23 42 9	444.0	32.89	337.23
68.42	23 18 5	1444.05	24.44	2.90	219.65	115.91	23 42 9	444.0	32.89	337.23
68.42	23 18 5	1444.05	24.44	2.90	219.65	115.91	23 42 9	444.0	32.89	337.23
68.42	23 18 5	1444.05	24.44	2.90	219.65	115.91	23 42 9	444.0	32.89	337.23
68.42	23 18 5	1444.05	24.44	2.90	219.65	115.91	23 42 9	444.0	32.89	337.23

DIFFERENTIAL CORRECTIONS

TDE -.2569 TRA .6052 TC3-2.9974 BAU .4498
RDE -.1060 RRA -.2598 RC3 .8715 FAU .24666
FDE .8500 FRA 7.7323 FC-19.8134 BSP 3662
BDE .2779 BRA .6586 BC3 3.1216 FSP 3154

MID-COURSE EXECUTION ACCURACY

SGT 2395.4 SGR 817.5 SG3 1818.5
RRT -.8975 RRF -.9789 RTF .9062
SGB 2531.0 R23 .3155 R13 -.9306
SG1 2507.5 SG2 344.5 THA 162.63

ORBIT DETERMINATION ACCURACY

ST 29.8 SR 12.5 SS 69.3
CRT .1192 CRS .8844 CST -.4185
LSA 67.4 MSA 27.5 SSA .5
EL1 29.8 EL2 12.4 ALF 3.45

LAUNCH DATE MAY 3 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 3 1971

DISTANCE 511.276

HELIOCENTRIC CONIC

RL 150.80 LAL -.00 LOL 221.93 VL 32.233 GAL -1.38 AZL 92.83 HCA 166.55 SMA 184.02 ECC .18206 INC 2.8307 V1 29.547
RP 213.92 LAP -.66 LOP 28.49 VP 22.794 GAP 4.77 AZP 87.25 TAL 351.04 TAP 157.58 RCA 150.51 APO 217.52 V2 25.662
RC 142.739 GL -28.73 GP 8.01 ZAL 111.40 ZAP 91.77 ETS 179.14 ZAE 134.73 ETE 172.35 ZAC 109.91 ETC 273.92 LVI -19.87

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.965 VHL 3.311 DLA -35.45 RAL 350.86 RAD 6638.5 VEL 11.448 PTH 6.50 VHP 2.917 DPA -13.96 RAP 301.17 ECC 1.1805

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 41 36	2239.47	5.67	55.49	206.25	137.32	19 18 55	1239.5	23.50	38.54
60.00	20 27 0	1958.73	12.55	36.72	212.74	128.62	20 59 38	958.7	27.03	16.22
67.67	23 16 55	1460.37	24.61	4.28	220.81	116.36	23 41 15	460.4	33.23	338.62
67.67	23 16 55	1460.37	24.61	4.28	220.81	116.36	23 41 15	460.4	33.23	338.62
67.67	23 16 55	1460.37	24.61	4.28	220.81	116.36	23 41 15	460.4	33.23	338.62
67.67	23 16 55	1460.37	24.61	4.28	220.81	116.36	23 41 15	460.4	33.23	338.62
67.67	23 16 55	1460.37	24.61	4.28	220.81	116.36	23 41 15	460.4	33.23	338.62

DIFFERENTIAL CORRECTIONS

TDE -.2568 TRA .6893 TC3-3.1524 BAU .4814
RDE -.1039 RRA -.2915 RC3 .9198 FAU .24701
FDE .8826 FRA 7.8085 FC-19.5036 BSP 4036
BDE .2789 BRA .7484 BC3 3.2838 FSP 3160

MID-COURSE EXECUTION ACCURACY

SGT 2589.0 SGR 887.0 SG3 1821.1
RRT -.9135 RRF -.9848 RTF .9267
SGB 2736.7 R23 .3024 R13 -.9396
SG1 2715.0 SG2 344.1 THA 162.33

ORBIT DETERMINATION ACCURACY

ST 31.5 SR 13.0 SS 65.8
CRT -.0137 CRS .8916 CST -.4638
LSA 68.6 MSA 28.0 SSA .5
EL1 31.5 EL2 13.0 ALF 179.61

LAUNCH DATE MAY 3 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 515.464 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.234 GAL -1.42 AZL 92.93 HCA 167.73 SMA 184.03 ECC .18220 INC 2.9304 V1 29.547
RP 214.24 LAP -.62 LOP 29.67 VP 22.755 GAP 4.60 AZP 87.14 TAL 350.77 TAP 158.50 RCA 150.50 APO 217.56 V2 25.627
RC 145.138 GL -29.51 GP 8.76 ZAL 111.61 ZAP 89.81 ETS 179.40 ZAE 132.67 ETE 172.22 ZAC 110.72 ETC 273.74 LVI -20.28

PLANETOCENTRIC CONIC

C3 11.189 VHL 3.345 DLA -35.97 RAL 351.72 RAD 6638.7 VEL 11.458 PTH 6.51 VHP 2.918 DPA -13.38 RAP 300.22 ECC 1.1841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 48 51	2229.90	6.15	55.08	207.63	137.27	19 26 1	1229.9	23.94	38.05
60.00	20 37 25	1940.62	13.32	35.81	214.36	128.40	21 9 46	940.6	27.66	15.10
66.78	23 15 23	1479.35	24.82	5.91	222.13	116.92	23 40 3	479.3	33.65	340.25
66.78	23 15 23	1479.35	24.82	5.91	222.13	116.92	23 40 3	479.3	33.65	340.25
66.78	23 15 23	1479.35	24.82	5.91	222.13	116.92	23 40 3	479.3	33.65	340.25
66.78	23 15 23	1479.35	24.82	5.91	222.13	116.92	23 40 3	479.3	33.65	340.25
66.78	23 15 23	1479.35	24.82	5.91	222.13	116.92	23 40 3	479.3	33.65	340.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2607 TRA .7778 TC3-3.2889 BAU .5130 SGT 2784.0 SGR 968.3 SG3 1817.9 ST 33.5 SR 13.7 SS 66.3
RDE -.1029 RRA -.3289 RC3 .9712 FAU .24589 RRT -.9261 RRF -.9894 RTF .9348 CRT -.1404 CRS .9236 CST -.5084
FDE .9237 FRA 7.8609 FC-19.0252 BSP 4430 SGB 2947.6 R23 .2913 R13 -.9468 LSA 69.9 MSA 28.5 SSA .4
BDE .2803 BRA .8445 BC3 3.4293 FSP 3163 SG1 2927.1 SG2 347.4 THA 161.88 EL1 33.5 EL2 13.5 ALF 176.07

LAUNCH DATE MAY 3 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 519.650 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.235 GAL -1.46 AZL 93.05 HCA 168.91 SMA 184.05 ECC .18239 INC 3.0502 V1 29.547
RP 214.55 LAP -.59 LOP 30.65 VP 22.716 GAP 4.43 AZP 87.01 TAL 350.49 TAP 159.40 RCA 150.48 APO 217.62 V2 25.591
RC 147.555 GL -30.44 GP 9.65 ZAL 111.79 ZAP 87.89 ETS 179.70 ZAE 130.61 ETE 172.01 ZAC 111.66 ETC 273.57 LVI -20.82

PLANETOCENTRIC CONIC

C3 11.462 VHL 3.386 DLA -36.61 RAL 352.69 RAD 6638.8 VEL 11.469 PTH 6.52 VHP 2.923 DPA -12.64 RAP 299.28 ECC 1.1886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 57 35	2217.66	6.76	54.57	209.25	137.21	19 34 32	1217.7	24.50	37.43
60.00	20 50 36	1916.44	14.34	34.58	216.33	128.08	21 22 32	916.4	28.49	13.59
65.71	23 13 29	1501.49	25.07	7.83	223.67	117.61	23 38 30	501.5	34.15	342.17
65.71	23 13 29	1501.49	25.07	7.83	223.67	117.61	23 38 30	501.5	34.15	342.17
65.71	23 13 29	1501.49	25.07	7.83	223.67	117.61	23 38 30	501.5	34.15	342.17
65.71	23 13 29	1501.49	25.07	7.83	223.67	117.61	23 38 30	501.5	34.15	342.17
65.71	23 13 29	1501.49	25.07	7.83	223.67	117.61	23 38 30	501.5	34.15	342.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2657 TRA .8677 TC3-3.4131 BAU .5464 SGT 2981.7 SGR 1064.7 SG3 1807.8 ST 35.6 SR 14.7 SS 66.6
RDE -.1026 RRA -.3720 RC3 1.0322 FAU .24479 RRT -.9361 RRF -.9928 RTF .9414 CRT -.2514 CRS .9488 CST -.5434
FDE .9592 FRA 7.9139 FC-18.4890 BSP 4816 SGB 3166.1 R23 .2810 R13 -.9528 LSA 71.2 MSA 29.2 SSA .4
BDE .2848 BRA .9441 BC3 3.5658 FSP 3144 SG1 3146.1 SG2 354.8 THA 161.27 EL1 35.9 EL2 14.1 ALF 173.01

LAUNCH DATE MAY 3 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 523.836 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.236 GAL -1.51 AZL 93.20 HCA 170.08 SMA 184.08 ECC .18263 INC 3.1983 V1 29.547
RP 214.88 LAP -.55 LOP 32.03 VP 22.678 GAP 4.26 AZP 86.85 TAL 350.20 TAP 160.28 RCA 150.48 APO 217.69 V2 25.554
RC 149.988 GL -31.56 GP 10.73 ZAL 111.92 ZAP 86.02 ETS 180.07 ZAE 128.56 ETE 171.71 ZAC 112.80 ETC 273.41 LVI -21.55

PLANETOCENTRIC CONIC

C3 11.801 VHL 3.435 DLA -37.42 RAL 353.81 RAD 6639.0 VEL 11.484 PTH 6.53 VHP 2.935 DPA -11.71 RAP 298.35 ECC 1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 8 23	2201.64	7.56	53.88	211.21	137.12	19 45 4	1201.6	25.23	36.60
60.00	21 8 3	1882.51	15.76	32.83	218.82	127.59	21 39 25	882.5	29.62	11.43
64.40	23 11 7	1527.60	25.37	10.13	225.48	118.48	23 36 35	527.6	34.78	344.49
64.40	23 11 7	1527.60	25.37	10.13	225.48	118.48	23 36 35	527.6	34.78	344.49
64.40	23 11 7	1527.60	25.37	10.13	225.48	118.48	23 36 35	527.6	34.78	344.49
64.40	23 11 7	1527.60	25.37	10.13	225.48	118.48	23 36 35	527.6	34.78	344.49
64.40	23 11 7	1527.60	25.37	10.13	225.48	118.48	23 36 35	527.6	34.78	344.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2702 TRA .9847 TC3-3.5042 BAU .5793 SGT 3178.7 SGR 1181.2 SG3 1790.7 ST 38.0 SR 16.0 SS 67.1
RDE -.1046 RRA -.4250 RC3 1.0974 FAU .24173 RRT -.9440 RRF -.9953 RTF .9467 CRT -.3523 CRS .9684 CST -.5738
FDE 1.0104 FRA 7.9437 FC-17.7328 BSP 5253 SGB 3391.1 R23 .2711 R13 -.9579 LSA 72.9 MSA 29.9 SSA .3
BDE .2897 BRA 1.0542 BC3 3.6720 FSP 3135 SG1 3371.1 SG2 367.3 THA 160.43 EL1 38.5 EL2 14.8 ALF 170.08

LAUNCH DATE MAY 3 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 528.020 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.239 GAL -1.56 AZL 93.38 HCA 171.26 SMA 184.11 ECC .18291 INC 3.3846 V1 29.547
RP 215.21 LAP -.51 LOP 33.20 VP 22.639 GAP 4.09 AZP 86.65 TAL 349.90 TAP 161.15 RCA 150.44 APO 217.79 V2 25.518
RC 152.438 GL -32.95 GP 12.08 ZAL 111.99 ZAP 84.21 ETS 180.54 ZAE 126.50 ETE 171.29 ZAC 114.19 ETC 273.27 LVI -22.54

PLANETOCENTRIC CONIC

C3 12.236 VHL 3.498 DLA -38.45 RAL 355.12 RAD 6639.2 VEL 11.503 PTH 6.55 VHP 2.953 DPA -10.50 RAP 297.42 ECC 1.2014

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 22 13	2180.11	8.63	52.97	213.66	136.97	19 58 33	1180.1	26.20	35.47
60.00	21 33 8	1830.58	17.89	30.10	222.16	126.73	22 3 38	830.6	31.26	8.01
62.79	23 8 17	1558.68	25.75	12.91	227.69	119.59	23 34 16	558.7	35.57	347.30
62.79	23 8 17	1558.68	25.75	12.91	227.69	119.59	23 34 16	558.7	35.57	347.30
62.79	23 8 17	1558.68	25.75	12.91	227.69	119.59	23 34 16	558.7	35.57	347.30
62.79	23 8 17	1558.68	25.75	12.91	227.69	119.59	23 34 16	558.7	35.57	347.30
62.79	23 8 17	1558.68	25.75	12.91	227.69	119.59	23 34 16	558.7	35.57	347.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2799 TRA 1.0634 TC3-3.5726 BAU .6153 SGT 3376.9 SGR 1324.1 SG3 1763.5 ST 40.7 SR 17.7 SS 67.1
RDE -.1073 RRA -.4885 RC3 1.1775 FAU .23878 RRT -.9506 RRF -.9971 RTF .9514 CRT -.4368 CRS .9820 CST -.5984
FDE 1.0387 FRA 7.9145 FC-16.8948 BSP 5668 SGB 3627.2 R23 .2600 R13 -.9627 LSA 74.3 MSA 30.8 SSA .3
BDE .2998 BRA 1.1703 BC3 3.7616 FSP 3080 SG1 3606.8 SG2 384.8 THA 159.31 EL1 41.5 EL2 15.6 ALF 167.42

LAUNCH DATE MAY 3 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 13 1971

HELIOCENTRIC CONIC DISTANCE 532.202 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.241	GAL	-1.61	AZL	93.63	HCA	172.42	SMA	184.16	ECC	.18324	INC	3.6275	V1	29.547
RP	215.54	LAP	-.48	LOP	34.37	VP	22.601	GAP	3.92	AZP	86.40	TAL	349.59	TAP	162.01	RCA	150.41	APO	217.90	V2	25.480
RC	154.904	GL	-34.73	GP	13.81	ZAL	111.95	ZAP	82.47	ETS	181.13	ZAE	124.42	ETE	170.71	ZAC	115.96	ETC	273.15	LVI	-23.88

PLANETOCENTRIC CONIC

C3	12.815	VHL	3.580	DLA	-39.79	RAL	356.73	RAD	6639.5	VEL	11.528	PTH	6.57	VHP	2.982	DPA	-8.91	RAP	296.47	ECC	1.2109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 40 44	2150.14	10.12	51.68	216.90	136.74	20 16 35	1150.1	27.53	33.87
60.00	22 18 7	1728.55	21.95	24.53	227.44	124.69	22 46 55	728.6	34.18	.95
60.76	23 5 4	1596.02	26.22	16.33	230.46	121.07	23 31 40	596.0	36.59	350.79
60.76	23 5 4	1596.02	26.22	16.33	230.46	121.07	23 31 40	596.0	36.59	350.79
60.76	23 5 4	1596.02	26.22	16.33	230.46	121.07	23 31 40	596.0	36.59	350.79
60.76	23 5 4	1596.02	26.22	16.33	230.46	121.07	23 31 40	596.0	36.59	350.79
60.76	23 5 4	1596.02	26.22	16.33	230.46	121.07	23 31 40	596.0	36.59	350.79

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2912	TRA	1.1700	TC3	-3.5929	BAU	.6527	SGT	3573.9	SGR	1505.2	SG3	1724.5	ST	43.5	SR	20.1	SS	67.2
RDE	-.1149	RRA	-.5698	RC3	1.2672	FAU	.23386	RRT	-.9556	RRF	-.9983	RTF	.9551	CRT	-.5056	CRS	.9911	CST	-.6156
FDE	1.0938	FRA	7.8507	FC	-15.7991	BSP	6134	SGB	3877.9	R23	.2488	R13	-.9668	LSA	76.1	MSA	32.0	SSA	.2
BDE	.3130	BRA	1.3014	BC3	3.8098	FSP	3020	SG1	3856.1	SG2	411.2	THA	157.81	EL1	44.9	EL2	16.8	ALF	164.67

LAUNCH DATE MAY 3 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE 536.383 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.245	GAL	-1.66	AZL	93.96	HCA	173.59	SMA	184.21	ECC	.18360	INC	3.9565	V1	29.547
RP	215.87	LAP	-.44	LOP	35.53	VP	22.563	GAP	3.76	AZP	86.07	TAL	349.26	TAP	162.85	RCA	150.39	APO	218.03	V2	25.443
RC	157.385	GL	-37.05	GP	16.10	ZAL	111.74	ZAP	80.85	ETS	181.91	ZAE	122.30	ETE	169.91	ZAC	118.28	ETC	273.06	LVI	-25.75

PLANETOCENTRIC CONIC

C3	13.631	VHL	3.692	DLA	-41.57	RAL	358.78	RAD	6639.9	VEL	11.563	PTH	6.61	VHP	3.027	DPA	-6.76	RAP	295.50	ECC	1.2243

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 7 16	2106.04	12.30	49.76	221.44	136.33	20 42 22	1106.0	29.46	31.43
58.16	23 1 42	1641.71	26.77	20.63	234.10	123.07	23 29 4	641.7	37.89	355.22
58.16	23 1 42	1641.71	26.77	20.63	234.10	123.07	23 29 4	641.7	37.89	355.22
58.16	23 1 42	1641.71	26.77	20.63	234.10	123.07	23 29 4	641.7	37.89	355.22
58.16	23 1 42	1641.71	26.77	20.63	234.10	123.07	23 29 4	641.7	37.89	355.22
58.16	23 1 42	1641.71	26.77	20.63	234.10	123.07	23 29 4	641.7	37.89	355.22
58.16	23 1 42	1641.71	26.77	20.63	234.10	123.07	23 29 4	641.7	37.89	355.22

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3094	TRA	1.2809	TC3	-3.5625	BAU	.6957	SGT	3769.6	SGR	1740.0	SG3	1666.2	ST	46.7	SR	23.3	SS	67.0
RDE	-.1281	RRA	-.6751	RC3	1.3725	FAU	.22736	RRT	-.9592	RRF	-.9991	RTF	.9577	CRT	-.5561	CRS	.9964	CST	-.6239
FDE	1.1524	FRA	7.6988	FC	-14.4397	BSP	6591	SGB	4151.8	R23	.2374	R13	-.9704	LSA	78.1	MSA	33.4	SSA	.2
BDE	.3349	BRA	1.4480	BC3	3.8177	FSP	2910	SG1	4127.4	SG2	449.5	THA	155.81	EL1	48.8	EL2	18.5	ALF	161.78

LAUNCH DATE MAY 3 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 540.563 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.248	GAL	-1.71	AZL	94.43	HCA	174.75	SMA	184.27	ECC	.18401	INC	4.4294	V1	29.547
RP	216.21	LAP	-.41	LOP	36.69	VP	22.526	GAP	3.59	AZP	85.59	TAL	348.94	TAP	163.69	RCA	150.36	APO	218.18	V2	25.405
RC	159.881	GL	-40.20	GP	19.27	ZAL	111.24	ZAP	79.38	ETS	182.97	ZAE	120.06	ETE	168.76	ZAC	121.48	ETC	273.01	LVI	-28.43

PLANETOCENTRIC CONIC

C3	14.880	VHL	3.857	DLA	-44.02	RAL	1.59	RAD	6640.5	VEL	11.616	PTH	6.66	VHP	3.099	DPA	-3.71	RAP	294.46	ECC	1.2449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 49 52	2033.26	15.86	46.51	228.56	135.47	21 23 45	1033.3	32.51	27.18
54.74	22 58 53	1698.94	27.38	26.17	239.17	125.92	23 27 11	698.9	39.56	1.07
54.74	22 58 53	1698.94	27.38	26.17	239.17	125.92	23 27 11	698.9	39.56	1.07
54.74	22 58 53	1698.94	27.38	26.17	239.17	125.92	23 27 11	698.9	39.56	1.07
54.74	22 58 53	1698.94	27.38	26.17	239.17	125.92	23 27 11	698.9	39.56	1.07
54.74	22 58 53	1698.94	27.38	26.17	239.17	125.92	23 27 11	698.9	39.56	1.07
54.74	22 58 53	1698.94	27.38	26.17	239.17	125.92	23 27 11	698.9	39.56	1.07

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3308	TRA	1.4012	TC3	-3.4446	BAU	.7481	SGT	3959.7	SGR	2053.5	SG3	1574.3	ST	50.0	SR	27.5	SS	65.6
RDE	-.1490	RRA	-.8119	RC3	1.5091	FAU	.22072	RRT	-.9640	RRF	-.9995	RTF	.9521	CRT	-.6003	CRS	.9990	CST	-.6346
FDE	1.1918	FRA	7.3535	FC	-12.8417	BSP	7047	SGB	4460.5	R23	.2168	R13	-.9757	LSA	79.7	MSA	34.7	SSA	.1
BDE	.3628	BRA	1.6194	BC3	3.7607	FSP	2679	SG1	4433.8	SG2	487.5	THA	153.09	EL1	53.2	EL2	20.7	ALF	158.27

LAUNCH DATE MAY 3 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 544.738 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.252	GAL	-1.77	AZL	95.17	HCA	175.91	SMA	184.34	ECC	.18446	INC	5.1660	V1	29.547
RP	216.56	LAP	-.37	LOP	37.85	VP	22.488	GAP	3.43	AZP	84.85	TAL	348.60	TAP	164.51	RCA	150.33	APO	218.34	V2	25.366
RC	162.390	GL	-44.71	GP	23.91	ZAL	110.25	ZAP	78.23	ETS	184.47	ZAE	117.57	ETE	167.07	ZAC	126.14	ETC	273.06	LVI	-32.46

PLANETOCENTRIC CONIC

C3	17.038	VHL	4.128	DLA	-47.48	RAL	5.81	RAD	6641.5	VEL	11.708	PTH	6.74	VHP	3.228	DPA	.80	RAP	293.29	ECC	1.2804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	22 40 3	1819.80	25.89	36.12	244.90	131.42	23 10 22	819.8	40.33	12.81
50.12	22 58 39	1773.53	27.86	33.55	246.81	130.15	23 28 13	773.5	41.64	9.20
50.12	22 58 39	1773.53	27.86	33.55	246.81	130.15	23 28 13	773.5	41.64	9.20
50.12	22 58 39	1773.53	27.86	33.55	246.81	130.15	23 28 13	773.5	41.64	9.20
50.12	22 58 39	1773.53	27.86	33.55	246.81	130.15	23 28 13	773.5	41.64	9.20
50.12	22 58 39	1773.53	27.86	33.55	246.81	130.15	23 28 13	773.5	41.64	9.20
50.12	22 58 39	1773.53	27.86	33.55	246.81	130.15	23 28 13	773.5	41.64	9.20

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3481	TRA	1.5331	TC3	-3.2016	BAU	.8189	SGT	4139.5	SGR	2498.5	SG3	1430.0	ST	53.2	SR	34.6	SS	64.5
RDE	-.2116	RRA	-1.0133	RC3	1.6360	FAU	.20619	RRT	-.9651	RRF	-.9998	RTF	.9625	CRT	-.6134	CRS	1.0000	CST	-.6198
FDE	1.3906	FRA	6.8056	FC	-10.4774	BSP	7536	SGB	4835.1	R23	.2029	R13	-.9790	LSA	82.5	MSA	37.1	SSA	.1
BDE	.4074	BRA	1.8377	BC3	3.5954	FSP	2400	SG1	4802.1	SG2	563.6	THA	149.31	EL1	58.4	EL2	24.9	ALF	152.98

LAUNCH DATE MAY 3 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC DISTANCE 548.908 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.257	GAL	-1.83	AZL	96.48	HCA	177.06	SMA	184.41	ECC	.18494	INC	6.4770	V1	29.547
RP	216.91	LAP	-.33	LOP	39.00	VP	22.451	GAP	3.27	AZP	83.53	TAL	348.26	TAP	165.31	RCA	150.31	APO	218.51	V2	25.327
RC	164.912	GL	-51.56	GP	31.21	ZAL	108.34	ZAP	77.74	ETS	186.67	ZAE	114.52	ETE	164.46	ZAC	133.44	ETC	273.34	LVI	-38.86

PLANETOCENTRIC CONIC

C3	21.572	VHL	4.645	DLA	-52.53	RAL	13.18	RAD	6643.5	VEL	11.898	PTH	6.91	VHP	3.507	DPA	7.97	RAP	291.86	ECC	1.3550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.69	23 7 12	1878.35	27.48	43.80	259.64	136.71	23 38 31	878.3	43.72	21.41
43.69	23 7 12	1878.35	27.48	43.80	259.64	136.71	23 38 31	878.3	43.72	21.41
43.69	23 7 12	1878.35	27.48	43.80	259.64	136.71	23 38 31	878.3	43.72	21.41
43.69	23 7 12	1878.35	27.48	43.80	259.64	136.71	23 38 31	878.3	43.72	21.41
43.69	23 7 12	1878.35	27.48	43.80	259.64	136.71	23 38 31	878.3	43.72	21.41
43.69	23 7 12	1878.35	27.48	43.80	259.64	136.71	23 38 31	878.3	43.72	21.41
43.69	23 7 12	1878.35	27.48	43.80	259.64	136.71	23 38 31	878.3	43.72	21.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2702	TRA	1.7182	TC3	-2.6902	BAU	.9148	SGT	4300.7	SGR	3168.2	SG3	1183.6	ST	55.0	SR	48.6	SS	65.0
RDE	-.4325	RRA	-1.3338	RC3	1.6806	FAU	.17604	RRT	-.9649	RRF	-.9999	RTF	.9612	CRT	-.6302	CRS	.9998	CST	-.6150
FDE	1.9640	FRA	5.8083	FC3	-7.0649	BSP	8428	SGB	5341.7	R23	.1855	R13	-.9826	LSA	90.0	MSA	38.9	SSA	.1
BDE	.5100	BRA	2.1752	BC3	3.1721	FSP	2002	SG1	5298.9	SG2	675.2	THA	143.92	EL1	66.4	EL2	31.3	ALF	140.54

LAUNCH DATE MAY 3 1971 FLIGHT TIME 234.00 ARRIVAL DATE DEC 23 1971

HELIOCENTRIC CONIC DISTANCE 553.071 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.262	GAL	-1.88	AZL	99.45	HCA	178.20	SMA	184.49	ECC	.18546	INC	9.4477	V1	29.547
RP	217.26	LAP	-.30	LOP	40.15	VP	22.414	GAP	3.11	AZP	80.55	TAL	347.91	TAP	166.11	RCA	150.27	APO	218.70	V2	25.288
RC	167.446	GL	-62.89	GP	43.45	ZAL	104.54	ZAP	78.92	ETS	189.66	ZAE	110.17	ETE	160.28	ZAC	145.62	ETC	274.47	LVI	-49.46

PLANETOCENTRIC CONIC

C3	35.394	VHL	5.949	DLA	-59.59	RAL	29.40	RAD	6649.0	VEL	12.462	PTH	7.36	VHP	4.317	DPA	20.07	RAP	289.99	ECC	1.5825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.08	23 48 16	2050.18	23.20	57.96	284.81	146.59	24 22 26	1050.2	42.95	40.67
35.08	23 48 16	2050.18	23.20	57.96	284.81	146.59	24 22 26	1050.2	42.95	40.67
35.08	23 48 16	2050.18	23.20	57.96	284.81	146.59	24 22 26	1050.2	42.95	40.67
35.08	23 48 16	2050.18	23.20	57.96	284.81	146.59	24 22 26	1050.2	42.95	40.67
35.08	23 48 16	2050.18	23.20	57.96	284.81	146.59	24 22 26	1050.2	42.95	40.67
35.08	23 48 16	2050.18	23.20	57.96	284.81	146.59	24 22 26	1050.2	42.95	40.67
35.08	23 48 16	2050.18	23.20	57.96	284.81	146.59	24 22 26	1050.2	42.95	40.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2819	TRA	1.9291	TC3	-1.8866	BAU	1.1589	SGT	4311.2	SGR	4099.8	SG3	712.3	ST	56.8	SR	84.9	SS	66.4
RDE	-1.4110	RRA	-1.7829	RC3	1.5617	FAU	.12534	RRT	-.9614	RRF	-.9997	RTF	.9544	CRT	-.7738	CRS	.9995	CST	-.7527
FDE	3.0263	FRA	3.5706	FC3	-3.0659	BSP	8426	SGB	5949.3	R23	.1702	R13	-.9854	LSA	117.1	MSA	33.7	SSA	.0
BDE	1.4389	BRA	2.6267	BC3	2.4491	FSP	1084	SG1	5891.8	SG2	825.5	THA	136.50	EL1	97.2	EL2	31.4	ALF	120.95

LAUNCH DATE MAY 3 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 565.612 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.278	GAL	-2.08	AZL	83.60	HCA	181.66	SMA	184.76	ECC	.18726	INC	6.3920	V1	29.547
RP	218.33	LAP	-.19	LOP	43.58	VP	22.303	GAP	2.64	AZP	96.40	TAL	346.72	TAP	168.39	RCA	150.16	APO	219.36	V2	25.169
RC	175.114	GL	50.34	GP	-44.80	ZAL	110.12	ZAP	76.34	ETS	164.89	ZAE	105.05	ETE	196.08	ZAC	57.58	ETC	272.37	LVI	31.25

PLANETOCENTRIC CONIC

C3	21.833	VHL	4.673	DLA	39.69	RAL	323.07	RAD	6643.6	VEL	11.909	PTH	6.92	VHP	4.532	DPA	-66.46	RAP	313.05	ECC	1.3593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	10 52 1	4034.79	-42.19	177.27	217.82	65.57	11 59 16	3034.8	-47.57	143.75
60.00	9 36 50	4237.54	-26.96	185.57	208.12	58.83	10 47 27	3237.5	-37.29	159.79
60.91	8 53 34	4359.80	-21.70	192.22	204.43	55.92	10 6 13	3359.8	-33.72	168.58
60.91	8 53 34	4359.80	-21.70	192.22	204.43	55.92	10 6 13	3359.8	-33.72	168.58
60.91	8 53 34	4359.80	-21.70	192.22	204.43	55.92	10 6 13	3359.8	-33.72	168.58
60.91	8 53 34	4359.80	-21.70	192.22	204.43	55.92	10 6 13	3359.8	-33.72	168.58
60.91	8 53 34	4359.80	-21.70	192.22	204.43	55.92	10 6 13	3359.8	-33.72	168.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.0390	TRA	.7620	TC3	-3.3243	BAU	1.1721	SGT	5019.5	SGR	4056.4	SG3	636.1	ST	188.5	SR	145.5	SS	101.3
RDE	2.3226	RRA	1.2414	RC3	-2.2524	FAU	.10295	RRT	.9638	RRF	.9996	RTF	.9669	CRT	.9941	CRS	-.9999	CST	-.9925
FDE	4.1190	FRA	2.3596	FC3	-4.0824	BSP	8630	SGB	6453.7	R23	.1871	R13	.9822	LSA	258.4	MSA	14.7	SSA	.1
BDE	3.8409	BRA	1.4566	BC3	4.0155	FSP	951	SG1	6397.6	SG2	848.8	THA	38.72	EL1	237.8	EL2	12.5	ALF	37.62

LAUNCH DATE MAY 3 1971 FLIGHT TIME 242.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 569.761 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.284	GAL	-2.15	AZL	86.94	HCA	182.79	SMA	184.86	ECC	.18791	INC	3.0536	V1	29.547
RP	218.69	LAP	-.15	LOP	44.72	VP	22.266	GAP	2.49	AZP	93.06	TAL	346.35	TAP	169.14	RCA	150.12	APO	219.60	V2	25.129
RC	177.690	GL	28.77	GP	-31.54	ZAL	117.34	ZAP	71.56	ETS	167.21	ZAE	106.47	ETE	190.92	ZAC	70.88	ETC	271.88	LVI	19.52

PLANETOCENTRIC CONIC

C3	12.805	VHL	3.578	DLA	20.04	RAL	333.48	RAD	6639.5	VEL	11.527	PTH	6.57	VHP	3.633	DPA	-54.10	RAP	302.95	ECC	1.2107

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 32 37	3439.12	-45.19	122.62	200.94	106.80	14 29 56	2439.1	-33.84	94.73
60.00	13 48 15	3397.47	-39.30	120.76	202.82	99.75	14 44 52	2397.5	-31.24	92.85
70.00	14 12 21	3326.49	-33.94	115.82	203.63	94.10	15 7 48	2326.5	-28.75	88.34
80.00	14 53 0	3199.05	-29.86	106.34	203.81	90.10	15 46 19	2199.0	-26.78	79.34
90.00	16 1 31	2977.85	-28.25	90.07	203.79	88.58	16 51 9	1977.9	-25.99	63.28
100.00	17 35 52	2673.52	-29.86	67.71	203.81	90.10	18 20 26	1673.5	-26.78	40.71
110.00	19 11 48	2373.31	-33.94	44.74	203.63	94.10	19 51 21	1373.3	-28.75	17.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7985	TRA	1.3278	TC3	-5.2738	BAU	.9923	SGT	5259.2	SGR	3025.5	SG3	1099.7	ST	148.0	SR	86.2	SS	111.1
RDE	1.0164	RRA	1.1041	RC3	-2.4058	FAU	.14973	RRT	.9705	RRF	.9998	RTF	.9676	CRT	.9947	CRS	-.9999	CST	-.9930
FDE	4.1486	FRA	4.7447	FC	-10.1235	BSP	9561	SGB	6067.4	R23	.1937	R13	.9809	LSA	203.8	MSA	11.5	SSA	.1
BDE	2.0658	BRA	1.7269	BC3	5.7966	FSP	1867	SG1	6034.0	SG2	635.3	THA	29.54	EL1	171.1	EL2	7.6	ALF	30.14

LAUNCH DATE MAY 3 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 573.911 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.290 GAL -2.22 AZL 88.35 HCA 183.92 SMA 184.97 ECC .18860 INC 1.6389 V1 29.547
RP 219.06 LAP -.11 LOP 45.85 VP 22.230 GAP 2.33 AZP 91.64 TAL 345.96 TAP 169.88 RCA 150.08 APO 219.85 V2 25.089
RC 180.275 GL 16.21 GP -23.68 ZAL 120.43 ZAP 68.62 ETS 169.19 ZAE 106.27 ETE 187.78 ZAC 78.75 ETC 271.71 LVI 12.45

PLANETOCENTRIC CONIC

C3 11.027 VHL 3.321 DLA 8.59 RAL 338.80 RAD 6638.6 VEL 11.450 PTH 6.50 VHP 3.366 DPA -46.54 RAP 299.50 ECC 1.1815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 39 55	3172.79	-37.65	101.63	195.71	121.56	15 32 48	2172.8	-22.24	79.99
60.00	15 10 13	3092.13	-33.07	97.36	198.70	114.48	16 1 46	2092.1	-20.35	74.40
70.00	15 52 4	2969.02	-28.96	89.29	200.61	108.95	16 41 33	1969.0	-18.59	65.60
80.00	16 50 49	2784.99	-25.98	76.37	201.64	105.26	17 37 14	1785.0	-17.28	52.35
90.00	18 8 4	2535.71	-24.86	58.37	201.97	103.93	18 50 20	1535.7	-16.78	34.25
100.00	19 33 41	2259.47	-25.98	37.74	201.64	105.26	20 11 21	1259.5	-17.28	13.71
110.00	20 51 31	2015.84	-28.96	18.21	200.61	108.95	21 25 7	1015.8	-18.59	354.52

DIFFERENTIAL CORRECTIONS

TDE 1.3045 TRA 1.5893 TC3-6.1860 BAU .9600
RDE .5952 RRA .8857 RC3-2.0349 FAU .17175
FDE 3.7307 FRA 5.9790 FC-13.4842 BSP 9542
BDE 1.4339 BRA 1.8194 BC3 6.5121 FSP 2279

MID-COURSE EXECUTION ACCURACY

SGT 5443.9 SGR 2295.6 SG3 1311.7
RRT .9722 RRF .9996 RTF .9706
SGB 5908.1 R23 .2054 R13 .9783
SG1 5887.2 SG2 496.8 THA 22.46

ORBIT DETERMINATION ACCURACY

ST 120.1 SR 56.4 SS 104.1
CRT .9974 CRS -.9996 CST -.9951
LSA 168.5 MSA 8.0 SSA .3
EL1 132.7 EL2 3.7 ALF 25.10

LAUNCH DATE MAY 3 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 578.061 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.297 GAL -2.28 AZL 89.13 HCA 185.05 SMA 185.08 ECC .18932 INC .8574 V1 29.547
RP 219.43 LAP -.08 LOP 46.98 VP 22.194 GAP 2.18 AZP 90.86 TAL 345.56 TAP 170.61 RCA 150.04 APO 220.12 V2 25.048
RC 182.871 GL 8.61 GP -18.75 ZAL 121.88 ZAP 66.48 ETS 170.60 ZAE 105.41 ETE 185.78 ZAC 83.69 ETC 271.62 LVI 8.00

PLANETOCENTRIC CONIC

C3 10.619 VHL 3.259 DLA 1.74 RAL 342.15 RAD 6638.4 VEL 11.433 PTH 6.48 VHP 3.264 DPA -41.76 RAP 297.74 ECC 1.1748

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 34	3028.31	-32.08	92.35	195.51	127.23	16 9 2	2028.3	-15.35	73.18
60.00	15 56 18	2927.92	-27.90	86.53	198.73	120.35	16 45 6	1927.9	-13.62	65.74
70.00	16 46 29	2780.32	-24.14	76.76	200.93	114.93	17 32 49	1780.3	-12.01	54.94
80.00	17 52 54	2572.32	-21.41	62.24	202.19	111.32	18 35 47	1572.3	-10.82	39.87
90.00	19 13 32	2312.17	-20.39	43.53	202.60	110.03	19 52 4	1312.2	-10.37	20.98
100.00	20 35 46	2046.79	-21.41	23.61	202.19	111.32	21 9 53	1046.8	-10.82	1.23
110.00	21 45 55	1827.14	-24.14	5.68	200.93	114.93	22 16 22	827.1	-12.01	343.86

DIFFERENTIAL CORRECTIONS

TDE 1.0688 TRA 1.7756 TC3-6.5600 BAU .9599
RDE .4148 RRA .7179 RC3-1.6391 FAU .18116
FDE 3.4015 FRA 6.6157 FC-14.7701 BSP 9662
BDE 1.1464 BRA 1.9152 BC3 6.7616 FSP 2462

MID-COURSE EXECUTION ACCURACY

SGT 5618.3 SGR 1807.7 SG3 1403.5
RRT .9730 RRF .9992 RTF .9724
SGB 5902.0 R23 .2093 R13 .9771
SG1 5888.5 SG2 398.1 THA 17.47

ORBIT DETERMINATION ACCURACY

ST 105.2 SR 41.1 SS 97.7
CRT .9996 CRS -.9988 CST -.9977
LSA 149.3 MSA 4.9 SSA .7
EL1 112.9 EL2 1.1 ALF 21.35

LAUNCH DATE MAY 3 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 6 1972

HELIOCENTRIC CONIC DISTANCE 582.209 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.304 GAL -2.36 AZL 89.63 HCA 186.17 SMA 185.19 ECC .19006 INC .3592 V1 29.547
RP 219.80 LAP -.04 LOP 48.10 VP 22.158 GAP 2.02 AZP 90.37 TAL 345.16 TAP 171.33 RCA 149.99 APO 220.39 V2 25.007
RC 185.475 GL 3.69 GP -15.42 ZAL 122.73 ZAP 64.71 ETS 171.62 ZAE 104.27 ETE 184.43 ZAC 87.03 ETC 271.57 LVI 5.01

PLANETOCENTRIC CONIC

C3 10.609 VHL 3.257 DLA -2.61 RAL 344.52 RAD 6638.4 VEL 11.432 PTH 6.48 VHP 3.225 DPA -38.53 RAP 296.66 ECC 1.1746

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 43 53	2941.52	-28.39	87.36	196.51	129.93	16 32 54	1941.5	-11.09	69.33
60.00	16 26 14	2828.88	-24.35	80.56	199.85	123.16	17 13 22	1828.9	-9.39	60.80
70.00	17 21 32	2666.22	-20.68	69.71	202.19	117.80	18 5 59	1666.2	-7.80	48.79
80.00	18 32 38	2443.64	-18.01	54.20	203.57	114.22	19 13 21	1443.6	-6.62	32.62
90.00	19 55 17	2176.95	-17.01	35.05	204.03	112.94	20 31 34	1177.0	-6.18	13.26
100.00	21 15 30	1918.12	-18.01	15.57	203.57	114.22	21 47 28	918.1	-6.62	353.99
110.00	22 20 59	1713.04	-20.68	358.63	202.19	117.80	22 49 32	713.0	-7.80	337.71

DIFFERENTIAL CORRECTIONS

TDE .9329 TRA 1.9215 TC3-6.7578 BAU .9773
RDE .3170 RRA .5888 RC3-1.3444 FAU .18734
FDE 3.1125 FRA 6.9065 FC-15.2875 BSP 9752
BDE .9852 BRA 2.0097 BC3 6.8902 FSP 2478

MID-COURSE EXECUTION ACCURACY

SGT 5789.7 SGR 1467.3 SG3 1438.1
RRT .9745 RRF .9984 RTF .9751
SGB 5972.8 R23 .2015 R13 .9779
SG1 5964.2 SG2 319.6 THA 13.91

ORBIT DETERMINATION ACCURACY

ST 96.7 SR 32.0 SS 91.7
CRT .9986 CRS -.9969 CST -.9992
LSA 137.0 MSA 3.1 SSA 1.3
EL1 101.8 EL2 1.6 ALF 18.26

LAUNCH DATE MAY 3 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 8 1972

HELIOCENTRIC CONIC DISTANCE 586.349 EARTH TO MARS

RL 150.80 LAL -.00 LOL 221.93 VL 32.311 GAL -2.43 AZL 89.97 HCA 187.29 SMA 185.31 ECC .19084 INC .0000 V1 29.547
RP 220.18 LAP -.00 LOP 49.22 VP 22.122 GAP 1.87 AZP 90.03 TAL 344.74 TAP 172.03 RCA 149.95 APO 220.68 V2 24.966
RC 188.089 GL .29 GP -13.04 ZAL 123.36 ZAP 63.16 ETS 172.38 ZAE 103.03 ETE 183.47 ZAC 89.41 ETC 271.53 LVI 2.87

PLANETOCENTRIC CONIC

C3 10.746 VHL 3.278 DLA -5.53 RAL 346.34 RAD 6638.4 VEL 11.438 PTH 6.49 VHP 3.213 DPA -36.22 RAP 295.93 ECC 1.1769

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 1 51	2885.96	-25.93	84.37	197.79	131.40	16 49 57	1886.0	-8.33	66.94
60.00	16 47 20	2765.01	-21.92	76.90	201.22	124.70	17 33 25	1765.0	-6.61	57.68
70.00	17 46 9	2592.07	-18.27	65.32	203.66	119.37	18 29 21	1592.1	-5.01	44.87
80.00	19 0 26	2359.50	-15.59	49.13	205.12	115.79	19 39 46	1359.5	-3.81	27.97
90.00	20 24 29	2088.29	-14.58	29.68	205.61	114.50	20 59 18	1088.3	-3.35	8.28
100.00	21 43 18	1833.97	-15.59	10.50	205.12	115.79	22 13 52	834.0	-3.81	349.33
110.00	22 45 35	1638.89	-18.27	354.23	203.66	119.37	23 12 54	638.9	-5.01	333.79

DIFFERENTIAL CORRECTIONS

TDE .8738 TRA 2.0733 TC3-6.7980 BAU .9889
RDE .2706 RRA .5010 RC3-1.0811 FAU .18403
FDE 3.0299 FRA 7.1760 FC-14.8254 BSP 10174
BDE .9147 BRA 2.1330 BC3 6.8834 FSP 2583

MID-COURSE EXECUTION ACCURACY

SGT 5954.1 SGR 1224.8 SG3 1449.1
RRT .9715 RRF .9970 RTF .9742
SGB 6078.8 R23 .2041 R13 .9761
SG1 6072.1 SG2 284.9 THA 11.33

ORBIT DETERMINATION ACCURACY

ST 94.1 SR 27.1 SS 90.4
CRT .9933 CRS -.9938 CST -.9997
LSA 133.2 MSA 3.0 SSA 1.7
EL1 97.9 EL2 3.0 ALF 15.98

LAUNCH DATE MAY 3 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 10 1972

HELIOCENTRIC CONIC DISTANCE 590.358 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.318	GAL	-2.52	AZL	90.22	HCA	188.41	SMA	185.43	ECC	.19171	INC	.2020	V1	29.547
RP	220.55	LAP	.03	LOP	50.33	VP	22.086	GAP	1.74	AZP	89.78	TAL	344.23	TAP	172.64	RCA	149.88	APO	220.98	V2	24.925
RC	190.711	GL	-2.15	GP	-11.28	ZAL	124.03	ZAP	61.88	ETS	173.00	ZAE	101.89	ETE	182.81	ZAC	91.17	ETC	271.54	LVI	1.24

PLANETOCENTRIC CONIC

C3	10.976	VHL	3.313	DLA	-7.51	RAL	347.94	RAD	6638.5	VEL	11.448	PTH	6.50	VHP	3.212	DPA	-34.48	RAP	295.59	ECC	1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 36	2850.59	-24.32	82.54	199.26	132.24	17 3 7	1850.6	-6.57	65.43
60.00	17 3 15	2723.86	-20.31	74.62	202.76	125.59	17 48 39	1723.9	-4.81	55.70
70.00	18 4 31	2543.73	-16.63	62.53	205.27	120.27	18 46 55	1543.7	-3.17	42.34
80.00	19 21 4	2304.08	-13.92	45.86	206.79	116.68	19 59 28	1304.1	-1.94	24.92
90.00	20 46 7	2029.66	-12.89	26.20	207.31	115.39	21 19 57	1029.7	-1.47	5.00
100.00	22 3 56	1778.55	-13.92	7.23	206.79	116.68	22 33 35	778.6	-1.94	346.28
110.00	23 3 57	1590.55	-16.63	351.44	205.27	120.27	23 30 28	590.6	-3.17	331.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3152	TRA	2.7059	TC3	-5.2048	BAU	.7641	SGT	6272.8	SGR	1322.2	SG3	1813.7	ST	134.1	SR	41.1	SS	183.9
RDE	.4368	RRA	.6192	RC3	-.1567	FAU	.03209	RRT	.8651	RRF	.9964	RTF	.8742	CRT	.9879	CRS	-.9974	CST	-.9963
FDE	6.0631	FRA	10.3807	FC3	-2.5310	BSP	16798	SGB	6410.6	R23	.4622	R13	.8830	LSA	215.5	MSA	9.8	SSA	1.1
BDE	1.3859	BRA	2.7759	BC3	5.2072	FSP	5970	SG1	6377.3	SG2	652.4	THA	10.44	EL1	140.1	EL2	6.1	ALF	16.88

LAUNCH DATE MAY 3 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC DISTANCE 594.619 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.326	GAL	-2.58	AZL	90.41	HCA	189.52	SMA	185.56	ECC	.19248	INC	.4059	V1	29.547
RP	220.93	LAP	.07	LOP	51.45	VP	22.050	GAP	1.56	AZP	89.59	TAL	343.90	TAP	173.42	RCA	149.84	APO	221.28	V2	24.884
RC	193.341	GL	-3.98	GP	-9.90	ZAL	124.39	ZAP	60.41	ETS	173.43	ZAE	100.45	ETE	182.24	ZAC	92.56	ETC	271.48	LVI	.04

PLANETOCENTRIC CONIC

C3	11.172	VHL	3.342	DLA	-9.03	RAL	349.07	RAD	6638.6	VEL	11.457	PTH	6.51	VHP	3.228	DPA	-33.15	RAP	295.04	ECC	1.1839

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 25 49	2823.73	-23.08	81.18	200.34	132.83	17 12 52	1823.7	-5.22	64.30
60.00	17 15 10	2692.48	-19.06	72.91	203.90	126.21	18 0 2	1692.5	-3.44	54.19
70.00	18 18 22	2506.68	-15.35	60.42	206.48	120.89	19 0 8	1506.7	-1.75	40.40
80.00	19 36 43	2261.38	-12.60	43.38	208.05	117.29	20 14 24	1261.4	-.49	22.57
90.00	21 2 34	1984.37	-11.56	23.55	208.59	115.99	21 35 39	984.4	-.01	2.48
100.00	22 19 35	1735.85	-12.60	4.75	208.05	117.29	22 48 31	735.9	-.49	343.94
110.00	23 17 48	1553.50	-15.35	349.34	206.48	120.89	23 43 41	553.5	-1.75	329.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8072	TRA	2.3203	TC3	-6.9071	BAU	1.0379	SGT	6281.2	SGR	898.5	SG3	1429.0	ST	92.1	SR	21.0	SS	86.6
RDE	.2181	RRA	.3686	RC3	-.7599	FAU	.18007	RRT	.9639	RRF	.9909	RTF	.9741	CRT	.9698	CRS	-.9818	CST	-.9982
FDE	2.8461	FRA	7.3491	FC3	-13.9542	BSP	10626	SGB	6345.1	R23	.1901	R13	.9751	LSA	128.0	MSA	5.8	SSA	1.2
BDE	.8361	BRA	2.3494	BC3	6.9488	FSP	2563	SG1	6340.7	SG2	237.0	THA	7.86	EL1	94.3	EL2	5.0	ALF	12.52

LAUNCH DATE MAY 3 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 598.746 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.334	GAL	-2.66	AZL	90.56	HCA	190.63	SMA	185.69	ECC	.19334	INC	.5583	V1	29.547
RP	221.31	LAP	.10	LOP	52.56	VP	22.015	GAP	1.41	AZP	89.45	TAL	343.47	TAP	174.10	RCA	149.79	APO	221.59	V2	24.842
RC	195.978	GL	-5.39	GP	-8.80	ZAL	124.88	ZAP	59.16	ETS	173.81	ZAE	99.15	ETE	181.82	ZAC	93.66	ETC	271.48	LVI	-.95

PLANETOCENTRIC CONIC

C3	11.415	VHL	3.379	DLA	-10.10	RAL	350.16	RAD	6638.8	VEL	11.467	PTH	6.52	VHP	3.245	DPA	-32.08	RAP	294.77	ECC	1.1879

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 14	2806.59	-22.29	80.32	201.53	133.19	17 21 1	1806.6	-4.36	63.58
60.00	17 24 49	2672.09	-18.23	71.82	205.14	126.59	18 9 21	1672.1	-2.54	53.21
70.00	18 29 25	2482.17	-14.49	59.05	207.77	121.27	19 10 47	1482.2	-.82	39.12
80.00	19 49 6	2232.74	-11.70	41.73	209.39	117.67	20 26 18	1232.7	.48	21.00
90.00	21 15 33	1953.82	-10.64	21.77	209.94	116.36	21 48 7	953.8	.98	.77
100.00	22 31 58	1707.21	-11.70	3.10	209.39	117.67	23 0 25	707.2	.48	342.37
110.00	23 28 51	1528.99	-14.49	347.96	207.77	121.27	23 54 20	529.0	-.82	328.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8048	TRA	2.4456	TC3	-6.9201	BAU	1.0606	SGT	6440.1	SGR	787.0	SG3	1411.0	ST	93.3	SR	19.4	SS	86.1
RDE	.2068	RRA	.3216	RC3	-.6441	FAU	.17549	RRT	.9565	RRF	.9854	RTF	.9732	CRT	.9533	CRS	-.9733	CST	-.9969
FDE	2.8252	FRA	7.4085	FC3	-13.3093	BSP	10948	SGB	6488.0	R23	.1830	R13	.9740	LSA	128.2	MSA	7.1	SSA	1.1
BDE	.8309	BRA	2.4667	BC3	6.9500	FSP	2569	SG1	6484.0	SG2	228.1	THA	6.67	EL1	95.1	EL2	5.8	ALF	11.27

LAUNCH DATE MAY 3 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 602.872 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.341	GAL	-2.74	AZL	90.69	HCA	191.73	SMA	185.82	ECC	.19422	INC	.6827	V1	29.547
RP	221.69	LAP	.14	LOP	53.66	VP	21.979	GAP	1.26	AZP	89.33	TAL	343.04	TAP	174.77	RCA	149.73	APO	221.91	V2	24.801
RC	198.621	GL	-6.50	GP	-7.92	ZAL	125.37	ZAP	57.96	ETS	174.13	ZAE	97.87	ETE	181.49	ZAC	94.55	ETC	271.47	LVI	-1.77

PLANETOCENTRIC CONIC

C3	11.667	VHL	3.416	DLA	-10.90	RAL	351.14	RAD	6638.9	VEL	11.478	PTH	6.53	VHP	3.266	DPA	-31.20	RAP	294.58	ECC	1.1920

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 41 10	2795.10	-21.75	79.76	202.66	133.42	17 27 45	1795.1	-3.79	63.09
60.00	17 32 40	2658.14	-17.66	71.08	206.31	126.83	18 16 58	1658.1	-1.93	52.55
70.00	18 38 20	2465.10	-13.88	58.09	208.98	121.52	19 19 25	1465.1	-.17	38.23
80.00	19 59 1	2212.52	-11.06	40.57	210.63	117.91	20 35 54	1212.5	1.17	19.89
90.00	21 25 56	1932.13	-9.98	20.52	211.20	116.60	21 58 8	932.1	1.68	359.56
100.00	22 41 53	1686.99	-11.06	1.94	210.63	117.91	23 10 0	687.0	1.17	341.26
110.00	23 37 46	1511.92	-13.88	347.01	208.98	121.52	24 2 58	511.9	-.17	327.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8008	TRA	2.5568	TC3	-6.9634	BAU	1.0897	SGT	6596.1	SGR	695.2	SG3	1386.4	ST	94.1	SR	18.0	SS	84.0
RDE	.1965	RRA	.2786	RC3	-.5636	FAU	.17420	RRT	.9491	RRF	.9774	RTF	.9745	CRT	.9337	CRS	-.9614	CST	-.9959
FDE	2.7407	FRA	7.3671	FC3	-12.9263	BSP	11128	SGB	6632.7	R23	.1634	R13	.9751	LSA	127.2	MSA	8.0	SSA	1.1
BDE	.8246	BRA	2.5719	BC3	6.9861	FSP	2489	SG1	6629.1	SG2	217.8	THA	5.72	EL1	95.6	EL2	6.3	ALF	10.16

LAUNCH DATE MAY 3 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 606.991 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.349	GAL	-2.82	AZL	90.79	HCA	192.83	SMA	185.96	ECC	.19513	INC	.7865
RP	222.07	LAP	.17	LOP	54.76	VP	21.944	GAP	1.10	AZP	89.23	TAL	342.60	TAP	175.43	RCA	149.67	APO	222.24
RC	201.270	GL	-7.39	GP	-7.18	ZAL	125.86	ZAP	56.82	ETS	174.40	ZAE	96.61	ETE	181.23	ZAC	95.28	ETC	271.48

V1	29.547
V2	24.759
LVI	-2.45

PLANETOCENTRIC CONIC

C3	11.926	VHL	3.453	DLA	-11.48	RAL	352.03	RAD	6639.0	VEL	11.489	PTH	6.54	VHP	3.290	DPA	-30.47	RAP	294.46	ECC	1.1963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 59	2787.80	-21.41	79.40	203.73	133.56	17 33 27	1787.8	-3.42	62.79
60.00	17 39 11	2649.01	-17.29	70.59	207.42	126.99	18 23 20	1649.0	-1.52	52.11
70.00	18 45 38	2453.63	-13.47	57.46	210.13	121.69	19 26 32	1453.6	.27	37.63
80.00	20 7 6	2198.64	-10.61	39.78	211.81	118.07	20 43 44	1198.6	1.64	19.13
90.00	21 34 21	1917.13	-9.52	19.66	212.38	116.75	22 6 18	917.1	2.16	358.72
100.00	22 49 58	1673.11	-10.61	1.15	211.81	118.07	23 17 51	673.1	1.64	340.50
110.00	23 45 5	1500.44	-13.47	346.37	210.13	121.69	24 10 5	500.4	.27	326.55

DIFFERENTIAL CORRECTIONS

TDE	.8163	TRA	2.6797	TC3	-6.9629	BAU	1.1129
RDE	.1922	RRA	.2439	RC3	-.4901	FAU	.16996
FDE	2.7228	FRA	7.3642	FC	-12.3375	BSP	11455
BDE	.8386	BRA	2.6907	BC3	6.9801	FSP	2462

MID-COURSE EXECUTION ACCURACY

SGT	6748.6	SGR	622.0	SG3	1361.9
RRT	.9371	RRF	.9663	RTF	.9745
SGB	6777.2	R23	.1497	R13	.9749
SG1	6773.7	SG2	216.3	THA	4.94

ORBIT DETERMINATION ACCURACY

ST	96.3	SR	17.1	SS	83.4
CRT	.9134	CRS	-.9489	CST	-.9949
LSA	128.2	MSA	8.9	SSA	1.1
EL1	97.5	EL2	6.9	ALF	9.27

LAUNCH DATE MAY 3 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 611.106 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.358	GAL	-2.90	AZL	90.87	HCA	193.93	SMA	186.10	ECC	.19607	INC	.8710
RP	222.46	LAP	.21	LOP	55.86	VP	21.909	GAP	.95	AZP	89.15	TAL	342.16	TAP	176.09	RCA	149.61	APO	222.58
RC	203.922	GL	-8.11	GP	-6.56	ZAL	126.35	ZAP	55.73	ETS	174.63	ZAE	95.37	ETE	181.01	ZAC	95.90	ETC	271.50

V1	29.547
V2	24.717
LVI	-3.04

PLANETOCENTRIC CONIC

C3	12.191	VHL	3.492	DLA	-11.92	RAL	352.85	RAD	6639.2	VEL	11.501	PTH	6.55	VHP	3.315	DPA	-29.86	RAP	294.40	ECC	1.2006

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 51 57	2783.67	-21.22	79.20	204.75	133.64	17 38 21	1783.7	-3.22	62.62
60.00	17 44 39	2643.52	-17.07	70.30	208.48	127.08	18 28 43	1643.5	-1.28	51.85
70.00	18 51 42	2446.38	-13.21	57.06	211.22	121.79	19 32 29	1446.4	.55	37.25
80.00	20 13 44	2189.59	-10.32	39.27	212.92	118.17	20 50 14	1189.6	1.94	18.63
90.00	21 41 16	1907.23	-9.22	19.09	213.51	116.85	22 13 3	907.2	2.48	358.17
100.00	22 56 36	1664.06	-10.32	.63	212.92	118.17	23 24 20	664.1	1.94	340.00
110.00	23 51 9	1493.19	-13.21	345.97	211.22	121.79	24 16 2	493.2	.55	326.17

DIFFERENTIAL CORRECTIONS

TDE	.8285	TRA	2.7931	TC3	-6.9860	BAU	1.1408
RDE	.1895	RRA	.2129	RC3	-.4323	FAU	.16662
FDE	2.6893	FRA	7.3274	FC	-11.8327	BSP	11665
BDE	.8499	BRA	2.8012	BC3	6.9994	FSP	2406

MID-COURSE EXECUTION ACCURACY

SGT	6898.7	SGR	561.6	SG3	1335.1
RRT	.9211	RRF	.9513	RTF	.9745
SGB	6921.5	R23	.1358	R13	.9748
SG1	6918.0	SG2	218.0	THA	4.29

ORBIT DETERMINATION ACCURACY

ST	98.0	SR	16.5	SS	82.4
CRT	.8907	CRS	-.9344	CST	-.9939
LSA	128.8	MSA	9.7	SSA	1.1
EL1	99.1	EL2	7.4	ALF	8.55

LAUNCH DATE MAY 3 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 615.215 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.366	GAL	-2.98	AZL	90.95	HCA	195.02	SMA	186.24	ECC	.19703	INC	.9442
RP	222.84	LAP	.25	LOP	56.95	VP	21.875	GAP	.80	AZP	89.09	TAL	341.71	TAP	176.74	RCA	149.54	APO	222.93
RC	206.578	GL	-8.69	GP	-6.03	ZAL	126.85	ZAP	54.68	ETS	174.83	ZAE	94.15	ETE	180.83	ZAC	96.42	ETC	271.52

V1	29.547
V2	24.675
LVI	-3.56

PLANETOCENTRIC CONIC

C3	12.461	VHL	3.530	DLA	-12.23	RAL	353.62	RAD	6639.3	VEL	11.512	PTH	6.56	VHP	3.342	DPA	-29.32	RAP	294.39	ECC	1.2051

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 14	2782.00	-21.14	79.12	205.74	133.67	17 42 36	1782.0	-3.13	62.55
60.00	17 49 19	2640.85	-16.96	70.16	209.50	127.12	18 33 20	1640.9	-1.17	51.72
70.00	18 56 48	2442.43	-13.07	56.84	212.26	121.84	19 37 31	1442.4	.70	37.05
80.00	20 19 16	2184.32	-10.15	38.97	213.98	118.23	20 55 40	1184.3	2.12	18.34
90.00	21 46 59	1901.34	-9.04	18.75	214.58	116.91	22 18 40	901.3	2.67	357.84
100.00	23 2 8	1658.80	-10.15	.33	213.98	118.23	23 29 46	658.8	2.12	339.71
110.00	0 0 11	1489.25	-13.07	345.76	212.26	121.84	0 25 0	489.2	.70	325.97

DIFFERENTIAL CORRECTIONS

TDE	.8492	TRA	2.9109	TC3	-6.9941	BAU	1.1669
RDE	.1890	RRA	.1859	RC3	-.3834	FAU	.16280
FDE	2.6713	FRA	7.2926	FC	-11.3103	BSP	11925
BDE	.8700	BRA	2.9168	BC3	7.0046	FSP	2362

MID-COURSE EXECUTION ACCURACY

SGT	7046.5	SGR	512.5	SG3	1308.2
RRT	.9005	RRF	.9318	RTF	.9744
SGB	7065.1	R23	.1231	R13	.9746
SG1	7061.6	SG2	222.4	THA	3.75

ORBIT DETERMINATION ACCURACY

ST	100.3	SR	16.0	SS	81.7
CRT	.8683	CRS	-.9194	CST	-.9931
LSA	130.0	MSA	10.3	SSA	1.1
EL1	101.3	EL2	7.9	ALF	7.95

LAUNCH DATE MAY 3 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 24 1972

HELIOCENTRIC CONIC DISTANCE 619.318 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.378	GAL	-3.07	AZL	91.01	HCA	196.11	SMA	186.38	ECC	.19801	INC	1.0080
RP	223.23	LAP	.28	LOP	58.04	VP	21.840	GAP	.65	AZP	89.03	TAL	341.26	TAP	177.37	RCA	149.48	APO	223.29
RC	209.236	GL	-9.18	GP	-5.58	ZAL	127.35	ZAP	53.66	ETS	175.01	ZAE	92.96	ETE	180.68	ZAC	96.87	ETC	271.54

V1	29.547
V2	24.633
LVI	-4.02

PLANETOCENTRIC CONIC

C3	12.738	VHL	3.569	DLA	-12.45	RAL	354.35	RAD	6639.4	VEL	11.524	PTH	6.57	VHP	3.370	DPA	-28.86	RAP	294.43	ECC	1.2096

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 59	2782.27	-21.15	79.13	206.69	133.67	17 46 22	1782.3	-3.14	62.56
60.00	17 53 20	2640.43	-16.94	70.14	210.48	127.13	18 37 20	1640.4	-1.15	51.70
70.00	19 1 8	2441.11	-13.02	56.76	213.27	121.86	19 41 49	1441.1	.75	36.98
80.00	20 23 53	2182.07	-10.08	38.84	215.00	118.25	21 0 15	1182.1	2.20	18.22
90.00	21 51 44	1898.65	-8.95	18.60	215.60	116.94	22 23 22	898.7	2.75	357.69
100.00	23 6 45	1656.55	-10.08	.21	215.00	118.25	23 34 21	656.5	2.20	339.59
110.00	0 4 30	1487.92	-13.02	345.68	213.27	121.86	0 29 18	487.9	.75	325.90

DIFFERENTIAL CORRECTIONS

TDE	.8766	TRA	3.0321	TC3	-6.9895	BAU	1.1916
RDE	.1901	RRA	.1620	RC3	-.3415	FAU	.15858
FDE	2.6635	FRA	7.2581	FC	-10.7780	BSP	12213
BDE	.8970	BRA	3.0364	BC3	6.9978	FSP	2322

MID-COURSE EXECUTION ACCURACY

SGT	7191.7	SGR	472.7	SG3	1281.1
RRT	.8746	RRF	.9071	RTF	.9742
SGB	7207.2	R23	.1119	R13	.9744
SG1	7203.5	SG2	228.8	THA	3.29

ORBIT DETERMINATION ACCURACY

ST	102.9	SR	15.8	SS	81.3
CRT	.8466	CRS	-.9043	CST	-.9925
LSA	131.6	MSA	10.9	SSA	1.1
EL1	103.8	EL2	8.3	ALF	7.44

LAUNCH DATE MAY 3 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 623.416 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.383	GAL	-3.15	AZL	91.06	HCA	197.20	SMA	186.53	ECC	.19902	INC	1.0633	V1	29.547
RP	223.62	LAP	.31	LOP	59.13	VP	21.806	GAP	.50	AZP	88.98	TAL	340.81	TAP	178.01	RCA	149.41	APO	223.65	V2	24.592
RC	211.896	GL	-9.58	GP	-5.18	ZAL	127.86	ZAP	52.69	ETS	175.17	ZAE	91.79	ETE	180.55	ZAC	97.26	ETC	271.58	LVI	-4.44

PLANETOCENTRIC CONIC

C3	13.020	VHL	3.608	DLA	-12.59	RAL	355.04	RAD	6639.6	VEL	11.536	PTH	6.58	VHP	3.399	DPA	-28.45	RAP	294.50	ECC	1.2143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 18	2784.11	-21.24	79.22	207.62	133.63	17 49 43	1784.1	-3.24	62.63
60.00	17 56 49	2641.81	-17.00	70.22	211.44	127.11	18 40 51	1641.8	-1.21	51.77
70.00	19 4 49	2441.90	-13.05	56.81	214.24	121.85	19 45 31	1441.9	.72	37.02
80.00	20 27 46	2182.26	-10.09	38.85	215.99	118.25	21 4 8	1182.3	2.19	18.23
90.00	21 55 42	1898.55	-8.95	18.59	216.59	116.94	22 27 21	898.6	2.76	357.68
100.00	23 10 37	1656.73	-10.09	.22	215.99	118.25	23 38 14	656.7	2.19	339.60
110.00	0 8 11	1488.72	-13.05	345.73	214.24	121.85	0 33 0	488.7	.72	325.94

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.9061	TRA	3.1524	TC3	-6.9853	BAU	1.2170	SGT	7334.0	SGR	440.6	SG3	1253.5	ST	105.6	SR	15.6	SS	80.8
RDE	.1922	RRA	.1402	RC3	-.3063	FAU	.15443	RRT	.8430	RRF	.8768	RTF	.9739	CRT	.8255	CRS	-.8893	CST	-.9919
FDE	2.6574	FRA	7.2142	FC3	-10.2689	BSP	12483	SGB	7347.3	R23	.1021	R13	.9741	LSA	133.4	MSA	11.5	SSA	1.1
BDE	.9263	BRA	3.1555	BC3	6.9920	FSP	2279	SG1	7343.4	SG2	236.7	THA	2.90	EL1	106.4	EL2	8.8	ALF	7.02

LAUNCH DATE MAY 3 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 627.509 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.392	GAL	-3.24	AZL	91.11	HCA	198.28	SMA	186.68	ECC	.20005	INC	1.1118	V1	29.547
RP	224.01	LAP	.35	LOP	60.21	VP	21.771	GAP	.34	AZP	88.94	TAL	340.35	TAP	178.63	RCA	149.33	APO	224.02	V2	24.550
RC	214.558	GL	-9.91	GP	-4.83	ZAL	128.37	ZAP	51.74	ETS	175.32	ZAE	90.64	ETE	180.44	ZAC	97.60	ETC	271.62	LVI	-4.82

PLANETOCENTRIC CONIC

C3	13.308	VHL	3.648	DLA	-12.67	RAL	355.71	RAD	6639.7	VEL	11.549	PTH	6.59	VHP	3.429	DPA	-28.08	RAP	294.62	ECC	1.2190

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 16	2787.23	-21.38	79.37	208.53	133.57	17 52 43	1787.2	-3.39	62.76
60.00	17 59 52	2644.68	-17.11	70.37	212.36	127.06	18 43 57	1644.7	-1.33	51.90
70.00	19 7 59	2444.44	-13.14	56.95	215.18	121.81	19 48 43	1444.4	.62	37.15
80.00	20 31 2	2184.45	-10.16	38.97	216.94	118.23	21 7 27	1184.5	2.12	18.35
90.00	21 59 2	1900.58	-9.01	18.71	217.55	116.92	22 30 42	900.6	2.69	357.80
100.00	23 13 54	1658.92	-10.16	.34	216.94	118.23	23 41 33	658.9	2.12	339.72
110.00	0 11 21	1491.26	-13.14	345.87	215.18	121.81	0 36 12	491.3	.62	326.07

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.9382	TRA	3.2721	TC3	-6.9839	BAU	1.2435	SGT	7474.7	SGR	415.1	SG3	1226.1	ST	108.2	SR	15.6	SS	80.2
RDE	.1951	RRA	.1204	RC3	-.2767	FAU	.15051	RRT	.8060	RRF	.8408	RTF	.9736	CRT	.8050	CRS	-.8743	CST	-.9915
FDE	2.6470	FRA	7.1659	FC3	-9.7912	BSP	12726	SGB	7486.2	R23	.0934	R13	.9738	LSA	135.0	MSA	12.0	SSA	1.1
BDE	.9563	BRA	3.2743	BC3	6.9894	FSP	2232	SG1	7482.2	SG2	245.5	THA	2.57	EL1	108.9	EL2	9.2	ALF	6.67

LAUNCH DATE MAY 3 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 631.597 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.401	GAL	-3.33	AZL	91.16	HCA	199.36	SMA	186.83	ECC	.20110	INC	1.1553	V1	29.547
RP	224.40	LAP	.38	LOP	61.29	VP	21.737	GAP	.19	AZP	88.91	TAL	339.89	TAP	179.25	RCA	149.26	APO	224.40	V2	24.508
RC	217.222	GL	-10.19	GP	-4.53	ZAL	128.89	ZAP	50.83	ETS	175.45	ZAE	89.51	ETE	180.35	ZAC	97.90	ETC	271.67	LVI	-5.17

PLANETOCENTRIC CONIC

C3	13.602	VHL	3.688	DLA	-12.70	RAL	356.35	RAD	6639.9	VEL	11.561	PTH	6.61	VHP	3.459	DPA	-27.75	RAP	294.77	ECC	1.2238

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 55	2791.41	-21.38	79.58	209.42	133.49	17 55 27	1791.4	-3.60	62.94
60.00	18 2 34	2648.77	-17.28	70.58	213.27	126.99	18 46 42	1648.8	-1.51	52.10
70.00	19 10 43	2448.41	-13.28	57.17	216.11	121.76	19 51 31	1448.4	.47	37.36
80.00	20 33 49	2188.30	-10.28	39.19	217.87	118.19	21 10 17	1188.3	1.99	18.56
90.00	22 1 49	1904.37	-9.13	18.92	218.48	116.88	22 33 33	904.4	2.57	358.01
100.00	23 16 40	1662.77	-10.28	.56	217.87	118.19	23 44 23	662.8	1.99	339.93
110.00	0 14 5	1495.23	-13.28	346.09	216.11	121.76	0 39 0	495.2	.47	326.28

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.9714	TRA	3.3948	TC3	-6.9720	BAU	1.2687	SGT	7612.5	SGR	395.4	SG3	1198.7	ST	111.0	SR	15.6	SS	79.7
RDE	.1990	RRA	.1022	RC3	-.2510	FAU	.14635	RRT	.7637	RRF	.7997	RTF	.9733	CRT	.7863	CRS	-.8604	CST	-.9911
FDE	2.6441	FRA	7.1156	FC3	-9.3149	BSP	12994	SGB	7622.8	R23	.0860	R13	.9734	LSA	137.0	MSA	12.5	SSA	1.1
BDE	.9916	BRA	3.3963	BC3	6.9765	FSP	2191	SG1	7618.5	SG2	255.0	THA	2.27	EL1	111.7	EL2	9.6	ALF	6.37

LAUNCH DATE MAY 3 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 635.678 EARTH TO MARS

RL	150.80	LAL	-.00	LOL	221.93	VL	32.410	GAL	-3.42	AZL	91.19	HCA	200.44	SMA	186.98	ECC	.20218	INC	1.1939	V1	29.547
RP	224.79	LAP	.42	LOP	62.36	VP	21.703	GAP	.04	AZP	88.88	TAL	339.42	TAP	179.86	RCA	149.18	APO	224.79	V2	24.466
RC	219.886	GL	-10.42	GP	-4.25	ZAL	129.40	ZAP	49.95	ETS	175.57	ZAE	88.41	ETE	180.26	ZAC	98.17	ETC	271.72	LVI	-5.50

PLANETOCENTRIC CONIC

C3	13.904	VHL	3.729	DLA	-12.68	RAL	356.96	RAD	6640.0	VEL	11.574	PTH	6.62	VHP	3.490	DPA	-27.44	RAP	294.95	ECC	1.2288

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 20	2796.49	-21.82	79.83	210.29	133.39	17 57 56	1796.5	-3.86	63.15
60.00	18 4 57	2653.89	-17.49	70.85	214.16	126.91	18 49 11	1653.9	-1.74	52.34
70.00	19 13 5	2453.59	-13.47	57.45	217.01	121.69	19 53 59	1453.6	.27	37.63
80.00	20 36 10	2193.54	-10.45	39.49	218.78	118.13	21 12 43	1193.5	1.81	18.85
90.00	22 4 10	1909.64	-9.29	19.23	219.39	116.83	22 35 59	909.6	2.40	358.30
100.00	23 19 2	1668.01	-10.45	.86	218.78	118.13	23 46 50	668.0	1.81	340.22
110.00	0 16 27	1500.41	-13.47	346.37	217.01	121.69	0 41 28	500.4	.27	326.55

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.0080	TRA	3.5183	TC3	-6.9587	BAU	1.2942	SGT	7748.4	SGR	380.7	SG3	1171.7	ST	113.9	SR	15.8	SS	79.3
RDE	.2035	RRA	.0854	RC3	-.2288	FAU	.14222	RRT	.7171	RRF	.7541	RTF	.9728	CRT	.7690	CRS	-.8473	CST	-.9908
FDE	2.6421	FRA	7.0644	FC3	-8.8557	BSP	13246	SGB	7757.7	R23	.0799	R13	.9729	LSA	139.1	MSA	12.9	SSA	1.1
BDE	1.0284	BRA	3.5194	BC3	6.9625	FSP	2147	SG1	7753.2	SG2	265.2	THA	2.02	EL1	114.5	EL2	10.0	ALF	6.12

LAUNCH DATE MAY 3 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 3 1972

DISTANCE 639.753

HELIOCENTRIC CONIC

RL 150.80 LAL -.00 LOL 221.93 VL 32.419 GAL -3.51 AZL 91.23 HCA 201.51 SMA 187.14 ECC .20327 INC 1.2288 V1 29.547
RP 225.18 LAP .45 LOP 63.43 VP 21.670 GAP -.12 AZP 88.86 TAL 338.95 TAP 180.46 RCA 149.10 APO 225.18 V2 24.424
RC 222.551 GL -10.61 GP -4.01 ZAL 129.92 ZAP 49.10 ETS 175.68 ZAE 87.33 ETE 180.19 ZAC 98.40 ETC 271.78 LVI -5.82

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.212 VHL 3.770 DLA -12.63 RAL 357.86 RAD 6640.1 VEL 11.588 PTH 6.63 VHP 3.522 DPA -27.17 RAP 295.17 ECC 1.2339

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 31	2802.31	-22.09	80.11	211.15	133.28	18 0 14	1802.3	-4.15	63.40
60.00	18 7 5	2659.88	-17.74	71.17	215.04	126.80	18 51 25	1659.9	-2.00	52.63
70.00	19 15 9	2459.78	-13.69	57.80	217.89	121.60	19 56 9	1459.8	.04	37.95
80.00	20 38 9	2199.95	-10.66	39.86	219.67	118.06	21 14 49	1199.9	1.59	19.20
90.00	22 6 7	1916.14	-9.49	19.60	220.29	116.76	22 38 4	916.1	2.19	358.67
100.00	23 21 1	1674.42	-10.66	1.22	219.67	118.06	23 48 56	674.4	1.59	340.57
110.00	0 18 31	1506.60	-13.69	346.72	217.89	121.60	0 43 38	506.6	.04	326.87

DIFFERENTIAL CORRECTIONS

TDE 1.0458 TRA 3.6415 TC3-6.9458 BAU 1.3203
RDE .2084 RRA .0697 RC3 -.2100 FAU .13838
FDE 2.6364 FRA 7.0050 FC3-8.4294 BSP 13486
BDE 1.0664 BRA 3.6422 BC3 6.9490 FSP 2100

MID-COURSE EXECUTION ACCURACY

SGT 7881.8 SGR 370.3 SG3 1144.6
RRT .6673 RRF .7051 RTF .9725
SGB 7890.5 R23 .0743 R13 .9725
SG1 7885.6 SG2 275.7 THA 1.80

ORBIT DETERMINATION ACCURACY

ST 116.7 SR 15.9 SS 78.8
CRT .7530 CRS -.8349 CST -.9905
LSA 141.0 MSA 13.3 SSA 1.2
EL1 117.3 EL2 10.4 ALF 5.91

LAUNCH DATE MAY 3 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 5 1972

DISTANCE 643.822

HELIOCENTRIC CONIC

RL 150.80 LAL -.00 LOL 221.93 VL 32.428 GAL -3.60 AZL 91.26 HCA 202.57 SMA 187.30 ECC .20439 INC 1.2602 V1 29.547
RP 225.57 LAP .48 LOP 64.50 VP 21.636 GAP -.27 AZP 88.84 TAL 338.48 TAP 181.06 RCA 149.01 APO 225.58 V2 24.382
RC 225.217 GL -10.77 GP -3.79 ZAL 130.44 ZAP 48.28 ETS 175.78 ZAE 86.27 ETE 180.13 ZAC 98.61 ETC 271.84 LVI -6.12

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.528 VHL 3.812 DLA -12.55 RAL 358.14 RAD 6640.3 VEL 11.601 PTH 6.64 VHP 3.554 DPA -26.91 RAP 295.41 ECC 1.2391

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 32	2808.79	-22.39	80.43	212.00	133.15	18 2 21	1808.8	-4.47	63.67
60.00	18 9 0	2666.60	-18.01	71.53	215.91	126.68	18 53 27	1666.6	-2.30	52.95
70.00	19 16 57	2466.84	-13.94	58.19	218.77	121.50	19 58 4	1466.8	-.23	38.32
80.00	20 39 51	2207.34	-10.89	40.28	220.55	117.97	21 16 38	1207.3	1.34	19.61
90.00	22 7 46	1923.70	-9.72	20.04	221.16	116.69	22 39 50	923.7	1.95	359.09
100.00	23 22 43	1681.82	-10.89	1.64	220.55	117.97	23 50 45	681.8	1.34	340.98
110.00	0 20 19	1513.66	-13.94	347.11	218.77	121.50	0 45 33	513.7	-.23	327.24

DIFFERENTIAL CORRECTIONS

TDE 1.0850 TRA 3.7665 TC3-6.9307 BAU 1.3467
RDE .2138 RRA .0549 RC3 -.1937 FAU .13456
FDE 2.6308 FRA 6.9473 FC3-8.0182 BSP 13717
BDE 1.1059 BRA 3.7669 BC3 6.9334 FSP 2054

MID-COURSE EXECUTION ACCURACY

SGT 8013.7 SGR 363.7 SG3 1118.1
RRT .6159 RRF .6541 RTF .9720
SGB 8022.0 R23 .0695 R13 .9721
SG1 8016.8 SG2 286.4 THA 1.60

ORBIT DETERMINATION ACCURACY

ST 119.5 SR 16.1 SS 78.2
CRT .7384 CRS -.8235 CST -.9903
LSA 143.1 MSA 13.7 SSA 1.2
EL1 120.1 EL2 10.8 ALF 5.74

LAUNCH DATE MAY 3 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 7 1972

DISTANCE 647.886

HELIOCENTRIC CONIC

RL 150.80 LAL -.00 LOL 221.93 VL 32.437 GAL -3.70 AZL 91.29 HCA 203.64 SMA 187.46 ECC .20553 INC 1.2892 V1 29.547
RP 225.96 LAP .52 LOP 65.56 VP 21.603 GAP -.43 AZP 88.82 TAL 338.01 TAP 181.65 RCA 148.93 APO 225.98 V2 24.340
RC 227.883 GL -10.90 GP -3.59 ZAL 130.96 ZAP 47.48 ETS 175.88 ZAE 85.23 ETE 180.08 ZAC 98.80 ETC 271.91 LVI -6.40

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.852 VHL 3.854 DLA -12.45 RAL 358.71 RAD 6640.5 VEL 11.615 PTH 6.66 VHP 3.586 DPA -26.67 RAP 295.68 ECC 1.2444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 23	2815.82	-22.72	80.78	212.84	133.00	18 4 19	1815.8	-4.83	63.96
60.00	18 10 43	2673.97	-18.31	71.92	216.76	126.55	18 55 17	1674.0	-2.62	53.30
70.00	19 18 32	2474.63	-14.22	58.62	219.63	121.39	19 59 46	1474.6	-.33	38.73
80.00	20 41 17	2215.59	-11.15	40.75	221.42	117.88	21 18 13	1215.6	1.06	20.06
90.00	22 9 8	1932.16	-9.98	20.52	222.03	116.60	22 41 20	932.2	1.68	359.56
100.00	23 24 9	1690.06	-11.15	2.12	221.42	117.88	23 52 19	690.1	1.06	341.43
110.00	0 21 54	1521.45	-14.22	347.54	219.63	121.39	0 47 15	521.5	-.33	327.65

DIFFERENTIAL CORRECTIONS

TDE 1.1278 TRA 3.8943 TC3-6.9073 BAU 1.3719
RDE .2198 RRA .0411 RC3 -.1793 FAU .13062
FDE 2.6268 FRA 6.8895 FC3-7.6140 BSP 13965
BDE 1.1491 BRA 3.8946 BC3 6.9097 FSP 2012

MID-COURSE EXECUTION ACCURACY

SGT 8143.2 SGR 360.3 SG3 1092.0
RRT .5640 RRF .6027 RTF .9715
SGB 8151.2 R23 .0654 R13 .9716
SG1 8145.8 SG2 297.4 THA 1.43

ORBIT DETERMINATION ACCURACY

ST 122.5 SR 16.4 SS 77.8
CRT .7258 CRS -.8135 CST -.9902
LSA 145.3 MSA 14.1 SSA 1.2
EL1 123.1 EL2 11.2 ALF 5.59

LAUNCH DATE MAY 4 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 16 1971

HELIOCENTRIC CONIC DISTANCE 303.397 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	35.199	GAL	-3.12	AZL	91.87	HCA	97.70	SMA	254.84	ECC	.41114	INC	1.8662	V1	29.540
RP	207.27	LAP	-1.85	LOP	320.60	VP	27.565	GAP	21.89	AZP	89.75	TAL	349.28	TAP	86.98	RCA	150.07	APO	359.62	V2	26.426
RC	56.362	GL	-10.69	GP	.49	ZAL	112.33	ZAP	175.53	ETS	173.59	ZAE	174.50	ETE	83.10	ZAC	100.76	ETC	277.38	LVI	-17.97

PLANETOCENTRIC CONIC

C3	38.071	VHL	6.170	DLA	-19.35	RAL	341.59	RAD	6650.0	VEL	12.568	PTH	7.44	VHP	10.895	DPA	-17.29	RAP	319.04	ECC	1.6266

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 26	2901.61	-26.63	85.20	207.59	131.00	17 21 47	1901.6	-9.11	67.61
60.00	17 35 55	2735.43	-20.77	75.26	212.61	125.35	18 21 30	1735.4	-5.32	56.25
70.00	18 54 56	2503.13	-15.22	60.22	216.42	120.95	19 36 39	1503.1	-1.62	40.22
80.00	20 29 20	2207.69	-10.90	40.30	218.92	117.97	21 6 8	1207.7	1.33	19.63
90.00	22 2 52	1905.97	-9.18	19.02	219.83	116.87	22 34 38	906.0	2.52	358.10
100.00	23 12 12	1682.17	-10.90	1.66	218.92	117.97	23 40 14	682.2	1.33	340.99
110.00	23 54 23	1549.95	-15.22	349.14	216.42	120.95	24 20 13	549.9	-1.62	329.13

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4900	TRA	-1.0698	TC3	-.0137	BAU	.0415	SGT	1147.1	SGR	584.4	SG3	115.9	ST	27.7	SR	26.8	SS	16.5
RDE	-.5737	RRA	.2224	RC3	.0803	FAU	.03425	RRT	.0153	RRF	-.0166	RTF	-.6769	CRT	.7455	CRS	.5254	CST	.9559
FDE	.2365	FRA	.9246	FC3	-.7789	BSP	1719	SGB	1287.4	R23	-.0027	R13	-.6769	LSA	38.6	MSA	16.5	SSA	1.1
BDE	.7545	BRA	1.0927	BC3	.0815	FSP	144	SG1	1147.2	SG2	584.3	THA	.60	EL1	36.0	EL2	13.7	ALF	43.80

LAUNCH DATE MAY 4 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 18 1971

HELIOCENTRIC CONIC DISTANCE 305.449 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	35.013	GAL	-3.01	AZL	91.87	HCA	98.96	SMA	248.61	ECC	.39626	INC	1.8708	V1	29.540
RP	207.18	LAP	-1.85	LOP	321.87	VP	27.338	GAP	21.38	AZP	89.71	TAL	349.36	TAP	88.32	RCA	150.10	APO	347.13	V2	26.438
RC	56.568	GL	-11.01	GP	.51	ZAL	112.33	ZAP	174.66	ETS	174.47	ZAE	174.34	ETE	74.10	ZAC	100.73	ETC	277.46	LVI	-18.10

PLANETOCENTRIC CONIC

C3	35.718	VHL	5.976	DLA	-19.64	RAL	341.74	RAD	6649.2	VEL	12.475	PTH	7.37	VHP	10.548	DPA	-17.16	RAP	319.43	ECC	1.5878

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 16	2879.42	-25.63	84.03	206.78	131.56	17 23 16	1879.4	-8.01	66.66
60.00	17 38 12	2712.09	-19.84	73.98	211.81	125.83	18 23 24	1712.1	-4.30	55.13
70.00	18 57 46	2478.15	-14.34	58.82	215.62	121.33	19 39 5	1478.1	-.66	38.91
80.00	20 32 48	2180.75	-10.04	38.76	218.15	118.27	21 9 9	1180.8	2.24	18.15
90.00	22 6 40	1877.96	-8.31	17.41	219.06	117.13	22 37 58	878.0	3.42	356.53
100.00	23 15 40	1655.22	-10.04	.13	218.15	118.27	23 43 15	655.2	2.24	339.51
110.00	0 1 9	1524.97	-14.34	347.74	215.62	121.33	0 26 34	525.0	-.66	327.83

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4851	TRA	-1.0608	TC3	-.0026	BAU	.0412	SGT	1175.7	SGR	585.3	SG3	124.1	ST	28.3	SR	26.9	SS	17.1
RDE	-.5561	RRA	.2147	RC3	.0862	FAU	.03537	RRT	.0168	RRF	-.0184	RTF	-.6883	CRT	.7446	CRS	.5191	CST	.9542
FDE	.2426	FRA	.9620	FC3	-.8572	BSP	1779	SGB	1313.3	R23	-.0030	R13	-.6883	LSA	39.2	MSA	16.8	SSA	1.1
BDE	.7379	BRA	1.0823	BC3	.0862	FSP	157	SG1	1175.7	SG2	585.2	THA	.64	EL1	36.5	EL2	13.9	ALF	42.94

LAUNCH DATE MAY 4 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 307.717 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	34.838	GAL	-2.91	AZL	91.88	HCA	100.23	SMA	243.04	ECC	.38227	INC	1.8755	V1	29.540
RP	207.09	LAP	-1.85	LOP	323.13	VP	27.123	GAP	20.88	AZP	89.67	TAL	349.46	TAP	89.69	RCA	150.13	APO	335.94	V2	26.448
RC	56.856	GL	-11.34	GP	.52	ZAL	112.30	ZAP	173.78	ETS	175.11	ZAE	174.07	ETE	66.02	ZAC	100.69	ETC	277.54	LVI	-18.22

PLANETOCENTRIC CONIC

C3	33.558	VHL	5.793	DLA	-19.94	RAL	341.87	RAD	6648.4	VEL	12.388	PTH	7.30	VHP	10.213	DPA	-17.03	RAP	319.80	ECC	1.5523

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 7	2857.31	-24.63	82.88	206.01	132.09	17 24 44	1857.3	-6.90	65.72
60.00	17 40 29	2688.77	-18.91	72.71	211.02	126.28	18 25 18	1688.8	-3.27	54.01
70.00	19 0 39	2453.09	-13.45	57.43	214.85	121.69	19 41 33	1453.1	.29	37.60
80.00	20 36 21	2153.58	-9.16	37.23	217.39	118.54	21 12 15	1153.6	3.16	16.65
90.00	22 10 35	1849.63	-7.43	15.80	218.31	117.36	22 41 25	849.6	4.32	354.94
100.00	23 19 13	1628.05	-9.16	358.59	217.39	118.54	23 46 21	628.0	3.16	338.02
110.00	0 4 2	1499.91	-13.45	346.34	214.85	121.69	0 29 2	499.9	.29	326.52

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4788	TRA	-1.0505	TC3	.0104	BAU	.0417	SGT	1202.6	SGR	585.8	SG3	132.8	ST	28.9	SR	26.9	SS	17.7
RDE	-.5390	RRA	.2072	RC3	.0923	FAU	.03654	RRT	.0181	RRF	-.0201	RTF	-.6998	CRT	.7432	CRS	.5115	CST	.9524
FDE	.2481	FRA	1.0008	FC3	-.9428	BSP	1877	SGB	1337.6	R23	-.0035	R13	-.6998	LSA	39.7	MSA	17.0	SSA	1.1
BDE	.7209	BRA	1.0708	BC3	.0929	FSP	170	SG1	1202.6	SG2	585.7	THA	.66	EL1	36.9	EL2	14.1	ALF	42.17

LAUNCH DATE MAY 4 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 310.174 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	34.672	GAL	-2.81	AZL	91.88	HCA	101.49	SMA	238.02	ECC	.36912	INC	1.8803	V1	29.540
RP	207.01	LAP	-1.84	LOP	324.40	VP	26.919	GAP	20.39	AZP	89.63	TAL	349.57	TAP	91.06	RCA	150.16	APO	325.88	V2	26.457
RC	57.225	GL	-11.67	GP	.54	ZAL	112.24	ZAP	172.89	ETS	175.60	ZAE	173.73	ETE	59.02	ZAC	100.66	ETC	277.62	LVI	-18.34

PLANETOCENTRIC CONIC

C3	31.574	VHL	5.619	DLA	-20.26	RAL	341.98	RAD	6647.6	VEL	12.308	PTH	7.24	VHP	9.890	DPA	-16.90	RAP	320.17	ECC	1.5196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 38 56	2835.33	-23.62	81.76	205.25	132.58	17 26 11	1835.3	-5.80	64.79
60.00	17 42 47	2665.52	-17.97	71.47	210.26	126.70	18 27 13	1665.5	-2.25	52.90
70.00	19 3 35	2427.98	-12.55	56.04	214.09	122.03	19 44 3	1428.0	1.25	36.29
80.00	20 40 1	2126.19	-8.26	35.69	216.65	118.79	21 15 27	1126.2	4.08	15.14
90.00	22 14 38	1820.99	-6.53	14.18	217.59	117.58	22 44 59	821.0	5.24	353.34
100.00	23 22 53	1600.67	-8.26	357.05	216.65	118.79	23 49 33	600.7	4.08	336.51
110.00	0 6 58	1474.80	-12.55	344.96	214.09	122.03	0 31 32	474.8	1.25	325.21

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4747	TRA	-1.0414	TC3	.0241	BAU	.0429	SGT	1231.4	SGR	585.8	SG3	142.1	ST	29.6	SR	26.8	SS	18.3
RDE	-.5224	RRA	.1998	RC3	.0987	FAU	.03780	RRT	.0208	RRF	-.0223	RTF	-.7102	CRT	.7429	CRS	.5047	CST	.9502
FDE	.2543	FRA	1.0415	FC3	-1.0364	BSP	1896	SGB	1363.6	R23	-.0032	R13	-.7102	LSA	40.4	MSA	17.3	SSA	1.1
BDE	.7059	BRA	1.0604	BC3	.1016	FSP	185	SG1	1231.4	SG2	585.7	THA	.73	EL1	37.3	EL2	14.2	ALF	41.28

LAUNCH DATE MAY 4 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 312.797 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	34.516	GAL	-2.70	AZL	91.89	HCA	102.76	SMA	233.50	ECC	.35677	INC	1.8851	V1	29.540
RP	206.94	LAP	-1.84	LOP	325.66	VP	26.726	GAP	19.90	AZP	89.58	TAL	349.69	TAP	92.45	RCA	150.19	APO	316.80	V2	26.466
RC	57.675	GL	-12.00	GP	.56	ZAL	112.17	ZAP	171.98	ETS	175.98	ZAE	173.34	ETE	53.07	ZAC	100.63	ETC	277.70	LVI	-18.46

PLANETOCENTRIC CONIC

C3	29.752	VHL	5.455	DLA	-20.58	RAL	342.07	RAD	6646.9	VEL	12.235	PTH	7.18	VHP	9.578	DPA	-16.77	RAP	320.52	ECC	1.4896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 44	2813.51	-22.61	80.67	204.52	133.05	17 27 38	1813.5	-4.71	63.87
60.00	17 45 6	2642.35	-17.02	70.24	209.51	127.10	18 29 8	1642.4	-1.23	51.79
70.00	19 6 34	2402.85	-11.64	54.67	213.36	122.34	19 46 37	1402.9	2.21	34.98
80.00	20 43 46	2098.63	-7.36	34.14	215.93	119.02	21 18 45	1098.6	5.01	13.62
90.00	22 18 49	1792.09	-5.62	12.55	216.88	117.76	22 48 41	792.1	6.15	351.70
100.00	23 26 38	1573.10	-7.36	355.51	215.93	119.02	23 52 51	573.1	5.01	334.99
110.00	0 9 56	1449.67	-11.64	343.58	213.36	122.34	0 34 6	449.7	2.21	323.90

DIFFERENTIAL CORRECTIONS

TDE	-.4689	TRA	-1.0313	TC3	.0383	BAU	.0446												
RDE	-.5063	RRA	.1926	RC3	.1054	FAU	.03912												
FDE	.2603	FRA	1.0838	FC3	-1.1383	BSP	1950												
BDE	.6901	BRA	1.0492	BC3	.1121	FSP	200												

MID-COURSE EXECUTION ACCURACY

SGT	1258.4	SGR	585.5	SG3	152.0						
RRT	.0226	RRF	-.0246	RTF	-.7199						
SGB	1387.9	R23	-.0038	R13	-.7199						
SG1	1258.5	SG2	585.3	THA	.77						

ORBIT DETERMINATION ACCURACY

ST	30.1	SR	26.8	SS	18.9		
CRT	.7416	CRS	.4974	CST	.9482		
LSA	40.9	MSA	17.6	SSA	1.2		
EL1	37.7	EL2	14.4	ALF	40.49		

LAUNCH DATE MAY 4 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 315.566 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	34.369	GAL	-2.60	AZL	91.89	HCA	104.02	SMA	229.40	ECC	.34514	INC	1.8899	V1	29.540
RP	206.87	LAP	-1.83	LOP	326.93	VP	26.543	GAP	19.42	AZP	89.54	TAL	349.83	TAP	93.85	RCA	150.23	APO	308.58	V2	26.473
RC	58.203	GL	-12.34	GP	.58	ZAL	112.07	ZAP	171.06	ETS	176.28	ZAE	172.92	ETE	48.10	ZAC	100.60	ETC	277.77	LVI	-18.57

PLANETOCENTRIC CONIC

C3	28.074	VHL	5.299	DLA	-20.92	RAL	342.15	RAD	6646.2	VEL	12.166	PTH	7.13	VHP	9.276	DPA	-16.65	RAP	320.85	ECC	1.4620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 32	2791.83	-21.60	79.60	203.81	133.48	17 29 4	1791.8	-3.62	62.96
60.00	17 47 26	2619.26	-16.07	69.04	208.79	127.47	18 31 5	1619.3	-.22	50.69
70.00	19 9 36	2377.68	-10.72	53.30	212.65	122.62	19 49 14	1377.7	3.17	33.67
80.00	20 47 39	2070.85	-6.44	32.60	215.24	119.22	21 22 9	1070.9	5.93	12.08
90.00	22 23 9	1762.80	-4.69	10.90	216.20	117.92	22 52 32	762.8	7.08	350.05
100.00	23 30 30	1545.32	-6.44	353.96	215.24	119.22	23 56 16	545.3	5.93	333.45
110.00	0 12 59	1424.50	-10.72	342.22	212.65	122.62	0 36 43	424.5	3.17	322.58

DIFFERENTIAL CORRECTIONS

TDE	-.4531	TRA	-1.0113	TC3	.0687	BAU	.0494												
RDE	-.4907	RRA	.1855	RC3	.1123	FAU	.04046												
FDE	.2677	FRA	1.1298	FC3	-1.2476	BSP	1892												
BDE	.6679	BRA	1.0282	BC3	.1317	FSP	219												

MID-COURSE EXECUTION ACCURACY

SGT	1271.3	SGR	584.7	SG3	162.6						
RRT	.0231	RRF	-.0273	RTF	-.7395						
SGB	1399.3	R23	-.0056	R13	-.7396						
SG1	1271.4	SG2	584.5	THA	.77						

ORBIT DETERMINATION ACCURACY

ST	30.1	SR	26.7	SS	19.6		
CRT	.7366	CRS	.4913	CST	.9485		
LSA	41.1	MSA	17.8	SSA	1.2		
EL1	37.6	EL2	14.5	ALF	40.35		

LAUNCH DATE MAY 4 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 318.467 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	34.230	GAL	-2.51	AZL	91.89	HCA	105.29	SMA	225.68	ECC	.33421	INC	1.8948	V1	29.540
RP	206.82	LAP	-1.83	LOP	328.20	VP	26.369	GAP	18.95	AZP	89.50	TAL	349.98	TAP	95.27	RCA	150.26	APO	301.11	V2	26.479
RC	58.807	GL	-12.68	GP	.60	ZAL	111.96	ZAP	170.13	ETS	176.53	ZAE	172.50	ETE	43.94	ZAC	100.58	ETC	277.84	LVI	-18.68

PLANETOCENTRIC CONIC

C3	26.534	VHL	5.151	DLA	-21.27	RAL	342.21	RAD	6645.6	VEL	12.103	PTH	7.08	VHP	8.985	DPA	-16.53	RAP	321.18	ECC	1.4367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 20	2770.43	-20.59	78.56	203.13	133.89	17 30 30	1770.4	-2.55	62.06
60.00	17 49 46	2596.39	-15.12	67.85	208.10	127.82	18 33 2	1596.4	.79	49.60
70.00	19 12 41	2352.63	-9.79	51.94	211.96	122.88	19 51 54	1352.6	4.12	32.35
80.00	20 51 37	2043.01	-5.51	31.05	214.57	119.39	21 25 40	1043.0	6.86	10.53
90.00	22 27 37	1733.35	-3.75	9.25	215.54	118.05	22 56 31	733.3	8.00	348.38
100.00	23 34 29	1517.48	-5.51	352.42	214.57	119.39	23 59 46	517.5	6.86	331.90
110.00	0 16 4	1399.45	-9.79	340.86	211.96	122.88	0 39 23	399.4	4.12	321.27

DIFFERENTIAL CORRECTIONS

TDE	-.4513	TRA	-1.0054	TC3	.0809	BAU	.0512												
RDE	-.4756	RRA	.1786	RC3	.1194	FAU	.04202												
FDE	.2722	FRA	1.1751	FC3	-1.3711	BSP	1997												
BDE	.6557	BRA	1.0212	BC3	.1443	FSP	236												

MID-COURSE EXECUTION ACCURACY

SGT	1303.5	SGR	583.5	SG3	174.0						
RRT	.0263	RRF	-.0297	RTF	-.7441						
SGB	1428.1	R23	-.0053	R13	-.7441						
SG1	1303.6	SG2	583.2	THA	.84						

ORBIT DETERMINATION ACCURACY

ST	30.9	SR	26.6	SS	20.2		
CRT	.7368	CRS	.4814	CST	.9449		
LSA	41.7	MSA	18.1	SSA	1.2		
EL1	38.1	EL2	14.6	ALF	39.31		

LAUNCH DATE MAY 4 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 321.484 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	34.099	GAL	-2.41	AZL	91.90	HCA	106.56	SMA	222.30	ECC	.32394	INC	1.8998	V1	29.540
RP	206.77	LAP	-1.82	LOP	329.47	VP	26.204	GAP	18.49	AZP	89.48	TAL	350.13	TAP	98.69	RCA	150.29	APO	294.31	V2	26.485
RC	59.485	GL	-13.02	GP	.62	ZAL	111.83	ZAP	169.18	ETS	176.74	ZAE	172.10	ETE	40.47	ZAC	100.56	ETC	277.90	LVI	-18.79

PLANETOCENTRIC CONIC

C3	25.117	VHL	5.012	DLA	-21.62	RAL	342.25	RAD	6645.0	VEL	12.045	PTH	7.03	VHP	8.704	DPA	-16.41	RAP	321.48	ECC	1.4134

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 6	2749.27	-19.59	77.54	202.47	134.27	17 31 56	1749.3	-1.49	61.18
60.00	17 52 7	2573.70	-14.16	66.69	207.43	128.13	18 35 1	1573.7	1.79	48.52
70.00	19 15 50	2327.63	-8.87	50.60	211.30	123.12	19 54 37	1327.6	5.07	31.04
80.00	20 55 43	2015.03	-4.57	29.50	213.94	119.54	21 29 18	1015.0	7.78	8.97
90.00	22 32 15	1703.62	-2.79	7.58	214.92	118.15	23 0 39	703.6	8.92	346.68
100.00	23 38 34	1489.51	-4.57	350.87	213.94	119.54	24 3 24	489.5	7.78	330.34
110.00	0 19 12	1374.45	-8.87	339.52	211.30	123.12	0 42 6	374.4	5.07	319.96

DIFFERENTIAL CORRECTIONS

TDE	-.4474	TRA	-.9972	TC3	.0967	BAU	.0535												
RDE	-.4610	RRA	.1719	RC3	.1268	FAU	.04368												
FDE	.2767	FRA	1.2225	FC3	-1.5055	BSP	2080												
BDE	.6425	BRA	1.0119	BC3	.1594	FSP	254												

MID-COURSE EXECUTION ACCURACY

SGT	1332.3	SGR	581.9	SG3	186.1						
RRT	.0293	RRF	-.0325	RTF	-.7500						
SGB	1453.8	R23	-.0054	R13	-.7501						
SG1	1332.4	SG2	581.6	THA	.91						

ORBIT DETERMINATION ACCURACY

ST	31.5	SR	26.5	SS	20.8		
CRT	.7363	CRS	.4713	CST	.9414		
LSA	42.3	MSA	18.3	SSA	1.2		
EL1	38.5	EL2	14.7	ALF	38.42		

LAUNCH DATE MAY 4 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 324.606 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.975	GAL	-2.32	AZL	91.90	HCA	107.63	SMA	219.21	ECC	.31427	INC	1.9048	V1	29.540
RP	206.74	LAP	-1.81	LOP	330.73	VP	26.048	GAP	18.03	AZP	89.42	TAL	350.29	TAP	98.12	RCA	150.32	APO	288.10	V2	26.489
RC	60.233	GL	-13.37	GP	.64	ZAL	111.68	ZAP	166.21	ETS	176.92	ZAE	171.73	ETE	37.58	ZAC	100.54	ETC	277.97	LVI	-18.89

PLANETOCENTRIC CONIC

C3	23.812	VHL	4.880	DLA	-21.99	RAL	342.28	RAD	6644.5	VEL	11.991	PTH	6.99	VHP	8.431	DPA	-16.29	RAP	321.77	ECC	1.3919

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 53	2728.38	-18.59	76.56	201.84	134.62	17 33 21	1728.4	-.44	60.30
60.00	17 54 30	2551.21	-13.22	65.54	206.79	128.43	18 37 1	1551.2	2.78	47.44
70.00	19 19 1	2302.73	-7.94	49.27	210.67	123.33	19 57 24	1302.7	6.02	29.73
80.00	20 59 55	1986.94	-3.63	27.95	213.32	119.66	21 33 2	986.9	8.71	7.40
90.00	22 37 3	1673.63	-1.83	5.91	214.32	118.23	23 4 57	673.6	9.84	344.96
100.00	23 42 47	1461.41	-3.63	349.32	213.32	119.66	24 7 9	461.4	8.71	328.76
110.00	0 22 23	1349.55	-7.94	338.19	210.67	123.33	0 44 53	349.5	6.02	318.65

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.4424	TRA	-.9881	TC3	.1142	BAU	.0561	SGT	1359.3	SGR	580.0	SG3	198.9			ST	32.0	SR	26.4	SS	21.4
RDE	-.4469	RRA	.1653	RC3	.1343	FAU	.04539	RRT	.0321	RRF	-.0353	RTF	-.7565			CRT	.7352	CRS	.4609	CST	.9380
FDE	.2812	FRA	1.2727	FC3	-1.6503	BSP	2155	SGB	1477.9	R23	-.0056	R13	-.7566			LSA	42.8	MSA	18.6	SSA	1.2
BDE	.6286	BRA	1.0018	BC3	.1764	FSP	275	SG1	1359.5	SG2	579.6	THA	.96			EL1	38.8	EL2	14.8	ALF	37.61

LAUNCH DATE MAY 4 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC DISTANCE 327.821 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.859	GAL	-2.22	AZL	91.91	HCA	109.10	SMA	216.38	ECC	.30517	INC	1.9099	V1	29.540
RP	206.71	LAP	-1.80	LOP	332.00	VP	25.899	GAP	17.59	AZP	89.37	TAL	350.47	TAP	99.56	RCA	150.35	APO	282.42	V2	26.492
RC	61.050	GL	-13.72	GP	.66	ZAL	111.51	ZAP	167.22	ETS	177.07	ZAE	171.39	ETE	35.17	ZAC	100.52	ETC	278.02	LVI	-18.99

PLANETOCENTRIC CONIC

C3	22.610	VHL	4.755	DLA	-22.36	RAL	342.30	RAD	6644.0	VEL	11.941	PTH	6.94	VHP	8.168	DPA	-16.18	RAP	322.04	ECC	1.3721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 39	2707.78	-17.61	75.60	201.24	134.95	17 34 46	1707.8	.60	59.44
60.00	17 56 53	2528.97	-12.27	64.42	206.17	128.69	18 39 2	1529.0	3.76	46.37
70.00	19 22 16	2277.94	-7.01	47.96	210.06	123.51	20 0 14	1277.9	6.95	28.42
80.00	21 4 15	1958.75	-2.68	26.40	212.74	119.75	21 36 54	958.7	9.62	5.81
90.00	22 42 2	1643.35	-.85	4.22	213.75	118.27	23 9 26	643.4	10.76	343.21
100.00	23 47 7	1433.22	-2.68	347.77	212.74	119.75	24 11 1	433.2	9.62	327.17
110.00	0 25 38	1324.76	-7.01	336.87	210.06	123.51	0 47 43	324.8	6.95	317.34

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.4365	TRA	-.9777	TC3	.1348	BAU	.0592	SGT	1384.2	SGR	577.6	SG3	212.7			ST	32.5	SR	26.3	SS	22.0
RDE	-.4333	RRA	.1588	RC3	.1421	FAU	.04727	RRT	.0354	RRF	-.0389	RTF	-.7633			CRT	.7339	CRS	.4508	CST	.9348
FDE	.2860	FRA	1.3251	FC3	-1.8100	BSP	2212	SGB	1499.8	R23	-.0062	R13	-.7634			LSA	43.3	MSA	18.8	SSA	1.2
BDE	.6150	BRA	.9905	BC3	.1959	FSP	297	SG1	1384.3	SG2	577.2	THA	1.02			EL1	39.1	EL2	14.9	ALF	36.87

LAUNCH DATE MAY 4 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC DISTANCE 331.120 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.749	GAL	-2.14	AZL	91.92	HCA	110.36	SMA	213.79	ECC	.29662	INC	1.9151	V1	29.540
RP	206.69	LAP	-1.80	LOP	333.27	VP	25.757	GAP	17.15	AZP	89.33	TAL	350.65	TAP	101.01	RCA	150.38	APO	277.20	V2	26.495
RC	61.933	GL	-14.07	GP	.69	ZAL	111.34	ZAP	166.22	ETS	177.20	ZAE	171.11	ETE	33.16	ZAC	100.51	ETC	278.08	LVI	-19.09

PLANETOCENTRIC CONIC

C3	21.503	VHL	4.637	DLA	-22.74	RAL	342.30	RAD	6643.5	VEL	11.895	PTH	6.91	VHP	7.914	DPA	-16.08	RAP	322.30	ECC	1.3939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 51 24	2687.51	-16.83	74.66	200.66	135.25	17 36 12	1687.5	1.62	58.60
60.00	17 59 17	2506.98	-11.33	63.32	205.58	128.94	18 41 4	1507.0	4.72	45.32
70.00	19 25 34	2253.30	-6.08	46.65	209.49	123.67	20 3 8	1253.3	7.87	27.11
80.00	21 8 44	1930.47	-1.72	24.85	212.19	119.81	21 40 54	930.5	10.53	4.20
90.00	22 47 13	1612.79	.13	2.51	213.22	118.28	23 14 6	612.8	11.67	341.43
100.00	23 51 36	1404.94	-1.72	346.21	212.19	119.81	24 15 0	404.9	10.53	325.57
110.00	0 28 57	1300.12	-6.08	335.57	209.49	123.67	0 50 37	300.1	7.87	316.03

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.4302	TRA	-.9666	TC3	.1554	BAU	.0621	SGT	1407.3	SGR	574.9	SG3	227.4			ST	32.9	SR	26.1	SS	22.7
RDE	-.4201	RRA	.1525	RC3	.1501	FAU	.04921	RRT	.0387	RRF	-.0426	RTF	-.7698			CRT	.7326	CRS	.4406	CST	.9315
FDE	.2909	FRA	1.3802	FC3	-1.9812	BSP	2268	SGB	1520.2	R23	-.0068	R13	-.7698			LSA	43.8	MSA	19.1	SSA	1.3
BDE	.6013	BRA	.9786	BC3	.2160	FSP	321	SG1	1407.5	SG2	574.4	THA	1.09			EL1	39.3	EL2	14.9	ALF	36.18

LAUNCH DATE MAY 4 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 334.495 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.645	GAL	-2.05	AZL	91.92	HCA	111.83	SMA	211.41	ECC	.28857	INC	1.9204	V1	29.540
RP	206.68	LAP	-1.79	LOP	334.54	VP	25.623	GAP	16.72	AZP	89.29	TAL	350.83	TAP	102.46	RCA	150.40	APO	272.42	V2	26.496
RC	62.879	GL	-14.42	GP	.71	ZAL	111.15	ZAP	165.19	ETS	177.31	ZAE	170.87	ETE	31.48	ZAC	100.50	ETC	278.13	LVI	-19.18

PLANETOCENTRIC CONIC

C3	20.482	VHL	4.526	DLA	-23.12	RAL	342.29	RAD	6643.1	VEL	11.853	PTH	6.87	VHP	7.668	DPA	-15.97	RAP	322.53	ECC	1.3371

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 9	2667.59	-15.66	73.75	200.11	135.52	17 37 37	1667.6	2.62	57.76
60.00	18 1 42	2485.29	-10.40	62.25	205.02	129.16	18 43 7	1485.3	5.67	44.27
70.00	19 28 56	2228.83	-5.16	45.36	208.94	123.81	20 6 5	1228.8	8.79	25.80
80.00	21 13 20	1902.10	-.76	23.29	211.67	119.85	21 45 2	902.1	11.44	2.58
90.00	22 52 36	1581.93	1.13	.79	212.72	118.26	23 18 58	581.9	12.59	339.62
100.00	0 0 8	1376.57	-.76	344.66	211.67	119.85	0 23 4	376.6	11.44	323.95
110.00	0 32 18	1275.65	-5.16	334.28	208.94	123.81	0 53 34	275.6	8.79	314.72

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.4234	TRA	-.9552	TC3	.1783	BAU	.0653	SGT	1429.1	SGR	571.8	SG3	243.0			ST	33.3	SR	26.0	SS	23.3
RDE	-.4073	RRA	.1464	RC3	.1582	FAU	.05128	RRT	.0423	RRF	-.0461	RTF	-.7763			CRT	.7309	CRS	.4284	CST	.9274
FDE	.2944	FRA	1.4386	FC3	-2.1677	BSP	2313	SGB	1539.3	R23	-.0070	R13	-.7764			LSA	44.2	MSA	19.3	SSA	1.3
BDE	.5875	BRA	.9664	BC3	.2384	FSP	346	SG1	1429.4	SG2	571.2	THA	1.15			EL1	39.5	EL2	14.9	ALF	35.52

LAUNCH DATE MAY 4 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 337.940 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.547	GAL	-1.97	AZL	91.93	HCA	112.90	SHA	209.22	ECC	.28101	INC	1.9257	V1	29.540
RP	206.67	LAP	-1.77	LOP	335.81	VP	25.494	GAP	16.31	AZP	89.25	TAL	351.02	TAP	103.92	RCA	150.43	APO	268.01	V2	26.496
RC	63.888	GL	-14.77	GP	.74	ZAL	110.95	ZAP	164.15	ETS	177.41	ZAE	170.70	ETE	30.10	ZAC	100.50	ETC	278.18	LVI	-19.26

PLANETOCENTRIC CONIC

C3	19.542	VHL	4.421	DLA	-23.51	RAL	342.28	RAD	6642.6	VEL	11.813	PTH	6.83	VHP	7.430	DPA	-15.88	RAP	322.74	ECC	1.3216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 54	2648.04	-14.71	72.87	199.58	135.77	17 39 2	1648.0	3.60	56.95
60.00	18 4 8	2463.92	-9.48	61.19	204.49	129.36	18 45 12	1463.9	6.60	43.24
70.00	19 32 21	2204.55	-4.23	44.09	208.42	123.92	20 9 6	1204.6	9.69	24.80
80.00	21 18 5	1873.66	.20	21.73	211.18	119.86	21 49 19	873.7	12.34	.95
90.00	22 58 12	1550.73	2.13	359.05	212.25	118.21	23 24 3	550.7	13.49	337.78
100.00	0 4 53	1348.13	.20	343.10	211.18	119.86	0 27 21	348.1	12.34	322.31
110.00	0 35 44	1251.37	-4.23	333.01	208.42	123.92	0 56 35	251.4	9.69	313.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4167	TRA	-.9435	TC3	.2013	BAU	.0683	SGT	1449.7	SGR	568.4	SG3	259.7			ST	33.6	SR	25.8	SS	24.0
RDE	-.3949	RRA	.1404	RC3	.1685	FAU	.05352	RRT	.0462	RRF	-.0506	RTF	-.7822			CRT	.7294	CRS	.4175	C3T	.9238
FDE	.2990	FRA	1.4996	FC3	-2.3710	BSP	2365	SGB	1557.2	R23	-.0079	R13	-.7823			LSA	44.6	NSA	19.5	SSA	1.3
BDE	.5741	BRA	.9539	BC3	.2613	FSP	374	SG1	1450.0	SG2	567.7	THA	1.23			EL1	39.6	EL2	15.0	ALF	34.89

LAUNCH DATE MAY 4 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 341.448 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.455	GAL	-1.89	AZL	91.93	HCA	114.17	SHA	207.21	ECC	.27389	INC	1.9312	V1	29.540
RP	206.68	LAP	-1.76	LOP	337.08	VP	25.372	GAP	15.90	AZP	89.21	TAL	351.21	TAP	105.39	RCA	150.45	APO	263.96	V2	26.496
RC	64.956	GL	-15.11	GP	.77	ZAL	110.74	ZAP	163.08	ETS	177.49	ZAE	170.58	ETE	28.97	ZAC	100.50	ETC	278.22	LVI	-19.34

PLANETOCENTRIC CONIC

C3	18.676	VHL	4.322	DLA	-23.90	RAL	342.25	RAD	6642.2	VEL	11.777	PTH	6.80	VHP	7.200	DPA	-15.79	RAP	322.93	ECC	1.3074

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 39	2628.88	-13.78	72.01	199.08	136.01	17 40 28	1628.9	4.56	56.14
60.00	18 6 35	2442.89	-8.57	60.16	203.98	129.53	18 47 16	1442.9	7.52	42.22
70.00	19 35 50	2180.50	-3.32	42.83	207.93	124.01	20 12 11	1180.5	10.57	23.20
80.00	21 22 59	1845.14	1.17	20.16	210.73	119.84	21 53 44	845.1	13.22	359.29
90.00	23 4 4	1519.15	3.15	357.28	211.82	118.12	23 29 23	519.2	14.40	335.91
100.00	0 9 47	1319.61	1.17	341.53	210.73	119.84	0 31 47	319.6	13.22	320.66
110.00	0 39 12	1227.32	-3.32	331.74	207.93	124.01	0 59 40	227.3	10.57	312.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4094	TRA	-.9309	TC3	.2247	BAU	.0711	SGT	1467.8	SGR	564.6	SG3	277.5			ST	33.9	SR	25.6	SS	24.7
RDE	-.3830	RRA	.1345	RC3	.1749	FAU	.05588	RRT	.0503	RRF	-.0552	RTF	-.7876			CRT	.7278	CRS	.4055	C3T	.9197
FDE	.3027	FRA	1.5633	FC3	-2.5906	BSP	2399	SGB	1572.7	R23	-.0087	R13	-.7877			LSA	44.9	NSA	19.8	SSA	1.3
BDE	.5606	BRA	.9405	BC3	.2848	FSP	402	SG1	1468.2	SG2	563.7	THA	1.30			EL1	39.7	EL2	14.9	ALF	34.30

LAUNCH DATE MAY 4 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 345.013 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.368	GAL	-1.81	AZL	91.94	HCA	115.44	SHA	205.35	ECC	.26720	INC	1.9368	V1	29.540
RP	206.70	LAP	-1.75	LOP	338.35	VP	25.256	GAP	15.49	AZP	89.17	TAL	351.41	TAP	106.85	RCA	150.48	APO	260.22	V2	26.494
RC	66.082	GL	-15.46	GP	.80	ZAL	110.52	ZAP	161.99	ETS	177.57	ZAE	170.53	ETE	28.07	ZAC	100.50	ETC	278.25	LVI	-19.42

PLANETOCENTRIC CONIC

C3	17.877	VHL	4.228	DLA	-24.29	RAL	342.22	RAD	6641.9	VEL	11.743	PTH	6.77	VHP	6.978	DPA	-15.70	RAP	323.09	ECC	1.2942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 23	2610.14	-12.86	71.18	198.61	136.21	17 41 54	1610.1	5.50	55.35
60.00	18 9 3	2422.22	-7.68	59.15	203.51	129.69	18 49 25	1422.2	8.42	41.21
70.00	19 39 22	2156.69	-2.41	41.58	207.47	124.08	20 15 19	1156.7	11.45	21.91
80.00	21 28 3	1818.53	2.14	18.59	210.30	119.79	21 58 20	818.5	14.10	357.63
90.00	23 10 11	1487.15	4.17	355.49	211.43	118.00	23 34 58	487.1	15.30	333.99
100.00	0 14 51	1291.01	2.14	339.96	210.30	119.79	0 36 22	291.0	14.10	318.99
110.00	0 42 44	1203.50	-2.41	330.50	207.47	124.08	1 2 48	203.5	11.45	310.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4024	TRA	-.9183	TC3	.2478	BAU	.0737	SGT	1488.0	SGR	560.4	SG3	296.4			ST	34.1	SR	25.3	SS	25.3
RDE	-.3715	RRA	.1288	RC3	.1838	FAU	.05840	RRT	.0548	RRF	-.0600	RTF	-.[illegible]24			CRT	.7264	CRS	.3924	C3T	.9149
FDE	.3056	FRA	1.6307	FC3	-2.8283	BSP	2443	SGB	1587.2	R23	-.0094	R13	-.7925			LSA	45.2	NSA	20.0	SSA	1.3
BDE	.5476	BRA	.9273	BC3	.3083	FSP	434	SG1	1485.3	SG2	559.5	THA	1.38			EL1	39.8	EL2	14.9	ALF	33.73

LAUNCH DATE MAY 4 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 348.631 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.287	GAL	-1.73	AZL	91.94	HCA	116.71	SHA	203.63	ECC	.26092	INC	1.9424	V1	29.540
RP	206.72	LAP	-1.74	LOP	339.62	VP	25.145	GAP	15.10	AZP	89.13	TAL	351.61	TAP	108.32	RCA	150.50	APO	256.76	V2	26.491
RC	67.265	GL	-15.81	GP	.83	ZAL	110.30	ZAP	160.87	ETS	177.63	ZAE	170.55	ETE	27.40	ZAC	100.51	ETC	278.29	LVI	-19.49

PLANETOCENTRIC CONIC

C3	17.140	VHL	4.140	DLA	-24.68	RAL	342.18	RAD	6641.5	VEL	11.712	PTH	6.74	VHP	6.763	DPA	-15.62	RAP	323.23	ECC	1.2821

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 8	2591.84	-11.96	70.38	198.17	136.40	17 43 20	1591.8	6.41	54.58
60.00	18 11 31	2401.95	-6.79	58.17	203.06	129.82	18 51 33	1401.9	9.30	40.22
70.00	19 42 57	2133.14	-1.51	40.35	207.04	124.12	20 18 31	1133.1	12.30	20.62
80.00	21 33 17	1787.65	3.11	17.01	209.92	119.71	22 3 5	787.8	14.97	355.94
90.00	23 16 36	1454.63	5.21	353.66	211.08	117.84	23 40 51	454.6	16.19	332.02
100.00	0 20 5	1262.31	3.11	338.38	209.92	119.71	0 41 7	262.3	14.97	317.31
110.00	0 46 20	1179.96	-1.51	329.27	207.04	124.12	1 6 0	180.0	12.30	309.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3947	TRA	-.9054	TC3	.2708	BAU	.0761	SGT	1500.1	SGR	556.0	SG3	316.6			ST	34.3	SR	25.1	SS	26.0
RDE	-.3603	RRA	.1231	RC3	.1922	FAU	.06108	RRT	.0592	RRF	-.0652	RTF	-.7969			CRT	.7244	CRS	.3789	C3T	.9101
FDE	.3082	FRA	1.7020	FC3	-3.0849	BSP	2476	SGB	1599.8	R23	-.0106	R13	-.7971			LSA	45.5	NSA	20.2	SSA	1.3
BDE	.5344	BRA	.9138	BC3	.3321	FSP	467	SG1	1500.5	SG2	554.8	THA	1.46			EL1	39.8	EL2	14.9	ALF	33.20

LAUNCH DATE MAY 4 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 352.296 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.210	GAL	-1.66	AZL	91.95	HCA	117.98	SMA	202.04	ECC	.28501	INC	1.9483
RP	206.75	LAP	-1.72	LOP	340.89	VP	25.039	GAP	14.72	AZP	89.09	TAL	351.80	TAP	109.78	RCA	150.52	APO	253.57
RC	68.502	GL	-16.15	GP	.87	ZAL	110.08	ZAP	159.73	ETS	177.69	ZAE	170.63	ETE	26.93	ZAC	100.53	ETC	278.31

V1	29.540																		
V2	26.487																		
LVI	-19.56																		

PLANETOCENTRIC CONIC

C3	16.462	VHL	4.057	DLA	-25.07	RAL	342.14	RAD	6641.2	VEL	11.683	PTH	6.72	VHP	6.555	DPA	-15.55	RAP	323.35
ECC	1.2709																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 52	2573.99	-11.07	69.60	197.75	136.57	17 44 46	1574.0	7.30	53.82
60.00	18 14 1	2382.09	-5.93	57.21	202.64	129.94	18 53 43	1382.1	10.15	39.24
70.00	19 46 36	2109.88	-.62	39.14	206.64	124.15	20 21 46	1109.9	13.14	19.34
80.00	21 38 42	1759.04	4.08	15.43	209.57	119.60	22 8 1	759.0	15.83	354.23
90.00	23 23 21	1421.51	6.26	351.80	210.76	117.63	23 47 3	421.5	17.08	329.99
100.00	0 25 30	1233.51	4.08	336.80	209.57	119.60	0 46 3	233.5	15.83	315.60
110.00	0 49 58	1156.69	-.62	328.06	206.64	124.15	1 9 15	156.7	13.14	308.26

DIFFERENTIAL CORRECTIONS

TDE	-.3680	TRA	-.8924	TC3	.2922	BAU	.0780
RDE	-.3495	RRA	.1176	RC3	.2009	FAU	.06390
FDE	.3112	FRA	1.7772	FC3	-3.3607	BSP	2510
BDE	.5222	BRA	.9001	BC3	.3546	FSP	503

MID-COURSE EXECUTION ACCURACY

SGT	1514.0	SGR	551.2	SG3	338.0				
RRT	.0647	RRF	-.0711	RTF	-.8006				
SGB	1611.2	R23	-.0115	R13	-.8008				
SG1	1514.5	SG2	549.9	THA	1.55				

ORBIT DETERMINATION ACCURACY

ST	34.4	SR	24.8	SS	26.7		
CRT	.7235	CRS	.3660	CST	.9049		
LSA	45.8	MSA	20.5	SSA	1.3		
EL1	39.8	EL2	14.8	ALF	32.64		

LAUNCH DATE MAY 4 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC DISTANCE 356.006 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.137	GAL	-1.59	AZL	91.95	HCA	119.25	SMA	200.58	ECC	.24946	INC	1.9542
RP	206.79	LAP	-1.71	LOP	342.16	VP	24.938	GAP	14.34	AZP	89.04	TAL	352.00	TAP	111.25	RCA	150.54	APO	250.61
RC	69.791	GL	-16.49	GP	.90	ZAL	109.85	ZAP	158.56	ETS	177.74	ZAE	170.79	ETE	26.68	ZAC	100.55	ETC	278.33

V1	29.540																		
V2	26.483																		
LVI	-19.62																		

PLANETOCENTRIC CONIC

C3	15.836	VHL	3.979	DLA	-25.46	RAL	342.09	RAD	6640.9	VEL	11.657	PTH	6.69	VHP	6.355	DPA	-15.48	RAP	323.44
ECC	1.2606																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 36	2556.61	-10.21	68.85	197.35	136.73	17 46 13	1556.6	8.17	53.08
60.00	18 16 31	2362.66	-5.08	56.27	202.25	130.03	18 55 54	1362.7	10.99	38.28
70.00	19 50 18	2086.92	.25	37.94	206.28	124.15	20 25 5	1086.9	13.96	18.07
80.00	21 44 18	1730.11	5.05	13.83	209.26	119.47	22 13 8	730.1	16.67	352.50
90.00	23 30 30	1387.63	7.32	349.88	210.49	117.39	23 53 38	387.6	17.96	327.90
100.00	0 31 6	1204.58	5.05	335.20	209.26	119.47	0 51 11	204.6	16.67	313.86
110.00	0 53 40	1133.74	.25	326.86	206.28	124.15	1 12 34	133.7	13.96	306.99

DIFFERENTIAL CORRECTIONS

TDE	-.3804	TRA	-.8785	TC3	.3127	BAU	.0797
RDE	-.3391	RRA	.1122	RC3	.2097	FAU	.06689
FDE	.3132	FRA	1.8567	FC3	-3.6567	BSP	2532
BDE	.5096	BRA	.8857	BC3	.3765	FSP	541

MID-COURSE EXECUTION ACCURACY

SGT	1524.6	SGR	546.1	SG3	360.8				
RRT	.0699	RRF	-.0772	RTF	-.8040				
SGB	1619.5	R23	-.0128	R13	-.8042				
SG1	1525.2	SG2	544.6	THA	1.64				

ORBIT DETERMINATION ACCURACY

ST	34.5	SR	24.6	SS	27.5		
CRT	.7221	CRS	.3520	CST	.8994		
LSA	46.0	MSA	20.7	SSA	1.3		
EL1	39.7	EL2	14.8	ALF	32.16		

LAUNCH DATE MAY 4 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC DISTANCE 359.756 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.069	GAL	-1.53	AZL	91.96	HCA	120.51	SMA	199.22	ECC	.24425	INC	1.9603
RP	206.84	LAP	-1.69	LOP	343.43	VP	24.841	GAP	13.97	AZP	89.00	TAL	352.20	TAP	112.71	RCA	150.56	APO	247.88
RC	71.130	GL	-16.83	GP	.94	ZAL	109.62	ZAP	157.37	ETS	177.79	ZAE	171.01	ETE	26.66	ZAC	100.57	ETC	278.35

V1	29.540																		
V2	26.477																		
LVI	-19.68																		

PLANETOCENTRIC CONIC

C3	15.258	VHL	3.906	DLA	-25.84	RAL	342.04	RAD	6640.7	VEL	11.632	PTH	6.67	VHP	6.161	DPA	-15.42	RAP	323.50
ECC	1.2511																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 20	2539.67	-9.37	68.12	196.99	136.86	17 47 39	1539.7	9.01	52.36
60.00	18 19 2	2343.64	-4.24	55.35	201.88	130.11	18 58 6	1343.6	11.80	37.33
70.00	19 54 4	2064.24	1.12	36.76	205.94	124.14	20 28 28	1064.2	14.76	16.80
80.00	21 50 8	1700.95	6.02	12.21	208.98	119.30	22 18 29	700.9	17.50	350.73
90.00	23 38 7	1352.70	8.41	347.89	210.27	117.10	24 0 40	352.7	18.85	325.72
100.00	0 36 56	1175.42	6.02	333.58	208.98	119.30	0 56 31	175.4	17.50	312.10
110.00	0 57 26	1111.06	1.12	325.68	205.94	124.14	1 15 57	111.1	14.76	305.72

DIFFERENTIAL CORRECTIONS

TDE	-.3645	TRA	-.8552	TC3	.3548	BAU	.0850
RDE	-.3289	RRA	.1070	RC3	.2188	FAU	.07024
FDE	.3121	FRA	1.9365	FC3	-3.9851	BSP	2450
BDE	.4909	BRA	.8619	BC3	.4169	FSP	579

MID-COURSE EXECUTION ACCURACY

SGT	1518.3	SGR	540.7	SG3	385.1				
RRT	.0758	RRF	-.0841	RTF	-.8138				
SGB	1611.7	R23	-.0136	R13	-.8140				
SG1	1519.0	SG2	538.9	THA	1.77				

ORBIT DETERMINATION ACCURACY

ST	33.9	SR	24.3	SS	28.1		
CRT	.7167	CRS	.3354	CST	.8951		
LSA	45.7	MSA	21.0	SSA	1.3		
EL1	39.0	EL2	14.7	ALF	32.25		

LAUNCH DATE MAY 4 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC DISTANCE 363.543 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	33.005	GAL	-1.47	AZL	91.97	HCA	121.78	SMA	197.96	ECC	.23936	INC	1.9666
RP	206.90	LAP	-1.67	LOP	344.69	VP	24.749	GAP	13.61	AZP	88.96	TAL	352.39	TAP	114.17	RCA	150.58	APO	245.35
RC	72.517	GL	-17.16	GP	.98	ZAL	109.40	ZAP	156.14	ETS	177.83	ZAE	171.31	ETE	26.87	ZAC	100.61	ETC	278.36

V1	29.540																		
V2	26.470																		
LVI	-19.73																		

PLANETOCENTRIC CONIC

C3	14.728	VHL	3.838	DLA	-26.22	RAL	341.99	RAD	6640.4	VEL	11.610	PTH	6.65	VHP	5.974	DPA	-15.37	RAP	323.52
ECC	1.2424																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 4	2523.30	-8.56	67.41	196.65	136.98	17 49 7	1523.3	9.83	51.65
60.00	18 21 33	2325.17	-3.43	54.47	201.55	130.18	19 0 19	1325.2	12.59	36.40
70.00	19 57 52	2042.00	1.97	35.60	205.64	124.10	20 31 54	1042.0	15.54	15.55
80.00	21 56 10	1671.69	7.00	10.59	208.74	119.10	22 24 2	671.7	18.32	348.95
90.00	23 46 15	1316.67	9.52	345.83	210.10	116.75	24 8 12	316.7	19.73	323.45
100.00	0 42 58	1146.16	7.00	331.95	208.74	119.10	1 2 4	146.2	18.32	310.32
110.00	1 1 14	1088.82	1.97	324.51	205.64	124.10	1 19 23	88.8	15.54	304.47

DIFFERENTIAL CORRECTIONS

TDE	-.3613	TRA	-.8445	TC3	.3599	BAU	.0839
RDE	-.3192	RRA	.1018	RC3	.2276	FAU	.07353
FDE	.3150	FRA	2.0251	FC3	-4.3223	BSP	2521
BDE	.4821	BRA	.8506	BC3	.4259	FSP	624

MID-COURSE EXECUTION ACCURACY

SGT	1530.6	SGR	535.1	SG3	410.6				
RRT	.0821	RRF	-.0916	RTF	-.8121				
SGB	1621.4	R23	-.0158	R13	-.8123				
SG1	1531.3	SG2	533.0	THA	1.87				

ORBIT DETERMINATION ACCURACY

ST	34.2	SR	24.0	SS	28.9		
CRT	.7182	CRS	.3230	CST	.8882		
LSA	46.2	MSA	21.2	SSA	1.3		
EL1	39.2	EL2	14.6	ALF	31.55		

LAUNCH DATE MAY 4 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 367.364 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.945 GAL -1.41 AZL 91.97 HCA 123.05 SMA 196.80 ECC .23478 INC 1.9730 V1 29.540
RP 206.96 LAP -1.65 LOP 345.96 VP 24.660 GAP 13.26 AZP 88.92 TAL 352.58 TAP 115.62 RCA 150.59 APO 243.00 V2 26.462
RC 73.950 GL -17.49 GP 1.03 ZAL 109.18 ZAP 154.89 ETS 177.86 ZAE 171.67 ETE 27.37 ZAC 100.65 ETC 278.36 LVI -19.77

PLANETOCENTRIC CONIC

C3 14.238 VHL 3.773 DLA -26.60 RAL 341.95 RAD 6640.2 VEL 11.589 PTH 6.63 VHP 5.794 DPA -15.33 RAP 323.52 ECC 1.2343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 48	2507.44	-7.77	66.74	196.34	137.09	17 50 35	1507.4	10.61	50.97
60.00	18 24 5	2307.18	-2.64	53.61	201.25	130.23	19 2 32	1307.2	13.35	35.49
70.00	20 1 43	2020.12	2.80	34.45	205.37	124.05	20 35 23	1020.1	16.30	14.31
80.00	22 2 28	1642.15	7.97	8.94	208.55	118.87	22 29 50	642.1	19.13	347.13
90.00	23 55 6	1278.94	10.67	343.65	209.98	116.34	24 16 25	278.9	20.62	321.04
100.00	0 49 16	1116.62	7.97	330.30	208.55	118.87	1 7 52	116.6	19.13	308.49
110.00	1 5 5	1066.94	2.80	323.37	205.37	124.05	1 22 52	66.9	16.30	303.23

DIFFERENTIAL CORRECTIONS

TDE -.3571 TRA -.8313 TC3 .3685 BAU .0834
RDE -.3098 RRA .0966 RC3 .2366 FAU .07709
FDE .3183 FRA 2.1181 FC3-4.6872 BSP 2563
BDE .4728 BRA .8369 BC3 .4379 FSP 671

MID-COURSE EXECUTION ACCURACY

SGT 1537.5 SGR 529.2 SG3 437.9
RRT .0899 RRF -.1003 RTF -.8115
SGB 1626.1 R23 -.0177 R13 -.8118
SG1 1538.4 SG2 526.7 THA 2.01

ORBIT DETERMINATION ACCURACY

ST 34.4 SR 23.6 SS 29.7
CRT .7199 CRS .3114 CST .8814
LSA 46.5 MSA 21.4 SSA 1.4
EL1 39.2 EL2 14.4 ALF 30.97

LAUNCH DATE MAY 4 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC DISTANCE 371.216 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.889 GAL -1.35 AZL 91.98 HCA 124.31 SMA 195.72 ECC .23048 INC 1.9796 V1 29.540
RP 207.04 LAP -1.64 LOP 347.23 VP 24.575 GAP 12.91 AZP 88.88 TAL 352.76 TAP 117.07 RCA 150.61 APO 240.83 V2 26.454
RC 75.426 GL -17.81 GP 1.07 ZAL 108.96 ZAP 153.60 ETS 177.89 ZAE 172.11 ETE 28.20 ZAC 100.70 ETC 278.36 LVI -19.81

PLANETOCENTRIC CONIC

C3 13.788 VHL 3.713 DLA -26.96 RAL 341.91 RAD 6639.9 VEL 11.569 PTH 6.61 VHP 5.620 DPA -15.29 RAP 323.49 ECC 1.2269

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 31	2492.11	-7.00	66.08	196.06	137.18	17 52 3	1492.1	11.37	50.30
60.00	18 26 37	2289.69	-1.87	52.77	200.98	130.26	19 4 47	1289.7	14.09	34.60
70.00	20 5 37	1998.62	3.62	33.33	205.13	123.98	20 38 55	998.6	17.04	13.08
80.00	22 9 3	1612.24	8.95	7.26	208.39	118.60	22 35 55	612.2	19.93	345.26
90.00	0 8 46	1238.82	11.87	341.32	209.92	115.85	0 29 25	238.8	21.52	318.44
100.00	0 55 50	1086.72	8.95	328.62	208.39	118.60	1 13 57	86.7	19.93	306.63
110.00	1 8 59	1045.44	3.62	322.25	205.13	123.98	1 26 24	45.4	17.04	302.00

DIFFERENTIAL CORRECTIONS

TDE -.3511 TRA -.8169 TC3 .3774 BAU .0830
RDE -.3006 RRA .0915 RC3 .2456 FAU .08088
FDE .3191 FRA 2.2175 FC3-5.0785 BSP 2577
BDE .4622 BRA .8220 BC3 .4503 FSP 719

MID-COURSE EXECUTION ACCURACY

SGT 1540.2 SGR 523.0 SG3 466.9
RRT .0973 RRF -.1091 RTF -.8113
SGB 1626.5 R23 -.0201 R13 -.8117
SG1 1541.1 SG2 520.2 THA 2.14

ORBIT DETERMINATION ACCURACY

ST 34.4 SR 23.3 SS 30.5
CRT .7204 CRS .2972 CST .8739
LSA 46.8 MSA 21.7 SSA 1.4
EL1 39.0 EL2 14.3 ALF 30.51

LAUNCH DATE MAY 4 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC DISTANCE 375.098 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.836 GAL -1.30 AZL 91.99 HCA 125.58 SMA 194.72 ECC .22645 INC 1.9865 V1 29.540
RP 207.12 LAP -1.62 LOP 348.49 VP 24.494 GAP 12.58 AZP 88.84 TAL 352.94 TAP 118.51 RCA 150.62 APO 238.81 V2 26.444
RC 76.944 GL -18.13 GP 1.12 ZAL 108.76 ZAP 152.29 ETS 177.92 ZAE 172.61 ETE 29.46 ZAC 100.75 ETC 278.35 LVI -19.84

PLANETOCENTRIC CONIC

C3 13.373 VHL 3.657 DLA -27.33 RAL 341.87 RAD 6639.7 VEL 11.552 PTH 6.60 VHP 5.452 DPA -15.26 RAP 323.42 ECC 1.2201

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 15	2477.32	-6.26	65.46	195.80	137.26	17 53 32	1477.3	12.10	49.65
60.00	18 29 10	2272.74	-1.13	51.96	200.73	130.29	19 7 3	1272.7	14.80	33.74
70.00	20 9 33	1977.53	4.42	32.22	204.93	123.90	20 42 31	977.5	17.75	11.86
80.00	22 15 57	1581.88	9.93	5.54	208.28	118.30	22 42 19	581.9	20.72	343.35
90.00	0 19 49	1195.07	13.16	338.75	209.94	115.26	0 39 44	195.1	22.45	315.57
100.00	1 2 44	1056.35	9.93	326.91	208.28	118.30	1 20 21	56.3	20.72	304.72
110.00	1 12 56	1024.35	4.42	321.14	204.93	123.90	1 30 0	24.3	17.75	300.78

DIFFERENTIAL CORRECTIONS

TDE -.3448 TRA -.8008 TC3 .3631 BAU .0822
RDE -.2917 RRA .0865 RC3 .2547 FAU .08482
FDE .3204 FRA 2.3208 FC3-5.4910 BSP 2582
BDE .4517 BRA .8054 BC3 .4600 FSP 772

MID-COURSE EXECUTION ACCURACY

SGT 1537.8 SGR 516.6 SG3 497.3
RRT .1055 RRF -.1189 RTF -.8108
SGB 1622.2 R23 -.0227 R13 -.8111
SG1 1538.9 SG2 513.3 THA 2.28

ORBIT DETERMINATION ACCURACY

ST 34.3 SR 23.0 SS 31.4
CRT .7216 CRS .2843 CST .8664
LSA 47.0 MSA 21.9 SSA 1.4
EL1 38.8 EL2 14.1 ALF 30.11

LAUNCH DATE MAY 4 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 1 1971

HELIOCENTRIC CONIC DISTANCE 379.006 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.786 GAL -1.25 AZL 91.99 HCA 126.84 SMA 193.79 ECC .22268 INC 1.9935 V1 29.540
RP 207.21 LAP -1.60 LOP 349.76 VP 24.415 GAP 12.25 AZP 88.80 TAL 353.11 TAP 119.95 RCA 150.64 APO 236.94 V2 26.433
RC 78.502 GL -18.44 GP 1.17 ZAL 108.55 ZAP 150.93 ETS 177.94 ZAE 173.17 ETE 31.26 ZAC 100.81 ETC 278.33 LVI -19.87

PLANETOCENTRIC CONIC

C3 12.992 VHL 3.604 DLA -27.68 RAL 341.84 RAD 6639.6 VEL 11.535 PTH 6.58 VHP 5.291 DPA -15.24 RAP 323.32 ECC 1.2138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 59	2463.08	-5.55	64.86	195.58	137.33	17 55 2	1463.1	12.80	49.03
60.00	18 31 42	2256.33	-.40	51.18	200.52	130.30	19 9 19	1256.3	15.48	32.89
70.00	20 13 32	1956.87	5.21	31.14	204.75	123.80	20 46 9	956.9	18.45	10.66
80.00	22 23 13	1550.89	10.93	3.78	208.21	117.96	22 49 4	550.9	21.49	341.38
90.00	0 32 58	1145.13	14.59	335.78	210.06	114.50	0 52 3	145.1	23.45	312.25
100.00	1 10 1	1025.36	10.93	325.15	208.21	117.96	1 27 6	25.4	21.49	302.75
110.00	1 16 55	1003.69	5.21	320.05	204.75	123.80	1 33 38	3.7	18.45	299.58

DIFFERENTIAL CORRECTIONS

TDE -.3382 TRA -.7830 TC3 .3859 BAU .0812
RDE -.2831 RRA .0815 RC3 .2638 FAU .08905
FDE .3213 FRA 2.4290 FC3-5.9336 BSP 2574
BDE .4411 BRA .7872 BC3 .4674 FSP 827

MID-COURSE EXECUTION ACCURACY

SGT 1530.3 SGR 510.0 SG3 529.6
RRT .1145 RRF -.1298 RTF -.8095
SGB 1613.0 R23 -.0260 R13 -.8099
SG1 1531.5 SG2 506.2 THA 2.45

ORBIT DETERMINATION ACCURACY

ST 34.2 SR 22.6 SS 32.2
CRT .7233 CRS .2717 CST .8585
LSA 47.2 MSA 22.1 SSA 1.4
EL1 38.6 EL2 13.8 ALF 29.79

LAUNCH DATE MAY 4 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 3 1971

HELIOCENTRIC CONIC DISTANCE 382.939 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.739	GAL	-1.21	AZL	92.00	HCA	128.10	SMA	192.93	ECC	.21916	INC	2.0007
RP	207.31	LAP	-1.57	LOP	351.02	VP	24.340	GAP	11.93	AZP	88.77	TAL	353.27	TAP	121.37	RCA	150.65	APO	235.21
RC	80.098	GL	-18.75	GP	1.22	ZAL	108.36	ZAP	149.55	ETS	177.96	ZAE	173.79	ETE	33.82	ZAC	100.88	ETC	278.31

V1	29.540																		
V2	26.422																		
LVI	-19.89																		

PLANETOCENTRIC CONIC

C3	12.642	VHL	3.556	DLA	-28.02	RAL	341.81	RAD	6639.4	VEL	11.520	PTH	6.57	VHP	5.135	DPA	-15.23	RAP	323.18

ECC	1.2081																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 43	2449.40	-4.87	64.28	195.38	137.39	17 56 32	1449.4	13.47	48.42
60.00	18 34 15	2240.48	.29	50.42	200.33	130.30	19 11 35	1240.5	16.14	32.07
70.00	20 17 34	1936.66	5.97	30.07	204.61	123.69	20 49 50	936.7	19.11	9.48
80.00	22 30 56	1519.05	11.94	1.95	208.19	117.57	22 56 15	519.1	22.26	339.33
90.00	0 50 33	1081.47	16.35	331.94	210.36	113.40	1 8 35	81.5	24.59	307.94
100.00	1 17 44	6281.56	11.94	301.23	208.19	117.57	3 2 26	5281.6	22.26	278.60
110.00	1 20 56	6271.52	5.97	296.90	204.61	123.69	3 5 27	5271.5	19.11	276.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3319	TRA	-.7648	TC3	.3865	BAU	.0800	SGT	1520.0	SGR	503.2	SG3	563.7	ST	34.0	SR	22.2	SS	33.1
RDE	-.2748	RRA	.0765	RC3	.2731	FAU	.09353	RRT	.1245	RRF	-.1418	RTF	-.8077	CRT	.7258	CRS	.2588	CST	.8498
FDE	.3214	FRA	2.5432	FC3	-6.4050	BSP	2563	SGB	1601.2	R23	-.0293	R13	-.8082	LSA	47.3	MSA	22.4	SSA	1.4
BDE	.4309	BRA	.7686	BC3	.4732	FSP	887	SG1	1521.5	SG2	498.9	THA	2.64	EL1	38.3	EL2	13.6	ALF	29.49

LAUNCH DATE MAY 4 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 386.896 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.698	GAL	-1.17	AZL	92.01	HCA	129.36	SMA	192.13	ECC	.21586	INC	2.0082
RP	207.42	LAP	-1.55	LOP	352.28	VP	24.268	GAP	11.61	AZP	88.73	TAL	353.42	TAP	122.78	RCA	150.66	APO	233.61
RC	81.730	GL	-19.05	GP	1.28	ZAL	108.18	ZAP	148.12	ETS	177.98	ZAE	174.44	ETE	37.45	ZAC	100.96	ETC	278.28

V1	29.540																		
V2	26.409																		
LVI	-19.90																		

PLANETOCENTRIC CONIC

C3	12.320	VHL	3.510	DLA	-28.36	RAL	341.79	RAD	6639.2	VEL	11.506	PTH	6.55	VHP	4.985	DPA	-15.23	RAP	323.00

ECC	1.2028																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 26	2436.29	-4.21	63.73	195.20	137.43	17 58 3	1436.3	14.12	47.84
60.00	18 36 47	2225.21	.97	49.69	200.18	130.29	19 13 53	1225.2	16.77	31.27
70.00	20 21 37	1916.93	6.72	29.03	204.50	123.57	20 53 34	916.9	19.76	8.31
80.00	22 39 13	1486.03	12.97	.05	208.22	117.13	23 3 59	486.0	23.03	337.18
87.83	1 5 43	1026.41	19.35	329.20	211.19	111.14	1 22 49	26.4	26.36	304.35
100.00	1 26 1	6248.54	12.97	299.32	208.22	117.13	3 10 10	5248.5	23.03	276.45
110.00	1 24 59	6251.78	6.72	295.85	204.50	123.57	3 9 11	5251.8	19.76	275.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3260	TRA	-.7448	TC3	.3784	BAU	.0778	SGT	1504.2	SGR	496.4	SG3	599.2	ST	33.7	SR	21.9	SS	34.0
RDE	-.2667	RRA	.0715	RC3	.2623	FAU	.09815	RRT	.1352	RRF	-.1551	RTF	-.8042	CRT	.7297	CRS	.2488	CST	.8412
FDE	.3235	FRA	2.6622	FC3	-6.8965	BSP	2533	SGB	1584.0	R23	-.0337	R13	-.8048	LSA	47.5	MSA	22.6	SSA	1.4
BDE	.4212	BRA	.7483	BC3	.4721	FSP	947	SG1	1505.9	SG2	491.3	THA	2.86	EL1	37.9	EL2	13.3	ALF	29.24

LAUNCH DATE MAY 4 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 390.874 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.655	GAL	-1.13	AZL	92.02	HCA	130.62	SMA	191.39	ECC	.21278	INC	2.0160
RP	207.54	LAP	-1.53	LOP	353.54	VP	24.198	GAP	11.31	AZP	88.69	TAL	353.56	TAP	124.19	RCA	150.67	APO	232.12
RC	83.399	GL	-19.34	GP	1.34	ZAL	108.01	ZAP	146.66	ETS	177.99	ZAE	175.13	ETE	42.70	ZAC	101.05	ETC	278.24

V1	29.540																		
V2	26.395																		
LVI	-19.90																		

PLANETOCENTRIC CONIC

C3	12.025	VHL	3.468	DLA	-28.68	RAL	341.78	RAD	6639.1	VEL	11.494	PTH	6.54	VHP	4.841	DPA	-15.23	RAP	322.78

ECC	1.1979																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 10	2423.70	-3.58	63.20	195.06	137.47	17 59 34	1423.7	14.73	47.27
60.00	18 39 20	2210.46	1.62	48.99	200.05	130.27	19 16 10	1210.5	17.38	30.49
70.00	20 25 43	1897.59	7.44	28.00	204.42	123.43	20 57 20	897.6	20.38	7.15
80.00	22 48 16	1451.11	14.05	358.01	208.31	116.62	23 12 27	451.1	23.81	334.87
85.01	0 42 15	1097.08	19.68	334.52	210.92	111.29	1 0 32	97.1	26.73	309.61
100.00	1 35 4	6213.62	14.05	297.29	208.31	116.62	3 18 37	5213.6	23.81	274.15
110.00	1 29 5	6232.45	7.44	294.83	204.42	123.43	3 12 57	5232.4	20.38	273.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3083	TRA	-.7144	TC3	.4029	BAU	.0800	SGT	1465.5	SGR	489.3	SG3	637.2	ST	32.5	SR	21.4	SS	34.7
RDE	-.2586	RRA	.0667	RC3	.2922	FAU	.10352	RRT	.1468	RRF	-.1689	RTF	-.8096	CRT	.7262	CRS	.2268	CST	.8316
FDE	.3113	FRA	2.7802	FC3	-7.4528	BSP	2358	SGB	1545.0	R23	-.0359	R13	-.8104	LSA	46.9	MSA	22.8	SSA	1.3
BDE	.4024	BRA	.7175	BC3	.4977	FSP	1001	SG1	1467.5	SG2	483.3	THA	3.15	EL1	36.7	EL2	13.1	ALF	29.75

LAUNCH DATE MAY 4 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 394.870 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.617	GAL	-1.09	AZL	92.02	HCA	131.88	SMA	190.71	ECC	.20991	INC	2.0241
RP	207.66	LAP	-1.51	LOP	354.80	VP	24.130	GAP	11.01	AZP	88.65	TAL	353.69	TAP	125.57	RCA	150.68	APO	230.74
RC	85.104	GL	-19.63	GP	1.40	ZAL	107.86	ZAP	145.17	ETS	178.00	ZAE	175.80	ETE	50.39	ZAC	101.15	ETC	278.19

V1	29.540																		
V2	26.381																		
LVI	-19.90																		

PLANETOCENTRIC CONIC

C3	11.756	VHL	3.429	DLA	-28.99	RAL	341.79	RAD	6638.9	VEL	11.482	PTH	6.53	VHP	4.704	DPA	-15.25	RAP	322.53

ECC	1.1935																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 54	2411.80	-2.98	62.70	194.94	137.50	18 1 6	1411.8	15.31	46.74
60.00	18 41 51	2196.44	2.23	48.32	199.95	130.25	19 18 28	1196.4	17.95	29.75
70.00	20 29 48	1878.93	8.14	27.01	204.38	123.28	21 1 7	878.9	20.97	6.03
80.00	22 58 16	1413.89	15.17	355.82	208.46	116.03	23 21 49	413.9	24.59	332.39
83.33	0 28 40	1136.24	20.01	337.53	210.69	111.43	0 47 36	136.2	27.08	312.57
100.00	1 45 3	6176.40	15.17	295.09	208.46	116.03	3 28 0	5176.4	24.59	271.66
110.00	1 33 11	6213.79	8.14	293.83	204.38	123.28	3 16 44	5213.8	20.97	272.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3122	TRA	-.7018	TC3	.3549	BAU	.0732	SGT	1459.1	SGR	482.2	SG3	676.8	ST	32.9	SR	21.1	SS	35.9
RDE	-.2511	RRA	.0616	RC3	.3013	FAU	.10834	RRT	.1585	RRF	-.1852	RTF	-.7956	CRT	.7380	CRS	.2248	CST	.8208
FDE	.3213	FRA	2.9212	FC3	-7.9784	BSP	2436	SGB	1536.7	R23	-.0447	R13	-.7966	LSA	47.8	MSA	23.0	SSA	1.4
BDE	.4006	BRA	.7045	BC3	.4656	FSP	1080	SG1	1461.3	SG2	475.4	THA	3.35	EL1	37.0	EL2	12.7	ALF	28.96

LAUNCH DATE MAY 4 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 398.885 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.561 GAL -1.06 AZL 92.03 HCA 133.14 SMA 190.07 ECC .20723 INC 2.0324 V1 29.540
RP 207.80 LAP -1.48 LOP 356.05 VP 24.065 GAP 10.71 AZP 88.61 TAL 353.81 TAP 126.95 RCA 150.68 APO 229.46 V2 26.365
RC 86.843 GL -19.91 GP 1.47 ZAL 107.72 ZAP 143.63 ETS 178.01 ZAE 176.40 ETE 61.85 ZAC 101.25 ETC 278.14 LVI -19.89

PLANETOCENTRIC CONIC

C3 11.510 VHL 3.393 DLA -29.29 RAL 341.81 RAD 6638.8 VEL 11.471 PTH 6.52 VHP 4.571 DPA -15.27 RAP 322.24 ECC 1.1894

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 38	2400.44	-2.41	62.23	194.86	137.53	18 2 38	1400.4	15.86	46.22
60.00	18 44 23	2182.98	2.82	47.67	199.88	130.22	19 20 46	1183.0	18.49	29.03
70.00	20 33 55	1860.73	8.82	26.04	204.37	123.13	21 4 56	860.7	21.54	4.93
80.00	23 9 52	1372.09	16.40	353.33	208.71	115.30	23 32 44	372.1	25.42	329.56
82.03	0 18 21	1165.21	20.31	339.80	210.49	111.57	0 37 46	165.2	27.41	314.77
100.00	1 56 40	6134.60	16.40	292.60	208.71	115.30	3 38 54	5134.6	25.42	268.83
110.00	1 37 18	6195.59	8.82	292.86	204.37	123.13	3 20 34	5195.6	21.54	271.75

DIFFERENTIAL CORRECTIONS

TDE -.3078 TRA -.6820 TC3 .3246 BAU .0692
RDE -.2436 RRA .0564 RC3 .3109 FAU .11366
FDE .3211 FRA 3.0658 FC3-8.5490 BSP 2404
BDE .3926 BRA .6843 BC3 .4495 FSP 1154

MID-COURSE EXECUTION ACCURACY

SGT 1436.3 SGR 475.0 SG3 718.7
RRT .1701 RRF -.2020 RTF -.7868
SGB 1512.8 R23 -.0531 R13 -.7881
SG1 1438.8 SG2 467.3 THA 3.60

ORBIT DETERMINATION ACCURACY

ST 32.7 SR 20.6 SS 36.9
CRT .7448 CRS .2148 CST .8089
LSA 48.1 MSA 23.3 SSA 1.4
EL1 36.7 EL2 12.3 ALF 28.70

LAUNCH DATE MAY 4 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 402.917 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.548 GAL -1.03 AZL 92.04 HCA 134.39 SMA 189.49 ECC .20474 INC 2.0411 V1 29.540
RP 207.94 LAP -1.46 LOP 357.31 VP 24.002 GAP 10.43 AZP 88.57 TAL 353.92 TAP 128.31 RCA 150.69 APO 228.28 V2 26.349
RC 88.616 GL -20.18 GP 1.54 ZAL 107.60 ZAP 142.06 ETS 178.02 ZAE 176.82 ETE 78.33 ZAC 101.37 ETC 278.08 LVI -19.88

PLANETOCENTRIC CONIC

C3 11.285 VHL 3.359 DLA -29.58 RAL 341.84 RAD 6638.7 VEL 11.462 PTH 6.51 VHP 4.444 DPA -15.30 RAP 321.90 ECC 1.1857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 22	2389.67	-1.87	61.78	194.79	137.55	18 4 12	1389.7	16.38	45.73
60.00	18 46 53	2170.13	3.39	47.06	199.84	130.18	19 23 4	1170.1	19.01	28.34
70.00	20 38 4	1843.07	9.48	25.09	204.38	122.97	21 8 48	843.1	22.09	3.85
80.00	23 24 35	1321.01	17.86	350.24	209.09	114.33	23 46 36	321.0	26.34	326.04
80.95	0 9 58	1188.42	20.61	341.64	210.33	111.70	0 29 46	188.4	27.73	316.56
100.00	2 11 23	6083.52	17.86	289.51	209.09	114.33	3 52 46	5083.5	26.34	265.32
110.00	1 41 27	6177.93	9.48	291.91	204.38	122.97	3 24 25	5177.9	22.09	270.67

DIFFERENTIAL CORRECTIONS

TDE -.3033 TRA -.6575 TC3 .2905 BAU .0653
RDE -.2363 RRA .0513 RC3 .3207 FAU .11919
FDE .3246 FRA 3.2104 FC3-9.1434 BSP 2340
BDE .3845 BRA .6595 BC3 .4327 FSP 1229

MID-COURSE EXECUTION ACCURACY

SGT 1403.0 SGR 468.0 SG3 761.5
RRT .1840 RRF -.2214 RTF -.7767
SGB 1479.0 R23 -.0624 R13 -.7783
SG1 1406.0 SG2 459.0 THA 3.93

ORBIT DETERMINATION ACCURACY

ST 32.3 SR 20.2 SS 38.0
CRT .7539 CRS .2094 CST .7973
LSA 48.4 MSA 23.5 SSA 1.4
EL1 36.2 EL2 11.8 ALF 28.60

LAUNCH DATE MAY 4 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 406.965 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.517 GAL -1.01 AZL 92.05 HCA 135.65 SMA 188.94 ECC .20243 INC 2.0502 V1 29.540
RP 208.08 LAP -1.43 LOP 358.56 VP 23.941 GAP 10.15 AZP 88.53 TAL 354.01 TAP 129.66 RCA 150.70 APO 227.19 V2 26.332
RC 90.421 GL -20.45 GP 1.62 ZAL 107.49 ZAP 140.44 ETS 178.03 ZAE 176.89 ETE 98.97 ZAC 101.50 ETC 278.01 LVI -19.85

PLANETOCENTRIC CONIC

C3 11.081 VHL 3.329 DLA -29.86 RAL 341.88 RAD 6638.6 VEL 11.453 PTH 6.50 VHP 4.323 DPA -15.34 RAP 321.52 ECC 1.1824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 6	2379.47	-1.36	61.35	194.76	137.56	18 5 46	1379.5	16.88	45.26
60.00	18 49 23	2157.90	3.93	46.47	199.83	130.14	19 25 21	1157.9	19.50	27.68
70.00	20 42 14	1825.96	10.11	24.17	204.43	122.80	21 12 40	826.0	22.61	2.79
80.00	23 55 43	1218.20	20.62	343.86	210.08	112.08	24 16 1	218.2	27.90	318.81
80.01	0 2 56	1207.71	20.88	343.19	210.20	111.83	0 23 3	207.7	28.03	318.06
100.00	2 42 31	5980.70	20.62	283.13	210.08	112.08	4 22 11	4980.7	27.90	258.08
110.00	1 45 36	6160.82	10.11	290.99	204.43	122.80	3 28 17	5160.8	22.61	269.61

DIFFERENTIAL CORRECTIONS

TDE -.2975 TRA -.6312 TC3 .2536 BAU .0618
RDE -.2292 RRA .0461 RC3 .3308 FAU .12514
FDE .3233 FRA 3.3602 FC3-9.7766 BSP 2257
BDE .3756 BRA .6329 BC3 .4169 FSP 1308

MID-COURSE EXECUTION ACCURACY

SGT 1363.8 SGR 461.0 SG3 806.6
RRT .1982 RRF -.2424 RTF -.[illegible]48
SGB 1439.6 R23 -.0736 R13 -.7669
SG1 1367.3 SG2 450.7 THA 4.30

ORBIT DETERMINATION ACCURACY

ST 31.8 SR 19.8 SS 39.0
CRT .7632 CRS .2011 CST .7833
LSA 48.5 MSA 23.7 SSA 1.3
EL1 35.6 EL2 11.4 ALF 28.60

LAUNCH DATE MAY 4 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 411.028 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.488 GAL -.98 AZL 92.06 HCA 136.90 SMA 188.44 ECC .20028 INC 2.0597 V1 29.540
RP 208.24 LAP -1.41 LOP 359.81 VP 23.882 GAP 9.87 AZP 88.50 TAL 354.10 TAP 130.99 RCA 150.70 APO 226.18 V2 26.313
RC 92.259 GL -20.71 GP 1.70 ZAL 107.40 ZAP 138.78 ETS 178.04 ZAE 176.54 ETE 119.12 ZAC 101.63 ETC 277.93 LVI -19.82

PLANETOCENTRIC CONIC

C3 10.896 VHL 3.301 DLA -30.12 RAL 341.94 RAD 6638.5 VEL 11.445 PTH 6.50 VHP 4.207 DPA -15.39 RAP 321.10 ECC 1.1793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 27 51	2369.83	-.87	60.95	194.76	137.57	18 7 21	1369.8	17.34	44.82
60.00	18 51 53	2146.26	4.44	45.91	199.85	130.10	19 27 39	1146.3	19.97	27.05
70.00	20 46 24	1809.36	10.72	23.27	204.51	122.62	21 16 33	809.4	23.11	1.76
79.18	23 52 59	1224.17	21.15	344.53	210.10	111.96	24 13 23	224.2	28.32	319.34
79.18	23 52 59	1224.17	21.15	344.53	210.10	111.96	24 13 23	224.2	28.32	319.34
79.18	23 52 59	1224.17	21.15	344.53	210.10	111.96	24 13 23	224.2	28.32	319.34
110.00	1 49 46	6144.22	10.72	290.10	204.51	122.62	3 32 10	5144.2	23.11	268.58

DIFFERENTIAL CORRECTIONS

TDE -.2863 TRA -.5980 TC3 .2279 BAU .0598
RDE -.2221 RRA .0409 RC3 .3416 FAU .13155
FDE .3153 FRA 3.5093 FC-10.4527 BSP 2082
BDE .3624 BRA .5994 BC3 .4106 FSP 1377

MID-COURSE EXECUTION ACCURACY

SGT 1307.5 SGR 454.1 SG3 853.2
RRT .2140 RRF -.2652 RTF -.7560
SGB 1384.1 R23 -.0844 R13 -.7587
SG1 1311.6 SG2 442.2 THA 4.80

ORBIT DETERMINATION ACCURACY

ST 30.7 SR 19.3 SS 39.8
CRT .7708 CRS .1894 CST .7682
LSA 48.3 MSA 23.8 SSA 1.3
EL1 34.6 EL2 10.9 ALF 29.06

LAUNCH DATE MAY 4 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 415.102 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.461	GAL	-.96	AZL	92.07	HCA	138.15	SMA	187.98	ECC	.19829	INC	2.0696	V1	29.540
RP	208.41	LAP	-1.38	LOP	1.06	VP	23.825	GAP	9.60	AZP	88.46	TAL	354.16	TAP	132.31	RCA	150.71	APO	225.25	V2	26.294
RC	94.128	GL	-20.97	GP	1.78	ZAL	107.33	ZAP	137.10	ETS	178.04	ZAE	175.79	ETE	134.64	ZAC	101.78	ETC	277.84	LVI	-19.78

PLANETOCENTRIC CONIC

C3	10.729	VHL	3.276	DLA	-30.37	RAL	342.02	RAD	6638.4	VEL	11.438	PTH	6.49	VHP	4.097	DPA	-15.45	RAP	320.63	ECC	1.1786

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 29 36	2380.84	-.42	60.57	194.78	137.57	18 8 57	1360.8	17.77	44.40
60.00	18 54 21	2135.34	4.91	45.39	199.90	130.05	19 29 57	1135.3	20.40	26.45
70.00	20 50 32	1793.48	11.30	22.41	204.62	122.45	21 20 26	793.5	23.57	.77
78.45	23 47 50	1238.39	21.40	345.70	210.03	112.08	24 8 29	238.4	28.59	320.46
78.45	23 47 50	1238.39	21.40	345.70	210.03	112.08	24 8 29	238.4	28.59	320.46
78.45	23 47 50	1238.39	21.40	345.70	210.03	112.08	24 8 29	238.4	28.59	320.46
110.00	1 53 55	6128.36	11.30	289.24	204.62	122.45	3 36 3	5128.4	23.57	267.59

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2895	TRA	-.5773	TC3	.1386	BAU	.0542	SGT	1278.5	SGR	447.4	SG3	901.1	ST	30.8	SR	18.9	SS	41.2
RDE	-.2155	RRA	.0352	RC3	.3514	FAU	.13711	RRT	.2242	RRF	-.2895	RTF	-.7275	CRT	.7881	CRS	.1933	CST	.7527
FDE	.3280	FRA	3.6881	FC-11	.0634	BSP	2086	SGB	1354.5	R23	-.1078	R13	-.7311	LSA	49.2	MSA	24.1	SSA	1.3
BDE	.3609	BRA	.5784	BC3	.3778	FSP	1479	SG1	1282.9	SG2	434.5	THA	5.07	EL1	34.6	EL2	10.3	ALF	28.56

LAUNCH DATE MAY 4 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 419.190 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.437	GAL	-.95	AZL	92.08	HCA	139.39	SMA	187.55	ECC	.19645	INC	2.0800	V1	29.540
RP	208.58	LAP	-1.35	LOP	2.31	VP	23.769	GAP	9.34	AZP	88.42	TAL	354.22	TAP	133.61	RCA	150.71	APO	224.40	V2	26.274
RC	96.027	GL	-21.22	GP	1.87	ZAL	107.28	ZAP	135.36	ETS	178.05	ZAE	174.78	ETE	145.38	ZAC	101.93	ETC	277.74	LVI	-19.73

PLANETOCENTRIC CONIC

C3	10.579	VHL	3.253	DLA	-30.60	RAL	342.11	RAD	6638.3	VEL	11.431	PTH	6.48	VHP	3.991	DPA	-15.51	RAP	320.13	ECC	1.1741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 31 21	2352.38	.00	60.22	194.83	137.58	18 10 34	1352.4	18.18	44.01
60.00	18 56 49	2125.00	5.37	44.89	199.98	130.00	19 32 14	1125.0	20.81	25.88
70.00	20 54 41	1778.17	11.86	21.57	204.76	122.27	21 24 20	778.2	24.02	359.80
77.78	23 43 20	1251.01	21.63	346.74	210.00	112.20	24 4 11	251.0	28.85	321.46
77.78	23 43 20	1251.01	21.63	346.74	210.00	112.20	24 4 11	251.0	28.85	321.46
77.78	23 43 20	1251.01	21.63	346.74	210.00	112.20	24 4 11	251.0	28.85	321.46
110.00	1 58 4	6113.02	11.86	288.40	204.76	122.27	3 39 57	5113.0	24.02	266.62

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2856	TRA	-.5482	TC3	.0737	BAU	.0523	SGT	1230.5	SGR	441.1	SG3	951.8	ST	30.3	SR	18.4	SS	42.3
RDE	-.2089	RRA	.0295	RC3	.3624	FAU	.14361	RRT	.2371	RRF	-.3170	RTF	-.7035	CRT	.8027	CRS	.1922	CST	.7358
FDE	.3319	FRA	3.8651	FC-11	.7521	BSP	1962	SGB	1307.2	R23	-.1310	R13	-.7082	LSA	49.6	MSA	24.2	SSA	1.3
BDE	.3538	BRA	.5490	BC3	.3698	FSP	1562	SG1	1235.6	SG2	426.8	THA	5.52	EL1	34.1	EL2	9.8	ALF	28.61

LAUNCH DATE MAY 4 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 423.288 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.414	GAL	-.94	AZL	92.09	HCA	140.64	SMA	187.16	ECC	.19475	INC	2.0909	V1	29.540
RP	208.76	LAP	-1.33	LOP	3.55	VP	23.715	GAP	9.09	AZP	88.38	TAL	354.26	TAP	134.90	RCA	150.71	APO	223.61	V2	26.254
RC	97.955	GL	-21.46	GP	1.97	ZAL	107.25	ZAP	133.59	ETS	178.05	ZAE	173.57	ETE	152.67	ZAC	102.10	ETC	277.63	LVI	-19.67

PLANETOCENTRIC CONIC

C3	10.445	VHL	3.232	DLA	-30.83	RAL	342.23	RAD	6638.3	VEL	11.425	PTH	6.48	VHP	3.891	DPA	-15.58	RAP	319.57	ECC	1.1719

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 7	2344.49	.40	59.89	194.91	137.57	18 12 12	1344.5	18.56	43.64
60.00	18 59 16	2115.29	5.79	44.42	200.08	129.95	19 34 31	1115.3	21.19	25.34
70.00	20 58 50	1763.44	12.39	20.77	204.93	122.08	21 28 13	763.4	24.44	358.86
77.18	23 39 26	1262.18	21.84	347.68	210.01	112.31	24 0 29	262.2	29.09	322.35
77.18	23 39 26	1262.18	21.84	347.68	210.01	112.31	24 0 29	262.2	29.09	322.35
77.18	23 39 26	1262.18	21.84	347.68	210.01	112.31	24 0 29	262.2	29.09	322.35
110.00	2 2 12	6098.30	12.39	287.59	204.93	122.08	3 43 51	5098.3	24.44	265.60

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2813	TRA	-.5167	TC3	-.0048	BAU	.0522	SGT	1177.6	SGR	435.2	SG3	1003.0	ST	29.6	SR	18.0	SS	43.5
RDE	-.2023	RRA	.0236	RC3	.3737	FAU	.15009	RRT	.2463	RRF	-.3458	RTF	-.6914	CRT	.8186	CRS	.1899	CST	.7151
FDE	.3320	FRA	4.0454	FC-12	.4401	BSP	1842	SGB	1235.4	R23	-.1612	R13	-.6778	LSA	49.9	MSA	24.4	SSA	1.3
BDE	.3465	BRA	.5172	BC3	.3737	FSP	1655	SG1	1183.2	SG2	419.8	THA	5.95	EL1	33.4	EL2	9.1	ALF	28.74

LAUNCH DATE MAY 4 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 427.398 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.393	GAL	-.92	AZL	92.10	HCA	141.88	SMA	186.80	ECC	.19318	INC	2.1024	V1	29.540
RP	208.94	LAP	-1.30	LOP	4.80	VP	23.662	GAP	8.84	AZP	88.35	TAL	354.28	TAP	136.16	RCA	150.71	APO	222.89	V2	26.232
RC	99.910	GL	-21.70	GP	2.07	ZAL	107.24	ZAP	131.78	ETS	178.06	ZAE	172.23	ETE	157.74	ZAC	102.27	ETC	277.51	LVI	-19.61

PLANETOCENTRIC CONIC

C3	10.326	VHL	3.213	DLA	-31.04	RAL	342.36	RAD	6638.2	VEL	11.420	PTH	6.47	VHP	3.797	DPA	-15.65	RAP	318.98	ECC	1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 34 54	2337.16	.77	59.58	195.02	137.57	18 13 51	1337.2	18.91	43.29
60.00	19 1 42	2106.20	6.19	43.98	200.21	129.90	19 36 48	1106.2	21.55	24.83
70.00	21 2 58	1749.33	12.90	19.99	205.13	121.90	21 32 7	749.3	24.84	357.96
76.64	23 36 5	1272.14	22.05	348.51	210.05	112.42	23 57 17	272.1	29.31	323.15
76.64	23 36 5	1272.14	22.05	348.51	210.05	112.42	23 57 17	272.1	29.31	323.15
76.64	23 36 5	1272.14	22.05	348.51	210.05	112.42	23 57 17	272.1	29.31	323.15
110.00	2 6 20	6084.18	12.90	286.82	205.13	121.90	3 47 44	5084.2	24.84	264.78

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2782	TRA	-.4827	TC3	-.0918	BAU	.0547	SGT	1121.8	SGR	429.9	SG3	1055.1	ST	29.0	SR	17.5	SS	44.6
RDE	-.1960	RRA	.0175	RC3	.3854	FAU	.15672	RRT	.2534	RRF	-.3777	RTF	-.6308	CRT	.8378	CRS	.1940	CST	.6937
FDE	.3394	FRA	4.2291	FC-13	.1397	BSP	1701	SGB	1201.4	R23	-.1991	R13	-.6396	LSA	50.3	MSA	24.5	SSA	1.3
BDE	.3403	BRA	.4830	BC3	.3962	FSP	1748	SG1	1127.9	SG2	413.6	THA	6.41	EL1	32.8	EL2	8.4	ALF	28.88

LAUNCH DATE MAY 4 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 27 1971

DISTANCE 431.516 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.83 LAL .00 LOL 222.90 VL 32.373 GAL -.92 AZL 92.11 HCA 143.12 SMA 186.47 ECC .19175 INC 2.1145 V1 29.540
RP 209.14 LAP -1.27 LOP 6.04 VP 23.610 GAP 8.59 AZP 88.31 TAL 354.29 TAP 137.41 RCA 150.71 APO 222.22 V2 26.209
RC 101.892 GL -21.94 GP 2.18 ZAL 107.24 ZAP 129.92 ETS 178.07 ZAE 170.78 ETE 161.38 ZAC 102.46 ETC 277.39 LVI -19.53

PLANETOCENTRIC CONIC

C3 10.222 VHL 3.197 DLA -31.24 RAL 342.51 RAD 6638.2 VEL 11.416 PTH 6.47 VHP 3.707 DPA -15.73 RAP 318.34 ECC 1.1682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 36 42	2330.35	1.11	59.30	195.16	137.57	18 15 32	1330.4	19.23	42.97
60.00	19 4 7	2097.70	6.56	43.57	200.38	129.85	19 39 5	1097.7	21.88	24.36
70.00	21 7 5	1735.81	13.39	19.25	205.36	121.72	21 36 1	735.8	25.21	357.09
76.14	23 33 9	1281.22	22.23	349.28	210.12	112.53	23 54 30	281.2	29.53	323.88
76.14	23 33 9	1281.22	22.23	349.28	210.12	112.53	23 54 30	281.2	29.53	323.88
76.14	23 33 9	1281.22	22.23	349.28	210.12	112.53	23 54 30	281.2	29.53	323.88
110.00	2 10 27	6070.67	13.39	286.07	205.36	121.72	3 51 38	5070.7	25.21	263.91

DIFFERENTIAL CORRECTIONS

TDE -.2739 TRA -.4449 TC3 -.1807 BAU .0597
RDE -.1897 RRA .0112 RC3 .3980 FAU .16374
FDE .3434 FRA 4.4125 FC-13.8686 BSP 1523
BDE .3332 BRA .4450 BC3 .4371 FSP 1835

MID-COURSE EXECUTION ACCURACY

SGT 1060.1 SGR 425.4 SG3 1108.3
RRT .2563 RRF -.4121 RTF -.5811
SGB 1142.3 R23 -.2451 R13 -.5931
SG1 1066.7 SG2 408.6 THA 6.89

ORBIT DETERMINATION ACCURACY

ST 28.2 SR 17.0 SS 45.7
CRT .8579 CRS .1974 CST .6681
LSA 50.7 MSA 24.7 SSA 1.2
EL1 32.1 EL2 7.7 ALF 29.17

LAUNCH DATE MAY 4 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 29 1971

DISTANCE 435.645 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.83 LAL .00 LOL 222.90 VL 32.355 GAL -.91 AZL 92.13 HCA 144.36 SMA 186.17 ECC .19043 INC 2.1274 V1 29.540
RP 209.34 LAP -1.24 LOP 7.28 VP 23.560 GAP 8.35 AZP 88.27 TAL 354.29 TAP 138.65 RCA 150.71 APO 221.62 V2 26.186
RC 103.900 GL -22.17 GP 2.29 ZAL 107.27 ZAP 128.03 ETS 178.08 ZAE 169.25 ETE 164.06 ZAC 102.66 ETC 277.25 LVI -19.45

PLANETOCENTRIC CONIC

C3 10.131 VHL 3.183 DLA -31.43 RAL 342.68 RAD 6638.1 VEL 11.412 PTH 6.46 VHP 3.623 DPA -15.81 RAP 317.66 ECC 1.1667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 38 30	2324.05	1.43	59.04	195.32	137.56	18 17 14	1324.1	19.53	42.67
60.00	19 6 33	2089.77	6.91	43.18	200.56	129.80	19 41 23	1089.8	22.18	23.91
70.00	21 11 12	1722.85	13.85	18.53	205.62	121.54	21 39 55	722.9	25.57	356.25
75.68	23 30 38	1289.47	22.41	349.98	210.22	112.63	23 52 8	289.5	29.72	324.55
75.68	23 30 38	1289.47	22.41	349.98	210.22	112.63	23 52 8	289.5	29.72	324.55
75.68	23 30 38	1289.47	22.41	349.98	210.22	112.63	23 52 8	289.5	29.72	324.55
110.00	2 14 34	6057.71	13.85	285.35	205.62	121.54	3 55 32	5057.7	25.57	263.07

DIFFERENTIAL CORRECTIONS

TDE -.2646 TRA -.4015 TC3 -.2636 BAU .0662
RDE -.1833 RRA .0048 RC3 .4118 FAU .17138
FDE .3301 FRA 4.5901 FC-14.6456 BSP 1289
BDE .3219 BRA .4015 BC3 .4889 FSP 1912

MID-COURSE EXECUTION ACCURACY

SGT 986.1 SGR 421.6 SG3 1162.5
RRT .2517 RRF -.4481 RTF -.5216
SGB 1072.5 R23 -.2994 R13 -.5381
SG1 993.0 SG2 405.2 THA 7.38

ORBIT DETERMINATION ACCURACY

ST 27.0 SR 16.5 SS 46.6
CRT .8774 CRS .1927 CST .6342
LSA 50.6 MSA 24.6 SSA 1.2
EL1 30.9 EL2 6.9 ALF 29.67

LAUNCH DATE MAY 4 1971 FLIGHT TIME 180.00 ARRIVAL DATE OCT 31 1971

DISTANCE 439.779 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.83 LAL .00 LOL 222.90 VL 32.339 GAL -.91 AZL 92.14 HCA 145.60 SMA 185.89 ECC .18923 INC 2.1409 V1 29.540
RP 209.55 LAP -1.21 LOP 8.51 VP 23.510 GAP 8.12 AZP 88.23 TAL 354.26 TAP 139.86 RCA 150.71 APO 221.07 V2 26.162
RC 105.933 GL -22.39 GP 2.41 ZAL 107.32 ZAP 126.11 ETS 178.09 ZAE 167.64 ETE 166.10 ZAC 102.86 ETC 277.11 LVI -19.37

PLANETOCENTRIC CONIC

C3 10.054 VHL 3.171 DLA -31.60 RAL 342.87 RAD 6638.1 VEL 11.408 PTH 6.46 VHP 3.543 DPA -15.90 RAP 316.95 ECC 1.1655

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 40 20	2318.35	1.71	58.80	195.52	137.55	18 18 58	1318.3	19.80	42.40
60.00	19 8 57	2082.53	7.22	42.83	200.79	129.76	19 43 40	1082.5	22.46	23.50
70.00	21 15 16	1710.70	14.28	17.85	205.92	121.36	21 43 47	710.7	25.89	355.45
75.27	23 28 34	1296.88	22.57	350.62	210.37	112.73	23 50 11	296.9	29.91	325.15
75.27	23 28 34	1296.88	22.57	350.62	210.37	112.73	23 50 11	296.9	29.91	325.15
75.27	23 28 34	1296.88	22.57	350.62	210.37	112.73	23 50 11	296.9	29.91	325.15
110.00	2 18 39	6045.55	14.28	284.67	205.92	121.36	3 59 24	5045.6	25.89	262.28

DIFFERENTIAL CORRECTIONS

TDE -.2706 TRA -.3703 TC3 -.4177 BAU .0800
RDE -.1777 RRA -.0026 RC3 .4236 FAU .17697
FDE .3640 FRA 4.8147 FC-15.2393 BSP 1228
BDE .3238 BRA .3703 BC3 .5949 FSP 2041

MID-COURSE EXECUTION ACCURACY

SGT 962.6 SGR 418.7 SG3 1216.3
RRT .2237 RRF -.4858 RTF -.[illegible]71
SGB 1049.7 R23 -.3787 R13 -.4464
SG1 968.1 SG2 405.8 THA 6.75

ORBIT DETERMINATION ACCURACY

ST 27.1 SR 16.1 SS 48.2
CRT .9025 CRS .2162 CST .6095
LSA 51.9 MSA 25.0 SSA 1.2
EL1 31.0 EL2 6.1 ALF 29.33

LAUNCH DATE MAY 4 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 2 1971

DISTANCE 443.922 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.83 LAL .00 LOL 222.90 VL 32.324 GAL -.91 AZL 92.16 HCA 146.83 SMA 185.64 ECC .18814 INC 2.1553 V1 29.540
RP 209.76 LAP -1.18 LOP 9.75 VP 23.462 GAP 7.89 AZP 88.20 TAL 354.23 TAP 141.06 RCA 150.71 APO 220.57 V2 26.137
RC 107.990 GL -22.62 GP 2.54 ZAL 107.39 ZAP 124.16 ETS 178.10 ZAE 165.95 ETE 167.60 ZAC 103.08 ETC 276.95 LVI -19.27

PLANETOCENTRIC CONIC

C3 9.989 VHL 3.161 DLA -31.77 RAL 343.09 RAD 6638.0 VEL 11.406 PTH 6.46 VHP 3.469 DPA -15.98 RAP 316.19 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 42 12	2313.09	1.98	58.58	195.74	137.54	18 20 45	1313.1	20.05	42.15
60.00	19 11 22	2075.78	7.52	42.51	201.04	129.71	19 45 58	1075.8	22.72	23.12
70.00	21 19 21	1699.01	14.69	17.20	206.24	121.18	21 47 40	699.0	26.20	354.69
74.89	23 26 48	1303.83	22.71	351.21	210.54	112.83	23 48 32	303.8	30.08	325.71
74.89	23 26 48	1303.83	22.71	351.21	210.54	112.83	23 48 32	303.8	30.08	325.71
74.89	23 26 48	1303.83	22.71	351.21	210.54	112.83	23 48 32	303.8	30.08	325.71
110.00	2 22 43	6033.87	14.69	284.02	206.24	121.18	4 3 17	5033.9	26.20	261.51

DIFFERENTIAL CORRECTIONS

TDE -.2687 TRA -.3286 TC3 -.5440 BAU .0932
RDE -.1718 RRA -.0100 RC3 .4378 FAU .18382
FDE .3760 FRA 5.0210 FC-15.9322 BSP 1044
BDE .3189 BRA .3287 BC3 .6982 FSP 2138

MID-COURSE EXECUTION ACCURACY

SGT 920.0 SGR 417.2 SG3 1271.3
RRT .1864 RRF -.5257 RTF -.3229
SGB 1010.2 R23 -.4584 R13 -.3445
SG1 924.1 SG2 408.1 THA 6.01

ORBIT DETERMINATION ACCURACY

ST 26.5 SR 15.6 SS 49.4
CRT .9251 CRS .2291 CST .5739
LSA 52.5 MSA 25.1 SSA 1.2
EL1 30.3 EL2 5.2 ALF 29.47

LAUNCH DATE MAY 4 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 448.071 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.310	GAL	-.92	AZL	92.17	HCA	148.06	SMA	185.41	ECC	.18716	INC	2.1707
RP	209.99	LAP	-1.15	LOP	10.98	VP	23.415	GAP	7.66	AZP	88.16	TAL	354.17	TAP	142.23	RCA	150.71	APO	220.12
RC	110.071	GL	-22.84	GP	2.68	ZAL	107.48	ZAP	122.17	ETS	178.12	ZAE	164.21	ETE	168.92	ZAC	103.31	ETC	276.79

V1	29.540																		
V2	26.111																		
LVI	-19.18																		

PLANETOCENTRIC CONIC

C3	9.936	VHL	3.152	DLA	-31.92	RAL	343.32	RAD	6638.0	VEL	11.403	PTH	6.46	VHP	3.399	DPA	-16.06	RAP	315.40

ECC	1.1635																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 44 5	2308.29	2.22	58.38	196.00	137.54	18 22 34	1308.3	20.28	41.92
60.00	19 13 48	2069.56	7.79	42.20	201.32	129.67	19 48 17	1069.6	22.96	22.77
70.00	21 23 26	1687.89	15.08	16.57	206.59	121.01	21 51 34	687.9	26.49	353.95
74.54	23 25 22	1310.22	22.84	351.75	210.76	112.93	23 47 12	310.2	30.24	326.23
74.54	23 25 22	1310.22	22.84	351.75	210.76	112.93	23 47 12	310.2	30.24	326.23
74.54	23 25 22	1310.22	22.84	351.75	210.76	112.93	23 47 12	310.2	30.24	326.23
110.00	2 26 48	6022.75	15.08	283.40	206.59	121.01	4 7 11	5022.7	26.49	260.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2673	TRA	-.2843	TC3	-.6827	BAU	.1086	SGT	889.9	SGR	417.1	SG3	1324.9	ST	26.0	SR	15.1	SS	50.6
RDE	-.1662	RRA	-.0178	RC3	.4524	FAU	.19042	RRT	.1272	RRF	-.5668	RTF	-.1948	CRT	.9473	CRS	.2466	CST	.5344
FDE	.3933	FRA	5.2258	FC-16.5913		BSP	867	SGB	982.8	R23	-.5393	R13	-.2139	LSA	53.2	MSA	25.2	SSA	1.1
BDE	.3147	BRA	.2849	BC3	.8190	FSP	2240	SG1	891.9	SG2	412.8	THA	4.34	EL1	29.7	EL2	4.2	ALF	29.54

LAUNCH DATE MAY 4 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 452.226 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.298	GAL	-.92	AZL	92.19	HCA	149.29	SMA	185.21	ECC	.18627	INC	2.1872
RP	210.22	LAP	-1.12	LOP	12.20	VP	23.368	GAP	7.44	AZP	88.12	TAL	354.11	TAP	143.40	RCA	150.71	APO	219.71
RC	112.177	GL	-23.07	GP	2.82	ZAL	107.59	ZAP	120.16	ETS	178.13	ZAE	162.41	ETE	169.91	ZAC	103.55	ETC	276.62

V1	29.540																		
V2	26.085																		
LVI	-19.07																		

PLANETOCENTRIC CONIC

C3	9.895	VHL	3.146	DLA	-32.07	RAL	343.58	RAD	6638.0	VEL	11.401	PTH	6.45	VHP	3.335	DPA	-16.14	RAP	314.57

ECC	1.1629																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 1	2303.94	2.44	58.19	196.28	137.53	18 24 25	1303.9	20.49	41.71
60.00	19 16 14	2063.84	8.03	41.92	201.63	129.63	19 50 38	1063.8	23.18	22.44
70.00	21 27 31	1677.27	15.46	15.97	206.97	120.84	21 55 29	677.3	26.77	353.25
74.21	23 24 12	1316.26	22.96	352.27	211.01	113.02	23 46 8	316.3	30.38	326.72
74.21	23 24 12	1316.26	22.96	352.27	211.01	113.02	23 46 8	316.3	30.38	326.72
74.21	23 24 12	1316.26	22.96	352.27	211.01	113.02	23 46 8	316.3	30.38	326.72
110.00	2 30 54	6012.13	15.46	282.80	206.97	120.84	4 11 6	5012.1	26.77	260.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2646	TRA	-.2373	TC3	-.8252	BAU	.1255	SGT	872.9	SGR	418.7	SG3	1379.0	ST	25.3	SR	14.6	SS	51.8
RDE	-.1605	RRA	-.0261	RC3	.4681	FAU	.19714	RRT	.0454	RRF	-.6085	RTF	-.0488	CRT	.9671	CRS	.2632	CST	.4872
FDE	.4045	FRA	5.4350	FC-17.2475		BSP	681	SGB	968.1	R23	-.6062	R13	-.0570	LSA	53.8	MSA	25.3	SSA	1.1
BDE	.3094	BRA	.2387	BC3	.9487	FSP	2333	SG1	873.1	SG2	418.1	THA	1.62	EL1	29.0	EL2	3.2	ALF	29.65

LAUNCH DATE MAY 4 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 456.388 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.287	GAL	-.93	AZL	92.20	HCA	150.51	SMA	185.02	ECC	.18548	INC	2.2049
RP	210.45	LAP	-1.09	LOP	13.43	VP	23.323	GAP	7.22	AZP	88.08	TAL	354.02	TAP	144.54	RCA	150.71	APO	219.34
RC	114.307	GL	-23.29	GP	2.98	ZAL	107.71	ZAP	118.12	ETS	178.16	ZAE	160.56	ETE	170.71	ZAC	103.80	ETC	276.45

V1	29.540																		
V2	26.058																		
LVI	-18.97																		

PLANETOCENTRIC CONIC

C3	9.866	VHL	3.141	DLA	-32.21	RAL	343.86	RAD	6638.0	VEL	11.400	PTH	6.45	VHP	3.275	DPA	-16.21	RAP	313.71

ECC	1.1624																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 48 0	2299.97	2.64	58.03	196.60	137.52	18 26 20	1300.0	20.67	41.52
60.00	19 18 43	2058.55	8.26	41.67	201.97	129.59	19 53 1	1058.6	23.38	22.14
70.00	21 31 40	1667.05	15.81	15.40	207.39	120.67	21 59 27	667.0	27.03	352.57
73.91	23 23 16	1322.03	23.07	352.76	211.29	113.12	23 45 18	322.0	30.52	327.19
73.91	23 23 16	1322.03	23.07	352.76	211.29	113.12	23 45 18	322.0	30.52	327.19
73.91	23 23 16	1322.03	23.07	352.76	211.29	113.12	23 45 18	322.0	30.52	327.19
110.00	2 35 2	6001.91	15.81	282.22	207.39	120.67	4 15 4	5001.9	27.03	259.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2593	TRA	-.1834	TC3	-.9648	BAU	.1425	SGT	864.5	SGR	422.1	SG3	1429.8	ST	24.4	SR	14.2	SS	52.6
RDE	-.1547	RRA	-.0344	RC3	.4856	FAU	.20431	RRT	-.0607	RRF	-.6903	RTF	.1.82	CRT	.9837	CRS	.2772	CST	.4261
FDE	.4044	FRA	5.6141	FC-17.9282		BSP	519	SGB	962.1	R23	.6419	R13	-.1304	LSA	54.1	MSA	25.2	SSA	1.1
BDE	.3019	BRA	.1866	BC3	1.0801	FSP	2409	SG1	865.0	SG2	421.1	THA	177.78	EL1	28.1	EL2	2.2	ALF	29.92

LAUNCH DATE MAY 4 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 460.553 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.277	GAL	-.95	AZL	92.22	HCA	151.74	SMA	184.86	ECC	.18478	INC	2.2238
RP	210.70	LAP	-1.05	LOP	14.65	VP	23.278	GAP	7.01	AZP	88.04	TAL	353.93	TAP	145.66	RCA	150.70	APO	219.02
RC	116.460	GL	-23.52	GP	3.14	ZAL	107.86	ZAP	116.06	ETS	178.18	ZAE	158.66	ETE	171.36	ZAC	104.06	ETC	276.26

V1	29.540																		
V2	26.030																		
LVI	-18.86																		

PLANETOCENTRIC CONIC

C3	9.849	VHL	3.138	DLA	-32.34	RAL	344.17	RAD	6638.0	VEL	11.399	PTH	6.45	VHP	3.220	DPA	-16.28	RAP	312.83

ECC	1.1621																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 50 2	2296.44	2.81	57.88	196.95	137.51	18 28 19	1296.4	20.84	41.35
60.00	19 21 13	2053.76	8.47	41.43	202.34	129.55	19 55 27	1053.8	23.56	21.86
70.00	21 35 49	1657.35	16.15	14.85	207.84	120.51	22 3 27	657.4	27.27	351.92
73.62	23 22 37	1327.53	23.17	353.22	211.61	113.21	23 44 45	327.5	30.65	327.64
73.62	23 22 37	1327.53	23.17	353.22	211.61	113.21	23 44 45	327.5	30.65	327.64
73.62	23 22 37	1327.53	23.17	353.22	211.61	113.21	23 44 45	327.5	30.65	327.64
110.00	2 39 12	5992.21	16.15	281.67	207.84	120.51	4 19 4	4992.2	27.27	258.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2624	TRA	-.1366	TC3	-1.1470	BAU	.1648	SGT	913.8	SGR	427.4	SG3	1480.9	ST	24.4	SR	13.7	SS	54.1
RDE	-.1496	RRA	-.0442	RC3	.5013	FAU	.20945	RRT	-.1728	RRF	-.6913	RTF	.2682	CRT	.9939	CRS	.3118	CST	.3777
FDE	.4442	FRA	5.8464	FC-18.4112		BSP	503	SGB	1008.8	R23	.6415	R13	-.2985	LSA	55.3	MSA	25.5	SSA	1.0
BDE	.3021	BRA	.1436	BC3	1.2518	FSP	2523	SG1	917.6	SG2	419.3	THA	174.15	EL1	28.0	EL2	1.3	ALF	29.31

LAUNCH DATE MAY 4 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC — DISTANCE 464.723 — EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.269	GAL	-.96	AZL	92.24	HCA	152.96	SMA	184.72	ECC	.18416	INC	2.2443	V1	29.540
RP	210.95	LAP	-1.02	LOP	15.87	VP	23.234	GAP	6.80	AZP	88.00	TAL	353.81	TAP	146.77	RCA	150.70	APO	218.73	V2	26.001
RC	118.637	GL	-23.75	GP	3.32	ZAL	108.02	ZAP	113.98	ETS	178.22	ZAE	156.73	ETE	171.90	ZAC	104.33	ETC	276.07	LVI	-18.76

PLANETOCENTRIC CONIC

C3	VHL	DLA	RAL	RAD	VEL	PTH	VHP	DPA	RAP	ECC
9.842	3.137	-32.46	344.50	6638.0	11.399	6.45	3.170	-16.33	311.92	1.1620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 52 9	2293.21	2.98	57.75	197.32	137.51	18 30 22	1293.2	20.99	41.19
60.00	19 23 48	2049.29	6.67	41.21	202.75	129.51	19 57 57	1049.3	23.73	21.60
70.00	21 40 6	1647.83	16.48	14.30	208.33	120.35	22 7 33	647.8	27.50	351.28
73.35	23 22 9	1332.95	23.26	353.68	211.97	113.31	23 44 22	333.0	30.77	328.08
73.35	23 22 9	1332.95	23.26	353.68	211.97	113.31	23 44 22	333.0	30.77	328.08
73.35	23 22 9	1332.95	23.26	353.68	211.97	113.31	23 44 22	333.0	30.77	328.08
110.00	2 43 28	5982.69	16.48	281.13	208.33	120.35	4 23 11	4982.7	27.50	258.10

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.2605	TRA	-.0815	TC3	-1.3124	BAU	.1858	SGT	967.2	SGR	435.5	SG3	1530.2	ST	24.0	SR	13.3	SS	55.2
RDE	-.1443	RRA	-.0541	RC3	.5201	FAU	.21568	RRT	-.2913	RRF	-.7314	RTF	.4138	CRT	.9959	CRS	.3408	CST	.3123
FDE	.4657	FRA	6.0458	FC	-18.9716	BSP	595	SGB	1060.8	R23	.6092	R13	-.4559	LSA	56.1	MSA	25.6	SSA	1.0
BDE	.2978	BRA	.0978	BC3	1.4117	FSP	2610	SG1	977.4	SG2	412.3	THA	170.89	EL1	27.4	EL2	1.1	ALF	28.98

LAUNCH DATE MAY 4 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC — DISTANCE 468.896 — EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.261	GAL	-.98	AZL	92.27	HCA	154.17	SMA	184.59	ECC	.18363	INC	2.2666	V1	29.540
RP	211.20	LAP	-.99	LOP	17.09	VP	23.190	GAP	6.60	AZP	87.96	TAL	353.68	TAP	147.86	RCA	150.69	APO	218.48	V2	25.972
RC	120.836	GL	-23.99	GP	3.51	ZAL	108.21	ZAP	111.88	ETS	178.26	ZAE	154.76	ETE	172.34	ZAC	104.62	ETC	275.88	LVI	-18.66

PLANETOCENTRIC CONIC

C3	VHL	DLA	RAL	RAD	VEL	PTH	VHP	DPA	RAP	ECC
9.847	3.138	-32.59	344.85	6638.0	11.399	6.45	3.124	-16.37	310.99	1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 54 20	2290.28	3.12	57.62	197.74	137.50	18 32 31	1290.3	21.13	41.05
60.00	19 26 27	2045.13	6.85	41.01	203.19	129.48	20 0 32	1045.1	23.88	21.36
70.00	21 44 30	1638.45	16.80	13.77	208.86	120.18	22 11 49	638.4	27.73	350.64
73.09	23 21 51	1338.36	23.34	354.13	212.37	113.41	23 44 9	338.4	30.88	328.52
73.09	23 21 51	1338.36	23.34	354.13	212.37	113.41	23 44 9	338.4	30.88	328.52
73.09	23 21 51	1338.36	23.34	354.13	212.37	113.41	23 44 9	338.4	30.88	328.52
110.00	2 47 52	5973.31	16.80	280.59	208.86	120.18	4 27 26	4973.3	27.73	257.47

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.2591	TRA	-.0240	TC3	-1.4901	BAU	.2086	SGT	1049.4	SGR	445.6	SG3	1574.6	ST	23.7	SR	12.9	SS	56.3
RDE	-.1391	RRA	-.0646	RC3	.5390	FAU	.22100	RRT	-.4040	RRF	-.7689	RTF	.5374	CRT	.9866	CRS	.3736	CST	.2409
FDE	.4898	FRA	6.2367	FC	-19.4296	BSP	789	SGB	1140.1	R23	.5611	R13	-.5813	LSA	56.9	MSA	25.6	SSA	1.0
BDE	.2941	BRA	.0689	BC3	1.5846	FSP	2697	SG1	1067.3	SG2	400.8	THA	168.64	EL1	26.9	EL2	1.9	ALF	28.34

LAUNCH DATE MAY 4 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC — DISTANCE 473.073 — EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.254	GAL	-1.00	AZL	92.29	HCA	155.39	SMA	184.48	ECC	.18317	INC	2.2908	V1	29.540
RP	211.46	LAP	-.95	LOP	18.30	VP	23.147	GAP	6.40	AZP	87.92	TAL	353.54	TAP	148.93	RCA	150.69	APO	218.27	V2	25.942
RC	123.058	GL	-24.23	GP	3.72	ZAL	108.41	ZAP	109.78	ETS	178.30	ZAE	152.76	ETE	172.70	ZAC	104.92	ETC	275.68	LVI	-18.56

PLANETOCENTRIC CONIC

C3	VHL	DLA	RAL	RAD	VEL	PTH	VHP	DPA	RAP	ECC
9.863	3.141	-32.71	345.23	6638.0	11.400	6.45	3.083	-16.40	310.04	1.1623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 56 38	2287.60	3.26	57.51	198.19	137.49	18 34 45	1287.6	21.26	40.92
60.00	19 29 12	2041.20	9.02	40.82	203.67	129.45	20 3 13	1041.2	24.03	21.13
70.00	21 49 7	1629.01	17.12	13.22	209.43	120.01	22 16 16	629.0	27.96	350.00
72.83	23 21 41	1343.89	23.41	354.59	212.81	113.52	23 44 5	343.9	30.99	328.97
72.83	23 21 41	1343.89	23.41	354.59	212.81	113.52	23 44 5	343.9	30.99	328.97
72.83	23 21 41	1343.89	23.41	354.59	212.81	113.52	23 44 5	343.9	30.99	328.97
110.00	2 52 29	5963.87	17.12	280.05	209.43	120.01	4 31 53	4963.9	27.96	256.83

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.2561	TRA	.0353	TC3	-1.6716	BAU	.2324	SGT	1153.2	SGR	458.9	SG3	1618.5	ST	23.6	SR	12.5	SS	57.3
RDE	-.1341	RRA	-.0761	RC3	.5596	FAU	.22621	RRT	-.5034	RRF	-.8043	RTF	.6450	CRT	.9635	CRS	.4111	CST	.1658
FDE	.5182	FRA	6.4315	FC	-19.8553	BSP	1040	SGB	1241.2	R23	.5123	R13	-.6748	LSA	57.8	MSA	25.8	SSA	.9
BDE	.2909	BRA	.0839	BC3	1.7627	FSP	2776	SG1	1179.0	SG2	387.9	THA	167.27	EL1	26.6	EL2	3.0	ALF	27.38

LAUNCH DATE MAY 4 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC — DISTANCE 477.253 — EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.248	GAL	-1.02	AZL	92.32	HCA	156.60	SMA	184.38	ECC	.18279	INC	2.3171	V1	29.540
RP	211.73	LAP	-.92	LOP	19.51	VP	23.105	GAP	6.20	AZP	87.87	TAL	353.38	TAP	149.98	RCA	150.68	APO	218.08	V2	25.911
RC	125.302	GL	-24.49	GP	3.94	ZAL	108.62	ZAP	107.67	ETS	178.35	ZAE	150.73	ETE	172.99	ZAC	105.23	ETC	275.48	LVI	-18.48

PLANETOCENTRIC CONIC

C3	VHL	DLA	RAL	RAD	VEL	PTH	VHP	DPA	RAP	ECC
9.891	3.145	-32.83	345.64	6638.0	11.401	6.45	3.046	-16.40	309.07	1.1628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 59 2	2285.10	3.38	57.41	198.68	137.48	18 37 7	1285.1	21.37	40.80
60.00	19 32 5	2037.43	9.18	40.63	204.20	129.42	20 6 3	1037.4	24.17	20.92
70.00	21 54 0	1619.27	17.45	12.66	210.06	119.84	22 20 59	619.3	28.19	349.34
72.58	23 21 39	1349.54	23.48	355.06	213.30	113.63	23 44 9	349.5	31.10	329.43
72.58	23 21 39	1349.54	23.48	355.06	213.30	113.63	23 44 9	349.5	31.10	329.43
72.58	23 21 39	1349.54	23.48	355.06	213.30	113.63	23 44 9	349.5	31.10	329.43
110.00	2 57 22	5954.13	17.45	279.49	210.06	119.84	4 36 37	4954.1	28.19	256.16

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.2571	TRA	.0971	TC3	-1.6590	BAU	.2576	SGT	1277.2	SGR	475.0	SG3	1657.8	ST	23.7	SR	12.1	SS	58.3
RDE	-.1293	RRA	-.0883	RC3	.5809	FAU	.23073	RRT	-.5889	RRF	-.8364	RTF	.7104	CRT	.9243	CRS	.4515	CST	.0861
FDE	.5462	FRA	6.6166	FC	-20.1947	BSP	1318	SGB	1362.6	R23	.4675	R13	-.7441	LSA	58.7	MSA	25.9	SSA	.9
BDE	.2878	BRA	.1313	BC3	1.9477	FSP	2853	SG1	1310.2	SG2	374.2	THA	166.53	EL1	26.3	EL2	4.2	ALF	26.03

LAUNCH DATE MAY 4 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC DISTANCE 481.435 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.244	GAL	-1.05	AZL	92.35	HCA	157.81	SMA	184.30	ECC	.18247	INC	2.3462	V1	29.540
RP	212.01	LAP	-.89	LOP	20.72	VP	23.063	GAP	6.01	AZP	87.83	TAL	353.21	TAP	151.02	RCA	150.67	APO	217.93	V2	25.880
RC	127.566	GL	-24.76	GP	4.18	ZAL	108.85	ZAP	105.56	ETS	178.42	ZAE	148.68	ETE	173.23	ZAC	105.56	ETC	275.27	LVI	-18.40

PLANETOCENTRIC CONIC

C3	9.931	VHL	3.151	DLA	-32.96	RAL	346.07	RAD	6638.0	VEL	11.403	PTH	6.45	VHP	3.013	DPA	-16.39	RAP	308.10	ECC	1.1634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 1 36	2282.71	3.50	57.31	199.21	137.48	18 39 38	1282.7	21.49	40.68
60.00	19 35 9	2033.70	9.34	40.45	204.76	129.38	20 9 3	1033.7	24.31	20.70
70.00	21 59 18	1608.86	17.80	12.06	210.74	119.64	22 26 7	608.9	28.43	348.63
72.31	23 21 41	1355.59	23.55	355.55	213.83	113.76	23 44 16	355.6	31.21	329.92
72.31	23 21 41	1355.59	23.55	355.55	213.83	113.76	23 44 16	355.6	31.21	329.92
72.31	23 21 41	1355.59	23.55	355.55	213.83	113.76	23 44 16	355.6	31.21	329.92
110.00	3 2 40	5943.72	17.80	278.88	210.74	119.64	4 41 44	4943.7	28.43	255.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2561	TRA	.1618	TC3	-2.0468	BAU	.2833	SGT	1415.6	SGR	494.8	SG3	1695.0	ST	23.9	SR	11.8	SS	59.3
RDE	-.1246	RRA	-.1015	RC3	.6045	FAU	.23530	RRT	-.6612	RRF	-.8655	RTF	.7687	CRT	.8671	CRS	.4967	CST	.0051
FDE	.5797	FRA	6.7920	FC-20	.5119	BSP	1624	SGB	1499.6	R23	.4282	R13	-.7964	LSA	59.6	MSA	26.0	SSA	.8
BDE	.2848	BRA	.1910	BC3	2.1342	FSP	2916	SG1	1455.5	SG2	361.1	THA	166.11	EL1	26.2	EL2	5.4	ALF	24.25

LAUNCH DATE MAY 4 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 485.619 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.240	GAL	-1.07	AZL	92.38	HCA	159.01	SMA	184.24	ECC	.18223	INC	2.3785	V1	29.540
RP	212.29	LAP	-.85	LOP	21.93	VP	23.022	GAP	5.82	AZP	87.78	TAL	353.02	TAP	152.04	RCA	150.66	APO	217.81	V2	25.848
RC	129.850	GL	-25.05	GP	4.45	ZAL	109.09	ZAP	103.45	ETS	178.49	ZAE	146.62	ETE	173.42	ZAC	105.91	ETC	275.07	LVI	-18.35

PLANETOCENTRIC CONIC

C3	9.983	VHL	3.160	DLA	-33.10	RAL	346.53	RAD	6638.0	VEL	11.405	PTH	6.46	VHP	2.985	DPA	-16.34	RAP	307.12	ECC	1.1643

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 4 19	2280.36	3.62	57.21	199.79	137.47	18 42 20	1280.4	21.60	40.57
60.00	19 38 25	2029.88	9.50	40.26	205.38	129.35	20 12 15	1029.9	24.45	20.47
70.00	22 5 10	1597.32	18.19	11.39	211.49	119.42	22 31 48	597.3	28.69	347.83
72.04	23 21 46	1362.05	23.61	356.08	214.40	113.90	23 44 28	362.1	31.33	330.44
72.04	23 21 46	1362.05	23.61	356.08	214.40	113.90	23 44 28	362.1	31.33	330.44
72.04	23 21 46	1362.05	23.61	356.08	214.40	113.90	23 44 28	362.1	31.33	330.44
110.00	3 8 33	5932.18	18.19	278.21	211.49	119.42	4 47 25	4932.2	28.69	254.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2546	TRA	.2295	TC3	-2.2355	BAU	.3100	SGT	1567.1	SGR	517.8	SG3	1726.9	ST	24.4	SR	11.5	SS	60.2
RDE	-.1201	RRA	-.1158	RC3	.6289	FAU	.23889	RRT	-.7214	RRF	-.8908	RTF	.8130	CRT	.7906	CRS	.5441	CST	-.0783
FDE	.6116	FRA	6.9580	FC-20	.7167	BSP	1947	SGB	1650.4	R23	.3947	R13	-.8356	LSA	60.6	MSA	26.1	SSA	.8
BDE	.2815	BRA	.2571	BC3	2.3223	FSP	2982	SG1	1613.2	SG2	348.4	THA	165.92	EL1	26.1	EL2	6.6	ALF	21.99

LAUNCH DATE MAY 4 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 489.805 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.236	GAL	-1.10	AZL	92.41	HCA	160.21	SMA	184.18	ECC	.18205	INC	2.4144	V1	29.540
RP	212.57	LAP	-.82	LOP	23.13	VP	22.981	GAP	5.63	AZP	87.73	TAL	352.83	TAP	153.04	RCA	150.65	APO	217.71	V2	25.815
RC	132.153	GL	-25.36	GP	4.74	ZAL	109.35	ZAP	101.35	ETS	178.57	ZAE	144.55	ETE	173.57	ZAC	106.29	ETC	274.86	LVI	-18.31

PLANETOCENTRIC CONIC

C3	10.049	VHL	3.170	DLA	-33.25	RAL	347.03	RAD	6638.1	VEL	11.408	PTH	6.46	VHP	2.981	DPA	-16.27	RAP	306.15	ECC	1.1654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 7 16	2277.95	3.74	57.11	200.41	137.46	18 45 14	1277.9	21.71	40.45
60.00	19 41 58	2025.85	9.68	40.06	206.06	129.32	20 15 44	1025.8	24.60	20.24
70.00	22 11 51	1583.94	18.63	10.61	212.33	119.15	22 38 15	583.9	28.99	346.90
71.74	23 21 51	1369.18	23.68	356.66	215.03	114.06	23 44 40	369.2	31.45	331.02
71.74	23 21 51	1369.18	23.68	356.66	215.03	114.06	23 44 40	369.2	31.45	331.02
71.74	23 21 51	1369.18	23.68	356.66	215.03	114.06	23 44 40	369.2	31.45	331.02
110.00	3 15 13	5918.80	18.63	277.43	212.33	119.15	4 53 52	4918.8	28.99	253.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2536	TRA	.2992	TC3	-2.4255	BAU	.3375	SGT	1730.0	SGR	545.2	SG3	1756.1	ST	25.0	SR	11.3	SS	61.1
RDE	-.1158	RRA	-.1315	RC3	.6553	FAU	.24211	RRT	-.7706	RRF	-.9128	RTF	.8161	CRT	.6965	CRS	.5950	CST	-.1580
FDE	.6473	FRA	7.1208	FC-20	.8588	BSP	2280	SGB	1813.9	R23	.3684	R13	-.8646	LSA	61.6	MSA	26.3	SSA	.7
BDE	.2788	BRA	.3268	BC3	2.5125	FSP	3034	SG1	1782.2	SG2	337.3	THA	165.83	EL1	26.3	EL2	7.7	ALF	19.21

LAUNCH DATE MAY 4 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 493.992 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.234	GAL	-1.14	AZL	92.45	HCA	161.41	SMA	184.14	ECC	.18193	INC	2.4545	V1	29.540
RP	212.86	LAP	-.78	LOP	24.32	VP	22.940	GAP	5.44	AZP	87.67	TAL	352.61	TAP	154.02	RCA	150.64	APO	217.64	V2	25.782
RC	134.475	GL	-25.70	GP	5.06	ZAL	109.61	ZAP	99.27	ETS	178.67	ZAE	142.48	ETE	173.68	ZAC	106.69	ETC	274.66	LVI	-18.30

PLANETOCENTRIC CONIC

C3	10.128	VHL	3.182	DLA	-33.42	RAL	347.55	RAD	6638.1	VEL	11.412	PTH	6.46	VHP	2.941	DPA	-16.15	RAP	305.17	ECC	1.1667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 10 28	2275.35	3.87	57.00	201.09	137.46	18 48 23	1275.3	21.83	40.32
60.00	19 45 52	2021.39	9.87	39.84	206.79	129.27	20 19 33	1021.4	24.77	19.98
70.00	22 19 44	1567.58	19.17	9.65	213.27	118.82	22 45 51	567.6	29.35	345.76
71.41	23 21 53	1377.13	23.74	357.31	215.72	114.24	23 44 50	377.1	31.58	331.67
71.41	23 21 53	1377.13	23.74	357.31	215.72	114.24	23 44 50	377.1	31.58	331.67
71.41	23 21 53	1377.13	23.74	357.31	215.72	114.24	23 44 50	377.1	31.58	331.67
110.00	3 23 6	5902.44	19.17	276.47	213.27	118.82	5 1 28	4902.4	29.35	252.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2525	TRA	.3717	TC3	-2.6135	BAU	.3658	SGT	1901.7	SGR	576.6	SG3	1779.5	ST	25.8	SR	11.2	SS	61.9
RDE	-.1116	RRA	-.1486	RC3	.6836	FAU	.24468	RRT	-.8112	RRF	-.9314	RTF	.8718	CRT	.5860	CRS	.6470	CST	-.2353
FDE	.6816	FRA	7.2639	FC-20	.9144	BSP	2626	SGB	1987.2	R23	.3462	R13	-.8873	LSA	62.7	MSA	26.5	SSA	.7
BDE	.2761	BRA	.4003	BC3	2.7014	FSP	3082	SG1	1960.1	SG2	327.1	THA	165.78	EL1	26.8	EL2	8.7	ALF	15.94

LAUNCH DATE MAY 4 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 498.180 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.232	GAL	-1.17	AZL	92.50	HCA	162.61	SMA	184.12	ECC	.18187	INC	2.4997	V1	29.540
RP	213.18	LAP	-.75	LOP	25.52	VP	22.900	GAP	5.26	AZP	87.61	TAL	352.39	TAP	154.99	RCA	150.63	APO	217.60	V2	25.749
RC	136.814	GL	-26.08	GP	5.42	ZAL	109.88	ZAP	97.20	ETS	178.78	ZAE	140.40	ETE	173.75	ZAC	107.12	ETC	274.45	LVI	-18.33

PLANETOCENTRIC CONIC

C3	10.224	VHL	3.197	DLA	-33.61	RAL	348.12	RAD	6638.2	VEL	11.416	PTH	6.47	VHP	2.925	DPA	-15.99	RAP	304.20	ECC	1.1683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 13 59	2272.42	4.02	56.87	201.84	137.45	18 51 51	1272.4	21.97	40.18
60.00	19 50 12	2016.27	10.09	39.59	207.61	129.23	20 23 48	1016.3	24.96	19.68
70.00	22 29 30	1546.22	19.87	8.38	214.37	118.37	22 55 16	546.2	29.79	344.26
71.03	23 21 49	1386.13	23.82	358.05	216.48	114.44	23 44 55	386.1	31.74	332.40
71.03	23 21 49	1386.13	23.82	358.05	216.48	114.44	23 44 55	386.1	31.74	332.40
71.03	23 21 49	1386.13	23.82	358.05	216.48	114.44	23 44 55	386.1	31.74	332.40
110.00	3 32 52	5881.08	19.87	275.21	214.37	118.37	5 10 53	4881.1	29.79	251.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2521	TRA	.4461	TC3	-2.7999	BAU	.3950	SGT	2081.2	SGR	613.2	SG3	1799.1	ST	26.9	SR	11.1	SS	62.6
RDE	-.1076	RRA	-.1673	RC3	.7151	FAU	.24702	RRT	-.8442	RRF	-.9470	RTF	.8917	CRT	.4635	CRS	.6992	CST	-.3067
FDE	.7133	FRA	7.3933	FC-20	.9174	BSP	2973	SGB	2169.6	R23	.3284	R13	-.9047	LSA	63.7	MSA	26.7	SSA	.6
BDE	.2741	BRA	.4765	BC3	2.8898	FSP	3112	SG1	2146.1	SG2	318.7	THA	165.71	EL1	27.5	EL2	9.6	ALF	12.33

LAUNCH DATE MAY 4 1971 FLIGHT TIME 210.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 502.367 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.231	GAL	-1.21	AZL	92.55	HCA	163.80	SMA	184.10	ECC	.18187	INC	2.5517	V1	29.540
RP	213.46	LAP	-.71	LOP	26.71	VP	22.860	GAP	5.08	AZP	87.55	TAL	352.15	TAP	155.94	RCA	150.62	APO	217.58	V2	25.714
RC	139.171	GL	-26.50	GP	5.82	ZAL	110.15	ZAP	95.15	ETS	178.92	ZAE	138.33	ETE	173.78	ZAC	107.60	ETC	274.25	LVI	-18.41

PLANETOCENTRIC CONIC

C3	10.337	VHL	3.215	DLA	-33.84	RAL	348.73	RAD	6638.2	VEL	11.421	PTH	6.47	VHP	2.913	DPA	-15.78	RAP	303.24	ECC	1.1701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 17 54	2268.97	4.19	56.73	202.66	137.44	18 55 43	1269.0	22.13	40.01
60.00	19 55 6	2010.20	10.35	39.29	208.51	129.17	20 28 37	1010.2	25.18	19.32
70.00	22 42 43	1515.21	20.86	6.52	215.69	117.68	23 7 58	515.2	30.41	342.06
70.60	23 21 35	1396.45	23.91	358.89	217.31	114.69	23 44 52	396.4	31.91	333.25
70.60	23 21 35	1396.45	23.91	358.89	217.31	114.69	23 44 52	396.4	31.91	333.25
70.60	23 21 35	1396.45	23.91	358.89	217.31	114.69	23 44 52	396.4	31.91	333.25
110.00	3 46 5	5850.07	20.86	273.35	215.69	117.68	5 23 35	4850.1	30.41	248.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2506	TRA	.5246	TC3	-2.9761	BAU	.4240	SGT	2264.6	SGR	655.3	SG3	1813.4	ST	28.1	SR	11.1	SS	63.5
RDE	-.1045	RRA	-.1885	RC3	.7476	FAU	.24798	RRT	-.8706	RRF	-.9598	RTF	.9069	CRT	.3301	CRS	.7541	CST	-.3687
FDE	.7669	FRA	7.5200	FC-20	.7697	BSP	3346	SGB	2357.5	R23	.3147	R13	-.9182	LSA	65.0	MSA	26.9	SSA	.6
BDE	.2715	BRA	.5574	BC3	3.0686	FSP	3155	SG1	2336.7	SG2	312.4	THA	165.60	EL1	28.4	EL2	10.4	ALF	8.61

LAUNCH DATE MAY 4 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 506.556 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.231	GAL	-1.24	AZL	92.61	HCA	164.98	SMA	184.09	ECC	.18192	INC	2.6110	V1	29.540
RP	213.77	LAP	-.68	LOP	27.90	VP	22.820	GAP	4.90	AZP	87.48	TAL	351.90	TAP	156.68	RCA	150.60	APO	217.58	V2	25.680
RC	141.545	GL	-26.98	GP	6.28	ZAL	110.43	ZAP	93.13	ETS	179.07	ZAE	136.27	ETE	173.77	ZAC	108.12	ETC	274.06	LVI	-18.54

PLANETOCENTRIC CONIC

C3	10.470	VHL	3.236	DLA	-34.10	RAL	349.38	RAD	6638.3	VEL	11.426	PTH	6.48	VHP	2.904	DPA	-15.50	RAP	302.29	ECC	1.1723

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 22 19	2264.78	4.40	56.55	203.58	137.42	19 0 4	1264.8	22.32	39.80
60.00	20 0 45	2002.75	10.67	38.92	209.52	129.10	20 34 7	1002.8	25.45	18.87
70.00	23 6 37	1452.68	22.79	2.70	217.59	116.15	23 30 49	452.7	31.52	337.53
70.09	23 21 8	1408.39	24.01	359.87	218.23	114.98	23 44 37	408.4	32.13	334.23
70.09	23 21 8	1408.39	24.01	359.87	218.23	114.98	23 44 37	408.4	32.13	334.23
70.09	23 21 8	1408.39	24.01	359.87	218.23	114.98	23 44 37	408.4	32.13	334.23
110.00	4 9 59	5787.53	22.79	269.52	217.59	116.15	5 46 27	4787.5	31.52	244.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2508	TRA	.6041	TC3	-3.1505	BAU	.4545	SGT	2454.2	SGR	703.6	SG3	1821.6	ST	29.6	SR	11.3	SS	64.0
RDE	-.1011	RRA	-.2118	RC3	.7847	FAU	.24884	RRT	-.8924	RRF	-.9700	RTF	.9192	CRT	.1942	CRS	.8027	CST	-.4273
FDE	.7967	FRA	7.6154	FC-20	.5759	BSP	3709	SGB	2553.1	R23	.3027	R13	-.9292	LSA	66.0	MSA	27.2	SSA	.5
BDE	.2704	BRA	.6402	BC3	3.2468	FSP	3168	SG1	2534.5	SG2	307.4	THA	165.43	EL1	29.7	EL2	11.0	ALF	4.90

LAUNCH DATE MAY 4 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 510.744 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.231	GAL	-1.29	AZL	92.68	HCA	166.17	SMA	184.10	ECC	.18203	INC	2.6804	V1	29.540
RP	214.08	LAP	-.64	LOP	29.08	VP	22.781	GAP	4.73	AZP	87.40	TAL	351.64	TAP	157.80	RCA	150.59	APO	217.61	V2	25.645
RC	143.936	GL	-27.53	GP	6.81	ZAL	110.70	ZAP	91.14	ETS	179.26	ZAE	134.22	ETE	173.72	ZAC	108.72	ETC	273.87	LVI	-18.74

PLANETOCENTRIC CONIC

C3	10.627	VHL	3.260	DLA	-34.43	RAL	350.09	RAD	6638.4	VEL	11.433	PTH	6.48	VHP	2.900	DPA	-15.15	RAP	301.36	ECC	1.1749

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 27 23	2259.53	4.66	56.33	204.61	137.40	19 5 3	1259.5	22.57	39.54
60.00	20 7 21	1993.36	11.08	38.45	210.67	129.00	20 40 34	993.4	25.79	18.31
69.49	23 20 24	1422.33	24.14	1.03	219.26	115.33	23 44 6	422.3	32.38	335.39
69.49	23 20 24	1422.33	24.14	1.03	219.26	115.33	23 44 6	422.3	32.38	335.39
69.49	23 20 24	1422.33	24.14	1.03	219.26	115.33	23 44 6	422.3	32.38	335.39
69.49	23 20 24	1422.33	24.14	1.03	219.26	115.33	23 44 6	422.3	32.38	335.39
69.49	23 20 24	1422.33	24.14	1.03	219.26	115.33	23 44 6	422.3	32.38	335.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2506	TRA	.6875	TC3	-3.3110	BAU	.4648	SGT	2645.8	SGR	760.2	SG3	1826.1	ST	31.3	SR	11.5	SS	64.6
RDE	-.0983	RRA	-.2385	RC3	.8256	FAU	.24894	RRT	-.9101	RRF	-.9782	RTF	.9292	CRT	.0555	CRS	.8483	CST	-.4801
FDE	.8308	FRA	7.7077	FC-20	.2798	BSP	4092	SGB	2752.8	R23	.2923	R13	-.9382	LSA	67.3	MSA	27.5	SSA	.5
BDE	.2692	BRA	.7277	BC3	3.4124	FSP	3187	SG1	2735.9	SG2	304.7	THA	165.16	EL1	31.3	EL2	11.5	ALF	1.36

LAUNCH DATE MAY 4 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 514.931 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.232	GAL	-1.33	AZL	92.76	HCA	167.35	SMA	184.11	ECC	.18218	INC	2.7617	V1	29.540
RP	214.38	LAP	-.60	LOP	30.26	VP	22.742	GAP	4.55	AZP	87.30	TAL	351.36	TAP	158.71	RCA	150.57	APO	217.65	V2	25.609
RC	146.344	GL	-28.18	GP	7.42	ZAL	110.96	ZAP	89.19	ETS	179.47	ZAE	132.18	ETE	173.62	ZAC	109.39	ETC	273.69	LVI	-19.02

PLANETOCENTRIC CONIC

C3	10.814	VHL	3.288	DLA	-34.83	RAL	350.88	RAD	6638.5	VEL	11.441	PTH	6.49	VHP	2.899	DPA	-14.69	RAP	300.44	ECC	1.1780

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 33 17	2252.82	5.00	56.05	205.77	137.38	19 10 50	1252.8	22.88	39.21
60.00	20 15 16	1981.26	11.59	37.85	212.00	128.87	20 48 17	981.3	26.23	17.59
68.77	23 19 17	1438.73	24.29	2.40	220.42	115.76	23 43 15	438.7	32.70	336.76
68.77	23 19 17	1438.73	24.29	2.40	220.42	115.76	23 43 15	438.7	32.70	336.76
68.77	23 19 17	1438.73	24.29	2.40	220.42	115.76	23 43 15	438.7	32.70	336.76
68.77	23 19 17	1438.73	24.29	2.40	220.42	115.76	23 43 15	438.7	32.70	336.76
68.77	23 19 17	1438.73	24.29	2.40	220.42	115.76	23 43 15	438.7	32.70	336.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2534	TRA	.7714	TC3	-3.4671	BAU	.5169	SGT	2841.7	SGR	826.5	SG3	1824.7	ST	33.2	SR	12.0	SS	64.9
RDE	-.0957	RRA	-.2688	RC3	.8732	FAU	.24892	RRT	-.9239	RRF	-.9846	RTF	.9369	CRT	-.0730	CRS	.8882	CST	-.5220
FDE	.8586	FRA	7.7701	FC-	19.9279	BSP	4451	SGB	2959.5	R23	.2843	R13	-.9453	LSA	68.4	MSA	26.0	SSA	.4
BDE	.2709	BRA	.8169	BC3	3.5754	FSP	3172	SG1	2943.7	SG2	305.3	THA	164.79	EL1	33.2	EL2	11.9	ALF	178.27

LAUNCH DATE MAY 4 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 519.118 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.234	GAL	-1.37	AZL	92.86	HCA	168.53	SMA	184.14	ECC	.18238	INC	2.8595	V1	29.540
RP	214.72	LAP	-.57	LOP	31.44	VP	22.703	GAP	4.38	AZP	87.20	TAL	351.08	TAP	159.60	RCA	150.55	APO	217.72	V2	25.573
RC	146.770	GL	-28.94	GP	8.16	ZAL	111.21	ZAP	87.27	ETS	179.73	ZAE	130.15	ETE	173.46	ZAC	110.18	ETC	273.52	LVI	-19.43

PLANETOCENTRIC CONIC

C3	11.038	VHL	3.322	DLA	-35.33	RAL	351.75	RAD	6638.6	VEL	11.451	PTH	6.50	VHP	2.903	DPA	-14.12	RAP	299.54	ECC	1.1817

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 40 18	2244.06	5.44	55.68	207.13	137.34	19 17 43	1244.1	23.28	38.77
60.00	20 25 0	1965.22	12.28	37.05	213.57	128.69	20 57 45	965.2	26.80	16.61
67.88	23 17 43	1458.12	24.49	4.04	221.74	116.30	23 42 1	458.1	33.10	338.40
67.88	23 17 43	1458.12	24.49	4.04	221.74	116.30	23 42 1	458.1	33.10	338.40
67.88	23 17 43	1458.12	24.49	4.04	221.74	116.30	23 42 1	458.1	33.10	338.40
67.88	23 17 43	1458.12	24.49	4.04	221.74	116.30	23 42 1	458.1	33.10	338.40
67.88	23 17 43	1458.12	24.49	4.04	221.74	116.30	23 42 1	458.1	33.10	338.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2564	TRA	.8594	TC3	-3.6037	BAU	.5491	SGT	3038.0	SGR	905.1	SG3	1817.4	ST	35.3	SR	12.7	SS	65.3
RDE	-.0943	RRA	-.3045	RC3	.9259	FAU	.24778	RRT	-.9348	RRF	-.9894	RTF	.9431	CRT	-.1939	CRS	.9224	CST	-.5567
FDE	.8974	FRA	7.8212	FC-	19.4335	BSP	4833	SGB	3169.9	R23	.2773	R13	-.9511	LSA	69.7	MSA	28.5	SSA	.4
BDE	.2732	BRA	.9117	BC3	3.7207	FSP	3165	SG1	3154.8	SG2	309.5	THA	164.28	EL1	35.4	EL2	12.4	ALF	175.46

LAUNCH DATE MAY 4 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 523.303 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.236	GAL	-1.42	AZL	92.98	HCA	169.70	SMA	184.17	ECC	.18263	INC	2.9790	V1	29.540
RP	215.04	LAP	-.53	LOP	32.61	VP	22.665	GAP	4.22	AZP	87.07	TAL	350.78	TAP	160.48	RCA	150.53	APO	217.80	V2	25.536
RC	151.211	GL	-29.87	GP	9.04	ZAL	111.42	ZAP	85.40	ETS	180.05	ZAE	128.14	ETE	173.23	ZAC	111.11	ETC	273.36	LVI	-19.98

PLANETOCENTRIC CONIC

C3	11.312	VHL	3.363	DLA	-35.96	RAL	352.73	RAD	6638.7	VEL	11.463	PTH	6.51	VHP	2.912	DPA	-13.38	RAP	298.65	ECC	1.1862

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 48 52	2232.43	6.02	55.19	208.73	137.28	19 26 4	1232.4	23.82	38.18
60.00	20 37 23	1943.32	13.21	35.94	215.48	128.43	21 9 46	943.3	27.57	15.27
66.80	23 15 34	1481.32	24.74	6.02	223.29	116.98	23 40 16	481.3	33.60	340.39
66.80	23 15 34	1481.32	24.74	6.02	223.29	116.98	23 40 16	481.3	33.60	340.39
66.80	23 15 34	1481.32	24.74	6.02	223.29	116.98	23 40 16	481.3	33.60	340.39
66.80	23 15 34	1481.32	24.74	6.02	223.29	116.98	23 40 16	481.3	33.60	340.39
66.80	23 15 34	1481.32	24.74	6.02	223.29	116.98	23 40 16	481.3	33.60	340.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2612	TRA	.9512	TC3	-3.7181	BAU	.5817	SGT	3234.3	SGR	999.1	SG3	1803.1	ST	37.6	SR	13.6	SS	65.6
RDE	-.0936	RRA	-.3470	RC3	.9855	FAU	.24559	RRT	-.9436	RRF	-.9930	RTF	.9482	CRT	-.3045	CRS	.9495	CST	-.5872
FDE	.9292	FRA	7.8530	FC-	18.7962	BSP	5226	SGB	3385.1	R23	.2702	R13	-.9561	LSA	71.1	MSA	29.2	SSA	.3
BDE	.2774	BRA	1.0125	BC3	3.8465	FSP	3144	SG1	3370.2	SG2	317.6	THA	163.60	EL1	37.8	EL2	12.9	ALF	172.89

LAUNCH DATE MAY 4 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 527.487 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.238	GAL	-1.47	AZL	93.13	HCA	170.87	SMA	184.21	ECC	.18292	INC	3.1289	V1	29.540
RP	215.37	LAP	-.50	LOP	33.78	VP	22.627	GAP	4.05	AZP	86.91	TAL	350.47	TAP	161.35	RCA	150.51	APO	217.90	V2	25.499
RC	153.669	GL	-31.02	GP	10.14	ZAL	111.58	ZAP	83.59	ETS	180.45	ZAE	126.14	ETE	172.92	ZAC	112.25	ETC	273.22	LVI	-20.74

PLANETOCENTRIC CONIC

C3	11.654	VHL	3.414	DLA	-36.78	RAL	353.87	RAD	6638.9	VEL	11.478	PTH	6.53	VHP	2.926	DPA	-12.42	RAP	297.76	ECC	1.1918

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 59 37	2216.69	6.81	54.52	210.70	137.20	19 36 33	1216.7	24.54	37.38
60.00	20 53 52	1912.14	14.52	34.36	217.90	128.02	21 25 44	912.1	28.63	13.32
65.44	23 12 51	1509.10	25.06	8.44	225.13	117.85	23 38 0	509.1	34.24	342.82
65.44	23 12 51	1509.10	25.06	8.44	225.13	117.85	23 38 0	509.1	34.24	342.82
65.44	23 12 51	1509.10	25.06	8.44	225.13	117.85	23 38 0	509.1	34.24	342.82
65.44	23 12 51	1509.10	25.06	8.44	225.13	117.85	23 38 0	509.1	34.24	342.82
65.44	23 12 51	1509.10	25.06	8.44	225.13	117.85	23 38 0	509.1	34.24	342.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2662	TRA	1.0495	TC3	-3.7990	BAU	.6143	SGT	3429.8	SGR	1115.0	SG3	1782.4	ST	40.0	SR	14.9	SS	66.0
RDE	-.0949	RRA	-.3995	RC3	1.0535	FAU	.24219	RRT	-.9505	RRF	-.9956	RTF	.9526	CRT	-.4028	CRS	.9700	CST	-.6126
FDE	.9749	FRA	7.8710	FC-	17.9910	BSP	5663	SGB	3606.5	R23	.2626	R13	-.9605	LSA	72.8	MSA	29.9	SSA	.3
BDE	.2826	BRA	1.1229	BC3	3.9424	FSP	3126	SG1	3591.3	SG2	330.8	THA	162.68	EL1	40.5	EL2	13.5	ALF	170.40

LAUNCH DATE MAY 4 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 14 1971

DISTANCE 531.669

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.241 GAL -1.52 AZL 93.32 HCA 172.04 SMA 184.26 ECC .18326 INC 3.3209 V1 29.540
RP 215.71 LAP -.46 LOP 34.95 VP 22.589 GAP 3.88 AZP 86.71 TAL 350.16 TAP 162.20 RCA 150.49 APO 218.02 V2 25.461
RC 156.143 GL -32.47 GP 11.53 ZAL 111.67 ZAP 81.64 ETS 180.95 ZAE 124.14 ETE 172.48 ZAC 113.68 ETC 273.09 LVI -21.78

PLANETOCENTRIC CONIC

C3 12.099 VHL 3.478 DLA -37.85 RAL 355.23 RAD 6639.1 VEL 11.497 PTH 6.55 VHP 2.948 DPA -11.16 RAP 296.88 ECC 1.1991

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 13 38	2194.87	7.90	53.60	213.19	137.07	19 50 13	1194.9	25.53	36.25
60.00	21 17 30	1864.39	16.51	31.89	221.15	127.30	21 48 35	864.4	30.20	10.25
63.72	23 9 25	1542.86	25.47	11.43	227.41	119.00	23 35 8	542.9	35.08	345.83
63.72	23 9 25	1542.86	25.47	11.43	227.41	119.00	23 35 8	542.9	35.08	345.83
63.72	23 9 25	1542.86	25.47	11.43	227.41	119.00	23 35 8	542.9	35.08	345.83
63.72	23 9 25	1542.86	25.47	11.43	227.41	119.00	23 35 8	542.9	35.08	345.83
63.72	23 9 25	1542.86	25.47	11.43	227.41	119.00	23 35 8	542.9	35.08	345.83

DIFFERENTIAL CORRECTIONS

TDE -.2781 TRA 1.1489 TC3-3.8558 BAU .6502
RDE -.0981 RRA -.4643 RC3 1.1357 FAU .23822
FDE 1.0136 FRA 7.8402 FC-17.0462 BSP 6070
BDE .2949 BRA 1.2391 BC3 4.0196 FSP 3078

MID-COURSE EXECUTION ACCURACY

SGT 3626.0 SGR 1260.2 SG3 1751.4
RRT -.9555 RRF -.9973 RTF .9556
SGB 3838.8 R23 .2559 R13 -.9640
SG1 3822.6 SG2 352.8 THA 161.47

ORBIT DETERMINATION ACCURACY

ST 42.8 SR 16.7 SS 66.2
CRT -.4794 CRS .9840 CST -.6275
LSA 74.4 MSA 30.9 SSA .2
EL1 43.6 EL2 14.3 ALF 168.13

LAUNCH DATE MAY 4 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 16 1971

DISTANCE 535.850

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.244 GAL -1.57 AZL 93.58 HCA 173.20 SMA 184.31 ECC .18363 INC 3.5775 V1 29.540
RP 216.04 LAP -.42 LOP 36.11 VP 22.551 GAP 3.72 AZP 86.45 TAL 349.83 TAP 163.03 RCA 150.47 APO 218.16 V2 25.424
RC 158.631 GL -34.36 GP 13.35 ZAL 111.64 ZAP 80.18 ETS 181.61 ZAE 122.12 ETE 171.86 ZAC 115.54 ETC 272.98 LVI -23.23

PLANETOCENTRIC CONIC

C3 12.704 VHL 3.564 DLA -39.28 RAL 356.92 RAD 6639.4 VEL 11.523 PTH 6.57 VHP 2.980 DPA -9.46 RAP 295.97 ECC 1.2091

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 32 54	2163.45	9.46	52.25	216.54	136.85	20 8 57	1163.5	26.94	34.59
60.00	21 57 28	1776.83	20.06	27.21	226.13	125.72	22 27 5	776.8	32.86	4.35
61.51	23 5 24	1584.19	25.99	15.19	230.33	120.56	23 31 48	584.2	36.18	349.64
61.51	23 5 24	1584.19	25.99	15.19	230.33	120.56	23 31 48	584.2	36.18	349.64
61.51	23 5 24	1584.19	25.99	15.19	230.33	120.56	23 31 48	584.2	36.18	349.64
61.51	23 5 24	1584.19	25.99	15.19	230.33	120.56	23 31 48	584.2	36.18	349.64
61.51	23 5 24	1584.19	25.99	15.19	230.33	120.56	23 31 48	584.2	36.18	349.64

DIFFERENTIAL CORRECTIONS

TDE -.2955 TRA 1.2546 TC3-3.8628 BAU .6888
RDE -.1033 RRA -.5476 RC3 1.2362 FAU .23339
FDE 1.0360 FRA 7.7495 FC-15.9049 BSP 6490
BDE .3131 BRA 1.3689 BC3 4.0558 FSP 2988

MID-COURSE EXECUTION ACCURACY

SGT 3820.6 SGR 1448.3 SG3 1707.0
RRT -.9598 RRF -.9985 RTF .9587
SGB 4085.9 R23 .2461 R13 -.9677
SG1 4068.0 SG2 381.8 THA 159.82

ORBIT DETERMINATION ACCURACY

ST 45.9 SR 19.0 SS 65.9
CRT -.5438 CRS .9927 CST -.6405
LSA 76.0 MSA 32.1 SSA .2
EL1 47.2 EL2 15.5 ALF 165.73

LAUNCH DATE MAY 4 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 18 1971

DISTANCE 540.027

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.248 GAL -1.63 AZL 93.94 HCA 174.36 SMA 184.38 ECC .18405 INC 3.9376 V1 29.540
RP 216.39 LAP -.39 LOP 37.27 VP 22.513 GAP 3.56 AZP 86.08 TAL 349.50 TAP 163.86 RCA 150.44 APO 218.31 V2 25.385
RC 161.134 GL -36.92 GP 15.86 ZAL 111.40 ZAP 78.65 ETS 182.50 ZAE 120.04 ETE 170.98 ZAC 118.07 ETC 272.90 LVI -25.32

PLANETOCENTRIC CONIC

C3 13.588 VHL 3.686 DLA -41.27 RAL 359.14 RAD 6639.8 VEL 11.561 PTH 6.61 VHP 3.029 DPA -7.08 RAP 295.03 ECC 1.2236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 1 29	2115.43	11.84	50.17	221.43	136.43	20 36 44	1115.4	29.05	31.96
58.59	23 1 3	1635.91	26.62	20.02	234.29	122.78	23 28 19	635.9	37.64	354.61
58.59	23 1 3	1635.91	26.62	20.02	234.29	122.78	23 28 19	635.9	37.64	354.61
58.59	23 1 3	1635.91	26.62	20.02	234.29	122.78	23 28 19	635.9	37.64	354.61
58.59	23 1 3	1635.91	26.62	20.02	234.29	122.78	23 28 19	635.9	37.64	354.61
58.59	23 1 3	1635.91	26.62	20.02	234.29	122.78	23 28 19	635.9	37.64	354.61
58.59	23 1 3	1635.91	26.62	20.02	234.29	122.78	23 28 19	635.9	37.64	354.61

DIFFERENTIAL CORRECTIONS

TDE -.3231 TRA 1.3642 TC3-3.8105 BAU .7350
RDE -.1145 RRA -.6390 RC3 1.3604 FAU .22726
FDE 1.0699 FRA 7.5604 FC-14.4791 BSP 6887
BDE .3428 BRA 1.5150 BC3 4.0461 FSP 2849

MID-COURSE EXECUTION ACCURACY

SGT 4012.9 SGR 1701.4 SG3 1842.0
RRT -.9627 RRF -.9992 RTF .9607
SGB 4358.7 R23 .2359 R13 -.9710
SG1 4337.8 SG2 425.9 THA 157.57

ORBIT DETERMINATION ACCURACY

ST 49.4 SR 22.3 SS 65.3
CRT -.5870 CRS .9976 CST -.6418
LSA 77.8 MSA 33.8 SSA .2
EL1 51.3 EL2 17.4 ALF 163.13

LAUNCH DATE MAY 4 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 20 1971

DISTANCE 544.204

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.252 GAL -1.68 AZL 94.48 HCA 175.52 SMA 184.45 ECC .18450 INC 4.4826 V1 29.540
RP 216.73 LAP -.35 LOP 38.43 VP 22.476 GAP 3.40 AZP 85.53 TAL 349.16 TAP 164.67 RCA 150.41 APO 218.48 V2 25.347
RC 163.649 GL -40.56 GP 19.49 ZAL 110.81 ZAP 77.32 ETS 183.76 ZAE 117.83 ETE 169.68 ZAC 121.73 ETC 272.89 LVI -28.45

PLANETOCENTRIC CONIC

C3 15.022 VHL 3.876 DLA -44.11 RAL 2.33 RAD 6640.5 VEL 11.622 PTH 6.66 VHP 3.113 DPA -3.56 RAP 293.98 ECC 1.2472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 50 19	2031.32	15.95	46.42	229.57	135.44	21 24 10	1031.3	32.59	27.06
54.61	22 57 23	1702.39	27.34	26.45	240.08	126.07	23 25 45	702.4	39.59	1.39
54.61	22 57 23	1702.39	27.34	26.45	240.08	126.07	23 25 45	702.4	39.59	1.39
54.61	22 57 23	1702.39	27.34	26.45	240.08	126.07	23 25 45	702.4	39.59	1.39
54.61	22 57 23	1702.39	27.34	26.45	240.08	126.07	23 25 45	702.4	39.59	1.39
54.61	22 57 23	1702.39	27.34	26.45	240.08	126.07	23 25 45	702.4	39.59	1.39
54.61	22 57 23	1702.39	27.34	26.45	240.08	126.07	23 25 45	702.4	39.59	1.39

DIFFERENTIAL CORRECTIONS

TDE -.3473 TRA 1.4949 TC3-3.6228 BAU .7880
RDE -.1411 RRA -.6172 RC3 1.5071 FAU .21788
FDE 1.1489 FRA 7.2053 FC-12.5564 BSP 7405
BDE .3749 BRA 1.7037 BC3 3.9237 FSP 2628

MID-COURSE EXECUTION ACCURACY

SGT 4198.1 SGR 2059.0 SG3 1540.1
RRT -.9663 RRF -.9996 RTF .9639
SGB 4675.8 R23 .2173 R13 -.9758
SG1 4651.3 SG2 478.3 THA 154.35

ORBIT DETERMINATION ACCURACY

ST 53.0 SR 27.4 SS 64.2
CRT -.6240 CRS .9996 CST -.6449
LSA 80.2 MSA 35.4 SSA .1
EL1 56.1 EL2 20.2 ALF 159.35

LAUNCH DATE MAY 4 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 548.375 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.257 GAL -1.74 AZL 95.40 HCA 176.67 SMA 184.92 ECC .18499 INC 5.3993 V1 29.540
RP 217.08 LAP -.31 LOP 39.58 VP 22.438 GAP 3.24 AZP 84.61 TAL 348.81 TAP 165.47 RCA 150.39 APO 218.66 V2 25.308
RC 166.178 GL -48.07 GP 25.17 ZAL 109.54 ZAP 76.45 ETS 185.66 ZAE 115.30 ETE 167.64 ZAC 127.42 ETC 273.00 LVI -33.45

PLANETOCENTRIC CONIC

C3 17.763 VHL 4.215 DLA -48.36 RAL 7.50 RAD 6641.8 VEL 11.738 PTH 6.77 VHP 3.279 DPA 1.99 RAP 292.75 ECC 1.2923

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.99	22 57 35	1792.67	27.85	35.41	249.47	131.28	23 27 28	792.7	42.06	11.34
48.99	22 57 35	1792.67	27.85	35.41	249.47	131.28	23 27 28	792.7	42.06	11.34
48.99	22 57 35	1792.67	27.85	35.41	249.47	131.28	23 27 28	792.7	42.06	11.34
48.99	22 57 35	1792.67	27.85	35.41	249.47	131.28	23 27 28	792.7	42.06	11.34
48.99	22 57 35	1792.67	27.85	35.41	249.47	131.28	23 27 28	792.7	42.06	11.34
48.99	22 57 35	1792.67	27.85	35.41	249.47	131.28	23 27 28	792.7	42.06	11.34
48.99	22 57 35	1792.67	27.85	35.41	249.47	131.28	23 27 28	792.7	42.06	11.34

DIFFERENTIAL CORRECTIONS

TDE -.3635 TRA 1.6416 TC3-3.2608 BAU .8675
RDE -.2226 RRA-1.0604 RC3 1.6469 FAU .19952
FDE 1.3996 FRA 6.5288 FC3-9.7244 BSP 7929
BDE .4263 BRA 1.9543 BC3 3.6531 FSP 2293

MID-COURSE EXECUTION ACCURACY

SGT 4367.9 SGR 2593.4 SG3 1364.0
RRT -.9669 RRF -.9998 RTF .9637
SGB 5079.8 R23 .2024 R13 -.9792
SG1 5047.4 SG2 572.8 THA 149.71

ORBIT DETERMINATION ACCURACY

ST 56.3 SR 36.0 SS 62.9
CRT -.6299 CRS 1.0000 CST -.6235
LSA 83.5 MSA 38.1 SSA .1
EL1 61.7 EL2 25.5 ALF 153.16

LAUNCH DATE MAY 4 1971 FLIGHT TIME 234.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 552.540 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.262 GAL -1.80 AZL 97.28 HCA 177.81 SMA 184.60 ECC .18552 INC 7.2702 V1 29.540
RP 217.43 LAP -.28 LOP 40.73 VP 22.401 GAP 3.08 AZP 82.73 TAL 348.45 TAP 166.26 RCA 150.36 APO 218.85 V2 25.269
RC 168.717 GL -55.15 GP 34.92 ZAL 106.86 ZAP 76.71 ETS 188.56 ZAE 111.89 ETE 164.25 ZAC 137.15 ETC 273.52 LVI -42.04

PLANETOCENTRIC CONIC

C3 24.759 VHL 4.976 DLA -54.87 RAL 17.88 RAD 6644.9 VEL 12.030 PTH 7.02 VHP 3.705 DPA 11.61 RAP 291.12 ECC 1.4075

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.80	23 13 42	1930.31	26.66	48.51	267.19	139.92	23 45 53	930.3	44.08	27.51
40.80	23 13 42	1930.31	26.66	48.51	267.19	139.92	23 45 53	930.3	44.08	27.51
40.80	23 13 42	1930.31	26.66	48.51	267.19	139.92	23 45 53	930.3	44.08	27.51
40.80	23 13 42	1930.31	26.66	48.51	267.19	139.92	23 45 53	930.3	44.08	27.51
40.80	23 13 42	1930.31	26.66	48.51	267.19	139.92	23 45 53	930.3	44.08	27.51
40.80	23 13 42	1930.31	26.66	48.51	267.19	139.92	23 45 53	930.3	44.08	27.51
40.80	23 13 42	1930.31	26.66	48.51	267.19	139.92	23 45 53	930.3	44.08	27.51

DIFFERENTIAL CORRECTIONS

TDE -.2366 TRA 1.8177 TC3-2.5863 BAU 1.0247
RDE -.5698 RRA-1.4495 RC3 1.7014 FAU .16358
FDE 2.1152 FRA 5.0163 FC3-5.7197 BSP 8227
BDE .6170 BRA 2.3249 BC3 3.0958 FSP 1622

MID-COURSE EXECUTION ACCURACY

SGT 4464.5 SGR 3422.2 SG3 1019.0
RRT -.9642 RRF -.9998 RTF .9591
SGB 5625.2 R23 .1871 R13 -.9823
SG1 5578.1 SG2 726.5 THA 142.79

ORBIT DETERMINATION ACCURACY

ST 56.4 SR 54.6 SS 62.1
CRT -.6299 CRS .9994 CST -.6031
LSA 91.6 MSA 40.1 SSA .0
EL1 70.8 EL2 33.7 ALF 136.49

LAUNCH DATE MAY 4 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 30 1971

HELIOCENTRIC CONIC DISTANCE 565.071 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.279 GAL -2.00 AZL 82.39 HCA 181.26 SMA 184.88 ECC .18733 INC 7.5928 V1 29.540
RP 218.51 LAP -.17 LOP 44.15 VP 22.291 GAP 2.61 AZP 97.61 TAL 347.26 TAP 168.53 RCA 150.25 APO 219.52 V2 25.149
RC 176.400 GL 35.89 GP -48.09 ZAL 107.55 ZAP 77.17 ETS 164.11 ZAE 104.01 ETE 196.81 ZAC 54.27 ETC 272.61 LVI 34.04

PLANETOCENTRIC CONIC

C3 26.618 VHL 5.159 DLA 44.71 RAL 319.79 RAD 6645.7 VEL 12.107 PTH 7.08 VHP 4.912 DPA -69.31 RAP 317.60 ECC 1.4381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	9 33 25	4266.48	-34.26	193.73	216.53	54.71	10 44 32	3266.5	-45.40	165.56
53.81	8 6 40	4490.04	-21.93	203.81	205.80	50.01	9 21 30	3490.0	-36.19	181.41
53.81	8 6 40	4490.04	-21.93	203.81	205.80	50.01	9 21 30	3490.0	-36.19	181.41
53.81	8 6 40	4490.04	-21.93	203.81	205.80	50.01	9 21 30	3490.0	-36.19	181.41
53.81	8 6 40	4490.04	-21.93	203.81	205.80	50.01	9 21 30	3490.0	-36.19	181.41
53.81	8 6 40	4490.04	-21.93	203.81	205.80	50.01	9 21 30	3490.0	-36.19	181.41
53.81	8 6 40	4490.04	-21.93	203.81	205.80	50.01	9 21 30	3490.0	-36.19	181.41

DIFFERENTIAL CORRECTIONS

TDE 3.4894 TRA .4448 TC3-2.9989 BAU 1.3232
RDE 2.7676 RRA 1.0816 RC3-2.1984 FAU .09359
FDE 3.7778 FRA 1.6159 FC3-3.0440 BSP 6746
BDE 4.4661 BRA 1.1695 BC3 3.7184 FSP 611

MID-COURSE EXECUTION ACCURACY

SGT 5007.5 SGR 4193.5 SG3 502.6
RRT .9815 RRF .9994 RTF .5520
SGB 6531.5 R23 .1954 R13 .9806
SG1 6470.3 SG2 892.0 THA 39.75

ORBIT DETERMINATION ACCURACY

ST 194.1 SR 156.9 SS 90.5
CRT .9941 CRS -.9999 CST -.9922
LSA 265.0 MSA 15.0 SSA .1
EL1 249.2 EL2 13.2 ALF 38.91

LAUNCH DATE MAY 4 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC DISTANCE 569.218 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.285 GAL -2.06 AZL 86.86 HCA 182.39 SMA 184.99 ECC .18799 INC 3.1268 V1 29.540
RP 218.88 LAP -.13 LOP 45.28 VP 22.254 GAP 2.46 AZP 93.14 TAL 346.89 TAP 169.28 RCA 150.21 APO 219.76 V2 25.109
RC 178.981 GL 29.55 GP -31.93 ZAL 116.39 ZAP 71.32 ETS 166.85 ZAE 106.00 ETE 190.77 ZAC 70.48 ETC 271.93 LVI 19.83

PLANETOCENTRIC CONIC

C3 12.835 VHL 3.583 DLA 20.79 RAL 333.22 RAD 6639.5 VEL 11.528 PTH 6.58 VHP 3.650 DPA -54.45 RAP 303.37 ECC 1.2112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 24 23	3455.35	-45.50	124.07	201.38	105.73	14 21 58	2455.3	-34.48	95.75
60.00	13 38 52	3416.76	-39.51	122.35	203.13	98.68	14 35 49	2416.8	-31.83	94.15
70.00	14 1 27	3350.25	-34.04	117.67	203.83	93.01	14 57 17	2350.2	-29.27	89.99
80.00	14 40 20	3228.35	-29.84	108.52	203.92	88.96	15 34 8	2228.4	-27.23	81.40
90.00	15 47 53	3010.27	-28.17	92.43	203.86	87.39	16 38 3	2010.3	-26.41	65.56
100.00	17 23 12	2702.83	-29.84	69.88	203.92	88.96	18 8 15	1702.8	-27.23	42.76
110.00	19 0 54	2397.06	-34.04	46.59	203.83	93.01	19 40 51	1397.1	-29.27	18.91

DIFFERENTIAL CORRECTIONS

TDE 1.7929 TRA 1.2379 TC3-5.4586 BAU 1.0314
RDE 1.0096 RRA 1.0596 RC3-2.5166 FAU .15294
FDE 4.0338 FRA 4.4491 FC-10.3162 BSP 8956
BDE 2.0576 BRA 1.6295 BC3 6.0108 FSP 1717

MID-COURSE EXECUTION ACCURACY

SGT 5291.8 SGR 3023.9 SG3 1072.8
RRT .9699 RRF .9998 RTF .9668
SGB 6094.9 R23 .1971 R13 .9803
SG1 6060.9 SG2 642.7 THA 29.36

ORBIT DETERMINATION ACCURACY

ST 147.0 SR 85.2 SS 108.0
CRT .9943 CRS -.9999 CST -.9925
LSA 200.9 MSA 11.7 SSA .1
EL1 169.7 EL2 7.9 ALF 30.04

LAUNCH DATE MAY 4 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC DISTANCE 573.367 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.291	GAL	-2.13	AZL	88.46	HCA	183.52	SMA	185.10	ECC	.18867	INC	1.5296	V1	29.540
RP	219.25	LAP	-.09	LOP	46.41	VP	22.218	GAP	2.30	AZP	91.54	TAL	346.50	TAP	170.01	RCA	150.17	APO	220.02	V2	25.068
RC	181.572	GL	15.28	GP	-23.05	ZAL	119.73	ZAP	68.14	ETS	169.25	ZAE	105.91	ETE	187.40	ZAC	79.37	ETC	271.75	LVI	11.82

PLANETOCENTRIC CONIC

C3	10.813	VHL	3.288	DLA	7.76	RAL	339.24	RAD	6638.5	VEL	11.441	PTH	6.49	VHP	3.346	DPA	-45.90	RAP	299.52	ECC	1.1780

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 40 50	3152.10	-36.91	100.22	195.43	122.47	15 33 22	2152.1	-21.27	78.98
60.00	15 12 4	3068.98	-32.40	95.76	198.45	115.40	16 3 13	2069.0	-19.43	73.13
70.00	15 54 56	2942.77	-28.37	87.48	200.40	109.87	16 44 1	1942.8	-17.71	64.08
80.00	16 54 42	2755.66	-25.44	74.36	201.47	106.18	17 40 38	1755.7	-16.44	50.58
90.00	18 12 23	2504.97	-24.34	56.27	201.81	104.86	18 54 8	1505.0	-15.95	32.38
100.00	19 37 34	2230.14	-25.44	35.73	201.47	106.18	20 14 44	1230.1	-16.44	11.95
110.00	20 54 24	1989.59	-28.37	16.40	200.40	109.87	21 27 34	989.6	-17.71	352.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2553	TRA	1.5639	TC3	-6.3922	BAU	.9698	SGT	5479.0	SGR	2216.6	SG3	1315.5	ST	117.0	SR	53.2	SS	101.7
RDE	.5546	RRA	.8409	RC3	-2.0360	FAU	.17478	RRT	.9724	RRF	.9997	RTF	.9707	CRT	.9974	CRS	-.9996	CST	-.9952
FDE	3.6190	FRA	5.8920	FC	-13.9936	BSP	9449	SGB	5910.4	R23	.2075	R13	.9779	LSA	163.7	MSA	7.7	SSA	.3
BDE	1.3723	BRA	1.7756	BC3	6.7086	FSP	2258	SG1	5890.8	SG2	481.3	THA	21.63	EL1	128.5	EL2	3.5	ALF	24.41

LAUNCH DATE MAY 4 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 577.515 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.298	GAL	-2.20	AZL	89.28	HCA	184.64	SMA	185.21	ECC	.18939	INC	.7118	V1	29.540
RP	219.62	LAP	-.06	LOP	47.54	VP	22.182	GAP	2.15	AZP	90.72	TAL	346.09	TAP	170.73	RCA	150.13	APO	220.28	V2	25.028
RC	184.172	GL	7.19	GP	-17.81	ZAL	121.14	ZAP	65.96	ETS	170.87	ZAE	105.05	ETE	185.37	ZAC	84.63	ETC	271.67	LVI	7.07

PLANETOCENTRIC CONIC

C3	10.434	VHL	3.230	DLA	.46	RAL	342.79	RAD	6638.3	VEL	11.425	PTH	6.48	VHP	3.243	DPA	-40.81	RAP	297.72	ECC	1.1717

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 21 50	2999.29	-30.87	90.63	195.48	128.19	16 11 49	1999.3	-13.93	71.87
60.00	16 0 55	2895.30	-26.76	84.52	198.73	121.33	16 49 10	1895.3	-12.23	64.10
70.00	16 52 37	2743.27	-23.06	74.43	200.96	115.92	17 38 20	1743.3	-10.66	52.93
80.00	18 0 24	2530.99	-20.36	59.62	202.26	112.32	18 42 35	1531.0	-9.49	37.52
90.00	19 21 37	2268.92	-19.35	40.78	202.69	111.03	19 59 26	1268.9	-9.05	18.49
100.00	20 43 16	2005.46	-20.36	20.99	202.26	112.32	21 16 42	1005.5	-9.49	358.89
110.00	21 52 3	1790.09	-23.06	3.35	200.96	115.92	22 21 53	790.1	-10.66	341.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0185	TRA	1.7736	TC3	-6.7005	BAU	.9600	SGT	5648.0	SGR	1702.7	SG3	1411.3	ST	102.1	SR	38.0	SS	95.9
RDE	.3780	RRA	.6714	RC3	-1.5720	FAU	.18204	RRT	.9727	RRF	.9993	RTF	.9722	CRT	.9997	CRS	-.9988	CST	-.9981
FDE	3.3105	FRA	6.6008	FC	-15.1046	BSP	9798	SGB	5899.1	R23	.2126	R13	.9764	LSA	145.1	MSA	4.3	SSA	.7
BDE	1.0864	BRA	1.8964	BC3	6.8825	FSP	2504	SG1	5886.8	SG2	379.3	THA	16.41	EL1	109.0	EL2	.9	ALF	20.42

LAUNCH DATE MAY 4 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 581.660 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.305	GAL	-2.27	AZL	89.78	HCA	185.76	SMA	185.32	ECC	.19014	INC	.2008	V1	29.540
RP	219.99	LAP	-.02	LOP	48.66	VP	22.146	GAP	1.99	AZP	90.22	TAL	345.68	TAP	171.45	RCA	150.09	APO	220.56	V2	24.987
RC	186.781	GL	2.17	GP	-14.41	ZAL	121.93	ZAP	64.22	ETS	171.98	ZAE	103.91	ETE	184.06	ZAC	88.03	ETC	271.61	LVI	4.01

PLANETOCENTRIC CONIC

C3	10.465	VHL	3.235	DLA	-3.96	RAL	345.21	RAD	6638.3	VEL	11.426	PTH	6.48	VHP	3.206	DPA	-37.50	RAP	296.66	ECC	1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 47 40	2911.76	-27.08	85.74	196.70	130.74	16 36 12	1911.8	-9.61	68.04
60.00	16 31 28	2795.28	-23.08	78.62	200.07	124.00	17 18 3	1795.3	-7.93	59.16
70.00	17 28 24	2627.88	-19.45	67.42	202.44	118.64	18 12 12	1627.9	-6.36	46.76
80.00	18 40 57	2400.71	-16.79	51.60	203.86	115.06	19 20 58	1400.7	-5.19	30.24
90.00	20 4 15	2131.95	-15.79	32.31	204.33	113.77	20 39 47	1131.9	-4.75	10.73
100.00	21 23 49	1875.18	-16.79	12.96	203.86	115.06	21 55 4	875.2	-5.19	351.61
110.00	22 27 50	1674.70	-19.45	356.34	202.44	118.64	22 55 45	674.7	-6.36	335.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8819	TRA	1.9228	TC3	-6.8691	BAU	.9767	SGT	5817.7	SGR	1358.9	SG3	1444.8	ST	93.6	SR	29.4	SS	91.0
RDE	.2884	RRA	.5446	RC3	-1.2471	FAU	.18573	RRT	.9720	RRF	.9984	RTF	.9730	CRT	.9975	CRS	-.9967	CST	-.9995
FDE	3.0640	FRA	6.9291	FC	-15.3657	BSP	9934	SGB	5974.3	R23	.2124	R13	.9756	LSA	133.8	MSA	2.4	SSA	1.7
BDE	.9279	BRA	1.9985	BC3	6.9814	FSP	2566	SG1	5966.2	SG2	311.5	THA	12.83	EL1	98.1	EL2	2.0	ALF	17.40

LAUNCH DATE MAY 4 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 585.801 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.312	GAL	-2.35	AZL	90.12	HCA	186.88	SMA	185.45	ECC	.19092	INC	.0951	V1	29.540
RP	220.36	LAP	.01	LOP	49.78	VP	22.110	GAP	1.84	AZP	89.88	TAL	345.27	TAP	172.15	RCA	150.04	APO	220.85	V2	24.946
RC	189.399	GL	-1.18	GP	-12.05	ZAL	122.91	ZAP	62.69	ETS	172.79	ZAE	102.66	ETE	183.15	ZAC	90.39	ETC	271.58	LVI	1.88

PLANETOCENTRIC CONIC

C3	10.629	VHL	3.260	DLA	-6.84	RAL	347.04	RAD	6638.4	VEL	11.433	PTH	6.48	VHP	3.198	DPA	-35.21	RAP	295.96	ECC	1.1749

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 33	2857.55	-24.64	82.89	198.11	132.08	16 53 11	1857.6	-6.92	65.73
60.00	16 52 28	2732.80	-20.66	75.11	201.57	125.40	17 38 1	1732.8	-5.20	56.13
70.00	17 52 53	2555.14	-17.02	63.18	204.04	120.07	18 35 28	1555.1	-3.60	42.93
80.00	19 8 39	2317.93	-14.34	46.67	205.54	116.47	19 47 17	1317.9	-2.40	25.68
90.00	20 33 22	2044.62	-13.33	27.08	206.04	115.17	21 7 27	1044.6	-1.95	5.83
100.00	21 51 31	1792.38	-14.34	8.04	205.54	116.47	22 21 24	792.4	-2.40	347.05
110.00	22 52 19	1601.96	-17.02	352.10	204.04	120.07	23 19 1	602.0	-3.60	331.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8052	TRA	2.0557	TC3	-6.9567	BAU	.9990	SGT	5984.8	SGR	1117.2	SG3	1450.4	ST	89.6	SR	24.1	SS	87.4
RDE	.2384	RRA	.4509	RC3	-1.0123	FAU	.18674	RRT	.9708	RRF	.9968	RTF	.9741	CRT	.9899	CRS	-.9929	CST	-.9994
FDE	2.8867	FRA	7.0950	FC	-15.2100	BSP	10117	SGB	6088.2	R23	.2056	R13	.9757	LSA	127.4	MSA	3.5	SSA	1.4
BDE	.8398	BRA	2.1045	BC3	7.0300	FSP	2562	SG1	6082.4	SG2	263.8	THA	10.29	EL1	92.8	EL2	3.3	ALF	14.95

LAUNCH DATE MAY 4 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 589.939 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.320 GAL -2.42 AZL 90.36 HCA 187.99 SMA 185.57 ECC .19173 INC .3638 V1 29.540
RP 220.74 LAP .05 LOP 90.89 VP 22.074 GAP 1.69 AZP 89.64 TAL 344.85 TAP 172.84 RCA 149.99 APO 221.15 V2 24.904
RC 192.025 GL -3.55 GP -10.33 ZAL 123.03 ZAP 61.30 ETS 173.40 ZAE 101.37 ETE 182.50 ZAC 92.12 ETC 271.56 LVI .33

PLANETOCENTRIC CONIC

C3 10.844 VHL 3.293 DLA -8.79 RAL 348.50 RAD 6638.5 VEL 11.443 PTH 6.49 VHP 3.203 DPA -33.52 RAP 295.47 ECC 1.1785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 43	2822.42	-23.02	81.11	199.48	132.86	17 5 45	1822.4	-5.16	64.24
60.00	17 7 48	2691.89	-19.03	72.88	203.01	126.22	17 52 40	1691.9	-3.41	54.16
70.00	18 10 41	2506.99	-15.36	60.44	205.56	120.89	18 52 28	1507.0	-1.77	40.42
80.00	19 28 45	2262.60	-12.64	43.45	207.12	117.28	20 6 28	1262.6	-.53	22.64
90.00	20 54 29	1986.01	-11.61	23.64	207.65	115.97	21 27 35	986.0	-.06	2.57
100.00	22 11 37	1737.07	-12.64	4.82	207.12	117.28	22 40 34	737.1	-.53	344.01
110.00	23 10 8	1553.81	-15.36	349.36	205.56	120.89	23 36 1	553.8	-1.77	329.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7717 TRA 2.1882 TC3-6.9770 BAU 1.0187 SGT 6144.9 SGR 939.4 SG3 1441.5 ST 88.8 SR 20.9 SS 85.4
RDE .2104 RRA .3804 RC3 -.8314 FAU .18457 RRT .9681 RRF .9940 RTF .9748 CRT .9776 CRS -.9868 CST -.9985
FDE 2.7891 FRA 7.1985 FC-14.7345 BSP 10456 SGB 6216.3 R23 .1956 R13 .9759 LSA 124.9 MSA 5.0 SSA 1.2
BDE .7999 BRA 2.2211 BC3 7.0263 FSP 2567 SG1 6211.9 SG2 233.0 THA 8.43 EL1 91.2 EL2 4.3 ALF 12.98

LAUNCH DATE MAY 4 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 594.069 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.327 GAL -2.50 AZL 90.54 HCA 189.10 SMA 185.70 ECC .19256 INC .5431 V1 29.540
RP 221.12 LAP .09 LOP 52.00 VP 22.039 GAP 1.54 AZP 89.46 TAL 344.42 TAP 173.53 RCA 149.94 APO 221.46 V2 24.863
RC 194.659 GL -5.29 GP -9.01 ZAL 123.52 ZAP 60.00 ETS 173.87 ZAE 100.07 ETE 182.01 ZAC 93.44 ETC 271.54 LVI -.86

PLANETOCENTRIC CONIC

C3 11.082 VHL 3.329 DLA -10.16 RAL 349.73 RAD 6638.6 VEL 11.453 PTH 6.50 VHP 3.217 DPA -32.24 RAP 295.13 ECC 1.1824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 51	2799.22	-21.94	79.96	200.77	133.34	17 15 30	1799.2	-4.00	63.27
60.00	17 19 29	2664.52	-17.93	71.42	204.36	126.72	18 3 54	1664.5	-2.21	52.85
70.00	18 24 10	2474.36	-14.21	58.61	206.97	121.39	19 5 25	1474.4	-.52	38.71
80.00	19 43 56	2224.69	-11.44	41.27	208.58	117.77	20 21 0	1224.7	.75	20.56
90.00	21 10 25	1945.66	-10.39	21.30	209.13	116.45	21 42 50	945.7	1.24	.32
100.00	22 26 48	1699.16	-11.44	2.64	208.58	117.77	22 55 7	699.2	.75	341.93
110.00	23 23 36	1521.18	-14.21	347.53	206.97	121.39	23 48 58	521.2	-.52	327.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7531 TRA 2.3109 TC3-7.0054 BAU 1.0429 SGT 6305.7 SGR 805.1 SG3 1426.2 ST 89.0 SR 18.8 SS 84.4
RDE .1942 RRA .3256 RC3 -.6919 FAU .18083 RRT .9618 RRF .9896 RTF .9739 CRT .9605 CRS -.9785 CST -.9969
FDE 2.7411 FRA 7.2735 FC-14.1266 BSP 10722 SGB 6356.9 R23 .1891 R13 .9747 LSA 123.9 MSA 6.5 SSA 1.1
BDE .7777 BRA 2.3337 BC3 7.0395 FSP 2567 SG1 6353.1 SG2 218.7 THA 7.01 EL1 90.8 EL2 5.1 ALF 11.49

LAUNCH DATE MAY 4 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 598.196 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.335 GAL -2.58 AZL 90.69 HCA 190.21 SMA 185.83 ECC .19342 INC .6861 V1 29.540
RP 221.50 LAP .12 LOP 53.11 VP 22.004 GAP 1.39 AZP 89.32 TAL 343.99 TAP 174.20 RCA 149.89 APO 221.77 V2 24.821
RC 197.299 GL -6.61 GP -7.98 ZAL 124.00 ZAP 58.77 ETS 174.25 ZAE 98.78 ETE 181.64 ZAC 94.47 ETC 271.54 LVI -1.81

PLANETOCENTRIC CONIC

C3 11.330 VHL 3.366 DLA -11.15 RAL 350.81 RAD 6638.7 VEL 11.464 PTH 6.51 VHP 3.236 DPA -31.23 RAP 294.89 ECC 1.1865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 36 54	2783.91	-21.23	79.21	201.98	133.64	17 23 18	1783.9	-3.23	62.63
60.00	17 28 41	2648.17	-17.18	70.44	205.62	127.04	18 12 47	1648.2	-1.40	51.98
70.00	18 34 41	2452.13	-13.42	57.37	208.28	121.71	19 15 33	1452.1	.33	37.55
80.00	19 55 42	2198.52	-10.61	39.77	209.93	118.07	20 32 21	1198.5	1.64	19.12
90.00	21 22 46	1917.65	-9.54	19.69	210.50	116.75	21 54 43	917.6	2.14	358.75
100.00	22 38 34	1672.99	-10.61	1.14	209.93	118.07	23 6 27	673.0	1.64	340.49
110.00	23 34 8	1498.95	-13.42	346.29	208.28	121.71	23 59 7	498.9	.33	326.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7515 TRA 2.4330 TC3-7.0153 BAU 1.0663 SGT 6462.0 SGR 700.2 SG3 1405.8 ST 90.3 SR 17.3 SS 83.8
RDE .1845 RRA .2807 RC3 -.5837 FAU .17644 RRT .9533 RRF .9829 RTF .9733 CRT .9403 CRS -.9681 CST -.9953
FDE 2.7163 FRA 7.3135 FC-13.4812 BSP 11035 SGB 6499.9 R23 .1791 R13 .9739 LSA 124.1 MSA 7.8 SSA 1.0
BDE .7738 BRA 2.4492 BC3 7.0395 FSP 2561 SG1 6496.5 SG2 210.3 THA 5.90 EL1 91.7 EL2 5.8 ALF 10.27

LAUNCH DATE MAY 4 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 602.320 EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.343 GAL -2.65 AZL 90.80 HCA 191.31 SMA 185.96 ECC .19430 INC .8002 V1 29.540
RP 221.88 LAP .16 LOP 54.21 VP 21.968 GAP 1.23 AZP 89.21 TAL 343.55 TAP 174.87 RCA 149.83 APO 222.10 V2 24.780
RC 199.945 GL -7.63 GP -7.14 ZAL 124.49 ZAP 57.60 ETS 174.56 ZAE 97.50 ETE 181.34 ZAC 95.31 ETC 271.54 LVI -2.58

PLANETOCENTRIC CONIC

C3 11.584 VHL 3.404 DLA -11.86 RAL 351.76 RAD 6638.8 VEL 11.475 PTH 6.52 VHP 3.258 DPA -30.40 RAP 294.72 ECC 1.1907

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 43 28	2774.08	-20.76	78.73	203.10	133.82	17 29 42	1774.1	-2.73	62.21
60.00	17 36 6	2634.10	-16.68	69.81	206.79	127.24	18 20 0	1634.1	-.87	51.40
70.00	18 43 5	2437.18	-12.88	56.55	209.50	121.91	19 23 42	1437.2	.90	36.77
80.00	20 5 2	2180.63	-10.03	38.76	211.18	118.27	20 41 23	1180.6	2.25	18.14
90.00	21 32 32	1898.38	-8.95	18.58	211.76	116.94	22 4 10	898.4	2.76	357.67
100.00	22 47 54	1655.10	-10.03	.12	211.18	118.27	23 15 29	655.1	2.25	339.51
110.00	23 42 31	1484.00	-12.88	345.47	209.50	121.91	24 7 15	484.0	.90	325.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7479 TRA 2.5418 TC3-7.0590 BAU 1.0961 SGT 6617.5 SGR 615.7 SG3 1380.6 ST 91.2 SR 16.1 SS 82.0
RDE .1765 RRA .2410 RC3 -.5067 FAU .17461 RRT .9434 RRF .9731 RTF .9741 CRT .9165 CRS -.9540 CST -.9939
FDE 2.6443 FRA 7.2753 FC-13.0489 BSP 11202 SGB 6646.1 R23 .1606 R13 .9745 LSA 123.4 MSA 8.7 SSA 1.0
BDE .7685 BRA 2.5532 BC3 7.0771 FSP 2485 SG1 6643.0 SG2 203.4 THA 5.02 EL1 92.4 EL2 6.4 ALF 9.24

LAUNCH DATE MAY 4 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 19 1972

DISTANCE 606.437

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.351 GAL -2.74 AZL 90.90 HCA 192.41 SMA 186.10 ECC .19521 INC .8953 V1 29.540
RP 222.27 LAP .19 LOP 55.31 VP 21.933 GAP 1.08 AZP 89.12 TAL 343.11 TAP 175.53 RCA 149.77 APO 222.43 V2 24.738
RC 202.595 GL -8.44 GP -6.46 ZAL 124.99 ZAP 56.48 ETS 174.83 ZAE 96.24 ETE 181.11 ZAC 95.99 ETC 271.55 LVI -3.22

PLANETOCENTRIC CONIC

C3 11.843 VHL 3.441 DLA -12.38 RAL 352.64 RAD 6639.0 VEL 11.486 PTH 6.53 VHP 3.282 DPA -29.72 RAP 294.63 ECC 1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 57	2768.27	-20.49	78.45	204.17	133.93	17 35 5	1768.3	-2.44	61.97
60.00	17 42 12	2626.66	-16.37	69.42	207.90	127.36	18 25 59	1626.7	-.54	51.04
70.00	18 49 54	2427.63	-12.54	56.02	210.64	122.03	19 30 22	1427.6	1.27	36.28
80.00	20 12 33	2168.90	-9.66	38.09	212.35	118.39	20 48 42	1168.9	2.64	17.50
90.00	21 40 22	1885.62	-8.55	17.85	212.94	117.06	22 11 47	885.6	3.17	356.96
100.00	22 55 25	1643.37	-9.66	359.46	212.35	118.39	23 22 48	643.4	2.64	338.86
110.00	23 49 20	1474.45	-12.54	344.94	210.64	122.03	24 13 55	474.4	1.27	325.19

DIFFERENTIAL CORRECTIONS

TDE .7616 TRA 2.6600 TC3-7.0664 BAU 1.1210
RDE .1734 RRA .2085 RC3 -.4397 FAU .17064
FDE 2.6247 FRA 7.2629 FC-12.4736 BSP 11484
BDE .7811 BRA 2.6682 BC3 7.0800 FSP 2446

MID-COURSE EXECUTION ACCURACY

SGT 6769.0 SGR 548.9 SG3 1355.3
RRT .9284 RRF .9593 RTF .9741
SGB 6791.3 R23 .1459 R13 .9744
SG1 6788.2 SG2 203.4 THA 4.31

ORBIT DETERMINATION ACCURACY

ST 93.3 SR 15.4 SS 61.4
CRT .8922 CRS -.9391 CST -.9927
LSA 124.4 MSA 9.6 SSA 1.0
EL1 94.3 EL2 6.9 ALF 8.42

LAUNCH DATE MAY 4 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 21 1972

DISTANCE 610.550

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.360 GAL -2.82 AZL 90.97 HCA 193.51 SMA 186.24 ECC .19615 INC .9750 V1 29.540
RP 222.65 LAP .23 LOP 56.40 VP 21.898 GAP .93 AZP 89.05 TAL 342.67 TAP 176.18 RCA 149.71 APO 222.77 V2 24.696
RC 205.250 GL -9.09 GP -5.89 ZAL 125.49 ZAP 55.41 ETS 175.05 ZAE 95.01 ETE 180.91 ZAC 96.56 ETC 271.57 LVI -3.77

PLANETOCENTRIC CONIC

C3 12.107 VHL 3.479 DLA -12.74 RAL 353.44 RAD 6639.1 VEL 11.497 PTH 6.55 VHP 3.308 DPA -29.15 RAP 294.59 ECC 1.1992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 36	2765.47	-20.36	78.32	205.19	133.98	17 39 42	1765.5	-2.30	61.85
60.00	17 47 18	2622.68	-16.21	69.21	208.95	127.42	18 31 0	1622.7	-.37	50.85
70.00	18 55 31	2422.13	-12.34	55.72	211.72	122.10	19 35 53	1422.1	1.48	35.99
80.00	20 18 40	2161.82	-9.43	37.69	213.45	118.46	20 54 42	1161.8	2.88	17.11
90.00	21 46 43	1877.79	-8.31	17.41	214.05	117.13	22 18 0	877.8	3.42	356.52
100.00	23 1 32	1636.29	-9.43	359.06	213.45	118.46	23 28 49	636.3	2.88	338.47
110.00	23 54 57	1468.95	-12.34	344.64	211.72	122.10	24 19 26	468.9	1.48	324.91

DIFFERENTIAL CORRECTIONS

TDE .7803 TRA 2.7771 TC3-7.0711 BAU 1.1462
RDE .1723 RRA .1802 RC3 -.3853 FAU .16667
FDE 2.6067 FRA 7.2340 FC-11.9181 BSP 11768
BDE .7991 BRA 2.7829 BC3 7.0816 FSP 2405

MID-COURSE EXECUTION ACCURACY

SGT 6917.1 SGR 494.9 SG3 1328.3
RRT .9085 RRF .9406 RTF .9741
SGB 6934.8 R23 .1313 R13 .9743
SG1 6931.7 SG2 206.3 THA 3.72

ORBIT DETERMINATION ACCURACY

ST 95.5 SR 14.9 SS 60.7
CRT .8673 CRS -.9228 CST -.9918
LSA 125.5 MSA 10.3 SSA 1.0
EL1 96.4 EL2 7.4 ALF 7.75

LAUNCH DATE MAY 4 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 23 1972

DISTANCE 614.658

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.368 GAL -2.90 AZL 91.04 HCA 194.60 SMA 186.38 ECC .19710 INC 1.0420 V1 29.540
RP 223.04 LAP .26 LOP 57.50 VP 21.864 GAP .78 AZP 88.99 TAL 342.22 TAP 176.82 RCA 149.65 APO 223.12 V2 24.654
RC 207.907 GL -9.62 GP -5.40 ZAL 126.00 ZAP 54.37 ETS 175.25 ZAE 93.80 ETE 180.75 ZAC 97.04 ETC 271.59 LVI -4.25

PLANETOCENTRIC CONIC

C3 12.375 VHL 3.518 DLA -12.99 RAL 354.20 RAD 6639.2 VEL 11.509 PTH 6.56 VHP 3.335 DPA -28.66 RAP 294.60 ECC 1.2037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 37	2764.98	-20.34	78.30	206.17	133.99	17 43 42	1765.0	-2.28	61.83
60.00	17 51 37	2621.38	-16.15	69.15	209.96	127.44	18 35 18	1621.4	-.31	50.79
70.00	19 0 11	2419.77	-12.25	55.59	212.76	122.13	19 40 31	1419.8	1.57	35.87
80.00	20 23 42	2158.36	-9.31	37.50	214.50	118.50	20 59 40	1158.4	3.00	16.92
90.00	21 51 54	1873.81	-8.18	17.18	215.11	117.16	22 23 8	873.8	3.55	356.30
100.00	23 6 34	1632.83	-9.31	358.86	214.50	118.50	23 33 47	632.8	3.00	338.28
110.00	0 3 34	1466.59	-12.25	344.51	212.76	122.13	0 28 0	466.6	1.57	324.78

DIFFERENTIAL CORRECTIONS

TDE .8022 TRA 2.8939 TC3-7.0783 BAU 1.1724
RDE .1728 RRA .1553 RC3 -.3405 FAU .16270
FDE 2.5947 FRA 7.2015 FC-11.3827 BSP 12027
BDE .8206 BRA 2.8981 BC3 7.0864 FSP 2360

MID-COURSE EXECUTION ACCURACY

SGT 7064.5 SGR 451.7 SG3 1301.5
RRT .8827 RRF .9161 RTF .9739
SGB 7078.9 R23 .1186 R13 .9741
SG1 7075.7 SG2 211.9 THA 3.23

ORBIT DETERMINATION ACCURACY

ST 97.9 SR 14.6 SS 60.2
CRT .8422 CRS -.9059 CST -.9910
LSA 126.9 MSA 11.0 SSA 1.0
EL1 98.7 EL2 7.8 ALF 7.21

LAUNCH DATE MAY 4 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 25 1972

DISTANCE 618.760

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.83 LAL .00 LOL 222.90 VL 32.377 GAL -2.99 AZL 91.10 HCA 195.69 SMA 186.53 ECC .19808 INC 1.0990 V1 29.540
RP 223.42 LAP .30 LOP 58.58 VP 21.829 GAP .63 AZP 88.94 TAL 341.76 TAP 177.45 RCA 149.58 APO 223.48 V2 24.612
RC 210.566 GL -10.05 GP -4.98 ZAL 126.51 ZAP 53.37 ETS 175.42 ZAE 92.61 ETE 180.62 ZAC 97.45 ETC 271.62 LVI -4.68

PLANETOCENTRIC CONIC

C3 12.647 VHL 3.556 DLA -13.16 RAL 354.92 RAD 6639.4 VEL 11.520 PTH 6.57 VHP 3.364 DPA -28.23 RAP 294.65 ECC 1.2081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 6	2766.32	-20.40	78.36	207.12	133.97	17 47 13	1766.3	-2.34	61.89
60.00	17 55 18	2622.18	-16.19	69.19	210.93	127.43	18 39 1	1622.2	-.34	50.83
70.00	19 4 7	2419.88	-12.26	55.60	213.75	122.13	19 44 27	1419.9	1.56	35.87
80.00	20 27 52	2157.76	-9.29	37.46	215.51	118.50	21 3 49	1157.8	3.02	16.88
90.00	21 56 10	1872.86	-8.16	17.12	216.12	117.17	22 27 23	872.9	3.58	356.25
100.00	23 10 44	1632.23	-9.29	358.83	215.51	118.50	23 37 56	632.2	3.02	338.25
110.00	0 7 29	1466.70	-12.26	344.52	213.75	122.13	0 31 56	466.7	1.56	324.79

DIFFERENTIAL CORRECTIONS

TDE .8242 TRA 3.0067 TC3-7.0925 BAU 1.2003
RDE .1744 RRA .1328 RC3 -.3039 FAU .15915
FDE 2.5776 FRA 7.1502 FC-10.8942 BSP 12238
BDE .8424 BRA 3.0097 BC3 7.0990 FSP 2305

MID-COURSE EXECUTION ACCURACY

SGT 7208.3 SGR 417.0 SG3 1273.5
RRT .8504 RRF .8852 RTF .9738
SGB 7220.3 R23 .1070 R13 .9739
SG1 7217.0 SG2 219.1 THA 2.82

ORBIT DETERMINATION ACCURACY

ST 100.2 SR 14.4 SS 79.5
CRT .8170 CRS -.8884 CST -.9902
LSA 128.1 MSA 11.6 SSA 1.0
EL1 100.9 EL2 8.3 ALF 6.76

LAUNCH DATE MAY 4 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 622.857 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.388	GAL	-3.07	AZL	91.15	HCA	196.77	SMA	186.68	ECC	.19909	INC	1.1495	V1	29.540
RP	223.81	LAP	.33	LOP	59.67	VP	21.795	GAP	.48	AZP	88.90	TAL	341.31	TAP	178.08	RCA	149.51	APO	223.84	V2	24.571
RC	213.227	GL	-10.40	GP	-4.62	ZAL	127.03	ZAP	52.41	ETS	175.58	ZAE	91.44	ETE	180.51	ZAC	97.81	ETC	271.66	LVI	-5.07

PLANETOCENTRIC CONIC

C3	12.925	VHL	3.595	DLA	-13.25	RAL	355.60	RAD	6639.5	VEL	11.532	PTH	6.58	VHP	3.393	DPA	-27.85	RAP	294.74	ECC	1.2127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 12	2788.12	-20.53	78.49	208.04	133.92	17 50 21	1769.1	-2.48	62.01
60.00	17 58 30	2624.68	-16.29	69.32	211.88	127.39	18 42 15	1624.7	-.45	50.95
70.00	19 7 27	2422.00	-12.33	55.71	214.71	122.10	19 47 49	1422.0	1.48	35.98
80.00	20 31 19	2159.46	-9.35	37.56	216.48	118.49	21 7 19	1159.5	2.96	16.98
90.00	21 59 41	1874.37	-8.20	17.21	217.09	117.16	22 30 56	874.4	3.53	356.33
100.00	23 14 11	1633.93	-9.35	358.93	216.48	118.49	23 41 25	633.9	2.96	338.34
110.00	0 10 49	1468.81	-12.33	344.63	214.71	122.10	0 35 18	468.8	1.48	324.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8545	TRA	3.1268	TC3	-7.0866	BAU	1.2255	SGT	7350.3	SGR	390.2	SG3	1246.2	ST	102.9	SR	14.4	SS	79.1
RDE	.1773	RRA	.1129	RC3	-.2718	FAU	.15477	RRT	.8115	RRF	.8477	RTF	.9733	CRT	.7943	CRS	-.8721	CST	-.9897
FDE	2.5767	FRA	7.1129	FC3	-10.3663	BSP	12510	SGB	7360.6	R23	.0977	R13	.9735	LSA	130.0	MSA	12.1	SSA	1.1
BDE	.8727	BRA	3.1289	BC3	7.0918	FSP	2265	SG1	7357.1	SG2	227.8	THA	2.47	EL1	103.6	EL2	8.7	ALF	6.39

LAUNCH DATE MAY 4 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 29 1972

HELIOCENTRIC CONIC DISTANCE 626.948 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.394	GAL	-3.16	AZL	91.19	HCA	197.85	SMA	186.83	ECC	.20011	INC	1.1938	V1	29.540
RP	224.20	LAP	.37	LOP	60.75	VP	21.761	GAP	.33	AZP	88.86	TAL	340.85	TAP	178.70	RCA	149.44	APO	224.22	V2	24.529
RC	215.890	GL	-10.69	GP	-4.30	ZAL	127.56	ZAP	51.48	ETS	175.71	ZAE	90.30	ETE	180.41	ZAC	98.12	ETC	271.70	LVI	-5.42

PLANETOCENTRIC CONIC

C3	13.209	VHL	3.634	DLA	-13.28	RAL	356.26	RAD	6639.7	VEL	11.545	PTH	6.59	VHP	3.423	DPA	-27.51	RAP	294.87	ECC	1.2174

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 56	2773.10	-20.72	78.69	208.94	133.84	17 53 9	1773.1	-2.68	62.17
60.00	18 1 17	2628.56	-16.45	69.52	212.79	127.32	18 45 6	1628.6	-.62	51.13
70.00	19 10 17	2425.73	-12.47	55.92	215.64	122.06	19 50 43	1425.7	1.34	36.18
80.00	20 34 12	2163.04	-9.47	37.76	217.42	118.45	21 10 15	1163.0	2.84	17.17
90.00	22 2 36	1877.88	-8.31	17.41	218.04	117.13	22 33 54	877.9	3.42	356.53
100.00	23 17 4	1637.51	-9.47	359.13	217.42	118.45	23 44 22	637.5	2.84	338.54
110.00	0 13 39	1472.55	-12.47	344.84	215.64	122.06	0 38 12	472.5	1.34	325.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8866	TRA	3.2456	TC3	-7.0821	BAU	1.2514	SGT	7489.5	SGR	369.6	SG3	1218.7	ST	105.7	SR	14.4	SS	78.6
RDE	.1809	RRA	.0946	RC3	-.2452	FAU	.15079	RRT	.7666	RRF	.8039	RTF	.9731	CRT	.7731	CRS	-.8563	CST	-.9893
FDE	2.5726	FRA	7.0631	FC3	-9.8827	BSP	12763	SGB	7498.6	R23	.0890	R13	.9732	LSA	131.9	MSA	12.5	SSA	1.1
BDE	.9049	BRA	3.2470	BC3	7.0863	FSP	2218	SG1	7494.9	SG2	237.1	THA	2.17	EL1	106.2	EL2	9.1	ALF	6.08

LAUNCH DATE MAY 4 1971 FLIGHT TIME 272.00 ARRIVAL DATE JAN 31 1972

HELIOCENTRIC CONIC DISTANCE 631.034 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.403	GAL	-3.25	AZL	91.23	HCA	198.93	SMA	186.98	ECC	.20116	INC	1.2332	V1	29.540
RP	224.59	LAP	.40	LOP	61.82	VP	21.727	GAP	.17	AZP	88.83	TAL	340.38	TAP	179.31	RCA	149.37	APO	224.60	V2	24.487
RC	218.554	GL	-10.93	GP	-4.03	ZAL	128.08	ZAP	50.58	ETS	175.84	ZAE	89.18	ETE	180.33	ZAC	98.39	ETC	271.75	LVI	-5.75

PLANETOCENTRIC CONIC

C3	13.499	VHL	3.674	DLA	-13.27	RAL	356.89	RAD	6639.8	VEL	11.557	PTH	6.60	VHP	3.453	DPA	-27.20	RAP	295.04	ECC	1.2222

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 24	2778.08	-20.95	78.93	209.82	133.75	17 55 42	1778.1	-2.93	62.38
60.00	18 3 44	2633.58	-16.66	69.78	213.69	127.24	18 47 38	1633.6	-.85	51.37
70.00	19 12 43	2430.80	-12.65	56.20	216.55	121.99	19 53 14	1430.8	1.14	36.44
80.00	20 36 37	2168.17	-9.63	38.05	218.34	118.40	21 12 45	1168.2	2.67	17.46
90.00	22 5 0	1883.03	-8.47	17.70	218.96	117.08	22 36 23	883.0	3.26	356.82
100.00	23 19 29	1642.64	-9.63	359.42	218.34	118.40	23 46 52	642.6	2.67	338.82
110.00	0 16 5	1477.61	-12.65	345.11	216.55	121.99	0 40 43	477.6	1.14	325.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9216	TRA	3.3664	TC3	-7.0725	BAU	1.2770	SGT	7026.7	SGR	354.5	SG3	1191.5	ST	108.5	SR	14.6	SS	78.2
RDE	.1852	RRA	.0778	RC3	-.2225	FAU	.14677	RRT	.7165	RRF	.7547	RTF	.9728	CRT	.7538	CRS	-.8417	CST	-.9890
FDE	2.5711	FRA	7.0127	FC3	-9.4128	BSP	13023	SGB	7034.9	R23	.0817	R13	.9729	LSA	133.9	MSA	13.0	SSA	1.1
BDE	.9400	BRA	3.3673	BC3	7.0760	FSP	2175	SG1	7030.9	SG2	247.2	THA	1.91	EL1	109.1	EL2	9.5	ALF	5.82

LAUNCH DATE MAY 4 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 2 1972

HELIOCENTRIC CONIC DISTANCE 635.114 EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.412	GAL	-3.34	AZL	91.27	HCA	200.00	SMA	187.14	ECC	.20223	INC	1.2682	V1	29.540
RP	224.98	LAP	.43	LOP	62.90	VP	21.693	GAP	.02	AZP	88.81	TAL	339.92	TAP	179.92	RCA	149.29	APO	224.98	V2	24.445
RC	221.219	GL	-11.12	GP	-3.78	ZAL	128.61	ZAP	49.72	ETS	175.95	ZAE	88.09	ETE	180.26	ZAC	98.63	ETC	271.81	LVI	-6.06

PLANETOCENTRIC CONIC

C3	13.795	VHL	3.714	DLA	-13.22	RAL	357.50	RAD	6639.9	VEL	11.570	PTH	6.61	VHP	3.484	DPA	-26.93	RAP	295.23	ECC	1.2270

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 38	2783.87	-21.23	79.21	210.68	133.64	17 58 2	1783.9	-3.23	62.62
60.00	18 5 54	2639.54	-16.90	70.10	214.57	127.15	18 49 54	1639.5	-1.11	51.66
70.00	19 14 48	2436.98	-12.87	56.54	217.44	121.91	19 55 25	1437.0	.91	36.76
80.00	20 38 36	2174.58	-9.84	38.41	219.23	118.33	21 14 53	1174.6	2.45	17.81
90.00	22 6 59	1889.56	-8.67	18.08	219.85	117.02	22 38 29	889.6	3.05	357.18
100.00	23 21 30	1649.06	-9.84	359.78	219.23	118.33	23 48 59	649.1	2.45	339.18
110.00	0 18 11	1483.80	-12.87	345.46	217.44	121.91	0 42 54	483.8	.91	325.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9585	TRA	3.4878	TC3	-7.0602	BAU	1.3026	SGT	7761.3	SGR	344.2	SG3	1164.3	ST	111.4	SR	14.7	SS	77.8
RDE	.1901	RRA	.0623	RC3	-.2028	FAU	.14264	RRT	.6623	RRF	.7015	RTF	.9723	CRT	.7363	CRS	-.8282	CST	-.9887
FDE	2.5714	FRA	6.9605	FC3	-8.9515	BSP	13275	SGB	7768.9	R23	.0758	R13	.9724	LSA	136.0	MSA	13.4	SSA	1.1
BDE	.9772	BRA	3.4884	BC3	7.0631	FSP	2132	SG1	7764.6	SG2	257.8	THA	1.68	EL1	111.9	EL2	9.9	ALF	5.61

LAUNCH DATE MAY 4 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 4 1972

HELIOCENTRIC CONIC — DISTANCE 639.188 — EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.422	GAL	-3.43	AZL	91.30	HCA	201.07	SMA	187.29	ECC	.20332	INC	1.2997	V1	29.540
RP	225.37	LAP	.47	LOP	63.96	VP	21.660	GAP	-.13	AZP	88.79	TAL	339.45	TAP	180.52	RCA	149.21	APO	225.38	V2	24.403
RC	223.884	GL	-11.28	GP	-3.56	ZAL	129.14	ZAP	48.87	ETS	176.06	ZAE	87.01	ETE	180.20	ZAC	98.84	ETC	271.87	LVI	-6.36

PLANETOCENTRIC CONIC

C3	14.098	VHL	3.755	DLA	-13.13	RAL	358.09	RAD	6640.1	VEL	11.583	PTH	6.63	VHP	3.516	DPA	-26.67	RAP	295.46	ECC	1.2320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 40	2790.36	-21.53	79.53	211.53	133.51	18 0 10	1790.4	-3.55	62.90
60.00	18 7 50	2646.31	-17.18	70.45	215.44	127.03	18 51 56	1646.3	-1.41	51.98
70.00	19 16 37	2444.10	-13.13	56.93	218.31	121.82	19 57 21	1444.1	.64	37.14
80.00	20 40 19	2182.08	-10.08	38.84	220.11	118.25	21 16 41	1182.1	2.20	18.22
90.00	22 8 37	1897.23	-8.91	18.52	220.73	116.95	22 40 14	897.2	2.80	357.61
100.00	23 23 11	1656.55	-10.08	.21	220.11	118.25	23 50 48	656.6	2.20	339.59
110.00	0 19 59	1490.92	-13.13	345.85	218.31	121.82	0 44 50	490.9	.64	326.05

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	.9967	TRA	3.6110	TC3	-7.0460	BAU	1.3285	SGT	7894.6	SGR	337.8	SG3	1137.8	ST	114.2	SR	15.0	SS	77.4
RDE	.1955	RRA	.0478	RC3	-.1861	FAU	.13871	RRT	.6064	RRF	.6460	RTF	.9719	CRT	.7206	CRS	-.8157	CST	-.9885
FDE	2.5686	FRA	6.9074	FC3	-8.5178	BSP	13521	SGB	7901.9	R23	.0704	R13	.9720	LSA	138.1	MSA	13.8	SSA	1.1
BDE	1.0157	BRA	3.6113	BC3	7.0485	FSP	2088	SG1	7897.3	SG2	268.5	THA	1.49	EL1	114.7	EL2	10.3	ALF	5.43

LAUNCH DATE MAY 4 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 6 1972

HELIOCENTRIC CONIC — DISTANCE 643.256 — EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.431	GAL	-3.52	AZL	91.33	HCA	202.14	SMA	187.45	ECC	.20444	INC	1.3282	V1	29.540
RP	225.76	LAP	.50	LOP	65.03	VP	21.627	GAP	-.29	AZP	88.77	TAL	338.98	TAP	181.11	RCA	149.13	APO	225.77	V2	24.361
RC	226.550	GL	-11.40	GP	-3.36	ZAL	129.67	ZAP	48.06	ETS	176.16	ZAE	85.96	ETE	180.15	ZAC	99.02	ETC	271.93	LVI	-6.64

PLANETOCENTRIC CONIC

C3	14.409	VHL	3.796	DLA	-13.02	RAL	358.67	RAD	6640.2	VEL	11.596	PTH	6.64	VHP	3.547	DPA	-26.43	RAP	295.71	ECC	1.2371

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 32	2797.44	-21.86	79.87	212.38	133.37	18 2 9	1797.4	-3.91	63.19
60.00	18 9 34	2653.75	-17.49	70.84	216.30	126.91	18 53 47	1653.7	-1.73	52.34
70.00	19 18 11	2452.02	-13.41	57.37	219.18	121.71	19 59 3	1452.0	.33	37.55
80.00	20 41 44	2190.49	-10.35	39.32	220.98	118.16	21 18 14	1190.5	1.91	18.68
90.00	22 9 57	1905.88	-9.18	19.01	221.60	116.87	22 41 43	905.9	2.52	358.09
100.00	23 24 36	1664.96	-10.35	.68	220.98	118.16	23 52 21	665.0	1.91	340.05
110.00	0 21 33	1498.84	-13.41	346.29	219.18	121.71	0 46 32	498.8	.33	326.47

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	1.0369	TRA	3.7347	TC3	-7.0293	BAU	1.3545	SGT	8025.3	SGR	334.9	SG3	1111.4	ST	117.1	SR	15.2	SS	76.9
RDE	.2013	RRA	.0342	RC3	-.1718	FAU	.13487	RRT	.5499	RRF	.5900	RTF	.9715	CRT	.7066	CRS	-.8046	CST	-.9884
FDE	2.5669	FRA	6.8494	FC3	-8.1037	BSP	13754	SGB	8032.3	R23	.0659	R13	.9716	LSA	140.2	MSA	14.1	SSA	1.1
BDE	1.0562	BRA	3.7349	BC3	7.0314	FSP	2041	SG1	8027.4	SG2	279.6	THA	1.32	EL1	117.6	EL2	10.7	ALF	5.29

LAUNCH DATE MAY 4 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 8 1972

HELIOCENTRIC CONIC — DISTANCE 647.318 — EARTH TO MARS

RL	150.83	LAL	.00	LOL	222.90	VL	32.440	GAL	-3.62	AZL	91.35	HCA	203.20	SMA	187.61	ECC	.20557	INC	1.3541	V1	29.540
RP	226.15	LAP	.53	LOP	66.09	VP	21.594	GAP	-.44	AZP	88.76	TAL	338.50	TAP	181.70	RCA	149.04	APO	226.18	V2	24.319
RC	229.216	GL	-11.50	GP	-3.18	ZAL	130.20	ZAP	47.27	ETS	176.25	ZAE	84.92	ETE	180.10	ZAC	99.19	ETC	272.00	LVI	-6.91

PLANETOCENTRIC CONIC

C3	14.727	VHL	3.838	DLA	-12.89	RAL	359.23	RAD	6640.4	VEL	11.610	PTH	6.65	VHP	3.579	DPA	-26.21	RAP	295.99	ECC	1.2424

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 14	2805.03	-22.22	80.25	213.21	133.22	18 3 59	1805.0	-4.29	63.51
60.00	18 11 7	2661.77	-17.81	71.27	217.14	126.77	18 55 28	1661.8	-2.09	52.72
70.00	19 19 32	2460.61	-13.72	57.84	220.03	121.59	20 0 33	1460.6	.01	36.00
80.00	20 42 54	2199.67	-10.65	39.84	221.83	118.06	21 19 34	1199.7	1.60	19.19
90.00	22 11 2	1915.34	-9.47	19.55	222.45	116.77	22 42 57	915.3	2.22	358.62
100.00	23 25 46	1674.14	-10.65	1.21	221.83	118.06	23 53 40	674.1	1.60	340.55
110.00	0 22 54	1507.43	-13.72	346.76	220.03	121.59	0 46 2	507.4	.01	326.91

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	1.0789	TRA	3.8605	TC3	-7.0087	BAU	1.3803	SGT	8154.2	SGR	334.7	SG3	1085.5	ST	120.1	SR	15.5	SS	76.5
RDE	.2075	RRA	.0213	RC3	-.1593	FAU	.13098	RRT	.4947	RRF	.5350	RTF	.9710	CRT	.6945	CRS	-.7947	CST	-.9883
FDE	2.5662	FRA	6.7929	FC3	-7.6993	BSP	13996	SGB	8161.1	R23	.0622	R13	.9711	LSA	142.5	MSA	14.5	SSA	1.2
BDE	1.0967	BRA	3.8606	BC3	7.0105	FSP	1999	SG1	8155.9	SG2	290.8	THA	1.16	EL1	120.6	EL2	11.1	ALF	5.17

LAUNCH DATE MAY 5 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 15 1971

HELIOCENTRIC CONIC DISTANCE 300.179 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	35.337	GAL	-3.02	AZL	91.86	HCA	96.10	SMA	259.91	ECC	.42224	INC	1.8602	V1	29.533
RP	207.32	LAP	-1.85	LOP	319.97	VP	27.742	GAP	22.24	AZP	89.80	TAL	349.81	TAP	85.91	RCA	150.16	APO	369.65	V2	26.420
RC	56.291	GL	-10.50	GP	.41	ZAL	111.35	ZAP	176.20	ETS	173.73	ZAE	174.59	ETE	85.44	ZAC	100.68	ETC	277.38	LVI	-17.90

PLANETOCENTRIC CONIC

C3	39.487	VHL	6.284	DLA	-19.20	RAL	341.47	RAD	6650.5	VEL	12.624	PTH	7.48	VHP	11.131	DPA	-17.36	RAP	319.10	ECC	1.6499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 20	2914.09	-27.18	85.87	208.02	130.68	17 16 54	1914.1	-9.73	68.14
60.00	17 30 36	2748.51	-21.28	75.98	213.05	125.07	18 16 25	1748.5	-5.89	56.89
70.00	18 49 20	2517.08	-15.71	61.01	216.64	120.72	19 31 17	1517.1	-2.15	40.94
80.00	20 23 24	2222.68	-11.38	41.15	219.34	117.79	21 0 26	1222.7	.82	20.45
90.00	21 56 45	1921.52	-9.66	19.91	220.24	116.71	22 28 47	921.5	2.02	358.97
100.00	23 6 15	1697.15	-11.38	2.52	219.34	117.79	23 34 33	697.2	.82	341.82
110.00	23 48 48	1563.90	-15.71	349.93	216.64	120.72	24 14 50	563.9	-2.15	329.86

DIFFERENTIAL CORRECTIONS

TDE	-.4833	TRA	-1.0583	TC3	-.0164	BAU	.0411												
RDE	-.5840	RRA	.2284	RC3	.0761	FAU	.03351												
FDE	.2231	FRA	.8795	FC3	-.7347	BSP	1649												
BDE	.7580	BRA	1.0827	BC3	.0778	FSP	135												

MID-COURSE EXECUTION ACCURACY

SGT	1112.9	SGR	584.2	SG3	109.8						
RRT	.0112	RRF	-.0125	RTF	-.6634						
SGB	1256.9	R23	-.0022	R13	-.6634						
SG1	1113.0	SG2	584.1	THA	.47						

ORBIT DETERMINATION ACCURACY

ST	26.8	SR	26.8	SS	15.7						
CRT	.7442	CRS	.5215	CST	.9549						
LSA	37.7	MSA	16.2	SSA	1.1						
EL1	35.4	EL2	13.6	ALF	44.98						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 302.067 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	35.143	GAL	-2.92	AZL	91.86	HCA	97.36	SMA	253.12	ECC	.40663	INC	1.8641	V1	29.533
RP	207.22	LAP	-1.85	LOP	321.23	VP	27.506	GAP	21.72	AZP	89.76	TAL	349.89	TAP	87.25	RCA	150.19	APO	356.04	V2	26.432
RC	56.455	GL	-10.82	GP	.42	ZAL	111.35	ZAP	175.33	ETS	174.74	ZAE	174.46	ETE	76.10	ZAC	100.64	ETC	277.47	LVI	-18.02

PLANETOCENTRIC CONIC

C3	36.997	VHL	6.082	DLA	-19.48	RAL	341.62	RAD	6649.6	VEL	12.525	PTH	7.41	VHP	10.775	DPA	-17.23	RAP	319.49	ECC	1.6089

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 10	2891.72	-26.19	84.67	207.19	131.26	17 18 22	1891.7	-8.62	67.18
60.00	17 32 51	2725.03	-20.36	74.68	212.22	125.56	18 18 16	1725.0	-4.86	55.75
70.00	18 52 7	2492.02	-14.83	59.60	216.03	121.12	19 33 39	1492.0	-1.19	39.64
80.00	20 26 47	2195.73	-10.52	39.61	218.54	118.10	21 3 23	1195.7	1.73	18.97
90.00	22 0 28	1893.55	-8.80	18.31	219.45	116.99	22 32 1	893.5	2.92	357.40
100.00	23 9 39	1670.20	-10.52	.98	218.54	118.10	23 37 29	670.2	1.73	340.34
110.00	23 51 33	1538.84	-14.83	348.51	216.03	121.12	24 17 12	538.8	-1.19	328.55

DIFFERENTIAL CORRECTIONS

TDE	-.4787	TRA	-1.0487	TC3	-.0055	BAU	.0405												
RDE	-.5661	RRA	.2208	RC3	.0817	FAU	.03458												
FDE	.2288	FRA	.9147	FC3	-.8091	BSP	1706												
BDE	.7414	BRA	1.0716	BC3	.0819	FSP	147												

MID-COURSE EXECUTION ACCURACY

SGT	1140.7	SGR	585.6	SG3	117.5						
RRT	.0130	RRF	-.0141	RTF	-.6755						
SGB	1282.3	R23	-.0021	R13	-.6755						
SG1	1140.8	SG2	585.5	THA	.52						

ORBIT DETERMINATION ACCURACY

ST	27.5	SR	26.9	SS	16.3						
CRT	.7437	CRS	.5151	CST	.9531						
LSA	38.3	MSA	16.5	SSA	1.1						
EL1	35.9	EL2	13.8	ALF	44.12						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 304.193 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	34.959	GAL	-2.82	AZL	91.87	HCA	98.63	SMA	247.06	ECC	.39197	INC	1.8681	V1	29.533
RP	207.13	LAP	-1.85	LOP	322.50	VP	27.282	GAP	21.21	AZP	89.72	TAL	349.98	TAP	88.61	RCA	150.22	APO	343.91	V2	26.443
RC	56.701	GL	-11.14	GP	.43	ZAL	111.33	ZAP	174.45	ETS	175.44	ZAE	174.21	ETE	67.61	ZAC	100.60	ETC	277.55	LVI	-18.15

PLANETOCENTRIC CONIC

C3	34.713	VHL	5.892	DLA	-19.78	RAL	341.76	RAD	6648.8	VEL	12.434	PTH	7.34	VHP	10.431	DPA	-17.10	RAP	319.87	ECC	1.5713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 59	2869.42	-25.18	83.51	206.38	131.80	17 19 49	1869.4	-7.51	66.23
60.00	17 35 6	2701.56	-19.42	73.40	211.40	126.03	18 20 8	1701.6	-3.83	54.63
70.00	18 54 57	2466.86	-13.94	58.19	215.22	121.50	19 36 4	1466.9	-.23	38.32
80.00	20 30 15	2168.54	-9.64	38.07	217.75	118.39	21 6 24	1168.5	2.65	17.48
90.00	22 4 17	1865.25	-7.92	16.69	218.67	117.24	22 35 22	865.2	3.83	355.82
100.00	23 13 8	1643.01	-9.64	359.44	217.75	118.39	23 40 31	643.0	2.65	338.84
110.00	23 54 23	1513.68	-13.94	347.11	215.22	121.50	24 19 37	513.7	-.23	327.24

DIFFERENTIAL CORRECTIONS

TDE	-.4737	TRA	-1.0393	TC3	.0066	BAU	.0408												
RDE	-.5487	RRA	.2132	RC3	.0877	FAU	.03572												
FDE	.2343	FRA	.9519	FC3	-.8909	BSP	1767												
BDE	.7249	BRA	1.0610	BC3	.0879	FSP	159												

MID-COURSE EXECUTION ACCURACY

SGT	1168.7	SGR	586.5	SG3	125.8						
RRT	.0145	RRF	-.0155	RTF	-.6871						
SGB	1307.6	R23	-.0022	R13	-.6872						
SG1	1168.7	SG2	586.4	THA	.56						

ORBIT DETERMINATION ACCURACY

ST	28.1	SR	26.9	SS	16.9						
CRT	.7427	CRS	.5078	CST	.9511						
LSA	38.9	MSA	16.8	SSA	1.1						
EL1	36.3	EL2	13.9	ALF	43.29						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 306.526 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	34.786	GAL	-2.72	AZL	91.87	HCA	99.89	SMA	241.64	ECC	.37820	INC	1.8721	V1	29.533
RP	207.05	LAP	-1.84	LOP	323.76	VP	27.069	GAP	20.71	AZP	89.68	TAL	350.09	TAP	89.98	RCA	150.25	APO	333.03	V2	26.453
RC	57.030	GL	-11.46	GP	.45	ZAL	111.29	ZAP	173.57	ETS	175.95	ZAE	173.88	ETE	60.21	ZAC	100.57	ETC	277.63	LVI	-18.26

PLANETOCENTRIC CONIC

C3	32.618	VHL	5.711	DLA	-20.08	RAL	341.87	RAD	6648.0	VEL	12.350	PTH	7.27	VHP	10.100	DPA	-16.97	RAP	320.23	ECC	1.5368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 47	2847.23	-24.17	82.36	205.60	132.32	17 21 14	1847.2	-6.40	65.29
60.00	17 37 22	2678.13	-18.48	72.14	210.61	126.48	18 22 0	1678.1	-2.81	53.50
70.00	18 57 49	2441.64	-13.04	56.79	214.44	121.85	19 38 31	1441.6	.73	37.01
80.00	20 33 50	2141.13	-8.75	36.53	216.99	118.66	21 9 31	1141.1	3.58	15.97
90.00	22 8 14	1836.64	-7.02	15.06	217.92	117.46	22 38 51	836.6	4.74	354.22
100.00	23 16 42	1615.60	-8.75	357.89	216.99	118.66	23 43 38	615.6	3.58	337.34
110.00	0 1 11	1488.45	-13.04	345.71	214.44	121.85	0 26 0	488.5	.73	325.93

DIFFERENTIAL CORRECTIONS

TDE	-.4487	TRA	-1.0172	TC3	.0551	BAU	.0475												
RDE	-.5318	RRA	.2059	RC3	.0939	FAU	.03710												
FDE	.2374	FRA	.9887	FC3	-.9847	BSP	2201												
BDE	.6958	BRA	1.0379	BC3	.1089	FSP	177												

MID-COURSE EXECUTION ACCURACY

SGT	1177.8	SGR	587.0	SG3	134.9						
RRT	.0115	RRF	-.0170	RTF	-.7209						
SGB	1316.0	R23	-.0059	R13	-.7209						
SG1	1177.8	SG2	586.9	THA	.44						

ORBIT DETERMINATION ACCURACY

ST	27.8	SR	26.9	SS	17.4						
CRT	.7318	CRS	.4970	CST	.9524						
LSA	36.7	MSA	17.2	SSA	1.1						
EL1	36.0	EL2	14.1	ALF	43.70						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 23 1971

DISTANCE 309.041

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 34.623 GAL -2.62 AZL 91.88 HCA 101.16 SMA 236.76 ECC .36525 INC 1.8761 V1 29.533
RP 206.97 LAP -1.84 LOP 325.03 VP 26.868 GAP 20.22 AZP 89.64 TAL 350.21 TAP 91.36 RCA 150.28 APO 323.24 V2 26.462
RC 57.440 GL -11.79 GP .46 ZAL 111.22 ZAP 172.66 ETS 176.35 ZAE 173.48 ETE 53.91 ZAC 100.53 ETC 277.70 LVI -18.38

PLANETOCENTRIC CONIC

C3 30.694 VHL 5.540 DLA -20.40 RAL 341.96 RAD 6647.3 VEL 12.273 PTH 7.21 VHP 9.780 DPA -16.85 RAP 320.59 ECC 1.5052

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 34	2825.19	-23.15	81.25	204.84	132.80	17 22 39	1825.2	-5.30	64.36
60.00	17 39 39	2654.78	-17.53	70.90	209.84	126.89	18 23 54	1654.8	-1.78	52.39
70.00	19 0 44	2416.38	-12.13	55.41	213.68	122.17	19 41 1	1416.4	1.70	35.69
80.00	20 37 30	2113.54	-7.85	34.98	216.24	118.90	21 12 44	1113.5	4.51	14.44
90.00	22 12 18	1807.74	-6.11	13.43	217.18	117.66	22 42 26	807.7	5.66	352.59
100.00	23 20 22	1588.01	-7.85	356.35	216.24	118.90	23 46 50	588.0	4.51	335.81
110.00	0 4 7	1463.20	-12.13	344.32	213.68	122.17	0 28 30	463.2	1.70	324.61

DIFFERENTIAL CORRECTIONS

TDE -.4627 TRA-1.0200 TC3 .0330 BAU .0434
RDE -.5156 RRA .1986 RC3 .1003 FAU .03822
FDE .2451 FRA 1.0305 FC3-1.0781 BSP 1883
BDE .6927 BRA 1.0392 BC3 .1058 FSP 188

MID-COURSE EXECUTION ACCURACY

SGT 1223.5 SGR 587.1 SG3 144.2
RRT .0176 RRF -.0190 RTF -.7082
SGB 1357.1 R23 -.0029 R13 -.7082
SG1 1223.6 SG2 587.0 THA .63

ORBIT DETERMINATION ACCURACY

ST 29.3 SR 26.9 SS 18.0
CRT .7403 CRS .4924 CST .9469
LSA 40.0 MSA 17.4 SSA 1.2
EL1 37.1 EL2 14.3 ALF 41.68

LAUNCH DATE MAY 5 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 25 1971

DISTANCE 311.716

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 34.470 GAL -2.52 AZL 91.88 HCA 102.42 SMA 232.35 ECC .35309 INC 1.8802 V1 29.533
RP 206.90 LAP -1.84 LOP 326.30 VP 26.677 GAP 19.74 AZP 89.60 TAL 350.34 TAP 92.76 RCA 150.31 APO 314.40 V2 26.469
RC 57.930 GL -12.13 GP .48 ZAL 111.13 ZAP 171.75 ETS 176.65 ZAE 173.05 ETE 48.63 ZAC 100.50 ETC 277.78 LVI -18.49

PLANETOCENTRIC CONIC

C3 28.928 VHL 5.378 DLA -20.73 RAL 342.04 RAD 6646.6 VEL 12.201 PTH 7.16 VHP 9.471 DPA -16.73 RAP 320.93 ECC 1.4761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 20	2803.32	-22.14	80.16	204.10	133.26	17 24 4	1803.3	-4.20	63.44
60.00	17 41 56	2631.54	-16.57	69.68	209.09	127.28	18 25 47	1631.5	-.76	51.28
70.00	19 3 43	2391.13	-11.21	54.03	212.94	122.47	19 43 34	1391.1	2.66	34.37
80.00	20 41 17	2085.77	-6.93	33.43	215.52	119.11	21 16 2	1085.8	5.44	12.91
90.00	22 16 31	1778.56	-5.19	11.79	216.47	117.84	22 46 10	778.6	6.58	350.94
100.00	23 24 9	1560.25	-6.93	354.79	215.52	119.11	23 50 9	560.2	5.44	334.26
110.00	0 7 5	1437.95	-11.21	342.95	212.94	122.47	0 31 3	438.0	2.66	323.29

DIFFERENTIAL CORRECTIONS

TDE -.4566 TRA-1.0102 TC3 .0506 BAU .0458
RDE -.4998 RRA .1916 RC3 .1069 FAU .03960
FDE .2502 FRA 1.0721 FC3-1.1852 BSP 1940
BDE .6769 BRA 1.0282 BC3 .1183 FSP 203

MID-COURSE EXECUTION ACCURACY

SGT 1250.5 SGR 586.8 SG3 154.3
RRT .0192 RRF -.0210 RTF -.7186
SGB 1381.3 R23 -.0033 R13 -.7186
SG1 1250.5 SG2 586.7 THA .66

ORBIT DETERMINATION ACCURACY

ST 29.8 SR 26.8 SS 18.6
CRT .7387 CRS .4839 CST .9446
LSA 40.5 MSA 17.7 SSA 1.2
EL1 37.4 EL2 14.4 ALF 40.91

LAUNCH DATE MAY 5 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 27 1971

DISTANCE 314.533

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 34.324 GAL -2.42 AZL 91.88 HCA 103.69 SMA 228.36 ECC .34164 INC 1.8843 V1 29.533
RP 206.85 LAP -1.83 LOP 327.56 VP 26.496 GAP 19.26 AZP 89.55 TAL 350.48 TAP 94.17 RCA 150.34 APO 306.38 V2 26.476
RC 58.496 GL -12.46 GP .50 ZAL 111.02 ZAP 170.82 ETS 176.90 ZAE 172.62 ETE 44.22 ZAC 100.47 ETC 277.85 LVI -18.60

PLANETOCENTRIC CONIC

C3 27.302 VHL 5.225 DLA -21.08 RAL 342.10 RAD 6645.9 VEL 12.135 PTH 7.10 VHP 9.172 DPA -16.61 RAP 321.26 ECC 1.4493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 6	2781.62	-21.12	79.10	203.39	133.68	17 25 27	1781.6	-3.11	62.53
60.00	17 44 14	2608.41	-15.62	68.47	208.37	127.64	18 27 42	1608.4	.26	50.17
70.00	19 6 44	2365.87	-10.28	52.66	212.22	122.75	19 46 10	1365.9	3.62	33.05
80.00	20 45 10	2057.82	-6.00	31.87	214.82	119.30	21 19 27	1057.8	6.37	11.36
90.00	22 20 53	1749.06	-4.25	10.13	215.79	117.99	22 50 2	749.1	7.51	349.27
100.00	23 28 1	1532.29	-6.00	353.24	214.82	119.30	23 53 34	532.3	6.37	332.73
110.00	0 10 6	1412.69	-10.28	341.58	212.22	122.75	0 33 39	412.7	3.62	321.97

DIFFERENTIAL CORRECTIONS

TDE -.4420 TRA -.9911 TC3 .0802 BAU .0508
RDE -.4845 RRA .1847 RC3 .1138 FAU .04097
FDE .2570 FRA 1.1175 FC3-1.2990 BSP 1880
BDE .6558 BRA 1.0081 BC3 .1393 FSP 222

MID-COURSE EXECUTION ACCURACY

SGT 1264.3 SGR 586.1 SG3 165.0
RRT .0198 RRF -.0234 RTF -.[illegible]72
SGB 1393.5 R23 -.0049 R13 -.7372
SG1 1264.3 SG2 585.9 THA .67

ORBIT DETERMINATION ACCURACY

ST 29.9 SR 26.8 SS 19.3
CRT .7340 CRS .4774 CST .9446
LSA 40.7 MSA 17.9 SSA 1.2
EL1 37.4 EL2 14.5 ALF 40.73

LAUNCH DATE MAY 5 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 29 1971

DISTANCE 317.476

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 34.187 GAL -2.32 AZL 91.89 HCA 104.96 SMA 224.73 ECC .33089 INC 1.8884 V1 29.533
RP 206.80 LAP -1.82 LOP 328.83 VP 26.325 GAP 18.79 AZP 89.51 TAL 350.64 TAP 95.59 RCA 150.37 APO 299.10 V2 26.482
RC 59.137 GL -12.80 GP .51 ZAL 110.89 ZAP 169.88 ETS 177.11 ZAE 172.20 ETE 40.55 ZAC 100.44 ETC 277.91 LVI -18.70

PLANETOCENTRIC CONIC

C3 25.810 VHL 5.080 DLA -21.43 RAL 342.14 RAD 6645.3 VEL 12.074 PTH 7.05 VHP 8.883 DPA -16.49 RAP 321.58 ECC 1.4248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 50	2760.22	-20.11	78.07	202.71	134.08	17 26 51	1760.2	-2.04	61.83
60.00	17 46 32	2585.51	-14.66	67.29	207.67	127.97	18 29 38	1585.5	1.27	49.08
70.00	19 9 48	2340.73	-9.35	51.31	211.53	123.00	19 48 49	1340.7	4.58	31.73
80.00	20 49 9	2029.81	-5.07	30.32	214.15	119.46	21 22 59	1029.8	7.30	9.80
90.00	22 25 23	1719.39	-3.30	8.47	215.13	118.10	22 54 2	719.4	8.43	347.58
100.00	23 32 1	1504.28	-5.07	351.69	214.15	119.46	23 57 5	504.3	7.30	331.17
110.00	0 13 10	1387.55	-9.35	340.22	211.53	123.00	0 36 18	387.5	4.58	320.65

DIFFERENTIAL CORRECTIONS

TDE -.4396 TRA -.9843 TC3 .0936 BAU .0528
RDE -.4697 RRA .1780 RC3 .1210 FAU .04257
FDE .2608 FRA 1.1616 FC3-1.4279 BSP 1985
BDE .6433 BRA 1.0003 BC3 .1529 FSP 239

MID-COURSE EXECUTION ACCURACY

SGT 1295.0 SGR 584.9 SG3 176.5
RRT .0227 RRF -.0257 RTF -.7418
SGB 1421.0 R23 -.0045 R13 -.7418
SG1 1295.1 SG2 584.7 THA .74

ORBIT DETERMINATION ACCURACY

ST 30.6 SR 26.7 SS 19.8
CRT .7340 CRS .4668 CST .9407
LSA 41.3 MSA 18.2 SSA 1.2
EL1 37.8 EL2 14.6 ALF 39.73

LAUNCH DATE MAY 5 1971 FLIGHT TIME 118.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 320.531 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 34.058 GAL -2.23 AZL 91.89 HCA 106.22 SMA 221.43 ECC .32078 INC 1.8927 V1 29.533
RP 206.75 LAP -1.82 LOP 330.10 VP 26.162 GAP 18.33 AZP 89.47 TAL 350.80 TAP 97.02 RCA 150.40 APO 292.46 V2 26.487
RC 59.850 GL -13.14 GP .53 ZAL 110.74 ZAP 168.92 ETS 177.28 ZAE 171.80 ETE 37.48 ZAC 100.42 ETC 277.98 LVI -18.80

PLANETOCENTRIC CONIC

C3 24.437 VHL 4.943 DLA -21.79 RAL 342.17 RAD 6644.8 VEL 12.017 PTH 7.01 VHP 8.605 DPA -18.38 RAP 321.88 ECC 1.4022

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 34	2739.08	-19.11	77.06	202.05	134.44	17 28 13	1739.1	-.98	60.75
60.00	17 48 51	2562.61	-13.71	66.13	207.00	128.28	18 31 34	1562.8	2.27	47.99
70.00	19 12 55	2315.68	-8.42	49.96	210.87	123.22	19 51 31	1315.7	5.53	30.41
80.00	20 53 15	2001.69	-4.12	28.77	213.51	119.60	21 26 36	1001.7	8.22	8.22
90.00	22 30 3	1689.45	-2.34	6.79	214.50	118.19	22 58 12	689.4	9.35	345.87
100.00	23 36 7	1476.16	-4.12	350.13	213.51	119.60	24 0 43	476.2	8.22	329.59
110.00	0 16 17	1362.50	-8.42	338.88	210.87	123.22	0 39 0	362.5	5.53	319.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4354 TRA -.9759 TC3 .1101 BAU .0552 SGT 1323.0 SGR 583.4 SG3 188.7 ST 31.2 SR 26.6 SS 20.4
RDE -.4593 RRA .1714 RC3 .1283 FAU .04424 RRT .0253 RRF -.0278 RTF -.7478 CRT .7332 CRS .4556 CST .9368
FDE .2645 FRA 1.2088 FC3-1.5674 BSP 2067 SGB 1445.9 R23 -.0044 R13 -.7479 LSA 41.8 MSA 18.5 SSA 1.2
BDE .6300 BRA .9909 BC3 .1690 FSP 258 SG1 1323.1 SG2 583.2 THA .79 EL1 38.2 EL2 14.7 ALF 38.87

LAUNCH DATE MAY 5 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 323.686 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 33.937 GAL -2.14 AZL 91.90 HCA 107.49 SMA 218.41 ECC .31128 INC 1.8969 V1 29.533
RP 206.72 LAP -1.81 LOP 331.37 VP 26.007 GAP 17.88 AZP 89.43 TAL 350.97 TAP 98.46 RCA 150.43 APO 286.40 V2 26.491
RC 60.633 GL -13.49 GP .55 ZAL 110.58 ZAP 167.94 ETS 177.43 ZAE 171.44 ETE 34.92 ZAC 100.40 ETC 278.04 LVI -18.90

PLANETOCENTRIC CONIC

C3 23.174 VHL 4.814 DLA -22.15 RAL 342.18 RAD 6644.2 VEL 11.965 PTH 6.96 VHP 8.335 DPA -16.27 RAP 322.16 ECC 1.3814

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 18	2718.23	-18.11	76.08	201.41	134.78	17 29 36	1718.2	.07	59.88
60.00	17 51 11	2540.34	-12.76	64.99	206.35	128.56	18 33 31	1540.3	3.26	46.92
70.00	19 16 5	2290.74	-7.49	48.64	210.23	123.42	19 54 16	1290.7	6.47	29.10
80.00	20 57 28	1973.47	-3.17	27.21	212.90	119.70	21 30 21	973.5	9.14	6.64
90.00	22 34 53	1659.25	-1.36	5.10	213.90	118.25	23 2 32	659.2	10.28	344.13
100.00	23 40 20	1447.94	-3.17	348.58	212.90	119.70	24 4 28	447.9	9.14	328.00
110.00	0 19 28	1337.55	-7.49	337.55	210.23	123.42	0 41 45	337.6	6.47	318.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4301 TRA -.9665 TC3 .1288 BAU .0580 SGT 1349.1 SGR 581.5 SG3 201.9 ST 31.7 SR 26.5 SS 21.0
RDE -.4415 RRA .1650 RC3 .1358 FAU .04603 RRT .0278 RRF -.0306 RTF -.7543 CRT .7319 CRS .4450 CST .9334
FDE .2687 FRA 1.2584 FC3-1.7197 BSP 2135 SGB 1469.1 R23 -.0048 R13 -.7543 LSA 42.3 MSA 18.7 SSA 1.2
BDE .6163 BRA .9805 BC3 .1872 FSP 279 SG1 1349.2 SG2 581.2 THA .84 EL1 38.5 EL2 14.8 ALF 38.09

LAUNCH DATE MAY 5 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 326.932 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 33.822 GAL -2.05 AZL 91.90 HCA 108.76 SMA 215.65 ECC .30233 INC 1.9012 V1 29.533
RP 206.70 LAP -1.80 LOP 332.64 VP 25.860 GAP 17.44 AZP 89.39 TAL 351.15 TAP 99.91 RCA 150.45 APO 280.85 V2 26.494
RC 61.483 GL -13.83 GP .57 ZAL 110.40 ZAP 166.94 ETS 177.55 ZAE 171.12 ETE 32.78 ZAC 100.38 ETC 278.09 LVI -18.99

PLANETOCENTRIC CONIC

C3 22.010 VHL 4.692 DLA -22.53 RAL 342.18 RAD 6643.7 VEL 11.917 PTH 6.92 VHP 8.074 DPA -16.16 RAP 322.42 ECC 1.3622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 1	2697.69	-17.12	75.13	200.80	135.10	17 30 58	1697.7	1.10	59.02
60.00	17 53 32	2518.12	-11.81	63.88	205.73	128.82	18 35 30	1518.1	4.23	45.85
70.00	19 19 19	2265.94	-6.56	47.32	209.62	123.59	19 57 5	1265.9	7.40	27.78
80.00	21 1 48	1945.16	-2.22	25.65	212.31	119.78	21 34 14	945.2	10.06	5.04
90.00	22 39 54	1628.78	-.38	3.40	213.33	118.28	23 7 3	628.8	11.20	342.36
100.00	23 44 40	1419.63	-2.22	347.02	212.31	119.78	24 8 20	419.6	10.06	326.40
110.00	0 22 41	1312.75	-6.56	336.24	209.62	123.59	0 44 34	312.8	7.40	316.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4238 TRA -.9558 TC3 .1502 BAU .0611 SGT 1372.9 SGR 579.2 SG3 215.9 ST 32.1 SR 26.3 SS 21.6
RDE -.4281 RRA .1587 RC3 .1435 FAU .04794 RRT .0305 RRF -.0333 RTF -.[illegible]12 CRT .7302 CRS .4330 CST .9295
FDE .2720 FRA 1.3103 FC3-1.8855 BSP 2191 SGB 1490.0 R23 -.0051 R13 -.7612 LSA 42.7 MSA 19.0 SSA 1.2
BDE .6023 BRA .9689 BC3 .2077 FSP 302 SG1 1373.0 SG2 578.9 THA .90 EL1 38.7 EL2 14.9 ALF 37.39

LAUNCH DATE MAY 5 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 330.260 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 33.714 GAL -1.97 AZL 91.91 HCA 110.03 SMA 213.12 ECC .29393 INC 1.9056 V1 29.533
RP 206.68 LAP -1.79 LOP 333.91 VP 25.720 GAP 17.01 AZP 89.35 TAL 351.34 TAP 101.37 RCA 150.48 APO 275.76 V2 26.498
RC 62.398 GL -14.17 GP .59 ZAL 110.21 ZAP 165.93 ETS 177.66 ZAE 170.86 ETE 30.98 ZAC 100.36 ETC 278.15 LVI -19.08

PLANETOCENTRIC CONIC

C3 20.939 VHL 4.576 DLA -22.91 RAL 342.17 RAD 6643.3 VEL 11.872 PTH 6.89 VHP 7.823 DPA -16.06 RAP 322.67 ECC 1.3446

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 43	2677.50	-16.15	74.20	200.22	135.39	17 32 20	1677.5	2.12	58.18
60.00	17 55 53	2496.20	-10.87	62.79	205.14	129.05	18 37 29	1496.2	5.19	44.80
70.00	19 22 35	2241.31	-5.63	46.02	209.04	123.74	19 59 57	1241.3	8.32	26.47
80.00	21 6 17	1916.79	-1.26	24.10	211.75	119.83	21 38 14	916.8	10.97	3.42
90.00	22 45 6	1598.04	.61	1.69	212.79	118.27	23 11 44	598.0	12.11	340.57
100.00	23 49 9	1391.26	-1.26	345.46	211.75	119.83	24 12 20	391.3	10.97	324.79
110.00	0 25 58	1288.13	-5.63	334.94	209.04	123.74	0 47 26	288.1	8.32	315.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4173 TRA -.9451 TC3 .1717 BAU .0641 SGT 1395.7 SGR 576.5 SG3 230.7 ST 32.5 SR 26.2 SS 22.2
RDE -.4151 RRA .1527 RC3 .1513 FAU .04994 RRT .0333 RRF -.0364 RTF -.7674 CRT .7285 CRS .4212 CST .9257
FDE .2756 FRA 1.3649 FC3-2.0648 BSP 2248 SGB 1510.1 R23 -.0056 R13 -.7675 LSA 43.1 MSA 19.2 SSA 1.3
BDE .5886 BRA .9573 BC3 .2288 FSP 326 SG1 1395.9 SG2 576.1 THA .95 EL1 38.9 EL2 15.0 ALF 36.70

LAUNCH DATE MAY 5 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 8 1971

DISTANCE 333.662

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	33.612	GAL	-1.88	AZL	91.91	HCA	111.30	SMA	210.80	ECC	.28602	INC	1.9101	V1	29.533
RP	206.67	LAP	-1.78	LOP	335.18	VP	25.587	GAP	16.58	AZP	89.31	TAL	351.53	TAP	102.83	RCA	150.50	APO	271.09	V2	26.496
RC	63.376	GL	-14.52	GP	.61	ZAL	110.01	ZAP	164.89	ETS	177.75	ZAE	170.65	ETE	29.48	ZAC	100.35	ETC	278.19	LVI	-19.17

PLANETOCENTRIC CONIC

C3	19.952	VHL	4.467	DLA	-23.29	RAL	342.14	RAD	6642.8	VEL	11.831	PTH	6.85	VHP	7.579	DPA	-15.97	RAP	322.89	ECC	1.3284

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 25	2657.68	-15.18	73.30	199.67	135.65	17 33 42	1657.7	3.11	57.35
60.00	17 58 15	2474.59	-9.94	61.72	204.57	129.26	18 39 30	1474.6	6.14	43.76
70.00	19 25 55	2216.87	-4.70	44.73	208.49	123.87	20 2 52	1216.9	9.23	25.16
80.00	21 10 53	1888.35	-.29	22.53	211.23	119.86	21 42 22	888.4	11.87	1.79
90.00	22 50 31	1567.00	1.61	359.96	212.29	118.24	23 16 38	567.0	13.02	338.74
100.00	23 53 45	1362.82	-.29	343.90	211.23	119.86	24 16 28	362.8	11.87	323.16
110.00	0 29 17	1263.69	-4.70	333.65	208.49	123.87	0 50 21	263.7	9.23	314.08

DIFFERENTIAL CORRECTIONS

TDE	-.4106	TRA	-.9335	TC3	.1956	BAU	.0673
RDE	-.4026	RRA	.1467	RC3	.1593	FAU	.05209
FDE	.2789	FRA	1.4224	FC3	-2.2603	BSP	2291
BDE	.5750	BRA	.9449	BC3	.2523	FSP	351

MID-COURSE EXECUTION ACCURACY

SGT	1416.8	SGR	573.5	SG3	246.7
RRT	.0366	RRF	-.0398	RTF	-.7740
SGB	1528.4	R23	-.0059	R13	-.7741
SG1	1417.0	SG2	573.0	THA	1.02

ORBIT DETERMINATION ACCURACY

ST	32.8	SR	26.0	SS	22.8
CRT	.7268	CRS	.4089	CST	.9215
LSA	43.5	MSA	19.5	SSA	1.3
EL1	39.1	EL2	15.0	ALF	36.06

LAUNCH DATE MAY 5 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 10 1971

DISTANCE 337.130

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	33.515	GAL	-1.80	AZL	91.91	HCA	112.57	SMA	208.66	ECC	.27858	INC	1.9146	V1	29.533
RP	206.68	LAP	-1.77	LOP	336.45	VP	25.460	GAP	16.17	AZP	89.26	TAL	351.72	TAP	104.29	RCA	150.53	APO	266.78	V2	26.496
RC	64.414	GL	-14.86	GP	.64	ZAL	109.80	ZAP	163.84	ETS	177.84	ZAE	170.50	ETE	28.24	ZAC	100.34	ETC	278.24	LVI	-19.25

PLANETOCENTRIC CONIC

C3	19.043	VHL	4.364	DLA	-23.68	RAL	342.11	RAD	6642.4	VEL	11.792	PTH	6.82	VHP	7.344	DPA	-15.88	RAP	323.09	ECC	1.3134

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 51 6	2638.26	-14.23	72.43	199.14	135.89	17 35 4	1638.3	4.09	56.53
60.00	18 0 38	2453.33	-9.03	60.67	204.03	129.45	18 41 32	1453.3	7.07	42.73
70.00	19 29 18	2192.66	-3.78	43.46	207.96	123.97	20 5 51	1192.7	10.13	23.86
80.00	21 15 38	1859.86	.67	20.97	210.74	119.85	21 46 38	859.9	12.77	.15
90.00	22 56 10	1535.64	2.62	358.21	211.82	118.17	23 21 45	535.6	13.93	336.89
100.00	0 2 26	1334.33	.67	342.34	210.74	119.85	0 24 40	334.3	12.77	321.52
110.00	0 32 40	1239.48	-3.78	332.38	207.96	123.97	0 53 20	239.5	10.13	312.78

DIFFERENTIAL CORRECTIONS

TDE	-.4033	TRA	-.9215	TC3	.2184	BAU	.0700
RDE	-.3905	RRA	.1409	RC3	.1674	FAU	.05437
FDE	.2818	FRA	1.4823	FC3	-2.4717	BSP	2334
BDE	.5614	BRA	.9322	BC3	.2751	FSP	379

MID-COURSE EXECUTION ACCURACY

SGT	1436.0	SGR	570.1	SG3	263.6
RRT	.0396	RRF	-.0434	RTF	-.7795
SGB	1545.0	R23	-.0068	R13	-.7795
SG1	1436.2	SG2	569.5	THA	1.07

ORBIT DETERMINATION ACCURACY

ST	33.1	SR	25.8	SS	23.5
CRT	.7248	CRS	.3962	CST	.9173
LSA	43.8	MSA	19.7	SSA	1.3
EL1	39.2	EL2	15.0	ALF	35.47

LAUNCH DATE MAY 5 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 12 1971

DISTANCE 340.660

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	33.425	GAL	-1.72	AZL	91.92	HCA	113.84	SMA	206.69	ECC	.27160	INC	1.9193	V1	29.533
RP	206.69	LAP	-1.76	LOP	337.72	VP	25.340	GAP	15.76	AZP	89.22	TAL	351.92	TAP	105.76	RCA	150.55	APO	262.82	V2	26.495
RC	65.512	GL	-15.20	GP	.66	ZAL	109.58	ZAP	162.76	ETS	177.91	ZAE	170.41	ETE	27.23	ZAC	100.34	ETC	278.28	LVI	-19.32

PLANETOCENTRIC CONIC

C3	18.205	VHL	4.267	DLA	-24.06	RAL	342.07	RAD	6642.0	VEL	11.757	PTH	6.78	VHP	7.116	DPA	-15.79	RAP	323.27	ECC	1.2996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 47	2619.24	-13.30	71.59	198.63	136.11	17 36 26	1619.2	5.04	55.74
60.00	18 3 2	2432.42	-8.12	59.65	203.52	129.61	18 43 34	1432.4	7.98	41.71
70.00	19 32 44	2168.69	-2.87	42.21	207.47	124.05	20 8 53	1168.7	11.01	22.56
80.00	21 20 32	1831.31	1.64	19.40	210.28	119.82	21 51 4	831.3	13.65	358.49
90.00	23 2 3	1503.90	3.64	356.43	211.39	118.06	23 27 7	503.9	14.83	334.99
100.00	0 7 20	1305.78	1.64	340.77	210.28	119.82	0 29 6	305.8	13.65	319.86
110.00	0 36 6	1215.51	-2.87	331.13	207.47	124.05	0 56 22	215.5	11.01	311.48

DIFFERENTIAL CORRECTIONS

TDE	-.3985	TRA	-.9092	TC3	.2424	BAU	.0729
RDE	-.3787	RRA	.1353	RC3	.1756	FAU	.05678
FDE	.2844	FRA	1.5453	FC3	-2.7000	BSP	2375
BDE	.5483	BRA	.9192	BC3	.2993	FSP	409

MID-COURSE EXECUTION ACCURACY

SGT	1454.0	SGR	566.3	SG3	281.6
RRT	.0435	RRF	-.0473	RTF	-.7948
SGB	1560.4	R23	-.0072	R13	-.7849
SG1	1454.3	SG2	565.7	THA	1.14

ORBIT DETERMINATION ACCURACY

ST	33.3	SR	25.6	SS	24.1
CRT	.7231	CRS	.3830	CST	.9125
LSA	44.1	MSA	20.0	SSA	1.3
EL1	39.3	EL2	15.0	ALF	34.87

LAUNCH DATE MAY 5 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 14 1971

DISTANCE 344.245

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	33.339	GAL	-1.65	AZL	91.92	HCA	115.11	SMA	204.87	ECC	.26503	INC	1.9239	V1	29.533
RP	206.71	LAP	-1.74	LOP	338.99	VP	25.225	GAP	15.36	AZP	89.18	TAL	352.12	TAP	107.23	RCA	150.57	APO	259.16	V2	26.493
RC	66.667	GL	-15.54	GP	.69	ZAL	109.35	ZAP	161.66	ETS	177.97	ZAE	170.39	ETE	26.43	ZAC	100.34	ETC	278.31	LVI	-19.39

PLANETOCENTRIC CONIC

C3	17.433	VHL	4.175	DLA	-24.45	RAL	342.02	RAD	6641.7	VEL	11.725	PTH	6.76	VHP	6.896	DPA	-15.71	RAP	323.43	ECC	1.2869

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 28	2600.67	-12.39	70.77	198.16	136.31	17 37 48	1600.7	5.97	54.95
60.00	18 5 26	2411.91	-7.23	58.65	203.04	129.76	18 45 38	1411.9	8.86	40.71
70.00	19 36 13	2144.99	-1.97	40.97	207.01	124.10	20 11 58	1145.0	11.87	21.27
80.00	21 25 36	1802.69	2.61	17.83	209.86	119.75	21 55 38	802.7	14.52	356.81
90.00	23 8 13	1471.74	4.67	354.63	210.99	117.92	23 32 44	471.7	15.72	333.05
100.00	0 12 23	1277.17	2.61	339.20	209.86	119.75	0 33 41	277.2	14.52	318.18
110.00	0 39 36	1191.81	-1.97	329.89	207.01	124.10	0 59 27	191.8	11.87	310.19

DIFFERENTIAL CORRECTIONS

TDE	-.3892	TRA	-.8969	TC3	.2659	BAU	.0753
RDE	-.3674	RRA	.1297	RC3	.1839	FAU	.05936
FDE	.2867	FRA	1.6125	FC3	-2.9479	BSP	2410
BDE	.5352	BRA	.9062	BC3	.3233	FSP	440

MID-COURSE EXECUTION ACCURACY

SGT	1470.5	SGR	562.2	SG3	300.8
RRT	.0471	RRF	-.0516	RTF	-.7896
SGB	1574.3	R23	-.0080	R13	-.7897
SG1	1470.8	SG2	561.5	THA	1.21

ORBIT DETERMINATION ACCURACY

ST	33.5	SR	25.4	SS	24.8
CRT	.7212	CRS	.3692	CST	.9076
LSA	44.4	MSA	20.2	SSA	1.3
EL1	39.3	EL2	15.0	ALF	34.32

LAUNCH DATE MAY 5 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 347.881 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 33.259 GAL -1.58 AZL 91.93 HCA 116.38 SMA 203.19 ECC .25886 INC 1.9288 V1 29.533
RP 206.73 LAP -1.73 LOP 340.26 VP 25.115 GAP 14.97 AZP 89.14 TAL 352.33 TAP 108.70 RCA 150.59 APO 255.79 V2 26.489
RC 67.877 GL -15.88 GP .71 ZAL 109.12 ZAP 160.53 ETS 178.02 ZAE 170.44 ETE 25.82 ZAC 100.35 ETC 278.34 LVI -19.45

PLANETOCENTRIC CONIC

C3 16.722 VHL 4.089 DLA -24.84 RAL 341.96 RAD 6641.3 VEL 11.694 PTH 6.73 VHP 6.684 DPA -15.64 RAP 323.56 ECC 1.2752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 8	2582.54	-11.50	69.97	197.70	136.49	17 39 11	1582.5	6.88	54.19
60.00	18 7 51	2391.82	-6.35	57.68	202.59	129.88	18 47 43	1391.8	9.73	39.72
70.00	19 39 46	2121.59	-1.07	39.75	206.57	124.14	20 15 7	1121.6	12.72	19.99
80.00	21 30 49	1774.02	3.57	16.25	209.47	119.66	22 0 23	774.0	15.38	355.12
90.00	23 14 40	1439.06	5.70	352.79	210.64	117.75	23 38 39	439.1	16.61	331.07
100.00	0 17 37	1248.49	3.57	337.62	209.47	119.66	0 38 25	248.5	15.38	316.49
110.00	0 43 8	1168.41	-1.07	328.67	206.57	124.14	1 2 36	168.4	12.72	308.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3817 TRA -.8839 TC3 .2888 BAU .0775 SGT 1484.7 SGR 557.7 SG3 321.3 ST 33.7 SR 25.1 SS 25.5
RDE -.3565 RRA .1244 RC3 .1922 FAU .06209 RRT .0510 RRF -.0560 RTF -.7940 CRT .7192 CRS .3548 CST .9023
FDE .2884 FRA 1.6830 FC3-3.2144 BSP 2447 SGB 1586.0 R23 -.0089 R13 -.7941 LSA 44.6 MSA 20.5 SSA 1.3
BDE .5223 BRA .8926 BC3 .3469 FSP 475 SG1 1485.0 SG2 556.9 THA 1.28 EL1 39.3 EL2 15.0 ALF 33.80

LAUNCH DATE MAY 5 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 351.564 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 33.184 GAL -1.51 AZL 91.93 HCA 117.64 SMA 201.64 ECC .25306 INC 1.9337 V1 29.533
RP 206.77 LAP -1.71 LOP 341.53 VP 25.010 GAP 14.59 AZP 89.10 TAL 352.53 TAP 110.17 RCA 150.61 APO 252.67 V2 26.485
RC 69.140 GL -16.22 GP .74 ZAL 108.89 ZAP 159.38 ETS 178.07 ZAE 170.56 ETE 25.42 ZAC 100.36 ETC 278.36 LVI -19.51

PLANETOCENTRIC CONIC

C3 16.066 VHL 4.008 DLA -25.23 RAL 341.90 RAD 6641.0 VEL 11.667 PTH 6.70 VHP 6.479 DPA -15.58 RAP 323.66 ECC 1.2644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 48	2564.90	-10.62	69.20	197.28	136.66	17 40 33	1564.9	7.76	53.43
60.00	18 10 16	2372.16	-5.49	56.73	202.16	129.99	18 49 48	1372.2	10.58	38.75
70.00	19 43 21	2098.50	-.19	38.54	206.17	124.15	20 18 19	1098.5	13.55	18.71
80.00	21 36 13	1745.25	4.54	14.67	209.11	119.54	22 5 18	745.3	16.23	353.40
90.00	23 21 29	1405.76	6.76	350.91	210.32	117.53	23 44 54	405.8	17.49	329.02
100.00	0 23 0	1219.73	4.54	336.04	209.11	119.54	0 43 20	219.7	16.23	314.77
110.00	0 46 43	1145.32	-.19	327.46	206.17	124.15	1 5 48	145.3	13.55	307.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3742 TRA -.8702 TC3 .3111 BAU .0795 SGT 1496.4 SGR 553.0 SG3 343.0 ST 33.8 SR 24.9 SS 26.1
RDE -.3459 RRA .1191 RC3 .2006 FAU .06501 RRT .0553 RRF -.0609 RTF -.7976 CRT .7175 CRS .3398 CST .8964
FDE .2893 FRA 1.7564 FC3-3.5031 BSP 2474 SGB 1595.3 R23 -.0098 R13 -.7977 LSA 44.8 MSA 20.7 SSA 1.3
BDE .5096 BRA .8784 BC3 .3702 FSP 511 SG1 1496.8 SG2 552.0 THA 1.36 EL1 39.2 EL2 14.9 ALF 33.31

LAUNCH DATE MAY 5 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 355.289 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 33.112 GAL -1.44 AZL 91.94 HCA 118.91 SMA 200.20 ECC .24761 INC 1.9387 V1 29.533
RP 206.81 LAP -1.70 LOP 342.79 VP 24.910 GAP 14.21 AZP 89.06 TAL 352.73 TAP 111.64 RCA 150.63 APO 249.77 V2 26.480
RC 70.455 GL -16.55 GP .77 ZAL 108.65 ZAP 158.20 ETS 178.12 ZAE 170.75 ETE 25.21 ZAC 100.38 ETC 278.38 LVI -19.57

PLANETOCENTRIC CONIC

C3 15.460 VHL 3.932 DLA -25.61 RAL 341.84 RAD 6640.7 VEL 11.641 PTH 6.68 VHP 6.280 DPA -15.52 RAP 323.74 ECC 1.2544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 28	2547.68	-9.77	68.46	196.88	136.80	17 41 55	1547.7	8.62	52.70
60.00	18 12 42	2352.88	-4.65	55.80	201.76	130.08	18 51 55	1352.9	11.41	37.79
70.00	19 46 59	2075.66	.68	37.35	205.80	124.15	20 21 35	1075.7	14.36	17.44
80.00	21 41 49	1716.26	5.51	13.06	208.79	119.39	22 10 25	716.3	17.07	351.66
90.00	23 28 42	1371.53	7.83	348.96	210.05	117.26	23 51 34	371.5	18.37	326.90
100.00	0 28 37	1190.73	5.51	334.43	208.79	119.39	0 48 27	190.7	17.07	313.03
110.00	0 50 21	1122.48	.68	326.27	205.80	124.15	1 9 4	122.5	14.36	306.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3530 TRA -.8418 TC3 .3698 BAU .0878 SGT 1483.1 SGR 547.9 SG3 366.2 ST 32.8 SR 24.6 SS 26.7
RDE -.3356 RRA .1140 RC3 .2093 FAU .06827 RRT .0599 RRF -.0665 RTF -.8135 CRT .7087 CRS .3220 CST .8938
FDE .2874 FRA 1.8307 FC3-3.8232 BSP 2314 SGB 1581.1 R23 -.0101 R13 -.8136 LSA 44.2 MSA 21.0 SSA 1.3
BDE .4871 BRA .8495 BC3 .4249 FSP 546 SG1 1483.6 SG2 546.7 THA 1.47 EL1 38.2 EL2 14.9 ALF 33.79

LAUNCH DATE MAY 5 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 359.054 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 33.045 GAL -1.38 AZL 91.94 HCA 120.18 SMA 198.88 ECC .24251 INC 1.9439 V1 29.533
RP 206.87 LAP -1.68 LOP 344.06 VP 24.815 GAP 13.85 AZP 89.02 TAL 352.93 TAP 113.11 RCA 150.65 APO 247.10 V2 26.474
RC 71.818 GL -16.87 GP .81 ZAL 108.42 ZAP 156.99 ETS 178.15 ZAE 171.02 ETE 25.21 ZAC 100.40 ETC 278.40 LVI -19.61

PLANETOCENTRIC CONIC

C3 14.904 VHL 3.861 DLA -25.99 RAL 341.78 RAD 6640.5 VEL 11.617 PTH 6.66 VHP 6.089 DPA -15.47 RAP 323.79 ECC 1.2453

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 7	2531.06	-8.95	67.75	196.51	136.93	17 43 18	1531.1	9.44	51.99
60.00	18 15 8	2334.20	-3.83	54.90	201.40	130.15	18 54 2	1334.2	12.20	36.86
70.00	19 50 40	2053.32	1.54	36.19	205.46	124.12	20 24 53	1053.3	15.15	16.19
80.00	21 47 36	1687.32	6.48	11.46	208.51	119.21	22 15 43	687.3	17.89	349.90
90.00	23 36 22	1336.54	8.91	346.97	209.82	116.95	23 58 39	336.5	19.25	324.70
100.00	0 34 24	1161.79	6.48	332.82	208.51	119.21	0 53 45	161.8	17.89	311.27
110.00	0 54 2	1100.14	1.54	325.11	205.46	124.12	1 12 22	100.1	15.15	305.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3528 TRA -.8349 TC3 .3713 BAU .0858 SGT 1502.2 SGR 542.5 SG3 390.8 ST 33.4 SR 24.3 SS 27.5
RDE -.3257 RRA .1090 RC3 .2176 FAU .07149 RRT .0654 RRF -.0724 RTF -.8097 CRT .7112 CRS .3084 CST .8856
FDE .2893 FRA 1.9145 FC3-4.1527 BSP 2429 SGB 1597.2 R23 -.0116 R13 -.8099 LSA 44.8 MSA 21.3 SSA 1.3
BDE .4802 BRA .8420 BC3 .4304 FSP 589 SG1 1502.7 SG2 541.2 THA 1.55 EL1 38.5 EL2 14.8 ALF 32.84

LAUNCH DATE MAY 5 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC — DISTANCE 362.854 — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.983	GAL	-1.32	AZL	91.95	HCA	121.45	SMA	197.65	ECC	.23772	INC	1.9491	V1	29.533
RP	206.93	LAP	-1.66	LOP	345.33	VP	24.723	GAP	13.49	AZP	88.98	TAL	353.12	TAP	114.57	RCA	150.66	APO	244.63	V2	26.466
RC	73.228	GL	-17.20	GP	.84	ZAL	108.19	ZAP	155.75	ETS	178.19	ZAE	171.35	ETE	25.45	ZAC	100.43	ETC	278.40	LVI	-19.65

PLANETOCENTRIC CONIC

C3	14.392	VHL	3.794	DLA	-26.37	RAL	341.72	RAD	6640.2	VEL	11.595	PTH	6.64	VHP	5.904	DPA	-15.43	RAP	323.81	ECC	1.2368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 46	2514.95	-8.14	67.06	196.17	137.04	17 44 41	1515.0	10.24	51.29
60.00	18 17 34	2316.00	-3.03	54.03	201.06	130.21	18 56 10	1316.0	12.98	35.94
70.00	19 54 23	2031.35	2.37	35.04	205.15	124.08	20 28 14	1031.4	15.91	14.95
80.00	21 53 36	1658.18	7.44	9.83	208.27	119.00	22 21 14	658.2	18.70	348.12
90.00	23 44 36	1300.21	10.03	344.88	209.65	116.58	24 6 16	300.2	20.12	322.40
100.00	0 40 24	1132.65	7.44	331.20	208.27	119.00	0 59 17	132.6	18.70	309.48
110.00	0 57 45	1078.17	2.37	323.96	205.15	124.08	1 15 43	78.2	15.91	303.87

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.3496	TRA	-.8234	TC3	.3781	BAU	.0848	SGT	1512.5	SGR	536.8	SG3	416.8	ST	33.6	SR	24.0	SS	28.3
RDE	-.3162	RRA	.1040	RC3	.2260	FAU	.07492	RRT	.0714	RRF	-.0790	RTF	-.8081	CRT	.7127	CRS	.2949	CST	.8779
FDE	.2907	FRA	2.0014	FC3	-4.5067	BSP	2481	SGB	1604.9	R23	-.0130	R13	-.8083	LSA	45.2	MSA	21.5	SSA	1.4
BDE	.4714	BRA	.8299	BC3	.4405	FSP	633	SG1	1513.0	SG2	535.3	THA	1.66	EL1	38.6	EL2	14.7	ALF	32.16

LAUNCH DATE MAY 5 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC — DISTANCE 366.687 — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.924	GAL	-1.26	AZL	91.95	HCA	122.71	SMA	196.51	ECC	.23323	INC	1.9545	V1	29.533
RP	207.00	LAP	-1.64	LOP	346.59	VP	24.635	GAP	13.14	AZP	88.94	TAL	353.31	TAP	116.02	RCA	150.68	APO	242.34	V2	26.458
RC	74.683	GL	-17.51	GP	.88	ZAL	107.97	ZAP	154.49	ETS	178.22	ZAE	171.75	ETE	25.96	ZAC	100.47	ETC	278.40	LVI	-19.69

PLANETOCENTRIC CONIC

C3	13.919	VHL	3.731	DLA	-26.73	RAL	341.66	RAD	6640.0	VEL	11.575	PTH	6.62	VHP	5.726	DPA	-15.39	RAP	323.79	ECC	1.2291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 25	2499.38	-7.37	66.39	195.85	137.14	17 46 4	1499.4	11.01	50.62
60.00	18 20 0	2298.31	-2.25	53.18	200.75	130.25	18 58 19	1298.3	13.72	35.04
70.00	19 58 8	2009.78	3.20	33.91	204.88	124.02	20 31 38	1009.8	16.66	13.72
80.00	21 59 51	1628.79	8.41	8.19	208.07	118.75	22 27 0	628.8	19.49	346.30
90.00	23 53 34	1262.07	11.18	342.67	209.53	116.15	24 14 36	262.1	21.00	319.95
100.00	0 46 39	1103.26	8.41	329.55	208.07	118.75	1 5 2	103.3	19.49	307.66
110.00	1 1 30	1056.60	3.20	322.83	204.88	124.02	1 19 7	56.6	16.66	302.64

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.3442	TRA	-.8105	TC3	.3871	BAU	.0842	SGT	1518.3	SGR	530.9	SG3	444.5	ST	33.7	SR	23.7	SS	29.0
RDE	-.3069	RRA	.0991	RC3	.2344	FAU	.07857	RRT	.0771	RRF	-.0858	RTF	-.8077	CRT	.7129	CRS	.2799	CST	.8702
FDE	.2908	FRA	2.0946	FC3	-4.6870	BSP	2516	SGB	1608.4	R23	-.0150	R13	-.8079	LSA	45.5	MSA	21.8	SSA	1.4
BDE	.4612	BRA	.8165	BC3	.4526	FSP	681	SG1	1518.9	SG2	529.1	THA	1.76	EL1	38.6	EL2	14.5	ALF	31.63

LAUNCH DATE MAY 5 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 28 1971

HELIOCENTRIC CONIC — DISTANCE 370.551 — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.868	GAL	-1.21	AZL	91.96	HCA	123.98	SMA	195.45	ECC	.22902	INC	1.9601	V1	29.533
RP	207.08	LAP	-1.63	LOP	347.86	VP	24.551	GAP	12.80	AZP	88.90	TAL	353.50	TAP	117.47	RCA	150.69	APO	240.22	V2	26.449
RC	76.180	GL	-17.82	GP	.92	ZAL	107.75	ZAP	153.19	ETS	178.24	ZAE	172.23	ETE	26.81	ZAC	100.51	ETC	278.40	LVI	-19.72

PLANETOCENTRIC CONIC

C3	13.485	VHL	3.672	DLA	-27.09	RAL	341.61	RAD	6639.8	VEL	11.556	PTH	6.60	VHP	5.554	DPA	-15.37	RAP	323.75	ECC	1.2219

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 4	2484.35	-6.62	65.75	195.56	137.22	17 47 28	1484.3	11.75	49.96
60.00	18 22 27	2281.16	-1.50	52.36	200.47	130.28	19 0 28	1281.2	14.44	34.17
70.00	20 1 56	1988.63	4.00	32.80	204.63	123.95	20 35 4	988.6	17.38	12.51
80.00	22 6 23	1599.07	9.38	6.51	207.91	118.48	22 33 2	599.1	20.27	344.44
90.00	0 7 27	1221.34	12.39	340.29	209.48	115.62	0 27 48	221.3	21.90	317.30
100.00	0 53 10	1073.54	9.38	327.88	207.91	118.48	1 11 4	73.5	20.27	305.80
110.00	1 5 18	1035.45	4.00	321.72	204.63	123.95	1 22 34	35.5	17.38	301.42

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.3382	TRA	-.7952	TC3	.3952	BAU	.0836	SGT	1518.3	SGR	524.6	SG3	473.7	ST	33.7	SR	23.4	SS	29.8
RDE	-.2979	RRA	.0943	RC3	.2428	FAU	.08245	RRT	.0837	RRF	-.0934	RTF	-.8071	CRT	.7136	CRS	.2649	CST	.8620
FDE	.2902	FRA	2.1909	FC3	-5.2934	BSP	2531	SGB	1606.3	R23	-.0169	R13	-.8073	LSA	45.6	MSA	22.0	SSA	1.4
BDE	.4507	BRA	.8008	BC3	.4638	FSP	731	SG1	1519.0	SG2	522.5	THA	1.88	EL1	38.4	EL2	14.4	ALF	31.20

LAUNCH DATE MAY 5 1971 FLIGHT TIME 148.00 ARRIVAL DATE SEP 30 1971

HELIOCENTRIC CONIC — DISTANCE 374.444 — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.816	GAL	-1.16	AZL	91.97	HCA	125.24	SMA	194.47	ECC	.22508	INC	1.9659	V1	29.533
RP	207.17	LAP	-1.61	LOP	349.12	VP	24.471	GAP	12.47	AZP	88.87	TAL	353.67	TAP	118.91	RCA	150.70	APO	238.25	V2	26.439
RC	77.718	GL	-18.13	GP	.96	ZAL	107.54	ZAP	151.86	ETS	178.26	ZAE	172.77	ETE	28.07	ZAC	100.56	ETC	278.39	LVI	-19.74

PLANETOCENTRIC CONIC

C3	13.084	VHL	3.617	DLA	-27.45	RAL	341.55	RAD	6639.6	VEL	11.539	PTH	6.59	VHP	5.388	DPA	-15.35	RAP	323.67	ECC	1.2153

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 42	2469.88	-5.89	65.14	195.30	137.30	17 48 52	1469.9	12.47	49.33
60.00	18 24 53	2264.57	-.77	51.57	200.22	130.29	19 2 38	1264.6	15.14	33.32
70.00	20 5 45	1967.94	4.79	31.72	204.42	123.86	20 38 33	967.9	18.08	11.31
80.00	22 13 13	1568.93	10.35	4.81	207.79	118.16	22 39 22	568.9	21.04	342.53
90.00	0 18 49	1176.56	13.69	337.65	209.50	114.99	0 38 26	176.6	22.83	314.35
100.00	1 0 1	1043.41	10.35	326.17	207.79	118.16	1 17 24	43.4	21.04	303.90
110.00	1 9 8	1014.76	4.79	320.64	204.42	123.86	1 26 2	14.8	18.08	300.22

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.3321	TRA	-.7795	TC3	.3991	BAU	.0825	SGT	1515.2	SGR	518.1	SG3	504.6	ST	33.6	SR	23.0	SS	30.7
RDE	-.2892	RRA	.0896	RC3	.2511	FAU	.08648	RRT	.0903	RRF	-.1016	RTF	-.8061	CRT	.7144	CRS	.2505	CST	.8538
FDE	.2897	FRA	2.2940	FC3	-5.7220	BSP	2535	SGB	1601.4	R23	-.0193	R13	-.8064	LSA	45.8	MSA	22.3	SSA	1.4
BDE	.4404	BRA	.7847	BC3	.4715	FSP	784	SG1	1516.1	SG2	515.7	THA	2.00	EL1	38.2	EL2	14.2	ALF	30.81

LAUNCH DATE MAY 5 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 378.362 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.787 GAL -1.11 AZL 91.97 HCA 126.50 SMA 193.57 ECC .22139 INC 1.9718 V1 29.533
RP 207.26 LAP -1.58 LOP 350.39 VP 24.393 GAP 12.14 AZP 88.83 TAL 353.84 TAP 120.35 RCA 150.71 APO 236.42 V2 26.428
RC 79.295 GL -18.43 GP 1.00 ZAL 107.34 ZAP 150.49 ETS 178.28 ZAE 173.37 ETE 29.91 ZAC 100.62 ETC 278.37 LVI -19.75

PLANETOCENTRIC CONIC

C3 12.717 VHL 3.566 DLA -27.79 RAL 341.51 RAD 6639.4 VEL 11.523 PTH 6.57 VHP 5.229 DPA -15.34 RAP 323.55 ECC 1.2093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 20	2455.98	-5.20	64.56	195.07	137.36	17 50 16	1456.0	13.15	48.71
60.00	18 27 19	2248.55	-.06	50.81	200.00	130.30	19 4 47	1248.5	15.81	32.49
70.00	20 9 37	1947.72	5.55	30.65	204.24	123.75	20 42 4	947.7	18.75	10.13
80.00	22 20 25	1538.22	11.33	3.05	207.71	117.81	22 46 3	538.2	21.80	340.57
90.00	0 32 39	1124.47	15.17	334.54	209.63	114.16	0 51 23	124.5	23.83	310.86
100.00	1 7 12	1012.69	11.33	324.42	207.71	117.81	1 24 5	12.7	21.80	301.93
110.00	1 12 59	6282.58	5.55	297.48	204.24	123.75	2 57 42	5282.6	18.75	276.95

DIFFERENTIAL CORRECTIONS

TDE -.3249 TRA -.7615 TC3 .4022 BAU .0814
RDE -.2808 RRA .0850 RC3 .2595 FAU .09085
FDE .2867 FRA 2.3996 FC3-6.1848 BSP 2523
BDE .4294 BRA .7662 BC3 .4787 FSP 840

MID-COURSE EXECUTION ACCURACY

SGT 1505.8 SGR 511.4 SG3 537.2
RRT .0976 RRF -.1107 RTF -.8046
SGB 1590.2 R23 -.0221 R13 -.8049
SG1 1506.7 SG2 508.7 THA 2.14

ORBIT DETERMINATION ACCURACY

ST 33.3 SR 22.7 SS 31.5
CRT .7153 CRS .2344 CST .8443
LSA 45.9 MSA 22.6 SSA 1.4
EL1 37.8 EL2 14.0 ALF 30.54

LAUNCH DATE MAY 5 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 382.305 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.722 GAL -1.07 AZL 91.98 HCA 127.76 SMA 192.73 ECC .21794 INC 1.9779 V1 29.533
RP 207.37 LAP -1.56 LOP 351.65 VP 24.318 GAP 11.82 AZP 88.79 TAL 354.00 TAP 121.77 RCA 150.72 APO 234.73 V2 26.415
RC 80.909 GL -18.72 GP 1.05 ZAL 107.14 ZAP 149.09 ETS 178.30 ZAE 174.02 ETE 32.53 ZAC 100.69 ETC 278.34 LVI -19.76

PLANETOCENTRIC CONIC

C3 12.379 VHL 3.518 DLA -28.12 RAL 341.47 RAD 6639.2 VEL 11.509 PTH 6.56 VHP 5.075 DPA -15.34 RAP 323.40 ECC 1.2037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 58	2442.66	-4.53	64.00	194.86	137.41	17 51 40	1442.7	13.80	48.12
60.00	18 29 44	2233.11	.62	50.07	199.81	130.30	19 6 57	1233.1	16.44	31.68
70.00	20 13 29	1928.00	6.30	29.61	204.09	123.64	20 45 37	928.0	19.40	8.96
80.00	22 28 3	1506.70	12.33	1.24	207.68	117.41	22 53 9	506.7	22.55	338.53
90.00	0 52 28	1053.60	17.10	330.23	210.00	112.88	1 10 1	53.6	25.05	306.03
100.00	1 14 50	6269.21	12.33	300.52	207.68	117.41	2 59 20	5269.2	22.55	277.80
110.00	1 16 52	6262.86	6.30	296.44	204.09	123.64	3 1 14	5262.9	19.40	275.79

DIFFERENTIAL CORRECTIONS

TDE -.3192 TRA -.7439 TC3 .3978 BAU .0794
RDE -.2726 RRA .0803 RC3 .2679 FAU .09536
FDE .2876 FRA 2.5139 FC3-6.6696 BSP 2510
BDE .4197 BRA .7482 BC3 .4796 FSP 900

MID-COURSE EXECUTION ACCURACY

SGT 1495.0 SGR 504.5 SG3 571.8
RRT .1058 RRF -.1211 RTF -.8018
SGB 1577.9 R23 -.0256 R13 -.8022
SG1 1496.1 SG2 501.3 THA 2.30

ORBIT DETERMINATION ACCURACY

ST 33.2 SR 22.3 SS 32.4
CRT .7178 CRS .2229 CST .8360
LSA 46.1 MSA 22.8 SSA 1.4
EL1 37.5 EL2 13.7 ALF 30.22

LAUNCH DATE MAY 5 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 386.270 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.679 GAL -1.03 AZL 91.98 HCA 129.02 SMA 191.95 ECC .21472 INC 1.9842 V1 29.533
RP 207.48 LAP -1.54 LOP 352.91 VP 24.247 GAP 11.51 AZP 88.75 TAL 354.16 TAP 123.18 RCA 150.73 APO 233.16 V2 26.402
RC 82.560 GL -19.01 GP 1.09 ZAL 106.96 ZAP 147.65 ETS 178.31 ZAE 174.72 ETE 36.32 ZAC 100.76 ETC 278.31 LVI -19.76

PLANETOCENTRIC CONIC

C3 12.068 VHL 3.474 DLA -28.44 RAL 341.45 RAD 6639.1 VEL 11.495 PTH 6.54 VHP 4.928 DPA -15.35 RAP 323.21 ECC 1.1986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 35	2429.94	-3.89	63.46	194.68	137.45	17 53 5	1429.9	14.43	47.55
60.00	18 32 9	2218.29	1.27	49.36	199.64	130.28	19 9 7	1218.3	17.05	30.91
70.00	20 17 23	1908.81	7.02	28.60	203.97	123.51	20 49 12	908.8	20.02	7.82
80.00	22 36 13	1474.07	13.34	359.35	207.71	116.96	23 0 47	474.1	23.30	336.39
86.83	0 52 3	1049.08	19.51	330.93	210.57	111.11	1 9 32	49.1	26.50	306.04
100.00	1 23 0	6236.58	13.34	298.63	207.71	116.96	3 6 57	5236.6	23.30	275.67
110.00	1 20 45	6243.67	7.02	295.42	203.97	123.51	3 4 49	5243.7	20.02	274.65

DIFFERENTIAL CORRECTIONS

TDE -.3130 TRA -.7245 TC3 .3909 BAU .0772
RDE -.2646 RRA .0757 RC3 .2763 FAU .10018
FDE .2852 FRA 2.6324 FC3-7.1868 BSP 2481
BDE .4098 BRA .7284 BC3 .4787 FSP 963

MID-COURSE EXECUTION ACCURACY

SGT 1478.8 SGR 497.4 SG3 608.1
RRT .1148 RRF -.1321 RTF -.[illegible]83
SGB 1560.2 R23 -.0292 R13 -.7988
SG1 1480.0 SG2 493.7 THA 2.49

ORBIT DETERMINATION ACCURACY

ST 32.9 SR 21.9 SS 33.2
CRT .7209 CRS .2089 CST .8256
LSA 46.2 MSA 23.0 SSA 1.4
EL1 37.2 EL2 13.4 ALF 29.98

LAUNCH DATE MAY 5 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 390.256 EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.639 GAL -1.00 AZL 91.99 HCA 130.28 SMA 191.22 ECC .21171 INC 1.9907 V1 29.533
RP 207.60 LAP -1.52 LOP 354.17 VP 24.177 GAP 11.21 AZP 88.71 TAL 354.30 TAP 124.58 RCA 150.74 APO 231.71 V2 26.388
RC 84.247 GL -19.28 GP 1.15 ZAL 106.80 ZAP 146.18 ETS 178.32 ZAE 175.45 ETE 41.93 ZAC 100.84 ETC 278.26 LVI -19.75

PLANETOCENTRIC CONIC

C3 11.783 VHL 3.433 DLA -28.75 RAL 341.43 RAD 6638.9 VEL 11.483 PTH 6.53 VHP 4.786 DPA -15.37 RAP 322.98 ECC 1.1939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 13	2417.76	-3.26	62.95	194.53	137.49	17 54 31	1417.8	15.02	47.01
60.00	18 34 33	2204.02	1.90	48.68	199.50	130.26	19 11 17	1204.0	17.64	30.15
70.00	20 21 18	1890.08	7.72	27.60	203.87	123.37	20 52 48	890.1	20.62	6.70
80.00	22 45 7	1439.62	14.40	357.34	207.78	116.44	23 9 7	439.6	24.05	334.11
84.57	0 33 18	1104.41	19.84	335.12	210.30	111.25	0 51 43	104.4	26.85	310.18
100.00	1 31 55	6202.13	14.40	296.61	207.78	116.44	3 15 17	5202.1	24.05	273.39
110.00	1 24 40	6224.94	7.72	294.43	203.87	123.37	3 8 25	5224.9	20.62	273.53

DIFFERENTIAL CORRECTIONS

TDE -.2977 TRA -.6936 TC3 .4110 BAU .0788
RDE -.2567 RRA .0713 RC3 .2652 FAU .10569
FDE .2747 FRA 2.7443 FC3-7.7653 BSP 2329
BDE .3931 BRA .6972 BC3 .5003 FSP 1021

MID-COURSE EXECUTION ACCURACY

SGT 1438.9 SGR 490.2 SG3 646.2
RRT .1261 RRF -.1449 RTF -.8021
SGB 1520.1 R23 -.0309 R13 -.8028
SG1 1440.4 SG2 485.8 THA 2.78

ORBIT DETERMINATION ACCURACY

ST 31.8 SR 21.5 SS 33.9
CRT .7195 CRS .1891 CST .8152
LSA 45.6 MSA 23.2 SSA 1.4
EL1 36.0 EL2 13.2 ALF 30.48

LAUNCH DATE MAY 5 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 10 1971

DISTANCE 394.260 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.87 LAL .00 LOL 223.87 VL 32.602 GAL -.96 AZL 92.00 HCA 131.54 SMA 190.56 ECC .20891 INC 1.9975 V1 29.533
RP 207.73 LAP -1.50 LOP 355.43 VP 24.111 GAP 10.91 AZP 88.68 TAL 354.43 TAP 125.97 RCA 150.75 APO 230.36 V2 26.373
RC 85.969 GL -19.55 GP 1.20 ZAL 106.65 ZAP 144.67 ETS 178.33 ZAE 176.15 ETE 50.42 ZAC 100.93 ETC 278.21 LVI -19.74

PLANETOCENTRIC CONIC

C3 11.524 VHL 3.395 DLA -29.05 RAL 341.42 RAD 6638.8 VEL 11.472 PTH 6.52 VHP 4.650 DPA -15.40 RAP 322.72 ECC 1.1896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 50	2406.27	-2.70	62.47	194.40	137.52	17 55 56	1406.3	15.58	46.49
60.00	18 36 57	2190.49	2.49	48.03	199.40	130.24	19 13 27	1190.5	18.19	29.43
70.00	20 25 12	1872.07	8.40	26.64	203.82	123.23	20 56 24	872.1	21.19	5.62
80.00	22 54 57	1402.93	15.50	355.17	207.93	115.84	23 18 20	402.9	24.81	331.65
83.06	0 21 4	1139.18	20.15	337.81	210.06	111.38	0 40 3	139.2	27.18	312.80
100.00	1 41 45	6165.44	15.50	294.44	207.93	115.84	3 24 31	5165.4	24.81	270.92
110.00	1 28 34	6206.93	8.40	293.47	203.82	123.23	3 12 1	5206.9	21.19	272.44

DIFFERENTIAL CORRECTIONS

TDE -.3011 TRA -.6818 TC3 .3576 BAU .0712
RDE -.2493 RRA .0665 RC3 .2930 FAU .11040
FDE .2829 FRA 2.8882 FC3-8.2938 BSP 2375
BDE .3909 BRA .6851 BC3 .4623 FSP 1096

MID-COURSE EXECUTION ACCURACY

SGT 1431.9 SGR 482.8 SG3 685.9
RRT .1346 RRF -.1579 RTF -.7874
SGB 1511.1 R23 -.0390 R13 -.7881
SG1 1433.5 SG2 477.8 THA 2.92

ORBIT DETERMINATION ACCURACY

ST 32.2 SR 21.1 SS 35.1
CRT .7304 CRS .1861 CST .8041
LSA 46.5 MSA 23.5 SSA 1.4
EL1 36.3 EL2 12.8 ALF 29.66

LAUNCH DATE MAY 5 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 12 1971

DISTANCE 398.282 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.87 LAL .00 LOL 223.87 VL 32.567 GAL -.93 AZL 92.00 HCA 132.80 SMA 189.94 ECC .20630 INC 2.0045 V1 29.533
RP 207.86 LAP -1.47 LOP 356.68 VP 24.046 GAP 10.62 AZP 88.64 TAL 354.55 TAP 127.34 RCA 150.75 APO 229.12 V2 26.357
RC 87.725 GL -19.82 GP 1.26 ZAL 106.51 ZAP 143.12 ETS 178.34 ZAE 176.77 ETE 63.56 ZAC 101.03 ETC 278.16 LVI -19.72

PLANETOCENTRIC CONIC

C3 11.286 VHL 3.359 DLA -29.34 RAL 341.43 RAD 6638.7 VEL 11.462 PTH 6.51 VHP 4.520 DPA -15.44 RAP 322.41 ECC 1.1857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 27	2395.35	-2.16	62.01	194.31	137.54	17 57 22	1395.3	16.11	45.99
60.00	18 39 19	2177.57	3.06	47.41	199.32	130.20	19 15 36	1177.6	18.71	28.74
70.00	20 29 7	1854.60	9.05	25.71	203.79	123.07	21 0 2	854.6	21.73	4.55
80.00	23 6 23	1361.75	16.70	352.71	208.16	115.11	23 29 5	361.8	25.61	328.85
81.86	0 11 33	1165.56	20.45	339.88	209.86	111.51	0 30 58	165.6	27.50	314.82
100.00	1 53 11	6124.26	16.70	291.98	208.16	115.11	3 35 15	5124.3	25.61	268.13
110.00	1 32 29	6189.46	9.05	292.53	203.79	123.07	3 15 38	5189.5	21.73	271.38

DIFFERENTIAL CORRECTIONS

TDE -.2969 TRA -.6610 TC3 .3259 BAU .0670
RDE -.2419 RRA .0619 RC3 .3015 FAU .11587
FDE .2819 FRA 3.0281 FC3-8.8886 BSP 2333
BDE .3830 BRA .6639 BC3 .4440 FSP 1170

MID-COURSE EXECUTION ACCURACY

SGT 1405.9 SGR 475.3 SG3 728.0
RRT .1448 RRF -.1726 RTF -.7777
SGB 1484.1 R23 -.0463 R13 -.7786
SG1 1407.8 SG2 469.7 THA 3.15

ORBIT DETERMINATION ACCURACY

ST 31.9 SR 20.7 SS 36.1
CRT .7375 CRS .1761 CST .7916
LSA 46.7 MSA 23.7 SSA 1.4
EL1 35.9 EL2 12.4 ALF 29.44

LAUNCH DATE MAY 5 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 14 1971

DISTANCE 402.320 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.87 LAL .00 LOL 223.87 VL 32.534 GAL -.91 AZL 92.01 HCA 134.05 SMA 189.36 ECC .20387 INC 2.0118 V1 29.533
RP 208.01 LAP -1.45 LOP 357.94 VP 23.983 GAP 10.33 AZP 88.60 TAL 354.65 TAP 128.70 RCA 150.76 APO 227.97 V2 26.340
RC 89.514 GL -20.08 GP 1.32 ZAL 106.39 ZAP 141.53 ETS 178.35 ZAE 177.15 ETE 82.89 ZAC 101.13 ETC 278.09 LVI -19.68

PLANETOCENTRIC CONIC

C3 11.069 VHL 3.327 DLA -29.61 RAL 341.45 RAD 6638.6 VEL 11.452 PTH 6.50 VHP 4.395 DPA -15.49 RAP 322.06 ECC 1.1822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 4	2385.02	-1.64	61.58	194.24	137.55	17 58 49	1385.0	16.61	45.52
60.00	18 41 40	2165.28	3.60	46.82	199.27	130.17	19 17 45	1165.3	19.21	28.08
70.00	20 33 1	1837.74	9.67	24.80	203.79	122.92	21 3 39	837.7	22.25	3.52
80.00	23 20 54	1311.32	18.13	349.65	208.52	114.13	23 42 45	311.3	26.51	325.37
80.85	0 3 44	1186.86	20.73	341.57	209.68	111.63	0 23 31	186.9	27.80	316.46
100.00	2 7 42	6073.83	18.13	288.92	208.52	114.13	3 48 55	5073.8	26.51	264.65
110.00	1 36 23	6172.59	9.67	291.63	203.79	122.92	3 19 16	5172.6	22.25	270.34

DIFFERENTIAL CORRECTIONS

TDE -.2920 TRA -.6374 TC3 .2882 BAU .0626
RDE -.2347 RRA .0372 RC3 .3100 FAU .12153
FDE .2802 FRA 3.1717 FC3-9.5054 BSP 2272
BDE .3747 BRA .6399 BC3 .4233 FSP 1248

MID-COURSE EXECUTION ACCURACY

SGT 1372.4 SGR 467.8 SG3 771.4
RRT .1556 RRF -.1887 RTF -.[illegible]61
SGB 1449.9 R23 -.0550 R13 -.7674
SG1 1374.6 SG2 461.3 THA 3.42

ORBIT DETERMINATION ACCURACY

ST 31.5 SR 20.3 SS 37.1
CRT .7456 CRS .1667 CST .7781
LSA 46.9 MSA 24.0 SSA 1.4
EL1 35.5 EL2 12.0 ALF 29.34

LAUNCH DATE MAY 5 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 16 1971

DISTANCE 406.374 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.87 LAL .00 LOL 223.87 VL 32.504 GAL -.88 AZL 92.02 HCA 135.30 SMA 188.84 ECC .20161 INC 2.0194 V1 29.533
RP 208.16 LAP -1.42 LOP 359.19 VP 23.923 GAP 10.06 AZP 88.56 TAL 354.74 TAP 130.05 RCA 150.76 APO 226.91 V2 26.323
RC 91.337 GL -20.33 GP 1.38 ZAL 106.29 ZAP 139.90 ETS 178.35 ZAE 177.11 ETE 106.23 ZAC 101.25 ETC 278.01 LVI -19.64

PLANETOCENTRIC CONIC

C3 10.872 VHL 3.297 DLA -29.87 RAL 341.49 RAD 6638.5 VEL 11.444 PTH 6.49 VHP 4.275 DPA -15.55 RAP 321.67 ECC 1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 41	2375.30	-1.15	61.18	194.19	137.57	18 0 16	1375.3	17.08	45.07
60.00	18 44 0	2153.64	4.11	46.27	199.24	130.13	19 19 53	1153.6	19.67	27.45
70.00	20 36 54	1821.50	10.27	23.93	203.82	122.75	21 7 16	821.5	22.74	2.51
79.97	23 53 13	1204.69	20.99	343.01	209.54	111.75	24 13 18	204.7	28.09	317.84
79.97	23 53 13	1204.69	20.99	343.01	209.54	111.75	24 13 18	204.7	28.09	317.84
79.97	23 53 13	1204.69	20.99	343.01	209.54	111.75	24 13 18	204.7	28.09	317.84
110.00	1 40 16	6156.36	10.27	290.75	203.82	122.75	3 22 53	5156.4	22.74	269.34

DIFFERENTIAL CORRECTIONS

TDE -.2866 TRA -.6118 TC3 .2469 BAU .0586
RDE -.2277 RRA .0524 RC3 .3187 FAU .12748
FDE .2784 FRA 3.3220 FC-10.1511 BSP 2194
BDE .3661 BRA .6140 BC3 .4031 FSP 1330

MID-COURSE EXECUTION ACCURACY

SGT 1333.2 SGR 460.2 SG3 816.7
RRT .1670 RRF -.2066 RTF -.7531
SG9 1410.4 R23 -.0653 R13 -.7547
SG1 1335.7 SG2 452.9 THA 3.73

ORBIT DETERMINATION ACCURACY

ST 31.0 SR 19.8 SS 38.1
CRT .7548 CRS .1583 CST .7638
LSA 47.1 MSA 24.2 SSA 1.4
EL1 34.9 EL2 11.5 ALF 29.34

LAUNCH DATE MAY 5 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 410.442 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.476	GAL	-.86	AZL	92.03	HCA	136.55	SMA	188.35	ECC	.19951	INC	2.0274	V1	29.533
RP	208.32	LAP	-1.39	LOP	.44	VP	23.864	GAP	9.78	AZP	88.53	TAL	354.82	TAP	131.38	RCA	150.77	APO	225.92	V2	26.304
RC	93.190	GL	-20.57	GP	1.45	ZAL	106.21	ZAP	138.23	ETS	178.36	ZAE	176.60	ETE	126.88	ZAC	101.38	ETC	277.93	LVI	-19.59

PLANETOCENTRIC CONIC

C3	10.692	VHL	3.270	DLA	-30.11	RAL	341.54	RAD	6638.4	VEL	11.436	PTH	6.49	VHP	4.161	DPA	-15.61	RAP	321.23	ECC	1.1760

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 18	2366.14	-.69	60.79	194.18	137.57	18 1 44	1366.1	17.52	44.65
60.00	18 46 18	2142.62	4.60	45.74	199.25	130.08	19 22 1	1142.6	20.11	26.85
70.00	20 40 47	1805.85	10.85	23.08	203.88	122.59	21 10 52	805.8	23.21	1.54
79.20	23 47 36	1219.91	21.24	344.25	209.44	111.86	24 7 55	219.9	28.36	319.03
79.20	23 47 36	1219.91	21.24	344.25	209.44	111.86	24 7 55	219.9	28.36	319.03
79.20	23 47 36	1219.91	21.24	344.25	209.44	111.86	24 7 55	219.9	28.36	319.03
110.00	1 44 9	6140.71	10.85	289.91	203.88	122.59	3 26 30	5140.7	23.21	268.36

DIFFERENTIAL CORRECTIONS

TDE	-.2749	TRA	-.5777	TC3	.2222	BAU	.0566												
RDE	-.2207	RRA	.0478	RC3	.3281	FAU	.13421												
FDE	.2641	FRA	3.4665	FC-10	.8668	BSP	2004												
BDE	.3525	BRA	.5797	BC3	.3962	FSP	1398												

MID-COURSE EXECUTION ACCURACY

SGT	1273.8	SGR	452.7	SG3	864.1						
RRT	.1807	RRF	-.2263	RTF	-.7436						
SGB	1351.8	R23	-.0745	R13	-.7457						
SG1	1276.8	SG2	444.2	THA	4.18						

ORBIT DETERMINATION ACCURACY

ST	29.8	SR	19.4	SS	39.0						
CRT	.7617	CRS	.1418	CST	.7458						
LSA	46.8	MSA	24.3	SSA	1.3						
EL1	33.8	EL2	11.1	ALF	29.91						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 414.521 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.450	GAL	-.84	AZL	92.04	HCA	137.80	SMA	187.90	ECC	.19758	INC	2.0357	V1	29.533
RP	208.49	LAP	-1.37	LOP	1.69	VP	23.807	GAP	9.52	AZP	88.49	TAL	354.89	TAP	132.69	RCA	150.77	APO	225.02	V2	26.284
RC	95.074	GL	-20.80	GP	1.52	ZAL	106.15	ZAP	136.52	ETS	178.36	ZAE	175.72	ETE	141.33	ZAC	101.51	ETC	277.84	LVI	-19.54

PLANETOCENTRIC CONIC

C3	10.531	VHL	3.245	DLA	-30.34	RAL	341.61	RAD	6638.3	VEL	11.429	PTH	6.48	VHP	4.053	DPA	-15.69	RAP	320.76	ECC	1.1733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 54	2357.66	-.26	60.44	194.19	137.58	18 3 12	1357.7	17.93	44.26
60.00	18 48 35	2132.36	5.05	45.24	199.28	130.04	19 24 7	1132.4	20.52	26.28
70.00	20 44 36	1791.05	11.39	22.28	203.97	122.42	21 14 27	791.1	23.64	.61
78.52	23 42 50	1232.89	21.48	345.32	209.37	111.96	24 3 23	232.9	28.61	320.06
78.52	23 42 50	1232.89	21.48	345.32	209.37	111.96	24 3 23	232.9	28.61	320.06
78.52	23 42 50	1232.89	21.48	345.32	209.37	111.96	24 3 23	232.9	28.61	320.06
110.00	1 47 58	6125.90	11.39	289.10	203.97	122.42	3 30 4	5125.9	23.64	267.43

DIFFERENTIAL CORRECTIONS

TDE	-.2800	TRA	-.5589	TC3	.1257	BAU	.0506												
RDE	-.2142	RRA	.0426	RC3	.3363	FAU	.13972												
FDE	.2816	FRA	3.6483	FC-11	.4855	BSP	1997												
BDE	.3526	BRA	.5606	BC3	.3590	FSP	1496												

MID-COURSE EXECUTION ACCURACY

SGT	1248.4	SGR	445.3	SG3	912.4						
RRT	.1890	RRF	-.2476	RTF	-.7121						
SGB	1325.5	R23	-.0960	R13	-.7149						
SG1	1251.7	SG2	436.1	THA	4.39						

ORBIT DETERMINATION ACCURACY

ST	30.1	SR	19.0	SS	40.3						
CRT	.7803	CRS	.1498	CST	.7315						
LSA	47.8	MSA	24.5	SSA	1.3						
EL1	34.0	EL2	10.5	ALF	29.24						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 418.614 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.426	GAL	-.83	AZL	92.04	HCA	139.05	SMA	187.48	ECC	.19579	INC	2.0444	V1	29.533
RP	208.67	LAP	-1.34	LOP	2.93	VP	23.752	GAP	9.26	AZP	88.46	TAL	354.94	TAP	133.98	RCA	150.77	APO	224.19	V2	26.264
RC	96.988	GL	-21.03	GP	1.60	ZAL	106.10	ZAP	134.77	ETS	178.36	ZAE	174.60	ETE	150.78	ZAC	101.65	ETC	277.73	LVI	-19.47

PLANETOCENTRIC CONIC

C3	10.386	VHL	3.223	DLA	-30.56	RAL	341.70	RAD	6638.2	VEL	11.423	PTH	6.47	VHP	3.949	DPA	-15.77	RAP	320.24	ECC	1.1709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 31	2349.73	.14	60.11	194.23	137.58	18 4 41	1349.7	18.31	43.89
60.00	18 50 51	2122.71	5.47	44.78	199.34	129.99	19 26 13	1122.7	20.90	25.75
70.00	20 48 23	1776.85	11.91	21.50	204.09	122.25	21 18 0	776.9	24.06	359.71
77.91	23 38 40	1244.42	21.69	346.28	209.33	112.07	23 59 24	244.4	28.85	320.97
77.91	23 38 40	1244.42	21.69	346.28	209.33	112.07	23 59 24	244.4	28.85	320.97
77.91	23 38 40	1244.42	21.69	346.28	209.33	112.07	23 59 24	244.4	28.85	320.97
110.00	1 51 46	6111.71	11.91	288.33	204.09	122.25	3 33 37	5111.7	24.06	266.54

DIFFERENTIAL CORRECTIONS

TDE	-.2763	TRA	-.5292	TC3	.0547	BAU	.0486												
RDE	-.2076	RRA	.0376	RC3	.3456	FAU	.14626												
FDE	.2816	FRA	3.8170	FC-12	.1915	BSP	1894												
BDE	.3456	BRA	.5306	BC3	.3499	FSP	1589												

MID-COURSE EXECUTION ACCURACY

SGT	1198.5	SGR	438.0	SG3	962.5						
RRT	.1989	RRF	-.2713	RTF	-.6941						
SGB	1276.1	R23	-.1177	R13	-.6879						
SG1	1202.1	SG2	428.0	THA	4.76						

ORBIT DETERMINATION ACCURACY

ST	29.5	SR	18.5	SS	41.4						
CRT	.7951	CRS	.1462	CST	.7121						
LSA	48.1	MSA	24.7	SSA	1.3						
EL1	33.4	EL2	9.9	ALF	29.31						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 422.717 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.404	GAL	-.82	AZL	92.05	HCA	140.29	SMA	187.10	ECC	.19414	INC	2.0535	V1	29.533
RP	208.85	LAP	-1.31	LOP	4.18	VP	23.698	GAP	9.01	AZP	88.42	TAL	354.97	TAP	135.26	RCA	150.78	APO	223.42	V2	26.243
RC	98.929	GL	-21.26	GP	1.68	ZAL	106.08	ZAP	132.99	ETS	178.37	ZAE	173.32	ETE	157.05	ZAC	101.81	ETC	277.62	LVI	-19.39

PLANETOCENTRIC CONIC

C3	10.256	VHL	3.203	DLA	-30.76	RAL	341.81	RAD	6638.2	VEL	11.417	PTH	6.47	VHP	3.851	DPA	-15.85	RAP	319.68	ECC	1.1688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 27 8	2342.38	.51	59.60	194.30	137.57	18 6 11	1342.4	18.66	43.54
60.00	18 53 5	2113.72	5.86	44.34	199.43	129.94	19 28 18	1113.7	21.25	25.25
70.00	20 52 8	1763.38	12.39	20.76	204.24	122.08	21 21 32	763.4	24.44	358.86
77.36	23 35 6	1254.54	21.89	347.12	209.32	112.17	23 56 0	254.5	29.07	321.77
77.36	23 35 6	1254.54	21.89	347.12	209.32	112.17	23 56 0	254.5	29.07	321.77
77.36	23 35 6	1254.54	21.89	347.12	209.32	112.17	23 56 0	254.5	29.07	321.77
110.00	1 55 31	6098.23	12.39	287.59	204.24	122.08	3 37 9	5098.2	24.44	265.68

DIFFERENTIAL CORRECTIONS

TDE	-.2722	TRA	-.4978	TC3	-.0275	BAU	.0488												
RDE	-.2011	RRA	.0323	RC3	.3551	FAU	.15286												
FDE	.2803	FRA	3.9949	FC-12	.9027	BSP	1760												
BDE	.3384	BRA	.4989	BC3	.3561	FSP	1679												

MID-COURSE EXECUTION ACCURACY

SGT	1145.4	SGR	431.0	SG3	1014.0						
RRT	.2056	RRF	-.2966	RTF	-.6487						
SGB	1223.8	R23	-.1455	R13	-.6538						
SG1	1149.3	SG2	420.3	THA	5.11						

ORBIT DETERMINATION ACCURACY

ST	28.9	SR	18.0	SS	42.5						
CRT	.8112	CRS	.1429	CST	.6903						
LSA	48.5	MSA	24.9	SSA	1.3						
EL1	32.8	EL2	9.3	ALF	29.45						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 26 1971

DISTANCE 426.830

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.383	GAL	-.81	AZL	92.06	HCA	141.53	SMA	186.75	ECC	.19262	INC	2.0632	V1	29.533
RP	209.04	LAP	-1.28	LOP	5.42	VP	23.645	GAP	8.76	AZP	88.38	TAL	354.99	TAP	136.52	RCA	150.78	APO	222.72	V2	26.221
RC	100.898	GL	-21.47	GP	1.76	ZAL	106.08	ZAP	131.16	ETS	178.37	ZAE	171.92	ETE	161.36	ZAC	101.97	ETC	277.50	LVI	-19.31

PLANETOCENTRIC CONIC

C3 10.141 VHL 3.184 DLA -30.95 RAL 341.93 RAD 6638.1 VEL 11.412 PTH 6.46 VHP 3.758 DPA -15.95 RAP 319.07 ECC 1.1669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 46	2335.61	.85	59.52	194.40	137.57	18 7 41	1335.6	18.98	43.22
60.00	18 55 17	2105.38	6.23	43.94	199.55	129.90	19 30 23	1105.4	21.58	24.79
70.00	20 55 50	1750.62	12.85	20.06	204.41	121.92	21 25 1	750.6	24.80	358.04
76.86	23 32 3	1263.52	22.08	347.88	209.35	112.26	23 53 6	263.5	29.28	322.49
76.86	23 32 3	1263.52	22.08	347.88	209.35	112.26	23 53 6	263.5	29.28	322.49
76.86	23 32 3	1263.52	22.08	347.88	209.35	112.26	23 53 6	263.5	29.28	322.49
110.00	1 59 13	6085.48	12.85	286.89	204.41	121.92	3 40 38	5085.5	24.80	264.86

DIFFERENTIAL CORRECTIONS

TDE	-.2699	TRA	-.4638	TC3	-.1190	BAU	.0520
RDE	-.1949	RRA	.0270	RC3	.3648	FAU	.15954
FDE	.2883	FRA	4.1739	FC-13.6202		BSP	1611
BDE	.3329	BRA	.4646	BC3	.3838	FSP	1771

MID-COURSE EXECUTION ACCURACY

SGT	1090.2	SGR	424.4	SG3	1065.9			
RRT	.2110	RRF	-.3251	RTF	-.6034			
SGB	1169.9	R23	-.1804	R13	-.6103			
SG1	1094.5	SG2	413.2	THA	5.48			

ORBIT DETERMINATION ACCURACY

ST	28.3	SR	17.6	SS	43.7		
CRT	.8309	CRS	.1473	CST	.6679		
LSA	48.9	MSA	25.0	SSA	1.3		
EL1	32.2	EL2	8.6	ALF	29.56		

LAUNCH DATE MAY 5 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 28 1971

DISTANCE 430.953

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.364	GAL	-.80	AZL	92.07	HCA	142.77	SMA	186.43	ECC	.19123	INC	2.0733	V1	29.533
RP	209.24	LAP	-1.25	LOP	6.66	VP	23.594	GAP	8.52	AZP	88.35	TAL	355.00	TAP	137.77	RCA	150.78	APO	222.08	V2	26.198
RC	102.893	GL	-21.69	GP	1.85	ZAL	106.09	ZAP	129.30	ETS	178.37	ZAE	170.42	ETE	164.45	ZAC	102.14	ETC	277.37	LVI	-19.22

PLANETOCENTRIC CONIC

C3 10.039 VHL 3.168 DLA -31.13 RAL 342.08 RAD 6638.1 VEL 11.408 PTH 6.46 VHP 3.671 DPA -16.05 RAP 318.42 ECC 1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 30 24	2329.38	1.16	59.26	194.52	137.57	18 9 13	1329.4	19.28	42.93
60.00	18 57 28	2097.68	6.56	43.57	199.69	129.85	19 32 26	1097.7	21.88	24.36
70.00	20 59 29	1738.60	13.29	19.40	204.61	121.76	21 28 28	738.6	25.13	357.27
76.42	23 29 26	1271.57	22.25	348.56	209.41	112.35	23 50 37	271.6	29.47	323.14
76.42	23 29 26	1271.57	22.25	348.56	209.41	112.35	23 50 37	271.6	29.47	323.14
76.42	23 29 26	1271.57	22.25	348.56	209.41	112.35	23 50 37	271.6	29.47	323.14
110.00	2 2 51	6073.46	13.29	286.22	204.61	121.76	3 44 5	5073.5	25.13	264.09

DIFFERENTIAL CORRECTIONS

TDE	-.2652	TRA	-.4273	TC3	-.2116	BAU	.0578
RDE	-.1866	RRA	.0214	RC3	.3755	FAU	.16679
FDE	.2847	FRA	4.3577	FC-14.3838		BSP	1440
BDE	.3254	BRA	.4279	BC3	.4310	FSP	1864

MID-COURSE EXECUTION ACCURACY

SGT	1031.0	SGR	418.3	SG3	1120.2			
RRT	.2107	RRF	-.3557	RTF	-.5488			
SGB	1112.6	R23	-.2235	R13	-.5581			
SG1	1035.4	SG2	407.1	THA	5.78			

ORBIT DETERMINATION ACCURACY

ST	27.5	SR	17.1	SS	44.8		
CRT	.8502	CRS	.1454	CST	.6393		
LSA	49.2	MSA	25.1	SSA	1.3		
EL1	31.4	EL2	7.9	ALF	29.85		

LAUNCH DATE MAY 5 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 30 1971

DISTANCE 435.084

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.347	GAL	-.80	AZL	92.08	HCA	144.01	SMA	186.13	ECC	.18995	INC	2.0840	V1	29.533
RP	209.44	LAP	-1.22	LOP	7.90	VP	23.544	GAP	8.28	AZP	88.31	TAL	354.99	TAP	139.00	RCA	150.78	APO	221.49	V2	26.174
RC	104.913	GL	-21.89	GP	1.95	ZAL	106.13	ZAP	127.39	ETS	178.38	ZAE	168.84	ETE	166.73	ZAC	102.32	ETC	277.23	LVI	-19.12

PLANETOCENTRIC CONIC

C3 9.950 VHL 3.154 DLA -31.29 RAL 342.24 RAD 6638.0 VEL 11.404 PTH 6.46 VHP 3.588 DPA -16.15 RAP 317.73 ECC 1.1638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 32 2	2323.68	1.44	59.02	194.67	137.56	18 10 46	1323.7	19.55	42.66
60.00	18 59 38	2090.57	6.87	43.22	199.86	129.81	19 34 29	1090.6	22.15	23.96
70.00	21 3 5	1727.27	13.69	18.77	204.84	121.60	21 31 52	727.3	25.45	356.53
76.01	23 27 15	1278.76	22.41	349.18	209.50	112.43	23 48 33	278.8	29.64	323.72
76.01	23 27 15	1278.76	22.41	349.18	209.50	112.43	23 48 33	278.8	29.64	323.72
76.01	23 27 15	1278.76	22.41	349.18	209.50	112.43	23 48 33	278.8	29.64	323.72
110.00	2 6 27	6062.13	13.69	285.60	204.84	121.60	3 47 29	5062.1	25.45	263.36

DIFFERENTIAL CORRECTIONS

TDE	-.2564	TRA	-.3841	TC3	-.3006	BAU	.0652
RDE	-.1823	RRA	.0158	RC3	.3870	FAU	.17444
FDE	.2692	FRA	4.5285	FC-15.1776		BSP	1191
BDE	.3146	BRA	.3845	BC3	.4900	FSP	1937

MID-COURSE EXECUTION ACCURACY

SGT	958.9	SGR	412.7	SG3	1173.8			
RRT	.2034	RRF	-.3882	RTF	-.5514			
SGB	1044.0	R23	-.2749	R13	-.4941			
SG1	963.4	SG2	402.2	THA	6.06			

ORBIT DETERMINATION ACCURACY

ST	26.3	SR	16.8	SS	45.6		
CRT	.8700	CRS	.1384	CST	.6028		
LSA	49.2	MSA	25.1	SSA	1.2		
EL1	30.3	EL2	7.1	ALF	30.57		

LAUNCH DATE MAY 5 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 1 1971

DISTANCE 439.222

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.331	GAL	-.80	AZL	92.10	HCA	145.24	SMA	185.87	ECC	.18879	INC	2.0953	V1	29.533
RP	209.66	LAP	-1.19	LOP	9.13	VP	23.495	GAP	8.05	AZP	88.28	TAL	354.96	TAP	140.20	RCA	150.78	APO	220.96	V2	26.150
RC	106.958	GL	-22.10	GP	2.05	ZAL	106.19	ZAP	125.46	ETS	178.39	ZAE	167.20	ETE	168.45	ZAC	102.51	ETC	277.09	LVI	-19.01

PLANETOCENTRIC CONIC

C3 9.875 VHL 3.142 DLA -31.44 RAL 342.44 RAD 6638.0 VEL 11.401 PTH 6.45 VHP 3.510 DPA -16.26 RAP 317.01 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 41	2318.61	1.70	58.81	194.85	137.55	18 12 20	1318.6	19.79	42.42
60.00	19 1 47	2084.20	7.15	42.91	200.06	129.77	19 36 31	1084.2	22.40	23.60
70.00	21 6 34	1716.89	14.06	18.20	205.09	121.45	21 35 11	716.9	25.73	355.86
75.65	23 25 30	1285.12	22.55	349.72	209.64	112.51	23 46 55	285.1	29.80	324.23
75.65	23 25 30	1285.12	22.55	349.72	209.64	112.51	23 46 55	285.1	29.80	324.23
75.65	23 25 30	1285.12	22.55	349.72	209.64	112.51	23 46 55	285.1	29.80	324.23
110.00	2 9 56	6051.74	14.06	285.02	205.09	121.45	3 50 48	5051.7	25.73	262.68

DIFFERENTIAL CORRECTIONS

TDE	-.2648	TRA	-.3536	TC3	-.4617	BAU	.0804
RDE	-.1767	RRA	.0093	RC3	.3966	FAU	.17995
FDE	.3152	FRA	4.7514	FC-15.7766		BSP	1127
BDE	.3183	BRA	.3537	BC3	.6086	FSP	2068

MID-COURSE EXECUTION ACCURACY

SGT	942.5	SGR	407.9	SG3	1227.2			
RRT	.1774	RRF	-.4237	RTF	-.3790			
SGB	1026.9	R23	-.3469	R13	-.3930			
SG1	945.8	SG2	400.0	THA	5.35			

ORBIT DETERMINATION ACCURACY

ST	26.7	SR	16.1	SS	47.2		
CRT	.8964	CRS	.1686	CST	.5812		
LSA	50.6	MSA	25.4	SSA	1.2		
EL1	30.5	EL2	6.2	ALF	29.82		

LAUNCH DATE MAY 5 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 443.367 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.317	GAL	-.80	AZL	92.11	HCA	146.48	SMA	185.63	ECC	.18774	INC	2.1073	V1	29.533
RP	209.87	LAP	-1.16	LOP	10.36	VP	23.447	GAP	7.82	AZP	88.24	TAL	354.92	TAP	141.39	RCA	150.78	APO	220.48	V2	26.124
RC	109.028	GL	-22.29	GP	2.16	ZAL	106.28	ZAP	123.50	ETS	178.40	ZAE	165.48	ETE	169.79	ZAC	102.71	ETC	276.93	LVI	-18.89

PLANETOCENTRIC CONIC

C3	9.811	VHL	3.132	DLA	-31.58	RAL	342.64	RAD	6637.9	VEL	11.398	PTH	6.45	VHP	3.438	DPA	-16.36	RAP	316.25	ECC	1.1615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 22	2313.99	1.93	58.62	195.06	137.55	18 13 55	1314.0	20.01	42.19
60.00	19 3 55	2078.35	7.40	42.63	200.29	129.73	19 38 33	1078.4	22.62	23.27
70.00	21 10 1	1707.13	14.41	17.65	205.37	121.31	21 38 28	707.1	25.99	355.22
75.32	23 24 3	1291.00	22.68	350.22	209.80	112.59	23 45 34	291.0	29.95	324.71
75.32	23 24 3	1291.00	22.68	350.22	209.80	112.59	23 45 34	291.0	29.95	324.71
75.32	23 24 3	1291.00	22.68	350.22	209.80	112.59	23 45 34	291.0	29.95	324.71
110.00	2 13 23	6041.99	14.41	284.47	205.37	121.31	3 54 5	5042.0	25.99	262.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2621	TRA	-.3124	TC3	-.5934	BAU	.0945	SGT	904.4	SGR	403.8	SG3	1282.1	ST	26.0	SR	15.6	SS	48.4
RDE	-.1708	RRA	.0029	RC3	.4083	FAU	.18690	RRT	.1385	RRF	-.4605	RTF	-.2662	CRT	.9188	CRS	.1752	CST	.5416
FDE	.3182	FRA	4.9528	FC-16.4926		BSP	929	SGB	990.5	R23	-.4186	R13	-.2805	LSA	51.1	MSA	25.5	SSA	1.2
BDE	.3126	BRA	.3124	BC3	.7203	FSP	2158	SG1	906.6	SG2	399.0	THA	4.39	EL1	29.9	EL2	5.4	ALF	29.97

LAUNCH DATE MAY 5 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 447.519 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.304	GAL	-.81	AZL	92.12	HCA	147.71	SMA	185.41	ECC	.18679	INC	2.1201	V1	29.533
RP	210.10	LAP	-1.13	LOP	11.59	VP	23.400	GAP	7.59	AZP	88.21	TAL	354.86	TAP	142.57	RCA	150.78	APO	220.04	V2	26.098
RC	111.121	GL	-22.49	GP	2.27	ZAL	106.38	ZAP	121.50	ETS	178.41	ZAE	163.71	ETE	170.85	ZAC	102.91	ETC	276.77	LVI	-18.77

PLANETOCENTRIC CONIC

C3	9.758	VHL	3.124	DLA	-31.71	RAL	342.87	RAD	6637.9	VEL	11.395	PTH	6.45	VHP	3.370	DPA	-16.47	RAP	315.45	ECC	1.1606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 3	2309.87	2.14	58.44	195.29	137.54	18 15 33	1309.9	20.21	42.00
60.00	19 6 2	2073.09	7.63	42.37	200.54	129.69	19 40 35	1073.1	22.82	22.97
70.00	21 13 25	1698.11	14.72	17.15	205.68	121.17	21 41 43	698.1	26.23	354.63
75.03	23 22 56	1296.32	22.79	350.67	210.00	112.66	23 44 32	296.3	30.08	325.14
75.03	23 22 56	1296.32	22.79	350.67	210.00	112.66	23 44 32	296.3	30.08	325.14
75.03	23 22 56	1296.32	22.79	350.67	210.00	112.66	23 44 32	296.3	30.08	325.14
110.00	2 16 47	6032.96	14.72	283.97	205.68	121.17	3 57 20	5033.0	26.23	261.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2603	TRA	-.2683	TC3	-.7379	BAU	.1108	SGT	880.3	SGR	400.7	SG3	1334.9	ST	25.4	SR	15.1	SS	49.5
RDE	-.1650	RRA	-.0039	RC3	.4203	FAU	.19344	RRT	.0801	RRF	-.4992	RTF	-.1301	CRT	.9413	CRS	.1873	CST	.4980
FDE	.3278	FRA	5.1525	FC-17.1611		BSP	746	SGB	967.2	R23	-.4875	R13	-.1402	LSA	51.7	MSA	25.5	SSA	1.2
BDE	.3082	BRA	.2683	BC3	.8492	FSP	2262	SG1	881.1	SG2	399.1	THA	2.63	EL1	29.2	EL2	4.4	ALF	30.05

LAUNCH DATE MAY 5 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 451.677 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.292	GAL	-.82	AZL	92.13	HCA	148.93	SMA	185.21	ECC	.18594	INC	2.1339	V1	29.533
RP	210.33	LAP	-1.10	LOP	12.62	VP	23.353	GAP	7.37	AZP	88.17	TAL	354.79	TAP	143.72	RCA	150.77	APO	219.65	V2	26.071
RC	113.239	GL	-22.69	GP	2.39	ZAL	106.50	ZAP	119.48	ETS	178.42	ZAE	161.89	ETE	171.69	ZAC	103.13	ETC	276.59	LVI	-18.64

PLANETOCENTRIC CONIC

C3	9.717	VHL	3.117	DLA	-31.82	RAL	343.13	RAD	6637.9	VEL	11.394	PTH	6.45	VHP	3.307	DPA	-16.57	RAP	314.62	ECC	1.1599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 38 46	2308.21	2.32	58.29	195.56	137.53	18 17 13	1306.2	20.38	41.82
60.00	19 8 9	2068.37	7.84	42.14	200.82	129.66	19 42 37	1068.4	23.00	22.70
70.00	21 16 45	1689.78	15.02	16.68	206.01	121.04	21 44 54	689.8	26.44	354.08
74.76	23 22 7	1301.17	22.89	351.09	210.23	112.73	23 43 49	301.2	30.20	325.53
74.76	23 22 7	1301.17	22.89	351.09	210.23	112.73	23 43 49	301.2	30.20	325.53
74.76	23 22 7	1301.17	22.89	351.09	210.23	112.73	23 43 49	301.2	30.20	325.53
110.00	2 20 7	6024.64	15.02	283.50	206.01	121.04	4 0 32	5024.6	26.44	260.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2591	TRA	-.2214	TC3	-.8862	BAU	.1282	SGT	872.5	SGR	399.2	SG3	1388.0	ST	24.9	SR	14.7	SS	50.6
RDE	-.1594	RRA	-.0110	RC3	.4335	FAU	.20032	RRT	.0043	RRF	-.5406	RTF	.[illegible]17	CRT	.9623	CRS	.2055	CST	.4510
FDE	.3456	FRA	5.3488	FC-17.8474		BSP	558	SGB	959.5	R23	-.5408	R13	.0211	LSA	52.4	MSA	25.6	SSA	1.1
BDE	.3042	BRA	.2216	BC3	.9866	FSP	2354	SG1	872.5	SG2	399.2	THA	.14	EL1	28.7	EL2	3.5	ALF	30.02

LAUNCH DATE MAY 5 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 455.841 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.281	GAL	-.83	AZL	92.15	HCA	150.16	SMA	185.03	ECC	.18518	INC	2.1485	V1	29.533
RP	210.57	LAP	-1.07	LOP	14.04	VP	23.308	GAP	7.16	AZP	88.14	TAL	354.70	TAP	144.86	RCA	150.77	APO	219.30	V2	26.044
RC	115.380	GL	-22.88	GP	2.52	ZAL	106.64	ZAP	117.43	ETS	178.44	ZAE	160.02	ETE	172.37	ZAC	103.36	ETC	276.41	LVI	-18.51

PLANETOCENTRIC CONIC

C3	9.687	VHL	3.112	DLA	-31.93	RAL	343.40	RAD	6637.9	VEL	11.392	PTH	6.44	VHP	3.249	DPA	-16.67	RAP	313.76	ECC	1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 40 32	2302.97	2.49	58.15	195.85	137.53	18 18 55	1303.0	20.53	41.67
60.00	19 10 17	2064.13	8.02	41.94	201.13	129.63	19 44 41	1064.1	23.17	22.46
70.00	21 20 3	1682.08	15.29	16.25	206.37	120.92	21 48 5	682.1	26.64	353.57
74.51	23 21 33	1305.74	22.98	351.48	210.49	112.80	23 43 19	305.7	30.31	325.91
74.51	23 21 33	1305.74	22.98	351.48	210.49	112.80	23 43 19	305.7	30.31	325.91
74.51	23 21 33	1305.74	22.98	351.48	210.49	112.80	23 43 19	305.7	30.31	325.91
110.00	2 23 25	6016.94	15.29	283.07	206.37	120.92	4 3 42	5016.9	26.64	260.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2539	TRA	-.1695	TC3	-1.0334	BAU	.1458	SGT	876.0	SGR	398.9	SG3	1439.4	ST	24.0	SR	14.1	SS	51.5
RDE	-.1535	RRA	-.0183	RC3	.4478	FAU	.20737	RRT	-.0934	RRF	-.5822	RTF	.1860	CRT	.9797	CRS	.2148	CST	.3878
FDE	.3411	FRA	5.5333	FC-18.5333		BSP	411	SGB	962.5	R23	.5626	R13	-.1997	LSA	52.7	MSA	25.5	SSA	1.1
BDE	.2967	BRA	.1705	BC3	1.1262	FSP	2427	SG1	877.0	SG2	396.7	THA	176.94	EL1	27.8	EL2	2.5	ALF	30.24

LAUNCH DATE MAY 5 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 11 1971

HELIOCENTRIC CONIC DISTANCE 460.008 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.272	GAL	-.84	AZL	92.16	HCA	151.38	SMA	184.88	ECC	.18451	INC	2.1643	V1	29.533
RP	210.82	LAP	-1.04	LOP	15.26	VP	23.263	GAP	6.95	AZP	88.10	TAL	354.59	TAP	145.97	RCA	150.77	APO	218.99	V2	26.015
RC	117.545	GL	-23.08	GP	2.66	ZAL	106.81	ZAP	115.37	ETS	178.46	ZAE	158.11	ETE	172.93	ZAC	103.59	ETC	276.23	LVI	-18.38

PLANETOCENTRIC CONIC

C3	9.667	VHL	3.109	DLA	-32.03	RAL	343.70	RAD	6637.9	VEL	11.392	PTH	6.44	VHP	3.195	DPA	-16.77	RAP	312.87	ECC	1.1591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 42 20	2300.20	2.62	58.04	196.17	137.52	18 20 40	1300.2	20.66	41.53
60.00	19 12 25	2060.45	8.18	41.76	201.47	129.60	19 46 46	1060.4	23.31	22.25
70.00	21 23 17	1675.12	15.53	15.85	206.76	120.81	21 51 12	675.1	26.82	353.11
74.29	23 21 17	1309.91	23.06	351.83	210.80	112.87	23 43 7	309.9	30.41	326.24
74.29	23 21 17	1309.91	23.06	351.83	210.80	112.87	23 43 7	309.9	30.41	326.24
74.29	23 21 17	1309.91	23.06	351.83	210.80	112.87	23 43 7	309.9	30.41	326.24
110.00	2 26 40	6009.98	15.53	282.68	206.76	120.81	4 6 49	5010.0	26.82	259.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2571	TRA	-.1225	TC3	-1.2196	BAU	.1685	SGT	933.0	SGR	400.2	SG3	1489.0	ST	24.0	SR	13.7	SS	52.9
RDE	-.1483	RRA	-.0265	RC3	.4609	FAU	.21263	RRT	-.1943	RRF	-.6245	RTF	.3307	CRT	.9915	CRS	.2477	CST	.3388
FDE	.3814	FRA	5.7520	FC	-19.0413	BSP	432	SGB	1015.2	R23	.5567	R13	-.3545	LSA	53.9	MSA	25.8	SSA	1.1
BDE	.2968	BRA	.1253	BC3	1.3038	FSP	2543	SG1	936.9	SG2	391.0	THA	174.23	EL1	27.6	EL2	1.5	ALF	29.56

LAUNCH DATE MAY 5 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 13 1971

HELIOCENTRIC CONIC DISTANCE 464.179 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.263	GAL	-.86	AZL	92.18	HCA	152.60	SMA	184.74	ECC	.18392	INC	2.1813	V1	29.533
RP	211.07	LAP	-1.00	LOP	16.48	VP	23.219	GAP	6.74	AZP	88.06	TAL	354.47	TAP	147.07	RCA	150.76	APO	218.71	V2	25.986
RC	119.734	GL	-23.27	GP	2.81	ZAL	106.99	ZAP	113.28	ETS	178.48	ZAE	156.15	ETE	173.38	ZAC	103.83	ETC	276.04	LVI	-18.24

PLANETOCENTRIC CONIC

C3	9.658	VHL	3.108	DLA	-32.12	RAL	344.02	RAD	6637.9	VEL	11.391	PTH	6.44	VHP	3.146	DPA	-16.85	RAP	311.96	ECC	1.1590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 44 11	2297.78	2.75	57.94	196.52	137.52	18 22 29	1297.8	20.78	41.42
60.00	19 14 36	2057.15	8.32	41.60	201.84	129.58	19 48 53	1057.2	23.43	22.06
70.00	21 26 32	1668.63	15.76	15.48	207.19	120.70	21 54 21	668.6	26.99	352.67
74.09	23 21 10	1314.08	23.13	352.18	211.13	112.94	23 43 4	314.1	30.50	326.58
74.09	23 21 10	1314.08	23.13	352.18	211.13	112.94	23 43 4	314.1	30.50	326.58
74.09	23 21 10	1314.08	23.13	352.18	211.13	112.94	23 43 4	314.1	30.50	326.58
110.00	2 29 55	6003.48	15.76	282.31	207.19	120.70	4 9 58	5003.5	26.99	259.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2561	TRA	-.0688	TC3	-1.3937	BAU	.1902	SGT	997.9	SGR	403.6	SG3	1537.8	ST	23.8	SR	13.2	SS	54.1
RDE	-.1430	RRA	-.0351	RC3	.4761	FAU	.21856	RRT	-.2988	RRF	-.6671	RTF	.4646	CRT	.9961	CRS	.2761	CST	.2755
FDE	.4080	FRA	5.9531	FC	-19.5905	BSP	584	SGB	1076.5	R23	.5278	R13	-.4936	LSA	54.7	MSA	25.8	SSA	1.0
BDE	.2933	BRA	.0773	BC3	1.4728	FSP	2624	SG1	1006.4	SG2	381.9	THA	171.94	EL1	27.2	EL2	1.0	ALF	29.09

LAUNCH DATE MAY 5 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 15 1971

HELIOCENTRIC CONIC DISTANCE 468.355 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.256	GAL	-.88	AZL	92.20	HCA	153.81	SMA	184.62	ECC	.18341	INC	2.1997	V1	29.533
RP	211.33	LAP	-.97	LOP	17.70	VP	23.176	GAP	6.54	AZP	88.03	TAL	354.34	TAP	148.15	RCA	150.76	APO	218.48	V2	25.957
RC	121.945	GL	-23.47	GP	2.97	ZAL	107.19	ZAP	111.19	ETS	178.51	ZAE	154.17	ETE	173.76	ZAC	104.09	ETC	275.84	LVI	-18.11

PLANETOCENTRIC CONIC

C3	9.660	VHL	3.108	DLA	-32.21	RAL	344.36	RAD	6637.9	VEL	11.391	PTH	6.44	VHP	3.102	DPA	-16.93	RAP	311.03	ECC	1.1590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 6	2295.70	2.85	57.85	196.91	137.51	18 24 21	1295.7	20.87	41.31
60.00	19 16 49	2054.24	8.45	41.46	202.25	129.55	19 51 3	1054.2	23.54	21.89
70.00	21 29 49	1662.60	15.97	15.14	207.64	120.60	21 57 31	662.6	27.14	352.27
73.90	23 21 17	1318.02	23.19	352.51	211.51	113.01	23 43 15	318.0	30.58	326.90
73.90	23 21 17	1318.02	23.19	352.51	211.51	113.01	23 43 15	318.0	30.58	326.90
73.90	23 21 17	1318.02	23.19	352.51	211.51	113.01	23 43 15	318.0	30.58	326.90
110.00	2 33 11	5997.46	15.57	281.97	207.64	120.60	4 13 8	4997.5	27.14	259.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2550	TRA	-.0131	TC3	-1.5763	BAU	.2133	SGT	1087.2	SGR	409.1	SG3	1583.6	ST	23.6	SR	12.8	SS	55.1
RDE	-.1378	RRA	-.0442	RC3	.4921	FAU	.22412	RRT	-.3992	RRF	-.7085	RTF	.5460	CRT	.9907	CRS	.3061	CST	.2055
FDE	.4326	FRA	6.1473	FC	-20.0865	BSP	815	SGB	1161.6	R23	.4882	R13	-.6049	LSA	55.6	MSA	25.9	SSA	1.0
BDE	.2899	BRA	.0461	BC3	1.6514	FSP	2708	SG1	1101.0	SG2	370.4	THA	170.36	EL1	26.8	EL2	1.5	ALF	28.37

LAUNCH DATE MAY 5 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 17 1971

HELIOCENTRIC CONIC DISTANCE 472.533 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.250	GAL	-.90	AZL	92.22	HCA	155.02	SMA	184.51	ECC	.18298	INC	2.2197	V1	29.533
RP	211.60	LAP	-.94	LOP	18.91	VP	23.133	GAP	6.34	AZP	87.99	TAL	354.19	TAP	149.22	RCA	150.75	APO	218.27	V2	25.926
RC	124.177	GL	-23.68	GP	3.14	ZAL	107.40	ZAP	109.08	ETS	178.55	ZAE	152.16	ETE	174.06	ZAC	104.35	ETC	275.64	LVI	-17.98

PLANETOCENTRIC CONIC

C3	9.672	VHL	3.110	DLA	-32.29	RAL	344.73	RAD	6637.9	VEL	11.392	PTH	6.44	VHP	3.082	DPA	-16.99	RAP	310.08	ECC	1.1592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 48 5	2293.91	2.94	57.78	197.32	137.51	18 26 19	1293.9	20.96	41.23
60.00	19 19 6	2051.65	8.56	41.33	202.68	129.53	19 53 18	1051.7	23.64	21.74
70.00	21 33 9	1656.91	16.16	14.82	208.13	120.50	22 0 46	656.9	27.28	351.89
73.72	23 21 33	1322.01	23.24	352.83	211.92	113.08	23 43 35	322.0	30.65	327.22
73.72	23 21 33	1322.01	23.24	352.83	211.92	113.08	23 43 35	322.0	30.65	327.22
73.72	23 21 33	1322.01	23.24	352.83	211.92	113.08	23 43 35	322.0	30.65	327.22
110.00	2 36 31	5991.77	16.16	281.64	208.13	120.50	4 16 23	4991.8	27.28	258.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2538	TRA	.0458	TC3	-1.7650	BAU	.2375	SGT	1197.4	SGR	416.6	SG3	1624.7	ST	23.5	SR	12.3	SS	56.1
RDE	-.1325	RRA	-.0538	RC3	.5088	FAU	.22916	RRT	-.4912	RRF	-.7479	RTF	.6659	CRT	.9728	CRS	.3375	CST	.1276
FDE	.4534	FRA	6.3265	FC	-20.5125	BSP	1086	SGB	1267.8	R23	.4458	R13	-.6914	LSA	56.3	MSA	25.9	SSA	.9
BDE	.2863	BRA	.0707	BC3	1.8369	FSP	2789	SG1	1216.4	SG2	357.2	THA	169.38	EL1	26.4	EL2	2.5	ALF	27.36

LAUNCH DATE MAY 5 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 476.714 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.244	GAL	-.92	AZL	92.24	HCA	186.23	SMA	184.42	ECC	.18262	INC	2.2415
RP	211.87	LAP	-.90	LOP	20.12	VP	23.091	GAP	6.14	AZP	87.95	TAL	354.03	TAP	150.26	RCA	150.74	APO	218.10
RC	126.431	GL	-23.89	GP	3.32	ZAL	107.64	ZAP	106.98	ETS	178.59	ZAE	150.13	ETE	174.32	ZAC	104.62	ETC	275.44

V1	29.533																		
V2	25.896																		
LVI	-17.86																		

PLANETOCENTRIC CONIC

C3	9.694	VHL	3.114	DLA	-32.38	RAL	345.13	RAD	6637.9	VEL	11.393	PTH	6.44	VHP	3.026	DPA	-17.03	RAP	309.13

ECC	1.1595																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 50 10	2292.37	3.02	57.71	197.77	137.50	18 28 22	1292.4	21.03	41.15
60.00	19 21 29	2049.32	8.66	41.21	203.16	129.51	19 55 39	1049.3	23.73	21.60
70.00	21 36 35	1651.42	16.35	14.51	208.65	120.41	22 4 7	651.4	27.42	351.52
73.54	23 21 57	1326.09	23.28	353.17	212.37	113.16	23 44 4	326.1	30.72	327.55
73.54	23 21 57	1326.09	23.28	353.17	212.37	113.16	23 44 4	326.1	30.72	327.55
73.54	23 21 57	1326.09	23.28	353.17	212.37	113.16	23 44 4	326.1	30.72	327.55
110.00	2 39 58	5986.27	16.35	281.33	208.65	120.41	4 19 44	4986.3	27.42	258.34

DIFFERENTIAL CORRECTIONS

TDE	-.2530	TRA	.1067	TC3	-1.9582	BAU	.2628												
RDE	-.1276	RRA	-.0642	RC3	.5263	FAU	.23354												
FDE	.4886	FRA	6.5089	FC	-20.8569	BSP	1381												
BDE	.2833	BRA	.1245	BC3	2.0277	FSP	2863												

MID-COURSE EXECUTION ACCURACY

SGT	1325.8	SGR	426.8	SG3	1663.4														
RRT	-.5706	RRF	-.7853	RTF	.7333														
SGB	1392.8	R23	.4094	R13	-.7548														
SG1	1349.5	SG2	344.3	THA	168.86														

ORBIT DETERMINATION ACCURACY

ST	23.6	SR	11.9	SS	57.1														
CRT	.9406	CRS	.3775	CST	.0522														
LSA	57.3	MSA	26.0	SSA	.9														
EL1	26.2	EL2	3.7	ALF	25.98														

LAUNCH DATE MAY 5 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 480.897 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.240	GAL	-.95	AZL	92.27	HCA	157.44	SMA	184.35	ECC	.18233	INC	2.2655
RP	212.14	LAP	-.87	LOP	21.32	VP	23.049	GAP	5.95	AZP	87.91	TAL	353.85	TAP	151.29	RCA	150.74	APO	217.96
RC	128.706	GL	-24.12	GP	3.52	ZAL	107.89	ZAP	104.87	ETS	178.64	ZAE	148.08	ETE	174.52	ZAC	104.91	ETC	275.23

V1	29.533																		
V2	25.864																		
LVI	-17.74																		

PLANETOCENTRIC CONIC

C3	9.727	VHL	3.119	DLA	-32.46	RAL	345.54	RAD	6637.9	VEL	11.394	PTH	6.45	VHP	2.995	DPA	-17.06	RAP	308.16

ECC	1.1601																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 52 21	2291.01	3.09	57.65	198.26	137.50	18 30 32	1291.0	21.10	41.09
60.00	19 23 59	2047.14	8.76	41.11	203.67	129.50	19 58 6	1047.1	23.81	21.48
70.00	21 40 12	1645.91	16.54	14.19	209.22	120.32	22 7 38	645.9	27.55	351.15
73.36	23 22 27	1330.39	23.32	353.51	212.86	113.24	23 44 38	330.4	30.79	327.89
73.36	23 22 27	1330.39	23.32	353.51	212.86	113.24	23 44 38	330.4	30.79	327.89
73.36	23 22 27	1330.39	23.32	353.51	212.86	113.24	23 44 38	330.4	30.79	327.89
110.00	2 43 35	5980.77	16.54	281.02	209.22	120.32	4 23 15	4980.8	27.55	257.97

DIFFERENTIAL CORRECTIONS

TDE	-.2518	TRA	.1703	TC3	-2.1530	BAU	.2888												
RDE	-.1227	RRA	-.0754	RC3	.5456	FAU	.23781												
FDE	.5170	FRA	6.6794	FC	-21.1657	BSP	1692												
BDE	.2801	BRA	.1862	BC3	2.2210	FSP	2931												

MID-COURSE EXECUTION ACCURACY

SGT	1467.9	SGR	439.9	SG3	1699.0														
RRT	-.6405	RRF	-.8200	RTF	.7858														
SGB	1532.4	R23	.3768	R13	-.8034														
SG1	1496.2	SG2	331.4	THA	168.57														

ORBIT DETERMINATION ACCURACY

ST	23.9	SR	11.5	SS	58.0														
CRT	.8922	CRS	.4182	CST	-.0289														
LSA	58.2	MSA	26.0	SSA	.9														
EL1	26.1	EL2	4.8	ALF	24.20														

LAUNCH DATE MAY 5 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 485.082 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.236	GAL	-.98	AZL	92.29	HCA	158.64	SMA	184.29	ECC	.18210	INC	2.2919
RP	212.43	LAP	-.83	LOP	22.53	VP	23.008	GAP	5.76	AZP	87.87	TAL	353.66	TAP	152.30	RCA	150.73	APO	217.85
RC	130.999	GL	-24.35	GP	3.74	ZAL	108.15	ZAP	102.77	ETS	178.70	ZAE	146.02	ETE	174.69	ZAC	105.22	ETC	275.02

V1	29.533																		
V2	25.832																		
LVI	-17.64																		

PLANETOCENTRIC CONIC

C3	9.771	VHL	3.126	DLA	-32.55	RAL	345.99	RAD	6637.9	VEL	11.396	PTH	6.45	VHP	2.968	DPA	-17.08	RAP	307.20

ECC	1.1608																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 54 41	2289.77	3.15	57.60	198.79	137.50	18 32 50	1289.8	21.15	41.03
60.00	19 26 38	2045.04	8.85	41.00	204.22	129.48	20 0 43	1045.0	23.89	21.36
70.00	21 44 5	1640.16	16.74	13.86	209.84	120.21	22 11 25	640.2	27.69	350.76
73.18	23 23 1	1335.05	23.35	353.89	213.39	113.34	23 45 16	335.0	30.86	328.26
73.18	23 23 1	1335.05	23.35	353.89	213.39	113.34	23 45 16	335.0	30.86	328.26
73.18	23 23 1	1335.05	23.35	353.89	213.39	113.34	23 45 16	335.0	30.86	328.26
110.00	2 47 27	5975.02	16.74	280.69	209.84	120.21	4 27 2	4975.0	27.69	257.58

DIFFERENTIAL CORRECTIONS

TDE	-.2510	TRA	.2359	TC3	-2.3499	BAU	.3158												
RDE	-.1180	RRA	-.0878	RC3	.5661	FAU	.24159												
FDE	.5550	FRA	6.8457	FC	-21.4044	BSP	2013												
BDE	.2773	BRA	.2516	BC3	2.4172	FSP	2994												

MID-COURSE EXECUTION ACCURACY

SGT	1622.7	SGR	456.3	SG3	1731.6														
RRT	-.6997	RRF	-.8915	RTF	.8249														
SGB	1685.6	R23	.3512	R13	-.8394														
SG1	1655.0	SG2	319.7	THA	168.43														

ORBIT DETERMINATION ACCURACY

ST	24.4	SR	11.2	SS	58.9														
CRT	.8274	CRS	.4654	CST	-.1058														
LSA	59.2	MSA	26.2	SSA	.8														
EL1	26.2	EL2	5.9	ALF	21.98														

LAUNCH DATE MAY 5 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 489.268 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.233	GAL	-1.01	AZL	92.32	HCA	159.84	SMA	184.24	ECC	.18194	INC	2.3213
RP	212.72	LAP	-.80	LOP	23.73	VP	22.967	GAP	5.58	AZP	87.82	TAL	353.45	TAP	153.30	RCA	150.72	APO	217.76
RC	133.312	GL	-24.61	GP	3.97	ZAL	108.43	ZAP	100.67	ETS	178.77	ZAE	143.95	ETE	174.82	ZAC	105.54	ETC	274.82

V1	29.533																		
V2	25.799																		
LVI	-17.56																		

PLANETOCENTRIC CONIC

C3	9.827	VHL	3.135	DLA	-32.64	RAL	346.46	RAD	6638.0	VEL	11.398	PTH	6.45	VHP	2.944	DPA	-17.03	RAP	306.23

ECC	1.1617																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 57 10	2288.57	3.21	57.55	199.36	137.49	18 35 19	1288.6	21.21	40.97
60.00	19 29 29	2042.88	8.94	40.90	204.82	129.46	20 3 32	1042.9	23.97	21.23
70.00	21 48 19	1633.85	16.95	13.50	210.52	120.10	22 15 33	633.8	27.84	350.33
72.98	23 23 36	1340.22	23.39	354.30	213.97	113.44	23 45 57	340.2	30.94	328.68
72.98	23 23 36	1340.22	23.39	354.30	213.97	113.44	23 45 57	340.2	30.94	328.68
72.98	23 23 36	1340.22	23.39	354.30	213.97	113.44	23 45 57	340.2	30.94	328.68
110.00	2 51 42	5968.71	16.95	280.33	210.52	120.10	4 31 10	4968.7	27.84	257.16

DIFFERENTIAL CORRECTIONS

TDE	-.2497	TRA	.3044	TC3	-2.5469	BAU	.3434												
RDE	-.1135	RRA	-.1006	RC3	.5879	FAU	.24464												
FDE	.5950	FRA	7.0012	FC	-21.5516	BSP	2351												
BDE	.2743	BRA	.3206	BC3	2.6138	FSP	3043												

MID-COURSE EXECUTION ACCURACY

SGT	1787.4	SGR	476.0	SG3	1759.4														
RRT	-.7502	RRF	-.8794	RTF	.8550														
SGB	1849.7	R23	.3300	R13	-.8671														
SG1	1823.8	SG2	308.5	THA	168.36														

ORBIT DETERMINATION ACCURACY

ST	25.0	SR	10.9	SS	59.8														
CRT	.7453	CRS	.5160	CST	-.1815														
LSA	60.3	MSA	26.3	SSA	.8														
EL1	26.4	EL2	6.9	ALF	19.36														

LAUNCH DATE MAY 3 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC DISTANCE 493.456 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.231	GAL	-1.04	AZL	92.35	HCA	161.04	SMA	184.21	ECC	.18184	INC	2.3541	V1	29.533
RP	213.01	LAP	-.76	LOP	24.92	VP	22.926	GAP	5.39	AZP	87.77	TAL	353.23	TAP	154.27	RCA	150.71	APO	217.70	V2	25.766
RC	135.643	GL	-24.89	GP	4.24	ZAL	108.72	ZAP	98.59	ETS	178.85	ZAE	141.88	ETE	174.91	ZAC	105.88	ETC	274.61	LVI	-17.50

PLANETOCENTRIC CONIC

C3	9.896	VHL	3.146	DLA	-32.75	RAL	346.97	RAD	6638.0	VEL	11.401	PTH	6.45	VHP	2.925	DPA	-16.97	RAP	305.27	ECC	1.1629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 59 51	2287.30	3.27	57.50	199.97	137.49	18 37 59	1287.3	21.27	40.91
60.00	19 32 35	2040.52	9.04	40.78	205.47	129.44	20 6 35	1040.5	24.06	21.09
70.00	21 53 5	1626.54	17.20	13.08	211.26	119.97	22 20 12	626.5	28.02	349.83
72.76	23 24 10	1346.08	23.42	354.76	214.60	113.57	23 46 36	346.1	31.02	329.15
72.76	23 24 10	1346.08	23.42	354.76	214.60	113.57	23 46 36	346.1	31.02	329.15
72.76	23 24 10	1346.08	23.42	354.76	214.60	113.57	23 46 36	346.1	31.02	329.15
110.00	2 56 27	5961.40	17.20	279.91	211.26	119.97	4 35 49	4961.4	28.02	256.66

DIFFERENTIAL CORRECTIONS

TDE	-.2487	TRA	.3749	TC3	-2.7436	BAU	.3719
RDE	-.1091	RRA	-.1149	RC3	.6114	FAU	.24711
FDE	.6327	FRA	7.1416	FC	-21.6191	BSP	2692
BDE	.2716	BRA	.3921	BC3	2.8109	FSP	3090

MID-COURSE EXECUTION ACCURACY

SGT	1960.6	SGR	499.3	SG3	1782.3
RRT	-.7926	RRF	-.9037	RTF	.8781
SGB	2023.2	R23	.3135	R13	-.8882
SG1	2001.1	SG2	298.3	THA	168.33

ORBIT DETERMINATION ACCURACY

ST	25.8	SR	10.6	SS	60.6
CRT	.6483	CRS	.5686	CST	-.2537
LSA	61.3	MSA	26.4	SSA	.7
EL1	26.8	EL2	7.8	ALF	16.34

LAUNCH DATE MAY 5 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC DISTANCE 497.644 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.230	GAL	-1.07	AZL	92.39	HCA	162.23	SMA	184.18	ECC	.18180	INC	2.3914	V1	29.533
RP	213.31	LAP	-.73	LOP	26.11	VP	22.886	GAP	5.21	AZP	87.72	TAL	353.00	TAP	155.24	RCA	150.70	APO	217.67	V2	25.732
RC	137.991	GL	-25.19	GP	4.53	ZAL	109.02	ZAP	96.53	ETS	178.95	ZAE	139.81	ETE	174.98	ZAC	106.25	ETC	274.41	LVI	-17.47

PLANETOCENTRIC CONIC

C3	9.977	VHL	3.159	DLA	-32.87	RAL	347.50	RAD	6638.0	VEL	11.405	PTH	6.46	VHP	2.910	DPA	-16.88	RAP	304.32	ECC	1.1642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 2 48	2285.85	3.34	57.44	200.64	137.49	18 40 53	1285.9	21.34	40.84
60.00	19 36 0	2037.77	9.16	40.65	206.18	129.42	20 9 58	1037.8	24.16	20.94
70.00	21 58 34	1617.64	17.51	12.57	212.09	119.81	22 25 32	617.6	28.23	349.23
72.50	23 24 38	1352.86	23.46	355.30	215.29	113.71	23 47 11	352.9	31.11	329.69
72.50	23 24 38	1352.86	23.46	355.30	215.29	113.71	23 47 11	352.9	31.11	329.69
72.50	23 24 38	1352.86	23.46	355.30	215.29	113.71	23 47 11	352.9	31.11	329.69
110.00	3 1 57	5952.50	17.51	279.39	212.09	119.81	4 41 9	4952.5	28.23	256.05

DIFFERENTIAL CORRECTIONS

TDE	-.2466	TRA	.4490	TC3	-2.9338	BAU	.4004
RDE	-.1049	RRA	-.1306	RC3	.6365	FAU	.24881
FDE	.6709	FRA	7.2722	FC	-21.5898	BSP	3053
BDE	.2680	BRA	.4676	BC3	3.0021	FSP	3128

MID-COURSE EXECUTION ACCURACY

SGT	2139.0	SGR	526.7	SG3	1800.3
RRT	-.8287	RRF	-.9244	RTF	.8966
SGB	2202.9	R23	.2992	R13	-.9052
SG1	2183.9	SG2	288.8	THA	168.26

ORBIT DETERMINATION ACCURACY

ST	26.8	SR	10.4	SS	61.4
CRT	.5347	CRS	.6234	CST	-.3241
LSA	62.4	MSA	26.5	SSA	.7
EL1	27.5	EL2	8.6	ALF	13.05

LAUNCH DATE MAY 5 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC DISTANCE 501.832 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.229	GAL	-1.11	AZL	92.43	HCA	163.42	SMA	184.17	ECC	.18181	INC	2.4332	V1	29.533
RP	213.61	LAP	-.69	LOP	27.30	VP	22.847	GAP	5.03	AZP	87.67	TAL	352.76	TAP	156.18	RCA	150.69	APO	217.66	V2	25.697
RC	140.356	GL	-25.53	GP	4.86	ZAL	109.33	ZAP	94.49	ETS	179.06	ZAE	137.75	ETE	175.01	ZAC	106.64	ETC	274.21	LVI	-17.48

PLANETOCENTRIC CONIC

C3	10.074	VHL	3.174	DLA	-33.02	RAL	348.07	RAD	6638.1	VEL	11.409	PTH	6.46	VHP	2.898	DPA	-16.74	RAP	303.38	ECC	1.1658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 6 2	2284.07	3.43	57.36	201.37	137.48	18 44 6	1284.1	21.42	40.75
60.00	19 39 50	2034.42	9.31	40.48	206.96	129.39	20 13 44	1034.4	24.28	20.74
70.00	22 5 5	1606.30	17.89	11.91	213.01	119.59	22 31 51	606.3	28.49	348.45
72.19	23 24 58	1360.79	23.51	355.94	216.04	113.89	23 47 39	360.8	31.23	330.32
72.19	23 24 58	1360.79	23.51	355.94	216.04	113.89	23 47 39	360.8	31.23	330.32
72.19	23 24 58	1360.79	23.51	355.94	216.04	113.89	23 47 39	360.8	31.23	330.32
110.00	3 8 27	5941.16	17.89	278.74	213.01	119.59	4 47 28	4941.2	28.49	255.27

DIFFERENTIAL CORRECTIONS

TDE	-.2459	TRA	.5238	TC3	-3.1240	BAU	.4301
RDE	-.1008	RRA	-.1476	RC3	.6646	FAU	.25023
FDE	.7058	FRA	7.3785	FC	-21.5054	BSP	3403
BDE	.2658	BRA	.5442	BC3	3.1939	FSP	3151

MID-COURSE EXECUTION ACCURACY

SGT	2324.1	SGR	558.7	SG3	1813.1
RRT	-.8581	RRF	-.9417	RTF	.9108
SGB	2390.3	R23	.2891	R13	-.9183
SG1	2373.8	SG2	280.8	THA	168.18

ORBIT DETERMINATION ACCURACY

ST	28.1	SR	10.3	SS	62.0
CRT	.4136	CRS	.6785	CST	-.3855
LSA	63.4	MSA	26.7	SSA	.6
EL1	28.4	EL2	9.3	ALF	9.66

LAUNCH DATE MAY 5 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC DISTANCE 506.021 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.229	GAL	-1.15	AZL	92.48	HCA	164.61	SMA	184.17	ECC	.18188	INC	2.4813	V1	29.533
RP	213.92	LAP	-.66	LOP	28.49	VP	22.807	GAP	4.86	AZP	87.61	TAL	352.50	TAP	157.11	RCA	150.67	APO	217.67	V2	25.662
RC	142.739	GL	-25.92	GP	5.23	ZAL	109.64	ZAP	92.48	ETS	179.19	ZAE	135.70	ETE	175.01	ZAC	107.08	ETC	274.02	LVI	-17.53

PLANETOCENTRIC CONIC

C3	10.187	VHL	3.192	DLA	-33.21	RAL	348.68	RAD	6638.1	VEL	11.414	PTH	6.47	VHP	2.890	DPA	-16.54	RAP	302.45	ECC	1.1676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 9 40	2281.78	3.55	57.27	202.17	137.48	18 47 41	1281.8	21.53	40.64
60.00	19 44 11	2030.17	9.49	40.27	207.83	129.35	20 18 1	1030.2	24.44	20.49
70.00	22 13 6	1591.15	18.40	11.03	214.08	119.30	22 38 37	591.1	28.83	347.40
71.83	23 25 5	1370.19	23.57	356.69	216.86	114.09	23 47 56	370.2	31.37	331.08
71.83	23 25 5	1370.19	23.57	356.69	216.86	114.09	23 47 56	370.2	31.37	331.08
71.83	23 25 5	1370.19	23.57	356.69	216.86	114.09	23 47 56	370.2	31.37	331.08
110.00	3 16 28	5926.00	18.40	277.85	214.08	119.30	4 55 14	4926.0	28.83	254.23

DIFFERENTIAL CORRECTIONS

TDE	-.2451	TRA	.6019	TC3	-3.3065	BAU	.4602
RDE	-.0971	RRA	-.1672	RC3	.6955	FAU	.25100
FDE	.7423	FRA	7.4941	FC	-21.3317	BSP	3767
BDE	.2636	BRA	.6247	BC3	3.3789	FSP	3175

MID-COURSE EXECUTION ACCURACY

SGT	2513.2	SGR	596.8	SG3	1824.1
RRT	-.8825	RRF	-.9561	RTF	.9220
SGB	2583.1	R23	.2818	R13	-.9286
SG1	2568.4	SG2	274.6	THA	168.02

ORBIT DETERMINATION ACCURACY

ST	29.5	SR	10.3	SS	62.7
CRT	.2820	CRS	.7344	CST	-.4419
LSA	64.7	MSA	26.9	SSA	.6
EL1	29.6	EL2	9.8	ALF	6.30

LAUNCH DATE MAY 5 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 510.209 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.230	GAL	-1.19	AZL	92.54	HCA	165.79	SMA	184.18	ECC	.18200	INC	2.5373	V1	29.833
RP	214.24	LAP	-.62	LOP	29.67	VP	22.768	GAP	4.68	AZP	87.54	TAL	352.24	TAP	156.03	RCA	150.66	APO	217.70	V2	25.627
RC	145.138	GL	-26.36	GP	5.66	ZAL	109.95	ZAP	90.50	ETS	179.34	ZAE	133.67	ETE	174.98	ZAC	107.57	ETC	273.83	LVI	-17.64

PLANETOCENTRIC CONIC

C3	10.319	VHL	3.212	DLA	-33.43	RAL	349.34	RAD	6638.2	VEL	11.420	PTH	6.47	VHP	2.885	DPA	-16.29	RAP	301.54	ECC	1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 13 46	2278.73	3.70	57.14	203.06	137.47	18 51 45	1278.7	21.67	40.49
60.00	19 49 14	2024.60	9.73	40.00	208.80	129.30	20 22 59	1024.6	24.65	20.17
70.00	22 23 28	1569.67	19.11	9.77	215.33	118.86	22 49 38	569.7	29.30	345.91
71.38	23 24 54	1381.46	23.65	357.60	217.77	114.35	23 47 56	381.5	31.54	332.00
71.38	23 24 54	1381.46	23.65	357.60	217.77	114.35	23 47 56	381.5	31.54	332.00
71.38	23 24 54	1381.46	23.65	357.60	217.77	114.35	23 47 56	381.5	31.54	332.00
110.00	3 26 51	5904.53	19.11	276.59	215.33	118.86	5 5 15	4904.5	29.30	252.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2442	TRA	.6824	TC3	-3.4788	BAU	.4904	SGT	2704.1	SGR	640.6	SG3	1826.8	ST	31.1	SR	10.4	SS	63.2
RDE	-.0938	RRA	-.1888	RC3	.7294	FAU	.25093	RRT	-.9022	RRF	-.9676	RTF	.9310	CRT	.1478	CRS	.7890	CST	-.4892
FDE	.7870	FRA	7.5758	FC	-21.0520	BSP	4138	SGB	2778.9	R23	.2761	R13	-.9371	LSA	65.8	MSA	27.2	SSA	.5
BDE	.2616	BRA	.7080	BC3	3.5544	FSP	3190	SG1	2765.8	SG2	270.2	THA	167.82	EL1	31.1	EL2	10.2	ALF	3.16

LAUNCH DATE MAY 5 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 514.396 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.231	GAL	-1.24	AZL	92.60	HCA	166.97	SMA	184.20	ECC	.18217	INC	2.6026	V1	29.533
RP	214.55	LAP	-.59	LOP	30.85	VP	22.729	GAP	4.51	AZP	87.46	TAL	351.96	TAP	158.93	RCA	150.64	APO	217.75	V2	25.591
RC	147.535	GL	-26.88	GP	6.15	ZAL	110.26	ZAP	88.56	ETS	179.52	ZAE	131.65	ETE	174.91	ZAC	108.13	ETC	273.65	LVI	-17.83

PLANETOCENTRIC CONIC

C3	10.475	VHL	3.236	DLA	-33.72	RAL	350.06	RAD	6638.3	VEL	11.427	PTH	6.48	VHP	2.884	DPA	-15.95	RAP	300.65	ECC	1.1724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 18 31	2274.59	3.91	56.97	204.06	137.45	18 56 25	1274.6	21.87	40.28
60.00	19 55 12	2017.19	10.05	39.64	209.89	129.24	20 28 49	1017.2	24.92	19.73
70.00	22 38 8	1536.23	20.19	7.79	216.88	118.15	23 3 44	536.2	30.00	343.55
70.82	23 24 21	1394.94	23.75	358.70	218.79	114.67	23 47 36	394.9	31.77	333.10
70.82	23 24 21	1394.94	23.75	358.70	218.79	114.67	23 47 36	394.9	31.77	333.10
70.82	23 24 21	1394.94	23.75	358.70	218.79	114.67	23 47 36	394.9	31.77	333.10
110.00	3 41 30	5871.09	20.19	274.61	216.88	118.15	5 19 21	4871.1	30.00	250.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2452	TRA	.7644	TC3	-3.6447	BAU	.5216	SGT	2898.5	SGR	693.0	SG3	1827.1	ST	32.9	SR	10.6	SS	63.7
RDE	-.0906	RRA	-.2136	RC3	.7691	FAU	.25084	RRT	-.9183	RRF	-.9767	RTF	.9384	CRT	.0145	CRS	.8382	CST	-.5317
FDE	.8164	FRA	7.6487	FC	-20.7321	BSP	4498	SGB	2980.2	R23	.2716	R13	-.9440	LSA	67.0	MSA	27.5	SSA	.5
BDE	.2614	BRA	.7937	BC3	3.7250	FSP	3185	SG1	2968.1	SG2	267.9	THA	167.51	EL1	32.9	EL2	10.6	ALF	.30

LAUNCH DATE MAY 5 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 518.583 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.232	GAL	-1.28	AZL	92.68	HCA	168.15	SMA	184.22	ECC	.18238	INC	2.6808	V1	29.533
RP	214.88	LAP	-.55	LOP	32.03	VP	22.690	GAP	4.34	AZP	87.38	TAL	351.67	TAP	159.81	RCA	150.62	APO	217.82	V2	25.554
RC	149.988	GL	-27.50	GP	6.74	ZAL	110.56	ZAP	86.65	ETS	179.74	ZAE	129.65	ETE	174.80	ZAC	108.77	ETC	273.48	LVI	-18.10

PLANETOCENTRIC CONIC

C3	10.659	VHL	3.265	DLA	-34.08	RAL	350.84	RAD	6638.4	VEL	11.435	PTH	6.49	VHP	2.887	DPA	-15.51	RAP	299.78	ECC	1.1754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 24 5	2268.94	4.19	56.73	205.20	137.44	19 1 54	1268.9	22.13	40.01
60.00	20 2 25	2007.17	10.48	39.14	211.16	129.14	20 35 52	1007.2	25.29	19.14
70.00	23 5 50	1464.49	22.43	3.43	219.17	116.45	23 30 15	464.5	31.32	338.39
70.13	23 23 17	1411.29	23.89	.04	219.93	115.06	23 46 48	411.3	32.06	334.44
70.13	23 23 17	1411.29	23.89	.04	219.93	115.06	23 46 48	411.3	32.06	334.44
70.13	23 23 17	1411.29	23.89	.04	219.93	115.06	23 46 48	411.3	32.06	334.44
110.00	4 9 12	5799.34	22.43	270.25	219.17	116.45	5 45 52	4799.3	31.32	245.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2463	TRA	.8502	TC3	-3.7928	BAU	.5527	SGT	3092.8	SGR	754.5	SG3	1820.7	ST	34.8	SR	11.0	SS	64.1
RDE	-.0883	RRA	-.2425	RC3	.8122	FAU	.24930	RRT	-.9308	RRF	-.9837	RTF	.9441	CRT	-.1150	CRS	.8830	CST	-.5666
FDE	.8574	FRA	7.7109	FC	-20.2497	BSP	4875	SGB	3183.5	R23	.2688	R13	-.9495	LSA	68.3	MSA	27.9	SSA	.4
BDE	.2616	BRA	.8841	BC3	3.8788	FSP	3181	SG1	3172.1	SG2	268.8	THA	167.11	EL1	34.8	EL2	10.9	ALF	177.70

LAUNCH DATE MAY 5 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 522.768 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.235	GAL	-1.33	AZL	92.78	HCA	169.32	SMA	184.26	ECC	.18264	INC	2.7753	V1	29.533
RP	215.21	LAP	-.51	LOP	33.20	VP	22.652	GAP	4.17	AZP	87.27	TAL	351.36	TAP	160.68	RCA	150.61	APO	217.91	V2	25.518
RC	152.438	GL	-28.24	GP	7.45	ZAL	110.84	ZAP	84.79	ETS	180.00	ZAE	127.67	ETE	174.64	ZAC	109.52	ETC	273.32	LVI	-18.49

PLANETOCENTRIC CONIC

C3	10.879	VHL	3.298	DLA	-34.55	RAL	351.72	RAD	6638.5	VEL	11.444	PTH	6.49	VHP	2.893	DPA	-14.95	RAP	298.93	ECC	1.1790

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 30 47	2261.15	4.58	56.40	206.52	137.41	19 8 28	1261.2	22.49	39.62
60.00	20 11 21	1993.36	11.08	38.45	212.66	129.00	20 44 35	993.4	25.79	18.31
69.27	23 21 36	1431.19	24.08	1.69	221.24	115.57	23 45 27	431.2	32.43	336.10
69.27	23 21 36	1431.19	24.08	1.69	221.24	115.57	23 45 27	431.2	32.43	336.10
69.27	23 21 36	1431.19	24.08	1.69	221.24	115.57	23 45 27	431.2	32.43	336.10
69.27	23 21 36	1431.19	24.08	1.69	221.24	115.57	23 45 27	431.2	32.43	336.10
69.27	23 21 36	1431.19	24.08	1.69	221.24	115.57	23 45 27	431.2	32.43	336.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2500	TRA	.9379	TC3	-3.9275	BAU	.5849	SGT	3288.5	SGR	828.8	SG3	1809.5	ST	37.0	SR	11.5	SS	64.4
RDE	-.0860	RRA	-.2762	RC3	.8646	FAU	.24794	RRT	-.9411	RRF	-.9891	RTF	.9492	CRT	-.2353	CRS	.9197	CST	-.5971
FDE	.8818	FRA	7.7452	FC	-19.7306	BSP	5246	SGB	3391.3	R23	.2649	R13	-.9545	LSA	69.5	MSA	28.4	SSA	.4
BDE	.2644	BRA	.9777	BC3	4.0215	FSP	3162	SG1	3380.3	SG2	272.6	THA	166.57	EL1	37.1	EL2	11.2	ALF	175.38

LAUNCH DATE MAY 5 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 13 1971

HELIOCENTRIC CONIC DISTANCE 526.952 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.237	GAL	-1.38	AZL	92.89	HCA	170.49	SMA	184.30	ECC	.18294	INC	2.8935	V1	29.533
RP	215.54	LAP	-.48	LOP	34.37	VP	22.614	GAP	4.01	AZP	87.15	TAL	351.05	TAP	161.54	RCA	150.59	APO	218.02	V2	25.480
RC	154.904	GL	-29.15	GP	8.31	ZAL	111.09	ZAP	82.98	ETS	180.33	ZAE	125.71	ETE	174.40	ZAC	110.43	ETC	273.17	LVI	-19.05

PLANETOCENTRIC CONIC

C3	11.149	VHL	3.339	DLA	-35.17	RAL	352.71	RAD	6638.6	VEL	11.456	PTH	6.51	VHP	2.904	DPA	-14.22	RAP	298.09	ECC	1.1835

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 39 4	2250.32	5.13	55.94	208.09	137.37	19 16 34	1250.3	23.00	39.08
60.00	20 22 51	1973.90	11.91	37.48	214.49	128.79	20 55 45	973.9	26.49	17.14
68.17	23 19 12	1455.42	24.32	3.73	222.79	116.22	23 43 28	455.4	32.92	338.14
68.17	23 19 12	1455.42	24.32	3.73	222.79	116.22	23 43 28	455.4	32.92	338.14
68.17	23 19 12	1455.42	24.32	3.73	222.79	116.22	23 43 28	455.4	32.92	338.14
68.17	23 19 12	1455.42	24.32	3.73	222.79	116.22	23 43 28	455.4	32.92	338.14
68.17	23 19 12	1455.42	24.32	3.73	222.79	116.22	23 43 28	455.4	32.92	338.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2515	TRA	1.0338	TC3	-4.0257	BAU	.6156	SGT	3481.8	SGR	920.5	SG3	1793.9	ST	39.3	SR	12.5	SS	64.9
RDE	-.0858	RRA	-.3181	RC3	.9230	FAU	.24495	RRT	-.9492	RRF	-.9930	RTF	.9535	CRT	-.3491	CRS	.9499	CST	-.6239
FDE	.9316	FRA	7.7872	FC	-19.0196	BSP	5683	SGB	3601.4	R23	.2604	R13	-.9588	LSA	71.2	MSA	28.9	SSA	.3
BDE	.2657	BRA	1.0816	BC3	4.1302	FSP	3161	SG1	3590.4	SG2	280.8	THA	165.82	EL1	39.5	EL2	11.6	ALF	173.07

LAUNCH DATE MAY 5 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE 531.134 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.240	GAL	-1.43	AZL	93.04	HCA	171.65	SMA	184.36	ECC	.18329	INC	3.0420	V1	29.533
RP	215.87	LAP	-.44	LOP	35.53	VP	22.576	GAP	3.84	AZP	86.99	TAL	350.73	TAP	162.39	RCA	150.57	APO	218.15	V2	25.443
RC	157.385	GL	-30.31	GP	9.40	ZAL	111.29	ZAP	81.22	ETS	180.75	ZAE	123.76	ETE	174.08	ZAC	111.56	ETC	273.03	LVI	-19.82

PLANETOCENTRIC CONIC

C3	11.491	VHL	3.390	DLA	-35.99	RAL	353.86	RAD	6638.8	VEL	11.471	PTH	6.52	VHP	2.921	DPA	-13.25	RAP	297.26	ECC	1.1891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 49 37	2235.06	5.89	55.30	210.03	137.30	19 26 52	1235.1	23.70	38.31
60.00	20 38 17	1945.54	13.11	36.06	216.82	128.46	21 10 43	945.5	27.49	15.41
66.76	23 15 56	1485.23	24.65	6.29	224.64	117.09	23 40 41	485.2	33.57	340.69
66.76	23 15 56	1485.23	24.65	6.29	224.64	117.09	23 40 41	485.2	33.57	340.69
66.76	23 15 56	1485.23	24.65	6.29	224.64	117.09	23 40 41	485.2	33.57	340.69
66.76	23 15 56	1485.23	24.65	6.29	224.64	117.09	23 40 41	485.2	33.57	340.69
66.76	23 15 56	1485.23	24.65	6.29	224.64	117.09	23 40 41	485.2	33.57	340.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2644	TRA	1.1249	TC3	-4.1212	BAU	.6514	SGT	3678.0	SGR	1033.6	SG3	1767.8	ST	41.9	SR	13.6	SS	64.7
RDE	-.0850	RRA	-.3675	RC3	.9986	FAU	.24266	RRT	-.9552	RRF	-.9957	RTF	.9567	CRT	-.4373	CRS	.9709	CST	-.6395
FDE	.9368	FRA	7.7563	FC	-18.2824	BSP	6011	SGB	3820.4	R23	.2565	R13	-.9623	LSA	72.4	MSA	29.8	SSA	.3
BDE	.2778	BRA	1.1834	BC3	4.2405	FSP	3087	SG1	3809.0	SG2	295.4	THA	164.88	EL1	42.4	EL2	12.1	ALF	171.20

LAUNCH DATE MAY 5 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 535.314 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.244	GAL	-1.49	AZL	93.24	HCA	172.82	SMA	184.41	ECC	.18367	INC	3.2388	V1	29.533
RP	216.21	LAP	-.41	LOP	36.69	VP	22.538	GAP	3.68	AZP	86.79	TAL	350.40	TAP	163.22	RCA	150.54	APO	218.29	V2	25.405
RC	159.881	GL	-31.81	GP	10.83	ZAL	111.40	ZAP	79.54	ETS	181.28	ZAE	121.82	ETE	173.62	ZAC	113.02	ETC	272.92	LVI	-20.91

PLANETOCENTRIC CONIC

C3	11.939	VHL	3.455	DLA	-37.10	RAL	355.26	RAD	6639.0	VEL	11.490	PTH	6.54	VHP	2.944	DPA	-11.95	RAP	296.42	ECC	1.1965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 3 42	2213.05	6.99	54.37	212.54	137.18	19 40 35	1213.1	24.71	37.19
60.00	21 0 32	1901.60	14.96	33.82	219.97	127.87	21 32 13	901.6	28.99	12.65
64.92	23 11 43	1522.17	25.09	9.52	226.97	118.26	23 37 6	522.2	34.44	343.94
64.92	23 11 43	1522.17	25.09	9.52	226.97	118.26	23 37 6	522.2	34.44	343.94
64.92	23 11 43	1522.17	25.09	9.52	226.97	118.26	23 37 6	522.2	34.44	343.94
64.92	23 11 43	1522.17	25.09	9.52	226.97	118.26	23 37 6	522.2	34.44	343.94
64.92	23 11 43	1522.17	25.09	9.52	226.97	118.26	23 37 6	522.2	34.44	343.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2776	TRA	1.2269	TC3	-4.1611	BAU	.6864	SGT	3871.2	SGR	1181.2	SG3	1735.6	ST	44.9	SR	15.4	SS	64.8
RDE	-.0873	RRA	-.4332	RC3	1.0859	FAU	.23824	RRT	-.9597	RRF	-.9975	RTF	.9692	CRT	-.5150	CRS	.9856	CST	-.6522
FDE	.9689	FRA	7.7331	FC	-17.2747	BSP	6423	SGB	4047.4	R23	.2516	R13	-.9653	LSA	74.1	MSA	30.9	SSA	.2
BDE	.2910	BRA	1.3011	BC3	4.3004	FSP	3041	SG1	4034.8	SG2	318.5	THA	163.57	EL1	45.6	EL2	13.0	ALF	169.10

LAUNCH DATE MAY 5 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 539.491 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.248	GAL	-1.54	AZL	93.51	HCA	173.97	SMA	184.48	ECC	.18410	INC	3.5100	V1	29.533
RP	216.56	LAP	-.37	LOP	37.85	VP	22.501	GAP	3.52	AZP	86.51	TAL	350.06	TAP	164.03	RCA	150.52	APO	218.44	V2	25.366
RC	162.390	GL	-33.84	GP	12.76	ZAL	111.37	ZAP	77.95	ETS	182.01	ZAE	119.86	ETE	172.97	ZAC	114.98	ETC	272.82	LVI	-22.49

PLANETOCENTRIC CONIC

C3	12.567	VHL	3.545	DLA	-38.64	RAL	357.03	RAD	6639.3	VEL	11.517	PTH	6.56	VHP	2.979	DPA	-10.13	RAP	295.56	ECC	1.2068

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 23 39	2180.12	8.63	52.97	216.00	136.97	19 59 59	1180.1	26.20	35.47
60.00	21 37 15	1823.33	18.19	29.72	224.75	126.61	22 7 38	823.3	31.49	7.53
62.49	23 6 34	1568.54	25.68	13.68	230.04	119.93	23 32 43	568.5	35.64	348.15
62.49	23 6 34	1568.54	25.68	13.68	230.04	119.93	23 32 43	568.5	35.64	348.15
62.49	23 6 34	1568.54	25.68	13.68	230.04	119.93	23 32 43	568.5	35.64	348.15
62.49	23 6 34	1568.54	25.68	13.68	230.04	119.93	23 32 43	568.5	35.64	348.15
62.49	23 6 34	1568.54	25.68	13.68	230.04	119.93	23 32 43	568.5	35.64	348.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2976	TRA	1.3358	TC3	-4.1431	BAU	.7244	SGT	4062.1	SGR	1378.1	SG3	1688.8	ST	48.1	SR	17.8	SS	64.6
RDE	-.0927	RRA	-.5203	RC3	1.1948	FAU	.23268	RRT	-.9633	RRF	-.9987	RTF	.9615	CRT	-.5764	CRS	.9942	CST	-.6602
FDE	.9948	FRA	7.6456	FC	-16.0294	BSP	6854	SGB	4289.5	R23	.2439	R13	-.9685	LSA	76.0	MSA	32.1	SSA	.2
BDE	.3117	BRA	1.4336	BC3	4.3119	FSP	2959	SG1	4275.0	SG2	351.7	THA	161.78	EL1	49.3	EL2	14.2	ALF	166.82

LAUNCH DATE MAY 5 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC DISTANCE 543.668 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.252	GAL	-1.60	AZL	93.91	HCA	175.13	SMA	184.55	ECC	.18456	INC	3.9054	V1	29.533
RP	216.81	LAP	-.33	LOP	39.00	VP	22.463	GAP	3.36	AZP	86.11	TAL	349.72	TAP	164.84	RCA	150.49	APO	218.61	V2	25.327
RC	164.912	GL	-36.69	GP	15.52	ZAL	111.10	ZAP	76.51	ETS	183.03	ZAE	117.84	ETE	172.02	ZAC	117.77	ETC	272.77	LVI	-24.83

PLANETOCENTRIC CONIC

C3	13.526	VHL	3.678	DLA	-40.88	RAL	359.45	RAD	6639.8	VEL	11.558	PTH	6.60	VHP	3.034	DPA	-7.48	RAP	294.63	ECC	1.2226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 54 35	2127.36	11.25	50.69	221.25	136.54	20 30 2	1127.4	28.53	32.62
59.16	23 0 48	1628.02	26.44	19.21	234.37	122.39	23 27 56	628.0	37.32	353.80
59.16	23 0 48	1628.02	26.44	19.21	234.37	122.39	23 27 56	628.0	37.32	353.80
59.16	23 0 48	1628.02	26.44	19.21	234.37	122.39	23 27 56	628.0	37.32	353.80
59.16	23 0 48	1628.02	26.44	19.21	234.37	122.39	23 27 56	628.0	37.32	353.80
59.16	23 0 48	1628.02	26.44	19.21	234.37	122.39	23 27 56	628.0	37.32	353.80
59.16	23 0 48	1628.02	26.44	19.21	234.37	122.39	23 27 56	628.0	37.32	353.80

DIFFERENTIAL CORRECTIONS

TDE	-.3472	TRA	1.4333	TC3	-4.0934	BAU	.7801												
RDE	-.0948	RRA	-.6327	RC3	1.3617	FAU	.23058												
FDE	.9173	FRA	7.3450	FC	-14.7579	BSP	7017												
BDE	.3599	BRA	1.5667	BC3	4.3140	FSP	2699												

MID-COURSE EXECUTION ACCURACY

SGT	4252.0	SGR	1650.6	SG3	1613.9				
RRT	-.9669	RRF	-.9994	RTF	.9645				
SGB	4561.1	R23	.2300	R13	-.9726				
SG1	4544.0	SG2	394.4	THA	159.26				

ORBIT DETERMINATION ACCURACY

ST	52.1	SR	21.0	SS	62.5				
CRT	-.6167	CRS	.9984	CST	-.6596				
LSA	77.0	MSA	33.7	SSA	.1				
EL1	53.8	EL2	16.0	ALF	164.69				

LAUNCH DATE MAY 5 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 23 1971

HELIOCENTRIC CONIC DISTANCE 547.838 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.257	GAL	-1.66	AZL	94.55	HCA	176.28	SMA	184.63	ECC	.18506	INC	4.5490	V1	29.533
RP	217.26	LAP	-.30	LOP	40.15	VP	22.426	GAP	3.20	AZP	85.46	TAL	349.36	TAP	165.64	RCA	150.47	APO	218.80	V2	25.288
RC	167.446	GL	-40.98	GP	19.78	ZAL	110.37	ZAP	75.36	ETS	184.58	ZAE	115.66	ETE	170.51	ZAC	122.04	ETC	272.79	LVI	-28.56

PLANETOCENTRIC CONIC

C3	15.208	VHL	3.900	DLA	-44.26	RAL	3.13	RAD	6640.6	VEL	11.630	PTH	6.67	VHP	3.133	DPA	-3.33	RAP	293.57	ECC	1.2503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 51 49	2027.84	16.12	46.26	230.75	135.39	21 25 36	1027.8	32.73	26.85
54.42	22 55 53	1707.18	27.31	26.86	241.12	126.29	23 24 20	707.2	39.65	1.85
54.42	22 55 53	1707.18	27.31	26.86	241.12	126.29	23 24 20	707.2	39.65	1.85
54.42	22 55 53	1707.18	27.31	26.86	241.12	126.29	23 24 20	707.2	39.65	1.85
54.42	22 55 53	1707.18	27.31	26.86	241.12	126.29	23 24 20	707.2	39.65	1.85
54.42	22 55 53	1707.18	27.31	26.86	241.12	126.29	23 24 20	707.2	39.65	1.85
54.42	22 55 53	1707.18	27.31	26.86	241.12	126.29	23 24 20	707.2	39.65	1.85

DIFFERENTIAL CORRECTIONS

TDE	-.3587	TRA	1.5965	TC3	-3.7663	BAU	.8236												
RDE	-.1385	RRA	-.8301	RC3	1.4913	FAU	.21236												
FDE	1.1480	FRA	7.0857	FC	-12.0891	BSP	7875												
BDE	.3845	BRA	1.7995	BC3	4.0508	FSP	2613												

MID-COURSE EXECUTION ACCURACY

SGT	4431.0	SGR	2072.3	SG3	1504.0				
RRT	-.9678	RRF	-.9997	RTF	.9648				
SGB	4891.6	R23	.2191	R13	-.9755				
SG1	4868.5	SG2	474.5	THA	155.40				

ORBIT DETERMINATION ACCURACY

ST	55.9	SR	27.6	SS	63.4				
CRT	-.6455	CRS	.9999	CST	-.6529				
LSA	81.3	MSA	36.1	SSA	.1				
EL1	59.1	EL2	19.9	ALF	159.99				

LAUNCH DATE MAY 5 1971 FLIGHT TIME 234.00 ARRIVAL DATE DEC 25 1971

HELIOCENTRIC CONIC DISTANCE 552.006 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.262	GAL	-1.72	AZL	95.76	HCA	177.42	SMA	184.72	ECC	.18559	INC	5.7548	V1	29.533
RP	217.61	LAP	-.26	LOP	41.30	VP	22.389	GAP	3.04	AZP	84.25	TAL	349.00	TAP	166.42	RCA	150.44	APO	219.00	V2	25.249
RC	169.992	GL	-48.03	GP	27.07	ZAL	108.65	ZAP	74.90	ETS	187.06	ZAE	113.00	ETE	167.97	ZAC	129.33	ETC	273.01	LVI	-35.04

PLANETOCENTRIC CONIC

C3	18.927	VHL	4.351	DLA	-49.67	RAL	9.64	RAD	6642.4	VEL	11.788	PTH	6.81	VHP	3.358	DPA	3.83	RAP	292.21	ECC	1.3115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.29	22 57 22	1821.17	27.77	38.17	253.27	133.00	23 27 43	821.2	42.63	14.58
47.29	22 57 22	1821.17	27.77	38.17	253.27	133.00	23 27 43	821.2	42.63	14.58
47.29	22 57 22	1821.17	27.77	38.17	253.27	133.00	23 27 43	821.2	42.63	14.58
47.29	22 57 22	1821.17	27.77	38.17	253.27	133.00	23 27 43	821.2	42.63	14.58
47.29	22 57 22	1821.17	27.77	38.17	253.27	133.00	23 27 43	821.2	42.63	14.58
47.29	22 57 22	1821.17	27.77	38.17	253.27	133.00	23 27 43	821.2	42.63	14.58
47.29	22 57 22	1821.17	27.77	38.17	253.27	133.00	23 27 43	821.2	42.63	14.58

DIFFERENTIAL CORRECTIONS

TDE	-.3626	TRA	1.7704	TC3	-3.2228	BAU	.9149												
RDE	-.2609	RRA	-1.1422	RC3	1.6390	FAU	.18785												
FDE	1.5077	FRA	6.2107	FC	-8.5924	BSP	8513												
BDE	.4467	BRA	2.1069	BC3	3.6156	FSP	2194												

MID-COURSE EXECUTION ACCURACY

SGT	4590.5	SGR	2748.8	SG3	1280.3				
RRT	-.9677	RRF	-.9998	RTF	.9537				
SGB	5350.6	R23	.2024	R13	-.9792				
SG1	5317.0	SG2	598.4	THA	149.48				

ORBIT DETERMINATION ACCURACY

ST	59.2	SR	38.9	SS	62.2				
CRT	-.6432	CRS	.9997	CST	-.6242				
LSA	85.6	MSA	39.4	SSA	.0				
EL1	65.6	EL2	26.9	ALF	151.95				

LAUNCH DATE MAY 5 1971 FLIGHT TIME 236.00 ARRIVAL DATE DEC 27 1971

HELIOCENTRIC CONIC DISTANCE 556.164 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.268	GAL	-1.78	AZL	98.86	HCA	178.56	SMA	184.81	ECC	.18615	INC	8.8611	V1	29.533
RP	217.97	LAP	-.22	LOP	42.44	VP	22.352	GAP	2.89	AZP	81.14	TAL	348.63	TAP	167.19	RCA	150.41	APO	219.21	V2	25.209
RC	172.547	GL	-61.15	GP	41.22	ZAL	104.55	ZAP	76.66	ETS	190.98	ZAE	108.90	ETE	163.19	ZAC	143.42	ETC	274.13	LVI	-47.50

PLANETOCENTRIC CONIC

C3	32.198	VHL	5.674	DLA	-58.48	RAL	26.80	RAD	6647.8	VEL	12.334	PTH	7.26	VHP	4.144	DPA	17.84	RAP	290.21	ECC	1.5299

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.42	23 33 30	2019.81	24.25	55.75	280.75	145.01	24 7 9	1019.8	43.47	37.50
36.42	23 33 30	2019.81	24.25	55.75	280.75	145.01	24 7 9	1019.8	43.47	37.50
36.42	23 33 30	2019.81	24.25	55.75	280.75	145.01	24 7 9	1019.8	43.47	37.50
36.42	23 33 30	2019.81	24.25	55.75	280.75	145.01	24 7 9	1019.8	43.47	37.50
36.42	23 33 30	2019.81	24.25	55.75	280.75	145.01	24 7 9	1019.8	43.47	37.50
36.42	23 33 30	2019.81	24.25	55.75	280.75	145.01	24 7 9	1019.8	43.47	37.50
36.42	23 33 30	2019.81	24.25	55.75	280.75	145.01	24 7 9	1019.8	43.47	37.50

DIFFERENTIAL CORRECTIONS

TDE	.1092	TRA	2.0463	TC3	-2.1295	BAU	1.1336												
RDE	-1.0963	RRA	-1.7197	RC3	1.5492	FAU	.12909												
FDE	2.7337	FRA	3.9384	FC	-3.4709	BSP	9248												
BDE	1.1017	BRA	2.6729	BC3	2.6334	FSP	1282												

MID-COURSE EXECUTION ACCURACY

SGT	4633.7	SGR	3917.7	SG3	777.6				
RRT	-.9639	RRF	-.9996	RTF	.9564				
SGB	6068.0	R23	.1833	R13	-.9830				
SG1	6014.4	SG2	804.1	THA	139.96				

ORBIT DETERMINATION ACCURACY

ST	59.6	SR	74.5	SS	64.1				
CRT	-.7353	CRS	.9991	CST	-.7061				
LSA	108.8	MSA	37.3	SSA	.0				
EL1	89.3	EL2	33.7	ALF	126.52				

LAUNCH DATE MAY 5 1971 FLIGHT TIME 240.00 ARRIVAL DATE DEC 31 1971

DISTANCE 564.528

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.280	GAL	-1.92	AZL	80.06	HCA	180.86	SMA	185.01	ECC	.18741	INC	9.9403	V1	29.533
RP	218.69	LAP	-.15	LOP	44.72	VP	22.279	GAP	2.58	AZP	99.94	TAL	347.80	TAP	168.67	RCA	150.33	APO	219.68	V2	25.129
RC	177.690	GL	64.10	GP	-52.90	ZAL	104.07	ZAP	78.76	ETS	163.49	ZAE	102.75	ETE	198.21	ZAC	49.43	ETC	273.11	LVI	38.02

PLANETOCENTRIC CONIC

C3	38.326	VHL	6.191	DLA	52.01	RAL	313.90	RAD	6650.1	VEL	12.578	PTH	7.44	VHP	5.698	DPA	-73.13	RAP	326.97	ECC	1.6308

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.34	7 7 1	4660.77	-20.09	218.59	207.33	40.94	8 24 42	3660.8	-37.67	199.37
44.34	7 7 1	4660.77	-20.09	218.59	207.33	40.94	8 24 42	3660.8	-37.67	199.37
44.34	7 7 1	4660.77	-20.09	218.59	207.33	40.94	8 24 42	3660.8	-37.67	199.37
44.34	7 7 1	4660.77	-20.09	218.59	207.33	40.94	8 24 42	3660.8	-37.67	199.37
44.34	7 7 1	4660.77	-20.09	218.59	207.33	40.94	8 24 42	3660.8	-37.67	199.37
44.34	7 7 1	4660.77	-20.09	218.59	207.33	40.94	8 24 42	3660.8	-37.67	199.37
44.34	7 7 1	4660.77	-20.09	218.59	207.33	40.94	8 24 42	3660.8	-37.67	199.37

DIFFERENTIAL CORRECTIONS

TDE	4.9053	TRA	.4350	TC3	-1.8759	BAU	1.2186	SGT	5141.2	SGR	4671.2	SG3	341.4
RDE	4.2157	RRA	1.2120	RC3	-1.4619	FAU	.05447	RRT	.9622	RRF	.9985	RTF	.9467
FDE	3.4657	FRA	1.1536	FC3	-1.2304	BSP	12261	SGB	6946.4	R23	.2019	R13	.9793
BDE	6.4679	BRA	1.2877	BC3	2.3782	FSP	668	SG1	6881.1	SG2	950.1	THA	42.15

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	227.2	SR	197.0	SS	80.0						
CRT	.9954	CRS	-.9998	CST	-.9931						
LSA	310.8	MSA	15.5	SSA	.1						
EL1	300.4	EL2	14.3	ALF	40.91						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 2 1972

DISTANCE 568.671

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.286	GAL	-1.98	AZL	86.75	HCA	181.98	SMA	185.11	ECC	.18807	INC	3.2448	V1	29.533
RP	219.06	LAP	-.11	LOP	45.85	VP	22.242	GAP	2.43	AZP	93.25	TAL	347.43	TAP	169.41	RCA	150.30	APO	219.92	V2	25.089
RC	180.275	GL	30.59	GP	-32.48	ZAL	115.37	ZAP	71.13	ETS	166.45	ZAE	105.50	ETE	190.67	ZAC	69.92	ETC	271.98	LVI	20.27

PLANETOCENTRIC CONIC

C3	12.933	VHL	3.596	DLA	21.77	RAL	332.84	RAD	6639.5	VEL	11.533	PTH	6.58	VHP	3.675	DPA	-54.94	RAP	303.88	ECC	1.2128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 14 33	3477.86	-45.90	126.09	202.01	104.21	14 12 30	2477.9	-35.35	97.19
60.00	13 27 27	3443.46	-39.76	124.58	203.60	97.19	14 24 51	2443.5	-32.62	95.98
70.00	13 47 55	3383.21	-34.13	120.24	204.13	91.49	14 44 18	2383.2	-29.96	92.31
80.00	14 24 13	3269.38	-29.75	111.56	204.08	87.36	15 18 42	2269.4	-27.82	84.30
90.00	15 30 18	3055.98	-27.98	95.76	203.96	85.74	16 21 14	2056.0	-26.94	68.80
100.00	17 7 5	2743.85	-29.75	72.93	204.08	87.36	17 52 48	1743.8	-27.82	45.67
110.00	18 47 21	2430.03	-34.13	49.16	204.13	91.49	19 27 51	1430.0	-29.96	21.23

DIFFERENTIAL CORRECTIONS

TDE	1.8984	TRA	1.2390	TC3	-5.3350	BAU	1.0156	SGT	5328.2	SGR	3059.8	SG3	1049.5
RDE	1.0645	RRA	1.0684	RC3	-2.4585	FAU	.14526	RRT	.9698	RRF	.9998	RTF	.9664
FDE	4.1270	FRA	4.3384	FC3	-9.7236	BSP	9715	SGB	6144.3	R23	.1982	R13	.9801
BDE	2.1765	BRA	1.6360	BC3	5.8742	FSP	1788	SG1	6109.7	SG2	651.2	THA	29.48

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	154.7	SR	89.2	SS	110.3						
CRT	.9944	CRS	-.9999	CST	-.9928						
LSA	209.5	MSA	12.0	SSA	.1						
EL1	178.3	EL2	8.2	ALF	29.90						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 4 1972

DISTANCE 572.820

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.293	GAL	-2.05	AZL	88.60	HCA	183.11	SMA	185.22	ECC	.18876	INC	1.3926	V1	29.533
RP	219.43	LAP	-.08	LOP	46.98	VP	22.206	GAP	2.27	AZP	91.40	TAL	347.03	TAP	170.14	RCA	150.26	APO	220.18	V2	25.048
RC	182.671	GL	14.07	GP	-22.25	ZAL	119.04	ZAP	67.63	ETS	169.40	ZAE	105.56	ETE	186.99	ZAC	80.16	ETC	271.78	LVI	11.02

PLANETOCENTRIC CONIC

C3	10.587	VHL	3.254	DLA	6.66	RAL	339.76	RAD	6638.3	VEL	11.431	PTH	6.48	VHP	3.322	DPA	-45.09	RAP	299.48	ECC	1.1742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 43 6	3125.77	-35.93	98.46	195.11	123.58	15 35 12	2125.8	-20.03	77.71
60.00	15 15 33	3039.42	-31.52	93.75	198.18	116.53	16 6 13	2039.4	-18.24	71.54
70.00	15 59 50	2909.18	-27.57	85.20	200.18	111.01	16 48 19	1909.2	-16.57	62.14
80.00	17 0 50	2718.10	-24.70	71.81	201.29	107.33	17 46 8	1718.1	-15.33	48.34
90.00	18 19 5	2465.58	-23.63	53.60	201.64	106.01	19 0 11	1465.6	-14.86	30.00
100.00	19 43 42	2192.57	-24.70	33.18	201.29	107.33	20 20 15	1192.6	-15.33	9.70
110.00	20 59 16	1956.00	-27.57	14.11	200.18	111.01	21 31 52	956.0	-16.57	351.06

DIFFERENTIAL CORRECTIONS

TDE	1.1963	TRA	1.5434	TC3	-6.6065	BAU	.9776	SGT	5514.3	SGR	2122.8	SG3	1323.5
RDE	.5100	RRA	.7935	RC3	-2.0158	FAU	.17776	RRT	.9722	RRF	.9997	RTF	.9706
FDE	3.5049	FRA	5.8363	FC	-14.5363	BSP	9384	SGB	5908.8	R23	.2107	R13	.9773
BDE	1.3004	BRA	1.7354	BC3	6.9072	FSP	2258	SG1	5890.4	SG2	465.1	THA	20.65

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	113.2	SR	49.7	SS	99.2						
CRT	.9976	CRS	-.9996	CST	-.9934						
LSA	158.4	MSA	7.3	SSA	.3						
EL1	123.6	EL2	3.2	ALF	23.64						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 6 1972

DISTANCE 576.967

HELIOCENTRIC CONIC — EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.299	GAL	-2.12	AZL	89.46	HCA	184.23	SMA	185.34	ECC	.18948	INC	.5211	V1	29.533
RP	219.80	LAP	-.04	LOP	48.10	VP	22.170	GAP	2.12	AZP	90.54	TAL	346.63	TAP	170.86	RCA	150.22	APO	220.45	V2	25.007
RC	185.475	GL	5.46	GP	-16.67	ZAL	120.37	ZAP	65.42	ETS	171.25	ZAE	104.70	ETE	184.93	ZAC	85.76	ETC	271.71	LVI	5.96

PLANETOCENTRIC CONIC

C3	10.256	VHL	3.203	DLA	-1.11	RAL	343.53	RAD	6638.2	VEL	11.417	PTH	6.47	VHP	3.219	DPA	-39.66	RAP	297.65	ECC	1.1688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 26 34	2964.60	-29.39	88.65	195.52	129.26	16 15 58	1964.6	-12.23	70.34
60.00	16 7 19	2856.20	-25.36	82.17	198.81	122.44	16 54 55	1856.2	-10.56	62.15
70.00	17 0 51	2698.75	-21.70	71.68	201.08	117.04	17 45 50	1698.7	-9.01	50.53
80.00	18 10 20	2481.22	-19.04	56.51	202.42	113.44	18 51 41	1481.2	-7.86	34.72
90.00	19 32 17	2216.79	-18.05	37.51	202.86	112.15	20 9 13	1216.8	-7.43	15.52
100.00	20 53 12	1955.69	-19.04	17.88	202.42	113.44	21 25 47	955.7	-7.86	356.09
110.00	22 0 18	1745.57	-21.70	.60	201.08	117.04	22 29 23	745.6	-9.01	339.45

DIFFERENTIAL CORRECTIONS

TDE	.9273	TRA	1.7453	TC3	-6.9513	BAU	.9756	SGT	5685.9	SGR	1577.4	SG3	1420.0
RDE	.3291	RRA	.6112	RC3	-1.5180	FAU	.18745	RRT	.9724	RRF	.9993	RTF	.9721
FDE	3.1193	FRA	6.5231	FC	-15.8227	BSP	9550	SGB	5900.6	R23	.2158	R13	.9757
BDE	.9840	BRA	1.8492	BC3	7.1152	FSP	2462	SG1	5889.9	SG2	355.2	THA	15.15

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	95.5	SR	33.7	SS	91.7						
CRT	.9996	CRS	-.9987	CST	-.9986						
LSA	136.6	MSA	3.5	SSA	.8						
EL1	101.3	EL2	.9	ALF	19.45						

LAUNCH DATE MAY 5 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 8 1972

HELIOCENTRIC CONIC DISTANCE 581.111 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.306	GAL	-2.19	AZL	89.96	HCA	185.35	SMA	185.46	ECC	.19023	INC	.0000	V1	29.533
RP	220.18	LAP	-.00	LOP	49.22	VP	22.134	GAP	1.97	AZP	90.04	TAL	346.22	TAP	171.57	RCA	150.18	APO	220.73	V2	24.966
RC	188.089	GL	.40	GP	-13.23	ZAL	121.09	ZAP	63.70	ETS	172.45	ZAE	103.55	ETE	183.66	ZAC	89.20	ETC	271.66	LVI	2.85

PLANETOCENTRIC CONIC

C3	10.336	VHL	3.215	DLA	-5.56	RAL	345.99	RAD	6638.2	VEL	11.421	PTH	6.47	VHP	3.187	DPA	-36.31	RAP	296.62	ECC	1.1701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 43	2877.47	-25.54	83.92	196.99	131.61	16 40 40	1877.5	-7.91	66.57
60.00	16 38 14	2736.42	-21.59	76.42	200.39	124.80	17 24 10	1756.4	-6.24	57.27
70.00	17 37 5	2583.38	-17.98	64.81	202.81	119.54	18 20 8	1583.4	-4.68	44.42
80.00	18 51 24	2350.69	-15.32	48.61	204.27	115.94	19 30 35	1350.7	-3.51	27.48
90.00	20 15 28	2079.44	-14.33	29.15	204.75	114.64	20 50 8	1079.4	-3.07	7.78
100.00	21 34 16	1825.17	-15.32	9.97	204.27	115.94	22 4 41	825.2	-3.51	348.65
110.00	22 36 31	1630.20	-17.98	353.73	202.81	119.54	23 3 41	630.2	-4.68	333.33

DIFFERENTIAL CORRECTIONS

TDE	.8094	TRA	1.9148	TC3	-7.0153	BAU	.9825												
RDE	.2502	RRA	.4883	RC3	-1.1579	FAU	.18831												
FDE	2.9128	FRA	6.8790	FC	-15.7732	BSP	9947												
BDE	.8472	BRA	1.9761	BC3	7.1102	FSP	2565												

MID-COURSE EXECUTION ACCURACY

SGT	5846.6	SGR	1232.0	SG3	1449.7						
RRT	.9718	RRF	.9983	RTF	.9732						
SGB	5975.0	R23	.2135	R13	.9753						
SG1	5968.2	SG2	284.7	THA	11.60						

ORBIT DETERMINATION ACCURACY

ST	88.8	SR	25.9	SS	87.6		
CRT	.9956	CRS	-.9962	CST	-.9996		
LSA	127.5	MSA	2.3	SSA	1.7		
EL1	92.5	EL2	2.3	ALF	16.19		

LAUNCH DATE MAY 5 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 10 1972

HELIOCENTRIC CONIC DISTANCE 585.252 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.314	GAL	-2.26	AZL	90.29	HCA	186.47	SMA	185.58	ECC	.19101	INC	.2812	V1	29.533
RP	220.55	LAP	.03	LOP	50.33	VP	22.098	GAP	1.82	AZP	89.71	TAL	345.80	TAP	172.27	RCA	150.13	APO	221.02	V2	24.925
RC	190.711	GL	-2.86	GP	-10.92	ZAL	121.63	ZAP	62.21	ETS	173.29	ZAE	102.28	ETE	182.82	ZAC	91.51	ETC	271.63	LVI	.76

PLANETOCENTRIC CONIC

C3	10.531	VHL	3.245	DLA	-8.33	RAL	347.80	RAD	6638.3	VEL	11.429	PTH	6.48	VHP	3.182	DPA	-34.06	RAP	295.96	ECC	1.1733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 10 17	2825.65	-23.17	81.27	198.53	132.79	16 57 23	1825.6	-5.32	64.38
60.00	16 58 51	2696.48	-19.22	73.13	202.02	126.13	17 43 48	1696.5	-3.61	54.38
70.00	18 1 9	2513.30	-15.58	60.80	204.54	120.79	18 43 3	1513.3	-2.01	40.75
80.00	19 18 41	2270.62	-12.89	43.91	206.08	117.17	19 56 31	1270.6	-.80	23.08
90.00	20 44 10	1994.81	-11.87	24.16	206.60	115.86	21 17 24	994.8	-.34	3.06
100.00	22 1 32	1745.09	-12.89	5.28	206.08	117.17	22 30 38	745.1	-.80	344.45
110.00	23 0 36	1560.12	-15.58	349.71	204.54	120.79	23 26 36	560.1	-2.01	329.66

DIFFERENTIAL CORRECTIONS

TDE	.7358	TRA	2.0460	TC3	-7.0801	BAU	1.0052												
RDE	.2063	RRA	.3974	RC3	-.9218	FAU	.18865												
FDE	2.7461	FRA	7.0267	FC	-15.5087	BSP	10147												
BDE	.7642	BRA	2.0842	BC3	7.1399	FSP	2561												

MID-COURSE EXECUTION ACCURACY

SGT	6011.0	SGR	996.8	SG3	1451.0						
RRT	.9699	RRF	.9964	RTF	.9740						
SGB	6093.1	R23	.2062	R13	.9754						
SG1	6088.4	SG2	239.5	THA	9.15						

ORBIT DETERMINATION ACCURACY

ST	85.2	SR	21.1	SS	84.5		
CRT	.9846	CRS	-.9914	CST	-.9987		
LSA	121.8	MSA	4.3	SSA	1.1		
EL1	87.7	EL2	3.6	ALF	13.73		

LAUNCH DATE MAY 5 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC DISTANCE 589.387 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.321	GAL	-2.34	AZL	90.52	HCA	187.58	SMA	185.70	ECC	.19181	INC	.5176	V1	29.533
RP	220.93	LAP	.07	LOP	51.45	VP	22.063	GAP	1.66	AZP	89.49	TAL	345.37	TAP	172.95	RCA	150.08	APO	221.33	V2	24.884
RC	193.341	GL	-5.10	GP	-9.27	ZAL	122.12	ZAP	60.86	ETS	173.91	ZAE	100.99	ETE	182.23	ZAC	93.17	ETC	271.61	LVI	-.73

PLANETOCENTRIC CONIC

C3	10.764	VHL	3.281	DLA	-10.17	RAL	349.24	RAD	6638.4	VEL	11.439	PTH	6.49	VHP	3.191	DPA	-32.45	RAP	295.52	ECC	1.1771

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 57	2793.21	-21.66	79.66	199.96	133.46	17 9 31	1793.2	-3.69	63.02
60.00	17 13 36	2658.51	-17.68	71.10	203.53	126.83	17 57 55	1658.5	-1.94	52.57
70.00	18 18 17	2468.34	-14.00	58.27	206.12	121.48	18 59 26	1468.3	-.29	38.40
80.00	19 38 3	2218.66	-11.25	40.92	207.72	117.84	20 15 2	1218.7	.96	20.23
90.00	21 4 32	1939.62	-10.21	20.95	208.27	116.52	21 36 52	939.6	1.44	359.98
100.00	22 20 55	1693.13	-11.25	2.29	207.72	117.84	22 49 8	693.1	.96	341.60
110.00	23 17 44	1515.16	-14.00	347.19	206.12	121.48	23 42 59	515.2	-.29	327.32

DIFFERENTIAL CORRECTIONS

TDE	.7039	TRA	2.1764	TC3	-7.0912	BAU	1.0261												
RDE	.1831	RRA	.3314	RC3	-.7447	FAU	.18553												
FDE	2.6676	FRA	7.1327	FC	-14.9222	BSP	10475												
BDE	.7273	BRA	2.2015	BC3	7.1302	FSP	2570												

MID-COURSE EXECUTION ACCURACY

SGT	6170.3	SGR	828.7	SG3	1439.9						
RRT	.9656	RRF	.9931	RTF	.9740						
SGB	6225.7	R23	.1981	R13	.9749						
SG1	6222.0	SG2	213.8	THA	7.40						

ORBIT DETERMINATION ACCURACY

ST	84.7	SR	18.3	SS	82.9		
CRT	.9677	CRS	-.9839	CST	-.9980		
LSA	119.8	MSA	6.0	SSA	1.0		
EL1	86.6	EL2	4.5	ALF	11.82		

LAUNCH DATE MAY 5 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 593.517 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.329	GAL	-2.42	AZL	90.69	HCA	188.69	SMA	185.83	ECC	.19265	INC	.6871	V1	29.533
RP	221.31	LAP	.10	LOP	52.56	VP	22.027	GAP	1.51	AZP	89.32	TAL	344.94	TAP	173.63	RCA	150.03	APO	221.63	V2	24.842
RC	195.978	GL	-6.72	GP	-8.04	ZAL	122.60	ZAP	59.59	ETS	174.38	ZAE	99.69	ETE	181.79	ZAC	94.40	ETC	271.60	LVI	-1.85

PLANETOCENTRIC CONIC

C3	11.010	VHL	3.318	DLA	-11.42	RAL	350.44	RAD	6638.6	VEL	11.450	PTH	6.50	VHP	3.207	DPA	-31.24	RAP	295.21	ECC	1.1812

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 32 34	2772.50	-20.69	78.66	201.27	133.85	17 18 46	1772.5	-2.65	62.15
60.00	17 24 41	2633.91	-16.67	69.80	204.90	127.24	18 8 35	1633.9	-.86	51.39
70.00	18 31 3	2438.78	-12.94	56.64	207.56	121.89	19 11 42	1438.8	.84	36.86
80.00	19 52 25	2184.05	-10.14	38.95	209.21	118.23	20 28 49	1184.1	2.13	18.33
90.00	21 19 39	1902.67	-9.08	18.83	209.78	116.90	21 51 21	902.7	2.63	357.91
100.00	22 35 17	1658.53	-10.14	.32	209.21	118.23	23 2 56	658.5	2.13	339.70
110.00	23 30 29	1485.60	-12.94	345.55	207.56	121.89	23 55 15	485.6	.84	325.78

DIFFERENTIAL CORRECTIONS

TDE	.6867	TRA	2.2947	TC3	-7.1187	BAU	1.0518												
RDE	.1693	RRA	.2793	RC3	-.6162	FAU	.18225												
FDE	2.6146	FRA	7.1798	FC	-14.3301	BSP	10727												
BDE	.7073	BRA	2.3116	BC3	7.1453	FSP	2554												

MID-COURSE EXECUTION ACCURACY

SGT	6329.7	SGR	703.3	SG3	1421.8						
RRT	.9585	RRF	.9876	RTF	.9736						
SGB	6368.6	R23	.1877	R13	.9742						
SG1	6365.5	SG2	199.4	THA	6.09						

ORBIT DETERMINATION ACCURACY

ST	85.1	SR	16.4	SS	81.8		
CRT	.9455	CRS	-.9733	CST	-.9946		
LSA	118.9	MSA	7.6	SSA	.9		
EL1	86.5	EL2	5.2	ALF	10.36		

LAUNCH DATE MAY 3 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC — DISTANCE 597.642 — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.337 GAL -2.49 AZL 90.82 HCA 189.79 SMA 185.97 ECC .19351 INC .8196 V1 29.533
RP 221.69 LAP .14 LOP 53.66 VP 21.992 GAP 1.36 AZP 89.19 TAL 344.51 TAP 174.30 RCA 149.98 APO 221.95 V2 24.801
RC 198.621 GL -7.92 GP -7.08 ZAL 123.09 ZAP 58.39 ETS 174.75 ZAE 98.40 ETE 181.46 ZAC 95.36 ETC 271.60 LVI -2.73

PLANETOCENTRIC CONIC

C3 11.263 VHL 3.356 DLA -12.30 RAL 351.49 RAD 6638.7 VEL 11.461 PTH 6.51 VHP 3.227 DPA -30.30 RAP 294.99 ECC 1.1854

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 8	2759.41	-20.07	78.03	202.49	134.09	17 26 7	1759.4	-2.00	61.60
60.00	17 33 17	2618.05	-16.02	68.97	206.16	127.49	18 16 55	1618.1	-.16	50.63
70.00	18 40 52	2419.35	-12.24	55.57	208.87	122.14	19 21 11	1419.4	1.58	35.84
80.00	20 3 25	2160.96	-9.40	37.64	210.56	118.47	20 39 26	1161.0	2.91	17.06
90.00	21 31 10	1877.84	-8.31	17.41	211.14	117.13	22 2 28	877.8	3.42	356.53
100.00	22 46 17	1635.43	-9.40	359.01	210.56	118.47	23 13 32	635.4	2.91	338.43
110.00	23 40 18	1466.17	-12.24	344.49	208.87	122.14	24 4 45	466.2	1.58	324.76

DIFFERENTIAL CORRECTIONS

TDE .6875 TRA 2.4151 TC3-7.1238 BAU 1.0754
RDE .1619 RRA .2377 RC3 -.5162 FAU .17779
FDE 2.5936 FRA 7.2118 FC-13.6667 BSP 11038
BDE .7063 BRA 2.4268 BC3 7.1425 FSP 2541

MID-COURSE EXECUTION ACCURACY

SGT 6484.6 SGR 607.4 SG3 1400.0
RRT .9480 RRF .9791 RTF .9730
SGB 6513.0 R23 .1754 R13 .9735
SG1 6510.1 SG2 192.5 THA 5.08

ORBIT DETERMINATION ACCURACY

ST 86.6 SR 15.2 SS 81.3
CRT .9204 CRS -.9602 CST -.9926
LSA 119.4 MSA 8.8 SSA .9
EL1 87.7 EL2 5.9 ALF 9.19

LAUNCH DATE MAY 5 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC — DISTANCE 601.765 — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.345 GAL -2.57 AZL 90.93 HCA 190.89 SMA 186.10 ECC .19439 INC .9243 V1 29.533
RP 222.07 LAP .17 LOP 54.76 VP 21.957 GAP 1.21 AZP 89.09 TAL 344.07 TAP 174.97 RCA 149.93 APO 222.28 V2 24.759
RC 201.270 GL -8.85 GP -6.31 ZAL 123.59 ZAP 57.24 ETS 175.06 ZAE 97.12 ETE 181.20 ZAC 96.13 ETC 271.61 LVI -3.44

PLANETOCENTRIC CONIC

C3 11.517 VHL 3.394 DLA -12.91 RAL 352.42 RAD 6638.8 VEL 11.472 PTH 6.52 VHP 3.250 DPA -29.54 RAP 294.86 ECC 1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 15	2751.54	-19.70	77.65	203.61	134.23	17 32 6	1751.5	-1.60	61.27
60.00	17 40 9	2608.20	-15.61	68.46	207.33	127.64	18 23 37	1608.2	.27	50.16
70.00	18 48 36	2406.93	-11.79	54.89	210.08	122.29	19 28 43	1406.9	2.06	35.20
80.00	20 12 0	2145.88	-8.91	36.79	211.80	118.62	20 47 46	1145.9	3.42	16.23
90.00	21 40 9	1861.50	-7.80	16.48	212.40	117.27	22 11 11	861.5	3.95	355.61
100.00	22 54 52	1620.35	-8.91	358.16	211.80	118.62	23 21 52	620.4	3.42	337.60
110.00	23 48 3	1453.75	-11.79	343.81	210.08	122.29	24 12 16	453.8	2.06	324.11

DIFFERENTIAL CORRECTIONS

TDE .6868 TRA 2.5230 TC3-7.1629 BAU 1.1051
RDE .1563 RRA .2014 RC3 -.4449 FAU .17563
FDE 2.5330 FRA 7.1732 FC-13.2014 BSP 11216
BDE .7043 BRA 2.5310 BC3 7.1767 FSP 2468

MID-COURSE EXECUTION ACCURACY

SGT 6639.1 SGR 531.5 SG3 1374.1
RRT .9348 RRF .9663 RTF .9737
SGB 6660.4 R23 .1559 R13 .9741
SG1 6657.7 SG2 188.3 THA 4.28

ORBIT DETERMINATION ACCURACY

ST 87.8 SR 14.2 SS 79.7
CRT .8912 CRS -.9430 CST -.9910
LSA 119.1 MSA 9.7 SSA .9
EL1 88.7 EL2 6.4 ALF 8.24

LAUNCH DATE MAY 5 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC — DISTANCE 605.881 — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.353 GAL -2.65 AZL 91.01 HCA 191.99 SMA 186.24 ECC .19530 INC 1.0109 V1 29.533
RP 222.46 LAP .21 LOP 55.86 VP 21.922 GAP 1.06 AZP 89.01 TAL 343.63 TAP 175.62 RCA 149.87 APO 222.62 V2 24.717
RC 203.922 GL -9.57 GP -5.69 ZAL 124.09 ZAP 56.14 ETS 175.31 ZAE 95.87 ETE 180.99 ZAC 96.75 ETC 271.62 LVI -4.03

PLANETOCENTRIC CONIC

C3 11.775 VHL 3.431 DLA -13.34 RAL 353.27 RAD 6638.9 VEL 11.483 PTH 6.53 VHP 3.275 DPA -28.92 RAP 294.79 ECC 1.1938

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 51 19	2747.44	-19.50	77.46	204.67	134.30	17 37 7	1747.4	-1.40	61.10
60.00	17 45 45	2602.71	-15.38	68.18	208.43	127.72	18 29 7	1602.7	.51	49.90
70.00	18 54 49	2399.63	-11.52	54.49	211.21	122.38	19 34 49	1399.6	2.33	34.81
80.00	20 18 50	2136.69	-8.61	36.28	212.96	118.70	20 54 26	1136.7	3.73	15.72
90.00	21 47 15	1851.40	-7.49	15.90	213.56	117.35	22 18 7	851.4	4.27	355.04
100.00	23 1 41	1611.16	-8.61	357.64	212.96	118.70	23 28 33	611.2	3.73	337.09
110.00	23 54 16	1446.45	-11.52	343.41	211.21	122.38	24 18 22	446.5	2.33	323.73

DIFFERENTIAL CORRECTIONS

TDE .7014 TRA 2.6390 TC3-7.1696 BAU 1.1303
RDE .1546 RRA .1718 RC3 -.3841 FAU .17154
FDE 2.5162 FRA 7.1565 FC-12.6119 BSP 11501
BDE .7182 BRA 2.6446 BC3 7.1798 FSP 2429

MID-COURSE EXECUTION ACCURACY

SGT 6789.0 SGR 472.2 SG3 1347.9
RRT .9153 RRF .9483 RTF .9737
SGB 6805.4 R23 .1401 R13 .9739
SG1 6802.8 SG2 189.9 THA 3.65

ORBIT DETERMINATION ACCURACY

ST 90.0 SR 13.6 SS 79.1
CRT .8623 CRS -.9249 CST -.9897
LSA 120.2 MSA 10.5 SSA .9
EL1 90.8 EL2 6.9 ALF 7.49

LAUNCH DATE MAY 5 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC — DISTANCE 609.993 — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.362 GAL -2.74 AZL 91.08 HCA 193.09 SMA 186.39 ECC .19623 INC 1.0827 V1 29.533
RP 222.84 LAP .25 LOP 56.95 VP 21.887 GAP .91 AZP 88.94 TAL 343.18 TAP 176.26 RCA 149.81 APO 222.96 V2 24.675
RC 206.578 GL -10.15 GP -5.17 ZAL 124.61 ZAP 55.08 ETS 175.52 ZAE 94.64 ETE 180.82 ZAC 97.27 ETC 271.64 LVI -4.54

PLANETOCENTRIC CONIC

C3 12.036 VHL 3.469 DLA -13.63 RAL 354.06 RAD 6639.1 VEL 11.494 PTH 6.54 VHP 3.302 DPA -28.40 RAP 294.77 ECC 1.1981

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 36	2746.15	-19.44	77.40	205.68	134.32	17 41 23	1746.1	-1.33	61.05
60.00	17 50 23	2600.47	-15.29	68.06	209.47	127.76	18 33 44	1600.5	.61	49.79
70.00	18 59 53	2396.14	-11.39	54.30	212.28	122.42	19 39 49	1396.1	2.47	34.63
80.00	20 24 19	2131.90	-8.45	36.01	214.04	118.74	20 59 51	1131.9	3.89	15.46
90.00	21 52 56	1845.98	-7.32	15.59	214.65	117.39	22 23 42	846.0	4.44	354.74
100.00	23 7 10	1606.37	-8.45	357.37	214.04	118.74	23 33 57	606.4	3.89	336.83
110.00	0 3 16	1442.96	-11.39	343.22	212.28	122.42	0 27 19	443.0	2.47	323.55

DIFFERENTIAL CORRECTIONS

TDE .7212 TRA 2.7539 TC3-7.1773 BAU 1.1561
RDE .1548 RRA .1460 RC3 -.3354 FAU .16754
FDE 2.5070 FRA 7.1277 FC-12.0513 BSP 11768
BDE .7376 BRA 2.7578 BC3 7.1851 FSP 2386

MID-COURSE EXECUTION ACCURACY

SGT 6936.9 SGR 425.6 SG3 1321.0
RRT .8891 RRF .9237 RTF .9736
SGB 6949.9 R23 .1254 R13 .9738
SG1 6947.2 SG2 194.5 THA 3.12

ORBIT DETERMINATION ACCURACY

ST 92.4 SR 13.3 SS 78.7
CRT .8334 CRS -.9060 CST -.9886
LSA 121.5 MSA 11.2 SSA .9
EL1 93.0 EL2 7.3 ALF 6.90

LAUNCH DATE MAY 5 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 24 1972

HELIOCENTRIC CONIC DISTANCE 614.099 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.370	GAL	-2.82	AZL	91.14	HCA	194.18	SMA	186.53	ECC	.19718	INC	1.1428	V1	29.533
RP	223.23	LAP	.28	LOP	58.04	VP	21.853	GAP	.76	AZP	88.89	TAL	342.73	TAP	176.90	RCA	149.75	APO	223.31	V2	24.633
RC	209.236	GL	-10.60	GP	-4.73	ZAL	125.13	ZAP	54.07	ETS	175.71	ZAE	93.44	ETE	180.69	ZAC	97.70	ETC	271.66	LVI	-4.98

PLANETOCENTRIC CONIC

C3	12.300	VHL	3.507	DLA	-13.81	RAL	354.80	RAD	6639.2	VEL	11.505	PTH	6.55	VHP	3.329	DPA	-27.95	RAP	294.80	ECC	1.2024

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 17	2746.99	-19.48	77.44	206.64	134.31	17 45 4	1747.0	-1.37	61.08
60.00	17 54 18	2600.70	-15.29	68.07	210.46	127.75	18 37 38	1600.7	.60	49.80
70.00	19 4 4	2395.58	-11.37	54.27	213.29	122.42	19 44 0	1395.6	2.49	34.60
80.00	20 28 46	2130.49	-8.40	35.93	215.07	118.76	21 4 16	1130.5	3.94	15.38
90.00	21 57 30	1844.18	-7.26	15.49	215.69	117.41	22 28 14	844.2	4.50	354.64
100.00	23 11 37	1604.97	-8.40	357.30	215.07	118.76	23 38 22	605.0	3.94	336.75
110.00	0 7 26	1442.40	-11.37	343.19	213.29	122.42	0 31 29	442.4	2.49	323.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7423	TRA	2.8671	TC3	-7.1877	BAU	1.1830	SGT	7082.0	SGR	388.8	SG3	1293.3	ST	94.7	SR	13.1	SS	78.1
RDE	.1562	RRA	.1233	RC3	-.2957	FAU	.16366	RRT	.8555	RRF	.8915	RTF	.9734	CRT	.8047	CRS	-.8863	CST	-.9878
FDE	2.4938	FRA	7.0877	FC3	-11.5189	BSP	12005	SGB	7092.7	R23	.1122	R13	.9736	LSA	122.9	MSA	11.8	SSA	1.0
BDE	.7586	BRA	2.8697	BC3	7.1938	FSP	2335	SG1	7089.8	SG2	201.1	THA	2.69	EL1	95.3	EL2	7.8	ALF	6.41

LAUNCH DATE MAY 5 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 618.200 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.379	GAL	-2.91	AZL	91.20	HCA	195.26	SMA	186.68	ECC	.19816	INC	1.1949	V1	29.533
RP	223.62	LAP	.31	LOP	59.13	VP	21.818	GAP	.61	AZP	88.85	TAL	342.27	TAP	177.53	RCA	149.69	APO	223.67	V2	24.592
RC	211.896	GL	-10.97	GP	-4.35	ZAL	125.65	ZAP	53.09	ETS	175.87	ZAE	92.26	ETE	180.57	ZAC	98.07	ETC	271.70	LVI	-5.37

PLANETOCENTRIC CONIC

C3	12.568	VHL	3.545	DLA	-13.92	RAL	355.50	RAD	6639.3	VEL	11.517	PTH	6.56	VHP	3.358	DPA	-27.56	RAP	294.87	ECC	1.2068

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 29	2749.50	-19.60	77.56	207.58	134.27	17 48 19	1749.5	-1.50	61.19
60.00	17 57 37	2602.88	-15.39	68.19	211.42	127.72	18 41 0	1602.9	.51	49.91
70.00	19 7 33	2397.31	-11.44	54.36	214.27	122.40	19 47 30	1397.3	2.42	34.69
80.00	20 32 23	2131.76	-8.45	36.00	216.06	118.74	21 7 55	1131.8	3.89	15.45
90.00	22 1 12	1845.22	-7.29	15.55	216.68	117.40	22 31 57	845.2	4.47	354.70
100.00	23 15 15	1606.23	-8.45	357.37	216.06	118.74	23 42 1	606.2	3.89	336.82
110.00	0 10 55	1444.13	-11.44	343.28	214.27	122.40	0 34 59	444.1	2.42	323.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7700	TRA	2.9829	TC3	-7.1894	BAU	1.2088	SGT	7225.0	SGR	360.7	SG3	1265.7	ST	97.4	SR	13.1	SS	77.7
RDE	.1589	RRA	.1031	RC3	-.2626	FAU	.15958	RRT	.8139	RRF	.8514	RTF	.9732	CRT	.7785	CRS	-.8675	CST	-.9872
FDE	2.4919	FRA	7.0464	FC3	-10.9925	BSP	12271	SGB	7234.0	R23	.1009	R13	.9734	LSA	124.6	MSA	12.3	SSA	1.0
BDE	.7862	BRA	2.9847	BC3	7.1942	FSP	2290	SG1	7231.0	SG2	209.4	THA	2.33	EL1	97.9	EL2	8.2	ALF	6.02

LAUNCH DATE MAY 5 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 622.295 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.388	GAL	-2.99	AZL	91.24	HCA	196.34	SMA	186.83	ECC	.19916	INC	1.2400	V1	29.533
RP	224.01	LAP	.35	LOP	60.21	VP	21.784	GAP	.46	AZP	88.81	TAL	341.81	TAP	178.16	RCA	149.62	APO	224.04	V2	24.550
RC	214.558	GL	-11.27	GP	-4.03	ZAL	126.19	ZAP	52.14	ETS	176.01	ZAE	91.10	ETE	180.48	ZAC	98.39	ETC	271.74	LVI	-5.73

PLANETOCENTRIC CONIC

C3	12.842	VHL	3.584	DLA	-13.95	RAL	356.17	RAD	6639.5	VEL	11.529	PTH	6.58	VHP	3.387	DPA	-27.22	RAP	294.98	ECC	1.2113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 18	2753.35	-19.78	77.74	208.48	134.20	17 51 12	1753.4	-1.69	61.35
60.00	18 0 29	2606.60	-15.54	68.38	212.34	127.66	18 43 56	1606.6	.34	50.09
70.00	19 10 28	2400.88	-11.57	54.56	215.21	122.36	19 50 29	1400.9	2.29	34.88
80.00	20 35 21	2135.16	-8.56	36.19	217.01	118.71	21 10 57	1135.2	3.78	15.64
90.00	22 4 12	1848.54	-7.40	15.74	217.63	117.37	22 35 1	848.5	4.36	354.88
100.00	23 18 13	1609.63	-8.56	357.56	217.01	118.71	23 45 3	609.6	3.78	337.01
110.00	0 13 50	1447.70	-11.57	343.48	215.21	122.36	0 37 58	447.7	2.29	323.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8002	TRA	3.0999	TC3	-7.1873	BAU	1.2346	SGT	7365.7	SGR	339.7	SG3	1238.3	ST	100.1	SR	13.2	SS	77.3
RDE	.1625	RRA	.0849	RC3	-.2348	FAU	.15544	RRT	.7648	RRF	.8037	RTF	.9730	CRT	.7542	CRS	-.8496	CST	-.9867
FDE	2.4911	FRA	7.0036	FC3	-10.4792	BSP	12529	SGB	7373.5	R23	.0914	R13	.9731	LSA	126.5	MSA	12.7	SSA	1.0
BDE	.8165	BRA	3.1011	BC3	7.1912	FSP	2246	SG1	7370.3	SG2	218.7	THA	2.02	EL1	100.6	EL2	8.6	ALF	5.70

LAUNCH DATE MAY 5 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 626.385 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.397	GAL	-3.08	AZL	91.28	HCA	197.42	SMA	186.98	ECC	.20018	INC	1.2792	V1	29.533
RP	224.40	LAP	.38	LOP	61.29	VP	21.750	GAP	.31	AZP	88.78	TAL	341.35	TAP	178.77	RCA	149.55	APO	224.41	V2	24.508
RC	217.222	GL	-11.51	GP	-3.75	ZAL	126.72	ZAP	51.22	ETS	176.14	ZAE	89.96	ETE	180.39	ZAC	98.66	ETC	271.78	LVI	-6.05

PLANETOCENTRIC CONIC

C3	13.120	VHL	3.622	DLA	-13.94	RAL	356.81	RAD	6639.6	VEL	11.541	PTH	6.59	VHP	3.417	DPA	-26.91	RAP	295.12	ECC	1.2159

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 49	2758.29	-20.02	77.97	209.37	134.11	17 53 47	1758.3	-1.94	61.55
60.00	18 2 58	2611.59	-15.75	68.64	213.25	127.59	18 46 30	1611.6	.12	50.32
70.00	19 12 56	2405.94	-11.75	54.83	216.12	122.30	19 53 2	1405.9	2.09	35.14
80.00	20 37 48	2140.28	-8.73	36.48	217.93	118.67	21 13 28	1140.3	3.61	15.92
90.00	22 6 38	1853.70	-7.56	16.03	218.56	117.33	22 37 32	853.7	4.20	355.17
100.00	23 20 40	1614.75	-8.72	357.85	217.93	118.67	23 47 35	614.8	3.61	337.29
110.00	0 16 18	1452.75	-11.75	343.75	216.12	122.30	0 40 31	452.8	2.09	324.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8324	TRA	3.2171	TC3	-7.1839	BAU	1.2606	SGT	7504.0	SGR	324.7	SG3	1210.9	ST	102.9	SR	13.3	SS	76.9
RDE	.1667	RRA	.0683	RC3	-.2115	FAU	.15135	RRT	.7094	RRF	.7494	RTF	.9726	CRT	.7322	CRS	-.8330	CST	-.9864
FDE	2.4911	FRA	6.9570	FC3	-9.9868	BSP	12779	SGB	7511.0	R23	.0834	R13	.9727	LSA	128.4	MSA	13.2	SSA	1.0
BDE	.8489	BRA	3.2178	BC3	7.1870	FSP	2202	SG1	7507.5	SG2	228.7	THA	1.76	EL1	103.3	EL2	9.0	ALF	5.45

LAUNCH DATE MAY 5 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 1 1972

DISTANCE 630.469

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.406 GAL -3.17 AZL 91.31 HCA 198.50 SMA 187.13 ECC .20123 INC 1.3143 V1 29.933
RP 224.79 LAP .42 LOP 62.36 VP 21.717 GAP .16 AZP 88.75 TAL 340.88 TAP 179.38 RCA 149.48 APO 224.79 V2 24.466
RC 219.886 GL -11.70 GP -3.50 ZAL 127.26 ZAP 50.34 ETS 176.26 ZAE 88.65 ETE 180.32 ZAC 98.90 ETC 271.83 LVI -6.36

PLANETOCENTRIC CONIC

C3 13.404 VHL 3.661 DLA -13.88 RAL 357.43 RAD 6639.8 VEL 11.553 PTH 6.60 VHP 3.448 DPA -26.64 RAP 295.30 ECC 1.2208

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 4	2764.12	-20.29	78.25	210.24	134.01	17 56 8	1764.1	-2.23	61.80
60.00	18 5 9	2617.61	-16.00	68.95	214.13	127.50	18 48 47	1617.6	-.14	50.61
70.00	19 15 1	2412.21	-11.98	55.18	217.01	122.23	19 55 13	1412.2	1.85	35.47
80.00	20 39 48	2146.82	-8.94	36.85	218.83	118.61	21 15 35	1146.8	3.39	16.28
90.00	22 8 36	1860.36	-7.77	16.41	219.46	117.28	22 39 36	860.4	3.98	355.55
100.00	23 22 40	1621.29	-8.94	358.21	218.83	118.61	23 49 41	621.3	3.39	337.65
110.00	0 18 23	1459.03	-11.98	344.09	217.01	122.23	0 42 42	459.0	1.85	324.39

DIFFERENTIAL CORRECTIONS

TDE .8687 TRA 3.3373 TC3-7.1735 BAU 1.2860
RDE .1716 RRA .0531 RC3 -.1917 FAU .14722
FDE 2.4947 FRA 6.9097 FC3-9.5086 BSP 13043
BDE .8855 BRA 3.3377 BC3 7.1760 FSP 2159

MID-COURSE EXECUTION ACCURACY

SGT 7640.7 SGR 314.9 SG3 1184.0
RRT .6495 RRF .6903 RTF .9723
SGB 7647.1 R23 .0766 R13 .9723
SG1 7643.4 SG2 239.3 THA 1.53

ORBIT DETERMINATION ACCURACY

ST 105.8 SR 13.5 SS 76.6
CRT .7132 CRS -.6180 CST -.9862
LSA 130.6 MSA 13.5 SSA 1.0
EL1 106.2 EL2 9.4 ALF 5.24

LAUNCH DATE MAY 5 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 3 1972

DISTANCE 634.569

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.415 GAL -3.26 AZL 91.35 HCA 199.57 SMA 187.29 ECC .20229 INC 1.3453 V1 29.533
RP 225.18 LAP .45 LOP 63.43 VP 21.683 GAP .00 AZP 88.73 TAL 340.42 TAP 179.98 RCA 149.40 APO 225.18 V2 24.424
RC 222.551 GL -11.85 GP -3.28 ZAL 127.80 ZAP 49.48 ETS 176.36 ZAE 87.76 ETE 180.26 ZAC 99.11 ETC 271.89 LVI -6.65

PLANETOCENTRIC CONIC

C3 13.695 VHL 3.701 DLA -13.79 RAL 358.03 RAD 6639.9 VEL 11.565 PTH 6.61 VHP 3.479 DPA -26.39 RAP 295.50 ECC 1.2254

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 5	2770.69	-20.61	78.57	211.09	133.89	17 58 16	1770.7	-2.56	62.07
60.00	18 7 4	2624.49	-16.28	69.31	215.00	127.39	18 50 48	1624.5	-.45	50.94
70.00	19 16 48	2419.49	-12.24	55.58	217.89	122.14	19 57 7	1419.5	1.58	35.85
80.00	20 41 27	2154.53	-9.19	37.28	219.71	118.53	21 17 21	1154.5	3.13	16.70
90.00	22 10 11	1868.28	-8.01	16.86	220.34	117.21	22 41 19	868.3	3.73	355.99
100.00	23 24 19	1629.00	-9.19	358.65	219.71	118.53	23 51 28	629.0	3.13	338.07
110.00	0 20 10	1466.31	-12.24	344.49	217.89	122.14	0 44 36	466.3	1.58	324.77

DIFFERENTIAL CORRECTIONS

TDE .9056 TRA 3.4575 TC3-7.1620 BAU 1.3117
RDE .1770 RRA .0389 RC3 -.1748 FAU .14311
FDE 2.4971 FRA 6.8597 FC3-9.0468 BSP 13296
BDE .9228 BRA 3.4578 BC3 7.1641 FSP 2117

MID-COURSE EXECUTION ACCURACY

SGT 7774.7 SGR 309.3 SG3 1157.1
RRT .5872 RRF .6286 RTF .9718
SGB 7780.9 R23 .0709 R13 .9719
SG1 7776.8 SG2 250.3 THA 1.34

ORBIT DETERMINATION ACCURACY

ST 108.7 SR 13.7 SS 76.3
CRT .6960 CRS -.8044 CST -.9861
LSA 132.8 MSA 13.9 SSA 1.1
EL1 109.1 EL2 9.8 ALF 5.07

LAUNCH DATE MAY 5 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 5 1972

DISTANCE 638.620

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.424 GAL -3.35 AZL 91.37 HCA 200.64 SMA 187.45 ECC .20338 INC 1.3732 V1 29.533
RP 225.57 LAP .48 LOP 64.50 VP 21.650 GAP -.15 AZP 88.71 TAL 339.95 TAP 180.58 RCA 149.32 APO 225.57 V2 24.382
RC 225.217 GL -11.97 GP -3.09 ZAL 128.34 ZAP 48.65 ETS 176.46 ZAE 86.69 ETE 180.21 ZAC 99.29 ETC 271.95 LVI -6.92

PLANETOCENTRIC CONIC

C3 13.992 VHL 3.741 DLA -13.66 RAL 358.62 RAD 6640.0 VEL 11.578 PTH 6.62 VHP 3.510 DPA -26.15 RAP 295.74 ECC 1.2303

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 57	2777.88	-20.94	78.92	211.93	133.75	18 0 14	1777.9	-2.92	62.37
60.00	18 8 46	2632.09	-16.60	69.70	215.85	127.27	18 52 38	1632.1	-.78	51.30
70.00	19 18 19	2427.62	-12.54	56.02	218.75	122.03	19 58 47	1427.6	1.27	36.28
80.00	20 42 47	2163.21	-9.47	37.77	220.57	118.45	21 18 51	1163.2	2.83	17.18
90.00	22 11 26	1877.22	-8.29	17.37	221.20	117.13	22 42 43	877.2	3.44	356.49
100.00	23 25 39	1637.68	-9.47	359.14	220.57	118.45	23 52 57	637.7	2.83	338.55
110.00	0 21 41	1474.43	-12.54	344.94	218.75	122.03	0 46 16	474.4	1.27	325.19

DIFFERENTIAL CORRECTIONS

TDE .9443 TRA 3.5784 TC3-7.1494 BAU 1.3377
RDE .1827 RRA .0256 RC3 -.1607 FAU .13927
FDE 2.4973 FRA 6.8041 FC3-8.6167 BSP 13533
BDE .9618 BRA 3.5785 BC3 7.1512 FSP 2070

MID-COURSE EXECUTION ACCURACY

SGT 7906.8 SGR 307.2 SG3 1130.6
RRT .5250 RRF .5667 RTF .9715
SGB 7912.8 R23 .0659 R13 .9715
SG1 7908.5 SG2 261.4 THA 1.17

ORBIT DETERMINATION ACCURACY

ST 111.6 SR 14.0 SS 75.8
CRT .6811 CRS -.7922 CST -.9860
LSA 134.9 MSA 14.2 SSA 1.1
EL1 111.0 EL2 10.2 ALF 4.93

LAUNCH DATE MAY 5 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 7 1972

DISTANCE 642.687

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.87 LAL .00 LOL 223.87 VL 32.433 GAL -3.44 AZL 91.40 HCA 201.70 SMA 187.61 ECC .20449 INC 1.3983 V1 29.533
RP 225.96 LAP .52 LOP 65.56 VP 21.617 GAP -.30 AZP 88.70 TAL 339.47 TAP 181.17 RCA 149.24 APO 225.97 V2 24.340
RC 227.883 GL -12.06 GP -2.91 ZAL 128.88 ZAP 47.65 ETS 176.55 ZAE 85.65 ETE 180.17 ZAC 99.45 ETC 272.02 LVI -7.18

PLANETOCENTRIC CONIC

C3 14.297 VHL 3.781 DLA -13.52 RAL 359.19 RAD 6640.2 VEL 11.591 PTH 6.63 VHP 3.541 DPA -25.94 RAP 296.00 ECC 1.2353

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 38	2785.61	-21.31	79.29	212.76	133.61	18 2 4	1785.6	-3.31	62.70
60.00	18 10 17	2640.30	-16.93	70.14	216.70	127.13	18 54 17	1640.3	-1.14	51.70
70.00	19 19 37	2436.45	-12.85	56.51	219.60	121.92	20 0 14	1436.5	.93	36.74
80.00	20 43 53	2172.71	-9.78	38.31	221.42	118.35	21 20 5	1172.7	2.51	17.70
90.00	22 12 26	1887.04	-8.60	17.93	222.05	117.05	22 43 53	887.0	3.13	357.04
100.00	23 26 45	1647.18	-9.78	359.68	221.42	118.35	23 54 12	647.2	2.51	339.07
110.00	0 22 59	1483.27	-12.85	345.43	219.60	121.92	0 47 43	483.3	.93	325.65

DIFFERENTIAL CORRECTIONS

TDE .9841 TRA 3.7009 TC3-7.1336 BAU 1.3638
RDE .1889 RRA .0132 RC3 -.1485 FAU .13538
FDE 2.4978 FRA 6.7496 FC3-8.1979 BSP 13762
BDE 1.0021 BRA 3.7010 BC3 7.1352 FSP 2025

MID-COURSE EXECUTION ACCURACY

SGT 8037.0 SGR 308.1 SG3 1104.5
RRT .4647 RRF .5065 RTF .9710
SGB 8042.9 R23 .0618 R13 .9710
SG1 8038.3 SG2 272.8 THA 1.02

ORBIT DETERMINATION ACCURACY

ST 114.5 SR 14.3 SS 75.4
CRT .6681 CRS -.7815 CST -.9860
LSA 137.1 MSA 14.6 SSA 1.1
EL1 114.9 EL2 10.6 ALF 4.82

LAUNCH DATE MAY 5 1971 FLIGHT TIME 260.00 ARRIVAL DATE FEB 9 1972

HELIOCENTRIC CONIC DISTANCE 646.748 EARTH TO MARS

RL	150.87	LAL	.00	LOL	223.87	VL	32.443	GAL	-3.54	AZL	91.42	HCA	202.76	SMA	187.77	ECC	.20562	INC	1.4213	V1	29.533
RP	226.35	LAP	.55	LOP	66.62	VP	21.584	GAP	-.45	AZP	88.69	TAL	338.99	TAP	181.75	RCA	149.16	APO	226.38	V2	24.299
RC	230.548	GL	-12.13	GP	-2.75	ZAL	129.42	ZAP	47.07	ETS	176.63	ZAE	84.62	ETE	180.13	ZAC	99.60	ETC	272.09	LVI	-7.43

PLANETOCENTRIC CONIC

C3	14.609	VHL	3.822	DLA	-13.35	RAL	359.75	RAD	6640.3	VEL	11.604	PTH	6.65	VHP	3.573	DPA	-25.74	RAP	296.29	ECC	1.2404

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 12	2793.79	-21.69	79.69	213.59	133.45	18 3 46	1793.8	-3.72	63.04
60.00	18 11 38	2649.02	-17.29	70.60	217.53	126.99	18 55 47	1649.0	-1.53	52.11
70.00	19 20 44	2445.89	-13.19	57.03	220.44	121.79	20 1 30	1445.9	.57	37.23
80.00	20 44 45	2182.90	-10.11	38.89	222.26	118.24	21 21 8	1182.9	2.17	18.26
90.00	22 13 12	1897.59	-8.92	18.54	222.89	116.95	22 44 49	897.6	2.79	357.63
100.00	23 27 37	1657.37	-10.11	.25	222.26	118.24	23 55 15	657.4	2.17	339.63
110.00	0 24 6	1492.71	-13.19	345.95	220.44	121.79	0 48 59	492.7	.57	326.18

DIFFERENTIAL CORRECTIONS

TDE	1.0276	TRA	3.8263	TC3	-7.1095	BAU	1.3888
RDE	.1954	RRA	.0014	RC3	-.1379	FAU	.13136
FDE	2.5008	FRA	8.6943	FC3	-7.7847	BSP	14018
BDE	1.0460	BRA	3.8263	BC3	7.1108	FSP	1984

MID-COURSE EXECUTION ACCURACY

SGT	8164.7	SGR	311.3	SG3	1078.6		
RRT	.4077	RRF	.4495	RTF	.9705		
SGB	8170.6	R23	.0584	R13	.9705		
SG1	8165.7	SG2	284.3	THA	.69		

ORBIT DETERMINATION ACCURACY

ST	117.6	SR	14.6	SS	75.1
CRT	.6575	CRS	-.7724	CST	-.9861
LSA	139.5	NSA	14.9	SSA	1.1
EL1	117.9	EL2	11.0	ALF	4.73

LAUNCH DATE MAY 6 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 16 1971

DISTANCE 298.784

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 35.278 GAL -2.82 AZL 91.86 HCA 95.76 SMA 258.01 ECC .41753 INC 1.8587 V1 29.526
RP 207.27 LAP -1.85 LOP 320.60 VP 27.681 GAP 22.06 AZP 89.81 TAL 350.42 TAP 86.18 RCA 150.29 APO 365.74 V2 26.426
RC 56.362 GL -10.63 GP .34 ZAL 110.36 ZAP 175.99 ETS 175.05 ZAE 174.58 ETE 78.25 ZAC 100.56 ETC 277.47 LVI -17.95

PLANETOCENTRIC CONIC

C3 38.374 VHL 6.195 DLA -19.33 RAL 341.49 RAD 6650.1 VEL 12.580 PTH 7.44 VHP 11.008 DPA -17.30 RAP 319.54 ECC 1.6315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 25 4	2904.14	-26.74	85.33	207.61	130.94	17 13 28	1904.1	-9.24	67.72
60.00	17 27 31	2738.05	-20.87	75.40	212.64	125.29	18 13 9	1738.0	-5.43	56.38
70.00	18 46 29	2505.89	-15.32	60.38	216.44	120.90	19 28 15	1505.9	-1.72	40.36
80.00	20 20 50	2210.62	-11.00	40.46	218.94	117.93	20 57 41	1210.6	1.23	19.79
90.00	21 54 20	1909.00	-9.27	19.19	219.85	116.84	22 26 9	909.0	2.42	358.27
100.00	23 3 42	1685.10	-11.00	1.83	218.94	117.93	23 31 47	685.1	1.23	341.16
110.00	23 45 56	1552.71	-15.32	349.29	216.44	120.90	24 11 48	552.7	-1.72	329.28

DIFFERENTIAL CORRECTIONS

TDE -.4724 TRA-1.0376 TC3 -.0085 BAU .0400
RDE -.5762 RRA .2266 RC3 .0774 FAU .03381
FDE .2158 FRA .8699 FC3 -.7627 BSP 1638
BDE .7451 BRA 1.0621 BC3 .0779 FSP 137

MID-COURSE EXECUTION ACCURACY

SGT 1107.0 SGR 585.3 SG3 111.3
RRT .0092 RRF -.0102 RTF -.6622
SGB 1252.2 R23 -.0017 R13 -.6622
SG1 1107.0 SG2 585.2 THA .39

ORBIT DETERMINATION ACCURACY

ST 26.6 SR 26.9 SS 15.5
CRT .7425 CRS .5111 CST .9521
LSA 37.5 MSA 16.3 SSA 1.1
EL1 35.3 EL2 13.6 ALF 45.30

LAUNCH DATE MAY 6 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 18 1971

DISTANCE 300.754

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 35.086 GAL -2.72 AZL 91.86 HCA 97.03 SMA 251.42 ECC .40215 INC 1.8620 V1 29.526
RP 207.18 LAP -1.85 LOP 321.87 VP 27.447 GAP 21.55 AZP 89.77 TAL 350.51 TAP 87.53 RCA 150.31 APO 352.54 V2 26.438
RC 56.568 GL -10.95 GP .35 ZAL 110.35 ZAP 175.12 ETS 175.82 ZAE 174.35 ETE 69.37 ZAC 100.52 ETC 277.55 LVI -18.07

PLANETOCENTRIC CONIC

C3 35.957 VHL 5.996 DLA -19.62 RAL 341.63 RAD 6649.2 VEL 12.484 PTH 7.37 VHP 10.656 DPA -17.17 RAP 319.92 ECC 1.5918

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 52	2881.65	-25.73	84.14	206.77	131.51	17 14 53	1881.6	-8.12	66.75
60.00	17 29 45	2714.42	-19.93	74.10	211.80	125.78	18 14 59	1714.4	-4.40	55.24
70.00	18 49 16	2480.63	-14.43	58.96	215.61	121.30	19 30 37	1480.6	-.76	39.04
80.00	20 24 14	2183.41	-10.12	38.91	218.13	118.24	21 0 38	1183.4	2.15	18.29
90.00	21 58 4	1880.72	-8.40	17.57	219.05	117.10	22 29 25	880.7	3.33	356.69
100.00	23 7 6	1657.88	-10.12	.28	218.13	118.24	23 34 44	657.9	2.15	339.66
110.00	23 48 43	1527.45	-14.43	347.88	215.61	121.30	24 14 10	527.4	-.76	327.96

DIFFERENTIAL CORRECTIONS

TDE -.4670 TRA-1.0280 TC3 .0026 BAU .0400
RDE -.5586 RRA .2191 RC3 .0832 FAU .03491
FDE .2210 FRA .9047 FC3 -.8405 BSP 1691
BDE .7281 BRA 1.0510 BC3 .0832 FSP 149

MID-COURSE EXECUTION ACCURACY

SGT 1134.2 SGR 586.7 SG3 119.2
RRT .0102 RRF -.0115 RTF -.6738
SGB 1277.0 R23 -.0021 R13 -.6739
SG1 1134.2 SG2 586.6 THA .41

ORBIT DETERMINATION ACCURACY

ST 27.2 SR 26.9 SS 16.0
CRT .7414 CRS .5041 CST .9502
LSA 38.0 MSA 16.6 SSA 1.1
EL1 35.7 EL2 13.8 ALF 44.49

LAUNCH DATE MAY 6 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 20 1971

DISTANCE 302.952

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 34.906 GAL -2.62 AZL 91.87 HCA 98.29 SMA 245.54 ECC .38771 INC 1.8652 V1 29.526
RP 207.09 LAP -1.85 LOP 323.13 VP 27.226 GAP 21.05 AZP 89.73 TAL 350.61 TAP 88.90 RCA 150.34 APO 340.74 V2 26.448
RC 56.856 GL -11.27 GP .36 ZAL 110.31 ZAP 174.24 ETS 176.35 ZAE 174.02 ETE 61.56 ZAC 100.48 ETC 277.63 LVI -18.19

PLANETOCENTRIC CONIC

C3 33.741 VHL 5.809 DLA -19.92 RAL 341.75 RAD 6648.4 VEL 12.396 PTH 7.31 VHP 10.315 DPA -17.05 RAP 320.29 ECC 1.3553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 38	2859.25	-24.72	82.98	205.96	132.04	17 16 18	1859.2	-7.00	65.80
60.00	17 31 58	2690.82	-18.99	72.82	210.98	126.24	18 16 49	1690.8	-3.36	54.11
70.00	18 52 6	2455.29	-13.53	57.55	214.80	121.66	19 33 1	1455.3	.21	37.72
80.00	20 27 44	2155.97	-9.24	37.36	217.34	118.52	21 3 40	1156.0	3.08	16.78
90.00	22 1 55	1852.13	-7.51	15.94	218.27	117.34	22 32 48	852.1	4.25	355.08
100.00	23 10 36	1630.44	-9.24	358.73	217.34	118.52	23 37 46	630.4	3.08	338.15
110.00	23 51 32	1502.11	-13.53	346.47	214.80	121.66	24 16 34	502.1	.21	326.64

DIFFERENTIAL CORRECTIONS

TDE -.4622 TRA-1.0180 TC3 .0153 BAU .0408
RDE -.5415 RRA .2117 RC3 .0891 FAU .03607
FDE .2262 FRA .9412 FC3 -.9254 BSP 1745
BDE .7120 BRA 1.0397 BC3 .0904 FSP 162

MID-COURSE EXECUTION ACCURACY

SGT 1161.4 SGR 587.7 SG3 127.6
RRT .0120 RRF -.0128 RTF -.6854
SGB 1301.6 R23 -.0018 R13 -.6854
SG1 1161.4 SG2 587.6 THA .47

ORBIT DETERMINATION ACCURACY

ST 27.9 SR 26.9 SS 16.6
CRT .7407 CRS .4967 CST .9480
LSA 38.6 MSA 16.9 SSA 1.1
EL1 36.1 EL2 13.9 ALF 43.66

LAUNCH DATE MAY 6 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 22 1971

DISTANCE 305.349

HELIOCENTRIC CONIC — EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 34.735 GAL -2.52 AZL 91.87 HCA 99.56 SMA 240.27 ECC .37415 INC 1.8685 V1 29.526
RP 207.01 LAP -1.84 LOP 324.40 VP 27.016 GAP 20.55 AZP 89.69 TAL 350.72 TAP 90.28 RCA 150.37 APO 330.16 V2 26.457
RC 57.225 GL -11.59 GP .37 ZAL 110.25 ZAP 173.34 ETS 176.75 ZAE 173.63 ETE 54.89 ZAC 100.44 ETC 277.71 LVI -18.30

PLANETOCENTRIC CONIC

C3 31.709 VHL 5.631 DLA -20.23 RAL 341.84 RAD 6647.7 VEL 12.314 PTH 7.25 VHP 9.987 DPA -16.92 RAP 320.66 ECC 1.3219

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 24	2836.98	-23.70	81.84	205.17	132.55	17 17 41	1837.0	-5.89	64.86
60.00	17 34 13	2667.28	-18.04	71.56	210.18	126.67	18 18 40	1667.3	-2.33	52.99
70.00	18 54 58	2429.91	-12.62	56.15	214.02	122.00	19 35 27	1429.9	1.18	36.40
80.00	20 31 19	2128.33	-8.33	35.81	216.57	118.77	21 6 47	1128.3	4.01	15.26
90.00	22 5 54	1823.24	-6.60	14.31	217.51	117.56	22 36 17	823.2	5.17	353.46
100.00	23 14 11	1602.80	-8.33	357.17	216.57	118.77	23 40 54	602.8	4.01	336.63
110.00	23 54 24	1476.73	-12.62	345.07	214.02	122.00	24 19 1	476.7	1.18	325.31

DIFFERENTIAL CORRECTIONS

TDE -.4565 TRA-1.0075 TC3 .0320 BAU .0426
RDE -.5250 RRA .2045 RC3 .0953 FAU .03733
FDE .2309 FRA .9789 FC3-1.0191 BSP 1841
BDE .6957 BRA 1.0281 BC3 .1006 FSP 176

MID-COURSE EXECUTION ACCURACY

SGT 1187.7 SGR 588.2 SG3 136.6
RRT .0139 RRF -.0143 RTF -.6978
SGB 1325.4 R23 -.0015 R13 -.6978
SG1 1187.8 SG2 588.2 THA .52

ORBIT DETERMINATION ACCURACY

ST 28.4 SR 26.9 SS 17.1
CRT .7395 CRS .4883 CST .9456
LSA 39.1 MSA 17.1 SSA 1.1
EL1 36.5 EL2 14.1 ALF 42.89

LAUNCH DATE MAY 6 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 307.921 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 34.575 GAL -2.42 AZL 91.87 HCA 100.82 SMA 235.52 ECC .36141 INC 1.8718 V1 29.526
RP 206.94 LAP -1.84 LOP 325.66 VP 26.817 GAP 20.06 AZP 89.65 TAL 350.85 TAP 91.67 RCA 150.40 APO 320.63 V2 26.466
RC 57.675 GL -11.92 GP .39 ZAL 110.17 ZAP 172.43 ETS 177.06 ZAE 173.20 ETE 49.29 ZAC 100.40 ETC 277.78 LVI -18.41

PLANETOCENTRIC CONIC

C3 29.844 VHL 5.463 DLA -20.56 RAL 341.92 RAD 6646.9 VEL 12.238 PTH 7.19 VHP 9.670 DPA -16.80 RAP 321.01 ECC 1.4912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 32 9	2814.89	-22.67	80.74	204.41	133.02	17 19 3	1814.9	-4.78	63.93
60.00	17 36 27	2643.85	-17.08	70.32	209.40	127.07	18 20 31	1643.8	-1.30	51.86
70.00	18 57 52	2404.52	-11.70	54.76	213.25	122.32	19 37 57	1404.5	2.15	35.07
80.00	20 35 0	2100.52	-7.42	34.25	215.82	119.00	21 10 1	1100.5	4.94	13.73
90.00	22 10 0	1794.05	-5.68	12.66	216.77	117.75	22 39 54	794.1	6.09	351.82
100.00	23 17 52	1574.99	-7.42	355.62	215.82	119.00	23 44 7	575.0	4.94	335.09
110.00	0 1 14	1451.34	-11.70	343.67	213.25	122.32	0 25 26	451.3	2.15	323.99

DIFFERENTIAL CORRECTIONS

TDE -.4507 TRA -.9987 TC3 .0440 BAU .0442
RDE -.5089 RRA .1974 RC3 .1018 FAU .03864
FDE .2351 FRA 1.0188 FC3-1.1209 BSP 1866
BDE .6798 BRA 1.0180 BC3 .1109 FSP 190

MID-COURSE EXECUTION ACCURACY

SGT 1215.3 SGR 588.4 SG3 146.2
RRT .0144 RRF -.0155 RTF -.7061
SGB 1350.3 R23 -.0023 R13 -.7061
SG1 1215.4 SG2 588.3 THA .52

ORBIT DETERMINATION ACCURACY

ST 29.0 SR 26.9 SS 17.7
CRT .7378 CRS .4787 CST .9430
LSA 39.6 MSA 17.4 SSA 1.2
EL1 36.9 EL2 14.3 ALF 42.10

LAUNCH DATE MAY 6 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 310.646 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 34.423 GAL -2.33 AZL 91.88 HCA 102.09 SMA 231.22 ECC .34944 INC 1.8752 V1 29.526
RP 206.87 LAP -1.83 LOP 326.93 VP 26.629 GAP 19.58 AZP 89.61 TAL 350.99 TAP 93.08 RCA 150.42 APO 312.02 V2 26.473
RC 58.203 GL -12.25 GP .40 ZAL 110.06 ZAP 171.51 ETS 177.31 ZAE 172.75 ETE 44.62 ZAC 100.37 ETC 277.85 LVI -18.52

PLANETOCENTRIC CONIC

C3 28.132 VHL 5.304 DLA -20.89 RAL 341.98 RAD 6646.3 VEL 12.169 PTH 7.13 VHP 9.364 DPA -16.68 RAP 321.34 ECC 1.4630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 52	2792.99	-21.65	79.65	203.67	133.46	17 20 25	1793.0	-3.68	63.01
60.00	17 38 43	2620.55	-16.12	69.10	208.65	127.45	18 22 23	1620.5	-.27	50.75
70.00	19 0 50	2379.15	-10.77	53.38	212.50	122.61	19 40 29	1379.2	3.12	33.74
80.00	20 38 47	2072.56	-6.49	32.69	215.09	119.21	21 13 20	1072.6	5.88	12.18
90.00	22 14 15	1764.64	-4.75	11.00	216.05	117.91	22 43 40	764.6	7.02	350.15
100.00	23 21 39	1547.03	-6.49	354.06	215.09	119.21	23 47 26	547.0	5.88	333.54
110.00	0 4 12	1425.97	-10.77	342.30	212.50	122.61	0 27 58	426.0	3.12	322.66

DIFFERENTIAL CORRECTIONS

TDE -.4447 TRA -.9890 TC3 .0617 BAU .0469
RDE -.4934 RRA .1906 RC3 .1084 FAU .04006
FDE .2396 FRA 1.0597 FC3-1.2328 BSP 1918
BDE .6642 BRA 1.0072 BC3 .1247 FSP 207

MID-COURSE EXECUTION ACCURACY

SGT 1242.0 SGR 588.1 SG3 156.4
RRT .0159 RRF -.0173 RTF -.7164
SGB 1374.2 R23 -.0026 R13 -.7164
SG1 1242.1 SG2 588.0 THA .56

ORBIT DETERMINATION ACCURACY

ST 29.5 SR 26.9 SS 18.3
CRT .7361 CRS .4695 CST .9404
LSA 40.1 MSA 17.7 SSA 1.2
EL1 37.2 EL2 14.4 ALF 41.34

LAUNCH DATE MAY 6 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 313.508 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 34.280 GAL -2.23 AZL 91.88 HCA 103.35 SMA 227.33 ECC .33818 INC 1.8785 V1 29.526
RP 206.82 LAP -1.83 LOP 328.20 VP 26.450 GAP 19.10 AZP 89.57 TAL 351.15 TAP 94.50 RCA 150.45 APO 304.21 V2 26.479
RC 58.807 GL -12.59 GP .41 ZAL 109.93 ZAP 170.57 ETS 177.50 ZAE 172.31 ETE 40.73 ZAC 100.34 ETC 277.92 LVI -18.62

PLANETOCENTRIC CONIC

C3 26.558 VHL 5.153 DLA -21.24 RAL 342.02 RAD 6645.6 VEL 12.104 PTH 7.08 VHP 9.068 DPA -16.57 RAP 321.67 ECC 1.4371

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 35	2771.28	-20.63	78.60	202.95	133.88	17 21 46	1771.3	-2.59	62.10
60.00	17 40 58	2597.38	-15.16	67.90	207.92	127.80	18 24 16	1597.4	.75	49.65
70.00	19 3 50	2353.80	-9.84	52.01	211.78	122.87	19 43 4	1353.8	4.08	32.42
80.00	20 42 41	2044.43	-5.56	31.13	214.39	119.38	21 16 45	1044.4	6.81	10.61
90.00	22 18 38	1734.91	-3.80	9.33	215.36	118.05	22 47 33	734.9	7.95	348.46
100.00	23 25 33	1518.90	-5.56	352.50	214.39	119.38	23 50 52	518.9	6.81	331.98
110.00	0 7 12	1400.62	-9.84	340.93	211.78	122.87	0 30 33	400.6	4.08	321.33

DIFFERENTIAL CORRECTIONS

TDE -.4308 TRA -.9708 TC3 .0921 BAU .0524
RDE -.4784 RRA .1838 RC3 .1153 FAU .04150
FDE .2456 FRA 1.1044 FC3-1.3528 BSP 1872
BDE .6438 BRA .9880 BC3 .1476 FSP 225

MID-COURSE EXECUTION ACCURACY

SGT 1256.7 SGR 587.4 SG3 167.4
RRT .0164 RRF -.0194 RTF -.[illegible]46
SGB 1387.2 R23 -.0040 R13 -.7346
SG1 1256.7 SG2 587.3 THA .56

ORBIT DETERMINATION ACCURACY

ST 29.6 SR 26.8 SS 18.9
CRT .7313 CRS .4620 CST .9401
LSA 40.3 MSA 18.0 SSA 1.2
EL1 37.2 EL2 14.5 ALF 41.14

LAUNCH DATE MAY 6 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 316.492 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 34.145 GAL -2.14 AZL 91.88 HCA 104.62 SMA 223.80 ECC .32761 INC 1.8819 V1 29.526
RP 206.77 LAP -1.82 LOP 329.47 VP 26.280 GAP 18.64 AZP 89.52 TAL 351.31 TAP 95.93 RCA 150.48 APO 297.11 V2 26.485
RC 59.485 GL -12.92 GP .43 ZAL 109.79 ZAP 169.62 ETS 177.67 ZAE 171.89 ETE 37.49 ZAC 100.31 ETC 277.99 LVI -18.72

PLANETOCENTRIC CONIC

C3 25.112 VHL 5.011 DLA -21.59 RAL 342.04 RAD 6645.0 VEL 12.045 PTH 7.03 VHP 8.782 DPA -16.46 RAP 321.97 ECC 1.4133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 17	2749.89	-19.62	77.57	202.26	134.26	17 23 7	1749.9	-1.52	61.20
60.00	17 43 15	2574.45	-14.20	66.73	207.22	128.12	18 26 9	1574.5	1.76	48.55
70.00	19 6 53	2328.59	-8.90	50.65	211.09	123.11	19 45 41	1328.6	5.04	31.09
80.00	20 46 41	2016.25	-4.61	29.57	213.72	119.53	21 20 17	1016.3	7.74	9.04
90.00	22 23 10	1705.00	-2.84	7.66	214.70	118.15	22 51 35	705.0	8.88	346.76
100.00	23 29 33	1490.73	-4.61	350.94	213.72	119.53	23 54 23	490.7	7.74	330.41
110.00	0 10 15	1375.41	-8.90	339.57	211.09	123.11	0 33 11	375.4	5.04	320.01

DIFFERENTIAL CORRECTIONS

TDE -.4278 TRA -.9637 TC3 .1068 BAU .0545
RDE -.4638 RRA .1773 RC3 .1224 FAU .04314
FDE .2484 FRA 1.1482 FC3-1.4873 BSP 1972
BDE .6310 BRA .9798 BC3 .1625 FSP 243

MID-COURSE EXECUTION ACCURACY

SGT 1286.4 SGR 586.4 SG3 179.1
RRT .0188 RRF -.0211 RTF -.7394
SGB 1413.8 R23 -.0036 R13 -.7395
SG1 1286.5 SG2 586.2 THA .62

ORBIT DETERMINATION ACCURACY

ST 30.2 SR 26.7 SS 19.4
CRT .7309 CRS .4500 CST .9357
LSA 40.9 MSA 18.3 SSA 1.2
EL1 37.6 EL2 14.7 ALF 40.19

LAUNCH DATE MAY 6 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC — DISTANCE 319.584 — EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 34.018 GAL -2.05 AZL 91.89 HCA 105.89 SMA 220.57 ECC .31766 INC 1.8854 V1 29.526
RP 206.74 LAP -1.81 LOP 330.73 VP 26.119 GAP 18.18 AZP 89.48 TAL 351.48 TAP 97.37 RCA 150.50 APO 290.64 V2 26.489
RC 60.233 GL -13.26 GP .44 ZAL 109.63 ZAP 168.65 ETS 177.81 ZAE 171.50 ETE 34.77 ZAC 100.28 ETC 278.05 LVI -18.82

PLANETOCENTRIC CONIC

C3 23.783 VHL 4.877 DLA -21.96 RAL 342.05 RAD 6644.5 VEL 11.990 PTH 6.99 VHP 8.508 DPA -16.35 RAP 322.26 ECC 1.3914

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 38 58	2728.77	-18.61	76.58	201.60	134.61	17 24 27	1728.8	-.46	60.32
60.00	17 45 32	2551.75	-13.24	65.57	206.54	128.42	18 28 3	1551.8	2.76	47.47
70.00	19 9 59	2303.48	-7.97	49.31	210.42	123.32	19 48 22	1303.5	5.99	29.77
80.00	20 50 47	1987.99	-3.66	28.01	213.07	119.65	21 23 55	988.0	8.67	7.45
90.00	22 27 52	1674.84	-1.87	5.98	214.06	118.22	22 55 47	674.8	9.80	345.03
100.00	23 33 39	1462.46	-3.66	349.38	213.07	119.65	23 58 2	462.5	8.67	328.82
110.00	0 13 21	1350.30	-7.97	338.23	210.42	123.32	0 35 51	350.3	5.99	318.69

DIFFERENTIAL CORRECTIONS

TDE -.4232 TRA -.9546 TC3 .1244 BAU .0571
RDE -.4498 RRA .1709 RC3 .1296 FAU .04487
FDE .2517 FRA 1.1942 FC3-1.6335 BSP 2047
BDE .6176 BRA .9698 BC3 .1797 FSP 262

MID-COURSE EXECUTION ACCURACY

SGT 1313.1 SGR 584.9 SG3 191.5
RRT .0212 RRF -.0233 RTF -.7454
SGB 1437.5 R23 -.0036 R13 -.7454
SG1 1313.2 SG2 584.7 THA .68

ORBIT DETERMINATION ACCURACY

ST 30.8 SR 26.6 SS 20.0
CRT .7299 CRS .4386 CST .9317
LSA 41.3 MSA 18.6 SSA 1.2
EL1 37.9 EL2 14.8 ALF 39.36

LAUNCH DATE MAY 6 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC — DISTANCE 322.773 — EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 33.898 GAL -1.96 AZL 91.89 HCA 107.16 SMA 217.63 ECC .30831 INC 1.8888 V1 29.526
RP 206.71 LAP -1.80 LOP 332.00 VP 25.966 GAP 17.73 AZP 89.44 TAL 351.66 TAP 98.82 RCA 150.53 APO 284.73 V2 26.492
RC 61.050 GL -13.60 GP .46 ZAL 109.45 ZAP 167.66 ETS 177.92 ZAE 171.15 ETE 32.49 ZAC 100.25 ETC 278.11 LVI -18.91

PLANETOCENTRIC CONIC

C3 22.560 VHL 4.750 DLA -22.33 RAL 342.05 RAD 6644.0 VEL 11.939 PTH 6.94 VHP 8.239 DPA -16.24 RAP 322.54 ECC 1.3713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 38	2707.97	-17.62	75.60	200.96	134.94	17 25 46	1708.0	.59	59.45
60.00	17 47 49	2529.31	-12.29	64.44	205.89	128.69	18 29 58	1529.3	3.74	46.39
70.00	19 13 8	2278.51	-7.03	47.99	209.78	123.51	19 51 6	1278.5	6.93	28.45
80.00	20 55 1	1959.64	-2.71	26.45	212.45	119.75	21 27 41	959.6	9.59	5.86
90.00	22 32 44	1644.44	-.89	4.28	213.46	118.27	23 0 9	644.4	10.72	343.27
100.00	23 37 53	1434.11	-2.71	347.82	212.45	119.75	24 1 47	434.1	9.59	327.22
110.00	0 16 30	1325.33	-7.03	336.90	209.78	123.51	0 38 35	325.3	6.93	317.37

DIFFERENTIAL CORRECTIONS

TDE -.4174 TRA -.9451 TC3 .1443 BAU .0600
RDE -.4362 RRA .1647 RC3 .1371 FAU .04670
FDE .2548 FRA 1.2432 FC3-1.7921 BSP 2114
BDE .6037 BRA .9593 BC3 .1990 FSP 284

MID-COURSE EXECUTION ACCURACY

SGT 1338.4 SGR 583.0 SG3 204.8
RRT .0232 RRF -.0255 RTF -.7520
SGB 1459.9 R23 -.0039 R13 -.7520
SG1 1338.5 SG2 582.8 THA .72

ORBIT DETERMINATION ACCURACY

ST 31.2 SR 26.5 SS 20.6
CRT .7282 CRS .4264 CST .9278
LSA 41.8 MSA 18.8 SSA 1.2
EL1 38.2 EL2 14.9 ALF 38.62

LAUNCH DATE MAY 6 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC — DISTANCE 326.050 — EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 33.785 GAL -1.88 AZL 91.89 HCA 108.43 SMA 214.93 ECC .29952 INC 1.8924 V1 29.526
RP 206.69 LAP -1.80 LOP 333.27 VP 25.821 GAP 17.29 AZP 89.40 TAL 351.84 TAP 100.27 RCA 150.55 APO 279.31 V2 26.495
RC 61.933 GL -13.94 GP .47 ZAL 109.26 ZAP 166.66 ETS 178.03 ZAE 170.85 ETE 30.58 ZAC 100.23 ETC 278.16 LVI -18.99

PLANETOCENTRIC CONIC

C3 21.434 VHL 4.630 DLA -22.70 RAL 342.03 RAD 6643.5 VEL 11.893 PTH 6.90 VHP 7.981 DPA -16.14 RAP 322.79 ECC 1.3527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 18	2687.51	-16.63	74.66	200.35	135.25	17 27 5	1687.5	1.62	58.60
60.00	17 50 7	2507.14	-11.34	63.33	205.27	128.94	18 31 54	1507.1	4.71	45.33
70.00	19 16 19	2253.71	-6.10	46.67	209.16	123.67	19 53 53	1253.7	7.86	27.13
80.00	20 59 22	1931.23	-1.75	24.89	211.86	119.81	21 31 33	931.2	10.51	4.24
90.00	22 37 47	1613.78	.10	2.57	212.89	118.28	23 4 41	613.8	11.64	341.49
100.00	23 42 14	1405.70	-1.75	346.26	211.86	119.81	24 5 39	405.7	10.51	325.61
110.00	0 19 42	1300.53	-6.10	335.59	209.16	123.67	0 41 22	300.5	7.86	316.05

DIFFERENTIAL CORRECTIONS

TDE -.4112 TRA -.9347 TC3 .1652 BAU .0629
RDE -.4230 RRA .1586 RC3 .1446 FAU .04860
FDE .2579 FRA 1.2952 FC3-1.9631 BSP 2169
BDE .5899 BRA .9481 BC3 .2195 FSP 306

MID-COURSE EXECUTION ACCURACY

SGT 1361.9 SGR 580.8 SG3 219.0
RRT .0253 RRF -.0277 RTF -.7587
SGB 1480.6 R23 -.0042 R13 -.7588
SG1 1362.0 SG2 580.5 THA .76

ORBIT DETERMINATION ACCURACY

ST 31.6 SR 26.4 SS 21.2
CRT .7263 CRS .4142 CST .9238
LSA 42.2 MSA 19.1 SSA 1.3
EL1 38.4 EL2 14.9 ALF 37.92

LAUNCH DATE MAY 6 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC — DISTANCE 329.405 — EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 33.679 GAL -1.79 AZL 91.90 HCA 109.70 SMA 212.46 ECC .29126 INC 1.8960 V1 29.526
RP 206.68 LAP -1.79 LOP 334.54 VP 25.683 GAP 16.86 AZP 89.36 TAL 352.04 TAP 101.73 RCA 150.58 APO 274.34 V2 26.496
RC 62.879 GL -14.28 GP .49 ZAL 109.06 ZAP 165.63 ETS 178.11 ZAE 170.61 ETE 28.97 ZAC 100.22 ETC 278.21 LVI -19.08

PLANETOCENTRIC CONIC

C3 20.398 VHL 4.516 DLA -23.08 RAL 342.00 RAD 6643.0 VEL 11.849 PTH 6.87 VHP 7.732 DPA -16.05 RAP 323.03 ECC 1.3357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 43 57	2667.41	-15.66	73.74	199.76	135.52	17 28 24	1667.4	2.63	57.76
60.00	17 52 26	2485.29	-10.40	62.25	204.67	129.16	18 33 51	1485.3	5.67	44.27
70.00	19 19 34	2229.10	-5.17	45.38	208.58	123.81	19 56 43	1229.1	8.78	25.82
80.00	21 3 51	1902.77	-.78	23.33	211.30	119.85	21 35 33	902.8	11.42	2.62
90.00	22 43 2	1582.85	1.10	.84	212.34	118.26	23 9 25	582.8	12.56	339.68
100.00	23 46 42	1377.24	-.78	344.69	211.30	119.85	24 9 40	377.2	11.42	323.99
110.00	0 22 56	1275.92	-5.17	334.30	208.58	123.81	0 44 12	275.9	8.78	314.74

DIFFERENTIAL CORRECTIONS

TDE -.4045 TRA -.9235 TC3 .1892 BAU .0662
RDE -.4103 RRA .1527 RC3 .1523 FAU .05072
FDE .2600 FRA 1.3484 FC3-2.1525 BSP 2223
BDE .5762 BRA .9361 BC3 .2429 FSP 331

MID-COURSE EXECUTION ACCURACY

SGT 1383.7 SGR 578.1 SG3 234.2
RRT .0280 RRF -.0304 RTF -.7652
SGB 1499.6 R23 -.0044 R13 -.7652
SG1 1383.8 SG2 577.9 THA .81

ORBIT DETERMINATION ACCURACY

ST 32.0 SR 26.2 SS 21.7
CRT .7243 CRS .4007 CST .9193
LSA 42.5 MSA 19.4 SSA 1.3
EL1 38.5 EL2 15.0 ALF 37.27

LAUNCH DATE MAY 6 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 332.832 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 33.578 GAL -1.71 AZL 91.90 HCA 110.97 SMA 210.19 ECC .28349 INC 1.8997 V1 29.526
RP 206.67 LAP -1.77 LOP 335.81 VP 25.551 GAP 16.44 AZP 89.32 TAL 352.23 TAP 103.20 RCA 150.60 APO 269.77 V2 26.496
RC 63.888 GL -14.62 GP .51 ZAL 108.85 ZAP 164.59 ETS 178.19 ZAE 170.43 ETE 27.62 ZAC 100.20 ETC 278.26 LVI -19.15

PLANETOCENTRIC CONIC

C3 19.443 VHL 4.409 DLA -23.47 RAL 341.96 RAD 6642.6 VEL 11.809 PTH 6.83 VHP 7.491 DPA -15.96 RAP 323.24 ECC 1.3200

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 45 35	2647.70	-14.70	72.86	199.20	135.78	17 29 43	1647.7	3.61	56.93
60.00	17 54 45	2463.77	-9.48	61.18	204.10	129.36	18 35 49	1463.8	6.61	43.23
70.00	19 22 52	2204.72	-4.24	44.10	208.02	123.92	19 59 37	1204.7	9.68	24.51
80.00	21 8 27	1874.26	.18	21.76	210.77	119.86	21 39 41	874.3	12.32	.98
90.00	22 48 29	1551.63	2.10	359.10	211.84	118.21	23 14 21	551.6	13.47	337.84
100.00	23 51 19	1348.73	.18	343.13	210.77	119.86	24 13 48	348.7	12.32	322.35
110.00	0 26 14	1251.53	-4.24	333.01	208.02	123.92	0 47 6	251.5	9.68	313.43

DIFFERENTIAL CORRECTIONS

TDE -.3977 TRA -.9125 TC3 .2124 BAU .0691
RDE -.3980 RRA .1470 RC3 .1601 FAU .05290
FDE .2628 FRA 1.4055 FC3-2.3553 BSP 2268
BDE .5627 BRA .9242 BC3 .2660 FSP 357

MID-COURSE EXECUTION ACCURACY

SGT 1404.6 SGR 575.1 SG3 250.3
RRT .0304 RRF -.0332 RTF -.7713
SGB 1517.8 R23 -.0050 R13 -.7714
SG1 1404.7 SG2 574.8 THA .86

ORBIT DETERMINATION ACCURACY

ST 32.3 SR 26.0 SS 22.4
CRT .7221 CRS .3878 CST .9150
LSA 42.8 MSA 19.6 SSA 1.3
EL1 38.7 EL2 15.1 ALF 36.64

LAUNCH DATE MAY 6 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 336.324 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 33.484 GAL -1.63 AZL 91.90 HCA 112.24 SMA 208.10 ECC .27619 INC 1.9034 V1 29.526
RP 206.68 LAP -1.76 LOP 337.08 VP 25.426 GAP 16.03 AZP 89.28 TAL 352.44 TAP 104.67 RCA 150.62 APO 265.57 V2 26.496
RC 64.956 GL -14.95 GP .53 ZAL 108.62 ZAP 163.52 ETS 178.26 ZAE 170.31 ETE 26.50 ZAC 100.19 ETC 278.30 LVI -19.23

PLANETOCENTRIC CONIC

C3 18.564 VHL 4.309 DLA -23.85 RAL 341.91 RAD 6642.2 VEL 11.772 PTH 6.80 VHP 7.258 DPA -15.88 RAP 323.44 ECC 1.3055

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 13	2628.41	-13.75	71.99	198.67	136.01	17 31 1	1628.4	4.58	56.12
60.00	17 57 4	2442.62	-8.56	60.15	203.56	129.53	18 37 47	1442.6	7.53	42.21
70.00	19 26 13	2180.57	-3.32	42.83	207.49	124.01	20 2 33	1180.6	10.57	23.21
80.00	21 13 12	1845.72	1.15	20.20	210.28	119.84	21 43 58	845.7	13.21	359.33
90.00	22 54 10	1520.09	3.12	357.34	211.37	118.12	23 19 30	520.1	14.37	335.96
100.00	0 0 0	1320.19	1.15	341.56	210.28	119.84	0 22 0	320.2	13.21	320.70
110.00	0 29 35	1227.39	-3.32	331.75	207.49	124.01	0 50 2	227.4	10.57	312.12

DIFFERENTIAL CORRECTIONS

TDE -.3906 TRA -.9002 TC3 .2359 BAU .0719
RDE -.3861 RRA .1414 RC3 .1680 FAU .05523
FDE .2641 FRA 1.4649 FC3-2.5756 BSP 2311
BDE .5493 BRA .9113 BC3 .2896 FSP 385

MID-COURSE EXECUTION ACCURACY

SGT 1422.8 SGR 571.8 SG3 267.5
RRT .0333 RRF -.0360 RTF -.7767
SGB 1533.4 R23 -.0052 R13 -.7768
SG1 1423.0 SG2 571.4 THA .91

ORBIT DETERMINATION ACCURACY

ST 32.6 SR 25.9 SS 23.0
CRT .7201 CRS .3730 CST .9097
LSA 43.1 MSA 19.9 SSA 1.3
EL1 38.8 EL2 15.1 ALF 36.06

LAUNCH DATE MAY 6 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 339.875 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 33.395 GAL -1.56 AZL 91.91 HCA 113.51 SMA 206.17 ECC .26933 INC 1.9071 V1 29.526
RP 206.70 LAP -1.75 LOP 338.35 VP 25.307 GAP 15.62 AZP 89.24 TAL 352.64 TAP 106.15 RCA 150.64 APO 261.70 V2 26.494
RC 66.082 GL -15.29 GP .55 ZAL 108.39 ZAP 162.43 ETS 178.31 ZAE 170.25 ETE 25.59 ZAC 100.19 ETC 278.33 LVI -19.29

PLANETOCENTRIC CONIC

C3 17.754 VHL 4.214 DLA -24.24 RAL 341.85 RAD 6641.8 VEL 11.738 PTH 6.77 VHP 7.033 DPA -15.80 RAP 323.61 ECC 1.2922

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 50	2609.55	-12.83	71.16	198.16	136.22	17 32 20	1609.6	5.53	55.33
60.00	17 59 24	2421.87	-7.66	59.13	203.04	129.69	18 39 46	1421.9	8.43	41.19
70.00	19 29 36	2156.71	-2.41	41.58	206.99	124.08	20 5 33	1156.7	11.45	21.91
80.00	21 18 6	1817.14	2.12	18.63	209.82	119.79	21 48 23	817.1	14.08	357.66
90.00	23 0 6	1488.18	4.14	355.55	210.93	118.00	23 24 54	488.2	15.27	334.05
100.00	0 4 54	1291.61	2.12	339.99	209.82	119.79	0 26 25	291.6	14.08	319.03
110.00	0 32 58	1203.52	-2.41	330.50	206.99	124.08	0 53 2	203.5	11.45	310.63

DIFFERENTIAL CORRECTIONS

TDE -.3832 TRA -.8884 TC3 .2610 BAU .0747
RDE -.3747 RRA .1360 RC3 .1760 FAU .05773
FDE .2655 FRA 1.5276 FC3-2.8151 BSP 2349
BDE .5359 BRA .8987 BC3 .3148 FSP 415

MID-COURSE EXECUTION ACCURACY

SGT 1440.5 SGR 568.0 SG3 285.9
RRT .0361 RRF -.0393 RTF -.7822
SGB 1548.4 R23 -.0059 R13 -.7822
SG1 1440.6 SG2 567.6 THA .96

ORBIT DETERMINATION ACCURACY

ST 32.8 SR 25.7 SS 23.6
CRT .7177 CRS .3582 CST .9046
LSA 43.3 MSA 20.2 SSA 1.3
EL1 38.8 EL2 15.1 ALF 35.50

LAUNCH DATE MAY 6 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 343.480 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 33.311 GAL -1.49 AZL 91.91 HCA 114.77 SMA 204.39 ECC .26288 INC 1.9110 V1 29.526
RP 206.72 LAP -1.74 LOP 339.62 VP 25.193 GAP 15.23 AZP 89.20 TAL 352.85 TAP 107.62 RCA 150.66 APO 258.13 V2 26.491
RC 67.265 GL -15.62 GP .57 ZAL 108.16 ZAP 161.32 ETS 178.36 ZAE 170.27 ETE 24.86 ZAC 100.19 ETC 278.37 LVI -19.35

PLANETOCENTRIC CONIC

C3 17.008 VHL 4.124 DLA -24.63 RAL 341.78 RAD 6641.5 VEL 11.707 PTH 6.74 VHP 6.815 DPA -15.73 RAP 323.75 ECC 1.2799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 27	2591.15	-11.92	70.35	197.68	136.41	17 33 38	1591.2	6.45	54.55
60.00	18 1 45	2401.52	-6.78	58.15	202.56	129.82	18 41 46	1401.5	9.31	40.20
70.00	19 33 2	2133.14	-1.51	40.35	206.52	124.12	20 8 35	1133.1	12.30	20.62
80.00	21 23 9	1788.53	3.09	17.05	209.39	119.71	21 52 57	788.5	14.95	355.98
90.00	23 6 18	1455.83	5.17	353.73	210.54	117.84	23 30 34	455.8	16.16	332.09
100.00	0 9 56	1262.99	3.09	338.42	209.39	119.71	0 30 59	263.0	14.95	317.35
110.00	0 36 24	1179.95	-1.51	329.27	206.52	124.12	0 56 4	180.0	12.30	309.54

DIFFERENTIAL CORRECTIONS

TDE -.3761 TRA -.8755 TC3 .2856 BAU .0772
RDE -.3636 RRA .1307 RC3 .1840 FAU .06041
FDE .2667 FRA 1.5930 FC3-3.0747 BSP 2384
BDE .5231 BRA .8852 BC3 .3397 FSP 448

MID-COURSE EXECUTION ACCURACY

SGT 1455.6 SGR 564.0 SG3 305.4
RRT .0396 RRF -.0430 RTF -.7868
SGB 1561.0 R23 -.0064 R13 -.7868
SG1 1455.8 SG2 563.4 THA 1.03

ORBIT DETERMINATION ACCURACY

ST 32.9 SR 25.4 SS 24.2
CRT .7158 CRS .3436 CST .8991
LSA 43.6 MSA 20.5 SSA 1.3
EL1 38.8 EL2 15.1 ALF 34.96

LAUNCH DATE MAY 6 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 347.134 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 33.232 GAL -1.42 AZL 91.91 HCA 116.04 SMA 202.75 ECC .25683 INC 1.9150 V1 29.526
RP 206.75 LAP -1.72 LOP 340.89 VP 25.085 GAP 14.84 AZP 89.16 TAL 353.05 TAP 109.10 RCA 150.68 APO 254.83 V2 26.487
RC 68.502 GL -15.95 GP .59 ZAL 107.92 ZAP 160.18 ETS 178.41 ZAE 170.35 ETE 24.32 ZAC 100.19 ETC 278.39 LVI -19.41

PLANETOCENTRIC CONIC

C3 16.321 VHL 4.040 DLA -25.01 RAL 341.71 RAD 6641.2 VEL 11.677 PTH 6.71 VHP 6.605 DPA -15.67 RAP 323.88 ECC 1.2686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 3	2573.23	-11.04	69.57	197.22	136.58	17 34 56	1573.2	7.34	53.79
60.00	18 4 6	2381.62	-5.91	57.18	202.10	129.94	18 43 47	1381.6	10.17	39.22
70.00	19 36 31	2109.89	-.63	39.14	206.09	124.15	20 11 41	1109.9	13.14	19.34
80.00	21 28 21	1759.86	4.05	15.47	209.00	119.61	21 57 41	759.9	15.80	354.28
90.00	23 12 49	1422.97	6.21	351.88	210.18	117.64	23 36 32	423.0	17.04	330.08
100.00	0 15 9	1234.33	4.05	336.84	209.00	119.61	0 35 43	234.3	15.80	315.65
110.00	0 39 53	1156.71	-.63	328.06	206.09	124.15	0 59 10	156.7	13.14	308.26

DIFFERENTIAL CORRECTIONS

TDE -.3688 TRA -.8624 TC3 .3077 BAU .0791
RDE -.3529 RRA .1255 RC3 .1920 FAU .06319
FDE .2672 FRA 1.6624 FC3-3.3518 BSP 2414
BDE .5104 BRA .8715 BC3 .3627 FSP 483

MID-COURSE EXECUTION ACCURACY

SGT 1468.7 SGR 559.5 SG3 326.1
RRT .0428 RRF -.0467 RTF -.7907
SGB 1571.6 R23 -.0071 R13 -.7907
SG1 1468.9 SG2 558.9 THA 1.09

ORBIT DETERMINATION ACCURACY

ST 33.1 SR 25.2 SS 24.9
CRT .7138 CRS .3280 CST .8931
LSA 43.8 MSA 20.7 SSA 1.3
EL1 38.8 EL2 15.1 ALF 34.45

LAUNCH DATE MAY 6 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC DISTANCE 350.833 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 33.157 GAL -1.35 AZL 91.92 HCA 117.31 SMA 201.24 ECC .25114 INC 1.9190 V1 29.526
RP 206.79 LAP -1.71 LOP 342.16 VP 24.981 GAP 14.46 AZP 89.12 TAL 353.26 TAP 110.57 RCA 150.70 APO 251.78 V2 26.483
RC 69.791 GL -16.28 GP .62 ZAL 107.68 ZAP 159.02 ETS 178.45 ZAE 170.51 ETE 23.96 ZAC 100.20 ETC 278.41 LVI -19.46

PLANETOCENTRIC CONIC

C3 15.687 VHL 3.961 DLA -25.40 RAL 341.64 RAD 6640.9 VEL 11.650 PTH 6.69 VHP 6.402 DPA -15.61 RAP 323.97 ECC 1.2582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 39	2555.80	-10.17	68.81	196.79	136.73	17 36 14	1555.8	8.21	53.05
60.00	18 6 27	2362.17	-5.06	56.25	201.67	130.04	18 45 49	1362.2	11.01	38.25
70.00	19 40 2	2086.99	.25	37.94	205.68	124.15	20 14 49	1087.0	13.96	18.07
80.00	21 33 44	1731.14	5.02	13.89	208.64	119.47	22 2 35	731.1	16.64	352.56
90.00	23 19 41	1389.47	7.27	349.98	209.86	117.41	23 42 50	389.5	17.91	328.01
100.00	0 20 32	1205.61	5.02	335.25	208.64	119.47	0 40 38	205.6	16.64	313.93
110.00	0 43 25	1133.81	.25	326.86	205.68	124.15	1 2 18	133.8	13.96	306.99

DIFFERENTIAL CORRECTIONS

TDE -.3611 TRA -.8490 TC3 .3300 BAU .0809
RDE -.3425 RRA .1205 RC3 .1999 FAU .06615
FDE .2666 FRA 1.7349 FC3-3.6507 BSP 2440
BDE .4977 BRA .8575 BC3 .3858 FSP 519

MID-COURSE EXECUTION ACCURACY

SGT 1479.7 SGR 554.8 SG3 348.1
RRT .0461 RRF -.0506 RTF -.7942
SGB 1580.3 R23 -.0080 R13 -.7943
SG1 1479.9 SG2 554.1 THA 1.15

ORBIT DETERMINATION ACCURACY

ST 33.1 SR 24.9 SS 25.5
CRT .7114 CRS .3113 CST .8867
LSA 43.9 MSA 21.0 SSA 1.4
EL1 38.7 EL2 15.0 ALF 33.98

LAUNCH DATE MAY 6 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC DISTANCE 354.574 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 33.087 GAL -1.29 AZL 91.92 HCA 118.58 SMA 199.83 ECC .24580 INC 1.9231 V1 29.526
RP 206.84 LAP -1.69 LOP 343.43 VP 24.882 GAP 14.09 AZP 89.08 TAL 353.47 TAP 112.04 RCA 150.71 APO 248.95 V2 26.477
RC 71.130 GL -16.60 GP .64 ZAL 107.43 ZAP 157.82 ETS 178.48 ZAE 170.73 ETE 23.79 ZAC 100.21 ETC 278.43 LVI -19.50

PLANETOCENTRIC CONIC

C3 15.103 VHL 3.886 DLA -25.78 RAL 341.56 RAD 6640.6 VEL 11.626 PTH 6.67 VHP 6.206 DPA -15.56 RAP 324.04 ECC 1.2486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 14	2538.82	-9.33	68.08	196.39	136.87	17 37 32	1538.8	9.06	52.32
60.00	18 8 48	2343.14	-4.22	55.33	201.26	130.12	18 47 51	1343.1	11.82	37.30
70.00	19 43 37	2064.38	1.11	36.76	205.30	124.14	20 18 1	1064.4	14.76	16.81
80.00	21 39 19	1702.22	5.98	12.28	208.31	119.31	22 7 41	702.2	17.47	350.81
90.00	23 26 59	1355.02	8.34	348.02	209.59	117.12	23 49 34	355.0	18.79	325.86
100.00	0 26 7	1176.69	5.98	333.65	208.31	119.31	0 45 44	176.7	17.47	312.18
110.00	0 46 59	1111.19	1.11	325.68	205.30	124.14	1 5 30	111.2	14.76	305.73

DIFFERENTIAL CORRECTIONS

TDE -.3409 TRA -.8221 TC3 .3878 BAU .0889
RDE -.3324 RRA .1156 RC3 .2082 FAU .06954
FDE .2636 FRA 1.8088 FC3-3.9883 BSP 2297
BDE .4761 BRA .8302 BC3 .4401 FSP 555

MID-COURSE EXECUTION ACCURACY

SGT 1468.1 SGR 549.7 SG3 371.8
RRT .0498 RRF -.0554 RTF -.8096
SGB 1567.6 R23 -.0085 R13 -.8097
SG1 1468.4 SG2 548.9 THA 1.24

ORBIT DETERMINATION ACCURACY

ST 32.2 SR 24.7 SS 26.1
CRT .7023 CRS .2922 CST .8834
LSA 43.3 MSA 21.3 SSA 1.3
EL1 37.7 EL2 15.0 ALF 34.45

LAUNCH DATE MAY 6 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC DISTANCE 358.353 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 33.022 GAL -1.23 AZL 91.93 HCA 119.85 SMA 198.53 ECC .24080 INC 1.9273 V1 29.526
RP 206.90 LAP -1.67 LOP 344.69 VP 24.788 GAP 13.73 AZP 89.04 TAL 353.67 TAP 113.51 RCA 150.73 APO 246.34 V2 26.470
RC 72.517 GL -16.91 GP .67 ZAL 107.19 ZAP 156.61 ETS 178.51 ZAE 171.03 ETE 23.81 ZAC 100.23 ETC 278.44 LVI -19.54

PLANETOCENTRIC CONIC

C3 14.566 VHL 3.816 DLA -26.15 RAL 341.49 RAD 6640.3 VEL 11.603 PTH 6.64 VHP 6.017 DPA -15.52 RAP 324.07 ECC 1.2397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 48	2522.46	-8.52	67.38	196.01	136.99	17 38 51	1522.5	9.87	51.62
60.00	18 11 9	2324.73	-3.41	54.45	200.89	130.18	18 49 53	1324.7	12.61	36.38
70.00	19 47 12	2042.29	1.96	35.61	204.96	124.10	20 21 15	1042.3	15.53	15.57
80.00	21 45 4	1673.36	6.94	10.68	208.03	119.11	22 12 58	673.4	18.28	349.05
90.00	23 34 43	1319.74	9.43	346.00	209.37	116.78	23 56 43	319.7	19.66	323.64
100.00	0 31 52	1147.83	6.94	332.05	208.03	119.11	0 51 0	147.8	18.28	310.42
110.00	0 50 35	1089.11	1.96	324.53	204.96	124.10	1 8 44	89.1	15.53	304.49

DIFFERENTIAL CORRECTIONS

TDE -.3406 TRA -.8141 TC3 .3888 BAU .0866
RDE -.3227 RRA .1108 RC3 .2160 FAU .07279
FDE .2648 FRA 1.8912 FC3-4.3264 BSP 2395
BDE .4692 BRA .8216 BC3 .4448 FSP 599

MID-COURSE EXECUTION ACCURACY

SGT 1484.3 SGR 544.3 SG3 396.6
RRT .0548 RRF -.0603 RTF -.8058
SGB 1580.9 R23 -.0093 R13 -.8059
SG1 1484.6 SG2 543.4 THA 1.33

ORBIT DETERMINATION ACCURACY

ST 32.7 SR 24.4 SS 26.9
CRT .7051 CRS .2784 CST .8748
LSA 43.8 MSA 21.6 SSA 1.4
EL1 38.0 EL2 14.9 ALF 33.53

LAUNCH DATE MAY 6 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 362.166 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.960 GAL -1.17 AZL 91.93 HCA 121.11 SMA 197.33 ECC .23611 INC 1.9316 V1 29.526
RP 206.98 LAP -1.65 LOP 345.96 VP 24.697 GAP 13.37 AZP 89.00 TAL 353.86 TAP 114.97 RCA 150.74 APO 243.92 V2 26.462
RC 73.950 GL -17.22 GP .70 ZAL 106.96 ZAP 155.36 ETS 178.54 ZAE 171.40 ETE 24.06 ZAC 100.26 ETC 278.44 LVI -19.58

PLANETOCENTRIC CONIC

C3 14.071 VHL 3.751 DLA -26.52 RAL 341.41 RAD 6640.1 VEL 11.581 PTH 6.62 VHP 5.835 DPA -15.49 RAP 324.08 ECC 1.2316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 22	2506.63	-7.73	66.70	195.66	137.09	17 40 9	1506.6	10.65	50.93
60.00	18 13 30	2306.82	-2.63	53.59	200.55	130.23	18 51 57	1306.8	13.36	35.47
70.00	19 50 50	2020.61	2.78	34.48	204.64	124.05	20 24 31	1020.6	16.28	14.34
80.00	21 51 3	1644.34	7.90	9.06	207.79	118.89	22 18 27	644.3	19.07	347.26
90.00	23 43 5	1283.05	10.55	343.89	209.19	116.39	24 4 28	283.0	20.52	321.30
100.00	0 37 50	1118.82	7.90	330.43	207.79	118.89	0 56 29	118.8	19.07	308.63
110.00	0 54 12	1067.43	2.78	323.40	204.64	124.05	1 12 0	67.4	16.28	303.26

DIFFERENTIAL CORRECTIONS

TDE -.3366 TRA -.8031 TC3 .3949 BAU .0854
RDE -.3134 RRA .1061 RC3 .2238 FAU .07629
FDE .2635 FRA 1.9774 FC3-4.6936 BSP 2457
BDE .4599 BRA .8101 BC3 .4539 FSP 645

MID-COURSE EXECUTION ACCURACY

SGT 1493.8 SGR 538.6 SG3 422.9
RRT .0590 RRF -.0654 RTF -.8039
SGB 1587.9 R23 -.0109 R13 -.8040
SG1 1494.2 SG2 537.5 THA 1.40

ORBIT DETERMINATION ACCURACY

ST 32.9 SR 24.1 SS 27.6
CRT .7054 CRS .2620 CST .8661
LSA 44.1 MSA 21.8 SSA 1.4
EL1 38.0 EL2 14.8 ALF 32.88

LAUNCH DATE MAY 6 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC DISTANCE 366.012 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.902 GAL -1.12 AZL 91.94 HCA 122.38 SMA 196.22 ECC .23171 INC 1.9361 V1 29.526
RP 207.04 LAP -1.64 LOP 347.23 VP 24.610 GAP 13.03 AZP 88.96 TAL 354.05 TAP 116.43 RCA 150.75 APO 241.69 V2 26.454
RC 75.426 GL -17.53 GP .73 ZAL 106.73 ZAP 154.08 ETS 178.56 ZAE 171.85 ETE 24.58 ZAC 100.29 ETC 278.44 LVI -19.60

PLANETOCENTRIC CONIC

C3 13.615 VHL 3.690 DLA -26.88 RAL 341.34 RAD 6639.9 VEL 11.562 PTH 6.61 VHP 5.659 DPA -15.46 RAP 324.06 ECC 1.2241

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 56	2491.35	-6.97	66.05	195.34	137.19	17 41 28	1491.3	11.41	50.27
60.00	18 15 50	2289.45	-1.86	52.76	200.23	130.27	18 54 0	1289.5	14.10	34.59
70.00	19 54 30	1999.36	3.59	33.37	204.36	123.99	20 27 49	999.4	17.01	13.12
80.00	21 57 15	1615.10	8.86	7.42	207.58	118.63	22 24 10	615.1	19.85	345.44
90.00	23 52 13	1244.39	11.71	341.64	209.07	115.93	24 12 57	244.4	21.40	318.80
100.00	0 44 3	1089.58	8.86	328.78	207.58	118.63	1 2 13	89.6	19.85	306.81
110.00	0 57 52	1046.18	3.59	322.28	204.36	123.99	1 15 18	46.2	17.01	302.04

DIFFERENTIAL CORRECTIONS

TDE -.3317 TRA -.7893 TC3 .4049 BAU .0849
RDE -.3043 RRA .1015 RC3 .2316 FAU .08012
FDE .2632 FRA 2.0685 FC3-5.0945 BSP 2485
BDE .4501 BRA .7959 BC3 .4665 FSP 694

MID-COURSE EXECUTION ACCURACY

SGT 1497.6 SGR 532.7 SG3 451.2
RRT .0646 RRF -.0716 RTF -.8033
SGB 1589.5 R23 -.0122 R13 -.8034
SG1 1498.0 SG2 531.4 THA 1.51

ORBIT DETERMINATION ACCURACY

ST 33.0 SR 23.8 SS 28.4
CRT .7062 CRS .2472 CST .8579
LSA 44.4 MSA 22.1 SSA 1.4
EL1 37.9 EL2 14.6 ALF 32.36

LAUNCH DATE MAY 6 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC DISTANCE 369.888 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.848 GAL -1.07 AZL 91.94 HCA 123.64 SMA 195.19 ECC .22759 INC 1.9406 V1 29.526
RP 207.12 LAP -1.62 LOP 348.49 VP 24.527 GAP 12.69 AZP 88.92 TAL 354.24 TAP 117.88 RCA 150.77 APO 239.61 V2 26.444
RC 76.944 GL -17.83 GP .76 ZAL 106.51 ZAP 152.76 ETS 178.58 ZAE 172.36 ETE 25.42 ZAC 100.33 ETC 278.43 LVI -19.62

PLANETOCENTRIC CONIC

C3 13.195 VHL 3.633 DLA -27.23 RAL 341.27 RAD 6639.7 VEL 11.544 PTH 6.59 VHP 5.489 DPA -15.45 RAP 324.00 ECC 1.2172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 29	2478.63	-6.23	65.43	195.05	137.26	17 42 46	1476.6	12.13	49.62
60.00	18 18 11	2272.65	-1.12	51.96	199.95	130.29	18 56 3	1272.6	14.80	33.73
70.00	19 58 11	1978.59	4.38	32.28	204.11	123.91	20 31 10	978.6	17.72	11.92
80.00	22 3 44	1595.58	9.81	5.75	207.41	118.34	22 30 9	585.6	20.62	343.59
90.00	0 6 20	1202.87	12.93	339.21	209.02	115.37	0 26 23	202.9	22.29	316.09
100.00	0 50 31	1060.05	9.81	327.12	207.41	118.34	1 8 11	60.1	20.62	304.95
110.00	1 1 33	1025.41	4.38	321.20	204.11	123.91	1 18 39	25.4	17.72	300.84

DIFFERENTIAL CORRECTIONS

TDE -.3261 TRA -.7746 TC3 .4109 BAU .0839
RDE -.2955 RRA .0970 RC3 .2393 FAU .08404
FDE .2621 FRA 2.1642 FC3-5.5135 BSP 2505
BDE .4401 BRA .7807 BC3 .4755 FSP 746

MID-COURSE EXECUTION ACCURACY

SGT 1497.2 SGR 526.4 SG3 480.7
RRT .0699 RRF -.0779 RTF -.8023
SGB 1587.1 R23 -.0140 R13 -.8025
SG1 1497.7 SG2 524.9 THA 1.61

ORBIT DETERMINATION ACCURACY

ST 33.0 SR 23.4 SS 29.2
CRT .7068 CRS .2321 CST .8494
LSA 44.5 MSA 22.4 SSA 1.4
EL1 37.8 EL2 14.5 ALF 31.92

LAUNCH DATE MAY 6 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 1 1971

HELIOCENTRIC CONIC DISTANCE 373.790 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.797 GAL -1.02 AZL 91.95 HCA 124.90 SMA 194.23 ECC .22373 INC 1.9453 V1 29.526
RP 207.21 LAP -1.60 LOP 349.76 VP 24.447 GAP 12.36 AZP 88.89 TAL 354.42 TAP 119.32 RCA 150.78 APO 237.69 V2 26.433
RC 78.502 GL -18.12 GP .79 ZAL 106.29 ZAP 151.42 ETS 178.60 ZAE 172.94 ETE 26.69 ZAC 100.37 ETC 278.42 LVI -19.63

PLANETOCENTRIC CONIC

C3 12.809 VHL 3.579 DLA -27.57 RAL 341.21 RAD 6639.5 VEL 11.527 PTH 6.57 VHP 5.325 DPA -15.44 RAP 323.91 ECC 1.2108

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 2	2462.50	-5.52	64.83	194.78	137.33	17 44 5	1462.5	12.83	49.00
60.00	18 20 30	2256.43	-.41	51.18	199.69	130.30	18 58 7	1256.4	15.48	32.90
70.00	20 1 53	1938.31	5.15	31.21	203.89	123.81	20 34 32	958.3	18.40	10.75
80.00	22 10 30	1555.67	10.78	4.05	207.28	118.01	22 36 26	555.7	21.37	341.68
90.00	0 18 9	1156.68	14.26	336.47	209.05	114.68	0 37 26	156.7	23.22	313.02
100.00	0 57 18	1030.14	10.78	325.42	207.28	118.01	1 14 28	30.1	21.37	303.05
110.00	1 5 16	1005.12	5.15	320.13	203.89	123.81	1 22 1	5.1	18.40	299.66

DIFFERENTIAL CORRECTIONS

TDE -.3200 TRA -.7585 TC3 .4164 BAU .0829
RDE -.2869 RRA .0926 RC3 .2469 FAU .08828
FDE .2594 FRA 2.2653 FC3-5.9668 BSP 2489
BDE .4298 BRA .7641 BC3 .4841 FSP 797

MID-COURSE EXECUTION ACCURACY

SGT 1492.5 SGR 519.9 SG3 512.3
RRT .0758 RRF -.0848 RTF -.8012
SGB 1580.4 R23 -.0157 R13 -.8014
SG1 1493.1 SG2 518.2 THA 1.72

ORBIT DETERMINATION ACCURACY

ST 32.8 SR 23.1 SS 30.0
CRT .7075 CRS .2158 CST .8399
LSA 44.7 MSA 22.7 SSA 1.4
EL1 37.5 EL2 14.3 ALF 31.56

LAUNCH DATE MAY 6 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 3 1971

HELIOCENTRIC CONIC DISTANCE 377.719 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.749	GAL	-.98	AZL	91.95	HCA	126.17	SMA	193.35	ECC	.22013	INC	1.9501	V1	29.526
RP	207.31	LAP	-1.57	LOP	351.02	VP	24.370	GAP	12.03	AZP	88.85	TAL	354.59	TAP	120.76	RCA	150.79	APO	235.91	V2	26.422
RC	80.098	GL	-18.41	GP	.83	ZAL	106.09	ZAP	150.04	ETS	178.62	ZAE	173.58	ETE	28.54	ZAC	100.43	ETC	278.40	LVI	-19.63

PLANETOCENTRIC CONIC

C3	12.454	VHL	3.529	DLA	-27.90	RAL	341.15	RAD	6639.3	VEL	11.512	PTH	6.56	VHP	5.168	DPA	-15.45	RAP	323.78	ECC	1.2050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 35	2448.96	-4.85	64.26	194.54	137.39	17 45 24	1449.0	13.50	48.40
60.00	18 22 50	2240.81	.28	50.44	199.46	130.30	19 0 10	1240.8	16.13	32.09
70.00	20 5 37	1938.55	5.90	30.17	203.70	123.70	20 37 55	938.5	19.05	9.59
80.00	22 17 37	1525.23	11.74	2.31	207.20	117.65	22 43 3	525.2	22.12	339.73
90.00	0 32 58	1101.45	15.81	333.15	209.21	113.76	0 51 19	101.4	24.25	309.30
100.00	1 4 25	6287.74	11.74	301.58	207.20	117.65	2 49 13	5287.7	22.12	279.00
110.00	1 8 59	6273.40	5.90	296.99	203.70	123.70	2 53 32	5273.4	19.05	276.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3135	TRA	-.7410	TC3	.4181	BAU	.0815	SGT	1483.0	SGR	513.1	SG3	545.4	ST	32.6	SR	22.8	SS	30.8
RDE	-.2786	RRA	.0883	RC3	.2545	FAU	.09275	RRT	.0821	RRF	-.0922	RTF	-.7993	CRT	.7086	CRS	.1990	CST	.8296
FDE	.2554	FRA	2.3710	FC3	-6.4476	BSP	2485	SGB	1569.3	R23	-.0178	R13	-.7996	LSA	44.7	MSA	23.0	SSA	1.4
BDE	.4194	BRA	.7463	BC3	.4895	FSP	855	SG1	1483.7	SG2	511.1	THA	1.85	EL1	37.2	EL2	14.1	ALF	31.26

LAUNCH DATE MAY 6 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 381.670 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.704	GAL	-.93	AZL	91.96	HCA	127.43	SMA	192.52	ECC	.21675	INC	1.9551	V1	29.526
RP	207.42	LAP	-1.55	LOP	352.28	VP	24.297	GAP	11.72	AZP	88.81	TAL	354.75	TAP	122.18	RCA	150.79	APO	234.25	V2	26.409
RC	81.730	GL	-18.68	GP	.87	ZAL	105.90	ZAP	148.62	ETS	178.63	ZAE	174.28	ETE	31.22	ZAC	100.49	ETC	278.37	LVI	-19.63

PLANETOCENTRIC CONIC

C3	12.128	VHL	3.483	DLA	-28.22	RAL	341.10	RAD	6639.1	VEL	11.498	PTH	6.55	VHP	5.016	DPA	-15.46	RAP	323.62	ECC	1.1996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 6	2436.01	-4.20	63.72	194.32	137.44	17 46 42	1436.0	14.13	47.83
60.00	18 25 8	2225.81	.94	49.72	199.26	130.29	19 2 14	1225.8	16.75	31.30
70.00	20 9 20	1919.34	6.62	29.16	203.54	123.58	20 41 20	919.3	19.68	8.45
80.00	22 25 10	1494.04	12.72	.51	207.16	117.24	22 50 4	494.0	22.85	337.70
90.00	0 57 35	1015.09	18.10	327.85	209.72	112.11	1 14 30	15.1	25.64	303.36
100.00	1 11 58	6256.55	12.72	299.79	207.16	117.24	2 56 14	5256.6	22.85	276.98
110.00	1 12 43	6254.20	6.62	295.98	203.54	123.58	2 56 57	5254.2	19.68	275.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3079	TRA	-.7229	TC3	.4114	BAU	.0791	SGT	1469.9	SGR	506.0	SG3	579.9	ST	32.4	SR	22.4	SS	31.6
RDE	-.2706	RRA	.0840	RC3	.2619	FAU	.09731	RRT	.0889	RRF	-.1006	RTF	-.7959	CRT	.7112	CRS	.1860	CST	.8200
FDE	.2541	FRA	2.4819	FC3	-6.9460	BSP	2453	SGB	1554.6	R23	-.0206	R13	-.7962	LSA	44.9	MSA	23.2	SSA	1.4
BDE	.4099	BRA	.7277	BC3	.4877	FSP	913	SG1	1470.7	SG2	503.8	THA	1.99	EL1	36.9	EL2	13.8	ALF	30.97

LAUNCH DATE MAY 6 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 385.644 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.662	GAL	-.90	AZL	91.96	HCA	128.69	SMA	191.76	ECC	.21361	INC	1.9602	V1	29.526
RP	207.54	LAP	-1.53	LOP	353.54	VP	24.225	GAP	11.41	AZP	88.77	TAL	354.90	TAP	123.59	RCA	150.80	APO	232.72	V2	26.395
RC	83.399	GL	-18.95	GP	.91	ZAL	105.72	ZAP	147.17	ETS	178.64	ZAE	175.02	ETE	35.18	ZAC	100.55	ETC	278.33	LVI	-19.62

PLANETOCENTRIC CONIC

C3	11.829	VHL	3.439	DLA	-28.53	RAL	341.07	RAD	6639.0	VEL	11.485	PTH	6.53	VHP	4.871	DPA	-15.49	RAP	323.42	ECC	1.1947

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 38	2423.68	-3.58	63.20	194.14	137.47	17 48 2	1423.7	14.73	47.27
60.00	18 27 25	2211.44	1.57	49.03	199.08	130.28	19 4 16	1211.4	17.34	30.54
70.00	20 13 4	1900.71	7.33	28.17	203.41	123.45	20 44 45	900.7	20.28	7.34
80.00	22 33 14	1461.79	13.72	358.64	207.18	116.78	22 57 35	461.8	23.57	335.58
86.05	0 40 8	1065.81	19.67	332.22	209.93	111.09	0 57 54	65.8	26.63	307.30
100.00	1 20 1	6224.30	13.72	297.91	207.18	116.78	3 3 46	5224.3	23.57	274.86
110.00	1 16 26	6235.57	7.33	294.99	203.41	123.45	3 0 22	5235.6	20.28	274.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3021	TRA	-.7044	TC3	.3997	BAU	.0782	SGT	1453.6	SGR	498.8	SG3	616.7	ST	32.2	SR	22.0	SS	32.5
RDE	-.2628	RRA	.0797	RC3	.2693	FAU	.10218	RRT	.0956	RRF	-.1097	RTF	-.7914	CRT	.7141	CRS	.1719	CST	.8094
FDE	.2512	FRA	2.6006	FC3	-7.4784	BSP	2424	SGB	1536.8	R23	-.0241	R13	-.7918	LSA	45.0	MSA	23.5	SSA	1.4
BDE	.4004	BRA	.7089	BC3	.4820	FSP	978	SG1	1454.5	SG2	496.2	THA	2.13	EL1	36.5	EL2	13.6	ALF	30.71

LAUNCH DATE MAY 6 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 389.638 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.623	GAL	-.86	AZL	91.97	HCA	129.94	SMA	191.06	ECC	.21067	INC	1.9656	V1	29.526
RP	207.66	LAP	-1.51	LOP	354.80	VP	24.157	GAP	11.11	AZP	88.74	TAL	355.04	TAP	124.99	RCA	150.81	APO	231.31	V2	26.381
RC	85.104	GL	-19.22	GP	.95	ZAL	105.55	ZAP	145.68	ETS	178.65	ZAE	175.78	ETE	41.20	ZAC	100.63	ETC	278.28	LVI	-19.60

PLANETOCENTRIC CONIC

C3	11.554	VHL	3.399	DLA	-28.83	RAL	341.04	RAD	6638.8	VEL	11.473	PTH	6.52	VHP	4.731	DPA	-15.52	RAP	323.17	ECC	1.1901

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 9	2411.91	-2.99	62.71	193.97	137.50	17 49 21	1411.9	15.30	46.74
60.00	18 29 41	2197.66	2.18	48.37	198.94	130.25	19 6 19	1197.7	17.90	29.82
70.00	20 16 48	1882.60	8.00	27.21	203.30	123.31	20 48 11	882.6	20.86	6.25
80.00	22 42 0	1427.81	14.75	356.64	207.24	116.26	23 5 48	427.8	24.30	333.32
84.15	0 24 24	1111.34	19.99	335.69	209.65	111.22	0 42 55	111.3	26.97	310.71
100.00	1 28 48	6190.32	14.75	295.92	207.24	116.26	3 11 58	5190.3	24.30	272.60
110.00	1 20 11	6217.46	8.00	294.03	203.30	123.31	3 3 48	5217.5	20.86	273.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2884	TRA	-.6756	TC3	.4138	BAU	.0769	SGT	1416.0	SGR	491.4	SG3	655.5	ST	31.2	SR	21.6	SS	33.2
RDE	-.2551	RRA	.0756	RC3	.2769	FAU	.10772	RRT	.1047	RRF	-.1200	RTF	-.7940	CRT	.7129	CRS	.1517	CST	.7982
FDE	.2402	FRA	2.7144	FC3	-8.0718	BSP	2276	SGB	1498.8	R23	-.0258	R13	-.7945	LSA	44.5	MSA	23.7	SSA	1.4
BDE	.3850	BRA	.6798	BC3	.4979	FSP	1035	SG1	1417.0	SG2	488.3	THA	2.36	EL1	35.5	EL2	13.3	ALF	31.15

LAUNCH DATE MAY 6 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 393.649 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.587	GAL	-.83	AZL	91.97	HCA	131.20	SMA	190.41	ECC	.20793	INC	1.9710	V1	29.526
RP	207.80	LAP	-1.48	LOP	356.05	VP	24.091	GAP	10.81	AZP	88.70	TAL	355.17	TAP	126.37	RCA	150.81	APO	230.00	V2	26.365
RC	86.843	GL	-19.47	GP	.99	ZAL	105.41	ZAP	144.16	ETS	178.65	ZAE	176.52	ETE	50.69	ZAC	100.71	ETC	278.23	LVI	-19.57

PLANETOCENTRIC CONIC

C3	11.303	VHL	3.362	DLA	-29.11	RAL	341.03	RAD	6638.7	VEL	11.462	PTH	6.51	VHP	4.597	DPA	-15.56	RAP	322.89	ECC	1.1660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 39	2400.84	-2.43	62.24	193.84	137.53	17 50 40	1400.8	15.84	46.24
60.00	18 31 55	2184.64	2.75	47.75	198.82	130.22	19 8 20	1184.6	18.43	29.12
70.00	20 20 31	1865.27	8.65	26.28	203.23	123.17	20 51 36	865.3	21.40	5.20
80.00	22 51 41	1391.63	15.83	354.50	207.37	115.65	23 14 53	391.6	25.04	330.89
82.79	0 13 21	1142.26	20.29	338.09	209.41	111.34	0 32 23	142.3	27.29	313.05
100.00	1 38 29	6154.14	15.83	293.77	207.37	115.65	3 21 3	5154.1	25.04	270.16
110.00	1 23 53	6200.13	8.65	293.10	203.23	123.17	3 7 13	5200.1	21.40	272.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2902	TRA	-.6613	TC3	.3658	BAU	.0700	SGT	1403.2	SGR	483.8	SG3	695.6	ST	31.4	SR	21.2	SS	34.3
RDE	-.2477	RRA	.0713	RC3	.2839	FAU	.11281	RRT	.1124	RRF	-.1314	RTF	-.7793	CRT	.7232	CRS	.1461	CST	.7857
FDE	.2442	FRA	2.8492	FC3	-8.6405	BSP	2378	SGB	1484.2	R23	-.0324	R13	-.7799	LSA	45.1	MSA	24.0	SSA	1.4
BDE	.3816	BRA	.6651	BC3	.4630	FSP	1117	SG1	1404.4	SG2	480.3	THA	2.51	EL1	35.6	EL2	12.9	ALF	30.46

LAUNCH DATE MAY 6 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 397.678 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.553	GAL	-.80	AZL	91.98	HCA	132.46	SMA	189.80	ECC	.20538	INC	1.9768	V1	29.526
RP	207.94	LAP	-1.46	LOP	357.31	VP	24.026	GAP	10.52	AZP	88.67	TAL	355.29	TAP	127.74	RCA	150.82	APO	228.78	V2	26.349
RC	88.616	GL	-19.72	GP	1.04	ZAL	105.27	ZAP	142.59	ETS	178.66	ZAE	177.14	ETE	66.05	ZAC	100.80	ETC	278.17	LVI	-19.53

PLANETOCENTRIC CONIC

C3	11.074	VHL	3.328	DLA	-29.38	RAL	341.03	RAD	6638.6	VEL	11.453	PTH	6.50	VHP	4.469	DPA	-15.62	RAP	322.57	ECC	1.1822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 9	2390.36	-1.91	61.80	193.74	137.55	17 52 0	1390.4	16.35	45.76
60.00	18 34 9	2172.26	3.30	47.16	198.73	130.19	19 10 21	1172.3	18.93	28.46
70.00	20 24 12	1848.54	9.27	25.38	203.19	123.02	20 55 0	848.5	21.92	4.18
80.00	23 2 56	1351.05	17.01	352.06	207.59	114.91	23 25 27	351.0	25.81	328.12
81.68	0 4 35	1166.14	20.57	339.98	209.20	111.45	0 24 2	166.1	27.59	314.88
100.00	1 49 44	6113.56	17.01	291.34	207.59	114.91	3 31 37	5113.6	25.81	267.39
110.00	1 27 34	6183.40	9.27	292.21	203.19	123.02	3 10 37	5183.4	21.92	271.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2854	TRA	-.6412	TC3	.3284	BAU	.0659	SGT	1376.4	SGR	475.9	SG3	737.7	ST	31.1	SR	20.8	SS	35.3
RDE	-.2405	RRA	.0671	RC3	.2911	FAU	.11826	RRT	.1189	RRF	-.1423	RTF	-.7682	CRT	.7290	CRS	.1314	CST	.7710
FDE	.2374	FRA	2.9887	FC3	-9.2455	BSP	2286	SGB	1456.3	R23	-.0391	R13	-.7689	LSA	45.3	MSA	24.2	SSA	1.4
BDE	.3732	BRA	.6447	BC3	.4388	FSP	1192	SG1	1377.7	SG2	472.1	THA	2.67	EL1	35.2	EL2	12.6	ALF	30.26

LAUNCH DATE MAY 6 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 401.722 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.521	GAL	-.78	AZL	91.98	HCA	133.71	SMA	189.24	ECC	.20302	INC	1.9827	V1	29.526
RP	208.08	LAP	-1.43	LOP	358.56	VP	23.964	GAP	10.24	AZP	88.63	TAL	355.39	TAP	129.10	RCA	150.82	APO	227.66	V2	26.332
RC	90.421	GL	-19.96	GP	1.09	ZAL	105.16	ZAP	140.99	ETS	178.66	ZAE	177.46	ETE	89.05	ZAC	100.90	ETC	278.10	LVI	-19.49

PLANETOCENTRIC CONIC

C3	10.864	VHL	3.296	DLA	-29.64	RAL	341.04	RAD	6638.5	VEL	11.443	PTH	6.49	VHP	4.346	DPA	-15.68	RAP	322.21	ECC	1.1788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 39	2380.50	-1.41	61.39	193.66	137.56	17 53 20	1380.5	16.83	45.31
60.00	18 36 20	2160.54	3.81	46.60	198.67	130.15	19 12 20	1160.5	19.40	27.82
70.00	20 27 51	1832.48	9.87	24.52	203.18	122.86	20 58 24	832.5	22.41	3.19
80.00	23 17 18	1301.11	18.42	349.02	207.94	113.92	23 38 59	301.1	26.68	324.66
80.74	23 53 25	1185.64	20.84	341.53	209.02	111.56	24 13 10	185.6	27.88	316.39
100.00	2 4 6	6063.63	18.42	288.30	207.94	113.92	3 45 10	5063.6	26.68	263.94
110.00	1 31 14	6167.34	9.87	291.34	203.18	122.86	3 14 1	5167.3	22.41	270.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2810	TRA	-.6179	TC3	.2858	BAU	.0600	SGT	1342.0	SGR	468.0	SG3	781.5	ST	30.7	SR	20.4	SS	36.3
RDE	-.2334	RRA	.0628	RC3	.2982	FAU	.12396	RRT	.1273	RRF	-.1554	RTF	-.7731	CRT	.7373	CRS	.1210	CST	.7563
FDE	.2340	FRA	3.1323	FC3	-9.8778	BSP	2217	SGB	1421.3	R23	-.0466	R13	-.7561	LSA	45.5	MSA	24.5	SSA	1.4
BDE	.3653	BRA	.6210	BC3	.4130	FSP	1270	SG1	1343.5	SG2	463.7	THA	2.89	EL1	34.8	EL2	12.1	ALF	30.16

LAUNCH DATE MAY 6 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 405.782 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.492	GAL	-.76	AZL	91.99	HCA	134.96	SMA	188.73	ECC	.20082	INC	1.9889	V1	29.526
RP	208.24	LAP	-1.41	LOP	359.81	VP	23.904	GAP	9.97	AZP	88.59	TAL	355.48	TAP	130.44	RCA	150.83	APO	226.63	V2	26.313
RC	92.259	GL	-20.19	GP	1.14	ZAL	105.07	ZAP	139.34	ETS	178.66	ZAE	177.28	ETE	114.92	ZAC	101.01	ETC	278.02	LVI	-19.43

PLANETOCENTRIC CONIC

C3	10.674	VHL	3.267	DLA	-29.88	RAL	341.07	RAD	6638.4	VEL	11.435	PTH	6.49	VHP	4.228	DPA	-15.75	RAP	321.81	ECC	1.1757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 9	2371.25	-.95	61.01	193.61	137.57	17 54 40	1371.3	17.27	44.89
60.00	18 38 29	2149.50	4.29	46.07	198.63	130.11	19 14 19	1149.5	19.84	27.22
70.00	20 31 29	1817.13	10.43	23.69	203.20	122.71	21 1 46	817.1	22.87	2.24
79.93	23 47 19	1201.89	21.09	342.85	208.87	111.66	24 7 21	201.9	28.15	317.65
79.93	23 47 19	1201.89	21.09	342.85	208.87	111.66	24 7 21	201.9	28.15	317.65
79.93	23 47 19	1201.89	21.09	342.85	208.87	111.66	24 7 21	201.9	28.15	317.65
110.00	1 34 51	6151.99	10.43	290.52	203.20	122.71	3 17 23	5152.0	22.87	269.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2773	TRA	-.5914	TC3	.2407	BAU	.0555	SGT	1300.8	SGR	460.1	SG3	826.6	ST	30.2	SR	19.9	SS	37.3
RDE	-.2265	RRA	.0586	RC3	.3054	FAU	.12998	RRT	.1383	RRF	-.1712	RTF	-.7401	CRT	.7485	CRS	.1166	CST	.7422
FDE	.2360	FRA	3.2757	FC3	-10.5425	BSP	2121	SGB	1379.8	R23	-.0551	R13	-.7413	LSA	45.7	MSA	24.6	SSA	1.4
BDE	.3581	BRA	.5943	BC3	.3888	FSP	1349	SG1	1302.6	SG2	455.1	THA	3.19	EL1	34.3	EL2	11.7	ALF	30.13

LAUNCH DATE MAY 6 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 409.856 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.464	GAL	-.74	AZL	92.00	HCA	136.21	SMA	188.25	ECC	.19878	INC	1.9954	V1	29.526
RP	208.41	LAP	-1.38	LOP	1.06	VP	23.846	GAP	9.70	AZP	88.56	TAL	355.56	TAP	131.76	RCA	150.83	APO	225.67	V2	26.294
RC	94.126	GL	-20.41	GP	1.20	ZAL	104.99	ZAP	137.66	ETS	178.67	ZAE	176.59	ETE	135.05	ZAC	101.12	ETC	277.93	LVI	-19.36

PLANETOCENTRIC CONIC

C3	10.500	VHL	3.240	DLA	-30.11	RAL	341.11	RAD	6638.3	VEL	11.428	PTH	6.48	VHP	4.116	DPA	-15.84	RAP	321.36	ECC	1.1728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 37	2362.58	-.51	60.64	193.58	137.57	17 56 0	1362.6	17.69	44.48
60.00	18 40 37	2139.10	4.75	45.57	198.63	130.07	19 16 16	1139.1	20.25	26.65
70.00	20 35 3	1802.44	10.97	22.90	203.24	122.55	21 5 6	802.4	23.31	1.33
79.22	23 42 5	1215.83	21.33	343.99	208.76	111.76	24 2 21	215.8	28.40	318.74
79.22	23 42 5	1215.83	21.33	343.99	208.76	111.76	24 2 21	215.8	28.40	318.74
79.22	23 42 5	1215.83	21.33	343.99	208.76	111.76	24 2 21	215.8	28.40	318.74
110.00	1 38 26	6137.30	10.97	289.72	203.24	122.55	3 20 43	5137.3	23.31	268.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2646	TRA	-.5579	TC3	.2178	BAU	.0536	SGT	1240.5	SGR	452.1	SG3	875.1	ST	29.0	SR	19.5	SS	38.1
RDE	-.2196	RRA	.0544	RC3	.3134	FAU	.13704	RRT	.1489	RRF	-.1875	RTF	-.7305	CRT	.7538	CRS	.0957	CST	.7224
FDE	.2163	FRA	3.4180	FC	-11.2993	BSP	1905	SGB	1320.4	R23	-.0632	R13	-.7321	LSA	45.3	MSA	24.8	SSA	1.4
BDE	.3439	BRA	.5605	BC3	.3816	FSP	1410	SG1	1242.6	SG2	446.3	THA	3.57	EL1	33.1	EL2	11.2	ALF	30.81

LAUNCH DATE MAY 6 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 413.940 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.439	GAL	-.72	AZL	92.00	HCA	137.46	SMA	187.81	ECC	.19689	INC	2.0021	V1	29.526
RP	208.58	LAP	-1.35	LOP	2.31	VP	23.790	GAP	9.44	AZP	88.52	TAL	355.61	TAP	133.07	RCA	150.83	APO	224.79	V2	26.274
RC	96.027	GL	-20.63	GP	1.26	ZAL	104.93	ZAP	135.94	ETS	178.67	ZAE	175.58	ETE	147.86	ZAC	101.24	ETC	277.84	LVI	-19.29

PLANETOCENTRIC CONIC

C3	10.344	VHL	3.216	DLA	-30.32	RAL	341.18	RAD	6638.2	VEL	11.421	PTH	6.47	VHP	4.009	DPA	-15.93	RAP	320.87	ECC	1.1702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 6	2354.62	-.11	60.31	193.59	137.58	17 57 21	1354.6	18.07	44.11
60.00	18 42 43	2129.51	5.17	45.11	198.65	130.02	19 18 12	1129.5	20.63	26.13
70.00	20 38 33	1788.70	11.47	22.15	203.31	122.39	21 8 22	788.7	23.71	.48
78.59	23 37 40	1227.69	21.55	344.96	208.68	111.86	23 58 8	227.7	28.64	319.67
78.59	23 37 40	1227.69	21.55	344.96	208.68	111.86	23 58 8	227.7	28.64	319.67
78.59	23 37 40	1227.69	21.55	344.96	208.68	111.86	23 58 8	227.7	28.64	319.67
110.00	1 41 55	6123.55	11.47	288.97	203.31	122.39	3 23 59	5123.5	23.71	267.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2708	TRA	-.5397	TC3	.1154	BAU	.0471	SGT	1216.1	SGR	444.0	SG3	923.9	ST	29.3	SR	19.1	SS	39.5
RDE	-.2131	RRA	.0499	RC3	.3201	FAU	.14271	RRT	.1553	RRF	-.2054	RTF	-.6953	CRT	.7732	CRS	.1037	CST	.7069
FDE	.2326	FRA	3.5988	FC	-11.9439	BSP	1923	SGB	1294.6	R23	-.0823	R13	-.6975	LSA	46.4	MSA	25.1	SSA	1.4
BDE	.3446	BRA	.5420	BC3	.3403	FSP	1518	SG1	1218.3	SG2	437.8	THA	3.73	EL1	33.3	EL2	10.6	ALF	30.03

LAUNCH DATE MAY 6 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 418.037 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.415	GAL	-.71	AZL	92.01	HCA	138.70	SMA	187.41	ECC	.19515	INC	2.0093	V1	29.526
RP	208.76	LAP	-1.33	LOP	3.55	VP	23.735	GAP	9.18	AZP	88.49	TAL	355.66	TAP	134.36	RCA	150.84	APO	223.98	V2	26.254
RC	97.955	GL	-20.84	GP	1.32	ZAL	104.90	ZAP	134.17	ETS	178.67	ZAE	174.36	ETE	155.90	ZAC	101.38	ETC	277.73	LVI	-19.21

PLANETOCENTRIC CONIC

C3	10.204	VHL	3.194	DLA	-30.51	RAL	341.26	RAD	6638.1	VEL	11.415	PTH	6.47	VHP	3.908	DPA	-16.03	RAP	320.34	ECC	1.1679

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 35	2347.21	.26	60.00	193.61	137.58	17 58 42	1347.2	18.43	43.77
60.00	18 44 46	2120.55	5.56	44.67	198.69	129.98	19 20 7	1120.6	20.98	25.63
70.00	20 42 0	1775.64	11.95	21.44	203.40	122.24	21 11 35	775.6	24.09	359.64
78.03	23 33 52	1238.05	21.75	345.83	208.63	111.94	23 54 30	238.0	28.85	320.49
78.03	23 33 52	1238.05	21.75	345.83	208.63	111.94	23 54 30	238.0	28.85	320.49
78.03	23 33 52	1238.05	21.75	345.83	208.63	111.94	23 54 30	238.0	28.85	320.49
110.00	1 45 22	6110.50	11.95	288.26	203.40	122.24	3 27 13	5110.5	24.09	266.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2672	TRA	-.5110	TC3	.0329	BAU	.0449	SGT	1167.0	SGR	435.9	SG3	973.3	ST	28.8	SR	18.6	SS	40.6
RDE	-.2066	RRA	.0453	RC3	.3273	FAU	.14892	RRT	.1603	RRF	-.2240	RTF	-.6928	CRT	.7876	CRS	.0984	CST	.6863
FDE	.2302	FRA	3.7693	FC	-12.6347	BSP	1808	SGB	1245.7	R23	-.1023	R13	-.6657	LSA	46.7	MSA	25.2	SSA	1.3
BDE	.3378	BRA	.5130	BC3	.3289	FSP	1609	SG1	1169.4	SG2	429.4	THA	3.96	EL1	32.8	EL2	10.1	ALF	30.09

LAUNCH DATE MAY 6 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 422.144 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.394	GAL	-.70	AZL	92.02	HCA	139.94	SMA	187.04	ECC	.19355	INC	2.0166	V1	29.526
RP	208.94	LAP	-1.30	LOP	4.80	VP	23.681	GAP	8.93	AZP	88.46	TAL	355.69	TAP	135.64	RCA	150.84	APO	223.24	V2	26.232
RC	99.910	GL	-21.04	GP	1.38	ZAL	104.88	ZAP	132.37	ETS	178.67	ZAE	173.01	ETE	161.14	ZAC	101.52	ETC	277.62	LVI	-19.11

PLANETOCENTRIC CONIC

C3	10.078	VHL	3.175	DLA	-30.70	RAL	341.36	RAD	6638.1	VEL	11.409	PTH	6.46	VHP	3.812	DPA	-16.13	RAP	319.77	ECC	1.1659

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 3	2340.41	.60	59.72	193.67	137.57	18 0 4	1340.4	18.75	43.45
60.00	18 46 48	2112.28	5.92	44.27	198.77	129.94	19 22 0	1112.3	21.31	25.17
70.00	20 45 22	1763.40	12.39	20.77	203.52	122.08	21 14 45	763.4	24.44	358.86
77.53	23 30 40	1247.00	21.94	346.58	208.62	112.02	23 51 27	247.0	29.06	321.20
77.53	23 30 40	1247.00	21.94	346.58	208.62	112.02	23 51 27	247.0	29.06	321.20
77.53	23 30 40	1247.00	21.94	346.58	208.62	112.02	23 51 27	247.0	29.06	321.20
110.00	1 48 44	6098.25	12.39	287.59	203.52	122.08	3 30 22	5098.3	24.44	265.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2644	TRA	-.4795	TC3	-.0502	BAU	.0456	SGT	1114.3	SGR	428.1	SG3	1025.2	ST	28.2	SR	18.1	SS	41.6
RDE	-.2003	RRA	.0408	RC3	.3351	FAU	.15585	RRT	.1669	RRF	-.2463	RTF	-.6239	CRT	.8049	CRS	.0963	CST	.6635
FDE	.2304	FRA	3.9394	FC	-13.3883	BSP	1667	SGB	1193.7	R23	-.1266	R13	-.6277	LSA	47.0	MSA	25.4	SSA	1.3
BDE	.3317	BRA	.4812	BC3	.3388	FSP	1698	SG1	1116.9	SG2	421.1	THA	4.28	EL1	32.2	EL2	9.4	ALF	30.18

LAUNCH DATE MAY 6 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 426.282 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.374	GAL	-.69	AZL	92.02	HCA	141.19	SMA	186.70	ECC	.19208	INC	2.0244	V1	29.526
RP	209.14	LAP	-1.27	LOP	6.04	VP	23.629	GAP	8.68	AZP	88.42	TAL	355.71	TAP	136.89	RCA	150.84	APO	222.56	V2	26.209
RC	101.892	GL	-21.24	GP	1.45	ZAL	104.89	ZAP	130.53	ETS	178.67	ZAE	171.56	ETE	164.74	ZAC	101.66	ETC	277.49	LVI	-19.01

PLANETOCENTRIC CONIC

C3	9.966	VHL	3.157	DLA	-30.87	RAL	341.49	RAD	6638.0	VEL	11.404	PTH	6.46	VHP	3.721	DPA	-16.25	RAP	319.15	ECC	1.1640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 31	2334.19	.92	59.46	193.75	137.57	18 1 26	1334.2	19.05	43.16
60.00	18 48 47	2104.69	6.26	43.91	198.87	129.89	19 23 51	1104.7	21.60	24.75
70.00	20 48 38	1751.98	12.81	20.14	203.67	121.94	21 17 50	752.0	24.76	358.13
77.09	23 27 56	1254.96	22.11	347.25	208.64	112.10	23 48 51	255.0	29.24	321.84
77.09	23 27 56	1254.96	22.11	347.25	208.64	112.10	23 48 51	255.0	29.24	321.84
77.09	23 27 56	1254.96	22.11	347.25	208.64	112.10	23 48 51	255.0	29.24	321.84
110.00	1 52 1	6086.84	12.81	286.96	203.67	121.94	3 33 27	5086.8	24.76	264.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2617	TRA	-.4458	TC3	-.1444	BAU	.0496	SGT	1059.5	SGR	420.4	SG3	1077.7	ST	27.6	SR	17.6	SS	42.7
RDE	-.1940	RRA	.0361	RC3	.3430	FAU	.16278	RRT	.1698	RRF	-.2707	RTF	-.5742	CRT	.8240	CRS	.0974	CST	.6389
FDE	.2336	FRA	4.1147	FC-14.1407		BSP	1522	SG8	1139.9	R23	-.1579	R13	-.5794	LSA	47.4	MSA	25.5	SSA	1.3
BDE	.3258	BRA	.4473	BC3	.3722	FSP	1794	SG1	1062.4	SG2	413.2	THA	4.54	EL1	31.6	EL2	8.7	ALF	30.31

LAUNCH DATE MAY 6 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 430.388 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.355	GAL	-.69	AZL	92.03	HCA	142.42	SMA	186.39	ECC	.19073	INC	2.0326	V1	29.526
RP	209.34	LAP	-1.24	LOP	7.28	VP	23.578	GAP	8.44	AZP	88.39	TAL	355.71	TAP	136.13	RCA	150.84	APO	221.94	V2	26.186
RC	103.900	GL	-21.43	GP	1.53	ZAL	104.92	ZAP	128.65	ETS	178.67	ZAE	170.02	ETE	167.31	ZAC	101.82	ETC	277.36	LVI	-18.90

PLANETOCENTRIC CONIC

C3	9.867	VHL	3.141	DLA	-31.02	RAL	341.63	RAD	6638.0	VEL	11.400	PTH	6.45	VHP	3.635	DPA	-16.37	RAP	318.49	ECC	1.1624

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 0	2328.55	1.20	59.22	193.86	137.56	18 2 48	1328.5	19.32	42.89
60.00	18 50 44	2097.76	6.56	43.57	198.99	129.85	19 25 42	1097.8	21.87	24.36
70.00	20 51 50	1741.39	13.19	19.55	203.84	121.79	21 20 51	741.4	25.06	357.45
76.69	23 25 39	1261.95	22.27	347.84	208.69	112.17	23 46 41	261.9	29.41	322.40
76.69	23 25 39	1261.95	22.27	347.84	208.69	112.17	23 46 41	261.9	29.41	322.40
76.69	23 25 39	1261.95	22.27	347.84	208.69	112.17	23 46 41	261.9	29.41	322.40
110.00	1 55 12	6076.25	13.19	286.38	203.84	121.79	3 36 28	5076.3	25.06	264.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2570	TRA	-.4100	TC3	-.2457	BAU	.0565	SGT	1002.5	SGR	412.8	SG3	1131.0	ST	26.9	SR	17.2	SS	43.8
RDE	-.1878	RRA	.0312	RC3	.3512	FAU	.16979	RRT	.1658	RRF	-.2959	RTF	-.5126	CRT	.8430	CRS	.0924	CST	.6078
FDE	.2260	FRA	4.2959	FC-14.8978		BSP	1335	SG8	1084.2	R23	-.1969	R13	-.5194	LSA	47.7	MSA	25.6	SSA	1.3
BDE	.3183	BRA	.4112	BC3	.4286	FSP	1883	SG1	1005.3	SG2	406.0	THA	4.67	EL1	30.8	EL2	8.0	ALF	30.62

LAUNCH DATE MAY 6 1971 FLIGHT TIME 178.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 434.523 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.339	GAL	-.69	AZL	92.04	HCA	143.66	SMA	186.10	ECC	.18949	INC	2.0412	V1	29.526
RP	209.55	LAP	-1.21	LOP	8.31	VP	23.528	GAP	8.20	AZP	88.36	TAL	355.69	TAP	139.35	RCA	150.84	APO	221.37	V2	26.162
RC	105.933	GL	-21.61	GP	1.60	ZAL	104.97	ZAP	126.74	ETS	178.67	ZAE	168.40	ETE	169.21	ZAC	101.99	ETC	277.21	LVI	-18.77

PLANETOCENTRIC CONIC

C3	9.780	VHL	3.127	DLA	-31.16	RAL	341.79	RAD	6637.9	VEL	11.396	PTH	6.45	VHP	3.554	DPA	-16.49	RAP	317.80	ECC	1.1609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 28	2323.45	1.46	59.01	194.00	137.56	18 4 12	1323.4	19.56	42.65
60.00	18 52 39	2091.47	6.83	43.27	199.14	129.82	19 27 31	1091.5	22.12	24.01
70.00	20 54 55	1731.62	13.54	19.01	204.04	121.66	21 23 47	731.6	25.33	356.82
76.34	23 23 48	1268.06	22.41	348.37	208.77	112.24	23 44 56	268.1	29.56	322.89
76.34	23 23 48	1268.06	22.41	348.37	208.77	112.24	23 44 56	268.1	29.56	322.89
76.34	23 23 48	1268.06	22.41	348.37	208.77	112.24	23 44 56	268.1	29.56	322.89
110.00	1 58 18	6066.48	13.54	285.84	204.04	121.66	3 39 24	5066.5	25.33	263.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2490	TRA	-.3669	TC3	-.3393	BAU	.0647	SGT	932.8	SGR	405.7	SG3	1184.8	ST	25.7	SR	16.7	SS	44.6
RDE	-.1815	RRA	.0263	RC3	.3604	FAU	.17757	RRT	.1575	RRF	-.3243	RTF	-.4971	CRT	.8639	CRS	.0832	CST	.5681
FDE	.2085	FRA	4.4615	FC-15.7191		BSP	1078	SG8	1017.2	R23	-.2429	R13	-.4461	LSA	47.7	MSA	25.5	SSA	1.3
BDE	.3061	BRA	.3678	BC3	.4930	FSP	1950	SG1	935.5	SG2	399.5	THA	4.80	EL1	29.7	EL2	7.3	ALF	31.33

LAUNCH DATE MAY 6 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 438.663 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.323	GAL	-.69	AZL	92.05	HCA	144.89	SMA	185.85	ECC	.18837	INC	2.0504	V1	29.526
RP	209.76	LAP	-1.18	LOP	9.75	VP	23.479	GAP	7.97	AZP	88.32	TAL	355.66	TAP	140.55	RCA	150.84	APO	220.85	V2	26.137
RC	107.990	GL	-21.79	GP	1.69	ZAL	105.04	ZAP	124.80	ETS	178.67	ZAE	166.72	ETE	170.65	ZAC	102.16	ETC	277.06	LVI	-18.64

PLANETOCENTRIC CONIC

C3	9.706	VHL	3.115	DLA	-31.28	RAL	341.97	RAD	6637.9	VEL	11.393	PTH	6.45	VHP	3.478	DPA	-16.62	RAP	317.06	ECC	1.1597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 57	2318.98	1.68	58.82	194.17	137.55	18 5 36	1319.0	19.77	42.43
60.00	18 54 32	2085.95	7.07	43.00	199.32	129.78	19 29 18	1085.9	22.33	23.70
70.00	20 57 53	1722.90	13.85	18.53	204.26	121.54	21 26 36	722.9	25.56	356.25
76.03	23 22 22	1273.36	22.53	348.82	208.89	112.30	23 43 36	273.4	29.70	323.32
76.03	23 22 22	1273.36	22.53	348.82	208.89	112.30	23 43 36	273.4	29.70	323.32
76.03	23 22 22	1273.36	22.53	348.82	208.89	112.30	23 43 36	273.4	29.70	323.32
110.00	2 1 15	6057.76	13.85	285.35	204.26	121.54	3 42 13	5057.8	25.56	263.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2565	TRA	-.3373	TC3	-.5051	BAU	.0811	SGT	921.2	SGR	398.9	SG3	1238.5	ST	26.0	SR	16.2	SS	46.2
RDE	-.1759	RRA	.0207	RC3	.3680	FAU	.18322	RRT	.1306	RRF	-.3550	RTF	-.3275	CRT	.8890	CRS	.1076	CST	.5436
FDE	.2445	FRA	4.6832	FC-16.3430		BSP	1012	SG8	1003.8	R23	-.3051	R13	-.3367	LSA	49.0	MSA	25.8	SSA	1.2
BDE	.3110	BRA	.3380	BC3	.6249	FSP	2084	SG1	923.0	SG2	394.8	THA	3.96	EL1	29.9	EL2	6.4	ALF	30.55

LAUNCH DATE MAY 6 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 442.812 EARTH TO MARS

RL 130.91 LAL .00 LOL 224.84 VL 32.309 GAL -.69 AZL 92.06 HCA 146.12 SMA 185.61 ECC .18736 INC 2.0601 V1 29.526
RP 209.99 LAP -1.15 LOP 10.98 VP 23.431 GAP 7.75 AZP 88.29 TAL 355.61 TAP 141.74 RCA 150.84 APO 220.39 V2 26.111
RC 110.071 GL -21.96 GP 1.77 ZAL 105.14 ZAP 122.82 ETS 178.68 ZAE 164.98 ETE 171.77 ZAC 102.34 ETC 276.91 LVI -18.51

PLANETOCENTRIC CONIC

C3 9.643 VHL 3.105 DLA -31.40 RAL 342.18 RAD 6637.9 VEL 11.390 PTH 6.44 VHP 3.407 DPA -16.75 RAP 316.29 ECC 1.1587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 27	2315.00	1.88	58.66	194.36	137.55	18 7 2	1315.0	19.96	42.24
60.00	18 56 23	2080.99	7.29	42.76	199.53	129.75	19 31 4	1081.0	22.52	23.42
70.00	21 0 45	1714.94	14.13	18.09	204.50	121.42	21 29 20	714.9	25.78	355.73
75.76	23 21 18	1278.02	22.64	349.22	209.04	112.35	23 42 36	278.0	29.82	323.70
75.76	23 21 18	1278.02	22.64	349.22	209.04	112.35	23 42 36	278.0	29.82	323.70
75.76	23 21 18	1278.02	22.64	349.22	209.04	112.35	23 42 36	278.0	29.82	323.70
110.00	2 4 8	6049.80	14.13	284.91	204.50	121.42	3 44 57	5049.8	25.78	262.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2557 TRA -.2962 TC3 -.6430 BAU .0961 SGT 890.0 SGR 392.9 SG3 1292.3 ST 25.5 SR 15.7 SS 47.3
RDE -.1700 RRA .0152 RC3 .3771 FAU .19016 RRT .0955 RRF -.3888 RTF -.2056 CRT .9129 CRS .1185 CST .5051
FDE .2567 FRA 4.8754 FC-17.0727 BSP 818 SGB 972.8 R23 -.3661 R13 -.2140 LSA 49.6 MSA 25.9 SSA 1.2
BDE .3071 BRA .2966 BC3 .7454 FSP 2181 SG1 890.9 SG2 390.7 THA 2.99 EL1 29.4 EL2 5.6 ALF 30.56

LAUNCH DATE MAY 6 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 446.966 EARTH TO MARS

RL 130.91 LAL .00 LOL 224.84 VL 32.297 GAL -.70 AZL 92.07 HCA 147.35 SMA 185.40 ECC .18644 INC 2.0704 V1 29.526
RP 210.22 LAP -1.12 LOP 12.20 VP 23.384 GAP 7.53 AZP 88.26 TAL 355.55 TAP 142.90 RCA 150.83 APO 219.97 V2 26.085
RC 112.177 GL -22.13 GP 1.87 ZAL 105.25 ZAP 120.82 ETS 178.68 ZAE 163.18 ETE 172.65 ZAC 102.52 ETC 276.74 LVI -18.36

PLANETOCENTRIC CONIC

C3 9.591 VHL 3.097 DLA -31.50 RAL 342.40 RAD 6637.8 VEL 11.388 PTH 6.44 VHP 3.341 DPA -16.88 RAP 315.49 ECC 1.1578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 29 57	2311.54	2.06	58.51	194.58	137.54	18 8 29	1311.5	20.13	42.08
60.00	18 58 13	2076.65	7.48	42.55	199.76	129.72	19 32 50	1076.7	22.69	23.17
70.00	21 3 31	1707.83	14.38	17.69	204.77	121.32	21 31 59	707.8	25.97	355.27
75.52	23 20 32	1282.17	22.74	349.58	209.23	112.40	23 41 54	282.2	29.92	324.04
75.52	23 20 32	1282.17	22.74	349.58	209.23	112.40	23 41 54	282.2	29.92	324.04
75.52	23 20 32	1282.17	22.74	349.58	209.23	112.40	23 41 54	282.2	29.92	324.04
110.00	2 6 53	6042.69	14.38	284.51	204.77	121.32	3 47 36	5042.7	25.97	262.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2550 TRA -.2534 TC3 -.7931 BAU .1131 SGT 875.3 SGR 387.5 SG3 1345.6 ST 25.0 SR 15.2 SS 48.5
RDE -.1643 RRA .0094 RC3 .3865 FAU .19675 RRT .0430 RRF -.4246 RTF -.0653 CRT .9358 CRS .1330 CST .4637
FDE .2733 FRA 5.0757 FC-17.7604 BSP 618 SGB 957.3 R23 -.4215 R13 -.0697 LSA 50.3 MSA 25.9 SSA 1.2
BDE .3033 BRA .2536 BC3 .8823 FSP 2270 SG1 875.5 SG2 387.1 THA 1.35 EL1 28.9 EL2 4.6 ALF 30.52

LAUNCH DATE MAY 6 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 451.126 EARTH TO MARS

RL 130.91 LAL .00 LOL 224.84 VL 32.285 GAL -.71 AZL 92.08 HCA 148.58 SMA 185.21 ECC .18562 INC 2.0815 V1 29.526
RP 210.45 LAP -1.09 LOP 13.43 VP 23.338 GAP 7.31 AZP 88.22 TAL 355.47 TAP 144.05 RCA 150.83 APO 219.59 V2 26.058
RC 114.307 GL -22.30 GP 1.96 ZAL 105.39 ZAP 118.79 ETS 178.69 ZAE 161.34 ETE 173.36 ZAC 102.72 ETC 276.56 LVI -18.21

PLANETOCENTRIC CONIC

C3 9.549 VHL 3.090 DLA -31.38 RAL 342.65 RAD 6637.8 VEL 11.386 PTH 6.44 VHP 3.280 DPA -17.01 RAP 314.65 ECC 1.1572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 31 28	2308.57	2.20	58.39	194.82	137.54	18 9 57	1308.6	20.27	41.94
60.00	19 0 2	2072.90	7.64	42.37	200.01	129.69	19 34 35	1072.9	22.83	22.96
70.00	21 6 11	1701.57	14.60	17.34	205.06	121.22	21 34 32	701.6	26.14	354.65
75.31	23 20 5	1285.82	22.82	349.89	209.44	112.45	23 41 31	285.8	30.02	324.33
75.31	23 20 5	1285.82	22.82	349.89	209.44	112.45	23 41 31	285.8	30.02	324.33
75.31	23 20 5	1285.82	22.82	349.89	209.44	112.45	23 41 31	285.8	30.02	324.33
110.00	2 9 33	6036.42	14.60	284.16	205.06	121.22	3 50 10	5036.4	26.14	261.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2535 TRA -.2069 TC3 -.9485 BAU .1313 SGT 876.0 SGR 382.9 SG3 1397.4 ST 24.5 SR 14.7 SS 49.5
RDE -.1586 RRA .0034 RC3 .3968 FAU .20353 RRT -.0265 RRF -.4626 RTF .[illegible]02 CRT .9571 CRS .1450 CST .4122
FDE .2827 FRA 5.2639 FC-18.4526 BSP 436 SGB 956.1 R23 .4598 R13 -.0931 LSA 50.9 MSA 25.9 SSA 1.2
BDE .2990 BRA .2070 BC3 1.0281 FSP 2377 SG1 876.1 SG2 382.8 THA 179.18 EL1 28.3 EL2 3.7 ALF 30.48

LAUNCH DATE MAY 6 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 455.292 EARTH TO MARS

RL 130.91 LAL .00 LOL 224.84 VL 32.275 GAL -.72 AZL 92.09 HCA 149.80 SMA 185.04 ECC .18489 INC 2.0933 V1 29.526
RP 210.70 LAP -1.05 LOP 14.65 VP 23.293 GAP 7.10 AZP 88.19 TAL 355.38 TAP 145.18 RCA 150.83 APO 219.25 V2 26.030
RC 116.460 GL -22.46 GP 2.07 ZAL 105.54 ZAP 116.73 ETS 178.70 ZAE 159.45 ETE 173.93 ZAC 102.92 ETC 276.38 LVI -18.05

PLANETOCENTRIC CONIC

C3 9.518 VHL 3.085 DLA -31.66 RAL 342.92 RAD 6637.8 VEL 11.385 PTH 6.44 VHP 3.223 DPA -17.14 RAP 313.79 ECC 1.1566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 1	2306.04	2.33	58.28	195.09	137.53	18 11 27	1306.0	20.39	41.81
60.00	19 1 50	2069.68	7.78	42.21	200.30	129.67	19 36 20	1069.7	22.95	22.77
70.00	21 8 45	1696.05	14.80	17.03	205.37	121.14	21 37 1	696.1	26.28	354.49
75.13	23 19 54	1289.09	22.89	350.17	209.69	112.49	23 41 24	289.1	30.10	324.60
75.13	23 19 54	1289.09	22.89	350.17	209.69	112.49	23 41 24	289.1	30.10	324.60
75.13	23 19 54	1289.09	22.89	350.17	209.69	112.49	23 41 24	289.1	30.10	324.60
110.00	2 12 8	6030.92	14.80	283.86	205.37	121.14	3 52 39	5030.9	26.28	261.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2492 TRA -.1563 TC3-1.1008 BAU .1494 SGT 889.8 SGR 379.5 SG3 1449.8 ST 23.7 SR 14.2 SS 50.4
RDE -.1528 RRA -.0029 RC3 .4082 FAU .21079 RRT -.1113 RRF -.5029 RTF .2504 CRT .9754 CRS .1531 CST .3487
FDE .2809 FRA 5.4485 FC-19.1736 BSP 321 SGB 967.4 R23 .4717 R13 -.2620 LSA 51.4 MSA 25.8 SSA 1.1
BDE .2923 BRA .1563 BC3 1.1740 FSP 2445 SG1 891.0 SG2 376.6 THA 176.69 EL1 27.5 EL2 2.7 ALF 30.60

LAUNCH DATE MAY 6 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 459.461 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.266	GAL	-.74	AZL	92.11	HCA	151.02	SMA	184.89	ECC	.18425	INC	2.1059	V1	29.526
RP	210.95	LAP	-1.02	LOP	15.87	VP	23.248	GAP	6.89	AZP	88.16	TAL	355.27	TAP	146.29	RCA	150.83	APO	218.96	V2	26.001
RC	118.637	GL	-22.63	GP	2.18	ZAL	105.72	ZAP	114.67	ETS	178.72	ZAE	157.52	ETE	174.40	ZAC	103.12	ETC	276.19	LVI	-17.89

PLANETOCENTRIC CONIC

C3	9.497	VHL	3.082	DLA	-31.73	RAL	343.21	RAD	6637.8	VEL	11.384	PTH	6.44	VHP	3.171	DPA	-17.26	RAP	312.90	ECC	1.1563

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 34 35	2304.02	2.43	58.20	195.39	137.53	18 12 59	1304.0	20.48	41.72
60.00	19 3 38	2067.05	7.89	42.08	200.61	129.65	19 38 5	1067.1	23.05	22.62
70.00	21 11 13	1691.45	14.98	16.77	205.71	121.07	21 39 25	691.5	26.40	354.19
74.98	23 20 2	1291.94	22.95	350.41	209.97	112.54	23 41 34	291.9	30.17	324.83
74.98	23 20 2	1291.94	22.95	350.41	209.97	112.54	23 41 34	291.9	30.17	324.83
74.98	23 20 2	1291.94	22.95	350.41	209.97	112.54	23 41 34	291.9	30.17	324.83
110.00	2 14 36	6026.31	14.96	283.60	205.71	121.07	3 55 2	5026.3	26.40	261.01

DIFFERENTIAL CORRECTIONS

TDE	-.2529	TRA	-.1100	TC3	-1.2957	BAU	.1729
RDE	-.1475	RRA	-.0099	RC3	.4181	FAU	.21569
FDE	.3243	FRA	5.6620	FC	-19.6627	BSP	400
BDE	.2928	BRA	.1104	BC3	1.3615	FSP	2553

MID-COURSE EXECUTION ACCURACY

SGT	957.4	SGR	377.0	SG3	1497.5
RRT	-.1984	RRF	-.5441	RTF	.3868
SGB	1029.0	R23	.4629	R13	-.4033
SG1	960.9	SG2	368.2	THA	174.76

ORBIT DETERMINATION ACCURACY

ST	23.8	SR	13.7	SS	51.8
CRT	.9887	CRS	.1853	CST	.3014
LSA	52.5	MSA	26.0	SSA	1.1
EL1	27.4	EL2	1.8	ALF	29.81

LAUNCH DATE MAY 6 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 463.634 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.258	GAL	-.75	AZL	92.12	HCA	152.24	SMA	184.76	ECC	.18369	INC	2.1197	V1	29.526
RP	211.20	LAP	-.99	LOP	17.09	VP	23.205	GAP	6.68	AZP	88.12	TAL	355.14	TAP	147.38	RCA	150.82	APO	218.70	V2	25.972
RC	120.836	GL	-22.79	GP	2.30	ZAL	105.92	ZAP	112.58	ETS	178.73	ZAE	155.55	ETE	174.78	ZAC	103.34	ETC	276.00	LVI	-17.72

PLANETOCENTRIC CONIC

C3	9.485	VHL	3.080	DLA	-31.79	RAL	343.52	RAD	6637.8	VEL	11.384	PTH	6.44	VHP	3.124	DPA	-17.37	RAP	311.99	ECC	1.1561

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 36 12	2302.37	2.52	58.13	195.72	137.53	18 14 34	1302.4	20.56	41.64
60.00	19 5 26	2064.88	7.99	41.97	200.94	129.63	19 39 51	1064.9	23.14	22.50
70.00	21 13 38	1687.49	15.10	16.55	206.08	121.01	21 41 45	687.5	26.50	353.93
74.84	23 20 22	1294.56	22.99	350.63	210.29	112.58	23 41 57	294.6	30.22	325.04
74.84	23 20 22	1294.56	22.99	350.63	210.29	112.58	23 41 57	294.6	30.22	325.04
74.84	23 20 22	1294.56	22.99	350.63	210.29	112.58	23 41 57	294.6	30.22	325.04
110.00	2 17 0	6022.35	15.10	283.37	206.08	121.01	3 57 22	5022.3	26.50	260.75

DIFFERENTIAL CORRECTIONS

TDE	-.2518	TRA	-.0569	TC3	-1.4782	BAU	.1952
RDE	-.1422	RRA	-.0170	RC3	.4297	FAU	.22127
FDE	.3504	FRA	5.8521	FC	-20.1961	BSP	607
BDE	.2892	BRA	.0594	BC3	1.5394	FSP	2646

MID-COURSE EXECUTION ACCURACY

SGT	1031.5	SGR	376.0	SG3	1543.7
RRT	-.2898	RRF	-.5867	RTF	.5115
SGB	1097.9	R23	.4366	R13	-.5300
SG1	1038.1	SG2	357.6	THA	173.15

ORBIT DETERMINATION ACCURACY

ST	23.5	SR	13.2	SS	52.8
CRT	.9954	CRS	.2105	CST	.2380
LSA	53.3	MSA	26.0	SSA	1.1
EL1	27.0	EL2	1.1	ALF	29.30

LAUNCH DATE MAY 6 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 467.811 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.251	GAL	-.77	AZL	92.13	HCA	153.45	SMA	184.65	ECC	.18321	INC	2.1343	V1	29.526
RP	211.46	LAP	-.95	LOP	18.30	VP	23.161	GAP	6.48	AZP	88.09	TAL	355.00	TAP	148.45	RCA	150.82	APO	218.47	V2	25.942
RC	123.058	GL	-22.96	GP	2.43	ZAL	106.14	ZAP	110.48	ETS	178.75	ZAE	153.56	ETE	175.09	ZAC	103.56	ETC	275.80	LVI	-17.56

PLANETOCENTRIC CONIC

C3	9.483	VHL	3.079	DLA	-31.84	RAL	343.86	RAD	6637.8	VEL	11.384	PTH	6.44	VHP	3.081	DPA	-17.48	RAP	311.08	ECC	1.1561

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 51	2301.11	2.58	58.08	196.07	137.52	18 16 12	1301.1	20.62	41.58
60.00	19 7 16	2063.15	8.06	41.89	201.31	129.62	19 41 39	1063.2	23.20	22.40
70.00	21 16 0	1684.17	15.21	16.36	206.47	120.95	21 44 4	684.2	26.59	353.71
74.73	23 20 55	1296.99	23.03	350.83	210.64	112.61	23 42 32	297.0	30.27	325.23
74.73	23 20 55	1296.99	23.03	350.83	210.64	112.61	23 42 32	297.0	30.27	325.23
74.73	23 20 55	1296.99	23.03	350.83	210.64	112.61	23 42 32	297.0	30.27	325.23
110.00	2 19 22	6019.03	15.21	283.19	206.47	120.95	3 59 41	5019.0	26.59	260.53

DIFFERENTIAL CORRECTIONS

TDE	-.2506	TRA	-.0017	TC3	-1.6656	BAU	.2185
RDE	-.1367	RRA	-.0246	RC3	.4426	FAU	.22715
FDE	.3606	FRA	6.0348	FC	-20.7364	BSP	865
BDE	.2854	BRA	.0246	BC3	1.7234	FSP	2729

MID-COURSE EXECUTION ACCURACY

SGT	1126.8	SGR	376.7	SG3	1589.0
RRT	-.3791	RRF	-.6300	RTF	-.5.47
SGB	1188.1	R23	.4025	R13	-.6323
SG1	1136.8	SG2	345.5	THA	172.04

ORBIT DETERMINATION ACCURACY

ST	23.4	SR	12.7	SS	53.8
CRT	.9933	CRS	.2309	CST	.1619
LSA	54.0	MSA	26.0	SSA	1.0
EL1	26.6	EL2	1.3	ALF	28.53

LAUNCH DATE MAY 6 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC DISTANCE 471.991 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.245	GAL	-.80	AZL	92.15	HCA	154.66	SMA	184.55	ECC	.18280	INC	2.1504	V1	29.526
RP	211.73	LAP	-.92	LOP	19.51	VP	23.119	GAP	6.28	AZP	88.06	TAL	354.85	TAP	149.51	RCA	150.81	APO	218.28	V2	25.911
RC	125.302	GL	-23.12	GP	2.56	ZAL	106.37	ZAP	108.38	ETS	178.78	ZAE	151.54	ETE	175.35	ZAC	103.79	ETC	275.60	LVI	-17.40

PLANETOCENTRIC CONIC

C3	9.491	VHL	3.081	DLA	-31.88	RAL	344.22	RAD	6637.8	VEL	11.384	PTH	6.44	VHP	3.042	DPA	-17.57	RAP	310.12	ECC	1.1562

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 39 33	2300.20	2.62	58.04	196.46	137.52	18 17 53	1300.2	20.66	41.53
60.00	19 9 8	2061.82	8.12	41.83	201.71	129.61	19 43 29	1061.8	23.25	22.32
70.00	21 18 20	1681.42	15.31	16.21	206.89	120.91	21 46 21	681.4	26.66	353.52
74.63	23 21 41	1299.26	23.06	351.02	211.02	112.65	23 43 20	299.3	30.31	325.41
74.63	23 21 41	1299.26	23.06	351.02	211.02	112.65	23 43 20	299.3	30.31	325.41
74.63	23 21 41	1299.26	23.06	351.02	211.02	112.65	23 43 20	299.3	30.31	325.41
110.00	2 21 42	6016.28	15.31	283.03	206.89	120.91	4 1 59	5016.3	26.66	260.35

DIFFERENTIAL CORRECTIONS

TDE	-.2500	TRA	.0553	TC3	-1.8610	BAU	.2431
RDE	-.1315	RRA	-.0327	RC3	.4557	FAU	.23206
FDE	.3923	FRA	6.2195	FC	-21.1672	BSP	1152
BDE	.2825	BRA	.0643	BC3	1.9160	FSP	2801

MID-COURSE EXECUTION ACCURACY

SGT	1243.3	SGR	379.2	SG3	1630.6
RRT	-.4603	RRF	-.6732	RTF	.6932
SGB	1299.8	R23	.3708	R13	-.7086
SG1	1256.4	SG2	333.1	THA	171.40

ORBIT DETERMINATION ACCURACY

ST	23.4	SR	12.3	SS	54.8
CRT	.9805	CRS	.2632	CST	.0909
LSA	55.0	MSA	26.0	SSA	1.0
EL1	26.3	EL2	2.1	ALF	27.44

LAUNCH DATE MAY 6 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC DISTANCE 476.173 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.240 GAL -.82 AZL 92.17 HCA 155.87 SMA 184.46 ECC .18246 INC 2.1677 V1 29.526
RP 212.01 LAP -.89 LOP 20.72 VP 23.077 GAP 6.09 AZP 88.02 TAL 354.68 TAP 150.55 RCA 150.81 APO 218.12 V2 25.880
RC 127.966 GL -23.29 GP 2.71 ZAL 106.63 ZAP 106.27 ETS 178.81 ZAE 149.50 ETE 175.56 ZAC 104.03 ETC 275.39 LVI -17.24

PLANETOCENTRIC CONIC

C3 9.509 VHL 3.084 DLA -31.92 RAL 344.60 RAD 6637.8 VEL 11.385 PTH 6.44 VHP 3.008 DPA -17.65 RAP 309.17 ECC 1.1565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 41 20	2299.58	2.66	58.01	196.88	137.52	18 19 39	1299.6	20.69	41.50
60.00	19 11 2	2060.83	8.16	41.78	202.13	129.60	19 45 23	1060.8	23.29	22.27
70.00	21 20 41	1679.12	15.39	16.08	207.34	120.87	21 48 40	679.1	26.72	353.37
74.54	23 22 34	1301.60	23.07	351.20	211.44	112.70	23 44 16	301.6	30.35	325.60
74.54	23 22 34	1301.60	23.07	351.20	211.44	112.70	23 44 16	301.6	30.35	325.60
74.54	23 22 34	1301.60	23.07	351.20	211.44	112.70	23 44 16	301.6	30.35	325.60
110.00	2 24 4	6013.97	15.39	282.90	207.34	120.87	4 4 18	5014.0	26.72	260.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2497 TRA .1149 TC3-2.0614 BAU .2688 SGT 1376.5 SGR 383.8 SG3 1668.2 ST 23.6 SR 11.8 SS 55.8
RDE -.1264 RRA -.0414 RC3 .4697 FAU .23648 RRT -.5339 RRF -.7154 RTF .7537 CRT .9553 CRS .3005 CST .0190
FDE .4300 FRA 6.3923 FC-21.5307 BSP 1452 SGB 1429.0 R23 .3426 R13 -.7666 LSA 55.9 MSA 26.1 SSA .9
BDE .2799 BRA .1222 BC3 2.1143 FSP 2877 SG1 1392.6 SG2 320.7 THA 171.05 EL1 26.2 EL2 3.1 ALF 26.01

LAUNCH DATE MAY 6 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 480.357 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.236 GAL -.85 AZL 92.19 HCA 157.07 SMA 184.39 ECC .18219 INC 2.1869 V1 29.526
RP 212.29 LAP -.85 LOP 21.93 VP 23.035 GAP 5.90 AZP 87.99 TAL 354.49 TAP 151.57 RCA 150.80 APO 217.99 V2 25.848
RC 129.850 GL -23.47 GP 2.87 ZAL 106.90 ZAP 104.17 ETS 178.85 ZAE 147.45 ETE 175.74 ZAC 104.27 ETC 275.19 LVI -17.09

PLANETOCENTRIC CONIC

C3 9.536 VHL 3.088 DLA -31.96 RAL 345.01 RAD 6637.8 VEL 11.386 PTH 6.44 VHP 2.978 DPA -17.71 RAP 308.21 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 43 11	2299.21	2.67	58.00	197.32	137.52	18 21 30	1299.2	20.71	41.48
60.00	19 13 2	2060.10	8.20	41.74	202.59	129.60	19 47 22	1060.1	23.32	22.23
70.00	21 23 6	1677.12	15.46	15.97	207.83	120.84	21 51 3	677.1	26.77	353.24
74.45	23 23 36	1303.98	23.08	351.39	211.90	112.74	23 45 20	304.0	30.37	325.79
74.45	23 23 36	1303.98	23.08	351.39	211.90	112.74	23 45 20	304.0	30.37	325.79
74.45	23 23 36	1303.98	23.08	351.39	211.90	112.74	23 45 20	304.0	30.37	325.79
110.00	2 26 28	6011.98	15.46	282.79	207.83	120.84	4 6 40	5012.0	26.77	260.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2484 TRA .1772 TC3-2.2636 BAU .2951 SGT 1522.2 SGR 390.4 SG3 1702.0 ST 23.9 SR 11.4 SS 56.6
RDE -.1213 RRA -.0506 RC3 .4847 FAU .24054 RRT -.6017 RRF -.7556 RTF .8011 CRT .9158 CRS .3353 CST -.0613
FDE .4539 FRA 6.5539 FC-21.8377 BSP 1768 SGB 1571.5 R23 .3166 R13 -.8117 LSA 56.8 MSA 26.1 SSA .9
BDE .2765 BRA .1843 BC3 2.3149 FSP 2940 SG1 1541.0 SG2 308.0 THA 170.86 EL1 26.1 EL2 4.2 ALF 24.25

LAUNCH DATE MAY 6 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 484.543 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.233 GAL -.88 AZL 92.21 HCA 158.28 SMA 184.34 ECC .18199 INC 2.2079 V1 29.526
RP 212.57 LAP -.82 LOP 23.13 VP 22.994 GAP 5.71 AZP 87.95 TAL 354.30 TAP 152.57 RCA 150.79 APO 217.89 V2 25.815
RC 132.153 GL -23.66 GP 3.04 ZAL 107.19 ZAP 102.07 ETS 178.90 ZAE 145.39 ETE 175.88 ZAC 104.53 ETC 274.98 LVI -16.95

PLANETOCENTRIC CONIC

C3 9.573 VHL 3.094 DLA -32.00 RAL 345.44 RAD 6637.8 VEL 11.387 PTH 6.44 VHP 2.952 DPA -17.76 RAP 307.26 ECC 1.1576

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 45 8	2299.03	2.68	57.99	197.81	137.52	18 23 27	1299.0	20.72	41.48
60.00	19 15 7	2059.57	8.22	41.72	203.09	129.59	19 49 27	1059.6	23.34	22.19
70.00	21 25 38	1675.29	15.52	15.86	208.35	120.81	21 53 33	675.3	26.82	353.12
74.36	23 24 43	1306.61	23.09	351.59	212.39	112.79	23 46 30	306.6	30.40	325.99
74.36	23 24 43	1306.61	23.09	351.59	212.39	112.79	23 46 30	306.6	30.40	325.99
74.36	23 24 43	1306.61	23.09	351.59	212.39	112.79	23 46 30	306.6	30.40	325.99
110.00	2 29 0	6010.15	15.52	282.69	208.35	120.81	4 9 10	5010.1	26.82	259.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2477 TRA .2413 TC3-2.4677 BAU .3223 SGT 1679.3 SGR 400.1 SG3 1733.8 ST 24.4 SR 11.0 SS 57.5
RDE -.1164 RRA -.0606 RC3 .5011 FAU .24433 RRT -.6613 RRF -.7940 RTF .8364 CRT .8622 CRS .3792 CST -.1342
FDE .4931 FRA 6.7136 FC-22.0854 BSP 2093 SGB 1726.3 R23 .2974 R13 -.8451 LSA 57.8 MSA 26.2 SSA .9
BDE .2737 BRA .2487 BC3 2.5181 FSP 2994 SG1 1700.6 SG2 296.3 THA 170.76 EL1 26.2 EL2 5.2 ALF 22.11

LAUNCH DATE MAY 6 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 488.730 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.230 GAL -.91 AZL 92.23 HCA 159.47 SMA 184.30 ECC .18185 INC 2.2314 V1 29.526
RP 212.86 LAP -.78 LOP 24.32 VP 22.953 GAP 5.52 AZP 87.91 TAL 354.08 TAP 153.56 RCA 150.78 APO 217.81 V2 25.782
RC 134.475 GL -23.86 GP 3.23 ZAL 107.49 ZAP 99.98 ETS 178.95 ZAE 143.32 ETE 175.99 ZAC 104.80 ETC 274.78 LVI -16.83

PLANETOCENTRIC CONIC

C3 9.621 VHL 3.102 DLA -32.04 RAL 345.89 RAD 6637.8 VEL 11.390 PTH 6.44 VHP 2.929 DPA -17.78 RAP 306.30 ECC 1.1583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 47 13	2298.98	2.69	57.99	198.32	137.52	18 25 32	1299.0	20.72	41.47
60.00	19 17 21	2059.12	8.24	41.69	203.62	129.59	19 51 40	1059.1	23.36	22.17
70.00	21 28 20	1673.41	15.59	15.76	208.91	120.78	21 56 14	673.4	26.86	352.99
74.27	23 25 55	1309.53	23.09	351.82	212.93	112.85	23 47 45	309.5	30.43	326.22
74.27	23 25 55	1309.53	23.09	351.82	212.93	112.85	23 47 45	309.5	30.43	326.22
74.27	23 25 55	1309.53	23.09	351.82	212.93	112.85	23 47 45	309.5	30.43	326.22
110.00	2 31 43	6008.27	15.59	282.58	208.91	120.78	4 11 51	5008.3	26.86	259.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2462 TRA .3084 TC3-2.6727 BAU .3501 SGT 1845.9 SGR 412.3 SG3 1759.9 ST 25.0 SR 10.6 SS 58.5
RDE -.1118 RRA -.0715 RC3 .5177 FAU .24682 RRT -.7138 RRF -.8290 RTF .8630 CRT .7929 CRS .4297 CST -.2037
FDE .5422 FRA 6.8691 FC-22.2109 BSP 2431 SGB 1891.4 R23 .2826 R13 -.8703 LSA 58.9 MSA 26.2 SSA .8
BDE .2704 BRA .3165 BC3 2.7224 FSP 3048 SG1 1869.8 SG2 285.1 THA 170.72 EL1 26.5 EL2 6.1 ALF 19.66

LAUNCH DATE MAY 6 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 492.918 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.228	GAL	-.94	AZL	92.26	HCA	160.67	SMA	184.27	ECC	.18177	INC	2.2573	V1	29.526
RP	213.16	LAP	-.75	LOP	25.82	VP	22.913	GAP	5.34	AZP	87.87	TAL	353.86	TAP	154.53	RCA	150.77	APO	217.76	V2	25.749
RC	136.814	GL	-24.08	GP	3.44	ZAL	107.80	ZAP	97.91	ETS	179.01	ZAE	141.25	ETE	176.07	ZAC	105.09	ETC	274.57	LVI	-16.72

PLANETOCENTRIC CONIC

C3	9.679	VHL	3.111	DLA	-32.09	RAL	346.37	RAD	6637.9	VEL	11.392	PTH	6.44	VHP	2.911	DPA	-17.77	RAP	305.36	ECC	1.1593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 49 26	2298.97	2.69	57.99	198.88	137.52	18 27 45	1299.0	20.72	41.47
60.00	19 19 44	2058.65	8.26	41.67	204.20	129.59	19 54 3	1058.7	23.37	22.14
70.00	21 31 18	1671.25	15.67	15.63	209.53	120.74	21 59 10	671.2	26.92	352.85
74.16	23 27 6	1312.99	23.10	352.08	213.51	112.92	23 48 59	313.0	30.46	326.49
74.16	23 27 6	1312.99	23.10	352.08	213.51	112.92	23 48 59	313.0	30.46	326.49
74.16	23 27 6	1312.99	23.10	352.08	213.51	112.92	23 48 59	313.0	30.46	326.49
110.00	2 34 41	6006.11	15.67	282.46	209.53	120.74	4 14 47	5006.1	26.92	259.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2450	TRA	.3772	TC3	-2.8770	BAU	.3787	SGT	2019.9	SGR	427.5	SG3	1781.1	ST	25.8	SR	10.2	SS	59.2
RDE	-.1070	RRA	-.0831	RC3	.5362	FAU	.24913	RRT	-.7600	RRF	-.8605	RTF	.8841	CRT	.7100	CRS	.4789	CST	-.2734
FDE	.5782	FRA	7.0007	FC	-22.2831	BSP	2771	SGB	2064.7	R23	.2706	R13	-.8903	LSA	59.9	MSA	26.3	SSA	.8
BDE	.2673	BRA	.3862	BC3	2.9265	FSP	3093	SG1	2046.4	SG2	274.3	THA	170.69	EL1	26.9	EL2	6.9	ALF	18.86

LAUNCH DATE MAY 6 1971 FLIGHT TIME 208.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 497.108 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.227	GAL	-.98	AZL	92.29	HCA	161.86	SMA	184.25	ECC	.18174	INC	2.2864	V1	29.526
RP	213.46	LAP	-.71	LOP	26.71	VP	22.873	GAP	5.16	AZP	87.83	TAL	353.62	TAP	155.48	RCA	150.76	APO	217.73	V2	25.714
RC	139.171	GL	-24.32	GP	3.67	ZAL	108.13	ZAP	95.86	ETS	179.09	ZAE	139.19	ETE	176.13	ZAC	105.39	ETC	274.37	LVI	-16.64

PLANETOCENTRIC CONIC

C3	9.749	VHL	3.122	DLA	-32.15	RAL	346.88	RAD	6637.9	VEL	11.395	PTH	6.45	VHP	2.896	DPA	-17.74	RAP	304.42	ECC	1.1604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 51 51	2298.92	2.69	57.98	199.48	137.52	18 30 10	1298.9	20.72	41.47
60.00	19 22 22	2058.02	8.29	41.64	204.82	129.58	19 56 40	1058.0	23.40	22.11
70.00	21 34 39	1668.48	15.76	15.48	210.20	120.70	22 2 27	668.5	26.99	352.66
74.03	23 28 15	1317.19	23.10	352.40	214.13	113.01	23 50 12	317.2	30.50	326.82
74.03	23 28 15	1317.19	23.10	352.40	214.13	113.01	23 50 12	317.2	30.50	326.82
74.03	23 28 15	1317.19	23.10	352.40	214.13	113.01	23 50 12	317.2	30.50	326.82
110.00	2 38 1	6003.34	15.76	282.30	210.20	120.70	4 18 5	5003.3	26.99	259.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2434	TRA	.4483	TC3	-3.0784	BAU	.4077	SGT	2199.8	SGR	446.4	SG3	1798.9	ST	26.8	SR	9.9	SS	59.8
RDE	-.1024	RRA	-.0957	RC3	.5568	FAU	.25112	RRT	-.8005	RRF	-.8883	RTF	.9011	CRT	.6130	CRS	.5307	CST	-.3405
FDE	.6104	FRA	7.1226	FC	-22.3012	BSP	3118	SGB	2244.7	R23	.2610	R13	-.9063	LSA	60.9	MSA	26.4	SSA	.7
BDE	.2641	BRA	.4585	BC3	3.1284	FSP	3126	SG1	2229.1	SG2	264.0	THA	170.64	EL1	27.6	EL2	7.6	ALF	13.84

LAUNCH DATE MAY 6 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 501.295 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.227	GAL	-1.02	AZL	92.32	HCA	163.05	SMA	184.24	ECC	.18177	INC	2.3198	V1	29.526
RP	213.77	LAP	-.68	LOP	27.90	VP	22.833	GAP	4.99	AZP	87.78	TAL	353.37	TAP	156.42	RCA	150.75	APO	217.73	V2	25.660
RC	141.545	GL	-24.58	GP	3.93	ZAL	108.47	ZAP	93.83	ETS	179.18	ZAE	137.14	ETE	176.16	ZAC	105.72	ETC	274.17	LVI	-16.58

PLANETOCENTRIC CONIC

C3	9.831	VHL	3.135	DLA	-32.23	RAL	347.42	RAD	6638.0	VEL	11.399	PTH	6.45	VHP	2.885	DPA	-17.66	RAP	303.90	ECC	1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 54 29	2298.70	2.70	57.98	200.13	137.52	18 32 48	1298.7	20.73	41.46
60.00	19 25 17	2057.06	8.33	41.59	205.50	129.58	19 59 34	1057.1	23.43	22.05
70.00	21 38 30	1664.72	15.89	15.26	210.93	120.64	22 6 15	664.7	27.08	352.41
73.86	23 29 16	1322.39	23.11	352.80	214.81	113.12	23 51 18	322.4	30.55	327.23
73.86	23 29 16	1322.39	23.11	352.80	214.81	113.12	23 51 18	322.4	30.55	327.23
73.86	23 29 16	1322.39	23.11	352.80	214.81	113.12	23 51 18	322.4	30.55	327.23
110.00	2 41 53	5999.58	15.89	282.09	210.93	120.64	4 21 52	4999.6	27.08	259.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2412	TRA	.5224	TC3	-3.2733	BAU	.4369	SGT	2383.5	SGR	469.5	SG3	1813.4	ST	28.0	SR	9.7	SS	60.8
RDE	-.0982	RRA	-.1099	RC3	.5789	FAU	.25228	RRT	-.8347	RRF	-.9125	RTF	.9141	CRT	.5022	CRS	.3902	CST	-.3984
FDE	.6397	FRA	7.2452	FC	-22.2164	BSP	3478	SGB	2429.3	R23	.2553	R13	-.9187	LSA	62.1	MSA	26.5	SSA	.7
BDE	.2604	BRA	.5339	BC3	3.3241	FSP	3151	SG1	2415.9	SG2	255.1	THA	170.56	EL1	28.4	EL2	8.2	ALF	10.77

LAUNCH DATE MAY 6 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 505.484 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.227	GAL	-1.06	AZL	92.36	HCA	164.23	SMA	184.24	ECC	.18185	INC	2.3578	V1	29.526
RP	214.08	LAP	-.64	LOP	29.08	VP	22.794	GAP	4.81	AZP	87.73	TAL	353.11	TAP	157.35	RCA	150.74	APO	217.75	V2	25.645
RC	143.936	GL	-24.88	GP	4.22	ZAL	108.81	ZAP	91.83	ETS	179.28	ZAE	135.10	ETE	176.17	ZAC	106.08	ETC	273.98	LVI	-16.57

PLANETOCENTRIC CONIC

C3	9.927	VHL	3.151	DLA	-32.33	RAL	348.00	RAD	6638.0	VEL	11.403	PTH	6.45	VHP	2.877	DPA	-17.55	RAP	302.60	ECC	1.1634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 57 24	2298.17	2.73	57.95	200.84	137.52	18 35 42	1298.2	20.76	41.43
60.00	19 28 34	2055.56	8.39	41.52	206.25	129.56	20 2 49	1055.6	23.49	21.96
70.00	21 43 4	1659.42	16.08	14.96	211.75	120.55	22 10 43	659.4	27.22	352.06
73.64	23 30 7	1328.78	23.12	353.30	215.54	113.25	23 52 16	328.8	30.62	327.73
73.64	23 30 7	1328.78	23.12	353.30	215.54	113.25	23 52 16	328.8	30.62	327.73
73.64	23 30 7	1328.78	23.12	353.30	215.54	113.25	23 52 16	328.8	30.62	327.73
110.00	2 46 26	5994.28	16.08	281.79	211.75	120.55	4 26 21	4994.3	27.22	258.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2390	TRA	.5986	TC3	-3.4628	BAU	.4665	SGT	2570.9	SGR	496.9	SG3	1822.3	ST	29.3	SR	9.5	SS	61.3
RDE	-.0942	RRA	-.1255	RC3	.6035	FAU	.25293	RRT	-.8637	RRF	-.9328	RTF	.9247	CRT	.3813	CRS	.6502	CST	-.4518
FDE	.7042	FRA	7.3471	FC	-22.0588	BSP	3843	SGB	2618.5	R23	.2514	R13	-.9288	LSA	63.2	MSA	26.6	SSA	.6
BDE	.2569	BRA	.6116	BC3	3.5150	FSP	3181	SG1	2606.8	SG2	247.0	THA	170.44	EL1	29.5	EL2	8.7	ALF	7.72

LAUNCH DATE MAY 6 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 509.672 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.228	GAL	-1.10	AZL	92.40	HCA	165.42	SMA	184.26	ECC	.18198	INC	2.4013	VI	29.526
RP	214.39	LAP	-.60	LOP	30.26	VP	22.755	GAP	4.64	AZP	87.68	TAL	352.84	TAP	158.25	RCA	150.73	APO	217.79	V2	25.609
RC	146.344	GL	-25.22	GP	4.55	ZAL	109.16	ZAP	89.86	ETS	179.40	ZAE	133.08	ETE	176.16	ZAC	106.48	ETC	273.79	LVI	-16.59

PLANETOCENTRIC CONIC

C3	10.038	VHL	3.168	DLA	-32.46	RAL	348.61	RAD	6638.1	VEL	11.408	PTH	6.46	VHP	2.872	DPA	-17.38	RAP	301.72	ECC	1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 0 41	2297.14	2.78	57.91	201.62	137.51	18 38 58	1297.1	20.81	41.38
60.00	19 32 20	2053.22	8.49	41.41	207.07	129.55	20 6 33	1053.2	23.58	21.83
70.00	21 48 37	1651.79	16.34	14.53	212.68	120.42	22 16 9	651.8	27.41	351.54
73.35	23 30 42	1336.80	23.16	353.93	216.35	113.41	23 52 59	336.8	30.72	328.36
73.35	23 30 42	1336.80	23.16	353.93	216.35	113.41	23 52 59	336.8	30.72	328.36
73.35	23 30 42	1336.80	23.16	353.93	216.35	113.41	23 52 59	336.8	30.72	328.36
110.00	2 51 59	5986.65	16.34	281.35	212.68	120.42	4 31 46	4986.7	27.41	258.37

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2381	TRA	.6758	TC3	-3.6487	BAU	.4969	SGT	2762.0	SGR	529.2	SG3	1825.4	ST	30.8	SR	9.4	SS	61.7
RDE	-.0901	RRA	-.1427	RC3	.6312	FAU	.25306	RRT	-.8676	RRF	-.9496	RTF	.9331	CRT	.2555	CRS	.7088	CST	-.4987
FDE	.7395	FRA	7.4253	FC	-21.8258	BSP	4199	SGB	2812.3	R23	.2496	R13	-.9369	LSA	64.3	MSA	26.8	SSA	.6
BDE	.2546	BRA	.6907	BC3	3.7029	FSP	3190	SG1	2802.0	SG2	240.2	THA	170.28	EL1	30.9	EL2	9.0	ALF	4.87

LAUNCH DATE MAY 6 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 513.859 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.229	GAL	-1.15	AZL	92.45	HCA	166.59	SMA	184.28	ECC	.18216	INC	2.4525	VI	29.526
RP	214.72	LAP	-.57	LOP	31.44	VP	22.718	GAP	4.47	AZP	87.61	TAL	352.55	TAP	159.15	RCA	150.71	APO	217.85	V2	25.573
RC	148.770	GL	-25.62	GP	4.94	ZAL	109.51	ZAP	87.93	ETS	179.55	ZAE	131.08	ETE	176.11	ZAC	106.92	ETC	273.61	LVI	-16.68

PLANETOCENTRIC CONIC

C3	10.167	VHL	3.189	DLA	-32.64	RAL	349.27	RAD	6638.1	VEL	11.413	PTH	6.46	VHP	2.871	DPA	-17.15	RAP	300.85	ECC	1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 4 25	2295.36	2.87	57.84	202.47	137.51	18 42 40	1295.4	20.89	41.30
60.00	19 36 44	2049.68	8.65	41.23	207.98	129.52	20 10 53	1049.7	23.71	21.63
70.00	21 55 34	1640.68	16.72	13.89	213.74	120.22	22 22 54	640.7	27.68	350.79
72.98	23 30 52	1346.96	23.20	354.73	217.24	113.63	23 53 19	347.0	30.85	329.17
72.98	23 30 52	1346.96	23.20	354.73	217.24	113.63	23 53 19	347.0	30.85	329.17
72.98	23 30 52	1346.96	23.20	354.73	217.24	113.63	23 53 19	347.0	30.85	329.17
110.00	2 58 56	5975.54	16.72	280.72	213.74	120.22	4 38 31	4975.5	27.68	257.62

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2365	TRA	.7568	TC3	-3.8215	BAU	.5272	SGT	2954.3	SGR	568.4	SG3	1826.4	ST	32.4	SR	9.4	SS	62.3
RDE	-.0865	RRA	-.1626	RC3	.6625	FAU	.25266	RRT	-.9076	RRF	-.9632	RTF	.9402	CRT	.1207	CRS	.7673	CST	-.5422
FDE	.7765	FRA	7.5082	FC	-21.5138	BSP	4571	SGB	3008.5	R23	.2487	R13	-.9437	LSA	65.5	MSA	26.9	SSA	.5
BDE	.2518	BRA	.7741	BC3	3.8785	FSP	3195	SG1	2999.3	SG2	235.0	THA	170.03	EL1	32.5	EL2	9.3	ALF	2.18

LAUNCH DATE MAY 6 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 518.046 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.231	GAL	-1.19	AZL	92.51	HCA	167.77	SMA	184.31	ECC	.18239	INC	2.5126	VI	29.526
RP	215.04	LAP	-.53	LOP	32.61	VP	22.677	GAP	4.30	AZP	87.54	TAL	352.26	TAP	160.03	RCA	150.69	APO	217.93	V2	25.536
RC	151.211	GL	-26.10	GP	5.40	ZAL	109.86	ZAP	86.03	ETS	179.72	ZAE	129.10	ETE	176.04	ZAC	107.43	ETC	273.44	LVI	-16.84

PLANETOCENTRIC CONIC

C3	10.318	VHL	3.212	DLA	-32.88	RAL	349.98	RAD	6638.2	VEL	11.420	PTH	6.47	VHP	2.873	DPA	-16.84	RAP	300.02	ECC	1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 8 46	2292.52	3.01	57.72	203.43	137.50	18 46 58	1292.5	21.02	41.16
60.00	19 41 58	2044.41	8.88	40.97	209.02	129.47	20 16 3	1044.4	23.91	21.32
70.00	22 4 36	1624.15	17.29	12.94	214.98	119.93	22 31 40	624.1	28.07	349.67
72.49	23 30 33	1359.69	23.28	355.74	218.22	113.90	23 53 13	359.7	31.03	330.19
72.49	23 30 33	1359.69	23.28	355.74	218.22	113.90	23 53 13	359.7	31.03	330.19
72.49	23 30 33	1359.69	23.28	355.74	218.22	113.90	23 53 13	359.7	31.03	330.19
110.00	3 7 58	5959.00	17.29	279.77	214.98	119.93	4 47 17	4959.0	28.07	256.50

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2376	TRA	.8379	TC3	-3.9895	BAU	.5587	SGT	3148.9	SGR	614.8	SG3	1821.0	ST	34.3	SR	9.5	SS	62.6
RDE	-.0829	RRA	-.1850	RC3	.6991	FAU	.25191	RRT	-.9234	RRF	-.9739	RTF	.9457	CRT	-.0097	CRS	.8215	CST	-.9766
FDE	.8049	FRA	7.5597	FC	-21.1363	BSP	4917	SGB	3208.4	R23	.2496	R13	-.9491	LSA	66.6	MSA	27.2	SSA	.5
BDE	.2517	BRA	.8581	BC3	4.0503	FSP	3181	SG1	3200.0	SG2	232.2	THA	169.73	EL1	34.3	EL2	9.5	ALF	179.83

LAUNCH DATE MAY 6 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 522.231 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.234	GAL	-1.24	AZL	92.59	HCA	168.94	SMA	184.35	ECC	.18266	INC	2.5859	VI	29.526
RP	215.37	LAP	-.50	LOP	33.78	VP	22.639	GAP	4.13	AZP	87.46	TAL	351.95	TAP	160.89	RCA	150.68	APO	218.02	V2	25.499
RC	153.669	GL	-26.67	GP	5.94	ZAL	110.19	ZAP	84.18	ETS	179.93	ZAE	127.15	ETE	175.92	ZAC	108.02	ETC	273.28	LVI	-17.09

PLANETOCENTRIC CONIC

C3	10.496	VHL	3.240	DLA	-33.19	RAL	350.76	RAD	6638.3	VEL	11.428	PTH	6.48	VHP	2.879	DPA	-16.43	RAP	299.20	ECC	1.1727

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 13 54	2288.14	3.23	57.53	204.52	137.49	18 52 3	1288.1	21.23	40.95
60.00	19 48 23	2036.67	9.21	40.59	210.21	129.41	20 22 20	1036.7	24.20	20.87
70.00	22 17 1	1598.49	18.15	11.46	216.50	119.44	22 43 39	598.5	28.67	347.91
71.85	23 29 35	1375.73	23.39	357.03	219.34	114.25	23 52 31	375.7	31.27	331.49
71.85	23 29 35	1375.73	23.39	357.03	219.34	114.25	23 52 31	375.7	31.27	331.49
71.85	23 29 35	1375.73	23.39	357.03	219.34	114.25	23 52 31	375.7	31.27	331.49
110.00	3 20 23	5933.35	18.15	278.28	216.50	119.44	4 59 16	4933.3	28.67	254.74

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2363	TRA	.9250	TC3	-4.1314	BAU	.5890	SGT	3340.9	SGR	671.0	SG3	1811.3	ST	36.2	SR	9.8	SS	63.1
RDE	-.0806	RRA	-.2117	RC3	.7397	FAU	.24985	RRT	-.9359	RRF	-.9821	RTF	.9504	CRT	-.1423	CRS	.8730	CST	-.6058
FDE	.8586	FRA	7.6137	FC	-20.6083	BSP	5308	SGB	3407.7	R23	.2508	R13	-.9537	LSA	68.1	MSA	27.6	SSA	.4
BDE	.2497	BRA	.9489	BC3	4.1971	FSP	3176	SG1	3399.7	SG2	232.3	THA	169.30	EL1	36.3	EL2	9.7	ALF	177.62

LAUNCH DATE MAY 6 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 14 1971

HELIOCENTRIC CONIC DISTANCE 526.414 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.236	GAL	-1.29	AZL	92.68	HCA	170.10	SMA	184.40	ECC	.18297	INC	2.6754	V1	29.526
RP	215.71	LAP	-.46	LOP	34.95	VP	22.601	GAP	3.97	AZP	87.36	TAL	351.64	TAP	161.74	RCA	150.66	APO	218.14	V2	25.461
RC	156.143	GL	-27.37	GP	6.60	ZAL	110.51	ZAP	82.37	ETS	180.19	ZAE	125.21	ETE	175.76	ZAC	108.73	ETC	273.13	LVI	-17.46

PLANETOCENTRIC CONIC

C3	10.709	VHL	3.273	DLA	-33.62	RAL	351.62	RAD	6638.4	VEL	11.437	PTH	6.49	VHP	2.888	DPA	-15.90	RAP	298.40	ECC	1.1763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 20 10	2281.58	3.56	57.26	205.78	137.47	18 58 11	1281.6	21.54	40.63
60.00	19 56 25	2025.33	9.70	40.04	211.62	129.31	20 30 11	1025.3	24.62	20.21
70.00	22 36 0	1554.44	19.60	8.87	218.49	118.54	23 1 54	554.4	29.62	344.84
71.01	23 27 50	1395.84	23.56	358.67	220.62	114.71	23 51 6	395.8	31.61	333.13
71.01	23 27 50	1395.84	23.56	358.67	220.62	114.71	23 51 6	395.8	31.61	333.13
71.01	23 27 50	1395.84	23.56	358.67	220.62	114.71	23 51 6	395.8	31.61	333.13
110.00	3 39 22	5889.30	19.60	275.69	218.49	118.54	5 17 31	4889.3	29.62	251.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2390	TRA	1.0137	TC3	-4.2614	BAU	.6205	SGT	3535.1	SGR	740.4	SG3	1798.7	ST	38.4	SR	10.3	SS	63.5
RDE	-.0784	RRA	-.2437	RC3	.7893	FAU	.24769	RRT	-.9457	RRF	-.9883	RTF	.9541	CRT	-.2653	CRS	.9149	CST	-.6310
FDE	.8902	FRA	7.6578	FC	-20.0229	BSP	5680	SGB	3611.8	R23	.2520	R13	-.9574	LSA	69.5	MSA	28.1	SSA	.4
BDE	.2515	BRA	1.0426	BC3	4.3339	FSP	3157	SG1	3604.1	SG2	236.0	THA	168.75	EL1	38.5	EL2	9.9	ALF	175.63

LAUNCH DATE MAY 6 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 530.596 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.240	GAL	-1.34	AZL	92.79	HCA	171.27	SMA	184.45	ECC	.18333	INC	2.7675	V1	29.526
RP	216.04	LAP	-.42	LOP	36.11	VP	22.563	GAP	3.81	AZP	87.24	TAL	351.31	TAP	162.58	RCA	150.64	APO	218.27	V2	25.424
RC	158.631	GL	-28.25	GP	7.44	ZAL	110.80	ZAP	80.61	ETS	180.52	ZAE	123.31	ETE	175.53	ZAC	109.60	ETC	272.99	LVI	-18.00

PLANETOCENTRIC CONIC

C3	10.971	VHL	3.312	DLA	-34.20	RAL	352.61	RAD	6638.5	VEL	11.448	PTH	6.50	VHP	2.901	DPA	-15.19	RAP	297.62	ECC	1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 28 0	2271.85	4.05	56.85	207.30	137.44	19 5 52	1271.9	21.99	40.15
60.00	20 6 52	2008.61	10.42	39.21	213.34	129.15	20 40 21	1008.6	25.24	19.22
69.91	23 25 4	1421.23	23.80	.77	222.13	115.32	23 48 45	421.2	32.08	335.22
69.91	23 25 4	1421.23	23.80	.77	222.13	115.32	23 48 45	421.2	32.08	335.22
69.91	23 25 4	1421.23	23.80	.77	222.13	115.32	23 48 45	421.2	32.08	335.22
69.91	23 25 4	1421.23	23.80	.77	222.13	115.32	23 48 45	421.2	32.08	335.22
69.91	23 25 4	1421.23	23.80	.77	222.13	115.32	23 48 45	421.2	32.08	335.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2483	TRA	1.1014	TC3	-4.3811	BAU	.6546	SGT	3730.2	SGR	826.2	SG3	1778.1	ST	40.9	SR	11.1	SS	63.4
RDE	-.0762	RRA	-.2617	RC3	.8513	FAU	.24561	RRT	-.9531	RRF	-.9927	RTF	.9571	CRT	-.3703	CRS	.9471	CST	-.6481
FDE	.8987	FRA	7.6542	FC	-19.3804	BSP	6000	SGB	3820.6	R23	.2528	R13	-.9606	LSA	70.7	MSA	28.8	SSA	.3
BDE	.2597	BRA	1.1369	BC3	4.4630	FSP	3103	SG1	3812.7	SG2	244.5	THA	168.03	EL1	41.1	EL2	10.2	ALF	173.91

LAUNCH DATE MAY 6 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 534.775 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.244	GAL	-1.40	AZL	92.94	HCA	172.43	SMA	184.52	ECC	.18372	INC	2.9349	V1	29.526
RP	216.39	LAP	-.39	LOP	37.27	VP	22.525	GAP	3.64	AZP	87.09	TAL	350.97	TAP	163.40	RCA	150.62	APO	218.42	V2	25.385
RC	161.134	GL	-29.40	GP	8.51	ZAL	111.04	ZAP	78.91	ETS	180.94	ZAE	121.42	ETE	175.20	ZAC	110.70	ETC	272.87	LVI	-18.78

PLANETOCENTRIC CONIC

C3	11.304	VHL	3.362	DLA	-35.01	RAL	353.77	RAD	6638.7	VEL	11.462	PTH	6.51	VHP	2.919	DPA	-14.23	RAP	296.84	ECC	1.1860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 38 11	2257.38	4.77	56.24	209.19	137.39	19 15 49	1257.4	22.67	39.43
60.00	20 21 6	1983.32	11.51	37.95	215.55	128.90	20 54 9	983.3	26.15	17.71
68.45	23 21 8	1453.29	24.13	3.46	223.98	116.16	23 45 21	453.3	32.73	337.92
68.45	23 21 8	1453.29	24.13	3.46	223.98	116.16	23 45 21	453.3	32.73	337.92
68.45	23 21 8	1453.29	24.13	3.46	223.98	116.16	23 45 21	453.3	32.73	337.92
68.45	23 21 8	1453.29	24.13	3.46	223.98	116.16	23 45 21	453.3	32.73	337.92
68.45	23 21 8	1453.29	24.13	3.46	223.98	116.16	23 45 21	453.3	32.73	337.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2537	TRA	1.2017	TC3	-4.4418	BAU	.6856	SGT	3919.0	SGR	936.8	SG3	1752.4	ST	43.5	SR	12.3	SS	63.9
RDE	-.0769	RRA	-.3318	RC3	.9215	FAU	.24098	RRT	-.9587	RRF	-.9957	RTF	.5096	CRT	-.4690	CRS	.9717	CST	-.6639
FDE	.9466	FRA	7.6717	FC	-18.4552	BSP	6430	SGB	4029.5	R23	.2520	R13	-.9634	LSA	72.5	MSA	29.5	SSA	.3
BDE	.2651	BRA	1.2467	BC3	4.5364	FSP	3083	SG1	4021.1	SG2	259.6	THA	167.04	EL1	43.9	EL2	10.8	ALF	171.97

LAUNCH DATE MAY 6 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 538.952 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.248	GAL	-1.45	AZL	93.13	HCA	173.58	SMA	184.59	ECC	.18415	INC	3.1329	V1	29.526
RP	216.73	LAP	-.35	LOP	38.43	VP	22.488	GAP	3.48	AZP	86.89	TAL	350.63	TAP	164.21	RCA	150.59	APO	218.58	V2	25.347
RC	163.649	GL	-30.94	GP	9.95	ZAL	111.18	ZAP	77.29	ETS	181.51	ZAE	119.54	ETE	174.74	ZAC	112.17	ETC	272.76	LVI	-19.91

PLANETOCENTRIC CONIC

C3	11.750	VHL	3.428	DLA	-36.14	RAL	355.18	RAD	6638.9	VEL	11.482	PTH	6.53	VHP	2.944	DPA	-12.90	RAP	296.06	ECC	1.1934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 52 8	2235.49	5.87	55.32	211.67	137.30	19 29 23	1235.5	23.68	38.34
60.00	20 41 50	1943.18	13.21	35.94	218.56	128.43	21 14 13	943.2	27.57	15.26
66.49	23 15 49	1494.17	24.61	6.98	226.33	117.35	23 40 43	494.2	33.64	341.43
66.49	23 15 49	1494.17	24.61	6.98	226.33	117.35	23 40 43	494.2	33.64	341.43
66.49	23 15 49	1494.17	24.61	6.98	226.33	117.35	23 40 43	494.2	33.64	341.43
66.49	23 15 49	1494.17	24.61	6.98	226.33	117.35	23 40 43	494.2	33.64	341.43
66.49	23 15 49	1494.17	24.61	6.98	226.33	117.35	23 40 43	494.2	33.64	341.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2740	TRA	1.2986	TC3	-4.4870	BAU	.7228	SGT	4110.6	SGR	1083.5	SG3	1716.8	ST	46.6	SR	13.9	SS	63.5
RDE	-.0772	RRA	-.3952	RC3	1.0192	FAU	.23774	RRT	-.9630	RRF	-.9977	RTF	.9618	CRT	-.5429	CRS	.9869	CST	-.6710
FDE	.9417	FRA	7.6103	FC	-17.5172	BSP	6760	SGB	4251.0	R23	.2486	R13	-.9662	LSA	73.9	MSA	30.7	SSA	.2
BDE	.2847	BRA	1.3574	BC3	4.6013	FSP	2999	SG1	4241.6	SG2	283.1	THA	165.69	EL1	47.2	EL2	11.5	ALF	170.21

LAUNCH DATE MAY 6 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 543.129 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.252	GAL	-1.51	AZL	93.42	HCA	174.74	SMA	184.66	ECC	.18462	INC	3.4185	V1	29.526
RP	217.08	LAP	-.31	LOP	39.58	VP	22.451	GAP	3.33	AZP	86.60	TAL	350.28	TAP	165.01	RCA	150.57	APO	218.75	V2	25.308
RC	166.178	GL	-33.10	GP	11.97	ZAL	111.16	ZAP	75.77	ETS	182.31	ZAE	117.65	ETE	174.07	ZAC	114.23	ETC	272.68	LVI	-21.59

PLANETOCENTRIC CONIC

C3	12.391	VHL	3.520	DLA	-37.81	RAL	357.02	RAD	6639.3	VEL	11.509	PTH	6.56	VHP	2.980	DPA	-10.98	RAP	295.23	ECC	1.2039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 12 36	2201.04	7.59	53.86	215.19	137.11	19 49 17	1201.0	25.25	36.57
60.00	21 16 4	1871.67	16.21	32.27	223.17	127.42	21 47 15	871.7	29.97	10.72
63.79	23 9 2	1546.99	25.28	11.65	229.52	119.11	23 34 49	547.0	34.95	346.13
63.79	23 9 2	1546.99	25.28	11.65	229.52	119.11	23 34 49	547.0	34.95	346.13
63.79	23 9 2	1546.99	25.28	11.65	229.52	119.11	23 34 49	547.0	34.95	346.13
63.79	23 9 2	1546.99	25.28	11.65	229.52	119.11	23 34 49	547.0	34.95	346.13
63.79	23 9 2	1546.99	25.28	11.65	229.52	119.11	23 34 49	547.0	34.95	346.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2946	TRA	1.4140	TC3	-4.4318	BAU	.7583	SGT	4295.5	SGR	1288.3	SG3	1667.7	ST	50.1	SR	16.3	SS	62.8
RDE	-.0795	RRA	-.4833	RC3	1.1464	FAU	.23346	RRT	-.9680	RRF	-.9989	RTF	.9660	CRT	-.6158	CRS	.9954	CST	-.6882
FDE	.9201	FRA	7.4980	FC	-16.3106	BSP	7220	SGB	4484.5	R23	.2344	R13	-.9710	LSA	75.8	MSA	31.3	SSA	.2
BDE	.3051	BRA	1.4944	BC3	4.5777	FSP	2878	SG1	4473.8	SG2	310.2	THA	163.73	EL1	51.1	EL2	12.6	ALF	167.90

LAUNCH DATE MAY 6 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 547.299 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.257	GAL	-1.57	AZL	93.86	HCA	175.88	SMA	184.74	ECC	.18513	INC	3.8583	V1	29.526
RP	217.43	LAP	-.28	LOP	40.73	VP	22.413	GAP	3.17	AZP	86.15	TAL	349.92	TAP	165.80	RCA	150.54	APO	218.94	V2	25.269
RC	168.717	GL	-36.32	GP	15.05	ZAL	110.85	ZAP	74.44	ETS	183.50	ZAE	115.70	ETE	173.03	ZAC	117.32	ETC	272.65	LVI	-24.25

PLANETOCENTRIC CONIC

C3	13.432	VHL	3.665	DLA	-40.35	RAL	359.67	RAD	6639.8	VEL	11.554	PTH	6.60	VHP	3.040	DPA	-8.01	RAP	294.33	ECC	1.2211

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 46 9	2142.75	10.49	51.36	220.86	136.68	20 21 52	1142.8	27.86	33.47
59.93	23 1 12	1616.86	26.19	18.08	234.28	121.87	23 28 9	616.9	36.88	352.67
59.93	23 1 12	1616.86	26.19	18.08	234.28	121.87	23 28 9	616.9	36.88	352.67
59.93	23 1 12	1616.86	26.19	18.08	234.28	121.87	23 28 9	616.9	36.88	352.67
59.93	23 1 12	1616.86	26.19	18.08	234.28	121.87	23 28 9	616.9	36.88	352.67
59.93	23 1 12	1616.86	26.19	18.08	234.28	121.87	23 28 9	616.9	36.88	352.67
59.93	23 1 12	1616.86	26.19	18.08	234.28	121.87	23 28 9	616.9	36.88	352.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3403	TRA	1.5300	TC3	-4.3016	BAU	.8072	SGT	4480.5	SGR	1592.5	SG3	1592.3	ST	54.3	SR	20.3	SS	62.4
RDE	-.0912	RRA	-.6169	RC3	1.3046	FAU	.22476	RRT	-.9686	RRF	-.9995	RTF	.9655	CRT	-.6443	CRS	.9993	CST	-.6725
FDE	.9572	FRA	7.3069	FC	-14.4865	BSP	7565	SGB	4755.1	R23	.2321	R13	-.9722	LSA	78.1	MSA	33.8	SSA	.1
BDE	.3523	BRA	1.6497	BC3	4.4950	FSP	2742	SG1	4740.3	SG2	374.5	THA	160.88	EL1	56.0	EL2	15.1	ALF	165.35

LAUNCH DATE MAY 6 1971 FLIGHT TIME 234.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 551.466 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.263	GAL	-1.63	AZL	94.64	HCA	177.03	SMA	184.83	ECC	.18566	INC	4.6382	V1	29.526
RP	217.79	LAP	-.24	LOP	41.87	VP	22.376	GAP	3.01	AZP	85.37	TAL	349.55	TAP	166.58	RCA	150.51	APO	219.15	V2	25.229
RC	171.268	GL	-41.54	GP	20.20	ZAL	109.91	ZAP	73.50	ETS	185.43	ZAE	113.53	ETE	171.25	ZAC	122.48	ETC	272.71	LVI	-28.82

PLANETOCENTRIC CONIC

C3	15.464	VHL	3.932	DLA	-44.50	RAL	4.06	RAD	6640.7	VEL	11.641	PTH	6.68	VHP	3.158	DPA	-2.96	RAP	293.21	ECC	1.2545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 55 28	2020.72	16.47	45.93	232.30	135.29	21 29 9	1020.7	33.02	26.42
54.08	22 54 22	1714.29	27.29	27.49	242.38	126.63	23 22 56	714.3	39.76	2.56
54.08	22 54 22	1714.29	27.29	27.49	242.38	126.63	23 22 56	714.3	39.76	2.56
54.08	22 54 22	1714.29	27.29	27.49	242.38	126.63	23 22 56	714.3	39.76	2.56
54.08	22 54 22	1714.29	27.29	27.49	242.38	126.63	23 22 56	714.3	39.76	2.56
54.08	22 54 22	1714.29	27.29	27.49	242.38	126.63	23 22 56	714.3	39.76	2.56
54.08	22 54 22	1714.29	27.29	27.49	242.38	126.63	23 22 56	714.3	39.76	2.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3706	TRA	1.7006	TC3	-3.8821	BAU	.8588	SGT	4656.6	SGR	2095.4	SG3	1461.8	ST	58.9	SR	27.9	SS	62.4
RDE	-.1371	RRA	-.8477	RC3	1.4785	FAU	.20640	RRT	-.9694	RRF	-.9998	RTF	.9937	CRT	-.6652	CRS	1.0000	CST	-.6594
FDE	1.1478	FRA	8.9377	FC	-11.5555	BSP	8364	SGB	5106.4	R23	.2195	R13	-.9755	LSA	82.5	MSA	36.7	SSA	.1
BDE	.3952	BRA	1.9002	BC3	4.1541	FSP	2575	SG1	5084.6	SG2	471.3	THA	156.22	EL1	62.1	EL2	19.7	ALF	160.46

LAUNCH DATE MAY 6 1971 FLIGHT TIME 236.00 ARRIVAL DATE DEC 28 1971

HELIOCENTRIC CONIC DISTANCE 555.628 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.268	GAL	-1.69	AZL	96.38	HCA	178.17	SMA	184.92	ECC	.18623	INC	6.3733	V1	29.526
RP	218.15	LAP	-.20	LOP	43.01	VP	22.340	GAP	2.86	AZP	83.62	TAL	349.17	TAP	167.34	RCA	150.48	APO	219.36	V2	25.189
RC	173.829	GL	-51.20	GP	30.28	ZAL	107.39	ZAP	73.78	ETS	188.88	ZAE	110.61	ETE	167.85	ZAC	132.55	ETC	273.13	LVI	-37.84

PLANETOCENTRIC CONIC

C3	21.143	VHL	4.598	DLA	-51.87	RAL	13.60	RAD	6643.3	VEL	11.680	PTH	6.89	VHP	3.500	DPA	6.99	RAP	291.59	ECC	1.3480

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.52	22 59 41	1867.84	27.45	42.64	259.51	135.90	23 30 49	867.8	43.41	20.02
44.52	22 59 41	1867.84	27.45	42.64	259.51	135.90	23 30 49	867.8	43.41	20.02
44.52	22 59 41	1867.84	27.45	42.64	259.51	135.90	23 30 49	867.8	43.41	20.02
44.52	22 59 41	1867.84	27.45	42.64	259.51	135.90	23 30 49	867.8	43.41	20.02
44.52	22 59 41	1867.84	27.45	42.64	259.51	135.90	23 30 49	867.8	43.41	20.02
44.52	22 59 41	1867.84	27.45	42.64	259.51	135.90	23 30 49	867.8	43.41	20.02
44.52	22 59 41	1867.84	27.45	42.64	259.51	135.90	23 30 49	867.8	43.41	20.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4058	TRA	1.8478	TC3	-3.1731	BAU	1.0182	SGT	4761.7	SGR	2977.4	SG3	1138.9	ST	61.5	SR	42.3	SS	58.3
RDE	-.3099	RRA	-1.2395	RC3	1.7056	FAU	.18004	RRT	-.9669	RRF	-.9998	RTF	.9617	CRT	-.6232	CRS	.9991	CST	-.5886
FDE	1.5314	FRA	5.5220	FC	-7.3721	BSP	8179	SGB	5615.9	R23	.2045	R13	-.9788	LSA	85.1	MSA	41.7	SSA	.0
BDE	.5106	BRA	2.2250	BC3	3.6024	FSP	1824	SG1	5578.3	SG2	648.9	THA	148.37	EL1	68.5	EL2	29.7	ALF	150.84

LAUNCH DATE MAY 6 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC DISTANCE 568.122 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.287 GAL -1.90 AZL 86.58 HCA 181.58 SMA 185.23 ECC .18815 INC 3.4125 V1 29.526
RP 219.25 LAP -.09 LOP 46.41 VP 22.230 GAP 2.40 AZP 93.42 TAL 347.97 TAP 169.55 RCA 150.38 APO 220.09 V2 25.068
RC 181.572 GL 32.08 GP -33.30 ZAL 114.23 ZAP 71.02 ETS 165.96 ZAE 104.97 ETE 190.63 ZAC 69.09 ETC 272.04 LVI 20.95

PLANETOCENTRIC CONIC

C3 13.160 VHL 3.628 DLA 23.15 RAL 332.26 RAD 6639.6 VEL 11.542 PTH 6.59 VHP 3.715 DPA -55.69 RAP 304.54 ECC 1.2166

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 1 32	3511.45	-46.42	129.17	203.04	101.89	14 0 23	2511.4	-36.62	99.41
60.00	13 12 25	3483.32	-40.05	127.93	204.33	94.94	14 10 29	2483.3	-33.73	98.77
70.00	13 29 35	3432.79	-34.15	124.11	204.60	89.20	14 26 47	2432.8	-30.90	95.86
80.00	14 1 38	3332.21	-29.46	116.21	204.32	84.93	14 57 11	2332.2	-28.57	88.62
90.00	15 5 10	3127.09	-27.52	100.91	204.09	83.20	15 57 17	2127.1	-27.59	73.90
100.00	16 44 30	2806.68	-29.46	77.58	204.32	84.93	17 31 17	1806.7	-28.57	50.19
110.00	18 29 1	2479.60	-34.15	53.03	204.60	89.20	19 10 20	1479.6	-30.90	24.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.9481 TRA 1.1482 TC3-5.4041 BAU 1.0504 SGT 5360.1 SGR 3097.2 SG3 1010.6 ST 156.8 SR 90.9 SS 108.4
RDE 1.0994 RRA 1.0390 RC3-2.5386 FAU .14491 RRT .9689 RRF .9998 RTF .9651 CRT .9940 CRS -.9999 CST -.9925
FDE 4.0675 FRA 4.0213 FC3-9.5331 BSP 9336 SGB 6190.6 R23 .2017 R13 .9794 LSA 210.8 MSA 12.3 SSA .1
BDE 2.2369 BRA 1.5485 BC3 5.9707 FSP 1660 SG1 6154.4 SG2 667.9 THA 29.63 EL1 181.0 EL2 8.6 ALF 30.03

LAUNCH DATE MAY 6 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 572.270 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.294 GAL -1.98 AZL 88.77 HCA 182.70 SMA 185.35 ECC .18885 INC 1.2128 V1 29.526
RP 219.62 LAP -.06 LOP 47.54 VP 22.194 GAP 2.24 AZP 91.23 TAL 347.57 TAP 170.28 RCA 150.34 APO 220.35 V2 25.026
RC 184.172 GL 12.43 GP -21.19 ZAL 118.36 ZAP 67.07 ETS 169.66 ZAE 105.24 ETE 186.51 ZAC 81.22 ETC 271.82 LVI 9.99

PLANETOCENTRIC CONIC

C3 10.347 VHL 3.217 DLA 5.17 RAL 340.44 RAD 6638.2 VEL 11.421 PTH 6.47 VHP 3.293 DPA -44.02 RAP 299.37 ECC 1.1703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 47 22	3091.32	-34.61	96.23	194.79	124.95	15 38 53	2091.3	-18.39	76.08
60.00	15 21 26	3000.66	-30.32	91.18	197.90	117.94	16 11 27	2000.7	-16.65	69.49
70.00	16 7 32	2865.06	-26.46	82.25	199.97	112.43	16 55 17	1865.1	-15.04	59.64
80.00	17 10 14	2668.72	-23.66	68.51	201.13	108.76	17 54 42	1668.7	-13.84	45.43
90.00	18 29 13	2413.83	-22.61	50.15	201.50	107.45	19 9 27	1413.8	-13.39	26.92
100.00	19 53 6	2143.20	-23.66	29.88	201.13	108.76	20 28 49	1143.2	-13.84	6.80
110.00	21 6 59	1911.88	-26.46	11.17	199.97	112.43	21 38 51	911.9	-15.04	348.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1157 TRA 1.5230 TC3-6.8574 BAU .9870 SGT 5552.6 SGR 2006.3 SG3 1337.0 ST 107.6 SR 45.4 SS 96.3
RDE .4577 RRA .7400 RC3-1.9715 FAU .18140 RRT .9713 RRF .9998 RTF .9698 CRT .9978 CRS -.9997 CST -.9959
FDE 3.3702 FRA 5.8126 FC-15.1780 BSP 9257 SGB 5903.9 R23 .2169 R13 .9760 LSA 151.3 MSA 6.6 SSA .3
BDE 1.2060 BRA 1.6933 BC3 7.1352 FSP 2268 SG1 5886.7 SG2 449.8 THA 19.46 EL1 116.8 EL2 2.8 ALF 22.83

LAUNCH DATE MAY 6 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 576.417 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.301 GAL -2.04 AZL 89.67 HCA 183.82 SMA 185.46 ECC .18957 INC .2780 V1 29.526
RP 219.99 LAP -.02 LOP 48.66 VP 22.158 GAP 2.09 AZP 90.33 TAL 347.17 TAP 170.99 RCA 150.31 APO 220.62 V2 24.987
RC 186.781 GL 3.32 GP -15.26 ZAL 119.57 ZAP 64.85 ETS 171.77 ZAE 104.37 ETE 184.44 ZAC 87.15 ETC 271.75 LVI 4.60

PLANETOCENTRIC CONIC

C3 10.093 VHL 3.177 DLA -3.06 RAL 344.41 RAD 6638.1 VEL 11.410 PTH 6.46 VHP 3.193 DPA -38.25 RAP 297.52 ECC 1.1661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 33 17	2922.59	-27.56	86.33	195.70	130.45	16 21 59	1922.6	-10.15	68.51
60.00	16 16 6	2808.69	-23.59	79.39	199.02	123.67	17 2 55	1808.7	-8.51	59.81
70.00	17 11 57	2644.47	-19.99	68.41	201.35	118.29	17 56 1	1644.5	-6.98	47.64
80.00	18 23 31	2420.39	-17.35	52.79	202.73	114.68	19 3 51	1420.4	-5.85	31.33
90.00	19 46 23	2153.02	-16.37	33.59	203.19	113.39	20 22 16	1153.0	-5.42	11.91
100.00	21 6 23	1894.86	-17.35	14.15	202.73	114.68	21 37 58	894.9	-5.85	352.70
110.00	22 11 23	1691.29	-19.99	357.32	201.35	118.29	22 39 34	691.3	-6.98	336.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8287 TRA 1.7266 TC3-7.1726 BAU .9866 SGT 5722.8 SGR 1428.0 SG3 1431.7 ST 88.5 SR 29.2 SS 87.7
RDE .2792 RRA .5464 RC3-1.4182 FAU .19177 RRT .9716 RRF .9993 RTF .9715 CRT .9991 CRS -.9985 CST -.9992
FDE 2.9321 FRA 6.4902 FC-16.4489 BSP 9395 SGB 5898.2 R23 .2209 R13 .9746 LSA 127.9 MSA 2.5 SSA 1.2
BDE .8745 BRA 1.8129 BC3 7.3114 FSP 2454 SG1 5889.1 SG2 328.6 THA 13.67 EL1 93.2 EL2 1.2 ALF 18.28

LAUNCH DATE MAY 6 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 580.559 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.308 GAL -2.11 AZL 90.17 HCA 184.94 SMA 185.59 ECC .19032 INC .1474 V1 29.526
RP 220.36 LAP .01 LOP 49.78 VP 22.122 GAP 1.94 AZP 89.83 TAL 346.75 TAP 171.69 RCA 150.26 APO 220.91 V2 24.946
RC 189.399 GL -1.68 GP -11.84 ZAL 120.20 ZAP 63.18 ETS 173.05 ZAE 103.19 ETE 183.24 ZAC 90.58 ETC 271.71 LVI 1.49

PLANETOCENTRIC CONIC

C3 10.232 VHL 3.199 DLA -7.44 RAL 346.89 RAD 6638.2 VEL 11.416 PTH 6.47 VHP 3.167 DPA -34.91 RAP 296.54 ECC 1.1684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 21	2837.72	-23.73	81.88	197.43	132.53	16 46 39	1837.7	-5.92	64.89
60.00	16 46 56	2711.19	-19.81	73.93	200.88	125.84	17 32 7	1711.2	-4.26	55.09
70.00	17 48 6	2531.32	-16.20	61.82	203.35	120.48	18 30 18	1531.3	-2.69	41.69
80.00	19 4 35	2291.92	-13.54	45.15	204.85	116.86	19 42 47	1291.9	-1.52	24.25
90.00	20 29 36	2017.61	-12.54	25.49	205.36	115.56	21 3 13	1017.6	-1.08	4.33
100.00	21 47 27	1766.39	-13.54	6.52	204.85	116.86	22 16 53	766.4	-1.52	345.62
110.00	22 47 33	1578.14	-16.20	350.74	203.35	120.48	23 13 51	578.1	-2.69	330.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7237 TRA 1.9088 TC3-7.1556 BAU .9891 SGT 5875.9 SGR 1086.1 SG3 1456.1 ST 83.2 SR 22.2 SS 84.6
RDE .2109 RRA .4267 RC3-1.0399 FAU .19056 RRT .9705 RRF .9982 RTF .9725 CRT .9916 CRS -.9954 CST -.9991
FDE 2.7541 FRA 6.8537 FC-16.1237 BSP 9943 SGB 5975.4 R23 .2178 R13 .9743 LSA 120.6 MSA 3.3 SSA 1.2
BDE .7538 BRA 1.9560 BC3 7.2307 FSP 2581 SG1 5969.9 SG2 257.8 THA 10.19 EL1 86.1 EL2 2.8 ALF 14.82

LAUNCH DATE MAY 6 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 584.699 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.315 GAL -2.18 AZL 90.46 HCA 186.06 SMA 185.71 ECC .19110 INC .4656 V1 29.526
RP 220.74 LAP .05 LOP 50.89 VP 22.087 GAP 1.79 AZP 89.53 TAL 346.33 TAP 172.38 RCA 150.22 APO 221.20 V2 24.904
RC 192.025 GL -4.77 GP -9.63 ZAL 120.69 ZAP 61.73 ETS 173.91 ZAE 101.91 ETE 182.47 ZAC 92.80 ETC 271.69 LVI -.51

PLANETOCENTRIC CONIC

C3 10.459 VHL 3.234 DLA -10.05 RAL 348.66 RAD 6638.3 VEL 11.426 PTH 6.48 VHP 3.167 DPA -32.75 RAP 295.94 ECC 1.1721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 16	2789.68	-21.50	79.49	199.08	133.53	17 2 46	1789.7	-3.52	62.87
60.00	17 6 47	2655.33	-17.55	70.93	202.62	126.88	17 51 3	1655.3	-1.80	52.41
70.00	18 11 19	2465.61	-13.90	58.12	205.20	121.52	18 52 25	1465.6	-.19	38.26
80.00	19 30 56	2216.38	-11.18	40.79	206.79	117.87	20 7 53	1216.4	1.04	20.10
90.00	20 57 22	1937.55	-10.15	20.83	207.33	116.54	21 29 39	937.6	1.50	359.86
100.00	22 13 48	1690.85	-11.18	2.16	206.79	117.87	22 41 59	690.8	1.04	341.47
110.00	23 10 46	1512.43	-13.90	347.04	205.20	121.52	23 35 58	512.4	-.19	327.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6466 TRA 2.0293 TC3-7.2314 BAU 1.0175 SGT 6043.3 SGR 862.3 SG3 1452.7 ST 79.6 SR 17.8 SS 81.0
RDE .1727 RRA .3391 RC3 -.8148 FAU .19143 RRT .9677 RRF .9958 RTF .9732 CRT .9742 CRS -.9889 CST -.9966
FDE 2.5774 FRA 6.9600 FC-15.8454 BSP 10049 SGB 6104.5 R23 .2096 R13 .9743 LSA 114.8 MSA 5.7 SSA .9
BDE .6692 BRA 2.0574 BC3 7.2771 FSP 2548 SG1 6100.7 SG2 215.2 THA 7.87 EL1 81.4 EL2 3.9 ALF 12.36

LAUNCH DATE MAY 6 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 588.832 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.323 GAL -2.26 AZL 90.69 HCA 187.17 SMA 185.84 ECC .19191 INC .6880 V1 29.526
RP 221.12 LAP .09 LOP 52.00 VP 22.051 GAP 1.64 AZP 89.31 TAL 345.90 TAP 173.07 RCA 150.17 APO 221.50 V2 24.863
RC 194.659 GL -6.83 GP -8.09 ZAL 121.17 ZAP 60.41 ETS 174.51 ZAE 100.61 ETE 181.94 ZAC 94.34 ETC 271.67 LVI -1.91

PLANETOCENTRIC CONIC

C3 10.708 VHL 3.272 DLA -11.71 RAL 350.05 RAD 6638.4 VEL 11.437 PTH 6.49 VHP 3.179 DPA -31.25 RAP 295.53 ECC 1.1762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 12	2760.87	-20.14	78.10	200.56	134.06	17 14 13	1760.9	-2.07	61.66
60.00	17 20 39	2621.37	-16.15	69.14	204.17	127.44	18 4 21	1621.4	-.31	50.79
70.00	18 27 26	2425.05	-12.44	55.88	206.83	122.07	19 7 51	1425.1	1.36	36.14
80.00	19 49 12	2169.12	-9.66	38.10	208.48	118.39	20 25 21	1169.1	2.63	17.51
90.00	21 16 35	1887.16	-8.60	17.94	209.04	117.04	21 48 2	887.2	3.12	357.05
100.00	22 32 3	1643.59	-9.66	359.47	208.48	118.39	22 59 27	643.6	2.63	338.88
110.00	23 26 52	1471.87	-12.44	344.80	206.83	122.07	23 51 24	471.9	1.36	325.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6263 TRA 2.1636 TC3-7.2070 BAU 1.0358 SGT 6198.2 SGR 707.1 SG3 1438.5 ST 80.2 SR 15.5 SS 80.2
RDE .1552 RRA .2784 RC3 -.6453 FAU .18700 RRT .9619 RRF .9915 RTF .9730 CRT .9511 CRS -.9791 CST -.9937
FDE 2.5313 FRA 7.0661 FC-15.1189 BSP 10460 SGB 6238.4 R23 .1998 R13 .9737 LSA 114.2 MSA 7.4 SSA .8
BDE .6452 BRA 2.1814 BC3 7.2359 FSP 2571 SG1 6235.4 SG2 192.1 THA 6.27 EL1 81.5 EL2 4.7 ALF 10.47

LAUNCH DATE MAY 6 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 592.961 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.331 GAL -2.33 AZL 90.85 HCA 188.27 SMA 185.97 ECC .19274 INC .8449 V1 29.526
RP 221.50 LAP .12 LOP 53.11 VP 22.016 GAP 1.49 AZP 89.16 TAL 345.47 TAP 173.74 RCA 150.13 APO 221.82 V2 24.821
RC 197.299 GL -8.29 GP -6.96 ZAL 121.65 ZAP 59.18 ETS 174.97 ZAE 99.31 ETE 181.56 ZAC 95.47 ETC 271.66 LVI -2.94

PLANETOCENTRIC CONIC

C3 10.961 VHL 3.311 DLA -12.81 RAL 351.21 RAD 6638.5 VEL 11.448 PTH 6.50 VHP 3.197 DPA -30.14 RAP 295.26 ECC 1.1804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 6	2743.32	-19.31	77.26	201.88	134.37	17 22 49	1743.3	-1.19	60.93
60.00	17 30 53	2600.31	-15.28	68.05	205.55	127.76	18 14 13	1600.3	.62	49.79
70.00	18 39 12	2399.46	-11.51	54.48	208.27	122.38	19 19 11	1399.5	2.34	34.81
80.00	20 2 27	2138.84	-8.68	36.40	209.97	118.68	20 38 6	1138.8	3.66	15.84
90.00	21 30 32	1854.66	-7.59	16.09	210.55	117.32	22 1 27	854.7	4.16	355.23
100.00	22 45 19	1613.31	-8.68	357.76	209.97	118.68	23 12 13	613.3	3.66	337.21
110.00	23 38 38	1446.27	-11.51	343.40	208.27	122.38	24 2 44	446.3	2.34	323.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6169 TRA 2.2838 TC3-7.2121 BAU 1.0597 SGT 6354.0 SGR 593.8 SG3 1418.2 ST 81.2 SR 14.0 SS 79.4
RDE .1451 RRA .2310 RC3 -.5262 FAU .18285 RRT .9525 RRF .9842 RTF .9726 CRT .9221 CRS -.9853 CST -.9908
FDE 2.4971 FRA 7.1116 FC-14.4416 BSP 10765 SGB 6381.7 R23 .1872 R13 .9731 LSA 114.1 MSA 8.9 SSA .8
BDE .6337 BRA 2.2954 BC3 7.2312 FSP 2560 SG1 6379.2 SG2 180.1 THA 5.09 EL1 82.2 EL2 5.3 ALF 9.07

LAUNCH DATE MAY 6 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 597.086 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.339 GAL -2.41 AZL 90.97 HCA 189.38 SMA 186.11 ECC .19360 INC .9636 V1 29.526
RP 221.88 LAP .16 LOP 54.21 VP 21.981 GAP 1.34 AZP 89.05 TAL 345.03 TAP 174.41 RCA 150.08 APO 222.14 V2 24.780
RC 199.945 GL -9.36 GP -6.09 ZAL 122.14 ZAP 58.00 ETS 175.32 ZAE 98.02 ETE 181.27 ZAC 96.34 ETC 271.67 LVI -3.73

PLANETOCENTRIC CONIC

C3 11.215 VHL 3.349 DLA -13.55 RAL 352.21 RAD 6638.7 VEL 11.459 PTH 6.51 VHP 3.218 DPA -29.29 RAP 295.09 ECC 1.1846

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 1	2732.92	-18.81	76.77	203.08	134.55	17 29 34	1732.9	-.67	60.49
60.00	17 38 42	2587.49	-14.74	67.39	206.80	127.94	18 21 50	1587.5	1.18	49.17
70.00	18 48 6	2383.49	-10.93	53.61	209.57	122.56	19 27 49	1383.5	2.95	33.97
80.00	20 12 25	2119.57	-8.05	35.32	211.30	118.85	20 47 44	1119.6	4.30	14.78
90.00	21 40 59	1833.83	-6.94	14.91	211.90	117.48	22 11 33	833.8	4.83	354.06
100.00	22 55 17	1594.05	-8.05	356.68	211.30	118.85	23 21 51	594.0	4.30	336.15
110.00	23 47 32	1430.30	-10.93	342.53	209.57	122.56	24 11 23	430.3	2.95	322.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6147 TRA 2.3952 TC3-7.2351 BAU 1.0868 SGT 6508.2 SGR 508.2 SG3 1393.6 ST 82.6 SR 13.0 SS 78.4
RDE .1392 RRA .1924 RC3 -.4402 FAU .17950 RRT .9392 RRF .9724 RTF .9727 CRT .8888 CRS -.9475 CST -.9883
FDE 2.4563 FRA 7.1050 FC-13.8568 BSP 10996 SGB 6528.0 R23 .1696 R13 .9730 LSA 114.2 MSA 10.0 SSA .8
BDE .6302 BRA 2.4029 BC3 7.2485 FSP 2513 SG1 6525.7 SG2 174.0 THA 4.20 EL1 83.4 EL2 5.9 ALF 7.98

LAUNCH DATE MAY 6 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC DISTANCE 601.207 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.347	GAL	-2.49	AZL	91.06	HCA	190.48	SMA	186.24	ECC	.19448	INC	1.0585	V1	29.526
RP	222.27	LAP	.19	LOP	55.31	VP	21.946	GAP	1.19	AZP	88.96	TAL	344.59	TAP	175.06	RCA	150.02	APO	222.46	V2	24.736
RC	202.595	GL	-10.17	GP	-5.41	ZAL	122.65	ZAP	56.88	ETS	175.61	ZAE	96.75	ETE	181.05	ZAC	97.02	ETC	271.67	LVI	-4.37

PLANETOCENTRIC CONIC

C3	11.469	VHL	3.387	DLA	-14.05	RAL	353.11	RAD	6638.8	VEL	11.470	PTH	6.52	VHP	3.243	DPA	-28.61	RAP	294.98	ECC	1.1887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 34	2727.36	-18.55	76.51	204.19	134.64	17 35 2	1727.4	-.39	60.26
60.00	17 44 53	2580.27	-14.44	67.02	207.95	128.04	18 27 53	1580.3	1.50	48.83
70.00	18 55 1	2374.10	-10.59	53.10	210.75	122.66	19 34 35	1374.1	3.31	33.48
80.00	20 20 4	2107.90	-7.66	34.66	212.52	118.95	20 55 12	1107.9	4.70	14.13
90.00	21 48 58	1821.05	-6.53	14.18	213.13	117.58	22 19 20	821.0	5.24	353.34
100.00	23 2 55	1582.37	-7.66	356.03	212.52	118.95	23 29 18	582.4	4.70	335.50
110.00	23 54 27	1420.92	-10.59	342.02	210.75	122.66	24 18 8	420.9	3.31	322.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6235	TRA	2.5079	TC3	-7.2501	BAU	1.1131	SGT	6660.2	SGR	442.7	SG3	1367.5	ST	84.5	SR	12.3	SS	77.5
RDE	.1364	RRA	.1605	RC3	-.3747	FAU	.17620	RRT	.9204	RRF	.9547	RTF	.9732	CRT	.8543	CRS	-.9265	CST	-.9867
FDE	2.4244	FRA	7.0812	FC	-13.3007	BSP	11260	SGB	6674.9	R23	.1493	R13	.9734	LSA	114.8	MSA	10.8	SSA	.8
BDE	.6382	BRA	2.5130	BC3	7.2598	FSP	2459	SG1	6672.6	SG2	172.8	THA	3.50	EL1	85.2	EL2	6.3	ALF	7.12

LAUNCH DATE MAY 6 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 605.322 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.355	GAL	-2.57	AZL	91.14	HCA	191.57	SMA	186.39	ECC	.19539	INC	1.1350	V1	29.526
RP	222.65	LAP	.23	LOP	56.40	VP	21.911	GAP	1.04	AZP	88.89	TAL	344.14	TAP	175.71	RCA	149.97	APO	222.80	V2	24.696
RC	205.250	GL	-10.78	GP	-4.85	ZAL	123.17	ZAP	55.80	ETS	175.84	ZAE	95.50	ETE	180.88	ZAC	97.57	ETC	271.69	LVI	-4.90

PLANETOCENTRIC CONIC

C3	11.723	VHL	3.424	DLA	-14.38	RAL	353.93	RAD	6638.9	VEL	11.481	PTH	6.53	VHP	3.269	DPA	-28.06	RAP	294.93	ECC	1.1929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 9	2725.23	-18.44	78.41	205.23	134.67	17 39 34	1725.2	-.28	60.17
60.00	17 49 52	2577.05	-14.31	66.86	209.02	128.09	18 32 49	1577.0	1.64	48.67
70.00	19 0 30	2369.43	-10.41	52.85	211.85	122.71	19 39 59	1369.4	3.49	33.23
80.00	20 26 1	2101.70	-7.46	34.32	213.64	118.99	21 1 2	1101.7	4.90	13.80
90.00	21 55 11	1814.11	-6.31	13.79	214.26	117.62	22 25 25	814.1	5.46	352.95
100.00	23 8 54	1576.17	-7.46	355.68	213.64	118.99	23 35 10	576.2	4.90	335.16
110.00	0 3 52	1416.25	-10.41	341.77	211.85	122.71	0 27 28	416.3	3.49	322.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6396	TRA	2.6209	TC3	-7.2609	BAU	1.1391	SGT	6809.4	SGR	392.5	SG3	1340.6	ST	86.8	SR	11.9	SS	77.0
RDE	.1362	RRA	.1338	RC3	-.3221	FAU	.17228	RRT	.8933	RRF	.9293	RTF	.9732	CRT	.8198	CRS	-.9043	CST	-.9854
FDE	2.4107	FRA	7.0557	FC	-12.7227	BSP	11531	SGB	6820.7	R23	.1320	R13	.9734	LSA	116.0	MSA	11.5	SSA	.8
BDE	.6539	BRA	2.6243	BC3	7.2680	FSP	2414	SG1	6818.4	SG2	176.2	THA	2.95	EL1	87.3	EL2	6.8	ALF	6.46

LAUNCH DATE MAY 6 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 609.432 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.364	GAL	-2.66	AZL	91.20	HCA	192.66	SMA	186.53	ECC	.19632	INC	1.1980	V1	29.526
RP	223.04	LAP	.26	LOP	57.50	VP	21.878	GAP	.89	AZP	88.83	TAL	343.69	TAP	176.36	RCA	149.91	APO	223.15	V2	24.654
RC	207.907	GL	-11.27	GP	-4.40	ZAL	123.70	ZAP	54.77	ETS	176.04	ZAE	94.28	ETE	180.74	ZAC	98.03	ETC	271.71	LVI	-5.36

PLANETOCENTRIC CONIC

C3	11.979	VHL	3.461	DLA	-14.58	RAL	354.69	RAD	6639.0	VEL	11.492	PTH	6.54	VHP	3.296	DPA	-27.59	RAP	294.94	ECC	1.1972

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 0	2725.64	-18.46	76.43	206.21	134.67	17 43 26	1725.6	-.30	60.19
60.00	17 53 59	2576.77	-14.29	66.84	210.04	128.09	18 36 56	1576.8	1.66	48.66
70.00	19 4 54	2368.26	-10.37	52.79	212.89	122.72	19 44 23	1368.3	3.53	33.17
80.00	20 30 45	2099.57	-7.39	34.20	214.70	119.01	21 5 44	1099.6	4.98	13.67
90.00	22 0 2	1811.51	-6.23	13.64	215.32	117.64	22 30 14	811.5	5.54	352.80
100.00	23 13 37	1574.04	-7.39	355.56	214.70	119.01	23 39 51	574.0	4.98	335.04
110.00	0 8 17	1415.08	-10.37	341.71	212.89	122.72	0 31 52	415.1	3.53	322.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6611	TRA	2.7344	TC3	-7.2671	BAU	1.1647	SGT	6955.6	SGR	354.2	SG3	1313.2	ST	89.3	SR	11.8	SS	76.6
RDE	.1377	RRA	.1109	RC3	-.2797	FAU	.16805	RRT	.8568	RRF	.8947	RTF	.9730	CRT	.7867	CRS	-.8819	CST	-.9844
FDE	2.4077	FRA	7.0264	FC	-12.1444	BSP	11801	SGB	6964.6	R23	.1172	R13	.9732	LSA	117.6	MSA	12.1	SSA	.9
BDE	.6753	BRA	2.7366	BC3	7.2725	FSP	2371	SG1	6962.2	SG2	182.4	THA	2.50	EL1	89.8	EL2	7.2	ALF	5.95

LAUNCH DATE MAY 6 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC DISTANCE 613.537 EARTH TO MARS

RL	150.91	LAL	.00	LOL	224.84	VL	32.372	GAL	-2.74	AZL	91.25	HCA	193.75	SMA	186.68	ECC	.19727	INC	1.2512	V1	29.526
RP	223.42	LAP	.30	LOP	58.58	VP	21.842	GAP	.74	AZP	88.78	TAL	343.24	TAP	176.99	RCA	149.85	APO	223.50	V2	24.612
RC	210.566	GL	-11.65	GP	-4.01	ZAL	124.23	ZAP	53.77	ETS	176.21	ZAE	93.08	ETE	180.62	ZAC	98.40	ETC	271.74	LVI	-5.75

PLANETOCENTRIC CONIC

C3	12.239	VHL	3.498	DLA	-14.69	RAL	355.41	RAD	6639.2	VEL	11.503	PTH	6.55	VHP	3.324	DPA	-27.20	RAP	294.99	ECC	1.2014

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 18	2727.96	-18.58	76.54	207.16	134.63	17 46 46	1728.0	-.42	60.29
60.00	17 57 25	2578.74	-14.38	66.94	211.01	128.06	18 40 23	1578.7	1.57	48.76
70.00	19 8 30	2369.74	-10.43	52.87	213.88	122.71	19 48 0	1369.7	3.47	33.25
80.00	20 34 30	2100.54	-7.42	34.25	215.70	119.00	21 9 31	1100.5	4.94	13.73
90.00	22 3 52	1812.24	-6.26	13.68	216.33	117.64	22 34 5	812.2	5.52	352.84
100.00	23 17 22	1575.02	-7.42	355.62	215.70	119.00	23 43 37	575.0	4.94	335.09
110.00	0 11 52	1416.56	-10.43	341.79	213.88	122.71	0 35 29	416.6	3.47	322.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6868	TRA	2.8481	TC3	-7.2708	BAU	1.1903	SGT	7099.2	SGR	325.4	SG3	1285.5	ST	91.9	SR	11.7	SS	76.3
RDE	.1403	RRA	.0907	RC3	-.2453	FAU	.16383	RRT	.8106	RRF	.8502	RTF	.9728	CRT	.7561	CRS	-.8601	CST	-.9838
FDE	2.4081	FRA	6.9902	FC	-11.5890	BSP	12079	SGB	7106.6	R23	.1043	R13	.9729	LSA	119.4	MSA	12.6	SSA	.9
BDE	.7010	BRA	2.8495	BC3	7.2749	FSP	2330	SG1	7104.1	SG2	190.4	THA	2.13	EL1	92.4	EL2	7.6	ALF	5.55

LAUNCH DATE MAY 6 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 617.637 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.381 GAL -2.82 AZL 91.30 HCA 194.84 SMA 186.82 ECC .19824 INC 1.2960 V1 29.526
RP 223.81 LAP .33 LOP 59.67 VP 21.808 GAP .59 AZP 88.75 TAL 342.78 TAP 177.62 RCA 149.79 APO 223.86 V2 24.571
RC 213.227 GL -11.94 GP -3.69 ZAL 124.77 ZAP 52.80 ETS 176.35 ZAE 91.91 ETE 180.53 ZAC 98.72 ETC 271.77 LVI -6.10

PLANETOCENTRIC CONIC

C3 12.502 VHL 3.536 DLA -14.73 RAL 356.09 RAD 6639.3 VEL 11.514 PTH 6.56 VHP 3.353 DPA -26.86 RAP 295.07 ECC 1.2057

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 9	2731.78	-18.76	76.72	208.07	134.57	17 49 41	1731.8	-.61	60.45
60.00	18 0 19	2582.44	-14.53	67.13	211.94	128.01	18 43 21	1582.4	1.41	48.93
70.00	19 11 27	2373.29	-10.56	53.06	214.83	122.67	19 51 1	1373.3	3.34	33.44
80.00	20 37 31	2103.93	-7.53	34.44	216.65	118.98	21 12 35	1103.9	4.83	13.91
90.00	22 6 54	1815.54	-6.36	13.87	217.29	117.61	22 37 10	815.5	5.41	353.03
100.00	23 20 23	1578.40	-7.53	355.81	216.65	118.98	23 46 41	578.4	4.83	335.28
110.00	0 14 50	1420.11	-10.56	341.98	214.83	122.67	0 38 30	420.1	3.34	322.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7131 TRA 2.9604 TC3-7.2807 BAU 1.2174 SGT 7242.0 SGR 304.6 SG3 1257.9 ST 94.5 SR 11.8 SS 75.8
RDE .1437 RRA .0727 RC3 -.2176 FAU .16002 RRT .7550 RRF .7960 RTF .9727 CRT .7273 CRS -.8389 CST -.9833
FDE 2.4034 FRA 6.9447 FC-11.0812 BSP 12310 SGB 7248.4 R23 .0931 R13 .9728 LSA 121.0 MSA 13.1 SSA .9
BDE .7274 BRA 2.9613 BC3 7.2840 FSP 2277 SG1 7245.7 SG2 199.6 THA 1.82 EL1 94.9 EL2 8.1 ALF 5.22

LAUNCH DATE MAY 6 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 29 1972

HELIOCENTRIC CONIC DISTANCE 621.731 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.390 GAL -2.91 AZL 91.34 HCA 195.92 SMA 186.98 ECC .19924 INC 1.3353 V1 29.526
RP 224.20 LAP .37 LOP 60.75 VP 21.774 GAP .44 AZP 88.72 TAL 342.32 TAP 178.24 RCA 149.72 APO 224.23 V2 24.529
RC 215.890 GL -12.18 GP -3.41 ZAL 125.32 ZAP 51.87 ETS 176.48 ZAE 90.76 ETE 180.45 ZAC 99.00 ETC 271.82 LVI -6.42

PLANETOCENTRIC CONIC

C3 12.769 VHL 3.573 DLA -14.70 RAL 356.74 RAD 6639.4 VEL 11.526 PTH 6.57 VHP 3.382 DPA -26.56 RAP 295.20 ECC 1.2101

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 40	2736.78	-19.00	76.95	208.96	134.48	17 52 17	1736.8	-.86	60.65
60.00	18 2 48	2587.52	-14.74	67.39	212.84	127.94	18 45 55	1587.5	1.18	49.18
70.00	19 13 54	2378.48	-10.75	53.34	215.74	122.62	19 53 33	1378.5	3.14	33.71
80.00	20 39 55	2109.23	-7.71	34.74	217.58	118.94	21 15 5	1109.2	4.65	14.21
90.00	22 9 18	1820.90	-6.53	14.17	218.22	117.58	22 39 39	820.9	5.24	353.33
100.00	23 22 47	1583.70	-7.71	356.10	217.58	118.94	23 49 11	583.7	4.65	335.57
110.00	0 17 16	1425.30	-10.75	342.26	215.74	122.62	0 41 2	425.3	3.14	322.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7452 TRA 3.0760 TC3-7.2768 BAU 1.2426 SGT 7380.7 SGR 290.4 SG3 1230.1 ST 97.4 SR 12.0 SS 75.6
RDE .1480 RRA .0564 RC3 -.1941 FAU .15570 RRT .6914 RRF .7336 RTF .9724 CRT .7029 CRS -.8202 CST -.9830
FDE 2.4086 FRA 6.9007 FC-10.5564 BSP 12576 SGB 7386.4 R23 .0841 R13 .9725 LSA 123.1 MSA 13.5 SSA .9
BDE .7598 BRA 3.0765 BC3 7.2794 FSP 2233 SG1 7383.4 SG2 209.7 THA 1.56 EL1 97.7 EL2 8.5 ALF 4.97

LAUNCH DATE MAY 6 1971 FLIGHT TIME 270.00 ARRIVAL DATE JAN 31 1972

HELIOCENTRIC CONIC DISTANCE 625.819 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.399 GAL -3.00 AZL 91.37 HCA 196.99 SMA 187.13 ECC .20026 INC 1.3689 V1 29.526
RP 224.59 LAP .40 LOP 61.82 VP 21.740 GAP .29 AZP 88.69 TAL 341.86 TAP 178.85 RCA 149.65 APO 224.60 V2 24.467
RC 218.554 GL -12.36 GP -3.16 ZAL 125.86 ZAP 50.97 ETS 176.60 ZAE 89.63 ETE 180.38 ZAC 99.23 ETC 271.86 LVI -6.71

PLANETOCENTRIC CONIC

C3 13.041 VHL 3.611 DLA -14.63 RAL 357.37 RAD 6639.6 VEL 11.537 PTH 6.58 VHP 3.412 DPA -26.29 RAP 295.36 ECC 1.2146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 54	2742.75	-19.28	77.23	209.82	134.38	17 54 37	1742.8	-1.16	60.90
60.00	18 4 56	2593.73	-15.00	67.71	213.73	127.85	18 48 10	1593.7	.91	49.47
70.00	19 15 57	2384.99	-10.99	53.69	216.63	122.54	19 55 41	1385.0	2.89	34.05
80.00	20 41 51	2116.08	-7.93	35.12	218.47	118.88	21 17 8	1116.1	4.42	14.58
90.00	22 11 11	1827.91	-6.75	14.57	219.11	117.53	22 41 39	827.9	5.02	353.72
100.00	23 24 43	1590.55	-7.93	356.49	218.47	118.88	23 51 14	590.5	4.42	335.95
110.00	0 19 19	1431.81	-10.99	342.61	216.63	122.54	0 43 11	431.8	2.89	322.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7771 TRA 3.1909 TC3-7.2782 BAU 1.2693 SGT 7518.7 SGR 281.8 SG3 1203.1 ST 100.1 SR 12.2 SS 75.2
RDE .1529 RRA .0416 RC3 -.1747 FAU .15167 RRT .6227 RRF .6658 RTF .9720 CRT .6806 CRS -.8029 CST -.9828
FDE 2.4115 FRA 6.8556 FC-10.0682 BSP 12807 SGB 7523.9 R23 .0767 R13 .9721 LSA 125.1 MSA 13.9 SSA 1.0
BDE .7920 BRA 3.1912 BC3 7.2803 FSP 2186 SG1 7520.7 SG2 220.4 THA 1.34 EL1 100.5 EL2 8.9 ALF 4.77

LAUNCH DATE MAY 6 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 2 1972

HELIOCENTRIC CONIC DISTANCE 629.902 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.408 GAL -3.09 AZL 91.40 HCA 198.07 SMA 187.28 ECC .20130 INC 1.3990 V1 29.526
RP 224.98 LAP .43 LOP 62.90 VP 21.706 GAP .14 AZP 88.67 TAL 341.39 TAP 179.45 RCA 149.58 APO 224.98 V2 24.445
RC 221.219 GL -12.51 GP -2.95 ZAL 126.42 ZAP 50.09 ETS 176.70 ZAE 88.52 ETE 180.32 ZAC 99.43 ETC 271.92 LVI -6.99

PLANETOCENTRIC CONIC

C3 13.319 VHL 3.650 DLA -14.53 RAL 357.98 RAD 6639.7 VEL 11.549 PTH 6.59 VHP 3.442 DPA -26.04 RAP 295.55 ECC 1.2192

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 54	2749.50	-19.60	77.56	210.67	134.27	17 56 44	1749.5	-1.50	61.19
60.00	18 6 48	2600.83	-15.30	68.08	214.59	127.75	18 50 9	1600.8	.60	49.81
70.00	19 17 39	2392.58	-11.26	54.11	217.51	122.46	19 57 31	1392.6	2.60	34.45
80.00	20 43 24	2124.17	-8.20	35.57	219.35	118.81	21 18 48	1124.2	4.15	15.03
90.00	22 12 39	1836.25	-7.01	15.04	219.99	117.47	22 43 15	836.2	4.75	354.19
100.00	23 26 16	1598.64	-8.20	356.94	219.35	118.81	23 52 55	598.6	4.15	336.40
110.00	0 21 1	1439.40	-11.26	343.02	217.51	122.46	0 45 1	439.4	2.60	323.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8130 TRA 3.3083 TC3-7.2710 BAU 1.2950 SGT 7653.9 SGR 277.7 SG3 1175.9 ST 103.0 SR 12.4 SS 74.9
RDE .1582 RRA .0279 RC3 -.1584 FAU .14766 RRT .5520 RRF .5955 RTF .9718 CRT .6622 CRS -.7877 CST -.9828
FDE 2.4147 FRA 6.8050 FC3-9.5978 BSP 13062 SGB 7658.9 R23 .0702 R13 .9718 LSA 127.2 MSA 14.2 SSA 1.0
BDE .8283 BRA 3.3084 BC3 7.2727 FSP 2142 SG1 7655.4 SG2 231.5 THA 1.15 EL1 103.4 EL2 9.3 ALF 4.61

LAUNCH DATE MAY 6 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 4 1972

HELIOCENTRIC CONIC DISTANCE 633.976 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.417 GAL -3.18 AZL 91.43 HCA 199.13 SMA 187.44 ECC .20236 INC 1.4256 V1 29.526
RP 225.37 LAP .47 LOP 63.96 VP 21.673 GAP -.01 AZP 88.65 TAL 340.92 TAP 180.05 RCA 149.51 APO 225.37 V2 24.403
RC 223.884 GL -12.62 GP -2.76 ZAL 126.97 ZAP 49.25 ETS 176.80 ZAE 87.44 ETE 180.27 ZAC 99.61 ETC 271.97 LVI -7.25

PLANETOCENTRIC CONIC

C3 13.604 VHL 3.688 DLA -14.39 RAL 358.58 RAD 6639.9 VEL 11.561 PTH 6.61 VHP 3.473 DPA -25.82 RAP 295.77 ECC 1.2239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 43	2756.90	-19.95	77.91	211.51	134.14	17 58 40	1756.9	-1.87	61.50
60.00	18 8 27	2608.70	-15.63	68.49	215.44	127.63	18 51 56	1608.7	.25	50.19
70.00	19 19 5	2401.06	-11.57	54.57	218.36	122.36	19 59 6	1401.1	2.28	34.89
80.00	20 44 37	2133.30	-8.50	36.09	220.20	118.73	21 20 11	1133.3	3.84	15.54
90.00	22 13 46	1845.69	-7.31	15.58	220.84	117.40	22 44 32	845.7	4.45	354.72
100.00	23 27 29	1607.77	-8.50	357.45	220.20	118.73	23 54 17	607.8	3.84	336.90
110.00	0 22 27	1447.87	-11.57	343.49	218.36	122.36	0 46 35	447.9	2.28	323.81

DIFFERENTIAL CORRECTIONS

TDE .8502 TRA 3.4266 TC3-7.2628 BAU 1.3211
RDE .1640 RRA .0151 RC3 -.1447 FAU .14368
FDE 2.4194 FRA 6.7546 FC3-9.1435 BSP 13301
BDE .8659 BRA 3.4266 BC3 7.2642 FSP 2097

MID-COURSE EXECUTION ACCURACY

SGT 7787.5 SGR 277.3 SG3 1149.4
RRT .4824 RRF .5260 RTF .9714
SGB 7792.5 R23 .0650 R13 .9714
SG1 7788.7 SG2 242.8 THA .98

ORBIT DETERMINATION ACCURACY

ST 105.9 SR 12.7 SS 74.6
CRT .6463 CRS -.7746 CST -.9828
LSA 129.4 MSA 14.5 SSA 1.0
EL1 106.2 EL2 9.7 ALF 4.48

LAUNCH DATE MAY 6 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 6 1972

HELIOCENTRIC CONIC DISTANCE 638.050 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.426 GAL -3.27 AZL 91.45 HCA 200.20 SMA 187.60 ECC .20344 INC 1.4497 V1 29.526
RP 225.76 LAP .50 LOP 65.03 VP 21.640 GAP -.16 AZP 88.64 TAL 340.44 TAP 180.65 RCA 149.43 APO 225.77 V2 24.361
RC 226.550 GL -12.69 GP -2.60 ZAL 127.52 ZAP 48.43 ETS 176.89 ZAE 86.38 ETE 180.23 ZAC 99.76 ETC 272.04 LVI -7.50

PLANETOCENTRIC CONIC

C3 13.695 VHL 3.728 DLA -14.23 RAL 359.15 RAD 6640.0 VEL 11.574 PTH 6.62 VHP 3.504 DPA -25.62 RAP 296.02 ECC 1.2287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 22	2764.86	-20.33	78.29	212.34	133.99	18 0 27	1764.9	-2.27	61.83
60.00	18 9 54	2617.20	-15.98	68.93	216.28	127.50	18 53 31	1617.2	-.12	50.59
70.00	19 20 17	2410.27	-11.91	55.07	219.21	122.25	20 0 27	1410.3	1.93	35.37
80.00	20 45 35	2143.27	-8.82	36.65	221.05	118.64	21 21 18	1143.3	3.51	16.08
90.00	22 14 37	1856.04	-7.63	16.17	221.69	117.31	22 45 33	856.0	4.12	355.30
100.00	23 28 27	1617.74	-8.82	358.01	221.05	118.64	23 55 25	617.7	3.51	337.45
110.00	0 23 39	1457.09	-11.91	343.99	219.21	122.25	0 47 56	457.1	1.93	324.29

DIFFERENTIAL CORRECTIONS

TDE .8909 TRA 3.5478 TC3-7.2445 BAU 1.3460
RDE .1702 RRA .0032 RC3 -.1330 FAU .13951
FDE 2.4265 FRA 6.7048 FC3-8.6924 BSP 13586
BDE .9070 BRA 3.5478 BC3 7.2457 FSP 2056

MID-COURSE EXECUTION ACCURACY

SGT 7918.0 SGR 279.8 SG3 1123.0
RRT .4162 RRF .4597 RTF .9709
SGB 7922.9 R23 .0607 R13 .9709
SG1 7918.9 SG2 254.4 THA .84

ORBIT DETERMINATION ACCURACY

ST 109.0 SR 13.1 SS 74.4
CRT .6336 CRS -.7636 CST -.9830
LSA 131.7 MSA 14.8 SSA 1.1
EL1 109.3 EL2 10.1 ALF 4.39

LAUNCH DATE MAY 6 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 8 1972

HELIOCENTRIC CONIC DISTANCE 642.115 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.436 GAL -3.36 AZL 91.47 HCA 201.26 SMA 187.76 ECC .20454 INC 1.4712 V1 29.526
RP 226.15 LAP .53 LOP 66.09 VP 21.607 GAP -.32 AZP 88.63 TAL 339.97 TAP 181.23 RCA 149.36 APO 226.17 V2 24.319
RC 229.216 GL -12.75 GP -2.45 ZAL 128.08 ZAP 47.64 ETS 176.97 ZAE 85.34 ETE 180.19 ZAC 99.90 ETC 272.11 LVI -7.74

PLANETOCENTRIC CONIC

C3 14.193 VHL 3.767 DLA -14.04 RAL 359.72 RAD 6640.1 VEL 11.587 PTH 6.63 VHP 3.536 DPA -25.42 RAP 296.29 ECC 1.2336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 53	2773.27	-20.73	78.69	213.16	133.84	18 2 6	1773.3	-2.69	62.18
60.00	18 11 11	2626.23	-16.35	69.40	217.11	127.36	18 54 37	1626.2	-.52	51.02
70.00	19 21 18	2420.10	-12.26	55.61	220.04	122.13	20 1 38	1420.1	1.55	35.88
80.00	20 46 19	2153.96	-9.17	37.25	221.88	118.54	21 22 13	1154.0	3.15	16.67
90.00	22 15 14	1867.14	-7.98	16.90	222.52	117.22	22 46 21	867.1	3.77	355.93
100.00	23 29 11	1628.43	-9.17	358.62	221.88	118.54	23 56 20	628.4	3.15	338.04
110.00	0 24 40	1466.92	-12.26	344.53	220.04	122.13	0 49 7	466.9	1.55	324.80

DIFFERENTIAL CORRECTIONS

TDE .9317 TRA 3.6691 TC3-7.2292 BAU 1.3719
RDE .1767 RRA -.0081 RC3 -.1231 FAU .13555
FDE 2.4318 FRA 6.6529 FC3-8.2686 BSP 13796
BDE .9483 BRA 3.6691 BC3 7.2302 FSP 2012

MID-COURSE EXECUTION ACCURACY

SGT 8047.6 SGR 284.6 SG3 1097.2
RRT .3551 RRF .3984 RTF .9703
SGB 8052.6 R23 .0572 R13 .9704
SG1 8048.2 SG2 266.0 THA .72

ORBIT DETERMINATION ACCURACY

ST 111.9 SR 13.4 SS 74.1
CRT .6227 CRS -.7541 CST -.9831
LSA 134.0 MSA 15.1 SSA 1.1
EL1 112.3 EL2 10.5 ALF 4.31

LAUNCH DATE MAY 6 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 10 1972

HELIOCENTRIC CONIC DISTANCE 646.175 EARTH TO MARS

RL 150.91 LAL .00 LOL 224.84 VL 32.445 GAL -3.46 AZL 91.49 HCA 202.32 SMA 187.92 ECC .20567 INC 1.4907 V1 29.526
RP 226.55 LAP .57 LOP 67.15 VP 21.574 GAP -.47 AZP 88.62 TAL 339.49 TAP 181.81 RCA 149.27 APO 226.57 V2 24.278
RC 231.880 GL -12.78 GP -2.31 ZAL 128.63 ZAP 46.87 ETS 177.04 ZAE 84.31 ETE 180.16 ZAC 100.02 ETC 272.18 LVI -7.97

PLANETOCENTRIC CONIC

C3 14.498 VHL 3.808 DLA -13.84 RAL .27 RAD 6640.3 VEL 11.600 PTH 6.64 VHP 3.567 DPA -25.24 RAP 296.59 ECC 1.2386

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 17	2782.09	-21.14	79.12	213.98	133.67	18 3 39	1782.1	-3.14	62.55
60.00	18 12 20	2635.70	-16.75	69.89	217.94	127.21	18 56 16	1635.7	-.94	51.48
70.00	19 22 9	2430.46	-12.64	56.18	220.86	122.00	20 2 39	1430.5	1.16	36.42
80.00	20 46 53	2165.24	-9.54	37.89	222.70	118.43	21 22 58	1165.2	2.77	17.29
90.00	22 15 39	1878.86	-8.34	17.47	223.34	117.12	22 46 58	878.9	3.39	356.58
100.00	23 29 44	1639.71	-9.54	359.25	222.70	118.43	23 57 4	639.7	2.77	338.66
110.00	0 25 31	1477.28	-12.64	345.10	220.86	122.00	0 50 8	477.3	1.16	325.34

DIFFERENTIAL CORRECTIONS

TDE .9747 TRA 3.7927 TC3-7.2087 BAU 1.3974
RDE .1835 RRA -.0188 RC3 -.1148 FAU .13169
FDE 2.4365 FRA 6.5994 FC3-7.8640 BSP 14040
BDE .9918 BRA 3.7927 BC3 7.2097 FSP 1970

MID-COURSE EXECUTION ACCURACY

SGT 8175.3 SGR 291.2 SG3 1071.9
RRT .3001 RRF .3430 RTF .9699
SGB 8180.5 R23 .0541 R13 .9699
SG1 8175.8 SG2 277.7 THA .61

ORBIT DETERMINATION ACCURACY

ST 115.0 SR 13.8 SS 73.7
CRT .6140 CRS -.7461 CST -.9833
LSA 136.4 MSA 15.4 SSA 1.1
EL1 115.3 EL2 10.9 ALF 4.26

LAUNCH DATE MAY 7 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 15 1971

HELIOCENTRIC CONIC DISTANCE 295.614 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 35.420 GAL -2.71 AZL 91.85 HCA 94.17 SMA 263.35 ECC .42898 INC 1.8546 V1 29.519
RP 207.32 LAP -1.85 LOP 319.97 VP 27.863 GAP 22.41 AZP 89.67 TAL 350.96 TAP 85.12 RCA 150.38 APO 376.32 V2 26.420
RC 56.291 GL -10.45 GP .26 ZAL 109.35 ZAP 176.65 ETS 175.44 ZAE 174.69 ETE 80.56 ZAC 100.48 ETC 277.47 LVI -17.88

PLANETOCENTRIC CONIC

C3 39.859 VHL 6.313 DLA -19.19 RAL 341.35 RAD 6650.6 VEL 12.638 PTH 7.49 VHP 11.249 DPA -17.37 RAP 319.59 ECC 1.6560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 57	2916.68	-27.30	86.01	208.03	130.61	17 8 33	1916.7	-9.86	68.26
60.00	17 22 11	2751.15	-21.38	76.13	213.07	125.01	18 8 3	1751.1	-6.01	57.01
70.00	18 40 54	2519.78	-15.80	61.16	216.87	120.68	19 22 53	1519.8	-2.25	41.08
80.00	20 14 56	2225.45	-11.47	41.31	219.36	117.76	20 52 2	1225.5	.73	20.60
90.00	21 48 17	1924.33	-9.74	20.07	220.26	116.68	22 20 21	924.3	1.93	359.12
100.00	22 57 48	1699.92	-11.47	2.68	219.36	117.76	23 26 8	699.9	.73	341.97
110.00	23 40 20	1566.60	-15.80	350.08	216.87	120.68	24 6 27	566.6	-2.25	330.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4670 TRA-1.0268 TC3 -.0115 BAU .0395 SGT 1073.9 SGR 584.4 SG3 105.4 ST 25.8 SR 26.8 SS 14.7
RDE -.5864 RRA .2323 RC3 .0733 FAU .03307 RRT .0064 RRF -.0068 RTF -.6478 CRT .7420 CRS .5072 CST .9507
FDE .2033 FRA .8263 FC3 -.7183 BSP 1561 SGB 1222.6 R23 -.0010 R13 -.6478 LSA 36.7 MSA 16.0 SSA 1.1
BDE .7496 BRA 1.0527 BC3 .0742 FSP 128 SG1 1073.9 SG2 584.4 THA .28 EL1 34.8 EL2 13.4 ALF 46.42

LAUNCH DATE MAY 7 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 297.409 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 35.219 GAL -2.62 AZL 91.86 HCA 95.43 SMA 256.16 ECC .41285 INC 1.8571 V1 29.519
RP 207.22 LAP -1.85 LOP 321.23 VP 27.619 GAP 21.89 AZP 89.82 TAL 351.04 TAP 86.47 RCA 150.40 APO 361.91 V2 26.432
RC 56.455 GL -10.76 GP .27 ZAL 109.35 ZAP 175.78 ETS 176.27 ZAE 174.48 ETE 71.29 ZAC 100.43 ETC 277.56 LVI -18.00

PLANETOCENTRIC CONIC

C3 37.297 VHL 6.107 DLA -19.47 RAL 341.49 RAD 6649.7 VEL 12.537 PTH 7.41 VHP 10.886 DPA -17.24 RAP 319.97 ECC 1.6138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 44	2894.00	-26.29	84.79	207.17	131.20	17 9 58	1894.0	-8.73	67.28
60.00	17 24 23	2727.37	-20.45	74.81	212.20	125.52	18 9 51	1727.4	-4.97	55.87
70.00	18 43 38	2494.42	-14.92	59.73	216.01	121.09	19 25 12	1494.4	-1.29	39.76
80.00	20 18 16	2198.21	-10.60	39.76	218.53	118.08	20 54 55	1198.2	1.65	19.11
90.00	21 51 56	1896.07	-8.87	18.45	219.44	116.96	22 23 32	896.1	2.84	357.55
100.00	23 1 8	1672.68	-10.60	1.12	218.53	118.08	23 29 1	672.7	1.65	340.47
110.00	23 43 4	1541.24	-14.92	348.65	216.01	121.09	24 8 45	541.2	-1.29	328.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4613 TRA-1.0172 TC3 -.0009 BAU .0393 SGT 1100.8 SGR 586.3 SG3 112.9 ST 26.4 SR 26.9 SS 15.2
RDE -.5685 RRA .2247 RC3 .0788 FAU .03413 RRT .0068 RRF -.0077 RTF -.6601 CRT .7406 CRS .4997 CST .9488
FDE .2080 FRA .8598 FC3 -.7923 BSP 1619 SGB 1247.2 R23 -.0014 R13 -.6601 LSA 37.2 MSA 16.3 SSA 1.1
BDE .7322 BRA 1.0417 BC3 .0788 FSP 139 SG1 1100.8 SG2 586.3 THA .29 EL1 35.2 EL2 13.6 ALF 45.65

LAUNCH DATE MAY 7 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 299.458 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 35.030 GAL -2.52 AZL 91.86 HCA 96.69 SMA 249.78 ECC .39771 INC 1.8596 V1 29.519
RP 207.13 LAP -1.85 LOP 322.50 VP 27.388 GAP 21.38 AZP 89.78 TAL 351.14 TAP 87.83 RCA 150.43 APO 349.09 V2 26.443
RC 56.701 GL -11.08 GP .28 ZAL 109.32 ZAP 174.90 ETS 176.82 ZAE 174.17 ETE 63.07 ZAC 100.39 ETC 277.64 LVI -18.12

PLANETOCENTRIC CONIC

C3 34.951 VHL 5.912 DLA -19.76 RAL 341.61 RAD 6648.9 VEL 12.444 PTH 7.34 VHP 10.537 DPA -17.12 RAP 320.35 ECC 1.5752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 29	2871.40	-25.27	83.61	206.34	131.76	17 11 21	1871.4	-7.61	66.32
60.00	17 26 35	2703.59	-19.50	73.51	211.36	125.99	18 11 39	1703.6	-3.92	54.72
70.00	18 46 24	2468.96	-14.02	58.31	215.18	121.47	19 27 33	1469.0	-.31	38.43
80.00	20 21 43	2170.73	-9.71	38.19	217.71	118.37	20 57 54	1170.7	2.58	17.59
90.00	21 55 42	1867.49	-7.99	16.62	218.63	117.22	22 26 50	867.5	3.75	355.95
100.00	23 4 34	1645.20	-9.71	359.56	217.71	118.37	23 31 59	645.2	2.58	338.96
110.00	23 49 51	1515.78	-14.02	347.23	215.18	121.47	24 11 6	515.8	-.31	327.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4568 TRA-1.0075 TC3 .0115 BAU .0399 SGT 1128.1 SGR 587.8 SG3 120.9 ST 27.1 SR 26.9 SS 15.8
RDE -.5512 RRA .2173 RC3 .0845 FAU .03525 RRT .0085 RRF -.0088 RTF -.6724 CRT .7399 CRS .4923 CST .9466
FDE .2129 FRA .8945 FC3 -.8731 BSP 1683 SGB 1272.0 R23 -.0010 R13 -.6724 LSA 37.8 MSA 16.6 SSA 1.1
BDE .7159 BRA 1.0306 BC3 .0853 FSP 151 SG1 1128.1 SG2 587.8 THA .35 EL1 35.6 EL2 13.8 ALF 44.81

LAUNCH DATE MAY 7 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 301.726 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 34.852 GAL -2.42 AZL 91.86 HCA 97.96 SMA 244.04 ECC .38349 INC 1.8622 V1 29.519
RP 207.05 LAP -1.84 LOP 323.76 VP 27.169 GAP 20.88 AZP 89.74 TAL 351.25 TAP 89.20 RCA 150.45 APO 337.63 V2 26.453
RC 57.030 GL -11.39 GP .29 ZAL 109.26 ZAP 174.01 ETS 177.22 ZAE 173.78 ETE 56.01 ZAC 100.35 ETC 277.71 LVI -18.23

PLANETOCENTRIC CONIC

C3 32.802 VHL 5.727 DLA -20.07 RAL 341.71 RAD 6648.1 VEL 12.358 PTH 7.28 VHP 10.200 DPA -16.99 RAP 320.72 ECC 1.5398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 25 14	2848.92	-24.24	82.45	205.52	132.28	17 12 43	1848.9	-6.48	65.36
60.00	17 28 48	2679.87	-18.55	72.24	210.53	126.44	18 13 28	1679.9	-2.88	53.59
70.00	18 49 13	2443.45	-13.11	56.89	214.36	121.82	19 29 57	1443.5	.66	37.10
80.00	20 25 12	2143.04	-8.82	36.63	216.91	118.64	21 0 55	1143.0	3.51	16.07
90.00	21 59 35	1838.60	-7.09	15.18	217.84	117.45	22 30 14	838.6	4.68	354.33
100.00	23 8 4	1617.51	-8.81	358.00	216.91	118.64	23 35 2	617.5	3.51	337.44
110.00	23 48 39	1490.27	-13.11	345.81	214.36	121.82	24 13 30	490.3	.66	326.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4508 TRA -.9978 TC3 .0242 BAU .0411 SGT 1154.8 SGR 588.8 SG3 129.4 ST 27.6 SR 26.9 SS 16.3
RDE -.5345 RRA .2101 RC3 .0905 FAU .03645 RRT .0090 RRF -.0097 RTF -.6831 CRT .7383 CRS .4831 CST .9441
FDE .2170 FRA .9304 FC3 -.9619 BSP 1726 SGB 1296.3 R23 -.0013 R13 -.6831 LSA 38.3 MSA 16.9 SSA 1.1
BDE .6992 BRA 1.0197 BC3 .0937 FSP 164 SG1 1154.8 SG2 588.8 THA .36 EL1 36.0 EL2 14.0 ALF 44.05

LAUNCH DATE MAY 7 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC DISTANCE 304.185 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	34.684	GAL	-2.33	AZL	91.86	HCA	99.22	SMA	238.91	ECC	.37015	INC	1.8648	V1	29.519
RP	206.97	LAP	-1.84	LOP	325.03	VP	26.962	GAP	20.38	AZP	89.70	TAL	351.37	TAP	90.59	RCA	150.48	APO	327.35	V2	26.462
RC	57.440	GL	-11.72	GP	.30	ZAL	109.19	ZAP	173.10	ETS	177.52	ZAE	173.35	ETE	50.07	ZAC	100.31	ETC	277.79	LVI	-18.34

PLANETOCENTRIC CONIC

C3	30.832	VHL	5.553	DLA	-20.39	RAL	341.79	RAD	6647.3	VEL	12.278	PTH	7.22	VHP	9.875	DPA	-16.87	RAP	321.07	ECC	1.5074

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 57	2826.59	-23.22	81.32	206.73	132.77	17 14 3	1826.6	-5.37	64.42
60.00	17 31 0	2656.24	-17.59	70.98	209.73	126.86	18 15 17	1656.2	-1.84	52.46
70.00	18 52 4	2417.92	-12.19	55.49	213.57	122.16	19 32 22	1417.9	1.64	35.77
80.00	20 28 48	2115.17	-7.90	35.07	216.13	118.89	21 4 4	1115.2	4.45	14.54
90.00	22 3 35	1809.43	-6.17	13.53	217.07	117.65	22 33 45	809.4	5.60	352.68
100.00	23 11 40	1589.64	-7.90	356.44	216.13	118.89	23 38 10	589.6	4.45	335.90
110.00	23 51 31	1464.74	-12.19	344.41	213.57	122.16	24 15 55	464.7	1.64	324.69

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4438	TRA	-.9887	TC3	.0414	BAU	.0434	SGT	1181.8	SGR	589.5	SG3	138.6	ST	28.1	SR	26.9	SS	16.8
RDE	-.5182	RRA	.2031	RC3	.0968	FAU	.03775	RRT	.0093	RRF	-.0110	RTF	-.6955	CRT	.7357	CRS	.4741	CST	.9421
FDE	.2213	FRA	.9678	FC3	-1.0600	BSP	1807	SGB	1320.6	R23	-.0023	R13	-.6955	LSA	38.8	MSA	17.2	SSA	1.2
BDE	.6823	BRA	1.0094	BC3	.1052	FSP	179	SG1	1181.8	SG2	589.4	THA	.36	EL1	36.3	EL2	14.1	ALF	43.34

LAUNCH DATE MAY 7 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 25 1971

HELIOCENTRIC CONIC DISTANCE 306.812 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	34.528	GAL	-2.23	AZL	91.87	HCA	100.49	SMA	234.29	ECC	.35761	INC	1.8673	V1	29.519
RP	206.90	LAP	-1.84	LOP	326.30	VP	26.766	GAP	19.90	AZP	89.66	TAL	351.51	TAP	92.00	RCA	150.51	APO	318.07	V2	26.469
RC	57.930	GL	-12.04	GP	.31	ZAL	109.09	ZAP	172.19	ETS	177.75	ZAE	172.89	ETE	45.13	ZAC	100.27	ETC	277.86	LVI	-18.44

PLANETOCENTRIC CONIC

C3	29.025	VHL	5.387	DLA	-20.72	RAL	341.85	RAD	6646.6	VEL	12.205	PTH	7.16	VHP	9.561	DPA	-16.76	RAP	321.42	ECC	1.4777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 39	2804.44	-22.19	80.22	203.96	133.23	17 15 23	1804.4	-4.26	63.49
60.00	17 33 13	2632.73	-16.62	69.74	208.95	127.26	18 17 6	1632.7	-.81	51.33
70.00	18 54 58	2392.40	-11.26	54.10	212.80	122.46	19 34 51	1392.4	2.61	34.44
80.00	20 32 30	2087.15	-6.98	33.50	215.38	119.10	21 7 17	1087.1	5.39	12.99
90.00	22 7 44	1780.00	-5.23	11.87	216.33	117.83	22 37 24	780.0	6.54	351.02
100.00	23 15 22	1561.62	-6.98	354.87	215.38	119.10	23 41 24	561.6	5.39	334.35
110.00	23 54 25	1439.22	-11.26	343.01	212.80	122.46	24 18 24	439.2	2.61	323.35

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4389	TRA	-.9783	TC3	.0570	BAU	.0457	SGT	1207.9	SGR	589.7	SG3	148.3	ST	28.7	SR	26.9	SS	17.4
RDE	-.5025	RRA	.1962	RC3	.1032	FAU	.03909	RRT	.0113	RRF	-.0122	RTF	-.7052	CRT	.7349	CRS	.4643	CST	.9388
FDE	.2251	FRA	1.0066	FC3	-1.1661	BSP	1846	SGB	1344.1	R23	-.0017	R13	-.7052	LSA	39.3	MSA	17.5	SSA	1.2
BDE	.6671	BRA	.9978	BC3	.1179	FSP	194	SG1	1207.9	SG2	589.6	THA	.42	EL1	36.7	EL2	14.3	ALF	42.54

LAUNCH DATE MAY 7 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 27 1971

HELIOCENTRIC CONIC DISTANCE 309.586 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	34.376	GAL	-2.14	AZL	91.87	HCA	101.75	SMA	230.11	ECC	.34582	INC	1.8700	V1	29.519
RP	206.85	LAP	-1.83	LOP	327.56	VP	26.580	GAP	19.42	AZP	89.62	TAL	351.66	TAP	93.41	RCA	150.53	APO	309.68	V2	26.476
RC	58.496	GL	-12.37	GP	.32	ZAL	108.96	ZAP	171.26	ETS	177.93	ZAE	172.43	ETE	41.01	ZAC	100.23	ETC	277.93	LVI	-18.54

PLANETOCENTRIC CONIC

C3	27.383	VHL	5.231	DLA	-21.06	RAL	341.89	RAD	6646.0	VEL	12.137	PTH	7.11	VHP	9.257	DPA	-16.64	RAP	321.75	ECC	1.4503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 20	2782.47	-21.16	79.14	203.21	133.67	17 16 42	1782.5	-3.15	62.56
60.00	17 35 26	2609.31	-15.65	68.52	208.19	127.62	18 18 56	1609.3	.22	50.22
70.00	18 57 55	2366.86	-10.32	52.71	212.04	122.74	19 37 22	1366.9	3.58	33.10
80.00	20 36 19	2058.92	-6.04	31.93	214.64	119.30	21 10 38	1058.9	6.33	11.42
90.00	22 12 1	1750.23	-4.29	10.19	215.60	117.98	22 41 11	750.2	7.47	349.34
100.00	23 19 10	1533.39	-6.04	353.30	214.64	119.30	23 44 44	533.4	6.33	332.79
110.00	0 1 17	1413.68	-10.32	341.63	212.04	122.74	0 24 51	413.7	3.58	322.02

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4207	TRA	-.9555	TC3	.0923	BAU	.0525	SGT	1216.3	SGR	589.4	SG3	158.7	ST	28.5	SR	26.9	SS	18.0
RDE	-.4872	RRA	.1895	RC3	.1099	FAU	.04043	RRT	.0106	RRF	-.0142	RTF	-.7287	CRT	.7283	CRS	.4584	CST	.9401
FDE	.2318	FRA	1.0495	FC3	-1.2790	BSP	1750	SGB	1351.6	R23	-.0041	R13	-.7287	LSA	39.3	MSA	17.8	SSA	1.2
BDE	.6437	BRA	.9741	BC3	.1435	FSP	213	SG1	1216.3	SG2	589.4	THA	.39	EL1	36.5	EL2	14.4	ALF	42.68

LAUNCH DATE MAY 7 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 29 1971

HELIOCENTRIC CONIC DISTANCE 312.493 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	34.236	GAL	-2.05	AZL	91.87	HCA	103.02	SMA	226.32	ECC	.33475	INC	1.8726	V1	29.519
RP	206.80	LAP	-1.82	LOP	328.83	VP	26.403	GAP	18.94	AZP	89.58	TAL	351.82	TAP	94.84	RCA	150.56	APO	302.08	V2	26.482
RC	59.137	GL	-12.71	GP	.33	ZAL	108.82	ZAP	170.31	ETS	178.08	ZAE	171.98	ETE	37.58	ZAC	100.20	ETC	278.00	LVI	-18.64

PLANETOCENTRIC CONIC

C3	25.840	VHL	5.083	DLA	-21.41	RAL	341.91	RAD	6645.3	VEL	12.075	PTH	7.06	VHP	8.964	DPA	-16.53	RAP	322.06	ECC	1.4253

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 32 0	2760.82	-20.14	78.10	202.49	134.07	17 18 1	1760.8	-2.07	61.66
60.00	17 37 40	2586.17	-14.69	67.33	207.46	127.96	18 20 46	1586.2	1.24	49.11
70.00	19 0 54	2341.49	-9.38	51.35	211.32	122.99	19 39 56	1341.5	4.55	31.77
80.00	20 40 13	2030.69	-5.10	30.37	213.94	119.46	21 14 3	1030.7	7.27	9.85
90.00	22 16 25	1720.33	-3.33	8.52	214.91	118.10	22 45 6	720.3	8.40	347.63
100.00	23 23 4	1505.16	-5.10	351.74	213.94	119.46	23 48 10	505.2	7.27	331.21
110.00	0 4 16	1388.30	-9.38	340.26	211.32	122.99	0 27 25	388.3	4.55	320.69

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4196	TRA	-.9502	TC3	.1042	BAU	.0540	SGT	1248.3	SGR	588.8	SG3	169.8	ST	29.3	SR	26.8	SS	18.5
RDE	-.4725	RRA	.1829	RC3	.1167	FAU	.04204	RRT	.0131	RRF	-.0154	RTF	-.7317	CRT	.7286	CRS	.4454	CST	.9349
FDE	.2338	FRA	1.0905	FC3	-1.4083	BSP	1868	SGB	1380.2	R23	-.0031	R13	-.7317	LSA	39.9	MSA	18.1	SSA	1.2
BDE	.6319	BRA	.9676	BC3	.1564	FSP	229	SG1	1248.3	SG2	588.8	THA	.46	EL1	36.9	EL2	14.6	ALF	41.59

LAUNCH DATE MAY 7 1971 FLIGHT TIME 116.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 315.516 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	34.103	GAL	-1.96	AZL	91.88	HCA	104.29	SMA	222.87	ECC	.32435	INC	1.8753	V1	29.519
RP	206.75	LAP	-1.82	LOP	330.10	VP	26.236	GAP	18.48	AZP	89.54	TAL	351.99	TAP	96.28	RCA	150.58	APO	295.16	V2	26.487
RC	59.850	GL	-13.04	GP	.34	ZAL	108.67	ZAP	169.35	ETS	178.21	ZAE	171.37	ETE	34.71	ZAC	100.17	ETC	278.06	LVI	-18.73

PLANETOCENTRIC CONIC

C3	24.440	VHL	4.944	DLA	-21.77	RAL	341.92	RAD	6644.8	VEL	12.017	PTH	7.01	VHP	8.681	DPA	-16.43	RAP	322.36	ECC	1.4022

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 39	2739.44	-19.12	77.08	201.80	134.44	17 19 18	1739.4	-.99	60.77
60.00	17 39 54	2563.24	-13.72	66.15	206.75	128.27	18 22 37	1563.2	2.25	48.01
70.00	19 3 56	2316.21	-8.44	49.99	210.62	123.22	19 42 32	1316.2	5.51	30.44
80.00	20 44 13	2002.35	-4.15	28.80	213.26	119.59	21 17 35	1002.4	8.20	8.26
90.00	22 21 0	1690.20	-2.36	6.83	214.24	118.19	22 49 10	690.2	9.33	345.91
100.00	23 27 5	1476.83	-4.15	350.17	213.26	119.59	23 51 42	476.8	8.20	329.63
110.00	0 7 18	1363.03	-8.44	338.91	210.62	123.22	0 30 1	363.0	5.51	319.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4160	TRA	-.9430	TC3	.1203	BAU	.0564	SGT	1277.3	SGR	587.8	SG3	181.7	ST	29.9	SR	26.8	SS	19.0
RDE	-.4582	RRA	.1766	RC3	.1237	FAU	.04372	RRT	.0150	RRF	-.0170	RTF	-.7370	CRT	.7277	CRS	.4331	CST	.9306
FDE	.2364	FRA	1.1339	FC3	-1.5485	BSP	1958	SGB	1406.0	R23	-.0029	R13	-.7370	LSA	40.4	MSA	18.4	SSA	1.2
BDE	.6189	BRA	.9593	BC3	.1725	FSP	247	SG1	1277.3	SG2	587.7	THA	.50	EL1	37.3	EL2	14.7	ALF	40.68

LAUNCH DATE MAY 7 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 318.644 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	33.978	GAL	-1.87	AZL	91.88	HCA	105.56	SMA	219.72	ECC	.31457	INC	1.8780	V1	29.519
RP	206.72	LAP	-1.81	LOP	331.37	VP	26.077	GAP	18.03	AZP	89.50	TAL	352.17	TAP	97.72	RCA	150.60	APO	288.84	V2	26.491
RC	60.633	GL	-13.37	GP	.35	ZAL	108.49	ZAP	168.37	ETS	178.32	ZAE	171.19	ETE	32.30	ZAC	100.14	ETC	278.12	LVI	-18.82

PLANETOCENTRIC CONIC

C3	23.153	VHL	4.812	DLA	-22.14	RAL	341.91	RAD	6644.2	VEL	11.964	PTH	6.96	VHP	8.408	DPA	-16.32	RAP	322.64	ECC	1.3810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 17	2718.36	-18.12	76.09	201.13	134.78	17 20 35	1718.4	.07	59.89
60.00	17 42 9	2540.55	-12.76	65.01	206.07	128.56	18 24 29	1540.5	3.25	46.93
70.00	19 7 1	2291.06	-7.50	48.65	209.95	123.42	19 45 12	1291.1	6.46	29.11
80.00	20 48 20	1973.94	-3.19	27.24	212.61	119.70	21 21 14	973.9	9.13	6.66
90.00	22 25 43	1659.82	-1.38	5.14	213.61	118.25	22 53 23	659.8	10.26	344.16
100.00	23 31 12	1448.41	-3.19	348.60	212.61	119.70	23 55 20	448.4	9.13	328.03
110.00	0 10 23	1337.88	-7.50	337.57	209.95	123.42	0 32 41	337.9	6.46	316.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4110	TRA	-.9342	TC3	.1388	BAU	.0591	SGT	1303.7	SGR	586.4	SG3	194.4	ST	30.4	SR	26.7	SS	19.6
RDE	-.4444	RRA	.1704	RC3	.1309	FAU	.04550	RRT	.0168	RRF	-.0183	RTF	-.7430	CRT	.7262	CRS	.4194	CST	.9259
FDE	.2384	FRA	1.1802	FC3	-1.7012	BSP	2032	SGB	1429.5	R23	-.0027	R13	-.7431	LSA	40.8	MSA	18.7	SSA	1.2
BDE	.6053	BRA	.9496	BC3	.1908	FSP	267	SG1	1303.8	SG2	586.3	THA	.54	EL1	37.6	EL2	14.8	ALF	39.88

LAUNCH DATE MAY 7 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 321.866 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	33.860	GAL	-1.79	AZL	91.88	HCA	106.83	SMA	218.85	ECC	.30538	INC	1.8807	V1	29.519
RP	206.70	LAP	-1.80	LOP	332.64	VP	25.926	GAP	17.58	AZP	89.46	TAL	352.35	TAP	99.18	RCA	150.63	APO	283.07	V2	26.494
RC	61.483	GL	-13.71	GP	.36	ZAL	108.30	ZAP	167.38	ETS	178.41	ZAE	170.87	ETE	30.27	ZAC	100.11	ETC	278.17	LVI	-18.91

PLANETOCENTRIC CONIC

C3	21.969	VHL	4.687	DLA	-22.51	RAL	341.89	RAD	6643.7	VEL	11.915	PTH	6.92	VHP	8.144	DPA	-16.22	RAP	322.91	ECC	1.3618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 36 54	2697.62	-17.12	75.13	200.49	135.10	17 21 52	1697.6	1.11	59.02
60.00	17 44 23	2518.14	-11.81	63.88	205.41	128.82	18 26 22	1518.1	4.23	45.85
70.00	19 10 8	2266.07	-6.56	47.33	209.30	123.59	19 47 54	1266.1	7.40	27.79
80.00	20 52 34	1945.47	-2.23	25.67	211.98	119.78	21 25 0	945.5	10.05	5.05
90.00	22 30 38	1629.20	-.40	3.43	213.00	118.28	22 57 47	629.2	11.18	342.39
100.00	23 35 26	1419.94	-2.23	347.04	211.98	119.78	23 59 6	419.9	10.05	326.42
110.00	0 13 30	1312.89	-6.56	336.25	209.30	123.59	0 35 23	312.9	7.40	316.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4054	TRA	-.9245	TC3	.1601	BAU	.0621	SGT	1328.4	SGR	584.6	SG3	207.9	ST	30.8	SR	26.5	SS	20.1
RDE	-.4311	RRA	.1643	RC3	.1382	FAU	.04737	RRT	.0188	RRF	-.0204	RTF	-.7499	CRT	.7244	CRS	.4072	CST	.9218
FDE	.2411	FRA	1.2285	FC3	-1.8667	BSP	2093	SGB	1451.3	R23	-.0029	R13	-.7499	LSA	41.2	MSA	19.0	SSA	1.3
BDE	.5917	BRA	.9390	BC3	.2115	FSP	288	SG1	1328.4	SG2	584.4	THA	.59	EL1	37.9	EL2	14.9	ALF	39.15

LAUNCH DATE MAY 7 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 325.172 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	33.749	GAL	-1.70	AZL	91.88	HCA	108.10	SMA	214.22	ECC	.29675	INC	1.8835	V1	29.519
RP	206.68	LAP	-1.79	LOP	333.91	VP	25.782	GAP	17.15	AZP	89.41	TAL	352.55	TAP	100.64	RCA	150.65	APO	277.79	V2	26.496
RC	62.398	GL	-14.04	GP	.37	ZAL	108.10	ZAP	166.36	ETS	178.49	ZAE	170.59	ETE	28.55	ZAC	100.09	ETC	278.23	LVI	-18.99

PLANETOCENTRIC CONIC

C3	20.880	VHL	4.569	DLA	-22.89	RAL	341.85	RAD	6643.2	VEL	11.869	PTH	6.88	VHP	7.889	DPA	-16.13	RAP	323.16	ECC	1.3436

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 38 30	2677.24	-16.13	74.19	199.87	135.39	17 23 8	1677.2	2.13	58.17
60.00	17 46 39	2496.03	-10.86	62.78	204.78	129.05	18 28 15	1496.0	5.20	44.79
70.00	19 13 18	2241.28	-5.63	46.02	208.68	123.74	19 50 39	1241.3	8.32	26.47
80.00	20 56 56	1916.96	-1.26	24.10	211.39	119.83	21 28 53	917.0	10.97	3.43
90.00	22 35 43	1598.34	.60	1.71	212.43	118.27	23 2 21	598.3	12.10	340.59
100.00	23 39 48	1391.43	-1.26	345.47	211.39	119.83	24 2 59	391.4	10.97	324.80
110.00	0 16 40	1288.10	-5.63	334.94	208.68	123.74	0 38 8	288.1	8.32	315.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3988	TRA	-.9139	TC3	.1828	BAU	.0652	SGT	1350.9	SGR	582.4	SG3	222.3	ST	31.2	SR	26.4	SS	20.7
RDE	-.4182	RRA	.1584	RC3	.1456	FAU	.04936	RRT	.0206	RRF	-.0222	RTF	-.7565	CRT	.7222	CRS	.3932	CST	.9171
FDE	.2429	FRA	1.2789	FC3	-2.0464	BSP	2149	SGB	1471.1	R23	-.0030	R13	-.7566	LSA	41.6	MSA	19.3	SSA	1.3
BDE	.5779	BRA	.9275	BC3	.2337	FSP	312	SG1	1351.0	SG2	582.2	THA	.63	EL1	38.0	EL2	15.0	ALF	38.46

LAUNCH DATE MAY 7 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 8 1971

HELIOCENTRIC CONIC DISTANCE 328.555 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 33.644 GAL -1.62 AZL 91.89 HCA 109.36 SMA 211.80 ECC .28863 INC 1.8863 V1 29.519
RP 206.67 LAP -1.78 LOP 335.18 VP 25.646 GAP 16.72 AZP 89.37 TAL 352.75 TAP 102.11 RCA 150.67 APO 272.94 V2 26.496
RC 63.376 GL -14.38 GP .39 ZAL 107.88 ZAP 165.33 ETS 178.55 ZAE 170.38 ETE 27.10 ZAC 100.07 ETC 278.27 LVI -19.06

PLANETOCENTRIC CONIC

C3 19.878 VHL 4.458 DLA -23.27 RAL 341.80 RAD 6642.8 VEL 11.827 PTH 6.85 VHP 7.642 DPA -16.04 RAP 323.38 ECC 1.3271

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 6	2657.25	-15.16	73.29	199.28	135.66	17 24 23	1657.3	3.14	57.33
60.00	17 48 54	2474.26	-9.93	61.70	204.18	129.26	18 30 8	1474.3	6.15	43.74
70.00	19 16 31	2216.70	-4.70	44.73	208.09	123.87	19 53 27	1216.7	9.24	25.15
80.00	21 1 25	1888.41	-.30	22.54	210.83	119.86	21 32 53	888.4	11.87	1.80
90.00	22 41 0	1567.21	1.60	359.97	211.88	118.24	23 7 7	567.2	13.02	338.76
100.00	23 44 16	1362.88	-.30	343.91	210.83	119.86	24 6 59	362.9	11.87	323.16
110.00	0 19 53	1263.52	-4.70	333.64	208.09	123.87	0 40 57	263.5	9.24	314.07

DIFFERENTIAL CORRECTIONS

TDE -.3919 TRA -.9029 TC3 .2074 BAU .0685
RDE -.4057 RRA .1527 RC3 .1532 FAU .05152
FDE .2440 FRA 1.3320 FC3-2.2437 BSP 2196
BDE .5641 BRA .9157 BC3 .2578 FSP 337

MID-COURSE EXECUTION ACCURACY

SGT 1372.2 SGR 579.8 SG3 237.8
RRT .0226 RRF -.0242 RTF -.7630
SGB 1489.7 R23 -.0032 R13 -.7630
SG1 1372.3 SG2 579.6 THA .67

ORBIT DETERMINATION ACCURACY

ST 31.5 SR 26.3 SS 21.3
CRT .7198 CRS .3783 CST .9121
LSA 41.8 MSA 19.5 SSA 1.3
EL1 38.2 EL2 15.1 ALF 37.86

LAUNCH DATE MAY 7 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 10 1971

HELIOCENTRIC CONIC DISTANCE 332.007 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 33.545 GAL -1.54 AZL 91.89 HCA 110.63 SMA 209.58 ECC .28100 INC 1.8891 V1 29.519
RP 206.68 LAP -1.77 LOP 336.45 VP 25.516 GAP 16.30 AZP 89.33 TAL 352.95 TAP 103.58 RCA 150.69 APO 268.48 V2 26.496
RC 64.414 GL -14.71 GP .40 ZAL 107.65 ZAP 164.27 ETS 178.61 ZAE 170.22 ETE 25.88 ZAC 100.05 ETC 278.32 LVI -19.13

PLANETOCENTRIC CONIC

C3 18.955 VHL 4.354 DLA -23.65 RAL 341.74 RAD 6642.4 VEL 11.789 PTH 6.81 VHP 7.403 DPA -15.96 RAP 323.59 ECC 1.3120

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 41 41	2637.67	-14.21	72.41	198.72	135.90	17 25 38	1637.7	4.12	56.51
60.00	17 51 10	2452.85	-9.00	60.65	203.61	129.45	18 32 3	1452.9	7.09	42.70
70.00	19 19 46	2192.37	-3.77	43.45	207.53	123.97	19 56 19	1192.4	10.14	23.84
80.00	21 6 1	1859.84	.67	20.97	210.30	119.85	21 37 1	859.8	12.77	.15
90.00	22 46 29	1535.80	2.61	358.22	211.37	118.17	23 12 5	535.8	13.92	336.90
100.00	23 48 53	1334.31	.67	342.34	210.30	119.85	24 11 8	334.3	12.77	321.52
110.00	0 23 9	1239.19	-3.77	332.37	207.53	123.97	0 43 48	239.2	10.14	312.76

DIFFERENTIAL CORRECTIONS

TDE -.3847 TRA -.8911 TC3 .2311 BAU .0713
RDE -.3937 RRA .1472 RC3 .1607 FAU .05375
FDE .2452 FRA 1.3875 FC3-2.4550 BSP 2241
BDE .5504 BRA .9032 BC3 .2815 FSP 363

MID-COURSE EXECUTION ACCURACY

SGT 1391.4 SGR 576.8 SG3 254.1
RRT .0245 RRF -.0264 RTF -.7688
SGB 1506.2 R23 -.0036 R13 -.7688
SG1 1391.4 SG2 576.6 THA .70

ORBIT DETERMINATION ACCURACY

ST 31.8 SR 26.1 SS 21.8
CRT .7173 CRS .3635 CST .9071
LSA 42.1 MSA 19.8 SSA 1.3
EL1 38.2 EL2 15.1 ALF 37.28

LAUNCH DATE MAY 7 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 12 1971

HELIOCENTRIC CONIC DISTANCE 335.522 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 33.452 GAL -1.47 AZL 91.89 HCA 111.90 SMA 207.54 ECC .27383 INC 1.8920 V1 29.519
RP 206.69 LAP -1.76 LOP 337.72 VP 25.392 GAP 15.89 AZP 89.29 TAL 353.16 TAP 105.06 RCA 150.71 APO 264.37 V2 26.495
RC 65.512 GL -15.04 GP .42 ZAL 107.42 ZAP 163.19 ETS 178.67 ZAE 170.13 ETE 24.87 ZAC 100.04 ETC 278.36 LVI -19.20

PLANETOCENTRIC CONIC

C3 18.105 VHL 4.255 DLA -24.04 RAL 341.68 RAD 6642.0 VEL 11.753 PTH 6.78 VHP 7.173 DPA -15.88 RAP 323.78 ECC 1.2980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 43 14	2618.53	-13.27	71.55	198.18	136.12	17 26 53	1618.5	5.08	55.71
60.00	17 53 26	2431.84	-8.09	59.62	203.06	129.62	18 33 58	1431.8	8.00	41.68
70.00	19 23 4	2168.32	-2.86	42.19	207.00	124.05	19 59 13	1168.3	11.02	22.54
80.00	21 10 46	1831.25	1.64	19.40	209.80	119.82	21 41 18	831.2	13.65	358.49
90.00	22 52 13	1504.07	3.63	356.44	210.90	118.06	23 17 17	504.1	14.82	335.00
100.00	23 53 38	1305.72	1.64	340.77	209.80	119.82	24 15 24	305.7	13.65	319.85
110.00	0 26 27	1215.13	-2.86	331.11	207.00	124.05	0 46 42	215.1	11.02	311.46

DIFFERENTIAL CORRECTIONS

TDE -.3776 TRA -.8793 TC3 .2540 BAU .0738
RDE -.3820 RRA .1418 RC3 .1684 FAU .05612
FDE .2460 FRA 1.4464 FC3-2.6833 BSP 2286
BDE .5372 BRA .8907 BC3 .3048 FSP 393

MID-COURSE EXECUTION ACCURACY

SGT 1409.3 SGR 573.5 SG3 271.5
RRT .0266 RRF -.0287 RTF -.7739
SGB 1521.5 R23 -.0041 R13 -.7740
SG1 1409.4 SG2 573.2 THA .74

ORBIT DETERMINATION ACCURACY

ST 32.0 SR 25.9 SS 22.4
CRT .7149 CRS .3481 CST .9016
LSA 42.3 MSA 20.1 SSA 1.3
EL1 38.3 EL2 15.1 ALF 36.71

LAUNCH DATE MAY 7 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 14 1971

HELIOCENTRIC CONIC DISTANCE 339.094 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 33.364 GAL -1.40 AZL 91.90 HCA 113.17 SMA 205.66 ECC .26709 INC 1.8950 V1 29.519
RP 206.71 LAP -1.74 LOP 338.99 VP 25.274 GAP 15.49 AZP 89.25 TAL 353.37 TAP 106.54 RCA 150.73 APO 260.59 V2 26.493
RC 66.667 GL -15.37 GP .43 ZAL 107.18 ZAP 162.09 ETS 178.71 ZAE 170.11 ETE 24.04 ZAC 100.03 ETC 278.39 LVI -19.26

PLANETOCENTRIC CONIC

C3 17.323 VHL 4.162 DLA -24.42 RAL 341.60 RAD 6641.6 VEL 11.720 PTH 6.75 VHP 6.950 DPA -15.81 RAP 323.94 ECC 1.2851

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 48	2599.84	-12.35	70.73	197.66	136.32	17 28 8	1599.8	6.01	54.92
60.00	17 55 43	2411.23	-7.20	58.62	202.54	129.76	18 35 54	1411.2	8.89	40.67
70.00	19 26 25	2144.56	-1.95	40.95	206.49	124.10	20 2 10	1144.6	11.89	21.25
80.00	21 15 40	1802.64	2.61	17.83	209.33	119.75	21 45 42	802.6	14.52	356.81
90.00	22 58 11	1471.97	4.66	354.64	210.46	117.93	23 22 43	472.0	15.72	333.07
100.00	0 2 28	1277.12	2.61	339.20	209.33	119.75	0 23 45	277.1	14.52	318.18
110.00	0 29 47	1191.38	-1.95	329.87	206.49	124.10	0 49 39	191.4	11.89	310.17

DIFFERENTIAL CORRECTIONS

TDE -.3700 TRA -.8666 TC3 .2800 BAU .0766
RDE -.3708 RRA .1366 RC3 .1760 FAU .05868
FDE .2461 FRA 1.5073 FC3-2.9328 BSP 2313
BDE .5238 BRA .8773 BC3 .3307 FSP 422

MID-COURSE EXECUTION ACCURACY

SGT 1424.9 SGR 569.8 SG3 290.0
RRT .0290 RRF -.0314 RTF -.7793
SGB 1534.6 R23 -.0045 R13 -.7793
SG1 1425.0 SG2 569.5 THA .79

ORBIT DETERMINATION ACCURACY

ST 32.2 SR 25.7 SS 23.0
CRT .7123 CRS .3321 CST .8958
LSA 42.5 MSA 20.4 SSA 1.3
EL1 38.3 EL2 15.2 ALF 36.20

LAUNCH DATE MAY 7 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 342.718 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	33.282	GAL	-1.33	AZL	91.90	HCA	114.44	SMA	203.92	ECC	.26077	INC	1.8980	V1	29.519
RP	206.73	LAP	-1.73	LOP	340.26	VP	25.162	GAP	15.10	AZP	89.21	TAL	333.58	TAP	108.02	RCA	150.75	APO	257.10	V2	26.489
RC	87.877	GL	-15.69	GP	.45	ZAL	106.93	ZAP	160.97	ETS	178.75	ZAE	170.16	ETE	23.38	ZAC	100.03	ETC	278.42	LVI	-19.31

PLANETOCENTRIC CONIC

C3	16.602	VHL	4.075	DLA	-24.81	RAL	341.52	RAD	6641.3	VEL	11.689	PTH	6.72	VHP	6.735	DPA	-15.75	RAP	324.07	ECC	1.2732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 20	2581.62	-11.45	69.93	197.18	136.50	17 29 22	1581.6	6.92	54.15
60.00	17 57 59	2391.07	-6.32	57.64	202.05	129.89	18 37 50	1391.1	9.77	39.68
70.00	19 29 48	2121.13	-1.05	39.73	206.02	124.14	20 5 9	1121.1	12.74	19.96
80.00	21 20 42	1774.02	3.57	16.25	206.90	119.66	21 50 16	774.0	15.38	355.12
90.00	23 4 27	1439.43	5.69	352.81	210.07	117.75	23 28 26	439.4	16.60	331.09
100.00	0 7 30	1248.50	3.57	337.62	208.90	119.66	0 28 19	248.5	15.38	316.49
110.00	0 33 10	1167.95	-1.05	328.64	206.02	124.14	0 52 38	167.9	12.74	308.88

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3631	TRA	-.8544	TC3	.3039	BAU	.0788	SGT	1440.2	SGR	565.8	SG3	309.9	ST	32.3	SR	25.5	SS	23.6
RDE	-.3599	RRA	.1315	RC3	.1837	FAU	.06141	RRT	.0317	RRF	-.0343	RTF	-.7836	CRT	.7101	CRS	.3161	CST	.8897
FDE	.2463	FRA	1.5729	FC3	-3.2023	BSP	2352	SGB	1547.3	R23	-.0049	R13	-.7837	LSA	42.7	MSA	20.7	SSA	1.3
BDE	.5113	BRA	.8645	BC3	.3551	FSP	456	SG1	1440.3	SG2	565.4	THA	.84	EL1	38.3	EL2	15.2	ALF	35.65

LAUNCH DATE MAY 7 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 346.390 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	33.204	GAL	-1.26	AZL	91.90	HCA	115.71	SMA	202.32	ECC	.25483	INC	1.9011	V1	29.519
RP	206.77	LAP	-1.71	LOP	341.53	VP	25.055	GAP	14.71	AZP	89.18	TAL	353.79	TAP	109.50	RCA	150.76	APO	253.88	V2	26.485
RC	69.140	GL	-16.01	GP	.47	ZAL	106.68	ZAP	159.82	ETS	178.79	ZAE	170.28	ETE	22.89	ZAC	100.03	ETC	278.44	LVI	-19.36

PLANETOCENTRIC CONIC

C3	15.938	VHL	3.992	DLA	-25.19	RAL	341.43	RAD	6641.0	VEL	11.661	PTH	6.70	VHP	6.527	DPA	-15.70	RAP	324.18	ECC	1.2623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 52	2563.91	-10.58	69.16	196.71	136.66	17 30 36	1563.9	7.81	53.39
60.00	18 0 16	2371.37	-5.46	56.69	201.58	129.99	18 39 47	1371.4	10.61	38.71
70.00	19 33 13	2098.05	-.17	38.52	205.58	124.15	20 8 11	1098.1	13.56	18.69
80.00	21 25 54	1745.38	4.54	14.67	208.51	119.54	21 55 0	745.4	16.23	353.41
90.00	23 11 1	1406.36	6.74	350.94	209.71	117.53	23 34 28	406.4	17.48	329.06
100.00	0 12 42	1219.85	4.54	336.04	208.51	119.54	0 33 2	219.9	16.23	314.78
110.00	0 36 35	1144.87	-.17	327.44	205.58	124.15	0 55 40	144.9	13.56	307.61

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3554	TRA	-.8419	TC3	.3284	BAU	.0810	SGT	1453.3	SGR	561.4	SG3	331.1	ST	32.4	SR	25.3	SS	24.3
RDE	-.3494	RRA	.1266	RC3	.1913	FAU	.06432	RRT	.0340	RRF	-.0369	RTF	-.7878	CRT	.7072	CRS	.2973	CST	.8825
FDE	.2443	FRA	1.6417	FC3	-3.4941	BSP	2385	SGB	1557.9	R23	-.0054	R13	-.7878	LSA	42.8	MSA	21.0	SSA	1.4
BDE	.4984	BRA	.8514	BC3	.3801	FSP	492	SG1	1453.4	SG2	561.0	THA	.88	EL1	38.2	EL2	15.2	ALF	35.17

LAUNCH DATE MAY 7 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 350.105 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	33.131	GAL	-1.20	AZL	91.90	HCA	116.98	SMA	200.84	ECC	.24926	INC	1.9042	V1	29.519
RP	206.81	LAP	-1.70	LOP	342.79	VP	24.952	GAP	14.33	AZP	89.14	TAL	354.00	TAP	110.98	RCA	150.78	APO	250.90	V2	26.480
RC	70.455	GL	-16.33	GP	.49	ZAL	106.43	ZAP	158.65	ETS	178.82	ZAE	170.47	ETE	22.56	ZAC	100.03	ETC	278.46	LVI	-19.40

PLANETOCENTRIC CONIC

C3	15.326	VHL	3.918	DLA	-25.57	RAL	341.34	RAD	6640.7	VEL	11.635	PTH	6.67	VHP	6.327	DPA	-15.65	RAP	324.27	ECC	1.2522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 23	2546.71	-9.72	68.42	196.28	136.81	17 31 50	1546.7	8.66	52.66
60.00	18 2 32	2352.16	-4.62	55.76	201.15	130.08	18 41 44	1352.2	11.44	37.75
70.00	19 36 41	2075.36	.69	37.34	205.17	124.15	20 11 16	1075.4	14.37	17.43
80.00	21 31 16	1716.70	5.50	13.09	208.15	119.39	21 59 53	716.7	17.06	351.69
90.00	23 17 57	1372.63	7.79	349.03	209.39	117.27	23 40 50	372.6	18.35	326.97
100.00	0 18 4	1191.17	5.50	334.46	208.15	119.39	0 37 55	191.2	17.06	313.06
110.00	0 40 3	1122.18	.69	326.26	205.17	124.15	0 58 45	122.2	14.37	306.34

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3481	TRA	-.8283	TC3	.3504	BAU	.0823	SGT	1463.1	SGR	556.6	SG3	353.4	ST	32.5	SR	25.0	SS	24.9
RDE	-.3393	RRA	.1218	RC3	.1989	FAU	.06740	RRT	.0371	RRF	-.0404	RTF	-.7908	CRT	.7052	CRS	.2807	CST	.8757
FDE	.2434	FRA	1.7126	FC3	-3.8071	BSP	2412	SGB	1565.4	R23	-.0061	R13	-.7909	LSA	43.0	MSA	21.3	SSA	1.4
BDE	.4861	BRA	.8372	BC3	.4029	FSP	529	SG1	1463.3	SG2	556.2	THA	.94	EL1	38.1	EL2	15.1	ALF	34.71

LAUNCH DATE MAY 7 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 353.861 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	33.063	GAL	-1.13	AZL	91.91	HCA	118.24	SMA	199.46	ECC	.24402	INC	1.9074	V1	29.519
RP	206.87	LAP	-1.68	LOP	344.08	VP	24.854	GAP	13.97	AZP	89.10	TAL	354.21	TAP	112.46	RCA	150.79	APO	248.14	V2	26.474
RC	71.818	GL	-16.64	GP	.51	ZAL	106.18	ZAP	157.44	ETS	178.84	ZAE	170.73	ETE	22.42	ZAC	100.04	ETC	278.48	LVI	-19.44

PLANETOCENTRIC CONIC

C3	14.761	VHL	3.842	DLA	-25.94	RAL	341.25	RAD	6640.4	VEL	11.611	PTH	6.65	VHP	6.133	DPA	-15.61	RAP	324.32	ECC	1.2429

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 53	2529.98	-8.89	67.70	195.87	136.94	17 33 3	1530.0	9.50	51.94
60.00	18 4 48	2333.39	-3.79	54.86	200.74	130.15	18 43 42	1333.4	12.24	36.81
70.00	19 40 10	2052.99	1.55	36.17	204.78	124.12	20 14 23	1053.0	15.16	16.17
80.00	21 36 50	1687.86	6.46	11.49	207.82	119.21	22 4 58	687.9	17.87	349.94
90.00	23 23 21	1337.91	8.87	347.04	209.12	116.96	23 47 38	337.9	19.21	324.79
100.00	0 23 38	1162.33	6.46	332.85	207.82	119.21	0 43 0	162.3	17.87	311.30
110.00	0 43 33	1099.81	1.55	325.09	204.78	124.12	1 1 52	99.8	15.16	305.09

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3289	TRA	-.8019	TC3	.4041	BAU	.0896	SGT	1451.0	SGR	551.6	SG3	377.3	ST	31.6	SR	24.7	SS	25.5
RDE	-.3294	RRA	.1172	RC3	.2065	FAU	.07081	RRT	.0397	RRF	-.0438	RTF	-.8051	CRT	.6960	CRS	.2589	CST	.8710
FDE	.2381	FRA	1.7849	FC3	-4.1527	BSP	2272	SGB	1552.3	R23	-.0065	R13	-.8051	LSA	42.3	MSA	21.6	SSA	1.3
BDE	.4655	BRA	.8104	BC3	.4538	FSP	564	SG1	1451.2	SG2	551.1	THA	1.01	EL1	37.2	EL2	15.1	ALF	35.20

LAUNCH DATE MAY 7 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC DISTANCE 357.654 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.998	GAL	-1.08	AZL	91.91	HCA	119.51	SMA	198.20	ECC	.23912	INC	1.9107	V1	29.519
RP	206.93	LAP	-1.66	LOP	345.33	VP	24.761	GAP	13.61	AZP	89.06	TAL	354.41	TAP	113.93	RCA	150.80	APO	245.59	V2	26.466
RC	73.228	GL	-16.95	GP	.53	ZAL	105.94	ZAP	156.21	ETS	178.87	ZAE	171.07	ETE	22.45	ZAC	100.06	ETC	278.48	LVI	-19.47

PLANETOCENTRIC CONIC

C3	14.243	VHL	3.774	DLA	-26.31	RAL	341.16	RAD	6640.2	VEL	11.589	PTH	6.63	VHP	5.946	DPA	-15.58	RAP	324.35	ECC	1.2344

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 23	2513.89	-8.09	67.01	195.49	137.05	17 34 17	1513.9	10.29	51.25
60.00	18 7 4	2315.25	-3.00	53.99	200.36	130.21	18 45 39	1315.2	13.01	35.90
70.00	19 43 41	2031.17	2.38	35.03	204.43	124.08	20 17 32	1031.2	15.92	14.94
80.00	21 42 34	1659.10	7.41	9.88	207.53	119.01	22 10 13	659.1	18.67	348.17
90.00	23 33 12	1302.28	9.96	345.00	208.89	116.60	23 54 54	302.3	20.07	322.53
100.00	0 29 21	1133.57	7.41	331.25	207.53	119.01	0 48 15	133.6	18.67	309.54
110.00	0 47 3	1077.99	2.38	323.95	204.43	124.08	1 5 1	78.0	15.92	303.86

DIFFERENTIAL CORRECTIONS

TDE	-.3283	TRA	-.7947	TC3	.4074	BAU	.0876												
RDE	-.3199	RRA	.1126	RC3	.2138	FAU	.07422												
FDE	.2388	FRA	1.8680	FC3	-4.5115	BSP	2366												
BDE	.4584	BRA	.8027	BC3	.4601	FSP	608												

MID-COURSE EXECUTION ACCURACY

SGT	1467.8	SGR	546.2	SG3	402.8				
RRT	.0437	RRF	-.0481	RTF	-.8017				
SGB	1566.2	R23	-.0075	R13	-.8017				
SG1	1468.1	SG2	545.6	THA	1.08				

ORBIT DETERMINATION ACCURACY

ST	32.1	SR	24.5	SS	26.2				
CRT	.6980	CRS	.2449	CST	.8624				
LSA	42.8	MSA	21.9	SSA	1.4				
EL1	37.4	EL2	15.0	ALF	34.27				

LAUNCH DATE MAY 7 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC DISTANCE 361.480 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.938	GAL	-1.02	AZL	91.91	HCA	120.78	SMA	197.02	ECC	.23452	INC	1.9141	V1	29.519
RP	207.00	LAP	-1.64	LOP	346.59	VP	24.671	GAP	13.25	AZP	89.02	TAL	354.61	TAP	115.39	RCA	150.82	APO	243.23	V2	26.458
RC	74.683	GL	-17.25	GP	.55	ZAL	105.70	ZAP	154.95	ETS	178.89	ZAE	171.48	ETE	22.70	ZAC	100.08	ETC	278.48	LVI	-19.49

PLANETOCENTRIC CONIC

C3	13.765	VHL	3.710	DLA	-26.67	RAL	341.07	RAD	6639.9	VEL	11.568	PTH	6.61	VHP	5.766	DPA	-15.55	RAP	324.35	ECC	1.2265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 52	2498.35	-7.32	66.35	195.13	137.14	17 35 31	1498.3	11.06	50.57
60.00	18 9 20	2297.65	-2.22	53.15	200.01	130.25	18 47 37	1297.7	13.75	35.01
70.00	19 47 14	2009.80	3.20	33.91	204.11	124.02	20 20 43	1009.8	16.66	13.72
80.00	21 48 30	1630.20	8.36	8.27	207.28	118.77	22 15 40	630.2	19.45	346.38
90.00	23 41 42	1265.14	11.09	342.85	208.72	116.18	24 2 47	265.1	20.93	320.15
100.00	0 35 18	1104.67	8.36	329.63	207.28	118.77	0 53 42	104.7	19.45	307.75
110.00	0 50 36	1056.62	3.20	322.83	204.11	124.02	1 8 12	56.6	16.66	302.64

DIFFERENTIAL CORRECTIONS

TDE	-.3238	TRA	-.7822	TC3	.4139	BAU	.0864												
RDE	-.3108	RRA	.1082	RC3	.2210	FAU	.07781												
FDE	.2350	FRA	1.9519	FC3	-4.8937	BSP	2418												
BDE	.4488	BRA	.7896	BC3	.4692	FSP	655												

MID-COURSE EXECUTION ACCURACY

SGT	1473.6	SGR	540.5	SG3	429.4				
RRT	.0472	RRF	-.0518	RTF	-.7997				
SGB	1569.6	R23	-.0082	R13	-.7998				
SG1	1473.9	SG2	539.8	THA	1.15				

ORBIT DETERMINATION ACCURACY

ST	32.2	SR	24.2	SS	26.9				
CRT	.6984	CRS	.2259	CST	.8521				
LSA	43.0	MSA	22.2	SSA	1.4				
EL1	37.4	EL2	14.9	ALF	33.69				

LAUNCH DATE MAY 7 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 28 1971

HELIOCENTRIC CONIC DISTANCE 365.338 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.881	GAL	-.97	AZL	91.92	HCA	122.04	SMA	195.93	ECC	.23022	INC	1.9175	V1	29.519
RP	207.08	LAP	-1.63	LOP	347.86	VP	24.585	GAP	12.91	AZP	88.98	TAL	354.81	TAP	116.85	RCA	150.83	APO	241.04	V2	26.449
RC	76.180	GL	-17.54	GP	.58	ZAL	105.46	ZAP	153.65	ETS	178.91	ZAE	171.96	ETE	23.21	ZAC	100.11	ETC	278.48	LVI	-19.51

PLANETOCENTRIC CONIC

C3	13.325	VHL	3.650	DLA	-27.02	RAL	340.98	RAD	6639.7	VEL	11.550	PTH	6.60	VHP	5.592	DPA	-15.54	RAP	324.31	ECC	1.2193

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 21	2483.38	-6.57	65.71	194.81	137.23	17 36 44	1483.4	11.60	49.92
60.00	18 11 35	2280.62	-1.47	52.34	199.69	130.28	18 49 35	1280.6	14.47	34.14
70.00	19 50 47	1986.90	3.99	32.82	203.82	123.95	20 23 56	988.9	17.37	12.52
80.00	21 54 40	1601.12	9.31	6.63	207.07	118.50	22 21 21	601.1	20.22	344.57
90.00	23 51 2	1225.83	12.26	340.56	208.60	115.68	24 11 28	225.8	21.80	317.59
100.00	0 41 28	1075.59	9.31	328.00	207.07	118.50	0 59 23	75.6	20.22	305.93
110.00	0 54 9	1035.72	3.99	321.74	203.82	123.95	1 11 25	35.7	17.37	301.44

DIFFERENTIAL CORRECTIONS

TDE	-.3183	TRA	-.7690	TC3	.4225	BAU	.0855												
RDE	-.3019	RRA	.1039	RC3	.2281	FAU	.08167												
FDE	.2316	FRA	2.0419	FC3	-5.3058	BSP	2443												
BDE	.4387	BRA	.7760	BC3	.4801	FSP	704												

MID-COURSE EXECUTION ACCURACY

SGT	1476.7	SGR	534.5	SG3	457.8				
RRT	.0508	RRF	-.0562	RTF	-.[illegible]88				
SGB	1570.5	R23	-.0095	R13	-.7989				
SG1	1477.0	SG2	533.7	THA	1.21				

ORBIT DETERMINATION ACCURACY

ST	32.2	SR	23.8	SS	27.7				
CRT	.6979	CRS	.2080	CST	.8427				
LSA	43.1	MSA	22.5	SSA	1.4				
EL1	37.3	EL2	14.8	ALF	33.20				

LAUNCH DATE MAY 7 1971 FLIGHT TIME 146.00 ARRIVAL DATE SEP 30 1971

HELIOCENTRIC CONIC DISTANCE 369.225 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.827	GAL	-.92	AZL	91.92	HCA	123.31	SMA	194.92	ECC	.22619	INC	1.9211	V1	29.519
RP	207.17	LAP	-1.61	LOP	349.12	VP	24.503	GAP	12.58	AZP	88.94	TAL	354.99	TAP	118.30	RCA	150.84	APO	239.01	V2	26.439
RC	77.718	GL	-17.83	GP	.60	ZAL	105.24	ZAP	152.33	ETS	178.92	ZAE	172.51	ETE	24.04	ZAC	100.14	ETC	278.47	LVI	-19.51

PLANETOCENTRIC CONIC

C3	12.920	VHL	3.595	DLA	-27.36	RAL	340.90	RAD	6639.5	VEL	11.532	PTH	6.58	VHP	5.424	DPA	-15.54	RAP	324.24	ECC	1.2126

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 49	2468.99	-5.85	65.11	194.50	137.30	17 37 58	1469.0	12.51	49.29
60.00	18 13 49	2264.18	-.75	51.55	199.40	130.30	18 51 33	1264.2	15.16	33.30
70.00	19 54 22	1968.51	4.77	31.75	203.56	123.86	20 27 10	968.5	18.06	11.34
80.00	22 1 5	1571.79	10.26	4.97	206.90	118.19	22 27 17	571.8	20.97	342.71
90.00	0 5 30	1183.26	13.50	338.05	208.56	115.09	0 25 13	183.3	22.70	314.79
100.00	0 47 53	1046.26	10.26	326.34	206.90	118.19	1 5 19	46.3	20.97	304.08
110.00	0 57 44	1015.33	4.77	320.67	203.56	123.86	1 14 39	15.3	18.06	300.26

DIFFERENTIAL CORRECTIONS

TDE	-.3134	TRA	-.7545	TC3	.4265	BAU	.0841												
RDE	-.2932	RRA	.0996	RC3	.2351	FAU	.08567												
FDE	.2298	FRA	2.1373	FC3	-5.7406	BSP	2444												
BDE	.4292	BRA	.7610	BC3	.4870	FSP	754												

MID-COURSE EXECUTION ACCURACY

SGT	1475.6	SGR	528.2	SG3	487.8				
RRT	.0553	RRF	-.0612	RTF	-.7974				
SGB	1567.3	R23	-.0107	R13	-.7975				
SG1	1475.9	SG2	527.3	THA	1.30				

ORBIT DETERMINATION ACCURACY

ST	32.2	SR	23.5	SS	28.4				
CRT	.6988	CRS	.1928	CST	.8336				
LSA	43.3	MSA	22.8	SSA	1.4				
EL1	37.1	EL2	14.6	ALF	32.74				

LAUNCH DATE MAY 7 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 373.130 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.777 GAL -.88 AZL 91.92 HCA 124.57 SMA 193.99 ECC .22241 INC 1.9247 V1 29.519
RP 207.26 LAP -1.38 LOP 350.39 VP 24.424 GAP 12.25 AZP 88.91 TAL 355.17 TAP 119.74 RCA 150.84 APO 237.14 V2 26.428
RC 79.295 GL -18.10 GP .63 ZAL 105.02 ZAP 150.97 ETS 178.93 ZAE 173.13 ETE 25.30 ZAC 100.18 ETC 278.45 LVI -19.52

PLANETOCENTRIC CONIC

C3 12.548 VHL 3.542 DLA -27.70 RAL 340.83 RAD 6639.3 VEL 11.516 PTH 6.56 VHP 5.263 DPA -15.54 RAP 324.14 ECC 1.2065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 16	2455.21	-5.16	64.52	194.23	137.36	17 39 11	1455.2	13.19	48.68
60.00	18 16 2	2248.35	-.05	50.80	199.13	130.30	18 53 30	1248.3	15.81	32.48
70.00	19 57 56	1948.66	5.52	30.70	203.34	123.76	20 30 25	948.7	18.72	10.18
80.00	22 7 48	1542.11	11.21	3.28	206.76	117.86	22 33 30	542.1	21.71	340.82
90.00	0 17 56	1135.13	14.87	335.18	208.60	114.33	0 36 51	135.1	23.64	311.58
100.00	0 54 36	1016.58	11.21	324.64	206.76	117.86	1 11 32	16.6	21.71	302.18
110.00	1 1 19	6283.52	5.52	297.53	203.34	123.76	2 46 2	5283.5	18.72	277.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3072 TRA -.7382 TC3 .4296 BAU .0827 SGT 1469.0 SGR 521.7 SG3 519.5 ST 32.0 SR 23.2 SS 29.2
RDE -.2849 RRA .0955 RC3 .2419 FAU .08997 RRT .0598 RRF -.0667 RTF -.7956 CRT .6993 CRS .1758 CST .8235
FDE .2257 FRA 2.2356 FC3-6.2075 BSP 2440 SGB 1558.9 R23 -.0123 R13 -.7957 LSA 43.4 MSA 23.1 SSA 1.4
BDE .4190 BRA .7443 BC3 .4931 FSP 810 SG1 1469.4 SG2 520.6 THA 1.39 EL1 36.8 EL2 14.4 ALF 32.40

LAUNCH DATE MAY 7 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 377.076 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.731 GAL -.84 AZL 91.93 HCA 125.83 SMA 193.12 ECC .21889 INC 1.9285 V1 29.519
RP 207.37 LAP -1.56 LOP 351.65 VP 24.348 GAP 11.93 AZP 88.87 TAL 355.34 TAP 121.17 RCA 150.85 APO 235.40 V2 26.415
RC 80.909 GL -18.38 GP .66 ZAL 104.82 ZAP 149.57 ETS 178.94 ZAE 173.81 ETE 27.15 ZAC 100.23 ETC 278.42 LVI -19.51

PLANETOCENTRIC CONIC

C3 12.205 VHL 3.494 DLA -28.02 RAL 340.76 RAD 6639.2 VEL 11.501 PTH 6.55 VHP 5.107 DPA -15.56 RAP 324.00 ECC 1.2009

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 42	2442.03	-4.50	63.97	193.98	137.41	17 40 24	1442.0	13.83	48.09
60.00	18 18 14	2233.14	.62	50.07	198.89	130.30	18 55 27	1233.1	16.44	31.69
70.00	20 1 31	1929.38	6.25	29.69	203.14	123.65	20 33 41	929.4	19.35	9.05
80.00	22 14 51	1511.95	12.16	1.54	206.67	117.48	22 40 3	511.9	22.43	338.87
90.00	0 34 16	1074.98	16.53	331.54	208.81	113.28	0 52 11	75.0	24.70	307.50
100.00	1 1 39	6274.46	12.16	300.82	206.67	117.48	2 46 13	5274.5	22.43	278.14
110.00	1 4 54	6264.24	6.25	296.51	203.14	123.65	2 49 18	5264.2	19.35	275.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3021 TRA -.7217 TC3 .4288 BAU .0809 SGT 1460.4 SGR 514.8 SG3 553.4 ST 31.9 SR 22.8 SS 30.1
RDE -.2768 RRA .0915 RC3 .2486 FAU .09454 RRT .0653 RRF -.0729 RTF -.7932 CRT .7012 CRS .1614 CST .8136
FDE .2234 FRA 2.3428 FC3-6.7059 BSP 2425 SGB 1548.5 R23 -.0139 R13 -.7934 LSA 43.5 MSA 23.4 SSA 1.4
BDE .4097 BRA .7275 BC3 .4956 FSP 868 SG1 1460.9 SG2 513.6 THA 1.50 EL1 36.6 EL2 14.2 ALF 32.04

LAUNCH DATE MAY 7 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 381.036 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.687 GAL -.80 AZL 91.93 HCA 127.09 SMA 192.32 ECC .21559 INC 1.9323 V1 29.519
RP 207.48 LAP -1.54 LOP 352.91 VP 24.274 GAP 11.61 AZP 88.83 TAL 355.50 TAP 122.59 RCA 150.86 APO 233.79 V2 26.402
RC 82.560 GL -18.64 GP .69 ZAL 104.63 ZAP 148.14 ETS 178.95 ZAE 174.54 ETE 29.89 ZAC 100.28 ETC 278.39 LVI -19.49

PLANETOCENTRIC CONIC

C3 11.891 VHL 3.448 DLA -28.33 RAL 340.70 RAD 6639.0 VEL 11.488 PTH 6.54 VHP 4.958 DPA -15.59 RAP 323.82 ECC 1.1957

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 8	2429.47	-3.67	63.44	193.76	137.46	17 41 38	1429.5	14.45	47.53
60.00	18 20 25	2218.58	1.26	49.37	198.68	130.28	18 57 23	1218.6	17.04	30.92
70.00	20 5 6	1910.70	6.95	28.70	202.97	123.52	20 36 57	910.7	19.96	7.94
80.00	22 22 18	1481.09	13.13	359.76	206.63	117.06	22 46 59	481.1	23.14	336.85
88.30	0 53 32	1006.09	19.51	327.78	209.59	110.95	1 10 18	6.1	26.43	302.88
100.00	1 9 6	6243.60	13.13	299.03	206.63	117.06	2 53 9	5243.6	23.14	276.13
110.00	1 8 28	6245.56	6.95	295.52	202.97	123.52	2 52 34	5245.6	19.96	274.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2955 TRA -.7034 TC3 .4211 BAU .0783 SGT 1445.0 SGR 507.7 SG3 588.3 ST 31.6 SR 22.5 SS 30.9
RDE -.2689 RRA .0875 RC3 .2550 FAU .09925 RRT .0697 RRF -.0790 RTF -.7893 CRT .7025 CRS .1434 CST .8019
FDE .2168 FRA 2.4308 FC3-7.2260 BSP 2409 SGB 1531.6 R23 -.0164 R13 -.7895 LSA 43.5 MSA 23.7 SSA 1.4
BDE .3995 BRA .7088 BC3 .4923 FSP 930 SG1 1445.5 SG2 506.3 THA 1.60 EL1 36.2 EL2 14.0 ALF 31.83

LAUNCH DATE MAY 7 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 385.018 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.646 GAL -.76 AZL 91.94 HCA 128.35 SMA 191.58 ECC .21252 INC 1.9364 V1 29.519
RP 207.60 LAP -1.52 LOP 354.17 VP 24.204 GAP 11.31 AZP 88.80 TAL 355.65 TAP 124.00 RCA 150.87 APO 232.29 V2 26.388
RC 84.247 GL -18.89 GP .72 ZAL 104.45 ZAP 146.68 ETS 178.96 ZAE 175.32 ETE 34.02 ZAC 100.34 ETC 278.35 LVI -19.47

PLANETOCENTRIC CONIC

C3 11.602 VHL 3.406 DLA -28.62 RAL 340.66 RAD 6638.9 VEL 11.475 PTH 6.52 VHP 4.815 DPA -15.62 RAP 323.61 ECC 1.1909

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 33	2417.53	-3.27	62.94	193.57	137.49	17 42 51	1417.5	15.03	47.00
60.00	18 22 34	2204.68	1.87	48.71	198.50	130.26	18 59 19	1204.7	17.61	30.19
70.00	20 8 40	1892.65	7.63	27.74	202.83	123.39	20 40 13	892.7	20.54	6.86
80.00	22 30 15	1449.22	14.10	357.90	206.63	116.59	22 54 25	449.2	23.85	334.75
85.39	0 29 4	1079.52	19.83	333.29	209.27	111.07	0 47 4	79.5	26.77	308.33
100.00	1 17 3	6211.73	14.10	297.18	206.63	116.59	3 0 35	5211.7	23.85	274.02
110.00	1 12 2	6227.51	7.63	294.56	202.83	123.39	2 55 50	5227.5	20.54	273.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2899 TRA -.6838 TC3 .4089 BAU .0753 SGT 1425.7 SGR 500.4 SG3 625.2 ST 31.3 SR 22.1 SS 31.7
RDE -.2612 RRA .0836 RC3 .2614 FAU .10427 RRT .0755 RRF -.0863 RTF -.7841 CRT .7056 CRS .1279 CST .7897
FDE .2114 FRA 2.5644 FC3-7.7806 BSP 2382 SGB 1510.9 R23 -.0189 R13 -.7843 LSA 43.6 MSA 24.0 SSA 1.4
BDE .3902 BRA .6889 BC3 .4853 FSP 997 SG1 1426.3 SG2 498.8 THA 1.73 EL1 35.8 EL2 13.7 ALF 31.62

LAUNCH DATE MAY 7 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 10 1971

HELIOCENTRIC CONIC DISTANCE 389.019 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.608 GAL -.73 AZL 91.94 HCA 129.61 SMA 190.89 ECC .20965 INC 1.9405 V1 29.519
RP 207.73 LAP -1.50 LOP 355.43 VP 24.136 GAP 11.01 AZP 88.76 TAL 355.79 TAP 125.40 RCA 150.87 APO 230.91 V2 26.373
RC 85.969 GL -19.14 GP .75 ZAL 104.28 ZAP 145.17 ETS 178.96 ZAE 176.13 ETE 40.53 ZAC 100.41 ETC 278.30 LVI -19.44

PLANETOCENTRIC CONIC

C3 11.337 VHL 3.367 DLA -28.91 RAL 340.62 RAD 6638.7 VEL 11.464 PTH 6.51 VHP 4.677 DPA -15.67 RAP 323.35 ECC 1.1866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 58	2406.19	-2.70	62.47	193.40	137.52	17 44 4	1406.2	15.58	46.48
60.00	18 24 42	2191.41	2.45	48.08	198.35	130.24	19 1 13	1191.4	18.15	29.48
70.00	20 12 13	1875.20	8.28	26.81	202.71	123.25	20 43 28	875.2	21.09	5.81
80.00	22 38 54	1415.69	15.12	355.93	206.68	116.06	23 2 30	415.7	24.56	332.51
83.75	0 15 32	1117.93	20.14	336.24	208.99	111.19	0 34 10	117.9	27.09	311.22
100.00	1 25 42	6178.21	15.12	293.20	206.68	116.06	3 8 40	5178.2	24.56	271.78
110.00	1 15 35	6210.06	8.28	293.63	202.71	123.25	2 59 5	5210.1	21.09	272.63

DIFFERENTIAL CORRECTIONS

TDE -.2768 TRA -.6559 TC3 .4195 BAU .0754
RDE -.2536 RRA .0798 RC3 .2678 FAU .10996
FDE .1978 FRA 2.6765 FC3-8.3975 BSP 2231
BDE .3754 BRA .6608 BC3 .4977 FSP 1052

MID-COURSE EXECUTION ACCURACY

SGT 1388.3 SGR 492.8 SG3 664.5
RRT .0824 RRF -.0944 RTF -.7857
SGB 1473.2 R23 -.0204 R13 -.7860
SG1 1389.0 SG2 490.9 THA 1.92

ORBIT DETERMINATION ACCURACY

ST 30.3 SR 21.7 SS 32.4
CRT .7043 CRS .1054 CST .7768
LSA 43.1 MSA 24.2 SSA 1.4
EL1 34.8 EL2 13.4 ALF 32.07

LAUNCH DATE MAY 7 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 12 1971

HELIOCENTRIC CONIC DISTANCE 393.038 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.572 GAL -.70 AZL 91.94 HCA 130.86 SMA 190.25 ECC .20698 INC 1.9448 V1 29.519
RP 207.86 LAP -1.47 LOP 356.68 VP 24.070 GAP 10.72 AZP 88.73 TAL 355.92 TAP 126.78 RCA 150.88 APO 229.63 V2 26.357
RC 87.725 GL -19.38 GP .78 ZAL 104.14 ZAP 143.63 ETS 178.97 ZAE 176.90 ETE 51.30 ZAC 100.49 ETC 278.25 LVI -19.39

PLANETOCENTRIC CONIC

C3 11.095 VHL 3.331 DLA -29.17 RAL 340.60 RAD 6638.6 VEL 11.453 PTH 6.50 VHP 4.545 DPA -15.73 RAP 323.06 ECC 1.1826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 22	2395.55	-2.17	62.02	193.26	137.54	17 45 17	1395.6	16.10	46.00
60.00	18 26 48	2178.92	3.00	47.48	198.22	130.21	19 3 7	1178.9	18.66	28.81
70.00	20 15 43	1858.55	8.90	25.92	202.63	123.11	20 46 41	858.6	21.61	4.79
80.00	22 48 26	1380.03	16.17	353.81	206.80	115.45	23 11 27	380.0	25.27	330.10
82.52	0 5 34	1145.30	20.43	338.37	208.74	111.30	0 24 39	145.3	27.40	313.30
100.00	1 35 14	6142.54	16.17	293.08	206.80	115.45	3 17 37	5142.5	25.27	269.37
110.00	1 19 5	6193.41	8.90	292.74	202.63	123.11	3 2 18	5193.4	21.61	271.62

DIFFERENTIAL CORRECTIONS

TDE -.2792 TRA -.6422 TC3 .3704 BAU .0683
RDE -.2464 RRA .0759 RC3 .2737 FAU .11517
FDE .2016 FRA 2.8127 FC3-8.9873 BSP 2260
BDE .3724 BRA .6467 BC3 .4605 FSP 1131

MID-COURSE EXECUTION ACCURACY

SGT 1375.6 SGR 485.0 SG3 705.5
RRT .0889 RRF -.1034 RTF -.7705
SGB 1458.6 R23 -.0254 R13 -.7709
SG1 1376.3 SG2 482.9 THA 2.05

ORBIT DETERMINATION ACCURACY

ST 30.6 SR 21.3 SS 33.5
CRT .7150 CRS .1008 CST .7641
LSA 43.8 MSA 24.5 SSA 1.4
EL1 34.9 EL2 13.1 ALF 31.32

LAUNCH DATE MAY 7 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 14 1971

HELIOCENTRIC CONIC DISTANCE 397.073 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.539 GAL -.67 AZL 91.95 HCA 132.12 SMA 189.67 ECC .20449 INC 1.9492 V1 29.519
RP 208.01 LAP -1.45 LOP 357.94 VP 24.007 GAP 10.43 AZP 88.69 TAL 356.03 TAP 128.15 RCA 150.88 APO 228.45 V2 26.340
RC 89.514 GL -19.61 GP .82 ZAL 104.01 ZAP 142.05 ETS 178.97 ZAE 177.51 ETE 69.69 ZAC 100.57 ETC 278.18 LVI -19.34

PLANETOCENTRIC CONIC

C3 10.873 VHL 3.297 DLA -29.43 RAL 340.59 RAD 6638.5 VEL 11.444 PTH 6.49 VHP 4.418 DPA -15.80 RAP 322.73 ECC 1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 45	2385.52	-1.66	61.60	193.14	137.55	17 46 30	1385.5	16.58	45.54
60.00	18 28 51	2167.08	3.52	46.91	198.12	130.17	19 4 59	1167.1	19.14	28.18
70.00	20 19 11	1842.58	9.49	25.06	202.58	122.96	20 49 53	842.6	22.10	3.82
80.00	22 59 31	1340.01	17.33	351.40	207.00	114.70	23 21 51	340.0	26.01	327.36
81.50	23 53 34	1166.93	20.70	340.09	208.52	111.40	24 13 1	166.9	27.68	314.96
100.00	1 46 19	6102.52	17.33	290.67	207.00	114.70	3 28 2	5102.5	26.01	266.63
110.00	1 22 33	6177.44	9.49	291.89	202.58	122.96	3 5 30	5177.4	22.10	270.64

DIFFERENTIAL CORRECTIONS

TDE -.2758 TRA -.6212 TC3 .3268 BAU .0625
RDE -.2393 RRA .0721 RC3 .2794 FAU .12057
FDE .1986 FRA 2.9481 FC3-9.5999 BSP 2219
BDE .3652 BRA .6254 BC3 .4300 FSP 1210

MID-COURSE EXECUTION ACCURACY

SGT 1346.2 SGR 477.0 SG3 747.2
RRT .0945 RRF -.1124 RTF -.[illegible]75
SGB 1428.2 R23 -.0308 R13 -.7580
SG1 1347.0 SG2 474.6 THA 2.19

ORBIT DETERMINATION ACCURACY

ST 30.3 SR 20.9 SS 34.5
CRT .7227 CRS .0909 CST .7501
LSA 44.0 MSA 24.7 SSA 1.4
EL1 34.6 EL2 12.7 ALF 31.10

LAUNCH DATE MAY 7 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 16 1971

HELIOCENTRIC CONIC DISTANCE 401.124 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.508 GAL -.65 AZL 91.95 HCA 133.37 SMA 189.12 ECC .20219 INC 1.9538 V1 29.519
RP 208.16 LAP -1.42 LOP 359.19 VP 23.945 GAP 10.15 AZP 88.66 TAL 356.13 TAP 129.50 RCA 150.88 APO 227.36 V2 26.323
RC 91.337 GL -19.83 GP .86 ZAL 103.90 ZAP 140.43 ETS 178.97 ZAE 177.73 ETE 97.27 ZAC 100.66 ETC 278.11 LVI -19.28

PLANETOCENTRIC CONIC

C3 10.671 VHL 3.267 DLA -29.67 RAL 340.60 RAD 6638.4 VEL 11.435 PTH 6.49 VHP 4.297 DPA -15.88 RAP 322.35 ECC 1.1756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 7	2376.13	-1.19	61.21	193.06	137.56	17 47 44	1376.1	17.04	45.11
60.00	18 30 53	2155.94	4.01	46.38	198.05	130.13	19 6 49	1155.9	19.58	27.57
70.00	20 22 35	1827.35	10.06	24.25	202.55	122.81	20 53 2	827.4	22.57	2.88
80.00	23 13 47	1290.46	18.71	348.37	207.34	113.70	23 35 17	290.5	26.85	323.92
80.64	23 46 54	1184.54	20.95	341.50	208.34	111.50	24 6 39	184.5	27.95	316.32
100.00	2 0 35	6052.97	18.71	287.64	207.34	113.70	3 41 28	5053.0	26.85	263.19
110.00	1 25 58	6162.21	10.06	291.07	202.55	122.81	3 8 40	5162.2	22.57	269.70

DIFFERENTIAL CORRECTIONS

TDE -.2705 TRA -.5988 TC3 .2832 BAU .0573
RDE -.2323 RRA .0683 RC3 .2852 FAU .12646
FDE .1888 FRA 3.0909 FC-10.2603 BSP 2135
BDE .3566 BRA .6027 BC3 .4019 FSP 1284

MID-COURSE EXECUTION ACCURACY

SGT 1311.6 SGR 468.8 SG3 791.7
RRT .0995 RRF -.1219 RTF -.7437
SGB 1392.9 R23 -.0373 R13 -.7443
SG1 1312.6 SG2 466.1 THA 2.33

ORBIT DETERMINATION ACCURACY

ST 29.9 SR 20.5 SS 35.5
CRT .7292 CRS .0749 CST .7332
LSA 44.1 MSA 25.0 SSA 1.4
EL1 34.1 EL2 12.3 ALF 31.05

LAUNCH DATE MAY 7 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 18 1971

DISTANCE 405.190 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.94 LAL .00 LOL 225.80 VL 32.479 GAL -.63 AZL 91.96 HCA 134.62 SMA 188.62 ECC .20004 INC 1.9586 V1 29.519
RP 208.32 LAP -1.39 LOP .44 VP 23.886 GAP 9.88 AZP 88.62 TAL 356.22 TAP 130.84 RCA 150.89 APO 226.35 V2 26.304
RC 93.190 GL -20.05 GP .90 ZAL 103.81 ZAP 138.77 ETS 178.97 ZAE 177.36 ETE 124.83 ZAC 100.76 ETC 278.02 LVI -19.21

PLANETOCENTRIC CONIC

C3 10.486 VHL 3.238 DLA -29.89 RAL 340.62 RAD 6638.3 VEL 11.427 PTH 6.48 VHP 4.182 DPA -15.97 RAP 321.93 ECC 1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 29	2367.36	-.75	60.64	193.00	137.57	17 48 57	1367.4	17.46	44.71
60.00	18 32 53	2145.51	4.47	45.88	198.00	130.09	19 8 38	1145.5	20.00	27.01
70.00	20 25 56	1812.89	10.59	23.46	202.55	122.66	20 56 9	812.9	23.00	1.98
79.89	23 41 16	1199.33	21.19	342.70	208.18	111.59	24 1 15	199.3	28.20	317.47
79.89	23 41 16	1199.33	21.19	342.70	208.18	111.59	24 1 15	199.3	28.20	317.47
79.89	23 41 16	1199.33	21.19	342.70	208.18	111.59	24 1 15	199.3	28.20	317.47
110.00	1 29 19	6147.75	10.59	290.29	202.55	122.66	3 11 46	5147.8	23.00	268.80

DIFFERENTIAL CORRECTIONS

TDE -.2666 TRA -.5739 TC3 .2404 BAU .0529
RDE -.2255 RRA .0645 RC3 .2911 FAU .13293
FDE .1862 FRA 3.2373 FC-10.9744 BSP .2037
BDE .3492 BRA .5775 BC3 .3775 FSP .1364

MID-COURSE EXECUTION ACCURACY

SGT 1272.3 SGR 460.5 SG3 838.9
RRT .1082 RRF -.1346 RTF -.7286
SGB 1353.0 R23 -.0443 R13 -.7294
SG1 1273.4 SG2 457.4 THA 2.58

ORBIT DETERMINATION ACCURACY

ST 29.4 SR 20.1 SS 36.5
CRT .7392 CRS .0671 CST .7176
LSA 44.3 MSA 25.2 SSA 1.4
EL1 33.6 EL2 11.8 ALF 31.02

LAUNCH DATE MAY 7 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 20 1971

DISTANCE 409.269 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.94 LAL .00 LOL 225.80 VL 32.452 GAL -.61 AZL 91.96 HCA 135.87 SMA 188.16 ECC .19806 INC 1.9636 V1 29.519
RP 208.49 LAP -1.37 LOP 1.69 VP 23.828 GAP 9.61 AZP 88.59 TAL 356.29 TAP 132.16 RCA 150.89 APO 225.42 V2 26.284
RC 95.074 GL -20.25 GP .94 ZAL 103.74 ZAP 137.07 ETS 178.97 ZAE 176.50 ETE 143.22 ZAC 100.87 ETC 277.93 LVI -19.13

PLANETOCENTRIC CONIC

C3 10.319 VHL 3.212 DLA -30.10 RAL 340.66 RAD 6638.2 VEL 11.420 PTH 6.47 VHP 4.072 DPA -16.07 RAP 321.47 ECC 1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 51	2359.18	-.34	60.50	192.96	137.58	17 50 10	1359.2	17.85	44.33
60.00	18 34 50	2135.74	4.90	45.41	197.98	130.05	19 10 25	1135.7	20.39	26.47
70.00	20 29 14	1799.17	11.09	22.72	202.57	122.51	20 59 13	799.2	23.41	1.12
79.23	23 36 27	1211.95	21.42	343.73	208.06	111.67	23 56 38	211.9	28.44	318.46
79.23	23 36 27	1211.95	21.42	343.73	208.06	111.67	23 56 38	211.9	28.44	318.46
79.23	23 36 27	1211.95	21.42	343.73	208.06	111.67	23 56 38	211.9	28.44	318.46
110.00	1 32 36	6134.03	11.09	289.54	202.57	122.51	3 14 50	5134.0	23.41	267.95

DIFFERENTIAL CORRECTIONS

TDE -.2539 TRA -.5389 TC3 .2072 BAU .0500
RDE -.2168 RRA .0608 RC3 .2970 FAU .13964
FDE .1645 FRA 3.3714 FC-11.7160 BSP .1821
BDE .3352 BRA .5423 BC3 .3621 FSP .1428

MID-COURSE EXECUTION ACCURACY

SGT 1207.1 SGR 452.1 SG3 885.6
RRT .1153 RRF -.1466 RTF -.7159
SGB 1289.0 R23 -.0512 R13 -.7170
SG1 1208.4 SG2 448.6 THA 2.87

ORBIT DETERMINATION ACCURACY

ST 28.1 SR 19.6 SS 37.3
CRT .7449 CRS .0450 CST .6959
LSA 43.8 MSA 25.3 SSA 1.4
EL1 32.3 EL2 11.4 ALF 31.83

LAUNCH DATE MAY 7 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 22 1971

DISTANCE 413.358 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.94 LAL .00 LOL 225.80 VL 32.428 GAL -.60 AZL 91.97 HCA 137.11 SMA 187.73 ECC .19623 INC 1.9688 V1 29.519
RP 208.67 LAP -1.34 LOP 2.93 VP 23.772 GAP 9.35 AZP 88.56 TAL 356.35 TAP 133.46 RCA 150.89 APO 224.57 V2 26.264
RC 96.988 GL -20.45 GP .99 ZAL 103.70 ZAP 135.34 ETS 178.98 ZAE 175.37 ETE 154.03 ZAC 100.98 ETC 277.83 LVI -19.04

PLANETOCENTRIC CONIC

C3 10.168 VHL 3.189 DLA -30.29 RAL 340.72 RAD 6638.1 VEL 11.413 PTH 6.46 VHP 3.967 DPA -16.18 RAP 320.97 ECC 1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 12	2351.73	.04	60.19	192.96	137.58	17 51 23	1351.7	18.21	43.98
60.00	18 36 44	2126.82	5.29	44.98	197.99	130.01	19 12 11	1126.8	20.74	25.98
70.00	20 32 24	1786.49	11.55	22.03	202.62	122.37	21 2 11	786.5	23.78	.32
78.66	23 32 27	1222.49	21.62	344.61	207.98	111.75	23 52 49	222.5	28.66	319.29
78.66	23 32 27	1222.49	21.62	344.61	207.98	111.75	23 52 49	222.5	28.66	319.29
78.66	23 32 27	1222.49	21.62	344.61	207.98	111.75	23 52 49	222.5	28.66	319.29
110.00	1 35 47	6121.34	11.55	288.65	202.62	122.37	3 17 48	5121.3	23.78	267.15

DIFFERENTIAL CORRECTIONS

TDE -.2615 TRA -.5212 TC3 .0959 BAU .0431
RDE -.2124 RRA .0568 RC3 .3021 FAU .14532
FDE .1826 FRA 3.5449 FC-12.3728 BSP .1834
BDE .3369 BRA .5242 BC3 .3169 FSP .1535

MID-COURSE EXECUTION ACCURACY

SGT 1183.5 SGR 443.5 SG3 933.7
RRT .1198 RRF -.1613 RTF -.[illegible]53
SGB 1263.9 R23 -.0679 R13 -.6767
SG1 1184.9 SG2 439.8 THA 2.96

ORBIT DETERMINATION ACCURACY

ST 28.6 SR 19.2 SS 38.6
CRT .7659 CRS .0557 CST .6802
LSA 44.9 MSA 25.5 SSA 1.4
EL1 32.7 EL2 10.8 ALF 30.91

LAUNCH DATE MAY 7 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 24 1971

DISTANCE 417.459 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.94 LAL .00 LOL 225.80 VL 32.405 GAL -.59 AZL 91.97 HCA 138.36 SMA 187.34 ECC .19454 INC 1.9743 V1 29.519
RP 208.85 LAP -1.31 LOP 4.18 VP 23.717 GAP 9.10 AZP 88.52 TAL 356.39 TAP 134.75 RCA 150.89 APO 223.78 V2 26.243
RC 98.929 GL -20.64 GP 1.04 ZAL 103.67 ZAP 133.56 ETS 178.96 ZAE 174.07 ETE 160.63 ZAC 101.10 ETC 277.72 LVI -18.94

PLANETOCENTRIC CONIC

C3 10.032 VHL 3.167 DLA -30.47 RAL 340.80 RAD 6638.1 VEL 11.407 PTH 6.46 VHP 3.868 DPA -16.29 RAP 320.43 ECC 1.1651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 32	2344.86	.38	59.90	192.98	137.57	17 52 37	1344.9	18.54	43.66
60.00	18 38 35	2118.55	5.65	44.58	198.03	129.97	19 13 54	1118.5	21.06	25.52
70.00	20 35 30	1774.57	11.99	21.38	202.70	122.22	21 5 5	774.6	24.12	359.57
78.15	23 29 0	1231.74	21.81	345.38	207.92	111.82	23 49 32	231.7	28.85	320.02
78.15	23 29 0	1231.74	21.81	345.38	207.92	111.82	23 49 32	231.7	28.85	320.02
78.15	23 29 0	1231.74	21.81	345.38	207.92	111.82	23 49 32	231.7	28.85	320.02
110.00	1 38 52	6109.42	11.99	288.20	202.70	122.22	3 20 42	5109.4	24.12	266.39

DIFFERENTIAL CORRECTIONS

TDE -.2589 TRA -.4932 TC3 .0140 BAU .0413
RDE -.2060 RRA .0528 RC3 .3076 FAU .15190
FDE .1805 FRA 3.7150 FC-13.1090 BSP .1734
BDE .3308 BRA .4960 BC3 .3080 FSP .1635

MID-COURSE EXECUTION ACCURACY

SGT 1136.2 SGR 434.9 SG3 984.6
RRT .1243 RRF -.1766 RTF -.6409
SGB 1216.6 R23 -.0842 R13 -.6428
SG1 1137.7 SG2 430.9 THA 3.18

ORBIT DETERMINATION ACCURACY

ST 28.1 SR 18.7 SS 39.7
CRT .7809 CRS .0510 CST .6590
LSA 45.3 MSA 25.7 SSA 1.4
EL1 32.2 EL2 10.2 ALF 30.92

LAUNCH DATE MAY 7 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 26 1971

HELIOCENTRIC CONIC DISTANCE 421.571 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.384 GAL -.58 AZL 91.98 HCA 139.60 SMA 186.98 ECC .19298 INC 1.9800 V1 29.519
RP 209.04 LAP -1.28 LOP 5.42 VP 23.664 GAP 8.85 AZP 88.49 TAL 356.42 TAP 136.01 RCA 150.89 APO 223.06 V2 26.221
RC 100.898 GL -20.82 GP 1.09 ZAL 103.66 ZAP 131.74 ETS 178.96 ZAE 172.66 ETE 164.92 ZAC 101.23 ETC 277.60 LVI -18.83

PLANETOCENTRIC CONIC

C3 9.910 VHL 3.148 DLA -30.63 RAL 340.89 RAD 6638.0 VEL 11.402 PTH 6.45 VHP 3.773 DPA -16.42 RAP 319.85 ECC 1.1631

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 52	2338.59	.70	59.64	193.02	137.57	17 53 50	1338.6	18.84	43.36
60.00	18 40 24	2110.99	5.98	44.21	198.08	129.93	19 15 35	1111.0	21.36	25.10
70.00	20 38 29	1763.54	12.39	20.77	202.80	122.09	21 7 53	763.5	24.44	358.87
77.71	23 26 6	1239.69	21.98	346.05	207.90	111.89	23 46 46	239.7	29.03	320.65
77.71	23 26 6	1239.69	21.98	346.05	207.90	111.89	23 46 46	239.7	29.03	320.65
77.71	23 26 6	1239.69	21.98	346.05	207.90	111.89	23 46 46	239.7	29.03	320.65
110.00	1 41 52	6098.40	12.39	287.60	202.80	122.09	3 23 30	5098.4	24.44	265.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2558 TRA -.4618 TC3 -.0753 BAU .0427 SGT 1083.2 SGR 426.2 SG3 1036.3 ST 27.5 SR 18.2 SS 40.7
RDE -.1997 RRA .0489 RC3 .3134 FAU .15883 RRT .1275 RRF -.1937 RTF -.5970 CRT .7978 CRS .0444 CST .6327
FDE .1743 FRA 3.8820 FC-13.8762 BSP 1587 SGB 1164.0 R23 -.1048 R13 -.5995 LSA 45.6 MSA 25.9 SSA 1.4
BDE .3245 BRA .4644 BC3 .3223 FSP 1723 SG1 1084.8 SG2 422.1 THA 3.38 EL1 31.6 EL2 9.6 ALF 31.05

LAUNCH DATE MAY 7 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 28 1971

HELIOCENTRIC CONIC DISTANCE 425.692 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.364 GAL -.57 AZL 91.99 HCA 140.84 SMA 186.65 ECC .19155 INC 1.9860 V1 29.519
RP 209.24 LAP -1.25 LOP 6.66 VP 23.612 GAP 8.60 AZP 88.46 TAL 356.43 TAP 137.26 RCA 150.89 APO 222.40 V2 26.198
RC 102.893 GL -20.99 GP 1.14 ZAL 103.68 ZAP 129.89 ETS 178.95 ZAE 171.15 ETE 167.85 ZAC 101.36 ETC 277.48 LVI -18.70

PLANETOCENTRIC CONIC

C3 9.801 VHL 3.131 DLA -30.78 RAL 341.01 RAD 6637.9 VEL 11.397 PTH 6.45 VHP 3.684 DPA -16.55 RAP 319.22 ECC 1.1613

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 11	2332.94	.98	59.41	193.09	137.57	17 55 4	1332.9	19.11	43.10
60.00	18 42 10	2104.14	6.28	43.88	198.17	129.89	19 17 15	1104.1	21.63	24.72
70.00	20 41 22	1753.43	12.75	20.22	202.92	121.96	21 10 35	753.4	24.72	358.22
77.32	23 23 44	1246.50	22.14	346.63	207.91	111.95	23 44 30	246.5	29.20	321.20
77.32	23 23 44	1246.50	22.14	346.63	207.91	111.95	23 44 30	246.5	29.20	321.20
77.32	23 23 44	1246.50	22.14	346.63	207.91	111.95	23 44 30	246.5	29.20	321.20
110.00	1 44 44	6088.29	12.75	287.04	202.92	121.96	3 26 12	5088.3	24.72	265.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2546 TRA -.4296 TC3 -.1786 BAU .0479 SGT 1033.0 SGR 417.6 SG3 1088.3 ST 27.0 SR 17.8 SS 41.8
RDE -.1935 RRA .0448 RC3 .3190 FAU .16551 RRT .1286 RRF -.2132 RTF -.5413 CRT .8177 CRS .0480 CST .6087
FDE .1811 FRA 4.0586 FC-14.6205 BSP 1427 SGB 1114.3 R23 -.1314 R13 -.5447 LSA 46.1 MSA 25.9 SSA 1.3
BDE .3198 BRA .4319 BC3 .3656 FSP 1815 SG1 1034.7 SG2 413.5 THA 3.54 EL1 31.1 EL2 8.9 ALF 31.06

LAUNCH DATE MAY 7 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 30 1971

HELIOCENTRIC CONIC DISTANCE 429.822 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.347 GAL -.57 AZL 91.99 HCA 142.07 SMA 186.35 ECC .19025 INC 1.9924 V1 29.519
RP 209.44 LAP -1.22 LOP 7.90 VP 23.561 GAP 8.36 AZP 88.43 TAL 356.42 TAP 138.50 RCA 150.89 APO 221.80 V2 26.174
RC 104.913 GL -21.16 GP 1.20 ZAL 103.72 ZAP 128.00 ETS 178.95 ZAE 169.57 ETE 169.98 ZAC 101.50 ETC 277.34 LVI -18.87

PLANETOCENTRIC CONIC

C3 9.704 VHL 3.115 DLA -30.91 RAL 341.15 RAD 6637.9 VEL 11.393 PTH 6.45 VHP 3.600 DPA -16.69 RAP 318.55 ECC 1.1597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 30	2327.86	1.23	59.19	193.19	137.56	17 56 18	1327.9	19.35	42.86
60.00	18 43 54	2097.99	6.55	43.58	198.28	129.86	19 18 52	1098.0	21.86	24.38
70.00	20 44 7	1744.24	13.08	19.71	203.06	121.83	21 13 11	744.2	24.98	357.63
76.97	23 21 49	1252.30	22.28	347.12	207.95	112.00	23 42 41	252.3	29.35	321.66
76.97	23 21 49	1252.30	22.28	347.12	207.95	112.00	23 42 41	252.3	29.35	321.66
76.97	23 21 49	1252.30	22.28	347.12	207.95	112.00	23 42 41	252.3	29.35	321.66
110.00	1 47 29	6079.10	13.08	286.54	203.06	121.83	3 28 48	5079.1	24.98	264.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2512 TRA -.3937 TC3 -.2829 BAU .0559 SGT 978.3 SGR 409.2 SG3 1142.2 ST 26.3 SR 17.3 SS 42.9
RDE -.1874 RRA .0406 RC3 .3251 FAU .17276 RRT .1254 RRF -.2347 RTF -.4435 CRT .8378 CRS .0464 CST .5781
FDE .1791 FRA 4.2354 FC-15.4130 BSP 1229 SGB 1060.4 R23 -.1642 R13 -.4780 LSA 46.4 MSA 26.0 SSA 1.3
BDE .3134 BRA .3958 BC3 .4310 FSP 1899 SG1 979.9 SG2 405.3 THA 3.62 EL1 30.4 EL2 8.2 ALF 31.31

LAUNCH DATE MAY 7 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 1 1971

HELIOCENTRIC CONIC DISTANCE 433.960 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.330 GAL -.57 AZL 92.00 HCA 143.31 SMA 186.07 ECC .18905 INC 1.9990 V1 29.519
RP 209.66 LAP -1.19 LOP 9.13 VP 23.511 GAP 8.13 AZP 88.40 TAL 356.40 TAP 139.71 RCA 150.89 APO 221.25 V2 26.150
RC 106.958 GL -21.32 GP 1.26 ZAL 103.78 ZAP 126.08 ETS 178.95 ZAE 167.92 ETE 171.52 ZAC 101.65 ETC 277.19 LVI -18.43

PLANETOCENTRIC CONIC

C3 9.619 VHL 3.102 DLA -31.03 RAL 341.30 RAD 6637.8 VEL 11.389 PTH 6.44 VHP 3.521 DPA -16.84 RAP 317.85 ECC 1.1583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 49	2323.35	1.46	59.01	193.31	137.56	17 57 33	1323.4	19.57	42.64
60.00	18 45 35	2092.50	6.79	43.32	198.41	129.82	19 20 27	1092.5	22.08	24.07
70.00	20 46 44	1735.95	13.38	19.25	203.23	121.72	21 15 40	736.0	25.21	357.10
76.67	23 20 17	1257.37	22.40	347.56	208.03	112.05	23 41 15	257.4	29.48	322.07
76.67	23 20 17	1257.37	22.40	347.56	208.03	112.05	23 41 15	257.4	29.48	322.07
76.67	23 20 17	1257.37	22.40	347.56	208.03	112.05	23 41 15	257.4	29.48	322.07
110.00	1 50 7	6070.81	13.38	286.08	203.23	121.72	3 31 17	5070.8	25.21	263.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2430 TRA -.3507 TC3 -.3805 BAU .0649 SGT 910.4 SGR 400.8 SG3 1195.9 ST 25.1 SR 16.8 SS 43.7
RDE -.1812 RRA .0364 RC3 .3319 FAU .18075 RRT .1160 RRF -.2578 RTF -.3895 CRT .8582 CRS .0325 CST .5342
FDE .1559 FRA 4.3932 FC-16.2673 BSP 979 SGB 994.7 R23 -.2033 R13 -.3952 LSA 46.4 MSA 25.9 SSA 1.3
BDE .3031 BRA .3526 BC3 .5049 FSP 1973 SG1 911.8 SG2 397.4 THA 3.61 EL1 29.3 EL2 7.4 ALF 32.08

LAUNCH DATE MAY 7 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 438.104 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.316 GAL -.58 AZL 92.01 HCA 144.54 SMA 185.82 ECC .18797 INC 2.0061 V1 29.519
RP 209.87 LAP -1.16 LOP 10.36 VP 23.463 GAP 7.90 AZP 88.37 TAL 356.36 TAP 140.91 RCA 150.89 APO 220.75 V2 26.124
RC 109.028 GL -21.48 GP 1.32 ZAL 103.86 ZAP 124.12 ETS 178.95 ZAE 166.21 ETE 172.70 ZAC 101.81 ETC 277.04 LVI -18.28

PLANETOCENTRIC CONIC

C3 9.547 VHL 3.090 DLA -31.13 RAL 341.49 RAD 6637.8 VEL 11.386 PTH 6.44 VHP 3.447 DPA -16.99 RAP 317.11 ECC 1.1571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 8	2319.50	1.66	58.85	193.47	137.55	17 58 48	1319.5	19.75	42.46
60.00	18 47 13	2087.81	6.99	43.09	198.57	129.79	19 22 0	1087.8	22.26	23.80
70.00	20 49 12	1728.81	13.64	18.86	203.42	121.62	21 18 1	728.8	25.40	356.63
76.42	23 19 16	1261.39	22.51	347.91	208.14	112.09	23 40 18	261.4	29.59	322.40
76.42	23 19 16	1261.39	22.51	347.91	208.14	112.09	23 40 18	261.4	29.59	322.40
76.42	23 19 16	1261.39	22.51	347.91	208.14	112.09	23 40 18	261.4	29.59	322.40
110.00	1 52 34	6063.67	13.64	285.68	203.42	121.62	3 33 38	5063.7	25.40	263.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2515 TRA -.3219 TC3 -.5536 BAU .0827 SGT 905.9 SGR 392.5 SG3 1248.8 ST 25.6 SR 16.3 SS 45.2
RDE -.1755 RRA .0317 RC3 .3372 FAU .18623 RRT .0920 RRF -.2832 RTF -.2724 CRT .8841 CRS .0589 CST .5110
FDE .1957 FRA 4.6133 FC-16.8882 BSP 899 SGB 987.3 R23 -.2535 R13 -.2778 LSA 47.7 MSA 26.2 SSA 1.3
BDE .3067 BRA .3234 BC3 .6482 FSP 2104 SG1 906.8 SG2 390.5 THA 2.80 EL1 29.6 EL2 6.6 ALF 31.14

LAUNCH DATE MAY 7 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 442.255 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.302 GAL -.58 AZL 92.01 HCA 145.77 SMA 185.60 ECC .18699 INC 2.0136 V1 29.519
RP 210.10 LAP -1.13 LOP 11.59 VP 23.415 GAP 7.68 AZP 88.33 TAL 356.31 TAP 142.08 RCA 150.89 APO 220.30 V2 26.098
RC 111.121 GL -21.62 GP 1.39 ZAL 103.97 ZAP 122.14 ETS 178.94 ZAE 164.44 ETE 173.62 ZAC 101.97 ETC 276.88 LVI -18.12

PLANETOCENTRIC CONIC

C3 9.485 VHL 3.080 DLA -31.21 RAL 341.69 RAD 6637.8 VEL 11.384 PTH 6.44 VHP 3.378 DPA -17.14 RAP 316.33 ECC 1.1561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 27	2316.15	1.82	58.71	193.64	137.55	18 0 4	1316.1	19.91	42.30
60.00	18 48 48	2083.72	7.17	42.89	198.76	129.77	19 23 32	1083.7	22.42	23.57
70.00	20 51 32	1722.52	13.86	18.51	203.63	121.53	21 20 15	722.5	25.57	356.22
76.21	23 18 32	1264.93	22.60	348.22	208.28	112.12	23 39 37	264.9	29.68	322.68
76.21	23 18 32	1264.93	22.60	348.22	208.28	112.12	23 39 37	264.9	29.68	322.68
76.21	23 18 32	1264.93	22.60	348.22	208.28	112.12	23 39 37	264.9	29.68	322.68
110.00	1 54 54	6057.38	13.86	285.33	203.63	121.53	3 35 52	5057.4	25.57	263.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2505 TRA -.2821 TC3 -.7008 BAU .0990 SGT 883.2 SGR 384.6 SG3 1302.4 ST 25.1 SR 15.8 SS 46.4
RDE -.1697 RRA .0270 RC3 .3436 FAU .19297 RRT .0583 RRF -.3108 RTF -.1436 CRT .9072 CRS .0659 CST .4707
FDE .2032 FRA 4.8082 FC-17.6140 BSP 694 SGB 963.3 R23 -.3010 R13 -.1477 LSA 48.3 MSA 26.2 SSA 1.2
BDE .3026 BRA .2834 BC3 .7805 FSP 2199 SG1 883.6 SG2 383.8 THA 1.79 EL1 29.1 EL2 5.7 ALF 31.13

LAUNCH DATE MAY 7 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 446.412 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.290 GAL -.59 AZL 92.02 HCA 147.00 SMA 185.39 ECC .18611 INC 2.0215 V1 29.519
RP 210.33 LAP -1.10 LOP 12.82 VP 23.369 GAP 7.46 AZP 88.30 TAL 356.24 TAP 143.24 RCA 150.89 APO 219.90 V2 26.071
RC 113.239 GL -21.77 GP 1.46 ZAL 104.10 ZAP 120.12 ETS 178.95 ZAE 162.62 ETE 174.34 ZAC 102.13 ETC 276.71 LVI -17.95

PLANETOCENTRIC CONIC

C3 9.433 VHL 3.071 DLA -31.29 RAL 341.91 RAD 6637.7 VEL 11.381 PTH 6.43 VHP 3.313 DPA -17.29 RAP 315.52 ECC 1.1552

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 47	2313.33	1.96	58.59	193.85	137.55	18 1 20	1313.3	20.04	42.16
60.00	18 50 22	2080.28	7.32	42.72	198.96	129.74	19 25 2	1080.3	22.55	23.38
70.00	20 53 44	1717.19	14.05	18.21	203.86	121.45	21 22 21	717.2	25.72	355.88
76.03	23 18 10	1267.82	22.68	348.47	208.45	112.15	23 39 18	267.8	29.77	322.92
76.03	23 18 10	1267.82	22.68	348.47	208.45	112.15	23 39 18	267.8	29.77	322.92
76.03	23 18 10	1267.82	22.68	348.47	208.45	112.15	23 39 18	267.8	29.77	322.92
110.00	1 57 6	6052.04	14.05	285.04	203.86	121.45	3 37 58	5052.0	25.72	262.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2505 TRA -.2397 TC3 -.8575 BAU .1168 SGT 877.2 SGR 377.1 SG3 1354.6 ST 24.7 SR 15.3 SS 47.5
RDE -.1640 RRA .0221 RC3 .3503 FAU .19952 RRT .0134 RRF -.3415 RTF -.1417 CRT .9505 CRS .0783 CST .4273
FDE .2185 FRA 4.9999 FC-18.3120 BSP 503 SGB 954.8 R23 -.3415 R13 .0007 LSA 49.0 MSA 26.3 SSA 1.2
BDE .2994 BRA .2407 BC3 .9262 FSP 2303 SG1 877.2 SG2 377.1 THA .41 EL1 28.6 EL2 4.8 ALF 31.01

LAUNCH DATE MAY 7 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 450.574 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.279 GAL -.60 AZL 92.03 HCA 148.22 SMA 185.21 ECC .18532 INC 2.0300 V1 29.519
RP 210.57 LAP -1.07 LOP 14.04 VP 23.323 GAP 7.24 AZP 88.27 TAL 356.16 TAP 144.38 RCA 150.89 APO 219.54 V2 26.044
RC 115.380 GL -21.91 GP 1.54 ZAL 104.25 ZAP 118.09 ETS 178.95 ZAE 160.76 ETE 174.93 ZAC 102.30 ETC 276.53 LVI -17.77

PLANETOCENTRIC CONIC

C3 9.391 VHL 3.064 DLA -31.35 RAL 342.15 RAD 6637.7 VEL 11.380 PTH 6.43 VHP 3.253 DPA -17.45 RAP 314.68 ECC 1.1545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 6	2311.03	2.08	58.49	194.07	137.54	18 2 37	1311.0	20.15	42.05
60.00	18 51 53	2077.46	7.44	42.59	199.20	129.72	19 26 30	1077.5	22.66	23.22
70.00	20 55 47	1712.78	14.21	17.97	204.11	121.39	21 24 20	712.8	25.84	355.59
75.88	23 18 7	1270.15	22.74	348.67	208.65	112.18	23 39 17	270.1	29.83	323.11
75.88	23 18 7	1270.15	22.74	348.67	208.65	112.18	23 39 17	270.1	29.83	323.11
75.88	23 18 7	1270.15	22.74	348.67	208.65	112.18	23 39 17	270.1	29.83	323.11
110.00	1 59 10	6047.64	14.21	284.79	204.11	121.39	3 39 57	5047.6	25.84	262.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2491 TRA -.1938 TC3-1.0181 BAU .1355 SGT 886.8 SGR 370.1 SG3 1405.8 ST 24.2 SR 14.8 SS 48.4
RDE -.1583 RRA .0171 RC3 .3576 FAU .20632 RRT -.0450 RRF -.3748 RTF .1569 CRT .9522 CRS .0879 CST .3748
FDE .2269 FRA 5.1813 FC-19.0206 BSP 308 SGB 961.0 R23 .3666 R13 -.1603 LSA 49.6 MSA 26.3 SSA 1.2
BDE .2952 BRA .1946 BC3 1.0791 FSP 2390 SG1 887.0 SG2 369.7 THA 178.70 EL1 28.1 EL2 3.9 ALF 30.93

LAUNCH DATE MAY 7 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 11 1971

HELIOCENTRIC CONIC DISTANCE 454.742 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.269	GAL	-.61	AZL	92.04	HCA	149.44	SMA	185.05	ECC	.18462	INC	2.0391	V1	29.519
RP	210.82	LAP	-1.04	LOP	15.26	VP	23.278	GAP	7.03	AZP	88.24	TAL	356.06	TAP	145.50	RCA	150.89	APO	219.21	V2	26.015
RC	117.545	GL	-22.04	GP	1.62	ZAL	104.42	ZAP	116.03	ETS	178.95	ZAE	158.85	ETE	175.39	ZAC	102.48	ETC	276.35	LVI	-17.59

PLANETOCENTRIC CONIC

C3	9.358	VHL	3.059	DLA	-31.39	RAL	342.41	RAD	6637.7	VEL	11.378	PTH	6.43	VHP	3.198	DPA	-17.60	RAP	313.81	ECC	1.1540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 27	2309.20	2.17	58.41	194.32	137.54	18 3 56	1309.2	20.24	41.97
60.00	18 53 23	2075.22	7.54	42.48	199.45	129.71	19 27 58	1075.2	22.74	23.09
70.00	20 57 43	1709.23	14.33	17.77	204.39	121.34	21 26 13	709.2	25.93	355.36
75.77	23 18 21	1272.03	22.79	348.84	208.88	112.20	23 39 33	272.0	29.89	323.26
75.77	23 18 21	1272.03	22.79	348.84	208.88	112.20	23 39 33	272.0	29.89	323.26
75.77	23 18 21	1272.03	22.79	348.84	208.88	112.20	23 39 33	272.0	29.89	323.26
110.00	2 1 6	6044.09	14.33	284.59	204.39	121.34	3 41 50	5044.1	25.93	262.18

DIFFERENTIAL CORRECTIONS

TDE	-.2445	TRA	-.1426	TC3	-1.1766	BAU	.1542														
RDE	-.1524	RRA	.0120	RC3	.3658	FAU	.21354														
FDE	.2159	FRA	5.3416	FC	-19.7544	BSP	269														
BDE	.2882	BRA	.1431	BC3	1.2322	FSP	2456														

MID-COURSE EXECUTION ACCURACY

SGT	908.8	SGR	363.8	SG3	1455.0						
RRT	-.1167	RRF	-.4103	RTF	.3168						
SGB	978.9	R23	.3688	R13	-.3249						
SG1	910.0	SG2	360.8	THA	176.83						

ORBIT DETERMINATION ACCURACY

ST	23.4	SR	14.3	SS	49.2		
CRT	.9713	CRS	.0888	CST	.3048		
LSA	49.9	MSA	26.1	SSA	1.2		
EL1	27.3	EL2	2.9	ALF	31.06		

LAUNCH DATE MAY 7 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 13 1971

HELIOCENTRIC CONIC DISTANCE 458.913 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.261	GAL	-.63	AZL	92.05	HCA	150.66	SMA	184.91	ECC	.18401	INC	2.0488	V1	29.519
RP	211.07	LAP	-1.00	LOP	16.48	VP	23.233	GAP	6.82	AZP	88.21	TAL	355.94	TAP	146.60	RCA	150.88	APO	218.93	V2	25.986
RC	119.734	GL	-22.18	GP	1.70	ZAL	104.62	ZAP	113.95	ETS	178.96	ZAE	156.90	ETE	175.78	ZAC	102.66	ETC	276.16	LVI	-17.40

PLANETOCENTRIC CONIC

C3	9.336	VHL	3.055	DLA	-31.43	RAL	342.70	RAD	6637.7	VEL	11.377	PTH	6.43	VHP	3.148	DPA	-17.75	RAP	312.92	ECC	1.1536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 48	2307.91	2.24	58.36	194.61	137.54	18 5 16	1307.9	20.30	41.90
60.00	18 54 51	2073.61	7.61	42.40	199.74	129.70	19 29 25	1073.6	22.80	23.00
70.00	20 59 31	1706.68	14.42	17.63	204.68	121.30	21 27 58	706.7	26.00	355.19
75.68	23 18 57	1273.33	22.83	348.95	209.15	112.21	23 40 10	273.3	29.92	323.37
75.68	23 18 57	1273.33	22.83	348.95	209.15	112.21	23 40 10	273.3	29.92	323.37
75.68	23 18 57	1273.33	22.83	348.95	209.15	112.21	23 40 10	273.3	29.92	323.37
110.00	2 2 53	6041.54	14.42	284.45	204.68	121.30	3 43 35	5041.5	26.00	262.01

DIFFERENTIAL CORRECTIONS

TDE	-.2493	TRA	-.0980	TC3	-1.3769	BAU	.1781														
RDE	-.1472	RRA	.0061	RC3	.3730	FAU	.21861														
FDE	.2716	FRA	5.5626	FC	-20.2722	BSP	411														
BDE	.2895	BRA	.0982	BC3	1.4265	FSP	2579														

MID-COURSE EXECUTION ACCURACY

SGT	986.4	SGR	358.2	SG3	1504.4						
RRT	-.1858	RRF	-.4492	RTF	.4397						
SGB	1049.4	R23	.3618	R13	-.4498						
SG1	988.9	SG2	351.1	THA	175.58						

ORBIT DETERMINATION ACCURACY

ST	23.6	SR	13.8	SS	50.6		
CRT	.9855	CRS	.1250	CST	.2649		
LSA	51.2	MSA	26.3	SSA	1.1		
EL1	27.3	EL2	2.0	ALF	30.12		

LAUNCH DATE MAY 7 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 15 1971

HELIOCENTRIC CONIC DISTANCE 463.088 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.253	GAL	-.65	AZL	92.06	HCA	151.88	SMA	184.78	ECC	.18347	INC	2.0593	V1	29.519
RP	211.33	LAP	-.97	LOP	17.70	VP	23.190	GAP	6.62	AZP	88.18	TAL	355.81	TAP	147.69	RCA	150.88	APO	218.69	V2	25.957
RC	121.945	GL	-22.31	GP	1.79	ZAL	104.83	ZAP	111.86	ETS	178.97	ZAE	154.92	ETE	176.09	ZAC	102.85	ETC	275.96	LVI	-17.21

PLANETOCENTRIC CONIC

C3	9.322	VHL	3.053	DLA	-31.45	RAL	343.01	RAD	6637.7	VEL	11.377	PTH	6.43	VHP	3.102	DPA	-17.89	RAP	312.01	ECC	1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 11	2307.02	2.28	58.32	194.91	137.53	18 6 38	1307.0	20.34	41.86
60.00	18 56 19	2072.51	7.66	42.35	200.05	129.69	19 30 51	1072.5	22.85	22.93
70.00	21 1 13	1704.88	14.49	17.53	205.00	121.27	21 29 38	704.9	26.05	355.07
75.62	23 19 44	1274.40	22.85	349.04	209.44	112.22	23 40 59	274.4	29.95	323.45
75.62	23 19 44	1274.40	22.85	349.04	209.44	112.22	23 40 59	274.4	29.95	323.45
75.62	23 19 44	1274.40	22.85	349.04	209.44	112.22	23 40 59	274.4	29.95	323.45
110.00	2 4 35	6039.74	14.49	284.35	205.00	121.27	3 45 15	5039.7	26.05	261.90

DIFFERENTIAL CORRECTIONS

TDE	-.2478	TRA	-.0460	TC3	-1.5647	BAU	.2007														
RDE	-.1416	RRA	.0002	RC3	.3814	FAU	.22424														
FDE	.2815	FRA	5.7458	FC	-20.8248	BSP	667														
BDE	.2854	BRA	.0460	BC3	1.6105	FSP	2651														

MID-COURSE EXECUTION ACCURACY

SGT	1067.4	SGR	353.4	SG3	1549.8						
RRT	-.2625	RRF	-.4867	RTF	.5049						
SGB	1124.4	R23	.3384	R13	-.5655						
SG1	1071.9	SG2	339.6	THA	174.48						

ORBIT DETERMINATION ACCURACY

ST	23.3	SR	13.3	SS	51.6		
CRT	.9940	CRS	.1395	CST	.1948		
LSA	51.9	MSA	26.2	SSA	1.1		
EL1	26.8	EL2	1.3	ALF	29.59		

LAUNCH DATE MAY 7 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 17 1971

HELIOCENTRIC CONIC DISTANCE 467.266 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.247	GAL	-.67	AZL	92.07	HCA	153.09	SMA	184.67	ECC	.18302	INC	2.0705	V1	29.519
RP	211.80	LAP	-.94	LOP	18.91	VP	23.147	GAP	6.42	AZP	88.15	TAL	355.66	TAP	148.75	RCA	150.88	APO	218.47	V2	25.926
RC	124.177	GL	-22.44	GP	1.89	ZAL	105.06	ZAP	109.77	ETS	178.98	ZAE	152.92	ETE	176.35	ZAC	103.04	ETC	275.76	LVI	-17.02

PLANETOCENTRIC CONIC

C3	9.318	VHL	3.053	DLA	-31.47	RAL	343.34	RAD	6637.7	VEL	11.376	PTH	6.43	VHP	3.061	DPA	-18.02	RAP	311.09	ECC	1.1533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 29 36	2306.55	2.31	58.30	195.24	137.53	18 8 2	1306.6	20.36	41.84
60.00	18 57 46	2071.90	7.68	42.32	200.38	129.68	19 32 18	1071.9	22.87	22.90
70.00	21 2 49	1703.85	14.52	17.47	205.34	121.26	21 31 13	703.9	26.07	355.00
75.59	23 20 47	1275.14	22.86	349.10	209.77	112.23	23 42 2	275.1	29.97	323.51
75.59	23 20 47	1275.14	22.86	349.10	209.77	112.23	23 42 2	275.1	29.97	323.51
75.59	23 20 47	1275.14	22.86	349.10	209.77	112.23	23 42 2	275.1	29.97	323.51
110.00	2 6 11	6038.71	14.52	284.29	205.34	121.26	3 46 50	5038.7	26.07	261.83

DIFFERENTIAL CORRECTIONS

TDE	-.2477	TRA	.0082	TC3	-1.7595	BAU	.2245														
RDE	-.1363	RRA	-.0060	RC3	.3907	FAU	.22992														
FDE	.3118	FRA	5.9196	FC	-21.3621	BSP	939														
BDE	.2827	BRA	.0102	BC3	1.8024	FSP	2739														

MID-COURSE EXECUTION ACCURACY

SGT	1170.6	SGR	350.0	SG3	1593.4						
RRT	-.3357	RRF	-.5320	RTF	.6471						
SGB	1221.8	R23	.3143	R13	-.6570						
SG1	1177.0	SG2	327.9	THA	173.78						

ORBIT DETERMINATION ACCURACY

ST	23.3	SR	12.8	SS	52.5		
CRT	.9949	CRS	.1654	CST	.1288		
LSA	52.7	MSA	26.2	SSA	1.1		
EL1	26.6	EL2	1.1	ALF	28.71		

LAUNCH DATE MAY 7 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 471.447 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.241 GAL -.69 AZL 92.08 HCA 154.30 SHA 184.58 ECC .18263 INC 2.0827 V1 29.519
RP 211.87 LAP -.90 LOP 20.12 VP 23.104 GAP 6.23 AZP 88.12 TAL 355.50 TAP 149.80 RCA 150.87 APO 218.29 V2 25.896
RC 126.431 GL -22.57 GP 2.00 ZAL 105.32 ZAP 107.66 ETS 178.99 ZAE 150.89 ETE 176.56 ZAC 103.24 ETC 275.56 LVI -16.83

PLANETOCENTRIC CONIC

C3 9.322 VHL 3.053 DLA -31.48 RAL 343.69 RAD 6637.7 VEL 11.377 PTH 6.43 VHP 3.023 DPA -18.15 RAP 310.15 ECC 1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 31 2	2306.47	2.31	58.30	195.60	137.53	18 9 29	1306.5	20.37	41.83
60.00	18 59 14	2071.76	7.69	42.31	200.74	129.68	19 33 46	1071.8	22.87	22.89
70.00	21 4 21	1703.51	14.53	17.45	205.70	121.25	21 32 44	703.5	26.08	354.98
75.57	23 22 4	1275.60	22.87	349.14	210.13	112.24	23 43 20	275.6	29.97	323.55
75.57	23 22 4	1275.60	22.87	349.14	210.13	112.24	23 43 20	275.6	29.97	323.55
75.57	23 22 4	1275.60	22.87	349.14	210.13	112.24	23 43 20	275.6	29.97	323.55
110.00	2 7 43	6038.37	14.53	284.27	205.70	121.25	3 48 22	5038.4	26.08	261.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2474 TRA .0641 TC3-1.9636 BAU .2497 SGT 1293.5 SGR 347.6 SG3 1632.0 ST 23.4 SR 12.3 SS 53.5
RDE -.1310 RRA -.0127 RC3 .3998 FAU .23436 RRT -.4061 RRF -.5754 RTF .7174 CRT .9865 CRS .1941 CST .0604
FDE .3446 FRA 6.0932 FC-21.7647 BSP 1234 SGB 1339.4 R23 .2905 R13 -.7259 LSA 53.6 NSA 26.2 SSA 1.0
BDE .2799 BRA .0654 BC3 2.0039 FSP 2813 SG1 1301.7 SG2 315.6 THA 173.38 EL1 26.4 EL2 1.8 ALF 27.58

LAUNCH DATE MAY 7 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 475.630 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.236 GAL -.72 AZL 92.10 HCA 155.51 SHA 184.50 ECC .18232 INC 2.0961 V1 29.519
RP 212.14 LAP -.87 LOP 21.32 VP 23.062 GAP 6.03 AZP 88.09 TAL 355.33 TAP 150.83 RCA 150.86 APO 218.14 V2 25.864
RC 128.706 GL -22.70 GP 2.11 ZAL 105.59 ZAP 105.56 ETS 179.01 ZAE 148.85 ETE 176.73 ZAC 103.44 ETC 275.35 LVI -16.64

PLANETOCENTRIC CONIC

C3 9.335 VHL 3.055 DLA -31.48 RAL 344.06 RAD 6637.7 VEL 11.377 PTH 6.43 VHP 2.990 DPA -18.26 RAP 309.20 ECC 1.1536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 32 31	2306.74	2.30	58.31	195.99	137.53	18 10 58	1306.7	20.35	41.85
60.00	19 0 44	2072.03	7.68	42.32	201.13	129.69	19 35 16	1072.0	22.86	22.91
70.00	21 5 50	1703.77	14.52	17.46	206.09	121.26	21 34 14	703.8	26.08	355.00
75.57	23 23 33	1275.89	22.86	349.16	210.52	112.25	23 44 49	275.9	29.97	323.57
75.57	23 23 33	1275.89	22.86	349.16	210.52	112.25	23 44 49	275.9	29.97	323.57
75.57	23 23 33	1275.89	22.86	349.16	210.52	112.25	23 44 49	275.9	29.97	323.57
110.00	2 9 13	6038.63	14.53	284.29	206.09	121.26	3 49 51	5038.6	26.08	261.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2465 TRA .1225 TC3-2.1657 BAU .2751 SGT 1427.5 SGR 347.1 SG3 1672.6 ST 23.5 SR 11.8 SS 54.5
RDE -.1258 RRA -.0199 RC3 .4106 FAU .23942 RRT -.4739 RRF -.6211 RTF .7723 CRT .9674 CRS .2250 CST -.0117
FDE .3775 FRA 6.2720 FC-22.2033 BSP 1545 SGB 1469.1 R23 .2699 R13 -.7795 LSA 54.5 NSA 26.2 SSA 1.0
BDE .2767 BRA .1241 BC3 2.2043 FSP 2877 SG1 1437.4 SG2 303.5 THA 173.12 EL1 26.2 EL2 2.7 ALF 26.19

LAUNCH DATE MAY 7 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 479.815 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.233 GAL -.75 AZL 92.11 HCA 156.71 SHA 184.44 ECC .18207 INC 2.1107 V1 29.519
RP 212.43 LAP -.83 LOP 22.53 VP 23.021 GAP 5.84 AZP 88.06 TAL 355.14 TAP 151.85 RCA 150.86 APO 218.02 V2 25.832
RC 130.999 GL -22.83 GP 2.23 ZAL 105.88 ZAP 103.46 ETS 179.04 ZAE 146.79 ETE 176.87 ZAC 103.65 ETC 275.15 LVI -16.45

PLANETOCENTRIC CONIC

C3 9.357 VHL 3.059 DLA -31.47 RAL 344.46 RAD 6637.7 VEL 11.378 PTH 6.43 VHP 2.961 DPA -18.36 RAP 308.26 ECC 1.1540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 34 4	2307.32	2.27	58.34	196.40	137.53	18 12 31	1307.3	20.33	41.87
60.00	19 2 15	2072.65	7.65	42.35	201.54	129.69	19 36 48	1072.6	22.84	22.94
70.00	21 7 19	1704.52	14.50	17.51	206.51	121.27	21 35 44	704.5	26.06	355.05
75.58	23 25 12	1276.09	22.84	349.17	210.95	112.26	23 46 28	276.1	29.96	323.58
75.58	23 25 12	1276.09	22.84	349.17	210.95	112.26	23 46 28	276.1	29.96	323.58
75.58	23 25 12	1276.09	22.84	349.17	210.95	112.26	23 46 28	276.1	29.96	323.58
110.00	2 10 42	6039.38	14.50	284.33	206.51	121.27	3 51 21	5039.4	26.06	261.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2456 TRA .1834 TC3-2.3768 BAU .3020 SGT 1577.4 SGR 347.8 SG3 1703.4 ST 23.9 SR 11.3 SS 55.3
RDE -.1206 RRA -.0273 RC3 .4210 FAU .24274 RRT -.5573 RRF -.6651 RTF .8139 CRT .9363 CRS .2588 CST -.0848
FDE .4120 FRA 6.4285 FC-22.4580 BSP 1864 SGB 1615.3 R23 .2518 R13 -.8197 LSA 55.4 NSA 26.2 SSA .9
BDE .2736 BRA .1854 BC3 2.4137 FSP 2940 SG1 1588.8 SG2 291.2 THA 173.01 EL1 26.2 EL2 3.6 ALF 24.47

LAUNCH DATE MAY 7 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 484.002 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.230 GAL -.78 AZL 92.13 HCA 157.91 SHA 184.39 ECC .18189 INC 2.1267 V1 29.519
RP 212.72 LAP -.80 LOP 23.73 VP 22.980 GAP 5.66 AZP 88.03 TAL 354.94 TAP 152.84 RCA 150.85 APO 217.93 V2 25.799
RC 133.312 GL -22.97 GP 2.36 ZAL 106.19 ZAP 101.37 ETS 179.07 ZAE 144.73 ETE 176.99 ZAC 103.87 ETC 274.94 LVI -16.27

PLANETOCENTRIC CONIC

C3 9.388 VHL 3.064 DLA -31.46 RAL 344.87 RAD 6637.7 VEL 11.379 PTH 6.43 VHP 2.936 DPA -18.45 RAP 307.31 ECC 1.1545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 41	2308.15	2.23	58.37	196.84	137.54	18 14 9	1308.2	20.29	41.92
60.00	19 3 51	2073.56	7.61	42.40	201.99	129.70	19 38 24	1073.6	22.81	22.99
70.00	21 8 50	1705.66	14.46	17.57	206.96	121.28	21 37 16	705.7	26.03	355.12
75.60	23 27 0	1276.32	22.82	349.17	211.40	112.27	23 48 16	276.3	29.94	323.60
75.60	23 27 0	1276.32	22.82	349.17	211.40	112.27	23 48 16	276.3	29.94	323.60
75.60	23 27 0	1276.32	22.82	349.17	211.40	112.27	23 48 16	276.3	29.94	323.60
110.00	2 12 12	6040.52	14.46	284.39	206.96	121.28	3 52 53	5040.5	26.03	261.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2444 TRA .2462 TC3-2.5883 BAU .3294 SGT 1736.7 SGR 350.8 SG3 1734.0 ST 24.4 SR 10.9 SS 56.2
RDE -.1154 RRA -.0354 RC3 .4330 FAU .24639 RRT -.5977 RRF -.7094 RTF .8463 CRT .8928 CRS .2941 CST -.1589
FDE .4426 FRA 6.5825 FC-22.7212 BSP 2189 SGB 1771.7 R23 .2371 R13 -.8511 LSA 56.4 NSA 26.2 SSA .9
BDE .2703 BRA .2488 BC3 2.6242 FSP 3000 SG1 1749.6 SG2 279.1 THA 172.94 EL1 26.3 EL2 4.5 ALF 22.41

LAUNCH DATE MAY 7 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC DISTANCE 488.189 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.227	GAL	-.81	AZL	92.14	HCA	159.11	SMA	184.35	ECC	.18177	INC	2.1444
RP	213.01	LAP	-.76	LOP	24.92	VP	22.939	GAP	5.47	AZP	88.00	TAL	354.72	TAP	153.82	RCA	150.84	APO	217.86
RC	135.643	GL	-23.12	GP	2.50	ZAL	106.51	ZAP	99.29	ETS	179.11	ZAE	142.66	ETE	177.08	ZAC	104.09	ETC	274.73

V1	29.519																		
V2	25.766																		
LVI	-16.11																		

PLANETOCENTRIC CONIC

C3	9.428	VHL	3.071	DLA	-31.45	RAL	345.31	RAD	6637.7	VEL	11.381	PTH	6.43	VHP	2.915	DPA	-18.51	RAP	306.37
ECC	1.1552																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 23	2309.20	2.17	58.41	197.32	137.54	18 15 52	1309.2	20.24	41.97
60.00	19 5 31	2074.68	7.56	42.45	202.47	129.70	19 40 5	1074.7	22.76	23.06
70.00	21 10 25	1707.04	14.41	17.65	207.44	121.31	21 38 52	707.0	25.99	355.21
75.62	23 28 54	1276.68	22.79	349.19	211.90	112.28	23 50 11	276.7	29.92	323.62
75.62	23 28 54	1276.68	22.79	349.19	211.90	112.28	23 50 11	276.7	29.92	323.62
75.62	23 28 54	1276.68	22.79	349.19	211.90	112.28	23 50 11	276.7	29.92	323.62
110.00	2 13 47	6041.89	14.41	284.47	207.44	121.31	3 54 29	5041.9	25.99	262.04

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2429	TRA	.3114	TC3	-2.8007	BAU	.3574	SGT	1904.6	SGR	355.8	SG3	1757.7	ST	25.0	SR	10.4	SS	57.0
RDE	-.1105	RRA	-.0441	RC3	.4452	FAU	.24883	RRT	-.6529	RRF	-.7517	RTF	.8706	CRT	.8366	CRS	.3361	CST	-.2257
FDE	.4879	FRA	6.7217	FC	-22.8482	BSP	2524	SGB	1937.6	R23	.2269	R13	-.8747	LSA	57.4	MSA	26.2	SSA	.8
BDE	.2669	BRA	.3145	BC3	2.8358	FSP	3051	SG1	1919.0	SG2	267.5	THA	172.91	EL1	26.5	EL2	5.4	ALF	20.09

LAUNCH DATE MAY 7 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC DISTANCE 492.378 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.226	GAL	-.85	AZL	92.16	HCA	160.30	SMA	184.33	ECC	.18170	INC	2.1641
RP	213.31	LAP	-.73	LOP	26.11	VP	22.899	GAP	5.29	AZP	87.96	TAL	354.49	TAP	154.79	RCA	150.83	APO	217.82
RC	137.991	GL	-23.28	GP	2.66	ZAL	106.85	ZAP	97.22	ETS	179.15	ZAE	140.60	ETE	177.15	ZAC	104.32	ETC	274.53

V1	29.519																		
V2	25.732																		
LVI	-15.96																		

PLANETOCENTRIC CONIC

C3	9.478	VHL	3.079	DLA	-31.45	RAL	345.78	RAD	6637.8	VEL	11.383	PTH	6.44	VHP	2.898	DPA	-18.55	RAP	305.44
ECC	1.1560																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 39 11	2310.39	2.11	58.46	197.82	137.54	18 17 41	1310.4	20.18	42.02
60.00	19 7 18	2075.93	7.51	42.51	202.98	129.71	19 41 53	1075.9	22.72	23.13
70.00	21 12 8	1708.48	14.36	17.73	207.95	121.33	21 40 36	708.5	25.95	355.31
75.64	23 30 53	1277.26	22.77	349.22	212.43	112.30	23 52 11	277.3	29.91	323.66
75.64	23 30 53	1277.26	22.77	349.22	212.43	112.30	23 52 11	277.3	29.91	323.66
75.64	23 30 53	1277.26	22.77	349.22	212.43	112.30	23 52 11	277.3	29.91	323.66
110.00	2 15 30	6043.33	14.36	284.55	207.95	121.33	3 56 14	5043.3	25.95	262.13

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2410	TRA	.3788	TC3	-3.0100	BAU	.3858	SGT	2078.2	SGR	363.7	SG3	1780.9	ST	25.8	SR	10.0	SS	57.7
RDE	-.1056	RRA	-.0535	RC3	.4595	FAU	.25152	RRT	-.7045	RRF	-.7923	RTF	.8904	CRT	.7671	CRS	.3835	CST	-.2926
FDE	.5274	FRA	6.8571	FC	-22.9748	BSP	2868	SGB	2109.8	R23	.2188	R13	-.8938	LSA	58.4	MSA	26.1	SSA	.8
BDE	.2631	BRA	.3826	BC3	3.0449	FSP	3095	SG1	2094.2	SG2	256.1	THA	172.86	EL1	27.0	EL2	6.1	ALF	17.50

LAUNCH DATE MAY 7 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC DISTANCE 496.567 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.225	GAL	-.88	AZL	92.19	HCA	161.49	SMA	184.31	ECC	.18170	INC	2.1863
RP	213.61	LAP	-.69	LOP	27.30	VP	22.859	GAP	5.11	AZP	87.93	TAL	354.25	TAP	155.73	RCA	150.82	APO	217.80
RC	140.356	GL	-23.46	GP	2.83	ZAL	107.20	ZAP	95.18	ETS	179.21	ZAE	138.54	ETE	177.20	ZAC	104.57	ETC	274.33

V1	29.519																		
V2	25.697																		
LVI	-15.82																		

PLANETOCENTRIC CONIC

C3	9.537	VHL	3.088	DLA	-31.45	RAL	346.26	RAD	6637.8	VEL	11.386	PTH	6.44	VHP	2.883	DPA	-18.57	RAP	304.52
ECC	1.1570																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 41 7	2311.65	2.05	58.52	198.37	137.54	18 19 39	1311.7	20.12	42.08
60.00	19 9 13	2077.21	7.45	42.57	203.53	129.72	19 43 50	1077.2	22.67	23.20
70.00	21 14 3	1709.80	14.31	17.80	208.51	121.35	21 42 32	709.8	25.92	355.39
75.64	23 32 51	1278.44	22.73	349.29	213.00	112.33	23 54 9	278.4	29.89	323.75
75.64	23 32 51	1278.44	22.73	349.29	213.00	112.33	23 54 9	278.4	29.89	323.75
75.64	23 32 51	1278.44	22.73	349.29	213.00	112.33	23 54 9	278.4	29.89	323.75
110.00	2 17 25	6044.66	14.31	284.62	208.51	121.35	3 58 10	5044.7	25.92	262.22

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2384	TRA	.4486	TC3	-3.2171	BAU	.4146	SGT	2257.3	SGR	374.1	SG3	1797.2	ST	26.7	SR	9.6	SS	58.5
RDE	-.1009	RRA	-.0636	RC3	.4743	FAU	.25302	RRT	-.7509	RRF	-.8293	RTF	.9056	CRT	.6846	CRS	.4347	CST	-.3542
FDE	.5730	FRA	6.9783	FC	-22.9680	BSP	3220	SGB	2288.1	R23	.2137	R13	-.9086	LSA	59.5	MSA	26.1	SSA	.8
BDE	.2589	BRA	.4531	BC3	3.2518	FSP	3126	SG1	2274.9	SG2	245.2	THA	172.82	EL1	27.5	EL2	6.8	ALF	14.74

LAUNCH DATE MAY 7 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC DISTANCE 500.756 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.225	GAL	-.92	AZL	92.21	HCA	162.67	SMA	184.31	ECC	.18174	INC	2.2111
RP	213.92	LAP	-.66	LOP	28.49	VP	22.819	GAP	4.94	AZP	87.89	TAL	353.99	TAP	156.67	RCA	150.81	APO	217.81
RC	142.739	GL	-23.65	GP	3.03	ZAL	107.56	ZAP	93.16	ETS	179.27	ZAE	136.50	ETE	177.23	ZAC	104.83	ETC	274.13

V1	29.519																		
V2	25.662																		
LVI	-15.71																		

PLANETOCENTRIC CONIC

C3	9.607	VHL	3.099	DLA	-31.45	RAL	346.78	RAD	6637.8	VEL	11.389	PTH	6.44	VHP	2.873	DPA	-18.56	RAP	303.62
ECC	1.1581																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 43 12	2312.90	1.99	58.57	198.95	137.54	18 21 45	1312.9	20.06	42.14
60.00	19 11 20	2078.39	7.40	42.63	204.12	129.73	19 45 59	1078.4	22.62	23.27
70.00	21 16 14	1710.77	14.28	17.85	209.12	121.36	21 44 45	710.8	25.89	355.46
75.62	23 34 46	1280.27	22.70	349.42	213.61	112.38	23 56 6	280.3	29.88	323.88
75.62	23 34 46	1280.27	22.70	349.42	213.61	112.38	23 56 6	280.3	29.88	323.88
75.62	23 34 46	1280.27	22.70	349.42	213.61	112.38	23 56 6	280.3	29.88	323.88
110.00	2 19 36	6045.63	14.28	284.68	209.12	121.36	4 0 22	5045.6	25.89	262.28

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2364	TRA	.5198	TC3	-3.4238	BAU	.4442	SGT	2442.2	SGR	387.8	SG3	1809.5	ST	27.8	SR	9.2	SS	59.2
RDE	-.0963	RRA	-.0747	RC3	.4906	FAU	.25398	RRT	-.7920	RRF	-.8626	RTF	.9173	CRT	.5918	CRS	.4896	CST	-.4093
FDE	.6181	FRA	7.0894	FC	-22.8877	BSP	3568	SGB	2472.8	R23	.2118	R13	-.9199	LSA	60.6	MSA	26.2	SSA	.7
BDE	.2553	BRA	.5251	BC3	3.4588	FSP	3153	SG1	2461.6	SG2	234.9	THA	172.77	EL1	28.4	EL2	7.3	ALF	11.92

LAUNCH DATE MAY 7 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 504.944 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.225 GAL -.96 AZL 92.24 HCA 163.66 SMA 184.32 ECC .18184 INC 2.2395 V1 29.519
RP 214.24 LAP -.62 LOP 29.67 VP 22.780 GAP 4.77 AZP 87.85 TAL 353.72 TAP 157.58 RCA 150.80 APO 217.83 V2 25.627
RC 145.138 GL -23.86 GP 3.25 ZAL 107.93 ZAP 91.17 ETS 179.35 ZAE 134.47 ETE 177.25 ZAC 105.12 ETC 273.94 LVI -15.63

PLANETOCENTRIC CONIC

C3 9.688 VHL 3.113 DLA -31.48 RAL 347.32 RAD 6637.9 VEL 11.392 PTH 6.44 VHP 2.865 DPA -18.51 RAP 302.74 ECC 1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 45 30	2314.01	1.93	58.62	199.57	137.55	18 24 4	1314.0	20.01	42.20
60.00	19 13 42	2079.30	7.36	42.68	204.76	129.74	19 48 21	1079.3	22.59	23.32
70.00	21 18 49	1711.06	14.27	17.87	209.78	121.36	21 47 20	711.1	25.88	355.48
75.57	23 36 34	1283.05	22.67	349.62	214.27	112.44	23 57 57	283.1	29.88	324.09
75.57	23 36 34	1283.05	22.67	349.62	214.27	112.44	23 57 57	283.1	29.88	324.09
75.57	23 36 34	1283.05	22.67	349.62	214.27	112.44	23 57 57	283.1	29.88	324.09
110.00	2 22 11	6045.91	14.27	284.69	209.78	121.36	4 2 57	5045.9	25.88	262.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2338 TRA .5935 TC3-3.6233 BAU .4739 SGT 2629.4 SGR 405.2 SG3 1818.1 ST 29.0 SR 8.9 SS 59.7
RDE -.0917 RRA -.0869 RC3 .5093 FAU .25468 RRT -.8285 RRF -.8919 RTF .9273 CRT .4866 CRS .5459 CST -.4631
FDE .6550 FRA 7.1866 FC-22.7592 BSP 3924 SGB 2660.4 R23 .2106 R13 -.9297 LSA 61.7 MSA 26.2 SSA .7
BDE .2511 BRA .5999 BC3 3.6589 FSP 3170 SG1 2650.9 SG2 225.0 THA 172.67 EL1 29.4 EL2 7.7 ALF 9.12

LAUNCH DATE MAY 7 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 509.133 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.226 GAL -1.01 AZL 92.27 HCA 165.04 SMA 184.34 ECC .18198 INC 2.2718 V1 29.519
RP 214.55 LAP -.59 LOP 30.85 VP 22.741 GAP 4.59 AZP 87.80 TAL 353.45 TAP 158.48 RCA 150.79 APO 217.88 V2 25.591
RC 147.555 GL -24.11 GP 3.50 ZAL 108.32 ZAP 89.22 ETS 179.44 ZAE 132.46 ETE 177.24 ZAC 105.43 ETC 273.76 LVI -15.59

PLANETOCENTRIC CONIC

C3 9.781 VHL 3.127 DLA -31.52 RAL 347.89 RAD 6637.9 VEL 11.396 PTH 6.45 VHP 2.861 DPA -18.43 RAP 301.88 ECC 1.1610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 48 3	2314.86	1.89	58.65	200.25	137.55	18 26 38	1314.9	19.97	42.24
60.00	19 16 23	2079.77	7.34	42.70	205.46	129.74	19 51 3	1079.8	22.57	23.35
70.00	21 21 55	1710.29	14.29	17.83	210.51	121.35	21 50 25	710.3	25.90	355.43
75.47	23 38 6	1287.28	22.65	349.93	214.98	112.52	23 59 33	287.3	29.90	324.42
75.47	23 38 6	1287.28	22.65	349.93	214.98	112.52	23 59 33	287.3	29.90	324.42
75.47	23 38 6	1287.28	22.65	349.93	214.98	112.52	23 59 33	287.3	29.90	324.42
110.00	2 25 17	6045.15	14.29	284.65	210.51	121.35	4 6 2	5045.2	25.90	262.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2322 TRA .6681 TC3-3.8215 BAU .5045 SGT 2820.8 SGR 427.0 SG3 1823.0 ST 30.5 SR 8.6 SS 60.3
RDE -.0874 RRA -.1004 RC3 .5305 FAU .25498 RRT -.8594 RRF -.9172 RTF .9349 CRT .3745 CRS .6079 CST -.5059
FDE .6995 FRA 7.2729 FC-22.5679 BSP 4266 SGB 2852.9 R23 .2132 R13 -.9370 LSA 62.8 MSA 26.4 SSA .6
BDE .2481 BRA .6756 BC3 3.8582 FSP 3176 SG1 2844.7 SG2 216.5 THA 172.55 EL1 30.7 EL2 8.0 ALF 6.50

LAUNCH DATE MAY 7 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 513.320 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.228 GAL -1.05 AZL 92.31 HCA 166.21 SMA 184.36 ECC .18217 INC 2.3101 V1 29.519
RP 214.88 LAP -.55 LOP 32.03 VP 22.702 GAP 4.42 AZP 87.76 TAL 353.16 TAP 159.37 RCA 150.78 APO 217.95 V2 25.554
RC 149.988 GL -24.40 GP 3.78 ZAL 108.70 ZAP 87.29 ETS 179.55 ZAE 130.48 ETE 177.22 ZAC 105.77 ETC 273.58 LVI -15.59

PLANETOCENTRIC CONIC

C3 9.889 VHL 3.145 DLA -31.59 RAL 348.49 RAD 6638.0 VEL 11.401 PTH 6.45 VHP 2.860 DPA -18.29 RAP 301.05 ECC 1.1627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 50 55	2315.25	1.87	58.67	200.99	137.55	18 29 30	1315.3	19.95	42.26
60.00	19 19 30	2079.51	7.35	42.69	206.23	129.74	19 54 10	1079.5	22.58	23.33
70.00	21 25 44	1707.92	14.38	17.69	211.33	121.32	21 54 12	707.9	25.97	355.27
75.29	23 39 19	1293.21	22.65	350.37	215.76	112.64	24 0 52	293.2	29.94	324.87
75.29	23 39 19	1293.21	22.65	350.37	215.76	112.64	24 0 52	293.2	29.94	324.87
75.29	23 39 19	1293.21	22.65	350.37	215.76	112.64	24 0 52	293.2	29.94	324.87
110.00	2 29 7	6042.77	14.38	284.52	211.33	121.32	4 9 49	5042.8	25.97	262.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2284 TRA .7474 TC3-4.0014 BAU .5340 SGT 3010.3 SGR 453.3 SG3 1822.4 ST 32.0 SR 8.5 SS 60.9
RDE -.0833 RRA -.1158 RC3 .5533 FAU .25400 RRT -.8656 RRF -.9381 RTF .9514 CRT .2470 CRS .6726 CST -.9487
FDE .7460 FRA 7.3544 FC-22.2372 BSP 4640 SGB 3044.2 R23 .2159 R13 -.9435 LSA 64.1 MSA 26.4 SSA .6
BDE .2431 BRA .7563 BC3 4.0394 FSP 3181 SG1 3037.1 SG2 208.6 THA 172.37 EL1 32.0 EL2 8.2 ALF 4.00

LAUNCH DATE MAY 7 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 517.506 EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.230 GAL -1.10 AZL 92.35 HCA 167.39 SMA 184.40 ECC .18241 INC 2.3552 V1 29.519
RP 215.21 LAP -.51 LOP 33.20 VP 22.664 GAP 4.26 AZP 87.70 TAL 352.85 TAP 160.24 RCA 150.76 APO 218.03 V2 25.518
RC 152.438 GL -24.74 GP 4.12 ZAL 109.09 ZAP 85.41 ETS 179.68 ZAE 128.52 ETE 177.17 ZAC 106.16 ETC 273.41 LVI -15.64

PLANETOCENTRIC CONIC

C3 10.012 VHL 3.164 DLA -31.71 RAL 349.14 RAD 6638.0 VEL 11.407 PTH 6.46 VHP 2.862 DPA -18.10 RAP 300.24 ECC 1.1648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 54 12	2314.96	1.88	58.66	201.80	137.55	18 32 47	1315.0	19.96	42.24
60.00	19 23 11	2078.18	7.41	42.62	207.08	129.73	19 57 49	1078.2	22.63	23.26
70.00	21 30 33	1703.19	14.55	17.43	212.25	121.25	21 58 57	703.2	26.09	354.96
75.03	23 40 6	1301.36	22.66	351.00	216.61	112.79	24 1 47	301.4	30.02	325.51
75.03	23 40 6	1301.36	22.66	351.00	216.61	112.79	24 1 47	301.4	30.02	325.51
75.03	23 40 6	1301.36	22.66	351.00	216.61	112.79	24 1 47	301.4	30.02	325.51
110.00	2 33 56	6038.05	14.55	284.25	212.25	121.25	4 14 34	5038.0	26.09	261.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2246 TRA .8285 TC3-4.1727 BAU .5639 SGT 3201.3 SGR 486.0 SG3 1818.9 ST 33.6 SR 8.4 SS 61.5
RDE -.0798 RRA -.1332 RC3 .5803 FAU .25289 RRT -.9070 RRF -.9552 RTF .9468 CRT .1141 CRS .7394 CST -.5826
FDE .8041 FRA 7.4223 FC-21.8659 BSP 5017 SGB 3237.9 R23 .2209 R13 -.9487 LSA 65.4 MSA 26.6 SSA .5
BDE .2384 BRA .8391 BC3 4.2129 FSP 3193 SG1 3231.6 SG2 202.7 THA 172.13 EL1 33.6 EL2 8.3 ALF 1.74

LAUNCH DATE MAY 7 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 13 1971

HELIOCENTRIC CONIC DISTANCE 521.691 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.233	GAL	-1.15	AZL	92.41	HCA	168.55	SMA	184.44	ECC	.18269	INC	2.4084	V1	29.519
RP	215.54	LAP	-.48	LOP	34.37	VP	22.626	GAP	4.09	AZP	87.64	TAL	352.54	TAP	161.10	RCA	150.74	APO	218.14	V2	25.480
RC	154.904	GL	-25.15	GP	4.52	ZAL	109.48	ZAP	83.56	ETS	179.83	ZAE	126.58	ETE	177.09	ZAC	106.60	ETC	273.25	LVI	-15.76

PLANETOCENTRIC CONIC

C3	10.156	VHL	3.187	DLA	-31.88	RAL	349.84	RAD	6638.1	VEL	11.413	PTH	6.46	VHP	2.867	DPA	-17.83	RAP	299.45	ECC	1.1671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 58 2	2313.65	1.95	58.60	202.70	137.55	18 36 36	1313.7	20.03	42.18
60.00	19 27 36	2075.30	7.54	42.48	208.04	129.71	20 2 11	1075.3	22.74	23.09
70.00	21 36 47	1694.95	14.84	16.97	213.32	121.12	22 5 2	695.0	26.31	354.42
74.63	23 40 11	1312.66	22.70	351.87	217.56	113.01	24 2 3	312.7	30.14	326.39
74.63	23 40 11	1312.66	22.70	351.87	217.56	113.01	24 2 3	312.7	30.14	326.39
74.63	23 40 11	1312.66	22.70	351.87	217.56	113.01	24 2 3	312.7	30.14	326.39
110.00	2 40 10	6029.81	14.84	283.79	213.32	121.12	4 20 39	5029.8	26.31	261.24

DIFFERENTIAL CORRECTIONS

TDE	-.2249	TRA	.9095	TC3	-4.3413	BAU	.5953												
RDE	-.0759	RRA	-.1532	RC3	.6128	FAU	.25165												
FDE	.8278	FRA	7.4694	FC	-21.4515	BSP	5356												
BDE	.2374	BRA	.9223	BC3	4.3843	FSP	3168												

MID-COURSE EXECUTION ACCURACY

SGT	3395.2	SGR	525.7	SG3	1810.8						
RRT	-.9245	RRF	-.9686	RTF	.9511						
SGB	3435.7	R23	.2264	R13	-.9531						
SG1	3430.0	SG2	198.4	THA	171.83						

ORBIT DETERMINATION ACCURACY

ST	35.5	SR	8.4	SS	61.8
CRT	-.0168	CRS	.7987	CST	-.6135
LSA	66.6	MSA	26.8	SSA	.4
EL1	35.5	EL2	8.4	ALF	179.76

LAUNCH DATE MAY 7 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE 525.874 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.236	GAL	-1.20	AZL	92.47	HCA	169.72	SMA	184.49	ECC	.18301	INC	2.4739	V1	29.519
RP	215.87	LAP	-.44	LOP	35.53	VP	22.588	GAP	3.93	AZP	87.57	TAL	352.22	TAP	161.94	RCA	150.73	APO	218.26	V2	25.443
RC	157.385	GL	-25.66	GP	5.01	ZAL	109.86	ZAP	81.76	ETS	180.03	ZAE	124.67	ETE	176.98	ZAC	107.13	ETC	273.10	LVI	-15.98

PLANETOCENTRIC CONIC

C3	10.324	VHL	3.213	DLA	-32.13	RAL	350.60	RAD	6638.2	VEL	11.420	PTH	6.47	VHP	2.875	DPA	-17.47	RAP	298.70	ECC	1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 2 38	2310.87	2.09	58.48	203.72	137.54	18 41 8	1310.9	20.16	42.05
60.00	19 33 4	2070.16	7.76	42.23	209.14	129.67	20 7 34	1070.2	22.94	22.80
70.00	21 45 7	1681.36	15.31	16.20	214.58	120.91	22 13 8	681.4	26.66	353.52
74.07	23 39 28	1327.69	22.78	353.05	218.62	113.30	24 1 35	327.7	30.33	327.58
74.07	23 39 28	1327.69	22.78	353.05	218.62	113.30	24 1 35	327.7	30.33	327.58
74.07	23 39 28	1327.69	22.78	353.05	218.62	113.30	24 1 35	327.7	30.33	327.58
110.00	2 48 29	6016.22	15.31	283.03	214.58	120.91	4 28 45	5016.2	26.66	260.34

DIFFERENTIAL CORRECTIONS

TDE	-.2240	TRA	.9948	TC3	-4.4884	BAU	.6260												
RDE	-.0729	RRA	-.1769	RC3	.6510	FAU	.24968												
FDE	.8689	FRA	7.5110	FC	-20.9363	BSP	5724												
BDE	.2355	BRA	1.0104	BC3	4.5353	FSP	3156												

MID-COURSE EXECUTION ACCURACY

SGT	3587.1	SGR	575.1	SG3	1799.0						
RRT	-.9381	RRF	-.9790	RTF	.9549						
SGB	3632.9	R23	.2324	R13	-.9568						
SG1	3627.6	SG2	196.9	THA	171.42						

ORBIT DETERMINATION ACCURACY

ST	37.5	SR	8.6	SS	62.2
CRT	-.1506	CRS	.8560	CST	-.6388
LSA	67.9	MSA	27.1	SSA	.4
EL1	37.5	EL2	8.5	ALF	177.91

LAUNCH DATE MAY 7 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 530.055 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.239	GAL	-1.25	AZL	92.56	HCA	170.88	SMA	184.55	ECC	.18338	INC	2.5558	V1	29.519
RP	216.21	LAP	-.41	LOP	36.69	VP	22.550	GAP	3.77	AZP	87.48	TAL	351.89	TAP	162.77	RCA	150.71	APO	218.39	V2	25.405
RC	159.881	GL	-26.29	GP	5.61	ZAL	110.23	ZAP	80.01	ETS	180.28	ZAE	122.79	ETE	176.83	ZAC	107.77	ETC	272.96	LVI	-16.32

PLANETOCENTRIC CONIC

C3	10.525	VHL	3.244	DLA	-32.49	RAL	351.45	RAD	6638.3	VEL	11.429	PTH	6.48	VHP	2.885	DPA	-16.98	RAP	297.96	ECC	1.1732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 8 16	2305.92	2.34	58.28	204.91	137.53	18 46 42	1305.9	20.39	41.81
60.00	19 40 2	2061.70	8.13	41.82	210.43	129.61	20 14 23	1061.7	23.26	22.32
70.00	21 56 45	1658.99	16.09	14.94	216.14	120.54	22 24 24	659.0	27.23	352.03
73.29	23 37 39	1347.71	22.92	354.65	219.85	113.69	24 0 7	347.7	30.62	329.18
73.29	23 37 39	1347.71	22.92	354.65	219.85	113.69	24 0 7	347.7	30.62	329.18
73.29	23 37 39	1347.71	22.92	354.65	219.85	113.69	24 0 7	347.7	30.62	329.18
110.00	3 0 7	5993.85	16.09	281.76	216.14	120.54	4 40 1	4993.9	27.23	258.85

DIFFERENTIAL CORRECTIONS

TDE	-.2238	TRA	1.0843	TC3	-4.6114	BAU	.6562												
RDE	-.0706	RRA	-.2058	RC3	.6960	FAU	.24659												
FDE	.9107	FRA	7.5476	FC	-20.2826	BSP	6105												
BDE	.2347	BRA	1.1037	BC3	4.6636	FSP	3138												

MID-COURSE EXECUTION ACCURACY

SGT	3776.8	SGR	636.6	SG3	1782.3						
RRT	-.9485	RRF	-.9865	RTF	.9578						
SGB	3830.0	R23	.2383	R13	-.9598						
SG1	3824.9	SG2	199.0	THA	170.89						

ORBIT DETERMINATION ACCURACY

ST	39.6	SR	9.0	SS	62.6
CRT	-.2802	CRS	.9093	CST	-.6604
LSA	69.4	MSA	27.5	SSA	.3
EL1	39.7	EL2	8.6	ALF	176.18

LAUNCH DATE MAY 7 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 534.234 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.243	GAL	-1.31	AZL	92.66	HCA	172.04	SMA	184.62	ECC	.18378	INC	2.6595	V1	29.519
RP	216.56	LAP	-.37	LOP	37.85	VP	22.512	GAP	3.61	AZP	87.37	TAL	351.55	TAP	163.59	RCA	150.69	APO	218.54	V2	25.366
RC	162.390	GL	-27.12	GP	6.38	ZAL	110.56	ZAP	78.31	ETS	180.59	ZAE	120.94	ETE	176.61	ZAC	108.58	ETC	272.83	LVI	-16.82

PLANETOCENTRIC CONIC

C3	10.772	VHL	3.282	DLA	-33.02	RAL	352.41	RAD	6638.4	VEL	11.439	PTH	6.49	VHP	2.900	DPA	-16.32	RAP	297.24	ECC	1.1773

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 15 26	2297.76	2.75	57.94	206.33	137.52	18 53 44	1297.8	20.78	41.41
60.00	19 49 13	2048.18	8.71	41.16	212.02	129.51	20 23 21	1048.2	23.77	21.54
70.00	22 14 21	1620.40	17.41	12.73	218.18	119.86	22 41 21	620.4	28.16	349.42
72.21	23 34 31	1374.04	23.13	356.77	221.29	114.24	23 57 25	374.0	31.04	331.30
72.21	23 34 31	1374.04	23.13	356.77	221.29	114.24	23 57 25	374.0	31.04	331.30
72.21	23 34 31	1374.04	23.13	356.77	221.29	114.24	23 57 25	374.0	31.04	331.30
110.00	3 17 43	5955.26	17.41	279.55	218.18	119.86	4 56 59	4955.3	28.16	256.24

DIFFERENTIAL CORRECTIONS

TDE	-.2340	TRA	1.1700	TC3	-4.7351	BAU	.6906												
RDE	-.0680	RRA	-.2407	RC3	.7562	FAU	.24448												
FDE	.9146	FRA	7.5379	FC	-19.6479	BSP	6395												
BDE	.2437	BRA	1.1945	BC3	4.7951	FSP	3077												

MID-COURSE EXECUTION ACCURACY

SGT	3970.0	SGR	715.3	SG3	1760.5						
RRT	-.9561	RRF	-.9919	RTF	.9601						
SGB	4033.9	R23	.2439	R13	-.9623						
SG1	4028.7	SG2	206.5	THA	170.20						

ORBIT DETERMINATION ACCURACY

ST	42.1	SR	9.6	SS	62.5
CRT	-.3878	CRS	.9427	CST	-.6723
LSA	70.5	MSA	28.3	SSA	.3
EL1	42.3	EL2	8.8	ALF	174.72

LAUNCH DATE MAY 7 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC — DISTANCE 538.410 — EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.248 GAL -1.37 AZL 92.80 HCA 173.19 SHA 184.69 ECC .18422 INC 2.7989 V1 29.919
RP 216.91 LAP -.33 LOP 39.00 VP 22.475 GAP 3.45 AZP 87.22 TAL 351.20 TAP 164.39 RCA 150.67 APO 218.71 V2 25.327
RC 164.912 GL -28.23 GP 7.40 ZAL 110.84 ZAP 78.67 ETS 181.01 ZAE 119.12 ETE 176.30 ZAC 109.63 ETC 272.72 LVI -17.57

PLANETOCENTRIC CONIC

C3 11.088 VHL 3.330 DLA -33.78 RAL 353.55 RAD 6638.6 VEL 11.453 PTH 6.50 VHP 2.919 DPA -15.40 RAP 296.53 ECC 1.1825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 24 58	2284.66	3.40	57.39	208.12	137.48	19 3 3	1284.7	21.39	40.78
60.00	20 1 56	2026.53	9.65	40.10	214.05	129.32	20 35 42	1026.5	24.58	20.28
70.00	22 47 13	1538.52	20.12	7.92	221.27	118.20	23 12 51	538.5	29.95	343.72
70.71	23 29 41	1408.73	23.46	359.62	223.08	115.03	23 53 10	408.7	31.66	334.14
70.71	23 29 41	1408.73	23.46	359.62	223.08	115.03	23 53 10	408.7	31.66	334.14
70.71	23 29 41	1408.73	23.46	359.62	223.08	115.03	23 53 10	408.7	31.66	334.14
110.00	3 50 35	5873.38	20.12	274.75	221.27	118.20	5 28 28	4873.4	29.95	250.54

DIFFERENTIAL CORRECTIONS

TDE -.2453 TRA 1.2643 TC3-4.8109 BAU .7237
RDE -.0669 RRA -.2866 RC3 .8305 FAU .24085
FDE .9278 FRA 7.5296 FC-18.8050 BSP 6742
BDE .2542 BRA 1.2964 BC3 4.8821 FSP 3029

MID-COURSE EXECUTION ACCURACY

SGT 4158.6 SGR 819.2 SG3 1733.1
RRT -.9617 RRF -.9955 RTF .9620
SGB 4238.5 R23 .2469 R13 -.9645
SG1 4232.7 SG2 220.6 THA 169.24

ORBIT DETERMINATION ACCURACY

ST 44.8 SR 10.6 SS 62.5
CRT -.4869 CRS .9703 CST -.6829
LSA 72.0 MSA 29.1 SSA .2
EL1 45.1 EL2 9.2 ALF 173.13

LAUNCH DATE MAY 7 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 23 1971

HELIOCENTRIC CONIC — DISTANCE 542.586 — EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.252 GAL -1.42 AZL 93.00 HCA 174.34 SHA 184.77 ECC .18469 INC 2.9939 V1 29.519
RP 217.26 LAP -.30 LOP 40.15 VP 22.438 GAP 3.29 AZP 87.02 TAL 350.85 TAP 165.19 RCA 150.64 APO 218.89 V2 25.288
RC 167.446 GL -29.77 GP 8.82 ZAL 111.02 ZAP 75.10 ETS 181.60 ZAE 117.30 ETE 175.86 ZAC 111.08 ETC 272.62 LVI -18.70

PLANETOCENTRIC CONIC

C3 11.517 VHL 3.394 DLA -34.92 RAL 354.96 RAD 6638.8 VEL 11.472 PTH 6.52 VHP 2.944 DPA -14.08 RAP 295.80 ECC 1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 36 25	2263.44	4.47	56.50	210.51	137.42	19 16 8	1263.4	22.39	39.73
60.00	20 20 52	1990.59	11.19	38.32	216.87	128.97	20 54 2	990.6	25.89	18.15
68.60	23 22 48	1454.59	23.96	3.47	225.40	116.20	23 47 3	454.6	32.59	337.98
68.60	23 22 48	1454.59	23.96	3.47	225.40	116.20	23 47 3	454.6	32.59	337.98
68.60	23 22 48	1454.59	23.96	3.47	225.40	116.20	23 47 3	454.6	32.59	337.98
68.60	23 22 48	1454.59	23.96	3.47	225.40	116.20	23 47 3	454.6	32.59	337.98
68.60	23 22 48	1454.59	23.96	3.47	225.40	116.20	23 47 3	454.6	32.59	337.98

DIFFERENTIAL CORRECTIONS

TDE -.2711 TRA 1.3576 TC3-4.8588 BAU .7621
RDE -.0635 RRA -.3454 RC3 .9424 FAU .24039
FDE .8494 FRA 7.4148 FC-18.0699 BSP 7004
BDE .2785 BRA 1.4009 BC3 4.9493 FSP 2879

MID-COURSE EXECUTION ACCURACY

SGT 4347.4 SGR 962.5 SG3 1696.5
RRT -.9675 RRF -.9977 RTF .9661
SGB 4452.7 R23 .2381 R13 -.9689
SG1 4446.3 SG2 237.9 THA 167.87

ORBIT DETERMINATION ACCURACY

ST 48.0 SR 12.0 SS 61.2
CRT -.5724 CRS .9869 CST -.6967
LSA 72.9 MSA 29.7 SSA .2
EL1 48.5 EL2 9.7 ALF 171.53

LAUNCH DATE MAY 7 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 25 1971

HELIOCENTRIC CONIC — DISTANCE 546.757 — EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.257 GAL -1.48 AZL 93.29 HCA 175.49 SHA 184.85 ECC .18520 INC 3.2864 V1 29.519
RP 217.61 LAP -.26 LOP 41.30 VP 22.401 GAP 3.13 AZP 86.72 TAL 350.48 TAP 165.97 RCA 150.62 APO 219.09 V2 25.249
RC 169.992 GL -32.05 GP 10.93 ZAL 111.03 ZAP 73.65 ETS 182.46 ZAE 115.49 ETE 175.18 ZAC 113.20 ETC 272.56 LVI -20.48

PLANETOCENTRIC CONIC

C3 12.160 VHL 3.487 DLA -36.69 RAL 356.85 RAD 6639.1 VEL 11.499 PTH 6.55 VHP 2.981 DPA -12.07 RAP 295.02 ECC 1.2001

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 59 1	2228.03	6.24	55.00	214.03	137.26	19 36 9	1228.0	24.02	37.96
60.00	20 32 36	1925.31	13.97	35.03	221.27	128.20	21 24 42	925.3	28.19	14.15
65.59	23 13 42	1515.82	24.72	8.78	228.68	118.02	23 38 58	515.8	34.01	343.29
65.59	23 13 42	1515.82	24.72	8.78	228.68	118.02	23 38 58	515.8	34.01	343.29
65.59	23 13 42	1515.82	24.72	8.78	228.68	118.02	23 38 58	515.8	34.01	343.29
65.59	23 13 42	1515.82	24.72	8.78	228.68	118.02	23 38 58	515.8	34.01	343.29
65.59	23 13 42	1515.82	24.72	8.78	228.68	118.02	23 38 58	515.8	34.01	343.29

DIFFERENTIAL CORRECTIONS

TDE -.3116 TRA 1.4593 TC3-4.8306 BAU .8048
RDE -.0647 RRA -.4345 RC3 1.0831 FAU .23546
FDE .8282 FRA 7.3158 FC-16.7628 BSP 7258
BDE .3183 BRA 1.5226 BC3 4.9506 FSP 2768

MID-COURSE EXECUTION ACCURACY

SGT 4533.5 SGR 1172.4 SG3 1646.7
RRT -.9694 RRF -.9990 RTF .9865
SGB 4682.6 R23 .2381 R13 -.9702
SG1 4674.3 SG2 279.1 THA 165.87

ORBIT DETERMINATION ACCURACY

ST 51.9 SR 14.4 SS 60.7
CRT -.6265 CRS .9964 CST -.8897
LSA 74.8 MSA 31.5 SSA .1
EL1 52.7 EL2 11.1 ALF 169.66

LAUNCH DATE MAY 7 1971 FLIGHT TIME 234.00 ARRIVAL DATE DEC 27 1971

HELIOCENTRIC CONIC — DISTANCE 550.924 — EARTH TO MARS

RL 150.94 LAL .00 LOL 225.80 VL 32.263 GAL -1.55 AZL 93.78 HCA 176.63 SHA 184.94 ECC .18575 INC 3.7819 V1 29.519
RP 217.97 LAP -.22 LOP 42.44 VP 22.364 GAP 2.98 AZP 86.23 TAL 350.11 TAP 166.74 RCA 150.59 APO 219.30 V2 25.209
RC 172.547 GL -35.71 GP 14.37 ZAL 110.67 ZAP 72.41 ETS 183.85 ZAE 113.61 ETE 174.04 ZAC 116.66 ETC 272.54 LVI -23.50

PLANETOCENTRIC CONIC

C3 13.281 VHL 3.644 DLA -39.61 RAL 359.75 RAD 6639.7 VEL 11.548 PTH 6.59 VHP 3.045 DPA -8.73 RAP 294.12 ECC 1.2186

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 35 26	2163.08	9.48	52.23	220.12	136.85	20 11 29	1163.1	26.96	34.57
60.00	22 7 45	1755.34	20.90	26.03	230.39	125.27	22 37 0	755.3	33.46	2.85
61.02	23 2 34	1600.39	25.85	16.45	233.91	121.13	23 29 14	600.4	36.28	351.04
61.02	23 2 34	1600.39	25.85	16.45	233.91	121.13	23 29 14	600.4	36.28	351.04
61.02	23 2 34	1600.39	25.85	16.45	233.91	121.13	23 29 14	600.4	36.28	351.04
61.02	23 2 34	1600.39	25.85	16.45	233.91	121.13	23 29 14	600.4	36.28	351.04
61.02	23 2 34	1600.39	25.85	16.45	233.91	121.13	23 29 14	600.4	36.28	351.04

DIFFERENTIAL CORRECTIONS

TDE -.3302 TRA 1.6227 TC3-4.5241 BAU .8329
RDE -.0844 RRA -.5907 RC3 1.2408 FAU .21999
FDE .9710 FRA 7.2516 FC-14.3404 BSP 8116
BDE .3408 BRA 1.7269 BC3 4.6911 FSP 2770

MID-COURSE EXECUTION ACCURACY

SGT 4702.1 SGR 1512.9 SG3 1571.0
RRT -.9707 RRF -.9996 RTF .9671
SGB 4939.5 R23 .2317 R13 -.9725
SG1 4927.3 SG2 346.8 THA 162.57

ORBIT DETERMINATION ACCURACY

ST 56.3 SR 19.3 SS 61.9
CRT -.6744 CRS .9998 CST -.6892
LSA 79.0 MSA 33.5 SSA .1
EL1 57.9 EL2 13.9 ALF 166.16

LAUNCH DATE MAY 7 1971 FLIGHT TIME 236.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 558.088 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.260	GAL	-1.61	AZL	94.77	HCA	177.77	SNA	185.04	ECC	.18632	INC	4.7684	V1	29.519
RP	218.33	LAP	-.19	LOP	43.58	VP	22.327	GAP	2.62	AZP	85.23	TAL	349.73	TAP	167.50	RCA	150.56	APO	219.52	V2	25.169
RC	179.114	GL	-42.37	GP	20.90	ZAL	109.39	ZAP	71.76	ETS	186.38	ZAE	111.44	ETE	171.86	ZAC	123.19	ETC	272.67	LVI	-29.36

PLANETOCENTRIC CONIC

C3	15.858	VHL	3.982	DLA	-44.96	RAL	5.21	RAD	6640.9	VEL	11.658	PTH	6.70	VHP	3.193	DPA	-2.31	RAP	292.88	ECC	1.2610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 3 58	2004.87	17.23	45.21	234.62	135.06	21 37 23	1004.9	33.66	25.44
53.46	22 52 40	1726.20	27.29	28.58	244.09	127.23	23 21 26	726.2	40.00	3.78
53.46	22 52 40	1726.20	27.29	28.58	244.09	127.23	23 21 26	726.2	40.00	3.78
53.46	22 52 40	1726.20	27.29	28.58	244.09	127.23	23 21 26	726.2	40.00	3.78
53.46	22 52 40	1726.20	27.29	28.58	244.09	127.23	23 21 26	726.2	40.00	3.78
53.46	22 52 40	1726.20	27.29	28.58	244.09	127.23	23 21 26	726.2	40.00	3.78
53.46	22 52 40	1726.20	27.29	28.58	244.09	127.23	23 21 26	726.2	40.00	3.78

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY				
TDE	-.4376	TRA	1.7539	TC3	-4.0850	BAU	.9248	SGT	4868.4	SGR	2129.1	SG3	1402.1	ST	62.3	SR	27.4	SS	58.9
RDE	-.1163	RRA	-.8544	RC3	1.5308	FAU	.20789	RRT	-.9703	RRF	-.9998	RTF	.9661	CRT	-.6673	CRS	.9996	CST	-.6469
FDE	.9809	FRA	6.5914	FC3	-11.3499	BSP	8163	SGS	5313.6	R23	.2209	R13	-.9752	LSA	81.8	MSA	37.6	SSA	.0
BDE	.4928	BRA	1.9510	BC3	4.3624	FSP	2341	SG1	5292.4	SG2	473.6	THA	156.81	EL1	65.2	EL2	19.5	ALF	161.94

LAUNCH DATE MAY 7 1971 FLIGHT TIME 238.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 559.246 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.275	GAL	-1.67	AZL	97.80	HCA	178.90	SNA	185.14	ECC	.18693	INC	7.7855	V1	29.519
RP	218.69	LAP	-.15	LOP	44.72	VP	22.291	GAP	2.67	AZP	82.20	TAL	349.34	TAP	168.25	RCA	150.53	APO	219.75	V2	25.129
RC	177.690	GL	-37.42	GP	36.83	ZAL	105.14	ZAP	73.78	ETS	191.63	ZAE	107.82	ETE	166.67	ZAC	139.07	ETC	273.62	LVI	-43.64

PLANETOCENTRIC CONIC

C3	27.029	VHL	5.199	DLA	-56.01	RAL	21.62	RAD	6645.8	VEL	12.124	PTH	7.10	VHP	3.857	DPA	13.47	RAP	290.69	ECC	1.4448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.40	23 12 56	1960.10	25.90	50.94	272.49	141.58	23 45 36	960.1	43.93	30.80
39.40	23 12 56	1960.10	25.90	50.94	272.49	141.58	23 45 36	960.1	43.93	30.80
39.40	23 12 56	1960.10	25.90	50.94	272.49	141.58	23 45 36	960.1	43.93	30.80
39.40	23 12 56	1960.10	25.90	50.94	272.49	141.58	23 45 36	960.1	43.93	30.80
39.40	23 12 56	1960.10	25.90	50.94	272.49	141.58	23 45 36	960.1	43.93	30.80
39.40	23 12 56	1960.10	25.90	50.94	272.49	141.58	23 45 36	960.1	43.93	30.80
39.40	23 12 56	1960.10	25.90	50.94	272.49	141.58	23 45 36	960.1	43.93	30.80

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY				
TDE	-.5022	TRA	1.7686	TC3	-3.0496	BAU	1.3046	SGT	4745.4	SGR	3316.4	SG3	852.0	ST	59.4	SR	45.6	SS	47.6
RDE	-.4283	RRA	-1.3165	RC3	1.9328	FAU	.17646	RRT	-.9634	RRF	-.9996	RTF	.9558	CRT	-.5160	CRS	.9973	CST	-.4522
FDE	1.4983	FRA	3.9278	FC3	-5.6521	BSP	4699	SGS	5789.4	R23	.2090	R13	-.9779	LSA	76.6	MSA	44.8	SSA	.0
BDE	.6600	BRA	2.2048	BC3	3.6109	FSP	830	SG1	5742.6	SG2	734.7	THA	145.40	EL1	66.1	EL2	35.1	ALF	148.64

LAUNCH DATE MAY 7 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 567.572 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.288	GAL	-1.61	AZL	86.29	HCA	181.17	SNA	185.38	ECC	.18825	INC	3.6720	V1	29.519
RP	219.43	LAP	-.08	LOP	46.98	VP	22.218	GAP	2.37	AZP	93.71	TAL	348.92	TAP	169.70	RCA	150.46	APO	220.28	V2	25.048
RC	182.871	GL	34.44	GP	-34.65	ZAL	112.87	ZAP	71.07	ETS	165.29	ZAE	104.36	ETE	190.73	ZAC	67.73	ETC	272.12	LVI	22.12

PLANETOCENTRIC CONIC

C3	13.670	VHL	3.697	DLA	25.34	RAL	331.26	RAD	6639.9	VEL	11.564	PTH	6.61	VHP	3.784	DPA	-56.94	RAP	309.53	ECC	1.2250

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 43 26	3567.36	-47.07	134.41	204.88	97.91	13 42 54	2567.4	-38.61	103.27
80.00	12 49 55	3550.09	-40.29	133.59	205.62	91.10	13 49 5	2550.1	-35.44	103.61
70.00	13 0 59	3517.49	-33.87	130.70	205.37	85.31	13 59 36	2517.5	-32.26	102.08
80.00	13 24 9	3444.78	-28.50	124.43	204.60	80.72	14 21 34	2444.8	-29.50	97.05
90.00	14 21 20	3260.11	-26.08	110.38	204.10	78.67	15 15 40	2260.1	-28.23	83.57
100.00	16 7 1	2919.23	-28.50	85.80	204.60	80.72	16 55 41	1919.2	-29.50	58.42
110.00	18 0 25	2564.31	-33.87	59.62	205.37	85.31	18 43 10	1564.3	-32.26	31.00

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY				
TDE	1.7493	TRA	.7395	TC3	-6.1975	BAU	1.2675	SGT	5473.4	SGR	3151.9	SG3	947.4	ST	137.0	SR	82.0	SS	92.0
RDE	1.0186	RRA	.8534	RC3	-3.1138	FAU	.17002	RRT	.9672	RRF	.9998	RTF	.9529	CRT	.9913	CRS	-.9999	CST	-.9894
FDE	3.4814	FRA	3.0715	FC3	-10.7679	BSP	4773	SGS	6316.0	R23	.2087	R13	.9779	LSA	163.9	MSA	12.8	SSA	.1
BDE	2.0243	BRA	1.1292	BC3	6.9358	FSP	895	SG1	6277.4	SG2	697.7	THA	29.52	EL1	159.4	EL2	9.3	ALF	30.79

LAUNCH DATE MAY 7 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 6 1972

HELIOCENTRIC CONIC DISTANCE 571.719 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.285	GAL	-1.88	AZL	89.01	HCA	182.30	SNA	185.47	ECC	.18895	INC	.9757	V1	29.519
RP	219.80	LAP	-.04	LOP	48.10	VP	22.182	GAP	2.21	AZP	90.99	TAL	348.12	TAP	170.41	RCA	150.43	APO	220.52	V2	25.007
RC	185.475	GL	10.15	GP	-19.73	ZAL	117.68	ZAP	66.44	ETS	170.12	ZAE	104.94	ETE	185.94	ZAC	82.67	ETC	271.85	LVI	8.98

PLANETOCENTRIC CONIC

C3	10.091	VHL	3.177	DLA	3.07	RAL	341.33	RAD	6638.1	VEL	11.410	PTH	6.46	VHP	3.257	DPA	-42.56	RAP	299.15	ECC	1.1661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 43	3044.51	-32.74	93.32	194.52	126.67	15 45 27	2044.5	-16.13	73.91
80.00	15 31 2	2947.88	-28.58	87.78	197.68	119.71	16 20 10	1947.9	-14.46	66.76
70.00	16 19 39	2804.90	-24.84	78.33	199.82	114.24	17 6 24	1804.9	-12.90	56.29
80.00	17 24 38	2601.38	-22.12	64.11	201.04	110.59	18 8 0	1601.4	-11.74	41.53
90.00	18 44 38	2343.24	-21.10	45.53	201.43	109.28	19 23 41	1343.2	-11.31	22.78
100.00	20 7 30	2075.85	-22.12	25.48	201.04	110.59	20 42 6	1075.8	-11.74	2.90
110.00	21 19 5	1851.72	-24.84	7.25	199.82	114.24	21 49 57	851.7	-12.90	345.21

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY				
TDE	1.0209	TRA	1.5211	TC3	-7.0880	BAU	.9895	SGT	5587.3	SGR	1852.5	SG3	1357.7	ST	101.1	SR	40.0	SS	92.6
RDE	.3944	RRA	.6757	RC3	-1.8865	FAU	.18606	RRT	.9719	RRF	.9998	RTF	.9705	CRT	.9983	CRS	-.9997	CST	-.9966
FDE	3.1980	FRA	5.8286	FC3	-15.9621	BSP	9234	SGS	5886.4	R23	.2180	R13	.9758	LSA	142.7	MSA	5.7	SSA	.3
BDE	1.0944	BRA	1.6644	BC3	7.3347	FSP	2286	SG1	5871.8	SG2	414.8	THA	17.95	EL1	108.7	EL2	2.2	ALF	21.58

LAUNCH DATE MAY 7 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 8 1972

HELIOCENTRIC CONIC DISTANCE 575.864 EARTH TO MARS

RL	130.94	LAL	.00	LOL	226.80	VL	32.302	GAL	-1.95	AZL	89.94	HCA	183.42	SHA	185.89	ECC	.18967	INC	.0000
RP	220.18	LAP	-.00	LOP	48.22	VP	22.146	GAP	2.06	AZP	90.06	TAL	347.70	TAP	171.12	RCA	150.39	APO	220.79
RC	188.089	GL	.63	GP	-13.49	ZAL	118.71	ZAP	64.25	ETS	172.49	ZAE	104.04	ETE	183.88	ZAC	88.91	ETC	271.79

V1 29.519 V2 24.966 LVI 2.90

PLANETOCENTRIC CONIC

C3	9.938	VHL	3.156	DLA	-5.52	RAL	345.80	RAD	6638.0	VEL	11.404	PTH	6.46	VHP	3.183	DPA	-36.48	RAP	297.31	ECC	1.1639

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 44	2870.66	-25.24	83.58	196.09	131.77	16 30 35	1870.9	-7.58	66.29
60.00	16 28 12	2749.93	-21.34	76.06	199.46	125.04	17 14 2	1749.9	-5.95	56.95
70.00	17 27 0	2577.04	-17.76	64.44	201.86	119.66	18 9 57	1577.0	-4.43	44.08
80.00	18 41 16	2344.51	-15.14	48.24	203.31	116.04	19 20 21	1344.5	-3.30	27.14
90.00	20 5 19	2073.32	-14.15	28.79	203.79	114.74	20 39 52	1073.3	-2.87	7.44
100.00	21 24 8	1818.98	-15.14	9.61	203.31	116.04	21 54 27	819.0	-3.30	348.51
110.00	22 26 26	1623.86	-17.76	353.36	201.86	119.66	22 53 30	623.9	-4.43	333.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7254	TRA	1.7327	TC3	-7.3265	BAU	.9897	SGT	5753.7	SGR	1245.4	SG3	1447.1	ST	81.4	SR	24.4	SS	83.9
RDE	.2280	RRA	.4735	RC3	-1.2612	FAU	.19493	RRT	.9707	RRF	.9993	RTF	.9712	CRT	.9973	CRS	-.9981	CST	-.9994
FDE	2.7483	FRA	6.8149	FC	-16.9475	BSP	9415	SGB	5887.0	R23	.2252	R13	.9736	L8A	119.4	N8A	2.1	S8A	1.3
BDE	.7604	BRA	1.7962	BC3	7.4343	FSP	2491	SG1	5879.7	SG2	292.7	THA	11.90	EL1	85.0	EL2	1.7	ALF	16.67

LAUNCH DATE MAY 7 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 10 1972

HELIOCENTRIC CONIC DISTANCE 580.005 EARTH TO MARS

RL	130.94	LAL	.00	LOL	225.80	VL	32.309	GAL	-2.02	AZL	90.41	HCA	184.53	SHA	188.71	ECC	.19043	INC	.4060
RP	220.35	LAP	.03	LOP	50.33	VP	22.110	GAP	1.91	AZP	89.59	TAL	347.29	TAP	171.02	RCA	150.35	APO	221.08
RC	190.711	GL	-4.15	GP	-10.18	ZAL	119.24	ZAP	62.64	ETS	173.82	ZAE	102.83	ETE	182.77	ZAC	92.24	ETC	271.76

V1 29.519 V2 24.925 LVI -.12

PLANETOCENTRIC CONIC

C3	10.164	VHL	3.188	DLA	-9.69	RAL	347.94	RAD	6638.1	VEL	11.413	PTH	6.46	VHP	3.146	DPA	-33.24	RAP	296.41	ECC	1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 8 4	2791.25	-21.57	79.57	198.09	133.50	16 54 35	1791.3	-3.60	62.93
60.00	16 58 10	2658.01	-17.66	71.07	201.60	126.83	17 42 28	1658.0	-1.92	52.54
70.00	18 2 13	2469.69	-14.04	58.35	204.15	121.46	18 43 23	1469.7	-.34	38.47
80.00	19 21 23	2221.87	-11.35	41.11	205.71	117.80	19 58 25	1221.9	.85	20.40
90.00	20 47 36	1943.69	-10.33	21.19	206.25	116.47	21 20 0	943.7	1.30	.21
100.00	22 4 15	1696.34	-11.35	2.47	205.71	117.80	22 32 31	696.3	.85	341.77
110.00	23 1 39	1516.51	-14.04	347.27	204.15	121.46	23 26 56	516.5	-.34	327.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6303	TRA	1.9129	TC3	-7.2539	BAU	.9931	SGT	5902.5	SGR	915.1	SG3	1462.7	ST	77.4	SR	18.2	SS	81.2
RDE	.1704	RRA	.3569	RC3	-.8874	FAU	.19250	RRT	.9689	RRF	.9978	RTF	.9721	CRT	.9833	CRS	-.9938	CST	-.9971
FDE	2.5839	FRA	6.8453	FC	-16.3984	BSP	10009	SGB	5973.0	R23	.2206	R13	.9734	L8A	113.5	N8A	5.0	S8A	.6
BDE	.6529	BRA	1.9459	BC3	7.3080	FSP	2610	SG1	5968.8	SG2	223.9	THA	8.55	EL1	79.5	EL2	3.2	ALF	13.03

LAUNCH DATE MAY 7 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC DISTANCE 584.144 EARTH TO MARS

RL	130.94	LAL	.00	LOL	225.80	VL	32.317	GAL	-2.10	AZL	90.69	HCA	185.64	SHA	188.84	ECC	.19121	INC	.6088
RP	220.93	LAP	.07	LOP	51.45	VP	22.075	GAP	1.76	AZP	89.31	TAL	346.86	TAP	172.51	RCA	150.31	APO	221.38
RC	193.341	GL	-6.96	GP	-8.13	ZAL	119.70	ZAP	61.25	ETS	174.65	ZAE	101.54	ETE	182.10	ZAC	94.28	ETC	271.74

V1 29.519 V2 24.884 LVI -1.97

PLANETOCENTRIC CONIC

C3	10.422	VHL	3.228	DLA	-12.03	RAL	349.63	RAD	6638.3	VEL	11.424	PTH	6.48	VHP	3.151	DPA	-31.25	RAP	295.87	ECC	1.1715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 49	2748.91	-19.57	77.53	199.83	134.28	17 9 38	1748.9	-1.47	61.16
60.00	17 16 40	2608.39	-15.82	68.47	203.43	127.64	18 0 8	1608.4	.26	50.17
70.00	18 23 53	2410.78	-11.93	55.10	206.08	122.24	19 4 4	1410.8	1.91	35.40
80.00	19 46 4	2153.51	-9.16	37.22	207.73	118.54	20 21 58	1153.5	3.16	16.65
90.00	21 13 40	1870.92	-8.10	17.01	208.30	117.19	21 44 51	870.9	3.64	356.14
100.00	22 28 56	1627.98	-9.16	358.59	207.73	118.54	22 56 4	628.0	3.16	336.02
110.00	23 23 19	1457.59	-11.93	344.02	206.08	122.24	23 47 37	457.6	1.91	324.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5598	TRA	2.0273	TC3	-7.3148	BAU	1.0235	SGT	6068.4	SGR	709.5	SG3	1493.2	ST	74.6	SR	14.9	SS	77.6
RDE	.1395	RRA	.2751	RC3	-.6804	FAU	.19344	RRT	.9654	RRF	.9946	RTF	.9733	CRT	.9561	CRS	-.9843	CST	-.9924
FDE	2.4080	FRA	6.9044	FC	-16.0687	BSP	10092	SGB	6109.7	R23	.2077	R13	.9740	L8A	108.3	N8A	7.4	S8A	.7
BDE	.3768	BRA	2.0439	BC3	7.3462	FSP	2544	SG1	6107.0	SG2	183.8	THA	6.45	EL1	75.9	EL2	4.2	ALF	10.55

LAUNCH DATE MAY 7 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 588.277 EARTH TO MARS

RL	130.94	LAL	.00	LOL	225.80	VL	32.324	GAL	-2.17	AZL	90.88	HCA	186.75	SHA	189.87	ECC	.19201	INC	.8808
RP	221.31	LAP	.10	LOP	52.56	VP	22.039	GAP	1.61	AZP	89.12	TAL	346.43	TAP	173.18	RCA	150.26	APO	221.68
RC	195.078	GL	-6.78	GP	-6.75	ZAL	120.16	ZAP	59.97	ETS	175.23	ZAE	100.23	ETE	181.65	ZAC	95.67	ETC	271.73

V1 29.519 V2 24.842 LVI -3.22

PLANETOCENTRIC CONIC

C3	10.683	VHL	3.268	DLA	-13.46	RAL	350.95	RAD	6638.4	VEL	11.436	PTH	6.49	VHP	3.167	DPA	-29.90	RAP	295.83	ECC	1.1758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 39	2784.85	-18.43	76.40	201.31	134.68	17 20 4	1785.0	-.27	60.16
60.00	17 29 13	2579.84	-14.42	67.00	204.99	128.05	18 12 13	1579.8	1.52	48.81
70.00	18 38 28	2376.26	-10.67	53.22	207.72	122.64	19 18 4	1376.3	3.23	33.59
80.00	20 2 38	2112.79	-7.82	34.93	209.43	118.91	20 37 51	1112.8	4.53	14.40
90.00	21 31 9	1827.25	-6.73	14.53	210.02	117.53	22 1 36	827.3	5.04	353.69
100.00	22 45 30	1587.26	-7.82	356.30	209.43	118.91	23 11 57	587.3	4.53	335.77
110.00	23 37 54	1423.08	-10.67	342.14	207.72	122.64	24 1 37	423.1	3.23	322.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5347	TRA	2.1473	TC3	-7.3202	BAU	1.0482	SGT	6225.5	SGR	571.5	SG3	1434.6	ST	75.0	SR	12.5	SS	76.4
RDE	.1259	RRA	.2196	RC3	-.5329	FAU	.18985	RRT	.9571	RRF	.9884	RTF	.9730	CRT	.9208	CRS	-.9695	CST	-.9879
FDE	2.3469	FRA	6.9652	FC	-15.3857	BSP	10373	SGB	6251.7	R23	.1950	R13	.9734	L8A	107.4	N8A	9.2	S8A	.6
BDE	.5493	BRA	2.1585	BC3	7.3395	FSP	2533	SG1	6249.5	SG2	165.0	THA	5.02	EL1	75.8	EL2	4.8	ALF	8.79

LAUNCH DATE MAY 7 1971 FLIGHT TIME 284.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 892.403 EARTH TO MARS

RL 150.94 LAL .00 LOL 228.80 VL 32.332 GAL -8.25 AZL 91.02 HCA 187.86 SMA 186.11 ECC .19284 INC 1.0195 V1 29.819
RP 221.69 LAP .14 LOP 53.66 VP 22.004 GAP 1.46 AZP 88.99 TAL 348.99 TAP 173.88 RCA 150.22 APO 222.00 V2 24.801
RC 198.621 GL -10.03 GP -8.76 ZAL 120.68 ZAP 88.77 ETS 175.68 ZAE 98.93 ETE 181.33 ZAC 96.66 ETC 271.73 LVI -4.13

PLANETOCENTRIC CONIC

C3 10.938 VHL 3.307 DLA -14.36 RAL 352.04 RAD 6638.5 VEL 11.447 PTH 6.50 VHP 3.187 DPA -28.92 RAP 295.30 ECC 1.1800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 38	2711.39	-17.78	78.78	202.61	134.89	17 27 47	1711.4	.42	59.59
60.00	17 36 17	2563.29	-13.73	66.16	206.34	128.27	18 21 0	1563.3	2.25	48.02
70.00	18 48 52	2355.78	-8.81	52.11	209.13	122.85	19 28 8	1355.8	4.00	32.92
80.00	20 14 22	2088.17	-7.01	33.56	210.89	119.10	20 49 10	1088.2	5.36	13.04
90.00	21 43 29	1800.62	-5.89	13.03	211.50	117.71	22 13 30	800.6	5.86	352.19
100.00	22 57 14	1562.64	-7.01	354.93	210.89	119.10	23 23 16	562.6	5.36	334.41
110.00	23 48 18	1402.60	-9.91	341.03	209.13	122.85	24 11 41	402.6	4.00	321.44

DIFFERENTIAL CORRECTIONS

TDE .5407 TRA 2.2743 TC3-7.2868 BAU 1.0678
RDE .1208 RRA .1790 RC3 -.4243 FAU .18354
FDE 2.3667 FRA 7.0352 FC-14.5240 BSP 10802
BDE .5540 BRA 2.2813 BC3 7.3011 FSP 2581

MID-COURSE EXECUTION ACCURACY

SGT 6376.8 SGR 474.3 SG3 1412.8
RRT .9428 RRF .9774 RTF .9718
SG8 6394.4 R23 .1823 R13 .9721
SG1 6392.4 SG2 158.1 THA 4.01

ORBIT DETERMINATION ACCURACY

ST 77.2 SR 11.5 SS 76.8
CRT .8632 CRS -.9511 CST -.9844
LSA 109.0 MSA 10.6 SSA .7
EL1 77.9 EL2 5.4 ALF 7.84

LAUNCH DATE MAY 7 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 596.528 EARTH TO MARS

RL 150.94 LAL .00 LOL 228.80 VL 32.340 GAL -8.33 AZL 91.12 HCA 188.96 SMA 186.24 ECC .19370 INC 1.1228 V1 29.819
RP 222.07 LAP .17 LOP 54.76 VP 21.988 GAP 1.31 AZP 88.89 TAL 345.85 TAP 174.51 RCA 150.17 APO 222.32 V2 24.759
RC 201.270 GL -10.92 GP -9.01 ZAL 121.16 ZAP 97.63 ETS 175.97 ZAE 97.84 ETE 181.09 ZAC 97.41 ETC 271.73 LVI -4.83

PLANETOCENTRIC CONIC

C3 11.191 VHL 3.345 DLA -14.94 RAL 352.98 RAD 6638.7 VEL 11.458 PTH 6.51 VHP 3.211 DPA -28.18 RAP 295.16 ECC 1.1842

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 41	2704.24	-17.44	78.43	203.77	135.00	17 33 45	1704.2	.78	59.30
60.00	17 45 6	2554.18	-13.34	65.69	207.56	128.39	18 27 40	1554.2	2.65	47.58
70.00	18 56 34	2344.09	-8.48	51.49	210.38	122.97	19 35 38	1344.1	4.45	31.91
80.00	20 22 57	2073.70	-6.83	32.75	212.18	119.20	20 57 31	1073.7	5.84	12.24
90.00	21 52 30	1784.82	-5.39	12.14	212.80	117.80	22 22 15	784.8	6.38	351.30
100.00	23 5 49	1548.18	-6.55	354.12	212.18	119.20	23 31 37	548.2	5.84	333.61
110.00	23 56 1	1390.90	-9.48	340.40	210.38	122.97	24 19 12	390.9	4.45	320.82

DIFFERENTIAL CORRECTIONS

TDE .5422 TRA 2.3825 TC3-7.3137 BAU 1.0955
RDE .1172 RRA .1449 RC3 -.3527 FAU .18075
FDE 2.3220 FRA 7.0067 FC-13.9812 BSP 11026
BDE .5547 BRA 2.3869 BC3 7.3222 FSP 2493

MID-COURSE EXECUTION ACCURACY

SGT 6530.2 SGR 402.3 SG3 1386.7
RRT .9231 RRF .9593 RTF .9725
SG8 6542.6 R23 .1588 R13 .9727
SG1 6540.8 SG2 154.5 THA 3.26

ORBIT DETERMINATION ACCURACY

ST 78.9 SR 10.8 SS 75.7
CRT .8399 CRS -.9263 CST -.9821
LSA 109.3 MSA 11.5 SSA .7
EL1 79.4 EL2 5.8 ALF 6.57

LAUNCH DATE MAY 7 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 600.644 EARTH TO MARS

RL 150.94 LAL .00 LOL 229.80 VL 32.349 GAL -8.41 AZL 91.20 HCA 190.06 SMA 186.38 ECC .19458 INC 1.2029 V1 29.819
RP 222.46 LAP .21 LOP 55.86 VP 21.934 GAP 1.17 AZP 88.81 TAL 345.11 TAP 175.16 RCA 150.12 APO 222.63 V2 24.717
RC 203.922 GL -11.59 GP -4.42 ZAL 121.68 ZAP 96.53 ETS 176.22 ZAE 96.38 ETE 180.91 ZAC 97.99 ETC 271.74 LVI -5.38

PLANETOCENTRIC CONIC

C3 11.441 VHL 3.383 DLA -15.30 RAL 353.84 RAD 6638.8 VEL 11.468 PTH 6.52 VHP 3.236 DPA -27.60 RAP 295.09 ECC 1.1883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 32	2701.42	-17.30	78.30	204.85	135.04	17 38 34	1701.4	.92	59.18
60.00	17 50 26	2550.13	-13.17	65.49	208.67	128.44	18 32 56	1550.1	2.83	47.39
70.00	19 2 27	2338.39	-9.27	51.18	211.53	123.02	19 41 26	1338.4	4.67	31.61
80.00	20 29 24	2066.24	-6.28	32.34	213.35	119.25	21 3 50	1066.2	6.09	11.83
90.00	21 59 13	1776.48	-5.12	11.67	213.98	117.85	22 28 50	776.5	6.65	350.82
100.00	23 12 16	1540.71	-6.28	353.71	213.35	119.25	23 37 57	540.7	6.09	333.19
110.00	0 5 49	1385.21	-9.27	340.10	211.53	123.02	0 28 55	385.2	4.67	320.52

DIFFERENTIAL CORRECTIONS

TDE .5651 TRA 2.5042 TC3-7.2942 BAU 1.1166
RDE .1182 RRA .1188 RC3 -.2918 FAU .17397
FDE 2.3684 FRA 7.0457 FC-13.1640 BSP 11423
BDE .5773 BRA 2.5070 BC3 7.3001 FSP 2512

MID-COURSE EXECUTION ACCURACY

SGT 6878.7 SGR 350.1 SG3 1362.0
RRT .8909 RRF .9318 RTF .9707
SG8 6887.9 R23 .1464 R13 .9709
SG1 6886.0 SG2 158.8 THA 2.68

ORBIT DETERMINATION ACCURACY

ST 81.8 SR 10.5 SS 76.5
CRT .8009 CRS -.9031 CST -.9800
LSA 111.8 MSA 12.4 SSA .7
EL1 82.3 EL2 6.2 ALF 5.90

LAUNCH DATE MAY 7 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 604.761 EARTH TO MARS

RL 150.94 LAL .00 LOL 229.80 VL 32.357 GAL -8.49 AZL 91.27 HCA 191.15 SMA 186.53 ECC .19549 INC 1.2673 V1 29.819
RP 222.84 LAP .25 LOP 56.95 VP 21.900 GAP 1.02 AZP 88.76 TAL 344.68 TAP 175.81 RCA 150.06 APO 222.98 V2 24.675
RC 206.578 GL -12.08 GP -3.95 ZAL 122.21 ZAP 95.47 ETS 176.43 ZAE 95.14 ETE 180.77 ZAC 98.46 ETC 271.76 LVI -5.83

PLANETOCENTRIC CONIC

C3 11.690 VHL 3.419 DLA -15.81 RAL 354.82 RAD 6638.9 VEL 11.479 PTH 6.53 VHP 3.263 DPA -27.13 RAP 295.07 ECC 1.1924

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 30	2701.52	-17.31	78.31	205.85	135.04	17 42 32	1701.5	.91	59.18
60.00	17 54 40	2549.80	-13.14	65.46	209.70	128.45	18 37 10	1549.5	2.85	47.36
70.00	19 7 2	2336.78	-9.21	51.09	212.58	123.04	19 45 59	1336.8	4.73	31.52
80.00	20 34 19	2063.56	-6.19	32.19	214.42	119.27	21 8 43	1063.6	6.18	11.68
90.00	22 4 18	1773.29	-5.02	11.49	215.06	117.87	22 33 51	773.3	6.75	350.64
100.00	23 17 11	1538.03	-6.19	353.56	214.42	119.27	23 42 49	538.0	6.18	333.05
110.00	0 10 24	1383.60	-9.21	340.01	212.58	123.04	0 33 28	383.6	4.73	320.44

DIFFERENTIAL CORRECTIONS

TDE .5713 TRA 2.6014 TC3-7.3496 BAU 1.1493
RDE .1181 RRA .0943 RC3 -.2536 FAU .17305
FDE 2.3000 FRA 6.9537 FC-12.8160 BSP 11532
BDE .5834 BRA 2.6031 BC3 7.3540 FSP 2396

MID-COURSE EXECUTION ACCURACY

SGT 6829.5 SGR 310.1 SG3 1332.6
RRT .8514 RRF .8920 RTF .9725
SG8 6836.6 R23 .1211 R13 .9726
SG1 6834.8 SG2 162.5 THA 2.22

ORBIT DETERMINATION ACCURACY

ST 83.4 SR 10.2 SS 74.7
CRT .7555 CRS -.8719 CST -.9791
LSA 111.7 MSA 12.8 SSA .8
EL1 83.7 EL2 6.7 ALF 5.32

LAUNCH DATE MAY 7 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 24 1972

HELIOCENTRIC CONIC DISTANCE 608.870 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.366	GAL	-2.57	AZL	91.32	HCA	192.24	SMA	186.67	ECC	.19641	INC	1.3214	VI	29.519
RP	223.23	LAP	.28	LOP	58.04	VP	21.865	GAP	.87	AZP	88.71	TAL	344.21	TAP	176.45	RCA	150.01	APO	223.34	V2	24.633
RC	209.236	GL	-12.46	GP	-3.57	ZAL	122.75	ZAP	54.45	ETS	176.60	ZAE	93.92	ETE	180.66	ZAC	98.84	ETC	271.78	LVI	-6.22

PLANETOCENTRIC CONIC

C3	11.940	VHL	3.455	DLA	-15.61	RAL	355.35	RAD	6639.0	VEL	11.490	PTH	6.54	VHP	3.290	DPA	-26.74	RAP	295.09	ECC	1.1965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 50	2703.85	-17.42	75.41	206.80	135.01	17 45 54	1703.9	.79	59.28
60.00	17 58 8	2551.48	-13.23	65.56	210.67	128.42	18 40 40	1551.5	2.77	47.45
70.00	19 10 39	2338.28	-9.26	51.17	213.58	123.02	19 49 38	1338.3	4.67	31.60
80.00	20 38 7	2064.55	-6.23	32.24	215.43	119.26	21 12 31	1064.5	6.14	11.73
90.00	22 8 10	1774 02	-5.04	11.53	216.08	117.86	22 37 44	774.0	6.72	350.68
100.00	23 20 59	1539.02	-6.23	353.61	215.43	119.26	23 46 38	539.0	6.14	333.10
110.00	0 14 2	1385.10	-9.26	340.09	213.58	123.02	0 37 7	385.1	4.67	320.52

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.5986	TRA	2.7166	TC3	-7.3454	BAU	1.1730	SGT	6973.5	SGR	282.0	SG3	1304.9	ST	86.3	SR	10.2	SS	74.5
RDE	.1209	RRA	.0746	RC3	-.2186	FAU	.16846	RRT	.7966	RRF	.8390	RTF	.9725	CRT	.7201	CRS	-.8459	CST	-.9787
FDE	2.3066	FRA	6.9265	FC	-12.2148	BSP	11850	SGB	6979.1	R23	.1057	R13	.9726	LSA	113.7	MSA	13.2	SSA	.8
BDE	.6107	BRA	2.7176	BC3	7.3487	FSP	2358	SG1	6977.1	SG2	170.4	THA	1.85	EL1	86.6	EL2	7.1	ALF	4.90

LAUNCH DATE MAY 7 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 612.973 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.374	GAL	-2.66	AZL	91.37	HCA	193.33	SMA	186.82	ECC	.19736	INC	1.3652	VI	29.519
RP	223.62	LAP	.31	LOP	59.13	VP	21.831	GAP	.72	AZP	88.67	TAL	343.75	TAP	177.08	RCA	149.95	APO	223.69	V2	24.592
RC	211.896	GL	-12.75	GP	-3.25	ZAL	123.31	ZAP	53.47	ETS	176.75	ZAE	92.73	ETE	180.57	ZAC	99.15	ETC	271.82	LVI	-6.56

PLANETOCENTRIC CONIC

C3	12.192	VHL	3.492	DLA	-15.63	RAL	356.04	RAD	6639.2	VEL	11.501	PTH	6.55	VHP	3.319	DPA	-26.40	RAP	295.17	ECC	1.2007

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 41	2707.84	-17.61	75.60	207.72	134.95	17 48 48	1707.8	.59	59.45
60.00	18 1 0	2555.39	-13.39	65.76	211.61	128.37	18 43 36	1555.4	2.60	47.64
70.00	19 13 33	2342.10	-9.40	51.38	214.53	122.99	19 52 36	1342.1	4.52	31.80
80.00	20 41 3	2068.26	-6.35	32.45	216.39	119.24	21 15 31	1068.3	6.02	11.94
90.00	22 11 7	1777.67	-5.16	11.74	217.04	117.84	22 40 45	777.7	6.61	350.89
100.00	23 23 55	1542.73	-6.35	353.82	216.39	119.24	23 49 37	542.7	6.02	333.31
110.00	0 16 56	1388.91	-9.40	340.30	214.53	122.99	0 40 5	388.9	4.52	320.72

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6242	TRA	2.8267	TC3	-7.3571	BAU	1.1996	SGT	7116.5	SGR	262.7	SG3	1277.0	ST	88.9	SR	10.3	SS	74.2
RDE	.1245	RRA	.0571	RC3	-.1909	FAU	.16430	RRT	.7291	RRF	.7733	RTF	.9722	CRT	.6868	CRS	-.8214	CST	-.9783
FDE	2.3097	FRA	6.8873	FC	-11.6665	BSP	12095	SGB	7121.4	R23	.0936	R13	.9723	LSA	115.5	MSA	13.7	SSA	.8
BDE	.6365	BRA	2.8273	BC3	7.3595	FSP	2311	SG1	7119.1	SG2	179.7	THA	1.54	EL1	89.2	EL2	7.5	ALF	4.59

LAUNCH DATE MAY 7 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 617.071 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.383	GAL	-2.74	AZL	91.40	HCA	194.41	SMA	186.97	ECC	.19833	INC	1.4028	VI	29.519
RP	224.01	LAP	.35	LOP	60.21	VP	21.797	GAP	.57	AZP	88.64	TAL	343.29	TAP	177.70	RCA	149.89	APO	224.05	V2	24.550
RC	214.558	GL	-12.97	GP	-2.98	ZAL	123.86	ZAP	52.52	ETS	176.88	ZAE	91.56	ETE	180.49	ZAC	99.42	ETC	271.85	LVI	-6.86

PLANETOCENTRIC CONIC

C3	12.448	VHL	3.528	DLA	-15.59	RAL	356.70	RAD	6639.3	VEL	11.512	PTH	6.56	VHP	3.348	DPA	-26.11	RAP	295.27	ECC	1.2049

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 8	2713.10	-17.86	75.84	208.60	134.86	17 51 22	1713.1	.33	59.67
60.00	18 3 25	2560.79	-13.62	66.03	212.51	128.30	18 46 6	1560.8	2.36	47.90
70.00	19 15 54	2347.69	-9.61	51.68	215.44	122.93	19 55 2	1347.7	4.31	32.10
80.00	20 43 19	2074.06	-6.54	32.77	217.31	119.20	21 17 54	1074.1	5.83	12.26
90.00	22 13 22	1783.56	-5.35	12.07	217.96	117.81	22 43 6	783.6	6.42	351.23
100.00	23 26 11	1548.53	-6.54	354.14	217.31	119.20	23 52 0	548.5	5.83	333.63
110.00	0 19 16	1394.51	-9.61	340.60	215.44	122.93	0 42 31	394.5	4.31	321.01

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6532	TRA	2.9378	TC3	-7.3644	BAU	1.2259	SGT	7256.9	SGR	250.6	SG3	1249.1	ST	91.6	SR	10.5	SS	74.0
RDE	.1289	RRA	.0414	RC3	-.1686	FAU	.16024	RRT	.6520	RRF	.6974	RTF	.9721	CRT	.6581	CRS	-.7992	CST	-.9781
FDE	2.3140	FRA	6.8415	FC	-11.1441	BSP	12340	SGB	7261.2	R23	.0833	R13	.9721	LSA	117.4	MSA	14.1	SSA	.9
BDE	.6658	BRA	2.9381	BC3	7.3663	FSP	2261	SG1	7258.7	SG2	190.0	THA	1.29	EL1	91.9	EL2	7.9	ALF	4.35

LAUNCH DATE MAY 7 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 621.164 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.392	GAL	-2.83	AZL	91.44	HCA	195.49	SMA	187.12	ECC	.19933	INC	1.4351	VI	29.519
RP	224.40	LAP	.38	LOP	61.29	VP	21.763	GAP	.42	AZP	88.62	TAL	342.83	TAP	178.32	RCA	149.82	APO	224.42	V2	24.508
RC	217.222	GL	-13.14	GP	-2.75	ZAL	124.42	ZAP	51.60	ETS	176.99	ZAE	90.41	ETE	180.43	ZAC	99.64	ETC	271.90	LVI	-7.14

PLANETOCENTRIC CONIC

C3	12.708	VHL	3.565	DLA	-15.50	RAL	357.33	RAD	6639.4	VEL	11.523	PTH	6.57	VHP	3.377	DPA	-25.86	RAP	295.42	ECC	1.2091

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 18	2719.37	-18.16	76.14	209.46	134.77	17 53 38	1719.4	.01	59.93
60.00	18 5 28	2567.38	-13.90	66.36	213.38	128.22	18 48 15	1567.4	2.87	48.21
70.00	19 17 48	2354.69	-9.87	52.06	216.32	122.86	19 57 3	1354.7	4.05	32.46
80.00	20 45 5	2081.51	-6.79	33.19	218.19	119.14	21 19 47	1081.5	5.58	12.67
90.00	22 15 4	1791.27	-5.59	12.50	218.85	117.77	22 44 55	791.3	6.18	351.66
100.00	23 27 57	1555.99	-6.79	354.56	218.19	119.14	23 53 53	556.0	5.58	334.04
110.00	0 21 11	1401.51	-9.87	340.97	216.32	122.86	0 44 32	401.5	4.05	321.38

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6853	TRA	3.0511	TC3	-7.3672	BAU	1.2520	SGT	7395.9	SGR	244.5	SG3	1221.7	ST	94.5	SR	10.8	SS	73.7
RDE	.1338	RRA	.0273	RC3	-.1502	FAU	.15616	RRT	.5701	RRF	.6159	RTF	.9719	CRT	.6342	CRS	-.7797	CST	-.9782
FDE	2.3192	FRA	6.7971	FC	-10.6380	BSP	12593	SGB	7400.0	R23	.0748	R13	.9719	LSA	119.4	MSA	14.4	SSA	.9
BDE	.6982	BRA	3.0512	BC3	7.3687	FSP	2213	SG1	7397.3	SG2	200.8	THA	1.08	EL1	94.7	EL2	8.3	ALF	4.17

LAUNCH DATE MAY 7 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 628.281 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.401	GAL	-2.92	AZL	91.46	HCA	196.86	SMA	187.28	ECC	.20034	INC	1.4632	V1	29.519
RP	224.79	LAP	.42	LOP	62.36	VP	21.729	GAP	.27	AZP	88.80	TAL	342.36	TAP	178.92	RCA	149.76	APO	224.80	V2	24.466
RC	219.886	GL	-13.26	GP	-2.55	ZAL	124.98	ZAP	50.71	ETS	177.09	ZAE	89.29	ETE	180.38	ZAC	99.83	ETC	271.95	LVI	-7.40

PLANETOCENTRIC CONIC

C3	12.974	VHL	3.602	DLA	-18.37	RAL	357.98	RAD	6639.5	VEL	11.534	PTH	6.58	VHP	3.407	DPA	-25.63	RAP	295.59	ECC	1.2135

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 14	2726.46	-18.50	76.47	210.31	134.65	17 55 40	1726.5	-.34	60.22
60.00	18 7 13	2574.91	-14.22	66.75	214.24	128.12	18 50 8	1574.9	1.74	48.57
70.00	19 19 22	2362.61	-10.17	52.49	217.18	122.78	19 58 45	1362.8	3.74	32.89
80.00	20 46 26	2090.28	-7.08	33.68	219.06	119.08	21 21 16	1090.3	5.29	13.16
90.00	22 16 19	1800.34	-5.88	13.01	219.71	117.71	22 46 19	800.3	5.89	352.17
100.00	23 29 18	1564.75	-7.08	355.05	219.06	119.08	23 55 23	564.8	5.29	334.53
110.00	0 22 44	1409.63	-10.17	341.41	217.18	122.78	0 46 14	409.6	3.74	321.81

DIFFERENTIAL CORRECTIONS

TDE	.7199	TRA	3.1657	TC3	-7.3649	BAU	1.2777
RDE	.1392	RRA	.0143	RC3	-.1350	FAU	.15194
FDE	2.3283	FRA	6.7527	FC3	-10.1388	BSP	12846
BDE	.7332	BRA	3.1658	BC3	7.3662	FSP	2170

MID-COURSE EXECUTION ACCURACY

SGT	7532.3	SGR	243.1	SG3	1194.6		
RRT	.4877	RRF	.5337	RTF	.9715		
SGB	7536.2	R23	.0682	R13	.9715		
SG1	7533.3	SG2	212.2	THA	.90		

ORBIT DETERMINATION ACCURACY

ST	97.4	SR	11.1	SS	73.5
CRT	.6145	CRS	-.7632	CST	-.0783
LSA	121.6	NSA	14.7	SSA	.9
EL1	97.6	EL2	8.7	ALF	4.03

LAUNCH DATE MAY 7 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 3 1972

HELIOCENTRIC CONIC DISTANCE 629.332 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.410	GAL	-3.01	AZL	91.49	HCA	197.63	SMA	187.43	ECC	.20138	INC	1.4880	V1	29.519
RP	225.18	LAP	.45	LOP	63.43	VP	21.696	GAP	.12	AZP	88.58	TAL	341.69	TAP	179.53	RCA	149.69	APO	225.18	V2	24.424
RC	222.551	GL	-13.38	GP	-2.37	ZAL	125.55	ZAP	49.85	ETS	177.18	ZAE	88.19	ETE	180.33	ZAC	99.99	ETC	272.00	LVI	-7.64

PLANETOCENTRIC CONIC

C3	13.245	VHL	3.639	DLA	-15.21	RAL	356.54	RAD	6639.7	VEL	11.546	PTH	6.59	VHP	3.438	DPA	-25.42	RAP	295.80	ECC	1.2180

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 58	2734.20	-18.87	76.83	211.14	134.53	17 57 32	1734.2	-.73	60.55
60.00	18 8 44	2583.20	-14.56	67.17	215.08	128.00	18 51 48	1583.2	1.37	48.97
70.00	19 20 38	2371.85	-10.50	52.98	218.03	122.69	20 0 10	1371.8	3.39	33.36
80.00	20 47 27	2100.11	-7.41	34.23	219.90	119.01	21 22 27	1100.1	4.96	13.70
90.00	22 17 12	1810.96	-6.20	13.59	220.56	117.65	22 47 23	810.6	5.57	352.75
100.00	23 30 18	1574.56	-7.41	355.59	219.90	119.01	23 56 34	574.6	4.96	335.07
110.00	0 24 0	1418.67	-10.50	341.90	218.03	122.69	0 47 39	418.7	3.39	322.28

DIFFERENTIAL CORRECTIONS

TDE	.7573	TRA	3.2817	TC3	-7.3586	BAU	1.3032
RDE	.1491	RRA	.0023	RC3	-.1224	FAU	.14784
FDE	2.3387	FRA	6.7043	FC3	-9.6632	BSP	13102
BDE	.7711	BRA	3.2817	BC3	7.3596	FSP	2127

MID-COURSE EXECUTION ACCURACY

SGT	7686.5	SGR	245.3	SG3	1167.7		
RRT	.4092	RRF	.4551	RTF	.9711		
SGB	7670.4	R23	.0628	R13	.9712		
SG1	7667.2	SG2	223.8	THA	.78		

ORBIT DETERMINATION ACCURACY

ST	100.3	SR	11.4	SS	73.3
CRT	.5988	CRS	-.7485	CST	-.0788
LSA	123.9	NSA	14.9	SSA	1.0
EL1	100.6	EL2	9.1	ALF	3.93

LAUNCH DATE MAY 7 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 5 1972

HELIOCENTRIC CONIC DISTANCE 633.406 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.420	GAL	-3.10	AZL	91.51	HCA	198.70	SMA	187.59	ECC	.20243	INC	1.5096	V1	29.519
RP	225.57	LAP	.48	LOP	64.50	VP	21.662	GAP	-.03	AZP	88.57	TAL	341.42	TAP	180.12	RCA	149.62	APO	225.57	V2	24.382
RC	225.217	GL	-13.41	GP	-2.22	ZAL	126.12	ZAP	49.02	ETS	177.26	ZAE	87.12	ETE	180.29	ZAC	100.14	ETC	272.06	LVI	-7.87

PLANETOCENTRIC CONIC

C3	13.522	VHL	3.677	DLA	-15.03	RAL	359.12	RAD	6639.8	VEL	11.558	PTH	6.60	VHP	3.468	DPA	-25.23	RAP	296.03	ECC	1.2225

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 32	2742.51	-19.27	77.22	211.95	134.39	17 59 14	1742.5	-1.15	60.89
60.00	18 10 4	2592.14	-14.94	67.63	215.91	127.88	18 53 16	1592.1	.98	49.40
70.00	19 21 41	2381.63	-10.86	53.51	218.86	122.58	20 1 22	1381.6	3.02	33.87
80.00	20 48 12	2110.80	-7.76	34.82	220.73	118.92	21 23 23	1110.8	4.60	14.29
90.00	22 17 49	1821.70	-6.55	14.22	221.38	117.57	22 48 11	821.7	5.21	353.37
100.00	23 31 4	1585.27	-7.76	356.19	220.73	118.92	23 57 29	585.3	4.60	335.66
110.00	0 25 3	1428.45	-10.86	342.43	218.86	122.58	0 48 51	428.4	3.02	322.79

DIFFERENTIAL CORRECTIONS

TDE	.7947	TRA	3.3977	TC3	-7.3542	BAU	1.3296
RDE	.1514	RRA	-.0090	RC3	-.1120	FAU	.14390
FDE	2.3475	FRA	6.6546	FC3	-9.2131	BSP	13331
BDE	.8090	BRA	3.3977	BC3	7.3551	FSP	2081

MID-COURSE EXECUTION ACCURACY

SGT	7799.6	SGR	250.2	SG3	1141.5		
RRT	.3374	RRF	.3829	RTF	.9707		
SGB	7803.6	R23	.0585	R13	.9707		
SG1	7800.0	SG2	235.6	THA	.62		

ORBIT DETERMINATION ACCURACY

ST	103.2	SR	11.8	SS	73.1
CRT	.5857	CRS	-.7380	CST	-.0788
LSA	126.1	NSA	15.2	SSA	1.0
EL1	103.5	EL2	9.5	ALF	3.86

LAUNCH DATE MAY 7 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 7 1972

HELIOCENTRIC CONIC DISTANCE 637.477 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.429	GAL	-3.19	AZL	91.53	HCA	199.76	SMA	187.75	ECC	.20351	INC	1.5292	V1	29.519
RP	225.96	LAP	.52	LOP	65.56	VP	21.629	GAP	-.18	AZP	88.56	TAL	340.98	TAP	180.71	RCA	149.54	APO	225.96	V2	24.340
RC	227.883	GL	-13.45	GP	-2.08	ZAL	126.69	ZAP	48.21	ETS	177.34	ZAE	86.06	ETE	180.26	ZAC	100.26	ETC	272.13	LVI	-8.10

PLANETOCENTRIC CONIC

C3	13.806	VHL	3.716	DLA	-14.82	RAL	359.69	RAD	6640.0	VEL	11.570	PTH	6.61	VHP	3.499	DPA	-25.05	RAP	296.29	ECC	1.2272

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 57	2791.27	-19.69	77.64	212.77	134.23	18 0 49	1751.3	-1.59	61.26
60.00	18 11 14	2601.60	-15.33	68.12	216.73	127.74	18 54 36	1601.6	.56	49.85
70.00	19 22 32	2392.02	-11.24	54.08	219.68	122.46	20 2 24	1392.0	2.62	34.42
80.00	20 48 44	2122.19	-8.13	35.46	221.55	118.83	21 24 6	1122.2	4.22	14.92
90.00	22 18 12	1833.58	-6.93	14.89	222.20	117.49	22 48 45	833.6	4.84	354.04
100.00	23 31 36	1596.67	-8.13	356.83	221.55	118.83	23 58 13	596.7	4.22	336.29
110.00	0 25 54	1438.84	-11.24	342.99	219.68	122.46	0 49 53	436.8	2.62	323.33

DIFFERENTIAL CORRECTIONS

TDE	.8345	TRA	3.5167	TC3	-7.3421	BAU	1.3553
RDE	.1579	RRA	-.0195	RC3	-.1034	FAU	.13992
FDE	2.3535	FRA	6.6058	FC3	-8.7739	BSP	13578
BDE	.8493	BRA	3.5167	BC3	7.3428	FSP	2039

MID-COURSE EXECUTION ACCURACY

SGT	7930.3	SGR	257.2	SG3	1115.6		
RRT	.2734	RRF	.3181	RTF	.9703		
SGB	7934.5	R23	.0546	R13	.9703		
SG1	7930.6	SG2	247.4	THA	.51		

ORBIT DETERMINATION ACCURACY

ST	106.2	SR	12.2	SS	72.6
CRT	.5755	CRS	-.7201	CST	-.0792
LSA	128.4	NSA	15.4	SSA	1.0
EL1	106.5	EL2	9.9	ALF	3.81

LAUNCH DATE MAY 7 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 9 1972

HELIOCENTRIC CONIC DISTANCE 641.541 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.438	GAL	-3.28	AZL	91.55	HCA	200.82	SMA	187.92	ECC	.20461	INC	1.5470	V1	29.519
RP	226.35	LAP	.55	LOP	66.62	VP	21.596	GAP	-.33	AZP	88.55	TAL	340.47	TAP	181.29	RCA	149.47	APO	226.36	V2	24.299
RC	230.548	GL	-13.47	GP	-1.96	ZAL	127.26	ZAP	47.43	ETS	177.41	ZAE	85.03	ETE	180.23	ZAC	100.37	ETC	272.20	LVI	-8.31

PLANETOCENTRIC CONIC

C3	14.097	VHL	3.755	DLA	-14.60	RAL	.24	RAD	6640.1	VEL	11.583	PTH	6.63	VHP	3.530	DPA	-24.89	RAP	296.57	ECC	1.2320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 17	2760.42	-20.12	78.08	213.57	134.07	18 2 17	1760.4	-2.05	61.64
60.00	18 12 16	2611.51	-15.74	68.63	217.54	127.59	18 55 48	1611.5	.13	50.32
70.00	19 23 13	2402.93	-11.64	54.67	220.50	122.34	20 3 16	1402.9	2.21	34.99
80.00	20 49 5	2134.17	-8.53	36.13	222.36	118.72	21 24 39	1134.2	3.81	15.58
90.00	22 18 23	1846.08	-7.32	15.60	223.01	117.39	22 49 9	846.1	4.44	354.75
100.00	23 31 57	1608.65	-8.53	357.50	222.36	118.72	23 58 45	608.6	3.81	336.95
110.00	0 26 35	1449.75	-11.64	343.59	220.50	122.34	0 50 45	449.7	2.21	323.90

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.8781	TRA	3.6384	TC3	-7.3213	BAU	1.3799	SGT	8058.5	SGR	265.7	SG3	1089.9	ST	109.4	SR	12.6	SS	72.6
RDE	.1648	RRA	-.0295	RC3	-.0961	FAU	.13579	RRT	.2177	RRF	.2618	RTF	.9698	CRT	.5686	CRS	-.7209	CST	-.9796
FDE	2.3654	FRA	6.5564	FC3	-8.3394	BSP	13838	SGB	8062.8	R23	.0517	R13	.9698	LSA	131.0	NSA	15.7	SSA	1.1
BDE	.8935	BRA	3.6385	BC3	7.3219	FSP	1999	SG1	8058.7	SG2	259.3	THA	.41	EL1	109.6	EL2	10.3	ALF	3.78

LAUNCH DATE MAY 7 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 11 1972

HELIOCENTRIC CONIC DISTANCE 645.599 EARTH TO MARS

RL	150.94	LAL	.00	LOL	225.80	VL	32.448	GAL	-3.38	AZL	91.56	HCA	201.88	SMA	188.08	ECC	.20572	INC	1.5626	V1	29.519
RP	226.74	LAP	.58	LOP	67.68	VP	21.564	GAP	-.48	AZP	88.55	TAL	339.99	TAP	181.87	RCA	149.39	APO	226.77	V2	24.257
RC	233.212	GL	-13.46	GP	-1.85	ZAL	127.83	ZAP	46.68	ETS	177.47	ZAE	84.01	ETE	180.20	ZAC	100.46	ETC	272.27	LVI	-8.53

PLANETOCENTRIC CONIC

C3	14.395	VHL	3.794	DLA	-14.36	RAL	.79	RAD	6640.2	VEL	11.595	PTH	6.64	VHP	3.562	DPA	-24.73	RAP	296.88	ECC	1.2369

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 30	2769.90	-20.57	78.53	214.37	133.90	18 3 40	1769.9	-2.52	62.04
60.00	18 13 11	2621.79	-16.17	69.17	218.35	127.43	18 56 53	1621.8	-.33	50.81
70.00	19 23 47	2414.27	-12.05	55.29	221.30	122.20	20 4 1	1414.3	1.78	35.58
80.00	20 49 17	2146.64	-8.93	36.84	223.16	118.61	21 25 4	1146.6	3.39	16.27
90.00	22 18 25	1859.09	-7.73	16.34	223.81	117.29	22 49 24	859.1	4.02	355.48
100.00	23 32 9	1621.11	-8.93	358.20	223.16	118.61	23 59 10	621.1	3.39	337.64
110.00	0 27 9	1461.08	-12.05	344.21	221.30	122.20	0 51 30	461.1	1.78	324.50

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.9192	TRA	3.7584	TC3	-7.3079	BAU	1.4065	SGT	8185.6	SGR	275.2	SG3	1064.7	ST	112.3	SR	13.0	SS	72.3
RDE	.1719	RRA	-.0391	RC3	-.0901	FAU	.13201	RRT	.1697	RRF	.2132	RTF	.9692	CRT	.5621	CRS	-.7144	CST	-.9799
FDE	2.3700	FRA	6.5029	FC3	-7.9393	BSP	14054	SGB	8190.2	R23	.0492	R13	.9692	LSA	133.2	NSA	15.9	SSA	1.1
BDE	.9351	BRA	3.7586	BC3	7.3085	FSP	1955	SG1	8185.7	SG2	271.2	THA	.33	EL1	112.5	EL2	10.7	ALF	3.76

LAUNCH DATE MAY 8 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 16 1971

HELIOCENTRIC CONIC DISTANCE 294.171 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	35.388	GAL	-2.81	AZL	91.88	HCA	93.83	SMA	261.31	ECC	.42409	INC	1.8835
RP	207.27	LAP	-1.85	LOP	320.60	VP	27.798	GAP	22.24	AZP	89.88	TAL	351.58	TAP	89.41	RCA	150.49	APO	372.13
RC	56.382	GL	-10.58	GP	.19	ZAL	108.33	ZAP	176.44	ETS	176.84	ZAE	174.61	ETE	73.38	ZAC	100.35	ETC	277.56

PLANETOCENTRIC CONIC																			
C3	38.742	VHL	6.224	DLA	-19.33	RAL	341.34	RAD	6650.2	VEL	12.594	PTH	7.46	VHP	11.124	DPA	-17.31	RAP	320.02

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 35	2906.81	-26.85	88.46	207.59	130.88	17 5 2	1906.5	-9.35	67.82
60.00	17 19 3	2740.41	-20.96	75.83	212.62	125.24	18 4 43	1740.4	-5.54	56.50
70.00	18 38 1	2508.24	-15.40	60.51	216.43	120.87	19 19 49	1508.2	-1.81	40.48
80.00	20 12 22	2212.96	-11.07	40.60	218.93	117.91	20 49 15	1213.0	1.15	19.92
90.00	21 45 52	1911.33	-9.34	19.32	219.84	116.81	22 17 44	911.3	2.35	358.40
100.00	22 55 14	1687.43	-11.07	1.96	218.93	117.91	23 23 21	687.4	1.15	341.28
110.00	23 37 28	1585.06	-15.40	349.43	216.43	120.87	24 3 23	585.1	-1.81	329.40

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.4988	TRA	-1.0065	TC3	-.0033	BAU	.0387	SGT	1087.8	SGR	585.4	SG3	106.8	ST	25.6	SR	26.8	SS	14.4
RDE	-.5786	RRA	.2302	RC3	.0746	FAU	.03337	RRT	.0041	RRF	-.0044	RTF	-.6469	CRT	.7398	CRS	.4953	CST	.9474
FDE	.1958	FRA	.8168	FC3	-.7458	BSP	1582	SGB	1217.7	R23	-.0006	R13	-.6469	LSA	36.5	NSA	16.0	SSA	1.1
BDE	.7368	BRA	1.0328	BC3	.0746	FSP	130	SG1	1087.8	SG2	585.4	THA	.18	EL1	34.6	EL2	13.4	ALF	46.79

LAUNCH DATE MAY 8 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 18 1971

HELIOCENTRIC CONIC DISTANCE 296.054 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	35.161	GAL	-2.41	AZL	91.86	HCA	95.09	SMA	254.34	ECC	.40820	INC	1.8553
RP	207.18	LAP	-1.85	LOP	321.87	VP	27.557	GAP	21.72	AZP	89.84	TAL	351.67	TAP	86.76	RCA	150.52	APO	358.16
RC	56.566	GL	-10.89	GP	.20	ZAL	108.31	ZAP	175.56	ETS	177.39	ZAE	174.32	ETE	64.74	ZAC	100.31	ETC	277.64

PLANETOCENTRIC CONIC																			
C3	36.256	VHL	6.021	DLA	-19.62	RAL	341.46	RAD	6649.3	VEL	12.496	PTH	7.30	VHP	10.768	DPA	-17.18	RAP	320.40

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 20	2883.70	-25.83	84.25	206.72	131.46	17 6 24	1883.7	-8.22	66.84
60.00	17 21 13	2716.47	-20.02	74.22	211.75	125.74	18 6 29	1716.5	-4.49	55.34
70.00	18 40 45	2482.67	-14.50	59.07	215.57	121.27	19 22 8	1482.7	-.84	39.15
80.00	20 15 43	2185.44	-10.19	39.03	218.09	118.22	20 52 9	1185.4	2.08	18.40
90.00	21 49 33	1882.74	-8.46	17.69	219.01	117.08	22 20 56	882.7	3.27	356.80
100.00	22 58 35	1659.91	-10.19	.40	218.09	118.22	23 26 15	659.9	2.08	339.77
110.00	23 40 11	1529.49	-14.50	347.99	215.57	121.27	24 5 41	529.5	-.84	328.07

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.4510	TRA	-.9973	TC3	.0076	BAU	.0390	SGT	1095.1	SGR	587.4	SG3	114.4	ST	26.2	SR	26.9	SS	15.0
RDE	-.5611	RRA	.2228	RC3	.0801	FAU	.03444	RRT	.0050	RRF	-.0054	RTF	-.6589	CRT	.7388	CRS	.4882	CST	.9454
FDE	.2005	FRA	.8496	FC3	-.8224	BSP	1609	SGB	1242.7	R23	-.0008	R13	-.6589	LSA	37.0	NSA	16.3	SSA	1.1
BDE	.7199	BRA	1.0219	BC3	.0805	FSP	141	SG1	1095.1	SG2	587.4	THA	.22	EL1	35.0	EL2	13.6	ALF	45.97

LAUNCH DATE MAY 8 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 298.179 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	34.974	GAL	-2.32	AZL	91.86	HCA	96.36	SMA	248.13	ECC	.39330	INC	1.8571
RP	207.09	LAP	-1.85	LOP	323.13	VP	27.329	GAP	21.21	AZP	89.79	TAL	351.77	TAP	88.13	RCA	150.54	APO	345.71
RC	56.856	GL	-11.20	GP	.20	ZAL	108.26	ZAP	174.67	ETS	177.77	ZAE	173.94	ETE	57.28	ZAC	100.26	ETC	277.72

PLANETOCENTRIC CONIC																			
C3	33.981	VHL	5.829	DLA	-19.92	RAL	341.58	RAD	6648.5	VEL	12.409	PTH	7.32	VHP	10.419	DPA	-17.06	RAP	320.78

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 20 3	2861.00	-24.80	83.07	205.88	132.00	17 7 44	1861.0	-7.09	65.87
60.00	17 23 23	2692.97	-19.06	72.92	210.90	126.21	18 8 16	1692.6	-3.44	54.20
70.00	18 43 31	2457.03	-13.59	57.65	214.73	121.64	19 24 28	1457.0	.14	37.81
80.00	20 19 9	2157.69	-9.29	37.46	217.27	118.50	20 55 7	1157.7	3.02	16.86
90.00	21 53 21	1853.85	-7.56	16.04	218.19	117.33	22 24 15	853.8	4.19	355.18
100.00	23 2 1	1632.17	-9.29	358.83	217.27	118.50	23 29 13	632.2	3.02	338.25
110.00	23 42 57	1503.85	-13.59	346.86	214.73	121.64	24 8 1	503.8	.14	326.73

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.4451	TRA	-.9871	TC3	.0203	BAU	.0401	SGT	1121.1	SGR	588.9	SG3	122.6	ST	26.8	SR	27.0	SS	15.5
RDE	-.5441	RRA	.2156	RC3	.0859	FAU	.03581	RRT	.0056	RRF	-.0060	RTF	-.6703	CRT	.7373	CRS	.4786	CST	.9427
FDE	.2041	FRA	.8635	FC3	-.9073	BSP	1667	SGB	1286.4	R23	-.0008	R13	-.6703	LSA	37.5	NSA	16.6	SSA	1.1
BDE	.7029	BRA	1.0104	BC3	.0883	FSP	194	SG1	1121.1	SG2	588.9	THA	.23	EL1	35.4	EL2	13.8	ALF	45.22

LAUNCH DATE MAY 8 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 300.515 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	34.799	GAL	-2.23	AZL	91.86	HCA	97.62	SMA	242.57	ECC	.37931	INC	1.8590
RP	207.01	LAP	-1.84	LOP	324.40	VP	27.113	GAP	20.71	AZP	89.79	TAL	351.89	TAP	89.52	RCA	150.56	APO	334.58
RC	57.225	GL	-11.52	GP	.21	ZAL	108.18	ZAP	173.78	ETS	178.04	ZAE	173.80	ETE	50.99	ZAC	100.22	ETC	277.79

PLANETOCENTRIC CONIC																			
C3	31.896	VHL	5.648	DLA	-20.23	RAL	341.68	RAD	6647.7	VEL	12.321	PTH	7.25	VHP	10.085	DPA	-16.95	RAP	321.14

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 45	2838.44	-23.76	81.92	205.06	132.81	17 9 4	1838.4	-5.96	64.92
60.00	17 25 34	2668.73	-18.10	71.64	210.07	126.65	18 10 3	1668.7	-2.39	53.08
70.00	18 46 19	2431.35	-12.67	56.23	213.91	121.98	19 26 50	1431.4	1.12	36.47
80.00	20 22 41	2129.76	-8.38	35.89	216.46	118.76	20 58 11	1129.8	3.96	15.34
90.00	21 57 16	1824.66	-6.65	14.39	217.40	117.55	22 27 41	824.7	5.12	353.54
100.00	23 5 33	1604.23	-8.38	357.25	216.46	118.76	23 32 17	604.2	3.96	336.71
110.00	23 45 45	1478.17	-12.67	345.14	213.91	121.98	24 10 24	478.2	1.12	325.39

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.4382	TRA	-.9781	TC3	.0330	BAU	.0416	SGT	1147.8	SGR	590.0	SG3	131.3	ST	27.3	SR	27.0	SS	16.0
RDE	-.9276	RRA	.2085	RC3	.0919	FAU	.03684	RRT	.0050	RRF	-.0068	RTF	-.6808	CRT	.7347	CRS	.4694	CST	.9406
FDE	.2081	FRA	.9194	FC3	-.9999	BSP	1733	SGB	1290.6	R23	-.0022	R13	-.6808	LSA	37.9	NSA	17.0	SSA	1.1
BDE	.6859	BRA	1.0001	BC3	.0976	FSP	187	SG1	1147.8	SG2	590.0	THA	.20	EL1	35.8	EL2	14.0	ALF	44.52

LAUNCH DATE MAY 8 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC — DISTANCE 303.034 — EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 34.633 GAL -2.13 AZL 91.86 HCA 98.89 SMA 237.58 ECC .36617 INC 1.8609 V1 29.512
RP 206.94 LAP -1.84 LOP 325.66 VP 26.908 GAP 20.22 AZP 89.71 TAL 352.03 TAP 90.92 RCA 150.59 APO 324.58 V2 26.466
RC 57.675 GL -11.84 GP .22 ZAL 108.10 ZAP 172.86 ETS 178.24 ZAE 173.03 ETE 45.75 ZAC 100.18 ETC 277.87 LVI -18.37

PLANETOCENTRIC CONIC

C3 29.986 VHL 5.476 DLA -20.56 RAL 341.71 RAD 6647.0 VEL 12.244 PTH 7.19 VHP 9.763 DPA -16.83 RAP 321.49 ECC 1.4935

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 26	2816.05	-22.73	80.79	204.26	133.00	17 10 22	1816.1	-4.84	63.97
60.00	17 27 45	2645.01	-17.13	70.38	209.26	127.06	18 11 50	1645.0	-1.35	51.92
70.00	18 49 10	2405.67	-11.74	54.82	213.10	122.30	19 29 15	1405.7	2.10	35.13
80.00	20 26 18	2101.66	-7.46	34.31	215.68	119.00	21 1 20	1101.7	4.91	13.79
90.00	22 1 18	1795 20	-5.72	12.72	216.62	117.74	22 31 13	795.2	6.05	351.88
100.00	23 9 10	1576.13	-7.46	355.68	215.68	119.00	23 35 26	576.1	4.91	335.16
110.00	23 48 36	1452.49	-11.74	343.74	213.10	122.30	24 12 49	452.5	2.10	324.05

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.4340 TRA -.9675 TC3 .0492 BAU .0440 — SGT 1173.9 SGR 590.7 SG3 140.5 — ST 27.9 SR 27.0 SS 16.5
RDE -.5116 RRA .2016 RC3 .0981 FAU .03815 — RRT .0076 RRF -.0077 RTF -.6916 — CRT .7345 CRS .4594 CST .9370
FDE .2115 FRA .9558 FC3-1.1015 BSP 1777 — SGB 1314.2 R23 -.0007 R13 -.6916 — LSA 38.5 MSA 17.3 SSA 1.2
BDE .6709 BRA .9883 BC3 .1098 FSP 181 — SG1 1173.9 SG2 590.7 THA .29 — EL1 36.1 EL2 14.1 ALF 43.69

LAUNCH DATE MAY 8 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC — DISTANCE 305.714 — EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 34.477 GAL -2.04 AZL 91.86 HCA 100.15 SMA 233.08 ECC .35384 INC 1.8627 V1 29.512
RP 206.87 LAP -1.83 LOP 326.93 VP 26.714 GAP 19.73 AZP 89.67 TAL 352.17 TAP 92.33 RCA 150.61 APO 315.56 V2 26.473
RC 58.203 GL -12.17 GP .22 ZAL 107.98 ZAP 171.94 ETS 178.41 ZAE 172.56 ETE 41.39 ZAC 100.14 ETC 277.94 LVI -18.47

PLANETOCENTRIC CONIC

C3 28.234 VHL 5.314 DLA -20.89 RAL 341.75 RAD 6646.3 VEL 12.173 PTH 7.14 VHP 9.452 DPA -16.72 RAP 321.82 ECC 1.4647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 25 5	2793.87	-21.69	79.70	203.49	133.44	17 11 39	1793.9	-3.73	63.04
60.00	17 29 56	2621.43	-16.16	69.15	208.47	127.44	18 13 37	1621.4	-.31	50.79
70.00	18 52 3	2380.03	-10.80	53.43	212.33	122.60	19 31 43	1380.0	3.08	33.79
80.00	20 30 1	2073.43	-6.52	32.74	214.92	119.20	21 4 34	1073.4	5.85	12.22
90.00	22 5 28	1765.51	-4.77	11.05	215.87	117.91	22 34 54	765.5	6.99	350.20
100.00	23 12 53	1547.90	-6.52	354.11	214.92	119.20	23 38 40	547.9	5.85	333.59
110.00	23 51 29	1426.85	-10.80	342.34	212.33	122.60	24 15 16	426.8	3.08	322.71

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.4273 TRA -.9580 TC3 .0677 BAU .0470 — SGT 1200.0 SGR 590.9 SG3 150.4 — ST 28.4 SR 27.0 SS 17.0
RDE -.4962 RRA .1949 RC3 .1045 FAU .03957 — RRT .0081 RRF -.0088 RTF -.7026 — CRT .7320 CRS .4487 CST .9341
FDE .2148 FRA .9940 FC3-1.2132 BSP 1830 — SGB 1337.6 R23 -.0013 R13 -.7026 — LSA 38.9 MSA 17.6 SSA 1.2
BDE .6548 BRA .9776 BC3 .1246 FSP 197 — SG1 1200.0 SG2 590.9 THA .30 — EL1 36.4 EL2 14.3 ALF 42.99

LAUNCH DATE MAY 8 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC — DISTANCE 308.536 — EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 34.330 GAL -1.95 AZL 91.86 HCA 101.42 SMA 229.01 ECC .34224 INC 1.8647 V1 29.512
RP 206.82 LAP -1.83 LOP 328.20 VP 26.531 GAP 19.26 AZP 89.63 TAL 352.33 TAP 93.75 RCA 150.63 APO 307.38 V2 26.479
RC 58.807 GL -12.50 GP .23 ZAL 107.84 ZAP 171.00 ETS 178.54 ZAE 172.09 ETE 37.77 ZAC 100.10 ETC 278.00 LVI -18.56

PLANETOCENTRIC CONIC

C3 28.625 VHL 5.160 DLA -21.24 RAL 341.77 RAD 6645.7 VEL 12.107 PTH 7.08 VHP 9.151 DPA -16.61 RAP 322.14 ECC 1.4382

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 43	2771.89	-20.66	78.63	202.73	133.86	17 12 55	1771.9	-2.62	62.12
60.00	17 32 7	2597.98	-15.18	67.93	207.71	127.79	18 15 25	1598.0	.72	49.67
70.00	18 54 58	2354.39	-9.86	52.04	211.57	122.87	19 34 13	1354.4	4.06	32.45
80.00	20 33 50	2045.01	-5.58	31.16	214.18	119.38	21 7 55	1045.0	6.79	10.64
90.00	22 9 47	1735.49	-3.81	9.37	215.14	118.04	22 38 43	735.5	7.93	348.50
100.00	23 16 42	1519.48	-5.58	352.53	214.18	119.38	23 42 1	519.5	6.79	332.01
110.00	23 54 25	1401.21	-9.86	340.96	211.57	122.87	24 17 46	401.2	4.06	321.36

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.4101 TRA -.9362 TC3 .1038 BAU .0541 — SGT 1209.5 SGR 590.8 SG3 161.0 — ST 28.3 SR 26.9 SS 17.6
RDE -.4818 RRA .1884 RC3 .1112 FAU .04095 — RRT .0074 RRF -.0103 RTF -.[illegible]57 — CRT .7255 CRS .4413 CST .9347
FDE .2204 FRA 1.0363 FC3-1.3314 BSP 1744 — SGB 1346.0 R23 -.0032 R13 -.7258 — LSA 38.9 MSA 17.9 SSA 1.2
BDE .6322 BRA .9550 BC3 .1521 FSP 216 — SG1 1209.5 SG2 590.8 THA .27 — EL1 36.3 EL2 14.4 ALF 43.10

LAUNCH DATE MAY 8 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC — DISTANCE 311.486 — EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 34.192 GAL -1.86 AZL 91.87 HCA 102.69 SMA 225.32 ECC .33135 INC 1.8665 V1 29.512
RP 206.77 LAP -1.82 LOP 329.47 VP 26.356 GAP 18.79 AZP 89.59 TAL 352.50 TAP 95.19 RCA 150.66 APO 299.97 V2 26.485
RC 59.485 GL -12.82 GP .24 ZAL 107.69 ZAP 170.04 ETS 178.64 ZAE 171.66 ETE 34.74 ZAC 100.06 ETC 278.07 LVI -18.66

PLANETOCENTRIC CONIC

C3 25.150 VHL 5.015 DLA -21.59 RAL 341.77 RAD 6645.1 VEL 12.047 PTH 7.03 VHP 8.862 DPA -16.30 RAP 322.45 ECC 1.4139

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 20	2750.24	-19.64	77.59	202.01	134.25	17 14 11	1750.2	-1.54	61.22
60.00	17 34 18	2574.81	-14.21	66.74	206.97	128.12	18 17 13	1574.8	1.74	48.57
70.00	18 57 56	2328.94	-8.92	50.67	210.84	123.11	19 36 45	1328.9	5.02	31.11
80.00	20 37 44	2016.60	-4.62	29.59	213.47	119.53	21 11 21	1016.6	7.73	9.06
90.00	22 14 14	1705.35	-2.85	7.68	214.45	118.15	22 42 40	705.3	8.86	346.78
100.00	23 20 36	1491.07	-4.62	350.96	213.47	119.53	23 45 27	491.1	7.73	330.43
110.00	0 1 19	1375.76	-8.92	339.59	210.84	123.11	0 24 14	375.8	5.02	320.03

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.4081 TRA -.9306 TC3 .1171 BAU .0559 — SGT 1240.4 SGR 590.2 SG3 172.3 — ST 28.9 SR 26.9 SS 18.1
RDE -.4667 RRA .1820 RC3 .1180 FAU .04259 — RRT .0093 RRF -.0112 RTF -.7292 — CRT .7252 CRS .4274 CST .9294
FDE .2218 FRA 1.0767 FC3-1.4660 BSP 1860 — SGB 1373.7 R23 -.0025 R13 -.7292 — LSA 39.4 MSA 18.2 SSA 1.2
BDE .6200 BRA .9482 BC3 .1662 FSP 233 — SG1 1240.4 SG2 590.2 THA .33 — EL1 36.7 EL2 14.6 ALF 42.08

LAUNCH DATE MAY 8 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 314.548 EARTH TO MARS

RL	180.98	LAL	.00	LOL	226.77	VL	34.061	GAL	-1.78	AZL	91.87	HCA	103.96	SMA	221.98	ECC	.32113	INC	1.8685	V1	29.512
RP	206.74	LAP	-1.81	LOP	330.73	VP	26.181	GAP	18.33	AZP	89.55	TAL	352.68	TAP	98.64	RCA	150.68	APO	293.23	V2	26.489
RC	60.233	GL	-13.18	GP	.25	ZAL	107.31	ZAP	168.07	ETS	178.73	ZAE	171.25	ETE	32.19	ZAC	100.03	ETC	278.13	LVI	-18.74

PLANETOCENTRIC CONIC

C3	23.794	VHL	4.878	DLA	-21.96	RAL	341.76	RAD	6644.5	VEL	11.991	PTH	6.99	VHP	8.881	DPA	-16.40	RAP	322.74	ECC	1.3916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 29 56	2728.89	-16.62	76.58	201.31	134.61	17 15 25	1728.9	-.46	60.33
60.00	17 36 30	2581.88	-13.24	65.58	206.26	128.42	18 19 2	1551.9	2.75	47.47
70.00	19 0 57	2303.61	-7.97	49.32	210.13	123.32	19 39 21	1303.6	5.98	29.78
80.00	20 41 46	1988.11	-3.67	28.02	212.78	119.65	21 14 54	988.1	8.67	7.46
90.00	22 18 50	1674.97	-1.87	5.98	213.78	118.22	22 46 45	675.0	9.80	345.03
100.00	23 24 37	1462.58	-3.67	349.38	212.78	119.65	23 49 0	462.6	8.67	328.83
110.00	0 4 19	1350.42	-7.97	338.24	210.13	123.32	0 26 50	350.4	5.98	318.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4040	TRA	-.9227	TC3	.1345	BAU	.0884			SGT	1268.1	SGR	589.2	SG3	184.4	ST	29.5	SR	26.8	SS	10.6
RDE	-.4527	RRA	.1758	RC3	.1249	FAU	.04432			RRT	.0109	RRF	-.0123	RTF	-.7345	CRT	.7240	CRS	.4133	CST	.9243
FDE	.2232	FRA	1.1195	FC3	-1.6125	BSP	1944			SGB	1398.3	R23	-.0021	R13	-.7346	LSA	39.9	NSA	18.5	SSA	1.2
SDE	.6068	SRA	.9393	SC3	.1836	FSP	251			SG1	1268.1	SG2	589.2	THA	.37	EL1	37.0	EL2	14.7	ALF	41.22

LAUNCH DATE MAY 8 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC DISTANCE 317.711 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	33.938	GAL	-1.69	AZL	91.87	HCA	105.22	SMA	218.89	ECC	.31152	INC	1.8704	V1	29.512
RP	206.71	LAP	-1.80	LOP	332.00	VP	26.034	GAP	17.88	AZP	89.51	TAL	352.87	TAP	98.09	RCA	150.70	APO	287.07	V2	26.492
RC	61.050	GL	-13.48	GP	.26	ZAL	107.32	ZAP	168.09	ETS	178.81	ZAE	170.90	ETE	30.04	ZAC	100.00	ETC	278.19	LVI	-18.83

PLANETOCENTRIC CONIC

C3	22.549	VHL	4.749	DLA	-22.33	RAL	341.74	RAD	6644.0	VEL	11.939	PTH	6.94	VHP	8.311	DPA	-16.30	RAP	323.02	ECC	1.3711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 31	2707.87	-17.61	75.60	200.64	134.95	17 16 39	1707.9	.59	59.45
60.00	17 38 42	2529.21	-12.28	64.44	205.57	128.69	18 20 51	1529.2	3.75	46.39
70.00	19 4 0	2278.43	-7.03	47.98	209.46	123.51	19 41 59	1278.4	6.93	28.44
80.00	20 45 53	1959.56	-2.70	26.45	212.13	119.75	21 18 33	959.6	9.60	5.85
90.00	22 23 37	1644.37	-.88	4.27	213.14	118.27	22 51 1	644.4	10.73	343.27
100.00	23 28 45	1434.03	-2.70	347.81	212.13	119.75	23 52 39	434.0	9.60	327.22
110.00	0 7 22	1325.24	-7.03	336.90	209.46	123.51	0 29 28	325.2	6.93	317.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3992	TRA	-.9143	TC3	.1540	BAU	.0611			SGT	1294.4	SGR	587.9	SG3	197.2	ST	30.0	SR	26.7	SS	19.1
RDE	-.4392	RRA	.1698	RC3	.1320	FAU	.04612			RRT	.0125	RRF	-.0135	RTF	-.7408	CRT	.7224	CRS	.3998	CST	.9196
FDE	.2251	FRA	1.1651	FC3	-1.7707	BSP	2018			SGB	1421.6	R23	-.0019	R13	-.7408	LSA	40.3	NSA	18.8	SSA	1.2
SDE	.5935	SRA	.9299	SC3	.2028	FSP	272			SG1	1294.4	SG2	587.8	THA	.41	EL1	37.3	EL2	14.8	ALF	40.42

LAUNCH DATE MAY 8 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC DISTANCE 320.965 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	33.822	GAL	-1.61	AZL	91.87	HCA	106.49	SMA	216.08	ECC	.30249	INC	1.8724	V1	29.512
RP	206.69	LAP	-1.80	LOP	333.27	VP	25.885	GAP	17.44	AZP	89.47	TAL	353.06	TAP	99.55	RCA	150.72	APO	281.44	V2	26.495
RC	61.933	GL	-13.81	GP	.26	ZAL	107.12	ZAP	167.08	ETS	178.88	ZAE	170.59	ETE	28.22	ZAC	99.97	ETC	278.24	LVI	-18.90

PLANETOCENTRIC CONIC

C3	21.403	VHL	4.626	DLA	-22.70	RAL	341.69	RAD	6643.5	VEL	11.891	PTH	6.90	VHP	8.049	DPA	-16.21	RAP	323.28	ECC	1.3522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 5	2687.20	-16.61	74.65	199.99	135.25	17 17 52	1687.2	1.63	58.58
60.00	17 40 54	2506.85	-11.33	63.32	204.91	128.94	18 22 41	1506.8	4.73	45.31
70.00	19 7 6	2253.43	-6.09	46.66	208.80	123.67	19 44 39	1253.4	7.87	27.12
80.00	20 50 8	1930.97	-1.74	24.87	211.50	119.81	21 22 19	931.0	10.52	4.23
90.00	22 28 33	1613.53	.11	2.55	212.53	118.28	22 55 27	613.5	11.65	341.47
100.00	23 33 0	1405.44	-1.74	346.24	211.50	119.81	23 56 25	405.4	10.52	325.60
110.00	0 10 28	1300.25	-6.09	335.58	208.80	123.67	0 32 8	300.3	7.87	316.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3930	TRA	-.9038	TC3	.1768	BAU	.0643			SGT	1317.5	SGR	586.1	SG3	211.0	ST	30.4	SR	26.6	SS	19.7
RDE	-.4261	RRA	.1639	RC3	.1392	FAU	.04808			RRT	.0141	RRF	-.0149	RTF	-.7478	CRT	.7203	CRS	.3850	CST	.9146
FDE	.2262	FRA	1.2125	FC3	-1.9447	BSP	2074			SGB	1441.9	R23	-.0018	R13	-.7475	LSA	40.6	NSA	19.1	SSA	1.3
SDE	.5797	SRA	.9185	SC3	.2248	FSP	294			SG1	1317.5	SG2	586.0	THA	.45	EL1	37.5	EL2	14.9	ALF	39.74

LAUNCH DATE MAY 8 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 324.301 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	33.712	GAL	-1.53	AZL	91.87	HCA	107.76	SMA	213.51	ECC	.29400	INC	1.8744	V1	29.512
RP	206.66	LAP	-1.79	LOP	334.54	VP	25.743	GAP	17.00	AZP	89.43	TAL	353.26	TAP	101.02	RCA	150.74	APO	276.29	V2	26.496
RC	62.879	GL	-14.14	GP	.27	ZAL	106.90	ZAP	166.06	ETS	178.93	ZAE	170.34	ETE	26.67	ZAC	99.94	ETC	278.29	LVI	-18.98

PLANETOCENTRIC CONIC

C3	20.349	VHL	4.511	DLA	-23.08	RAL	341.64	RAD	6643.0	VEL	11.847	PTH	6.86	VHP	7.797	DPA	-16.12	RAP	323.51	ECC	1.3349

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 38	2666.92	-15.63	73.72	199.37	135.53	17 19 5	1666.9	2.65	57.74
60.00	17 43 6	2484.81	-10.38	62.22	204.26	129.16	18 24 31	1484.8	5.69	44.25
70.00	19 10 14	2228.65	-5.15	45.35	208.18	123.81	19 47 23	1228.7	8.79	25.79
80.00	20 54 30	1902.35	-.77	23.30	210.90	119.85	21 26 12	902.4	11.43	2.60
90.00	22 33 41	1582.46	1.11	.82	211.95	118.26	23 0 3	582.5	12.57	339.65
100.00	23 37 22	1376.83	-.77	344.67	210.90	119.85	24 0 16	376.8	11.43	323.96
110.00	0 13 36	1275.47	-5.15	334.27	208.18	123.81	0 34 52	275.5	8.79	314.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3863	TRA	-.8933	TC3	.1997	BAU	.0674			SGT	1339.5	SGR	584.0	SG3	225.6	ST	30.7	SR	26.5	SS	20.2
RDE	-.4135	RRA	.1582	RC3	.1464	FAU	.05012			RRT	.0154	RRF	-.0162	RTF	-.7539	CRT	.7177	CRS	.3695	CST	.9093
FDE	.2268	FRA	1.2623	FC3	-2.1322	BSP	2127			SGB	1461.2	R23	-.0019	R13	-.7539	LSA	40.9	NSA	19.4	SSA	1.3
SDE	.5658	SRA	.9072	SC3	.2476	FSP	317			SG1	1339.5	SG2	583.9	THA	.48	EL1	37.7	EL2	15.0	ALF	39.10

LAUNCH DATE MAY 8 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 327.710 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	33.609	GAL	-1.45	AZL	91.88	HCA	109.03	SMA	211.15	ECC	.28602	INC	1.8764	V1	29.512
RP	206.67	LAP	-1.77	LOP	335.81	VP	25.608	GAP	16.58	AZP	89.39	TAL	353.47	TAP	102.50	RCA	150.76	APO	271.55	V2	26.496
RC	63.888	GL	-14.47	GP	.28	ZAL	106.67	ZAP	165.01	ETS	178.98	ZAE	170.15	ETE	25.36	ZAC	99.92	ETC	278.34	LVI	-19.05

PLANETOCENTRIC CONIC

C3	19.380	VHL	4.402	DLA	-23.46	RAL	341.57	RAD	6642.6	VEL	11.807	PTH	6.83	VHP	7.552	DPA	-16.04	RAP	323.73	ECC	1.3189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 36 10	2647.05	-14.66	72.83	198.78	135.79	17 20 17	1647.0	3.65	56.90
60.00	17 45 19	2463.14	-9.45	61.15	203.67	129.36	18 26 22	1463.1	6.64	43.20
70.00	19 13 25	2204.12	-4.22	44.07	207.59	123.92	19 50 9	1204.1	9.70	24.48
80.00	20 58 59	1873.72	.20	21.73	210.34	119.86	21 30 13	873.7	12.33	.95
90.00	22 39 0	1551.13	2.12	359.07	211.40	118.21	23 4 51	551.1	13.48	337.81
100.00	23 41 51	1348.[illegible]	.20	343.10	210.34	119.86	24 4 19	348.2	12.33	322.32
110.00	0 16 47	1250.94	-4.22	332.98	207.59	123.92	0 37 38	250.9	9.70	313.40

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3793	TRA	-.8815	TC3	.2244	BAU	.0705	SGT	1359.1	SGR	581.4	SG3	241.2	ST	31.0	SR	26.3	SS	20.7
RDE	-.4013	RRA	.1527	RC3	.1537	FAU	.05231	RRT	.0172	RRF	-.0178	RTF	-.7600	CRT	.7153	CRS	.3534	CST	.9035
FDE	.2270	FRA	1.3139	FC3	-2.3369	BSP	2173	SGB	1478.2	R23	-.0018	R13	-.7600	LSA	41.2	MSA	19.7	SSA	1.3
BDE	.5522	BRA	.8947	BC3	.2721	FSP	342	SG1	1359.1	SG2	581.3	THA	.52	EL1	37.8	EL2	15.1	ALF	38.52

LAUNCH DATE MAY 8 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 331.186 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	33.512	GAL	-1.38	AZL	91.88	HCA	110.30	SMA	208.99	ECC	.27853	INC	1.8785	V1	29.512
RP	206.68	LAP	-1.76	LOP	337.08	VP	25.480	GAP	16.16	AZP	89.35	TAL	353.68	TAP	103.98	RCA	150.78	APO	267.20	V2	26.496
RC	64.956	GL	-14.80	GP	.30	ZAL	106.43	ZAP	163.95	ETS	179.03	ZAE	170.03	ETE	24.26	ZAC	99.90	ETC	278.38	LVI	-19.11

PLANETOCENTRIC CONIC

C3	18.488	VHL	4.300	DLA	-23.85	RAL	341.50	RAD	6642.2	VEL	11.769	PTH	6.80	VHP	7.316	DPA	-15.96	RAP	323.93	ECC	1.3043

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 40	2627.60	-13.71	71.96	198.21	136.02	17 21 28	1627.6	4.62	56.09
60.00	17 47 31	2441.85	-8.53	60.11	203.09	129.54	18 28 13	1441.9	7.57	42.17
70.00	19 16 38	2179.86	-3.30	42.79	207.02	124.01	19 52 58	1179.9	10.60	23.17
80.00	21 3 36	1845.09	1.17	20.16	209.80	119.84	21 34 21	845.1	13.22	359.29
90.00	22 44 32	1519.52	3.14	357.30	210.89	118.12	23 9 52	519.5	14.39	335.93
100.00	23 46 28	1319.56	1.17	341.53	209.80	119.84	24 8 27	319.6	13.22	320.66
110.00	0 20 0	1226.68	-3.30	331.71	207.02	124.01	0 40 27	226.7	10.60	312.09

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3719	TRA	-.8707	TC3	.2492	BAU	.0733	SGT	1378.7	SGR	578.5	SG3	257.9	ST	31.2	SR	26.2	SS	21.3
RDE	-.3895	RRA	.1474	RC3	.1611	FAU	.05462	RRT	.0182	RRF	-.0194	RTF	-.7660	CRT	.7121	CRS	.3370	CST	.8980
FDE	.2271	FRA	1.3693	FC3	-2.5575	BSP	2216	SGB	1495.1	R23	-.0024	R13	-.7660	LSA	41.4	MSA	20.0	SSA	1.3
BDE	.5385	BRA	.8831	BC3	.2968	FSP	370	SG1	1378.7	SG2	578.4	THA	.53	EL1	37.8	EL2	15.2	ALF	37.95

LAUNCH DATE MAY 8 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 334.723 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	33.420	GAL	-1.30	AZL	91.88	HCA	111.57	SMA	206.99	ECC	.27150	INC	1.8806	V1	29.512
RP	206.70	LAP	-1.75	LOP	338.35	VP	25.357	GAP	15.75	AZP	89.31	TAL	353.89	TAP	105.46	RCA	150.79	APO	263.19	V2	26.494
RC	66.082	GL	-15.12	GP	.31	ZAL	106.18	ZAP	162.86	ETS	179.07	ZAE	169.97	ETE	23.33	ZAC	99.89	ETC	278.41	LVI	-19.17

PLANETOCENTRIC CONIC

C3	17.666	VHL	4.203	DLA	-24.23	RAL	341.41	RAD	6641.8	VEL	11.734	PTH	6.76	VHP	7.088	DPA	-15.89	RAP	324.11	ECC	1.2907

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 10	2608.62	-12.78	71.12	197.66	136.23	17 22 39	1608.6	5.57	55.29
60.00	17 49 44	2420.98	-7.62	59.09	202.54	129.69	18 30 5	1421.0	8.47	41.15
70.00	19 19 53	2155.90	-2.38	41.54	206.48	124.08	19 55 49	1155.9	11.47	21.87
80.00	21 8 21	1816.46	2.14	18.59	209.30	119.79	21 38 37	816.5	14.10	357.62
90.00	22 50 19	1487.59	4.16	355.52	210.42	118.00	23 15 6	487.6	15.28	334.01
100.00	23 51 13	1290.93	2.14	339.96	209.30	119.79	24 12 44	290.9	14.10	318.99
110.00	0 23 16	1202.72	-2.38	330.46	206.48	124.08	0 43 18	202.7	11.47	310.79

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3651	TRA	-.8592	TC3	.2742	BAU	.0760	SGT	1396.6	SGR	575.2	SG3	275.7	ST	31.5	SR	26.0	SS	21.9
RDE	-.3781	RRA	.1422	RC3	.1684	FAU	.05709	RRT	.0202	RRF	-.0214	RTF	-.7714	CRT	.7096	CRS	.3212	CST	.8922
FDE	.2274	FRA	1.4277	FC3	-2.7978	BSP	2258	SGB	1510.4	R23	-.0026	R13	-.7714	LSA	41.6	MSA	20.3	SSA	1.3
BDE	.5256	BRA	.8709	BC3	.3218	FSP	399	SG1	1396.6	SG2	575.1	THA	.57	EL1	37.9	EL2	15.2	ALF	37.38

LAUNCH DATE MAY 8 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 338.315 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	33.334	GAL	-1.23	AZL	91.88	HCA	112.84	SMA	205.15	ECC	.26489	INC	1.8827	V1	29.512
RP	206.72	LAP	-1.74	LOP	339.62	VP	25.241	GAP	15.35	AZP	89.27	TAL	354.11	TAP	106.95	RCA	150.81	APO	259.49	V2	26.491
RC	67.265	GL	-15.44	GP	.32	ZAL	105.93	ZAP	161.75	ETS	179.10	ZAE	169.98	ETE	22.57	ZAC	99.87	ETC	278.44	LVI	-19.22

PLANETOCENTRIC CONIC

C3	16.910	VHL	4.112	DLA	-24.61	RAL	341.32	RAD	6641.4	VEL	11.702	PTH	6.74	VHP	6.868	DPA	-15.83	RAP	324.26	ECC	1.2783

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 39	2590.11	-11.87	70.30	197.14	136.42	17 23 50	1590.1	6.50	54.51
60.00	17 51 56	2400.54	-6.73	58.10	202.02	129.83	18 31 57	1400.5	9.36	40.15
70.00	19 23 11	2132.27	-1.48	40.31	205.98	124.13	19 58 43	1132.3	12.33	20.58
80.00	21 13 14	1787.84	3.11	17.01	208.83	119.71	21 43 2	787.8	14.97	355.94
90.00	22 56 21	1455.28	5.19	353.70	209.98	117.84	23 20 36	455.3	16.17	332.06
100.00	0 0 2	1262.31	3.11	338.38	208.83	119.71	0 21 4	262.3	14.97	317.31
110.00	0 26 33	1179.09	-1.48	329.22	205.98	124.13	0 46 12	179.1	12.33	309.49

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3578	TRA	-.8466	TC3	.2987	BAU	.0784	SGT	1411.5	SGR	571.6	SG3	294.5	ST	31.6	SR	25.8	SS	22.5
RDE	-.3671	RRA	.1372	RC3	.1758	FAU	.05971	RRT	.0220	RRF	-.0235	RTF	-.7760	CRT	.7070	CRS	.3043	CST	.8859
FDE	.2267	FRA	1.4879	FC3	-3.0572	BSP	2294	SGB	1522.8	R23	-.0031	R13	-.7760	LSA	41.7	MSA	20.6	SSA	1.3
BDE	.5126	BRA	.8576	BC3	.3466	FSP	431	SG1	1411.6	SG2	571.4	THA	.61	EL1	37.8	EL2	15.2	ALF	36.87

LAUNCH DATE MAY 8 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 341.998 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	33.253	GAL	-1.17	AZL	91.88	HCA	114.11	SMA	203.46	ECC	.25868	INC	1.8649
RP	206.75	LAP	-1.72	LOP	340.69	VP	25.130	GAP	14.98	AZP	89.23	TAL	354.32	TAP	108.43	RCA	150.83	APO	256.09
RC	68.302	GL	-15.76	GP	.33	ZAL	108.67	ZAP	180.61	ETS	179.13	ZAE	170.06	ETE	21.97	ZAC	99.87	ETC	278.47

V1	29.512																		
V2	26.487																		
LVI	-19.27																		

PLANETOCENTRIC CONIC

C3	18.214	VHL	4.027	DLA	-25.00	RAL	341.22	RAD	6641.1	VEL	11.673	PTH	6.71	VHP	6.655	DPA	-15.78	RAP	324.38

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 8	2572.10	-10.98	89.52	196.65	136.59	17 25 0	1572.1	7.40	53.74
60.00	17 54 8	2360.57	-5.86	97.13	201.52	129.94	18 33 49	1360.6	10.22	39.16
70.00	19 26 31	2109.00	-.59	39.09	205.50	124.15	20 1 40	1109.0	13.17	19.29
80.00	21 18 16	1759.21	4.07	15.44	208.40	119.60	21 47 35	759.2	15.82	354.24
90.00	23 2 40	1422.52	6.23	351.85	209.58	117.64	23 26 22	422.5	17.05	330.05
100.00	0 5 4	1233.69	4.07	336.81	208.40	119.60	0 25 38	233.7	15.82	315.61
110.00	0 29 53	1155.82	-.59	328.01	205.50	124.15	0 49 9	155.8	13.17	308.21

SP	31.8	SR	25.6	SS	23.0														
CRT	.7047	CRS	.2857	CST	.8783														
LSA	41.9	NSA	20.9	SSA	1.4														
EL1	37.8	EL2	15.2	ALF	36.38														

DIFFERENTIAL CORRECTIONS

TDE	-.3507	TRA	-.8335	TC3	.3231	BAU	.0805												
RDE	-.3585	RRA	.1323	RC3	.1830	FAU	.06251												
FDE	.2248	FRA	1.5513	FC3	-3.3378	BSP	2323												
SDE	.5000	SRA	.8439	SC3	.3713	FSP	463												

MID-COURSE EXECUTION ACCURACY

SGT	1424.4	SGR	567.6	SG3	314.6														
RRT	.0243	RRF	-.0255	RTF	-.7801														
SGB	1533.3	R23	-.0029	R13	-.7801														
SG1	1424.5	SG2	567.4	THA	.68														

ORBIT DETERMINATION ACCURACY

SMA	203.46	ECC	.25868	INC	1.8649	V1	29.512												
TAP	108.43	RCA	150.83	APO	256.09	V2	26.487												
ZAC	99.87	ETC	278.47	LVI	-19.27														

LAUNCH DATE MAY 8 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC DISTANCE 345.648 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	33.177	GAL	-1.10	AZL	91.89	HCA	115.38	SMA	201.89	ECC	.25286	INC	1.8871
RP	206.79	LAP	-1.71	LOP	342.16	VP	25.024	GAP	14.58	AZP	89.19	TAL	354.84	TAP	109.92	RCA	150.84	APO	252.94
RC	69.791	GL	-16.07	GP	.34	ZAL	108.42	ZAP	180.45	ETS	179.16	ZAE	170.22	ETE	21.81	ZAC	99.87	ETC	278.49

V1	29.512																		
V2	26.483																		
LVI	-19.31																		

PLANETOCENTRIC CONIC

C3	15.572	VHL	3.946	DLA	-25.37	RAL	341.12	RAD	6640.8	VEL	11.646	PTH	6.68	VHP	6.480	DPA	-15.73	RAP	324.48

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 43 35	2554.61	-10.11	88.76	196.19	136.74	17 26 10	1554.6	8.27	53.00
60.00	17 56 20	2361.09	-5.01	96.19	201.05	130.04	18 35 42	1361.1	11.05	38.20
70.00	19 29 52	2086.11	.28	37.90	205.05	124.18	20 4 38	1086.1	13.99	18.03
80.00	21 23 28	1730.59	5.03	13.86	208.00	119.47	21 52 18	730.6	16.66	352.53
90.00	23 9 19	1389.21	7.28	349.97	209.22	117.40	23 32 28	389.2	17.92	328.00
100.00	0 10 19	1205.06	5.03	335.22	208.00	119.47	0 30 20	205.1	16.66	313.89
110.00	0 33 14	1132.93	.28	326.82	205.05	124.15	0 52 7	132.9	13.99	306.94

SP	31.8	SR	25.3	SS	23.7														
CRT	.7016	CRS	.2678	CST	.8715														
LSA	42.0	NSA	21.3	SSA	1.4														
EL1	37.7	EL2	15.2	ALF	35.92														

DIFFERENTIAL CORRECTIONS

TDE	-.3431	TRA	-.8211	TC3	.3472	BAU	.0824												
RDE	-.3468	RRA	.1276	RC3	.1902	FAU	.06848												
FDE	.2231	FRA	1.6192	FC3	-3.6367	BSP	2350												
SDE	.4874	SRA	.8309	SC3	.3959	FSP	500												

MID-COURSE EXECUTION ACCURACY

SGT	1436.7	SGR	563.3	SG3	336.0														
RRT	.0260	RRF	-.0277	RTF	-.7842														
SGB	1543.1	R23	-.0036	R13	-.7843														
SG1	1436.8	SG2	563.0	THA	.69														

ORBIT DETERMINATION ACCURACY

SMA	201.89	ECC	.25286	INC	1.8871	V1	29.512												
TAP	109.92	RCA	150.84	APO	252.94	V2	26.483												
ZAC	99.87	ETC	278.49	LVI	-19.31														

LAUNCH DATE MAY 8 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC DISTANCE 349.379 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	33.105	GAL	-1.04	AZL	91.89	HCA	116.64	SMA	200.44	ECC	.24740	INC	1.8894
RP	206.84	LAP	-1.69	LOP	343.43	VP	24.923	GAP	14.21	AZP	89.15	TAL	354.75	TAP	111.40	RCA	150.85	APO	250.03
RC	71.130	GL	-16.38	GP	.36	ZAL	108.16	ZAP	180.26	ETS	179.18	ZAE	170.44	ETE	21.21	ZAC	99.87	ETC	278.51

V1	29.512																		
V2	26.477																		
LVI	-19.34																		

PLANETOCENTRIC CONIC

C3	14.982	VHL	3.871	DLA	-25.75	RAL	341.01	RAD	6640.5	VEL	11.620	PTH	6.66	VHP	6.252	DPA	-15.69	RAP	324.56

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 45 1	2537.65	-9.27	88.03	195.74	136.88	17 27 19	1537.6	9.11	52.27
60.00	17 58 32	2342.13	-4.18	95.28	200.61	130.12	18 37 34	1342.1	11.86	37.25
70.00	19 33 15	2063.63	1.14	36.73	204.64	124.14	20 7 39	1063.6	14.78	16.77
80.00	21 28 49	1701.96	5.99	12.27	207.64	119.31	21 57 11	702.0	17.48	350.79
90.00	23 16 20	1355.21	8.34	348.03	208.90	117.12	23 38 55	355.2	18.78	325.88
100.00	0 15 36	1176.44	5.99	333.64	207.64	119.31	0 35 13	176.4	17.48	312.16
110.00	0 36 38	1110.45	1.14	325.64	204.64	124.14	0 55 8	110.5	14.78	305.69

SP	31.8	SR	25.1	SS	24.3														
CRT	.6989	CRS	.2482	CST	.9032														
LSA	42.0	NSA	21.6	SSA	1.4														
EL1	37.6	EL2	15.2	ALF	35.49														

DIFFERENTIAL CORRECTIONS

TDE	-.3355	TRA	-.8075	TC3	.3694	BAU	.0838												
RDE	-.3363	RRA	.1230	RC3	.1973	FAU	.06861												
FDE	.2198	FRA	1.6893	FC3	-3.9649	BSP	2373												
SDE	.4750	SRA	.8168	SC3	.4188	FSP	537												

MID-COURSE EXECUTION ACCURACY

SGT	1445.6	SGR	558.6	SG3	358.7														
RRT	.0280	RRF	-.0300	RTF	-.7871														
SGB	1549.7	R23	-.0040	R13	-.7872														
SG1	1445.7	SG2	558.3	THA	.73														

ORBIT DETERMINATION ACCURACY

SMA	200.44	ECC	.24740	INC	1.8894	V1	29.512												
TAP	111.40	RCA	150.85	APO	250.03	V2	26.477												
ZAC	99.87	ETC	278.51	LVI	-19.34														

LAUNCH DATE MAY 8 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC DISTANCE 353.150 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	33.038	GAL	-.98	AZL	91.89	HCA	117.91	SMA	199.10	ECC	.24226	INC	1.8917
RP	206.90	LAP	-1.67	LOP	344.69	VP	24.826	GAP	13.84	AZP	89.11	TAL	354.97	TAP	112.68	RCA	150.86	APO	247.33
RC	72.517	GL	-16.68	GP	.37	ZAL	104.90	ZAP	157.05	ETS	179.20	ZAE	170.74	ETE	21.08	ZAC	99.87	ETC	278.52

V1	29.512																		
V2	26.470																		
LVI	-19.37																		

PLANETOCENTRIC CONIC

C3	14.437	VHL	3.800	DLA	-26.12	RAL	340.90	RAD	6640.3	VEL	11.597	PTH	6.64	VHP	6.060	DPA	-15.66	RAP	324.60

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 27	2521.19	-8.45	87.32	195.33	137.00	17 28 28	1521.2	9.93	51.56
60.00	18 0 43	2323.64	-3.37	94.39	200.19	130.18	18 39 27	1323.6	12.65	36.32
70.00	19 36 40	2041.52	1.99	35.57	204.25	124.10	20 10 42	1041.5	15.56	15.52
80.00	21 34 21	1673.20	6.95	10.67	207.30	119.11	22 2 14	673.2	18.28	349.04
90.00	23 23 49	1320.17	9.42	346.03	208.63	116.79	23 48 49	320.2	19.65	323.67
100.00	0 21 9	1147.67	6.95	332.04	207.30	119.11	0 40 16	147.7	18.28	310.41
110.00	0 40 3	1088.34	1.99	324.49	204.25	124.10	0 58 11	88.3	15.56	304.44

SP	31.0	SR	24.8	SS	24.8														
CRT	.6901	CRS	.2260	CST	.8979														
LSA	41.4	NSA	21.9	SSA	1.4														
EL1	36.7	EL2	15.2	ALF	35.95														

DIFFERENTIAL CORRECTIONS

TDE	-.3178	TRA	-.7825	TC3	.4217	BAU	.0804												
RDE	-.3266	RRA	.1186	RC3	.2044	FAU	.07213												
FDE	.2141	FRA	1.7604	FC3	-4.3255	BSP	2256												
SDE	.4957	SRA	.7914	SC3	.4086	FSP	573												

MID-COURSE EXECUTION ACCURACY

SGT	1435.0	SGR	553.5	SG3	383.0														
RRT	.0302	RRF	-.0328	RTF	-.8007														
SGB	1536.0	R23	-.0044	R13	-.8007														
SG1	1435.1	SG2	553.3	THA	.79														

ORBIT DETERMINATION ACCURACY

SMA	199.10	ECC	.24226	INC	1.8917	V1	29.512												
TAP	112.68	RCA	150.86	APO	247.33	V2	26.470												
ZAC	99.87	ETC	278.52	LVI	-19.37														

LAUNCH DATE MAY 8 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 356.956 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.975	GAL	-.93	AZL	91.89	HCA	119.18	SMA	197.86	ECC	.23746	INC	1.8941	V1	29.512
RP	206.96	LAP	-1.65	LOP	345.96	VP	24.733	GAP	13.49	AZP	89.08	TAL	355.17	TAP	114.35	RCA	150.87	APO	244.84	V2	26.462
RC	73.950	GL	-16.97	GP	.39	ZAL	104.65	ZAP	155.60	ETS	179.21	ZAE	171.12	ETE	21.11	ZAC	99.89	ETC	278.52	LVI	-19.39

PLANETOCENTRIC CONIC

C3	13.936	VHL	3.733	DLA	-26.48	RAL	340.80	RAD	6640.0	VEL	11.576	PTH	6.62	VHP	5.875	DPA	-15.64	RAP	324.62	ECC	1.2294

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 52	2305.36	-7.67	66.65	194.94	137.10	17 29 37	1505.4	10.71	50.88
60.00	18 2 54	2305.80	-2.58	53.54	199.81	130.23	18 41 20	1305.8	13.41	35.42
70.00	19 40 6	2019.99	2.81	34.45	203.89	124.05	20 13 46	1020.0	16.31	14.30
80.00	21 40 3	1644.54	7.89	9.07	207.01	118.89	22 7 28	644.5	19.07	347.27
90.00	23 31 49	1264.13	10.52	343.95	208.41	116.40	23 53 13	284.1	20.50	321.37
100.00	0 26 51	1119.01	7.89	330.44	207.01	118.89	0 45 30	119.0	19.07	308.64
110.00	0 43 28	1066.81	2.81	323.36	203.89	124.05	1 1 15	66.8	16.31	303.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3156	TRA	-.7743	TC3	.4238	BAU	.0882	SGT	1448.3	SGR	548.2	SG3	408.6	ST	31.4	SR	24.5	SS	25.5
RDE	-.3174	RRA	.1143	RC3	.2111	FAU	.07558	RRT	.0322	RRF	-.0351	RTF	-.7969	CRT	.6907	CRS	.2068	CST	.8472
FDE	.2104	FRA	1.8415	FC3	-4.6953	BSP	2333	SGB	1548.5	R23	-.0051	R13	-.7969	LSA	41.7	MSA	22.3	SSA	1.4
BDE	.4476	BRA	.7827	BC3	.4734	FSP	619	SG1	1448.4	SG2	547.8	THA	.82	EL1	36.8	EL2	15.1	ALF	35.13

LAUNCH DATE MAY 8 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC DISTANCE 360.796 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.915	GAL	-.87	AZL	91.90	HCA	120.44	SMA	196.71	ECC	.23297	INC	1.8965	V1	29.512
RP	207.04	LAP	-1.64	LOP	347.23	VP	24.645	GAP	13.14	AZP	89.04	TAL	355.37	TAP	115.82	RCA	150.88	APO	242.54	V2	26.454
RC	75.426	GL	-17.26	GP	.40	ZAL	104.41	ZAP	154.53	ETS	179.23	ZAE	171.56	ETE	21.36	ZAC	99.90	ETC	278.52	LVI	-19.40

PLANETOCENTRIC CONIC

C3	13.475	VHL	3.671	DLA	-26.83	RAL	340.70	RAD	6639.8	VEL	11.556	PTH	6.60	VHP	5.697	DPA	-15.63	RAP	324.60	ECC	1.2218

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 16	2490.14	-6.91	66.00	194.58	137.19	17 30 46	1490.1	11.47	50.21
60.00	18 5 4	2288.52	-1.82	52.71	199.45	130.27	18 43 12	1288.5	14.14	34.54
70.00	19 43 33	1998.95	3.61	33.34	203.56	123.99	20 16 52	998.9	17.03	13.10
80.00	21 45 58	1615.77	8.83	7.45	206.76	118.64	22 12 53	615.8	19.84	345.48
90.00	23 40 30	1246.41	11.65	341.76	208.23	115.95	24 1 16	246.4	21.35	318.93
100.00	0 32 45	1090.24	8.83	328.82	206.76	118.64	0 50 56	90.2	19.84	306.85
110.00	0 46 55	1045.76	3.61	322.26	203.56	123.99	1 4 21	45.8	17.03	302.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3124	TRA	-.7622	TC3	.4307	BAU	.0869	SGT	1454.3	SGR	542.5	SG3	435.6	ST	31.5	SR	24.2	SS	26.3
RDE	-.3084	RRA	.1101	RC3	.2177	FAU	.07929	RRT	.0360	RRF	-.0387	RTF	-.7948	CRT	.6920	CRS	.1911	CST	.8376
FDE	.2085	FRA	1.9241	FC3	-5.0942	BSP	2380	SGB	1552.2	R23	-.0055	R13	-.7949	LSA	42.0	MSA	22.5	SSA	1.4
BDE	.4389	BRA	.7701	BC3	.4826	FSP	666	SG1	1454.5	SG2	542.1	THA	.89	EL1	36.8	EL2	15.0	ALF	34.49

LAUNCH DATE MAY 8 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC DISTANCE 364.665 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.860	GAL	-.82	AZL	91.90	HCA	121.71	SMA	195.65	ECC	.22875	INC	1.8990	V1	29.512
RP	207.12	LAP	-1.62	LOP	348.49	VP	24.560	GAP	12.80	AZP	89.00	TAL	355.57	TAP	117.27	RCA	150.89	APO	240.40	V2	26.444
RC	76.944	GL	-17.54	GP	.42	ZAL	104.17	ZAP	153.22	ETS	179.24	ZAE	172.08	ETE	21.85	ZAC	99.93	ETC	278.51	LVI	-19.41

PLANETOCENTRIC CONIC

C3	13.051	VHL	3.613	DLA	-27.17	RAL	340.60	RAD	6639.6	VEL	11.538	PTH	6.58	VHP	5.526	DPA	-15.62	RAP	324.55	ECC	1.2148

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 39	2475.49	-6.17	65.38	194.25	137.27	17 31 54	1475.5	12.19	49.57
60.00	18 7 13	2271.84	-1.09	51.92	199.13	130.29	18 45 5	1271.8	14.83	33.69
70.00	19 47 0	1978.42	4.39	32.27	203.27	123.90	20 19 58	978.4	17.72	11.91
80.00	21 52 5	1586.85	9.77	5.82	206.54	118.35	22 18 32	586.9	20.59	343.67
90.00	23 50 6	1206.27	12.83	339.41	208.12	115.42	24 10 13	206.3	22.22	316.31
100.00	0 38 53	1061.32	9.77	327.19	206.54	118.35	0 56 34	61.3	20.59	305.03
110.00	0 50 22	1025.23	4.39	321.19	203.27	123.90	1 7 28	25.2	17.72	300.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3080	TRA	-.7487	TC3	.4355	BAU	.0854	SGT	1455.7	SGR	536.5	SG3	464.1	ST	31.6	SR	23.9	SS	27.0
RDE	-.2997	RRA	.1061	RC3	.2240	FAU	.08314	RRT	.0393	RRF	-.0422	RTF	-.7931	CRT	.6928	CRS	.1752	CST	.8281
FDE	.2061	FRA	2.0125	FC3	-5.5154	BSP	2398	SGB	1551.5	R23	-.0062	R13	-.7932	LSA	42.1	MSA	22.8	SSA	1.4
BDE	.4298	BRA	.7562	BC3	.4897	FSP	715	SG1	1455.9	SG2	536.1	THA	.96	EL1	36.7	EL2	14.8	ALF	33.97

LAUNCH DATE MAY 8 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 1 1971

HELIOCENTRIC CONIC DISTANCE 368.563 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.807	GAL	-.78	AZL	91.90	HCA	122.97	SMA	194.66	ECC	.22481	INC	1.9015	V1	29.512
RP	207.21	LAP	-1.60	LOP	349.76	VP	24.478	GAP	12.46	AZP	88.97	TAL	355.76	TAP	118.73	RCA	150.90	APO	238.42	V2	26.433
RC	78.502	GL	-17.81	GP	.44	ZAL	103.94	ZAP	151.88	ETS	179.25	ZAE	172.67	ETE	22.65	ZAC	99.96	ETC	278.50	LVI	-19.41

PLANETOCENTRIC CONIC

C3	12.660	VHL	3.558	DLA	-27.50	RAL	340.50	RAD	6639.4	VEL	11.521	PTH	6.57	VHP	5.360	DPA	-15.63	RAP	324.47	ECC	1.2084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 1	2461.45	-5.47	64.79	193.94	137.34	17 33 3	1461.5	12.88	48.95
60.00	18 9 21	2255.78	-.38	51.15	198.83	130.30	18 46 56	1255.8	15.51	32.86
70.00	19 50 27	1958.44	5.15	31.22	203.00	123.81	20 23 6	958.4	18.39	10.75
80.00	21 58 28	1557.72	10.71	4.17	206.36	118.04	22 24 25	557.7	21.32	341.82
90.00	0 5 1	1162.30	14.10	336.80	208.09	114.77	0 24 23	162.3	23.11	313.40
100.00	0 45 15	1032.19	10.71	325.54	206.36	118.04	1 2 28	32.2	21.32	303.18
110.00	0 53 50	1005.26	5.15	320.14	203.00	123.81	1 10 35	5.3	18.39	299.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3017	TRA	-.7340	TC3	.4436	BAU	.0846	SGT	1453.2	SGR	530.3	SG3	495.1	ST	31.5	SR	23.6	SS	27.8
RDE	-.2912	RRA	.1021	RC3	.2302	FAU	.08744	RRT	.0421	RRF	-.0456	RTF	-.7922	CRT	.6920	CRS	.1546	CST	.8170
FDE	.1996	FRA	2.1069	FC3	-5.9797	BSP	2406	SGB	1546.9	R23	-.0071	R13	-.7922	LSA	42.2	MSA	23.2	SSA	1.4
BDE	.4193	BRA	.7411	BC3	.4998	FSP	768	SG1	1453.3	SG2	529.7	THA	1.02	EL1	36.5	EL2	14.7	ALF	33.60

LAUNCH DATE MAY 8 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 3 1971

HELIOCENTRIC CONIC DISTANCE 378.488 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.758	GAL	-.74	AZL	91.90	HCA	124.23	SHA	193.78	ECC	.22112	INC	1.9042
RP	207.31	LAP	-1.57	LOP	351.02	VP	24.400	GAP	12.14	AZP	88.93	TAL	358.94	TAP	120.17	RCA	150.91	APO	236.59
RC	80.098	GL	-18.08	GP	.46	ZAL	103.78	ZAP	150.51	ETS	179.26	ZAE	173.33	ETE	25.89	ZAC	99.99	ETC	278.48
PLANETOCENTRIC CONIC																			
C3	12.301	VHL	3.507	DLA	-27.83	RAL	340.42	RAD	6639.2	VEL	11.505	PTH	6.55	VHP	5.201	DPA	-15.65	RAP	324.36

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 23	2448.02	-4.80	64.22	193.66	137.39	17 34 11	1448.0	13.54	48.36
60.00	18 11 27	2240.35	.30	50.41	198.59	130.30	18 48 47	1240.3	16.15	32.06
70.00	19 53 55	1939.04	5.88	30.20	202.76	123.70	20 26 14	939.0	19.04	9.62
80.00	22 5 7	1528.27	11.65	2.48	206.22	117.69	22 30 35	528.3	22.04	339.92
90.00	0 18 19	1111.39	15.83	333.75	208.16	113.93	0 36 50	111.4	24.07	309.98
100.00	0 51 54	1002.75	11.65	323.85	206.22	117.69	1 8 37	2.7	22.04	301.29
110.00	0 57 17	6273.90	5.88	297.02	202.76	123.70	2 41 51	5273.9	19.04	276.44

DIFFERENTIAL CORRECTIONS

TDE	-.2952	TRA	-.7186	TC3	.4436	BAU	.0826
RDE	-.2830	RRA	.0983	RC3	.2361	FAU	.09178
FDE	.1924	FRA	2.2055	FC3	-6.4599	BSP	2396
BDE	.4089	BRA	.7253	BC3	.5025	FSP	822

MID-COURSE EXECUTION ACCURACY

SGT	1446.2	SGR	523.7	SG3	527.2		
RRT	.0442	RRF	-.0488	RTF	-.7899		
SGB	1538.1	R23	-.0067	R13	-.7899		
SG1	1446.4	SG2	523.1	THA	1.08		

ORBIT DETERMINATION ACCURACY

ST	31.3	SR	23.3	SS	28.5
CRT	.6913	CRS	.1345	CST	.8056
LSA	42.2	NSA	23.5	SSA	1.4
EL1	36.2	EL2	14.5	ALF	33.29

LAUNCH DATE MAY 8 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 376.433 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.712	GAL	-.70	AZL	91.91	HCA	125.49	SHA	192.91	ECC	.21767	INC	1.9069
RP	207.42	LAP	-1.55	LOP	352.28	VP	24.328	GAP	11.82	AZP	88.89	TAL	358.11	TAP	121.60	RCA	150.91	APO	234.90
RC	81.730	GL	-18.34	GP	.48	ZAL	103.52	ZAP	149.10	ETS	179.26	ZAE	174.05	ETE	26.73	ZAC	100.03	ETC	278.45
PLANETOCENTRIC CONIC																			
C3	11.970	VHL	3.460	DLA	-28.14	RAL	340.34	RAD	6639.0	VEL	11.491	PTH	6.54	VHP	5.048	DPA	-15.68	RAP	324.20

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 43	2435.22	-4.16	63.68	193.40	137.44	17 38 18	1435.2	14.17	47.79
60.00	18 13 32	2225.58	.95	49.71	198.31	130.29	18 50 37	1225.6	16.76	31.29
70.00	19 57 21	1920.27	6.39	29.20	202.55	123.59	20 29 21	920.3	19.65	8.51
80.00	22 12 5	1498.39	12.39	.76	206.13	117.30	22 37 4	498.4	22.75	337.99
90.00	0 37 25	1042.36	17.39	329.54	208.44	112.66	0 54 47	42.4	25.23	305.25
100.00	0 58 53	6260.90	12.59	300.04	206.13	117.30	2 43 14	5260.9	22.75	277.26
110.00	1 0 43	6255.12	6.59	296.03	202.55	123.59	2 44 58	5255.1	19.65	275.33

DIFFERENTIAL CORRECTIONS

TDE	-.2897	TRA	-.7007	TC3	.4398	BAU	.0803
RDE	-.2751	RRA	.0946	RC3	.2418	FAU	.09837
FDE	.1854	FRA	2.3047	FC3	-6.8702	BSP	2391
BDE	.3995	BRA	.7071	BC3	.5019	FSP	885

MID-COURSE EXECUTION ACCURACY

SGT	1433.3	SGR	516.8	SG3	560.5		
RRT	.0483	RRF	-.0531	RTF	-.7862		
SGB	1523.6	R23	-.0095	R13	-.7863		
SG1	1433.6	SG2	516.1	THA	1.18		

ORBIT DETERMINATION ACCURACY

ST	31.1	SR	22.9	SS	29.3
CRT	.6932	CRS	.1160	CST	.7929
LSA	42.2	NSA	23.8	SSA	1.4
EL1	35.9	EL2	14.3	ALF	33.01

LAUNCH DATE MAY 8 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 380.403 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.670	GAL	-.66	AZL	91.91	HCA	126.78	SHA	192.12	ECC	.21445	INC	1.9097
RP	207.54	LAP	-1.53	LOP	353.54	VP	24.252	GAP	11.51	AZP	88.86	TAL	356.27	TAP	123.08	RCA	150.92	APO	233.32
RC	83.399	GL	-18.59	GP	.50	ZAL	103.33	ZAP	147.68	ETS	179.27	ZAE	174.63	ETE	28.81	ZAC	100.08	ETC	278.41
PLANETOCENTRIC CONIC																			
C3	11.666	VHL	3.416	DLA	-28.43	RAL	340.27	RAD	6638.9	VEL	11.478	PTH	6.83	VHP	4.900	DPA	-15.72	RAP	324.02

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 3	2423.06	-3.55	63.17	193.17	137.48	17 36 26	1423.1	14.76	47.25
60.00	18 15 35	2211.47	1.57	49.03	198.09	130.28	18 52 27	1211.5	17.33	30.55
70.00	20 0 46	1902.14	7.27	28.24	202.38	123.46	20 32 28	902.1	20.23	7.43
80.00	22 19 27	1467.86	13.53	358.99	206.07	116.87	22 43 55	467.9	23.44	335.98
86.93	0 36 23	1039.30	19.66	330.26	208.91	110.95	0 53 42	39.3	26.58	305.34
100.00	1 6 15	6230.37	13.53	298.26	206.07	116.87	2 50 5	5230.4	23.44	275.26
110.00	1 4 8	6236.99	7.27	295.07	202.38	123.46	2 48 5	5237.0	20.24	274.25

DIFFERENTIAL CORRECTIONS

TDE	-.2839	TRA	-.6825	TC3	.4310	BAU	.0775
RDE	-.2674	RRA	.0909	RC3	.2472	FAU	.10124
FDE	.1798	FRA	2.4130	FC3	-7.5129	BSP	2350
BDE	.3899	BRA	.6886	BC3	.4969	FSP	943

MID-COURSE EXECUTION ACCURACY

SGT	1417.3	SGR	509.6	SG3	596.2		
RRT	.0519	RRF	-.0579	RTF	-.7820		
SGB	1506.1	R23	-.0114	R13	-.7821		
SG1	1417.5	SG2	508.9	THA	1.23		

ORBIT DETERMINATION ACCURACY

ST	30.8	SR	22.6	SS	30.1
CRT	.6950	CRS	.1000	CST	.7615
LSA	42.2	NSA	24.1	SSA	1.5
EL1	35.5	EL2	14.1	ALF	32.79

LAUNCH DATE MAY 8 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 384.392 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.628	GAL	-.63	AZL	91.91	HCA	126.01	SHA	191.40	ECC	.21145	INC	1.9126
RP	207.66	LAP	-1.51	LOP	354.80	VP	24.182	GAP	11.21	AZP	88.82	TAL	356.41	TAP	124.42	RCA	150.93	APO	231.87
RC	85.104	GL	-18.83	GP	.52	ZAL	103.18	ZAP	146.17	ETS	179.27	ZAE	175.65	ETE	32.82	ZAC	100.14	ETC	278.37
PLANETOCENTRIC CONIC																			
C3	11.388	VHL	3.375	DLA	-28.72	RAL	340.21	RAD	6638.8	VEL	11.466	PTH	6.52	VHP	4.759	DPA	-15.77	RAP	323.78

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 22	2411.53	-2.97	62.69	192.97	137.51	17 37 33	1411.5	15.32	46.73
60.00	18 17 37	2198.06	2.16	48.39	197.90	130.25	18 54 15	1198.1	17.88	29.84
70.00	20 4 10	1884.69	7.93	27.32	202.22	123.33	20 35 34	884.7	20.79	6.38
80.00	22 27 18	1436.38	14.49	357.15	206.07	116.39	22 51 14	436.4	24.12	333.89
84.80	0 18 32	1091.28	19.99	334.22	208.59	111.06	0 36 43	91.3	26.90	309.22
100.00	1 14 6	6198.89	14.49	296.42	206.07	116.39	2 57 25	5198.9	24.12	273.17
110.00	1 7 32	6219.55	7.93	294.14	202.22	123.33	2 51 11	5219.5	20.79	273.20

DIFFERENTIAL CORRECTIONS

TDE	-.2785	TRA	-.6645	TC3	.4168	BAU	.0742
RDE	-.2598	RRA	.0873	RC3	.2324	FAU	.10035
FDE	.1719	FRA	2.5290	FC3	-8.0848	BSP	2321
BDE	.3809	BRA	.6702	BC3	.4873	FSP	1011

MID-COURSE EXECUTION ACCURACY

SGT	1399.2	SGR	502.2	SG3	633.9		
RRT	.0556	RRF	-.0626	RTF	-.7765		
SGB	1486.6	R23	-.0131	R13	-.7767		
SG1	1399.5	SG2	501.3	THA	1.31		

ORBIT DETERMINATION ACCURACY

ST	30.5	SR	22.2	SS	31.0
CRT	.6975	CRS	.0824	CST	.7680
LSA	42.2	NSA	24.5	SSA	1.5
EL1	35.1	EL2	13.8	ALF	32.56

LAUNCH DATE MAY 8 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 388.401 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.892	GAL	-.60	AZL	91.92	HCA	129.27	SMA	190.73	ECC	.20865	INC	1.9155	V1	29.512
RP	207.80	LAP	-1.48	LOP	356.05	VP	24.115	GAP	10.91	AZP	88.79	TAL	356.55	TAP	125.82	RCA	150.93	APO	230.52	V2	26.365
RC	86.843	GL	-19.06	GP	.55	ZAL	102.99	ZAP	144.65	ETS	179.27	ZAE	176.49	ETE	39.90	ZAC	100.20	ETC	278.32	LVI	-19.27

PLANETOCENTRIC CONIC

C3	11.132	VHL	3.336	DLA	-28.98	RAL	340.17	RAD	6638.6	VEL	11.455	PTH	6.51	VHP	4.623	DPA	-15.83	RAP	323.52	ECC	1.1832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 40	2400.62	-2.42	62.23	192.80	137.53	17 38 40	1400.6	15.85	46.23
60.00	18 19 36	2185.31	2.72	47.78	197.74	130.22	18 56 1	1185.3	18.40	29.16
70.00	20 7 31	1867.90	8.55	26.42	202.10	123.19	20 38 39	867.9	21.32	5.36
80.00	22 35 49	1403.32	15.49	355.19	206.11	115.85	22 59 13	403.3	24.81	331.68
83.37	0 6 43	1124.06	20.28	336.75	208.30	111.16	0 25 28	124.1	27.21	311.70
100.00	1 22 37	6165.83	15.49	294.47	206.11	115.85	3 5 23	5165.8	24.81	270.95
110.00	1 10 53	6202.76	8.55	293.24	202.10	123.19	2 54 16	5202.8	21.32	272.19

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2670	TRA	-.6390	TC3	.4189	BAU	.0732	SGT	1365.1	SGR	494.6	SG3	673.8	ST	29.7	SR	21.8	SS	31.8
RDE	-.2525	RRA	.0838	RC3	.2576	FAU	.11205	RRT	.0606	RRF	-.0685	RTF	-.7760	CRT	.6972	CRS	.0620	CST	.7550
FDE	.1598	FRA	2.6431	FC3	-8.7145	BSP	2181	SGB	1451.9	R23	-.0145	R13	-.7762	LSA	41.9	MSA	24.7	SSA	1.4
BDE	.3680	BRA	.6445	BC3	.4917	FSP	1068	SG1	1365.5	SG2	493.5	THA	1.45	EL1	34.3	EL2	13.6	ALF	32.89

LAUNCH DATE MAY 8 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 392.427 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.557	GAL	-.57	AZL	91.92	HCA	130.52	SMA	190.10	ECC	.20605	INC	1.9185	V1	29.512
RP	207.94	LAP	-1.46	LOP	357.31	VP	24.050	GAP	10.62	AZP	88.75	TAL	356.68	TAP	127.20	RCA	150.93	APO	229.28	V2	26.349
RC	88.616	GL	-19.28	GP	.57	ZAL	102.85	ZAP	143.09	ETS	179.27	ZAE	177.29	ETE	52.38	ZAC	100.27	ETC	278.26	LVI	-19.21

PLANETOCENTRIC CONIC

C3	10.898	VHL	3.301	DLA	-29.24	RAL	340.14	RAD	6638.5	VEL	11.445	PTH	6.50	VHP	4.493	DPA	-15.90	RAP	323.22	ECC	1.1794

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 57	2390.42	-1.91	61.81	192.65	137.55	17 39 47	1390.4	16.35	45.77
60.00	18 21 33	2173.34	3.25	47.21	197.60	130.19	18 57 46	1173.3	18.88	28.51
70.00	20 10 48	1851.97	9.15	25.57	202.01	123.05	20 41 40	852.0	21.81	4.39
80.00	22 45 13	1368.16	16.52	353.09	206.22	115.23	23 8 1	368.2	25.49	329.29
82.25	23 53 46	1148.40	20.56	338.66	208.05	111.26	24 12 54	148.4	27.50	313.55
100.00	1 32 0	6130.67	16.52	292.37	206.22	115.23	3 14 11	5130.7	25.49	268.56
110.00	1 14 11	6186.83	9.15	292.39	202.01	123.05	2 57 18	5186.8	21.81	271.22

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2699	TRA	-.6237	TC3	.3634	BAU	.0653	SGT	1347.6	SGR	486.7	SG3	713.9	ST	29.9	SR	21.4	SS	32.8
RDE	-.2454	RRA	.0804	RC3	.2621	FAU	.11714	RRT	.0651	RRF	-.0752	RTF	-.7590	CRT	.7085	CRS	.0590	CST	.7425
FDE	.1639	FRA	2.7738	FC3	-9.3058	BSP	2195	SGB	1432.8	R23	-.0184	R13	-.7593	LSA	42.5	MSA	24.9	SSA	1.4
BDE	.3648	BRA	.6289	BC3	.4480	FSP	1147	SG1	1348.1	SG2	485.5	THA	1.55	EL1	34.4	EL2	13.2	ALF	32.19

LAUNCH DATE MAY 8 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 396.469 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.525	GAL	-.54	AZL	91.92	HCA	131.77	SMA	189.53	ECC	.20363	INC	1.9217	V1	29.512
RP	208.08	LAP	-1.43	LOP	358.56	VP	23.987	GAP	10.34	AZP	88.72	TAL	356.79	TAP	128.56	RCA	150.94	APO	228.12	V2	26.332
RC	90.421	GL	-19.49	GP	.60	ZAL	102.72	ZAP	141.50	ETS	179.27	ZAE	177.88	ETE	75.09	ZAC	100.34	ETC	278.19	LVI	-19.15

PLANETOCENTRIC CONIC

C3	10.684	VHL	3.269	DLA	-29.48	RAL	340.12	RAD	6638.4	VEL	11.436	PTH	6.49	VHP	4.369	DPA	-15.99	RAP	322.87	ECC	1.1758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 13	2380.85	-1.43	61.41	192.53	137.56	17 40 54	1380.8	16.81	45.33
60.00	18 23 27	2162.06	3.74	46.67	197.49	130.16	18 59 30	1162.1	19.34	27.91
70.00	20 14 3	1836.77	9.71	24.75	201.94	122.91	20 44 39	836.8	22.28	3.46
80.00	22 56 8	1328.68	17.65	350.71	206.40	114.48	23 18 17	328.7	26.21	326.58
81.32	23 46 25	1167.74	20.82	340.20	207.82	111.35	24 5 52	167.7	27.77	315.04
100.00	1 42 56	6091.20	17.65	289.98	206.40	114.48	3 24 27	5091.2	26.21	265.85
110.00	1 17 25	6171.63	9.71	291.58	201.94	122.91	3 0 17	5171.6	22.28	270.28

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2651	TRA	-.6016	TC3	.3231	BAU	.0598	SGT	1314.5	SGR	478.5	SG3	756.2	ST	29.5	SR	21.0	SS	33.7
RDE	-.2384	RRA	.0770	RC3	.2665	FAU	.12293	RRT	.0668	RRF	-.0812	RTF	-.7654	CRT	.7149	CRS	.0405	CST	.7237
FDE	.1514	FRA	2.9014	FC3	-9.9612	BSP	2146	SGB	1398.9	R23	-.0222	R13	-.7456	LSA	42.5	MSA	25.3	SSA	1.4
BDE	.3565	BRA	.6065	BC3	.4189	FSP	1226	SG1	1314.9	SG2	477.2	THA	1.65	EL1	33.9	EL2	12.8	ALF	32.11

LAUNCH DATE MAY 8 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 400.526 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.494	GAL	-.52	AZL	91.93	HCA	133.03	SMA	189.00	ECC	.20138	INC	1.9251	V1	29.512
RP	208.24	LAP	-1.41	LOP	359.81	VP	23.926	GAP	10.06	AZP	88.69	TAL	356.88	TAP	129.91	RCA	150.94	APO	227.06	V2	26.313
RC	92.259	GL	-19.70	GP	.63	ZAL	102.62	ZAP	139.86	ETS	179.27	ZAE	177.94	ETE	108.03	ZAC	100.42	ETC	278.11	LVI	-19.07

PLANETOCENTRIC CONIC

C3	10.489	VHL	3.239	DLA	-29.70	RAL	340.12	RAD	6638.3	VEL	11.427	PTH	6.48	VHP	4.250	DPA	-16.08	RAP	322.48	ECC	1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 29	2371.92	-.98	61.03	192.43	137.57	17 42 1	1371.9	17.24	44.92
60.00	18 25 19	2151.52	4.21	46.16	197.41	130.12	19 1 11	1151.5	19.76	27.33
70.00	20 17 13	1822.39	10.24	23.98	201.90	122.76	20 47 35	822.4	22.72	2.57
80.00	23 10 20	1279.37	19.01	347.68	206.73	113.47	23 31 39	279.4	27.02	323.14
80.53	23 40 16	1183.68	21.06	341.48	207.63	111.44	24 0 0	183.7	28.02	316.27
100.00	1 57 8	6041.88	19.01	286.96	206.73	113.47	3 37 50	5041.9	27.02	262.41
110.00	1 20 35	6157.25	10.24	290.80	201.90	122.76	3 3 12	5157.2	22.72	269.39

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2624	TRA	-.5790	TC3	.2813	BAU	.0548	SGT	1280.4	SGR	470.2	SG3	801.5	ST	29.2	SR	20.6	SS	34.6
RDE	-.2316	RRA	.0736	RC3	.2709	FAU	.12917	RRT	.0755	RRF	-.0901	RTF	-.7307	CRT	.7245	CRS	.0336	CST	.7091
FDE	.1497	FRA	3.0381	FC3	-10.6619	BSP	2059	SGB	1364.0	R23	-.0265	R13	-.7310	LSA	42.7	MSA	25.5	SSA	1.4
BDE	.3500	BRA	.5837	BC3	.3906	FSP	1301	SG1	1280.9	SG2	468.6	THA	1.83	EL1	33.5	EL2	12.4	ALF	31.95

LAUNCH DATE MAY 8 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 404.597 EARTH TO MARS

RL	180.00	LAL	.00	LOL	226.77	VL	32.466	GAL	-.30	AZL	91.93	HCA	134.20	SNA	180.51	ECC	.19930	INC	1.9285	V1	29.512
RP	208.41	LAP	-1.38	LOP	1.06	VP	23.867	GAP	9.79	AZP	88.65	TAL	356.97	TAP	131.24	RCA	180.94	APO	226.08	V2	26.294
RC	94.128	GL	-19.89	GP	.68	ZAL	102.83	ZAP	138.19	ETS	179.26	ZAE	177.34	ETE	135.36	ZAC	100.51	ETC	278.03	LVI	-18.99

PLANETOCENTRIC CONIC

C3	10.310	VHL	3.211	DLA	-29.81	RAL	340.14	RAD	6838.2	VEL	11.419	PTH	6.47	VHP	4.136	DPA	-16.19	RAP	322.05	ECC	1.1697

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 43	2363.64	-.56	60.69	192.36	137.57	17 43 7	1363.6	17.64	44.53
60.00	18 27 9	2141.69	4.64	48.69	197.35	130.08	19 2 50	1141.7	20.15	26.80
70.00	20 20 17	1808.84	10.74	23.24	201.88	122.62	20 50 26	808.8	23.12	1.73
79.85	23 38 6	1196.93	21.29	342.56	207.48	111.51	23 55 3	196.9	28.26	317.30
79.85	23 38 6	1196.93	21.29	342.56	207.48	111.51	23 55 3	196.9	28.26	317.30
79.85	23 38 6	1196.93	21.29	342.56	207.48	111.51	23 55 3	196.9	28.26	317.30
110.00	1 23 40	6143.70	10.74	290.07	201.88	122.62	3 6 3	5143.7	23.12	268.55

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2586	TRA	-.5543	TC3	.2304	BAU	.0498	SGT	1238.3	SGR	461.6	SG3	848.2	ST	28.6	SR	20.2	SS	35.6
RDE	-.2249	RRA	.0702	RC3	.2781	FAU	.13546	RRT	.0787	RRF	-.0973	RTF	-.7132	CRT	.7320	CRS	.0166	CST	.6891
FDE	.1361	FRA	3.1840	FC-11.3787		BSP	1986	SGB	1321.5	R23	-.0323	R13	-.7136	LSA	42.8	NSA	25.7	SSA	1.4
BDE	.3412	BRA	.8587	BC3	.3568	FSP	1394	SG1	1238.9	SG2	459.9	THA	1.95	EL1	32.9	EL2	11.9	ALF	32.06

LAUNCH DATE MAY 8 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 408.681 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.440	GAL	-.49	AZL	91.93	HCA	135.52	SNA	180.06	ECC	.19736	INC	1.9321	V1	29.512
RP	208.58	LAP	-1.35	LOP	2.31	VP	23.808	GAP	9.52	AZP	88.62	TAL	357.04	TAP	132.56	RCA	180.94	APO	225.18	V2	26.274
RC	96.027	GL	-20.08	GP	.69	ZAL	102.47	ZAP	136.47	ETS	179.26	ZAE	176.32	ETE	150.99	ZAC	100.61	ETC	277.93	LVI	-18.89

PLANETOCENTRIC CONIC

C3	10.148	VHL	3.186	DLA	-30.10	RAL	340.17	RAD	6838.1	VEL	11.412	PTH	6.46	VHP	4.028	DPA	-16.30	RAP	321.58	ECC	1.1670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 57	2358.96	-.18	60.37	192.32	137.58	17 44 13	1356.0	18.01	44.18
60.00	18 28 55	2132.56	5.04	48.28	197.32	130.04	19 4 27	1132.6	20.51	26.30
70.00	20 23 17	1796.09	11.20	22.95	201.88	122.48	20 53 13	796.1	23.50	.93
79.25	23 30 42	1208.22	21.50	343.49	207.35	111.59	23 50 50	208.2	28.48	318.19
79.25	23 30 42	1208.22	21.50	343.49	207.35	111.59	23 50 50	208.2	28.48	318.19
79.25	23 30 42	1208.22	21.50	343.49	207.35	111.59	23 50 50	208.2	28.48	318.19
110.00	1 26 39	6130.95	11.20	289.38	201.88	122.48	3 8 50	5131.0	23.50	267.75

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2436	TRA	-.5199	TC3	.1944	BAU	.0462	SGT	1172.8	SGR	452.8	SG3	895.5	ST	27.3	SR	19.7	SS	36.4
RDE	-.2182	RRA	.0669	RC3	.2792	FAU	.14228	RRT	.0821	RRF	-.1053	RTF	-.6992	CRT	.7364	CRS	-.0069	CST	.6654
FDE	.1101	FRA	3.3180	FC-12.1373		BSP	1738	SGB	1257.2	R23	-.0360	R13	-.6999	LSA	42.3	NSA	25.6	SSA	1.4
BDE	.3270	BRA	.5242	BC3	.3402	FSP	1447	SG1	1173.5	SG2	451.0	THA	2.13	EL1	31.6	EL2	11.5	ALF	32.98

LAUNCH DATE MAY 8 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 412.775 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.416	GAL	-.48	AZL	91.94	HCA	136.77	SNA	187.65	ECC	.19859	INC	1.9358	V1	29.512
RP	208.76	LAP	-1.33	LOP	3.55	VP	23.783	GAP	9.27	AZP	88.89	TAL	357.09	TAP	133.68	RCA	180.95	APO	224.35	V2	26.284
RC	97.955	GL	-20.26	GP	.72	ZAL	102.43	ZAP	134.72	ETS	179.25	ZAE	175.09	ETE	159.69	ZAC	100.71	ETC	277.63	LVI	-18.78

PLANETOCENTRIC CONIC

C3	10.002	VHL	3.163	DLA	-30.27	RAL	340.23	RAD	6838.0	VEL	11.406	PTH	6.46	VHP	3.925	DPA	-16.43	RAP	321.07	ECC	1.1646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 10	2349.03	.17	60.08	192.31	137.58	17 45 19	1349.0	18.34	43.85
60.00	18 30 38	2124.30	5.40	44.65	197.32	130.00	19 6 2	1124.3	20.84	25.84
70.00	20 26 6	1784.47	11.63	21.92	201.92	122.34	20 55 53	784.5	23.84	.20
78.73	23 27 6	1217.51	21.69	344.26	207.26	111.65	23 47 23	217.5	28.67	318.92
78.73	23 27 6	1217.51	21.69	344.26	207.26	111.65	23 47 23	217.5	28.67	318.92
78.73	23 27 6	1217.51	21.69	344.26	207.26	111.65	23 47 23	217.5	28.67	318.92
110.00	1 29 31	6119.32	11.63	288.74	201.92	122.34	3 11 30	5119.3	23.84	267.02

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2526	TRA	-.5046	TC3	.0788	BAU	.0392	SGT	1154.2	SGR	443.9	SG3	945.5	ST	27.9	SR	19.3	SS	37.8
RDE	-.2119	RRA	.0634	RC3	.2827	FAU	.14822	RRT	.0854	RRF	-.1164	RTF	-.6953	CRT	.7582	CRS	.0042	CST	.6504
FDE	.1297	FRA	3.4982	FC-12.8289		BSP	1778	SGB	1236.7	R23	-.0509	R13	-.6962	LSA	43.5	NSA	26.1	SSA	1.4
BDE	.3297	BRA	.5086	BC3	.2934	FSP	1567	SG1	1155.0	SG2	442.0	THA	2.20	EL1	32.1	EL2	10.9	ALF	31.84

LAUNCH DATE MAY 8 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 416.881 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.394	GAL	-.47	AZL	91.94	HCA	138.01	SNA	187.27	ECC	.19394	INC	1.9398	V1	29.512
RP	208.94	LAP	-1.30	LOP	4.80	VP	23.699	GAP	9.01	AZP	88.56	TAL	357.12	TAP	135.14	RCA	180.95	APO	223.58	V2	26.232
RC	99.910	GL	-20.43	GP	.76	ZAL	102.41	ZAP	132.93	ETS	179.24	ZAE	173.72	ETE	164.94	ZAC	100.82	ETC	277.71	LVI	-18.66

PLANETOCENTRIC CONIC

C3	9.870	VHL	3.142	DLA	-30.43	RAL	340.30	RAD	6838.0	VEL	11.400	PTH	6.45	VHP	3.828	DPA	-16.57	RAP	320.51	ECC	1.1624

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 22	2342.68	.49	59.81	192.32	137.57	17 46 25	1342.7	18.64	43.55
60.00	18 32 18	2116.72	5.73	44.49	197.34	129.96	19 7 35	1116.7	21.13	25.42
70.00	20 28 54	1773.67	12.02	21.33	201.97	122.21	20 58 27	773.7	24.15	359.51
78.28	23 24 1	1225.58	21.86	344.94	207.20	111.71	23 44 27	225.6	28.85	319.56
78.28	23 24 1	1225.58	21.86	344.94	207.20	111.71	23 44 27	225.6	28.85	319.56
78.28	23 24 1	1225.58	21.86	344.94	207.20	111.71	23 44 27	225.6	28.85	319.56
110.00	1 32 16	6108.53	12.02	288.15	201.97	122.21	3 14 4	5108.5	24.15	266.34

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2513	TRA	-.4780	TC3	-.0067	BAU	.0378	SGT	1104.3	SGR	434.9	SG3	995.3	ST	27.4	SR	18.8	SS	38.0
RDE	-.2086	RRA	.0601	RC3	.2864	FAU	.15497	RRT	.0906	RRF	-.1288	RTF	-.6160	CRT	.7756	CRS	.0028	CST	.6282
FDE	.1308	FRA	3.6536	FC-13.5922		BSP	1643	SGB	1186.8	R23	-.0631	R13	-.6171	LSA	43.8	NSA	26.2	SSA	1.4
BDE	.3247	BRA	.4708	BC3	.2865	FSP	1684	SG1	1105.1	SG2	432.8	THA	2.41	EL1	31.6	EL2	10.3	ALF	31.83

LAUNCH DATE MAY 8 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 420.997 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.374	GAL	-.46	AZL	91.94	HCA	139.25	SMA	186.92	ECC	.19244	INC	1.9438	V1	29.512
RP	209.14	LAP	-1.27	LOP	6.04	VP	23.646	GAP	8.77	AZP	88.53	TAL	357.15	TAP	136.40	RCA	150.95	APO	222.89	V2	26.209
RC	101.892	GL	-20.59	GP	.79	ZAL	102.42	ZAP	131.10	ETS	179.24	ZAE	172.25	ETE	168.36	ZAC	100.94	ETC	277.59	LVI	-18.53

PLANETOCENTRIC CONIC

C3	9.752	VHL	3.123	DLA	-30.57	RAL	340.40	RAD	6637.9	VEL	11.395	PTH	6.45	VHP	3.735	DPA	-16.71	RAP	319.91	ECC	1.1605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 34	2336.96	.78	59.57	192.35	137.57	17 47 31	1337.0	18.92	43.29
60.00	18 33 55	2109.88	6.03	44.16	197.38	129.92	19 9 4	1109.9	21.40	25.04
70.00	20 31 31	1763.85	12.38	20.79	202.05	122.09	21 0 55	763.9	24.43	358.89
77.89	23 21 30	1232.37	22.02	345.51	207.17	111.76	23 42 2	232.4	29.01	320.10
77.89	23 21 30	1232.37	22.02	345.51	207.17	111.76	23 42 2	232.4	29.01	320.10
77.89	23 21 30	1232.37	22.02	345.51	207.17	111.76	23 42 2	232.4	29.01	320.10
110.00	1 34 53	6098.71	12.38	287.61	202.05	122.09	3 16 32	5098.7	24.43	265.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2488	TRA	-.4457	TC3	-.1070	BAU	.0403	SGT	1055.9	SGR	425.6	SG3	1046.7	ST	26.9	SR	18.4	SS	39.9
RDE	-.1994	RRA	.0566	RC3	.2899	FAU	.16153	RRT	.0899	RRF	-.1401	RTF	-.5668	CRT	.7920	CRS	-.0038	CST	.6020
FDE	.1246	FRA	3.8270	FC-14.3402		BSP	1493	SGB	1138.4	R23	-.0796	R13	-.5683	LSA	44.2	MSA	26.3	SSA	1.4
BDE	.3189	BRA	.4493	BC3	.3090	FSP	1741	SG1	1056.7	SG2	423.6	THA	2.47	EL1	31.1	EL2	9.7	ALF	31.89

LAUNCH DATE MAY 8 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 425.121 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.355	GAL	-.46	AZL	91.95	HCA	140.49	SMA	186.60	ECC	.19105	INC	1.9481	V1	29.512
RP	209.34	LAP	-1.24	LOP	7.28	VP	23.595	GAP	8.52	AZP	88.50	TAL	357.15	TAP	137.64	RCA	150.95	APO	222.25	V2	26.186
RC	103.900	GL	-20.74	GP	.83	ZAL	102.44	ZAP	129.24	ETS	179.23	ZAE	170.71	ETE	170.70	ZAC	101.06	ETC	277.46	LVI	-18.39

PLANETOCENTRIC CONIC

C3	9.646	VHL	3.106	DLA	-30.69	RAL	340.51	RAD	6637.9	VEL	11.391	PTH	6.44	VHP	3.648	DPA	-16.86	RAP	319.28	ECC	1.1587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 45	2331.86	1.03	59.36	192.42	137.57	17 48 37	1331.9	19.16	43.04
60.00	18 35 28	2103.77	6.30	43.86	197.45	129.89	19 10 32	1103.8	21.64	24.70
70.00	20 34 0	1755.02	12.70	20.31	202.15	121.98	21 3 15	755.0	24.68	358.32
77.55	23 19 30	1237.95	22.16	345.99	207.17	111.80	23 40 8	237.9	29.15	320.55
77.55	23 19 30	1237.95	22.16	345.99	207.17	111.80	23 40 8	237.9	29.15	320.55
77.55	23 19 30	1237.95	22.16	345.99	207.17	111.80	23 40 8	237.9	29.15	320.55
110.00	1 37 22	6089.88	12.70	287.13	202.15	121.98	3 18 52	5089.9	24.68	265.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2473	TRA	-.4131	TC3	-.2089	BAU	.0465	SGT	1005.1	SGR	416.4	SG3	1099.9	ST	26.4	SR	17.9	SS	40.9
RDE	-.1933	RRA	.0531	RC3	.2937	FAU	.16876	RRT	.0909	RRF	-.1549	RTF	-.5064	CRT	.8118	CRS	-.0053	CST	.5737
FDE	.1238	FRA	3.9956	FC-15.1471		BSP	1341	SGB	1088.0	R23	-.0998	R13	-.5083	LSA	44.6	MSA	26.4	SSA	1.4
BDE	.3139	BRA	.4165	BC3	.3604	FSP	1839	SG1	1006.0	SG2	414.4	THA	2.60	EL1	30.6	EL2	9.0	ALF	31.95

LAUNCH DATE MAY 8 1971 FLIGHT TIME 176.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 429.255 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.338	GAL	-.46	AZL	91.95	HCA	141.73	SMA	186.30	ECC	.18978	INC	1.9527	V1	29.512
RP	209.55	LAP	-1.21	LOP	8.51	VP	23.544	GAP	8.29	AZP	88.47	TAL	357.14	TAP	138.87	RCA	150.95	APO	221.66	V2	26.162
RC	105.933	GL	-20.89	GP	.87	ZAL	102.49	ZAP	127.33	ETS	179.22	ZAE	169.09	ETE	172.39	ZAC	101.18	ETC	277.32	LVI	-18.24

PLANETOCENTRIC CONIC

C3	9.552	VHL	3.091	DLA	-30.80	RAL	340.64	RAD	6637.8	VEL	11.387	PTH	6.44	VHP	3.566	DPA	-17.02	RAP	318.60	ECC	1.1572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 55	2327.35	1.26	59.17	192.50	137.56	17 49 42	1327.4	19.38	42.83
60.00	18 36 58	2098.38	6.53	43.60	197.55	129.86	19 11 57	1098.4	21.85	24.40
70.00	20 36 19	1747.18	12.98	19.87	202.27	121.87	21 5 27	747.2	24.90	357.82
77.26	23 17 55	1242.73	22.28	346.40	207.20	111.84	23 38 38	242.7	29.28	320.93
77.26	23 17 55	1242.73	22.28	346.40	207.20	111.84	23 38 38	242.7	29.28	320.93
77.26	23 17 55	1242.73	22.28	346.40	207.20	111.84	23 38 38	242.7	29.28	320.93
110.00	1 39 42	6082.04	12.98	286.70	202.27	121.87	3 21 4	5082.0	24.90	264.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2442	TRA	-.3771	TC3	-.3199	BAU	.0558	SGT	952.1	SGR	407.1	SG3	1153.0	ST	25.7	SR	17.4	SS	41.9
RDE	-.1872	RRA	.0496	RC3	.2975	FAU	.17609	RRT	.0868	RRF	-.1711	RTF	-.4_98	CRT	.8323	CRS	-.0083	CST	.5408
FDE	.1196	FRA	4.1623	FC-15.9603		BSP	1133	SGB	1035.5	R23	-.1260	R13	-.4323	LSA	45.0	MSA	26.4	SSA	1.3
BDE	.3077	BRA	.3803	BC3	.4369	FSP	1923	SG1	952.9	SG2	405.3	THA	2.60	EL1	29.9	EL2	8.3	ALF	32.20

LAUNCH DATE MAY 8 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 433.396 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.322	GAL	-.46	AZL	91.96	HCA	142.96	SMA	186.04	ECC	.18863	INC	1.9575	V1	29.512
RP	209.76	LAP	-1.18	LOP	9.75	VP	23.495	GAP	8.06	AZP	88.44	TAL	357.12	TAP	140.08	RCA	150.95	APO	221.13	V2	26.137
RC	107.990	GL	-21.02	GP	.92	ZAL	102.56	ZAP	125.40	ETS	179.21	ZAE	167.40	ETE	173.64	ZAC	101.32	ETC	277.17	LVI	-18.08

PLANETOCENTRIC CONIC

C3	9.469	VHL	3.077	DLA	-30.89	RAL	340.80	RAD	6637.8	VEL	11.383	PTH	6.44	VHP	3.488	DPA	-17.19	RAP	317.88	ECC	1.1558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 5	2323.42	1.46	59.01	192.61	137.56	17 50 48	1323.4	19.56	42.64
60.00	18 36 25	2093.68	6.74	43.37	197.66	129.83	19 13 19	1093.7	22.03	24.13
70.00	20 38 30	1740.31	13.22	19.49	202.41	121.78	21 7 31	740.3	25.09	357.38
77.01	23 16 46	1246.58	22.39	346.74	207.27	111.86	23 37 33	246.6	29.39	321.24
77.01	23 16 46	1246.58	22.39	346.74	207.27	111.86	23 37 33	246.6	29.39	321.24
77.01	23 16 46	1246.58	22.39	346.74	207.27	111.86	23 37 33	246.6	29.39	321.24
110.00	1 41 53	6075.17	13.22	286.32	202.41	121.78	3 23 8	5075.2	25.09	264.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2365	TRA	-.3352	TC3	-.4294	BAU	.0664	SGT	890.3	SGR	397.7	SG3	1205.0	ST	24.6	SR	16.9	SS	42.7
RDE	-.1812	RRA	.0461	RC3	.3014	FAU	.18347	RRT	.0758	RRF	-.1869	RTF	-.3356	CRT	.8527	CRS	-.0245	CST	.4940
FDE	.0940	FRA	4.3209	FC-16.7746		BSP	877	SGB	975.1	R23	-.1556	R13	-.3386	LSA	45.0	MSA	26.3	SSA	1.3
BDE	.2979	BRA	.3383	BC3	.5246	FSP	1996	SG1	890.9	SG2	396.3	THA	2.42	EL1	28.9	EL2	7.5	ALF	32.97

LAUNCH DATE MAY 8 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 437.843 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.308	GAL	-.46	AZL	91.96	HCA	144.19	SNA	185.60	ECC	.18759	INC	1.9625	V1	29.812
RP	209.99	LAP	-1.15	LOP	10.96	VP	23.447	GAP	7.83	AZP	88.41	TAL	357.07	TAP	141.26	RCA	150.85	APO	220.65	V2	26.111
RC	110.071	GL	-21.16	GP	.96	ZAL	102.86	ZAP	123.43	ETS	179.21	ZAE	165.67	ETE	174.60	ZAC	101.45	ETC	277.01	LVI	-17.91

PLANETOCENTRIC CONIC

C3	9.398	VHL	3.066	DLA	-30.97	RAL	340.98	RAD	6637.7	VEL	11.380	PTH	6.43	VHP	3.416	DPA	-17.36	RAP	317.14	ECC	1.1547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 14	2320.17	1.62	58.87	192.75	137.56	17 51 54	1320.2	19.72	42.49
60.00	18 30 49	2089.81	6.90	43.19	197.81	129.60	19 14 39	1089.8	22.18	23.92
70.00	20 40 30	1734.67	13.43	19.18	202.57	121.70	21 9 24	734.7	25.24	357.01
76.62	23 16 7	1249.41	22.48	348.99	207.37	111.88	23 36 57	249.4	29.48	321.47
76.62	23 16 7	1249.41	22.48	348.99	207.37	111.88	23 36 57	249.4	29.48	321.47
76.62	23 16 7	1249.41	22.48	348.99	207.37	111.88	23 36 57	249.4	29.48	321.47
110.00	1 43 52	6069.53	13.43	286.01	202.57	121.70	3 25 1	5069.5	25.24	263.84

DIFFERENTIAL CORRECTIONS

TDE	-.2467	TRA	-.3068	TC3	-.5995	BAU	.0845												
RDE	-.1755	RRA	.0421	RC3	.3048	FAU	.18985												
FDE	.1444	FRA	4.5364	FC-17.4896		BSP	771												
BDE	.3027	BRA	.3096	BC3	.6726	FSP	2110												

MID-COURSE EXECUTION ACCURACY

SGT	891.5	SGR	388.6	SG3	1280.5				
RRT	.0610	RRF	-.2090	RTF	-.2149				
SGB	972.5	R23	-.1932	R13	-.2177				
SG1	891.9	SG2	387.7	THA	1.88				

ORBIT DETERMINATION ACCURACY

ST	25.1	SR	16.5	SS	44.2				
CRT	.8796	CRS	.0087	CBT	.4752				
LSA	46.4	MSA	26.6	SSA	1.3				
EL1	29.3	EL2	6.7	ALF	31.81				

LAUNCH DATE MAY 8 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 441.696 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.295	GAL	-.47	AZL	91.97	HCA	145.42	SNA	185.58	ECC	.18664	INC	1.9678	V1	29.812
RP	210.22	LAP	-1.12	LOP	12.21	VP	23.399	GAP	7.61	AZP	88.38	TAL	357.01	TAP	142.43	RCA	150.94	APO	220.22	V2	26.085
RC	112.177	GL	-21.28	GP	1.01	ZAL	102.78	ZAP	121.44	ETS	179.20	ZAE	163.87	ETE	175.34	ZAC	101.60	ETC	276.85	LVI	-17.72

PLANETOCENTRIC CONIC

C3	9.336	VHL	3.056	DLA	-31.03	RAL	341.17	RAD	6637.7	VEL	11.377	PTH	6.43	VHP	3.349	DPA	-17.53	RAP	316.35	ECC	1.1537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 23	2317.44	1.76	58.76	192.92	137.55	17 53 1	1317.4	19.85	42.36
60.00	18 41 9	2086.57	7.05	43.03	197.97	129.78	19 15 56	1086.6	22.31	23.73
70.00	20 42 20	1729.95	13.60	18.92	202.75	121.84	21 11 10	729.9	25.37	356.71
76.67	23 15 48	1251.64	22.55	347.19	207.50	111.90	23 36 40	251.6	29.55	321.65
76.67	23 15 48	1251.64	22.55	347.19	207.50	111.90	23 36 40	251.6	29.55	321.65
76.67	23 15 48	1251.64	22.55	347.19	207.50	111.90	23 36 40	251.6	29.55	321.65
110.00	1 45 42	6064.81	13.60	285.74	202.75	121.84	3 26 47	5064.8	25.37	263.53

DIFFERENTIAL CORRECTIONS

TDE	-.2496	TRA	-.2870	TC3	-.7546	BAU	.1018												
RDE	-.1697	RRA	.0383	RC3	.3086	FAU	.19639												
FDE	.1455	FRA	4.7155	FC-18.2112		BSP	578												
BDE	.2985	BRA	.2697	BC3	.8153	FSP	2216												

MID-COURSE EXECUTION ACCURACY

SGT	875.3	SGR	379.2	SG3	1311.5				
RRT	.0320	RRF	-.2294	RTF	-.0770				
SGB	953.9	R23	-.2265	R13	-.0787				
SG1	875.4	SG2	379.0	THA	.98				

ORBIT DETERMINATION ACCURACY

ST	24.6	SR	16.0	SS	45.2				
CRT	.9027	CRS	.0109	CBT	.4307				
LSA	46.9	MSA	26.6	SSA	1.3				
EL1	28.8	EL2	5.9	ALF	31.80				

LAUNCH DATE MAY 8 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 445.856 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.283	GAL	-.48	AZL	91.97	HCA	146.64	SNA	185.38	ECC	.18579	INC	1.9735	V1	29.812
RP	210.45	LAP	-1.09	LOP	13.43	VP	23.353	GAP	7.39	AZP	88.35	TAL	356.94	TAP	143.58	RCA	150.94	APO	219.83	V2	26.058
RC	114.307	GL	-21.40	GP	1.06	ZAL	102.92	ZAP	119.42	ETS	179.19	ZAE	162.03	ETE	175.92	ZAC	101.74	ETC	276.68	LVI	-17.53

PLANETOCENTRIC CONIC

C3	9.285	VHL	3.047	DLA	-31.08	RAL	341.39	RAD	6637.7	VEL	11.375	PTH	6.43	VHP	3.286	DPA	-17.71	RAP	315.54	ECC	1.1520

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 32	2315.26	1.87	58.67	193.10	137.55	17 54 7	1315.3	19.95	42.26
60.00	18 42 27	2084.00	7.16	42.90	198.16	129.77	19 17 11	1084.0	22.41	23.59
70.00	20 44 1	1726.25	13.73	18.72	202.95	121.58	21 12 47	726.2	25.47	356.47
76.55	23 15 51	1253.18	22.61	347.33	207.66	111.91	23 36 44	253.2	29.60	321.78
76.55	23 15 51	1253.18	22.61	347.33	207.66	111.91	23 36 44	253.2	29.60	321.78
76.55	23 15 51	1253.18	22.61	347.33	207.66	111.91	23 36 44	253.2	29.60	321.78
110.00	1 47 23	6061.10	13.73	285.54	202.95	121.58	3 28 24	5061.1	25.47	263.29

DIFFERENTIAL CORRECTIONS

TDE	-.2455	TRA	-.2249	TC3	-.9167	BAU	.1202												
RDE	-.1640	RRA	.0343	RC3	.3126	FAU	.20309												
FDE	.1602	FRA	4.8998	FC-18.9362		BSP	365												
BDE	.2953	BRA	.2275	BC3	.9686	FSP	2310												

MID-COURSE EXECUTION ACCURACY

SGT	877.0	SGR	370.2	SG3	1303.3				
RRT	-.0037	RRF	-.2837	RTF	.1720				
SGB	951.9	R23	.2534	R13	-.0722				
SG1	877.0	SG2	370.2	THA	179.89				

ORBIT DETERMINATION ACCURACY

ST	24.3	SR	15.5	SS	46.3				
CRT	.9260	CRS	.0219	CBT	.3866				
LSA	47.5	MSA	26.6	SSA	1.2				
EL1	28.3	EL2	5.0	ALF	31.85				

LAUNCH DATE MAY 8 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 450.021 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.273	GAL	-.49	AZL	91.98	HCA	147.87	SNA	185.21	ECC	.18504	INC	1.9794	V1	29.812
RP	210.70	LAP	-1.08	LOP	14.68	VP	23.307	GAP	7.18	AZP	88.32	TAL	356.88	TAP	144.72	RCA	150.94	APO	219.48	V2	26.030
RC	116.460	GL	-21.51	GP	1.11	ZAL	103.00	ZAP	117.37	ETS	179.19	ZAE	160.18	ETE	176.38	ZAC	101.69	ETC	276.50	LVI	-17.33

PLANETOCENTRIC CONIC

C3	9.243	VHL	3.040	DLA	-31.11	RAL	341.63	RAD	6637.6	VEL	11.373	PTH	6.43	VHP	3.228	DPA	-17.88	RAP	314.69	ECC	1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 41	2313.62	1.95	58.60	193.32	137.55	17 55 15	1313.6	20.03	42.18
60.00	18 43 42	2082.09	7.24	42.81	198.37	129.75	19 18 24	1082.1	22.48	23.48
70.00	20 45 32	1723.54	13.82	18.57	203.17	121.55	21 14 15	723.5	25.55	356.29
76.47	23 16 14	1254.09	22.66	347.42	207.85	111.91	23 37 8	254.1	29.64	321.66
76.47	23 16 14	1254.09	22.66	347.42	207.85	111.91	23 37 8	254.1	29.64	321.66
76.47	23 16 14	1254.09	22.66	347.42	207.85	111.91	23 37 8	254.1	29.64	321.66
110.00	1 48 54	6058.40	13.82	285.39	203.17	121.55	3 29 52	5058.4	25.55	263.12

DIFFERENTIAL CORRECTIONS

TDE	-.2447	TRA	-.1811	TC3	-1.0879	BAU	.1400												
RDE	-.1583	RRA	.0301	RC3	.3168	FAU	.20948												
FDE	.1656	FRA	5.0877	FC-19.6213		BSP	192												
BDE	.2914	BRA	.1835	BC3	1.1331	FSP	2408												

MID-COURSE EXECUTION ACCURACY

SGT	899.5	SGR	361.2	SG3	1414.0				
RRT	-.0500	RRF	-.2790	RTF	.2231				
SGB	969.3	R23	.2660	R13	-.2257				
SG1	899.7	SG2	360.7	THA	178.63				

ORBIT DETERMINATION ACCURACY

ST	23.8	SR	15.0	SS	47.3				
CRT	.9474	CRS	.0280	CBT	.3328				
LSA	48.2	MSA	26.6	SSA	1.2				
EL1	27.8	EL2	4.1	ALF	31.47				

LAUNCH DATE MAY 8 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 454.190 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.263	GAL	-.51	AZL	91.99	HCA	149.09	SMA	185.06	ECC	.18437	INC	1.9859	V1	29.512
RP	210.95	LAP	-1.02	LOP	15.87	VP	23.262	GAP	6.97	AZP	88.30	TAL	356.74	TAP	145.83	RCA	150.94	APO	219.18	V2	26.001
RC	118.637	GL	-21.62	GP	1.17	ZAL	103.27	ZAP	115.31	ETS	179.18	ZAE	156.22	ETE	176.76	ZAC	102.05	ETC	276.31	LVI	-17.13

PLANETOCENTRIC CONIC

C3	9.210	VHL	3.035	DLA	-31.13	RAL	341.89	RAD	6637.6	VEL	11.372	PTH	6.42	VHP	3.175	DPA	-18.06	RAP	313.82	ECC	1.1516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 50	2312.47	2.01	58.55	193.55	137.54	17 56 22	1312.5	20.08	42.12
60.00	18 44 54	2080.78	7.30	42.75	198.61	129.75	19 19 35	1080.8	22.53	23.40
70.00	20 46 54	1721.76	13.89	18.47	203.41	121.52	21 15 35	721.8	25.60	356.18
76.42	23 16 55	1254.48	22.69	347.47	208.06	111.90	23 37 50	254.5	29.67	321.89
76.42	23 16 55	1254.48	22.69	347.47	208.06	111.90	23 37 50	254.5	29.67	321.89
76.42	23 16 55	1254.48	22.69	347.47	208.06	111.90	23 37 50	254.5	29.67	321.89
110.00	1 50 16	6056.62	13.89	285.29	203.41	121.52	3 31 13	5056.6	25.60	263.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2417	TRA	-.1321	TC3	-1.2520	BAU	.1592	SGT	933.0	SGR	352.7	SG3	1465.2	ST	23.3	SR	14.4	SS	48.2
RDE	-.1526	RRA	.0258	RC3	.3218	FAU	.21677	RRT	-.1021	RRF	-.3086	RTF	.3714	CRT	.9669	CRS	.0322	CST	.2681
FDE	.1653	FRA	5.2587	FC	-20.3770	BSP	274	SGB	997.5	R23	.2658	R13	-.3759	LSA	48.7	MSA	26.4	SSA	1.2
BDE	.2858	BRA	.1346	BC3	1.2927	FSP	2481	SG1	933.8	SG2	350.5	THA	177.43	EL1	27.2	EL2	3.1	ALF	31.43

LAUNCH DATE MAY 8 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 458.363 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.255	GAL	-.52	AZL	91.99	HCA	150.30	SMA	184.92	ECC	.18378	INC	1.9929	V1	29.512
RP	211.20	LAP	-.99	LOP	17.09	VP	23.218	GAP	6.76	AZP	88.27	TAL	356.62	TAP	146.92	RCA	150.94	APO	218.91	V2	25.972
RC	120.836	GL	-21.72	GP	1.23	ZAL	103.48	ZAP	113.23	ETS	179.18	ZAE	156.26	ETE	177.07	ZAC	102.21	ETC	276.12	LVI	-16.91

PLANETOCENTRIC CONIC

C3	9.186	VHL	3.031	DLA	-31.13	RAL	342.18	RAD	6637.6	VEL	11.371	PTH	6.42	VHP	3.126	DPA	-18.23	RAP	312.93	ECC	1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 59	2311.88	2.04	58.53	193.81	137.54	17 57 31	1311.9	20.11	42.09
60.00	18 46 4	2080.15	7.33	42.72	198.87	129.74	19 20 45	1080.2	22.55	23.37
70.00	20 48 6	1721.04	13.91	18.43	203.67	121.51	21 16 47	721.0	25.61	356.13
76.41	23 18 0	1254.16	22.70	347.45	208.31	111.89	23 38 54	254.2	29.68	321.87
76.41	23 18 0	1254.16	22.70	347.45	208.31	111.89	23 38 54	254.2	29.68	321.87
76.41	23 18 0	1254.16	22.70	347.45	208.31	111.89	23 38 54	254.2	29.68	321.87
110.00	1 51 28	6055.89	13.91	285.25	203.67	121.51	3 32 24	5055.9	25.61	262.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2450	TRA	-.0870	TC3	-1.4610	BAU	.1838	SGT	1017.8	SGR	344.3	SG3	1509.1	ST	23.4	SR	13.9	SS	49.4
RDE	-.1471	RRA	.0212	RC3	.3257	FAU	.22117	RRT	-.1570	RRF	-.3390	RTF	.4891	CRT	.9818	CRS	.0578	CST	.2206
FDE	.2040	FRA	5.4576	FC	-20.8446	BSP	478	SGB	1074.4	R23	.2558	R13	-.4943	LSA	49.7	MSA	26.5	SSA	1.2
BDE	.2858	BRA	.0896	BC3	1.4969	FSP	2583	SG1	1019.4	SG2	339.5	THA	176.58	EL1	27.1	EL2	2.3	ALF	30.56

LAUNCH DATE MAY 8 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 462.539 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.248	GAL	-.54	AZL	92.00	HCA	151.52	SMA	184.80	ECC	.18328	INC	2.0002	V1	29.512
RP	211.46	LAP	-.95	LOP	18.30	VP	23.175	GAP	6.56	AZP	88.24	TAL	356.48	TAP	148.00	RCA	150.93	APO	218.67	V2	25.942
RC	123.058	GL	-21.82	GP	1.30	ZAL	103.71	ZAP	111.14	ETS	179.18	ZAE	154.27	ETE	177.32	ZAC	102.37	ETC	275.92	LVI	-16.70

PLANETOCENTRIC CONIC

C3	9.170	VHL	3.028	DLA	-31.12	RAL	342.48	RAD	6637.6	VEL	11.370	PTH	6.42	VHP	3.082	DPA	-18.40	RAP	312.02	ECC	1.1509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 9	2311.73	2.05	58.52	194.10	137.54	17 58 41	1311.7	20.12	42.09
60.00	18 47 13	2080.06	7.33	42.71	199.15	129.74	19 21 53	1080.1	22.56	23.36
70.00	20 49 10	1721.14	13.91	18.43	203.94	121.51	21 17 52	721.1	25.61	356.13
76.43	23 19 20	1253.41	22.71	347.39	208.59	111.88	23 40 14	253.4	29.68	321.81
76.43	23 19 20	1253.41	22.71	347.39	208.59	111.88	23 40 14	253.4	29.68	321.81
76.43	23 19 20	1253.41	22.71	347.39	208.59	111.88	23 40 14	253.4	29.68	321.81
110.00	1 52 33	6056.00	13.91	285.26	203.94	121.51	3 33 29	5056.0	25.61	262.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2448	TRA	-.0362	TC3	-1.6539	BAU	.2068	SGT	1106.4	SGR	336.6	SG3	1555.6	ST	23.2	SR	13.4	SS	50.3
RDE	-.1416	RRA	.0164	RC3	.3311	FAU	.22734	RRT	-.2140	RRF	-.3744	RTF	.5038	CRT	.9920	CRS	.0742	CST	.1961
FDE	.2239	FRA	5.6331	FC	-21.4622	BSP	744	SGB	1156.5	R23	.2406	R13	-.5990	LSA	50.5	MSA	26.4	SSA	1.1
BDE	.2828	BRA	.0397	BC3	1.6867	FSP	2671	SG1	1109.0	SG2	328.1	THA	175.92	EL1	26.8	EL2	1.5	ALF	29.89

LAUNCH DATE MAY 8 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC DISTANCE 466.719 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.242	GAL	-.57	AZL	92.01	HCA	152.73	SMA	184.70	ECC	.18285	INC	2.0081	V1	29.512
RP	211.73	LAP	-.92	LOP	19.51	VP	23.132	GAP	6.36	AZP	88.21	TAL	356.33	TAP	149.06	RCA	150.93	APO	218.47	V2	25.911
RC	125.302	GL	-21.92	GP	1.36	ZAL	103.96	ZAP	109.04	ETS	179.18	ZAE	152.26	ETE	177.52	ZAC	102.53	ETC	275.72	LVI	-16.48

PLANETOCENTRIC CONIC

C3	9.163	VHL	3.027	DLA	-31.10	RAL	342.80	RAD	6637.6	VEL	11.370	PTH	6.42	VHP	3.042	DPA	-18.57	RAP	311.10	ECC	1.1508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 20	2312.03	2.03	58.53	194.41	137.54	17 59 52	1312.0	20.10	42.10
60.00	18 48 20	2080.53	7.31	42.74	199.45	129.74	19 23 0	1080.5	22.54	23.39
70.00	20 50 8	1722.07	13.88	18.48	204.24	121.53	21 18 50	722.1	25.59	356.20
76.48	23 20 58	1252.20	22.70	347.30	208.90	111.86	23 41 50	252.2	29.66	321.72
76.48	23 20 58	1252.20	22.70	347.30	208.90	111.86	23 41 50	252.2	29.66	321.72
76.48	23 20 58	1252.20	22.70	347.30	208.90	111.86	23 41 50	252.2	29.66	321.72
110.00	1 53 30	6056.93	13.88	285.31	204.24	121.53	3 34 27	5056.9	25.59	263.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2445	TRA	.0165	TC3	-1.8571	BAU	.2312	SGT	1216.4	SGR	329.5	SG3	1597.3	ST	23.2	SR	12.9	SS	51.3
RDE	-.1361	RRA	.0114	RC3	.3365	FAU	.23241	RRT	-.2717	RRF	-.4116	RTF	.6758	CRT	.9953	CRS	.0940	CST	.0894
FDE	.2484	FRA	5.8077	FC	-21.9582	BSP	1027	SGB	1260.2	R23	.2231	R13	-.6805	LSA	51.3	MSA	26.4	SSA	1.1
BDE	.2799	BRA	.0201	BC3	1.8873	FSP	2757	SG1	1219.9	SG2	316.1	THA	175.49	EL1	26.5	EL2	1.1	ALF	28.99

LAUNCH DATE MAY 8 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC DISTANCE 470.901 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.237	GAL	-.59	AZL	92.02	HCA	153.94	SMA	184.61	ECC	.18249	INC	2.0168	V1	29.512
RP	212.01	LAP	-.69	LOP	20.72	VP	23.089	GAP	6.17	AZP	88.19	TAL	356.16	TAP	150.10	RCA	150.92	APO	218.30	V2	25.880
RC	127.366	GL	-22.01	GP	1.44	ZAL	104.23	ZAP	106.94	ETS	179.19	ZAE	150.22	ETE	177.69	ZAC	102.70	ETC	275.52	LVI	-16.26

PLANETOCENTRIC CONIC

C3	9.164	VHL	3.027	DLA	-31.07	RAL	343.15	RAD	6637.6	VEL	11.370	PTH	6.42	VHP	3.006	DPA	-18.72	RAP	310.17	ECC	1.1808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 32	2312.75	1.99	58.56	194.74	137.54	18 1 4	1312.8	20.07	42.14
60.00	18 49 26	2081.50	7.27	42.78	199.78	129.75	19 24 8	1081.5	22.50	23.45
70.00	20 50 59	1723.78	13.82	18.58	204.55	121.55	21 19 43	723.8	25.54	356.31
76.55	23 22 52	1250.57	22.67	347.17	209.24	111.84	23 43 43	250.6	29.63	321.59
76.55	23 22 52	1250.57	22.67	347.17	209.24	111.84	23 43 43	250.6	29.63	321.59
76.55	23 22 52	1250.57	22.67	347.17	209.24	111.84	23 43 43	250.6	29.63	321.59
110.00	1 54 22	6058.64	13.82	285.40	204.55	121.55	3 35 20	5058.6	25.54	263.13

DIFFERENTIAL CORRECTIONS

TDE	-.2444	TRA	.0714	TC3	-2.0633	BAU	.2562												
RDE	-.1307	RRA	.0060	RC3	.3427	FAU	.23763												
FDE	.2756	FRA	5.9795	FC	-22.4484	BSP	1335												
BDE	.2771	BRA	.0716	BC3	2.0915	FSP	2809												

MID-COURSE EXECUTION ACCURACY

SGT	1341.4	SGR	323.2	SG3	1638.4						
RRT	-.3290	RRF	-.4524	RTF	.7399						
SGB	1379.8	R23	.2073	R13	-.7440						
SG1	1345.8	SG2	304.2	THA	175.22						

ORBIT DETERMINATION ACCURACY

ST	23.3	SR	12.4	SS	52.2						
CRT	.9908	CRS	.1164	CST	.0205						
LSA	52.2	MSA	26.3	SSA	1.0						
EL1	26.4	EL2	1.5	ALF	27.83						

LAUNCH DATE MAY 8 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 475.085 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.232	GAL	-.62	AZL	92.03	HCA	155.14	SMA	184.54	ECC	.18220	INC	2.0263	V1	29.512
RP	212.29	LAP	-.65	LOP	21.93	VP	23.048	GAP	5.98	AZP	88.16	TAL	355.98	TAP	151.12	RCA	150.92	APO	216.17	V2	25.848
RC	129.850	GL	-22.10	GP	1.52	ZAL	104.52	ZAP	104.84	ETS	179.20	ZAE	148.17	ETE	177.83	ZAC	102.87	ETC	275.31	LVI	-16.04

PLANETOCENTRIC CONIC

C3	9.173	VHL	3.029	DLA	-31.04	RAL	343.51	RAD	6637.6	VEL	11.370	PTH	6.42	VHP	2.974	DPA	-18.87	RAP	309.23	ECC	1.1810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 45	2313.66	1.94	58.61	195.10	137.55	18 2 19	1313.9	20.02	42.19
60.00	18 50 32	2082.95	7.20	42.85	200.14	129.76	19 25 15	1083.0	22.45	23.53
70.00	20 51 46	1726.19	13.73	18.71	204.89	121.58	21 20 32	726.2	25.48	356.46
76.65	23 25 1	1248.55	22.64	347.00	209.60	111.81	23 45 50	248.6	29.59	321.43
76.65	23 25 1	1248.55	22.64	347.00	209.60	111.81	23 45 50	248.6	29.59	321.43
76.65	23 25 1	1248.55	22.64	347.00	209.60	111.81	23 45 50	248.6	29.59	321.43
110.00	1 55 8	6061.05	13.73	285.54	204.89	121.58	3 36 9	5061.0	25.48	263.29

DIFFERENTIAL CORRECTIONS

TDE	-.2439	TRA	.1287	TC3	-2.2778	BAU	.2826												
RDE	-.1255	RRA	.0004	RC3	.3487	FAU	.24147												
FDE	.3199	FRA	6.1435	FC	-22.7889	BSP	1642												
BDE	.2742	BRA	.1287	BC3	2.3043	FSP	2891												

MID-COURSE EXECUTION ACCURACY

SGT	1482.3	SGR	317.7	SG3	1672.9						
RRT	-.3858	RRF	-.4954	RTF	.7882						
SGB	1516.0	R23	.1940	R13	-.7916						
SG1	1487.6	SG2	292.1	THA	175.08						

ORBIT DETERMINATION ACCURACY

ST	23.5	SR	11.9	SS	53.1						
CRT	.9771	CRS	.1479	CST	-.0436						
LSA	53.2	MSA	26.3	SSA	1.0						
EL1	26.3	EL2	2.3	ALF	26.44						

LAUNCH DATE MAY 8 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 479.271 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.229	GAL	-.65	AZL	92.04	HCA	156.34	SMA	184.48	ECC	.18197	INC	2.0368	V1	29.512
RP	212.57	LAP	-.62	LOP	23.13	VP	23.006	GAP	5.79	AZP	88.13	TAL	388.79	TAP	152.13	RCA	150.91	APO	218.06	V2	25.815
RC	132.153	GL	-22.20	GP	1.60	ZAL	104.83	ZAP	102.74	ETS	179.21	ZAE	146.11	ETE	177.94	ZAC	103.04	ETC	275.10	LVI	-15.82

PLANETOCENTRIC CONIC

C3	9.191	VHL	3.032	DLA	-30.99	RAL	343.90	RAD	6637.6	VEL	11.371	PTH	6.42	VHP	2.946	DPA	-19.00	RAP	308.29	ECC	1.1813

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 1	2315.36	1.86	58.67	195.48	137.55	18 3 36	1315.4	19.95	42.26
60.00	18 51 39	2084.83	7.12	42.95	200.51	129.77	19 26 24	1084.8	22.37	23.63
70.00	20 52 30	1729.21	13.62	18.88	205.26	121.63	21 21 19	729.2	25.39	356.66
76.77	23 27 24	1246.27	22.60	346.81	210.00	111.79	23 48 10	246.3	29.54	321.25
76.77	23 27 24	1246.27	22.60	346.81	210.00	111.79	23 48 10	246.3	29.54	321.25
76.77	23 27 24	1246.27	22.60	346.81	210.00	111.79	23 48 10	246.3	29.54	321.25
110.00	1 55 52	6064.06	13.62	285.70	205.26	121.63	3 36 56	5064.1	25.39	263.48

DIFFERENTIAL CORRECTIONS

TDE	-.2429	TRA	.1882	TC3	-2.4931	BAU	.3094												
RDE	-.1202	RRA	-.0054	RC3	.3558	FAU	.24547												
FDE	.3570	FRA	6.2847	FC	-23.1230	BSP	1965												
BDE	.2710	BRA	.1883	BC3	2.5183	FSP	2949												

MID-COURSE EXECUTION ACCURACY

SGT	1633.4	SGR	313.5	SG3	1704.0						
RRT	-.4428	RRF	-.5406	RTF	.8167						
SGB	1663.2	R23	.1824	R13	-.8296						
SG1	1639.4	SG2	280.0	THA	175.00						

ORBIT DETERMINATION ACCURACY

ST	23.9	SR	11.4	SS	53.9						
CRT	.9534	CRS	.1777	CST	-.1122						
LSA	54.0	MSA	26.2	SSA	1.0						
EL1	26.3	EL2	3.1	ALF	24.77						

LAUNCH DATE MAY 8 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 483.458 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.226	GAL	-.68	AZL	92.05	HCA	157.54	SMA	184.44	ECC	.18181	INC	2.0478	V1	29.512
RP	212.86	LAP	-.78	LOP	24.32	VP	22.965	GAP	5.60	AZP	88.11	TAL	359.58	TAP	153.12	RCA	150.91	APO	217.97	V2	25.782
RC	134.475	GL	-22.29	GP	1.69	ZAL	105.16	ZAP	100.68	ETS	179.22	ZAE	144.05	ETE	178.03	ZAC	103.21	ETC	274.90	LVI	-15.61

PLANETOCENTRIC CONIC

C3	9.216	VHL	3.036	DLA	-30.94	RAL	344.30	RAD	6637.6	VEL	11.372	PTH	6.42	VHP	2.922	DPA	-19.12	RAP	307.36	ECC	1.1917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 19	2317.17	1.77	58.75	195.89	137.55	18 4 56	1317.2	19.86	42.35
60.00	18 52 47	2087.09	7.02	43.05	200.92	129.79	19 27 34	1087.1	22.29	23.76
70.00	20 53 12	1732.75	13.50	19.08	205.64	121.68	21 22 4	732.7	25.30	356.89
76.91	23 30 0	1243.70	22.55	346.59	210.43	111.76	23 50 44	243.7	29.49	321.05
76.91	23 30 0	1243.70	22.55	346.59	210.43	111.76	23 50 44	243.7	29.49	321.05
76.91	23 30 0	1243.70	22.55	346.59	210.43	111.76	23 50 44	243.7	29.49	321.05
110.00	1 56 34	6067.60	13.50	285.90	205.64	121.68	3 37 41	5067.6	25.30	263.71

DIFFERENTIAL CORRECTIONS

TDE	-.2416	TRA	.2497	TC3	-2.7102	BAU	.3369												
RDE	-.1150	RRA	-.0119	RC3	.3633	FAU	.24887												
FDE	.3963	FRA	6.4451	FC	-23.3786	BSP	2293												
BDE	.2675	BRA	.2498	BC3	2.7345	FSP	2995												

MID-COURSE EXECUTION ACCURACY

SGT	1793.7	SGR	310.6	SG3	1734.8						
RRT	-.4999	RRF	-.5877	RTF	.8554						
SGB	1820.4	R23	.1737	R13	-.8377						
SG1	1800.6	SG2	268.0	THA	174.94						

ORBIT DETERMINATION ACCURACY

ST	24.4	SR	10.9	SS	54.8						
CRT	.9192	CRS	.2105	CST	-.1802						
LSA	55.0	MSA	26.1	SSA	.9						
EL1	26.4	EL2	3.9	ALF	22.83						

LAUNCH DATE MAY 8 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 487.647 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.224	GAL	-.71	AZL	92.06	HCA	158.74	SMA	184.41	ECC	.18170	INC	2.0600	V1	29.512
RP	213.16	LAP	-.75	LOP	25.52	VP	22.925	GAP	5.42	AZP	88.08	TAL	355.36	TAP	154.09	RCA	150.90	APO	217.92	V2	25.749
RC	136.814	GL	-22.39	GP	1.79	ZAL	105.50	ZAP	98.58	ETS	179.24	ZAE	141.98	ETE	178.10	ZAC	103.39	ETC	274.69	LVI	-15.40

PLANETOCENTRIC CONIC

C3	9.249	VHL	3.041	DLA	-30.88	RAL	344.73	RAD	6637.7	VEL	11.373	PTH	6.43	VHP	2.902	DPA	-19.23	RAP	306.43	ECC	1.1522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 27 40	2319.26	1.67	58.84	196.33	137.55	18 6 19	1319.3	19.76	42.45
60.00	18 53 57	2089.66	6.91	43.18	201.34	129.80	19 28 47	1089.7	22.19	23.91
70.00	20 53 54	1736.69	13.35	19.29	206.05	121.73	21 22 51	736.7	25.19	357.14
77.06	23 32 47	1240.99	22.49	346.37	210.88	111.73	23 53 28	241.0	29.42	320.83
77.06	23 32 47	1240.99	22.49	346.37	210.88	111.73	23 53 28	241.0	29.42	320.83
77.06	23 32 47	1240.99	22.49	346.37	210.88	111.73	23 53 28	241.0	29.42	320.83
110.00	1 57 16	6071.55	13.35	286.12	206.05	121.73	3 38 28	5071.6	25.19	263.97

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2401	TRA	.3129	TC3	-2.9305	BAU	.3653	SGT	1963.0	SGR	309.0	SG3	1758.6	ST	25.0	SR	10.4	SS	55.5
RDE	-.1098	RRA	-.0186	RC3	.3715	FAU	.25152	RRT	-.5561	RRF	-.6350	RTF	.8779	CRT	.8748	CRS	.2434	CST	-.2483
FDE	.4294	FRA	6.5799	FC-23	5.5424	BSP	2624	SGB	1987.2	R23	.1665	R13	-.8799	LSA	56.0	MSA	26.1	SSA	.9
BDE	.2640	BRA	.3134	BC3	2.9540	FSP	3043	SG1	1970.7	SG2	255.8	THA	174.91	EL1	26.6	EL2	4.7	ALF	20.61

LAUNCH DATE MAY 8 1971 FLIGHT TIME 206.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 491.836 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.223	GAL	-.75	AZL	92.07	HCA	159.93	SMA	184.39	ECC	.18165	INC	2.0740	V1	29.512
RP	213.46	LAP	-.71	LOP	26.71	VP	22.885	GAP	5.24	AZP	88.05	TAL	355.12	TAP	155.05	RCA	150.89	APO	217.88	V2	25.714
RC	139.171	GL	-22.49	GP	1.90	ZAL	105.86	ZAP	96.53	ETS	179.27	ZAE	139.92	ETE	178.16	ZAC	103.58	ETC	274.49	LVI	-15.21

PLANETOCENTRIC CONIC

C3	9.291	VHL	3.048	DLA	-30.82	RAL	345.18	RAD	6637.7	VEL	11.375	PTH	6.43	VHP	2.886	DPA	-19.31	RAP	305.51	ECC	1.1529

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 29 5	2321.59	1.55	58.93	196.79	137.56	18 7 47	1321.6	19.65	42.56
60.00	18 55 11	2092.49	6.79	43.32	201.80	129.82	19 30 3	1092.5	22.08	24.07
70.00	20 54 39	1740.94	13.20	19.53	206.50	121.79	21 23 40	740.9	25.07	357.42
77.22	23 35 43	1238.19	22.43	346.13	211.37	111.71	23 56 22	238.2	29.36	320.61
77.22	23 35 43	1238.19	22.43	346.13	211.37	111.71	23 56 22	238.2	29.36	320.61
77.22	23 35 43	1238.19	22.43	346.13	211.37	111.71	23 56 22	238.2	29.36	320.61
110.00	1 58 1	6075.80	13.20	286.35	206.50	121.79	3 39 17	5075.8	25.07	264.24

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2376	TRA	.3789	TC3	-3.1472	BAU	.3938	SGT	2137.4	SGR	309.3	SG3	1777.6	ST	25.7	SR	9.9	SS	56.3
RDE	-.1047	RRA	-.0259	RC3	.3801	FAU	.25331	RRT	-.6106	RRF	-.6826	RTF	.8955	CRT	.8188	CRS	.2858	CST	-.3093
FDE	.4789	FRA	6.7062	FC-23	6.6032	BSP	2970	SGB	2159.6	R23	.1623	R13	-.8972	LSA	57.0	MSA	26.0	SSA	.8
BDE	.2596	BRA	.3798	BC3	3.1701	FSP	3090	SG1	2145.8	SG2	244.0	THA	174.88	EL1	27.0	EL2	5.4	ALF	18.22

LAUNCH DATE MAY 8 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 496.025 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.222	GAL	-.79	AZL	92.09	HCA	161.12	SMA	184.38	ECC	.18166	INC	2.0893	V1	29.512
RP	213.77	LAP	-.68	LOP	27.90	VP	22.845	GAP	5.07	AZP	88.02	TAL	354.87	TAP	155.99	RCA	150.88	APO	217.87	V2	25.680
RC	141.545	GL	-22.60	GP	2.02	ZAL	106.23	ZAP	94.50	ETS	179.30	ZAE	137.87	ETE	178.20	ZAC	103.77	ETC	274.29	LVI	-15.03

PLANETOCENTRIC CONIC

C3	9.341	VHL	3.056	DLA	-30.75	RAL	345.64	RAD	6637.7	VEL	11.377	PTH	6.43	VHP	2.872	DPA	-19.38	RAP	304.61	ECC	1.1537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 30 35	2324.10	1.42	59.04	197.28	137.56	18 9 19	1324.1	19.53	42.68
60.00	18 56 30	2095.51	6.66	43.46	202.29	129.84	19 31 25	1095.5	21.96	24.24
70.00	20 55 29	1745.36	13.04	19.77	206.97	121.85	21 24 35	745.4	24.95	357.70
77.38	23 38 45	1235.56	22.36	345.90	211.89	111.69	23 59 20	235.6	29.29	320.39
77.38	23 38 45	1235.56	22.36	345.90	211.89	111.69	23 59 20	235.6	29.29	320.39
77.38	23 38 45	1235.56	22.36	345.90	211.89	111.69	23 59 20	235.6	29.29	320.39
110.00	1 58 52	6080.22	13.04	286.60	206.97	121.85	3 40 12	5080.2	24.95	264.53

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2353	TRA	.4462	TC3	-3.3647	BAU	.4230	SGT	2317.7	SGR	311.8	SG3	1794.1	ST	26.6	SR	9.4	SS	57.0
RDE	-.0998	RRA	-.0338	RC3	.3899	FAU	.25484	RRT	-.6633	RRF	-.7296	RTF	.8990	CRT	.7533	CRS	.3320	CST	-.3646
FDE	.5303	FRA	6.8266	FC-23	6.6184	BSP	3313	SGB	2338.6	R23	.1610	R13	-.9105	LSA	58.1	MSA	26.0	SSA	.8
BDE	.2556	BRA	.4474	BC3	3.3872	FSP	3132	SG1	2327.0	SG2	232.4	THA	174.85	EL1	27.6	EL2	6.0	ALF	15.68

LAUNCH DATE MAY 8 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 500.214 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.223	GAL	-.83	AZL	92.11	HCA	162.30	SMA	184.38	ECC	.18172	INC	2.1069	V1	29.512
RP	214.08	LAP	-.64	LOP	29.08	VP	22.805	GAP	4.89	AZP	87.99	TAL	354.61	TAP	156.91	RCA	150.87	APO	217.89	V2	25.645
RC	143.936	GL	-22.73	GP	2.16	ZAL	106.62	ZAP	92.49	ETS	179.34	ZAE	135.84	ETE	178.22	ZAC	103.97	ETC	274.09	LVI	-14.87

PLANETOCENTRIC CONIC

C3	9.400	VHL	3.066	DLA	-30.70	RAL	346.13	RAD	6637.7	VEL	11.380	PTH	6.43	VHP	2.862	DPA	-19.42	RAP	303.73	ECC	1.1547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 32 11	2326.71	1.29	59.15	197.81	137.56	18 10 58	1326.7	19.41	42.80
60.00	18 57 55	2098.60	6.52	43.61	202.81	129.86	19 32 54	1098.6	21.84	24.41
70.00	20 56 28	1749.77	12.88	20.02	207.48	121.91	21 25 38	749.8	24.82	357.99
77.54	23 41 51	1233.16	22.29	345.69	212.45	111.67	24 2 24	233.2	29.22	320.20
77.54	23 41 51	1233.16	22.29	345.69	212.45	111.67	24 2 24	233.2	29.22	320.20
77.54	23 41 51	1233.16	22.29	345.69	212.45	111.67	24 2 24	233.2	29.22	320.20
110.00	1 59 51	6084.62	12.88	286.84	207.48	121.91	3 41 15	5084.6	24.82	264.81

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2314	TRA	.5167	TC3	-3.5740	BAU	.4520	SGT	2500.1	SGR	316.6	SG3	1805.0	ST	27.6	SR	9.0	SS	57.7
RDE	-.0949	RRA	-.0423	RC3	.4005	FAU	.25546	RRT	-.7134	RRF	-.7742	RTF	.9203	CRT	.6749	CRS	.3819	CST	-.4197
FDE	.5811	FRA	6.9344	FC-23	5.5271	BSP	3671	SGB	2520.1	R23	.1604	R13	-.9217	LSA	59.2	MSA	25.9	SSA	.7
BDE	.2501	BRA	.5184	BC3	3.5963	FSP	3147	SG1	2510.4	SG2	220.9	THA	174.80	EL1	28.3	EL2	6.5	ALF	13.08

LAUNCH DATE MAY 8 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 504.403 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.223	GAL	-.87	AZL	92.13	HCA	163.48	SHA	184.39	ECC	.18183	INC	2.1264
RP	214.39	LAP	-.60	LOP	30.26	VP	22.766	GAP	4.72	AZP	87.96	TAL	354.34	TAP	157.82	RCA	150.86	APO	217.92
RC	146.344	GL	-22.86	GP	2.31	ZAL	107.02	ZAP	90.91	ETS	179.39	ZAE	133.82	ETE	178.24	ZAC	104.19	ETC	273.91

VI	29.812	V2	25.609	LVI	-14.73														

PLANETOCENTRIC CONIC

C3	9.469	VHL	3.077	DLA	-30.64	RAL	346.84	RAD	6637.8	VEL	11.383	PTH	6.44	VHP	2.856	DPA	-19.44	RAP	302.87

ECC	1.1558																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 55	2329.37	1.16	59.26	198.36	137.57	18 12 48	1329.4	19.28	42.93
60.00	18 59 30	2101.60	6.39	43.76	203.37	129.88	19 34 32	1101.7	21.72	24.58
70.00	20 57 40	1753.99	12.73	20.25	208.02	121.96	21 26 54	754.0	24.71	358.26
77.68	23 44 54	1231.38	22.21	348.53	213.04	111.67	24 5 25	231.4	29.15	320.05
77.68	23 44 54	1231.38	22.21	348.53	213.04	111.67	24 5 25	231.4	29.15	320.05
77.68	23 44 54	1231.38	22.21	348.53	213.04	111.67	24 5 25	231.4	29.15	320.05
110.00	2 1 2	6088.65	12.73	287.07	208.02	121.96	3 42 31	5088.9	24.71	265.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2288	TRA	.5875	TC3	-3.7854	BAU	.4820	SGT	2887.9	SGR	324.3	SG3	1813.3	ST	28.8	SR	8.6	SS	58.3
RDE	-.0900	RRA	-.0514	RC3	.4132	FAU	.25833	RRT	-.7602	RRF	-.8160	RTF	.9296	CRT	.5893	CRS	.4322	CST	-.4699
FDE	.6208	FRA	7.0244	FC	-23.4364	BSP	4015	SGB	2707.4	R23	.1617	R13	-.9307	L8A	60.2	M8A	25.9	S8A	.7
BDE	.2496	BRA	.5897	BC3	3.8079	FSP	3160	SG1	2699.2	SG2	209.8	THA	174.73	EL1	29.2	EL2	6.8	ALF	10.51

LAUNCH DATE MAY 8 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 508.591 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.225	GAL	-.91	AZL	92.15	HCA	164.66	SHA	184.41	ECC	.18199	INC	2.1489
RP	214.72	LAP	-.57	LOP	31.44	VP	22.727	GAP	4.55	AZP	87.93	TAL	354.05	TAP	158.71	RCA	150.85	APO	217.97
RC	148.770	GL	-23.02	GP	2.48	ZAL	107.43	ZAP	88.57	ETS	179.45	ZAE	131.82	ETE	178.24	ZAC	104.42	ETC	273.72

VI	29.812	V2	25.573	LVI	-14.62														

PLANETOCENTRIC CONIC

C3	9.547	VHL	3.090	DLA	-30.60	RAL	347.18	RAD	6637.8	VEL	11.386	PTH	6.44	VHP	2.852	DPA	-19.43	RAP	302.03

ECC	1.1571																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 49	2331.96	1.03	59.37	198.96	137.57	18 14 41	1332.0	19.16	43.08
60.00	19 1 16	2104.60	6.26	43.90	203.97	129.89	19 36 21	1104.6	21.61	24.75
70.00	20 59 8	1757.82	12.59	20.46	208.62	122.01	21 28 25	757.8	24.60	358.50
77.79	23 47 52	1230.36	22.15	345.42	213.67	111.68	24 8 22	230.4	29.09	319.97
77.79	23 47 52	1230.36	22.15	345.42	213.67	111.68	24 8 22	230.4	29.09	319.97
77.79	23 47 52	1230.36	22.15	345.42	213.67	111.68	24 8 22	230.4	29.09	319.97
110.00	2 2 30	6092.68	12.39	287.28	208.62	122.01	3 44 3	5092.7	24.60	265.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2249	TRA	.6607	TC3	-3.9881	BAU	.5119	SGT	2876.4	SGR	335.0	SG3	1816.3	ST	30.1	SR	8.2	SS	58.9
RDE	-.0853	RRA	-.0616	RC3	.4268	FAU	.25594	RRT	-.8022	RRF	-.8538	RTF	.9366	CRT	.4926	CRS	.4903	CST	-.5137
FDE	.6693	FRA	7.1106	FC	-23.2091	BSP	4368	SGB	2895.9	R23	.1656	R13	-.9377	L8A	61.4	M8A	25.9	S8A	.8
BDE	.2408	BRA	.6636	BC3	4.0109	FSP	3175	SG1	2889.0	SG2	199.2	THA	174.64	EL1	30.4	EL2	7.0	ALF	8.06

LAUNCH DATE MAY 8 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 512.778 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.226	GAL	-.96	AZL	92.18	HCA	165.83	SHA	184.44	ECC	.18219	INC	2.1749
RP	215.04	LAP	-.53	LOP	32.61	VP	22.689	GAP	4.38	AZP	87.89	TAL	353.76	TAP	159.59	RCA	150.84	APO	218.05
RC	151.211	GL	-23.20	GP	2.68	ZAL	107.85	ZAP	86.66	ETS	179.52	ZAE	129.85	ETE	178.23	ZAC	104.67	ETC	273.55

VI	29.812	V2	25.536	LVI	-14.54														

PLANETOCENTRIC CONIC

C3	9.636	VHL	3.104	DLA	-30.58	RAL	347.74	RAD	6637.8	VEL	11.390	PTH	6.44	VHP	2.851	DPA	-19.38	RAP	301.23

ECC	1.1586																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 55	2334.36	.91	59.47	199.59	137.57	18 16 50	1334.4	19.04	43.16
60.00	19 3 18	2107.19	6.15	44.03	204.61	129.91	19 38 29	1107.2	21.51	24.89
70.00	21 0 59	1760.93	12.48	20.63	209.27	122.05	21 30 20	760.9	24.51	358.70
77.86	23 50 35	1230.68	22.08	345.42	214.35	111.70	24 11 6	230.7	29.05	319.98
77.86	23 50 35	1230.68	22.08	345.42	214.35	111.70	24 11 6	230.7	29.05	319.98
77.86	23 50 35	1230.68	22.08	345.42	214.35	111.70	24 11 6	230.7	29.05	319.98
110.00	2 4 21	6095.79	12.48	287.45	209.27	122.05	3 45 57	5095.8	24.51	265.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2212	TRA	.7335	TC3	-4.1063	BAU	.5423	SGT	3067.2	SGR	349.8	SG3	1817.0	ST	31.5	SR	7.8	SS	59.4
RDE	-.0808	RRA	-.0728	RC3	.4434	FAU	.25587	RRT	-.8395	RRF	-.8874	RTF	.9429	CRT	.3863	CRS	.9529	CST	-.9827
FDE	.7160	FRA	7.1783	FC	-22.9873	BSP	4716	SGB	3087.1	R23	.1708	R13	-.9439	L8A	62.5	M8A	25.9	S8A	.6
BDE	.2358	BRA	.7391	BC3	4.2097	FSP	3174	SG1	3081.3	SG2	189.2	THA	174.51	EL1	31.6	EL2	7.2	ALF	5.78

LAUNCH DATE MAY 8 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 516.964 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.228	GAL	-1.01	AZL	92.21	HCA	167.00	SHA	184.48	ECC	.18244	INC	2.2055
RP	215.37	LAP	-.50	LOP	33.78	VP	22.650	GAP	4.22	AZP	87.85	TAL	353.45	TAP	160.46	RCA	150.83	APO	218.14
RC	153.669	GL	-23.42	GP	2.91	ZAL	108.28	ZAP	84.79	ETS	179.61	ZAE	127.90	ETE	178.20	ZAC	104.95	ETC	273.38

VI	29.812	V2	25.499	LVI	-14.50														

PLANETOCENTRIC CONIC

C3	9.738	VHL	3.121	DLA	-30.58	RAL	348.33	RAD	6637.8	VEL	11.395	PTH	6.45	VHP	2.853	DPA	-19.29	RAP	300.45

ECC	1.1603																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 40 18	2336.41	.81	59.55	200.28	137.57	18 19 14	1336.4	18.94	43.26
60.00	19 5 41	2109.23	6.06	44.13	205.31	129.92	19 40 50	1109.2	21.43	25.00
70.00	21 3 22	1762.95	12.41	20.74	209.98	122.08	21 32 45	763.0	24.45	358.83
77.85	23 52 56	1232.84	22.03	345.56	215.09	111.76	24 13 28	232.8	29.03	320.14
77.85	23 52 56	1232.84	22.03	345.56	215.09	111.76	24 13 28	232.8	29.03	320.14
77.85	23 52 56	1232.84	22.03	345.56	215.09	111.76	24 13 28	232.8	29.03	320.14
110.00	2 6 44	6097.81	12.41	287.57	209.98	122.08	3 48 22	5097.8	24.45	265.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2173	TRA	.8126	TC3	-4.3732	BAU	.5725	SGT	3257.8	SGR	368.8	SG3	1811.8	ST	33.0	SR	7.5	SS	59.9
RDE	-.0764	RRA	-.0858	RC3	.4615	FAU	.25435	RRT	-.8713	RRF	-.9157	RTF	.9476	CRT	.2691	CRS	.6189	CST	-.8878
FDE	.7620	FRA	7.2434	FC	-22.6122	BSP	5063	SGB	3278.4	R23	.1785	R13	-.9486	L8A	63.7	M8A	26.0	S8A	.8
BDE	.2304	BRA	.8171	BC3	4.3974	FSP	3166	SG1	3273.4	SG2	180.1	THA	174.35	EL1	33.1	EL2	7.2	ALF	3.69

LAUNCH DATE MAY 8 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 14 1971

HELIOCENTRIC CONIC DISTANCE 521.149 EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 32.232 GAL -1.06 AZL 92.24 HCA 168.17 SMA 184.53 ECC .18273 INC 2.2420 V1 29.512
RP 215.71 LAP -.46 LOP 34.95 VP 22.612 GAP 4.05 AZP 87.81 TAL 353.14 TAP 161.31 RCA 150.81 APO 218.25 V2 25.461
RC 156.143 GL -23.68 GP 3.18 ZAL 108.71 ZAP 82.96 ETS 179.72 ZAE 125.98 ETE 178.15 ZAC 105.27 ETC 273.22 LVI -14.51

PLANETOCENTRIC CONIC

C3 9.854 VHL 3.139 DLA -30.62 RAL 348.96 RAD 6638.0 VEL 11.400 PTH 6.45 VHP 2.858 DPA -19.15 RAP 299.70 ECC 1.1622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 43 1	2337.87	.73	59.61	201.03	137.57	18 21 59	1337.9	18.87	43.33
60.00	19 8 31	2110.40	6.01	44.18	206.09	129.93	19 43 41	1110.4	21.38	25.07
70.00	21 6 29	1763.31	12.40	20.76	210.79	122.08	21 35 52	763.3	24.44	358.85
77.75	23 54 43	1237.49	22.00	345.89	215.89	111.85	24 15 20	237.5	29.03	320.49
77.75	23 54 43	1237.49	22.00	345.89	215.89	111.85	24 15 20	237.5	29.03	320.49
77.75	23 54 43	1237.49	22.00	345.89	215.89	111.85	24 15 20	237.5	29.03	320.49
110.00	2 9 51	6098.17	12.40	287.59	210.79	122.08	3 51 29	5098.2	24.44	265.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2138 TRA .8913 TC3-4.5522 BAU .6031 SGT 3448.7 SGR 393.1 SG3 1804.2 ST 34.7 SR 7.3 SS 60.2
RDE -.0721 RRA -.0999 RC3 .4839 FAU .25316 RRT -.8980 RRF -.9392 RTF .9520 CRT .1434 CRS .6871 CST -.6186
FDE .8017 FRA 7.2880 FC-22.2416 BSP 5413 SGB 3471.0 R23 .1869 R13 -.9529 LSA 64.9 MSA 26.1 SSA .5
BDE .2257 BRA .8969 BC3 4.5779 FSP 3154 SG1 3466.7 SG2 172.1 THA 174.14 EL1 34.7 EL2 7.2 ALF 1.81

LAUNCH DATE MAY 8 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 525.331 EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 32.235 GAL -1.11 AZL 92.29 HCA 169.33 SMA 184.58 ECC .18307 INC 2.2862 V1 29.512
RP 216.04 LAP -.42 LOP 36.11 VP 22.574 GAP 3.89 AZP 87.75 TAL 352.81 TAP 162.14 RCA 150.79 APO 218.38 V2 25.424
RC 158.631 GL -24.01 GP 3.51 ZAL 109.14 ZAP 81.17 ETS 179.85 ZAE 124.09 ETE 178.09 ZAC 105.64 ETC 273.07 LVI -14.59

PLANETOCENTRIC CONIC

C3 9.987 VHL 3.160 DLA -30.70 RAL 349.64 RAD 6638.0 VEL 11.405 PTH 6.46 VHP 2.865 DPA -18.94 RAP 298.98 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 13	2338.46	.70	59.64	201.86	137.57	18 25 12	1338.5	18.85	43.36
60.00	19 11 59	2110.28	6.01	44.18	206.95	129.93	19 47 9	1110.3	21.39	25.06
70.00	21 10 36	1761.26	12.47	20.65	211.70	122.06	21 39 57	761.3	24.50	358.72
77.52	23 55 40	1245.61	21.99	346.50	216.77	111.98	24 16 26	245.6	29.08	321.11
77.52	23 55 40	1245.61	21.99	346.50	216.77	111.98	24 16 26	245.6	29.08	321.11
77.52	23 55 40	1245.61	21.99	346.50	216.77	111.98	24 16 26	245.6	29.08	321.11
110.00	2 13 58	6096.12	12.47	287.47	211.70	122.06	3 55 34	5096.1	24.50	265.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2100 TRA .9729 TC3-4.7177 BAU .6336 SGT 3639.3 SGR 424.3 SG3 1793.8 ST 36.5 SR 7.2 SS 60.7
RDE -.0684 RRA -.1168 RC3 .5104 FAU .25123 RRT -.9194 RRF -.9580 RTF .9553 CRT .0083 CRS .7584 CST -.6438
FDE .8523 FRA 7.3343 FC-21.7787 BSP 5763 SGB 3664.0 R23 .1979 R13 -.9563 LSA 66.2 MSA 26.3 SSA .4
BDE .2209 BRA .9799 BC3 4.7453 FSP 3136 SG1 3660.2 SG2 165.9 THA 173.87 EL1 36.5 EL2 7.2 ALF .10

LAUNCH DATE MAY 8 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 529.512 EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 32.239 GAL -1.16 AZL 92.34 HCA 170.49 SMA 184.65 ECC .18344 INC 2.3410 V1 29.512
RP 216.39 LAP -.39 LOP 37.27 VP 22.537 GAP 3.73 AZP 87.69 TAL 352.47 TAP 162.97 RCA 150.78 APO 218.52 V2 25.385
RC 161.134 GL -24.43 GP 3.92 ZAL 109.57 ZAP 79.42 ETS 180.02 ZAE 122.24 ETE 177.99 ZAC 106.08 ETC 272.93 LVI -14.75

PLANETOCENTRIC CONIC

C3 10.141 VHL 3.185 DLA -30.86 RAL 350.37 RAD 6638.1 VEL 11.412 PTH 6.46 VHP 2.875 DPA -18.65 RAP 298.29 ECC 1.1669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 50 5	2337.72	.74	59.61	202.80	137.57	18 29 2	1337.7	18.88	43.32
60.00	19 16 20	2108.23	6.10	44.08	207.93	129.91	19 51 28	1108.2	21.47	24.95
70.00	21 16 10	1755.56	12.68	20.34	212.76	121.98	21 45 26	755.6	24.66	358.36
77.09	23 55 31	1258.37	22.02	347.47	217.76	112.19	24 16 29	258.4	29.19	322.09
77.09	23 55 31	1258.37	22.02	347.47	217.76	112.19	24 16 29	258.4	29.19	322.09
77.09	23 55 31	1258.37	22.02	347.47	217.76	112.19	24 16 29	258.4	29.19	322.09
110.00	2 19 33	6090.42	12.68	287.16	212.76	121.98	4 1 3	5090.4	24.66	265.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2072 TRA 1.0575 TC3-4.8657 BAU .6638 SGT 3828.3 SGR 464.0 SG3 1779.4 ST 38.4 SR 7.3 SS 61.2
RDE -.0649 RRA -.1369 RC3 .5424 FAU .24857 RRT -.9361 RRF -.9723 RTF .9581 CRT -.1310 CRS .8256 CST -.6660
FDE .8964 FRA 7.3744 FC-21.2198 BSP 6119 SGB 3856.3 R23 .2098 R13 -.9591 LSA 67.6 MSA 26.5 SSA .4
BDE .2172 BRA 1.0664 BC3 4.8958 FSP 3117 SG1 3852.9 SG2 162.1 THA 173.52 EL1 38.4 EL2 7.2 ALF 178.53

LAUNCH DATE MAY 8 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 533.690 EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 32.243 GAL -1.22 AZL 92.41 HCA 171.65 SMA 184.72 ECC .18385 INC 2.4105 V1 29.512
RP 216.73 LAP -.35 LOP 38.43 VP 22.499 GAP 3.57 AZP 87.61 TAL 352.13 TAP 163.78 RCA 150.76 APO 218.68 V2 25.347
RC 163.649 GL -24.96 GP 4.43 ZAL 109.98 ZAP 77.72 ETS 180.24 ZAE 120.41 ETE 177.86 ZAC 106.63 ETC 272.80 LVI -15.02

PLANETOCENTRIC CONIC

C3 10.324 VHL 3.213 DLA -31.13 RAL 351.17 RAD 6638.2 VEL 11.420 PTH 6.47 VHP 2.887 DPA -18.24 RAP 297.62 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 54 52	2334.98	.88	59.49	203.87	137.57	18 33 47	1335.0	19.01	43.19
60.00	19 21 57	2103.27	6.32	43.84	209.08	129.89	19 57 0	1103.3	21.66	24.67
70.00	21 23 58	1744.19	13.09	19.71	214.04	121.83	21 53 2	744.2	24.98	357.63
76.41	23 53 55	1277.16	22.11	348.92	218.88	112.49	24 15 12	277.2	29.40	323.55
76.41	23 53 55	1277.16	22.11	348.92	218.88	112.49	24 15 12	277.2	29.40	323.55
76.41	23 53 55	1277.16	22.11	348.92	218.88	112.49	24 15 12	277.2	29.40	323.55
110.00	2 27 20	6079.05	13.09	286.53	214.04	121.83	4 8 39	5079.0	24.98	264.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2074 TRA 1.1440 TC3-4.9969 BAU .6944 SGT 4015.9 SGR 515.0 SG3 1760.5 ST 40.5 SR 7.5 SS 61.4
RDE -.0617 RRA -.1612 RC3 .5827 FAU .24561 RRT -.9489 RRF -.9828 RTF .9606 CRT -.2671 CRS .8842 CST -.6852
FDE .9228 FRA 7.3950 FC-20.5958 BSP 6467 SGB 4048.7 R23 .2212 R13 -.9617 LSA 68.9 MSA 26.8 SSA .3
BDE .2164 BRA 1.1553 BC3 5.0308 FSP 3087 SG1 4045.5 SG2 161.4 THA 173.05 EL1 40.6 EL2 7.2 ALF 177.08

LAUNCH DATE MAY 8 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 537.867 EARTH TO MARS

RL	180.98	LAL	.00	LOL	226.77	VL	32.247	GAL	-1.28	AZL	92.50	HCA	172.80	SMA	184.79	ECC	.18429	INC	2.5010
RP	217.08	LAP	-.31	LOP	39.58	VP	22.462	GAP	3.41	AZP	87.52	TAL	351.78	TAP	184.58	RCA	150.74	APO	218.85
RC	166.178	GL	-25.68	GP	5.10	ZAL	110.36	ZAP	76.08	ETS	180.52	ZAE	116.62	ETE	177.67	ZAC	107.33	ETC	272.68

VI	29.512	V1	29.512
V2	25.308	V2	25.308
LVI	-19.48	LVI	-19.48

PLANETOCENTRIC CONIC

C3	10.947	VHL	3.246	DLA	-31.55	RAL	352.09	RAD	6636.3	VEL	11.430	PTH	6.48	VHP	2.902	DPA	-17.67	RAP	296.97
DPA	1.1736																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 1 3	2329.17	1.17	58.25	205.16	137.57	18 38 53	1329.2	19.29	42.92
60.00	19 29 31	2093.78	6.73	43.38	210.48	129.83	20 4 25	1093.8	22.03	24.14
70.00	21 35 21	1723.37	13.83	18.56	215.65	121.54	22 4 5	723.4	25.55	356.28
75.39	23 50 22	1304.07	22.28	351.03	220.22	112.94	24 12 7	304.1	29.74	328.65
75.39	23 50 22	1304.07	22.28	351.03	220.22	112.94	24 12 7	304.1	29.74	328.65
75.39	23 50 22	1304.07	22.28	351.03	220.22	112.94	24 12 7	304.1	29.74	328.65
110.00	2 38 43	6058.23	13.83	285.38	215.65	121.54	4 19 42	5058.2	25.55	263.10

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2157	TRA	1.2283	TC3	-5.1230	BAU	.7281	SGT	4205.7	SGR	582.5	SG3	1737.8	ST	42.9	SR	7.9	SS	61.1
RDE	-.0506	RRA	-.1913	RC3	.6383	FAU	.24369	RRT	-.9581	RRF	-.9900	RTF	.9628	CRT	-.3878	CRS	.9309	CST	-.6968
FDE	.9200	FRA	7.3753	FC	-20.0022	BSP	6745	SGB	4245.9	R23	.2307	R13	-.9641	LSA	69.9	NSA	27.4	SSA	.3
BDE	.2238	BRA	1.2431	BC3	5.1635	FSP	3019	SG1	4242.7	SG2	165.3	THA	172.43	EL1	43.0	EL2	7.3	ALF	178.80

LAUNCH DATE MAY 8 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 542.042 EARTH TO MARS

RL	180.98	LAL	.00	LOL	226.77	VL	32.252	GAL	-1.34	AZL	92.63	HCA	173.95	SMA	184.87	ECC	.18477	INC	2.6274
RP	217.43	LAP	-.28	LOP	40.73	VP	22.425	GAP	3.25	AZP	87.39	TAL	351.42	TAP	185.37	RCA	150.71	APO	219.03
RC	168.717	GL	-26.69	GP	6.02	ZAL	110.70	ZAP	74.49	ETS	180.92	ZAE	116.85	ETE	177.40	ZAC	108.28	ETC	272.58

VI	29.512	V1	29.512
V2	25.269	V2	25.269
LVI	-16.13	LVI	-16.13

PLANETOCENTRIC CONIC

C3	10.833	VHL	3.291	DLA	-32.22	RAL	353.16	RAD	6636.8	VEL	11.442	PTH	6.49	VHP	2.922	DPA	-16.84	RAP	296.32
DPA	1.1783																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 9 29	2318.38	1.71	58.80	206.77	137.55	18 48 7	1318.4	19.80	42.40
60.00	19 40 15	2076.81	7.47	42.56	212.27	129.72	20 14 52	1076.8	22.68	23.18
70.00	21 53 24	1684.70	15.20	18.39	217.85	120.96	22 21 29	684.7	26.56	353.74
73.87	23 44 25	1341.56	22.58	354.02	221.87	113.62	24 6 47	341.6	30.29	328.63
73.87	23 44 25	1341.56	22.58	354.02	221.87	113.62	24 6 47	341.6	30.29	328.63
73.87	23 44 25	1341.56	22.58	354.02	221.87	113.62	24 6 47	341.6	30.29	328.63
110.00	2 56 47	6019.55	15.20	283.22	217.85	120.96	4 37 6	5019.6	26.56	260.87

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2223	TRA	1.3250	TC3	-5.1898	BAU	.7587	SGT	4388.0	SGR	675.3	SG3	1711.0	ST	45.5	SR	8.7	SS	60.7
RDE	-.0559	RRA	-.2312	RC3	.7129	FAU	.24163	RRT	-.9661	RRF	-.9948	RTF	.9667	CRT	-.5099	CRS	.9650	CST	-.7188
FDE	.8993	FRA	7.3403	FC	-19.3107	BSP	7115	SGB	4439.6	R23	.2302	R13	-.9680	LSA	71.2	NSA	27.5	SSA	.2
BDE	.2293	BRA	1.3450	BC3	5.2386	FSP	2935	SG1	4436.3	SG2	172.6	THA	171.53	EL1	45.8	EL2	7.4	ALF	174.31

LAUNCH DATE MAY 8 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 546.211 EARTH TO MARS

RL	180.98	LAL	.00	LOL	226.77	VL	32.258	GAL	-1.40	AZL	92.81	HCA	175.10	SMA	184.96	ECC	.18529	INC	2.8094
RP	217.79	LAP	-.24	LOP	41.87	VP	22.388	GAP	3.10	AZP	87.20	TAL	351.04	TAP	186.14	RCA	150.69	APO	219.23
RC	171.268	GL	-28.16	GP	7.35	ZAL	110.94	ZAP	72.97	ETS	181.49	ZAE	115.11	ETE	176.99	ZAC	109.63	ETC	272.50

VI	29.512	V1	29.512
V2	25.229	V2	25.229
LVI	-17.20	LVI	-17.20

PLANETOCENTRIC CONIC

C3	11.227	VHL	3.351	DLA	-33.30	RAL	354.53	RAD	6636.7	VEL	11.439	PTH	6.51	VHP	2.946	DPA	-15.59	RAP	295.67
DPA	1.1848																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 21 47	2299.24	2.67	58.00	208.97	137.52	19 0 6	1299.2	20.71	41.49
60.00	19 58 42	2046.59	8.78	41.08	214.79	129.49	20 30 48	1046.6	23.83	21.45
70.00	22 27 42	1601.32	18.06	11.62	221.33	119.50	22 54 23	601.3	28.60	348.11
71.64	23 35 25	1393.61	23.08	358.26	224.07	114.70	23 58 39	393.6	31.18	332.84
71.64	23 35 25	1393.61	23.08	358.26	224.07	114.70	23 58 39	393.6	31.18	332.84
71.64	23 35 25	1393.61	23.08	358.26	224.07	114.70	23 58 39	393.6	31.18	332.84
110.00	3 31 4	5936.18	18.06	278.45	221.33	119.50	5 10 0	4936.2	28.60	254.93

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2463	TRA	1.4200	TC3	-5.2321	BAU	.7948	SGT	4372.8	SGR	808.7	SG3	1676.4	ST	48.7	SR	10.1	SS	60.6
RDE	-.0554	RRA	-.2885	RC3	.8129	FAU	.23722	RRT	-.9693	RRF	-.9976	RTF	.9670	CRT	-.5919	CRS	.9871	CST	-.7126
FDE	.9005	FRA	7.3129	FC	-18.2918	BSP	7393	SGB	4643.8	R23	.2381	R13	-.9687	LSA	72.8	NSA	29.0	SSA	.2
BDE	.2324	BRA	1.4490	BC3	5.2949	FSP	2877	SG1	4639.7	SG2	196.0	THA	170.26	EL1	49.1	EL2	8.1	ALF	172.82

LAUNCH DATE MAY 8 1971 FLIGHT TIME 234.00 ARRIVAL DATE DEC 28 1971

HELIOCENTRIC CONIC DISTANCE 550.378 EARTH TO MARS

RL	180.98	LAL	.00	LOL	226.77	VL	32.263	GAL	-1.46	AZL	93.10	HCA	176.24	SMA	185.05	ECC	.18584	INC	3.1048
RP	218.15	LAP	-.20	LOP	43.01	VP	22.351	GAP	2.94	AZP	86.90	TAL	350.67	TAP	186.90	RCA	150.66	APO	219.45
RC	173.829	GL	-30.50	GP	9.47	ZAL	110.99	ZAP	71.57	ETS	182.40	ZAE	113.38	ETE	176.33	ZAC	111.76	ETC	272.44

VI	29.512	V1	29.512
V2	25.189	V2	25.189
LVI	-19.01	LVI	-19.01

PLANETOCENTRIC CONIC

C3	11.842	VHL	3.441	DLA	-35.12	RAL	356.43	RAD	6639.0	VEL	11.486	PTH	6.53	VHP	2.982	DPA	-13.56	RAP	294.94
DPA	1.1949																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 41 46	2284.00	4.44	56.52	212.36	137.42	19 19 30	1284.0	22.36	39.76
60.00	20 25 19	1988.23	11.29	38.20	218.84	128.95	20 58 27	988.2	25.96	18.01
68.24	23 22 41	1466.57	23.92	4.39	227.32	116.52	23 47 8	466.6	32.68	338.95
68.24	23 22 41	1466.57	23.92	4.39	227.32	116.52	23 47 8	466.6	32.68	338.95
68.24	23 22 41	1466.57	23.92	4.39	227.32	116.52	23 47 8	466.6	32.68	338.95
68.24	23 22 41	1466.57	23.92	4.39	227.32	116.52	23 47 8	466.6	32.68	338.95
68.24	23 22 41	1466.57	23.92	4.39	227.32	116.52	23 47 8	466.6	32.68	338.95

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2656	TRA	1.5499	TC3	-5.1084	BAU	.8225	SGT	4744.6	SGR	1019.2	SG3	1631.0	ST	52.5	SR	12.0	SS	61.3
RDE	-.0612	RRA	-.3819	RC3	.9463	FAU	.22796	RRT	-.9713	RRF	-.9990	RTF	.9676	CRT	-.6629	CRS	.9975	CST	-.7135
FDE	.9557	FRA	7.3234	FC	-16.6660	BSP	7962	SGB	4852.8	R23	.2391	R13	-.9701	LSA	75.8	NSA	30.5	SSA	.1
BDE	.2726	BRA	1.5962	BC3	5.1953	FSP	2870	SG1	4847.0	SG2	237.1	THA	168.18	EL1	53.2	EL2	9.4	ALF	170.55

LAUNCH DATE MAY 8 1971 FLIGHT TIME 236.00 ARRIVAL DATE DEC 30 1971

HELIOCENTRIC CONIC DISTANCE 554.541 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.269	GAL	-1.52	AZL	93.65	HCA	177.37	SMA	185.15	ECC	.18642	INC	3.6472	V1	29.512
RP	218.51	LAP	-.17	LOP	44.15	VP	22.314	GAP	2.79	AZP	86.35	TAL	350.28	TAP	167.65	RCA	150.64	APO	219.67	V2	25.148
RC	176.400	GL	-34.67	GP	13.31	ZAL	110.58	ZAP	70.42	ETS	184.02	ZAE	111.58	ETE	175.10	ZAC	115.62	ETC	272.45	LVI	-22.43

PLANETOCENTRIC CONIC

C3	13.028	VHL	3.609	DLA	-38.51	RAL	359.57	RAD	6639.6	VEL	11.537	PTH	6.58	VHP	3.047	DPA	-9.81	RAP	294.03	ECC	1.2144

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 20 50	2191.75	8.05	53.46	218.79	137.05	19 57 21	1191.7	25.67	36.08
60.00	21 32 34	1840.01	17.51	30.60	227.49	126.90	22 3 14	840.0	30.97	8.64
62.69	23 5 55	1573.40	25.34	13.86	233.04	120.03	23 32 9	573.4	35.38	348.45
62.69	23 5 55	1573.40	25.34	13.86	233.04	120.03	23 32 9	573.4	35.38	348.45
62.69	23 5 55	1573.40	25.34	13.86	233.04	120.03	23 32 9	573.4	35.38	348.45
62.69	23 5 55	1573.40	25.34	13.86	233.04	120.03	23 32 9	573.4	35.38	348.45
62.69	23 5 55	1573.40	25.34	13.86	233.04	120.03	23 32 9	573.4	35.38	348.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3544	TRA	1.6636	TC3	-4.9111	BAU	.8802	SGT	4926.9	SGR	1394.4	SG3	1549.5	ST	58.2	SR	17.3	SS	59.6
RDE	-.0660	RRA	-.5385	RC3	1.1918	FAU	.22261	RRT	-.9720	RRF	-.9996	RTF	.9876	CRT	-.6867	CRS	1.0000	CST	-.6884
FDE	.8591	FRA	7.0708	FC3	-14.7928	BSP	8084	SGB	5120.4	R23	.2350	R13	-.9718	LSA	78.1	MSA	33.5	SSA	.1
BDE	.3605	BRA	1.7486	BC3	5.0536	FSP	2645	SG1	5110.7	SG2	316.0	THA	164.56	EL1	59.4	EL2	12.3	ALF	167.97

LAUNCH DATE MAY 8 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC DISTANCE 558.703 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.275	GAL	-1.59	AZL	95.02	HCA	178.51	SMA	185.26	ECC	.18703	INC	5.0224	V1	29.512
RP	218.88	LAP	-.13	LOP	45.28	VP	22.278	GAP	2.64	AZP	84.98	TAL	349.89	TAP	168.40	RCA	150.61	APO	219.91	V2	25.109
RC	178.981	GL	-43.87	GP	22.27	ZAL	108.70	ZAP	70.24	ETS	187.61	ZAE	109.35	ETE	172.23	ZAC	124.57	ETC	272.68	LVI	-30.55

PLANETOCENTRIC CONIC

C3	16.589	VHL	4.073	DLA	-45.96	RAL	6.9[illegible]	RAD	6641.3	VEL	11.689	PTH	6.72	VHP	3.249	DPA	-.97	RAP	292.54	ECC	1.2730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 27 0	1961.46	19.31	43.18	239.17	134.37	21 59 41	961.5	35.35	22.69
52.13	22 50 45	1749.25	27.37	30.79	246.90	128.48	23 19 54	749.3	40.56	6.23
52.13	22 50 45	1749.25	27.37	30.79	246.90	128.48	23 19 54	749.3	40.56	6.23
52.13	22 50 45	1749.25	27.37	30.79	246.90	128.48	23 19 54	749.3	40.56	6.23
52.13	22 50 45	1749.25	27.37	30.79	246.90	128.48	23 19 54	749.3	40.56	6.23
52.13	22 50 45	1749.25	27.37	30.79	246.90	128.48	23 19 54	749.3	40.56	6.23
52.13	22 50 45	1749.25	27.37	30.79	246.90	128.48	23 19 54	749.3	40.56	6.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3859	TRA	1.9452	TC3	-3.9060	BAU	.9258	SGT	5090.2	SGR	2251.3	SG3	1343.4	ST	65.2	SR	30.4	SS	60.4
RDE	-.1517	RRA	-.9355	RC3	1.4730	FAU	.19009	RRT	-.9732	RRF	-.9998	RTF	.9686	CRT	-.7049	CRS	.9991	CST	-.6738
FDE	1.1955	FRA	6.5117	FC3	-9.9203	BSP	9653	SGB	5565.8	R23	.2122	R13	-.9772	LSA	86.1	MSA	37.5	SSA	.0
BDE	.4146	BRA	2.1584	BC3	4.1745	FSP	2444	SG1	5545.5	SG2	475.3	THA	156.53	EL1	68.9	EL2	20.4	ALF	159.98

LAUNCH DATE MAY 8 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 567.015 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.289	GAL	-1.73	AZL	85.68	HCA	180.77	SMA	185.48	ECC	.18835	INC	4.3151	V1	29.512
RP	219.62	LAP	-.06	LOP	47.54	VP	22.206	GAP	2.34	AZP	94.32	TAL	349.07	TAP	169.84	RCA	150.54	APO	220.41	V2	25.028
RC	184.172	GL	38.92	GP	-37.25	ZAL	110.96	ZAP	71.54	ETS	164.28	ZAE	103.58	ETE	191.16	ZAC	65.12	ETC	272.24	LVI	24.39

PLANETOCENTRIC CONIC

C3	14.973	VHL	3.869	DLA	29.46	RAL	329.27	RAD	6640.5	VEL	11.620	PTH	6.66	VHP	3.938	DPA	-59.35	RAP	307.44	ECC	1.2464

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 9 55	3680.66	-47.57	145.30	208.82	89.54	13 11 15	2680.7	-42.17	111.79
60.00	12 6 53	3688.73	-39.81	145.34	208.14	83.15	13 8 22	2688.7	-38.24	114.30
70.00	12 0 53	3706.45	-31.88	145.06	206.43	77.05	13 2 39	2706.4	-33.99	116.53
80.00	11 36 6	3784.56	-22.53	147.83	203.31	69.87	12 39 11	2784.6	-28.79	122.16
81.40	11 5 48	3881.59	-18.97	153.51	201.81	67.03	12 10 30	2881.6	-26.78	128.93
100.00	14 18 58	3259.03	-22.53	109.20	203.31	69.87	15 13 17	2259.0	-28.79	83.53
110.00	17 0 19	2753.27	-31.88	73.98	206.43	77.05	17 46 13	1753.3	-33.99	45.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.4286	TRA	1.0097	TC3	-4.7582	BAU	1.0678	SGT	5425.8	SGR	3384.7	SG3	865.5	ST	181.7	SR	111.0	SS	110.4
RDE	1.4521	RRA	1.0763	RC3	-2.4115	FAU	.12192	RRT	.9664	RRF	.9998	RTF	.[illegible]10	CRT	.9942	CRS	-.9999	CST	-.9929
FDE	4.2317	FRA	3.2910	FC3	-7.0495	BSP	10452	SGB	6395.0	R23	.2068	R13	.9783	LSA	239.5	MSA	13.5	SSA	.1
BDE	2.8296	BRA	1.4758	BC3	5.3344	FSP	1542	SG1	6351.6	SG2	743.6	THA	31.57	EL1	212.7	EL2	10.2	ALF	31.35

LAUNCH DATE MAY 8 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 571.163 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.296	GAL	-1.80	AZL	89.34	HCA	181.89	SMA	185.60	ECC	.18905	INC	.5796	V1	29.512
RP	219.99	LAP	-.02	LOP	48.66	VP	22.170	GAP	2.18	AZP	90.66	TAL	348.66	TAP	170.55	RCA	150.51	APO	220.68	V2	24.987
RC	186.781	GL	6.80	GP	-17.58	ZAL	117.00	ZAP	65.71	ETS	170.91	ZAE	104.68	ETE	185.22	ZAC	84.81	ETC	271.88	LVI	6.55

PLANETOCENTRIC CONIC

C3	9.833	VHL	3.136	DLA	-.03	RAL	342.63	RAD	6638.0	VEL	11.399	PTH	6.45	VHP	3.209	DPA	-40.43	RAP	298.76	ECC	1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 7 15	2977.67	-29.95	89.39	194.44	128.87	15 56 53	1977.7	-12.87	70.92
60.00	15 46 52	2872.30	-25.94	83.13	197.67	121.99	16 34 44	1872.3	-11.25	62.95
70.00	16 39 8	2718.59	-22.31	72.90	199.89	116.55	17 24 27	1718.6	-9.75	51.60
80.00	17 47 27	2504.67	-19.67	57.97	201.20	112.92	18 29 12	1504.7	-8.63	36.04
90.00	19 8 54	2241.86	-18.68	39.08	201.63	111.62	19 46 16	1241.9	-8.21	16.94
100.00	20 30 19	1979.14	-19.67	19.34	201.20	112.92	21 3 18	979.1	-8.63	357.41
110.00	21 38 34	1765.40	-22.31	1.82	199.89	116.55	22 8 0	765.4	-9.75	340.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8029	TRA	1.4483	TC3	-7.6570	BAU	1.0341	SGT	5675.8	SGR	1636.5	SG3	1390.8	ST	83.7	SR	31.4	SS	83.1
RDE	.2970	RRA	.5748	RC3	-1.8045	FAU	.20100	RRT	.9700	RRF	.9998	RTF	.9689	CRT	.9990	CRS	-.9996	CST	-.9979
FDE	2.7852	FRA	5.7414	FC3	-17.6972	BSP	8147	SGB	5907.0	R23	.2291	R13	.9732	LSA	122.0	MSA	3.9	SSA	.4
BDE	.8561	BRA	1.5581	BC3	7.8667	FSP	2137	SG1	5894.5	SG2	383.2	THA	15.69	EL1	89.4	EL2	1.3	ALF	20.56

LAUNCH DATE MAY 8 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 575.308 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.303	GAL	-1.87	AZL	90.27	HCA	183.01	SNA	185.72	ECC	.18978	INC	.2672	V1	29.512
RP	220.36	LAP	.01	LOP	49.78	VP	22.134	GAP	2.03	AZP	89.73	TAL	348.25	TAP	171.25	RCA	150.47	APO	220.96	V2	24.946
RC	189.399	GL	-2.82	GP	-11.20	ZAL	117.76	ZAP	63.61	ETS	173.52	ZAE	103.73	ETE	183.21	ZAC	91.20	ETC	271.84	LVI	.71

PLANETOCENTRIC CONIC

C3	9.876	VHL	3.143	DLA	-8.68	RAL	346.89	RAD	6638.0	VEL	11.401	PTH	6.45	VHP	3.132	DPA	-34.20	RAP	297.00	ECC	1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 56 8	2808.68	-22.26	80.29	196.87	133.20	16 42 54	1805.9	-4.33	63.55
60.00	16 45 6	2675.69	-18.38	72.01	200.32	126.52	17 29 41	1675.7	-2.70	53.39
70.00	17 47 50	2491.22	-14.80	59.55	202.82	121.14	18 29 21	1491.2	-1.16	39.59
80.00	19 5 46	2247.26	-12.16	42.56	204.35	117.48	19 43 13	1247.3	-.01	21.80
90.00	20 31 26	1970.86	-11.15	22.76	204.87	116.16	21 4 17	970.9	.43	1.72
100.00	21 48 38	1721.73	-12.16	3.93	204.35	117.48	22 17 19	721.7	-.01	343.17
110.00	22 47 16	1538.04	-14.80	348.47	202.82	121.14	23 12 54	538.0	-1.16	328.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6261	TRA	1.7770	TC3	-7.3280	BAU	.9769	SGT	5766.9	SGR	1013.4	SG3	1464.9	ST	75.6	SR	19.3	SS	81.1
RDE	.1760	RRA	.3882	RC3	-1.0204	FAU	.19467	RRT	.9897	RRF	.9992	RTF	.9710	CRT	.9918	CRS	-.9975	CST	-.9960
FDE	2.5916	FRA	6.6428	FC	-17.0647	BSP	9808	SGB	5855.3	R23	.2286	R13	.9727	LSA	112.5	NSA	3.9	SSA	.7
BDE	.6503	BRA	1.6189	BC3	7.3987	FSP	2615	SG1	5850.2	SG2	244.2	THA	9.69	EL1	78.0	EL2	2.4	ALF	14.24

LAUNCH DATE MAY 8 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 579.449 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.310	GAL	-1.94	AZL	90.70	HCA	184.12	SNA	185.84	ECC	.19053	INC	.7019	V1	29.512
RP	220.74	LAP	.05	LOP	50.89	VP	22.098	GAP	1.88	AZP	89.30	TAL	347.82	TAP	171.94	RCA	150.43	APO	221.25	V2	24.904
RC	192.025	GL	-7.12	GP	-8.15	ZAL	118.19	ZAP	62.09	ETS	174.81	ZAE	102.48	ETE	182.25	ZAC	94.25	ETC	271.81	LVI	-2.06

PLANETOCENTRIC CONIC

C3	10.153	VHL	3.186	DLA	-12.39	RAL	349.19	RAD	6638.1	VEL	11.413	PTH	6.46	VHP	3.128	DPA	-31.22	RAP	296.22	ECC	1.1671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 31	2736.39	-18.98	76.93	199.09	134.49	17 5 8	1736.4	-.84	60.84
60.00	17 12 48	2594.73	-15.05	67.77	202.68	127.84	17 56 2	1594.7	.66	49.82
70.00	18 20 31	2395.64	-11.38	54.27	205.33	122.42	18 0 26	1395.6	2.49	34.61
80.00	19 43 11	2136.85	-8.61	36.28	206.99	118.70	20 18 48	1136.9	3.72	15.73
90.00	21 11 0	1853.54	-7.55	16.02	207.56	117.33	21 41 54	853.5	4.20	355.16
100.00	22 26 3	1611.32	-8.61	357.65	206.99	118.70	22 52 54	611.3	3.72	337.10
110.00	23 19 57	1442.46	-11.38	343.19	205.33	122.42	23 44 0	442.5	2.49	323.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5212	TRA	1.9248	TC3	-7.3098	BAU	.9967	SGT	5927.5	SGR	711.4	SG3	1469.0	ST	71.2	SR	13.8	SS	77.3
RDE	.1282	RRA	.2753	RC3	-.6948	FAU	.19455	RRT	.9863	RRF	.9970	RTF	.9718	CRT	.9841	CRS	-.9903	CST	-.9913
FDE	2.3841	FRA	6.8477	FC	-16.5888	BSP	10085	SGB	5970.0	R23	.2217	R13	.9726	LSA	105.7	NSA	7.4	SSA	.5
BDE	.5368	BRA	1.9444	BC3	7.3426	FSP	2635	SG1	5967.2	SG2	181.8	THA	6.62	EL1	72.4	EL2	3.6	ALF	10.63

LAUNCH DATE MAY 8 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 583.587 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.318	GAL	-2.01	AZL	90.95	HCA	185.23	SNA	188.07	ECC	.19131	INC	.9468	V1	29.512
RP	221.12	LAP	.09	LOP	52.00	VP	22.063	GAP	1.74	AZP	89.06	TAL	347.40	TAP	172.63	RCA	150.39	APO	221.88	V2	24.863
RC	194.659	GL	-9.50	GP	-8.38	ZAL	118.63	ZAP	60.77	ETS	175.87	ZAE	101.17	ETE	181.70	ZAC	96.08	ETC	271.80	LVI	-3.67

PLANETOCENTRIC CONIC

C3	10.434	VHL	3.230	DLA	-14.32	RAL	350.74	RAD	6638.3	VEL	11.425	PTH	6.48	VHP	3.137	DPA	-29.49	RAP	298.77	ECC	1.1717

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 22	2702.46	-17.38	78.38	200.83	135.03	17 18 24	1702.5	.86	59.22
60.00	17 29 1	2554.47	-13.38	65.71	204.52	128.39	18 11 38	1554.5	2.84	47.60
70.00	18 39 33	2347.11	-9.89	51.65	207.28	122.94	19 18 40	1347.1	4.33	32.06
80.00	20 4 59	2079.65	-8.73	33.09	209.02	119.16	20 39 39	1079.7	5.84	12.87
90.00	21 34 8	1792.22	-8.82	12.95	209.62	117.76	22 3 58	792.2	6.15	351.71
100.00	22 47 51	1554.12	-8.73	354.45	209.02	119.16	23 13 45	554.1	5.84	333.94
110.00	23 38 59	1393.93	-9.89	340.57	207.28	122.94	24 2 13	393.9	4.33	320.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4718	TRA	2.0423	TC3	-7.3284	BAU	1.0245	SGT	6089.4	SGR	535.3	SG3	1483.8	ST	70.3	SR	11.1	SS	74.6
RDE	.1072	RRA	.2045	RC3	-.5139	FAU	.19393	RRT	.9603	RRF	.9918	RTF	.9531	CRT	.9214	CRS	-.9748	CST	-.9845
FDE	2.2498	FRA	6.8879	FC	-16.0917	BSP	10279	SGB	6112.9	R23	.2033	R13	.9736	LSA	102.7	NSA	9.6	SSA	.5
BDE	.4838	BRA	2.0525	BC3	7.3444	FSP	2575	SG1	6111.1	SG2	148.7	THA	4.83	EL1	71.1	EL2	4.2	ALF	8.27

LAUNCH DATE MAY 8 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 587.718 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.326	GAL	-2.09	AZL	91.10	HCA	186.34	SNA	186.10	ECC	.19212	INC	1.1026	V1	29.512
RP	221.50	LAP	.12	LOP	53.11	VP	22.028	GAP	1.59	AZP	88.90	TAL	346.96	TAP	173.30	RCA	150.35	APO	221.86	V2	24.821
RC	197.299	GL	-10.97	GP	-5.23	ZAL	119.10	ZAP	59.54	ETS	176.07	ZAE	99.85	ETE	181.34	ZAC	97.18	ETC	271.79	LVI	-4.72

PLANETOCENTRIC CONIC

C3	10.699	VHL	3.271	DLA	-15.43	RAL	351.94	RAD	6638.4	VEL	11.436	PTH	6.49	VHP	3.156	DPA	-28.36	RAP	295.49	ECC	1.1761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 35	2684.95	-18.31	74.54	202.26	135.28	17 27 20	1685.0	1.74	58.49
60.00	17 39 38	2533.22	-12.45	64.64	206.02	128.64	18 21 51	1533.2	3.57	46.98
70.00	18 51 52	2320.88	-8.62	50.24	208.85	123.18	19 30 33	1320.9	5.33	30.69
80.00	20 19 1	2048.08	-5.68	31.33	210.65	119.36	20 53 9	1048.1	6.69	10.82
90.00	21 48 56	1758.00	-4.53	10.63	211.28	117.94	22 18 14	758.0	7.23	349.78
100.00	23 1 53	1522.55	-5.68	352.70	210.65	119.36	23 27 16	522.5	6.69	332.18
110.00	23 51 18	1367.69	-8.62	339.16	208.85	123.18	24 14 6	367.7	5.33	319.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4514	TRA	2.1518	TC3	-7.3498	BAU	1.0528	SGT	6247.6	SGR	421.7	SG3	1431.1	ST	71.1	SR	9.7	SS	73.7
RDE	.0988	RRA	.1571	RC3	-.3939	FAU	.19021	RRT	.9458	RRF	.9809	RTF	.9724	CRT	.8676	CRS	-.9511	CST	-.9763
FDE	2.2048	FRA	6.9183	FC	-15.3915	BSP	10495	SGB	6261.9	R23	.1871	R13	.9726	LSA	102.3	NSA	11.3	SSA	.5
BDE	.4621	BRA	2.1576	BC3	7.3604	FSP	2549	SG1	6260.4	SG2	136.6	THA	3.65	EL1	71.6	EL2	4.8	ALF	6.76

LAUNCH DATE MAY 8 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 591.844 EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 32.334 GAL -2.17 AZL 91.22 HCA 187.44 SMA 186.24 ECC .19295 INC 1.2139 V1 29.512
RP 221.88 LAP .16 LOP 54.21 VP 21.992 GAP 1.44 AZP 88.79 TAL 346.52 TAP 173.96 RCA 150.30 APO 222.18 V2 24.780
RC 199.945 GL -11.95 GP -4.42 ZAL 119.60 ZAP 58.38 ETS 176.43 ZAE 98.55 ETE 181.09 ZAC 97.99 ETC 271.79 LVI -5.46

PLANETOCENTRIC CONIC

C3 10.952 VHL 3.309 DLA -16.07 RAL 352.94 RAD 6638.5 VEL 11.447 PTH 6.50 VHP 3.179 DPA -27.56 RAP 295.31 ECC 1.1802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 13	2676.36	-16.09	74.15	203.50	135.40	17 33 49	1676.4	2.18	58.13
60.00	17 47 7	2522.36	-11.99	64.09	207.31	128.77	18 29 9	1522.4	4.05	46.06
70.00	19 0 23	2306.98	-8.10	49.50	210.19	123.29	19 38 50	1307.0	5.85	29.95
80.00	20 28 36	2030.87	-5.10	30.38	212.02	119.46	21 2 27	1030.9	7.26	9.86
90.00	21 59 2	1739.45	-3.93	9.57	212.67	118.03	22 28 1	739.2	7.82	348.71
100.00	23 11 28	1505.34	-5.10	351.75	212.02	119.46	23 36 33	505.3	7.26	331.22
110.00	0 3 45	1353.80	-8.10	338.42	210.19	123.29	0 26 19	353.8	5.85	318.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4564 TRA 2.2665 TC3-7.3486 BAU 1.0769 SGT 6399.8 SGR 344.5 SG3 1406.2 ST 73.3 SR 9.0 SS 73.8
RDE .0964 RRA .1225 RC3 -.3101 FAU .18489 RRT .9213 RRF .9607 RTF .9714 CRT .8125 CRS -.9220 CST -.9744
FDE 2.2133 FRA 6.9460 FC-14.6151 BSP 10824 SGB 6409.1 R23 .1681 R13 .9716 LSA 103.6 MSA 12.5 SSA .6
BDE .4664 BRA 2.2698 BC3 7.3551 FSP 2543 SG1 6407.7 SG2 133.8 THA 2.84 EL1 73.6 EL2 5.2 ALF 5.72

LAUNCH DATE MAY 8 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC DISTANCE 595.967 EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 32.342 GAL -2.25 AZL 91.30 HCA 188.54 SMA 186.38 ECC .19381 INC 1.2966 V1 29.512
RP 222.27 LAP .19 LOP 55.31 VP 21.958 GAP 1.29 AZP 88.72 TAL 346.08 TAP 174.62 RCA 150.26 APO 222.50 V2 24.738
RC 202.595 GL -12.63 GP -3.82 ZAL 120.13 ZAP 57.26 ETS 176.70 ZAE 97.26 ETE 180.91 ZAC 98.59 ETC 271.80 LVI -6.02

PLANETOCENTRIC CONIC

C3 11.197 VHL 3.346 DLA -16.45 RAL 353.82 RAD 6638.7 VEL 11.458 PTH 6.51 VHP 3.204 DPA -26.97 RAP 295.21 ECC 1.1843

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 14	2673.13	-15.93	74.00	204.60	135.45	17 38 47	1673.1	2.34	58.00
60.00	17 52 39	2517.80	-11.80	63.86	208.45	128.82	18 34 37	1517.8	4.25	45.84
70.00	19 6 32	2300.61	-7.86	49.16	211.36	123.34	19 44 52	1300.6	6.10	29.62
80.00	20 35 23	2022.51	-4.82	29.92	213.23	119.50	21 9 5	1022.5	7.54	9.39
90.00	22 6 7	1729.80	-3.63	9.05	213.88	118.06	22 34 57	729.8	8.11	348.17
100.00	23 18 15	1496.98	-4.82	351.28	213.23	119.50	23 43 12	497.0	7.54	330.76
110.00	0 9 54	1347.43	-7.86	338.08	211.36	123.34	0 32 21	347.4	6.10	318.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4623 TRA 2.3711 TC3-7.3795 BAU 1.1053 SGT 6552.7 SGR 290.1 SG3 1378.7 ST 75.2 SR 8.6 SS 72.8
RDE .0956 RRA .0944 RC3 -.2541 FAU .18201 RRT .8855 RRF .9269 RTF .9723 CRT .7548 CRS -.8859 CST -.9725
FDE 2.1758 FRA 6.9070 FC-14.0732 BSP 11039 SGB 6559.1 R23 .1412 R13 .9724 LSA 104.2 MSA 13.2 SSA .6
BDE .4721 BRA 2.3730 BC3 7.3838 FSP 2468 SG1 6557.7 SG2 134.7 THA 2.25 EL1 75.5 EL2 5.6 ALF 4.95

LAUNCH DATE MAY 8 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 600.082 EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 32.351 GAL -2.33 AZL 91.36 HCA 189.64 SMA 186.52 ECC .19469 INC 1.3606 V1 29.512
RP 222.65 LAP .23 LOP 56.40 VP 21.923 GAP 1.14 AZP 88.66 TAL 345.63 TAP 175.27 RCA 150.21 APO 222.83 V2 24.696
RC 205.250 GL -13.12 GP -3.35 ZAL 120.67 ZAP 56.19 ETS 176.91 ZAE 96.01 ETE 180.78 ZAC 99.05 ETC 271.81 LVI -6.47

PLANETOCENTRIC CONIC

C3 11.439 VHL 3.382 DLA -16.65 RAL 354.61 RAD 6638.8 VEL 11.468 PTH 6.52 VHP 3.230 DPA -26.50 RAP 295.18 ECC 1.1882

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 13	2673.48	-15.95	74.02	205.61	135.44	17 42 46	1673.5	2.32	58.01
60.00	17 56 53	2517.44	-11.78	63.85	209.49	128.82	18 38 51	1517.4	4.26	45.82
70.00	19 11 6	2299.30	-7.81	49.09	212.43	123.35	19 49 25	1299.3	6.14	29.55
80.00	20 40 17	2020.13	-4.74	29.78	214.32	119.51	21 13 58	1020.1	7.62	9.26
90.00	22 11 11	1726.89	-3.54	8.89	214.98	118.08	22 39 58	726.9	8.20	348.01
100.00	23 23 9	1494.60	-4.74	351.15	214.32	119.51	23 48 4	494.6	7.62	330.62
110.00	0 14 28	1346.12	-7.81	338.01	212.43	123.35	0 36 54	346.1	6.14	318.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4916 TRA 2.4910 TC3-7.3576 BAU 1.1256 SGT 6698.0 SGR 253.1 SG3 1352.8 ST 78.5 SR 8.6 SS 73.8
RDE .0984 RRA .0729 RC3 -.2072 FAU .17493 RRT .8282 RRF .8753 RTF .9705 CRT .7094 CRS -.8561 CST -.9711
FDE 2.2375 FRA 6.9398 FC-13.2397 BSP 11454 SGB 6702.8 R23 .1270 R13 .9706 LSA 107.2 MSA 14.0 SSA .6
BDE .5013 BRA 2.4921 BC3 7.3605 FSP 2487 SG1 6701.3 SG2 141.8 THA 1.79 EL1 78.7 EL2 6.0 ALF 4.45

LAUNCH DATE MAY 8 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 604.197 EARTH TO MARS

RL 150.98 LAL .00 LOL 226.77 VL 32.359 GAL -2.41 AZL 91.41 HCA 190.73 SMA 186.67 ECC .19559 INC 1.4121 V1 29.512
RP 223.04 LAP .26 LOP 57.50 VP 21.888 GAP .99 AZP 88.61 TAL 345.18 TAP 175.91 RCA 150.16 APO 223.18 V2 24.654
RC 207.907 GL -13.48 GP -2.98 ZAL 121.22 ZAP 55.15 ETS 177.08 ZAE 94.77 ETE 180.67 ZAC 99.42 ETC 271.83 LVI -6.83

PLANETOCENTRIC CONIC

C3 11.678 VHL 3.417 DLA -16.73 RAL 355.34 RAD 6638.9 VEL 11.479 PTH 6.53 VHP 3.258 DPA -26.13 RAP 295.19 ECC 1.1922

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 27	2676.20	-16.08	74.14	206.56	135.41	17 46 3	1676.2	2.18	58.12
60.00	18 0 14	2519.88	-11.89	63.97	210.46	128.80	18 42 14	1519.9	4.16	45.94
70.00	19 14 34	2301.36	-7.89	49.20	213.42	123.34	19 52 55	1301.4	6.07	29.66
80.00	20 43 54	2021.77	-4.80	29.87	215.32	119.50	21 17 35	1021.8	7.56	9.35
90.00	22 14 52	1728.32	-3.58	8.97	215.99	118.07	22 43 40	728.3	8.15	348.09
100.00	23 26 45	1496.25	-4.80	351.24	215.32	119.50	23 51 42	496.2	7.56	330.72
110.00	0 17 56	1348.18	-7.89	338.12	213.42	123.34	0 40 24	348.2	6.07	318.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5075 TRA 2.5927 TC3-7.3964 BAU 1.1551 SGT 6847.0 SGR 227.7 SG3 1324.0 ST 80.6 SR 8.6 SS 72.6
RDE .1006 RRA .0532 RC3 -.1775 FAU .17306 RRT .7565 RRF .8036 RTF .9721 CRT .6603 CRS -.8191 CST -.9711
FDE 2.1964 FRA 6.8636 FC-12.8294 BSP 11650 SGB 6850.8 R23 .1037 R13 .9722 LSA 107.9 MSA 14.2 SSA .7
BDE .5174 BRA 2.5932 BC3 7.3986 FSP 2393 SG1 6849.2 SG2 148.9 THA 1.44 EL1 80.8 EL2 6.4 ALF 4.03

LAUNCH DATE MAY 8 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 608.304 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.388	GAL	-2.49	AZL	91.45	HCA	191.82	SMA	186.81	ECC	.19651	INC	1.4526	V1	29.512
RP	223.42	LAP	.30	LOP	58.58	VP	21.854	GAP	.84	AZP	88.58	TAL	344.73	TAP	176.54	RCA	150.10	APO	223.52	V2	24.612
RC	210.566	GL	-13.74	GP	-2.69	ZAL	121.79	ZAP	54.15	ETS	177.23	ZAE	93.56	ETE	180.59	ZAC	99.71	ETC	271.86	LVI	-7.15

PLANETOCENTRIC CONIC

C3	11.919	VHL	3.452	DLA	-16.71	RAL	356.03	RAD	6639.0	VEL	11.489	PTH	6.54	VHP	3.286	DPA	-25.82	RAP	295.24	ECC	1.1962

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 10	2680.71	-16.30	74.35	207.46	135.34	17 48 50	1680.7	1.96	58.31
60.00	18 2 55	2524.44	-12.08	64.20	211.39	128.75	18 45 0	1524.4	3.96	46.16
70.00	19 17 14	2305.97	-8.06	49.45	214.35	123.30	19 55 40	1306.0	5.89	29.90
80.00	20 46 33	2026.45	-4.95	30.13	216.26	119.48	21 20 19	1026.4	7.41	9.61
90.00	22 17 30	1733.02	-3.73	9.23	216.93	118.05	22 46 23	733.0	8.01	348.36
100.00	23 29 25	1500.92	-4.95	351.50	216.26	119.48	23 54 26	500.9	7.41	330.98
110.00	0 20 37	1352.79	-8.06	338.36	214.35	123.30	0 43 9	352.8	5.89	316.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5298	TRA	2.6971	TC3	-7.4216	BAU	1.1829	SGT	6991.1	SGR	212.5	SG3	1295.5	ST	83.1	SR	8.7	SS	72.3
RDE	.1048	RRA	.0367	RC3	-.1521	FAU	.16913	RRT	.6853	RRF	.7141	RTF	.9720	CRT	.6198	CRS	-.7887	CST	-.9708
FDE	2.1965	FRA	6.8187	FC	-12.2643	BSP	11859	SGB	6994.3	R23	.0899	R13	.9720	LSA	109.5	MSA	14.6	SSA	.7
BDE	.5400	BRA	2.6974	BC3	7.4231	FSP	2334	SG1	6992.5	SG2	158.6	THA	1.16	EL1	83.3	EL2	6.8	ALF	3.75

LAUNCH DATE MAY 8 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 612.406 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.376	GAL	-2.58	AZL	91.49	HCA	192.90	SMA	186.96	ECC	.19746	INC	1.4867	V1	29.512
RP	223.81	LAP	.33	LOP	59.67	VP	21.820	GAP	.70	AZP	88.55	TAL	344.27	TAP	177.17	RCA	150.04	APO	223.86	V2	24.571
RC	213.227	GL	-13.93	GP	-2.44	ZAL	122.36	ZAP	53.18	ETS	177.35	ZAE	92.37	ETE	180.52	ZAC	99.95	ETC	271.89	LVI	-7.42

PLANETOCENTRIC CONIC

C3	12.163	VHL	3.488	DLA	-16.64	RAL	356.69	RAD	6639.1	VEL	11.500	PTH	6.55	VHP	3.314	DPA	-25.55	RAP	295.34	ECC	1.2002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 28	2686.55	-16.58	74.62	208.33	135.26	17 51 15	1686.6	1.66	58.56
60.00	18 5 8	2530.55	-12.34	64.50	212.27	128.68	18 47 19	1530.6	3.69	46.45
70.00	19 19 19	2312.45	-8.30	49.79	215.25	123.25	19 57 52	1312.5	5.65	30.24
80.00	20 48 30	2033.34	-5.19	30.51	217.16	119.45	21 22 23	1033.3	7.18	9.99
90.00	22 19 23	1740.13	-3.96	9.63	217.83	118.02	22 48 24	740.1	7.79	348.76
100.00	23 31 22	1507.81	-5.19	351.88	217.16	119.45	23 56 30	507.8	7.18	331.36
110.00	0 22 42	1359.27	-8.30	338.71	215.25	123.25	0 45 21	359.3	5.65	319.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5587	TRA	2.8064	TC3	-7.4341	BAU	1.2090	SGT	7133.5	SGR	205.1	SG3	1267.9	ST	85.9	SR	9.0	SS	72.2
RDE	.1091	RRA	.0223	RC3	-.1319	FAU	.16483	RRT	.5642	RRF	.6139	RTF	.9717	CRT	.5882	CRS	-.7635	CST	-.9709
FDE	2.2091	FRA	6.7813	FC	-11.7324	BSP	12120	SGB	7136.4	R23	.0792	R13	.9717	LSA	111.5	MSA	14.9	SSA	.8
BDE	.5693	BRA	2.8065	BC3	7.4353	FSP	2291	SG1	7134.4	SG2	169.3	THA	.93	EL1	86.1	EL2	7.3	ALF	3.55

LAUNCH DATE MAY 8 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 616.803 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.385	GAL	-2.66	AZL	91.52	HCA	193.98	SMA	187.11	ECC	.19843	INC	1.5135	V1	29.512
RP	224.20	LAP	.37	LOP	60.75	VP	21.786	GAP	.55	AZP	88.53	TAL	343.81	TAP	177.79	RCA	149.99	APO	224.24	V2	24.529
RC	215.890	GL	-14.06	GP	-2.23	ZAL	122.93	ZAP	52.25	ETS	177.45	ZAE	91.21	ETE	180.46	ZAC	100.15	ETC	271.93	LVI	-7.67

PLANETOCENTRIC CONIC

C3	12.410	VHL	3.523	DLA	-16.51	RAL	357.32	RAD	6639.3	VEL	11.510	PTH	6.56	VHP	3.343	DPA	-25.33	RAP	295.46	ECC	1.2042

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 29	2693.41	-16.91	74.93	209.18	135.16	17 53 22	1693.4	1.32	58.84
60.00	18 6 58	2537.85	-12.65	64.87	213.13	128.59	18 49 16	1537.9	3.37	46.80
70.00	19 20 57	2320.36	-8.60	50.21	216.11	123.18	19 59 36	1320.4	5.35	30.66
80.00	20 49 55	2041.93	-5.47	30.99	218.02	119.40	21 23 57	1041.9	6.90	10.47
90.00	22 20 42	1749.05	-4.25	10.13	218.70	117.99	22 49 51	749.0	7.51	349.27
100.00	23 32 47	1516.40	-5.47	352.36	218.02	119.40	23 58 3	516.4	6.90	331.84
110.00	0 24 19	1367.18	-8.60	339.13	216.11	123.18	0 47 7	367.2	5.35	319.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5886	TRA	2.9143	TC3	-7.4486	BAU	1.2360	SGT	7273.2	SGR	203.6	SG3	1240.0	ST	88.6	SR	9.3	SS	71.9
RDE	.1143	RRA	.0092	RC3	-.1159	FAU	.16087	RRT	.4618	RRF	.5114	RTF	.9715	CRT	.5623	CRS	-.7417	CST	-.9712
FDE	2.2164	FRA	6.7335	FC	-11.2221	BSP	12355	SGB	7276.1	R23	.0705	R13	.9716	LSA	113.5	MSA	15.2	SSA	.8
BDE	.5996	BRA	2.9144	BC3	7.4495	FSP	2241	SG1	7273.8	SG2	180.6	THA	.74	EL1	88.8	EL2	7.7	ALF	3.40

LAUNCH DATE MAY 8 1971 FLIGHT TIME 268.00 ARRIVAL DATE JAN 31 1972

HELIOCENTRIC CONIC DISTANCE 620.594 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.394	GAL	-2.75	AZL	91.54	HCA	195.06	SMA	187.27	ECC	.19942	INC	1.5400	V1	29.512
RP	224.59	LAP	.40	LOP	61.82	VP	21.752	GAP	.40	AZP	88.51	TAL	343.34	TAP	178.40	RCA	149.92	APO	224.61	V2	24.487
RC	218.554	GL	-14.15	GP	-2.05	ZAL	123.51	ZAP	51.34	ETS	177.54	ZAE	90.07	ETE	180.42	ZAC	100.32	ETC	271.98	LVI	-7.90

PLANETOCENTRIC CONIC

C3	12.662	VHL	3.558	DLA	-16.35	RAL	357.93	RAD	6639.4	VEL	11.521	PTH	6.57	VHP	3.373	DPA	-25.12	RAP	295.63	ECC	1.2084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 15	2701.07	-17.28	75.29	210.01	135.05	17 55 16	1701.1	.93	59.16
60.00	18 8 31	2546.09	-13.00	65.29	213.97	128.49	18 50 57	1546.1	3.00	47.19
70.00	19 22 14	2329.39	-8.93	50.70	216.95	123.10	20 1 3	1329.4	5.01	31.13
80.00	20 50 55	2051.83	-5.80	31.54	218.87	119.34	21 25 7	1051.8	6.57	11.02
90.00	22 21 34	1759.39	-4.58	10.71	219.54	117.94	22 50 53	759.4	7.18	349.86
100.00	23 33 47	1526.30	-5.80	352.91	218.87	119.34	23 59 13	526.3	6.57	332.39
110.00	0 25 36	1376.21	-8.93	339.62	216.95	123.10	0 48 32	376.2	5.01	320.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6206	TRA	3.0246	TC3	-7.4581	BAU	1.2626	SGT	7411.5	SGR	206.5	SG3	1212.8	ST	91.4	SR	9.7	SS	71.7
RDE	.1199	RRA	-.0026	RC3	-.1030	FAU	.15676	RRT	.3655	RRF	.4143	RTF	.9712	CRT	.5419	CRS	-.7236	CST	-.9717
FDE	2.2251	FRA	6.6897	FC	-10.7184	BSP	12590	SGB	7414.3	R23	.0635	R13	.9712	LSA	115.6	MSA	15.4	SSA	.8
BDE	.6321	BRA	3.0246	BC3	7.4588	FSP	2193	SG1	7411.8	SG2	192.2	THA	.58	EL1	91.6	EL2	8.1	ALF	3.30

LAUNCH DATE MAY 8 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 2 1972

DISTANCE 624.680 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.98 LAL .00 LOL 226.77 VL 32.404 GAL -2.84 AZL 91.56 HCA 196.13 SMA 187.43 ECC .20043 INC 1.5621 V1 29.512
RP 224.98 LAP .43 LOP 62.90 VP 21.718 GAP .25 AZP 88.50 TAL 342.87 TAP 179.00 RCA 149.86 APO 224.99 V2 24.445
RC 221.219 GL -14.21 GP -1.90 ZAL 124.09 ZAP 50.47 ETS 177.62 ZAE 88.96 ETE 180.38 ZAC 100.46 ETC 272.03 LVI -8.12

PLANETOCENTRIC CONIC

C3 12.919 VHL 3.594 DLA -16.16 RAL 358.53 RAD 6639.5 VEL 11.532 PTH 6.58 VHP 3.403 DPA -24.94 RAP 295.82 ECC 1.2126

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 49	2709.37	-17.68	75.67	210.82	134.92	17 56 59	1709.4	.52	59.51
60.00	18 9 50	2555.08	-13.38	65.74	214.79	128.38	18 52 25	1555.1	2.61	47.62
70.00	19 23 14	2339.30	-9.30	51.23	217.78	123.01	20 2 13	1339.3	4.63	31.65
80.00	20 51 35	2062.76	-6.17	32.15	219.69	119.27	21 25 58	1062.8	6.20	11.63
90.00	22 22 5	1770 23	-4.94	11.35	220.36	117.88	22 51 36	770.8	6.82	350.50
100.00	23 34 27	1537.23	-6.17	353.51	219.69	119.27	24 0 5	537.2	6.20	333.00
110.00	0 26 36	1386.12	-9.30	340.15	217.78	123.01	0 49 43	386.1	4.63	320.57

DIFFERENTIAL CORRECTIONS

TDE .6598 TRA 3.1403 TC3-7.4492 BAU 1.2867
RDE .1260 RRA -.0136 RC3 -.0924 FAU .15231
FDE 2.2440 FRA 6.6489 FC-10.2070 BSP 12880
BDE .6717 BRA 3.1404 BC3 7.4498 FSP 2154

MID-COURSE EXECUTION ACCURACY

SGT 7546.2 SGR 212.7 SG3 1185.9
RRT .2800 RRF .3278 RTF .9709
SGB 7549.2 R23 .0581 R13 .9709
SG1 7546.4 SG2 204.2 THA .45

ORBIT DETERMINATION ACCURACY

ST 94.6 SR 10.0 SS 71.7
CRT .5288 CRS -.7104 CST -.9725
LSA 118.1 MSA 15.6 SSA .9
EL1 94.7 EL2 8.5 ALF 3.24

LAUNCH DATE MAY 8 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 4 1972

DISTANCE 628.760 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.98 LAL .00 LOL 226.77 VL 32.413 GAL -2.93 AZL 91.58 HCA 197.20 SMA 187.58 ECC .20146 INC 1.5807 V1 29.512
RP 225.37 LAP .47 LOP 63.96 VP 21.685 GAP .10 AZP 88.49 TAL 342.40 TAP 179.60 RCA 149.79 APO 225.37 V2 24.403
RC 223.884 GL -14.24 GP -1.77 ZAL 124.67 ZAP 49.62 ETS 177.69 ZAE 87.86 ETE 180.34 ZAC 100.59 ETC 272.08 LVI -8.32

PLANETOCENTRIC CONIC

C3 13.182 VHL 3.631 DLA -15.94 RAL 359.11 RAD 6639.6 VEL 11.543 PTH 6.59 VHP 3.433 DPA -24.77 RAP 296.04 ECC 1.2169

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 14	2718.20	-18.11	76.08	211.62	134.78	17 58 33	1718.2	.07	59.88
60.00	18 10 58	2564.67	-13.78	66.23	215.60	128.25	18 53 43	1564.7	2.19	48.08
70.00	19 24 1	2349.93	-9.70	51.80	218.59	122.91	20 3 11	1349.9	4.23	32.21
80.00	20 52 1	2074.52	-6.56	32.80	220.50	119.19	21 26 35	1074.5	5.81	12.29
90.00	22 22 20	1783.15	-5.33	12.04	221.16	117.81	22 52 3	783.2	6.44	351.20
100.00	23 34 53	1548.99	-6.56	354.17	220.50	119.19	24 0 42	549.0	5.81	333.65
110.00	0 27 23	1396.75	-9.70	340.72	218.59	122.91	0 50 40	396.7	4.23	321.13

DIFFERENTIAL CORRECTIONS

TDE .6966 TRA 3.2536 TC3-7.4497 BAU 1.3129
RDE .1323 RRA -.0238 RC3 -.0839 FAU .14829
FDE 2.2561 FRA 6.6008 FC3-9.7390 BSP 13119
BDE .7091 BRA 3.2536 BC3 7.4502 FSP 2109

MID-COURSE EXECUTION ACCURACY

SGT 7680.1 SGR 221.0 SG3 1159.3
RRT .2065 RRF .2532 RTF .9705
SGB 7683.3 R23 .0538 R13 .9705
SG1 7680.2 SG2 216.2 THA .34

ORBIT DETERMINATION ACCURACY

ST 97.5 SR 10.5 SS 71.6
CRT .5176 CRS -.6993 CST -.9731
LSA 120.3 MSA 15.8 SSA .9
EL1 97.6 EL2 8.9 ALF 3.20

LAUNCH DATE MAY 8 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 6 1972

DISTANCE 632.832 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.98 LAL .00 LOL 226.77 VL 32.422 GAL -3.02 AZL 91.60 HCA 198.27 SMA 187.74 ECC .20251 INC 1.5975 V1 29.512
RP 225.76 LAP .50 LOP 65.03 VP 21.652 GAP -.05 AZP 88.48 TAL 341.93 TAP 180.19 RCA 149.72 APO 225.76 V2 24.361
RC 226.550 GL -14.25 GP -1.65 ZAL 125.25 ZAP 48.80 ETS 177.76 ZAE 86.79 ETE 180.31 ZAC 100.69 ETC 272.15 LVI -8.52

PLANETOCENTRIC CONIC

C3 13.451 VHL 3.668 DLA -15.70 RAL 359.67 RAD 6639.8 VEL 11.555 PTH 6.60 VHP 3.464 DPA -24.62 RAP 296.28 ECC 1.2214

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 32	2727.46	-18.55	76.51	212.42	134.64	17 59 59	1727.5	-.39	60.27
60.00	18 11 57	2574.76	-14.21	66.74	216.40	128.12	18 54 52	1574.8	1.74	48.57
70.00	19 24 37	2361.13	-10.11	52.40	219.39	122.80	20 3 58	1361.1	3.80	32.80
80.00	20 52 14	2086.93	-6.97	33.49	221.29	119.11	21 27 0	1086.9	5.40	12.97
90.00	22 22 21	1796.17	-5.75	12.78	221.96	117.74	22 52 18	796.2	6.02	351.94
100.00	23 35 5	1561.41	-6.97	354.86	221.29	119.11	24 1 7	561.4	5.40	334.34
110.00	0 27 59	1407.95	-10.11	341.32	219.39	122.80	0 51 27	408.0	3.80	321.72

DIFFERENTIAL CORRECTIONS

TDE .7369 TRA 3.3702 TC3-7.4399 BAU 1.3380
RDE .1390 RRA -.0335 RC3 -.0771 FAU .14413
FDE 2.2697 FRA 6.5547 FC3-9.2766 BSP 13373
BDE .7499 BRA 3.3704 BC3 7.4403 FSP 2068

MID-COURSE EXECUTION ACCURACY

SGT 7811.4 SGR 230.8 SG3 1133.2
RRT .1451 RRF .1906 RTF .9701
SGB 7814.8 R23 .0503 R13 .9701
SG1 7811.5 SG2 228.4 THA .25

ORBIT DETERMINATION ACCURACY

ST 100.6 SR 10.9 SS 71.4
CRT .5104 CRS -.6909 CST -.9739
LSA 122.8 MSA 16.0 SSA 1.0
EL1 100.7 EL2 9.3 ALF 3.19

LAUNCH DATE MAY 8 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 8 1972

DISTANCE 636.902 EARTH TO MARS

HELIOCENTRIC CONIC

RL 150.98 LAL .00 LOL 226.77 VL 32.431 GAL -3.11 AZL 91.61 HCA 199.33 SMA 187.91 ECC .20358 INC 1.6122 V1 29.512
RP 226.15 LAP .53 LOP 66.09 VP 21.619 GAP -.20 AZP 88.48 TAL 341.45 TAP 180.78 RCA 149.65 APO 226.16 V2 24.319
RC 229.216 GL -14.24 GP -1.55 ZAL 125.84 ZAP 48.00 ETS 177.82 ZAE 85.74 ETE 180.29 ZAC 100.78 ETC 272.21 LVI -8.72

PLANETOCENTRIC CONIC

C3 13.727 VHL 3.705 DLA -15.45 RAL .23 RAD 6639.9 VEL 11.567 PTH 6.61 VHP 3.494 DPA -24.47 RAP 296.56 ECC 1.2259

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 43	2737.09	-19.01	76.97	213.21	134.48	18 1 20	1737.1	-.88	60.67
60.00	18 12 49	2585.27	-14.65	67.28	217.20	127.97	18 55 54	1585.3	1.28	49.07
70.00	19 25 5	2372.81	-10.54	53.03	220.19	122.68	20 4 37	1372.8	3.36	33.41
80.00	20 52 16	2099.89	-7.40	34.21	222.08	119.01	21 27 16	1099.9	4.96	13.69
90.00	22 22 13	1809.76	-6.18	13.54	222.75	117.65	22 52 22	809.8	5.59	352.70
100.00	23 35 8	1574.36	-7.40	355.58	222.08	119.01	24 1 23	574.4	4.96	335.06
110.00	0 28 27	1419.63	-10.54	341.95	220.19	122.68	0 52 7	419.6	3.36	322.33

DIFFERENTIAL CORRECTIONS

TDE .7773 TRA 3.4869 TC3-7.4312 BAU 1.3638
RDE .1459 RRA -.0426 RC3 -.0716 FAU .14017
FDE 2.2809 FRA 6.5064 FC3-8.8404 BSP 13610
BDE .7908 BRA 3.4871 BC3 7.4316 FSP 2024

MID-COURSE EXECUTION ACCURACY

SGT 7941.3 SGR 241.6 SG3 1107.6
RRT .0943 RRF .1388 RTF .9697
SGB 7945.0 R23 .0475 R13 .9697
SG1 7941.4 SG2 240.5 THA .16

ORBIT DETERMINATION ACCURACY

ST 103.5 SR 11.3 SS 71.3
CRT .5052 CRS -.6843 CST -.9746
LSA 125.2 MSA 16.2 SSA 1.0
EL1 103.7 EL2 9.8 ALF 3.19

LAUNCH DATE MAY 0 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 10 1972

HELIOCENTRIC CONIC DISTANCE 640.964 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.441	GAL	-3.80	AZL	91.03	HCA	200.30	SNA	180.07	ECC	.20467	INC	1.6255	VI	29.812
RP	226.86	LAP	.87	LOP	67.15	VP	21.886	GAP	-.35	AZP	88.48	TAL	340.97	TAP	181.36	RCA	149.58	APO	226.86	VE	24.278
RC	231.880	GL	-14.21	GP	-1.48	ZAL	126.42	ZAP	47.23	ETS	177.07	ZAE	84.71	ETE	180.27	ZAC	100.66	ETC	272.29	LVI	-0.01

PLANETOCENTRIC CONIC

C3	14.010	VHL	3.743	DLA	-15.18	RAL	.77	RAD	6640.8	VEL	11.879	PTH	6.62	VHP	3.686	DPA	-24.33	RAP	296.68	ECC	1.2306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 49	2747.02	-10.48	77.44	214.00	134.31	18 2 36	1747.0	-1.37	61.06
60.00	18 13 34	2596.12	-15.10	67.84	217.99	127.82	18 56 50	1596.1	.80	49.59
70.00	19 25 25	2364.68	-10.98	53.69	220.97	122.54	20 5 10	1364.9	2.90	34.04
80.00	20 52 11	2113.28	-7.84	34.96	222.87	118.90	21 27 25	1113.3	4.52	14.43
90.00	22 21 55	1823.00	-6.62	14.34	223.63	117.56	22 52 19	823.0	5.15	353.49
100.00	23 35 3	1587.75	-7.84	356.33	222.87	118.90	24 1 31	587.8	4.52	335.60
110.00	0 28 47	1431.70	-10.98	342.61	220.97	122.54	0 52 39	431.7	2.90	322.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0201	TRA	3.6059	TC3	-7.4177	BAU	1.3894	S6T	8069.9	S6R	283.0	S63	1082.5	ST	106.6	SR	11.6	SS	71.1
RDE	.1530	RRA	-.0513	RC3	-.0871	FAU	.13615	RRT	.0526	RRF	.0966	RTF	.9691	CRT	.5026	CRS	-.6799	CST	-.9782
FDE	2.2940	FRA	6.4594	FC3	-8.4151	BSP	13852	S6B	8073.9	R23	.0483	R13	.9691	LSA	127.7	NSA	16.3	SSA	1.0
SDE	.0343	SRA	3.6063	SC3	7.4181	FSP	1983	S61	8069.9	S62	282.7	TMA	.10	EL1	106.8	EL2	10.2	ALP	3.21

LAUNCH DATE MAY 0 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 12 1972

HELIOCENTRIC CONIC DISTANCE 648.021 EARTH TO MARS

RL	150.98	LAL	.00	LOL	226.77	VL	32.480	GAL	-3.29	AZL	91.64	HCA	201.44	SNA	180.23	ECC	.20578	INC	1.6373	VI	29.812
RP	226.94	LAP	.60	LOP	68.20	VP	21.884	GAP	-.50	AZP	88.48	TAL	340.49	TAP	181.03	RCA	149.80	APO	226.97	VE	24.236
RC	234.843	GL	-14.17	GP	-1.37	ZAL	127.00	ZAP	46.48	ETS	177.03	ZAE	83.70	ETE	180.25	ZAC	100.92	ETC	272.36	LVI	-0.10

PLANETOCENTRIC CONIC

C3	14.301	VHL	3.782	DLA	-14.91	RAL	1.31	RAD	6640.2	VEL	11.891	PTH	6.63	VHP	3.686	DPA	-24.20	RAP	297.17	ECC	1.2384

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 50	2757.21	-10.07	77.92	214.78	134.13	18 3 47	1757.2	-1.89	61.81
60.00	18 14 14	2607.28	-15.87	68.41	218.78	127.65	18 57 41	1607.3	.31	50.12
70.00	19 25 30	2397.27	-11.43	54.36	221.76	122.40	20 5 37	1397.3	2.42	34.69
80.00	20 52 0	2127.02	-8.89	35.73	223.65	118.79	21 27 27	1127.0	4.05	15.19
90.00	22 21 31	1838.20	-7.07	15.15	224.30	117.45	22 52 10	838.2	4.69	354.30
100.00	23 34 52	1601.80	-8.89	357.10	223.65	118.79	24 1 33	601.8	4.05	336.86
110.00	0 29 2	1444.09	-11.43	343.28	221.76	122.40	0 53 6	444.1	2.42	323.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0617	TRA	3.7248	TC3	-7.4038	BAU	1.4188	S6T	8195.5	S6R	284.8	S63	1087.3	ST	109.6	SR	12.2	SS	70.8
RDE	.1604	RRA	-.0597	RC3	-.0637	FAU	.13231	RRT	.0187	RRF	.0618	RTF	.9686	CRT	.5006	CRS	-.6782	CST	-.9788
FDE	2.3008	FRA	6.4062	FC3	-8.0100	BSP	14072	S6B	8199.8	R23	.0434	R13	.9686	LSA	130.0	NSA	16.5	SSA	1.0
SDE	.0765	SRA	3.7253	SC3	7.4038	FSP	1939	S61	8195.5	S62	284.8	TMA	.03	EL1	109.7	EL2	10.6	ALP	3.23

LAUNCH DATE MAY 9 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 292.749 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	35.297	GAL	-2.30	AZL	91.85	HCA	93.49	SMA	259.31	ECC	.41923	INC	1.8522	V1	29.505
RP	207.22	LAP	-1.85	LOP	321.23	VP	27.733	GAP	22.06	AZP	89.89	TAL	352.21	TAP	85.70	RCA	150.60	APO	368.02	V2	26.432
RC	56.455	GL	-10.70	GP	.12	ZAL	107.28	ZAP	176.22	ETS	178.11	ZAE	174.47	ETE	66.57	ZAC	100.23	ETC	277.64	LVI	-17.98

PLANETOCENTRIC CONIC

C3	37.664	VHL	6.137	DLA	-19.48	RAL	341.30	RAD	6649.8	VEL	12.552	PTH	7.42	VHP	11.000	DPA	-17.25	RAP	320.45	ECC	1.6199

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 10	2896.16	-26.39	84.91	207.12	131.14	17 1 26	1896.2	-8.84	67.37
60.00	17 15 51	2729.47	-20.53	74.93	212.16	125.47	18 1 20	1729.5	-5.06	55.97
70.00	18 35 7	2496.43	-14.99	59.84	215.97	121.05	19 16 44	1496.4	-1.36	39.87
80.00	20 9 48	2200.12	-10.66	39.86	218.49	118.06	20 46 28	1200.1	1.59	19.21
90.00	21 43 29	1897.33	-8.93	18.56	219.40	116.94	22 15 7	897.9	2.78	357.65
100.00	22 52 40	1674.59	-10.66	1.23	218.49	118.06	23 20 34	674.6	1.59	340.58
110.00	23 34 34	1543.25	-14.99	348.76	215.97	121.05	24 0 17	543.3	-1.36	328.78

DIFFERENTIAL CORRECTIONS

TDE	-.4453	TRA	-.9871	TC3	.0041	BAU	.0382
RDE	-.5710	RRA	.2261	RC3	.0758	FAU	.03369
FDE	.1883	FRA	.8067	FC3	-.7744	BSP	1537
BDE	.7241	BRA	1.0131	BC3	.0759	FSP	132

MID-COURSE EXECUTION ACCURACY

SGT	1062.2	SGR	586.4	SG3	108.3		
RRT	.0020	RRF	-.0023	RTF	-.6447		
SGB	1213.4	R23	-.0004	R13	-.6447		
SG1	1062.2	SG2	586.4	THA	.09		

ORBIT DETERMINATION ACCURACY

ST	25.4	SR	26.9	SS	14.2
CRT	.7379	CRS	.4833	CST	.9438
LSA	36.2	MSA	16.0	SSA	1.1
EL1	34.5	EL2	13.4	ALF	47.13

LAUNCH DATE MAY 9 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 294.717 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	35.102	GAL	-2.21	AZL	91.85	HCA	94.76	SMA	252.55	ECC	.40359	INC	1.8533	V1	29.505
RP	207.13	LAP	-1.85	LOP	322.50	VP	27.495	GAP	21.55	AZP	89.85	TAL	352.31	TAP	87.07	RCA	150.62	APO	354.47	V2	26.443
RC	56.701	GL	-11.02	GP	.12	ZAL	107.24	ZAP	175.34	ETS	178.43	ZAE	174.10	ETE	58.69	ZAC	100.18	ETC	277.72	LVI	-18.09

PLANETOCENTRIC CONIC

C3	35.252	VHL	5.937	DLA	-19.78	RAL	341.41	RAD	6649.0	VEL	12.456	PTH	7.35	VHP	10.645	DPA	-17.13	RAP	320.83	ECC	1.5802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 52	2873.25	-25.35	83.70	206.25	131.71	17 2 46	1873.2	-7.70	66.39
60.00	17 18 0	2705.38	-19.57	73.61	211.28	125.96	18 3 5	1705.4	-4.00	54.81
70.00	18 37 50	2470.66	-14.08	58.40	215.11	121.44	19 19 1	1470.7	-.38	38.52
80.00	20 13 10	2172.32	-9.77	38.28	217.64	118.36	20 49 22	1172.3	2.53	17.68
90.00	21 47 11	1869.02	-8.04	16.90	218.56	117.21	22 18 20	869.0	3.70	356.03
100.00	22 56 2	1646.79	-9.77	359.65	217.64	118.36	23 23 29	646.8	2.53	339.05
110.00	23 37 17	1517.46	-14.08	347.32	215.11	121.44	24 2 34	517.5	-.38	327.44

DIFFERENTIAL CORRECTIONS

TDE	-.4401	TRA	-.9772	TC3	.0165	BAU	.0391
RDE	-.5536	RRA	.2209	RC3	.0814	FAU	.03479
FDE	.1922	FRA	.8389	FC3	-.8545	BSP	1595
BDE	.7073	BRA	1.0019	BC3	.0830	FSP	144

MID-COURSE EXECUTION ACCURACY

SGT	1088.6	SGR	588.4	SG3	116.0		
RRT	.0028	RRF	-.0029	RTF	-.6570		
SGB	1237.5	R23	-.0003	R13	-.6570		
SG1	1088.6	SG2	588.4	THA	.12		

ORBIT DETERMINATION ACCURACY

ST	26.0	SR	26.9	SS	14.7
CRT	.7368	CRS	.4747	CST	.9413
LSA	36.7	MSA	16.3	SSA	1.1
EL1	34.9	EL2	13.6	ALF	46.35

LAUNCH DATE MAY 9 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 296.917 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	34.919	GAL	-2.12	AZL	91.85	HCA	96.02	SMA	246.52	ECC	.38892	INC	1.8545	V1	29.505
RP	207.05	LAP	-1.84	LOP	323.76	VP	27.270	GAP	21.04	AZP	89.81	TAL	352.42	TAP	88.45	RCA	150.64	APO	342.40	V2	26.453
RC	57.030	GL	-11.33	GP	.13	ZAL	107.18	ZAP	174.44	ETS	178.65	ZAE	173.66	ETE	52.04	ZAC	100.13	ETC	277.80	LVI	-18.19

PLANETOCENTRIC CONIC

C3	33.044	VHL	5.748	DLA	-20.09	RAL	341.49	RAD	6648.2	VEL	12.368	PTH	7.29	VHP	10.302	DPA	-17.01	RAP	321.19	ECC	1.5438

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 33	2850.45	-24.31	82.53	205.40	132.24	17 4 4	1850.5	-6.56	65.43
60.00	17 20 9	2681.34	-18.61	72.31	210.42	126.42	18 4 50	1681.3	-2.95	53.66
70.00	18 40 36	2444.83	-13.16	56.97	214.26	121.81	19 21 21	1444.8	.61	37.17
80.00	20 16 37	2144.31	-8.86	36.71	216.81	118.63	20 52 21	1144.3	3.47	16.14
90.00	21 51 1	1839.81	-7.12	15.24	217.74	117.44	22 21 41	839.8	4.64	354.39
100.00	22 59 29	1618.78	-8.86	358.07	216.81	118.63	23 26 28	618.8	3.47	337.51
110.00	23 40 2	1491.65	-13.16	345.89	214.26	121.81	24 4 54	491.7	.61	326.09

DIFFERENTIAL CORRECTIONS

TDE	-.4347	TRA	-.9680	TC3	.0306	BAU	.0408
RDE	-.5371	RRA	.2138	RC3	.0872	FAU	.03600
FDE	.1953	FRA	.8723	FC3	-.9432	BSP	1651
BDE	.6910	BRA	.9913	BC3	.0924	FSP	157

MID-COURSE EXECUTION ACCURACY

SGT	1115.5	SGR	590.0	SG3	124.3		
RRT	.0036	RRF	-.0034	RTF	-.6688		
SGB	1261.9	R23	-.0000	R13	-.6688		
SG1	1115.5	SG2	590.0	THA	.15		

ORBIT DETERMINATION ACCURACY

ST	26.6	SR	27.0	SS	15.2
CRT	.7353	CRS	.4646	CST	.9383
LSA	37.2	MSA	16.7	SSA	1.1
EL1	35.3	EL2	13.8	ALF	45.58

LAUNCH DATE MAY 9 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC DISTANCE 299.318 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	34.746	GAL	-2.03	AZL	91.86	HCA	97.29	SMA	241.12	ECC	.37515	INC	1.8557	V1	29.505
RP	206.97	LAP	-1.84	LOP	325.03	VP	27.056	GAP	20.54	AZP	89.76	TAL	352.55	TAP	89.64	RCA	150.66	APO	331.58	V2	26.462
RC	57.440	GL	-11.65	GP	.13	ZAL	107.09	ZAP	173.53	ETS	178.81	ZAE	173.19	ETE	46.48	ZAC	100.09	ETC	277.87	LVI	-18.30

PLANETOCENTRIC CONIC

C3	31.024	VHL	5.570	DLA	-20.40	RAL	341.55	RAD	6647.4	VEL	12.286	PTH	7.22	VHP	9.971	DPA	-16.90	RAP	321.55	ECC	1.5106

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 13	2827.82	-23.27	81.38	204.57	132.75	17 5 20	1827.8	-5.43	64.47
60.00	17 22 17	2657.41	-17.63	71.04	209.58	126.84	18 6 35	1657.4	-1.89	52.51
70.00	18 43 23	2419.00	-12.22	55.55	213.43	122.14	19 23 42	1419.0	1.60	35.83
80.00	20 20 10	2116.13	-7.93	35.12	215.99	118.88	20 55 26	1116.1	4.42	14.59
90.00	21 54 58	1810.33	-6.19	13.58	216.94	117.65	22 25 8	810.3	5.58	352.73
100.00	23 3 1	1590.60	-7.93	356.49	215.99	118.88	23 29 32	590.6	4.42	335.96
110.00	23 42 50	1465.81	-12.22	344.47	213.43	122.14	24 7 16	465.8	1.60	324.74

DIFFERENTIAL CORRECTIONS

TDE	-.4274	TRA	-.9577	TC3	.0476	BAU	.0434
RDE	-.5209	RRA	.2069	RC3	.0932	FAU	.03728
FDE	.1983	FRA	.9072	FC3	-1.0402	BSP	1742
BDE	.6738	BRA	.9798	BC3	.1046	FSP	170

MID-COURSE EXECUTION ACCURACY

SGT	1140.6	SGR	591.2	SG3	133.2		
RRT	.0035	RRF	-.0038	RTF	-.6812		
SGB	1284.7	R23	-.0005	R13	-.6812		
SG1	1140.6	SG2	591.2	THA	.14		

ORBIT DETERMINATION ACCURACY

ST	27.1	SR	27.0	SS	15.7
CRT	.7326	CRS	.4537	CST	.9355
LSA	37.6	MSA	17.0	SSA	1.2
EL1	35.6	EL2	14.0	ALF	44.94

LAUNCH DATE MAY 9 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 25 1971

HELIOCENTRIC CONIC DISTANCE 301.895 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 34.583 GAL -1.94 AZL 91.86 HCA 98.55 SMA 236.27 ECC .36223 INC 1.8568 V1 29.505
RP 206.90 LAP -1.84 LOP 326.30 VP 26.854 GAP 20.05 AZP 89.72 TAL 352.70 TAP 91.25 RCA 150.69 APO 321.86 V2 26.469
RC 57.930 GL -11.97 GP .14 ZAL 106.98 ZAP 172.61 ETS 178.93 ZAE 172.70 ETE 41.67 ZAC 100.04 ETC 277.94 LVI -18.39

PLANETOCENTRIC CONIC

C3 29.172 VHL 5.401 DLA -20.74 RAL 341.60 RAD 6646.7 VEL 12.211 PTH 7.17 VHP 9.652 DPA -16.79 RAP 321.89 ECC 1.4801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 50	2805.38	-22.23	80.26	203.77	133.21	17 6 36	1805.4	-4.30	63.53
60.00	17 24 26	2633.60	-16.66	69.78	208.77	127.24	18 8 20	1633.6	-.85	51.38
70.00	18 46 13	2393.18	-11.29	54.14	212.62	122.45	19 26 6	1393.2	2.58	34.48
80.00	20 23 48	2087.81	-7.00	33.54	215.20	119.10	20 58 35	1087.8	5.37	13.02
90.00	21 59 2	1780.59	-5.25	11.90	216.16	117.83	22 28 43	780.6	6.52	351.06
100.00	23 6 39	1562.28	-7.00	354.91	215.20	119.10	23 32 42	562.3	5.37	334.39
110.00	23 45 40	1440.00	-11.29	343.06	212.62	122.45	24 9 40	440.0	2.58	323.40

DIFFERENTIAL CORRECTIONS

TDE -.4223 TRA -.9474 TC3 .0627 BAU .0458
RDE -.5052 RRA .2002 RC3 .0994 FAU .03861
FDE .2019 FRA .9433 FC3-1.1459 BSP 1771
BDE .6585 BRA .9683 BC3 .1175 FSP 185

MID-COURSE EXECUTION ACCURACY

SGT 1166.2 SGR 591.9 SG3 142.6
RRT .0049 RRF -.0049 RTF -.6909
SGB 1307.8 R23 -.0003 R13 -.6909
SG1 1166.2 SG2 591.9 THA .19

ORBIT DETERMINATION ACCURACY

ST 27.6 SR 27.0 SS 16.2
CRT .7316 CRS .4443 CST .9324
LSA 38.1 MSA 17.3 SSA 1.2
EL1 35.9 EL2 14.1 ALF 44.17

LAUNCH DATE MAY 9 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 27 1971

HELIOCENTRIC CONIC DISTANCE 304.627 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 34.429 GAL -1.85 AZL 91.86 HCA 99.82 SMA 231.89 ECC .35010 INC 1.8580 V1 29.505
RP 206.85 LAP -1.83 LOP 327.56 VP 26.663 GAP 19.37 AZP 89.68 TAL 352.85 TAP 92.67 RCA 150.71 APO 313.08 V2 26.476
RC 58.496 GL -12.29 GP .14 ZAL 106.85 ZAP 171.68 ETS 179.03 ZAE 172.22 ETE 38.04 ZAC 100.00 ETC 278.01 LVI -18.49

PLANETOCENTRIC CONIC

C3 27.474 VHL 5.242 DLA -21.08 RAL 341.62 RAD 6646.0 VEL 12.142 PTH 7.11 VHP 9.344 DPA -16.68 RAP 322.22 ECC 1.4522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 27	2783.18	-21.19	79.18	202.99	133.65	17 7 50	1783.2	-3.19	62.59
60.00	17 26 35	2609.97	-15.68	68.55	207.98	127.61	18 10 5	1610.0	.19	50.25
70.00	18 49 5	2367.42	-10.34	52.74	211.83	122.73	19 28 33	1367.4	3.56	33.13
80.00	20 27 31	2059.37	-6.05	31.96	214.44	119.29	21 1 51	1059.4	6.32	11.44
90.00	22 3 14	1750.61	-4.30	10.21	215.40	117.98	22 32 25	750.6	7.46	349.36
100.00	23 10 23	1533.84	-6.05	353.33	214.44	119.29	23 35 57	533.8	6.32	332.81
110.00	23 48 32	1414.24	-10.34	341.66	211.83	122.73	24 12 6	414.2	3.56	322.05

DIFFERENTIAL CORRECTIONS

TDE -.4159 TRA -.9385 TC3 .0808 BAU .0489
RDE -.4901 RRA .1936 RC3 .1058 FAU .04006
FDE .2041 FRA .9812 FC3-1.2622 BSP 1815
BDE .6428 BRA .9582 BC3 .1331 FSP 200

MID-COURSE EXECUTION ACCURACY

SGT 1192.7 SGR 592.2 SG3 152.7
RRT .0051 RRF -.0053 RTF -.7010
SGB 1331.6 R23 -.0006 R13 -.7010
SG1 1192.7 SG2 592.2 THA .19

ORBIT DETERMINATION ACCURACY

ST 28.1 SR 27.0 SS 16.7
CRT .7290 CRS .4317 CST .9288
LSA 38.5 MSA 17.6 SSA 1.2
EL1 36.2 EL2 14.3 ALF 43.46

LAUNCH DATE MAY 9 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 29 1971

HELIOCENTRIC CONIC DISTANCE 307.496 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 34.284 GAL -1.76 AZL 91.86 HCA 101.09 SMA 227.92 ECC .33869 INC 1.8591 V1 29.505
RP 206.80 LAP -1.82 LOP 328.83 VP 26.481 GAP 19.10 AZP 89.64 TAL 353.02 TAP 94.11 RCA 150.73 APO 305.12 V2 26.482
RC 59.137 GL -12.61 GP .15 ZAL 106.69 ZAP 170.73 ETS 179.12 ZAE 171.75 ETE 34.85 ZAC 99.96 ETC 278.08 LVI -18.58

PLANETOCENTRIC CONIC

C3 25.915 VHL 5.091 DLA -21.43 RAL 341.62 RAD 6645.4 VEL 12.078 PTH 7.06 VHP 9.046 DPA -16.57 RAP 322.53 ECC 1.4265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 2	2761.20	-20.16	78.11	202.24	134.06	17 9 3	1761.2	-2.09	61.67
60.00	17 28 44	2586.48	-14.70	67.34	207.20	127.96	18 11 50	1586.5	1.23	49.13
70.00	18 52 0	2341.70	-9.39	51.36	211.07	122.99	19 31 2	1341.7	4.54	31.78
80.00	20 31 21	2030.77	-5.10	30.37	213.69	119.46	21 5 12	1030.8	7.27	9.85
90.00	22 7 35	1720.34	-3.33	8.52	214.67	118.10	22 36 16	720.3	8.40	347.63
100.00	23 14 13	1505.24	-5.10	351.74	213.69	119.46	23 39 18	505.2	7.27	331.22
110.00	23 51 26	1388.52	-9.39	340.27	211.07	122.99	24 14 35	388.5	4.54	320.70

DIFFERENTIAL CORRECTIONS

TDE -.3991 TRA -.9177 TC3 .1153 BAU .0558
RDE -.4754 RRA .1872 RC3 .1124 FAU .04148
FDE .2083 FRA 1.0220 FC3-1.3858 BSP 1743
BDE .6207 BRA .9366 BC3 .1610 FSP 219

MID-COURSE EXECUTION ACCURACY

SGT 1202.8 SGR 592.1 SG3 163.3
RRT .0036 RRF -.0064 RTF -.[illegible]23
SGB 1340.6 R23 -.0030 R13 -.7223
SG1 1202.8 SG2 592.1 THA .13

ORBIT DETERMINATION ACCURACY

ST 28.0 SR 27.0 SS 17.2
CRT .7220 CRS .4225 CST .9290
LSA 38.5 MSA 18.0 SSA 1.2
EL1 36.0 EL2 14.5 ALF 43.58

LAUNCH DATE MAY 9 1971 FLIGHT TIME 114.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 310.488 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 34.148 GAL -1.68 AZL 91.86 HCA 102.36 SMA 224.33 ECC .32799 INC 1.8603 V1 29.505
RP 206.75 LAP -1.82 LOP 330.10 VP 26.309 GAP 18.63 AZP 89.60 TAL 353.20 TAP 95.55 RCA 150.75 APO 297.90 V2 26.487
RC 59.850 GL -12.94 GP .15 ZAL 106.52 ZAP 169.77 ETS 179.18 ZAE 171.33 ETE 32.16 ZAC 99.92 ETC 278.14 LVI -18.67

PLANETOCENTRIC CONIC

C3 24.487 VHL 4.948 DLA -21.79 RAL 341.60 RAD 6644.8 VEL 12.019 PTH 7.01 VHP 8.759 DPA -16.47 RAP 322.83 ECC 1.4030

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 24 36	2739.57	-19.13	77.08	201.51	134.44	17 10 16	1739.6	-1.00	60.77
60.00	17 30 53	2563.30	-13.73	66.16	206.46	128.27	18 13 36	1563.3	2.25	48.02
70.00	18 54 57	2316.17	-8.44	49.99	210.34	123.22	19 33 33	1316.2	5.51	30.44
80.00	20 35 16	2002.18	-4.14	28.79	212.98	119.60	21 8 39	1002.2	8.21	8.25
90.00	22 12 5	1689.94	-2.35	6.82	213.97	118.19	22 40 14	689.9	9.34	345.89
100.00	23 18 8	1476.65	-4.14	350.16	212.98	119.60	23 42 45	476.7	8.21	329.62
110.00	23 54 23	1362.99	-8.44	338.91	210.34	123.22	24 17 8	363.0	5.51	319.36

DIFFERENTIAL CORRECTIONS

TDE -.3966 TRA -.9115 TC3 .1304 BAU .0578
RDE -.4612 RRA .1810 RC3 .1191 FAU .04317
FDE .2088 FRA 1.0621 FC3-1.5262 BSP 1845
BDE .6083 BRA .9293 BC3 .1766 FSP 236

MID-COURSE EXECUTION ACCURACY

SGT 1232.6 SGR 591.6 SG3 174.8
RRT .0054 RRF -.0069 RTF -.7262
SGB 1367.2 R23 -.0018 R13 -.7262
SG1 1232.6 SG2 591.6 THA .19

ORBIT DETERMINATION ACCURACY

ST 28.6 SR 26.9 SS 17.7
CRT .7216 CRS .4070 CST .9229
LSA 39.0 MSA 18.3 SSA 1.2
EL1 36.4 EL2 14.6 ALF 42.59

LAUNCH DATE MAY 9 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 313.588 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	34.019	GAL	-1.60	AZL	91.86	HCA	103.62	SMA	221.05	ECC	.31794	INC	1.8615	V1	29.505
RP	206.72	LAP	-1.81	LOP	331.37	VP	26.146	GAP	18.17	AZP	89.56	TAL	353.38	TAP	97.01	RCA	150.77	APO	291.33	V2	26.491
RC	60.633	GL	-13.27	GP	.16	ZAL	106.33	ZAP	168.79	ETS	179.24	ZAE	170.94	ETE	29.89	ZAC	99.89	ETC	278.20	LVI	-18.75

PLANETOCENTRIC CONIC

C3	23.174	VHL	4.814	DLA	-22.15	RAL	341.57	RAD	6644.2	VEL	11.965	PTH	6.96	VHP	8.482	DPA	-16.37	RAP	323.12	ECC	1.3814

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 9	2718.27	-18.11	76.08	200.81	134.78	17 11 27	1718.3	.07	59.88
60.00	17 33 2	2540.38	-12.76	65.00	205.75	128.56	18 15 22	1540.4	3.26	46.92
70.00	18 57 56	2290.79	-7.49	48.64	209.63	123.42	19 36 7	1290.8	6.47	29.10
80.00	20 39 18	1973.54	-3.18	27.21	212.29	119.70	21 12 12	973.5	9.14	6.64
90.00	22 16 43	1659.33	-1.37	5.11	213.29	118.25	22 44 22	659.3	10.27	344.13
100.00	23 22 10	1448.01	-3.18	348.58	212.29	119.70	23 46 18	448.0	9.14	328.01
110.00	0 1 18	1337.61	-7.49	337.56	209.63	123.42	0 23 36	337.6	6.47	318.02

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3925	TRA	-.9031	TC3	.1481	BAU	.0602	SGT	1259.2	SGR	590.7	SG3	187.0	ST	29.1	SR	26.8	SS	18.2
RDE	-.4475	RRA	.1750	RC3	.1259	FAU	.04493	RRT	.0069	RRF	-.0079	RTF	-.7314	CRT	.7204	CRS	.3930	CST	.9177
FDE	.2101	FRA	1.1040	FC3	-1.6784	BSP	1929	SGB	1390.8	R23	-.0015	R13	-.7314	LSA	39.4	MSA	18.6	SSA	1.2
BDE	.5952	BRA	.9199	BC3	.1944	FSP	255	SG1	1259.2	SG2	590.7	THA	.24	EL1	36.8	EL2	14.8	ALF	41.75

LAUNCH DATE MAY 9 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 316.785 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	33.898	GAL	-1.51	AZL	91.86	HCA	104.89	SMA	218.06	ECC	.30849	INC	1.8627	V1	29.505
RP	206.70	LAP	-1.80	LOP	332.64	VP	25.991	GAP	17.73	AZP	89.52	TAL	353.58	TAP	98.47	RCA	150.79	APO	285.33	V2	26.494
RC	61.483	GL	-13.59	GP	.16	ZAL	106.12	ZAP	167.79	ETS	179.29	ZAE	170.60	ETE	27.97	ZAC	99.85	ETC	278.25	LVI	-18.82

PLANETOCENTRIC CONIC

C3	21.969	VHL	4.687	DLA	-22.52	RAL	341.53	RAD	6643.7	VEL	11.915	PTH	6.92	VHP	8.214	DPA	-16.28	RAP	323.39	ECC	1.3616

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 40	2697.31	-17.10	75.11	200.13	135.10	17 12 38	1697.3	1.12	59.01
60.00	17 35 11	2517.76	-11.79	63.86	205.05	128.82	18 17 9	1517.8	4.25	45.84
70.00	19 0 58	2265.59	-6.54	47.30	208.95	123.60	19 38 43	1265.6	7.41	27.76
80.00	20 43 27	1944.85	-2.21	25.64	211.63	119.78	21 15 52	944.9	10.07	5.02
90.00	22 21 32	1628.49	-.37	3.39	212.65	118.28	22 48 40	628.5	11.20	342.34
100.00	23 26 19	1419.32	-2.21	347.00	211.63	119.78	23 49 58	419.3	10.07	326.39
110.00	0 4 20	1312.41	-6.54	336.22	208.95	123.60	0 26 12	312.4	7.41	316.68

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3870	TRA	-.8940	TC3	.1699	BAU	.0633	SGT	1284.1	SGR	589.4	SG3	200.2	ST	29.6	SR	26.8	SS	18.7
RDE	-.4342	RRA	.1691	RC3	.1329	FAU	.04680	RRT	.0082	RRF	-.0086	RTF	-.7383	CRT	.7183	CRS	.3773	CST	.9121
FDE	.2107	FRA	1.1493	FC3	-1.8441	BSP	1994	SGB	1412.9	R23	-.0009	R13	-.7383	LSA	39.7	MSA	18.9	SSA	1.3
BDE	.5817	BRA	.9099	BC3	.2157	FSP	276	SG1	1284.1	SG2	589.3	THA	.27	EL1	37.0	EL2	14.9	ALF	41.02

LAUNCH DATE MAY 9 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 320.070 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	33.783	GAL	-1.43	AZL	91.86	HCA	106.16	SMA	215.32	ECC	.29962	INC	1.8640	V1	29.505
RP	206.68	LAP	-1.79	LOP	333.91	VP	25.844	GAP	17.29	AZP	89.48	TAL	353.78	TAP	99.94	RCA	150.81	APO	279.84	V2	26.496
RC	62.398	GL	-13.92	GP	.17	ZAL	105.90	ZAP	166.78	ETS	179.33	ZAE	170.32	ETE	26.33	ZAC	99.82	ETC	278.30	LVI	-18.90

PLANETOCENTRIC CONIC

C3	20.860	VHL	4.567	DLA	-22.90	RAL	341.47	RAD	6643.2	VEL	11.869	PTH	6.88	VHP	7.955	DPA	-16.20	RAP	323.63	ECC	1.3433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 29 11	2678.73	-16.11	74.17	199.48	135.40	17 13 47	1676.7	2.16	58.15
60.00	17 37 20	2495.45	-10.84	62.75	204.39	129.06	18 18 56	1495.5	5.23	44.76
70.00	19 4 2	2240.60	-5.60	45.98	208.29	123.75	19 41 22	1240.6	8.35	26.43
80.00	20 47 42	1916.14	-1.23	24.06	211.00	119.83	21 19 38	916.1	10.99	3.38
90.00	22 26 31	1597.44	.63	1.66	212.04	118.27	22 53 8	597.4	12.13	340.53
100.00	23 30 34	1390.62	-1.23	345.43	211.00	119.83	23 53 44	390.6	10.99	324.75
110.00	0 7 24	1287.42	-5.60	334.90	208.29	123.75	0 28 51	287.4	8.35	315.35

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3807	TRA	-.8837	TC3	.1916	BAU	.0662	SGT	1306.5	SGR	587.7	SG3	214.1	ST	29.9	SR	26.6	SS	19.2
RDE	-.4214	RRA	.1634	RC3	.1389	FAU	.04876	RRT	.0091	RRF	-.0092	RTF	-.7444	CRT	.7158	CRS	.3607	CST	.9065
FDE	.2107	FRA	1.1959	FC3	-2.0237	BSP	2054	SGB	1432.6	R23	-.0008	R13	-.7444	LSA	40.0	MSA	19.2	SSA	1.3
BDE	.5679	BRA	.8987	BC3	.2373	FSP	298	SG1	1306.5	SG2	587.6	THA	.29	EL1	37.2	EL2	15.0	ALF	40.37

LAUNCH DATE MAY 9 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 8 1971

HELIOCENTRIC CONIC DISTANCE 323.434 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	33.676	GAL	-1.36	AZL	91.87	HCA	107.43	SMA	212.81	ECC	.29128	INC	1.8652	V1	29.505
RP	206.67	LAP	-1.78	LOP	335.18	VP	25.704	GAP	16.86	AZP	89.44	TAL	353.99	TAP	101.42	RCA	150.82	APO	274.80	V2	26.496
RC	63.376	GL	-14.24	GP	.17	ZAL	105.67	ZAP	165.74	ETS	179.37	ZAE	170.10	ETE	24.93	ZAC	99.80	ETC	278.35	LVI	-18.96

PLANETOCENTRIC CONIC

C3	19.841	VHL	4.454	DLA	-23.28	RAL	341.39	RAD	6642.8	VEL	11.826	PTH	6.85	VHP	7.705	DPA	-16.11	RAP	323.86	ECC	1.3265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 40	2656.55	-15.13	73.25	198.85	135.67	17 14 56	1656.6	3.17	57.30
60.00	17 39 29	2473.50	-9.90	61.66	203.75	129.27	18 20 43	1473.5	6.19	43.70
70.00	19 7 8	2215.85	-4.66	44.68	207.66	123.87	19 44 4	1215.9	9.27	25.11
80.00	20 52 4	1887.43	-.26	22.48	210.40	119.86	21 23 32	887.4	11.90	1.74
90.00	22 31 41	1566.15	1.64	359.91	211.45	118.24	22 57 47	566.1	13.05	338.69
100.00	23 34 56	1361.90	-.26	343.85	210.40	119.86	23 57 38	361.9	11.90	323.11
110.00	0 10 30	1262.67	-4.66	333.60	207.66	123.87	0 31 33	262.7	9.27	314.03

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3741	TRA	-.8733	TC3	.2167	BAU	.0695	SGT	1328.2	SGR	585.6	SG3	229.0	ST	30.3	SR	26.5	SS	19.7
RDE	-.4090	RRA	.1579	RC3	.1470	FAU	.05089	RRT	.0103	RRF	-.0104	RTF	-.7511	CRT	.7132	CRS	.3445	CST	.9006
FDE	.2108	FRA	1.2449	FC3	-2.2203	BSP	2108	SGB	1451.6	R23	-.0007	R13	-.7511	LSA	40.3	MSA	19.6	SSA	1.3
BDE	.5543	BRA	.8874	BC3	.2619	FSP	323	SG1	1328.2	SG2	585.5	THA	.32	EL1	37.3	EL2	15.1	ALF	39.74

LAUNCH DATE MAY 8 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 10 1971

HELIOCENTRIC CONIC DISTANCE 326.869 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	33.974	GAL	-1.28	AZL	91.87	HCA	108.70	SMA	210.81	ECC	.28345	INC	1.8665	VI	29.505
RP	206.68	LAP	-1.77	LOP	336.48	VP	25.870	GAP	16.43	AZP	89.40	TAL	354.20	TAP	102.90	RCA	150.84	APO	270.18	V2	26.496
RC	64.414	GL	-14.58	GP	.18	ZAL	105.43	ZAP	164.69	ETS	179.40	ZAE	169.94	ETE	23.74	ZAC	99.77	ETC	278.39	LVI	-19.03

PLANETOCENTRIC CONIC

C3	18.004	VHL	4.348	DLA	-23.66	RAL	341.31	RAD	6642.3	VEL	11.787	PTH	6.81	VHP	7.463	DPA	-16.04	RAP	324.07	ECC	1.3111

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 32 8	2636.01	-14.16	72.37	198.25	135.91	17 16 4	1636.8	4.16	56.47
60.00	17 41 38	2451.94	-8.87	60.60	203.14	129.46	18 22 30	1451.9	7.13	42.66
70.00	19 10 16	2191.37	-3.73	43.40	207.06	123.97	19 46 48	1191.4	10.17	23.79
80.00	20 56 34	1858.72	.71	20.91	209.83	119.85	21 27 32	858.7	12.80	.08
90.00	22 37 3	1534.60	2.65	358.15	210.91	118.17	23 2 38	534.6	13.96	336.83
100.00	23 39 25	1333.19	.71	342.28	209.83	119.85	24 1 39	333.2	12.80	321.45
110.00	0 13 38	1238.19	-3.73	332.31	207.06	123.97	0 34 17	238.2	10.17	312.71

DIFFERENTIAL CORRECTIONS

TDE	-.3668	TRA	-.8616	TC3	.2420	BAU	.0725
RDE	-.3971	RRA	.1526	RC3	.1541	FAU	.05313
FDE	.2105	FRA	1.2960	FC3	-2.4333	BSP	2150
BDE	.5406	BRA	.8750	BC3	.2869	FSP	348

MID-COURSE EXECUTION ACCURACY

SGT	1347.1	SGR	583.1	SG3	244.8
RRT	.0114	RRF	-.0116	RTF	-.7572
SGB	1467.9	R23	-.0010	R13	-.7572
SG1	1347.1	SG2	583.0	THA	.35

ORBIT DETERMINATION ACCURACY

BT	30.5	BR	26.4	BS	20.2
CRT	.7103	CRS	.3279	CBT	.8948
LSA	40.5	MSA	19.9	SSA	1.3
EL1	37.4	EL2	15.2	ALF	38.20

LAUNCH DATE MAY 9 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 12 1971

HELIOCENTRIC CONIC DISTANCE 330.369 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	33.479	GAL	-1.21	AZL	91.87	HCA	109.97	SMA	208.40	ECC	.27610	INC	1.8678	VI	29.505
RP	206.69	LAP	-1.76	LOP	337.72	VP	25.444	GAP	16.02	AZP	89.36	TAL	354.42	TAP	104.39	RCA	150.86	APO	265.93	V2	26.495
RC	65.512	GL	-14.88	GP	.19	ZAL	105.18	ZAP	163.61	ETS	179.43	ZAE	169.85	ETE	22.73	ZAC	99.75	ETC	278.43	LVI	-19.08

PLANETOCENTRIC CONIC

C3	18.041	VHL	4.248	DLA	-24.05	RAL	341.21	RAD	6642.0	VEL	11.790	PTH	6.78	VHP	7.230	DPA	-15.97	RAP	324.26	ECC	1.2969

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 35	2617.52	-13.22	71.51	197.68	136.13	17 17 12	1617.5	5.13	55.66
60.00	17 43 47	2430.79	-8.05	59.57	202.56	129.62	18 24 18	1430.8	8.05	41.63
70.00	19 13 27	2167.20	-2.81	42.13	206.49	124.05	19 49 34	1167.2	11.06	22.48
80.00	21 1 11	1830.03	1.68	19.33	209.29	119.81	21 31 41	830.0	13.69	358.41
90.00	22 42 39	1502.78	3.67	356.37	210.40	118.06	23 7 41	502.8	14.86	334.92
100.00	23 44 3	1304.80	1.68	340.70	209.29	119.81	24 5 47	304.5	13.69	319.78
110.00	0 16 49	1214.02	-2.81	331.05	206.49	124.05	0 37 3	214.0	11.06	311.40

DIFFERENTIAL CORRECTIONS

TDE	-.3600	TRA	-.8503	TC3	.2672	BAU	.0753
RDE	-.3856	RRA	.1475	RC3	.1611	FAU	.05553
FDE	.2102	FRA	1.3505	FC3	-2.6645	BSP	2196
BDE	.5275	BRA	.8630	BC3	.3120	FSP	376

MID-COURSE EXECUTION ACCURACY

SGT	1365.6	SGR	580.2	SG3	261.8
RRT	.0127	RRF	-.0130	RTF	-.7629
SGB	1483.7	R23	-.0012	R13	-.7629
SG1	1365.6	SG2	580.2	THA	.36

ORBIT DETERMINATION ACCURACY

BT	30.7	BR	26.2	BS	20.8
CRT	.7075	CRS	.3113	CBT	.8887
LSA	40.7	MSA	20.2	SSA	1.3
EL1	37.4	EL2	15.2	ALF	38.63

LAUNCH DATE MAY 9 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 14 1971

HELIOCENTRIC CONIC DISTANCE 333.928 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	33.389	GAL	-1.14	AZL	91.87	HCA	111.24	SMA	208.45	ECC	.28919	INC	1.8690	VI	29.505
RP	206.71	LAP	-1.74	LOP	338.89	VP	25.323	GAP	15.82	AZP	89.32	TAL	354.64	TAP	105.87	RCA	150.87	APO	262.02	V2	26.493
RC	66.867	GL	-15.20	GP	.19	ZAL	104.92	ZAP	162.52	ETS	179.46	ZAE	169.82	ETE	21.88	ZAC	99.73	ETC	278.47	LVI	-19.13

PLANETOCENTRIC CONIC

C3	17.248	VHL	4.153	DLA	-24.43	RAL	341.11	RAD	6641.6	VEL	11.717	PTH	6.75	VHP	7.005	DPA	-15.91	RAP	324.43	ECC	1.2839

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 0	2598.71	-12.29	70.68	197.13	136.33	17 18 19	1598.7	6.07	54.87
60.00	17 45 56	2410.07	-7.15	58.56	202.00	129.77	18 26 6	1410.1	8.94	40.62
70.00	19 16 39	2143.35	-1.90	40.89	205.95	124.11	19 52 23	1143.4	11.93	21.18
80.00	21 5 56	1801.36	2.65	17.76	208.79	119.75	21 35 57	801.4	14.56	356.73
90.00	22 48 28	1470.63	4.70	354.56	209.92	117.92	23 12 59	470.6	15.75	332.99
100.00	23 48 48	1275.83	2.65	339.13	208.79	119.75	24 10 3	275.8	14.56	318.10
110.00	0 20 2	1190.17	-1.90	329.80	205.95	124.11	0 39 52	190.2	11.93	310.10

DIFFERENTIAL CORRECTIONS

TDE	-.3925	TRA	-.8382	TC3	.2943	BAU	.0782
RDE	-.3744	RRA	.1425	RC3	.1682	FAU	.05809
FDE	.2075	FRA	1.4064	FC3	-2.9156	BSP	2231
BDE	.5142	BRA	.8502	BC3	.3390	FSP	406

MID-COURSE EXECUTION ACCURACY

SGT	1381.7	SGR	577.0	SG3	279.8
RRT	.0140	RRF	-.0140	RTF	-.7682
SGB	1497.4	R23	-.0010	R13	-.7683
SG1	1381.8	SG2	577.0	THA	.40

ORBIT DETERMINATION ACCURACY

BT	30.8	BR	26.0	BS	21.3
CRT	.7043	CRS	.2913	CBT	.8811
LSA	40.8	MSA	20.5	SSA	1.3
EL1	37.4	EL2	15.3	ALF	38.14

LAUNCH DATE MAY 9 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 337.940 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	33.304	GAL	-1.07	AZL	91.87	HCA	112.51	SMA	204.65	ECC	.26271	INC	1.8704	VI	29.505
RP	206.73	LAP	-1.73	LOP	340.26	VP	25.206	GAP	15.22	AZP	89.28	TAL	354.86	TAP	107.36	RCA	150.89	APO	258.41	V2	26.488
RC	67.877	GL	-15.51	GP	.20	ZAL	104.65	ZAP	161.39	ETS	179.48	ZAE	169.86	ETE	21.17	ZAC	99.72	ETC	278.50	LVI	-19.18

PLANETOCENTRIC CONIC

C3	16.317	VHL	4.064	DLA	-24.81	RAL	341.00	RAD	6641.2	VEL	11.686	PTH	6.72	VHP	6.787	DPA	-15.85	RAP	324.57	ECC	1.2718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 36 25	2580.39	-11.39	69.88	196.60	136.91	17 19 26	1580.4	6.98	54.09
60.00	17 48 4	2389.82	-6.26	57.58	201.47	129.89	18 27 54	1389.8	9.82	39.62
70.00	19 19 54	2119.86	-1.01	39.66	205.44	124.14	19 55 14	1119.9	12.78	19.89
80.00	21 10 49	1772.72	3.62	16.18	208.32	119.68	21 40 22	772.7	15.42	355.04
90.00	22 54 34	1438.10	5.73	352.73	209.48	117.74	23 18 32	438.1	16.64	331.01
100.00	23 53 41	1247.19	3.62	337.55	208.32	119.68	24 14 28	247.2	15.42	316.41
110.00	0 23 16	1166.68	-1.01	328.58	205.44	124.14	0 42 43	166.7	12.78	308.81

DIFFERENTIAL CORRECTIONS

TDE	-.3453	TRA	-.8262	TC3	.3182	BAU	.0802
RDE	-.3637	RRA	.1377	RC3	.1751	FAU	.06075
FDE	.2055	FRA	1.4666	FC3	-3.1642	BSP	2265
BDE	.5015	BRA	.8376	BC3	.3632	FSP	438

MID-COURSE EXECUTION ACCURACY

SGT	1396.7	SGR	573.4	SG3	298.9
RRT	.0150	RRF	-.0151	RTF	-.7726
SGB	1509.6	R23	-.0012	R13	-.7726
SG1	1396.7	SG2	573.4	THA	.43

ORBIT DETERMINATION ACCURACY

BT	31.0	BR	25.8	BS	21.8
CRT	.7013	CRS	.2724	CBT	.8737
LSA	40.9	MSA	20.9	SSA	1.4
EL1	37.4	EL2	15.3	ALF	37.63

LAUNCH DATE MAY 9 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 341.202 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 33.225 GAL -1.00 AZL 91.87 HCA 113.78 SMA 202.99 ECC .25663 INC 1.8717 V1 29.505
RP 206.77 LAP -1.71 LOP 341.53 VP 25.098 GAP 14.83 AZP 89.25 TAL 355.08 TAP 108.85 RCA 150.90 APO 255.09 V2 26.485
RC 69.140 GL -15.82 GP .21 ZAL 104.39 ZAP 160.25 ETS 179.50 ZAE 169.98 ETE 20.61 ZAC 99.71 ETC 278.52 LVI -19.22

PLANETOCENTRIC CONIC

C3 15.844 VHL 3.981 DLA -25.19 RAL 340.89 RAD 6640.9 VEL 11.657 PTH 6.69 VHP 6.576 DPA -15.81 RAP 324.69 ECC 1.2608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 49	2562.60	-10.51	69.10	196.10	136.68	17 20 32	1562.6	7.87	53.34
60.00	17 50 12	2370.07	-5.40	56.63	200.97	130.00	18 29 43	1370.1	10.67	38.64
70.00	19 23 10	2096.76	-.12	38.45	204.96	124.15	19 58 7	1096.8	13.61	18.62
80.00	21 15 51	1744.11	4.58	14.60	207.88	119.54	21 44 55	744.1	16.26	353.34
90.00	23 0 37	1405.10	6.78	350.87	209.08	117.52	23 24 22	405.1	17.51	328.98
100.00	0 2 38	[illegible] .58	4.58	335.97	207.88	119.54	0 22 57	218.6	16.26	314.70
110.00	0 26 32	1143.58	-.12	327.37	204.96	124.15	0 45 36	143.6	13.61	307.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3375 TRA -.8133 TC3 .3435 BAU .0823 SGT 1408.7 SGR 569.5 SG3 319.3 ST 31.1 SR 25.6 SS 22.4
RDE -.3533 RRA .1330 RC3 .1820 FAU .06361 RRT .0161 RRF -.0163 RTF -.7768 CRT .6980 CRS .2518 CST .8656
FDE .2020 FRA 1.5286 FC3-3.4759 BSP 2300 SGB 1519.5 R23 -.0014 R13 -.7768 LSA 40.9 MSA 21.2 SSA 1.4
BDE .4886 BRA .8241 BC3 .3888 FSP 473 SG1 1408.8 SG2 569.4 THA .45 EL1 37.3 EL2 15.3 ALF 37.21

LAUNCH DATE MAY 9 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 344.908 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 33.150 GAL -.94 AZL 91.87 HCA 115.04 SMA 201.46 ECC .25092 INC 1.8731 V1 29.505
RP 206.81 LAP -1.70 LOP 342.79 VP 24.993 GAP 14.45 AZP 89.21 TAL 355.30 TAP 110.34 RCA 150.91 APO 252.01 V2 26.480
RC 70.455 GL -16.12 GP .22 ZAL 104.12 ZAP 159.07 ETS 179.52 ZAE 170.17 ETE 20.19 ZAC 99.70 ETC 278.54 LVI -19.25

PLANETOCENTRIC CONIC

C3 15.225 VHL 3.902 DLA -25.56 RAL 340.77 RAD 6640.6 VEL 11.631 PTH 6.67 VHP 6.373 DPA -15.77 RAP 324.78 ECC 1.2506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 12	2545.35	-9.66	68.36	195.63	136.82	17 21 37	1545.3	8.73	52.60
60.00	17 52 20	2350.82	-4.56	55.70	200.49	130.09	18 31 31	1350.8	11.49	37.69
70.00	19 26 27	2074.08	.74	37.27	204.51	124.15	20 1 2	1074.1	14.42	17.35
80.00	21 21 1	1715.52	5.54	13.02	207.48	119.39	21 49 37	715.5	17.09	351.62
90.00	23 7 41	1371.52	7.83	348.96	208.72	117.26	23 30 33	371.5	18.37	326.90
100.00	0 7 49	1189.99	5.54	334.39	207.48	119.39	0 27 39	190.0	17.09	312.98
110.00	0 29 50	1120.90	.74	326.19	204.51	124.15	0 48 31	120.9	14.42	306.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3306 TRA -.8006 TC3 .3676 BAU .0841 SGT 1420.0 SGR 565.2 SG3 341.1 ST 31.2 SR 25.4 SS 23.0
RDE -.3432 RRA .1285 RC3 .1887 FAU .06668 RRT .0179 RRF -.0180 RTF -.7805 CRT .6954 CRS .2330 CST .8576
FDE .1993 FRA 1.5951 FC3-3.7915 BSP 2317 SGB 1528.3 R23 -.0014 R13 -.7805 LSA 41.0 MSA 21.5 SSA 1.4
BDE .4766 BRA .8109 BC3 .4132 FSP 508 SG1 1420.0 SG2 565.1 THA .48 EL1 37.2 EL2 15.3 ALF 36.74

LAUNCH DATE MAY 9 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 348.655 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 33.079 GAL -.88 AZL 91.87 HCA 116.31 SMA 200.05 ECC .24557 INC 1.8745 V1 29.505
RP 206.87 LAP -1.68 LOP 344.06 VP 24.893 GAP 14.08 AZP 89.17 TAL 355.51 TAP 111.82 RCA 150.92 APO 249.17 V2 26.474
RC 71.818 GL -16.42 GP .22 ZAL 103.86 ZAP 157.87 ETS 179.53 ZAE 170.44 ETE 19.90 ZAC 99.70 ETC 278.55 LVI -19.27

PLANETOCENTRIC CONIC

C3 14.655 VHL 3.828 DLA -25.93 RAL 340.65 RAD 6640.4 VEL 11.606 PTH 6.65 VHP 6.177 DPA -15.74 RAP 324.84 ECC 1.2412

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 33	2528.65	-8.83	67.64	195.19	136.95	17 22 42	1528.6	9.56	51.88
60.00	17 54 27	2332.12	-3.74	54.80	200.05	130.16	18 33 19	1332.1	12.29	36.75
70.00	19 29 46	2051.84	1.59	36.11	204.08	124.12	20 3 58	1051.8	15.20	16.11
80.00	21 26 21	1686.94	6.49	11.44	207.11	119.21	21 54 28	686.9	17.90	349.68
90.00	23 14 48	1337.20	8.89	347.00	208.40	116.96	23 37 5	337.2	19.23	324.74
100.00	0 13 9	1161.41	6.49	332.80	207.11	119.21	0 32 31	161.4	17.90	311.25
110.00	0 33 9	1098.66	1.59	325.03	204.08	124.12	0 51 27	98.7	15.20	305.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3235 TRA -.7875 TC3 .3880 BAU .0851 SGT 1428.4 SGR 560.5 SG3 364.1 ST 31.2 SR 25.2 SS 23.6
RDE -.3335 RRA .1242 RC3 .1953 FAU .06990 RRT .0192 RRF -.0195 RTF -.[illegible]28 CRT .6928 CRS .2126 CST .8487
FDE .1953 FRA 1.6649 FC3-4.1295 BSP 2344 SGB 1534.4 R23 -.0018 R13 -.7828 LSA 41.0 MSA 21.9 SSA 1.4
BDE .4647 BRA .7972 BC3 .4344 FSP 547 SG1 1428.4 SG2 560.4 THA .51 EL1 37.0 EL2 15.3 ALF 36.31

LAUNCH DATE MAY 9 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC DISTANCE 352.441 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 33.013 GAL -.83 AZL 91.88 HCA 117.58 SMA 198.73 ECC .24054 INC 1.8759 V1 29.505
RP 206.93 LAP -1.66 LOP 345.33 VP 24.797 GAP 13.72 AZP 89.13 TAL 355.73 TAP 113.31 RCA 150.93 APO 246.54 V2 26.466
RC 73.228 GL -16.71 GP .23 ZAL 103.59 ZAP 156.64 ETS 179.54 ZAE 170.77 ETE 19.77 ZAC 99.70 ETC 278.56 LVI -19.29

PLANETOCENTRIC CONIC

C3 14.129 VHL 3.759 DLA -26.29 RAL 340.52 RAD 6640.1 VEL 11.584 PTH 6.63 VHP 5.988 DPA -15.72 RAP 324.87 ECC 1.2325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 41 54	2512.47	-8.02	66.95	194.76	137.06	17 23 46	1512.5	10.36	51.18
60.00	17 56 33	2313.92	-2.94	53.93	199.63	130.21	18 35 7	1313.9	13.06	35.83
70.00	19 33 6	2030.01	2.43	34.97	203.69	124.08	20 6 56	1030.0	15.96	14.87
80.00	21 31 53	1658.26	7.44	9.84	206.77	119.00	21 59 31	658.3	18.69	348.12
90.00	23 22 25	1301.77	9.98	344.97	208.13	116.60	23 44 7	301.8	20.09	322.50
100.00	0 18 40	1132.73	7.44	331.20	206.77	119.00	0 37 33	132.7	18.69	309.49
110.00	0 36 29	1076.83	2.43	323.89	203.69	124.08	0 54 26	76.8	15.96	303.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3058 TRA -.7632 TC3 .4390 BAU .0913 SGT 1417.8 SGR 555.6 SG3 388.8 ST 30.4 SR 24.9 SS 24.2
RDE -.3241 RRA .1200 RC3 .2017 FAU .07350 RRT .0198 RRF -.0211 RTF -.7960 CRT .6830 CRS .1874 CST .8422
FDE .1872 FRA 1.7349 FC3-4.5037 BSP 2227 SGB 1522.8 R23 -.0024 R13 -.7960 LSA 40.4 MSA 22.3 SSA 1.4
BDE .4456 BRA .7726 BC3 .4831 FSP 584 SG1 1417.9 SG2 555.4 THA .53 EL1 36.2 EL2 15.3 ALF 36.82

LAUNCH DATE MAY 8 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC DISTANCE 356.260 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.881	GAL	-.77	AZL	91.88	HCA	118.84	SNA	197.52	ECC	.23584	INC	1.8774
RP	207.08	LAP	-1.64	LOP	346.59	VP	24.706	GAP	13.37	AZP	89.09	TAL	355.94	TAP	114.78	RCA	150.94	APO	244.11
RC	74.683	GL	-16.99	GP	.24	ZAL	103.34	ZAP	155.38	ETS	179.55	ZAE	171.18	ETE	19.80	ZAC	99.71	ETC	278.56

VI	29.595																		
V2	26.459																		
LVI	-19.30																		

PLANETOCENTRIC CONIC

C3	13.646	VHL	3.694	DLA	-26.65	RAL	340.40	RAD	6639.9	VEL	11.883	PTH	6.61	VHP	5.605	DPA	-19.71	RAP	324.87
ECC	1.2246																		

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 43 14	2496.96	-7.25	66.29	194.37	137.15	17 24 51	1497.0	11.13	50.51
60.00	17 58 38	2296.40	-2.17	53.09	199.24	130.25	18 36 54	1296.4	13.80	34.95
70.00	19 36 27	2008.79	3.24	33.86	203.33	124.02	20 9 56	1008.8	16.69	13.66
80.00	21 37 33	1629.70	8.38	8.24	206.48	118.76	22 4 43	629.7	19.47	346.35
90.00	23 30 34	1265.22	11.09	342.86	207.91	116.18	23 51 40	265.2	20.93	320.19
100.00	0 24 21	1104.17	8.38	329.61	206.48	118.76	0 42 45	104.2	19.47	307.72
110.00	0 39 49	1085.61	3.24	322.78	203.33	124.02	0 57 28	85.6	16.69	302.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3033	TRA	-.7842	TC3	.4403	BAU	.0888		SGT	1428.2	SGR	550.2	SG3	414.4		ST	30.6	SR	24.6
RDE	-.3150	RRA	.1159	RC3	.2078	FAU	.07699		RRT	.0210	RRF	-.0223	RTF	-.7919		CRT	.6834	CRS	.1667
PDE	.1818	PRA	1.8132	FC3	-4.8848	BSP	2302		SGB	1530.6	R23	-.0028	R13	-.7919		LSA	40.6	NSA	22.6
BDE	.4373	BRA	.7630	BC3	.4668	FSP	629		SG1	1428.3	SG2	550.1	TMA	.54		EL1	36.2	EL2	15.2

SS	24.9																		
CST	.6304																		
SSA	1.4																		
ALF	36.06																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 28 1971

HELIOCENTRIC CONIC DISTANCE 360.112 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.893	GAL	-.72	AZL	91.88	HCA	120.11	SNA	196.40	ECC	.23144	INC	1.8789
RP	207.08	LAP	-1.63	LOP	347.86	VP	24.618	GAP	13.02	AZP	89.06	TAL	356.14	TAP	116.25	RCA	150.95	APO	241.86
RC	76.180	GL	-17.27	GP	.25	ZAL	103.09	ZAP	154.09	ETS	179.56	ZAE	171.67	ETE	20.02	ZAC	99.73	ETC	278.56

VI	29.606																		
V2	26.449																		
LVI	-19.31																		

PLANETOCENTRIC CONIC

C3	13.201	VHL	3.633	DLA	-26.99	RAL	340.29	RAD	6639.7	VEL	11.844	PTH	6.59	VHP	5.630	DPA	-19.70	RAP	324.88
ECC	1.2172																		

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 32	2482.04	-6.50	65.66	194.01	137.24	17 25 54	1482.0	11.87	49.86
60.00	18 0 42	2279.46	-1.42	52.28	198.88	130.28	18 38 41	1279.8	14.52	34.08
70.00	19 39 47	1988.09	4.02	32.78	202.99	123.94	20 12 55	988.1	17.40	12.47
80.00	21 43 26	1601.07	9.31	6.63	206.22	118.80	22 10 7	601.1	20.22	344.56
90.00	23 38 29	1226.79	12.23	340.61	207.74	115.70	23 59 56	226.8	21.78	317.66
100.00	0 30 13	1075.54	9.31	327.99	206.22	118.80	0 48 9	75.5	20.22	305.93
110.00	0 43 10	1034.91	4.02	321.69	202.99	123.94	1 0 25	34.9	17.40	301.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2998	TRA	-.7419	TC3	.4463	BAU	.0873		SGT	1432.6	SGR	544.6	SG3	441.8		ST	30.8	SR	24.3
RDE	-.3062	RRA	.1120	RC3	.2136	FAU	.08081		RRT	.0236	RRF	-.0248	RTF	-.7893		CRT	.6843	CRS	.1491
PDE	.1778	PRA	1.8940	FC3	-5.3000	BSP	2340		SGB	1532.6	R23	-.0030	R13	-.7894		LSA	40.6	NSA	22.9
BDE	.4288	BRA	.7503	BC3	.4948	FSP	677		SG1	1432.7	SG2	544.4	TMA	.60		EL1	36.2	EL2	15.1

SS	28.8																		
CST	.8197																		
SSA	1.4																		
ALF	38.48																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 144.00 ARRIVAL DATE SEP 30 1971

HELIOCENTRIC CONIC DISTANCE 363.993 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.838	GAL	-.68	AZL	91.88	HCA	121.37	SNA	195.36	ECC	.22731	INC	1.8804
RP	207.17	LAP	-1.61	LOP	349.12	VP	24.534	GAP	12.68	AZP	89.02	TAL	356.34	TAP	117.71	RCA	150.96	APO	239.77
RC	77.718	GL	-17.53	GP	.26	ZAL	102.85	ZAP	152.77	ETS	179.57	ZAE	172.23	ETE	20.48	ZAC	99.75	ETC	278.55

VI	29.508																		
V2	26.439																		
LVI	-19.30																		

PLANETOCENTRIC CONIC

C3	12.791	VHL	3.576	DLA	-27.32	RAL	340.18	RAD	6639.8	VEL	11.527	PTH	6.57	VHP	5.460	DPA	-19.71	RAP	324.79
ECC	1.2105																		

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 45 50	2467.72	-5.78	65.05	193.66	137.31	17 26 58	1467.7	12.57	49.23
60.00	18 2 45	2263.15	-.70	51.50	198.54	130.30	18 40 28	1263.1	15.20	33.24
70.00	19 43 8	1967.95	4.79	31.72	202.69	123.86	20 15 36	967.9	18.08	11.31
80.00	21 49 31	1572.32	10.24	5.00	206.00	118.20	22 15 43	572.3	20.96	342.74
90.00	23 49 27	1185.54	13.44	338.18	207.63	115.12	24 9 13	185.5	22.65	314.94
100.00	0 38 19	1046.78	10.24	326.37	206.00	118.20	0 53 45	46.8	20.96	304.11
110.00	0 46 30	1014.76	4.79	320.64	202.69	123.86	1 3 23	14.8	18.08	300.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2944	TRA	-.7290	TC3	.4547	BAU	.0883		SGT	1434.0	SGR	538.6	SG3	471.4		ST	30.7	SR	24.0
RDE	-.2977	RRA	.1082	RC3	.2192	FAU	.08492		RRT	.0253	RRF	-.0264	RTF	-.7884		CRT	.6834	CRS	.1278
PDE	.1718	PRA	1.9036	FC3	-5.7474	BSP	2347		SGB	1531.9	R23	-.0032	R13	-.7884		LSA	40.0	NSA	23.3
BDE	.4187	BRA	.7370	BC3	.5047	FSP	726		SG1	1434.1	SG2	538.4	TMA	.63		EL1	36.0	EL2	15.0

SS	28.3																		
CST	.8079																		
SSA	1.4																		
ALF	34.99																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 367.901 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.787	GAL	-.63	AZL	91.88	HCA	122.63	SNA	194.40	ECC	.22346	INC	1.8820
RP	207.26	LAP	-1.58	LOP	350.39	VP	24.453	GAP	12.35	AZP	88.98	TAL	356.53	TAP	119.16	RCA	150.96	APO	237.84
RC	79.295	GL	-17.79	GP	.28	ZAL	102.61	ZAP	151.42	ETS	179.57	ZAE	172.88	ETE	21.28	ZAC	99.77	ETC	278.53

VI	29.505																		
V2	26.428																		
LVI	-19.29																		

PLANETOCENTRIC CONIC

C3	12.414	VHL	3.523	DLA	-27.68	RAL	340.07	RAD	6639.3	VEL	11.310	PTH	6.56	VHP	5.297	DPA	-19.73	RAP	324.69
ECC	1.2043																		

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 7	2454.03	-5.10	64.47	193.35	137.37	17 28 1	1454.0	13.25	48.63
60.00	18 4 46	2247.48	-.01	50.75	198.23	130.30	18 42 13	1247.5	15.85	32.42
70.00	19 46 28	1948.40	5.83	30.69	202.42	123.76	20 18 56	948.4	18.73	10.17
80.00	21 55 50	1543.38	11.17	3.35	205.81	117.87	22 21 34	543.4	21.68	340.90
90.00	0 4 58	1139.66	14.74	335.45	207.61	114.41	0 23 57	139.7	23.55	311.88
100.00	0 42 38	1017.86	11.17	324.72	205.81	117.87	0 59 36	17.9	21.68	302.27
110.00	0 49 50	6283.26	5.83	297.51	202.42	123.76	2 34 34	5283.3	18.73	276.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2898	TRA	-.7130	TC3	.4584	BAU	.0843		SGT	1427.8	SGR	532.4	SG3	501.5		ST	30.7	SR	23.7
RDE	-.2895	RRA	.1045	RC3	.2245	FAU	.08905		RRT	.0282	RRF	-.0292	RTF	-.7856		CRT	.6849	CRS	.1116
PDE	.1667	PRA	2.0718	FC3	-6.2108	BSP	2362		SGB	1523.8	R23	-.0034	R13	-.7857		LSA	40.9	NSA	23.6
BDE	.4086	BRA	.7207	BC3	.5078	FSP	782		SG1	1427.9	SG2	532.1	TMA	.70		EL1	35.8	EL2	14.8

SS	27.0																		
CST	.7971																		
SSA	1.5																		
ALF	34.60																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 4 1971

DISTANCE 371.838

HELIOCENTRIC CONIC — EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	38.730	GAL	-.89	AZL	91.88	HCA	123.80	SNA	193.81	ECC	.21988	INC	1.8836	V1	29.805
RP	207.37	LAP	-1.86	LOP	381.65	VP	24.376	GAP	12.03	AZP	88.95	TAL	356.71	TAP	120.80	RCA	150.97	APO	236.06	V2	26.415
RC	80.889	GL	-10.05	GP	.29	ZAL	102.40	ZAP	150.03	ETS	179.58	ZAE	173.88	ETE	22.44	ZAC	99.80	ETC	278.50	LVI	-19.27

PLANETOCENTRIC CONIC

C3	12.067	VHL	3.474	DLA	-27.96	RAL	339.97	RAD	6639.1	VEL	11.498	PTH	6.84	VHP	5.140	DPA	-15.76	RAP	324.87	ECC	1.1986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 22	2440.97	-4.45	83.93	193.06	137.42	17 20 3	1441.0	13.89	48.05
60.00	18 8 48	2232.47	.68	80.04	197.98	130.30	18 43 58	1232.5	16.47	31.65
70.00	19 49 47	1929.48	6.24	29.69	202.17	123.65	20 21 57	929.5	19.35	9.05
80.00	22 2 26	1514.19	12.09	1.67	205.67	117.51	22 27 40	514.2	22.38	339.01
90.00	0 19 37	1084.46	16.27	332.12	207.72	113.45	0 37 41	84.5	24.54	308.14
100.00	0 49 14	9278.70	18.09	300.95	205.67	117.51	2 33 50	8276.7	22.38	278.29
110.00	0 53 9	8264.34	6.24	298.52	202.17	123.65	2 37 34	8264.3	19.35	275.88

DIFFERENTIAL CORRECTIONS

TDE	-.2646	TRA	-.6886	TC3	.4585	BAU	.0827
RDE	-.2815	RRA	.1000	RC3	.2295	FAU	.09375
FDE	.1602	FRA	2.1709	FC3	-8.7256	BSP	2350
BDE	.4003	BRA	.7080	BC3	.5120	FSP	837

MID-COURSE EXECUTION ACCURACY

SGT	1422.6	SGR	525.8	SG3	535.0
RRT	.0305	RRF	-.0318	RTF	-.7835
SGB	1516.7	R23	-.0041	R13	-.7835
SG1	1422.7	SG2	525.8	THA	.75

ORBIT DETERMINATION ACCURACY

ST	30.6	SR	23.4	SS	27.8
CRT	.6851	CRS	.0931	CST	.7655
LSA	41.0	NSA	23.9	SSA	1.5
EL1	39.6	EL2	14.6	ALF	34.21

LAUNCH DATE MAY 9 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 6 1971

DISTANCE 378.791

HELIOCENTRIC CONIC — EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.694	GAL	-.56	AZL	91.89	HCA	125.16	SNA	192.69	ECC	.21649	INC	1.8853	V1	29.509
RP	207.48	LAP	-1.54	LOP	382.91	VP	24.301	GAP	11.71	AZP	88.91	TAL	356.88	TAP	122.03	RCA	150.97	APO	234.40	V2	26.402
RC	82.560	GL	-10.29	GP	.30	ZAL	102.19	ZAP	148.61	ETS	179.58	ZAE	174.31	ETE	24.26	ZAC	99.84	ETC	278.47	LVI	-19.24

PLANETOCENTRIC CONIC

C3	11.748	VHL	3.428	DLA	-28.26	RAL	339.88	RAD	6638.9	VEL	11.482	PTH	6.83	VHP	4.989	DPA	-15.00	RAP	324.40	ECC	1.1933

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 37	2429.56	-3.82	83.40	192.80	137.46	17 30 9	1428.6	14.49	47.49
60.00	18 8 43	2218.14	1.28	49.35	197.70	130.28	18 45 41	1218.1	17.06	30.90
70.00	19 53 5	1911.23	6.93	28.73	201.95	123.53	20 24 56	911.2	19.94	7.97
80.00	22 9 20	1484.59	13.02	359.96	205.56	117.11	22 34 4	484.6	23.06	337.08
90.00	0 46 25	8278.54	18.72	304.22	208.25	111.89	2 31 4	8278.5	25.99	279.55
100.00	0 56 8	8247.10	13.02	299.24	205.56	117.11	2 40 15	8247.1	23.06	276.36
110.00	0 56 27	8246.09	6.93	298.55	201.95	123.53	2 40 33	8246.1	19.94	274.79

DIFFERENTIAL CORRECTIONS

TDE	-.2782	TRA	-.6824	TC3	.4561	BAU	.0808
RDE	-.2737	RRA	.0975	RC3	.2342	FAU	.09852
FDE	.1493	FRA	2.2743	FC3	-7.2601	BSP	2319
BDE	.3902	BRA	.6893	BC3	.5127	FSP	893

MID-COURSE EXECUTION ACCURACY

SGT	1411.0	SGR	518.9	SG3	529.6
RRT	.0319	RRF	-.0335	RTF	-.7806
SGB	1503.4	R23	-.0047	R13	-.7807
SG1	1411.1	SG2	518.6	THA	.78

ORBIT DETERMINATION ACCURACY

ST	30.3	SR	23.0	SS	28.6
CRT	.6847	CRS	.0704	CST	.7715
LSA	40.9	NSA	24.3	SSA	1.5
EL1	38.2	EL2	14.9	ALF	33.98

LAUNCH DATE MAY 9 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 6 1971

DISTANCE 378.769

HELIOCENTRIC CONIC — EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.652	GAL	-.52	AZL	91.89	HCA	126.41	SNA	191.92	ECC	.21334	INC	1.8870	V1	29.505
RP	207.60	LAP	-1.52	LOP	384.17	VP	24.229	GAP	11.41	AZP	88.88	TAL	357.03	TAP	123.45	RCA	150.98	APO	232.87	V2	26.386
RC	84.247	GL	-10.32	GP	.31	ZAL	102.00	ZAP	147.15	ETS	179.58	ZAE	175.13	ETE	27.08	ZAC	99.88	ETC	278.43	LVI	-19.20

PLANETOCENTRIC CONIC

C3	11.455	VHL	3.386	DLA	-28.84	RAL	339.80	RAD	6638.8	VEL	11.469	PTH	6.82	VHP	4.844	DPA	-15.06	RAP	324.20	ECC	1.1885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 50	2418.00	-3.23	82.91	192.87	137.48	17 31 7	1416.8	15.07	46.96
60.00	18 10 39	2204.51	1.88	48.70	197.48	130.26	18 47 23	1204.5	17.62	30.18
70.00	19 56 20	1893.67	7.59	27.79	201.76	123.40	20 27 54	893.7	20.51	8.92
80.00	22 16 36	1454.38	13.95	358.20	205.50	116.67	22 40 51	454.4	23.74	335.09
85.99	0 22 50	1060.68	18.84	331.91	208.22	110.94	0 40 30	60.6	26.73	306.94
100.00	1 3 24	6216.00	13.95	297.48	205.50	116.67	2 47 1	6216.0	23.74	274.37
110.00	0 59 42	6228.53	7.59	294.62	201.76	123.40	2 43 31	6228.5	20.51	273.74

DIFFERENTIAL CORRECTIONS

TDE	-.2731	TRA	-.6852	TC3	.4427	BAU	.0770
RDE	-.2661	RRA	.0941	RC3	.2385	FAU	.10341
FDE	.1428	FRA	2.3806	FC3	-7.0152	BSP	2303
BDE	.3813	BRA	.6718	BC3	.5029	FSP	960

MID-COURSE EXECUTION ACCURACY

SGT	1395.2	SGR	511.8	SG3	605.4
RRT	.0338	RRF	-.0365	RTF	-.7852
SGB	1486.1	R23	-.0062	R13	-.7752
SG1	1395.4	SG2	511.4	THA	.82

ORBIT DETERMINATION ACCURACY

ST	30.1	SR	22.7	SS	29.4
CRT	.6866	CRS	.0849	CST	.7596
LSA	40.9	NSA	24.8	SSA	1.5
EL1	34.9	EL2	14.2	ALF	33.72

LAUNCH DATE MAY 9 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 10 1971

DISTANCE 383.767

HELIOCENTRIC CONIC — EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.613	GAL	-.49	AZL	91.89	HCA	127.67	SNA	191.21	ECC	.21041	INC	1.8887	V1	29.509
RP	207.73	LAP	-1.50	LOP	388.43	VP	24.160	GAP	11.10	AZP	88.85	TAL	357.18	TAP	124.68	RCA	150.98	APO	231.45	V2	26,373
RC	85.869	GL	-10.75	GP	.33	ZAL	101.82	ZAP	145.69	ETS	179.58	ZAE	176.99	ETE	31.88	ZAC	99.83	ETC	278.39	LVI	-19.15

PLANETOCENTRIC CONIC

C3	11.186	VHL	3.346	DLA	-28.81	RAL	339.74	RAD	6638.6	VEL	11.467	PTH	6.81	VHP	4.704	DPA	-15.02	RAP	323.98	ECC	1.1841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 3	2408.70	-2.68	82.45	192.36	137.52	17 32 9	1405.7	15.61	46.46
60.00	18 12 32	2191.59	2.45	48.06	197.28	130.24	18 49 3	1191.6	18.14	29.49
70.00	19 59 33	1878.68	8.22	26.90	201.60	123.27	20 30 50	878.9	21.04	8.91
80.00	22 24 21	1423.30	14.09	356.38	205.49	116.18	22 48 4	423.3	24.40	333.02
84.27	0 8 22	1101.60	20.14	335.04	207.89	111.04	0 26 43	101.6	27.03	310.01
100.00	1 11 9	6185.82	14.89	295.65	205.49	116.18	2 54 15	6185.8	24.40	272.29
110.00	1 2 55	6211.71	8.22	293.72	201.60	123.27	2 46 27	6211.7	21.04	272.73

DIFFERENTIAL CORRECTIONS

TDE	-.2683	TRA	-.6460	TC3	.4268	BAU	.0734
RDE	-.2588	RRA	.0909	RC3	.2428	FAU	.10878
FDE	.1355	FRA	2.4922	FC3	-8.4161	BSP	2287
BDE	.3727	BRA	.6523	BC3	.4909	FSP	1024

MID-COURSE EXECUTION ACCURACY

SGT	1373.9	SGR	504.4	SG3	643.6
RRT	.0370	RRF	-.0401	RTF	-.7687
SGB	1463.9	R23	-.0072	R13	-.7688
SG1	1374.0	SG2	504.0	THA	.90

ORBIT DETERMINATION ACCURACY

ST	29.8	SR	22.3	SS	30.3
CRT	.6902	CRS	.0388	CST	.7460
LSA	41.0	NSA	24.9	SSA	1.5
EL1	34.5	EL2	15.9	ALF	33.52

LAUNCH DATE MAY 0 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 12 1971

HELIOCENTRIC CONIC DISTANCE 387.783 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.576	GAL	-.46	AZL	91.89	HCA	128.93	SNA	190.96	ECC	.20768	INC	1.8906
RP	207.86	LAP	-1.47	LOP	356.68	VP	24.093	GAP	10.81	AZP	88.81	TAL	357.32	TAP	126.25	RCA	150.98	APO	230.14
RC	87.725	GL	-18.96	GP	.34	ZAL	101.67	ZAP	144.12	ETS	179.97	ZAE	176.87	ETE	39.34	ZAC	99.98	ETC	278.33

V1 29.508 V2 26.357 LVI -19.09

PLANETOCENTRIC CONIC

C3	10.939	VHL	3.307	DLA	-29.06	RAL	339.68	RAD	6638.5	VEL	11.447	PTH	6.50	VHP	4.570	DPA	-16.00	RAP	323.68

ECC 1.1800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 14	2398.23	-2.18	62.01	192.17	137.54	17 33 10	1395.2	16.11	45.99
60.00	18 14 23	2179.37	2.98	47.50	197.10	130.21	18 50 42	1179.4	18.64	28.84
70.00	20 2 42	1960.75	8.82	26.04	201.47	123.13	20 33 43	960.8	21.54	4.93
80.00	22 32 45	1390.72	18.86	354.44	205.52	115.63	22 55 55	390.7	25.06	330.82
83.00	23 34 2	1129.83	20.42	337.23	207.60	111.14	24 12 52	129.8	27.33	312.15
100.00	1 19 32	6153.23	19.86	293.72	205.52	115.63	3 2 6	5193.2	25.06	270.10
110.00	1 6 5	6198.61	8.82	292.86	201.47	123.13	2 49 20	5198.6	21.54	271.75

DIFFERENTIAL CORRECTIONS

TDE	-.2589	TRA	-.6197	TC3	.4208	BAU	.0713
RDE	-.2516	RRA	.0877	RC3	.2463	FAU	.11440
FDE	.1229	FRA	2.5989	FC3	-9.0541	BSP	2148
SDE	.3610	SRA	.6259	SC3	.4876	FSP	1091

MID-COURSE EXECUTION ACCURACY

SGT	1336.9	SGR	496.7	SG3	682.8		
RRT	.0410	RRF	-.0441	RTF	-.7657		
SGB	1426.1	R23	-.0076	R13	-.7657		
SG1	1337.0	SG2	496.2	THA	1.01		

ORBIT DETERMINATION ACCURACY

ST	29.0	SR	21.9	SS	31.0
CRT	.6919	CRS	.0189	CST	.7310
LSA	40.6	NSA	25.2	SSA	1.5
EL1	33.7	EL2	13.6	ALF	33.86

LAUNCH DATE MAY 0 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 14 1971

HELIOCENTRIC CONIC DISTANCE 391.816 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.542	GAL	-.44	AZL	91.89	HCA	130.18	SNA	189.96	ECC	.20515	INC	1.8925
RP	208.01	LAP	-1.48	LOP	357.94	VP	24.029	GAP	10.52	AZP	88.78	TAL	357.44	TAP	127.62	RCA	150.99	APO	228.92
RC	89.514	GL	-18.17	GP	.36	ZAL	101.53	ZAP	142.54	ETS	179.87	ZAE	177.89	ETE	84.20	ZAC	100.04	ETC	278.27

V1 29.505 V2 26.340 LVI -19.03

PLANETOCENTRIC CONIC

C3	10.713	VHL	3.273	DLA	-29.30	RAL	339.68	RAD	6638.4	VEL	11.437	PTH	6.49	VHP	4.443	DPA	-16.08	RAP	323.36

ECC 1.1763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIN	INJ 2 LAT	INJ 2 LONG
50.00	16 54 25	2388.47	-1.66	61.60	192.02	137.55	17 34 10	1385.5	16.58	46.54
60.00	18 16 11	2167.94	3.48	46.95	196.96	130.18	18 52 19	1167.9	19.10	28.22
70.00	20 3 47	1945.55	9.38	25.22	201.36	122.99	20 36 33	945.6	22.01	4.00
80.00	22 41 59	1386.07	18.87	352.37	205.62	115.01	23 4 38	386.1	25.72	328.46
82.00	23 48 51	1151.40	20.69	338.93	207.34	111.23	24 5 3	151.4	27.60	313.79
100.00	1 28 47	6118.58	18.87	291.64	205.62	115.01	3 10 46	5118.6	25.72	267.74
110.00	1 9 9	6180.41	9.38	292.05	201.36	122.99	2 52 10	5180.4	22.01	270.62

DIFFERENTIAL CORRECTIONS

TDE	-.2588	TRA	-.6083	TC3	.3703	BAU	.0640
RDE	-.2446	RRA	.0846	RC3	.2496	FAU	.11982
FDE	.1134	FRA	2.7300	FC3	-9.6824	BSP	2151
SDE	.3588	SRA	.6112	SC3	.4465	FSP	1169

MID-COURSE EXECUTION ACCURACY

SGT	1319.0	SGR	488.7	SG3	724.1		
RRT	.0418	RRF	-.0464	RTF	-.7494		
SGB	1408.6	R23	-.0101	R13	-.7498		
SG1	1319.2	SG2	488.2	THA	1.03		

ORBIT DETERMINATION ACCURACY

ST	29.1	SR	21.6	SS	32.0
CRT	.6992	CRS	.0030	CST	.7129
LSA	40.9	NSA	25.6	SSA	1.5
EL1	33.6	EL2	13.3	ALF	33.29

LAUNCH DATE MAY 0 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 16 1971

HELIOCENTRIC CONIC DISTANCE 395.864 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.511	GAL	-.41	AZL	91.89	HCA	131.43	SNA	189.40	ECC	.20279	INC	1.8944
RP	208.16	LAP	-1.42	LOP	359.19	VP	23.966	GAP	10.24	AZP	88.78	TAL	357.55	TAP	128.98	RCA	150.99	APO	227.80
RC	91.337	GL	-19.36	GP	.38	ZAL	101.41	ZAP	140.93	ETS	179.86	ZAE	178.22	ETE	83.30	ZAC	100.11	ETC	278.19

V1 29.505 V2 26.323 LVI -18.98

PLANETOCENTRIC CONIC

C3	10.907	VHL	3.241	DLA	-29.52	RAL	339.63	RAD	6638.3	VEL	11.428	PTH	6.48	VHP	4.320	DPA	-16.18	RAP	323.00

ECC 1.1729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIN	INJ 2 LAT	INJ 2 LONG
50.00	16 55 34	2378.36	-1.20	61.22	191.89	137.56	17 35 11	1376.4	17.03	45.12
60.00	18 17 56	2157.24	3.95	46.44	196.84	130.14	18 53 53	1157.2	19.53	27.64
70.00	20 5 47	1831.16	9.92	24.45	201.28	122.85	20 39 19	931.2	22.45	3.11
80.00	22 52 46	1317.12	17.97	350.00	205.79	114.25	23 14 43	317.1	26.41	325.77
81.15	23 39 9	1168.68	20.93	340.31	207.11	111.31	23 58 37	168.7	27.85	315.12
100.00	1 39 34	6079.63	17.97	289.28	205.79	114.25	3 20 53	5079.6	26.41	265.05
110.00	1 12 10	6166.01	9.92	291.27	201.28	122.85	2 54 56	5166.0	22.45	269.94

DIFFERENTIAL CORRECTIONS

TDE	-.2568	TRA	-.5857	TC3	.3200	BAU	.0573
RDE	-.2377	RRA	.0815	RC3	.2525	FAU	.12544
FDE	.1128	FRA	2.8668	FC3	-10.3358	BSP	2077
SDE	.3498	SRA	.5914	SC3	.4077	FSP	1242

MID-COURSE EXECUTION ACCURACY

SGT	1290.2	SGR	480.4	SG3	767.2		
RRT	.0445	RRF	-.0506	RTF	-.7540		
SGB	1376.8	R23	-.0127	R13	-.7341		
SG1	1290.4	SG2	479.9	THA	1.10		

ORBIT DETERMINATION ACCURACY

ST	28.9	SR	21.2	SS	33.0
CRT	.7060	CRS	-.0030	CST	.6998
LSA	41.3	NSA	25.8	SSA	1.5
EL1	33.4	EL2	12.9	ALF	32.98

LAUNCH DATE MAY 0 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 399.927 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.481	GAL	-.39	AZL	91.90	HCA	132.68	SNA	188.88	ECC	.20060	INC	1.8965
RP	208.32	LAP	-1.39	LOP	.44	VP	23.906	GAP	9.97	AZP	88.71	TAL	357.84	TAP	130.32	RCA	150.99	APO	226.77
RC	93.190	GL	-18.55	GP	.39	ZAL	101.31	ZAP	139.28	ETS	179.86	ZAE	178.06	ETE	121.20	ZAC	100.19	ETC	278.11

V1 29.503 V2 26.304 LVI -18.86

PLANETOCENTRIC CONIC

C3	10.318	VHL	3.212	DLA	-29.73	RAL	339.62	RAD	6638.2	VEL	11.420	PTH	6.47	VHP	4.203	DPA	-16.29	RAP	322.60

ECC 1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIN	INJ 2 LAT	INJ 2 LONG
50.00	16 56 43	2367.92	-.76	60.87	191.78	137.57	17 36 10	1367.9	17.43	44.73
60.00	18 19 38	2147.29	4.39	45.96	196.75	130.10	18 55 26	1147.3	19.93	27.10
70.00	20 11 42	1817.63	10.41	23.72	201.22	122.71	20 42 0	817.6	22.86	2.27
80.00	23 6 57	1267.87	19.32	346.97	206.11	113.22	23 26 5	267.9	27.20	322.33
80.43	23 33 33	1102.87	21.16	341.46	206.91	111.38	23 53 16	102.9	28.09	316.22
100.00	1 53 45	6030.36	19.32	286.24	206.11	113.22	3 34 15	5030.4	27.20	261.60
110.00	1 15 4	6152.49	10.41	290.54	201.22	122.71	2 57 37	5152.5	22.86	269.10

DIFFERENTIAL CORRECTIONS

TDE	-.2528	TRA	-.5616	TC3	.2730	BAU	.0516
RDE	-.2310	RRA	.0786	RC3	.2583	FAU	.13174
FDE	.1006	FRA	2.9950	FC3	-11.0539	BSP	2017
SDE	.3425	SRA	.5671	SC3	.3736	FSP	1328

MID-COURSE EXECUTION ACCURACY

SGT	1250.9	SGR	472.0	SG3	811.9		
RRT	.0482	RRF	-.0584	RTF	-.7165		
SGB	1337.0	R23	-.0152	R13	-.7167		
SG1	1251.2	SG2	471.4	THA	1.21		

ORBIT DETERMINATION ACCURACY

ST	28.4	SR	20.7	SS	33.9
CRT	.7169	CRS	-.0186	CST	.6792
LSA	41.3	NSA	26.1	SSA	1.5
EL1	32.9	EL2	12.8	ALF	32.97

LAUNCH DATE MAY 9 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 404,003 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.454	GAL	-.38	AZL	91.90	HCA	133.93	SMA	188.40	ECC	.19857	INC	1.8986	V1	29.505
RP	208.49	LAP	-1.37	LOP	1.69	VP	23.847	GAP	9.70	AZP	88.68	TAL	357.72	TAP	131.65	RCA	150.99	APO	225.82	V2	26.284
RC	95.074	GL	-19.73	GP	.41	ZAL	101.23	ZAP	137.59	ETS	179.55	ZAE	177.23	ETE	145.70	ZAC	100.27	ETC	278.02	LVI	-18.76

PLANETOCENTRIC CONIC

C3	VHL	DLA	RAL	RAD	VEL	PTH	VHP	DPA	RAP	ECC
10.146	3.185	-29.92	339.63	6638.1	11.412	6.46	4.092	-16.41	322.16	1.1670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 50	2360.12	-.39	60.54	191.71	137.57	17 37 10	1360.1	17.81	44.37
60.00	18 21 17	2138.08	4.79	45.52	196.68	130.06	18 56 55	1138.1	20.29	26.60
70.00	20 14 30	1805.01	10.88	23.04	201.19	122.58	20 44 35	805.0	23.23	1.49
79.81	23 28 50	1194.68	21.38	342.43	206.75	111.44	23 48 45	194.7	28.31	317.14
79.81	23 28 50	1194.68	21.38	342.43	206.75	111.44	23 48 45	194.7	28.31	317.14
79.81	23 28 50	1194.68	21.38	342.43	206.75	111.44	23 48 45	194.7	28.31	317.14
110.00	1 17 53	6139.86	10.88	289.86	201.19	122.58	3 0 13	5139.9	23.23	268.31

DIFFERENTIAL CORRECTIONS

TDE	-.2486	TRA	-.5381	TC3	.2132	BAU	.0454
RDE	-.2245	RRA	.0756	RC3	.2577	FAU	.13783
FDE	.0928	FRA	3.1430	FC-11.7607		BSP	1902
BDE	.3350	BRA	.5434	BC3	.3345	FSP	1408

MID-COURSE EXECUTION ACCURACY

SGT	1210.6	SGR	463.3	SG3	858.4				
RRT	.0494	RRF	-.0595	RTF	-.6965				
SGB	1296.2	R23	-.0193	R13	-.6966				
SG1	1210.8	SG2	462.6	THA	1.27				

ORBIT DETERMINATION ACCURACY

ST	27.9	SR	20.3	SS	34.9		
CRT	.7256	CRS	-.0294	CST	.6619		
LSA	41.5	MSA	26.2	SSA	1.5		
EL1	32.4	EL2	12.1	ALF	32.99		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 408,093 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.429	GAL	-.36	AZL	91.90	HCA	135.18	SMA	187.96	ECC	.19669	INC	1.9008	V1	29.505
RP	208.67	LAP	-1.34	LOP	2.93	VP	23.790	GAP	9.44	AZP	88.65	TAL	357.79	TAP	132.96	RCA	150.99	APO	224.94	V2	26.264
RC	96.988	GL	-19.90	GP	.43	ZAL	101.17	ZAP	135.86	ETS	179.54	ZAE	176.07	ETE	158.07	ZAC	100.35	ETC	277.92	LVI	-18.64

PLANETOCENTRIC CONIC

C3	VHL	DLA	RAL	RAD	VEL	PTH	VHP	DPA	RAP	ECC
9.989	3.160	-30.09	339.66	6638.0	11.406	6.46	3.985	-16.55	321.67	1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 56	2352.94	-.03	60.24	191.66	137.58	17 38 9	1352.9	18.15	44.04
60.00	18 22 53	2129.59	5.17	45.11	196.64	130.02	18 58 23	1129.6	20.63	26.13
70.00	20 17 13	1793.21	11.31	22.40	201.18	122.44	20 47 6	793.2	23.58	.75
79.27	23 24 51	1204.64	21.57	343.25	206.62	111.50	23 44 56	204.6	28.51	317.93
79.27	23 24 51	1204.64	21.57	343.25	206.62	111.50	23 44 56	204.6	28.51	317.93
79.27	23 24 51	1204.64	21.57	343.25	206.62	111.50	23 44 56	204.6	28.51	317.93
110.00	1 20 35	6128.10	11.31	289.22	201.18	122.44	3 2 43	5128.1	23.58	267.57

DIFFERENTIAL CORRECTIONS

TDE	-.2341	TRA	-.4998	TC3	.1815	BAU	.0424
RDE	-.2180	RRA	.0728	RC3	.2601	FAU	.14507
FDE	.0550	FRA	3.2536	FC-12.5738		BSP	1643
BDE	.3199	BRA	.5050	BC3	.3172	FSP	1463

MID-COURSE EXECUTION ACCURACY

SGT	1135.7	SGR	454.3	SG3	904.7				
RRT	.0520	RRF	-.0644	RTF	-.6805				
SGB	1223.2	R23	-.0223	R13	-.6808				
SG1	1136.0	SG2	453.6	THA	1.42				

ORBIT DETERMINATION ACCURACY

ST	26.4	SR	19.9	SS	35.5		
CRT	.7300	CRS	-.0646	CST	.6299		
LSA	40.7	MSA	26.4	SSA	1.4		
EL1	31.0	EL2	11.6	ALF	34.27		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 412,191 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.405	GAL	-.35	AZL	91.90	HCA	136.42	SMA	187.56	ECC	.19497	INC	1.9031	V1	29.505
RP	208.85	LAP	-1.31	LOP	4.18	VP	23.735	GAP	9.18	AZP	88.62	TAL	357.83	TAP	134.26	RCA	150.99	APO	224.13	V2	26.243
RC	98.929	GL	-20.06	GP	.45	ZAL	101.14	ZAP	134.10	ETS	179.53	ZAE	174.75	ETE	164.77	ZAC	100.44	ETC	277.82	LVI	-18.52

PLANETOCENTRIC CONIC

C3	VHL	DLA	RAL	RAD	VEL	PTH	VHP	DPA	RAP	ECC
9.848	3.138	-30.24	339.71	6638.0	11.399	6.45	3.885	-16.69	321.15	1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 2	2346.53	.30	59.97	191.64	137.58	17 39 8	1346.5	18.46	43.74
60.00	18 24 25	2122.00	5.50	44.74	196.63	129.99	18 59 47	1122.0	20.93	25.71
70.00	20 19 45	1782.68	11.69	21.82	201.20	122.32	20 49 28	782.7	23.89	.08
78.81	23 21 39	1212.68	21.75	343.93	206.52	111.55	23 41 52	212.7	28.68	318.56
78.81	23 21 39	1212.68	21.75	343.93	206.52	111.55	23 41 52	212.7	28.68	318.56
78.81	23 21 39	1212.68	21.75	343.93	206.52	111.55	23 41 52	212.7	28.68	318.56
110.00	1 23 8	6117.53	11.69	288.65	201.20	122.32	3 5 5	5117.5	23.89	266.91

DIFFERENTIAL CORRECTIONS

TDE	-.2454	TRA	-.4879	TC3	.0570	BAU	.0353
RDE	-.2117	RRA	.0698	RC3	.2618	FAU	.15096
FDE	.0829	FRA	3.4442	FC-13.2714		BSP	1689
BDE	.3242	BRA	.4929	BC3	.2679	FSP	1584

MID-COURSE EXECUTION ACCURACY

SGT	1124.9	SGR	445.2	SG3	955.8				
RRT	.0540	RRF	-.0718	RTF	-.6525				
SGB	1209.8	R23	-.0313	R13	-.6329				
SG1	1125.2	SG2	444.4	THA	1.45				

ORBIT DETERMINATION ACCURACY

ST	27.2	SR	19.5	SS	37.0		
CRT	.7530	CRS	-.0430	CST	.6198		
LSA	42.2	MSA	26.6	SSA	1.4		
EL1	31.6	EL2	11.0	ALF	32.78		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 26 1971

HELIOCENTRIC CONIC DISTANCE 416,301 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.384	GAL	-.35	AZL	91.91	HCA	137.66	SMA	187.19	ECC	.19337	INC	1.9055	V1	29.505
RP	209.04	LAP	-1.28	LOP	5.42	VP	23.681	GAP	8.93	AZP	88.59	TAL	357.86	TAP	135.53	RCA	151.00	APO	223.39	V2	26.221
RC	100.898	GL	-20.21	GP	.47	ZAL	101.13	ZAP	132.29	ETS	179.52	ZAE	173.32	ETE	168.82	ZAC	100.54	ETC	277.70	LVI	-18.38

PLANETOCENTRIC CONIC

C3	VHL	DLA	RAL	RAD	VEL	PTH	VHP	DPA	RAP	ECC
9.719	3.118	-30.38	339.78	6637.9	11.394	6.45	3.789	-16.84	320.58	1.1600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 6	2340.71	.59	59.73	191.64	137.57	17 40 7	1340.7	18.74	43.46
60.00	18 25 54	2115.11	5.80	44.41	196.63	129.95	19 1 9	1115.1	21.20	25.33
70.00	20 22 10	1773.01	12.05	21.29	201.23	122.20	20 51 43	773.0	24.17	359.47
78.41	23 18 58	1219.52	21.91	344.51	206.45	111.59	23 39 17	219.5	28.84	319.10
78.41	23 18 58	1219.52	21.91	344.51	206.45	111.59	23 39 17	219.5	28.84	319.10
78.41	23 18 58	1219.52	21.91	344.51	206.45	111.59	23 39 17	219.5	28.84	319.10
110.00	1 25 32	6107.86	12.05	288.12	201.23	122.20	3 7 20	5107.9	24.17	266.29

DIFFERENTIAL CORRECTIONS

TDE	-.2442	TRA	-.4591	TC3	-.0285	BAU	.0345
RDE	-.2055	RRA	.0669	RC3	.2637	FAU	.15828
FDE	.0772	FRA	3.5966	FC-14.0981		BSP	1559
BDE	.3192	BRA	.4639	BC3	.2652	FSP	1672

MID-COURSE EXECUTION ACCURACY

SGT	1076.1	SGR	435.9	SG3	1007.6				
RRT	.0580	RRF	-.0800	RTF	-.5897				
SGB	1161.1	R23	-.0392	R13	-.5902				
SG1	1076.5	SG2	435.0	THA	1.61				

ORBIT DETERMINATION ACCURACY

ST	26.8	SR	19.0	SS	37.9		
CRT	.7700	CRS	-.0492	CST	.5938		
LSA	42.5	MSA	26.7	SSA	1.4		
EL1	31.2	EL2	10.4	ALF	32.76		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 28 1971

HELIOCENTRIC CONIC DISTANCE 429.421 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.364	GAL	-.34	AZL	91.91	HCA	138.80	SHA	186.85	ECC	.19191	INC	1.9080
RP	209.24	LAP	-1.25	LOP	8.66	VP	23.626	GAP	8.69	AZP	88.36	TAL	357.88	TAP	136.79	RCA	151.00	APO	222.71
RC	102.883	GL	-20.35	GP	.49	ZAL	101.15	ZAP	130.48	ETS	179.51	ZAE	171.81	ETE	171.47	ZAC	100.65	ETC	277.58

V1	29.505																		
V2	26.198																		
LVI	-18.24																		

PLANETOCENTRIC CONIC

C3	9.604	VHL	3.099	DLA	-30.50	RAL	339.87	RAD	6637.8	VEL	11.389	PTH	6.44	VHP	3.098	DPA	-17.00	RAP	319.97

ECC	1.1581																		
V1	29.505																		
V2	26.198																		
LVI	-18.24																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
60.00	17 2 9	2338.83	.88	88.51	191.87	137.87	17 41 8	1338.5	18.99	43.22
60.00	18 27 18	2108.98	6.07	44.11	196.87	129.82	19 2 27	1109.0	21.44	24.99
70.00	20 24 26	1764.37	12.36	20.82	201.29	122.10	20 53 50	764.4	24.41	358.92
78.07	23 16 50	1228.06	22.08	344.98	206.42	111.63	23 37 15	225.1	28.98	319.55
78.07	23 16 50	1228.06	22.08	344.98	206.42	111.63	23 37 15	225.1	28.98	319.55
78.07	23 16 50	1228.06	22.08	344.98	206.42	111.63	23 37 15	225.1	28.98	319.55
110.00	1 27 48	6099.22	12.36	287.64	201.29	122.10	3 9 27	5099.2	24.41	268.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2408	TRA	-.4294	TC3	-.1349	BAU	.0382		BGT	1026.8	BGR	426.3	BG3	1058.3		BT	26.2	BR	18.5
RDE	-.1994	RRA	.0640	RC3	.2681	FAU	.16484		RRT	.0546	RRF	-.0859	RTF	-.5345		CRT	.7856	CRS	-.0602
FDE	.0648	FRA	3.7630	FC-14.8591		BSP	1403		BGB	1111.8	R23	-.0508	R13	-.5352		LBA	42.8	NBA	26.9
BDE	.3127	BRA	.4342	BC3	.2975	FBP	1762		BG1	1027.1	BG2	426.6	THA	1.57		EL1	30.6	EL2	9.8

BBT	39.0																		
CBT	.5644																		
BBA	1.4																		
ALF	32.92																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 30 1971

HELIOCENTRIC CONIC DISTANCE 424.850 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.340	GAL	-.34	AZL	91.91	HCA	140.14	SHA	186.85	ECC	.19087	INC	1.9106
RP	209.44	LAP	-1.22	LOP	7.90	VP	23.577	GAP	8.48	AZP	88.53	TAL	357.88	TAP	138.02	RCA	151.00	APO	222.09
RC	104.913	GL	-20.48	GP	.52	ZAL	101.16	ZAP	128.87	ETS	179.49	ZAE	170.22	ETE	173.30	ZAC	100.75	ETC	277.44

V1	29.505																		
V2	26.174																		
LVI	-18.08																		

PLANETOCENTRIC CONIC

C3	9.501	VHL	3.082	DLA	-30.60	RAL	339.96	RAD	6637.8	VEL	11.384	PTH	6.44	VHP	3.613	DPA	-17.16	RAP	319.32

ECC	1.1584																		
V1	29.505																		
V2	26.174																		
LVI	-18.08																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
60.00	17 3 12	2330.97	1.08	89.32	191.72	137.87	17 42 3	1331.0	19.20	43.00
60.00	18 28 39	2103.60	6.30	43.88	196.72	129.89	19 3 43	1103.6	21.65	24.69
70.00	20 26 32	1756.78	12.63	20.40	201.37	122.00	20 55 48	756.8	24.63	358.44
77.79	23 15 12	1229.83	22.17	345.37	206.42	111.68	23 38 41	229.5	29.11	319.91
77.79	23 15 12	1229.83	22.17	345.37	206.42	111.68	23 38 41	229.5	29.11	319.91
77.79	23 15 12	1229.83	22.17	345.37	206.42	111.68	23 38 41	229.5	29.11	319.91
110.00	1 29 54	6091.64	12.63	287.23	201.37	122.00	3 11 25	5091.6	24.63	268.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2398	TRA	-.3944	TC3	-.2458	BAU	.0461		BGT	973.1	BGR	418.7	BG3	1107.9		BT	25.7	BR	18.1
RDE	-.1934	RRA	.0612	RC3	.2665	FAU	.17188		RRT	.0564	RRF	-.0983	RTF	-.4629		CRT	.8077	CRS	-.0610
FDE	.0637	FRA	3.9072	FC-15.6610		BSP	1248		BGB	1058.6	R23	-.0648	R13	-.4637		LBA	43.0	NBA	28.9
BDE	.3081	BRA	.3891	BC3	.3626	FBP	1862		BG1	973.5	BG2	418.9	THA	1.69		EL1	30.1	EL2	9.1

BBT	39.8																		
CBT	.5328																		
BBA	1.4																		
ALF	33.03																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 1 1971

HELIOCENTRIC CONIC DISTANCE 428.686 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.329	GAL	-.34	AZL	91.91	HCA	141.38	SHA	186.26	ECC	.18934	INC	1.9134
RP	209.66	LAP	-1.19	LOP	9.13	VP	23.527	GAP	8.21	AZP	88.50	TAL	357.87	TAP	139.24	RCA	151.00	APO	221.53
RC	106.958	GL	-20.60	GP	.54	ZAL	101.24	ZAP	126.65	ETS	179.48	ZAE	168.57	ETE	174.62	ZAC	100.87	ETC	277.30

V1	29.505																		
V2	26.150																		
LVI	-17.91																		

PLANETOCENTRIC CONIC

C3	9.410	VHL	3.068	DLA	-30.69	RAL	340.12	RAD	6637.7	VEL	11.380	PTH	6.43	VHP	3.533	DPA	-17.38	RAP	318.64

ECC	1.1549																		
V1	29.505																		
V2	26.150																		
LVI	-17.91																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
60.00	17 4 14	2327.04	1.28	89.16	191.80	137.86	17 43 1	1327.0	19.39	42.82
60.00	18 29 57	2096.97	6.51	43.63	196.80	129.86	19 4 56	1099.0	21.83	24.43
70.00	20 28 27	1750.25	12.87	20.04	201.47	121.91	20 57 38	750.3	24.81	358.02
77.55	23 14 1	1233.02	22.28	345.66	206.44	111.67	23 34 34	233.0	29.21	320.19
77.55	23 14 1	1233.02	22.28	345.66	206.44	111.67	23 34 34	233.0	29.21	320.19
77.55	23 14 1	1233.02	22.28	345.66	206.44	111.67	23 34 34	233.0	29.21	320.19
110.00	1 31 50	6085.11	12.87	286.87	201.47	121.91	3 13 15	5085.1	24.81	264.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2384	TRA	-.3605	TC3	-.3670	BAU	.0372		BGT	928.5	BGR	406.9	BG3	1161.2		BT	25.2	BR	17.6
RDE	-.1874	RRA	.0582	RC3	.2678	FAU	.17898		RRT	.0528	RRF	-.1060	RTF	-.4664		CRT	.8288	CRS	-.0617
FDE	.0628	FRA	4.0828	FC-16.4600		BSP	1033		BGB	1013.7	R23	-.0814	R13	-.3795		LBA	43.5	NBA	26.9
BDE	.3033	BRA	.3652	BC3	.4543	FBP	1942		BG1	928.8	BG2	406.2	THA	1.64		EL1	29.6	EL2	8.4

BBT	40.9																		
CBT	.5005																		
BBA	1.4																		
ALF	33.11																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 432.831 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.314	GAL	-.34	AZL	91.92	HCA	142.61	SHA	186.01	ECC	.18823	INC	1.9163
RP	209.87	LAP	-1.16	LOP	10.36	VP	23.470	GAP	7.98	AZP	88.48	TAL	357.84	TAP	140.45	RCA	151.00	APO	221.02
RC	109.088	GL	-20.72	GP	.57	ZAL	101.32	ZAP	124.71	ETS	179.47	ZAE	166.86	ETE	175.60	ZAC	100.99	ETC	277.14

V1	29.505																		
V2	26.124																		
LVI	-17.73																		

PLANETOCENTRIC CONIC

C3	9.329	VHL	3.054	DLA	-30.76	RAL	340.27	RAD	6637.7	VEL	11.377	PTH	6.43	VHP	3.497	DPA	-17.54	RAP	317.91

ECC	1.1535																		
V1	29.505																		
V2	26.124																		
LVI	-17.73																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CBT TIM	INJ 2 LAT	INJ 2 LONG
60.00	17 5 14	2323.68	1.45	89.02	191.90	137.86	17 43 58	1323.7	19.55	42.66
60.00	18 31 10	2093.04	6.68	43.44	196.90	129.84	19 6 3	1095.0	21.98	24.21
70.00	20 30 13	1744.75	13.06	19.74	201.58	121.84	20 59 18	744.8	24.96	357.66
77.36	23 13 16	1238.64	22.37	345.91	206.50	111.68	23 33 51	238.6	29.30	320.40
77.36	23 13 16	1238.64	22.37	345.91	206.50	111.68	23 33 51	238.6	29.30	320.40
77.36	23 13 16	1238.64	22.37	345.91	206.50	111.68	23 33 51	238.6	29.30	320.40
110.00	1 33 35	6079.61	13.06	286.56	201.50	121.84	3 14 55	5079.6	24.96	264.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2321	TRA	-.3199	TC3	-.4711	BAU	.0677		BGT	871.8	BGR	387.0	BG3	1216.5		BT	24.2	BR	17.1
RDE	-.1818	RRA	.0552	RC3	.2694	FAU	.18721		RRT	.0481	RRF	-.1183	RTF	-.2807		CRT	.8497	CRS	-.0717
FDE	.0473	FRA	4.2379	FC-17.3738		BSP	762		BGB	967.9	R23	-.1014	R13	-.2820		LBA	43.7	NBA	26.7
BDE	.2946	BRA	.3246	BC3	.5427	FBP	2009		BG1	872.1	BG2	386.4	THA	1.58		EL1	28.6	EL2	7.6

BBT	41.7																		
CBT	.4571																		
BBA	1.3																		
ALF	33.77																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 436.980 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.300	GAL	-.35	AZL	91.92	HCA	143.84	SMA	185.78	ECC	.18722	INC	1.9194	V1	29.505
RP	210.10	LAP	-1.13	LOP	11.59	VP	23.430	GAP	7.76	AZP	88.45	TAL	357.79	TAP	141.62	RCA	150.99	APO	220.56	V2	26.098
RC	111.121	GL	-20.83	GP	.60	ZAL	101.44	ZAP	122.73	ETS	179.45	ZAE	165.09	ETE	176.35	ZAC	101.11	ETC	276.99	LVI	-17.53

PLANETOCENTRIC CONIC

C3	9.259	VHL	3.043	DLA	-30.81	RAL	340.44	RAD	6637.7	VEL	11.374	PTH	6.43	VHP	3.387	DPA	-17.73	RAP	317.16	ECC	1.1524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 15	2321.03	1.58	58.91	192.03	137.56	17 44 56	1321.0	19.68	42.53
60.00	18 32 20	2091.97	6.81	43.29	197.03	129.82	19 7 12	1092.0	22.10	24.04
70.00	20 31 46	1740.54	13.22	19.51	201.72	121.78	21 0 46	740.5	25.08	357.39
77.23	23 13 2	1237.16	22.44	346.06	206.59	111.68	23 33 39	237.2	29.36	320.53
77.23	23 13 2	1237.16	22.44	346.06	206.59	111.68	23 33 39	237.2	29.36	320.53
77.23	23 13 2	1237	22.44	346.06	206.59	111.68	23 33 39	237.2	29.36	320.53
110.00	1 35 8	6072.39	13.22	286.33	201.72	121.78	3 16 23	5075.4	25.08	264.22

DIFFERENTIAL CORRECTIONS

TDE	-.2408	TRA	-.2937	TC3	-.6600	BAU	.0883
RDE	-.1758	RRA	.0521	RC3	.2701	FAU	.19241
FDE	.0760	FRA	4.4620	FC	-17.9911	BSP	688
BDE	.2981	BRA	.2983	BC3	.7132	FSP	2148

MID-COURSE EXECUTION ACCURACY

SGT	884.1	SGR	386.8	SG3	1268.6				
RRT	.0308	RRF	-.1289	RTF	-.1517				
SGB	965.0	R23	-.1232	R13	-.1526				
SG1	884.2	SG2	386.5	THA	.95				

ORBIT DETERMINATION ACCURACY

ST	24.6	SR	16.6	SS	43.3
CRT	.8740	CRS	-.0511	CST	.4320
LSA	45.0	MSA	27.0	SSA	1.3
EL1	28.9	EL2	6.9	ALF	32.62

LAUNCH DATE MAY 9 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 441.137 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.288	GAL	-.36	AZL	91.92	HCA	145.06	SMA	185.57	ECC	.18631	INC	1.9227	V1	29.505
RP	210.33	LAP	-1.10	LOP	12.82	VP	23.383	GAP	7.54	AZP	88.42	TAL	357.72	TAP	142.79	RCA	150.99	APO	220.14	V2	26.071
RC	113.239	GL	-20.93	GP	.63	ZAL	101.57	ZAP	120.73	ETS	179.44	ZAE	163.28	ETE	176.93	ZAC	101.23	ETC	276.82	LVI	-17.33

PLANETOCENTRIC CONIC

C3	9.198	VHL	3.033	DLA	-30.85	RAL	340.64	RAD	6637.6	VEL	11.371	PTH	6.42	VHP	3.321	DPA	-17.93	RAP	316.36	ECC	1.1514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 14	2318.90	1.69	58.82	192.18	137.55	17 45 53	1318.9	19.78	42.43
60.00	18 33 26	2089.55	6.92	43.17	197.18	129.80	19 8 16	1089.6	22.19	23.90
70.00	20 33 9	1737.28	13.33	19.33	201.87	121.74	21 2 6	737.3	25.17	357.18
77.14	23 13 7	1238.08	22.50	346.15	206.71	111.68	23 33 45	238.1	29.41	320.61
77.14	23 13 7	1238.08	22.50	346.15	206.71	111.68	23 33 45	238.1	29.41	320.61
77.14	23 13 7	1238.08	22.50	346.15	206.71	111.68	23 33 45	238.1	29.41	320.61
110.00	1 36 31	6072.14	13.33	286.15	201.87	121.74	3 17 43	5072.1	25.17	264.01

DIFFERENTIAL CORRECTIONS

TDE	-.2415	TRA	-.2529	TC3	-.8220	BAU	.1064
RDE	-.1700	RRA	.0490	RC3	.2712	FAU	.19895
FDE	.0908	FRA	4.6242	FC	-18.7253	BSP	472
BDE	.2953	BRA	.2576	BC3	.8655	FSP	2242

MID-COURSE EXECUTION ACCURACY

SGT	875.4	SGR	376.6	SG3	1317.6				
RRT	.0138	RRF	-.1439	RTF	-.0058				
SGB	953.0	R23	-.1439	R13	-.0062				
SG1	875.4	SG2	376.6	THA	.42				

ORBIT DETERMINATION ACCURACY

ST	24.3	SR	16.1	SS	44.1
CRT	.8990	CRS	-.0422	CST	.3898
LSA	45.5	MSA	27.0	SSA	1.3
EL1	28.5	EL2	6.0	ALF	32.47

LAUNCH DATE MAY 9 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 445.298 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.276	GAL	-.37	AZL	91.93	HCA	146.29	SMA	185.38	ECC	.18550	INC	1.9261	V1	29.505
RP	210.57	LAP	-1.07	LOP	14.04	VP	23.337	GAP	7.32	AZP	88.40	TAL	357.64	TAP	143.93	RCA	150.99	APO	219.77	V2	26.044
RC	115.380	GL	-21.02	GP	.66	ZAL	101.72	ZAP	118.70	ETS	179.43	ZAE	161.41	ETE	177.38	ZAC	101.36	ETC	276.64	LVI	-17.12

PLANETOCENTRIC CONIC

C3	9.147	VHL	3.024	DLA	-30.87	RAL	340.86	RAD	6637.6	VEL	11.369	PTH	6.42	VHP	3.260	DPA	-18.12	RAP	315.54	ECC	1.1505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 13	2317.34	1.76	58.76	192.35	137.55	17 46 51	1317.3	19.85	42.36
60.00	18 34 29	2087.83	6.99	43.09	197.35	129.79	19 9 17	1087.8	22.26	23.80
70.00	20 34 21	1735.10	13.41	19.21	202.04	121.71	21 3 16	735.1	25.23	357.04
77.09	23 13 35	1238.22	22.54	346.18	206.86	111.67	23 34 14	238.2	29.44	320.62
77.09	23 13 35	1238.22	22.54	346.18	206.86	111.67	23 34 14	238.2	29.44	320.62
77.09	23 13 35	1238.22	22.54	346.18	206.86	111.67	23 34 14	238.2	29.44	320.62
110.00	1 37 43	6069.96	13.41	286.03	202.04	121.71	3 18 53	5070.0	25.23	263.86

DIFFERENTIAL CORRECTIONS

TDE	-.2417	TRA	-.2125	TC3	-.9844	BAU	.1249
RDE	-.1643	RRA	.0458	RC3	.2726	FAU	.20609
FDE	.1042	FRA	4.8075	FC	-19.5061	BSP	244
BDE	.2923	BRA	.2173	BC3	1.0214	FSP	2329

MID-COURSE EXECUTION ACCURACY

SGT	885.5	SGR	366.5	SG3	1371.1				
RRT	-.0091	RRF	-.1608	RTF	.[illegible]94				
SGB	958.4	R23	.1593	R13	-.1397				
SG1	885.5	SG2	366.5	THA	179.74				

ORBIT DETERMINATION ACCURACY

ST	24.0	SR	15.6	SS	45.2
CRT	.9216	CRS	-.0351	CST	.3458
LSA	46.2	MSA	26.9	SSA	1.3
EL1	28.2	EL2	5.2	ALF	32.24

LAUNCH DATE MAY 9 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 11 1971

HELIOCENTRIC CONIC DISTANCE 449.465 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.266	GAL	-.38	AZL	91.93	HCA	147.51	SMA	185.21	ECC	.18477	INC	1.9298	V1	29.505
RP	210.82	LAP	-1.04	LOP	15.26	VP	23.291	GAP	7.11	AZP	88.37	TAL	357.54	TAP	145.05	RCA	150.99	APO	219.44	V2	26.015
RC	117.545	GL	-21.11	GP	.69	ZAL	101.90	ZAP	116.65	ETS	179.41	ZAE	159.51	ETE	177.75	ZAC	101.49	ETC	276.46	LVI	-16.90

PLANETOCENTRIC CONIC

C3	9.105	VHL	3.017	DLA	-30.87	RAL	341.09	RAD	6637.6	VEL	11.367	PTH	6.42	VHP	3.204	DPA	-18.32	RAP	314.70	ECC	1.1498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 12	2316.34	1.81	58.71	192.55	137.55	17 47 48	1316.3	19.90	42.31
60.00	18 35 28	2086.79	7.04	43.04	197.54	129.79	19 10 15	1086.8	22.30	23.74
70.00	20 35 22	1733.95	13.45	19.14	202.23	121.69	21 4 16	734.0	25.26	356.97
77.07	23 14 28	1237.55	22.57	346.14	207.04	111.65	23 35 6	237.6	29.45	320.58
77.07	23 14 28	1237.55	22.57	346.14	207.04	111.65	23 35 6	237.6	29.45	320.58
77.07	23 14 28	1237.55	22.57	346.14	207.04	111.65	23 35 6	237.6	29.45	320.58
110.00	1 38 44	6068.81	13.45	285.97	202.23	121.69	3 19 53	5068.8	25.26	263.79

DIFFERENTIAL CORRECTIONS

TDE	-.2422	TRA	-.1694	TC3	-1.1607	BAU	.1452
RDE	-.1587	RRA	.0424	RC3	.2739	FAU	.21257
FDE	.1204	FRA	4.9963	FC	-20.2123	BSP	109
BDE	.2895	BRA	.1746	BC3	1.1925	FSP	2418

MID-COURSE EXECUTION ACCURACY

SGT	917.8	SGR	356.3	SG3	1422.3				
RRT	-.0378	RRF	-.1787	RTF	.2844				
SGB	984.6	R23	.1662	R13	-.2855				
SG1	918.0	SG2	356.0	THA	179.01				

ORBIT DETERMINATION ACCURACY

ST	23.7	SR	15.1	SS	46.3
CRT	.9433	CRS	-.0224	CST	.2967
LSA	47.0	MSA	26.9	SSA	1.3
EL1	27.8	EL2	4.3	ALF	31.92

LAUNCH DATE MAY 9 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 13 1971

HELIOCENTRIC CONIC DISTANCE 453.637 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.250	GAL	-.40	AZL	91.03	HCA	148.73	SNA	188.07	ECC	.18413	INC	1.9337
RP	211.07	LAP	-1.00	LOP	16.48	VP	23.247	GAP	6.90	AZP	88.35	TAL	357.43	TAP	146.16	RCA	150.99	APO	218.14
RC	119.754	GL	-21.19	GP	.73	ZAL	102.10	ZAP	114.58	ETS	179.40	ZAE	187.87	ETE	178.04	ZAC	101.62	ETC	276.27

V1	29.885																		
V2	25.986																		
LVI	-16.87																		

PLANETOCENTRIC CONIC

C3	9.071	VHL	3.012	DLA	-30.86	RAL	341.35	RAD	6637.6	VEL	11.366	PTH	6.42	VHP	3.152	DPA	-18.92	RAP	313.82

ECC	1.1493																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 10	2318.86	1.84	58.69	192.77	137.58	17 48 46	1318.9	19.92	42.28
60.00	18 36 24	2086.30	7.08	43.02	197.76	129.78	19 11 11	1086.4	22.31	23.72
70.00	20 36 14	1733.78	13.46	19.13	202.44	121.69	21 8 8	733.8	25.27	356.96
77.10	23 15 41	1236.21	22.58	346.04	207.24	111.62	23 36 18	236.2	29.45	320.48
77.10	23 15 41	1236.21	22.58	346.04	207.24	111.62	23 36 18	236.2	29.45	320.48
77.10	23 15 41	1236.21	22.58	346.04	207.24	111.62	23 36 18	236.2	29.45	320.48
110.00	1 39 36	6068.64	13.46	286.96	202.44	121.69	3 20 45	5068.6	25.27	263.78

DIFFERENTIAL CORRECTIONS

TDE	-.2381	TRA	-.1204	TC3	-1.3318	BAU	.1648												
RDE	-.1530	RRA	.0391	RC3	.2788	FAU	.21980												
FDE	.1020	FRA	9.1417	FC	-20.9781	BSP	348												
BDE	.2830	BRA	.1266	BC3	1.3598	FSP	2489												

MID-COURSE EXECUTION ACCURACY

BT	959.0	BR	346.1	B3	1470.2														
RRT	-.0737	RRF	-.1983	RTF	.4294														
B6B	1019.8	R23	.1824	R13	-.4312														
B61	959.4	B62	348.0	THA	178.28														

ORBIT DETERMINATION ACCURACY

BT	23.0	BR	14.6	BB	48.9														
CRT	.9630	CRB	-.0302	CBT	.2221														
LBA	47.3	NBA	26.6	BBA	1.2														
EL1	27.1	EL2	3.4	ALF	31.98														

LAUNCH DATE MAY 9 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 15 1971

HELIOCENTRIC CONIC DISTANCE 457.611 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.250	GAL	-.42	AZL	91.04	HCA	149.04	SNA	184.84	ECC	.18358	INC	1.9379
RP	211.33	LAP	-.97	LOP	17.70	VP	23.203	GAP	6.70	AZP	88.32	TAL	357.30	TAP	147.25	RCA	150.99	APO	218.69
RC	121.948	GL	-21.26	GP	.76	ZAL	102.32	ZAP	112.50	ETS	179.30	ZAE	186.59	ETE	178.27	ZAC	101.76	ETC	276.08

V1	29.808																		
V2	25.987																		
LVI	-16.43																		

PLANETOCENTRIC CONIC

C3	9.046	VHL	3.008	DLA	-30.83	RAL	341.63	RAD	6637.6	VEL	11.364	PTH	6.42	VHP	3.105	DPA	-18.72	RAP	312.93

ECC	1.1489																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 8	2318.98	1.83	58.70	193.02	137.55	17 49 44	1319.0	19.92	42.29
60.00	18 37 17	2086.69	7.04	43.04	198.00	129.78	19 12 4	1086.7	22.30	23.74
70.00	20 36 55	1734.70	13.43	19.18	202.66	121.70	21 9 49	734.7	25.24	357.01
77.17	23 17 18	1234.15	22.57	345.89	207.48	111.58	23 37 52	234.2	29.43	320.32
77.17	23 17 18	1234.15	22.57	345.89	207.48	111.58	23 37 52	234.2	29.43	320.32
77.17	23 17 18	1234.15	22.57	345.89	207.48	111.58	23 37 52	234.2	29.43	320.32
110.00	1 40 17	6069.56	13.43	286.01	202.66	121.70	3 21 26	5069.6	25.24	263.84

DIFFERENTIAL CORRECTIONS

TDE	-.2424	TRA	-.0772	TC3	-1.5401	BAU	.1902												
RDE	-.1479	RRA	.0354	RC3	.2767	FAU	.22404												
FDE	.1512	FRA	9.3519	FC	-21.4421	BSP	563												
BDE	.2837	BRA	.0849	BC3	1.5726	FSP	2599												

MID-COURSE EXECUTION ACCURACY

BT	1053.4	BR	335.9	B3	1514.9														
RRT	-.1092	RRF	-.2199	RTF	.5330														
B6B	1105.6	R23	.1561	R13	-.5349														
B61	1054.1	B62	333.7	THA	177.78														

ORBIT DETERMINATION ACCURACY

BT	23.3	BR	14.1	BB	48.2														
CRT	.9782	CRB	-.0010	CBT	.1824														
LBA	48.5	NBA	26.7	BBA	1.2														
EL1	27.1	EL2	2.8	ALF	30.96														

LAUNCH DATE MAY 9 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 17 1971

HELIOCENTRIC CONIC DISTANCE 461.989 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.243	GAL	-.44	AZL	91.04	HCA	151.16	SNA	184.82	ECC	.18310	INC	1.9424
RP	211.60	LAP	-.94	LOP	18.91	VP	23.189	GAP	6.50	AZP	88.30	TAL	357.16	TAP	148.32	RCA	150.98	APO	218.66
RC	124.177	GL	-21.33	GP	.80	ZAL	102.57	ZAP	110.41	ETS	179.38	ZAE	183.59	ETE	178.46	ZAC	101.89	ETC	275.88

V1	29.809																		
V2	25.926																		
LVI	-16.19																		

PLANETOCENTRIC CONIC

C3	9.028	VHL	3.005	DLA	-30.80	RAL	341.93	RAD	6637.5	VEL	11.364	PTH	6.42	VHP	3.062	DPA	-18.91	RAP	312.03

ECC	1.1486																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 6	2316.51	1.81	58.72	193.28	137.55	17 50 42	1316.5	19.89	42.32
60.00	18 38 0	2087.58	7.00	43.08	198.25	129.79	19 12 55	1087.6	22.27	23.79
70.00	20 37 27	1736.49	13.36	19.28	202.90	121.73	21 6 23	736.5	25.19	357.13
77.27	23 19 14	1231.43	22.55	345.67	207.74	111.54	23 39 45	231.4	29.40	320.11
77.27	23 19 14	1231.43	22.55	345.67	207.74	111.54	23 39 45	231.4	29.40	320.11
77.27	23 19 14	1231.43	22.55	345.67	207.74	111.54	23 39 45	231.4	29.40	320.11
110.00	1 40 49	6071.34	13.36	286.11	202.90	121.73	3 22 0	5071.3	25.19	263.95

DIFFERENTIAL CORRECTIONS

TDE	-.2425	TRA	-.0271	TC3	-1.7407	BAU	.2137												
RDE	-.1420	RRA	.0317	RC3	.2785	FAU	.22974												
FDE	.1750	FRA	5.5128	FC	-22.0302	BSP	846												
BDE	.2810	BRA	.0417	BC3	1.7707	FSP	2677												

MID-COURSE EXECUTION ACCURACY

BT	1149.7	BR	326.0	B3	1557.9														
RRT	-.1469	RRF	-.2458	RTF	.6181														
B6B	1195.0	R23	.1475	R13	-.6300														
B61	1150.7	B62	322.2	THA	177.42														

ORBIT DETERMINATION ACCURACY

BT	23.2	BR	13.6	BB	49.0														
CRT	.9895	CRB	.0148	CBT	.1211														
LBA	49.2	NBA	26.7	BBA	1.2														
EL1	26.8	EL2	1.7	ALF	30.23														

LAUNCH DATE MAY 9 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 466.170 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.237	GAL	-.46	AZL	91.05	HCA	152.37	SNA	184.73	ECC	.18269	INC	1.9472
RP	211.87	LAP	-.90	LOP	20.12	VP	23.117	GAP	6.30	AZP	88.27	TAL	357.00	TAP	149.37	RCA	150.98	APO	218.48
RC	126.431	GL	-21.39	GP	.84	ZAL	102.83	ZAP	108.31	ETS	179.37	ZAE	181.87	ETE	178.62	ZAC	102.03	ETC	275.68

V1	29.809																		
V2	25.896																		
LVI	-15.94																		

PLANETOCENTRIC CONIC

C3	9.019	VHL	3.003	DLA	-30.74	RAL	342.28	RAD	6637.5	VEL	11.363	PTH	6.42	VHP	3.023	DPA	-19.10	RAP	311.11

ECC	1.1484																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 3	2317.88	1.78	58.76	193.57	137.58	17 51 41	1317.6	19.84	42.37
60.00	18 38 56	2089.05	6.94	43.15	198.53	129.80	19 13 45	1089.1	22.21	23.87
70.00	20 37 51	1739.15	13.27	19.43	203.16	121.76	21 6 50	739.2	25.12	357.30
77.41	23 21 31	1228.05	22.52	345.41	208.03	111.50	23 41 58	228.0	29.35	319.84
77.41	23 21 31	1228.05	22.52	345.41	208.03	111.50	23 41 58	228.0	29.35	319.84
77.41	23 21 31	1228.05	22.52	345.41	208.03	111.50	23 41 58	228.0	29.35	319.84
110.00	1 41 13	6074.01	13.27	286.25	203.16	121.76	3 22 27	5074.0	25.12	264.13

DIFFERENTIAL CORRECTIONS

TDE	-.2428	TRA	.0246	TC3	-1.9547	BAU	.2381												
RDE	-.1365	RRA	.0278	RC3	.2807	FAU	.23542												
FDE	.1979	FRA	5.6777	FC	-22.5906	BSP	1136												
BDE	.2784	BRA	.0371	BC3	1.9747	FSP	2748												

MID-COURSE EXECUTION ACCURACY

BT	1263.2	BR	316.3	B3	1600.7														
RRT	-.1653	RRF	-.2745	RTF	.7029														
B6B	1302.2	R23	.1383	R13	-.7046														
B61	1264.6	B62	310.8	THA	177.17														

ORBIT DETERMINATION ACCURACY

BT	23.2	BR	13.1	BB	49.0														
CRT	.9948	CRB	.0304	CBT	.0888														
LBA	49.9	NBA	26.6	BBA	1.1														
EL1	26.6	EL2	1.2	ALF	29.27														

LAUNCH DATE MAY 9 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 470.353 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 32.232 GAL -.49 AZL 91.95 HCA 153.57 SMA 184.65 ECC .18235 INC 1.9525 V1 29.505
RP 212.14 LAP -.87 LOP 21.32 VP 23.074 GAP 6.11 AZP 88.25 TAL 356.83 TAP 150.40 RCA 150.98 APO 218.32 V2 25.864
RC 128.706 GL -21.45 GP .89 ZAL 103.12 ZAP 106.21 ETS 179.36 ZAE 149.53 ETE 178.74 ZAC 102.16 ETC 275.47 LVI -15.69

PLANETOCENTRIC CONIC

C3 9.017 VHL 3.003 DLA -30.68 RAL 342.59 RAD 6637.5 VEL 11.363 PTH 6.42 VHP 2.989 DPA -19.29 RAP 310.18 ECC 1.1484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 2	2319.06	1.68	58.83	193.89	137.55	17 52 41	1319.1	19.77	42.44
60.00	18 39 42	2091.09	6.85	43.25	198.83	129.81	19 14 34	1091.1	22.13	23.99
70.00	20 38 8	1742.65	13.14	19.62	203.44	121.81	21 7 10	742.7	25.02	357.53
77.59	23 24 9	1223.95	22.48	345.08	208.35	111.45	23 44 33	223.9	29.29	319.52
77.59	23 24 9	1223.95	22.48	345.08	208.35	111.45	23 44 33	223.9	29.29	319.52
77.59	23 24 9	1223.95	22.48	345.08	208.35	111.45	23 44 33	223.9	29.29	319.52
110.00	1 41 30	6077.51	13.14	286.45	203.44	121.81	3 22 47	5077.5	25.02	264.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2423 TRA .0780 TC3-2.1718 BAU .2640 SGT 1394.6 SGR 306.8 SG3 1637.7 ST 23.3 SR 12.5 SS 50.9
RDE -.1311 RRA .0237 RC3 .2827 FAU .23952 RRT -.2260 RRF -.3050 RTF .7586 CRT .9934 CRS .0525 CST -.0070
FDE .2329 FRA 5.8485 FC-22.9967 BSP 1440 SGB 1427.9 R23 .1286 R13 -.7601 LSA 50.9 MSA 26.5 SSA 1.1
BDE .2755 BRA .0816 BC3 2.1901 FSP 2821 SG1 1396.4 SG2 298.4 THA 177.02 EL1 26.5 EL2 1.3 ALF 28.14

LAUNCH DATE MAY 9 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 474.539 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 32.228 GAL -.52 AZL 91.96 HCA 154.78 SMA 184.58 ECC .18208 INC 1.9581 V1 29.505
RP 212.43 LAP -.83 LOP 22.53 VP 23.033 GAP 5.92 AZP 88.23 TAL 356.64 TAP 151.42 RCA 150.97 APO 218.19 V2 25.832
RC 130.999 GL -21.51 GP .94 ZAL 103.42 ZAP 104.11 ETS 179.36 ZAE 147.47 ETE 178.85 ZAC 102.30 ETC 275.27 LVI -15.45

PLANETOCENTRIC CONIC

C3 9.023 VHL 3.004 DLA -30.60 RAL 342.95 RAD 6637.5 VEL 11.363 PTH 6.42 VHP 2.959 DPA -19.46 RAP 309.25 ECC 1.1485

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 0	2321.00	1.58	58.91	194.22	137.56	17 53 41	1321.0	19.68	42.53
60.00	18 40 27	2093.65	6.74	43.37	199.16	129.83	19 15 21	1093.7	22.03	24.13
70.00	20 38 18	1746.90	12.99	19.86	203.74	121.87	21 7 25	746.9	24.90	357.80
77.79	23 27 5	1219.30	22.42	344.71	208.69	111.39	23 47 24	219.3	29.22	319.16
77.79	23 27 5	1219.30	22.42	344.71	208.69	111.39	23 47 24	219.3	29.22	319.16
77.79	23 27 5	1219.30	22.42	344.71	208.69	111.39	23 47 24	219.3	29.22	319.16
110.00	1 41 40	6081.76	12.99	286.68	203.74	121.87	3 23 2	5081.8	24.90	264.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2420 TRA .1339 TC3-2.3902 BAU .2904 SGT 1537.2 SGR 297.8 SG3 1673.3 ST 23.6 SR 12.0 SS 51.8
RDE -.1257 RRA .0194 RC3 .2853 FAU .24386 RRT -.2680 RRF -.3404 RTF .8025 CRT .9843 CRS .0791 CST -.0684
FDE .2760 FRA 6.0068 FC-23.3988 BSP 1753 SGB 1565.8 R23 .1220 R13 -.8038 LSA 51.8 MSA 26.4 SSA 1.0
BDE .2727 BRA .1353 BC3 2.4071 FSP 2882 SG1 1539.3 SG2 286.5 THA 176.92 EL1 26.4 EL2 1.9 ALF 26.74

LAUNCH DATE MAY 9 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 478.725 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 32.225 GAL -.55 AZL 91.96 HCA 155.98 SMA 184.53 ECC .18188 INC 1.9643 V1 29.505
RP 212.72 LAP -.80 LOP 23.73 VP 22.991 GAP 5.73 AZP 88.21 TAL 356.44 TAP 152.42 RCA 150.97 APO 218.09 V2 25.799
RC 133.312 GL -21.56 GP .99 ZAL 103.75 ZAP 102.02 ETS 179.36 ZAE 145.41 ETE 178.93 ZAC 102.44 ETC 275.06 LVI -15.20

PLANETOCENTRIC CONIC

C3 9.036 VHL 3.006 DLA -30.51 RAL 343.33 RAD 6637.5 VEL 11.364 PTH 6.42 VHP 2.932 DPA -19.63 RAP 308.32 ECC 1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 0	2323.36	1.46	59.01	194.58	137.56	17 54 43	1323.4	19.57	42.64
60.00	18 41 11	2096.71	6.60	43.52	199.50	129.85	19 16 8	1096.7	21.91	24.30
70.00	20 38 24	1751.85	12.81	20.13	204.05	121.93	21 7 35	751.8	24.77	358.12
78.04	23 30 22	1213.91	22.35	344.28	209.06	111.33	23 50 36	213.9	29.13	318.74
78.04	23 30 22	1213.91	22.35	344.28	209.06	111.33	23 50 36	213.9	29.13	318.74
78.04	23 30 22	1213.91	22.35	344.28	209.06	111.33	23 50 36	213.9	29.13	318.74
110.00	1 41 46	6086.70	12.81	286.96	204.05	121.93	3 23 13	5086.7	24.77	264.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2409 TRA .1916 TC3-2.6135 BAU .3176 SGT 1691.0 SGR 289.2 SG3 1704.8 ST 23.9 SR 11.5 SS 52.6
RDE -.1203 RRA .0148 RC3 .2880 FAU .24733 RRT -.3127 RRF -.3777 RTF .8261 CRT .9671 CRS .1019 CST -.1354
FDE .3096 FRA 6.1646 FC-23.6975 BSP 2072 SGB 1715.5 R23 .1149 R13 -.8371 LSA 52.8 MSA 26.3 SSA 1.0
BDE .2693 BRA .1922 BC3 2.6294 FSP 2950 SG1 1693.5 SG2 274.3 THA 176.86 EL1 26.4 EL2 2.6 ALF 25.14

LAUNCH DATE MAY 9 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC DISTANCE 482.913 EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 32.223 GAL -.58 AZL 91.97 HCA 157.17 SMA 184.49 ECC .18173 INC 1.9712 V1 29.505
RP 213.01 LAP -.76 LOP 24.92 VP 22.951 GAP 5.55 AZP 88.18 TAL 356.23 TAP 153.40 RCA 150.96 APO 218.02 V2 25.766
RC 135.643 GL -21.61 GP 1.04 ZAL 104.10 ZAP 99.94 ETS 179.35 ZAE 143.35 ETE 179.00 ZAC 102.58 ETC 274.85 LVI -14.95

PLANETOCENTRIC CONIC

C3 9.056 VHL 3.009 DLA -30.42 RAL 343.72 RAD 6637.6 VEL 11.365 PTH 6.42 VHP 2.909 DPA -19.78 RAP 307.39 ECC 1.1490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 1	2326.09	1.32	59.12	194.96	137.56	17 55 47	1326.1	19.44	42.77
60.00	18 41 54	2100.22	6.45	43.69	199.87	129.87	19 16 55	1100.2	21.78	24.50
70.00	20 38 25	1757.40	12.61	20.44	204.39	122.01	21 7 43	757.4	24.61	358.48
78.31	23 33 57	1208.00	22.27	343.80	209.46	111.27	23 54 5	208.0	29.04	318.28
78.31	23 33 57	1208.00	22.27	343.80	209.46	111.27	23 54 5	208.0	29.04	318.28
78.31	23 33 57	1208.00	22.27	343.80	209.46	111.27	23 54 5	208.0	29.04	318.28
110.00	1 41 48	6092.26	12.61	287.26	204.39	122.01	3 23 20	5092.3	24.61	265.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2393 TRA .2518 TC3-2.8363 BAU .3452 SGT 1852.2 SGR 281.3 SG3 1730.9 ST 24.4 SR 10.9 SS 53.3
RDE -.1149 RRA .0101 RC3 .2914 FAU .25064 RRT -.3595 RRF -.4192 RTF .8635 CRT .9411 CRS .1267 CST -.2024
FDE .3439 FRA 6.2913 FC-23.9606 BSP 2402 SGB 1873.5 R23 .1097 R13 -.8644 LSA 53.6 MSA 26.1 SSA 1.0
BDE .2654 BRA .2520 BC3 2.8513 FSP 3005 SG1 1855.0 SG2 262.1 THA 176.81 EL1 26.5 EL2 3.4 ALF 23.30

LAUNCH DATE MAY 9 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC DISTANCE 407.102 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.221	GAL	-.62	AZL	91.98	HCA	158.37	SNA	184.46	ECC	.18165	INC	1.9786	VI	29.506
RP	213.31	LAP	-.73	LOP	26.12	VP	22.810	GAP	5.37	AZP	88.18	TAL	356.00	TAP	154.36	RCA	150.96	APO	217.97	V2	25.752
RC	137.991	GL	-21.66	GP	1.10	ZAL	104.48	ZAP	97.88	ETS	179.36	ZAE	141.28	ETE	179.05	ZAC	102.71	ETC	274.68	LVI	-14.71

PLANETOCENTRIC CONIC

C3	9.084	VHL	3.014	DLA	-30.31	RAL	344.14	RAD	6637.6	VEL	11.366	PTH	6.42	VHP	2.690	DPA	-19.92	RAP	306.48	ECC	1.1498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 3	2329.18	1.17	59.25	198.36	137.57	17 56 52	1329.2	19.29	42.92
60.00	18 42 38	2104.14	6.28	43.68	200.25	129.89	19 17 42	1104.1	21.63	24.72
70.00	20 36 25	1763.49	12.39	20.77	204.75	122.08	21 7 48	763.5	24.44	358.86
78.62	23 37 52	1201.38	22.19	343.27	209.88	111.20	23 57 54	201.4	28.93	317.77
78.62	23 37 52	1201.38	22.19	343.27	209.88	111.20	23 57 54	201.4	28.93	317.77
78.62	23 37 52	1201.38	22.19	343.27	209.88	111.20	23 57 54	201.4	28.93	317.77
110.00	1 41 47	6098.38	12.39	287.60	204.75	122.08	3 23 23	5098.3	24.44	268.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2373	TRA	.3134	TC3	-3.0624	BAU	.3736			SGT	2021.8	SGR	274.2	SG3	1754.5	ST	25.0	SR	10.4	SS	54.0
RDE	-.1096	RRA	.0081	RC3	.2982	FAU	.25347			RRT	-.4090	RRF	-.4643	RTF	.8843	CRT	.9067	CRS	.1558	CST	-.2648
FDE	.3848	FRA	6.4191	FC	-24.1573	BSP	2738			SGB	2040.3	R23	.1063	R13	-.8851	LSA	54.5	NSA	26.0	SSA	.9
BDE	.2614	BRA	.3138	BC3	3.0766	FSP	3044			SG1	2024.9	SG2	249.8	THA	176.78	EL1	26.7	EL2	4.1	ALF	21.25

LAUNCH DATE MAY 9 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC DISTANCE 491.292 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.220	GAL	-.68	AZL	91.99	HCA	159.86	SNA	184.46	ECC	.18162	INC	1.9868	VI	29.508
RP	213.61	LAP	-.69	LOP	27.30	VP	22.870	GAP	5.10	AZP	88.14	TAL	355.75	TAP	155.31	RCA	150.98	APO	217.98	V2	25.697
RC	140.386	GL	-21.71	GP	1.17	ZAL	104.84	ZAP	98.83	ETS	179.36	ZAE	139.23	ETE	179.09	ZAC	102.86	ETC	274.45	LVI	-14.48

PLANETOCENTRIC CONIC

C3	9.119	VHL	3.020	DLA	-30.20	RAL	344.87	RAD	6637.6	VEL	11.368	PTH	6.42	VHP	2.678	DPA	-20.08	RAP	308.58	ECC	1.1801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 7	2332.59	1.00	59.39	198.78	137.57	17 58 0	1338.6	19.13	43.08
60.00	18 43 22	2108.43	6.09	44.09	200.66	129.92	19 18 31	1108.4	21.46	24.96
70.00	20 38 23	1770.04	12.18	21.13	205.13	122.17	21 7 53	770.0	24.25	359.26
78.98	23 42 3	1194.32	22.09	342.70	210.33	111.13	24 1 57	194.3	28.81	317.22
78.98	23 42 3	1194.32	22.09	342.70	210.33	111.13	24 1 57	194.3	28.81	317.22
78.98	23 42 3	1194.32	22.09	342.70	210.33	111.13	24 1 57	194.3	28.81	317.22
110.00	1 41 46	6104.90	12.18	287.98	205.13	122.17	3 23 31	5104.9	24.25	268.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2381	TRA	.3772	TC3	-3.2883	BAU	.4028			SGT	2197.4	SGR	268.1	SG3	1773.5	ST	25.7	SR	9.9	SS	54.8
RDE	-.1044	RRA	-.0003	RC3	.2992	FAU	.25823			RRT	-.4602	RRF	-.5127	RTF	.8998	CRT	.8638	CRS	.1949	CST	-.3178
FDE	.4490	FRA	6.5451	FC	-24.2321	BSP	3074			SGB	2213.7	R23	.1056	R13	-.9004	LSA	55.6	NSA	26.0	SSA	.9
BDE	.2972	BRA	.3772	BC3	3.3019	FSP	3076			SG1	2200.9	SG2	237.7	THA	176.75	EL1	27.1	EL2	4.7	ALF	19.01

LAUNCH DATE MAY 9 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC DISTANCE 495.481 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.220	GAL	-.69	AZL	92.00	HCA	160.74	SNA	184.44	ECC	.18164	INC	1.9862	VI	29.505
RP	213.92	LAP	-.66	LOP	28.49	VP	22.831	GAP	5.02	AZP	88.12	TAL	355.50	TAP	156.24	RCA	150.94	APO	217.95	V2	25.662
RC	142.739	GL	-21.76	GP	1.84	ZAL	105.23	ZAP	93.61	ETS	179.38	ZAE	137.18	ETE	179.12	ZAC	103.00	ETC	274.25	LVI	-14.26

PLANETOCENTRIC CONIC

C3	9.161	VHL	3.027	DLA	-30.08	RAL	345.02	RAD	6637.6	VEL	11.369	PTH	6.42	VHP	2.662	DPA	-20.17	RAP	304.69	ECC	1.1908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 14	2336.27	.81	59.55	198.23	137.57	17 59 10	1336.3	18.95	43.25
60.00	18 44 9	2113.02	5.89	44.31	201.10	129.94	19 19 22	1113.0	21.28	25.21
70.00	20 38 23	1776.94	11.90	21.51	205.53	122.25	21 8 0	776.9	24.05	359.72
79.31	23 46 33	1186.61	21.98	342.08	210.81	111.06	24 6 20	186.6	28.69	316.62
79.31	23 46 33	1186.61	21.98	342.08	210.81	111.06	24 6 20	186.6	28.69	316.62
79.31	23 46 33	1186.61	21.98	342.08	210.81	111.06	24 6 20	186.6	28.69	316.62
110.00	1 41 49	6111.79	11.90	288.33	205.53	122.25	3 23 37	5111.8	24.05	268.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2315	TRA	.4432	TC3	-3.5101	BAU	.4315			SGT	2376.3	SGR	263.1	SG3	1787.9	ST	26.5	SR	9.4	SS	55.5
RDE	-.0992	RRA	-.0061	RC3	.3036	FAU	.25646			RRT	-.5140	RRF	-.5631	RTF	.9128	CRT	.8114	CRS	.2309	CST	-.4745
FDE	.4923	FRA	6.6576	FC	-24.2367	BSP	3421			SGB	2390.6	R23	.1046	R13	-.8134	LSA	56.6	NSA	25.8	SSA	.8
BDE	.2516	BRA	.4432	BC3	3.5233	FSP	3109			SG1	2380.2	SG2	225.4	THA	176.71	EL1	27.6	EL2	5.3	ALF	16.68

LAUNCH DATE MAY 9 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 499.670 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.220	GAL	-.73	AZL	92.01	HCA	161.02	SNA	184.45	ECC	.18172	INC	2.0066	VI	29.505
RP	214.24	LAP	-.62	LOP	29.67	VP	22.781	GAP	4.84	AZP	88.09	TAL	355.23	TAP	157.16	RCA	150.93	APO	217.97	V2	25.627
RC	145.130	GL	-21.82	GP	1.32	ZAL	105.64	ZAP	91.82	ETS	179.39	ZAE	135.16	ETE	179.14	ZAC	103.15	ETC	274.06	LVI	-14.06

PLANETOCENTRIC CONIC

C3	9.211	VHL	3.035	DLA	-29.95	RAL	346.49	RAD	6637.6	VEL	11.372	PTH	6.42	VHP	2.653	DPA	-20.26	RAP	303.63	ECC	1.1816

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 24	2340.18	.62	59.71	196.70	137.57	18 0 24	1340.2	18.76	43.44
60.00	18 44 58	2117.86	5.68	44.54	201.56	129.97	19 20 16	1117.9	21.09	25.48
70.00	20 38 25	1784.09	11.64	21.90	205.96	122.34	21 8 9	784.1	23.85	.17
79.69	23 51 18	1178.48	21.87	341.43	211.31	110.99	24 10 56	178.5	28.56	318.99
79.69	23 51 18	1178.48	21.87	341.43	211.31	110.99	24 10 56	178.5	28.56	318.99
79.69	23 51 18	1178.48	21.87	341.43	211.31	110.99	24 10 56	178.5	28.56	318.99
110.00	1 41 47	6118.95	11.64	288.72	205.96	122.34	3 23 46	5118.9	23.85	267.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2277	TRA	.5110	TC3	-3.7306	BAU	.4610			SGT	2559.7	SGR	259.6	SG3	1800.0	ST	27.4	SR	8.9	SS	56.2
RDE	-.0940	RRA	-.0123	RC3	.3093	FAU	.25735			RRT	-.5696	RRF	-.6154	RTF	.9232	CRT	.7509	CRS	.2675	CST	-.4297
FDE	.5337	FRA	6.7977	FC	-24.1892	BSP	3770			SGB	2572.9	R23	.1044	R13	-.9237	LSA	57.7	NSA	25.7	SSA	.6
BDE	.2463	BRA	.5112	BC3	3.7434	FSP	3136			SG1	2564.0	SG2	213.0	THA	176.67	EL1	28.3	EL2	5.7	ALF	14.26

LAUNCH DATE MAY 9 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 7 1971

DISTANCE 503.859

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 32.221 GAL -.78 AZL 92.02 HCA 163.10 SMA 184.47 ECC .18184 INC 2.0181 V1 29.505
RP 214.55 LAP -.59 LOP 30.85 VP 22.752 GAP 4.67 AZP 88.07 TAL 354.96 TAP 158.06 RCA 150.92 APO 218.01 V2 25.591
RC 147.555 GL -21.88 GP 1.41 ZAL 106.07 ZAP 89.85 ETS 179.41 ZAE 133.15 ETE 179.15 ZAC 103.30 ETC 273.87 LVI -13.86

PLANETOCENTRIC CONIC

C3 9.268 VHL 3.044 DLA -29.83 RAL 345.97 RAD 6637.7 VEL 11.374 PTH 6.43 VHP 2.847 DPA -20.34 RAP 302.99 ECC 1.1525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 38	2344.28	.41	59.88	197.20	137.57	18 1 42	1344.3	18.57	43.63
60.00	18 45 51	2122.89	5.46	44.79	202.04	129.99	19 21 14	1122.9	20.69	25.76
70.00	20 38 32	1791.39	11.38	22.30	206.42	122.42	21 8 24	791.4	23.63	.63
80.00	23 45 6	1205.68	20.94	343.06	211.51	111.78	24 5 12	205.7	28.06	317.91
80.09	0 0 12	1170.02	21.76	340.75	211.85	110.93	0 19 42	170.0	28.43	315.34
100.00	2 31 54	596[illegible]	20.94	282.34	211.51	111.78	4 11 22	4968.2	28.06	257.19
110.00	1 41 55	6125.25	11.38	289.12	206.42	122.42	3 24 1	5126.2	23.63	267.46

DIFFERENTIAL CORRECTIONS

TDE -.2237 TRA .5796 TC3-3.9496 BAU .4909
RDE -.0869 RRA -.0188 RC3 .3155 FAU .25770
FDE .5899 FRA 6.8525 FC-24.0712 BSP 4110
BDE .2407 BRA .5799 BC3 3.9622 FSP 3150

MID-COURSE EXECUTION ACCURACY

SGT 2746.2 SGR 258.0 SG3 1806.3
RRT -.6253 RRF -.6692 RTF .9314
SGB 2758.3 R23 .1072 R13 -.9319
SG1 2751.0 SG2 201.0 THA 176.62

ORBIT DETERMINATION ACCURACY

ST 28.5 SR 8.4 SS 56.8
CRT .6837 CRS .3135 CST -.4738
LSA 58.7 MSA 25.6 SSA .7
EL1 29.1 EL2 6.0 ALF 11.89

LAUNCH DATE MAY 9 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 9 1971

DISTANCE 508.047

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 32.223 GAL -.82 AZL 92.03 HCA 164.28 SMA 184.49 ECC .18201 INC 2.0315 V1 29.505
RP 214.88 LAP -.55 LOP 32.03 VP 22.713 GAP 4.50 AZP 88.04 TAL 354.67 TAP 158.95 RCA 150.91 APO 218.07 V2 25.554
RC 149.988 GL -21.96 GP 1.51 ZAL 106.51 ZAP 87.92 ETS 179.44 ZAE 131.16 ETE 179.16 ZAC 103.46 ETC 273.69 LVI -13.69

PLANETOCENTRIC CONIC

C3 9.334 VHL 3.055 DLA -29.71 RAL 346.48 RAD 6637.7 VEL 11.377 PTH 6.43 VHP 2.844 DPA -20.39 RAP 302.18 ECC 1.1536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 58	2348.50	.20	60.06	197.73	137.58	18 3 6	1348.5	18.37	43.83
60.00	18 46 50	2128.01	5.24	45.03	202.56	130.02	19 22 18	1128.0	20.69	26.04
70.00	20 38 47	1798.68	11.11	22.69	206.91	122.51	21 8 46	798.7	23.42	1.09
80.00	23 32 41	1253.21	19.71	346.06	211.59	112.89	23 53 34	253.2	27.42	321.30
80.49	0 5 20	1161.43	21.64	340.07	212.41	110.87	0 24 41	161.4	28.30	314.67
100.00	2 19 29	6015.72	19.71	285.33	211.59	112.89	3 59 45	5015.7	27.42	260.57
110.00	1 42 10	6133.54	11.11	289.52	206.91	122.51	3 24 23	5133.5	23.42	267.91

DIFFERENTIAL CORRECTIONS

TDE -.2183 TRA .6511 TC3-4.1600 BAU .5207
RDE -.0839 RRA -.0261 RC3 .3227 FAU .25732
FDE .6485 FRA 6.9375 FC-23.8668 BSP 4461
BDE .2338 BRA .6517 BC3 4.1725 FSP 3157

MID-COURSE EXECUTION ACCURACY

SGT 2933.5 SGR 258.4 SG3 1809.3
RRT -.6805 RRF -.7224 RTF .9381
SGB 2944.9 R23 .1110 R13 -.9386
SG1 2938.8 SG2 189.0 THA 176.56

ORBIT DETERMINATION ACCURACY

ST 29.6 SR 7.9 SS 57.5
CRT .6056 CRS .3644 CST -.5163
LSA 59.9 MSA 25.5 SSA .7
EL1 30.0 EL2 6.2 ALF 9.60

LAUNCH DATE MAY 9 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 11 1971

DISTANCE 512.234

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 32.225 GAL -.87 AZL 92.05 HCA 165.45 SMA 184.53 ECC .18223 INC 2.0470 V1 29.505
RP 215.21 LAP -.51 LOP 33.20 VP 22.675 GAP 4.34 AZP 88.02 TAL 354.37 TAP 159.82 RCA 150.99 APO 218.15 V2 25.518
RC 152.438 GL -22.04 GP 1.63 ZAL 106.96 ZAP 86.03 ETS 179.48 ZAE 129.20 ETE 179.15 ZAC 103.63 ETC 273.52 LVI -13.54

PLANETOCENTRIC CONIC

C3 9.408 VHL 3.067 DLA -29.59 RAL 347.00 RAD 6637.7 VEL 11.380 PTH 6.43 VHP 2.844 DPA -20.42 RAP 301.40 ECC 1.1548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 24	2352.75	-.02	60.23	198.28	137.58	18 4 37	1352.7	18.16	44.03
60.00	18 47 57	2133.11	5.01	45.28	203.11	130.04	19 23 30	1133.1	20.49	26.33
70.00	20 39 13	1805.81	10.85	23.08	207.43	122.59	21 9 19	805.8	23.21	1.54
80.00	23 26 24	1281.64	18.95	347.82	211.89	113.51	23 47 45	281.6	26.99	323.30
80.90	0 10 33	1152.95	21.52	339.39	213.01	110.82	0 29 46	153.0	28.18	314.02
100.00	2 13 12	6044.15	18.95	287.10	211.89	113.51	3 53 56	5044.2	26.99	262.57
110.00	1 42 36	6140.67	10.85	289.90	207.43	122.59	3 24 56	5140.7	23.21	268.36

DIFFERENTIAL CORRECTIONS

TDE -.2128 TRA .7237 TC3-4.3652 BAU .5506
RDE -.0789 RRA -.0338 RC3 .3311 FAU .25656
FDE .6941 FRA 7.0008 FC-23.6094 BSP 4812
BDE .2270 BRA .7245 BC3 4.3778 FSP 3161

MID-COURSE EXECUTION ACCURACY

SGT 3121.8 SGR 261.2 SG3 1807.4
RRT -.7337 RRF -.7733 RTF .9440
SGB 3132.7 R23 .1155 R13 -.9444
SG1 3127.7 SG2 177.2 THA 176.48

ORBIT DETERMINATION ACCURACY

ST 30.9 SR 7.5 SS 57.9
CRT .5200 CRS .4156 CST -.5972
LSA 61.0 MSA 25.4 SSA .6
EL1 31.2 EL2 6.3 ALF 7.46

LAUNCH DATE MAY 9 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 13 1971

DISTANCE 516.420

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.01 LAL .00 LOL 227.74 VL 32.228 GAL -.92 AZL 92.07 HCA 166.62 SMA 184.57 ECC .18249 INC 2.0652 V1 29.505
RP 215.54 LAP -.48 LOP 34.37 VP 22.637 GAP 4.17 AZP 87.99 TAL 354.03 TAP 160.68 RCA 150.89 APO 218.25 V2 25.480
RC 154.904 GL -22.14 GP 1.76 ZAL 107.42 ZAP 84.17 ETS 179.52 ZAE 127.26 ETE 179.14 ZAC 103.81 ETC 273.35 LVI -13.42

PLANETOCENTRIC CONIC

C3 9.491 VHL 3.081 DLA -29.49 RAL 347.55 RAD 6637.8 VEL 11.384 PTH 6.44 VHP 2.846 DPA -20.42 RAP 300.65 ECC 1.1562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 59	2356.94	-.23	60.41	198.87	137.58	18 6 16	1356.9	17.96	44.22
60.00	18 49 15	2138.07	4.80	45.52	203.69	130.06	19 24 53	1138.1	20.29	26.60
70.00	20 39 54	1812.58	10.60	23.45	208.00	122.66	21 10 7	812.6	23.01	1.96
80.00	23 22 27	1303.06	18.36	349.14	212.31	113.96	23 44 10	303.1	26.64	324.80
81.28	0 15 43	1145.13	21.41	338.77	213.65	110.78	0 34 48	145.1	28.06	313.42
100.00	2 9 15	6065.57	18.36	288.42	212.31	113.96	3 50 20	5065.6	26.64	264.07
110.00	1 43 17	6147.44	10.60	290.27	208.00	122.66	3 25 44	5147.4	23.01	268.78

DIFFERENTIAL CORRECTIONS

TDE -.2061 TRA .7990 TC3-4.5623 BAU .5805
RDE -.0741 RRA -.0426 RC3 .3412 FAU .25551
FDE .7564 FRA 7.0725 FC-23.3061 BSP 5168
BDE .2190 BRA .8001 BC3 4.5751 FSP 3164

MID-COURSE EXECUTION ACCURACY

SGT 3311.1 SGR 267.4 SG3 1805.2
RRT -.7835 RRF -.8215 RTF .9486
SGB 3321.9 R23 .1229 R13 -.9490
SG1 3317.7 SG2 165.8 THA 176.37

ORBIT DETERMINATION ACCURACY

ST 32.3 SR 7.0 SS 58.6
CRT .4221 CRS .4780 CST -.5915
LSA 62.3 MSA 25.4 SSA .6
EL1 32.4 EL2 6.3 ALF 5.47

LAUNCH DATE MAY 9 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 520.604 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.231	GAL	-.97	AZL	92.09	HCA	167.79	SHA	184.62	ECC	.18279	INC	2.0865
RP	215.87	LAP	-.44	LOP	35.53	VP	22.899	GAP	4.01	AZP	87.96	TAL	353.73	TAP	161.52	RCA	150.87	APO	218.36
RC	197.365	GL	-22.27	GP	1.92	ZAL	107.88	ZAP	82.35	ETS	179.58	ZAE	125.38	ETE	179.11	ZAC	104.01	ETC	273.19

VI	29.808																		
V2	25.443																		
LVI	-13.33																		

PLANETOCENTRIC CONIC

C3	9.985	VHL	3.096	DLA	-29.40	RAL	348.12	RAD	6637.0	VEL	11.388	PTH	6.44	VHP	2.851	DPA	-20.39	RAP	299.93
ECC	1.1577																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 46	2360.93	-.43	60.58	199.50	137.57	18 8 6	1360.9	17.77	44.41
60.00	18 50 47	2142.71	4.59	48.74	204.32	130.08	19 26 30	1142.7	20.11	26.85
70.00	20 40 56	1818.71	10.37	23.78	208.62	122.72	21 11 15	818.7	22.83	2.34
80.00	23 20 14	1319.45	17.91	350.15	212.83	114.30	23 42 13	319.4	26.37	328.94
81.61	0 20 36	1138.72	21.30	338.28	214.32	110.76	0 39 34	138.7	27.95	312.92
100.00	2 7 2	6081.96	17.91	289.42	212.83	114.30	3 46 24	5082.0	26.37	285.21
110.00	1 44 18	6153.87	10.37	290.60	208.62	122.72	3 26 52	5153.6	22.83	289.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1999	TRA	.8780	TC3	-4.7513	BAU	.6108			SGT	3499.5	SGR	278.7	SG3	1795.8	ST	33.7	SR	6.6
RDE	-.0693	RRA	-.0522	RC3	.3531	FAU	.28387			RRT	-.8882	RRF	-.8640	RTF	.9526	CRT	.3161	CR8	.9411
FDE	.8010	FRA	7.1147	FC-	22.9123	BSP	8813			SG8	3810.4	R23	.1312	R13	-.9830	L8A	63.4	N8A	25.3
BDE	.2118	BRA	.8765	BC3	4.7644	FSP	3147			SG1	3807.0	SG2	154.8	THA	176.25	EL1	33.8	EL2	6.3

SS	89.0																		
CBT	-.8241																		
S8A	.5																		
ALP	3.68																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 524.786 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.234	GAL	-1.02	AZL	92.11	HCA	168.08	SHA	184.68	ECC	.18313	INC	2.1118
RP	216.21	LAP	-.41	LOP	36.69	VP	22.861	GAP	3.88	AZP	87.93	TAL	353.40	TAP	162.35	RCA	150.66	APO	218.80
RC	198.881	GL	-22.43	GP	2.11	ZAL	108.36	ZAP	80.58	ETS	179.66	ZAE	123.48	ETE	179.08	ZAC	104.28	ETC	273.04

VI	29.805																		
V2	25.408																		
LVI	-13.29																		

PLANETOCENTRIC CONIC

C3	9.690	VHL	3.113	DLA	-29.33	RAL	348.72	RAD	6637.0	VEL	11.393	PTH	6.44	VHP	2.858	DPA	-20.32	RAP	299.28
ECC	1.1898																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 30 47	2364.86	-.61	60.73	200.18	137.87	18 10 12	1364.6	17.80	44.58
60.00	18 52 38	2146.79	4.41	48.94	205.00	130.10	19 28 26	1146.8	19.98	27.08
70.00	20 42 27	1823.64	10.19	24.06	209.29	122.78	21 12 50	823.8	22.67	2.66
80.00	23 19 40	1331.11	17.58	350.66	213.45	114.83	23 41 51	331.1	26.17	326.74
81.66	0 24 56	1134.63	21.20	337.91	215.05	110.76	0 43 50	134.6	27.87	312.61
100.00	2 6 28	6093.62	17.58	290.13	213.45	114.83	3 48 2	5093.6	26.17	286.02
110.00	1 48 49	6158.70	10.19	290.88	209.29	122.78	3 28 27	5158.7	22.67	289.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1949	TRA	.9517	TC3	-4.9367	BAU	.6413			SGT	3689.5	SGR	290.7	SG3	1784.6	ST	38.4	SR	6.3
RDE	-.0647	RRA	-.0632	RC3	.3681	FAU	.28178			RRT	-.8669	RRF	-.9010	RTF	.9587	CRT	.2017	CR8	.6109
FDE	.8461	FRA	7.1532	FC-	22.4934	BSP	8837			SG8	3700.9	R23	.1430	R13	-.9561	L8A	64.6	N8A	25.4
BDE	.2083	BRA	.9838	BC3	4.9504	FSP	3122			SG1	3698.1	SG2	144.6	THA	176.09	EL1	38.4	EL2	6.2

SS	89.4																		
CBT	-.8499																		
S8A	.5																		
ALP	2.12																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 528.966 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.238	GAL	-1.07	AZL	92.14	HCA	170.11	SHA	184.74	ECC	.18351	INC	2.1436
RP	216.56	LAP	-.37	LOP	37.85	VP	22.823	GAP	3.69	AZP	87.89	TAL	353.08	TAP	163.17	RCA	150.84	APO	218.64
RC	162.390	GL	-22.64	GP	2.38	ZAL	108.83	ZAP	78.84	ETS	179.75	ZAE	121.64	ETE	179.03	ZAC	104.52	ETC	272.91

VI	29.805																		
V2	25.366																		
LVI	-13.29																		

PLANETOCENTRIC CONIC

C3	9.809	VHL	3.132	DLA	-29.31	RAL	349.35	RAD	6637.0	VEL	11.398	PTH	6.45	VHP	2.867	DPA	-20.19	RAP	298.60
ECC	1.1814																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 10	2367.86	-.76	60.85	200.91	137.57	18 12 38	1367.6	17.45	44.71
60.00	18 54 58	2149.97	4.27	48.09	205.75	130.11	19 30 48	1150.0	19.82	27.25
70.00	20 44 37	1827.44	10.05	24.25	210.05	122.81	21 15 4	827.4	22.56	2.88
80.00	23 21 4	1337.17	17.41	351.22	214.19	114.65	23 43 21	337.2	26.06	327.16
81.96	0 28 16	1134.43	21.13	337.86	215.84	110.80	0 47 10	134.4	27.82	312.58
100.00	2 7 52	6099.68	17.41	290.50	214.19	114.65	3 49 31	5099.7	26.06	286.44
110.00	1 47 59	6162.30	10.05	291.07	210.05	122.81	3 30 41	5162.3	22.36	289.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1878	TRA	1.0329	TC3	-5.1031	BAU	.6711			SGT	3877.0	SGR	310.3	SG3	1771.9	ST	37.1	SR	6.0
RDE	-.0604	RRA	-.0760	RC3	.3865	FAU	.24945			RRT	-.8992	RRF	-.9315	RTF	.9586	CRT	.0686	CR8	.6876
FDE	.8961	FRA	7.1928	FC-	22.0172	BSP	6188			SG8	3889.4	R23	.1966	R13	-.9890	L8A	66.0	N8A	25.4
BDE	.1972	BRA	1.0357	BC3	5.1177	FSP	3101			SG1	3887.0	SG2	135.4	THA	175.88	EL1	37.1	EL2	6.0

SS	89.9																		
CBT	-.8783																		
S8A	.4																		
ALP	.66																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC DISTANCE 533.144 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.242	GAL	-1.13	AZL	92.18	HCA	171.26	SHA	184.81	ECC	.18392	INC	2.1839
RP	216.91	LAP	-.33	LOP	39.00	VP	22.786	GAP	3.53	AZP	87.84	TAL	352.71	TAP	163.97	RCA	150.82	APO	218.81
RC	164.912	GL	-22.92	GP	2.64	ZAL	109.31	ZAP	77.18	ETS	179.87	ZAE	118.83	ETE	178.96	ZAC	104.84	ETC	272.78

VI	29.808																		
V2	25.327																		
LVI	-13.37																		

PLANETOCENTRIC CONIC

C3	9.944	VHL	3.153	DLA	-29.34	RAL	350.03	RAD	6638.0	VEL	11.404	PTH	6.46	VHP	2.879	DPA	-20.00	RAP	297.98
ECC	1.1837																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 36 3	2369.55	-.86	60.94	201.73	137.57	18 15 33	1369.6	17.36	44.81
60.00	18 57 55	2151.74	4.20	48.17	206.58	130.12	19 33 47	1151.7	19.75	27.35
70.00	20 47 45	1828.70	10.01	24.32	210.90	122.83	21 18 14	828.7	22.53	2.96
80.00	23 25 9	1336.41	17.46	351.12	215.10	114.61	23 47 29	335.4	26.09	327.04
81.84	0 29 59	1140.32	21.08	338.28	216.71	110.89	0 48 59	140.3	27.81	313.02
100.00	2 11 57	6097.92	17.46	290.39	215.10	114.61	3 53 35	5097.9	26.09	286.32
110.00	1 51 7	6163.56	10.01	291.14	210.90	122.83	3 33 51	5163.6	22.53	289.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1792	TRA	1.1174	TC3	-5.2469	BAU	.6996			SGT	4059.7	SGR	336.6	SG3	1754.0	ST	38.9	SR	5.9
RDE	-.0566	RRA	-.0913	RC3	.4089	FAU	.24597			RRT	-.9248	RRF	-.9583	RTF	.9609	CRT	-.0789	CR8	.7682
FDE	.9353	FRA	7.2242	FC-	21.4144	BSP	6866			SG8	4073.6	R23	.1731	R13	-.9614	L8A	67.4	N8A	25.4
BDE	.1879	BRA	1.1212	BC3	5.2628	FSP	3091			SG1	4071.6	SG2	128.0	THA	175.61	EL1	38.9	EL2	5.9

SS	88.4																		
CBT	-.8972																		
S8A	.4																		
ALP	179.30																		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 23 1971

HELIOCENTRIC CONIC DISTANCE 537.320 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.247	GAL	-1.19	AZL	92.24	HCA	172.41	SMA	184.89	ECC	.18438	INC	2.2342	V1	29.505
RP	217.26	LAP	-.30	LOP	40.15	VP	22.449	GAP	3.37	AZP	87.78	TAL	352.35	TAP	164.76	RCA	150.80	APO	218.98	V2	25.288
RC	167.446	GL	-23.30	GP	3.02	ZAL	109.78	ZAP	75.51	ETS	180.04	ZAE	118.06	ETE	178.86	ZAC	105.25	ETC	272.66	LVI	-13.54

PLANETOCENTRIC CONIC

C3	10.102	VHL	3.178	DLA	-29.46	RAL	350.77	RAD	6638.1	VEL	11.410	PTH	6.46	VHP	2.892	DPA	-19.71	RAP	297.39	ECC	1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 39 39	2369.97	-.88	60.95	202.65	137.57	18 19 9	1370.0	17.34	44.83
60.00	19 1 50	2131.31	4.21	46.15	207.54	130.12	19 37 42	1151.3	19.77	27.32
70.00	20 52 19	1828.33	10.09	24.19	211.91	122.80	21 22 46	826.3	22.60	2.81
80.00	23 33 43	1320.41	17.88	350.20	216.27	114.32	23 55 44	320.4	26.35	326.00
81.39	0 29 25	1154.70	21.09	339.34	217.70	111.06	0 48 40	154.7	27.89	314.09
100.00	2 20 31	6082	17.88	289.48	216.27	114.32	4 1 54	5082.9	26.35	265.28
110.00	1 55 41	6161.15	10.09	291.01	211.91	122.80	3 38 23	5161.2	22.60	269.64

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1804	TRA	1.1966	TC3	-5.4049	BAU	.7324	SGT	4248.2	SGR	372.8	SG3	1734.3	ST	40.9	SR	5.8	SS	60.3
RDE	-.0525	RRA	-.1095	RC3	.4412	FAU	.24404	RRT	-.9435	RRF	-.9728	RTF	.9630	CRT	-.2161	CRS	.8394	CST	-.7107
FDE	.9676	FRA	7.2145	FC-2	0.9152	BSP	6826	SGB	4264.6	R23	.1914	R13	-.9634	LSA	68.4	MSA	25.7	SSA	.3
BDE	.1879	BRA	1.2016	BC3	5.4229	FSP	3022	SG1	4262.8	SG2	123.1	THA	175.26	EL1	40.9	EL2	5.7	ALF	178.20

LAUNCH DATE MAY 9 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 25 1971

HELIOCENTRIC CONIC DISTANCE 541.494 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.252	GAL	-1.25	AZL	92.30	HCA	173.56	SMA	184.98	ECC	.18486	INC	2.3022	V1	29.505
RP	217.61	LAP	-.26	LOP	41.30	VP	22.412	GAP	3.22	AZP	87.71	TAL	351.99	TAP	165.55	RCA	150.78	APO	219.17	V2	25.249
RC	169.992	GL	-23.84	GP	3.53	ZAL	110.22	ZAP	73.92	ETS	180.26	ZAE	116.32	ETE	178.72	ZAC	105.78	ETC	272.55	LVI	-13.84

PLANETOCENTRIC CONIC

C3	10.290	VHL	3.208	DLA	-29.71	RAL	351.59	RAD	6638.2	VEL	11.419	PTH	6.47	VHP	2.908	DPA	-19.29	RAP	296.82	ECC	1.1694

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 44 22	2367.77	-.77	60.86	203.73	137.57	18 23 50	1367.8	17.44	44.72
60.00	19 7 15	2147.26	4.39	45.96	208.68	130.10	19 43 2	1147.3	19.93	27.10
70.00	20 59 13	1817.90	10.40	23.73	213.15	122.72	21 29 31	817.9	22.85	2.29
80.00	23 53 15	1271.96	19.21	347.22	217.99	113.30	24 14 27	272.0	27.14	322.62
80.49	0 25 39	1180.96	21.17	341.32	218.84	111.35	0 45 20	181.0	28.08	316.08
100.00	2 40 3	6034.47	19.21	286.50	217.99	113.30	4 20 38	5034.5	27.14	261.89
110.00	2 2 35	6152.76	10.40	290.56	213.15	122.72	3 45 8	5152.8	22.85	269.11

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1915	TRA	1.2721	TC3	-5.5648	BAU	.7685	SGT	4439.3	SGR	423.3	SG3	1712.3	ST	43.1	SR	5.9	SS	59.0
RDE	-.0474	RRA	-.1314	RC3	.4905	FAU	.24542	RRT	-.9586	RRF	-.9849	RTF	.9671	CRT	-.3515	CRS	.8968	CST	-.7284
FDE	.8906	FRA	7.1264	FC-2	0.6470	BSP	7011	SGB	4459.4	R23	.2007	R13	-.9676	LSA	68.6	MSA	25.7	SSA	.3
BDE	.1973	BRA	1.2789	BC3	5.5864	FSP	2878	SG1	4457.8	SG2	120.1	THA	174.77	EL1	43.2	EL2	5.5	ALF	177.21

LAUNCH DATE MAY 9 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 27 1971

HELIOCENTRIC CONIC DISTANCE 545.663 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.258	GAL	-1.31	AZL	92.40	HCA	174.70	SMA	185.07	ECC	.18539	INC	2.4022	V1	29.505
RP	217.97	LAP	-.22	LOP	42.44	VP	22.375	GAP	3.06	AZP	87.61	TAL	351.61	TAP	166.31	RCA	150.76	APO	219.38	V2	25.209
RC	172.547	GL	-24.63	GP	4.25	ZAL	110.63	ZAP	72.38	ETS	180.58	ZAE	114.62	ETE	178.51	ZAC	106.53	ETC	272.46	LVI	-14.36

PLANETOCENTRIC CONIC

C3	10.529	VHL	3.245	DLA	-30.19	RAL	352.56	RAD	6638.3	VEL	11.429	PTH	6.48	VHP	2.927	DPA	-18.64	RAP	296.26	ECC	1.1733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 50 57	2361.27	-.44	60.59	205.08	137.57	18 30 18	1361.3	17.75	44.42
60.00	19 15 11	2137.17	4.83	45.47	210.14	130.06	19 50 48	1137.2	20.33	26.55
70.00	21 10 8	1798.95	11.10	22.71	214.78	122.51	21 40 7	798.9	23.41	1.11
78.97	0 18 4	1222.15	21.37	344.47	220.26	111.84	0 38 26	222.2	28.47	319.22
78.97	0 18 4	1222.15	21.37	344.47	220.26	111.84	0 38 26	222.2	28.47	319.22
78.97	0 18 4	1222.15	21.37	344.47	220.26	111.84	0 38 26	222.2	28.47	319.22
110.00	2 13 31	6133.81	11.10	289.53	214.78	122.51	3 55 44	5133.8	23.41	267.93

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1897	TRA	1.3710	TC3	-5.6291	BAU	.7961	SGT	4615.3	SGR	495.5	SG3	1686.9	ST	45.6	SR	6.5	SS	59.7
RDE	-.0458	RRA	-.1646	RC3	.5468	FAU	.23965	RRT	-.9668	RRF	-.9926	RTF	.9677	CRT	-.4974	CRS	.9327	CST	-.7567
FDE	.9548	FRA	7.1753	FC-1	9.7041	BSP	7425	SGB	4641.9	R23	.2203	R13	-.9683	LSA	70.7	MSA	26.4	SSA	.2
BDE	.1952	BRA	1.3809	BC3	5.6556	FSP	2887	SG1	4640.2	SG2	126.0	THA	174.07	EL1	45.7	EL2	5.6	ALF	175.89

LAUNCH DATE MAY 9 1971 FLIGHT TIME 234.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 549.829 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.264	GAL	-1.37	AZL	92.56	HCA	175.84	SMA	185.17	ECC	.18594	INC	2.5553	V1	29.505
RP	218.33	LAP	-.19	LOP	43.58	VP	22.338	GAP	2.91	AZP	87.45	TAL	351.23	TAP	167.07	RCA	150.74	APO	219.60	V2	25.169
RC	175.114	GL	-25.88	GP	5.37	ZAL	110.96	ZAP	70.90	ETS	181.08	ZAE	112.95	ETE	178.18	ZAC	107.67	ETC	272.39	LVI	-15.25

PLANETOCENTRIC CONIC

C3	10.859	VHL	3.295	DLA	-31.07	RAL	353.79	RAD	6638.5	VEL	11.443	PTH	6.49	VHP	2.950	DPA	-17.60	RAP	295.69	ECC	1.1787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 0 59	2346.75	.29	59.98	206.93	137.58	18 40 6	1346.8	18.45	43.75
60.00	19 27 52	2115.58	5.78	44.43	212.19	129.95	20 3 7	1115.6	21.18	25.36
70.00	21 29 20	1758.00	12.59	20.47	217.19	122.02	21 58 38	758.1	24.59	358.52
76.57	0 5 27	1283.88	21.80	349.29	222.17	112.70	0 26 51	283.9	29.21	324.01
76.57	0 5 27	1283.88	21.80	349.29	222.17	112.70	0 26 51	283.9	29.21	324.01
76.57	0 5 27	1283.88	21.80	349.29	222.17	112.70	0 26 51	283.9	29.21	324.01
110.00	2 32 43	6092.93	12.59	287.30	217.19	122.02	4 14 16	5092.9	24.59	265.34

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2002	TRA	1.4739	TC3	-5.6523	BAU	.8257	SGT	4790.5	SGR	606.4	SG3	1656.1	ST	48.5	SR	7.6	SS	60.2
RDE	-.0457	RRA	-.2132	RC3	.6334	FAU	.23389	RRT	-.9713	RRF	-.9969	RTF	.9680	CRT	-.6095	CRS	.9848	CST	-.7373
FDE	.9909	FRA	7.1967	FC-1	8.6470	BSP	7804	SGB	4828.7	R23	.2345	R13	-.9689	LSA	72.6	MSA	27.5	SSA	.2
BDE	.2054	BRA	1.4892	BC3	5.6877	FSP	2870	SG1	4826.6	SG2	143.2	THA	172.98	EL1	48.7	EL2	6.0	ALF	174.43

LAUNCH DATE MAY 9 1971 FLIGHT TIME 236.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 553.992 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.270	GAL	-1.44	AZL	92.02	HCA	176.98	SNA	165.27	ECC	.18683	INC	2.9206
RP	219.69	LAP	-.15	LOP	44.72	VP	22.302	GAP	2.76	AZP	87.18	TAL	350.84	TAP	167.02	RCA	150.71	APO	219.62
RC	177.690	GL	-20.08	GP	7.30	ZAL	111.11	ZAP	69.83	ETS	181.98	ZAE	111.31	ETE	177.60	ZAC	109.61	ETC	272.34

VI	29.505	V2	25.189	LVI	-16.92														

PLANETOCENTRIC CONIC

C3	11.390	VHL	3.375	DLA	-32.77	RAL	355.55	RAD	6638.8	VEL	11.466	PTH	6.52	VHP	2.981	DPA	-13.74	RAP	295.03

ECC	1.1678																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 18 32	2318.30	1.07	58.67	209.68	137.55	18 57 7	1318.3	19.95	42.26
60.00	19 51 21	2068.28	7.84	42.14	218.59	129.66	20 25 49	1068.3	23.01	22.69
70.00	22 12 13	1653.19	16.29	14.61	221.64	120.44	22 39 47	653.2	27.37	351.64
72.71	23 42 23	1378.60	22.65	356.66	225.13	114.34	24 5 19	378.6	30.65	331.32
72.71	23 42 23	1378.60	22.65	356.66	225.13	114.34	24 5 19	378.6	30.65	331.32
72.71	23 42 23	1378.60	22.65	356.66	225.13	114.34	24 5 19	378.6	30.65	331.32
110.00	3 15 36	5988.05	16.29	281.43	221.64	120.44	4 55 24	4988.1	27.37	258.46

DIFFERENTIAL CORRECTIONS

TDE	-.2414	TRA	1.5796	TC3	-5.611D	BAU	.8627												
RDE	-.0470	RRA	-.2932	RC3	.7826	FAU	.22912												
FDE	.9515	FRA	7.1499	FC	-17.4147	BSP	8074												
SDE	.2460	SRA	1.6065	SC3	5.6653	FSP	2787												

MID-COURSE EXECUTION ACCURACY

SGT	4988.2	SGR	797.4	SG3	1614.5														
RRT	-.9733	RRF	-.9989	RTF	.9983														
SG8	5031.8	R23	.2404	R13	-.0697														
SG1	5028.5	SG2	180.8	THA	171.11														

ORBIT DETERMINATION ACCURACY

ST	52.4	SR	9.8	SS	59.7														
CRT	-.6798	CRS	.9979	CST	-.7255														
LSA	74.4	NSA	29.3	SSA	.1														
EL1	52.8	EL2	7.1	ALF	172.64														

LAUNCH DATE MAY 9 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 558.192 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.276	GAL	-1.50	AZL	93.41	HCA	178.11	SNA	168.37	ECC	.18714	INC	3.4007
RP	219.06	LAP	-.11	LOP	45.88	VP	22.268	GAP	2.60	AZP	86.60	TAL	350.44	TAP	166.88	RCA	150.68	APO	220.06
RC	180.278	GL	-32.73	GP	11.46	ZAL	110.70	ZAP	68.48	ETS	183.79	ZAE	109.81	ETE	176.33	ZAC	113.78	ETC	272.35

VI	29.505	V2	25.089	LVI	-20.65														

PLANETOCENTRIC CONIC

C3	12.568	VHL	3.545	DLA	-36.60	RAL	358.86	RAD	6639.3	VEL	11.517	PTH	6.56	VHP	3.042	DPA	-11.67	RAP	294.12

ECC	1.2068																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 58 29	2237.38	5.77	55.40	216.30	137.31	19 35 46	1237.4	23.59	38.43
60.00	20 51 24	1936.44	13.50	38.60	223.55	128.34	21 23 40	936.4	27.81	14.84
68.73	23 14 36	1520.49	24.44	9.00	231.11	118.13	23 39 57	520.5	33.81	343.60
68.73	23 14 36	1520.49	24.44	9.00	231.11	118.13	23 39 57	520.5	33.81	343.60
68.73	23 14 36	1520.49	24.44	9.00	231.11	118.13	23 39 57	520.5	33.81	343.60
68.73	23 14 36	1520.49	24.44	9.00	231.11	118.13	23 39 57	520.5	33.81	343.60
68.73	23 14 36	1520.49	24.44	9.00	231.11	118.13	23 39 57	520.5	33.81	343.60

DIFFERENTIAL CORRECTIONS

TDE	-.3528	TRA	1.6967	TC3	-5.3693	BAU	.9201												
RDE	-.0485	RRA	-.4572	RC3	1.0818	FAU	.22507												
FDE	.7788	FRA	6.9157	FC	-15.5078	BSP	8129												
SDE	.3561	SRA	1.7572	SC3	5.4772	FSP	2550												

MID-COURSE EXECUTION ACCURACY

SGT	5146.3	SGR	1200.8	SG3	1836.7														
RRT	-.9741	RRF	-.9996	RTF	.9990														
SG8	5284.5	R23	.2352	R13	-.0718														
SG1	5277.9	SG2	264.7	THA	167.16														

ORBIT DETERMINATION ACCURACY

ST	58.9	SR	14.4	SS	57.8														
CRT	-.7098	CRS	.9999	CST	-.6984														
LSA	77.0	NSA	32.4	SSA	.1														
EL1	59.8	EL2	10.0	ALF	169.87														

LAUNCH DATE MAY 9 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 562.312 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.283	GAL	-1.57	AZL	95.70	HCA	179.23	SNA	169.48	ECC	.18779	INC	3.6554
RP	219.43	LAP	-.08	LOP	46.98	VP	22.229	GAP	2.45	AZP	84.30	TAL	350.05	TAP	169.28	RCA	150.65	APO	220.32
RC	182.871	GL	-47.73	GP	26.13	ZAL	107.34	ZAP	66.35	ETS	189.78	ZAE	107.12	ETE	171.84	ZAC	128.42	ETC	272.83

VI	29.505	V2	25.048	LVI	-34.02														

PLANETOCENTRIC CONIC

C3	10.752	VHL	4.330	DLA	-48.81	RAL	10.91	RAD	6642.3	VEL	11.780	PTH	6.80	VHP	3.386	DPA	2.84	RAP	291.96

ECC	1.3086																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.41	22 49 34	1810.15	27.48	36.76	253.81	132.07	23 19 44	810.1	42.02	13.04
48.41	22 49 34	1810.15	27.48	36.76	253.81	132.07	23 19 44	810.1	42.02	13.04
48.41	22 49 34	1810.15	27.48	36.76	253.81	132.07	23 19 44	810.1	42.02	13.04
48.41	22 49 34	1810.15	27.48	36.76	253.81	132.07	23 19 44	810.1	42.02	13.04
48.41	22 49 34	1810.15	27.48	36.76	253.81	132.07	23 19 44	810.1	42.02	13.04
48.41	22 49 34	1810.15	27.48	36.76	253.81	132.07	23 19 44	810.1	42.02	13.04
48.41	22 49 34	1810.15	27.48	36.76	253.81	132.07	23 19 44	810.1	42.02	13.04

DIFFERENTIAL CORRECTIONS

TDE	-1.0838	TRA	1.3963	TC3	-5.0346	BAU	1.3803												
RDE	.1179	RRA	-.7836	RC3	2.2293	FAU	.28916												
FDE	-.4482	FRA	4.3099	FC	-11.9682	BSP	926												
SDE	1.0902	SRA	1.6012	SC3	5.5061	FSP	385												

MID-COURSE EXECUTION ACCURACY

SGT	5379.3	SGR	2496.0	SG3	1167.8														
RRT	-.9725	RRF	-.9998	RTF	.9971														
SG8	5930.2	R23	.2146	R13	-.0767														
SG1	5906.5	SG2	529.1	THA	155.50														

ORBIT DETERMINATION ACCURACY

ST	63.4	SR	25.0	SS	39.2														
CRT	-.7529	CRS	.9998	CST	-.6878														
LSA	90.6	NSA	30.3	SSA	.0														
EL1	65.6	EL2	16.1	ALF	166.79														

LAUNCH DATE MAY 9 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 6 1972

HELIOCENTRIC CONIC DISTANCE 566.455 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.290	GAL	-1.64	AZL	83.71	HCA	180.36	SNA	169.68	ECC	.18847	INC	6.1385
RP	219.80	LAP	-.04	LOP	48.10	VP	22.193	GAP	2.31	AZP	96.29	TAL	349.61	TAP	169.98	RCA	150.62	APO	220.58
RC	188.475	GL	50.52	GP	-44.31	ZAL	106.91	ZAP	73.64	ETS	182.24	ZAE	102.11	ETE	192.76	ZAC	58.04	ETC	272.59

VI	29.505	V2	25.007	LVI	30.56														

PLANETOCENTRIC CONIC

C3	20.060	VHL	4.579	DLA	39.97	RAL	323.28	RAD	6643.3	VEL	11.873	PTH	6.89	VHP	4.493	DPA	-65.79	RAP	313.86

ECC	1.3481																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	10 26 26	4033.90	-42.21	177.20	217.25	65.62	11 33 40	3033.9	-47.57	143.66
60.00	9 1 9	4264.34	-26.00	187.20	206.83	58.05	10 12 13	3264.3	-36.75	161.87
60.48	8 28 65	4358.63	-22.21	192.24	204.13	55.87	9 41 21	3358.6	-34.20	168.47
60.48	8 28 45	4358.63	-22.21	192.24	204.13	55.87	9 41 21	3358.6	-34.20	168.47
60.48	8 28 45	4358.63	-22.21	192.24	204.13	55.87	9 41 21	3358.6	-34.20	168.47
60.48	8 28 45	4358.63	-22.21	192.24	204.13	55.87	9 41 21	3358.6	-34.20	168.47
60.48	8 28 45	4358.63	-22.21	192.24	204.13	55.87	9 41 21	3358.6	-34.20	168.47

DIFFERENTIAL CORRECTIONS

TDE	.9666	TRA	-1.6213	TC3	-7.7488	BAU	2.6279												
RDE	.7972	RRA	-.4797	RC3	-5.2763	FAU	.23433												
FDE	1.4676	FRA	-.7494	FC3	-9.6752	BSP	24027												
SDE	1.2530	SRA	1.6906	SC3	9.3748	FSP	-1993												

MID-COURSE EXECUTION ACCURACY

SGT	7670.2	SGR	4998.8	SG3	788.0														
RRT	.8805	RRF	.9897	RTF	.9787														
SG8	9183.7	R23	.1615	R13	.0868														
SG1	9116.8	SG2	826.1	THA	38.87														

ORBIT DETERMINATION ACCURACY

ST	73.1	SR	51.7	SS	36.7														
CRT	.9407	CRS	-.9994	CST	-.9886														
LSA	95.3	NSA	17.1	SSA	.1														
EL1	68.4	EL2	14.5	ALF	34.72														

LAUNCH DATE MAY 9 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 10 1972

HELIOCENTRIC CONIC — DISTANCE 574.750 — EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.304	GAL	-1.78	AZL	90.72	HCA	182.60	SMA	185.84	ECC	.18990	INC	.7021	V1	29.505
RP	220.55	LAP	.03	LOP	50.34	VP	22.122	GAP	2.01	AZP	89.29	TAL	348.79	TAP	171.39	RCA	150.55	APO	221.13	V2	24.925
RC	190.711	GL	-7.36	GP	-8.12	ZAL	116.64	ZAP	62.95	ETS	174.99	ZAE	103.43	ETE	182.40	ZAC	94.27	ETC	271.89	LVI	-2.20

PLANETOCENTRIC CONIC

C3	9.905	VHL	3.147	DLA	-12.84	RAL	348.74	RAD	6638.0	VEL	11.402	PTH	6.45	VHP	3.099	DPA	-31.14	RAP	296.56	ECC	1.1630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 33	2722.42	-18.31	76.28	198.36	134.72	17 0 55	1722.4	-.14	60.05
60.00	17 9 21	2579.33	-14.40	66.97	201.95	128.06	17 52 21	1579.3	1.54	48.78
70.00	18 17 42	2378.39	-10.74	53.34	204.61	122.62	18 57 21	1378.4	3.14	33.70
80.00	19 41 0	2117.67	-7.98	35.21	206.27	118.87	20 16 18	1117.7	4.37	14.67
90.00	21 9 6	1835.19	-6.92	14.88	206.84	117.49	21 39 39	833.5	4.84	354.04
100.00	22 23 52	1554.14	-7.98	356.58	206.27	118.87	22 50 24	592.1	4.37	336.04
110.00	23 17 9	1425.20	-10.74	342.25	204.61	122.62	23 40 54	425.2	3.14	322.62

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.4389	TRA	1.7812	TC3	-7.4602	BAU	.9925	SGT	5809.4	SGR	707.4	SG3	1483.2	ST	64.3	SR	12.6	SS	74.2
RDE	.1112	RRA	.2686	RC3	-.7245	FAU	.20153	RRT	.9663	RRF	.9987	RTF	.9701	CRT	.9660	CRS	-.9947	CST	-.9871
FDE	2.2376	FRA	6.6715	FC	-17.6151	BSP	9524	SGB	5852.4	R23	.2344	R13	.9710	LSA	98.6	MSA	8.1	SSA	.3
BDE	.4528	BRA	1.8013	BC3	7.4953	FSP	2598	SG1	5849.6	SG2	181.0	THA	6.72	EL1	65.5	EL2	3.2	ALF	10.77

LAUNCH DATE MAY 9 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC — DISTANCE 578.890 — EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.312	GAL	-1.86	AZL	91.06	HCA	183.71	SMA	185.97	ECC	.19065	INC	1.0511	V1	29.505
RP	220.93	LAP	.07	LOP	51.45	VP	22.086	GAP	1.86	AZP	88.95	TAL	348.36	TAP	172.07	RCA	150.52	APO	221.43	V2	24.884
RC	193.341	GL	-10.72	GP	-5.66	ZAL	117.01	ZAP	61.56	ETS	176.09	ZAE	102.13	ETE	181.66	ZAC	96.73	ETC	271.87	LVI	-4.45

PLANETOCENTRIC CONIC

C3	10.234	VHL	3.199	DLA	-15.67	RAL	350.73	RAD	6638.2	VEL	11.416	PTH	6.47	VHP	3.106	DPA	-28.73	RAP	295.95	ECC	1.1684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 46	2670.98	-15.83	73.91	200.60	135.48	17 19 17	1671.0	2.45	57.91
60.00	17 32 9	2518.40	-11.82	63.89	204.33	128.81	18 14 7	1518.4	4.22	45.87
70.00	18 44 45	2304.94	-8.02	49.39	207.14	123.31	19 23 10	1304.9	5.93	29.85
80.00	20 12 18	2030.91	-5.10	30.38	208.93	119.46	20 46 9	1030.9	7.26	9.86
90.00	21 42 25	1740.24	-3.97	9.63	209.55	118.02	22 11 25	740.2	7.78	348.77
100.00	22 55 10	1505.38	-5.10	351.75	208.93	119.46	23 20 16	505.4	7.26	331.23
110.00	23 44 12	1351.75	-8.02	338.31	207.14	123.31	24 6 44	351.8	5.93	318.76

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.3695	TRA	1.9218	TC3	-7.3908	BAU	1.0131	SGT	5964.7	SGR	464.4	SG3	1473.0	ST	63.4	SR	9.0	SS	71.7
RDE	.0836	RRA	.1760	RC3	-.4587	FAU	.19942	RRT	.9592	RRF	.9941	RTF	.9711	CRT	.9047	CRS	-.9779	CST	-.9733
FDE	2.0945	FRA	6.8017	FC	-16.8699	BSP	9881	SGB	5982.8	R23	.2198	R13	.9715	LSA	95.5	MSA	11.3	SSA	.3
BDE	.3789	BRA	1.9298	BC3	7.4050	FSP	2599	SG1	5981.3	SG2	131.0	THA	4.27	EL1	63.9	EL2	3.8	ALF	7.31

LAUNCH DATE MAY 9 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC — DISTANCE 583.028 — EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.319	GAL	-1.93	AZL	91.24	HCA	184.82	SMA	186.10	ECC	.19143	INC	1.2367	V1	29.505
RP	221.31	LAP	.10	LOP	52.56	VP	22.051	GAP	1.71	AZP	88.77	TAL	347.93	TAP	172.75	RCA	150.48	APO	221.73	V2	24.842
RC	195.978	GL	-12.44	GP	-4.32	ZAL	117.46	ZAP	60.30	ETS	176.70	ZAE	100.79	ETE	181.26	ZAC	98.07	ETC	271.86	LVI	-5.65

PLANETOCENTRIC CONIC

C3	10.516	VHL	3.243	DLA	-16.99	RAL	352.05	RAD	6638.3	VEL	11.428	PTH	6.48	VHP	3.125	DPA	-27.42	RAP	295.61	ECC	1.1731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 45 27	2649.22	-14.77	72.92	202.20	135.76	17 29 36	1649.2	3.54	56.99
60.00	17 44 35	2491.96	-10.69	62.58	206.02	129.09	18 26 7	1492.0	5.38	44.59
70.00	18 59 22	2272.15	-6.79	47.65	208.92	123.55	19 37 14	1272.2	7.17	28.11
80.00	20 29 9	1991.13	-3.77	28.18	210.79	119.64	21 2 20	991.1	8.57	7.63
90.00	22 0 20	1696.95	-2.58	7.21	211.44	118.17	22 28 37	696.9	9.12	346.30
100.00	23 12 1	1465.60	-3.77	349.55	210.79	119.64	23 36 26	465.6	8.57	329.00
110.00	0 2 44	1318.97	-6.79	336.57	208.92	123.55	0 24 43	319.0	7.17	317.03

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.3412	TRA	2.0329	TC3	-7.3976	BAU	1.0410	SGT	6122.7	SGR	333.6	SG3	1450.2	ST	64.3	SR	7.3	SS	69.6
RDE	.0730	RRA	.1215	RC3	-.3244	FAU	.19827	RRT	.9450	RRF	.9815	RTF	.9532	CRT	.8252	CRS	-.9431	CST	-.9699
FDE	1.9868	FRA	6.7896	FC	-16.3222	BSP	10107	SGB	6131.8	R23	.1880	R13	.9734	LSA	94.2	MSA	12.8	SSA	.4
BDE	.3489	BRA	2.0365	BC3	7.4047	FSP	2514	SG1	6130.8	SG2	108.9	THA	2.95	EL1	64.6	EL2	4.1	ALF	5.36

LAUNCH DATE MAY 9 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC — DISTANCE 587.156 — EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.327	GAL	-2.01	AZL	91.35	HCA	185.92	SMA	186.24	ECC	.19224	INC	1.3492	V1	29.505
RP	221.69	LAP	.14	LOP	53.66	VP	22.016	GAP	1.56	AZP	88.65	TAL	347.50	TAP	173.42	RCA	150.43	APO	222.04	V2	24.801
RC	198.621	GL	-13.45	GP	-3.49	ZAL	117.96	ZAP	59.13	ETS	177.08	ZAE	99.47	ETE	181.02	ZAC	98.91	ETC	271.86	LVI	-6.41

PLANETOCENTRIC CONIC

C3	10.771	VHL	3.282	DLA	-17.65	RAL	353.07	RAD	6638.4	VEL	11.439	PTH	6.49	VHP	3.148	DPA	-26.61	RAP	295.42	ECC	1.1773

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 20	2640.24	-14.33	72.52	203.49	135.87	17 36 21	1640.2	3.99	56.62
60.00	17 52 24	2480.55	-10.20	62.01	207.36	129.20	18 33 44	1480.5	5.88	44.04
70.00	19 8 19	2257.37	-6.23	46.87	210.32	123.65	19 45 56	1257.4	7.72	27.33
80.00	20 39 18	1972.56	-3.14	27.16	212.23	119.71	21 12 11	972.6	9.17	6.59
90.00	22 11 6	1676.44	-1.92	6.06	212.91	118.22	22 39 3	676.4	9.75	345.12
100.00	23 22 10	1447.04	-3.14	348.53	212.23	119.71	23 46 17	447.0	9.17	327.95
110.00	0 11 41	1304.19	-6.23	335.79	210.32	123.65	0 33 25	304.2	7.72	316.24

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.3393	TRA	2.1417	TC3	-7.4101	BAU	1.0676	SGT	6277.3	SGR	255.2	SG3	1424.8	ST	66.3	SR	6.7	SS	70.0
RDE	.0715	RRA	.0869	RC3	-.2370	FAU	.19233	RRT	.9085	RRF	.9526	RTF	.9713	CRT	.7380	CRS	-.8985	CST	-.9588
FDE	2.0075	FRA	6.8327	FC	-15.4588	BSP	10388	SGB	6282.5	R23	.1674	R13	.9714	LSA	95.6	MSA	14.3	SSA	.4
BDE	.3467	BRA	2.1435	BC3	7.4139	FSP	2519	SG1	6281.5	SG2	106.5	THA	2.12	EL1	66.5	EL2	4.5	ALF	4.27

LAUNCH DATE MAY 9 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 901.408 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.336	GAL	-2.07	AZL	91.43	HCA	187.02	SNA	186.37	ECC	.19302	INC	1.4300	V1	29.505
RP	222.07	LAP	.17	LOP	54.76	VP	21.981	GAP	1.39	AZP	88.58	TAL	347.18	TAP	174.17	RCA	150.40	APO	222.35	V2	24.759
RC	201.270	GL	-14.10	GP	-2.91	ZAL	118.36	ZAP	57.86	ETS	177.33	ZAE	98.03	ETE	180.84	ZAC	99.49	ETC	271.83	LVI	-6.89

PLANETOCENTRIC CONIC

C3	10.983	VHL	3.314	DLA	-18.05	RAL	383.83	RAD	6638.8	VEL	11.449	PTH	6.80	VHP	3.177	DPA	-26.06	RAP	295.16	ECC	1.1808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 1	2638.93	-14.12	72.33	204.45	135.92	17 40 57	1638.9	4.20	56.44
60.00	17 57 38	2474.78	-9.95	61.73	208.37	129.26	18 38 52	1474.7	6.13	43.76
70.00	19 14 15	2249.51	-5.94	46.45	211.36	123.70	19 51 44	1249.5	8.02	26.91
80.00	20 46 0	1962.34	-2.80	26.60	213.31	119.74	21 10 42	962.3	9.51	6.01
90.00	22 18 11	1665.00	-1.55	5.43	214.00	118.24	22 45 56	665.0	10.10	344.46
100.00	23 28 52	1436.81	-2.80	347.97	213.31	119.74	23 52 49	436.8	9.51	327.36
110.00	0 17 37	1296.33	-5.94	338.37	211.36	123.70	0 39 13	296.3	8.02	315.83

DIFFERENTIAL CORRECTIONS

TDE	-.1490	TRA	1.7270	TC3	-9.1577	BAU	1.3456
RDE	.0272	RRA	.0209	RC3	-.3456	FAU	.33491
FDE	-1.0676	FRA	3.6255	FC	-26.3987	BSP	4437
BDE	.1514	BRA	1.7271	BC3	9.1642	FSP	-813

MID-COURSE EXECUTION ACCURACY

SGT	6839.0	SGR	236.9	SG3	1634.7				
RRT	.9242	RRF	.9357	RTF	.9933				
SGB	6843.1	R23	.0406	R13	.9933				
SG1	6842.5	SG2	90.4	THA	1.83				

ORBIT DETERMINATION ACCURACY

ST	49.7	SR	2.4	SS	38.9		
CRT	-.0029	CRS	.4291	CST	-.9007		
LSA	61.6	MSA	13.8	SSA	.5		
EL1	49.7	EL2	2.4	ALF	179.99		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 595.403 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.344	GAL	-2.16	AZL	91.49	HCA	188.12	SNA	186.81	ECC	.19392	INC	1.4876	V1	29.505
RP	222.46	LAP	.21	LOP	55.86	VP	21.946	GAP	1.26	AZP	88.53	TAL	346.61	TAP	174.73	RCA	150.35	APO	222.68	V2	24.717
RC	203.922	GL	-14.51	GP	-2.50	ZAL	119.05	ZAP	56.91	ETS	177.54	ZAE	96.89	ETE	180.73	ZAC	99.90	ETC	271.87	LVI	-7.33

PLANETOCENTRIC CONIC

C3	11.239	VHL	3.352	DLA	-18.12	RAL	384.72	RAD	6638.7	VEL	11.460	PTH	6.81	VHP	3.199	DPA	-25.63	RAP	295.25	ECC	1.1850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 51	2638.36	-14.29	72.48	205.58	135.88	17 44 51	1638.4	4.03	56.58
60.00	18 1 33	2477.94	-10.09	61.88	209.52	129.23	18 42 51	1477.9	5.99	43.92
70.00	19 18 17	2252.37	-6.05	46.60	212.53	123.68	19 55 50	1252.4	7.91	27.06
80.00	20 50 10	1964.83	-2.88	26.73	214.50	119.73	21 22 54	964.8	9.43	6.15
90.00	22 22 24	1667.29	-1.62	5.55	215.19	118.24	22 50 11	667.3	10.03	344.59
100.00	23 33 1	1439.30	-2.88	348.10	214.50	119.73	23 57 1	439.3	9.43	327.92
110.00	0 21 38	1299.19	-6.05	338.52	212.53	123.68	0 43 19	299.2	7.91	315.98

DIFFERENTIAL CORRECTIONS

TDE	.3797	TRA	2.3656	TC3	-7.4119	BAU	1.1138
RDE	.0753	RRA	.0409	RC3	-.1423	FAU	.18204
FDE	2.0485	FRA	6.8304	FC	-14.0228	BSP	11099
BDE	.3671	BRA	2.3660	BC3	7.4133	FSP	2469

MID-COURSE EXECUTION ACCURACY

SGT	6573.7	SGR	176.2	SG3	1370.3				
RRT	.7514	RRF	.8083	RTF	.9711				
SGB	6576.1	R23	.1142	R13	.9712				
SG1	6575.1	SG2	116.3	THA	1.15				

ORBIT DETERMINATION ACCURACY

ST	72.0	SR	6.5	SS	70.3		
CRT	.5964	CRS	-.8013	CST	-.9578		
LSA	99.7	MSA	19.4	SSA	.6		
EL1	72.1	EL2	5.2	ALF	3.11		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 599.517 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.352	GAL	-2.24	AZL	91.53	HCA	189.22	SNA	186.66	ECC	.19480	INC	1.5319	V1	29.505
RP	222.84	LAP	.25	LOP	56.85	VP	21.911	GAP	1.12	AZP	88.49	TAL	348.16	TAP	175.37	RCA	150.30	APO	223.02	V2	24.675
RC	206.578	GL	-14.79	GP	-2.18	ZAL	119.62	ZAP	55.86	ETS	177.69	ZAE	95.83	ETE	180.69	ZAC	100.21	ETC	271.89	LVI	-7.65

PLANETOCENTRIC CONIC

C3	11.466	VHL	3.386	DLA	-18.12	RAL	355.44	RAD	6638.8	VEL	11.469	PTH	6.52	VHP	3.226	DPA	-25.31	RAP	295.25	ECC	1.1887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 44	2643.41	-14.49	72.66	206.50	135.83	17 47 47	1643.4	3.83	56.75
60.00	18 4 26	2481.97	-10.26	62.08	210.46	129.19	18 45 48	1482.0	5.82	44.11
70.00	19 21 11	2256.38	-6.20	46.82	213.49	123.65	19 58 47	1256.4	7.76	27.27
80.00	20 53 4	1968.80	-3.02	26.95	215.46	119.72	21 25 53	968.8	9.30	6.37
90.00	22 25 18	1671.25	-1.75	5.77	216.16	118.23	22 53 9	671.2	9.91	344.82
100.00	23 35 56	1443.27	-3.02	348.32	215.46	119.72	23 59 59	443.3	9.30	327.74
110.00	0 24 33	1303.20	-6.20	338.73	213.49	123.65	0 46 16	303.2	7.76	316.19

DIFFERENTIAL CORRECTIONS

TDE	.4129	TRA	2.4609	TC3	-7.4017	BAU	1.1347
RDE	.0794	RRA	.0248	RC3	-.1134	FAU	.17564
FDE	2.1040	FRA	6.8392	FC	-13.2620	BSP	11503
BDE	.4205	BRA	2.4610	BC3	7.4026	FSP	2467

MID-COURSE EXECUTION ACCURACY

SGT	6717.4	SGR	180.8	SG3	1343.0				
RRT	.6218	RRF	.6789	RTF	.9701				
SGB	6719.3	R23	.0978	R13	.9701				
SG1	6718.2	SG2	126.0	THA	.88				

ORBIT DETERMINATION ACCURACY

ST	75.3	SR	6.8	SS	71.2		
CRT	.5488	CRS	-.7638	CST	-.9581		
LSA	102.6	MSA	19.8	SSA	.6		
EL1	75.4	EL2	5.6	ALF	2.83		

LAUNCH DATE MAY 9 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 24 1972

HELIOCENTRIC CONIC DISTANCE 603.630 EARTH TO MARS

RL	181.01	LAL	.00	LOL	227.74	VL	32.361	GAL	-2.33	AZL	91.57	HCA	190.31	SNA	186.80	ECC	.19570	INC	1.5659	V1	29.505
RP	223.23	LAP	.28	LOP	58.04	VP	21.877	GAP	.97	AZP	88.46	TAL	345.71	TAP	176.01	RCA	150.25	APO	223.36	V2	24.633
RC	209.236	GL	-14.98	GP	-1.93	ZAL	120.20	ZAP	54.84	ETS	177.81	ZAE	94.40	ETE	180.58	ZAC	100.45	ETC	271.91	LVI	-7.91

PLANETOCENTRIC CONIC

C3	11.692	VHL	3.419	DLA	-18.04	RAL	386.11	RAD	6638.9	VEL	11.479	PTH	6.83	VHP	3.254	DPA	-25.05	RAP	295.30	ECC	1.1924

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 5	2649.13	-14.77	72.92	207.36	135.76	17 50 14	1649.1	3.54	56.99
60.00	18 6 40	2487.98	-10.52	62.38	211.34	129.13	18 48 8	1488.0	5.55	44.40
70.00	19 23 16	2262.81	-6.44	47.16	214.38	123.61	20 0 59	1262.8	7.52	27.62
80.00	20 55 0	1975.70	-3.25	27.33	216.35	119.70	21 27 56	975.7	9.07	6.76
90.00	22 27 10	1678.40	-1.98	6.17	217.05	118.22	22 55 8	678.4	9.69	345.23
100.00	23 37 52	1450.18	-3.25	348.70	216.35	119.70	24 2 2	450.2	9.07	328.13
110.00	0 26 36	1309.62	-6.44	338.07	214.38	123.61	0 48 28	309.6	7.52	316.63

DIFFERENTIAL CORRECTIONS

TDE	.4293	TRA	2.5757	TC3	-7.4597	BAU	1.1061
RDE	.0835	RRA	.0099	RC3	-.0948	FAU	.17378
FDE	2.0699	FRA	6.7565	FC	-12.8675	BSP	11638
BDE	.4374	BRA	2.5758	BC3	7.4603	FSP	2368

MID-COURSE EXECUTION ACCURACY

SGT	6866.4	SGR	155.1	SG3	1313.8				
RRT	.4792	RRF	.5354	RTF	.9718				
SGB	6868.1	R23	.0794	R13	.9718				
SG1	6866.8	SG2	136.2	THA	.68				

ORBIT DETERMINATION ACCURACY

ST	77.4	SR	7.0	SS	70.1		
CRT	.4986	CRS	-.7226	CST	-.9589		
LSA	103.4	MSA	15.9	SSA	.6		
EL1	77.5	EL2	6.1	ALF	2.60		

LAUNCH DATE MAY 8 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 607.736 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.370	GAL	-2.41	AZL	91.59	HCA	191.39	SMA	186.95	ECC	.19662	INC	1.5931	V1	29.505
RP	223.62	LAP	.31	LOP	59.13	VP	21.842	GAP	.82	AZP	88.44	TAL	345.25	TAP	176.64	RCA	150.19	APO	223.71	V2	24.592
RC	211.896	GL	-15.10	GP	-1.73	ZAL	120.78	ZAP	53.86	ETS	177.91	ZAE	93.20	ETE	180.52	ZAC	100.65	ETC	271.94	LVI	-8.13

PLANETOCENTRIC CONIC

C3 11.921 VHL 3.453 DLA -17.90 RAL 356.75 RAD 6639.0 VEL 11.489 PTH 6.54 VHP 3.282 DPA -24.84 RAP 295.38 ECC 1.1962

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 3	2656.11	-15.11	73.23	208.20	135.67	17 52 19	1656.1	3.19	57.28
60.00	18 8 26	2495.50	-10.84	62.75	212.19	129.06	18 50 2	1495.5	5.22	44.76
70.00	19 24 47	2271.05	-6.75	47.59	215.23	123.56	20 2 38	1271.1	7.21	28.05
80.00	20 56 15	1984.79	-3.55	27.83	217.20	119.66	21 29 20	984.8	8.78	7.27
90.00	22 28 17	1687.92	-2.29	6.71	217.91	118.19	22 56 25	687.9	9.40	345.78
100.00	23 39 7	1459.[illegible]	-3.55	349.20	217.20	119.66	24 3 26	459.3	8.78	328.64
110.00	0 28 10	131[illegible]	-6.75	336.51	215.23	123.56	0 50 7	317.9	7.21	316.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4568	TRA	2.6796	TC3	-7.4860	BAU	1.1931	SGT	7009.4	SGR	157.0	SG3	1285.6	ST	80.1	SR	7.4	SS	70.0
RDE	.0886	RRA	-.0026	RC3	-.0794	FAU	.16953	RRT	.3399	RRF	.3949	RTF	.9712	CRT	.4664	CRS	-.6947	CST	-.9597
FDE	2.0849	FRA	6.7158	FC	-12.3119	BSP	11879	SGB	7011.2	R23	.0688	R13	.9712	LSA	105.4	MSA	16.1	SSA	.7
BDE	.4653	BRA	2.6796	BC3	7.4864	FSP	2317	SG1	7009.6	SG2	147.7	THA	.44	EL1	80.1	EL2	6.5	ALF	2.47

LAUNCH DATE MAY 9 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 611.837 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.379	GAL	-2.49	AZL	91.62	HCA	192.47	SMA	187.10	ECC	.19757	INC	1.6162	V1	29.505
RP	224.01	LAP	.35	LOP	60.21	VP	21.808	GAP	.67	AZP	88.42	TAL	344.79	TAP	177.26	RCA	150.14	APO	224.07	V2	24.550
RC	214.558	GL	-15.18	GP	-1.57	ZAL	121.38	ZAP	52.91	ETS	177.99	ZAE	92.02	ETE	180.48	ZAC	100.81	ETC	271.97	LVI	-8.33

PLANETOCENTRIC CONIC

C3 12.153 VHL 3.486 DLA -17.72 RAL 357.37 RAD 6639.1 VEL 11.499 PTH 6.55 VHP 3.311 DPA -24.65 RAP 295.50 ECC 1.2000

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 44	2664.02	-15.49	73.59	209.01	135.57	17 54 8	1664.0	2.80	57.62
60.00	18 9 52	2504.09	-11.21	63.18	213.01	128.97	18 51 36	1504.1	4.85	45.18
70.00	19 25 54	2280.60	-7.11	48.10	216.05	123.49	20 3 54	1280.6	6.85	28.56
80.00	20 57 1	1995.43	-3.91	28.42	218.03	119.62	21 30 16	995.4	8.43	7.87
90.00	22 28 52	1699.12	-2.65	7.33	218.72	118.17	22 57 11	699.1	9.06	346.42
100.00	23 39 52	1469.90	-3.91	349.79	218.03	119.62	24 4 22	469.9	8.43	329.24
110.00	0 29 16	1327.42	-7.11	337.02	216.05	123.49	0 51 23	327.4	6.85	317.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4891	TRA	2.7872	TC3	-7.5014	BAU	1.2188	SGT	7150.2	SGR	163.6	SG3	1258.1	ST	82.9	SR	7.8	SS	70.0
RDE	.0942	RRA	-.0137	RC3	-.0677	FAU	.16523	RRT	.2202	RRF	.2730	RTF	.9711	CRT	.4451	CRS	-.6738	CST	-.9610
FDE	2.1041	FRA	6.6771	FC	-11.7706	BSP	12141	SGB	7152.1	R23	.0606	R13	.9711	LSA	107.6	MSA	16.3	SSA	.7
BDE	.4980	BRA	2.7872	BC3	7.5017	FSP	2270	SG1	7150.3	SG2	159.6	THA	.29	EL1	83.0	EL2	6.9	ALF	2.40

LAUNCH DATE MAY 9 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 615.932 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.387	GAL	-2.58	AZL	91.64	HCA	193.55	SMA	187.26	ECC	.19853	INC	1.6347	V1	29.505
RP	224.40	LAP	.38	LOP	61.29	VP	21.775	GAP	.53	AZP	88.41	TAL	344.32	TAP	177.88	RCA	150.08	APO	224.44	V2	24.508
RC	217.222	GL	-15.21	GP	-1.43	ZAL	121.97	ZAP	51.98	ETS	178.07	ZAE	90.86	ETE	180.44	ZAC	100.93	ETC	272.01	LVI	-8.52

PLANETOCENTRIC CONIC

C3 12.389 VHL 3.520 DLA -17.50 RAL 357.97 RAD 6639.3 VEL 11.509 PTH 6.56 VHP 3.340 DPA -24.49 RAP 295.65 ECC 1.2039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 12	2672.64	-15.91	73.98	209.81	135.45	17 55 45	1672.6	2.36	57.98
60.00	18 11 2	2513.52	-11.61	63.65	213.81	128.87	18 52 56	1513.5	4.43	45.63
70.00	19 26 41	2291.15	-7.51	48.66	216.86	123.42	20 4 52	1291.1	6.45	29.12
80.00	20 57 24	2007.24	-4.31	29.07	218.82	119.57	21 30 51	1007.2	8.04	8.53
90.00	22 29 3	1711.58	-3.05	8.03	219.52	118.13	22 57 34	711.6	8.67	347.13
100.00	23 40 16	1481.71	-4.31	350.44	218.82	119.57	24 4 57	481.7	8.04	329.90
110.00	0 30 3	1337.96	-7.51	337.58	216.86	123.42	0 52 21	338.0	6.45	318.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5197	TRA	2.8916	TC3	-7.5240	BAU	1.2462	SGT	7288.9	SGR	173.1	SG3	1230.2	ST	85.6	SR	8.2	SS	69.9
RDE	.1002	RRA	-.0239	RC3	-.0587	FAU	.16120	RRT	.1234	RRF	.1739	RTF	.9708	CRT	.4287	CRS	-.6576	CST	-.9620
FDE	2.1169	FRA	6.6283	FC	-11.2642	BSP	12362	SGB	7290.9	R23	.0545	R13	.9708	LSA	109.6	MSA	16.4	SSA	.8
BDE	.5293	BRA	2.8917	BC3	7.5242	FSP	2221	SG1	7288.9	SG2	171.8	THA	.17	EL1	85.7	EL2	7.4	ALF	2.36

LAUNCH DATE MAY 9 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 620.022 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.397	GAL	-2.67	AZL	91.65	HCA	194.63	SMA	187.41	ECC	.19952	INC	1.6515	V1	29.505
RP	224.79	LAP	.42	LOP	62.36	VP	21.741	GAP	.38	AZP	88.40	TAL	343.86	TAP	178.48	RCA	150.02	APO	224.81	V2	24.466
RC	219.886	GL	-15.22	GP	-1.31	ZAL	122.57	ZAP	51.09	ETS	178.13	ZAE	89.73	ETE	180.41	ZAC	101.04	ETC	272.06	LVI	-8.70

PLANETOCENTRIC CONIC

C3 12.630 VHL 3.554 DLA -17.25 RAL 358.55 RAD 6639.4 VEL 11.520 PTH 6.57 VHP 3.369 DPA -24.35 RAP 295.83 ECC 1.2079

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 31	2681.82	-16.35	74.40	210.60	135.33	17 57 13	1681.8	1.90	58.36
60.00	18 12 1	2523.60	-12.04	64.15	214.60	128.76	18 54 4	1523.6	3.99	46.12
70.00	19 27 14	2302.45	-7.93	49.26	217.64	123.33	20 5 37	1302.5	6.03	29.71
80.00	20 57 30	2019.94	-4.74	29.77	219.60	119.51	21 31 10	1019.9	7.62	9.25
90.00	22 28 56	1724.99	-3.48	8.78	220.30	118.08	22 57 41	725.0	8.26	347.90
100.00	23 40 22	1494.41	-4.74	351.14	219.60	119.51	24 5 17	494.4	7.62	330.61
110.00	0 30 37	1349.27	-7.93	338.18	217.64	123.33	0 53 6	349.3	6.03	318.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5575	TRA	3.0034	TC3	-7.5273	BAU	1.2711	SGT	7425.6	SGR	184.3	SG3	1203.4	ST	88.7	SR	8.6	SS	69.9
RDE	.1065	RRA	-.0333	RC3	-.0518	FAU	.15686	RRT	.0485	RRF	.0966	RTF	.9706	CRT	.4210	CRS	-.6465	CST	-.9636
FDE	2.1373	FRA	6.5887	FC	-10.7519	BSP	12638	SGB	7427.9	R23	.0495	R13	.9706	LSA	112.0	MSA	16.5	SSA	.8
BDE	.5675	BRA	3.0036	BC3	7.5275	FSP	2178	SG1	7425.6	SG2	184.1	THA	.07	EL1	88.8	EL2	7.8	ALF	2.36

LAUNCH DATE MAY 9 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 3 1972

HELIOCENTRIC CONIC DISTANCE 626.106 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.406	GAL	-2.75	AZL	91.07	HCA	199.78	SNA	187.87	ECC	.20892	INC	1.6658	VI	29.505
RP	225.10	LAP	.45	LOP	63.43	VP	21.706	GAP	.23	AZP	88.40	TAL	343.39	TAP	179.88	RCA	149.98	APO	225.10	V2	24.424
RC	222.851	GL	-15.20	GP	-1.21	ZAL	123.17	ZAP	90.23	ETS	178.19	ZAE	88.62	ETE	180.38	ZAC	101.13	ETC	272.11	LVI	-8.87

PLANETOCENTRIC CONIC

C3	12.878	VHL	3.589	DLA	-16.99	RAL	359.12	RAD	6638.5	VEL	11.530	PTH	6.58	VHP	3.389	DPA	-24.21	RAP	296.03	ECC	1.2119

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 42	2691.45	-16.82	74.84	211.37	135.19	17 58 33	1691.9	1.42	58.76
60.00	18 12 50	2534.19	-12.49	64.69	215.38	128.63	18 55 4	1534.2	3.63	46.62
70.00	19 27 37	2314.36	-8.37	49.89	218.42	123.23	20 6 11	1314.4	5.58	30.34
80.00	20 57 24	2033.32	-5.18	30.51	220.38	119.45	21 31 17	1033.3	7.18	9.89
90.00	22 28 36	1739.13	-3.93	9.57	221.07	118.03	22 57 35	739.1	7.82	348.70
100.00	23 40 16	1507.79	-5.18	351.88	220.38	119.45	24 5 24	507.8	7.18	331.36
110.00	0 30 59	1361.18	-8.37	338.81	218.42	123.23	0 53 40	361.2	5.58	319.26

DIFFERENTIAL CORRECTIONS

TDE	.5953	TRA	3.1149	TC3	-7.5298	BAU	1.2963
RDE	.1130	RRA	-.0421	RC3	-.0465	FAU	.15262
FDE	2.1360	FRA	6.5455	FC3	-10.2603	BSP	12898
BDE	.6059	BRA	3.1152	BC3	7.5298	FSP	2135

MID-COURSE EXECUTION ACCURACY

SGT	7559.8	SGR	196.5	SG3	1176.7		
RRT	-.0091	RRF	.0371	RTF	.9702		
SG8	7562.4	R23	-.0459	R13	-.9702		
SG1	7559.8	SG2	196.5	THA	179.99		

ORBIT DETERMINATION ACCURACY

ST	91.7	SR	9.1	SS	69.9
CRT	.4188	CRS	-.6388	CST	-.9650
LSA	114.4	NSA	16.6	SSA	.8
EL1	91.8	EL2	8.3	ALP	2.38

LAUNCH DATE MAY 9 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 5 1972

HELIOCENTRIC CONIC DISTANCE 628.185 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.415	GAL	-2.84	AZL	91.00	HCA	196.77	SNA	187.73	ECC	.20185	INC	1.6782	VI	29.505
RP	225.57	LAP	.48	LOP	64.80	VP	21.674	GAP	.08	AZP	88.39	TAL	342.91	TAP	179.88	RCA	149.89	APO	225.57	V2	24.382
RC	225.217	GL	-15.17	GP	-1.13	ZAL	123.77	ZAP	40.39	ETS	178.24	ZAE	87.54	ETE	180.37	ZAC	101.21	ETC	272.17	LVI	-9.04

PLANETOCENTRIC CONIC

C3	13.131	VHL	3.624	DLA	-16.71	RAL	359.68	RAD	6639.6	VEL	11.541	PTH	6.59	VHP	3.429	DPA	-24.09	RAP	296.27	ECC	1.2181

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 46	2701.45	-17.30	75.30	212.15	135.04	17 59 47	1701.4	.92	59.18
60.00	18 13 32	2548.19	-12.96	65.24	216.16	128.50	18 55 57	1548.2	3.04	47.15
70.00	19 27 50	2326.74	-8.83	50.56	219.19	123.13	20 6 37	1326.7	5.11	30.99
80.00	20 57 8	2047.24	-5.65	31.28	221.14	119.37	21 31 15	1047.2	6.72	10.77
90.00	22 26 5	1753.83	-4.40	10.40	221.82	117.96	22 57 19	753.8	7.36	349.84
100.00	23 40 0	1521.71	-5.65	352.65	221.14	119.37	24 5 22	521.7	6.72	332.14
110.00	0 31 12	1373.86	-8.83	339.47	219.19	123.13	0 54 6	373.8	5.11	319.01

DIFFERENTIAL CORRECTIONS

TDE	.6380	TRA	3.2277	TC3	-7.5290	BAU	1.3217
RDE	.1199	RRA	-.0804	RC3	-.0486	FAU	.14847
FDE	2.1739	FRA	6.9002	FC3	-9.7885	BSP	13146
BDE	.6462	BRA	3.2281	BC3	7.5290	FSP	2090

MID-COURSE EXECUTION ACCURACY

SGT	7692.4	SGR	209.3	SG3	1180.4		
RRT	-.0528	RRF	-.0083	RTF	.9699		
SG8	7695.3	R23	-.0430	R13	-.9699		
SG1	7692.4	SG2	209.0	THA	179.92		

ORBIT DETERMINATION ACCURACY

ST	94.7	SR	9.6	SS	69.8
CRT	.4188	CRS	-.6338	CST	-.9664
LSA	118.9	NSA	16.7	SSA	.9
EL1	94.8	EL2	8.7	ALP	2.42

LAUNCH DATE MAY 9 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 7 1972

HELIOCENTRIC CONIC DISTANCE 632.287 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.424	GAL	-2.93	AZL	91.00	HCA	197.03	SNA	187.00	ECC	.20880	INC	1.6867	VI	29.505
RP	225.96	LAP	.52	LOP	66.66	VP	21.641	GAP	-.07	AZP	88.38	TAL	342.44	TAP	180.87	RCA	149.83	APO	225.96	V2	24.340
RC	227.883	GL	-15.12	GP	-1.08	ZAL	124.37	ZAP	40.88	ETS	178.28	ZAE	86.47	ETE	180.38	ZAC	101.27	ETC	272.23	LVI	-9.20

PLANETOCENTRIC CONIC

C3	13.391	VHL	3.659	DLA	-16.42	RAL	.23	RAD	6639.7	VEL	11.592	PTH	6.60	VHP	3.460	DPA	-23.97	RAP	296.53	ECC	1.2204

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 45	2711.78	-17.80	75.78	212.91	134.88	18 0 57	1711.7	.40	59.61
60.00	18 14 7	2558.84	-13.44	65.81	216.93	128.36	18 56 44	1558.8	2.55	47.69
70.00	19 27 57	2339.51	-9.31	51.24	219.96	123.01	20 6 56	1339.5	4.62	31.67
80.00	20 56 44	2061.89	-6.13	32.08	221.89	119.28	21 31 6	1061.8	6.24	11.67
90.00	22 27 27	1768.97	-4.88	11.25	222.58	117.89	22 56 56	769.0	6.88	350.40
100.00	23 39 36	1536.08	-6.13	353.45	221.89	119.28	24 5 12	536.1	6.24	332.94
110.00	0 31 19	1386.33	-9.31	340.16	219.96	123.01	0 54 25	386.3	4.62	320.88

DIFFERENTIAL CORRECTIONS

TDE	.6732	TRA	3.3396	TC3	-7.5327	BAU	1.3488
RDE	.1209	RRA	-.0584	RC3	-.0506	FAU	.14456
FDE	2.1889	FRA	6.4529	FC3	-9.3498	BSP	13367
BDE	.6851	BRA	3.3401	BC3	7.5328	FSP	2047

MID-COURSE EXECUTION ACCURACY

SGT	7824.3	SGR	222.3	SG3	1124.8		
RRT	-.0962	RRF	-.0428	RTF	.9694		
SG8	7827.4	R23	-.0409	R13	-.9694		
SG1	7824.3	SG2	221.4	THA	179.86		

ORBIT DETERMINATION ACCURACY

ST	97.6	SR	10.0	SS	68.7
CRT	.4184	CRS	-.6308	CST	-.9676
LSA	119.2	NSA	16.9	SSA	.9
EL1	97.7	EL2	9.1	ALP	2.47

LAUNCH DATE MAY 9 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 9 1972

HELIOCENTRIC CONIC DISTANCE 636.324 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.434	GAL	-3.02	AZL	91.70	HCA	198.89	SNA	188.08	ECC	.20366	INC	1.6986	VI	29.505
RP	226.35	LAP	.55	LOP	66.62	VP	21.609	GAP	-.22	AZP	88.39	TAL	341.98	TAP	180.88	RCA	149.76	APO	226.36	V2	24.299
RC	230.548	GL	-15.06	GP	-.98	ZAL	124.97	ZAP	47.80	ETS	178.33	ZAE	85.43	ETE	180.33	ZAC	101.32	ETC	272.30	LVI	-9.36

PLANETOCENTRIC CONIC

C3	13.659	VHL	3.696	DLA	-16.12	RAL	.77	RAD	6639.9	VEL	11.564	PTH	6.61	VHP	3.490	DPA	-23.86	RAP	296.81	ECC	1.2248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 40	2722.30	-18.30	76.27	213.68	134.72	18 2 2	1722.3	-.13	60.05
60.00	18 14 36	2568.16	-13.93	66.40	217.70	128.21	18 57 26	1568.2	2.03	48.25
70.00	19 27 56	2352.59	-9.79	51.94	220.72	122.88	20 7 10	1352.6	4.13	32.35
80.00	20 56 15	2076.28	-6.62	32.90	222.65	119.18	21 30 51	1076.3	5.75	12.30
90.00	22 26 42	1784.44	-5.37	12.12	223.33	117.81	22 56 27	784.4	6.39	351.27
100.00	23 39 7	1550.73	-6.62	354.26	222.65	119.18	24 4 57	550.7	5.75	333.75
110.00	0 31 20	1399.41	-9.79	340.86	220.72	122.88	0 54 39	399.4	4.13	321.27

DIFFERENTIAL CORRECTIONS

TDE	.7168	TRA	3.4567	TC3	-7.5198	BAU	1.3731
RDE	.1341	RRA	-.0660	RC3	-.0376	FAU	.14039
FDE	2.2068	FRA	6.4074	FC3	-8.8965	BSP	13635
BDE	.7293	BRA	3.4573	BC3	7.5196	FSP	2009

MID-COURSE EXECUTION ACCURACY

SGT	7952.8	SGR	238.3	SG3	1099.3		
RRT	-.1114	RRF	-.0691	RTF	.9689		
SG8	7956.0	R23	-.0392	R13	-.9689		
SG1	7952.6	SG2	233.8	THA	179.81		

ORBIT DETERMINATION ACCURACY

ST	100.8	SR	10.5	SS	69.7
CRT	.4192	CRS	-.6298	CST	-.9667
LSA	121.8	NSA	17.0	SSA	.9
EL1	100.9	EL2	9.8	ALP	2.53

LAUNCH DATE MAY 8 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 11 1972

HELIOCENTRIC CONIC DISTANCE 640.385 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.443	GAL	-3.12	AZL	91.71	HCA	199.95	SMA	188.22	ECC	.20475	INC	1.7073	V1	29.505
RP	226.74	LAP	.58	LOP	67.68	VP	21.578	GAP	-.37	AZP	88.39	TAL	341.48	TAP	181.43	RCA	149.68	APO	226.76	V2	24.257
RC	233.212	GL	-14.99	GP	-.92	ZAL	125.56	ZAP	47.03	ETS	178.37	ZAE	84.40	ETE	180.31	ZAC	101.37	ETC	272.38	LVI	-9.53

PLANETOCENTRIC CONIC

C3	13.933	VHL	3.733	DLA	-15.80	RAL	1.30	RAD	6640.0	VEL	11.576	PTH	6.62	VHP	3.521	DPA	-23.75	RAP	297.12	ECC	1.2293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 31	2733.07	-18.82	76.78	214.44	134.54	18 3 4	1733.1	-.67	60.50
60.00	18 15 5	2580.02	-14.43	67.01	218.46	128.05	18 58 5	1580.0	1.51	48.82
70.00	19 27 54	2365.91	-10.28	52.66	221.48	122.75	20 7 20	1365.9	3.62	33.05
80.00	20 55 41	2091.20	-7.11	33.73	223.40	119.07	21 30 32	1091.2	5.26	13.21
90.00	22 25 53	1800.7	-5.87	13.00	224.07	117.71	22 55 53	800.2	5.90	352.16
100.00	23 38 32	1569.67	-7.11	355.10	223.40	119.07	24 4 38	565.7	5.26	334.58
110.00	0 31 17	1412.73	-10.28	341.58	221.48	122.75	0 54 49	412.7	3.62	321.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7604	TRA	3.5746	TC3	-7.5062	BAU	1.3982	SGT	8079.7	SGR	248.3	SG3	1074.4	ST	103.9	SR	11.0	SS	69.6
RDE	.1416	RRA	-.0734	RC3	-.0363	FAU	.13633	RRT	-.1306	RRF	-.0890	RTF	.9684	CRT	.4236	CRS	-.6300	CST	-.9698
FDE	2.2230	FRA	6.3620	FC3	-8.4712	BSP	13872	SGB	8083.5	R23	-.0379	R13	-.9684	LSA	124.4	MSA	17.1	SSA	1.0
BDE	.7735	BRA	3.5754	BC3	7.5062	FSP	1966	SG1	8079.8	SG2	246.2	THA	179.77	EL1	104.0	EL2	10.0	ALF	2.59

LAUNCH DATE MAY 9 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 13 1972

HELIOCENTRIC CONIC DISTANCE 644.440 EARTH TO MARS

RL	151.01	LAL	.00	LOL	227.74	VL	32.453	GAL	-3.21	AZL	91.72	HCA	201.00	SMA	188.39	ECC	.20585	INC	1.7151	V1	29.505
RP	227.13	LAP	.61	LOP	68.73	VP	21.544	GAP	-.52	AZP	88.40	TAL	341.00	TAP	182.00	RCA	149.61	APO	227.17	V2	24.215
RC	235.874	GL	-14.91	GP	-.87	ZAL	126.16	ZAP	46.29	ETS	178.40	ZAE	83.40	ETE	180.30	ZAC	101.40	ETC	272.45	LVI	-9.69

PLANETOCENTRIC CONIC

C3	14.215	VHL	3.770	DLA	-15.49	RAL	1.83	RAD	6640.1	VEL	11.588	PTH	6.63	VHP	3.552	DPA	-23.65	RAP	297.45	ECC	1.2339

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 20	2744.02	-19.34	77.29	215.21	134.36	18 4 4	1744.0	-1.22	60.96
60.00	18 15 28	2592.07	-14.93	67.63	219.23	127.88	18 58 40	1592.1	.98	49.39
70.00	19 27 47	2379.45	-10.78	53.39	222.24	122.60	20 7 27	1379.4	3.10	33.76
80.00	20 55 3	2106.34	-7.61	34.57	224.15	118.96	21 30 9	1106.3	4.75	14.05
90.00	22 25 1	1816.12	-6.38	13.90	224.82	117.61	22 55 17	816.1	5.39	353.06
100.00	23 37 55	1580.81	-7.61	355.94	224.15	118.96	24 4 15	580.8	4.75	335.42
110.00	0 31 10	1426.26	-10.78	342.31	222.24	122.60	0 54 56	426.3	3.10	322.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8048	TRA	3.6936	TC3	-7.4913	BAU	1.4237	SGT	8205.5	SGR	261.3	SG3	1050.0	ST	107.0	SR	11.5	SS	69.5
RDE	.1492	RRA	-.0805	RC3	-.0355	FAU	.13247	RRT	-.1449	RRF	-.1040	RTF	.9678	CRT	.4288	CRS	-.6310	CST	-.9709
FDE	2.2362	FRA	6.3139	FC3	-8.0674	BSP	14118	SGB	8209.7	R23	-.0368	R13	-.9678	LSA	126.9	MSA	17.2	SSA	1.0
BDE	.8185	BRA	3.6945	BC3	7.4914	FSP	1928	SG1	8205.6	SG2	258.5	THA	179.74	EL1	107.1	EL2	10.4	ALF	2.66

LAUNCH DATE MAY 10 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 16 1971

HELIOCENTRIC CONIC DISTANCE 289.586 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	35.440	GAL	-2.10	AZL	91.85	NCA	91.90	SNA	264.74	ECC	.43083	INC	1.8903	V1	29.498
RP	207.27	LAP	-1.85	LOP	320.60	VP	27.916	GAP	22.41	AZP	89.94	TAL	352.75	TAP	84.68	RCA	150.68	APO	378.80	V2	26.426
RC	56.382	GL	-10.53	GP	.05	ZAL	106.24	ZAP	176.08	ETS	179.08	ZAE	174.61	ETE	68.56	ZAC	100.15	ETC	277.65	LVI	-17.02

PLANETOCENTRIC CONIC

C3	39.188	VHL	6.260	DLA	-19.36	RAL	341.12	RAD	6680.4	VEL	12.612	PTH	7.47	VHP	11.242	DPA	-17.31	RAP	320.50	ECC	1.6449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 59	2906.79	-26.95	88.58	207.54	130.62	16 56 28	1908.8	-8.47	87.92
60.00	17 10 29	2742.59	-21.08	75.65	212.58	125.20	17 56 12	1742.6	-5.63	86.60
70.00	18 29 31	2510.26	-15.47	60.62	216.39	120.63	19 11 21	1510.3	-1.89	40.59
80.00	20 3 55	2214.79	-11.13	40.70	218.90	117.89	20 40 50	1214.8	1.09	20.02
90.00	21 37 28	1913.06	-9.40	19.42	219.81	116.80	22 9 21	913.1	2.29	358.50
100.00	22 46 47	1689.26	-11.13	2.07	218.90	117.89	23 14 57	689.3	1.09	341.38
110.00	23 28 57	1557.08	-15.47	349.84	216.39	120.63	23 54 55	557.1	-1.89	329.81

DIFFERENTIAL CORRECTIONS

TDE	-.4401	TRA	-.9770	TC3	.0011	BAU	.0378
RDE	-.5811	RRA	.2333	RC3	.0717	FAU	.03284
FDE	.1766	FRA	.7656	FC3	-.7277	BSP	1470
BDE	.7289	BRA	1.0045	BC3	.0717	FSP	123

MID-COURSE EXECUTION ACCURACY

SGT	1029.9	SGR	984.9	SG3	102.5
RRT	-.0002	RRF	.0006	RTF	-.6304
SGB	1184.4	R23	-.0003	R13	.6304
SG1	1029.9	SG2	984.9	THA	179.99

ORBIT DETERMINATION ACCURACY

ST	24.7	SR	26.8	SS	13.4
CRT	.7374	CRS	.4782	CST	.9419
LSA	35.5	NSA	15.7	SSA	1.1
EL1	34.0	EL2	13.1	ALF	48.85

LAUNCH DATE MAY 10 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 18 1971

HELIOCENTRIC CONIC DISTANCE 291.349 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	35.236	GAL	-2.09	AZL	91.85	NCA	93.18	SNA	267.35	ECC	.41441	INC	1.8508	V1	29.498
RP	207.18	LAP	-1.85	LOP	321.87	VP	27.867	GAP	21.89	AZP	89.90	TAL	352.85	TAP	86.01	RCA	150.70	APO	364.00	V2	26.438
RC	56.568	GL	-10.63	GP	.05	ZAL	106.21	ZAP	175.99	ETS	179.26	ZAE	174.26	ETE	60.26	ZAC	100.10	ETC	277.73	LVI	-18.02

PLANETOCENTRIC CONIC

C3	36.624	VHL	6.052	DLA	-19.68	RAL	341.23	RAD	6649.5	VEL	12.511	PTH	7.39	VHP	10.877	DPA	-17.20	RAP	320.88	ECC	1.6027

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 9 41	2885.66	-25.91	84.38	206.64	131.41	16 57 47	1885.7	-8.32	88.92
60.00	17 12 37	2718.32	-20.09	74.32	211.67	125.70	17 57 55	1718.3	-4.57	85.43
70.00	18 32 12	2484.36	-14.56	59.17	215.50	121.24	19 13 36	1484.4	-.90	39.24
80.00	20 7 14	2186.93	-10.24	38.11	218.03	118.20	20 43 41	1186.9	2.03	18.49
90.00	21 41 6	1884.13	-8.81	17.77	218.95	117.07	22 12 30	884.1	3.22	356.68
100.00	22 50 6	1661.40	-10.24	.48	218.03	118.20	23 17 47	661.4	2.03	339.85
110.00	23 31 38	1531.18	-14.56	348.09	215.50	121.24	23 57 9	531.2	-.90	328.15

DIFFERENTIAL CORRECTIONS

TDE	-.4347	TRA	-.9677	TC3	.0127	BAU	.0382
RDE	-.5636	RRA	.2260	RC3	.0770	FAU	.03401
FDE	.1803	FRA	.7963	FC3	-.8040	BSP	1527
BDE	.7118	BRA	.9937	BC3	.0781	FSP	134

MID-COURSE EXECUTION ACCURACY

SGT	1056.4	SGR	987.4	SG3	109.9
RRT	.0000	RRF	.0001	RTF	-.6432
SGB	1208.7	R23	.0001	R13	-.6432
SG1	1056.4	SG2	987.4	THA	.00

ORBIT DETERMINATION ACCURACY

ST	25.2	SR	26.9	SS	13.9
CRT	.7389	CRS	.4696	CST	.9396
LSA	36.0	NSA	16.0	SSA	1.1
EL1	34.4	EL2	13.4	ALF	47.49

LAUNCH DATE MAY 10 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 293.399 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	35.044	GAL	-2.01	AZL	91.85	NCA	94.42	SNA	280.79	ECC	.39902	INC	1.8512	V1	29.498
RP	207.09	LAP	-1.85	LOP	323.13	VP	27.433	GAP	21.38	AZP	89.86	TAL	352.96	TAP	87.38	RCA	150.72	APO	350.86	V2	26.448
RC	56.856	GL	-11.14	GP	.05	ZAL	106.18	ZAP	175.10	ETS	179.38	ZAE	173.83	ETE	53.22	ZAC	100.08	ETC	277.80	LVI	-18.13

PLANETOCENTRIC CONIC

C3	34.283	VHL	5.855	DLA	-19.95	RAL	341.32	RAD	6648.6	VEL	12.417	PTH	7.32	VHP	10.825	DPA	-17.08	RAP	321.25	ECC	1.5842

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 11 21	2862.64	-24.87	83.16	205.76	131.96	16 59 3	1862.6	-7.17	85.94
60.00	17 14 44	2694.09	-19.12	73.00	210.79	126.18	17 59 38	1694.1	-3.51	84.27
70.00	18 34 54	2458.39	-13.64	57.72	214.62	121.62	19 15 53	1458.4	.09	37.68
80.00	20 10 36	2158.85	-9.33	37.53	217.17	118.49	20 46 35	1158.8	2.98	16.94
90.00	21 44 51	1854.89	-7.60	16.10	218.10	117.32	22 15 45	854.9	4.16	355.24
100.00	22 53 29	1633.32	-9.33	358.89	217.17	118.49	23 20 42	633.3	2.98	338.31
110.00	23 34 21	1505.20	-13.64	346.64	214.62	121.62	23 59 26	505.2	.09	326.80

DIFFERENTIAL CORRECTIONS

TDE	-.4286	TRA	-.9579	TC3	.0284	BAU	.0396
RDE	-.5467	RRA	.2189	RC3	.0826	FAU	.03518
FDE	.1831	FRA	.8278	FC3	-.8885	BSP	1586
BDE	.6946	BRA	.9826	BC3	.0865	FSP	146

MID-COURSE EXECUTION ACCURACY

SGT	1082.2	SGR	989.5	SG3	117.7
RRT	-.0001	RRF	-.0001	RTF	-.6446
SGB	1232.3	R23	.0002	R13	.6446
SG1	1082.2	SG2	989.5	THA	180.00

ORBIT DETERMINATION ACCURACY

ST	25.8	SR	27.0	SS	14.4
CRT	.7359	CRS	.4591	CST	.9366
LSA	36.4	NSA	16.4	SSA	1.1
EL1	34.7	EL2	13.6	ALF	46.79

LAUNCH DATE MAY 10 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 295.670 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	34.863	GAL	-1.92	AZL	91.85	NCA	95.89	SNA	244.94	ECC	.38458	INC	1.8516	V1	29.498
RP	207.01	LAP	-1.84	LOP	324.40	VP	27.210	GAP	20.87	AZP	89.82	TAL	353.08	TAP	88.77	RCA	150.74	APO	339.14	V2	26.457
RC	57.228	GL	-11.48	GP	.05	ZAL	106.07	ZAP	174.20	ETS	179.47	ZAE	173.38	ETE	47.34	ZAC	100.00	ETC	277.88	LVI	-18.23

PLANETOCENTRIC CONIC

C3	32.143	VHL	5.669	DLA	-20.26	RAL	341.38	RAD	6647.8	VEL	12.331	PTH	7.26	VHP	10.188	DPA	-16.97	RAP	321.61	ECC	1.5290

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 59	2838.77	-23.82	81.98	204.90	132.49	17 0 19	1839.8	-6.03	84.97
60.00	17 16 51	2669.94	-18.15	71.70	209.92	126.62	18 1 21	1669.9	-2.48	53.11
70.00	18 37 39	2432.39	-12.71	56.28	213.77	121.97	19 18 11	1432.4	1.08	36.52
80.00	20 14 5	2130.58	-8.41	35.93	216.33	118.75	20 49 36	1130.6	3.93	15.39
90.00	21 48 42	1825.37	-6.67	14.43	217.27	117.55	22 19 8	825.4	5.10	353.58
100.00	22 56 57	1605.06	-8.41	357.30	216.33	118.75	23 23 42	605.1	3.93	336.75
110.00	23 37 5	1479.21	-12.71	345.20	213.77	121.97	24 1 45	479.2	1.08	325.44

DIFFERENTIAL CORRECTIONS

TDE	-.4229	TRA	-.9487	TC3	.0410	BAU	.0419
RDE	-.5303	RRA	.2120	RC3	.0864	FAU	.03441
FDE	.1864	FRA	.8607	FC3	-.9806	BSP	1629
BDE	.6783	BRA	.9721	BC3	.0975	FSP	159

MID-COURSE EXECUTION ACCURACY

SGT	1108.7	SGR	991.1	SG3	126.1
RRT	.0005	RRF	-.0006	RTF	-.6670
SGB	1256.5	R23	-.0004	R13	-.6670
SG1	1108.7	SG2	991.1	THA	.02

ORBIT DETERMINATION ACCURACY

ST	26.3	SR	27.0	SS	14.9
CRT	.7321	CRS	.4496	CST	.9339
LSA	36.9	NSA	16.7	SSA	1.1
EL1	35.1	EL2	13.8	ALF	46.05

LAUNCH DATE MAY 10 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 298.135 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	34.693	GAL	-1.83	AZL	91.85	HCA	96.95	SMA	239.70	ECC	.37104	INC	1.8521	V1	29.498
RP	206.94	LAP	-1.84	LOP	325.66	VP	27.000	GAP	20.38	AZP	89.78	TAL	353.22	TAP	90.18	RCA	150.76	APO	328.64	V2	26.466
RC	57.675	GL	-11.77	GP	.05	ZAL	105.96	ZAP	173.28	ETS	179.54	ZAE	172.85	ETE	42.46	ZAC	99.96	ETC	277.95	LVI	-18.32

PLANETOCENTRIC CONIC

C3	30.183	VHL	5.494	DLA	-20.59	RAL	341.43	RAD	6647.1	VEL	12.252	PTH	7.20	VHP	9.858	DPA	-16.85	RAP	321.95	ECC	1.4967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 36	2817.07	-22.78	80.84	204.07	132.97	17 1 33	1817.1	-4.89	64.02
60.00	17 18 57	2645.91	-17.16	70.43	209.08	127.04	18 3 3	1645.9	-1.39	51.96
70.00	18 40 26	2406.40	-11.77	54.86	212.93	122.30	19 20 32	1406.4	2.08	35.17
80.00	20 17 38	2102.16	-7.47	34.34	215.51	118.99	20 52 41	1102.2	4.89	13.82
90.00	21 52 41	1795.58	-5.73	12.74	216.46	117.74	22 22 37	795.6	6.04	351.90
100.00	23 0 30	1576.[illegible]	-7.47	355.71	215.51	118.99	23 26 47	576.6	4.89	335.18
110.00	23 39 52	1453.22	-11.77	343.78	212.93	122.30	24 4 5	453.2	2.08	324.09

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.4233	TRA	-.9392	TC3	.0588	BAU	.0449	SGT	1137.4	SGR	592.3	SG3	135.1	ST	27.1	SR	27.0	SS	15.3
RDE	-.5144	RRA	.2053	RC3	.0944	FAU	.03772	RRT	.0064	RRF	-.0016	RTF	-.6786	CRT	.7349	CRS	.4396	CST	.9286
FDE	.1896	FRA	.8950	FC3	-1.0819	BSP	1670	SGB	1282.4	R23	.0044	R13	-.6786	LSA	37.6	MSA	17.0	SSA	1.2
BDE	.6662	BRA	.9613	BC3	.1113	FSP	173	SG1	1137.4	SG2	592.3	THA	.26	EL1	35.6	EL2	13.9	ALF	44.94

LAUNCH DATE MAY 10 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 300.769 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	34.532	GAL	-1.75	AZL	91.85	HCA	98.22	SMA	234.98	ECC	.35833	INC	1.8526	V1	29.498
RP	206.87	LAP	-1.83	LOP	326.93	VP	26.800	GAP	19.89	AZP	89.74	TAL	353.38	TAP	91.60	RCA	150.78	APO	319.18	V2	26.473
RC	58.203	GL	-12.09	GP	.05	ZAL	105.84	ZAP	172.36	ETS	179.59	ZAE	172.35	ETE	38.41	ZAC	99.91	ETC	278.02	LVI	-18.42

PLANETOCENTRIC CONIC

C3	28.389	VHL	5.328	DLA	-20.92	RAL	341.45	RAD	6646.4	VEL	12.179	PTH	7.14	VHP	9.542	DPA	-16.75	RAP	322.29	ECC	1.4672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 11	2794.60	-21.73	79.73	203.26	133.43	17 2 45	1794.6	-3.76	63.07
60.00	17 21 4	2622.04	-16.18	69.18	208.26	127.43	18 4 46	1622.0	-.34	50.82
70.00	18 43 15	2380.45	-10.82	53.45	212.12	122.59	19 22 55	1380.5	3.07	33.81
80.00	20 21 17	2073.62	-6.53	32.75	214.71	119.20	20 55 51	1073.6	5.84	12.24
90.00	21 56 47	1765.56	-4.77	11.05	215.67	117.91	22 26 13	765.6	6.99	350.21
100.00	23 4 9	1548.09	-6.53	354.12	214.71	119.20	23 29 57	548.1	5.84	333.60
110.00	23 42 41	1427.27	-10.82	342.37	212.12	122.59	24 6 28	427.3	3.07	322.73

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.4109	TRA	-.9277	TC3	.0743	BAU	.0475	SGT	1158.6	SGR	593.1	SG3	144.6	ST	27.3	SR	27.1	SS	15.8
RDE	-.4990	RRA	.1987	RC3	.1006	FAU	.03908	RRT	.0020	RRF	-.0012	RTF	-.6884	CRT	.7286	CRS	.4249	CST	.9260
FDE	.1906	FRA	.9303	FC3	-1.1919	BSP	1745	SGB	1301.6	R23	.0006	R13	-.6884	LSA	37.7	MSA	17.4	SSA	1.2
BDE	.6465	BRA	.9488	BC3	.1251	FSP	188	SG1	1158.6	SG2	593.1	THA	.08	EL1	35.7	EL2	14.2	ALF	44.65

LAUNCH DATE MAY 10 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 303.551 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	34.381	GAL	-1.66	AZL	91.85	HCA	99.49	SMA	230.72	ECC	.34639	INC	1.8530	V1	29.498
RP	206.82	LAP	-1.83	LOP	328.20	VP	26.611	GAP	19.41	AZP	89.69	TAL	353.54	TAP	93.03	RCA	150.80	APO	310.64	V2	26.479
RC	58.807	GL	-12.41	GP	.06	ZAL	105.68	ZAP	171.41	ETS	179.64	ZAE	171.86	ETE	35.04	ZAC	99.87	ETC	278.08	LVI	-18.51

PLANETOCENTRIC CONIC

C3	26.744	VHL	5.171	DLA	-21.27	RAL	341.46	RAD	6645.7	VEL	12.112	PTH	7.09	VHP	9.237	DPA	-16.64	RAP	322.61	ECC	1.4401

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 17 44	2772.39	-20.69	78.65	202.48	133.85	17 3 57	1772.4	-2.65	62.14
60.00	17 23 11	2598.35	-15.20	67.95	207.46	127.79	18 6 29	1598.4	.71	49.69
70.00	18 46 6	2354.59	-9.87	52.05	211.33	122.86	19 25 21	1354.6	4.05	32.46
80.00	20 25 2	2044.97	-5.57	31.16	213.94	119.38	20 59 7	1045.0	6.80	10.64
90.00	22 1 2	1735.31	-3.81	9.36	214.91	118.04	22 29 57	735.3	7.94	348.49
100.00	23 7 54	1519.44	-5.57	352.53	213.94	119.38	23 33 13	519.4	6.80	332.01
110.00	23 45 32	1401.41	-9.87	340.97	211.33	122.86	24 8 54	401.4	4.05	321.37

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.4042	TRA	-.9178	TC3	.0937	BAU	.0509	SGT	1183.5	SGR	593.5	SG3	154.9	ST	27.7	SR	27.0	SS	16.3
RDE	-.4842	RRA	.1923	RC3	.1070	FAU	.04056	RRT	.0022	RRF	-.0020	RTF	-.6887	CRT	.7260	CRS	.4153	CST	.9228
FDE	.1930	FRA	.9672	FC3	-1.3131	BSP	1797	SGB	1323.9	R23	.0001	R13	-.6987	LSA	38.1	MSA	17.7	SSA	1.2
BDE	.6307	BRA	.9377	BC3	.1422	FSP	204	SG1	1183.5	SG2	593.5	THA	.08	EL1	36.0	EL2	14.3	ALF	43.99

LAUNCH DATE MAY 10 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 306.466 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	34.238	GAL	-1.58	AZL	91.85	HCA	100.76	SMA	226.86	ECC	.33518	INC	1.8535	V1	29.498
RP	206.77	LAP	-1.82	LOP	329.47	VP	26.432	GAP	18.94	AZP	89.65	TAL	353.72	TAP	94.47	RCA	150.82	APO	302.89	V2	26.485
RC	59.485	GL	-12.73	GP	.06	ZAL	105.51	ZAP	170.46	ETS	179.67	ZAE	171.41	ETE	32.21	ZAC	99.82	ETC	278.15	LVI	-18.59

PLANETOCENTRIC CONIC

C3	25.234	VHL	5.023	DLA	-21.62	RAL	341.44	RAD	6645.1	VEL	12.050	PTH	7.04	VHP	8.942	DPA	-16.54	RAP	322.92	ECC	1.4153

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 16	2750.42	-19.65	77.60	201.72	134.25	17 5 7	1750.4	-1.55	61.22
60.00	17 25 17	2574.85	-14.21	66.75	206.68	128.12	18 8 12	1574.9	1.74	48.57
70.00	18 48 59	2328.79	-8.91	50.66	210.56	123.11	19 27 48	1328.8	5.03	31.10
80.00	20 28 52	2016.19	-4.61	29.57	213.19	119.53	21 2 29	1016.2	7.75	9.04
90.00	22 5 25	1704.78	-2.83	7.65	214.17	118.15	22 33 50	704.8	8.88	346.74
100.00	23 11 44	1490.66	-4.61	350.93	213.19	119.53	23 36 35	490.7	7.75	330.40
110.00	23 48 26	1375.60	-8.91	339.58	210.56	123.11	24 11 21	375.6	5.03	320.02

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.3884	TRA	-.8984	TC3	.1287	BAU	.0579	SGT	1195.0	SGR	593.4	SG3	165.7	ST	27.6	SR	27.0	SS	16.8
RDE	-.4697	RRA	.1860	RC3	.1135	FAU	.04204	RRT	.0007	RRF	-.0022	RTF	-.7195	CRT	.7191	CRS	.4011	CST	.9216
FDE	.1955	FRA	1.0077	FC3	-1.4424	BSP	1733	SGB	1334.2	R23	-.0015	R13	-.7195	LSA	38.1	MSA	18.0	SSA	1.2
BDE	.6095	BRA	.9175	BC3	.1716	FSP	223	SG1	1195.0	SG2	593.4	THA	.03	EL1	35.8	EL2	14.5	ALF	44.08

LAUNCH DATE MAY 10 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 309.498 EARTH TO MARS

RL	151.08	LAL	.00	LOL	228.70	VL	34.104	GAL	-1.49	AZL	91.89	HCA	102.02	SNA	223.38	ECC	.32466	INC	1.8540	V1	29.498
RP	206.74	LAP	-1.81	LOP	330.73	VP	26.262	GAP	18.48	AZP	89.61	TAL	353.90	TAP	95.92	RCA	150.84	APO	295.86	V2	26.489
RC	60.233	GL	-13.08	GP	.06	ZAL	105.32	ZAP	168.49	ETS	179.71	ZAE	171.00	ETE	29.82	ZAC	99.78	ETC	278.21	LVI	-18.67

PLANETOCENTRIC CONIC

C3	23.851	VHL	4.884	DLA	-21.99	RAL	341.40	RAD	6644.5	VEL	11.993	PTH	6.99	VHP	8.698	DPA	-16.45	RAP	323.21	ECC	1.3925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 20 47	2728.82	-18.62	76.58	200.99	134.61	17 8 16	1728.8	-.46	60.32
60.00	17 27 24	2581.67	-13.24	65.57	205.94	128.42	18 9 55	1551.7	2.76	47.46
70.00	18 51 55	2303.20	-7.96	49.30	209.82	123.32	19 30 18	1303.2	6.00	29.75
80.00	20 32 49	1987.44	-3.64	27.98	212.47	119.65	21 5 56	987.4	8.69	7.42
90.00	22 9 57	1674.13	-1.84	5.94	213.47	118.22	22 37 51	674.1	9.82	344.98
100.00	23 15 40	1461.91	-3.64	349.35	212.47	119.65	23 40 2	461.9	8.69	328.79
110.00	23 51 21	1350.02	-7.96	338.22	209.82	123.32	24 13 51	350.0	6.00	310.67

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3855	TRA	-.8922	TC3	.1448	BAU	.0800	SGT	1224.3	SGR	893.0	SGS	177.4	ST	28.3	SR	27.0	SS	17.3
RDE	-.4558	RRA	.1800	RC3	.1201	FAU	.04378	RRT	.0019	RRF	-.0027	RTF	-.7235	CRT	.7181	CRS	.3855	CST	.9156
FDE	.1959	FRA	1.0471	FC3	-1.5890	BSP	1840	SGB	1360.4	R23	-.0009	R13	-.7235	LSA	38.5	NSA	18.4	SSA	1.2
BDE	.5970	BRA	.9102	BC3	.1881	FSP	240	SG1	1224.3	SG2	893.0	THA	.07	EL1	36.2	EL2	14.6	ALF	43.13

LAUNCH DATE MAY 10 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC DISTANCE 312.635 EARTH TO MARS

RL	151.08	LAL	.00	LOL	228.70	VL	33.977	GAL	-1.41	AZL	91.85	HCA	103.28	SNA	220.16	ECC	.31478	INC	1.8544	V1	29.498
RP	206.71	LAP	-1.80	LOP	332.00	VP	26.101	GAP	18.02	AZP	89.57	TAL	354.10	TAP	97.38	RCA	150.86	APO	289.46	V2	26.492
RC	61.050	GL	-13.37	GP	.06	ZAL	105.12	ZAP	168.50	ETS	179.73	ZAE	170.63	ETE	27.79	ZAC	99.75	ETC	278.26	LVI	-18.75

PLANETOCENTRIC CONIC

C3	22.561	VHL	4.752	DLA	-22.36	RAL	341.35	RAD	6644.0	VEL	11.940	PTH	6.84	VHP	8.383	DPA	-16.35	RAP	323.49	ECC	1.3716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 16	2707.87	-17.60	75.59	200.28	134.95	17 7 24	1707.6	.61	59.44
60.00	17 29 30	2528.78	-12.26	64.41	205.21	128.70	18 11 30	1528.8	3.77	46.36
70.00	18 54 53	2277.79	-7.00	47.95	209.10	123.51	19 32 50	1277.8	6.86	28.41
80.00	20 36 51	1958.64	-2.67	26.39	211.78	119.75	21 9 30	958.6	9.63	5.80
90.00	22 14 38	1643.27	-.85	4.21	212.79	118.27	22 42 1	643.3	10.76	343.20
100.00	23 19 43	1433.11	-2.67	347.78	211.78	119.75	23 43 36	433.1	9.63	327.17
110.00	23 54 19	1324.61	-7.00	336.87	209.10	123.51	24 16 24	324.6	6.86	317.33

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3806	TRA	-.8838	TC3	.1640	BAU	.0626	SGT	1250.1	SGR	892.1	SGS	189.9	ST	28.7	SR	26.9	SS	17.7
RDE	-.4424	RRA	.1741	RC3	.1268	FAU	.04560	RRT	.0029	RRF	-.0031	RTF	-.7289	CRT	.7163	CRS	.3692	CST	.9096
FDE	.1959	FRA	1.0885	FC3	-1.7482	BSP	1918	SGB	1383.3	R23	-.0005	R13	-.7289	LSA	38.9	NSA	18.7	SSA	1.2
BDE	.5837	BRA	.9008	BC3	.2073	FSP	260	SG1	1250.1	SG2	892.1	THA	.10	EL1	36.5	EL2	14.8	ALF	42.35

LAUNCH DATE MAY 10 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC DISTANCE 315.866 EARTH TO MARS

RL	151.08	LAL	.00	LOL	228.70	VL	33.858	GAL	-1.33	AZL	91.85	HCA	104.36	SNA	217.84	ECC	.30550	INC	1.8549	V1	29.498
RP	206.69	LAP	-1.80	LOP	333.27	VP	25.948	GAP	17.58	AZP	89.53	TAL	354.30	TAP	98.86	RCA	150.87	APO	283.61	V2	26.495
RC	61.933	GL	-13.70	GP	.06	ZAL	104.90	ZAP	167.48	ETS	179.78	ZAE	170.32	ETE	26.06	ZAC	99.71	ETC	278.32	LVI	-18.82

PLANETOCENTRIC CONIC

C3	21.414	VHL	4.628	DLA	-22.73	RAL	341.28	RAD	6643.5	VEL	11.892	PTH	6.90	VHP	8.118	DPA	-16.27	RAP	323.79	ECC	1.3824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 44	2686.69	-18.58	74.62	199.60	135.26	17 8 31	1686.7	1.66	58.56
60.00	17 31 36	2506.20	-11.30	63.28	204.52	128.95	18 13 22	1506.2	4.76	45.28
70.00	18 57 53	2252.58	-6.08	46.61	208.42	123.68	19 35 25	1252.6	7.90	27.07
80.00	20 41 0	1929.82	-1.70	24.81	211.12	119.81	21 13 10	929.8	10.59	4.16
90.00	22 19 29	1612.20	.15	2.40	212.14	118.28	22 46 21	612.2	11.69	341.40
100.00	23 23 52	1404.30	-1.70	346.18	211.12	119.81	23 47 16	404.3	10.55	325.53
110.00	0 1 15	1299.39	-6.08	335.53	208.42	123.68	0 22 54	299.4	7.90	315.99

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3792	TRA	-.8743	TC3	.1897	BAU	.0688	SGT	1273.9	SGR	890.9	SGS	203.1	ST	29.1	SR	26.8	SS	18.2
RDE	-.4294	RRA	.1684	RC3	.1336	FAU	.04749	RRT	.0038	RRF	-.0037	RTF	-.7354	CRT	.7141	CRS	.3534	CST	.9038
FDE	.1962	FRA	1.1326	FC3	-1.9198	BSP	1978	SGB	1404.3	R23	-.0001	R13	-.7354	LSA	39.2	NSA	19.0	SSA	1.3
BDE	.5702	BRA	.8904	BC3	.2288	FSP	280	SG1	1273.9	SG2	890.9	THA	.13	EL1	36.7	EL2	14.9	ALF	41.65

LAUNCH DATE MAY 10 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 319.181 EARTH TO MARS

RL	151.08	LAL	.00	LOL	228.70	VL	33.745	GAL	-1.26	AZL	91.86	HCA	105.03	SNA	214.57	ECC	.29679	INC	1.8554	V1	29.498
RP	206.68	LAP	-1.79	LOP	334.54	VP	25.802	GAP	17.14	AZP	89.49	TAL	354.81	TAP	100.34	RCA	150.89	APO	278.25	V2	26.498
RC	62.879	GL	-14.02	GP	.07	ZAL	104.66	ZAP	166.47	ETS	179.78	ZAE	170.06	ETE	24.58	ZAC	99.68	ETC	278.37	LVI	-18.88

PLANETOCENTRIC CONIC

C3	20.342	VHL	4.510	DLA	-23.11	RAL	341.21	RAD	6643.0	VEL	11.847	PTH	6.86	VHP	7.862	DPA	-16.19	RAP	323.99	ECC	1.3848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 25 11	2666.21	-15.60	73.69	196.84	135.54	17 9 37	1666.2	2.68	57.71
60.00	17 33 42	2483.97	-10.35	62.18	203.85	129.17	18 15 6	1484.0	5.73	44.21
70.00	19 0 55	2227.60	-5.11	45.30	207.76	123.82	19 38 2	1227.6	8.83	25.74
80.00	20 45 16	1901.00	-.72	23.23	210.48	119.85	21 16 57	901.0	11.47	2.52
90.00	22 24 30	1580.92	1.16	.73	211.53	118.26	22 80 51	580.9	12.62	339.56
100.00	23 28 8	1375.48	-.72	344.60	210.48	119.85	23 51 3	375.5	11.47	323.89
110.00	0 4 17	1274.42	-5.11	334.22	207.76	123.82	0 25 31	274.4	8.83	314.66

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3686	TRA	-.8640	TC3	.2092	BAU	.0685	SGT	1295.8	SGR	889.2	SGS	217.3	ST	29.5	SR	26.7	SS	18.7
RDE	-.4169	RRA	.1629	RC3	.1405	FAU	.04954	RRT	.0046	RRF	-.0041	RTF	-.7415	CRT	.7113	CRS	.3386	CST	.8974
FDE	.1953	FRA	1.1783	FC3	-2.1086	BSP	2031	SGB	1423.5	R23	.0001	R13	-.7415	LSA	39.4	NSA	19.4	SSA	1.3
BDE	.5566	BRA	.8792	BC3	.2519	FSP	304	SG1	1295.8	SG2	889.2	THA	.15	EL1	36.8	EL2	15.0	ALF	41.02

LAUNCH DATE MAY 10 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 322.573 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	33.640	GAL	-1.18	AZL	91.86	HCA	107.10	SMA	212.12	ECC	.28860	INC	1.8559	V1	29.498
RP	206.67	LAP	-1.77	LOP	335.81	VP	25.664	GAP	16.71	AZP	89.45	TAL	354.72	TAP	101.82	RCA	150.90	APO	273.34	V2	26.496
RC	63.888	GL	-14.33	GP	.07	ZAL	104.41	ZAP	165.42	ETS	179.80	ZAE	169.87	ETE	23.31	ZAC	99.65	ETC	278.41	LVI	-18.94

PLANETOCENTRIC CONIC

C3	19.356	VHL	4.400	DLA	-23.49	RAL	341.12	RAD	6642.5	VEL	11.806	PTH	6.83	VHP	7.614	DPA	-16.11	RAP	324.21	ECC	1.3186

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 36	2646.16	-14.62	72.79	198.31	135.80	17 10 42	1646.2	3.69	56.87
60.00	17 35 48	2462.12	-9.41	61.10	203.20	129.37	18 16 50	1462.1	6.68	43.15
70.00	19 3 59	2202.90	-4.17	44.00	207.12	123.93	19 40 42	1202.9	9.75	24.41
80.00	20 49 39	1872.20	.25	21.65	209.88	119.86	21 20 51	872.2	12.38	.86
90.00	22 29 43	1549.40	2.18	358.98	210.95	118.20	22 55 33	549.4	13.53	337.70
100.00	23 32 30	134C..	.25	343.02	209.88	119.86	23 54 57	346.7	12.38	322.23
110.00	0 7 21	1249.71	-4.17	332.92	207.12	123.93	0 28 11	249.7	9.75	313.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3618	TRA	-.8532	TC3	.2346	BAU	.0717	SGT	1316.2	SGR	587.2	SG3	232.5	ST	29.8	SR	26.6	SS	19.2
RDE	-.4048	RRA	.1576	RC3	.1473	FAU	.05170	RRT	.0051	RRF	-.0045	RTF	-.7482	CRT	.7083	CRS	.3174	CST	.8909
FDE	.1942	FRA	1.2268	FC3	-2.3125	BSP	2076	SGB	1441.3	R23	.0003	R13	-.7482	LSA	39.6	MSA	19.7	SSA	1.3
BDE	.5429	BRA	.8677	BC3	.2770	FSP	328	SG1	1316.2	SG2	587.2	THA	.16	EL1	36.9	EL2	15.1	ALF	40.45

LAUNCH DATE MAY 10 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 326.033 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	33.540	GAL	-1.11	AZL	91.86	HCA	108.37	SMA	209.88	ECC	.28092	INC	1.8564	V1	29.498
RP	206.68	LAP	-1.76	LOP	337.08	VP	25.532	GAP	16.29	AZP	89.41	TAL	354.94	TAP	103.31	RCA	150.92	APO	268.83	V2	26.496
RC	64.956	GL	-14.65	GP	.07	ZAL	104.16	ZAP	164.36	ETS	179.81	ZAE	169.74	ETE	22.21	ZAC	99.62	ETC	278.45	LVI	-19.00

PLANETOCENTRIC CONIC

C3	18.450	VHL	4.295	DLA	-23.87	RAL	341.01	RAD	6642.1	VEL	11.767	PTH	6.79	VHP	7.375	DPA	-16.04	RAP	324.41	ECC	1.3036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 0	2626.56	-13.66	71.91	197.70	136.03	17 11 47	1626.6	4.67	56.04
60.00	17 37 54	2440.68	-8.48	60.05	202.59	129.55	18 18 34	1440.7	7.62	42.11
70.00	19 7 5	2178.49	-3.24	42.72	206.52	124.02	19 43 23	1178.5	10.65	23.09
80.00	20 54 8	1843.42	1.23	20.07	209.31	119.83	21 24 52	843.4	13.28	359.19
90.00	22 35 9	1517.63	3.20	357.20	210.40	118.11	23 0 27	517.6	14.44	335.81
100.00	23 37 0	1317.89	1.23	341.44	209.31	119.83	23 58 58	317.9	13.28	320.56
110.00	0 10 27	1225.31	-3.24	331.64	206.52	124.02	0 30 52	225.3	10.65	312.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3548	TRA	-.8415	TC3	.2617	BAU	.0749	SGT	1334.6	SGR	584.8	SG3	248.7	ST	30.0	SR	26.4	SS	19.7
RDE	-.3931	RRA	.1525	RC3	.1541	FAU	.05406	RRT	.0063	RRF	-.0053	RTF	-.7543	CRT	.7054	CRS	.2985	CST	.8837
FDE	.1924	FRA	1.2767	FC3	-2.5366	BSP	2125	SGB	1457.1	R23	.0006	R13	-.7543	LSA	39.8	MSA	20.0	SSA	1.3
BDE	.5295	BRA	.8552	BC3	.3037	FSP	354	SG1	1334.7	SG2	584.8	THA	.19	EL1	37.0	EL2	15.2	ALF	39.92

LAUNCH DATE MAY 10 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 329.556 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	33.446	GAL	-1.04	AZL	91.86	HCA	109.64	SMA	207.81	ECC	.27370	INC	1.8569	V1	29.498
RP	206.70	LAP	-1.75	LOP	338.35	VP	25.407	GAP	15.88	AZP	89.38	TAL	355.16	TAP	104.80	RCA	150.93	APO	264.69	V2	26.494
RC	66.082	GL	-14.96	GP	.07	ZAL	103.89	ZAP	163.27	ETS	179.83	ZAE	169.68	ETE	21.28	ZAC	99.60	ETC	278.49	LVI	-19.05

PLANETOCENTRIC CONIC

C3	17.616	VHL	4.197	DLA	-24.25	RAL	340.90	RAD	6641.8	VEL	11.732	PTH	6.76	VHP	7.144	DPA	-15.98	RAP	324.59	ECC	1.2899

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 29 23	2607.44	-12.72	71.06	197.12	136.24	17 12 50	1607.4	5.63	55.24
60.00	17 39 59	2419.68	-7.57	59.03	202.00	129.70	18 20 18	1419.7	8.53	41.09
70.00	19 10 12	2154.41	-2.33	41.46	205.94	124.08	19 46 7	1154.4	11.53	21.79
80.00	20 58 46	1814.67	2.20	18.49	208.77	119.78	21 29 0	814.7	14.16	357.52
90.00	22 40 48	1485.58	4.22	355.40	209.68	117.99	23 5 33	485.6	15.34	333.89
100.00	23 41 38	1289.14	2.20	339.86	208.77	119.78	24 3 7	289.1	14.16	318.88
110.00	0 13 35	1201.23	-2.33	330.38	205.94	124.08	0 33 36	201.2	11.53	310.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3477	TRA	-.8305	TC3	.2871	BAU	.0775	SGT	1352.6	SGR	582.0	SG3	265.9	ST	30.2	SR	26.3	SS	20.2
RDE	-.3818	RRA	.1475	RC3	.1609	FAU	.05650	RRT	.0067	RRF	-.0062	RTF	-.7598	CRT	.7020	CRS	.2811	CST	.8774
FDE	.1914	FRA	1.3301	FC3	-2.7769	BSP	2166	SGB	1472.5	R23	.0000	R13	-.7598	LSA	39.9	MSA	20.4	SSA	1.3
BDE	.5164	BRA	.8435	BC3	.3291	FSP	382	SG1	1352.6	SG2	582.0	THA	.20	EL1	37.0	EL2	15.3	ALF	39.39

LAUNCH DATE MAY 10 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 333.136 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	33.358	GAL	-.97	AZL	91.86	HCA	110.91	SMA	205.91	ECC	.26693	INC	1.8574	V1	29.498
RP	206.72	LAP	-1.74	LOP	339.62	VP	25.288	GAP	15.48	AZP	89.34	TAL	355.39	TAP	106.30	RCA	150.94	APO	260.87	V2	26.491
RC	67.265	GL	-15.27	GP	.08	ZAL	103.62	ZAP	162.16	ETS	179.84	ZAE	169.69	ETE	20.49	ZAC	99.58	ETC	278.52	LVI	-19.09

PLANETOCENTRIC CONIC

C3	16.849	VHL	4.105	DLA	-24.64	RAL	340.78	RAD	6641.4	VEL	11.700	PTH	6.73	VHP	6.921	DPA	-15.93	RAP	324.74	ECC	1.2773

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 44	2588.82	-11.81	70.25	196.57	136.43	17 13 53	1588.8	6.56	54.45
60.00	17 42 3	2399.15	-6.67	58.03	201.44	129.84	18 22 3	1399.1	9.42	40.08
70.00	19 13 22	2130.69	-1.42	40.22	205.40	124.13	19 48 53	1130.7	12.39	20.49
80.00	21 3 31	1785.98	3.17	16.91	208.26	119.70	21 33 17	786.0	15.03	355.83
90.00	22 46 41	1453.20	5.26	353.58	209.40	117.83	23 10 54	453.2	16.23	331.93
100.00	23 46 23	1260.44	3.17	338.28	208.26	119.70	24 7 23	260.4	15.03	317.20
110.00	0 16 44	1177.51	-1.42	329.14	205.40	124.13	0 36 22	177.5	12.39	309.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3401	TRA	-.8186	TC3	.3116	BAU	.0797	SGT	1367.9	SGR	578.8	SG3	283.9	ST	30.3	SR	26.1	SS	20.8
RDE	-.3709	RRA	.1427	RC3	.1676	FAU	.05903	RRT	.0070	RRF	-.0060	RTF	-.7646	CRT	.6985	CRS	.2587	CST	.8686
FDE	.1874	FRA	1.3863	FC3	-3.0329	BSP	2199	SGB	1485.3	R23	.0005	R13	-.7646	LSA	40.0	MSA	20.7	SSA	1.4
BDE	.5033	BRA	.8310	BC3	.3538	FSP	412	SG1	1367.9	SG2	578.8	THA	.21	EL1	37.0	EL2	15.3	ALF	38.92

LAUNCH DATE MAY 10 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC — DISTANCE 336.768 — EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	33.274	GAL	-.91	AZL	91.86	HCA	112.18	SNA	204.18	ECC	.26057	INC	1.8579
RP	206.75	LAP	-1.72	LOP	340.89	VP	25.174	GAP	15.09	AZP	89.30	TAL	355.62	TAP	107.79	RCA	150.96	APO	257.35
RC	68.902	GL	-15.57	GP	.08	ZAL	103.38	ZAP	161.03	ETS	179.85	ZAE	169.77	ETE	18.84	ZAC	99.56	ETC	278.59

V1	29.498	V2	26.487	VHL	4.018	DLA	-25.01	RAL	340.65	RAD	6641.1	VEL	11.670	PTH	6.71	VHP	6.706	DPA	-15.88
LVI	-19.13			C3	16.143														

PLANETOCENTRIC CONIC

RAP	324.87	ECC	1.2697																

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 32 5	2570.72	-10.91	89.46	196.04	136.60	17 14 56	1570.7	7.47	53.68
60.00	17 44 8	2379.10	-5.60	57.06	200.90	129.95	18 23 47	1379.1	10.26	39.09
70.00	19 16 33	2107.36	-.53	39.01	204.88	124.15	19 51 40	1107.4	13.23	19.20
80.00	21 6 24	1757.32	4.14	15.33	207.78	119.60	21 37 41	757.3	15.88	354.13
90.00	22 52 51	1420.42	6.29	351.74	208.96	117.63	23 16 32	420.4	17.11	329.93
100.00	23 51 16	1231.79	4.14	336.70	207.78	119.60	24 11 47	231.8	15.88	315.49
110.00	0 19 55	1184.18	-.83	327.92	204.88	124.15	0 38 10	184.2	13.23	308.12

DIFFERENTIAL CORRECTIONS

TDE	-.3331	TRA	-.8065	TC3	.3389	BAU	.0818												
RDE	-.3604	RRA	.1381	RC3	.1741	FAU	.06179												
FDE	.1846	FRA	1.4458	FC3	-3.3137	BSP	2231												
BDE	.4908	BRA	.8183	BC3	.3792	FSP	448												

MID-COURSE EXECUTION ACCURACY

SGT	1381.9	SGR	575.3	SG3	303.4														
RRT	.0078	RRF	-.0067	RTF	-.7692														
SGB	1496.9	R23	.0006	R13	-.7692														
SG1	1381.9	SG2	575.3	THA	.22														

ORBIT DETERMINATION ACCURACY

ST	30.4	SR	25.9	SS	21.3														
CRT	.6984	CRS	.2392	CST	.8607														
LSA	40.1	NSA	21.1	SSA	1.4														
EL1	36.9	EL2	18.4	ALF	38.44														

LAUNCH DATE MAY 10 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC — DISTANCE 340.448 — EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	33.198	GAL	-.84	AZL	91.86	HCA	113.44	SNA	202.53	ECC	.25460	INC	1.8584
RP	206.79	LAP	-1.71	LOP	342.16	VP	25.066	GAP	14.70	AZP	89.26	TAL	355.84	TAP	109.28	RCA	150.97	APO	254.10
RC	69.791	GL	-15.87	GP	.08	ZAL	103.07	ZAP	159.87	ETS	179.86	ZAE	169.92	ETE	19.31	ZAC	99.55	ETC	278.87

V1	29.498	V2	26.483	VHL	3.936	DLA	-25.39	RAL	340.52	RAD	6640.8	VEL	11.642	PTH	6.68	VHP	6.698	DPA	-15.84
LVI	-19.16			C3	15.494														

RAP	324.98	ECC	1.2550																

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 24	2553.15	-10.04	88.70	195.53	136.76	17 15 57	1553.2	8.34	52.93
60.00	17 46 11	2359.87	-4.94	56.12	200.40	130.05	18 25 31	1359.6	11.12	38.12
70.00	19 19 45	2084.45	.35	37.81	204.40	124.15	19 54 30	1084.5	14.05	17.93
80.00	21 13 25	1728.72	5.10	13.75	207.34	119.46	21 42 14	728.7	16.71	352.41
90.00	22 59 20	1387.15	7.34	349.85	208.56	117.39	23 22 27	387.2	17.97	327.87
100.00	0 0 13	1203.19	5.10	335.12	207.34	119.46	0 20 16	203.2	16.71	313.78
110.00	0 23 8	1131.27	.38	328.73	204.40	124.15	0 41 39	131.3	14.05	306.88

DIFFERENTIAL CORRECTIONS

TDE	-.3282	TRA	-.7940	TC3	.3627	BAU	.0839												
RDE	-.3503	RRA	.1336	RC3	.1808	FAU	.06478												
FDE	.1812	FRA	1.5062	FC3	-3.6196	BSP	2260												
BDE	.4787	BRA	.8052	BC3	.4051	FSP	479												

MID-COURSE EXECUTION ACCURACY

SGT	1394.2	SGR	571.4	SG3	324.2														
RRT	.0091	RRF	-.0079	RTF	-.7730														
SGB	1506.7	R23	.0006	R13	-.7730														
SG1	1394.2	SG2	571.4	THA	.26														

ORBIT DETERMINATION ACCURACY

ST	30.5	SR	25.7	SS	21.9														
CRT	.6926	CRS	.2194	CST	.8522														
LSA	40.1	NSA	21.4	SSA	1.4														
EL1	36.8	EL2	18.4	ALF	37.98														

LAUNCH DATE MAY 10 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC — DISTANCE 344.171 — EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	33.123	GAL	-.78	AZL	91.86	HCA	114.71	SNA	201.04	ECC	.24901	INC	1.8590
RP	206.84	LAP	-1.69	LOP	343.43	VP	24.962	GAP	14.33	AZP	89.22	TAL	356.06	TAP	110.78	RCA	150.98	APO	257.10
RC	71.130	GL	-16.16	GP	.09	ZAL	102.80	ZAP	158.68	ETS	179.87	ZAE	170.14	ETE	18.90	ZAC	99.54	ETC	278.58

V1	29.498	V2	26.477	VHL	3.859	DLA	-25.76	RAL	340.38	RAD	6640.5	VEL	11.617	PTH	6.66	VHP	6.297	DPA	-15.81
LVI	-19.18			C3	14.896														

RAP	325.06	ECC	1.2481																

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 42	2936.15	-9.20	87.96	195.06	136.89	17 16 58	1536.2	9.19	52.21
60.00	17 48 14	2340.58	-4.11	55.21	199.92	130.13	18 27 14	1340.6	11.93	37.18
70.00	19 22 59	2062.00	1.21	36.64	203.94	124.14	19 57 21	1062.0	14.84	16.68
80.00	21 18 39	1700.16	6.05	12.17	206.94	119.29	21 46 59	700.2	17.53	350.69
90.00	23 6 9	1353.26	6.40	347.92	208.20	117.10	23 26 42	353.3	18.63	325.78
100.00	0 5 23	1174.63	6.05	333.54	206.94	119.29	0 24 56	174.6	17.53	312.05
110.00	0 26 21	1108.81	1.21	325.56	203.94	124.14	0 44 50	108.8	14.84	305.60

DIFFERENTIAL CORRECTIONS

TDE	-.3179	TRA	-.7816	TC3	.3872	BAU	.0856												
RDE	-.3404	RRA	.1293	RC3	.1867	FAU	.06792												
FDE	.1744	FRA	1.5727	FC3	-3.9476	BSP	2295												
BDE	.4658	BRA	.7923	BC3	.4299	FSP	517												

MID-COURSE EXECUTION ACCURACY

SGT	1404.3	SGR	567.2	SG3	346.4														
RRT	.0087	RRF	-.0076	RTF	-.7767														
SGB	1514.5	R23	.0005	R13	-.7767														
SG1	1404.3	SG2	567.1	THA	.24														

ORBIT DETERMINATION ACCURACY

ST	30.5	SR	25.5	SS	22.4														
CRT	.6880	CRS	.1940	CST	.8419														
LSA	40.1	NSA	21.8	SSA	1.4														
EL1	36.6	EL2	18.4	ALF	37.62														

LAUNCH DATE MAY 10 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC — DISTANCE 347.933 — EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	33.054	GAL	-.73	AZL	91.86	HCA	115.98	SNA	199.65	ECC	.24377	INC	1.8595
RP	206.90	LAP	-1.67	LOP	344.69	VP	24.863	GAP	13.96	AZP	89.19	TAL	356.29	TAP	112.26	RCA	150.98	APO	260.32
RC	72.517	GL	-16.45	GP	.09	ZAL	102.53	ZAP	157.47	ETS	179.87	ZAE	170.44	ETE	18.62	ZAC	99.53	ETC	278.60

V1	29.498	V2	26.470	VHL	3.787	DLA	-26.12	RAL	340.25	RAD	6640.2	VEL	11.593	PTH	6.64	VHP	6.103	DPA	-15.79
LVI	-19.20			C3	14.345														

RAP	325.11	ECC	1.2361																

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 59	2519.72	-8.38	87.26	194.61	137.01	17 17 58	1519.7	10.00	51.50
60.00	17 50 15	2322.16	-5.30	54.32	199.46	130.19	18 28 58	1322.2	12.71	36.25
70.00	19 26 13	2040.01	2.04	35.49	203.51	124.10	20 0 13	1040.0	15.61	15.44
80.00	21 23 54	1671.64	7.00	10.58	206.56	119.10	21 51 46	671.6	18.33	348.94
90.00	23 13 23	1318.57	9.47	345.94	207.89	116.77	23 35 22	318.6	19.68	323.57
100.00	0 10 42	1146.12	7.00	331.95	206.56	119.10	0 29 48	146.1	18.33	310.31
110.00	0 29 35	1086.83	2.04	324.41	203.51	124.10	0 47 42	86.8	15.61	304.36

DIFFERENTIAL CORRECTIONS

TDE	-.3104	TRA	-.7382	TC3	.4077	BAU	.0865												
RDE	-.3310	RRA	.1232	RC3	.1927	FAU	.07123												
FDE	.1681	FRA	1.6412	FC3	-4.2986	BSP	2301												
BDE	.4537	BRA	.7783	BC3	.4510	FSP	555												

MID-COURSE EXECUTION ACCURACY

SGT	1411.0	SGR	562.6	SG3	369.7														
RRT	.0090	RRF	-.0080	RTF	-.7790														
SGB	1519.0	R23	.0003	R13	-.7790														
SG1	1411.0	SG2	562.5	THA	.24														

ORBIT DETERMINATION ACCURACY

ST	30.5	SR	25.2	SS	23.0														
CRT	.6847	CRS	.1708	CST	.8318														
LSA	40.0	NSA	22.2	SSA	1.4														
EL1	36.5	EL2	15.4	ALF	37.26														

LAUNCH DATE MAY 10 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 391.733 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.989	GAL	-.67	AZL	91.86	HCA	117.24	SMA	198.37	ECC	.23885	INC	1.8601	V1	29.498
RP	206.96	LAP	-1.65	LOP	345.96	VP	24.769	GAP	13.60	AZP	89.15	TAL	356.50	TAP	113.75	RCA	150.99	APO	245.75	V2	26.462
RC	73.950	GL	-16.73	GP	.09	ZAL	102.26	ZAP	156.23	ETS	179.88	ZAE	170.82	ETE	18.49	ZAC	99.53	ETC	278.60	LVI	-19.21

PLANETOCENTRIC CONIC

C3	13.837	VHL	3.720	DLA	-26.48	RAL	340.11	RAD	6640.0	VEL	11.571	PTH	6.62	VHP	5.916	DPA	-15.78	RAP	325.13	ECC	1.2277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 14	2303.85	-7.59	66.58	194.18	137.11	17 18 58	1503.8	10.79	50.81
60.00	17 52 16	2304.27	-2.51	53.47	199.04	130.24	18 30 40	1304.3	13.47	35.35
70.00	19 29 28	2018.48	2.87	34.37	203.11	124.05	20 3 6	1018.5	16.36	14.22
80.00	21 29 24	1643.06	7.94	8.99	206.23	118.88	21 56 48	643.1	19.11	347.18
90.00	23 21 9	1282.68	10.56	343.87	207.62	116.39	23 42 32	282.7	20.53	321.28
100.00	0 16 12	1111.5	7.94	330.35	206.23	118.88	0 34 50	117.5	19.11	308.55
110.00	0 32 50	1065.30	2.87	323.29	203.11	124.05	0 50 36	65.3	16.36	303.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2944	TRA	-.7450	TC3	.4546	BAU	.0918	SGT	1401.2	SGR	557.6	SG3	394.5	ST	29.7	SR	25.0	SS	23.5
RDE	-.3218	RRA	.1212	RC3	.1984	FAU	.07487	RRT	.0093	RRF	-.0088	RTF	-.7906	CRT	.6757	CRS	.1446	CST	.8236
FDE	.1589	FRA	1.7084	FC3	-4.6846	BSP	2200	SGB	1508.1	R23	-.0001	R13	-.7906	LSA	39.4	MSA	22.6	SSA	1.4
BDE	.4361	BRA	.7548	BC3	.4960	FSP	594	SG1	1401.2	SG2	557.6	THA	.25	EL1	35.7	EL2	15.3	ALF	37.73

LAUNCH DATE MAY 10 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC DISTANCE 355.566 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.928	GAL	-.62	AZL	91.86	HCA	118.51	SMA	197.19	ECC	.23425	INC	1.8606	V1	29.498
RP	207.04	LAP	-1.64	LOP	347.23	VP	24.678	GAP	13.25	AZP	89.11	TAL	356.71	TAP	115.22	RCA	151.00	APO	243.38	V2	26.454
RC	75.426	GL	-17.00	GP	.10	ZAL	101.99	ZAP	154.95	ETS	179.88	ZAE	171.27	ETE	18.50	ZAC	99.54	ETC	278.60	LVI	-19.21

PLANETOCENTRIC CONIC

C3	13.371	VHL	3.657	DLA	-26.82	RAL	339.97	RAD	6639.7	VEL	11.551	PTH	6.60	VHP	5.736	DPA	-15.78	RAP	325.12	ECC	1.2201

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 38 29	2488.64	-6.83	65.94	193.78	137.20	17 19 57	1488.6	11.54	50.15
60.00	17 54 16	2287.07	-1.76	52.65	198.64	130.27	18 32 23	1287.1	14.20	34.47
70.00	19 32 43	1997.59	3.66	33.27	202.74	123.98	20 6 0	997.6	17.07	13.02
80.00	21 35 4	1614.61	8.87	7.39	205.93	118.63	22 1 58	614.6	19.87	345.41
90.00	23 29 31	1245.49	11.68	341.71	207.40	115.94	23 50 17	245.5	21.37	318.87
100.00	0 21 51	1089.08	8.87	328.76	205.93	118.63	0 40 0	89.1	19.87	306.78
110.00	0 36 5	1044.41	3.66	322.19	202.74	123.98	0 53 29	44.4	17.07	301.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2920	TRA	-.7360	TC3	.4584	BAU	.0897	SGT	1411.3	SGR	552.4	SG3	421.0	ST	30.0	SR	24.7	SS	24.2
RDE	-.3129	RRA	.1174	RC3	.2038	FAU	.07857	RRT	.0102	RRF	-.0097	RTF	-.7871	CRT	.6761	CRS	.1254	CST	.8122
FDE	.1541	FRA	1.7872	FC3	-5.0873	BSP	2267	SGB	1515.5	R23	-.0002	R13	-.7871	LSA	39.6	MSA	23.0	SSA	1.4
BDE	.4280	BRA	.7453	BC3	.5017	FSP	639	SG1	1411.3	SG2	552.3	THA	.27	EL1	35.7	EL2	15.3	ALF	36.96

LAUNCH DATE MAY 10 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC DISTANCE 359.430 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.871	GAL	-.58	AZL	91.86	HCA	119.77	SMA	196.10	ECC	.22994	INC	1.8613	V1	29.498
RP	207.12	LAP	-1.62	LOP	348.49	VP	24.591	GAP	12.90	AZP	89.08	TAL	356.92	TAP	116.69	RCA	151.01	APO	241.19	V2	26.444
RC	76.944	GL	-17.26	GP	.10	ZAL	101.74	ZAP	153.65	ETS	179.89	ZAE	171.79	ETE	18.69	ZAC	99.55	ETC	278.59	LVI	-19.21

PLANETOCENTRIC CONIC

C3	12.942	VHL	3.597	DLA	-27.16	RAL	339.84	RAD	6639.5	VEL	11.533	PTH	6.58	VHP	5.563	DPA	-15.79	RAP	325.08	ECC	1.2130

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 42	2474.05	-6.10	65.32	193.41	137.28	17 20 56	1474.1	12.26	49.51
60.00	17 56 13	2270.50	-1.03	51.83	198.27	130.29	18 34 4	1270.5	14.89	33.62
70.00	19 35 57	1977.26	4.43	32.21	202.40	123.90	20 8 54	977.3	17.76	11.85
80.00	21 40 54	1586.12	9.80	5.78	205.66	118.35	22 7 20	586.1	20.61	343.62
90.00	23 38 44	1206.14	12.84	339.40	207.23	115.42	23 58 50	206.1	22.22	316.30
100.00	0 27 42	1060.59	9.80	327.15	205.66	118.35	0 45 22	60.6	20.61	304.99
110.00	0 39 19	1024.08	4.43	321.13	202.40	123.90	0 56 23	24.1	17.76	300.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2884	TRA	-.7235	TC3	.4623	BAU	.0878	SGT	1413.8	SGR	546.8	SG3	448.5	ST	30.1	SR	24.4	SS	24.9
RDE	-.3043	RRA	.1137	RC3	.2089	FAU	.08237	RRT	.0116	RRF	-.0104	RTF	-.7843	CRT	.6768	CRS	.1052	CST	.7998
FDE	.1477	FRA	1.8673	FC3	-5.5104	BSP	2312	SGB	1515.9	R23	.0003	R13	-.7843	LSA	39.7	MSA	23.3	SSA	1.5
BDE	.4193	BRA	.7324	BC3	.5073	FSP	691	SG1	1413.8	SG2	546.7	THA	.30	EL1	35.7	EL2	15.2	ALF	36.39

LAUNCH DATE MAY 10 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 1 1971

HELIOCENTRIC CONIC DISTANCE 363.322 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.817	GAL	-.53	AZL	91.86	HCA	121.04	SMA	195.08	ECC	.22591	INC	1.8618	V1	29.498
RP	207.21	LAP	-1.60	LOP	349.76	VP	24.508	GAP	12.57	AZP	89.04	TAL	357.12	TAP	118.15	RCA	151.01	APO	239.15	V2	26.433
RC	78.502	GL	-17.52	GP	.11	ZAL	101.50	ZAP	152.32	ETS	179.89	ZAE	172.38	ETE	19.10	ZAC	99.56	ETC	278.58	LVI	-19.19

PLANETOCENTRIC CONIC

C3	12.546	VHL	3.542	DLA	-27.48	RAL	339.72	RAD	6639.3	VEL	11.516	PTH	6.56	VHP	5.395	DPA	-15.81	RAP	325.01	ECC	1.2065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 54	2460.09	-5.40	64.73	193.06	137.34	17 21 54	1460.1	12.95	48.89
60.00	17 58 10	2254.57	-.33	51.09	197.93	130.30	18 35 44	1254.6	15.56	32.80
70.00	19 39 11	1957.53	5.18	31.17	202.09	123.81	20 11 48	957.5	18.42	10.70
80.00	21 46 57	1557.54	10.72	4.16	205.44	118.04	22 12 54	557.5	21.33	341.80
90.00	23 49 10	1163.43	14.07	336.87	207.14	114.79	24 8 33	163.4	23.09	313.47
100.00	0 33 45	1032.01	10.72	325.52	205.44	118.04	0 50 57	32.0	21.33	303.17
110.00	0 42 33	1004.35	5.18	320.09	202.09	123.81	0 59 17	4.3	18.42	299.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2848	TRA	-.7113	TC3	.4690	BAU	.0864	SGT	1415.8	SGR	540.9	SG3	478.5	ST	30.2	SR	24.1	SS	25.7
RDE	-.2960	RRA	.1102	RC3	.2136	FAU	.08656	RRT	.0136	RRF	-.0117	RTF	-.7828	CRT	.6775	CRS	.0890	CST	.7891
FDE	.1436	FRA	1.9562	FC3	-5.9727	BSP	2305	SGB	1515.6	R23	.0007	R13	-.7828	LSA	39.9	MSA	23.7	SSA	1.5
BDE	.4108	BRA	.7198	BC3	.5153	FSP	738	SG1	1415.8	SG2	540.8	THA	.35	EL1	35.6	EL2	15.0	ALF	35.83

LAUNCH DATE MAY 10 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 3 1971

HELIOCENTRIC CONIC DISTANCE 367.241 EARTH TO MARS

RL	181.08	LAL	.00	LOL	228.70	VL	32.787	GAL	-.49	AZL	91.86	HCA	122.30	SNA	194.14	ECC	.22214	INC	1.6824
RP	207.31	LAP	-1.57	LOP	351.02	VP	24.428	GAP	12.24	AZP	89.00	TAL	357.31	TAP	119.60	RCA	151.02	APO	237.27
RC	80.098	GL	-17.76	GP	.11	ZAL	101.26	ZAP	150.95	ETS	179.89	ZAE	173.08	ETE	19.82	ZAC	99.58	ETC	278.56

V1	29.498	V2	26.422	LVI	-19.17														

PLANETOCENTRIC CONIC

C3	12.162	VHL	3.490	DLA	-27.79	RAL	339.60	RAD	6639.1	VEL	11.800	PTH	6.55	VHP	9.234	DPA	-19.84	RAP	324.91

ECC	1.2009																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 5	2446.76	-4.74	64.17	192.74	137.40	17 22 52	1446.8	13.60	48.30
60.00	18 0 4	2239.31	.35	50.36	197.62	130.30	18 37 24	1239.3	16.19	32.01
70.00	19 42 23	1938.44	5.90	30.16	201.81	123.70	20 14 41	938.4	19.06	9.58
80.00	21 53 13	1528.81	11.63	2.51	205.25	117.69	22 18 42	528.8	22.03	339.98
90.00	0 5 32	1114.78	15.44	333.96	207.14	113.99	0 24 7	114.8	24.01	310.21
100.00	0 40 1	1003.29	11.63	323.88	205.25	117.69	0 56 44	3.3	22.03	301.33
110.00	0 45 45	6273.29	5.90	296.99	201.81	123.70	2 30 19	5273.3	19.06	276.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2782	TRA	-.6939	TC3	.4728	BAU	.0848	SGT	1405.5	SGR	534.6	SG3	509.2	ST	29.9	SR	23.8	SS	26.3
RDE	-.2980	RRA	.1068	RC3	.2180	FAU	.09100	RRT	.0146	RRF	-.0125	RTF	-.7797	CRT	.6770	CRS	.0631	CST	.7734
FDE	.1312	FRA	2.0384	FC3	-6.4670	BSP	2325	SGB	1503.8	R23	.0008	R13	-.7797	LSA	39.7	NSA	24.0	SSA	1.5
BDE	.4004	BRA	.7021	BC3	.5206	FBP	796	SG1	1405.5	SG2	534.6	THA	.37	EL1	35.2	EL2	14.9	ALF	35.84

LAUNCH DATE MAY 10 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 371.184 EARTH TO MARS

RL	181.09	LAL	.00	LOL	228.70	VL	32.720	GAL	-.45	AZL	91.86	HCA	123.56	SNA	193.27	ECC	.21862	INC	1.6831
RP	207.42	LAP	-1.55	LOP	352.28	VP	24.382	GAP	11.92	AZP	88.97	TAL	357.48	TAP	121.04	RCA	151.02	APO	235.53
RC	81.730	GL	-18.00	GP	.11	ZAL	101.04	ZAP	149.54	ETS	179.89	ZAE	173.79	ETE	20.95	ZAC	99.61	ETC	278.55

V1	29.498	V2	26.409	LVI	-19.14														

PLANETOCENTRIC CONIC

C3	11.848	VHL	3.442	DLA	-28.09	RAL	339.49	RAD	6639.0	VEL	11.486	PTH	6.53	VHP	8.079	DPA	-15.88	RAP	324.76

ECC	1.1980																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 43 15	2434.09	-4.10	63.64	192.44	137.44	17 23 49	1434.1	14.22	47.74
60.00	18 1 57	2224.73	.09	49.67	197.33	130.29	18 39 1	1224.7	16.79	31.24
70.00	19 45 34	1920.02	6.60	29.19	201.58	123.89	20 17 34	920.0	19.66	8.49
80.00	21 59 45	1499.67	12.54	.85	205.10	117.32	22 24 45	499.9	22.71	338.08
90.00	0 22 31	1082.10	17.14	330.14	207.32	112.85	0 40 3	82.1	23.08	305.92
100.00	0 46 33	6262.38	12.54	300.12	205.10	117.32	2 30 55	5262.4	22.71	277.36
110.00	0 48 56	6254.88	6.60	296.02	201.58	123.89	2 33 11	5254.9	19.66	276.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2739	TRA	-.6811	TC3	.4636	BAU	.0814	SGT	1400.5	SGR	528.1	SG3	542.1	ST	29.9	SR	23.5	SS	27.2
RDE	-.2901	RRA	.1038	RC3	.2220	FAU	.09535	RRT	.0142	RRF	-.0128	RTF	-.7759	CRT	.6772	CRS	.0478	CST	.7632
FDE	.1262	FRA	2.1407	FC3	-6.9877	BSP	2291	SGB	1496.7	R23	.0001	R13	-.7759	LSA	39.8	NSA	24.4	SSA	1.5
BDE	.3918	BRA	.6889	BC3	.5140	FBP	848	SG1	1400.5	SG2	528.0	THA	.36	EL1	35.0	EL2	14.7	ALF	35.16

LAUNCH DATE MAY 10 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 375.149 EARTH TO MARS

RL	181.09	LAL	.00	LOL	228.70	VL	32.678	GAL	-.42	AZL	91.86	HCA	124.82	SNA	192.47	ECC	.21833	INC	1.6837
RP	207.54	LAP	-1.53	LOP	353.54	VP	24.278	GAP	11.61	AZP	88.94	TAL	357.68	TAP	122.47	RCA	151.02	APO	233.91
RC	83.399	GL	-18.23	GP	.12	ZAL	100.84	ZAP	148.11	ETS	179.88	ZAE	174.58	ETE	22.71	ZAC	99.64	ETC	278.48

V1	29.498	V2	26.398	LVI	-19.10														

PLANETOCENTRIC CONIC

C3	11.540	VHL	3.397	DLA	-28.38	RAL	339.39	RAD	6638.8	VEL	11.473	PTH	6.52	VHP	4.930	DPA	-15.93	RAP	324.59

ECC	1.1889																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 23	2422.08	-3.50	63.13	192.18	137.48	17 24 45	1422.1	14.81	47.20
60.00	18 3 47	2210.87	1.60	49.01	197.07	130.27	18 40 38	1210.9	17.36	30.91
70.00	19 48 42	1908.31	7.27	28.25	201.33	123.46	20 20 24	908.3	20.23	7.44
80.00	22 6 35	1470.56	13.45	359.15	204.99	116.91	22 31 5	470.6	23.38	336.16
87.57	0 30 20	1019.65	19.69	328.86	207.87	110.85	0 47 20	19.8	26.55	303.91
100.00	0 53 22	6233.07	13.45	298.42	204.99	116.91	2 37 16	5233.1	23.38	279.44
110.00	0 52 4	6237.17	7.27	295.08	201.33	123.46	2 36 1	5237.2	20.23	274.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2676	TRA	-.6627	TC3	.4583	BAU	.0788	SGT	1383.7	SGR	521.3	SG3	576.5	ST	29.5	SR	23.2	SS	27.9
RDE	-.2725	RRA	.1003	RC3	.2256	FAU	.10025	RRT	.0152	RRF	-.0135	RTF	-.7716	CRT	.6778	CRS	.0244	CST	.7479
FDE	.1138	FRA	2.2363	FC3	-7.5206	BSP	2289	SGB	1478.6	R23	.0001	R13	-.7716	LSA	39.6	NSA	24.8	SSA	1.5
BDE	.3819	BRA	.6703	BC3	.5108	FBP	914	SG1	1383.7	SG2	521.2	THA	.38	EL1	34.6	EL2	14.5	ALF	35.04

LAUNCH DATE MAY 10 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 379.136 EARTH TO MARS

RL	181.08	LAL	.00	LOL	228.70	VL	32.635	GAL	-.38	AZL	91.86	HCA	126.08	SNA	191.72	ECC	.21226	INC	1.6844
RP	207.66	LAP	-1.51	LOP	354.80	VP	24.207	GAP	11.30	AZP	88.90	TAL	357.81	TAP	123.89	RCA	151.03	APO	232.42
RC	85.104	GL	-18.45	GP	.12	ZAL	100.65	ZAP	146.63	ETS	179.88	ZAE	175.44	ETE	25.50	ZAC	99.68	ETC	278.45

V1	29.498	V2	26.381	LVI	-19.05														

PLANETOCENTRIC CONIC

C3	11.257	VHL	3.355	DLA	-28.65	RAL	339.31	RAD	6638.7	VEL	11.460	PTH	6.51	VHP	4.787	DPA	-16.00	RAP	324.37

ECC	1.1853																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 45 30	2410.73	-2.93	62.66	191.94	137.51	17 25 41	1410.7	15.36	46.69
60.00	18 5 35	2197.73	2.18	48.38	196.84	130.25	18 42 12	1197.7	17.90	29.82
70.00	19 51 47	1885.36	7.90	27.35	201.13	123.34	20 23 13	885.4	20.77	6.42
80.00	22 13 46	1440.72	14.36	357.40	204.92	116.46	22 37 47	440.7	24.03	334.18
88.23	0 10 37	1077.36	20.00	333.20	207.51	110.95	0 28 35	77.4	26.87	308.19
100.00	1 0 34	6203.23	14.36	296.68	204.92	116.46	2 43 57	5203.2	24.03	273.46
110.00	0 55 10	6220.22	7.90	294.18	201.13	123.34	2 38 50	5220.2	20.77	273.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2643	TRA	-.6457	TC3	.4545	BAU	.0766	SGT	1369.4	SGR	514.2	SG3	614.5	ST	29.4	SR	22.8	SS	28.7
RDE	-.2691	RRA	.0972	RC3	.2288	FAU	.10577	RRT	.0192	RRF	-.0166	RTF	-.7673	CRT	.6819	CRS	.0121	CST	.7395
FDE	.1093	FRA	2.3412	FC3	-8.1342	BSP	2253	SGB	1462.7	R23	.0005	R13	-.7673	LSA	39.7	NSA	25.1	SSA	1.5
BDE	.3744	BRA	.6529	BC3	.5088	FBP	977	SG1	1369.4	SG2	514.1	THA	.48	EL1	34.4	EL2	14.3	ALF	34.70

LAUNCH DATE MAY 10 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 383.141 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.597	GAL	-.35	AZL	91.87	HCA	127.33	SMA	191.03	ECC	.20940	INC	1.8651	V1	29.498
RP	207.80	LAP	-1.48	LOP	356.05	VP	24.138	GAP	11.00	AZP	88.87	TAL	357.96	TAP	125.29	RCA	151.03	APO	231.04	V2	26.365
RC	86.843	GL	-18.86	GP	.13	ZAL	100.47	ZAP	145.12	ETS	179.87	ZAE	176.35	ETE	30.18	ZAC	99.72	ETC	278.40	LVI	-18.99

PLANETOCENTRIC CONIC

C3	10.998	VHL	3.316	DLA	-28.90	RAL	339.23	RAD	6638.6	VEL	11.449	PTH	6.50	VHP	4.650	DPA	-16.08	RAP	324.12	ECC	1.1810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 37	2400.06	-2.39	62.21	191.72	137.53	17 26 37	1400.1	15.88	46.21
60.00	18 7 20	2185.32	2.72	47.78	196.63	130.22	18 43 45	1185.3	18.40	29.16
70.00	19 54 49	1869.19	8.50	26.49	200.96	123.20	20 25 58	869.2	21.28	5.44
80.00	22 21 24	1410.03	15.29	355.59	204.89	115.96	22 44 54	410.0	24.67	332.13
83.78	23 54 31	1110.89	20.29	335.78	207.18	111.04	24 13 2	110.9	27.16	310.72
100.00	1 8 12	617[illegible]	15.29	294.87	204.89	115.96	2 51 4	5172.5	24.67	271.40
110.00	0 58 11	6204.05	8.50	293.31	200.96	123.20	2 41 35	5204.0	21.28	272.26

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2595	TRA	-.6272	TC3	.4268	BAU	.0714	SGT	1346.6	SGR	506.7	SG3	651.6	ST	29.1	SR	22.5	SS	29.6
RDE	-.2579	RRA	.0943	RC3	.2315	FAU	.11075	RRT	.0191	RRF	-.0167	RTF	-.7584	CRT	.6850	CRS	-.0061	CST	.7201
FDE	.0989	FRA	2.4515	FC3	-8.7185	BSP	2195	SGB	1438.8	R23	.0001	R13	-.7584	LSA	39.7	MSA	25.4	SSA	1.5
BDE	.3659	BRA	.6342	BC3	.4856	FSP	1041	SG1	1346.6	SG2	506.6	THA	.48	EL1	34.0	EL2	14.0	ALF	34.52

LAUNCH DATE MAY 10 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 387.165 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.561	GAL	-.33	AZL	91.87	HCA	128.59	SMA	190.39	ECC	.20674	INC	1.8658	V1	29.498
RP	207.94	LAP	-1.46	LOP	357.31	VP	24.072	GAP	10.71	AZP	88.84	TAL	358.09	TAP	126.68	RCA	151.03	APO	229.76	V2	26.349
RC	88.616	GL	-18.86	GP	.14	ZAL	100.32	ZAP	143.57	ETS	179.86	ZAE	177.27	ETE	38.86	ZAC	99.77	ETC	278.34	LVI	-18.91

PLANETOCENTRIC CONIC

C3	10.759	VHL	3.280	DLA	-29.14	RAL	339.17	RAD	6638.4	VEL	11.439	PTH	6.49	VHP	4.518	DPA	-16.17	RAP	323.82	ECC	1.1771

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 41	2390.04	-1.89	61.79	191.53	137.55	17 27 31	1390.0	16.37	45.75
60.00	18 9 2	2173.63	3.23	47.22	196.45	130.19	18 45 16	1173.6	18.87	28.53
70.00	19 57 46	1853.80	9.08	25.67	200.82	123.07	20 28 40	853.8	21.76	4.50
80.00	22 29 40	1377.93	16.23	353.68	204.92	115.41	22 52 38	377.9	25.31	329.96
82.66	23 45 17	1135.34	20.56	337.69	206.88	111.12	24 4 13	135.3	27.44	312.57
100.00	1 16 27	6140.44	16.23	292.95	204.92	115.41	2 58 48	5140.4	25.31	269.23
110.00	1 1 9	6186.66	9.08	292.49	200.82	123.07	2 44 17	5188.7	21.76	271.33

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2491	TRA	-.6043	TC3	.4128	BAU	.0682	SGT	1312.8	SGR	499.0	SG3	691.5	ST	28.3	SR	22.1	SS	30.4
RDE	-.2509	RRA	.0914	RC3	.2339	FAU	.11631	RRT	.0172	RRF	-.0161	RTF	-.7543	CRT	.6829	CRS	-.0335	CST	.7029
FDE	.0791	FRA	2.5658	FC3	-9.3593	BSP	2086	SGB	1404.5	R23	-.0009	R13	-.7543	LSA	39.3	MSA	25.8	SSA	1.5
BDE	.3536	BRA	.6112	BC3	.4745	FSP	1105	SG1	1312.8	SG2	499.0	THA	.44	EL1	33.2	EL2	13.8	ALF	34.90

LAUNCH DATE MAY 10 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 391.204 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.528	GAL	-.30	AZL	91.87	HCA	129.84	SMA	189.81	ECC	.20427	INC	1.8665	V1	29.498
RP	208.08	LAP	-1.43	LOP	358.56	VP	24.008	GAP	10.43	AZP	88.80	TAL	358.21	TAP	128.05	RCA	151.03	APO	228.58	V2	26.332
RC	90.421	GL	-19.05	GP	.14	ZAL	100.18	ZAP	141.98	ETS	179.86	ZAE	178.11	ETE	57.29	ZAC	99.82	ETC	278.27	LVI	-18.83

PLANETOCENTRIC CONIC

C3	10.541	VHL	3.247	DLA	-29.36	RAL	339.13	RAD	6638.3	VEL	11.429	PTH	6.48	VHP	4.393	DPA	-16.27	RAP	323.49	ECC	1.1735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 45	2360.74	-1.42	61.40	191.37	137.56	17 28 26	1360.7	16.82	45.32
60.00	18 10 41	2162.76	3.71	46.70	196.30	130.16	18 46 44	1162.8	19.31	27.94
70.00	20 0 38	1839.35	9.61	24.89	200.70	122.93	20 31 18	839.4	22.20	3.62
80.00	22 38 46	1343.80	17.22	351.63	205.00	114.78	23 1 10	343.8	25.94	327.62
81.75	23 37 55	1154.29	20.81	339.20	206.61	111.20	23 57 9	154.3	27.70	314.03
100.00	1 25 33	6106.31	17.22	290.90	205.00	114.78	3 7 20	5106.3	25.94	288.89
110.00	1 4 1	6174.21	9.61	291.71	200.70	122.93	2 46 55	5174.2	22.20	270.44

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2518	TRA	-.5901	TC3	.3641	BAU	.0611	SGT	1296.5	SGR	491.1	SG3	734.2	ST	28.5	SR	21.7	SS	31.4
RDE	-.2441	RRA	.0886	RC3	.2358	FAU	.12209	RRT	.0206	RRF	-.0188	RTF	-.[illegible]74	CRT	.6944	CRS	-.0359	CST	.6897
FDE	.0808	FRA	2.6956	FC3	-10.0276	BSP	2101	SGB	1386.4	R23	-.0011	R13	-.7374	LSA	39.9	MSA	26.0	SSA	1.5
BDE	.3506	BRA	.5967	BC3	.4338	FSP	1190	SG1	1296.6	SG2	491.0	THA	.52	EL1	33.3	EL2	13.4	ALF	34.11

LAUNCH DATE MAY 10 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 395.258 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.497	GAL	-.28	AZL	91.87	HCA	131.09	SMA	189.26	ECC	.20197	INC	1.8673	V1	29.498
RP	208.24	LAP	-1.41	LOP	359.81	VP	23.946	GAP	10.15	AZP	88.77	TAL	358.31	TAP	129.41	RCA	151.04	APO	227.49	V2	26.313
RC	92.259	GL	-19.23	GP	.15	ZAL	100.07	ZAP	140.35	ETS	179.85	ZAE	178.52	ETE	95.80	ZAC	99.88	ETC	278.20	LVI	-18.74

PLANETOCENTRIC CONIC

C3	10.341	VHL	3.216	DLA	-29.57	RAL	339.10	RAD	6638.2	VEL	11.421	PTH	6.47	VHP	4.272	DPA	-16.38	RAP	323.12	ECC	1.1702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 48	2372.10	-.99	61.04	191.23	137.57	17 29 20	1372.1	17.23	44.92
60.00	18 12 17	2152.64	4.16	46.22	196.17	130.12	18 48 10	1152.6	19.71	27.39
70.00	20 3 24	1825.77	10.11	24.16	200.60	122.80	20 33 50	825.8	22.61	2.78
80.00	22 49 23	1305.37	18.30	349.28	205.16	114.01	23 11 9	305.4	26.61	324.96
80.99	23 31 50	1169.59	21.04	340.43	206.38	111.26	23 51 19	169.6	27.94	315.21
100.00	1 36 11	6067.88	18.30	288.56	205.16	114.01	3 17 19	5067.9	26.61	284.23
110.00	1 6 47	6160.63	10.11	290.98	200.60	122.80	2 49 27	5160.6	22.61	269.60

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.2461	TRA	-.5669	TC3	.3140	BAU	.0544	SGT	1257.6	SGR	482.8	SG3	776.6	ST	28.0	SR	21.3	SS	32.2
RDE	-.2374	RRA	.0860	RC3	.2372	FAU	.12805	RRT	.0193	RRF	-.0188	RTF	-.7197	CRT	.6998	CRS	-.0612	CST	.6655
FDE	.0596	FRA	2.8148	FC3	-10.7197	BSP	2037	SGB	1347.1	R23	-.0025	R13	-.7197	LSA	39.7	MSA	26.4	SSA	1.5
BDE	.3419	BRA	.5734	BC3	.3936	FSP	1269	SG1	1257.6	SG2	482.7	THA	.50	EL1	32.7	EL2	13.0	ALF	34.22

LAUNCH DATE MAY 10 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 399.327 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.468	GAL	-.27	AZL	91.87	HCA	132.34	SMA	188.76	ECC	.19984	INC	1.8681
RP	200.41	LAP	-1.38	LOP	1.06	VP	23.686	GAP	9.88	AZP	88.74	TAL	358.40	TAP	130.75	RCA	151.04	APO	226.48
RC	94.128	GL	-19.40	GP	.16	ZAL	99.98	ZAP	138.69	ETS	179.84	ZAE	178.05	ETE	135.64	ZAC	99.95	ETC	278.11

VI 29.498 V2 26.294 LVI -18.64

PLANETOCENTRIC CONIC

C3	10.159	VHL	3.187	DLA	-29.76	RAL	339.09	RAD	6638.1	VEL	11.413	PTH	6.46	VHP	4.157	DPA	-16.51	RAP	322.71

ECC 1.1672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 49	2364.13	-.59	60.71	191.12	137.57	17 30 13	1364.1	17.62	44.56
60.00	18 13 50	2143.29	4.37	45.77	196.07	130.09	18 49 33	1143.3	20.09	26.88
70.00	20 6 4	1813.12	10.58	23.48	200.53	122.66	20 36 17	813.1	22.99	1.99
80.00	23 3 38	1255.98	19.64	346.23	205.48	112.95	23 24 34	256.0	27.38	321.49
80.33	23 26 45	1182.12	21.26	341.45	206.18	111.32	23 46 27	182.1	28.15	316.18
100.00	1 50 26	6018.49	19.64	285.50	205.48	112.95	3 30 45	5018.5	27.38	260.77
110.00	1 9 26	6147.98	10.58	290.30	200.53	122.66	2 51 54	5148.0	22.99	268.82

APO 226.48 V2 26.294 LVI -18.64

DIFFERENTIAL CORRECTIONS

TDE	-.2484	TRA	-.5439	TC3	.2603	BAU	.0479
RDE	-.2308	RRA	.0834	RC3	.2383	FAU	.13422
FDE	.0631	FRA	2.9413	FC	-11.4385	BSP	1950
BDE	.3369	BRA	.9502	BC3	.3830	FSP	1349

MID-COURSE EXECUTION ACCURACY

SGT	1220.9	SGR	474.4	SG3	820.9		
RRT	.0240	RRF	-.0230	RTF	-.6999		
SG0	1309.8	R23	-.0032	R13	-.7000		
SG1	1220.9	SG2	474.2	THA	.63		

ORBIT DETERMINATION ACCURACY

ST	27.8	SR	20.9	SS	33.1
CRT	.7126	CRS	-.0604	CST	.6524
LSA	40.0	NSA	26.5	SSA	1.5
EL1	32.4	EL2	12.6	ALF	33.99

LAUNCH DATE MAY 10 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 403.409 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.441	GAL	-.25	AZL	91.87	HCA	133.59	SMA	188.30	ECC	.19787	INC	1.8689
RP	200.58	LAP	-1.38	LOP	2.31	VP	23.828	GAP	9.61	AZP	88.71	TAL	358.48	TAP	132.07	RCA	151.04	APO	225.55
RC	96.027	GL	-19.55	GP	.16	ZAL	99.91	ZAP	136.98	ETS	179.82	ZAE	177.01	ETE	188.13	ZAC	100.02	ETC	278.02

VI 29.498 V2 26.274 LVI -18.52

PLANETOCENTRIC CONIC

C3	9.992	VHL	3.161	DLA	-29.93	RAL	339.10	RAD	6638.0	VEL	11.408	PTH	6.46	VHP	4.048	DPA	-16.65	RAP	322.25

ECC 1.1844

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 51 49	2356.83	-.22	60.40	191.04	137.58	17 31 6	1356.8	17.97	44.22
60.00	18 15 10	2134.71	4.84	45.36	195.99	130.08	18 50 53	1134.7	20.43	26.41
70.00	20 8 36	1801.43	11.01	22.84	200.49	122.54	20 38 38	801.4	23.34	1.26
79.77	23 22 31	1192.47	21.46	342.30	206.01	111.38	23 42 23	192.5	28.35	316.99
79.77	23 22 31	1192.47	21.46	342.30	206.01	111.38	23 42 23	192.5	28.35	316.99
79.77	23 22 31	1192.47	21.46	342.30	206.01	111.38	23 42 23	192.5	28.35	316.99
110.00	1 11 58	6136.29	11.01	289.67	200.49	122.54	2 54 15	5136.3	23.34	268.09

APO 225.55 V2 26.274 LVI -18.52

DIFFERENTIAL CORRECTIONS

TDE	-.2416	TRA	-.5193	TC3	.1943	BAU	.0412
RDE	-.2244	RRA	.0808	RC3	.2390	FAU	.14038
FDE	.0494	FRA	3.0822	FC	-12.1631	BSP	1820
BDE	.3297	BRA	.5255	BC3	.3080	FSP	1425

MID-COURSE EXECUTION ACCURACY

SGT	1177.5	SGR	465.6	SG3	867.0		
RRT	.0239	RRF	-.0233	RTF	-.6758		
SG0	1266.2	R23	-.0042	R13	-.6758		
SG1	1177.5	SG2	465.5	THA	.64		

ORBIT DETERMINATION ACCURACY

ST	27.3	SR	20.5	SS	34.1
CRT	.7223	CRS	-.0759	CST	.6297
LSA	40.1	NSA	26.6	SSA	1.5
EL1	31.9	EL2	12.1	ALF	34.08

LAUNCH DATE MAY 10 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 407.504 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.417	GAL	-.24	AZL	91.87	HCA	134.84	SMA	187.87	ECC	.19804	INC	1.8697
RP	200.76	LAP	-1.33	LOP	3.85	VP	23.771	GAP	9.38	AZP	88.68	TAL	358.54	TAP	133.38	RCA	151.04	APO	224.70
RC	97.955	GL	-19.71	GP	.17	ZAL	99.85	ZAP	135.24	ETS	179.81	ZAE	175.74	ETE	164.28	ZAC	100.10	ETC	277.92

VI 29.498 V2 26.254 LVI -18.39

PLANETOCENTRIC CONIC

C3	9.840	VHL	3.137	DLA	-30.08	RAL	339.12	RAD	6638.0	VEL	11.399	PTH	6.45	VHP	3.943	DPA	-16.80	RAP	321.75

ECC 1.1819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 48	2350.15	.12	60.13	190.98	137.58	17 31 58	1350.1	18.29	43.90
60.00	18 16 44	2126.85	5.29	44.98	195.94	130.01	18 52 11	1126.9	20.74	25.98
70.00	20 11 0	1790.67	11.40	22.26	200.46	122.41	20 40 51	790.7	23.66	.59
79.29	23 10 57	1201.06	21.64	343.02	205.87	111.42	23 38 58	201.1	28.54	317.67
79.29	23 10 57	1201.06	21.64	343.02	205.87	111.42	23 38 58	201.1	28.54	317.67
79.29	23 10 57	1201.06	21.64	343.02	205.87	111.42	23 38 58	201.1	28.54	317.67
110.00	1 14 23	6125.52	11.40	289.08	200.46	122.41	2 56 20	5125.5	23.66	267.41

APO 224.70 V2 26.254 LVI -18.39

DIFFERENTIAL CORRECTIONS

TDE	-.2290	TRA	-.4842	TC3	.1671	BAU	.0384
RDE	-.2101	RRA	.0783	RC3	.2395	FAU	.14012
FDE	.0240	FRA	3.2070	FC	-13.0312	BSP	1553
BDE	.3162	BRA	.4905	BC3	.2921	FSP	1477

MID-COURSE EXECUTION ACCURACY

SGT	1109.3	SGR	456.7	SG3	917.1		
RRT	.0263	RRF	-.0262	RTF	-.6820		
SG0	1199.6	R23	-.0052	R13	-.6820		
SG1	1109.4	SG2	456.5	THA	.75		

ORBIT DETERMINATION ACCURACY

ST	25.9	SR	20.1	SS	34.9
CRT	.7272	CRS	-.1000	CST	.6049
LSA	39.7	NSA	26.7	SSA	1.5
EL1	30.6	EL2	11.7	ALF	35.20

LAUNCH DATE MAY 10 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 411.606 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.394	GAL	-.23	AZL	91.87	HCA	136.08	SMA	187.48	ECC	.19437	INC	1.8706
RP	200.94	LAP	-1.30	LOP	4.80	VP	23.716	GAP	9.10	AZP	88.65	TAL	358.58	TAP	134.66	RCA	151.04	APO	223.92
RC	99.910	GL	-19.84	GP	.18	ZAL	99.83	ZAP	133.46	ETS	179.80	ZAE	174.36	ETE	169.24	ZAC	100.18	ETC	277.81

VI 29.498 V2 26.232 LVI -18.25

PLANETOCENTRIC CONIC

C3	9.703	VHL	3.115	DLA	-30.22	RAL	339.17	RAD	6637.9	VEL	11.393	PTH	6.45	VHP	3.845	DPA	-16.95	RAP	321.21

ECC 1.1597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 46	2344.26	.41	59.88	190.95	137.57	17 32 51	1344.3	18.57	43.63
60.00	18 18 5	2119.94	5.59	44.64	195.91	129.98	18 53 25	1119.9	21.01	25.60
70.00	20 13 14	1781.16	11.75	21.74	200.46	122.30	20 42 55	781.2	23.93	359.99
78.89	23 16 9	1207.84	21.80	343.59	205.77	111.46	23 36 17	207.8	28.69	318.20
78.89	23 16 9	1207.84	21.80	343.59	205.77	111.46	23 36 17	207.8	28.69	318.20
78.89	23 16 9	1207.84	21.80	343.59	205.77	111.46	23 36 17	207.8	28.69	318.20
110.00	1 16 36	6116.02	11.75	288.56	200.46	122.30	2 58 32	5116.0	23.93	266.81

APO 223.92 V2 26.232 LVI -18.25

DIFFERENTIAL CORRECTIONS

TDE	-.2369	TRA	-.4718	TC3	.0326	BAU	.0313
RDE	-.2119	RRA	.0758	RC3	.2394	FAU	.15383
FDE	.0245	FRA	3.3845	FC	-13.7244	BSP	1626
BDE	.3170	BRA	.4779	BC3	.2416	FSP	1611

MID-COURSE EXECUTION ACCURACY

SGT	1094.9	SGR	447.4	SG3	966.0		
RRT	.0218	RRF	-.0259	RTF	-.6068		
SG0	1182.8	R23	-.0100	R13	-.6068		
SG1	1094.9	SG2	447.3	THA	.61		

ORBIT DETERMINATION ACCURACY

ST	26.5	SR	19.8	SS	36.2
CRT	.7461	CRS	-.1006	CST	.5818
LSA	40.7	NSA	27.2	SSA	1.5
EL1	31.0	EL2	11.2	ALF	33.92

LAUNCH DATE MAY 10 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 415.721 EARTH TO MARS

RL 151.05 LAL .00 LOL 228.70 VL 32.373 GAL -.22 AZL 91.87 HCA 137.32 SMA 187.12 ECC .19282 INC 1.8716 V1 29.498
RP 209.14 LAP -1.27 LOP 6.04 VP 23.663 GAP 8.85 AZP 88.62 TAL 358.61 TAP 135.93 RCA 151.04 APO 223.20 V2 26.209
RC 101.892 GL -19.98 GP .19 ZAL 99.83 ZAP 131.64 ETS 179.78 ZAE 172.88 ETE 172.27 ZAC 100.26 ETC 277.69 LVI -18.10

PLANETOCENTRIC CONIC

C3 9.579 VHL 3.095 DLA -30.33 RAL 339.24 RAD 6637.8 VEL 11.388 PTH 6.44 VHP 3.751 DPA -17.13 RAP 320.63 ECC 1.1576

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 43	2338.96	.68	59.66	190.95	137.57	17 33 42	1339.0	18.82	43.38
60.00	18 19 22	2113.73	5.86	44.34	195.91	129.94	18 54 36	1113.7	21.25	25.25
70.00	20 15 19	1772.60	12.06	21.27	200.48	122.20	20 44 52	772.6	24.18	359.44
78.55	23 13 51	1213.46	21.94	344.07	205.70	111.48	23 34 5	213.5	28.83	318.65
78.55	23 13 51	1213.46	21.94	344.07	205.70	111.48	23 34 5	213.5	28.83	318.65
78.55	23 13 51	1213.46	21.94	344.07	205.70	111.48	23 34 5	213.5	28.83	318.65
110.00	1 18 41	6107.45	12.06	288.09	200.48	122.20	3 0 29	5107.5	24.18	266.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2382 TRA -.4459 TC3 -.0579 BAU .0315 SGT 1053.7 SGR 438.0 SG3 1019.7 ST 26.3 SR 19.2 SS 37.3
RDE -.2058 RRA .0734 RC3 .2391 FAU .16115 RRT .0262 RRF -.0307 RTF -.5618 CRT .7646 CRS -.0945 CST .5634
FDE .0329 FRA 3.5506 FC-14.5643 BSP 1456 SGB 1141.1 R23 -.0129 R13 -.5619 LSA 41.3 MSA 27.2 SSA 1.5
BDE .3148 BRA .4519 BC3 .2461 FSP 1687 SG1 1053.7 SG2 437.8 THA .75 EL1 30.8 EL2 10.6 ALF 33.64

LAUNCH DATE MAY 10 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 419.845 EARTH TO MARS

RL 151.05 LAL .00 LOL 228.70 VL 32.354 GAL -.22 AZL 91.87 HCA 138.56 SMA 186.79 ECC .19140 INC 1.8725 V1 29.498
RP 209.34 LAP -1.24 LOP 7.28 VP 23.610 GAP 8.61 AZP 88.60 TAL 358.62 TAP 137.18 RCA 151.04 APO 222.55 V2 26.186
RC 103.900 GL -20.10 GP .20 ZAL 99.85 ZAP 129.78 ETS 179.76 ZAE 171.32 ETE 174.26 ZAC 100.36 ETC 277.56 LVI -17.94

PLANETOCENTRIC CONIC

C3 9.467 VHL 3.077 DLA -30.43 RAL 339.33 RAD 6637.8 VEL 11.383 PTH 6.44 VHP 3.662 DPA -17.31 RAP 320.02 ECC 1.1558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 39	2334.32	.91	59.46	190.96	137.57	17 34 33	1334.3	19.04	43.16
60.00	18 20 35	2108.31	6.10	44.08	195.93	129.91	18 55 44	1108.3	21.46	24.95
70.00	20 17 14	1765.13	12.33	20.86	200.52	122.11	20 46 39	765.1	24.39	358.97
78.26	23 12 7	1217.78	22.07	344.45	205.66	111.50	23 32 25	217.8	28.95	319.00
78.26	23 12 7	1217.78	22.07	344.45	205.66	111.50	23 32 25	217.8	28.95	319.00
78.26	23 12 7	1217.78	22.07	344.45	205.66	111.50	23 32 25	217.8	28.95	319.00
110.00	1 20 36	6099.98	12.33	287.68	200.52	122.11	3 2 16	5100.0	24.39	265.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2380 TRA -.4165 TC3 -.1731 BAU .0373 SGT 1008.5 SGR 428.3 SG3 1069.6 ST 25.9 SR 18.7 SS 38.4
RDE -.1998 RRA .0710 RC3 .2385 FAU .16752 RRT .0261 RRF -.0329 RTF -.4998 CRT .7837 CRS -.0965 CST .5363
FDE .0315 FRA 3.7157 FC-15.3185 BSP 1301 SGB 1095.7 R23 -.0170 R13 -.4999 LSA 41.8 MSA 27.3 SSA 1.4
BDE .3108 BRA .4225 BC3 .2947 FSP 1779 SG1 1008.6 SG2 428.1 THA .77 EL1 30.4 EL2 9.9 ALF 33.55

LAUNCH DATE MAY 10 1971 FLIGHT TIME 174.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 423.977 EARTH TO MARS

RL 151.05 LAL .00 LOL 228.70 VL 32.336 GAL -.22 AZL 91.87 HCA 139.79 SMA 186.49 ECC .19011 INC 1.8735 V1 29.498
RP 209.55 LAP -1.21 LOP 8.51 VP 23.559 GAP 8.37 AZP 88.57 TAL 358.62 TAP 138.41 RCA 151.04 APO 221.95 V2 26.162
RC 105.933 GL -20.21 GP .20 ZAL 99.90 ZAP 127.89 ETS 179.75 ZAE 169.70 ETE 175.65 ZAC 100.45 ETC 277.42 LVI -17.76

PLANETOCENTRIC CONIC

C3 9.367 VHL 3.061 DLA -30.51 RAL 339.43 RAD 6637.7 VEL 11.378 PTH 6.43 VHP 3.579 DPA -17.49 RAP 319.36 ECC 1.1542

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 33	2330.31	1.11	59.30	191.01	137.57	17 35 23	1330.3	19.24	42.97
60.00	18 21 44	2103.66	6.30	43.86	195.98	129.89	18 56 48	1103.7	21.64	24.69
70.00	20 18 57	1758.76	12.56	20.51	200.57	122.02	20 48 16	758.8	24.57	358.56
78.03	23 10 53	1221.02	22.18	344.73	205.65	111.51	23 31 14	221.0	29.05	319.26
78.03	23 10 53	1221.02	22.18	344.73	205.65	111.51	23 31 14	221.0	29.05	319.26
78.03	23 10 53	1221.02	22.18	344.73	205.65	111.51	23 31 14	221.0	29.05	319.26
110.00	1 22 20	6093.62	12.56	287.34	200.57	122.02	3 3 53	5093.6	24.57	265.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2347 TRA -.3820 TC3 -.2918 BAU .0471 SGT 955.9 SGR 418.4 SG3 1119.1 ST 25.3 SR 18.3 SS 39.1
RDE -.1938 RRA .0687 RC3 .2376 FAU .17468 RRT .0259 RRF -.0303 RTF -.4.96 CRT .8028 CRS -.1108 CST .4967
FDE .0128 FRA 3.8534 FC-16.1445 BSP 1179 SGB 1043.5 R23 -.0239 R13 -.4197 LSA 41.8 MSA 27.4 SSA 1.4
BDE .3044 BRA .3881 BC3 .3763 FSP 1902 SG1 956.0 SG2 418.3 THA .74 EL1 29.8 EL2 9.2 ALF 33.87

LAUNCH DATE MAY 10 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 428.117 EARTH TO MARS

RL 151.05 LAL .00 LOL 228.70 VL 32.320 GAL -.22 AZL 91.87 HCA 141.03 SMA 186.22 ECC .18892 INC 1.8747 V1 29.498
RP 209.76 LAP -1.18 LOP 9.75 VP 23.510 GAP 8.14 AZP 88.54 TAL 358.60 TAP 139.62 RCA 151.04 APO 221.40 V2 26.137
RC 107.990 GL -20.31 GP .21 ZAL 99.97 ZAP 125.96 ETS 179.73 ZAE 168.02 ETE 176.65 ZAC 100.55 ETC 277.27 LVI -17.57

PLANETOCENTRIC CONIC

C3 9.278 VHL 3.046 DLA -30.58 RAL 339.56 RAD 6637.7 VEL 11.375 PTH 6.43 VHP 3.500 DPA -17.69 RAP 318.66 ECC 1.1527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 26	2326.93	1.28	59.16	191.08	137.56	17 36 13	1326.9	19.40	42.81
60.00	18 22 49	2099.76	6.47	43.67	196.04	129.87	18 57 49	1099.8	21.80	24.47
70.00	20 20 30	1753.50	12.75	20.22	200.65	121.96	20 49 44	753.5	24.72	358.23
77.86	23 10 6	1223.26	22.27	344.94	205.67	111.51	23 30 29	223.3	29.14	319.44
77.86	23 10 6	1223.26	22.27	344.94	205.67	111.51	23 30 29	223.3	29.14	319.44
77.86	23 10 6	1223.26	22.27	344.94	205.67	111.51	23 30 29	223.3	29.14	319.44
110.00	1 23 52	6088.36	12.75	287.05	200.65	121.96	3 5 21	5088.4	24.72	265.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2334 TRA -.3473 TC3 -.4093 BAU .0586 SGT 911.5 SGR 408.3 SG3 1173.1 ST 24.7 SR 17.8 SS 40.1
RDE -.1879 RRA .0663 RC3 .2366 FAU .18212 RRT .0252 RRF -.0411 RTF -.3308 CRT .8246 CRS -.1114 CST .4628
FDE .0118 FRA 4.0203 FC-16.9941 BSP 936 SGB 998.8 R23 -.0307 R13 -.3310 LSA 42.3 MSA 27.3 SSA 1.4
BDE .2997 BRA .3536 BC3 .4728 FSP 1961 SG1 911.6 SG2 408.2 THA .81 EL1 29.3 EL2 8.5 ALF 33.97

LAUNCH DATE MAY 18 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 438.268 EARTH TO MARS

RL	181.08	LAL	.00	LOL	228.70	VL	38.306	GAL	-.23	AZL	91.88	HCA	142.26	SNA	188.97	ECC	.18784	INC	1.8758	V1	29.498
RP	209.88	LAP	-1.18	LOP	10.98	VP	23.461	GAP	7.91	AZP	88.52	TAL	358.58	TAP	140.02	RCA	181.04	APO	220.91	V2	26.111
RC	110.871	GL	-20.41	GP	.22	ZAL	100.06	ZAP	124.00	ETS	179.71	ZAE	166.28	ETE	177.40	ZAC	100.65	ETC	277.12	LVI	-17.37

PLANETOCENTRIC CONIC

C3	9.198	VHL	3.033	DLA	-30.63	RAL	339.71	RAD	6637.6	VEL	11.371	PTH	6.42	VHP	3.426	DPA	-17.90	RAP	317.93	ECC	1.1814

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 19	2324.15	1.42	89.04	191.17	137.56	17 37 3	1324.1	19.63	42.68
60.00	18 23 50	2096.60	6.61	43.52	196.13	129.65	18 56 47	1096.6	21.92	24.30
70.00	20 21 52	1749.31	12.90	19.99	200.74	121.90	20 51 1	749.3	24.64	357.96
77.73	23 9 45	1224.57	22.34	348.07	205.72	111.51	23 30 10	224.6	29.20	319.55
77.73	23 9 45	1224.57	22.34	348.07	205.72	111.51	23 30 10	224.6	29.20	319.55
77.73	23 9 45	1224.57	22.34	348.07	205.72	111.51	23 30 10	224.6	29.20	319.55
110.00	1 25 14	6084.17	12.90	286.82	200.74	121.90	3 6 38	5084.2	24.64	264.78

DIFFERENTIAL CORRECTIONS

TDE	-.2270	TRA	-.3067	TC3	-.8186	BAU	.0700
RDE	-.1821	RRA	.0639	RC3	.2355	FAU	.19068
FDE	-.0070	FRA	4.1599	FC-17.9433		BBP	674
BDE	.2917	BRA	.3133	BC3	.5896	FBP	2034

MID-COURSE EXECUTION ACCURACY

SGT	858.7	SGR	398.1	SG3	1227.6		
RRT	.0253	RRF	-.0474	RTF	-.2228		
SG8	946.5	R23	-.0402	R13	-.2231		
SG1	858.8	SG2	398.0	THA	.86		

ORBIT DETERMINATION ACCURACY

ST	23.8	SR	17.3	SS	40.8
CRT	.6465	CRS	-.1239	CST	.4151
LSA	42.4	NSA	27.1	SSA	1.4
EL1	28.4	EL2	7.7	ALF	34.61

LAUNCH DATE MAY 10 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 436.416 EARTH TO MARS

RL	181.08	LAL	.00	LOL	228.70	VL	38.292	GAL	-.24	AZL	91.88	HCA	143.49	SNA	188.78	ECC	.18688	INC	1.8769	V1	29.498
RP	210.22	LAP	-1.12	LOP	12.21	VP	23.413	GAP	7.69	AZP	88.49	TAL	358.50	TAP	141.99	RCA	181.04	APO	220.46	V2	26.085
RC	112.177	GL	-20.49	GP	.24	ZAL	100.19	ZAP	122.02	ETS	179.69	ZAE	164.49	ETE	177.96	ZAC	100.76	ETC	278.95	LVI	-17.16

PLANETOCENTRIC CONIC

C3	9.130	VHL	3.022	DLA	-30.65	RAL	339.89	RAD	6637.6	VEL	11.368	PTH	6.42	VHP	3.358	DPA	-18.11	RAP	317.16	ECC	1.1803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 10	2322.07	1.83	88.95	191.20	137.56	17 37 52	1322.1	19.63	42.58
60.00	18 24 46	2094.31	6.71	43.41	196.25	129.63	18 59 41	1094.3	22.01	24.17
70.00	20 23 0	1746.44	13.00	19.83	200.86	121.86	20 52 6	746.4	24.92	357.77
77.66	23 9 56	1224.78	22.40	348.11	205.80	111.49	23 30 21	224.8	29.24	319.58
77.66	23 9 56	1224.78	22.40	348.11	205.80	111.49	23 30 21	224.8	29.24	319.58
77.66	23 9 56	1224.78	22.40	348.11	205.80	111.49	23 30 21	224.8	29.24	319.58
110.00	1 26 22	6081.30	13.00	286.66	200.86	121.86	3 7 43	5081.3	24.92	264.60

DIFFERENTIAL CORRECTIONS

TDE	-.2378	TRA	-.2791	TC3	-.7186	BAU	.0922
RDE	-.1764	RRA	.0615	RC3	.2339	FAU	.19863
FDE	.0341	FRA	4.3628	FC-18.8804		BBP	578
BDE	.2959	BRA	.2858	BC3	.7867	FBP	2167

MID-COURSE EXECUTION ACCURACY

SGT	877.5	SGR	387.6	SG3	1276.1		
RRT	.0173	RRF	-.0528	RTF	-.0831		
SG8	959.3	R23	-.0510	R13	-.0833		
SG1	877.5	SG2	387.5	THA	.84		

ORBIT DETERMINATION ACCURACY

ST	24.3	SR	16.8	SS	42.1
CRT	.8721	CRS	-.0963	CST	.3939
LSA	43.6	NSA	27.4	SSA	1.4
EL1	28.8	EL2	7.0	ALF	33.33

LAUNCH DATE MAY 10 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 440.578 EARTH TO MARS

RL	181.08	LAL	.00	LOL	228.70	VL	38.280	GAL	-.25	AZL	91.88	HCA	144.71	SNA	188.58	ECC	.18600	INC	1.8782	V1	29.498
RP	210.48	LAP	-1.09	LOP	13.43	VP	23.366	GAP	7.47	AZP	88.47	TAL	358.43	TAP	143.18	RCA	181.04	APO	220.06	V2	26.088
RC	114.307	GL	-20.57	GP	.25	ZAL	100.33	ZAP	120.01	ETS	179.67	ZAE	162.68	ETE	178.40	ZAC	100.87	ETC	278.78	LVI	-16.93

PLANETOCENTRIC CONIC

C3	9.070	VHL	3.012	DLA	-30.66	RAL	340.08	RAD	6637.6	VEL	11.366	PTH	6.42	VHP	3.294	DPA	-18.32	RAP	316.37	ECC	1.1493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 1	2320.84	1.00	88.89	191.43	137.56	17 38 41	1320.5	19.70	42.51
60.00	18 25 39	2092.89	6.78	43.33	196.38	129.82	19 0 31	1092.7	22.07	24.08
70.00	20 23 57	1744.88	13.07	19.73	200.99	121.84	20 53 2	744.8	24.97	357.65
77.63	23 10 31	1224.15	22.44	348.08	205.92	111.48	23 30 55	224.2	29.27	319.53
77.63	23 10 31	1224.15	22.44	348.08	205.92	111.48	23 30 55	224.2	29.27	319.53
77.63	23 10 31	1224.15	22.44	348.08	205.92	111.48	23 30 55	224.2	29.27	319.53
110.00	1 27 19	6079.44	13.07	286.55	200.99	121.84	3 8 38	5079.4	24.97	264.48

DIFFERENTIAL CORRECTIONS

TDE	-.2367	TRA	-.2420	TC3	-.8891	BAU	.1110
RDE	-.1707	RRA	.0591	RC3	.2323	FAU	.20208
FDE	.0302	FRA	4.5468	FC-19.2858		BBP	378
BDE	.2934	BRA	.2491	BC3	.9151	FBP	2277

MID-COURSE EXECUTION ACCURACY

SGT	881.4	SGR	377.0	SG3	1327.5		
RRT	.0089	RRF	-.0591	RTF	-.0867		
SG8	958.6	R23	-.0598	R13	.0866		
SG1	881.4	SG2	377.0	THA	.27		

ORBIT DETERMINATION ACCURACY

ST	24.1	SR	16.4	SS	43.2
CRT	.8951	CRS	-.0863	CST	.3968
LSA	44.4	NSA	27.3	SSA	1.3
EL1	28.5	EL2	6.2	ALF	33.04

LAUNCH DATE MAY 10 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 444.740 EARTH TO MARS

RL	181.08	LAL	.00	LOL	228.70	VL	38.270	GAL	-.26	AZL	91.88	HCA	145.93	SNA	188.37	ECC	.18522	INC	1.8795	V1	29.498
RP	210.70	LAP	-1.08	LOP	14.68	VP	23.320	GAP	7.25	AZP	88.44	TAL	358.38	TAP	144.28	RCA	181.04	APO	219.71	V2	26.030
RC	116.460	GL	-20.64	GP	.26	ZAL	100.50	ZAP	117.97	ETS	179.65	ZAE	160.77	ETE	178.74	ZAC	100.98	ETC	276.61	LVI	-16.70

PLANETOCENTRIC CONIC

C3	9.019	VHL	3.003	DLA	-30.66	RAL	340.30	RAD	6637.5	VEL	11.363	PTH	6.42	VHP	3.238	DPA	-18.54	RAP	315.54	ECC	1.1484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 50	2319.89	1.65	88.85	191.59	137.55	17 39 30	1319.6	19.74	42.46
60.00	18 26 27	2091.79	6.82	43.28	196.53	129.82	19 1 19	1091.8	22.10	24.03
70.00	20 24 43	1743.81	13.10	19.69	201.13	121.83	20 53 47	743.8	24.99	357.60
77.64	23 11 28	1222.75	22.46	344.98	206.05	111.43	23 31 51	222.7	29.27	319.43
77.64	23 11 28	1222.75	22.46	344.98	206.05	111.43	23 31 51	222.7	29.27	319.43
77.64	23 11 28	1222.75	22.46	344.98	206.05	111.43	23 31 51	222.7	29.27	319.43
110.00	1 28 5	6078.67	13.10	286.51	201.13	121.83	3 9 24	5078.7	24.99	264.43

DIFFERENTIAL CORRECTIONS

TDE	-.2381	TRA	-.2020	TC3	-1.0585	BAU	.1306
RDE	-.1650	RRA	.0566	RC3	.2307	FAU	.20870
FDE	.0452	FRA	4.7284	FC-20.0328		BBP	140
BDE	.2997	BRA	.2098	BC3	1.0834	FBP	2364

MID-COURSE EXECUTION ACCURACY

SGT	900.6	SGR	366.2	SG3	1379.0		
RRT	-.0039	RRF	-.0647	RTF	.2026		
SG8	972.2	R23	.0638	R13	-.2027		
SG1	900.6	SG2	366.2	THA	179.89		

ORBIT DETERMINATION ACCURACY

ST	23.7	SR	15.9	SS	44.3
CRT	.9171	CRS	-.0894	CST	.3030
LSA	45.0	NSA	27.2	SSA	1.3
EL1	28.0	EL2	5.3	ALF	32.88

LAUNCH DATE MAY 10 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 448.908 EARTH TO MARS

RL 151.05 LAL .00 LOL 228.70 VL 32.260 GAL -.27 AZL 91.88 HCA 147.15 SMA 185.21 ECC .18453 INC 1.8809 V1 29.498
RP 210.95 LAP -1.02 LOP 15.87 VP 23.275 GAP 7.04 AZP 88.42 TAL 358.24 TAP 145.40 RCA 151.04 APO 219.39 V2 26.001
RC 118.637 GL -20.70 GP .27 ZAL 100.69 ZAP 115.91 ETS 179.62 ZAE 158.85 ETE 179.01 ZAC 101.09 ETC 276.42 LVI -16.46

PLANETOCENTRIC CONIC

C3 8.977 VHL 2.996 DLA -30.63 RAL 340.54 RAD 6637.5 VEL 11.361 PTH 6.41 VHP 3.180 DPA -18.76 RAP 314.69 ECC 1.1477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 39	2319.22	1.67	58.83	191.78	137.55	17 40 18	1319.2	19.76	42.44
60.00	18 27 12	2091.60	6.83	43.27	196.71	129.82	19 2 3	1091.6	22.11	24.02
70.00	20 25 18	1744.11	13.09	19.70	201.29	121.83	20 54 22	744.1	24.98	357.62
77.70	23 12 51	1220.43	22.47	344.81	206.22	111.39	23 33 12	220.4	29.26	319.25
77.70	23 12 51	1220.43	22.47	344.81	206.22	111.39	23 33 12	220.4	29.26	319.25
77.70	23 12 51	1220.43	22.47	344.81	206.22	111.39	23 33 12	220.4	29.26	319.25
110.00	1 28 40	6078.97	13.09	286.53	201.29	121.83	3 9 59	5079.0	24.98	264.45

DIFFERENTIAL CORRECTIONS

TDE -.2386 TRA -.1590 TC3-1.2399 BAU .1513
RDE -.1594 RRA .0541 RC3 .2290 FAU .21520
FDE .0540 FRA 4.8948 FC-20.7551 BSP 139
BDE .2869 BRA .1679 BC3 1.2609 FSP 2443

MID-COURSE EXECUTION ACCURACY

SGT 940.7 SGR 355.2 SG3 1427.7
RRT -.0160 RRF -.0735 RTF .3441
SGB 1005.6 R23 .0670 R13 -.3443
SG1 940.7 SG2 355.2 THA 179.60

ORBIT DETERMINATION ACCURACY

ST 23.4 SR 15.3 SS 45.2
CRT .9390 CRS -.0839 CST .2496
LSA 45.7 MSA 27.2 SSA 1.3
EL1 27.7 EL2 4.5 ALF 32.54

LAUNCH DATE MAY 10 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 453.082 EARTH TO MARS

RL 151.05 LAL .00 LOL 228.70 VL 32.252 GAL -.29 AZL 91.88 HCA 148.37 SMA 185.07 ECC .18391 INC 1.8825 V1 29.498
RP 211.20 LAP -.99 LOP 17.09 VP 23.231 GAP 6.84 AZP 88.40 TAL 358.13 TAP 146.50 RCA 151.03 APO 219.11 V2 25.972
RC 120.836 GL -20.75 GP .28 ZAL 100.90 ZAP 113.84 ETS 179.60 ZAE 156.89 ETE 179.22 ZAC 101.20 ETC 276.23 LVI -16.21

PLANETOCENTRIC CONIC

C3 8.942 VHL 2.990 DLA -30.60 RAL 340.79 RAD 6637.5 VEL 11.360 PTH 6.41 VHP 3.130 DPA -18.98 RAP 313.81 ECC 1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 27	2319.38	1.66	58.84	191.98	137.55	17 41 6	1319.4	19.75	42.45
60.00	18 27 53	2092.07	6.81	43.30	196.91	129.82	19 2 45	1092.1	22.09	24.04
70.00	20 25 42	1745.41	13.04	19.78	201.47	121.85	20 54 47	745.4	24.95	357.71
77.81	23 14 39	1217.25	22.46	344.57	206.42	111.34	23 34 56	217.3	29.23	319.01
77.81	23 14 39	1217.25	22.46	344.57	206.42	111.34	23 34 56	217.3	29.23	319.01
77.81	23 14 39	1217.25	22.46	344.57	206.42	111.34	23 34 56	217.3	29.23	319.01
110.00	1 29 4	6080.26	13.04	286.60	201.47	121.85	3 10 24	5080.3	24.95	264.53

DIFFERENTIAL CORRECTIONS

TDE -.2362 TRA -.1114 TC3-1.4195 BAU .1719
RDE -.1538 RRA .0515 RC3 .2275 FAU .22211
FDE .0641 FRA 5.0495 FC-21.5037 BSP 435
BDE .2819 BRA .1227 BC3 1.4376 FSP 2511

MID-COURSE EXECUTION ACCURACY

SGT 993.5 SGR 344.2 SG3 1475.8
RRT -.0307 RRF -.0847 RTF .4759
SGB 1051.5 R23 .0681 R13 -.4762
SG1 993.6 SG2 344.0 THA 179.31

ORBIT DETERMINATION ACCURACY

ST 23.0 SR 14.8 SS 45.9
CRT .9590 CRS -.0775 CST .1901
LSA 46.2 MSA 26.9 SSA 1.3
EL1 27.1 EL2 3.6 ALF 32.40

LAUNCH DATE MAY 10 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 457.257 EARTH TO MARS

RL 151.05 LAL .00 LOL 228.70 VL 32.244 GAL -.31 AZL 91.88 HCA 149.58 SMA 184.95 ECC .18339 INC 1.8841 V1 29.498
RP 211.46 LAP -.95 LOP 16.30 VP 23.187 GAP 6.64 AZP 88.38 TAL 357.99 TAP 147.58 RCA 151.03 APO 218.87 V2 25.942
RC 123.058 GL -20.80 GP .30 ZAL 101.14 ZAP 111.76 ETS 179.58 ZAE 154.91 ETE 179.39 ZAC 101.31 ETC 276.04 LVI -15.95

PLANETOCENTRIC CONIC

C3 8.916 VHL 2.986 DLA -30.54 RAL 341.07 RAD 6637.5 VEL 11.359 PTH 6.41 VHP 3.084 DPA -19.20 RAP 312.92 ECC 1.1467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 3 14	2320.14	1.62	58.87	192.21	137.55	17 41 54	1320.1	19.72	42.49
60.00	18 28 30	2093.27	6.75	43.35	197.12	129.83	19 3 23	1093.3	22.05	24.11
70.00	20 25 54	1747.81	12.95	19.91	201.67	121.88	20 55 2	747.8	24.88	357.86
77.96	23 16 52	1213.17	22.44	344.26	206.64	111.28	23 37 5	213.2	29.19	318.70
77.96	23 16 52	1213.17	22.44	344.26	206.64	111.28	23 37 5	213.2	29.19	318.70
77.96	23 16 52	1213.17	22.44	344.26	206.64	111.28	23 37 5	213.2	29.19	318.70
110.00	1 29 17	6082.67	12.96	286.73	201.67	121.88	3 10 39	5082.7	24.88	264.68

DIFFERENTIAL CORRECTIONS

TDE -.2402 TRA -.0674 TC3-1.6359 BAU .1968
RDE -.1462 RRA .0488 RC3 .2258 FAU .22725
FDE .0954 FRA 5.2185 FC-22.0665 BSP 657
BDE .2823 BRA .0832 BC3 1.6514 FSP 2620

MID-COURSE EXECUTION ACCURACY

SGT 1090.6 SGR 333.1 SG3 1518.4
RRT -.0466 RRF -.0964 RTF .5462
SGB 1140.3 R23 .0669 R13 -.5765
SG1 1090.7 SG2 332.7 THA 179.10

ORBIT DETERMINATION ACCURACY

ST 23.2 SR 14.3 SS 46.8
CRT .9748 CRS -.0597 CST .1410
LSA 47.0 MSA 27.0 SSA 1.2
EL1 27.1 EL2 2.7 ALF 31.38

LAUNCH DATE MAY 10 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC DISTANCE 461.437 EARTH TO MARS

RL 151.05 LAL .00 LOL 228.70 VL 32.238 GAL -.33 AZL 91.89 HCA 150.80 SMA 184.84 ECC .18293 INC 1.8859 V1 29.498
RP 211.73 LAP -.92 LOP 19.51 VP 23.144 GAP 6.44 AZP 88.35 TAL 357.84 TAP 148.64 RCA 151.03 APO 218.66 V2 25.911
RC 125.302 GL -20.83 GP .31 ZAL 101.40 ZAP 109.66 ETS 179.56 ZAE 152.89 ETE 179.53 ZAC 101.42 ETC 275.84 LVI -15.68

PLANETOCENTRIC CONIC

C3 8.897 VHL 2.983 DLA -30.47 RAL 341.37 RAD 6637.5 VEL 11.358 PTH 6.41 VHP 3.043 DPA -19.42 RAP 312.02 ECC 1.1464

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 0	2321.39	1.56	58.92	192.47	137.56	17 42 42	1321.4	19.66	42.55
60.00	18 29 4	2095.08	6.67	43.44	197.36	129.84	19 3 59	1095.1	21.98	24.21
70.00	20 25 58	1751.11	12.84	20.09	201.88	121.92	20 55 9	751.1	24.79	358.07
78.16	23 19 29	1208.25	22.39	343.87	206.89	111.22	23 39 37	208.3	29.13	318.32
78.16	23 19 29	1208.25	22.39	343.87	206.89	111.22	23 39 37	208.3	29.13	318.32
78.16	23 19 29	1208.25	22.39	343.87	206.89	111.22	23 39 37	208.3	29.13	318.32
110.00	1 29 20	6085.97	12.84	286.91	201.88	121.92	3 10 46	5086.0	24.79	264.90

DIFFERENTIAL CORRECTIONS

TDE -.2401 TRA -.0199 TC3-1.8423 BAU .2207
RDE -.1427 RRA .0460 RC3 .2242 FAU .23275
FDE .1124 FRA 5.4082 FC-22.6485 BSP 953
BDE .2793 BRA .0501 BC3 1.8559 FSP 2690

MID-COURSE EXECUTION ACCURACY

SGT 1192.7 SGR 321.8 SG3 1564.5
RRT -.0655 RRF -.1082 RTF .6582
SGB 1235.4 R23 .0618 R13 -.6586
SG1 1192.9 SG2 321.0 THA 178.91

ORBIT DETERMINATION ACCURACY

ST 23.1 SR 13.8 SS 47.9
CRT .9865 CRS -.0502 CST .0797
LSA 48.0 MSA 26.8 SSA 1.2
EL1 26.9 EL2 1.9 ALF 30.65

LAUNCH DATE MAY 18 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 468.619 EARTH TO MARS

RL	181.08	LAL	.00	LOL	228.70	VL	32.233	GAL	-.36	AZL	91.89	HCA	152.00	SMA	184.75	ECC	.18288	INC	1.8876	VI	29.498
RP	212.61	LAP	-.89	LOP	20.72	VP	23.101	GAP	6.24	AZP	88.33	TAL	357.68	TAP	149.68	RCA	181.03	APO	218.48	V2	25.880
RC	127.866	GL	-20.87	GP	.33	ZAL	101.68	ZAP	107.87	ETS	179.54	ZAE	180.86	ETE	179.64	ZAC	101.53	ETC	275.63	LVI	-16.41

PLANETOCENTRIC CONIC

C3	8.868	VHL	2.981	DLA	-30.38	RAL	341.68	RAD	6637.8	VEL	11.357	PTH	6.41	VHP	3.006	DPA	-19.63	RAP	311.10	ECC	1.1462

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CRT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 46	2323.15	1.47	59.00	192.74	137.56	17 43 29	1323.2	19.56	42.63
60.00	18 29 35	2097.52	6.57	43.56	197.62	129.65	19 4 32	1097.5	21.88	24.35
70.00	20 25 53	1755.33	12.66	20.32	202.11	121.98	20 55 8	755.3	24.67	358.34
78.40	23 22 32	1202.31	22.34	343.40	207.16	111.15	23 42 34	202.3	29.05	317.86
78.40	23 22 32	1202.31	22.34	343.40	207.16	111.15	23 42 34	202.3	29.05	317.86
78.40	23 22 32	1202.31	22.34	343.40	207.16	111.15	23 42 34	202.3	29.05	317.86
110.00	1 29 18	6090.18	12.66	287.18	202.11	121.98	3 10 45	5090.2	24.67	268.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2406	TRA	.0311	TC3	-2.0874	BAU	.2488		86T	1312.7	86R	310.5	863	1602.7		ST	23.2	SR	13.3	SS	48.7
RDE	-.1372	RRA	.0432	RC3	.2227	FAU	.23786		RRT	-.0840	RRF	-.1282	RTF	.7256		CRT	.9938	CRS	-.0286	CST	.0244
FDE	.1816	FRA	5.8831	FC-	23.1758	BSP	1247		868	1348.9	R23	.0608	R13	-.7259		L8A	48.7	N8A	26.7	S8A	1.2
BDE	.2770	BRA	.0532	BC3	2.0694	FSP	2788		861	1312.9	862	309.4	THA	178.79		EL1	26.7	EL2	1.3	ALF	29.66

LAUNCH DATE MAY 10 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 469.804 EARTH TO MARS

RL	181.08	LAL	.00	LOL	228.70	VL	32.228	GAL	-.39	AZL	91.89	HCA	153.21	SMA	184.68	ECC	.18223	INC	1.8896	VI	29.498
RP	212.29	LAP	-.85	LOP	21.93	VP	23.059	GAP	6.08	AZP	88.31	TAL	357.50	TAP	150.71	RCA	151.02	APO	218.33	V2	25.846
RC	129.880	GL	-20.89	GP	.35	ZAL	101.98	ZAP	108.47	ETS	179.52	ZAE	148.81	ETE	179.73	ZAC	101.64	ETC	275.43	LVI	-15.14

PLANETOCENTRIC CONIC

C3	8.881	VHL	2.980	DLA	-30.20	RAL	342.08	RAD	6637.8	VEL	11.357	PTH	6.41	VHP	2.973	DPA	-19.84	RAP	310.18	ECC	1.1462

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CRT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 5 32	2328.41	1.36	59.00	193.03	137.56	17 44 17	1328.4	19.47	42.74
60.00	18 30 2	2100.56	6.44	43.71	197.90	129.67	19 5 3	1100.6	21.77	24.52
70.00	20 25 40	1760.40	12.50	20.60	202.38	122.08	20 55 0	760.4	24.53	358.67
78.69	23 26 1	1198.37	22.28	342.86	207.46	111.07	23 43 57	198.4	28.95	317.32
78.69	23 26 1	1198.37	22.28	342.86	207.46	111.07	23 43 57	198.4	28.95	317.32
78.69	23 26 1	1198.37	22.28	342.86	207.46	111.07	23 43 57	198.4	28.95	317.32
110.00	1 29 2	6098.26	12.50	287.43	202.38	122.08	3 10 37	5098.3	24.53	268.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2408	TRA	.0829	TC3	-2.8794	BAU	.2719		86T	1447.1	86R	299.2	863	1642.2		ST	23.4	SR	12.7	SS	49.7
RDE	-.1317	RRA	.0402	RC3	.2213	FAU	.24240		RRT	-.1081	RRF	-.1422	RTF	.7751		CRT	.9946	CRS	-.0092	CST	-.0337
FDE	.1889	FRA	5.7302	FC-	23.6301	BSP	1557		868	1477.7	R23	.0578	R13	-.7754		L8A	49.7	N8A	26.6	S8A	1.1
BDE	.2748	BRA	.0821	BC3	2.8901	FSP	2817		861	1447.5	862	297.4	THA	178.70		EL1	26.6	EL2	1.2	ALF	28.48

LAUNCH DATE MAY 10 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 473.990 EARTH TO MARS

RL	181.08	LAL	.00	LOL	228.70	VL	32.224	GAL	-.42	AZL	91.89	HCA	154.41	SMA	184.62	ECC	.18199	INC	1.8917	VI	29.498
RP	212.97	LAP	-.82	LOP	23.13	VP	23.018	GAP	5.86	AZP	88.29	TAL	357.30	TAP	151.71	RCA	151.02	APO	218.22	V2	25.815
RC	132.153	GL	-20.91	GP	.36	ZAL	102.30	ZAP	103.38	ETS	179.50	ZAE	146.76	ETE	179.80	ZAC	101.78	ETC	275.22	LVI	-14.86

PLANETOCENTRIC CONIC

C3	8.883	VHL	2.980	DLA	-30.17	RAL	342.37	RAD	6637.8	VEL	11.357	PTH	6.41	VHP	2.964	DPA	-20.05	RAP	309.26	ECC	1.1462

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CRT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 17	2328.14	1.22	59.21	193.35	137.56	17 45 5	1328.1	19.34	42.87
60.00	18 30 28	2104.17	6.28	43.88	198.19	129.69	19 5 32	1104.2	21.62	24.72
70.00	20 25 19	1766.27	12.29	20.92	202.61	122.12	20 54 45	766.3	24.36	359.04
79.02	23 29 57	1187.43	22.19	342.23	207.78	110.98	23 49 44	187.4	28.85	316.71
79.02	23 29 57	1187.43	22.19	342.23	207.78	110.98	23 49 44	187.4	28.85	316.71
79.02	23 29 57	1187.43	22.19	342.23	207.78	110.98	23 49 44	187.4	28.85	316.71
110.00	1 28 41	6101.13	12.29	287.78	202.61	122.12	3 10 22	5101.1	24.36	265.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2401	TRA	.1375	TC3	-2.9060	BAU	.2988		86T	1593.1	86R	287.8	863	1672.7		ST	23.6	SR	12.2	SS	50.3
RDE	-.1262	RRA	.0371	RC3	.2200	FAU	.24611		RRT	-.1281	RRF	-.1612	RTF	.8187		CRT	.9894	CRS	.0048	CST	-.1009
FDE	.2134	FRA	5.8675	FC-	23.9847	BSP	1866		868	1618.9	R23	.0537	R13	-.8159		L8A	50.4	N8A	26.4	S8A	1.1
BDE	.2712	BRA	.1424	BC3	2.8156	FSP	2885		861	1593.5	862	285.4	THA	178.63		EL1	26.5	EL2	1.6	ALF	27.14

LAUNCH DATE MAY 10 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 478.178 EARTH TO MARS

RL	181.08	LAL	.00	LOL	228.70	VL	32.222	GAL	-.45	AZL	91.89	HCA	155.61	SMA	184.57	ECC	.18180	INC	1.8943	VI	29.498
RP	212.86	LAP	-.78	LOP	24.32	VP	22.977	GAP	5.68	AZP	88.27	TAL	357.10	TAP	152.70	RCA	151.02	APO	218.13	V2	25.782
RC	134.478	GL	-20.93	GP	.38	ZAL	102.64	ZAP	101.29	ETS	179.48	ZAE	144.69	ETE	179.85	ZAC	101.85	ETC	275.02	LVI	-14.59

PLANETOCENTRIC CONIC

C3	8.892	VHL	2.982	DLA	-30.04	RAL	342.74	RAD	6637.8	VEL	11.358	PTH	6.41	VHP	2.919	DPA	-20.24	RAP	308.33	ECC	1.1463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CRT TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 2	2331.32	1.06	59.34	193.68	137.57	17 45 53	1331.3	19.19	43.02
60.00	18 30 51	2108.33	6.10	44.06	198.51	129.92	19 5 59	1108.3	21.46	24.85
70.00	20 24 52	1772.88	12.05	21.29	202.89	122.20	20 54 25	772.9	24.17	359.46
79.41	23 34 20	1178.36	22.10	341.52	208.13	110.89	23 53 58	178.4	28.72	316.01
79.41	23 34 20	1178.36	22.10	341.52	208.13	110.89	23 53 58	178.4	28.72	316.01
79.41	23 34 20	1178.36	22.10	341.52	208.13	110.89	23 53 58	178.4	28.72	316.01
110.00	1 28 14	6107.74	12.05	286.11	202.89	122.20	3 10 2	5107.7	24.17	266.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2389	TRA	.1945	TC3	-2.7341	BAU	.3261		86T	1748.1	86R	276.6	863	1702.3		ST	24.0	SR	11.7	SS	51.2
RDE	-.1207	RRA	.0339	RC3	.2189	FAU	.24953		RRT	-.1530	RRF	-.1844	RTF	.8465		CRT	.9772	CRS	.0293	CST	-.1591
FDE	.2608	FRA	6.0111	FC-	24.2936	BSP	2191		868	1769.9	R23	.0523	R13	-.8467		L8A	51.3	N8A	26.3	S8A	1.0
BDE	.2677	BRA	.1974	BC3	2.7428	FSP	2943		861	1748.7	862	273.2	THA	178.58		EL1	26.6	EL2	2.2	ALF	25.60

LAUNCH DATE MAY 10 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 482.366 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.220	GAL	-.48	AZL	91.90	HCA	156.80	SMA	184.54	ECC	.18168	INC	1.8967	V1	29.498
RP	213.16	LAP	-.75	LOP	25.52	VP	22.936	GAP	5.50	AZP	88.26	TAL	356.87	TAP	153.68	RCA	151.01	APO	218.07	V2	25.749
RC	136.814	GL	-20.94	GP	.41	ZAL	103.01	ZAP	99.22	ETS	179.47	ZAE	142.63	ETE	179.90	ZAC	101.95	ETC	274.81	LVI	-14.31

PLANETOCENTRIC CONIC

C3	8.908	VHL	2.985	DLA	-29.90	RAL	343.13	RAD	6637.5	VEL	11.358	PTH	6.41	VHP	2.897	DPA	-20.43	RAP	307.42	ECC	1.1466

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 7 47	2334.95	.88	59.49	194.04	137.37	17 46 42	1334.9	19.01	43.19
60.00	18 31 12	2113.01	5.89	44.31	198.84	129.94	19 6 25	1113.0	21.28	25.21
70.00	20 24 20	1780.19	11.78	21.69	203.19	122.29	20 54 0	780.2	23.96	359.93
79.85	23 39 13	1168.03	21.99	340.70	208.50	110.79	23 58 42	168.0	28.59	315.22
79.85	23 39 13	1168.03	21.99	340.70	208.50	110.79	23 58 42	168.0	28.59	315.22
79.85	23 39 13	1168.03	21.99	340.70	208.50	110.79	23 58 42	168.0	28.59	315.22
110.00	1 27 42	6115.05	11.78	288.51	203.19	122.29	3 9 37	5115.0	23.96	266.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2376	TRA	.2525	TC3	-2.9664	BAU	.3542	SGT	1912.1	SGR	265.4	SG3	1728.2	ST	24.4	SR	11.1	SS	51.9
RDE	-.1153	RRA	.0305	RC3	.2180	FAU	.25252	RRT	-.1807	RRF	-.2111	RTF	.8699	CRT	.9583	CRS	.0571	CST	-.2133
FDE	.3147	FRA	6.1446	FC	-24.5404	BSP	2515	SGB	1930.5	R23	.0517	R13	-.8701	LSA	52.3	MSA	26.2	SSA	1.0
BDE	.2640	BRA	.2544	BC3	2.9744	FSP	2989	SG1	1912.7	SG2	261.0	THA	178.54	EL1	26.7	EL2	2.9	ALF	23.84

LAUNCH DATE MAY 10 1971 FLIGHT TIME 204.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 486.555 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.218	GAL	-.52	AZL	91.90	HCA	157.99	SMA	184.52	ECC	.18161	INC	1.8996	V1	29.498
RP	213.46	LAP	-.71	LOP	26.71	VP	22.896	GAP	5.32	AZP	88.24	TAL	356.64	TAP	154.63	RCA	151.01	APO	218.03	V2	25.714
RC	139.171	GL	-20.94	GP	.43	ZAL	103.39	ZAP	97.16	ETS	179.45	ZAE	140.57	ETE	179.93	ZAC	102.05	ETC	274.61	LVI	-14.04

PLANETOCENTRIC CONIC

C3	8.931	VHL	2.988	DLA	-29.75	RAL	343.54	RAD	6637.5	VEL	11.359	PTH	6.41	VHP	2.879	DPA	-20.61	RAP	306.52	ECC	1.1470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 32	2338.98	.68	59.66	194.41	137.57	17 47 31	1339.0	18.82	43.38
60.00	18 31 31	2118.18	5.67	44.56	199.19	129.97	19 6 49	1118.2	21.08	25.50
70.00	20 23 43	1788.12	11.50	22.12	203.50	122.38	20 53 32	788.1	23.73	.43
80.00	23 20 50	1232.43	20.26	344.75	208.21	112.42	23 41 23	232.4	27.71	319.82
80.35	23 44 38	1156.41	21.87	339.79	208.90	110.69	24 3 54	156.4	28.44	314.35
100.00	2 7 38	5994.94	20.26	284.03	208.21	112.42	3 47 33	4994.9	27.71	259.09
110.00	1 27 6	6122.97	11.50	288.94	203.50	122.38	3 9 9	5123.0	23.73	267.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2351	TRA	.3127	TC3	-3.1972	BAU	.3826	SGT	2081.3	SGR	254.4	SG3	1748.0	ST	25.0	SR	10.6	SS	52.6
RDE	-.1098	RRA	.0270	RC3	.2172	FAU	.25456	RRT	-.2114	RRF	-.2393	RTF	.8890	CRT	.9322	CRS	.0776	CST	-.2754
FDE	.3513	FRA	6.2636	FC	-24.6768	BSP	2850	SGB	2096.8	R23	.0497	R13	-.8891	LSA	53.1	MSA	26.0	SSA	1.0
BDE	.2595	BRA	.3139	BC3	3.2046	FSP	3045	SG1	2082.0	SG2	248.6	THA	178.50	EL1	26.9	EL2	3.6	ALF	21.93

LAUNCH DATE MAY 10 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 490.745 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.218	GAL	-.55	AZL	91.90	HCA	159.18	SMA	184.51	ECC	.18159	INC	1.9026	V1	29.498
RP	213.77	LAP	-.68	LOP	27.90	VP	22.856	GAP	5.14	AZP	88.22	TAL	356.39	TAP	155.58	RCA	151.00	APO	218.01	V2	25.680
RC	141.545	GL	-20.94	GP	.43	ZAL	103.79	ZAP	95.13	ETS	179.44	ZAE	138.52	ETE	179.95	ZAC	102.15	ETC	274.41	LVI	-13.78

PLANETOCENTRIC CONIC

C3	8.960	VHL	2.993	DLA	-29.59	RAL	343.96	RAD	6637.5	VEL	11.361	PTH	6.41	VHP	2.865	DPA	-20.77	RAP	305.63	ECC	1.1475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 9 17	2343.41	.45	59.84	194.80	137.57	17 48 20	1343.4	18.61	43.59
60.00	18 31 49	2123.81	5.42	44.83	199.56	130.00	19 7 13	1123.8	20.86	25.81
70.00	20 23 4	1796.60	11.19	22.58	203.83	122.48	20 53 0	796.6	23.48	.96
80.00	23 9 58	1273.25	19.18	347.30	208.21	113.33	23 31 12	273.3	27.12	322.71
80.92	23 50 40	1143.07	21.74	338.75	209.31	110.58	24 9 43	143.1	28.26	313.31
100.00	1 56 46	6035.76	19.18	286.50	208.21	113.33	3 37 22	5035.8	27.12	261.98
110.00	1 26 26	6131.46	11.19	289.40	203.83	122.48	3 8 37	5131.5	23.48	267.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2325	TRA	.3746	TC3	-3.4299	BAU	.4117	SGT	2257.0	SGR	243.7	SG3	1769.1	ST	25.6	SR	10.0	SS	53.3
RDE	-.1044	RRA	.0233	RC3	.2168	FAU	.25703	RRT	-.2460	RRF	-.2731	RTF	.9040	CRT	.8997	CRS	.1046	CST	-.3298
FDE	.4013	FRA	6.3864	FC	-24.8359	BSP	3185	SGB	2270.1	R23	.0498	R13	-.9042	LSA	54.2	MSA	25.8	SSA	.9
BDE	.2548	BRA	.3753	BC3	3.4368	FSP	3076	SG1	2257.8	SG2	236.1	THA	178.46	EL1	27.2	EL2	4.1	ALF	19.84

LAUNCH DATE MAY 10 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 494.833 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.218	GAL	-.59	AZL	91.91	HCA	160.37	SMA	184.51	ECC	.18163	INC	1.9062	V1	29.498
RP	214.08	LAP	-.64	LOP	29.08	VP	22.816	GAP	4.97	AZP	88.20	TAL	356.13	TAP	156.50	RCA	150.99	APO	218.02	V2	25.645
RC	143.936	GL	-20.94	GP	.48	ZAL	104.20	ZAP	93.12	ETS	179.43	ZAE	136.48	ETE	179.97	ZAC	102.25	ETC	274.21	LVI	-13.52

PLANETOCENTRIC CONIC

C3	8.995	VHL	2.999	DLA	-29.41	RAL	344.39	RAD	6637.5	VEL	11.362	PTH	6.42	VHP	2.854	DPA	-20.93	RAP	304.77	ECC	1.1480

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 3	2348.20	.21	60.04	195.21	137.58	17 49 11	1348.2	18.38	43.61
60.00	18 32 7	2129.86	5.15	45.12	199.95	130.03	19 7 37	1129.9	20.62	26.15
70.00	20 22 21	1805.59	10.86	23.07	204.18	122.58	20 52 27	805.6	23.22	1.52
80.00	23 2 12	1304.39	18.32	349.24	208.32	114.00	23 23 57	304.6	26.62	324.90
81.55	0 1 18	1127.95	21.60	337.57	209.75	110.46	0 20 6	127.9	28.10	312.16
100.00	1 49 0	6067.10	18.32	288.51	208.32	114.00	3 30 7	5067.1	26.62	264.18
110.00	1 25 43	6140.45	10.86	289.89	204.18	122.58	3 8 4	5140.5	23.22	268.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2283	TRA	.4386	TC3	-3.6592	BAU	.4408	SGT	2435.8	SGR	233.2	SG3	1780.9	ST	26.4	SR	9.5	SS	54.0
RDE	-.0990	RRA	.0194	RC3	.2164	FAU	.25772	RRT	-.2843	RRF	-.3101	RTF	.9156	CRT	.8597	CRS	.1355	CST	-.3812
FDE	.4577	FRA	6.4920	FC	-24.8052	BSP	3527	SGB	2446.9	R23	.0497	R13	-.9158	LSA	55.2	MSA	25.7	SSA	.9
BDE	.2489	BRA	.4390	BC3	3.6656	FSP	3093	SG1	2436.7	SG2	223.5	THA	178.43	EL1	27.6	EL2	4.6	ALF	17.69

LAUNCH DATE MAY 10 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 499.124 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.218	GAL	-.64	AZL	91.91	HCA	161.55	SMA	184.52	ECC	.18172	INC	1.9099	V1	29.498
RP	214.39	LAP	-.60	LOP	30.26	VP	22.777	GAP	4.79	AZP	88.19	TAL	355.86	TAP	157.41	RCA	150.99	APO	218.05	V2	25.609
RC	146.344	GL	-20.93	GP	.51	ZAL	104.63	ZAP	91.14	ETS	179.42	ZAE	134.46	ETE	179.99	ZAC	102.35	ETC	274.02	LVI	-13.27

PLANETOCENTRIC CONIC

C3	9.037	VHL	3.006	DLA	-29.23	RAL	344.84	RAD	6637.5	VEL	11.364	PTH	6.42	VHP	2.846	DPA	-21.07	RAP	303.92	ECC	1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 49	2353.34	-.05	60.26	195.64	137.58	17 50 2	1353.3	18.13	44.05
60.00	18 32 24	2136.30	4.87	45.43	200.36	130.06	19 8 0	1136.3	20.36	26.50
70.00	20 21 38	1815.03	10.51	23.58	204.55	122.68	20 51 53	815.0	22.94	2.11
80.00	22 55 52	1331.75	17.56	350.89	208.51	114.54	23 18 3	331.8	26.16	326.79
82.26	0 8 48	1110.49	21.45	336.22	210.21	110.34	0 27 19	110.5	27.92	310.83
100.00	1 42 39	6094.26	17.56	290.17	208.51	114.54	3 24 14	5094.3	26.16	266.06
110.00	1 25 0	6149.89	10.51	290.40	204.55	122.68	3 7 30	5149.9	22.94	268.94

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2241	TRA	.5036	TC3	-3.8886	BAU	.4705	SGT	2618.8	SGR	223.3	SG3	1790.3			ST	27.2	SR	8.9	SS	54.6
RDE	-.0936	RRA	.0153	RC3	.2164	FAU	.25861	RRT	-.3271	RRF	-.3525	RTF	.9254			CRT	.8146	CRS	.1665	CST	-.4292
FDE	.5110	FRA	6.5797	FC	-24.7753	BSP	3872	SGB	2628.3	R23	.0507	R13	-.9255			LSA	56.1	MSA	25.5	SSA	.8
BDE	.2429	BRA	.5038	BC3	3.8947	FSP	3133	SG1	2619.8	SG2	210.9	THA	178.39			EL1	28.2	EL2	5.0	ALF	15.47

LAUNCH DATE MAY 10 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 503.313 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.219	GAL	-.68	AZL	91.91	HCA	162.73	SMA	184.54	ECC	.18186	INC	1.9142	V1	29.498
RP	214.72	LAP	-.57	LOP	31.44	VP	22.738	GAP	4.63	AZP	88.17	TAL	355.58	TAP	158.30	RCA	150.98	APO	218.10	V2	25.573
RC	148.770	GL	-20.92	GP	.54	ZAL	105.08	ZAP	89.19	ETS	179.41	ZAE	132.45	ETE	179.99	ZAC	102.44	ETC	273.84	LVI	-13.03

PLANETOCENTRIC CONIC

C3	9.085	VHL	3.014	DLA	-29.04	RAL	345.31	RAD	6637.6	VEL	11.366	PTH	6.42	VHP	2.840	DPA	-21.20	RAP	303.11	ECC	1.1495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 37	2358.79	-.32	60.49	196.09	137.58	17 50 55	1358.8	17.87	44.31
60.00	18 32 41	2143.09	4.58	45.76	200.79	130.08	19 8 25	1143.1	20.09	26.87
70.00	20 20 54	1824.83	10.15	24.11	204.93	122.79	20 51 19	824.8	22.64	2.72
80.00	22 50 25	1356.44	16.86	352.39	208.74	115.01	23 13 1	356.4	25.71	328.49
83.11	0 17 18	1090.16	21.30	334.66	210.70	110.22	0 35 28	90.2	27.73	309.30
100.00	1 37 13	6118.95	16.86	291.66	208.74	115.01	3 19 11	5118.9	25.71	267.76
110.00	1 24 16	6159.69	10.15	290.93	204.93	122.79	3 6 56	5159.7	22.64	269.54

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2189	TRA	.5706	TC3	-4.1141	BAU	.5004	SGT	2804.2	SGR	213.8	SG3	1796.4			ST	28.2	SR	8.4	SS	55.3
RDE	-.0882	RRA	.0110	RC3	.2167	FAU	.25859	RRT	-.3746	RRF	-.3991	RTF	.9329			CRT	.7631	CRS	.1995	CST	-.4751
FDE	.5658	FRA	6.6729	FC	-24.6415	BSP	4209	SGB	2812.3	R23	.0516	R13	-.9330			LSA	57.2	MSA	25.3	SSA	.8
BDE	.2360	BRA	.5708	BC3	4.1198	FSP	3127	SG1	2805.3	SG2	198.2	THA	178.36			EL1	28.9	EL2	5.3	ALF	13.26

LAUNCH DATE MAY 10 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 507.501 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.221	GAL	-.73	AZL	91.92	HCA	163.90	SMA	184.57	ECC	.18204	INC	1.9193	V1	29.498
RP	215.04	LAP	-.53	LOP	32.61	VP	22.699	GAP	4.46	AZP	88.16	TAL	355.28	TAP	159.18	RCA	150.97	APO	218.17	V2	25.536
RC	151.211	GL	-20.92	GP	.58	ZAL	105.54	ZAP	87.27	ETS	179.41	ZAE	130.48	ETE	180.00	ZAC	102.53	ETC	273.66	LVI	-12.80

PLANETOCENTRIC CONIC

C3	9.140	VHL	3.023	DLA	-28.84	RAL	345.79	RAD	6637.6	VEL	11.369	PTH	6.42	VHP	2.838	DPA	-21.32	RAP	302.32	ECC	1.1504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 26	2364.51	-.61	60.73	196.56	137.57	17 51 50	1364.5	17.60	44.57
60.00	18 33 0	2150.18	4.26	46.10	201.24	130.11	19 8 50	1150.2	19.81	27.26
70.00	20 20 11	1834.93	9.78	24.65	205.34	122.89	20 50 46	834.9	22.34	3.35
80.00	22 45 38	1379.37	16.19	353.77	209.01	115.43	23 8 37	379.4	25.28	330.05
84.08	0 27 3	1066.07	21.13	332.82	211.20	110.10	0 44 49	66.1	27.53	307.49
100.00	1 32 25	6141.88	16.19	293.04	209.01	115.43	3 14 47	5141.9	25.28	269.33
110.00	1 23 33	6169.79	9.78	291.48	205.34	122.89	3 6 23	5169.8	22.34	270.17

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2124	TRA	.6393	TC3	-4.3338	BAU	.5302	SGT	2990.3	SGR	205.2	SG3	1799.1			ST	29.2	SR	7.8	SS	55.8
RDE	-.0828	RRA	.0064	RC3	.2175	FAU	.25857	RRT	-.4274	RRF	-.4917	RTF	.5997			CRT	.7050	CRS	.2359	CST	-.5178
FDE	.6229	FRA	6.7437	FC	-24.4916	BSP	4554	SGB	2997.3	R23	.0537	R13	-.9398			LSA	58.3	MSA	25.1	SSA	.7
BDE	.2280	BRA	.6393	BC3	4.3393	FSP	3129	SG1	2991.6	SG2	185.4	THA	178.31			EL1	29.7	EL2	5.5	ALF	11.12

LAUNCH DATE MAY 10 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 511.688 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.224	GAL	-.77	AZL	91.93	HCA	165.07	SMA	184.61	ECC	.18227	INC	1.9253	V1	29.498
RP	215.37	LAP	-.50	LOP	33.78	VP	22.661	GAP	4.29	AZP	88.14	TAL	354.98	TAP	160.05	RCA	150.96	APO	218.25	V2	25.499
RC	153.669	GL	-20.91	GP	.63	ZAL	106.02	ZAP	85.39	ETS	179.41	ZAE	128.52	ETE	180.00	ZAC	102.63	ETC	273.49	LVI	-12.59

PLANETOCENTRIC CONIC

C3	9.201	VHL	3.033	DLA	-28.64	RAL	346.28	RAD	6637.6	VEL	11.371	PTH	6.42	VHP	2.838	DPA	-21.41	RAP	301.56	ECC	1.1514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 17	2370.48	-.91	60.97	197.05	137.57	17 52 47	1370.5	17.31	44.85
60.00	18 33 20	2157.53	3.94	46.45	201.70	130.14	19 9 18	1157.5	19.52	27.66
70.00	20 19 31	1845.26	9.39	25.21	205.77	122.99	20 50 16	845.3	22.02	3.98
80.00	22 41 22	1400.97	15.55	355.05	209.32	115.81	23 4 43	401.0	24.85	331.52
85.28	0 38 48	1035.80	20.96	330.53	211.72	109.98	0 56 3	35.8	27.32	305.23
100.00	1 28 10	6163.48	15.55	294.33	209.32	115.81	3 10 54	5163.5	24.85	270.79
110.00	1 22 53	6180.11	9.39	292.03	205.77	122.99	3 5 53	5180.1	22.02	270.80

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2045	TRA	.7106	TC3	-4.5452	BAU	.5598	SGT	3176.7	SGR	197.5	SG3	1797.3			ST	30.3	SR	7.3	SS	56.5
RDE	-.0775	RRA	.0015	RC3	.2185	FAU	.25728	RRT	-.4848	RRF	-.5085	RTF	.9448			CRT	.6390	CRS	.2774	CST	-.5572
FDE	.6867	FRA	6.8193	FC	-24.2070	BSP	4908	SGB	3182.8	R23	.0562	R13	-.9449			LSA	59.5	MSA	24.9	SSA	.7
BDE	.2186	BRA	.7106	BC3	4.5504	FSP	3138	SG1	3178.1	SG2	172.6	THA	178.27			EL1	30.6	EL2	5.6	ALF	9.09

LAUNCH DATE MAY 10 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 14 1971

HELIOCENTRIC CONIC DISTANCE 515.873 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.226	GAL	-.82	AZL	91.93	HCA	166.24	SMA	184.65	ECC	.18254	INC	1.9319	V1	29.498
RP	215.71	LAP	-.46	LOP	34.95	VP	22.623	GAP	4.13	AZP	88.12	TAL	354.66	TAP	160.90	RCA	150.95	APO	218.36	V2	25.461
RC	156.143	GL	-20.91	GP	.68	ZAL	106.50	ZAP	83.55	ETS	179.42	ZAE	126.60	ETE	179.99	ZAC	102.73	ETC	273.32	LVI	-12.40

PLANETOCENTRIC CONIC

C3	9.270	VHL	3.045	DLA	-28.43	RAL	346.79	RAD	6637.7	VEL	11.374	PTH	6.43	VHP	2.841	DPA	-21.50	RAP	300.84	ECC	1.1526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 11	2376.65	-1.22	61.23	197.56	137.56	17 53 48	1376.7	17.01	45.13
60.00	18 33 43	2165.07	3.61	46.81	202.19	130.17	19 9 48	1165.1	19.22	28.07
70.00	20 18 54	1855.72	9.01	25.77	206.22	123.08	20 49 50	855.7	21.70	4.62
80.00	22 37 36	1421.41	14.95	356.27	209.67	116.15	23 1 17	421.4	24.44	332.89
86.92	0 54 28	6281.10	20.78	305.24	212.27	109.85	2 39 9	5281.1	27.11	279.97
100.00	1 24 24	6183.92	14.95	295.54	209.67	116.15	3 7 28	5183.9	24.44	272.17
110.00	1 22 17	6190.58	9.01	292.59	206.22	123.08	3 5 27	5190.6	21.70	271.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1965	TRA	.7826	TC3	-4.7556	BAU	.5900	SGT	3365.6	SGR	191.1	SG3	1794.4	ST	31.5	SR	6.8	SS	57.2
RDE	-.0721	RRA	-.0037	RC3	.2204	FAU	.25620	RRT	-.5471	RRF	-.5706	RTF	.9492	CRT	.5686	CRS	.3215	CST	-.5923
FDE	.7480	FRA	6.8846	FC-	23.9272	BSP	5250	SGB	3371.0	R23	.0599	R13	-.9493	LSA	60.8	MSA	24.8	SSA	.6
BDE	.2093	BRA	.7826	BC3	4.7607	FSP	3133	SG1	3367.3	SG2	159.9	THA	178.22	EL1	31.7	EL2	5.5	ALF	7.21

LAUNCH DATE MAY 10 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 520.057 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.230	GAL	-.88	AZL	91.94	HCA	167.40	SMA	184.71	ECC	.18285	INC	1.9391	V1	29.498
RP	216.04	LAP	-.42	LOP	36.11	VP	22.585	GAP	3.97	AZP	88.11	TAL	354.33	TAP	161.73	RCA	150.93	APO	218.48	V2	25.424
RC	158.631	GL	-20.91	GP	.73	ZAL	107.00	ZAP	81.75	ETS	179.43	ZAE	124.71	ETE	179.98	ZAC	102.83	ETC	273.17	LVI	-12.22

PLANETOCENTRIC CONIC

C3	9.346	VHL	3.057	DLA	-28.23	RAL	347.31	RAD	6637.7	VEL	11.378	PTH	6.43	VHP	2.846	DPA	-21.56	RAP	300.15	ECC	1.1538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 9	2382.96	-1.53	61.50	198.09	137.56	17 54 51	1383.0	16.71	45.42
60.00	18 34 10	2172.73	3.27	47.18	202.71	130.19	19 10 23	1172.7	18.91	28.48
70.00	20 18 24	1866.20	8.62	26.33	206.70	123.18	20 49 30	866.2	21.37	5.26
80.00	22 34 17	1440.74	14.36	357.40	210.06	116.46	22 58 18	440.7	24.03	334.19
90.00	1 7 10	6248.31	19.47	302.32	212.40	110.93	2 51 18	5248.3	26.38	277.43
100.00	1 21 5	6203.25	14.36	296.68	210.06	116.46	3 4 28	5203.3	24.03	273.46
110.00	1 21 46	6201.06	8.62	293.15	206.70	123.18	3 5 7	5201.1	21.37	272.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1904	TRA	.8528	TC3	-4.9665	BAU	.6212	SGT	3555.1	SGR	186.2	SG3	1784.9	ST	32.9	SR	6.3	SS	57.3
RDE	-.0668	RRA	-.0092	RC3	.2233	FAU	.25518	RRT	-.6126	RRF	-.6355	RTF	.9532	CRT	.4986	CRS	.3612	CST	-.6248
FDE	.7820	FRA	6.9049	FC-	23.6384	BSP	5568	SGB	3560.0	R23	.0640	R13	-.9533	LSA	61.6	MSA	24.6	SSA	.6
BDE	.2017	BRA	.8528	BC3	4.9715	FSP	3113	SG1	3556.9	SG2	147.1	THA	178.16	EL1	33.0	EL2	5.4	ALF	5.58

LAUNCH DATE MAY 10 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 524.238 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.233	GAL	-.93	AZL	91.95	HCA	168.56	SMA	184.77	ECC	.18320	INC	1.9493	V1	29.498
RP	216.39	LAP	-.39	LOP	37.27	VP	22.547	GAP	3.81	AZP	88.09	TAL	354.00	TAP	162.56	RCA	150.92	APO	218.62	V2	25.385
RC	161.134	GL	-20.92	GP	.80	ZAL	107.51	ZAP	79.99	ETS	179.45	ZAE	122.85	ETE	179.97	ZAC	102.94	ETC	273.02	LVI	-12.07

PLANETOCENTRIC CONIC

C3	9.429	VHL	3.071	DLA	-28.02	RAL	347.84	RAD	6637.7	VEL	11.381	PTH	6.43	VHP	2.853	DPA	-21.60	RAP	299.51	ECC	1.1552

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 11	2389.33	-1.85	61.76	198.64	137.55	17 56 1	1389.3	16.40	45.72
60.00	18 34 44	2180.40	2.94	47.55	203.25	130.21	19 11 4	1180.4	18.60	28.69
70.00	20 18 3	1876.57	8.23	26.88	207.21	123.27	20 49 19	876.6	21.05	5.89
80.00	22 31 26	1458.93	13.81	358.47	210.49	116.74	22 55 45	458.9	23.64	335.39
90.00	0 51 5	1021.24	17.94	328.23	212.45	112.23	1 8 6	21.2	25.55	303.79
100.00	1 18 14	6221.45	13.81	297.74	210.49	116.74	3 1 55	5221.4	23.64	274.67
110.00	1 21 25	6211.43	8.23	293.71	207.21	123.27	3 4 56	5211.4	21.05	272.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1778	TRA	.9301	TC3	-5.1480	BAU	.6496	SGT	3737.8	SGR	183.4	SG3	1772.5	ST	34.2	SR	5.8	SS	58.1
RDE	-.0616	RRA	-.0155	RC3	.2264	FAU	.25212	RRT	-.6794	RRF	-.7022	RTF	.9562	CRT	.4052	CRS	.4220	CST	-.6548
FDE	.8608	FRA	6.9561	FC-	23.1491	BSP	5937	SGB	3742.3	R23	.0706	R13	-.9563	LSA	63.1	MSA	24.4	SSA	.5
BDE	.1882	BRA	.9303	BC3	5.1530	FSP	3107	SG1	3739.8	SG2	134.5	THA	178.09	EL1	34.2	EL2	5.3	ALF	4.01

LAUNCH DATE MAY 10 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 528.418 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.238	GAL	-.98	AZL	91.96	HCA	169.72	SMA	184.84	ECC	.18359	INC	1.9609	V1	29.498
RP	216.73	LAP	-.35	LOP	38.43	VP	22.510	GAP	3.65	AZP	88.07	TAL	353.65	TAP	163.37	RCA	150.90	APO	218.77	V2	25.347
RC	163.649	GL	-20.95	GP	.89	ZAL	108.03	ZAP	78.27	ETS	179.47	ZAE	121.02	ETE	179.95	ZAC	103.06	ETC	272.89	LVI	-11.94

PLANETOCENTRIC CONIC

C3	9.520	VHL	3.085	DLA	-27.83	RAL	348.40	RAD	6637.8	VEL	11.385	PTH	6.44	VHP	2.863	DPA	-21.62	RAP	298.89	ECC	1.1567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 21	2395.66	-2.17	62.03	199.22	137.54	17 57 17	1395.7	16.09	46.01
60.00	18 35 26	2187.98	2.60	47.91	203.81	130.23	19 11 54	1188.0	18.29	29.30
70.00	20 17 53	1886.66	7.85	27.42	207.75	123.35	20 49 20	886.7	20.73	6.50
80.00	22 29 6	1475.85	13.29	359.46	210.96	116.99	22 53 42	475.9	23.26	336.51
90.00	0 42 21	1058.86	16.96	330.55	212.73	112.98	0 59 59	58.9	24.97	306.39
100.00	1 15 54	6238.37	13.29	298.73	210.96	116.99	2 59 52	5238.4	23.26	275.78
110.00	1 21 16	6221.52	7.85	294.25	207.75	123.35	3 4 57	5221.5	20.73	273.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1677	TRA	1.0072	TC3	-5.3339	BAU	.6795	SGT	3924.8	SGR	183.2	SG3	1760.7	ST	35.7	SR	5.3	SS	58.6
RDE	-.0565	RRA	-.0223	RC3	.2314	FAU	.24993	RRT	-.7459	RRF	-.7680	RTF	.9590	CRT	.3086	CRS	.4803	CST	-.6834
FDE	.9102	FRA	6.9946	FC-	22.7279	BSP	6274	SGB	3929.1	R23	.0781	R13	-.9591	LSA	64.4	MSA	24.2	SSA	.5
BDE	.1770	BRA	1.0075	BC3	5.3389	FSP	3083	SG1	3927.2	SG2	122.0	THA	178.00	EL1	35.7	EL2	5.0	ALF	2.67

LAUNCH DATE MAY 10 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 532.595 EARTH TO MARS

RL 181.05 LAL .00 LOL 228.70 VL 32.242 GAL -1.04 AZL 91.98 HCA 170.87 SMA 184.91 ECC .18401 INC 1.9740 V1 29.498
RP 217.08 LAP -.31 LOP 39.58 VP 22.472 GAP 3.49 AZP 88.05 TAL 353.30 TAP 164.17 RCA 150.89 APO 218.94 V2 25.308
RC 166.178 GL -20.99 GP .99 ZAL 108.56 ZAP 76.60 ETS 179.51 ZAE 119.22 ETE 179.93 ZAC 103.20 ETC 272.76 LVI -11.85

PLANETOCENTRIC CONIC

C3 9.621 VHL 3.102 DLA -27.65 RAL 348.97 RAD 6637.8 VEL 11.390 PTH 6.44 VHP 2.874 DPA -21.61 RAP 298.32 ECC 1.1583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 40	2401.84	-2.48	62.28	199.84	137.53	17 58 42	1401.8	15.79	46.29
60.00	18 36 20	2195.29	2.28	48.26	204.42	130.25	19 12 55	1195.3	17.99	29.69
70.00	20 18 2	1896.22	7.49	27.93	208.33	123.42	20 49 38	896.2	20.42	7.07
80.00	22 27 23	1491.23	12.81	.35	211.49	117.20	22 52 15	491.2	22.91	337.52
90.00	0 36 30	1087.55	16.19	332.31	213.14	113.51	0 54 38	87.6	24.49	308.36
100.00	1 14 11	8253.74	12.81	299.62	211.49	117.20	2 58 25	8253.7	22.91	278.79
110.00	1 21 24	8231.08	7.49	294.75	208.33	123.42	3 5 15	8231.1	20.42	273.90

DIFFERENTIAL CORRECTIONS

TDE -.1613 TRA 1.0805 TC3-5.5256 BAU .7114
RDE -.0513 RRA -.0298 RC3 .2386 FAU .24771
FDE .9491 FRA 7.0005 FC-22.2904 BSP 6550
BDE .1602 BRA 1.0809 BC3 5.5308 FSP 3036

MID-COURSE EXECUTION ACCURACY

SGT 4112.9 SGR 186.4 SG3 1743.9
RRT -.8078 RRF -.8294 RTF .9609
SGB 4117.1 R23 .0893 R13 -.9610
SG1 4115.6 SG2 109.8 THA 177.90

ORBIT DETERMINATION ACCURACY

ST 37.3 SR 4.8 SS 58.8
CRT .2102 CRS .5454 CST -.7024
LSA 65.4 MSA 24.3 SSA .4
EL1 37.3 EL2 4.7 ALF 1.59

LAUNCH DATE MAY 10 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 536.770 EARTH TO MARS

RL 181.05 LAL .00 LOL 228.70 VL 32.247 GAL -1.10 AZL 91.99 HCA 172.02 SMA 184.99 ECC .18447 INC 1.9927 V1 29.498
RP 217.43 LAP -.28 LOP 40.73 VP 22.438 GAP 3.34 AZP 88.03 TAL 352.93 TAP 164.95 RCA 150.87 APO 219.12 V2 25.269
RC 168.717 GL -21.08 GP 1.13 ZAL 109.09 ZAP 74.97 ETS 179.56 ZAE 117.47 ETE 179.89 ZAC 103.36 ETC 272.64 LVI -11.80

PLANETOCENTRIC CONIC

C3 9.732 VHL 3.120 DLA -27.49 RAL 349.57 RAD 6637.9 VEL 11.394 PTH 6.45 VHP 2.887 DPA -21.56 RAP 297.79 ECC 1.1602

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 14	2407.62	-2.77	62.53	200.50	137.51	18 0 22	1407.6	15.51	46.55
60.00	18 37 32	2202.03	1.99	48.58	205.07	130.26	19 14 14	1202.0	17.72	30.05
70.00	20 18 35	1904.85	7.17	28.39	208.97	123.48	20 50 20	904.8	20.15	7.59
80.00	22 26 28	1504.51	12.40	1.12	212.08	117.38	22 51 33	504.5	22.61	338.38
90.00	0 32 48	1109.80	15.58	333.65	213.66	113.90	0 51 18	109.8	24.10	309.87
100.00	1 13 16	8267.03	12.40	300.39	212.08	117.38	2 57 43	8267.0	22.61	277.66
110.00	1 21 58	8239.70	7.17	295.21	208.97	123.48	3 5 57	5239.7	20.15	274.41

DIFFERENTIAL CORRECTIONS

TDE -.1495 TRA 1.1612 TC3-5.6847 BAU .7403
RDE -.0464 RRA -.0387 RC3 .2479 FAU .24433
FDE 1.0036 FRA 7.0209 FC-21.7343 BSP 6892
BDE .1565 BRA 1.1619 BC3 5.6901 FSP 3012

MID-COURSE EXECUTION ACCURACY

SGT 4293.7 SGR 193.9 SG3 1724.9
RRT -.8622 RRF -.8833 RTF .9629
SGB 4298.1 R23 .1039 R13 -.9630
SG1 4297.0 SG2 98.1 THA 177.77

ORBIT DETERMINATION ACCURACY

ST 39.0 SR 4.4 SS 59.3
CRT .0803 CRS .6263 CST -.7247
LSA 66.8 MSA 24.1 SSA .4
EL1 39.0 EL2 4.4 ALF .53

LAUNCH DATE MAY 10 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 540.944 EARTH TO MARS

RL 181.05 LAL .00 LOL 228.70 VL 32.252 GAL -1.16 AZL 92.02 HCA 173.16 SMA 185.08 ECC .18496 INC 2.0158 V1 29.498
RP 217.79 LAP -.24 LOP 41.87 VP 22.398 GAP 3.18 AZP 88.00 TAL 352.56 TAP 165.73 RCA 150.85 APO 219.32 V2 25.229
RC 171.268 GL -21.21 GP 1.31 ZAL 109.62 ZAP 73.38 ETS 179.64 ZAE 115.74 ETE 179.84 ZAC 103.57 ETC 272.54 LVI -11.80

PLANETOCENTRIC CONIC

C3 9.856 VHL 3.139 DLA -27.38 RAL 350.19 RAD 6638.0 VEL 11.400 PTH 6.45 VHP 2.902 DPA -21.46 RAP 297.28 ECC 1.1622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 9	2412.63	-3.02	62.74	201.21	137.50	18 2 22	1412.6	15.27	46.78
60.00	18 39 11	2207.71	1.74	48.86	205.78	130.27	19 15 59	1207.7	17.49	30.35
70.00	20 19 48	1911.85	6.91	28.78	209.67	123.53	20 51 40	911.9	19.92	8.01
80.00	22 28 40	1514.68	12.08	1.70	212.76	117.51	22 51 55	514.7	22.37	339.05
90.00	0 31 19	1125.40	15.14	334.60	214.29	114.17	0 50 5	125.4	23.82	310.92
100.00	1 13 28	8277.19	12.08	300.98	212.76	117.51	2 58 5	5277.2	22.37	278.32
110.00	1 23 10	8246.71	6.91	295.58	209.67	123.53	3 7 17	5246.7	19.92	274.83

DIFFERENTIAL CORRECTIONS

TDE -.1496 TRA 1.2311 TC3-5.8782 BAU .7753
RDE -.0410 RRA -.0485 RC3 .2647 FAU .24591
FDE .9506 FRA 6.9292 FC-21.6002 BSP 7081
BDE .1551 BRA 1.2320 BC3 5.8842 FSP 2870

MID-COURSE EXECUTION ACCURACY

SGT 4483.2 SGR 207.7 SG3 1705.8
RRT -.9076 RRF -.9274 RTF .9673
SGB 4488.0 R23 .1169 R13 -.9674
SG1 4487.1 SG2 87.1 THA 177.59

ORBIT DETERMINATION ACCURACY

ST 40.7 SR 4.0 SS 58.0
CRT -.0431 CRS .6948 CST -.7466
LSA 66.9 MSA 23.7 SSA .3
EL1 40.7 EL2 4.0 ALF 179.75

LAUNCH DATE MAY 10 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 28 1971

HELIOCENTRIC CONIC DISTANCE 545.112 EARTH TO MARS

RL 181.05 LAL .00 LOL 228.70 VL 32.258 GAL -1.22 AZL 92.05 HCA 174.31 SMA 185.18 ECC .18549 INC 2.0488 V1 29.498
RP 218.15 LAP -.20 LOP 43.01 VP 22.362 GAP 3.03 AZP 87.96 TAL 352.18 TAP 166.49 RCA 150.83 APO 219.52 V2 25.189
RC 173.829 GL -21.43 GP 1.56 ZAL 110.14 ZAP 71.84 ETS 179.74 ZAE 114.06 ETE 179.78 ZAC 103.84 ETC 272.44 LVI -11.89

PLANETOCENTRIC CONIC

C3 9.999 VHL 3.162 DLA -27.34 RAL 350.87 RAD 6638.0 VEL 11.406 PTH 6.46 VHP 2.919 DPA -21.28 RAP 296.81 ECC 1.1646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 39	2416.39	-3.21	62.89	202.01	137.49	18 4 55	1416.4	15.09	46.94
60.00	18 41 36	2211.72	1.56	49.05	206.59	130.28	19 18 27	1211.7	17.32	30.56
70.00	20 22 3	1916.33	6.74	29.00	210.49	123.56	20 53 59	916.3	19.78	8.27
80.00	22 28 34	1520.27	11.90	2.02	213.58	117.59	22 53 54	520.3	22.23	339.41
90.00	0 32 39	1132.81	14.94	335.04	215.10	114.29	0 51 32	132.8	23.68	311.42
100.00	1 15 22	8282.78	11.90	301.30	213.58	117.59	3 0 4	5282.8	22.23	278.68
110.00	1 25 25	8251.19	6.74	295.82	210.49	123.56	3 9 36	5251.2	19.78	275.10

DIFFERENTIAL CORRECTIONS

TDE -.1444 TRA 1.3109 TC3-6.0297 BAU .8069
RDE -.0365 RRA -.0617 RC3 .2850 FAU .24194
FDE 1.0013 FRA 6.9432 FC-20.9480 BSP 7341
BDE .1489 BRA 1.3124 BC3 6.0364 FSP 2833

MID-COURSE EXECUTION ACCURACY

SGT 4664.8 SGR 229.6 SG3 1682.9
RRT -.9400 RRF -.9595 RTF .9676
SGB 4670.4 R23 .1458 R13 -.9677
SG1 4669.8 SG2 78.3 THA 177.35

ORBIT DETERMINATION ACCURACY

ST 42.6 SR 3.8 SS 58.5
CRT -.2095 CRS .7983 CST -.7545
LSA 68.3 MSA 24.1 SSA .3
EL1 42.6 EL2 3.7 ALF 178.92

LAUNCH DATE MAY 10 1971 FLIGHT TIME 234.00 ARRIVAL DATE DEC 30 1971

HELIOCENTRIC CONIC DISTANCE 549.277 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.264	GAL	-1.28	AZL	92.10	HCA	175.44	SMA	185.28	ECC	.18605	INC	2.1039
RP	218.51	LAP	-.17	LOP	44.15	VP	22.325	GAP	2.87	AZP	87.90	TAL	351.80	TAP	167.24	RCA	150.80	APO	219.75
RC	176.400	GL	-21.80	GP	1.93	ZAL	110.65	ZAP	70.35	ETS	179.91	ZAE	112.42	ETE	179.67	ZAC	104.23	ETC	272.36

V1	29.498																		
V2	25.149																		
LVI	-12.10																		

PLANETOCENTRIC CONIC

C3	10.168	VHL	3.189	DLA	-27.43	RAL	351.63	RAD	6638.1	VEL	11.413	PTH	6.46	VHP	2.937	DPA	-20.97	RAP	296.37

ECC	1.1673																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 10	2417.64	-3.27	62.95	202.95	137.49	18 8 28	1417.6	15.03	47.00
60.00	18 48 19	2212.40	1.53	49.08	207.57	130.28	19 22 12	1212.4	17.30	30.60
70.00	20 26 9	1915.92	6.75	28.97	211.50	123.56	20 58 5	915.9	19.79	8.25
80.00	22 33 30	1517.26	12.00	1.85	214.63	117.55	22 58 47	517.3	22.31	339.21
90.00	0 36 55	1125.49	15.14	334.60	216.20	114.17	0 57 40	125.5	23.81	310.93
100.00	1 20 17	6279.78	12.00	301.13	214.63	117.55	3 4 57	5279.8	22.31	278.49
110.00	1 29 31	6250.78	6.75	295.80	211.50	123.56	3 13 42	5250.8	19.79	275.07

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1181	TRA	1.4185	TC3	-6.0878	BAU	.8259	SGT	4823.5	SGR	264.7	SG3	1656.8	ST	44.7	SR	3.9	SS	60.0
RDE	-.0337	RRA	-.0808	RC3	.3122	FAU	.23398	RRT	-.9613	RRF	-.9807	RTF	.9684	CRT	-.4309	CRS	.9017	CST	-.7774
FDE	1.1204	FRA	7.0244	FC-	19.9222	BSP	7908	SGB	4830.7	R23	.1798	R13	-.9686	LSA	71.1	MSA	23.9	SSA	.2
BDE	.1228	BRA	1.4208	BC3	6.0758	FSP	2881	SG1	4830.2	SG2	72.8	THA	176.98	EL1	44.8	EL2	3.5	ALF	177.83

LAUNCH DATE MAY 10 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC DISTANCE 553.439 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.270	GAL	-1.35	AZL	92.19	HCA	176.58	SMA	185.38	ECC	.18664	INC	2.1859
RP	218.88	LAP	-.13	LOP	45.28	VP	22.289	GAP	2.72	AZP	87.82	TAL	351.40	TAP	167.98	RCA	150.78	APO	219.98
RC	178.981	GL	-22.47	GP	2.55	ZAL	111.12	ZAP	68.91	ETS	180.20	ZAE	110.81	ETE	179.50	ZAC	104.87	ETC	272.28

V1	29.498																		
V2	25.109																		
LVI	-12.55																		

PLANETOCENTRIC CONIC

C3	10.387	VHL	3.223	DLA	-27.79	RAL	352.55	RAD	6638.2	VEL	11.423	PTH	6.47	VHP	2.957	DPA	-20.42	RAP	295.92

ECC	1.1709																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 43	2413.76	-3.08	62.78	204.16	137.50	18 13 57	1413.8	15.21	46.83
60.00	18 51 43	2206.30	1.60	48.79	208.85	130.27	19 28 29	1206.3	17.55	30.27
70.00	20 34 2	1905.40	7.15	28.42	212.87	123.49	21 5 48	905.4	20.13	7.62
80.00	22 44 54	1495.72	12.67	.61	216.16	117.26	23 9 49	495.7	22.81	337.81
90.00	0 57 16	1081.54	16.35	331.94	217.95	113.40	1 15 17	81.5	24.59	307.95
100.00	1 31 41	6256.23	12.67	299.66	216.16	117.26	3 16 0	5256.2	22.81	277.09
110.00	1 37 25	6240.26	7.15	295.24	212.87	123.49	3 21 25	5240.3	20.13	274.45

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1312	TRA	1.4978	TC3	-6.1974	BAU	.8621	SGT	5007.2	SGR	325.6	SG3	1630.8	ST	47.0	SR	4.2	SS	59.5
RDE	-.0305	RRA	-.1077	RC3	.3679	FAU	.23201	RRT	-.9729	RRF	-.9926	RTF	.9691	CRT	-.5866	CRS	.9663	CST	-.7743
FDE	1.0998	FRA	6.9855	FC-	19.3384	BSP	8066	SGB	5017.8	R23	.2142	R13	-.9693	LSA	71.8	MSA	24.8	SSA	.1
BDE	.1347	BRA	1.5016	BC3	6.2083	FSP	2797	SG1	5017.2	SG2	75.2	THA	176.38	EL1	47.1	EL2	3.4	ALF	176.95

LAUNCH DATE MAY 10 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC DISTANCE 557.597 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.277	GAL	-1.42	AZL	92.35	HCA	177.71	SMA	185.49	ECC	.18726	INC	2.3431
RP	219.25	LAP	-.09	LOP	46.41	VP	22.252	GAP	2.57	AZP	87.65	TAL	351.00	TAP	168.71	RCA	150.75	APO	220.22
RC	181.572	GL	-23.88	GP	3.77	ZAL	111.48	ZAP	67.53	ETS	180.77	ZAE	109.24	ETE	179.15	ZAC	106.10	ETC	272.23

V1	29.498																		
V2	25.068																		
LVI	-13.58																		

PLANETOCENTRIC CONIC

C3	10.728	VHL	3.275	DLA	-28.81	RAL	353.84	RAD	6638.4	VEL	11.438	PTH	6.49	VHP	2.981	DPA	-19.26	RAP	295.42

ECC	1.1766																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 44 24	2397.07	-2.24	62.09	206.07	137.54	18 24 21	1397.1	16.03	46.07
60.00	19 4 53	2182.95	2.83	47.67	210.94	130.22	19 41 16	1183.0	18.50	29.03
70.00	20 51 55	1868.18	8.54	26.44	215.22	123.19	21 23 3	868.2	21.31	5.36
80.00	23 16 45	1414.51	15.15	355.86	219.05	116.04	23 40 20	414.5	24.58	332.43
84.25	1 0 36	1093.33	20.35	334.52	221.42	110.84	1 18 50	93.3	27.14	309.42
100.00	2 3 33	6177.02	15.15	295.13	219.05	116.04	3 46 30	5177.0	24.58	271.70
110.00	1 55 17	6203.04	8.54	293.26	215.22	123.19	3 38 40	5203.0	21.31	272.20

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2068	TRA	1.5420	TC3	-6.4119	BAU	.9223	SGT	5220.1	SGR	446.7	SG3	1601.3	ST	50.0	SR	5.2	SS	86.7
RDE	-.0263	RRA	-.1540	RC3	.4897	FAU	.23614	RRT	-.9766	RRF	-.9978	RTF	.9689	CRT	-.6744	CRS	.9960	CST	-.7585
FDE	.9130	FRA	6.8152	FC-	19.0564	BSP	7664	SGB	5239.2	R23	.2384	R13	-.9693	LSA	70.7	MSA	27.2	SSA	.1
BDE	.2064	BRA	1.5497	BC3	6.4306	FSP	2561	SG1	5238.3	SG2	95.7	THA	175.22	EL1	50.1	EL2	3.8	ALF	178.98

LAUNCH DATE MAY 10 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 561.754 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.283	GAL	-1.48	AZL	92.64	HCA	178.83	SMA	185.60	ECC	.18791	INC	2.8218
RP	219.62	LAP	-.06	LOP	47.54	VP	22.216	GAP	2.42	AZP	87.16	TAL	350.60	TAP	169.43	RCA	150.73	APO	220.48
RC	184.172	GL	-28.04	GP	7.31	ZAL	111.32	ZAP	66.33	ETS	182.42	ZAE	107.69	ETE	178.12	ZAC	109.64	ETC	272.23

V1	29.498																		
V2	25.028																		
LVI	-16.76																		

PLANETOCENTRIC CONIC

C3	11.589	VHL	3.404	DLA	-32.26	RAL	356.65	RAD	6638.9	VEL	11.475	PTH	6.52	VHP	3.023	DPA	-15.80	RAP	294.61

ECC	1.1907																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 15 45	2331.43	1.06	59.34	210.91	137.57	18 54 36	1331.4	19.18	43.02
60.00	19 46 39	2089.50	6.92	43.17	216.52	129.80	20 21 28	1089.5	22.19	23.90
70.00	22 0 15	1696.03	14.80	17.03	222.23	121.14	22 28 31	696.0	26.28	354.49
73.79	23 49 55	1357.20	22.22	355.04	226.31	114.01	24 12 32	357.2	30.13	329.78
73.79	23 49 55	1357.20	22.22	355.04	226.31	114.01	24 12 32	357.2	30.13	329.78
73.79	23 49 55	1357.20	22.22	355.04	226.31	114.01	24 12 32	357.2	30.13	329.78
110.00	3 3 38	6030.89	14.80	283.85	222.23	121.14	4 44 9	5030.9	26.28	261.31

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3770	TRA	1.5936	TC3	-6.4229	BAU	1.0034	SGT	5439.3	SGR	793.3	SG3	1550.5	ST	57.6	SR	8.5	SS	52.2
RDE	-.0178	RRA	-.2793	RC3	.8301	FAU	.24358	RRT	-.9770	RRF	-.9995	RTF	.9703	CRT	-.7239	CRS	.9991	CST	-.6949
FDE	.5133	FRA	6.5090	FC-	18.1953	BSP	6926	SGB	5496.9	R23	.2371	R13	-.9714	LSA	72.0	MSA	30.4	SSA	.0
BDE	.3774	BRA	1.6179	BC3	6.4763	FSP	2172	SG1	5494.3	SG2	167.6	THA	171.88	EL1	57.9	EL2	5.8	ALF	173.82

LAUNCH DATE MAY 10 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 570.047 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.298	GAL	-1.62	AZL	90.77	HCA	181.07	SMA	185.84	ECC	.18929	INC	.4114	V1	29.498
RP	220.36	LAP	.01	LOP	49.78	VP	22.145	GAP	2.12	AZP	89.23	TAL	349.76	TAP	170.83	RCA	150.66	APO	221.02	V2	24.946
RC	189.399	GL	-8.01	GP	-7.81	ZAL	115.02	ZAP	63.77	ETS	175.30	ZAE	104.40	ETE	182.47	ZAC	94.57	ETC	271.97	LVI	-2.61

PLANETOCENTRIC CONIC

C3	9.700	VHL	3.115	DLA	-13.68	RAL	348.41	RAD	6637.9	VEL	11.393	PTH	6.45	VHP	3.071	DPA	-30.78	RAP	296.85	ECC	1.1596

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 37	2701.16	-17.29	75.29	197.79	135.05	16 58 39	1701.2	.93	59.17
60.00	17 8 28	2555.32	-13.39	65.75	201.39	128.37	17 51 3	1555.3	2.60	47.64
70.00	18 18 2	2350.80	-9.73	51.85	204.07	122.90	18 57 13	1350.8	4.19	32.26
80.00	19 42 31	2086.34	-6.95	33.46	205.76	119.11	20 17 17	1086.3	5.42	12.94
90.00	21 11 10	1800.33	-5.88	13.01	206.34	117.71	21 41 11	800.3	5.89	352.17
100.00	22 25 23	1560.81	-6.95	354.83	205.76	119.11	22 51 24	560.8	5.42	334.31
110.00	23 17 28	1397.62	-9.73	340.76	204.07	122.90	23 40 46	397.6	4.19	321.18

DIFFERENTIAL CORRECTIONS

TDE	-.1885	TRA	1.1008	TC3	-9.7146	BAU	1.2662
RDE	.0310	RRA	.1966	RC3	-.9803	FAU	.28282
FDE	.5660	FRA	5.0656	FC	-25.2409	BSP	2234
BDE	.1910	BRA	1.1182	BC3	9.7639	FSP	961

MID-COURSE EXECUTION ACCURACY

SGT	6409.5	SGR	717.4	SG3	1593.8
RRT	.9680	RRF	.9997	RTF	.9707
SGB	6449.5	R23	.2365	R13	.9714
SG1	6447.1	SG2	179.0	THA	6.19

ORBIT DETERMINATION ACCURACY

ST	36.9	SR	6.3	SS	41.1
CRT	.5706	CRS	-.9923	CST	-.6672
LSA	50.8	MSA	22.5	SSA	.1
EL1	37.1	EL2	5.2	ALF	5.71

LAUNCH DATE MAY 10 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 574.190 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.305	GAL	-1.70	AZL	91.32	HCA	182.19	SMA	185.97	ECC	.19002	INC	1.2941	V1	29.498
RP	220.74	LAP	.05	LOP	50.89	VP	22.109	GAP	1.98	AZP	88.68	TAL	349.33	TAP	171.52	RCA	150.63	APO	221.31	V2	24.904
RC	192.025	GL	-13.49	GP	-3.81	ZAL	115.21	ZAP	62.32	ETS	177.18	ZAE	103.14	ETE	181.34	ZAC	98.56	ETC	271.96	LVI	-6.26

PLANETOCENTRIC CONIC

C3	10.169	VHL	3.189	DLA	-18.43	RAL	351.34	RAD	6638.1	VEL	11.413	PTH	6.47	VHP	3.072	DPA	-26.86	RAP	295.93	ECC	1.1674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 48	2612.36	-12.97	71.28	201.22	136.19	17 28 20	1612.4	5.39	55.45
60.00	17 45 57	2449.74	-8.87	60.50	205.09	129.48	18 26 47	1449.7	7.22	42.55
70.00	19 3 15	2222.49	-4.92	45.03	208.05	123.84	19 40 18	1222.5	9.02	25.46
80.00	20 35 45	1932.99	-1.81	24.98	209.99	119.81	21 7 58	933.0	10.45	4.34
90.00	22 8 18	1634.43	-.56	3.72	210.68	118.27	22 35 33	634.4	11.03	342.69
100.00	23 18 37	1407.46	-1.81	346.35	209.99	119.81	23 42 4	407.5	10.45	325.71
110.00	0 6 38	1269.30	-4.92	333.95	208.05	123.84	0 27 47	269.3	9.02	314.38

DIFFERENTIAL CORRECTIONS

TDE	.1576	TRA	1.7574	TC3	-7.6089	BAU	1.0352
RDE	.0459	RRA	.1053	RC3	-.2962	FAU	.21440
FDE	1.6786	FRA	6.5931	FC	-18.2521	BSP	8655
BDE	.1642	BRA	1.7605	BC3	7.6146	FSP	2442

MID-COURSE EXECUTION ACCURACY

SGT	5891.3	SGR	286.8	SG3	1497.8
RRT	.9492	RRF	.9932	RTF	.9684
SGB	5898.3	R23	.2343	R13	.9686
SG1	5897.6	SG2	90.2	THA	2.65

ORBIT DETERMINATION ACCURACY

ST	52.4	SR	5.1	SS	64.0
CRT	.7849	CRS	-.9651	CST	-.9192
LSA	81.2	MSA	16.4	SSA	.2
EL1	52.6	EL2	3.2	ALF	4.39

LAUNCH DATE MAY 10 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 578.329 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.313	GAL	-1.77	AZL	91.50	HCA	183.30	SMA	186.10	ECC	.19078	INC	1.4884	V1	29.498
RP	221.12	LAP	.09	LOP	52.00	VP	22.074	GAP	1.83	AZP	88.50	TAL	348.91	TAP	172.20	RCA	150.59	APO	221.60	V2	24.863
RC	194.659	GL	-15.14	GP	-2.51	ZAL	115.65	ZAP	61.07	ETS	177.79	ZAE	101.78	ETE	180.97	ZAC	99.67	ETC	271.95	LVI	-7.44

PLANETOCENTRIC CONIC

C3	10.466	VHL	3.235	DLA	-19.68	RAL	352.67	RAD	6638.3	VEL	11.426	PTH	6.48	VHP	3.093	DPA	-25.59	RAP	295.59	ECC	1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 26	2592.07	-11.97	70.39	202.91	136.40	17 38 38	1592.1	6.40	54.59
60.00	17 58 24	2424.60	-7.78	59.27	206.88	129.67	18 38 49	1424.6	8.31	41.33
70.00	19 18 3	2190.46	-3.70	43.35	209.95	123.98	19 54 33	1190.5	10.21	23.74
80.00	20 53 9	1892.82	-.44	22.78	211.97	119.85	21 24 42	892.8	11.73	2.05
90.00	22 27 3	1589.90	.67	1.24	212.71	118.27	22 53 33	589.9	12.35	340.09
100.00	23 36 1	1367.29	-.44	344.15	211.97	119.85	23 58 48	367.3	11.73	323.42
110.00	0 21 25	1237.28	-3.70	332.27	209.95	123.98	0 42 2	237.3	10.21	312.66

DIFFERENTIAL CORRECTIONS

TDE	.1796	TRA	1.9176	TC3	-7.4147	BAU	1.0377
RDE	.0415	RRA	.0552	RC3	-.1543	FAU	.20531
FDE	1.7280	FRA	6.7219	FC	-16.9836	BSP	9526
BDE	.1843	BRA	1.9184	BC3	7.4163	FSP	2519

MID-COURSE EXECUTION ACCURACY

SGT	6010.5	SGR	161.7	SG3	1471.3
RRT	.9022	RRF	.9569	RTF	.9701
SGB	6012.6	R23	.1890	R13	.9702
SG1	6012.2	SG2	69.7	THA	1.39

ORBIT DETERMINATION ACCURACY

ST	56.8	SR	4.0	SS	65.3
CRT	.6334	CRS	-.8819	CST	-.9228
LSA	85.0	MSA	17.0	SSA	.2
EL1	56.9	EL2	3.1	ALF	2.55

LAUNCH DATE MAY 10 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 582.466 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.321	GAL	-1.85	AZL	91.59	HCA	184.41	SMA	186.23	ECC	.19156	INC	1.5825	V1	29.498
RP	221.50	LAP	.12	LOP	53.11	VP	22.039	GAP	1.68	AZP	88.42	TAL	348.47	TAP	172.88	RCA	150.56	APO	221.90	V2	24.821
RC	197.299	GL	-15.87	GP	-1.86	ZAL	116.17	ZAP	59.88	ETS	178.10	ZAE	100.42	ETE	180.79	ZAC	100.52	ETC	271.94	LVI	-8.01

PLANETOCENTRIC CONIC

C3	10.702	VHL	3.271	DLA	-20.09	RAL	353.59	RAD	6638.4	VEL	11.436	PTH	6.49	VHP	3.117	DPA	-24.96	RAP	295.40	ECC	1.1761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 57	2587.83	-11.76	70.20	204.09	136.44	17 44 4	1587.8	6.61	54.41
60.00	18 4 33	2418.69	-7.52	58.98	208.11	129.71	18 44 51	1418.7	8.57	41.04
70.00	19 25 1	2182.14	-3.38	42.91	211.22	124.01	20 1 23	1182.1	10.51	23.29
80.00	21 1 3	1881.56	-.06	22.16	213.29	119.86	21 32 25	881.6	12.09	1.40
90.00	22 35 28	1577.02	1.29	.52	214.04	118.25	23 1 45	577.0	12.73	339.34
100.00	23 43 55	1356.03	-.06	343.53	213.29	119.86	24 6 31	356.0	12.09	322.77
110.00	0 28 23	1228.95	-3.38	331.83	211.22	124.01	0 48 52	229.0	10.51	312.21

DIFFERENTIAL CORRECTIONS

TDE	.1943	TRA	2.0305	TC3	-7.4039	BAU	1.0594
RDE	.0420	RRA	.0267	RC3	-.0925	FAU	.20226
FDE	1.7033	FRA	6.6875	FC	-16.3620	BSP	9933
BDE	.1988	BRA	2.0307	BC3	7.4045	FSP	2448

MID-COURSE EXECUTION ACCURACY

SGT	6158.0	SGR	107.4	SG3	1443.3
RRT	.7659	RRF	.8292	RTF	.9731
SGB	6159.0	R23	.1304	R13	.9731
SG1	6158.6	SG2	69.1	THA	.77

ORBIT DETERMINATION ACCURACY

ST	59.7	SR	3.8	SS	64.6
CRT	.4714	CRS	-.7664	CST	-.9271
LSA	86.4	MSA	17.0	SSA	.3
EL1	59.8	EL2	3.3	ALF	1.70

LAUNCH DATE MAY 10 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 586.593 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.329	GAL	-1.92	AZL	91.64	HCA	185.51	SMA	186.37	ECC	.19236	INC	1.6320	V1	29.498
RP	221.88	LAP	.16	LOP	54.21	VP	22.003	GAP	1.53	AZP	88.37	TAL	348.03	TAP	173.54	RCA	150.52	APO	222.22	V2	24.780
RC	199.945	GL	-16.25	GP	-1.48	ZAL	116.73	ZAP	58.74	ETS	178.28	ZAE	99.09	ETE	180.68	ZAC	100.91	ETC	271.93	LVI	-8.36

PLANETOCENTRIC CONIC

C3 10.917 VHL 3.304 DLA -20.18 RAL 354.37 RAD 6638.5 VEL 11.446 PTH 6.50 VHP 3.142 DPA -24.59 RAP 295.30 ECC 1.1797

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 4 25	2590.05	-11.87	70.30	205.07	136.42	17 47 35	1590.1	6.50	54.50
60.00	18 8 9	2420.55	-7.60	59.07	209.11	129.70	18 48 30	1420.6	8.49	41.13
70.00	19 28 48	2183.48	-3.43	42.98	212.25	124.00	20 5 11	1183.5	10.46	23.36
80.00	21 5 2	1882.27	-.09	22.20	214.33	119.86	21 36 25	882.3	12.07	1.44
90.00	22 39 33	1577.38	1.28	.54	215.09	118.25	23 5 51	577.4	12.72	339.36
100.00	23 47 54	1356.74	-.09	343.57	214.33	119.86	24 10 31	356.7	12.07	322.81
110.00	0 32 10	1230.30	-3.43	331.90	212.25	124.00	0 52 40	230.3	10.46	312.28

DIFFERENTIAL CORRECTIONS

TDE	.2018	TRA	2.1227	TC3	-7.4715	BAU	1.0905												
RDE	.0457	RRA	.0084	RC3	-.0557	FAU	.19656												
FDE	1.7449	FRA	6.6951	FC-	15.5877	B&P	10109												
BDE	.2089	BRA	2.1227	BC3	7.4717	F&P	2431												

MID-COURSE EXECUTION ACCURACY

SGT	6315.0	SGR	88.7	SG3	1415.1														
RRT	.4822	RRF	.5575	RTF	.9709														
SGB	6315.6	R23	.1019	R13	.9709														
SG1	6315.1	SG2	77.7	THA	.39														

ORBIT DETERMINATION ACCURACY

ST	61.8	SR	4.0	S&	65.1														
CRT	.3398	CR&	-.6755	C&T	-.9222														
L&A	88.1	M&A	18.0	B&A	.3														
EL1	61.8	EL2	3.7	ALF	1.25														

LAUNCH DATE MAY 10 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC DISTANCE 590.718 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.337	GAL	-2.00	AZL	91.68	HCA	186.61	SMA	186.51	ECC	.19319	INC	1.6721	V1	29.498
RP	222.27	LAP	.19	LOP	55.31	VP	21.969	GAP	1.39	AZP	88.34	TAL	347.59	TAP	174.20	RCA	150.48	APO	222.54	V2	24.738
RC	202.595	GL	-16.46	GP	-1.22	ZAL	117.32	ZAP	57.64	ETS	178.40	ZAE	97.79	ETE	180.61	ZAC	101.16	ETC	271.94	LVI	-8.60

PLANETOCENTRIC CONIC

C3 11.122 VHL 3.335 DLA -20.11 RAL 355.06 RAD 6638.6 VEL 11.455 PTH 6.50 VHP 3.168 DPA -24.33 RAP 295.26 ECC 1.1830

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 6 52	2595.39	-12.13	70.53	205.94	136.37	17 50 7	1595.4	6.24	54.73
60.00	18 10 30	2426.18	-7.85	59.34	209.99	129.66	18 50 56	1426.2	8.25	41.40
70.00	19 31 0	2189.53	-3.66	43.30	213.14	123.98	20 7 29	1189.5	10.24	23.69
80.00	21 7 4	1888.84	-.31	22.56	215.23	119.86	21 38 33	888.8	11.86	1.82
90.00	22 41 30	1584.24	1.05	.92	215.99	118.26	23 7 54	584.2	12.52	339.76
100.00	23 49 56	1363.31	-.31	343.93	215.23	119.86	24 12 39	363.3	11.86	323.19
110.00	0 34 22	1236.35	-3.66	332.22	213.14	123.98	0 54 58	236.4	10.24	312.61

DIFFERENTIAL CORRECTIONS

TDE	.2462	TRA	2.2442	TC3	-7.4361	BAU	1.1057												
RDE	.0502	RRA	-.0057	RC3	-.0337	FAU	.18984												
FDE	1.8147	FRA	6.7081	FC-	14.7770	B&P	10660												
BDE	.2512	BRA	2.2442	BC3	7.4362	F&P	2432												

MID-COURSE EXECUTION ACCURACY

SGT	6452.6	SGR	89.8	SG3	1386.4														
RRT	.1809	RRF	.2509	RTF	.9715														
SGB	6453.3	R23	.0764	R13	.9715														
SG1	6452.7	SG2	88.3	THA	.14														

ORBIT DETERMINATION ACCURACY

ST	65.5	SR	4.3	S&	66.2														
CRT	.2890	CR&	-.6172	C&T	-.9308														
L&A	91.5	M&A	17.7	B&A	.4														
EL1	65.6	EL2	4.1	ALF	1.10														

LAUNCH DATE MAY 10 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 594.836 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.346	GAL	-2.08	AZL	91.70	HCA	187.70	SMA	186.65	ECC	.19405	INC	1.6988	V1	29.498
RP	222.65	LAP	.23	LOP	56.40	VP	21.934	GAP	1.24	AZP	88.32	TAL	347.14	TAP	174.84	RCA	150.43	APO	222.87	V2	24.696
RC	205.250	GL	-16.56	GP	-1.04	ZAL	117.92	ZAP	56.57	ETS	178.49	ZAE	96.51	ETE	180.56	ZAC	101.34	ETC	271.95	LVI	-8.78

PLANETOCENTRIC CONIC

C3 11.325 VHL 3.365 DLA -19.94 RAL 355.71 RAD 6638.7 VEL 11.463 PTH 6.51 VHP 3.195 DPA -24.15 RAP 295.27 ECC 1.1864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 8 44	2602.61	-12.49	70.85	206.75	136.29	17 52 7	1602.6	5.87	55.03
60.00	18 12 6	2434.07	-8.19	59.73	210.81	129.60	18 52 41	1434.1	7.90	41.79
70.00	19 32 17	2198.39	-4.00	43.76	213.96	123.95	20 8 55	1198.4	9.92	24.17
80.00	21 7 59	1898.88	-.65	23.11	216.05	119.85	21 39 38	898.9	11.54	2.40
90.00	22 42 12	1594.94	.71	1.52	216.81	118.27	23 8 47	594.9	12.20	340.39
100.00	23 50 51	1373.35	-.65	344.48	216.05	119.85	24 13 44	373.4	11.54	323.76
110.00	0 35 39	1245.21	-4.00	332.68	213.96	123.95	0 56 24	245.2	9.92	313.09

DIFFERENTIAL CORRECTIONS

TDE	.2679	TRA	2.3600	TC3	-7.4250	BAU	1.1242												
RDE	.0956	RRA	-.0171	RC3	-.0192	FAU	.18247												
FDE	1.9024	FRA	6.7344	FC-	13.9485	B&P	11129												
BDE	.2933	BRA	2.3601	BC3	7.4250	F&P	2452												

MID-COURSE EXECUTION ACCURACY

SGT	6594.3	SGR	100.4	SG3	1359.0														
RRT	-.0323	RRF	.0318	RTF	.9703														
SGB	6595.1	R23	-.0632	R13	-.9703														
SG1	6594.3	SG2	100.4	THA	179.97														

ORBIT DETERMINATION ACCURACY

ST	69.0	SR	4.8	S&	67.6														
CRT	.2630	CR&	-.5858	C&T	-.9393														
L&A	95.1	M&A	17.9	B&A	.4														
EL1	69.1	EL2	4.6	ALF	1.04														

LAUNCH DATE MAY 10 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 598.950 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.354	GAL	-2.16	AZL	91.72	HCA	188.80	SMA	186.80	ECC	.19492	INC	1.7174	V1	29.498
RP	223.04	LAP	.26	LOP	57.50	VP	21.899	GAP	1.09	AZP	88.30	TAL	346.69	TAP	175.48	RCA	150.38	APO	223.21	V2	24.654
RC	207.907	GL	-16.60	GP	-.90	ZAL	118.53	ZAP	55.54	ETS	178.56	ZAE	95.26	ETE	180.52	ZAC	101.48	ETC	271.96	LVI	-8.93

PLANETOCENTRIC CONIC

C3 11.530 VHL 3.396 DLA -19.72 RAL 356.33 RAD 6638.8 VEL 11.472 PTH 6.52 VHP 3.223 DPA -24.00 RAP 295.31 ECC 1.1897

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 10 14	2611.00	-12.90	71.22	207.53	136.21	17 53 45	1611.0	5.45	55.39
60.00	18 13 16	2443.36	-8.59	60.18	211.60	129.53	18 53 59	1443.4	7.50	42.24
70.00	19 33 0	2208.96	-4.40	44.32	214.74	123.90	20 9 49	1209.0	9.52	24.74
80.00	21 8 12	1911.01	-1.06	23.78	216.82	119.84	21 40 3	911.0	11.16	3.09
90.00	22 42 10	1607.93	.29	2.24	217.57	118.28	23 8 58	607.9	11.82	341.15
100.00	23 51 4	1385.49	-1.06	345.15	216.82	119.84	24 14 9	385.5	11.16	324.46
110.00	0 36 22	1255.78	-4.40	333.24	214.74	123.90	0 57 18	255.8	9.52	313.66

DIFFERENTIAL CORRECTIONS

TDE	.3190	TRA	2.4639	TC3	-7.4566	BAU	1.1494												
RDE	.0613	RRA	-.0269	RC3	-.0100	FAU	.17727												
FDE	1.9442	FRA	6.7199	FC-	13.3107	B&P	11428												
BDE	.3249	BRA	2.4641	BC3	7.4566	F&P	2423												

MID-COURSE EXECUTION ACCURACY

SGT	6740.9	SGR	114.3	SG3	1331.7														
RRT	-.1594	RRF	-.1021	RTF	.9696														
SGB	6741.8	R23	-.0532	R13	-.9696														
SG1	6740.9	SG2	112.8	THA	179.85														

ORBIT DETERMINATION ACCURACY

ST	71.9	SR	5.2	S&	68.1														
CRT	.2433	CR&	-.5624	C&T	-.9381														
L&A	97.5	M&A	18.0	B&A	.5														
EL1	71.9	EL2	5.1	ALF	1.02														

LAUNCH DATE MAY 10 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC DISTANCE 603.061 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.363	GAL	-2.24	AZL	91.73	HCA	189.88	SMA	186.94	ECC	.19582	INC	1.7328	V1	29.498
RP	223.42	LAP	.30	LOP	58.58	VP	21.865	GAP	.94	AZP	88.29	TAL	346.23	TAP	176.11	RCA	150.34	APO	223.55	V2	24.612
RC	210.566	GL	-16.59	GP	-.79	ZAL	119.14	ZAP	54.54	ETS	178.62	ZAE	94.03	ETE	180.49	ZAC	101.58	ETC	271.99	LVI	-9.06

PLANETOCENTRIC CONIC

C3	11.736	VHL	3.426	DLA	-19.46	RAL	356.92	RAD	6638.9	VEL	11.481	PTH	6.53	VHP	3.251	DPA	-23.88	RAP	295.39	ECC	1.1932

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 11 29	2620.16	-13.35	71.63	208.29	136.10	17 55 9	1620.2	4.99	58.77
60.00	18 14 8	2453.55	-9.03	60.68	212.36	129.44	18 55 1	1453.5	7.06	42.74
70.00	19 33 22	2220.64	-4.85	44.93	215.49	123.85	20 10 22	1220.6	9.09	25.36
80.00	21 7 59	1924.47	-1.52	24.52	217.56	119.82	21 40 4	924.5	10.73	3.86
90.00	22 41 39	1622.35	-.17	3.05	218.31	118.28	23 8 41	622.4	11.39	341.99
100.00	23 50 51	1398.94	-1.52	345.89	217.56	119.82	24 14 10	398.9	10.73	325.23
110.00	0 36 44	1267.46	-4.85	333.85	215.49	123.85	0 57 51	267.5	9.09	314.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3471	TRA	2.5608	TC3	-7.5025	BAU	1.1772	SGT	6884.4	SGR	129.0	SG3	1302.2	ST	74.5	SR	5.7	SS	67.5
RDE	.0671	RRA	-.0357	RC3	-.0044	FAU	.17431	RRT	-.2331	RRF	-.1828	RTF	.9708	CRT	.2318	CRS	-.5432	CST	-.9419
FDE	1.9420	FRA	6.6462	FC	-12.8583	BSP	11645	SGB	6885.6	R23	-.0448	R13	-.9708	LSA	99.1	MSA	17.8	SSA	.5
BDE	.3535	BRA	2.5611	BC3	7.5025	FSP	2341	SG1	6884.5	SG2	125.4	THA	179.75	EL1	74.5	EL2	5.5	ALF	1.02

LAUNCH DATE MAY 10 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 607.166 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.372	GAL	-2.33	AZL	91.75	HCA	190.97	SMA	187.09	ECC	.19674	INC	1.7441	V1	29.498
RP	223.81	LAP	.33	LOP	59.67	VP	21.831	GAP	.80	AZP	88.29	TAL	345.77	TAP	176.74	RCA	150.29	APO	223.90	V2	24.571
RC	213.227	GL	-16.56	GP	-.71	ZAL	119.75	ZAP	53.57	ETS	178.66	ZAE	92.84	ETE	180.47	ZAC	101.66	ETC	272.02	LVI	-9.19

PLANETOCENTRIC CONIC

C3	11.948	VHL	3.457	DLA	-19.18	RAL	357.51	RAD	6639.0	VEL	11.490	PTH	6.54	VHP	3.279	DPA	-23.78	RAP	295.50	ECC	1.1966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 12 33	2629.95	-13.83	72.06	209.04	135.99	17 56 23	1629.9	4.50	56.19
60.00	18 14 47	2464.46	-9.51	61.22	213.10	129.35	18 55 52	1464.5	6.58	43.27
70.00	19 33 28	2233.16	-5.32	45.59	216.23	123.79	20 10 41	1233.2	8.63	26.04
80.00	21 7 29	1938.92	-2.01	25.31	218.29	119.80	21 39 48	938.9	10.26	4.68
90.00	22 40 49	1637.84	-.67	3.91	219.03	118.27	23 8 7	637.8	10.92	342.89
100.00	23 50 21	1413.39	-2.01	346.68	218.29	119.80	24 13 54	413.4	10.26	326.05
110.00	0 36 50	1279.98	-5.32	334.51	216.23	123.79	0 58 10	280.0	8.63	314.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

END OF TAPE, CHANGE AND PRESS START

RDE	.0734	RRA	-.0436	RC3	-.0006	FAU	.17023	RRT	-.2767	RRF	-.2303	RTF	.9706	CRT	.2301	CRS	-.5352	CST	-.9448
FDE	1.9626	FRA	6.6032	FC	-12.3347	BSP	11869	SGB	7029.0	R23	-.0399	R13	-.9706	LSA	101.1	MSA	17.9	SSA	.6
BDE	.3845	BRA	2.6614	BC3	7.5422	FSP	2288	SG1	7027.7	SG2	138.2	THA	179.68	EL1	77.1	EL2	6.0	ALF	1.06

LAUNCH DATE MAY 10 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 29 1972

HELIOCENTRIC CONIC DISTANCE 611.265 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.381	GAL	-2.41	AZL	91.75	HCA	192.05	SMA	187.25	ECC	.19768	INC	1.7535	V1	29.498
RP	224.20	LAP	.37	LOP	60.75	VP	21.797	GAP	.65	AZP	88.28	TAL	345.31	TAP	177.36	RCA	150.23	APO	224.26	V2	24.529
RC	215.890	GL	-16.50	GP	-.64	ZAL	120.37	ZAP	52.64	ETS	178.70	ZAE	91.66	ETE	180.45	ZAC	101.72	ETC	272.05	LVI	-9.30

PLANETOCENTRIC CONIC

C3	12.165	VHL	3.488	DLA	-18.87	RAL	358.08	RAD	6639.1	VEL	11.500	PTH	6.55	VHP	3.308	DPA	-23.69	RAP	295.64	ECC	1.2002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 13 31	2640.17	-14.33	72.52	209.77	135.87	17 57 31	1640.2	3.99	56.62
60.00	18 15 17	2475.88	-10.00	61.78	213.84	129.25	18 56 33	1475.9	6.08	43.82
70.00	19 33 24	2246.27	-5.82	46.28	216.96	123.71	20 10 50	1246.3	8.14	26.74
80.00	21 6 46	1954.03	-2.52	26.14	219.01	119.76	21 39 20	954.0	9.78	5.54
90.00	22 39 46	1654.02	-1.20	4.81	219.74	118.26	23 7 20	654.0	10.44	343.82
100.00	23 49 38	1428.50	-2.52	347.51	219.01	119.76	24 13 27	428.5	9.78	326.91
110.00	0 36 46	1293.09	-5.82	335.20	216.96	123.71	0 58 19	293.1	8.14	315.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4097	TRA	2.7626	TC3	-7.5742	BAU	1.2318	SGT	7167.3	SGR	158.4	SG3	1246.7	ST	79.8	SR	6.7	SS	67.5
RDE	.0799	RRA	-.0510	RC3	.0018	FAU	.16609	RRT	-.3023	RRF	-.2586	RTF	.9704	CRT	.2343	CRS	-.5323	CST	-.9470
FDE	1.9836	FRA	6.5572	FC	-11.8206	BSP	12093	SGB	7169.0	R23	-.0365	R13	-.9704	LSA	103.2	MSA	17.9	SSA	.6
BDE	.4174	BRA	2.7631	BC3	7.5742	FSP	2237	SG1	7167.4	SG2	151.0	THA	179.62	EL1	79.8	EL2	6.5	ALF	1.13

LAUNCH DATE MAY 10 1971 FLIGHT TIME 266.00 ARRIVAL DATE JAN 31 1972

HELIOCENTRIC CONIC DISTANCE 615.359 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.390	GAL	-2.50	AZL	91.76	HCA	193.12	SMA	187.40	ECC	.19864	INC	1.7621	V1	29.498
RP	224.59	LAP	.40	LOP	61.82	VP	21.763	GAP	.50	AZP	88.28	TAL	344.84	TAP	177.97	RCA	150.18	APO	224.63	V2	24.487
RC	218.554	GL	-16.43	GP	-.58	ZAL	120.99	ZAP	51.73	ETS	178.74	ZAE	90.52	ETE	180.43	ZAC	101.77	ETC	272.09	LVI	-9.42

PLANETOCENTRIC CONIC

C3	12.387	VHL	3.520	DLA	-18.55	RAL	358.64	RAD	6639.3	VEL	11.509	PTH	6.56	VHP	3.337	DPA	-23.61	RAP	295.82	ECC	1.2039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 14 22	2650.74	-14.84	72.99	210.51	135.74	17 58 33	1650.7	3.46	57.06
60.00	18 15 41	2487.69	-10.51	62.37	214.57	129.13	18 57 9	1487.7	5.57	44.39
70.00	19 33 12	2259.83	-6.33	47.00	217.68	123.63	20 10 52	1259.8	7.63	27.46
80.00	21 5 55	1969.62	-3.04	27.00	219.72	119.72	21 38 45	969.6	9.27	6.42
90.00	22 38 35	1670.69	-1.73	5.74	220.44	118.23	23 6 26	670.7	9.93	344.79
100.00	23 48 47	1444.09	-3.04	348.37	219.72	119.72	24 12 51	444.1	9.27	327.79
110.00	0 36 34	1306.64	-6.33	335.92	217.68	123.63	0 58 21	306.6	7.63	316.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4500	TRA	2.8727	TC3	-7.5819	BAU	1.2556	SGT	7304.2	SGR	172.7	SG3	1220.0	ST	82.9	SR	7.2	SS	67.8
RDE	.0866	RRA	-.0581	RC3	.0028	FAU	.16138	RRT	-.3166	RRF	-.2749	RTF	.9701	CRT	.2468	CRS	-.5345	CST	-.9503
FDE	2.0180	FRA	6.5260	FC	-11.2785	BSP	12401	SGB	7306.3	R23	-.0341	R13	-.9701	LSA	105.9	MSA	17.8	SSA	.7
BDE	.4583	BRA	2.8733	BC3	7.5819	FSP	2203	SG1	7304.4	SG2	163.9	THA	179.57	EL1	83.0	EL2	7.0	ALF	1.24

LAUNCH DATE MAY 10 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 2 1972

HELIOCENTRIC CONIC DISTANCE 619.447 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.399	GAL	-2.58	AZL	91.77	HCA	194.20	SMA	187.86	ECC	.19862	INC	1.7691	V1	29.498
RP	224.98	LAP	.43	LOP	62.90	VP	21.730	GAP	.36	AZP	88.28	TAL	344.37	TAP	178.57	RCA	150.12	APO	225.00	V2	24.445
RC	221.219	GL	-16.34	GP	-.53	ZAL	121.61	ZAP	50.85	ETS	178.77	ZAE	89.30	ETE	180.42	ZAC	101.81	ETC	272.14	LVI	-9.54

PLANETOCENTRIC CONIC

C3	12.616	VHL	3.552	DLA	-18.21	RAL	359.19	RAD	6639.4	VEL	11.518	PTH	6.57	VHP	3.366	DPA	-23.53	RAP	296.02	ECC	1.2076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 9	2661.59	-15.37	73.48	211.24	135.60	17 59 31	1661.6	2.92	57.51
60.00	18 16 0	2499.80	-11.03	62.97	215.30	129.01	18 57 39	1499.8	5.04	44.97
70.00	19 32 54	2273.71	-6.85	47.73	218.40	123.54	20 10 48	1273.7	7.11	28.19
80.00	21 4 58	1985.56	-3.58	27.88	220.42	119.66	21 38 4	985.6	8.75	7.32
90.00	22 37 18	1687.70	-2.28	6.69	221.14	116.20	23 5 26	687.7	9.41	345.76
100.00	23 47 50	1460.03	-3.58	349.24	220.42	119.66	24 12 10	460.0	8.75	328.69
110.00	0 36 16	1320.53	-6.85	336.65	218.40	123.54	0 58 17	320.5	7.11	317.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4888	TRA	2.9804	TC3	-7.5940	BAU	1.2809	SGT	7439.1	SGR	186.8	SG3	1193.1	ST	85.9	SR	7.7	SS	68.0
RDE	.0935	RRA	-.0648	RC3	.0031	FAU	.15710	RRT	-.3239	RRF	-.2835	RTF	.9698	CRT	.2592	CRS	-.5382	CST	-.9529
FDE	2.0441	FRA	6.4824	FC3	-10.7801	BSP	12660	SGB	7441.5	R23	-.0325	R13	-.9698	LSA	108.4	MSA	17.8	SSA	.7
BDE	.4977	BRA	2.9811	BC3	7.5940	FSP	2158	SG1	7439.4	SG2	176.7	THA	179.53	EL1	86.0	EL2	7.5	ALF	1.34

LAUNCH DATE MAY 10 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 4 1972

HELIOCENTRIC CONIC DISTANCE 623.530 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.408	GAL	-2.67	AZL	91.78	HCA	195.27	SMA	187.72	ECC	.20062	INC	1.7749	V1	29.498
RP	225.37	LAP	.47	LOP	63.96	VP	21.697	GAP	.21	AZP	88.29	TAL	343.90	TAP	179.17	RCA	150.06	APO	225.38	V2	24.403
RC	223.884	GL	-16.25	GP	-.49	ZAL	122.23	ZAP	50.00	ETS	178.79	ZAE	88.29	ETE	180.41	ZAC	101.84	ETC	272.20	LVI	-9.66

PLANETOCENTRIC CONIC

C3	12.852	VHL	3.585	DLA	-17.87	RAL	359.73	RAD	6639.5	VEL	11.529	PTH	6.58	VHP	3.396	DPA	-23.45	RAP	296.24	ECC	1.2115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 15 53	2672.66	-15.91	73.98	211.97	135.45	18 0 26	1672.7	2.36	57.98
60.00	18 16 14	2512.15	-11.56	63.58	216.03	128.88	18 58 7	1512.1	4.49	45.57
70.00	19 32 33	2287.84	-7.38	48.48	219.12	123.44	20 10 40	1287.8	6.58	28.94
80.00	21 3 57	2001.74	-4.13	28.77	221.13	119.60	21 37 19	1001.7	8.22	8.23
90.00	22 35 57	1704.95	-2.83	7.66	221.84	118.15	23 4 22	705.0	8.88	346.75
100.00	23 46 49	1476.21	-4.13	350.14	221.13	119.60	24 11 25	476.2	8.22	329.59
110.00	0 35 55	1334.66	-7.38	337.40	219.12	123.44	0 58 9	334.7	6.58	317.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5265	TRA	3.0882	TC3	-7.6085	BAU	1.3073	SGT	7573.7	SGR	200.5	SG3	1166.9	ST	88.8	SR	8.2	SS	67.9
RDE	.1006	RRA	-.0713	RC3	.0027	FAU	.15512	RRT	-.3267	RRF	-.2875	RTF	.9695	CRT	.2713	CRS	-.5422	CST	-.9552
FDE	2.0630	FRA	6.4373	FC3	-10.3145	BSP	12889	SGB	7576.4	R23	-.0312	R13	-.9695	LSA	110.7	MSA	17.8	SSA	.8
BDE	.5360	BRA	3.0890	BC3	7.6086	FSP	2111	SG1	7574.0	SG2	189.4	THA	179.50	EL1	88.8	EL2	7.9	ALF	1.45

LAUNCH DATE MAY 10 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 6 1972

HELIOCENTRIC CONIC DISTANCE 627.607 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.417	GAL	-2.76	AZL	91.78	HCA	196.33	SMA	187.88	ECC	.20165	INC	1.7803	V1	29.498
RP	225.76	LAP	.50	LOP	65.03	VP	21.664	GAP	.06	AZP	88.29	TAL	343.42	TAP	179.76	RCA	149.99	APO	225.76	V2	24.361
RC	226.550	GL	-16.14	GP	-.46	ZAL	122.84	ZAP	49.17	ETS	178.82	ZAE	87.21	ETE	180.40	ZAC	101.86	ETC	272.26	LVI	-9.78

PLANETOCENTRIC CONIC

C3	13.094	VHL	3.619	DLA	-17.53	RAL	.27	RAD	6639.6	VEL	11.540	PTH	6.59	VHP	3.426	DPA	-23.38	RAP	296.49	ECC	1.2155

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 16 34	2683.92	-16.46	74.50	212.70	139.30	18 1 18	1683.9	1.80	58.45
60.00	18 16 26	2524.70	-12.09	64.21	216.76	128.74	18 58 31	1524.7	3.94	46.17
70.00	19 32 8	2302.18	-7.92	49.24	219.84	123.33	20 10 30	1302.2	6.04	29.70
80.00	21 2 54	2018.11	-4.68	29.67	221.83	119.52	21 36 32	1018.1	7.68	9.14
90.00	22 34 34	1722.37	-3.39	8.63	222.54	118.09	23 3 17	722.4	8.34	347.75
100.00	23 45 45	1492.58	-4.68	351.04	221.83	119.52	24 10 38	492.6	7.68	330.51
110.00	0 35 30	1349.00	-7.92	338.16	219.84	123.33	0 57 59	349.0	6.04	318.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5690	TRA	3.2003	TC3	-7.6073	BAU	1.3317	SGT	7704.8	SGR	213.9	SG3	1141.0	ST	91.9	SR	8.8	SS	68.1
RDE	.1076	RRA	-.0776	RC3	.0017	FAU	.14874	RRT	-.3263	RRF	-.2877	RTF	.9691	CRT	.2863	CRS	-.5487	CST	-.9579
FDE	2.0897	FRA	6.3963	FC3	-9.8339	BSP	13161	SGB	7707.6	R23	-.0304	R13	-.9691	LSA	113.3	MSA	17.8	SSA	.8
BDE	.5791	BRA	3.2012	BC3	7.6073	FSP	2073	SG1	7704.9	SG2	202.2	THA	179.48	EL1	92.0	EL2	8.4	ALF	1.57

LAUNCH DATE MAY 10 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 8 1972

HELIOCENTRIC CONIC DISTANCE 631.677 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.427	GAL	-2.85	AZL	91.79	HCA	197.39	SMA	188.04	ECC	.20269	INC	1.7844	V1	29.498
RP	226.18	LAP	.53	LOP	66.09	VP	21.631	GAP	-.09	AZP	88.30	TAL	342.95	TAP	180.34	RCA	149.93	APO	226.16	V2	24.319
RC	229.216	GL	-16.03	GP	-.42	ZAL	123.46	ZAP	48.37	ETS	178.84	ZAE	86.15	ETE	180.39	ZAC	101.88	ETC	272.32	LVI	-9.90

PLANETOCENTRIC CONIC

C3	13.344	VHL	3.653	DLA	-17.17	RAL	.80	RAD	6639.7	VEL	11.550	PTH	6.60	VHP	3.456	DPA	-23.30	RAP	296.77	ECC	1.2196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 12	2695.34	-17.01	75.02	213.44	135.13	18 2 8	1695.3	1.22	58.92
60.00	18 16 36	2537.41	-12.63	64.85	217.49	128.60	18 58 53	1537.4	3.39	46.78
70.00	19 31 41	2316.67	-8.46	50.02	220.56	123.21	20 10 18	1316.7	5.49	30.46
80.00	21 1 48	2034.61	-5.23	30.58	222.54	119.44	21 35 43	1034.6	7.14	10.06
90.00	22 33 10	1739.89	-3.95	9.61	223.24	118.02	23 2 10	739.9	7.79	348.75
100.00	23 44 40	1509.08	-5.23	351.95	222.54	119.44	24 9 49	509.1	7.14	331.43
110.00	0 33 3	1363.48	-8.46	338.93	220.56	123.21	0 57 47	363.5	5.49	319.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6073	TRA	3.3093	TC3	-7.6169	BAU	1.3588	SGT	7838.1	SGR	227.1	SG3	1115.3	ST	94.8	SR	9.3	SS	67.9
RDE	.1152	RRA	-.0837	RC3	.0004	FAU	.14493	RRT	-.3239	RRF	-.2858	RTF	.9687	CRT	.2987	CRS	-.5543	CST	-.9593
FDE	2.1040	FRA	6.3469	FC3	-9.4025	BSP	13362	SGB	7838.4	R23	-.0297	R13	-.9687	LSA	115.8	MSA	17.9	SSA	.9
BDE	.6181	BRA	3.3103	BC3	7.6169	FSP	2024	SG1	7835.5	SG2	214.8	THA	179.46	EL1	94.8	EL2	8.8	ALF	1.69

LAUNCH DATE MAY 10 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 10 1972

HELIOCENTRIC CONIC DISTANCE 635.743 EARTH TO MARS

RL	151.08	LAL	.00	LOL	228.70	VL	32.436	GAL	-2.94	AZL	91.79	HCA	198.45	SMA	188.21	ECC	.20375	INC	1.7890	V1	29.498
RP	226.55	LAP	.57	LOP	67.15	VP	21.598	GAP	-.24	AZP	88.30	TAL	342.47	TAP	180.92	RCA	149.86	APO	226.55	V2	24.278
RC	231.880	GL	-15.92	GP	-.40	ZAL	124.08	ZAP	47.59	ETS	178.87	ZAE	85.11	ETE	180.38	ZAC	101.89	ETC	272.39	LVI	-10.03

PLANETOCENTRIC CONIC

C3	13.601	VHL	3.688	DLA	-16.82	RAL	1.32	RAD	6639.9	VEL	11.561	PTH	6.61	VHP	3.486	DPA	-23.23	RAP	297.07	ECC	1.2238

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 49	2706.88	-17.56	75.55	214.17	134.96	18 2 56	1706.9	.64	59.41
60.00	18 16 43	2550.24	-13.18	65.50	218.22	128.44	18 59 14	1550.2	2.82	47.39
70.00	19 31 13	2331.27	-9.00	50.80	221.28	123.09	20 10 4	1331.3	4.94	31.23
80.00	21 0 42	2051.19	-5.78	31.50	223.25	119.34	21 34 53	1051.2	6.59	10.99
90.00	22 31 45	1757.48	-4.52	10.60	223.95	117.95	23 1 2	757.5	7.24	349.75
100.00	23 43 34	1525.66	-5.78	352.87	223.25	119.34	24 8 59	525.7	6.59	332.36
110.00	0 34 35	1378.09	-9.00	339.72	221.28	123.09	0 57 33	378.1	4.94	320.15

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6543	TRA	3.4278	TC3	-7.6015	BAU	1.3823	SGT	7963.7	SGR	240.1	SG3	1090.8	ST	98.1	SR	9.8	SS	68.0
RDE	.1228	RRA	-.0898	RC3	-.0014	FAU	.14066	RRT	-.3198	RRF	-.2821	RTF	.9683	CRT	.3150	CRS	-.5616	CST	-.9616
FDE	2.1291	FRA	6.3086	FC3	-8.9531	BSP	13657	SGB	7967.3	R23	-.0293	R13	-.9683	LSA	118.4	MSA	17.9	SSA	.9
BDE	.6657	BRA	3.4290	BC3	7.6015	FSP	1990	SG1	7964.1	SG2	227.4	THA	179.45	EL1	98.1	EL2	9.3	ALF	1.82

LAUNCH DATE MAY 10 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 12 1972

HELIOCENTRIC CONIC DISTANCE 639.803 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.446	GAL	-3.03	AZL	91.79	HCA	199.51	SMA	188.37	ECC	.20483	INC	1.7922	V1	29.498
RP	226.94	LAP	.60	LOP	68.20	VP	21.566	GAP	-.38	AZP	88.31	TAL	341.99	TAP	181.49	RCA	149.79	APO	226.96	V2	24.236
RC	234.543	GL	-15.79	GP	-.37	ZAL	124.69	ZAP	46.84	ETS	178.89	ZAE	84.10	ETE	180.37	ZAC	101.90	ETC	272.47	LVI	-10.17

PLANETOCENTRIC CONIC

C3	13.867	VHL	3.724	DLA	-16.46	RAL	1.84	RAD	6640.0	VEL	11.573	PTH	6.62	VHP	3.517	DPA	-23.15	RAP	297.38	ECC	1.2282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 25	2718.54	-18.12	76.10	214.91	134.78	18 3 43	1718.5	.06	59.89
60.00	18 16 50	2563.19	-13.72	66.15	218.96	128.27	18 59 33	1563.2	2.25	48.01
70.00	19 30 43	2345.97	-9.55	51.59	222.01	122.95	20 9 49	1346.0	4.38	32.00
80.00	20 59 35	2067.83	-6.34	32.43	223.97	119.24	21 34 3	1067.8	6.04	11.91
90.00	22 30 19	1775.10	-5.08	11.59	224.65	117.86	22 59 54	775.1	6.69	350.75
100.00	23 42 27	1542.30	-6.34	353.80	223.97	119.24	24 8 9	542.3	6.04	333.28
110.00	0 34 5	1392.78	-9.55	340.50	222.01	122.95	0 57 18	392.8	4.38	320.92

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6963	TRA	3.5413	TC3	-7.5986	BAU	1.4087	SGT	8090.4	SGR	252.8	SG3	1066.1	ST	101.0	SR	10.3	SS	68.0
RDE	.1305	RRA	-.0957	RC3	-.0033	FAU	.13674	RRT	-.3146	RRF	-.2771	RTF	.9676	CRT	.3282	CRS	-.5686	CST	-.9631
FDE	2.1463	FRA	6.2619	FC3	-8.5374	BSP	13866	SGB	8094.4	R23	-.0292	R13	-.9676	LSA	120.9	MSA	17.9	SSA	.9
BDE	.7084	BRA	3.5426	BC3	7.5986	FSP	1946	SG1	8090.8	SG2	240.0	THA	179.44	EL1	101.1	EL2	9.7	ALF	1.93

LAUNCH DATE MAY 10 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 14 1972

HELIOCENTRIC CONIC DISTANCE 643.856 EARTH TO MARS

RL	151.05	LAL	.00	LOL	228.70	VL	32.455	GAL	-3.13	AZL	91.80	HCA	200.56	SMA	188.54	ECC	.20592	INC	1.7953	V1	29.498
RP	227.33	LAP	.63	LOP	69.25	VP	21.534	GAP	-.53	AZP	88.32	TAL	341.50	TAP	182.06	RCA	149.71	APO	227.36	V2	24.195
RC	237.203	GL	-15.67	GP	-.35	ZAL	125.30	ZAP	46.11	ETS	178.91	ZAE	83.10	ETE	180.36	ZAC	101.90	ETC	272.54	LVI	-10.30

PLANETOCENTRIC CONIC

C3	14.140	VHL	3.760	DLA	-16.10	RAL	2.35	RAD	6640.1	VEL	11.584	PTH	6.63	VHP	3.547	DPA	-23.08	RAP	297.72	ECC	1.2327

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 58	2730.29	-18.69	76.65	215.65	134.59	18 4 29	1730.3	-.53	60.38
60.00	18 16 55	2576.21	-14.27	66.82	219.70	128.10	18 59 51	1576.2	1.68	48.64
70.00	19 30 13	2360.73	-10.09	52.38	222.74	122.80	20 9 33	1360.7	3.82	32.78
80.00	20 58 28	2084.50	-6.89	33.36	224.68	119.12	21 33 12	1084.5	5.48	12.84
90.00	22 28 55	1792.77	-5.64	12.58	225.36	117.76	22 58 47	792.8	6.13	351.74
100.00	23 41 20	1558.97	-6.89	354.72	224.68	119.12	24 7 19	559.0	5.48	334.21
110.00	0 33 35	1407.54	-10.09	341.30	222.74	122.80	0 57 2	407.5	3.82	321.70

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.7399	TRA	3.6572	TC3	-7.5900	BAU	1.4348	SGT	8215.4	SGR	265.4	SG3	1041.9	ST	104.0	SR	10.8	SS	67.9
RDE	.1384	RRA	-.1016	RC3	-.0055	FAU	.13299	RRT	-.3087	RRF	-.2712	RTF	.9671	CRT	.3415	CRS	-.5755	CST	-.9646
FDE	2.1606	FRA	6.2134	FC3	-8.1425	BSP	14090	SGB	8219.7	R23	-.0291	R13	-.9671	LSA	123.4	MSA	18.0	SSA	1.0
BDE	.7528	BRA	3.6586	BC3	7.5900	FSP	1905	SG1	8215.8	SG2	252.4	THA	179.43	EL1	104.1	EL2	10.2	ALF	2.05

LAUNCH DATE MAY 11 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 288.085 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	35.376	GAL	-1.97	AZL	91.85	HCA	91.56	SMA	262.59	ECC	.42578	INC	1.8495	V1	29.491
RP	207.22	LAP	-1.85	LOP	321.23	VP	27.847	GAP	22.24	AZP	89.95	TAL	353.39	TAP	84.96	RCA	150.78	APO	374.39	V2	26.432
RC	56.455	GL	-10.65	GP	-.03	ZAL	105.16	ZAP	176.65	ETS	180.38	ZAE	174.42	ETE	61.99	ZAC	100.02	ETC	277.73	LVI	-17.96

PLANETOCENTRIC CONIC

C3	38.106	VHL	6.173	DLA	-19.52	RAL	341.05	RAD	6650.0	VEL	12.569	PTH	7.44	VHP	11.116	DPA	-17.26	RAP	320.92	ECC	1.6271

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 4 29	2898.26	-26.48	85.02	207.04	131.09	16 52 47	1898.3	-8.94	67.46
60.00	17 7 14	2731.40	-20.61	75.03	212.08	125.43	17 52 45	1731.4	-5.14	56.06
70.00	18 26 35	2498.14	-15.05	59.94	215.91	121.03	19 8 13	1498.1	-1.43	39.96
80.00	20 1 20	2201.55	-10.71	39.95	218.43	118.04	20 38 2	1201.6	1.54	19.29
90.00	21 35 4	1899.21	-8.97	18.63	219.34	116.93	22 6 43	899.2	2.74	357.72
100.00	22 44 12	1676.02	-10.71	1.31	218.43	118.04	23 12 8	676.0	1.54	340.66
110.00	23 26 1	1544.96	-15.05	348.86	215.91	121.03	23 51 46	545.0	-1.43	328.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4298	TRA	-.9584	TC3	.0092	BAU	.0374	SGT	1024.7	SGR	585.9	SG3	104.0	ST	24.5	SR	26.8	SS	13.2
RDE	-.5736	RRA	.2310	RC3	.0728	FAU	.03325	RRT	-.0022	RRF	.0027	RTF	-.6267	CRT	.7352	CRS	.4644	CST	.9376
FDE	.1690	FRA	.7553	FC3	-.7554	BSP	1458	SGB	1180.4	R23	-.0006	R13	.6267	LSA	35.3	MSA	15.7	SSA	1.1
BDE	.7187	BRA	.9858	BC3	.0734	FSP	125	SG1	1024.7	SG2	585.9	THA	179.89	EL1	33.8	EL2	13.1	ALF	48.60

LAUNCH DATE MAY 11 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 289.969 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	35.175	GAL	-1.89	AZL	91.85	HCA	92.83	SMA	255.43	ECC	.40963	INC	1.8492	V1	29.491
RP	207.13	LAP	-1.85	LOP	322.50	VP	27.602	GAP	21.72	AZP	89.91	TAL	353.50	TAP	86.32	RCA	150.80	APO	360.06	V2	26.443
RC	56.701	GL	-10.96	GP	-.03	ZAL	105.11	ZAP	175.76	ETS	180.31	ZAE	173.99	ETE	54.54	ZAC	99.97	ETC	277.81	LVI	-18.06

PLANETOCENTRIC CONIC

C3	35.621	VHL	5.968	DLA	-19.82	RAL	341.14	RAD	6649.1	VEL	12.471	PTH	7.36	VHP	10.754	DPA	-17.14	RAP	321.30	ECC	1.5862

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 8	2875.02	-25.43	83.80	206.13	131.67	16 54 3	1875.0	-7.79	66.47
60.00	17 9 19	2706.98	-19.64	73.70	211.17	125.93	17 54 26	1707.0	-4.07	54.89
70.00	18 29 15	2472.02	-14.13	58.48	215.00	121.42	19 10 27	1472.0	-.43	38.59
80.00	20 4 40	2173.40	-9.80	38.35	217.54	118.34	20 40 53	1173.4	2.49	17.74
90.00	21 38 44	1869.94	-8.06	16.96	218.47	117.20	22 9 54	869.9	3.68	356.08
100.00	22 47 32	1647.67	-9.80	359.71	217.54	118.34	23 14 59	647.9	2.49	339.11
110.00	23 28 41	1518.84	-14.13	347.40	215.00	121.42	23 54 0	518.8	-.43	327.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4239	TRA	-.9487	TC3	.0217	BAU	.0387	SGT	1050.5	SGR	588.4	SG3	111.4	ST	25.0	SR	26.9	SS	13.6
RDE	-.5564	RRA	.2239	RC3	.0782	FAU	.03436	RRT	-.0023	RRF	.0027	RTF	-.6412	CRT	.7334	CRS	.4537	CST	.9345
FDE	.1716	FRA	.7653	FC3	-.8351	BSP	1510	SGB	1204.1	R23	-.0006	R13	.6412	LSA	35.7	MSA	16.1	SSA	1.1
BDE	.6995	BRA	.9748	BC3	.0812	FSP	136	SG1	1050.5	SG2	588.4	THA	179.89	EL1	34.2	EL2	13.4	ALF	47.90

LAUNCH DATE MAY 11 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 292.098 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	34.986	GAL	-1.80	AZL	91.85	HCA	94.09	SMA	249.07	ECC	.39448	INC	1.8490	V1	29.491
RP	207.05	LAP	-1.84	LOP	323.76	VP	27.370	GAP	21.21	AZP	89.87	TAL	353.62	TAP	87.71	RCA	150.82	APO	347.32	V2	26.453
RC	57.030	GL	-11.27	GP	-.03	ZAL	105.03	ZAP	174.86	ETS	180.27	ZAE	173.51	ETE	48.31	ZAC	99.92	ETC	277.88	LVI	-18.16

PLANETOCENTRIC CONIC

C3	33.351	VHL	5.775	DLA	-20.13	RAL	341.21	RAD	6648.3	VEL	12.380	PTH	7.30	VHP	10.405	DPA	-17.03	RAP	321.66	ECC	1.5489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 45	2851.90	-24.38	82.60	205.29	132.21	16 55 17	1851.9	-6.63	65.49
60.00	17 11 24	2682.62	-18.66	72.38	210.28	126.39	17 56 7	1682.6	-3.00	53.72
70.00	18 31 57	2445.86	-13.19	57.03	214.12	121.79	19 12 43	1445.9	.57	37.23
80.00	20 8 4	2145.04	-8.88	36.75	216.68	118.62	20 43 49	1145.0	3.45	16.18
90.00	21 42 31	1840.37	-7.14	15.28	217.61	117.44	22 13 11	840.4	4.62	354.42
100.00	22 50 56	1619.51	-8.88	358.11	216.68	118.62	23 17 55	619.5	3.45	337.55
110.00	23 31 23	1492.68	-13.19	345.95	214.12	121.79	23 56 16	492.7	.57	326.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4184	TRA	-.9388	TC3	.0361	BAU	.0407	SGT	1076.2	SGR	590.5	SG3	119.5	ST	25.5	SR	27.0	SS	14.1
RDE	-.5398	RRA	.2170	RC3	.0838	FAU	.03557	RRT	-.0017	RRF	.0024	RTF	-.6435	CRT	.7319	CRS	.4435	CST	.9314
FDE	.1744	FRA	.8167	FC3	-.9232	BSP	1570	SGB	1227.5	R23	-.0006	R13	.6835	LSA	36.2	MSA	16.4	SSA	1.1
BDE	.6830	BRA	.9836	BC3	.0913	FSP	149	SG1	1076.2	SG2	590.5	THA	179.92	EL1	34.6	EL2	13.6	ALF	47.17

LAUNCH DATE MAY 11 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC DISTANCE 294.439 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	34.808	GAL	-1.72	AZL	91.85	HCA	95.36	SMA	243.39	ECC	.38028	INC	1.8487	V1	29.491
RP	206.97	LAP	-1.84	LOP	325.03	VP	27.181	GAP	20.71	AZP	89.83	TAL	353.75	TAP	89.11	RCA	150.83	APO	335.95	V2	26.462
RC	57.440	GL	-11.58	GP	-.03	ZAL	104.93	ZAP	173.95	ETS	180.25	ZAE	173.00	ETE	43.15	ZAC	99.87	ETC	277.95	LVI	-18.26

PLANETOCENTRIC CONIC

C3	31.275	VHL	5.592	DLA	-20.45	RAL	341.25	RAD	6647.5	VEL	12.296	PTH	7.23	VHP	10.069	DPA	-16.92	RAP	322.01	ECC	1.5147

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 9 21	2828.95	-23.33	81.44	204.38	132.72	16 56 30	1829.0	-5.49	64.92
60.00	17 13 29	2658.37	-17.67	71.09	209.40	126.83	17 57 48	1658.4	-1.94	52.56
70.00	18 34 41	2419.70	-12.25	55.59	213.26	122.13	19 15 0	1419.7	1.57	35.86
80.00	20 11 33	2116.52	-7.95	35.14	215.83	118.88	20 46 49	1116.5	4.41	14.61
90.00	21 46 24	1810.54	-6.20	13.59	216.78	117.65	22 16 35	810.5	5.57	352.75
100.00	22 54 25	1590.99	-7.95	356.51	215.83	118.88	23 20 56	591.0	4.41	335.98
110.00	23 34 7	1466.52	-12.25	344.51	213.26	122.13	23 58 33	466.5	1.57	324.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4116	TRA	-.9292	TC3	.0502	BAU	.0430	SGT	1101.4	SGR	592.2	SG3	127.9	ST	26.0	SR	27.0	SS	14.5
RDE	-.5237	RRA	.2102	RC3	.0898	FAU	.03679	RRT	-.0024	RRF	.0022	RTF	-.6643	CRT	.7292	CRS	.4324	CST	.9284
FDE	.1768	FRA	.8486	FC3	-1.0184	BSP	1628	SGB	1250.6	R23	.0001	R13	.6643	LSA	36.6	MSA	16.7	SSA	1.2
BDE	.6661	BRA	.9526	BC3	.1027	FSP	162	SG1	1101.4	SG2	592.2	THA	179.89	EL1	34.9	EL2	13.8	ALF	46.93

LAUNCH DATE MAY 11 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 25 1971

HELIOCENTRIC CONIC DISTANCE 296.965 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	34.640	GAL	-1.64	AZL	91.85	HCA	96.62	SMA	238.30	ECC	.36696	INC	1.8484	V1	29.491
RP	206.90	LAP	-1.84	LOP	326.30	VP	26.943	GAP	20.21	AZP	89.79	TAL	353.90	TAP	90.52	RCA	150.85	APO	325.74	V2	26.469
RC	57.930	GL	-11.89	GP	-.03	ZAL	104.81	ZAP	173.03	ETS	180.23	ZAE	172.49	ETE	38.87	ZAC	99.82	ETC	278.02	LVI	-18.35

PLANETOCENTRIC CONIC

C3	29.376	VHL	5.420	DLA	-20.78	RAL	341.28	RAD	6646.8	VEL	12.219	PTH	7.17	VHP	9.745	DPA	-16.81	RAP	322.35	ECC	1.4835

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 10 54	2806.22	-22.27	80.31	203.55	133.20	16 57 41	1806.2	-4.35	63.56
60.00	17 15 34	2634.25	-16.69	69.82	208.55	127.23	17 59 28	1634.3	-.88	51.41
70.00	18 37 27	2393.57	-11.30	54.16	212.41	122.45	19 17 20	1393.6	2.57	34.50
80.00	20 15 7	2087.86	-7.00	33.54	215.00	119.10	20 49 55	1087.9	5.37	13.02
90.00	21 50 25	1780.46	-5.25	11.89	215.96	117.83	22 20 6	780.5	6.52	351.05
100.00	22 57 59	1562.33	-7.00	354.91	215.00	119.10	23 24 1	562.3	5.37	334.39
110.00	23 36 53	1440.39	-11.30	343.08	212.41	122.45	24 0 53	440.4	2.57	323.42

DIFFERENTIAL CORRECTIONS

TDE	-.4077	TRA	-.9183	TC3	.0692	BAU	.0463
RDE	-.5081	RRA	.2036	RC3	.0956	FAU	.03815
FDE	.1790	FRA	.8825	FC3	-1.1243	BSP	1667
BDE	.6515	BRA	.9406	BC3	.1180	FSP	176

MID-COURSE EXECUTION ACCURACY

SGT	1126.7	SGR	593.5	SG3	137.1		
RRT	.0004	RRF	.0019	RTF	-.6764		
SGB	1273.5	R23	.0023	R13	-.6764		
SG1	1126.7	SG2	593.5	THA	.02		

ORBIT DETERMINATION ACCURACY

ST	26.6	SR	27.1	SS	15.0
CRT	.7292	CRS	.4204	CST	.9237
LSA	37.0	MSA	17.1	SSA	1.2
EL1	35.3	EL2	14.0	ALF	45.72

LAUNCH DATE MAY 11 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 27 1971

HELIOCENTRIC CONIC DISTANCE 299.654 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	34.482	GAL	-1.55	AZL	91.85	HCA	97.89	SMA	233.71	ECC	.35446	INC	1.8482	V1	29.491
RP	206.85	LAP	-1.83	LOP	327.56	VP	26.746	GAP	19.73	AZP	89.75	TAL	354.07	TAP	91.95	RCA	150.87	APO	316.55	V2	26.476
RC	58.496	GL	-12.21	GP	-.03	ZAL	104.66	ZAP	172.09	ETS	180.22	ZAE	171.99	ETE	35.31	ZAC	99.78	ETC	278.09	LVI	-18.44

PLANETOCENTRIC CONIC

C3	27.637	VHL	5.257	DLA	-21.12	RAL	341.28	RAD	6646.1	VEL	12.149	PTH	7.12	VHP	9.432	DPA	-16.71	RAP	322.68	ECC	1.4548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 26	2763.72	-21.22	79.20	202.73	133.64	16 58 50	1783.7	-3.22	62.62
60.00	17 17 39	2610.32	-15.70	68.57	207.72	127.61	18 1 9	1610.3	.18	50.26
70.00	18 40 14	2367.50	-10.34	52.75	211.59	122.73	19 19 42	1367.5	3.56	33.13
80.00	20 18 47	2059.10	-6.05	31.94	214.20	119.29	20 53 6	1059.1	6.33	11.43
90.00	21 54 34	1750.14	-4.28	10.19	215.17	117.98	22 23 44	750.1	7.47	349.33
100.00	23 1 39	1533.57	-6.05	353.31	214.20	119.29	23 27 12	533.6	6.33	332.80
110.00	23 39 41	1414.32	-10.34	341.66	211.59	122.73	24 3 15	414.3	3.56	322.05

DIFFERENTIAL CORRECTIONS

TDE	-.3994	TRA	-.9089	TC3	.0864	BAU	.0493
RDE	-.4930	RRA	.1971	RC3	.1017	FAU	.03958
FDE	.1801	FRA	.9171	FC3	-1.2398	BSP	1716
BDE	.6343	BRA	.9301	BC3	.1335	FSP	191

MID-COURSE EXECUTION ACCURACY

SGT	1151.3	SGR	594.3	SG3	146.8		
RRT	-.0015	RRF	.0019	RTF	-.6861		
SGB	1295.7	R23	-.0005	R13	.6861		
SG1	1151.3	SG2	594.3	THA	179.94		

ORBIT DETERMINATION ACCURACY

ST	27.0	SR	27.1	SS	15.4
CRT	.7250	CRS	.4065	CST	.9202
LSA	37.3	MSA	17.4	SSA	1.2
EL1	35.5	EL2	14.2	ALF	45.17

LAUNCH DATE MAY 11 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 29 1971

HELIOCENTRIC CONIC DISTANCE 302.486 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	34.333	GAL	-1.47	AZL	91.85	HCA	99.16	SMA	229.56	ECC	.34272	INC	1.8480	V1	29.491
RP	206.80	LAP	-1.82	LOP	328.83	VP	26.560	GAP	19.25	AZP	89.71	TAL	354.24	TAP	93.39	RCA	150.89	APO	308.24	V2	26.482
RC	59.137	GL	-12.53	GP	-.03	ZAL	104.49	ZAP	171.14	ETS	180.21	ZAE	171.51	ETE	32.33	ZAC	99.73	ETC	278.16	LVI	-18.52

PLANETOCENTRIC CONIC

C3	26.043	VHL	5.103	DLA	-21.47	RAL	341.26	RAD	6645.4	VEL	12.083	PTH	7.06	VHP	9.130	DPA	-16.61	RAP	323.00	ECC	1.4286

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 57	2761.50	-20.17	78.13	201.95	134.05	16 59 58	1761.5	-2.10	61.69
60.00	17 19 43	2586.61	-14.71	67.35	206.92	127.96	18 2 49	1586.6	1.22	49.13
70.00	18 43 5	2341.54	-9.38	51.35	210.80	122.99	19 22 6	1341.5	4.35	31.77
80.00	20 22 32	2030.25	-5.08	30.34	213.42	119.46	20 56 23	1030.3	7.28	9.82
90.00	21 58 51	1719.61	-3.31	8.48	214.40	118.10	22 27 30	719.6	8.42	347.59
100.00	23 5 24	1504.72	-5.08	351.71	213.42	119.46	23 30 29	504.7	7.28	331.19
110.00	23 42 31	1388.36	-9.38	340.27	210.80	122.99	24 5 39	388.4	4.35	320.69

DIFFERENTIAL CORRECTIONS

TDE	-.3929	TRA	-.8988	TC3	.1085	BAU	.0528
RDE	-.4784	RRA	.1909	RC3	.1080	FAU	.04109
FDE	.1810	FRA	.9536	FC3	-1.3661	BSP	1780
BDE	.6191	BRA	.9186	BC3	.1517	FSP	207

MID-COURSE EXECUTION ACCURACY

SGT	1175.4	SGR	594.8	SG3	157.2		
RRT	-.0011	RRF	.0019	RTF	-.6861		
SGB	1317.4	R23	-.0009	R13	.6861		
SG1	1175.4	SG2	594.8	THA	179.96		

ORBIT DETERMINATION ACCURACY

ST	27.4	SR	27.1	SS	15.9
CRT	.7226	CRS	.3918	CST	.9154
LSA	37.7	MSA	17.8	SSA	1.2
EL1	35.8	EL2	14.3	ALF	44.53

LAUNCH DATE MAY 11 1971 FLIGHT TIME 112.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 305.444 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	34.192	GAL	-1.39	AZL	91.85	HCA	100.42	SMA	225.80	ECC	.33170	INC	1.8477	V1	29.491
RP	206.75	LAP	-1.82	LOP	330.10	VP	26.383	GAP	18.78	AZP	89.67	TAL	354.42	TAP	94.85	RCA	150.90	APO	300.70	V2	26.487
RC	59.850	GL	-12.84	GP	-.03	ZAL	104.30	ZAP	170.18	ETS	180.21	ZAE	171.07	ETE	29.82	ZAC	99.69	ETC	278.22	LVI	-18.60

PLANETOCENTRIC CONIC

C3	24.581	VHL	4.958	DLA	-21.83	RAL	341.22	RAD	6644.8	VEL	12.023	PTH	7.01	VHP	8.838	DPA	-16.51	RAP	323.30	ECC	1.4045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 25	2739.56	-19.13	77.08	201.18	134.44	17 1 5	1739.6	-1.00	60.77
60.00	17 21 47	2563.10	-13.72	66.15	206.14	128.27	18 4 30	1563.1	2.26	48.01
70.00	18 45 57	2315.67	-8.42	49.96	210.02	123.22	19 24 32	1315.7	5.53	30.41
80.00	20 26 24	2001.29	-4.11	28.74	212.67	119.60	20 59 45	1001.3	8.24	8.20
90.00	22 3 16	1688.82	-2.32	6.76	213.66	118.19	22 31 25	688.8	9.37	345.83
100.00	23 9 16	1475.76	-4.11	350.11	212.67	119.60	23 33 51	475.8	8.24	329.57
110.00	23 45 23	1362.49	-8.42	338.88	210.02	123.22	24 8 6	362.5	5.53	319.33

DIFFERENTIAL CORRECTIONS

TDE	-.3778	TRA	-.8801	TC3	.1411	BAU	.0597
RDE	-.4643	RRA	.1848	RC3	.1144	FAU	.04263
FDE	.1830	FRA	.9934	FC3	-1.5014	BSP	1726
BDE	.5986	BRA	.8993	BC3	.1817	FSP	226

MID-COURSE EXECUTION ACCURACY

SGT	1187.7	SGR	594.8	SG3	168.2		
RRT	-.0027	RRF	.0018	RTF	-.7160		
SGB	1328.3	R23	.0008	R13	.7160		
SG1	1187.7	SG2	594.8	THA	179.90		

ORBIT DETERMINATION ACCURACY

ST	27.3	SR	27.1	SS	16.4
CRT	.7157	CRS	.3769	CST	.9139
LSA	37.6	MSA	18.1	SSA	1.2
EL1	35.6	EL2	14.5	ALF	44.59

LAUNCH DATE MAY 11 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 308.516 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	34.060	GAL	-1.31	AZL	91.85	HCA	101.69	SMA	222.39	ECC	.32137	INC	1.8475	V1	29.491
RP	206.72	LAP	-1.81	LOP	331.37	VP	26.215	GAP	18.32	AZP	89.63	TAL	354.62	TAP	96.31	RCA	150.92	APO	293.86	V2	26.491
RC	60.633	GL	-13.16	GP	-.03	ZAL	104.10	ZAP	169.19	ETS	180.21	ZAE	170.68	ETE	27.69	ZAC	99.64	ETC	278.27	LVI	-18.67

PLANETOCENTRIC CONIC

C3	23.242	VHL	4.821	DLA	-22.20	RAL	341.17	RAD	6644.3	VEL	11.968	PTH	6.97	VHP	8.557	DPA	-16.42	RAP	323.58	ECC	1.3825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 53	2718.02	-18.10	76.07	200.44	134.79	17 2 11	1718.0	.08	59.87
60.00	17 23 50	2539.93	-12.74	64.97	205.39	128.56	18 6 10	1539.9	3.28	46.90
70.00	18 46 51	2290.04	-7.46	48.60	209.28	123.43	19 27 1	1290.0	6.49	29.06
80.00	20 30 21	1972.37	-3.14	27.15	211.95	119.71	21 3 13	972.4	9.18	6.57
90.00	22 7 50	1657.91	-1.32	5.03	212.95	118.25	22 35 28	657.9	10.32	344.05
100.00	23 13 13	1446.85	-3.14	348.52	211.95	119.71	23 37 20	446.8	9.18	327.94
110.00	23 48 17	1336.86	-7.46	337.52	209.28	123.43	24 10 34	336.9	6.49	317.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3744	TRA	-.6732	TC3	.1583	BAU	.0619	SGT	1215.5	SGR	594.4	SG3	180.1	ST	27.9	SR	27.0	SS	16.8
RDE	-.4507	RRA	.1789	RC3	.1209	FAU	.04440	RRT	-.0018	RRF	.0018	RTF	-.7203	CRT	.7144	CRS	.3629	CST	.9077
FDE	.1830	FRA	1.0321	FC3	-1.6540	BSP	1823	SGB	1353.1	R23	.0002	R13	.7203	LSA	38.1	MSA	18.5	SSA	1.2
BDE	.5859	BRA	.8913	BC3	.1993	FSP	244	SG1	1215.5	SG2	594.4	THA	179.93	EL1	35.9	EL2	14.7	ALF	43.71

LAUNCH DATE MAY 11 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 311.669 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	33.936	GAL	-1.23	AZL	91.85	HCA	102.96	SMA	219.27	ECC	.31166	INC	1.8472	V1	29.491
RP	206.70	LAP	-1.80	LOP	332.64	VP	26.056	GAP	17.87	AZP	89.59	TAL	354.82	TAP	97.78	RCA	150.93	APO	287.61	V2	26.494
RC	61.483	GL	-13.48	GP	-.03	ZAL	103.88	ZAP	168.20	ETS	180.21	ZAE	170.33	ETE	25.87	ZAC	99.60	ETC	278.33	LVI	-18.74

PLANETOCENTRIC CONIC

C3	22.012	VHL	4.692	DLA	-22.57	RAL	341.10	RAD	6643.7	VEL	11.917	PTH	6.92	VHP	8.285	DPA	-16.34	RAP	323.85	ECC	1.3623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 18	2696.83	-17.08	75.09	199.73	135.11	17 3 15	1696.8	1.15	58.99
60.00	17 25 54	2517.08	-11.77	63.83	204.66	128.83	18 7 51	1517.1	4.28	45.80
70.00	18 51 47	2264.60	-6.51	47.25	208.56	123.60	19 29 31	1264.6	7.45	27.71
80.00	20 34 24	1943.43	-2.16	25.56	211.25	119.79	21 6 47	943.4	10.12	4.94
90.00	22 12 34	1626.81	-.32	3.29	212.27	118.28	22 39 41	626.8	11.26	342.25
100.00	23 17 16	1417.91	-2.16	346.93	211.25	119.79	23 40 54	417.9	10.12	326.31
110.00	23 51 13	1311.42	-6.51	336.17	208.56	123.60	24 13 5	311.4	7.45	316.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3695	TRA	-.8646	TC3	.1804	BAU	.0650	SGT	1240.9	SGR	593.6	SG3	192.8	ST	28.3	SR	26.9	SS	17.3
RDE	-.4376	RRA	.1732	RC3	.1275	FAU	.04629	RRT	-.0008	RRF	.0016	RTF	-.7264	CRT	.7124	CRS	.3439	CST	.9003
FDE	.1816	FRA	1.0727	FC3	-1.8205	BSP	1900	SGB	1375.6	R23	-.0009	R13	.7264	LSA	38.4	MSA	18.8	SSA	1.3
BDE	.5727	BRA	.8818	BC3	.2209	FSP	264	SG1	1240.9	SG2	593.6	THA	179.97	EL1	36.2	EL2	14.8	ALF	42.96

LAUNCH DATE MAY 11 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 314.953 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	33.818	GAL	-1.15	AZL	91.85	HCA	104.23	SMA	216.43	ECC	.30255	INC	1.8470	V1	29.491
RP	206.68	LAP	-1.79	LOP	333.91	VP	25.905	GAP	17.43	AZP	89.55	TAL	355.03	TAP	99.26	RCA	150.95	APO	281.91	V2	26.496
RC	62.398	GL	-13.80	GP	-.03	ZAL	103.64	ZAP	167.18	ETS	180.21	ZAE	170.04	ETE	24.30	ZAC	99.57	ETC	278.38	LVI	-18.81

PLANETOCENTRIC CONIC

C3	20.884	VHL	4.570	DLA	-22.94	RAL	341.01	RAD	6643.2	VEL	11.870	PTH	6.88	VHP	8.022	DPA	-16.26	RAP	324.10	ECC	1.3437

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 43	2676.04	-16.07	74.14	199.04	135.41	17 4 19	1676.0	2.19	58.12
60.00	17 27 57	2494.57	-10.80	62.71	203.96	129.07	18 9 32	1494.6	5.27	44.72
70.00	18 54 45	2239.40	-5.56	45.92	207.87	123.75	19 32 4	1239.4	8.39	26.37
80.00	20 38 34	1914.49	-1.18	23.97	210.58	119.84	21 10 28	914.5	11.04	3.29
90.00	22 17 28	1595.50	.69	1.55	211.62	118.27	22 44 3	595.5	12.19	340.42
100.00	23 21 26	1388.96	-1.18	345.34	210.58	119.84	23 44 35	389.0	11.04	324.66
110.00	23 54 11	1286.21	-5.56	334.84	207.87	123.75	24 15 37	286.2	8.39	315.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3634	TRA	-.8555	TC3	.2025	BAU	.0670	SGT	1264.3	SGR	592.4	SG3	206.3	ST	28.7	SR	26.9	SS	17.7
RDE	-.4249	RRA	.1677	RC3	.1341	FAU	.04824	RRT	-.0008	RRF	.0018	RTF	-.7225	CRT	.7094	CRS	.3251	CST	.8935
FDE	.1802	FRA	1.1161	FC3	-1.9996	BSP	1955	SGB	1396.2	R23	-.0011	R13	.7325	LSA	38.6	MSA	19.2	SSA	1.3
BDE	.5591	BRA	.8718	BC3	.2429	FSP	284	SG1	1264.3	SG2	592.4	THA	179.97	EL1	36.4	EL2	14.9	ALF	42.31

LAUNCH DATE MAY 11 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 8 1971

HELIOCENTRIC CONIC DISTANCE 318.298 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	33.708	GAL	-1.08	AZL	91.85	HCA	105.50	SMA	213.83	ECC	.29399	INC	1.8467	V1	29.491
RP	206.67	LAP	-1.78	LOP	335.18	VP	25.781	GAP	16.99	AZP	89.51	TAL	355.25	TAP	100.75	RCA	150.96	APO	276.69	V2	26.498
RC	63.376	GL	-14.11	GP	-.04	ZAL	103.39	ZAP	166.15	ETS	180.21	ZAE	169.82	ETE	22.95	ZAC	99.53	ETC	278.43	LVI	-18.87

PLANETOCENTRIC CONIC

C3	19.847	VHL	4.455	DLA	-23.32	RAL	340.92	RAD	6642.8	VEL	11.826	PTH	6.85	VHP	7.769	DPA	-16.18	RAP	324.33	ECC	1.3266

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 5	2655.68	-15.08	73.21	198.38	135.68	17 5 21	1655.7	3.21	57.27
60.00	17 30 0	2472.43	-9.85	61.61	203.29	129.28	18 11 12	1472.4	6.23	43.65
70.00	18 57 45	2214.45	-4.61	44.61	207.20	123.88	19 34 39	1214.5	9.32	25.03
80.00	20 42 50	1885.56	-.20	22.38	209.95	119.86	21 14 16	885.6	11.96	1.63
90.00	22 22 32	1563.97	1.71	359.79	211.00	118.23	22 48 36	564.0	13.11	338.57
100.00	23 25 42	1360.04	-.20	343.75	209.95	119.86	23 46 22	360.0	11.96	323.00
110.00	0 1 7	1261.27	-4.61	333.53	207.20	123.88	0 22 8	261.3	9.32	313.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3566	TRA	-.8448	TC3	.2272	BAU	.0709	SGT	1285.0	SGR	590.8	SG3	220.7	ST	29.0	SR	26.8	SS	16.2
RDE	-.4126	RRA	.1624	RC3	.1408	FAU	.05033	RRT	-.0004	RRF	.0018	RTF	-.7391	CRT	.7064	CRS	.3060	CST	.8864
FDE	.1786	FRA	1.1614	FC3	-2.1953	BSP	2005	SGB	1414.3	R23	-.0014	R13	.7391	LSA	38.8	MSA	19.5	SSA	1.3
BDE	.5454	BRA	.8602	BC3	.2673	FSP	307	SG1	1285.0	SG2	590.8	THA	179.99	EL1	36.5	EL2	15.1	ALF	41.74

LAUNCH DATE MAY 11 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 10 1971

HELIOCENTRIC CONIC DISTANCE 321.716 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 33.603 GAL -1.01 AZL 91.85 HCA 106.77 SMA 211.44 ECC .28595 INC 1.8464 V1 29.491
RP 206.68 LAP -1.77 LOP 336.45 VP 25.624 GAP 16.57 AZP 89.47 TAL 355.47 TAP 102.24 RCA 150.98 APO 271.90 V2 26.496
RC 64.414 GL -14.42 GP -.04 ZAL 103.13 ZAP 165.09 ETS 180.21 ZAE 169.65 ETE 21.78 ZAC 99.50 ETC 278.47 LVI -18.92

PLANETOCENTRIC CONIC

C3 18.894 VHL 4.347 DLA -23.71 RAL 340.80 RAD 6642.3 VEL 11.786 PTH 6.81 VHP 7.524 DPA -16.11 RAP 324.54 ECC 1.3109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 27	2635.77	-14.11	72.32	197.74	135.92	17 6 23	1635.8	4.21	56.43
60.00	17 32 2	2450.69	-8.91	60.54	202.64	129.47	18 12 53	1450.7	7.18	42.60
70.00	18 0 46	2189.80	-3.67	43.31	206.57	123.98	19 37 16	1189.8	10.23	23.71
80.00	20 47 13	1856.67	.78	20.80	209.34	119.85	21 18 10	856.7	12.87	359.96
90.00	22 27 49	1532.22	2.73	358.02	210.42	118.16	22 53 21	532.2	14.03	336.68
100.00	23 30 5	1331.14	.78	342.16	209.34	119.85	23 52 16	331.1	12.87	321.33
110.00	0 4 9	1236.62	-3.67	332.23	206.57	123.98	0 24 45	236.6	10.23	312.62

DIFFERENTIAL CORRECTIONS

TDE -.3498 TRA -.8338 TC3 .2530 BAU .0740
RDE -.4008 RRA .1573 RC3 .1473 FAU .05254
FDE .1772 FRA 1.2083 FC3-2.4076 BSP 2060
BDE .5320 BRA .8485 BC3 .2928 FSP 333

MID-COURSE EXECUTION ACCURACY

SGT 1304.6 SGR 588.8 SG3 236.0
RRT -.0000 RRF .0014 RTF -.7454
SGB 1431.3 R23 -.0014 R13 .7454
SG1 1304.6 SG2 588.8 THA 180.00

ORBIT DETERMINATION ACCURACY

ST 29.3 SR 26.6 SS 18.7
CRT .7032 CRS .2878 CST .8797
LSA 39.0 MSA 19.9 SSA 1.3
EL1 36.5 EL2 15.2 ALF 41.19

LAUNCH DATE MAY 11 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 12 1971

HELIOCENTRIC CONIC DISTANCE 325.201 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 33.505 GAL -.94 AZL 91.85 HCA 108.04 SMA 209.25 ECC .27841 INC 1.8462 V1 29.491
RP 206.69 LAP -1.76 LOP 337.72 VP 25.494 GAP 16.15 AZP 89.43 TAL 355.69 TAP 103.73 RCA 150.99 APO 267.50 V2 26.495
RC 65.512 GL -14.73 GP -.04 ZAL 102.86 ZAP 164.02 ETS 180.21 ZAE 169.55 ETE 20.78 ZAC 99.47 ETC 278.51 LVI -18.97

PLANETOCENTRIC CONIC

C3 18.017 VHL 4.245 DLA -24.09 RAL 340.68 RAD 6641.9 VEL 11.749 PTH 6.78 VHP 7.288 DPA -16.05 RAP 324.73 ECC 1.2965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 47	2616.33	-13.16	71.46	197.13	136.15	17 7 23	1616.3	5.19	55.61
60.00	17 34 4	2429.40	-7.99	59.50	202.02	129.63	18 14 33	1429.4	8.11	41.56
70.00	19 3 50	2165.48	-2.75	42.04	205.96	124.06	19 39 55	1165.5	11.12	22.39
80.00	20 51 43	1827.82	1.76	19.21	208.76	119.81	21 22 11	827.8	13.76	358.29
90.00	22 33 18	1500.22	3.76	356.22	209.87	118.05	22 58 18	500.2	14.93	334.77
100.00	23 34 35	1302.29	1.76	340.58	208.76	119.81	23 56 17	302.3	13.76	319.65
110.00	0 7 12	1212.30	-2.75	330.96	205.96	124.06	0 27 24	212.3	11.12	311.31

DIFFERENTIAL CORRECTIONS

TDE -.3429 TRA -.8224 TC3 .2793 BAU .0768
RDE -.3893 RRA .1523 RC3 .1539 FAU .05492
FDE .1748 FRA 1.2573 FC3-2.6388 BSP 2102
BDE .5188 BRA .8364 BC3 .3189 FSP 360

MID-COURSE EXECUTION ACCURACY

SGT 1322.5 SGR 586.5 SG3 252.3
RRT .0005 RRF .0011 RTF -.7511
SGB 1446.7 R23 .0016 R13 -.7510
SG1 1322.5 SG2 586.5 THA .02

ORBIT DETERMINATION ACCURACY

ST 29.5 SR 26.5 SS 19.2
CRT .7000 CRS .2683 CST .8721
LSA 39.1 MSA 20.2 SSA 1.3
EL1 36.6 EL2 15.2 ALF 40.67

LAUNCH DATE MAY 11 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 14 1971

HELIOCENTRIC CONIC DISTANCE 328.747 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 33.413 GAL -.87 AZL 91.85 HCA 109.31 SMA 207.23 ECC .27133 INC 1.8459 V1 29.491
RP 206.71 LAP -1.74 LOP 338.99 VP 25.371 GAP 15.74 AZP 89.39 TAL 355.92 TAP 105.23 RCA 151.00 APO 263.46 V2 26.493
RC 66.667 GL -15.03 GP -.04 ZAL 102.58 ZAP 162.92 ETS 180.21 ZAE 169.53 ETE 19.91 ZAC 99.44 ETC 278.54 LVI -19.01

PLANETOCENTRIC CONIC

C3 17.212 VHL 4.149 DLA -24.47 RAL 340.55 RAD 6641.6 VEL 11.715 PTH 6.75 VHP 7.059 DPA -16.00 RAP 324.90 ECC 1.2833

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 25 5	2597.39	-12.23	70.62	196.55	136.35	17 8 22	1597.4	6.13	54.81
60.00	17 36 5	2408.56	-7.08	58.49	201.42	129.78	18 16 14	1408.6	9.01	40.54
70.00	19 6 55	2141.52	-1.83	40.79	205.38	124.11	19 42 36	1141.5	12.00	21.08
80.00	20 56 21	1799.03	2.73	17.63	208.22	119.74	21 26 20	799.0	14.63	356.60
90.00	22 39 0	1467.93	4.79	354.41	209.35	117.90	23 3 28	467.9	15.83	332.82
100.00	23 39 13	1273.50	2.73	339.00	208.22	119.74	24 0 26	273.5	14.63	317.97
110.00	0 10 17	1188.34	-1.83	329.71	205.38	124.11	0 30 5	188.3	12.00	310.00

DIFFERENTIAL CORRECTIONS

TDE -.3353 TRA -.8105 TC3 .3059 BAU .0795
RDE -.3783 RRA .1475 RC3 .1603 FAU .05740
FDE .1712 FRA 1.3088 FC3-2.8870 BSP 2138
BDE .5055 BRA .8238 BC3 .3454 FSP 389

MID-COURSE EXECUTION ACCURACY

SGT 1338.4 SGR 583.8 SG3 269.6
RRT .0006 RRF .0013 RTF -.[illegible]66
SGB 1460.2 R23 .0018 R13 -.7566
SG1 1338.4 SG2 583.8 THA .02

ORBIT DETERMINATION ACCURACY

ST 29.6 SR 26.3 SS 19.7
CRT .6963 CRS .2468 CST .8637
LSA 39.1 MSA 20.6 SSA 1.4
EL1 36.5 EL2 15.3 ALF 40.22

LAUNCH DATE MAY 11 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 332.348 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 33.326 GAL -.80 AZL 91.85 HCA 110.58 SMA 205.37 ECC .26469 INC 1.8456 V1 29.491
RP 206.73 LAP -1.73 LOP 340.26 VP 25.253 GAP 15.34 AZP 89.35 TAL 356.15 TAP 106.73 RCA 151.01 APO 259.73 V2 26.489
RC 67.877 GL -15.33 GP -.04 ZAL 102.30 ZAP 161.80 ETS 180.21 ZAE 169.57 ETE 19.17 ZAC 99.42 ETC 278.57 LVI -19.05

PLANETOCENTRIC CONIC

C3 16.471 VHL 4.058 DLA -24.85 RAL 340.41 RAD 6641.2 VEL 11.684 PTH 6.72 VHP 6.839 DPA -15.95 RAP 325.05 ECC 1.2711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 22	2578.97	-11.32	69.82	195.99	136.53	17 9 21	1579.0	7.06	54.03
60.00	17 38 5	2388.22	-6.19	57.50	200.85	129.90	18 17 54	1388.2	9.89	39.54
70.00	19 10 1	2117.95	-.93	39.56	204.83	124.14	19 45 19	1118.0	12.85	19.79
80.00	21 1 6	1770.31	3.70	16.05	207.71	119.65	21 30 36	770.3	15.49	354.90
90.00	22 44 58	1435.30	5.82	352.58	208.88	117.72	23 8 53	435.3	16.71	330.84
100.00	23 43 58	1244.78	3.70	337.42	207.71	119.65	24 4 42	244.8	15.49	316.27
110.00	0 13 23	1164.77	-.93	328.48	204.83	124.14	0 32 48	164.8	12.85	308.71

DIFFERENTIAL CORRECTIONS

TDE -.3283 TRA -.7996 TC3 .3309 BAU .0816
RDE -.3677 RRA .1429 RC3 .1666 FAU .06006
FDE .1678 FRA 1.3648 FC3-3.1566 BSP 2177
BDE .4929 BRA .8123 BC3 .3704 FSP 420

MID-COURSE EXECUTION ACCURACY

SGT 1354.4 SGR 580.6 SG3 288.2
RRT .0004 RRF .0014 RTF -.7612
SGB 1473.7 R23 .0017 R13 -.7612
SG1 1354.4 SG2 580.6 THA .01

ORBIT DETERMINATION ACCURACY

ST 29.8 SR 26.2 SS 20.2
CRT .6926 CRS .2257 CST .8554
LSA 39.2 MSA 20.9 SSA 1.4
EL1 36.5 EL2 15.4 ALF 39.73

LAUNCH DATE MAY 11 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 335.999 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	33.245	GAL	-.74	AZL	91.85	HCA	111.84	SMA	203.66	ECC	.25846	INC	1.8484	V1	29.491
RP	206.77	LAP	-1.71	LOP	341.53	VP	25.140	GAP	14.95	AZP	89.31	TAL	356.38	TAP	108.23	RCA	151.02	APO	256.29	V2	26.485
RC	69.140	GL	-15.83	GP	-.04	ZAL	102.02	ZAP	160.65	ETS	180.21	ZAE	169.68	ETE	18.55	ZAC	99.40	ETC	278.59	LVI	-19.08

PLANETOCENTRIC CONIC

C3	15.789	VHL	3.974	DLA	-25.22	RAL	340.26	RAD	6640.9	VEL	11.655	PTH	6.69	VHP	6.626	DPA	-15.91	RAP	325.17	ECC	1.2598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 38	2561.10	-10.44	69.04	195.45	136.69	17 10 19	1561.1	7.95	53.27
60.00	17 40 5	2368.39	-5.33	56.55	200.31	130.01	18 19 34	1368.4	10.74	38.56
70.00	19 13 9	2094.60	-.05	38.35	204.31	124.15	19 48 3	1094.6	13.68	18.51
80.00	21 5 59	1741.65	4.66	14.47	207.23	119.52	21 35 0	741.7	16.34	353.19
90.00	22 51 13	1402.24	6.87	350.71	208.44	117.50	23 14 35	402.2	17.58	328.80
100.00	23 48 50	1216.12	4.66	335.84	207.23	119.52	24 9 7	216.1	16.34	314.56
110.00	0 16 31	1141.62	-.05	327.27	204.31	124.15	0 35 32	141.6	13.68	307.43

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.3210	TRA	-.7861	TC3	.3608	BAU	.0844	SGT	1366.1	SGR	577.2	SG3	308.2	ST	29.8	SR	26.0	SS	20.7
RDE	-.3574	RRA	.1385	RC3	.1727	FAU	.06305	RRT	.0017	RRF	.0007	RTF	-.7658	CRT	.6896	CRS	.2035	CST	.8456
FDE	.1629	FRA	1.4196	FC3	-3.4570	BSP	2202	SGB	1483.0	R23	.0022	R13	-.7658	LSA	39.2	MSA	21.3	SSA	1.4
BDE	.4804	BRA	.7982	BC3	.4000	FSP	453	SG1	1366.1	SG2	577.2	THA	.05	EL1	36.4	EL2	15.4	ALF	39.34

LAUNCH DATE MAY 11 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 339.696 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	33.168	GAL	-.68	AZL	91.85	HCA	113.11	SMA	202.08	ECC	.25261	INC	1.8451	V1	29.491
RP	206.81	LAP	-1.70	LOP	342.79	VP	25.033	GAP	14.57	AZP	89.28	TAL	356.61	TAP	109.73	RCA	151.03	APO	253.12	V2	26.460
RC	70.455	GL	-15.92	GP	-.04	ZAL	101.73	ZAP	159.48	ETS	180.21	ZAE	169.87	ETE	18.05	ZAC	99.38	ETC	278.61	LVI	-19.10

PLANETOCENTRIC CONIC

C3	15.161	VHL	3.894	DLA	-25.59	RAL	340.11	RAD	6640.6	VEL	11.628	PTH	6.67	VHP	6.420	DPA	-15.88	RAP	325.26	ECC	1.2495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 52	2543.78	-9.58	68.29	194.94	136.83	17 11 16	1543.8	8.81	52.53
60.00	17 42 4	2349.11	-4.48	55.62	199.80	130.09	18 21 13	1349.1	11.57	37.60
70.00	19 16 17	2072.10	.82	37.17	203.81	124.15	19 50 49	1072.1	14.49	17.24
80.00	21 11 0	1713.07	5.62	12.89	206.79	119.37	21 39 33	713.1	17.16	351.47
90.00	22 57 47	1368.66	7.92	348.80	208.03	117.24	23 20 36	368.7	18.45	326.72
100.00	23 53 51	1187.54	5.62	334.25	206.79	119.37	24 13 39	187.5	17.16	312.84
110.00	0 19 39	1118.92	.82	326.09	203.81	124.15	0 38 18	118.9	14.49	306.16

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.3137	TRA	-.7752	TC3	.3815	BAU	.0854	SGT	1378.8	SGR	573.4	SG3	329.2	ST	29.9	SR	25.8	SS	21.3
RDE	-.3475	RRA	.1342	RC3	.1786	FAU	.06596	RRT	.0005	RRF	.0017	RTF	-.7691	CRT	.6853	CRS	.1800	CST	.8360
FDE	.1576	FRA	1.4837	FC3	-3.7663	BSP	2239	SGB	1493.2	R23	.0021	R13	-.7691	LSA	39.2	MSA	21.7	SSA	1.4
BDE	.4681	BRA	.7868	BC3	.4212	FSP	489	SG1	1378.8	SG2	573.4	THA	.01	EL1	36.3	EL2	15.4	ALF	38.90

LAUNCH DATE MAY 11 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 343.436 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	33.096	GAL	-.63	AZL	91.84	HCA	114.38	SMA	200.61	ECC	.24713	INC	1.8448	V1	29.491
RP	206.87	LAP	-1.68	LOP	344.06	VP	24.931	GAP	14.20	AZP	89.24	TAL	356.84	TAP	111.22	RCA	151.04	APO	250.19	V2	26.474
RC	71.818	GL	-16.20	GP	-.05	ZAL	101.45	ZAP	158.28	ETS	180.21	ZAE	170.13	ETE	17.65	ZAC	99.37	ETC	278.63	LVI	-19.12

PLANETOCENTRIC CONIC

C3	14.584	VHL	3.819	DLA	-25.96	RAL	339.96	RAD	6640.3	VEL	11.603	PTH	6.65	VHP	6.222	DPA	-15.86	RAP	325.33	ECC	1.2400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 5	2527.05	-8.75	67.57	194.46	136.96	17 12 12	1527.0	9.64	51.81
60.00	17 44 2	2330.39	-3.66	54.72	199.32	130.16	18 22 52	1330.4	12.36	36.66
70.00	19 19 26	2049.88	1.67	36.01	203.35	124.12	19 53 36	1049.9	15.27	16.00
80.00	21 16 9	1684.55	6.57	11.30	206.38	119.19	21 44 14	684.6	17.97	349.73
90.00	23 4 43	1334.41	8.98	346.84	207.68	116.93	23 26 58	334.4	19.30	324.57
100.00	0 2 57	1159.03	6.57	332.67	206.38	119.19	0 22 16	159.0	17.97	311.10
110.00	0 22 48	1096.70	1.67	324.93	203.35	124.12	0 41 5	96.7	15.27	304.91

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.3061	TRA	-.7616	TC3	.4092	BAU	.0868	SGT	1386.2	SGR	569.2	SG3	351.3	ST	29.8	SR	25.6	SS	21.8
RDE	-.3379	RRA	.1301	RC3	.1842	FAU	.06914	RRT	.0005	RRF	.0018	RTF	-.7722	CRT	.6817	CRS	.1984	CST	.8294
FDE	.1811	FRA	1.5459	FC3	-4.1042	BSP	2260	SGB	1498.5	R23	.0023	R13	-.7722	LSA	39.1	MSA	22.1	SSA	1.4
BDE	.4559	BRA	.7726	BC3	.4451	FSP	527	SG1	1386.2	SG2	569.2	THA	.02	EL1	36.1	EL2	15.4	ALF	38.57

LAUNCH DATE MAY 11 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC DISTANCE 347.213 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	33.028	GAL	-.57	AZL	91.84	HCA	115.65	SMA	199.26	ECC	.24200	INC	1.8445	V1	29.491
RP	206.93	LAP	-1.66	LOP	345.33	VP	24.833	GAP	13.83	AZP	89.20	TAL	357.07	TAP	112.71	RCA	151.04	APO	247.49	V2	26.466
RC	73.228	GL	-16.47	GP	-.05	ZAL	101.17	ZAP	157.06	ETS	180.21	ZAE	170.47	ETE	17.37	ZAC	99.36	ETC	278.63	LVI	-19.12

PLANETOCENTRIC CONIC

C3	14.052	VHL	3.749	DLA	-26.31	RAL	339.81	RAD	6640.1	VEL	11.581	PTH	6.62	VHP	6.030	DPA	-15.85	RAP	325.37	ECC	1.2313

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 17	2510.91	-7.94	66.88	194.00	137.07	17 13 8	1510.9	10.44	51.12
60.00	17 45 58	2312.27	-2.87	53.85	198.86	130.22	18 24 30	1312.3	13.13	35.75
70.00	19 22 35	2028.18	2.50	34.87	202.92	124.07	19 56 23	1028.2	16.02	14.77
80.00	21 21 28	1656.10	7.51	9.72	206.00	118.98	21 49 4	656.1	18.75	347.99
90.00	23 12 6	1299.28	10.06	344.83	207.36	116.57	23 33 46	299.3	20.14	322.34
100.00	0 8 15	1130.57	7.51	331.08	206.00	118.98	0 27 8	130.6	18.75	309.36
110.00	0 25 57	1075.00	2.50	323.79	202.92	124.07	0 43 52	75.0	16.02	303.69

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2994	TRA	-.7487	TC3	.4280	BAU	.0879	SGT	1393.5	SGR	564.7	SG3	375.4	ST	29.8	SR	25.3	SS	22.4
RDE	-.3287	RRA	.1262	RC3	.1895	FAU	.07262	RRT	.0011	RRF	.0022	RTF	-.7747	CRT	.6789	CRS	.1317	CST	.8134
FDE	.1436	FRA	1.6142	FC3	-4.4738	BSP	2267	SGB	1503.6	R23	.0032	R13	-.7747	LSA	39.1	MSA	22.5	SSA	1.4
BDE	.4446	BRA	.7592	BC3	.4680	FSP	564	SG1	1393.5	SG2	564.7	THA	.03	EL1	36.0	EL2	15.4	ALF	38.18

LAUNCH DATE MAY 11 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC DISTANCE 351.027 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.964 GAL -.52 AZL 91.84 HCA 116.91 SMA 198.01 ECC .23718 INC 1.8442 V1 29.491
RP 207.00 LAP -1.64 LOP 346.59 VP 24.740 GAP 13.48 AZP 89.17 TAL 357.29 TAP 114.20 RCA 151.05 APO 244.98 V2 26.458
RC 74.683 GL -16.74 GP -.05 ZAL 100.69 ZAP 155.80 ETS 180.21 ZAE 170.88 ETE 17.22 ZAC 99.36 ETC 278.64 LVI -19.12

PLANETOCENTRIC CONIC

C3 13.562 VHL 3.683 DLA -26.66 RAL 339.66 RAD 6639.8 VEL 11.560 PTH 6.60 VHP 5.846 DPA -15.85 RAP 325.38 ECC 1.2232

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 32 27	2495.35	-7.17	66.22	193.57	137.16	17 14 3	1495.3	11.21	50.44
60.00	17 47 53	2294.71	-2.09	53.01	198.43	130.26	18 26 8	1294.7	13.88	34.86
70.00	19 25 45	2006.97	3.30	33.77	202.51	124.01	19 59 12	1007.0	16.75	13.56
80.00	21 26 56	1627.61	8.45	8.12	205.66	118.74	21 54 4	627.6	19.52	346.22
90.00	23 20 3	1262.82	11.16	342.72	207.09	116.15	23 41 6	262.8	20.99	320.00
100.00	0 13 44	1102.08	8.45	329.49	205.66	118.74	0 32 6	102.1	19.52	307.59
110.00	0 29 7	1053.79	3.30	322.68	202.51	124.01	0 46 41	53.8	16.75	302.48

DIFFERENTIAL CORRECTIONS

TDE -.2836 TRA -.7266 TC3 .4735 BAU .0928
RDE -.3197 RRA .1224 RC3 .1946 FAU .07638
FDE .1330 FRA 1.6813 FC3-4.8758 BSP 2168
BDE .4273 BRA .7368 BC3 .5119 FSP 603

MID-COURSE EXECUTION ACCURACY

SGT 1384.3 SGR 559.8 SG3 400.7
RRT -.0002 RRF .0024 RTF -.7860
SGB 1493.2 R23 -.0022 R13 .7860
SG1 1384.3 SG2 559.8 THA 179.99

ORBIT DETERMINATION ACCURACY

ST 29.1 SR 25.1 SS 22.9
CRT .6688 CRS .1038 CST .8050
LSA 38.4 MSA 22.9 SSA 1.4
EL1 35.2 EL2 15.4 ALF 38.70

LAUNCH DATE MAY 11 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 28 1971

HELIOCENTRIC CONIC DISTANCE 354.873 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.905 GAL -.47 AZL 91.84 HCA 118.18 SMA 196.86 ECC .23268 INC 1.8439 V1 29.491
RP 207.08 LAP -1.63 LOP 347.86 VP 24.650 GAP 13.13 AZP 89.13 TAL 357.50 TAP 115.68 RCA 151.05 APO 242.67 V2 26.449
RC 76.180 GL -17.00 GP -.05 ZAL 100.62 ZAP 154.51 ETS 180.21 ZAE 171.37 ETE 17.20 ZAC 99.36 ETC 278.63 LVI -19.12

PLANETOCENTRIC CONIC

C3 13.112 VHL 3.621 DLA -27.00 RAL 339.51 RAD 6639.6 VEL 11.540 PTH 6.59 VHP 5.668 DPA -15.86 RAP 325.36 ECC 1.2158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 36	2480.47	-6.42	65.59	193.16	137.24	17 14 57	1480.5	11.95	49.79
60.00	17 49 47	2277.86	-1.35	52.21	198.03	130.28	18 27 44	1277.9	14.58	34.00
70.00	19 28 53	1986.43	4.09	32.69	202.14	123.94	20 2 0	986.4	17.45	12.38
80.00	21 32 34	1599.28	9.37	6.52	205.36	118.48	21 59 13	599.3	20.27	344.45
90.00	23 28 41	1224.83	12.29	340.50	206.88	115.67	23 49 6	224.8	21.83	317.53
100.00	0 19 22	1073.75	9.37	327.89	205.36	118.48	0 37 15	73.8	20.27	305.82
110.00	0 32 15	1033.25	4.09	321.61	202.14	123.94	0 49 29	33.2	17.45	301.30

DIFFERENTIAL CORRECTIONS

TDE -.2811 TRA -.7170 TC3 .4729 BAU .0900
RDE -.3111 RRA .1168 RC3 .1992 FAU .08002
FDE .1258 FRA 1.7566 FC3-5.2833 BSP 2220
BDE .4193 BRA .7267 BC3 .5132 FSP 649

MID-COURSE EXECUTION ACCURACY

SGT 1391.4 SGR 554.6 SG3 426.9
RRT -.0004 RRF .0030 RTF -.7812
SGB 1497.9 R23 -.0026 R13 .7812
SG1 1391.4 SG2 554.6 THA 179.99

ORBIT DETERMINATION ACCURACY

ST 29.3 SR 24.8 SS 23.6
CRT .6694 CRS .0821 CST .7914
LSA 38.6 MSA 23.3 SSA 1.5
EL1 35.2 EL2 15.3 ALF 37.97

LAUNCH DATE MAY 11 1971 FLIGHT TIME 142.00 ARRIVAL DATE SEP 30 1971

HELIOCENTRIC CONIC DISTANCE 358.748 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.849 GAL -.43 AZL 91.84 HCA 119.44 SMA 195.79 ECC .22847 INC 1.8436 V1 29.491
RP 207.17 LAP -1.61 LOP 349.12 VP 24.564 GAP 12.79 AZP 89.09 TAL 357.71 TAP 117.15 RCA 151.06 APO 240.52 V2 26.439
RC 77.718 GL -17.25 GP -.05 ZAL 100.37 ZAP 153.20 ETS 180.20 ZAE 171.93 ETE 17.35 ZAC 99.37 ETC 278.62 LVI -19.10

PLANETOCENTRIC CONIC

C3 12.698 VHL 3.563 DLA -27.32 RAL 339.37 RAD 6639.4 VEL 11.523 PTH 6.57 VHP 5.496 DPA -15.88 RAP 325.31 ECC 1.2090

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 44	2466.22	-5.71	64.99	192.78	137.31	17 15 50	1466.2	12.65	49.17
60.00	17 51 38	2261.66	-.64	51.43	197.65	130.30	18 29 20	1261.7	15.26	33.17
70.00	19 32 1	1966.49	4.84	31.64	201.79	123.85	20 4 47	966.5	18.12	11.22
80.00	21 38 22	1570.94	10.29	4.92	205.09	118.18	22 4 33	570.9	20.99	342.66
90.00	23 38 16	1164.29	13.47	338.11	206.72	115.10	23 58 1	164.3	22.67	314.86
100.00	0 25 10	1045.41	10.29	326.29	205.09	118.18	0 42 36	45.4	20.99	304.03
110.00	0 35 23	1013.31	4.84	320.56	201.79	123.85	0 52 17	13.3	18.12	300.14

DIFFERENTIAL CORRECTIONS

TDE -.2782 TRA -.7051 TC3 .4805 BAU .0886
RDE -.3027 RRA .1154 RC3 .2034 FAU .08413
FDE .1199 FRA 1.8360 FC3-5.7356 BSP 2272
BDE .4111 BRA .7145 BC3 .5218 FSP 702

MID-COURSE EXECUTION ACCURACY

SGT 1394.9 SGR 549.1 SG3 455.4
RRT .0013 RRF .0025 RTF -.7888
SGB 1499.1 R23 .0036 R13 -.7788
SG1 1394.9 SG2 549.1 THA .03

ORBIT DETERMINATION ACCURACY

ST 29.4 SR 24.5 SS 24.3
CRT .6706 CRS .0637 CST .7790
LSA 38.7 MSA 23.6 SSA 1.5
EL1 35.2 EL2 15.2 ALF 37.36

LAUNCH DATE MAY 11 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 362.652 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.796 GAL -.38 AZL 91.84 HCA 120.70 SMA 194.80 ECC .22453 INC 1.8432 V1 29.491
RP 207.26 LAP -1.58 LOP 350.39 VP 24.482 GAP 12.45 AZP 89.06 TAL 357.90 TAP 118.61 RCA 151.06 APO 238.54 V2 26.428
RC 79.295 GL -17.49 GP -.06 ZAL 100.12 ZAP 151.85 ETS 180.20 ZAE 172.56 ETE 17.70 ZAC 99.38 ETC 278.61 LVI -19.08

PLANETOCENTRIC CONIC

C3 12.316 VHL 3.509 DLA -27.64 RAL 339.23 RAD 6639.2 VEL 11.506 PTH 6.55 VHP 5.331 DPA -15.91 RAP 325.23 ECC 1.2027

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 50	2452.62	-5.03	64.41	192.43	137.37	17 16 43	1452.6	13.32	48.56
60.00	17 53 28	2246.13	.04	50.69	197.30	130.30	18 30 54	1246.1	15.91	32.36
70.00	19 35 7	1947.20	5.57	30.63	201.47	123.75	20 7 35	947.2	18.77	10.10
80.00	21 44 23	1542.54	11.20	3.30	204.86	117.86	22 10 5	542.5	21.70	340.84
90.00	23 49 21	1139.55	14.75	335.45	206.65	114.41	24 8 20	139.5	23.55	311.88
100.00	0 31 11	1017.01	11.20	324.67	204.86	117.86	0 48 8	17.0	21.70	302.21
110.00	0 38 30	6282.06	5.57	297.45	201.47	123.75	2 23 12	5282.1	18.77	276.92

DIFFERENTIAL CORRECTIONS

TDE -.2719 TRA -.6917 TC3 .4827 BAU .0865
RDE -.2946 RRA .1120 RC3 .2073 FAU .08836
FDE .1086 FRA 1.9204 FC3-6.2106 BSP 2260
BDE .4009 BRA .7007 BC3 .5253 FSP 750

MID-COURSE EXECUTION ACCURACY

SGT 1391.6 SGR 543.2 SG3 485.4
RRT -.0006 RRF .0037 RTF -.7760
SGB 1493.9 R23 -.0032 R13 .7760
SG1 1391.6 SG2 543.2 THA 179.99

ORBIT DETERMINATION ACCURACY

ST 29.3 SR 24.2 SS 25.0
CRT .6681 CRS .0381 CST .7649
LSA 38.6 MSA 24.1 SSA 1.5
EL1 34.9 EL2 15.2 ALF 37.04

LAUNCH DATE MAY 11 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 366.581 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.747	GAL	-.34	AZL	91.84	HCA	121.96	SMA	193.89	ECC	.22085	INC	1.8429	V1	29.491
RP	207.37	LAP	-1.56	LOP	351.65	VP	24.403	GAP	12.13	AZP	89.02	TAL	358.09	TAP	120.06	RCA	151.07	APO	236.70	V2	26.415
RC	80.909	GL	-17.73	GP	-.06	ZAL	99.88	ZAP	150.46	ETS	180.19	ZAE	173.26	ETE	18.34	ZAC	99.39	ETC	278.58	LVI	-19.04

PLANETOCENTRIC CONIC

C3	11.965	VHL	3.459	DLA	-27.94	RAL	339.10	RAD	6639.0	VEL	11.491	PTH	6.54	VHP	5.172	DPA	-15.95	RAP	325.11	ECC	1.1969

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 36 56	2439.67	-4.38	63.87	192.10	137.42	17 17 35	1439.7	13.95	47.99
60.00	17 55 16	2231.30	.70	49.98	196.98	130.30	18 32 27	1231.3	16.52	31.59
70.00	19 38 12	1928.59	6.28	29.64	201.19	123.64	20 10 20	928.6	19.38	9.00
80.00	21 50 36	1514.04	12.10	1.67	204.67	117.51	22 15 50	514.0	22.38	339.00
90.00	0 7 4	1086.63	16.21	332.25	206.69	113.49	0 25 11	86.6	24.51	308.29
100.00	0 37 24	6276.55	12.10	300.94	204.67	117.51	2 22 0	5276.6	22.38	278.28
110.00	0 41 34	6263.45	6.28	296.47	201.19	123.64	2 25 58	5263.4	19.38	275.82

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2666	TRA	-.6760	TC3	.4872	BAU	.0849	SGT	1383.8	SGR	537.1	SG3	516.8	ST	29.1	SR	23.9	SS	25.6
RDE	-.2867	RRA	.1089	RC3	.2107	FAU	.09290	RRT	.0002	RRF	.0043	RTF	-.7735	CRT	.6682	CRS	.0138	CST	.7489
FDE	.0966	FRA	2.0053	FC3	-6.7213	BSP	2286	SGB	1484.3	R23	.0044	R13	-.7735	LSA	38.4	MSA	24.5	SSA	1.5
BDE	.3915	BRA	.6847	BC3	.5308	FSP	810	SG1	1383.8	SG2	537.1	THA	.00	EL1	34.6	EL2	15.0	ALF	36.76

LAUNCH DATE MAY 11 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 370.534 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.701	GAL	-.31	AZL	91.84	HCA	123.22	SMA	193.04	ECC	.21741	INC	1.8425	V1	29.491
RP	207.48	LAP	-1.54	LOP	352.91	VP	24.327	GAP	11.81	AZP	88.99	TAL	358.27	TAP	121.50	RCA	151.07	APO	235.00	V2	26.402
RC	82.560	GL	-17.95	GP	-.06	ZAL	99.66	ZAP	149.05	ETS	180.19	ZAE	174.04	ETE	19.38	ZAC	99.41	ETC	278.55	LVI	-19.00

PLANETOCENTRIC CONIC

C3	11.642	VHL	3.412	DLA	-28.22	RAL	338.98	RAD	6638.9	VEL	11.477	PTH	6.53	VHP	5.020	DPA	-16.00	RAP	324.95	ECC	1.1916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 59	2427.40	-3.76	63.36	191.80	137.46	17 18 27	1427.4	14.55	47.44
60.00	17 57 1	2217.18	1.32	49.31	196.69	130.28	18 33 58	1217.2	17.10	30.85
70.00	19 41 14	1910.70	6.95	28.70	200.92	123.52	20 13 4	910.7	19.96	7.94
80.00	21 57 4	1485.35	12.99	.01	204.51	117.12	22 21 50	485.3	23.05	337.13
90.00	0 29 38	1005.95	18.33	327.28	207.04	111.92	0 46 23	5.9	25.77	302.72
100.00	0 43 52	6247.86	12.99	299.28	204.51	117.12	2 28 0	5247.9	23.05	276.41
110.00	0 44 36	6245.56	6.95	295.52	200.92	123.52	2 28 42	5245.6	19.96	274.76

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2617	TRA	-.6609	TC3	.4823	BAU	.0821	SGT	1374.0	SGR	530.6	SG3	550.6	ST	29.0	SR	23.6	SS	26.4
RDE	-.2791	RRA	.1058	RC3	.2136	FAU	.09765	RRT	-.0003	RRF	.0047	RTF	-.7697	CRT	.6685	CRS	-.0043	CST	.7365
FDE	.0884	FRA	2.1010	FC3	-7.2615	BSP	2262	SGB	1472.9	R23	-.0044	R13	.7697	LSA	38.4	MSA	24.9	SSA	1.5
BDE	.3825	BRA	.6694	BC3	.5275	FSP	869	SG1	1374.0	SG2	530.6	THA	179.99	EL1	34.3	EL2	14.8	ALF	36.45

LAUNCH DATE MAY 11 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 374.508 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.658	GAL	-.28	AZL	91.84	HCA	124.48	SMA	192.25	ECC	.21420	INC	1.8422	V1	29.491
RP	207.60	LAP	-1.52	LOP	354.17	VP	24.254	GAP	11.50	AZP	88.96	TAL	358.44	TAP	122.92	RCA	151.07	APO	233.43	V2	26.368
RC	84.247	GL	-18.16	GP	-.06	ZAL	99.46	ZAP	147.59	ETS	180.18	ZAE	174.88	ETE	21.05	ZAC	99.44	ETC	278.51	LVI	-18.95

PLANETOCENTRIC CONIC

C3	11.345	VHL	3.368	DLA	-28.50	RAL	338.87	RAD	6638.7	VEL	11.464	PTH	6.51	VHP	4.873	DPA	-16.07	RAP	324.76	ECC	1.1867

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 2	2415.79	-3.18	62.87	191.53	137.50	17 19 18	1415.8	15.12	46.92
60.00	17 58 43	2203.79	1.91	48.67	196.42	130.26	18 35 27	1203.8	17.65	30.14
70.00	19 44 12	1893.57	7.59	27.79	200.69	123.40	20 15 46	893.6	20.51	6.91
80.00	22 3 49	1456.35	13.89	356.32	204.39	116.70	22 28 6	456.4	23.69	335.22
86.34	0 14 8	1049.31	19.86	331.09	207.14	110.86	0 31 37	49.3	26.71	306.10
100.00	0 50 37	6218.86	13.89	297.59	204.39	116.70	2 34 16	5218.9	23.69	274.50
110.00	0 47 35	6228.42	7.59	294.61	200.69	123.40	2 31 23	5228.4	20.51	273.74

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2573	TRA	-.6447	TC3	.4612	BAU	.0773	SGT	1358.3	SGR	523.8	SG3	583.8	ST	28.8	SR	23.5	SS	27.2
RDE	-.2716	RRA	.1029	RC3	.2160	FAU	.10207	RRT	-.0010	RRF	.0068	RTF	-.7624	CRT	.6704	CRS	-.0239	CST	.7214
FDE	.0779	FRA	2.1083	FC3	-7.7889	BSP	2213	SGB	1455.8	R23	-.0081	R13	.7624	LSA	38.4	MSA	25.3	SSA	1.5
BDE	.3742	BRA	.6528	BC3	.5093	FSP	923	SG1	1358.3	SG2	523.8	THA	179.98	EL1	34.0	EL2	14.6	ALF	36.16

LAUNCH DATE MAY 11 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 10 1971

HELIOCENTRIC CONIC DISTANCE 378.502 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.618	GAL	-.24	AZL	91.84	HCA	125.74	SMA	191.82	ECC	.21120	INC	1.8418	V1	29.491
RP	207.73	LAP	-1.50	LOP	355.43	VP	24.183	GAP	11.20	AZP	88.92	TAL	358.60	TAP	124.34	RCA	151.07	APO	231.97	V2	26.373
RC	88.969	GL	-18.36	GP	-.07	ZAL	99.27	ZAP	146.10	ETS	180.17	ZAE	175.78	ETE	23.80	ZAC	99.47	ETC	278.46	LVI	-18.89

PLANETOCENTRIC CONIC

C3	11.072	VHL	3.328	DLA	-28.75	RAL	338.78	RAD	6638.6	VEL	11.452	PTH	6.50	VHP	4.732	DPA	-16.15	RAP	324.53	ECC	1.1822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 3	2404.87	-2.63	62.41	191.28	137.52	17 20 8	1404.9	15.65	46.42
60.00	18 0 23	2191.18	2.46	48.06	196.18	130.24	18 36 54	1191.2	18.16	29.47
70.00	19 47 7	1877.23	8.20	26.92	200.48	123.27	20 18 25	877.2	21.03	5.93
80.00	22 10 55	1426.67	14.78	356.59	204.32	116.24	22 34 42	426.9	24.32	333.26
84.58	23 55 19	1091.19	20.16	334.28	206.78	110.95	24 13 30	91.2	27.01	309.24
100.00	0 57 43	6189.36	14.78	295.86	204.32	116.24	2 40 52	5189.4	24.32	272.53
110.00	0 50 30	6212.09	8.20	293.74	200.48	123.27	2 34 2	5212.1	21.03	272.75

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2534	TRA	-.6278	TC3	.4511	BAU	.0742	SGT	1342.0	SGR	516.8	SG3	621.4	ST	28.6	SR	23.0	SS	28.0
RDE	-.2644	RRA	.1002	RC3	.2180	FAU	.10748	RRT	-.0005	RRF	.0063	RTF	-.7569	CRT	.6734	CRS	-.0395	CST	.7077
FDE	.0694	FRA	2.3019	FC3	-8.4035	BSP	2191	SGB	1438.1	R23	-.0059	R13	.7569	LSA	38.4	MSA	25.6	SSA	1.5
BDE	.3662	BRA	.6358	BC3	.5010	FSP	987	SG1	1342.0	SG2	516.8	THA	179.99	EL1	33.7	EL2	14.4	ALF	35.89

LAUNCH DATE MAY 11 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 12 1971

HELIOCENTRIC CONIC DISTANCE 382.516 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.580 GAL -.22 AZL 91.84 HCA 127.00 SMA 190.85 ECC .20842 INC 1.8415 V1 29.491
RP 207.86 LAP -1.47 LOP 356.68 VP 24.116 GAP 10.90 AZP 88.89 TAL 358.74 TAP 125.74 RCA 151.08 APO 230.63 V2 26.357
RC 87.725 GL -18.56 GP -.07 ZAL 99.10 ZAP 144.57 ETS 180.16 ZAE 176.72 ETE 28.66 ZAC 99.51 ETC 278.41 LVI -18.81

PLANETOCENTRIC CONIC

C3 10.822 VHL 3.290 DLA -28.99 RAL 338.70 RAD 6638.5 VEL 11.442 PTH 6.49 VHP 4.597 DPA -16.24 RAP 324.27 ECC 1.1781

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 41 3	2394.64	-2.12	61.98	191.06	137.54	17 20 57	1394.6	16.14	45.96
60.00	18 2 0	2179.27	2.99	47.49	195.97	130.21	18 38 19	1179.3	18.64	28.83
70.00	19 49 58	1861.74	8.78	26.09	200.30	123.14	20 20 59	861.7	21.51	4.99
80.00	22 18 26	1396.61	15.68	354.79	204.28	115.74	22 41 43	396.6	24.94	331.22
83.33	23 44 49	1119.27	20.43	336.46	206.44	111.03	24 3 28	119.3	27.29	311.36
100.00	1 5 14	6159.12	15.68	294.07	204.28	115.74	2 47 53	5159.1	24.94	270.50
110.00	0 53 20	6196.60	8.78	292.92	200.30	123.14	2 36 36	5196.6	21.51	271.81

DIFFERENTIAL CORRECTIONS

TDE -.2477 TRA -.6114 TC3 .4250 BAU .0692
RDE -.2574 RRA .0975 RC3 .2194 FAU .11291
FDE .0534 FRA 2.4133 FC3-9.0331 BSP 2160
BDE .3573 BRA .6191 BC3 .4783 FSP 1062

MID-COURSE EXECUTION ACCURACY

SGT 1321.5 SGR 509.4 SG3 660.4
RRT -.0038 RRF .0085 RTF -.7477
SGB 1416.3 R23 -.0052 R13 .7477
SG1 1321.5 SG2 509.4 THA 179.90

ORBIT DETERMINATION ACCURACY

ST 26.3 SR 22.6 SS 28.9
CRT .6737 CRS -.0631 CST .6903
LSA 38.3 MSA 26.0 SSA 1.5
EL1 33.3 EL2 14.2 ALF 35.75

LAUNCH DATE MAY 11 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 14 1971

HELIOCENTRIC CONIC DISTANCE 386.546 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.546 GAL -.19 AZL 91.84 HCA 128.25 SMA 190.23 ECC .20582 INC 1.8411 V1 29.491
RP 208.01 LAP -1.45 LOP 357.94 VP 24.050 GAP 10.61 AZP 88.86 TAL 358.87 TAP 127.12 RCA 151.08 APO 229.38 V2 26.340
RC 89.514 GL -18.74 GP -.07 ZAL 98.95 ZAP 143.01 ETS 180.15 ZAE 177.69 ETE 38.51 ZAC 99.55 ETC 278.35 LVI -18.73

PLANETOCENTRIC CONIC

C3 10.591 VHL 3.254 DLA -29.22 RAL 338.63 RAD 6638.3 VEL 11.432 PTH 6.48 VHP 4.467 DPA -16.34 RAP 323.96 ECC 1.1743

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 1	2385.07	-1.64	61.58	190.87	137.55	17 21 46	1385.1	16.61	45.52
60.00	18 3 34	2168.13	3.48	46.96	195.78	130.18	18 39 42	1168.1	19.09	28.23
70.00	19 52 43	1847.08	9.33	25.31	200.14	123.01	20 23 30	847.1	21.96	4.09
80.00	22 26 34	1365.00	16.61	352.90	204.30	115.17	22 49 19	365.0	25.55	329.07
82.33	23 36 36	1140.47	20.69	338.13	206.14	111.10	23 55 36	140.5	27.55	312.98
100.00	1 13 22	6127.51	16.61	292.18	204.30	115.17	2 55 29	5127.5	25.55	268.35
110.00	0 56 5	6181.94	9.33	292.13	200.14	123.01	2 39 7	5181.9	21.96	270.92

DIFFERENTIAL CORRECTIONS

TDE -.2363 TRA -.5856 TC3 .4039 BAU .0652
RDE -.2505 RRA .0949 RC3 .2204 FAU .11851
FDE .0206 FRA 2.5140 FC3-9.6868 BSP 2046
BDE .3444 BRA .5932 BC3 .4601 FSP 1127

MID-COURSE EXECUTION ACCURACY

SGT 1279.6 SGR 501.8 SG3 699.1
RRT -.0079 RRF .0125 RTF -.7401
SGB 1374.5 R23 -.0056 R13 .7401
SG1 1279.6 SG2 501.8 THA 179.79

ORBIT DETERMINATION ACCURACY

ST 27.3 SR 22.2 SS 29.6
CRT .6711 CRS -.1035 CST .6631
LSA 37.6 MSA 26.5 SSA 1.5
EL1 32.4 EL2 13.9 ALF 36.42

LAUNCH DATE MAY 11 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 16 1971

HELIOCENTRIC CONIC DISTANCE 390.592 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.513 GAL -.17 AZL 91.84 HCA 129.50 SMA 189.66 ECC .20341 INC 1.8407 V1 29.491
RP 208.16 LAP -1.42 LOP 359.19 VP 23.986 GAP 10.33 AZP 88.83 TAL 358.99 TAP 128.49 RCA 151.08 APO 228.24 V2 26.323
RC 91.337 GL -18.91 GP -.08 ZAL 98.82 ZAP 141.40 ETS 180.14 ZAE 178.52 ETE 62.74 ZAC 99.60 ETC 278.26 LVI -18.63

PLANETOCENTRIC CONIC

C3 10.381 VHL 3.222 DLA -29.42 RAL 338.58 RAD 6638.2 VEL 11.423 PTH 6.47 VHP 4.343 DPA -16.46 RAP 323.61 ECC 1.1708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 58	2376.23	-1.20	61.21	190.70	137.56	17 22 34	1376.2	17.03	45.12
60.00	18 5 4	2157.83	3.93	46.47	195.62	130.14	18 41 2	1157.8	19.51	27.68
70.00	19 55 21	1833.41	9.83	24.57	200.02	122.87	20 25 55	833.4	22.38	3.25
80.00	22 35 31	1331.41	17.57	350.87	204.37	114.54	22 57 43	331.4	26.16	326.77
81.52	23 29 59	1157.00	20.93	339.45	205.87	111.17	23 49 16	157.0	27.79	314.25
100.00	1 22 19	6093.92	17.57	290.15	204.37	114.54	3 3 53	5093.9	26.16	266.04
110.00	0 58 44	6168.27	9.83	291.40	200.02	122.87	2 41 32	5168.3	22.38	270.08

DIFFERENTIAL CORRECTIONS

TDE -.2419 TRA -.5687 TC3 .3502 BAU .0575
RDE -.2438 RRA .0925 RC3 .2208 FAU .12412
FDE .0304 FRA 2.6359 FC-10.3512 BSP 2060
BDE .3435 BRA .5761 BC3 .4140 FSP 1214

MID-COURSE EXECUTION ACCURACY

SGT 1258.5 SGR 493.9 SG3 740.5
RRT -.0010 RRF .0104 RTF -.[illegible]10
SGB 1352.0 R23 -.0095 R13 .7210
SG1 1258.5 SG2 493.9 THA 179.97

ORBIT DETERMINATION ACCURACY

ST 27.7 SR 21.9 SS 30.5
CRT .6892 CRS -.0943 CST .6914
LSA 38.3 MSA 26.7 SSA 1.5
EL1 32.6 EL2 13.4 ALF 35.48

LAUNCH DATE MAY 11 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 394.654 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.483 GAL -.15 AZL 91.84 HCA 130.75 SMA 189.13 ECC .20117 INC 1.8402 V1 29.491
RP 208.32 LAP -1.39 LOP .44 VP 23.925 GAP 10.06 AZP 88.80 TAL 359.09 TAP 129.84 RCA 151.08 APO 227.17 V2 26.304
RC 93.190 GL -19.08 GP -.08 ZAL 98.70 ZAP 139.76 ETS 180.12 ZAE 178.70 ETE 114.10 ZAC 99.65 ETC 278.20 LVI -18.53

PLANETOCENTRIC CONIC

C3 10.187 VHL 3.192 DLA -29.61 RAL 338.54 RAD 6638.1 VEL 11.414 PTH 6.47 VHP 4.225 DPA -16.59 RAP 323.22 ECC 1.1677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 43 54	2368.01	-.78	60.87	190.55	137.57	17 23 22	1368.0	17.43	44.74
60.00	18 6 31	2148.22	4.35	46.01	195.48	130.11	18 42 19	1148.2	19.89	27.15
70.00	19 57 54	1820.57	10.31	23.88	199.91	122.74	20 28 14	820.6	22.77	2.46
80.00	22 46 7	1293.11	18.64	348.53	204.52	113.76	23 7 40	293.1	26.81	324.10
80.82	23 24 25	1170.60	21.15	340.55	205.63	111.23	23 43 55	170.6	28.01	315.30
100.00	1 32 54	6055.62	18.64	287.80	204.52	113.76	3 13 50	5055.6	26.81	263.38
110.00	1 1 16	6155.43	10.31	290.70	199.91	122.74	2 43 51	5155.4	22.77	269.28

DIFFERENTIAL CORRECTIONS

TDE -.2270 TRA -.5400 TC3 .3441 BAU .0557
RDE -.2373 RRA .0901 RC3 .2207 FAU .13109
FDE .0022 FRA 2.7569 FC-11.1406 BSP 1830
BDE .3284 BRA .5475 BC3 .4088 FSP 1267

MID-COURSE EXECUTION ACCURACY

SGT 1207.4 SGR 485.7 SG3 787.1
RRT -.0052 RRF .0127 RTF -.7194
SGB 1301.4 R23 -.0082 R13 .7194
SG1 1207.4 SG2 485.7 THA 179.86

ORBIT DETERMINATION ACCURACY

ST 26.4 SR 21.5 SS 31.4
CRT .6839 CRS -.1254 CST .6329
LSA 37.7 MSA 26.9 SSA 1.5
EL1 31.3 EL2 13.2 ALF 36.61

LAUNCH DATE MAY 11 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 398.727 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.455	GAL	-.14	AZL	91.84	HCA	132.00	SMA	188.64	ECC	.19911	INC	1.8399	VI	29.491
RP	208.49	LAP	-1.37	LOP	1.69	VP	23.866	GAP	9.79	AZP	88.77	TAL	359.17	TAP	131.18	RCA	151.08	APO	226.20	V2	26.284
RC	95.074	GL	-19.23	GP	-.08	ZAL	98.62	ZAP	136.08	ETS	180.11	ZAE	177.90	ETE	149.41	ZAC	99.71	ETC	278.11	LVI	-18.41

PLANETOCENTRIC CONIC

C3	10.011	VHL	3.164	DLA	-29.78	RAL	338.53	RAD	6638.0	VEL	11.406	PTH	6.46	VHP	4.112	DPA	-16.73	RAP	322.80	ECC	1.1648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 48	2360.59	-.41	60.56	190.44	137.57	17 24 9	1360.6	17.79	44.39
60.00	18 7 53	2139.55	4.73	45.59	195.37	130.07	18 43 33	1139.6	20.23	26.68
70.00	20 0 17	1808.91	10.73	23.25	199.83	122.62	20 30 26	808.9	23.12	1.73
80.00	23 0 23	1243.75	19.96	345.46	204.83	112.68	23 21 7	243.7	27.55	320.62
80.25	23 19 55	1181.32	21.35	341.43	205.43	111.27	23 39 37	181.3	28.21	316.13
100.00	1 47 11	6006.26	19.96	284.74	204.83	112.68	3 27 17	5006.3	27.55	259.90
110.00	1 3 39	6143.77	10.73	290.07	199.83	122.62	2 46 3	5143.8	23.12	268.55

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2383	TRA	-.5265	TC3	.2502	BAU	.0446	SGT	1190.7	SGR	477.3	SG3	831.3	ST	27.1	SR	21.1	SS	32.4
RDE	-.2309	RRA	.0879	RC3	.2201	FAU	.13709	RRT	.0018	RRF	.0100	RTF	-.6826	CRT	.7088	CRS	-.1101	CST	.6177
FDE	.0184	FRA	2.8876	FC-11.8553		BSP	1890	SGB	1282.8	R23	.0115	R13	-.6826	LSA	38.6	MSA	27.1	SSA	1.5
BDE	.3318	BRA	.5338	BC3	.3333	FSP	1380	SG1	1190.7	SG2	477.3	THA	.05	EL1	32.0	EL2	12.6	ALF	35.09

LAUNCH DATE MAY 11 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 402.814 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.429	GAL	-.12	AZL	91.84	HCA	133.25	SMA	188.19	ECC	.19719	INC	1.8394	VI	29.491
RP	208.67	LAP	-1.34	LOP	2.93	VP	23.808	GAP	9.52	AZP	88.74	TAL	359.25	TAP	132.49	RCA	151.08	APO	225.30	V2	26.264
RC	96.908	GL	-19.37	GP	-.09	ZAL	98.56	ZAP	136.36	ETS	180.09	ZAE	176.71	ETE	163.22	ZAC	99.77	ETC	278.01	LVI	-18.28

PLANETOCENTRIC CONIC

C3	9.850	VHL	3.138	DLA	-29.94	RAL	338.53	RAD	6638.0	VEL	11.399	PTH	6.45	VHP	4.004	DPA	-16.88	RAP	322.33	ECC	1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 45 41	2353.78	-.07	60.28	190.35	137.58	17 24 55	1353.8	18.11	44.07
60.00	18 9 12	2131.60	5.08	45.21	195.29	130.03	18 44 44	1131.6	20.55	26.24
70.00	20 2 33	1798.16	11.13	22.66	199.76	122.50	20 32 31	798.2	23.44	1.06
79.75	23 16 8	1190.27	21.53	342.17	205.26	111.31	23 35 58	190.3	28.40	316.83
79.75	23 16 8	1190.27	21.53	342.17	205.26	111.31	23 35 58	190.3	28.40	316.83
79.75	23 16 8	1190.27	21.53	342.17	205.26	111.31	23 35 58	190.3	28.40	316.83
110.00	1 5 55	6133.03	11.13	289.49	199.76	122.50	2 48 8	5133.0	23.44	267.88

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2322	TRA	-.5027	TC3	.1975	BAU	.0388	SGT	1147.5	SGR	468.6	SG3	880.3	ST	26.5	SR	20.7	SS	33.3
RDE	-.2246	RRA	.0857	RC3	.2190	FAU	.14405	RRT	-.0008	RRF	.0129	RTF	-.6617	CRT	.7147	CRS	-.1318	CST	.5935
FDE	-.0032	FRA	3.0269	FC-12.6605		BSP	1793	SGB	1239.5	R23	-.0122	R13	.6617	LSA	38.6	MSA	27.3	SSA	1.5
BDE	.3230	BRA	.5100	BC3	.2949	FSP	1465	SG1	1147.5	SG2	468.6	THA	179.98	EL1	31.3	EL2	12.2	ALF	35.35

LAUNCH DATE MAY 11 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 406.912 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.405	GAL	-.11	AZL	91.84	HCA	134.49	SMA	187.78	ECC	.19542	INC	1.8389	VI	29.491
RP	208.85	LAP	-1.31	LOP	4.18	VP	23.752	GAP	9.27	AZP	88.71	TAL	359.30	TAP	133.79	RCA	151.08	APO	224.47	V2	26.243
RC	98.929	GL	-19.50	GP	-.09	ZAL	98.52	ZAP	134.60	ETS	180.07	ZAE	175.36	ETE	169.61	ZAC	99.84	ETC	277.91	LVI	-18.14

PLANETOCENTRIC CONIC

C3	9.703	VHL	3.115	DLA	-30.07	RAL	338.56	RAD	6637.9	VEL	11.393	PTH	6.45	VHP	3.902	DPA	-17.05	RAP	321.82	ECC	1.1597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 33	2347.68	.24	60.02	190.29	137.58	17 25 41	1347.7	18.41	43.79
60.00	18 10 27	2124.48	5.39	44.86	195.22	130.00	18 45 51	1124.5	20.83	25.85
70.00	20 4 39	1788.52	11.48	22.14	199.73	122.39	20 34 27	788.5	23.72	.45
79.33	23 13 5	1197.32	21.70	342.76	205.12	111.34	23 33 2	197.3	28.56	317.39
79.33	23 13 5	1197.32	21.70	342.76	205.12	111.34	23 33 2	197.3	28.56	317.39
79.33	23 13 5	1197.32	21.70	342.76	205.12	111.34	23 33 2	197.3	28.56	317.39
110.00	1 8 1	6123.38	11.48	288.96	199.73	122.39	2 50 4	5123.4	23.72	267.28

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2313	TRA	-.4797	TC3	.0960	BAU	.0308	SGT	1106.5	SGR	459.7	SG3	926.3	ST	26.2	SR	20.3	SS	34.4
RDE	-.2184	RRA	.0836	RC3	.2175	FAU	.14992	RRT	-.0043	RRF	.0170	RTF	-.6605	CRT	.7281	CRS	-.1468	CST	.5693
FDE	-.0195	FRA	3.1732	FC-13.3761		BSP	1720	SGB	1198.1	R23	-.0138	R13	.6205	LSA	38.9	MSA	27.6	SSA	1.5
BDE	.3181	BRA	.4870	BC3	.2378	FSP	1570	SG1	1106.5	SG2	459.7	THA	179.88	EL1	31.0	EL2	11.8	ALF	35.18

LAUNCH DATE MAY 11 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 26 1971

HELIOCENTRIC CONIC DISTANCE 411.021 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.383	GAL	-.11	AZL	91.84	HCA	135.73	SMA	187.40	ECC	.19379	INC	1.8385	VI	29.491
RP	209.04	LAP	-1.28	LOP	5.42	VP	23.697	GAP	9.01	AZP	88.68	TAL	359.34	TAP	135.07	RCA	151.08	APO	223.71	V2	26.221
RC	100.898	GL	-19.62	GP	-.10	ZAL	98.50	ZAP	132.80	ETS	180.05	ZAE	173.92	ETE	173.14	ZAC	99.91	ETC	277.79	LVI	-17.98

PLANETOCENTRIC CONIC

C3	9.570	VHL	3.094	DLA	-30.19	RAL	338.60	RAD	6637.8	VEL	11.387	PTH	6.44	VHP	3.805	DPA	-17.23	RAP	321.27	ECC	1.1575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 24	2342.23	.51	59.79	190.25	137.57	17 26 26	1342.2	18.67	43.53
60.00	18 11 37	2118.15	5.67	44.56	195.19	129.97	18 46 56	1118.1	21.08	25.50
70.00	20 6 34	1779.95	11.79	21.67	199.71	122.29	20 36 14	779.9	23.97	359.91
78.98	23 10 37	1203.03	21.85	343.25	205.01	111.36	23 30 40	203.0	28.70	317.64
78.98	23 10 37	1203.03	21.85	343.25	205.01	111.36	23 30 40	203.0	28.70	317.64
78.98	23 10 37	1203.03	21.85	343.25	205.01	111.36	23 30 40	203.0	28.70	317.64
110.00	1 9 57	6114.81	11.79	288.50	199.71	122.29	2 51 52	5114.8	23.97	266.73

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2334	TRA	-.4536	TC3	.0151	BAU	.0276	SGT	1063.8	SGR	450.5	SG3	977.3	ST	26.1	SR	19.8	SS	35.3
RDE	-.2123	RRA	.0816	RC3	.2155	FAU	.15740	RRT	.0026	RRF	.0142	RTF	-.5794	CRT	.7478	CRS	-.1375	CST	.5487
FDE	-.0088	FRA	3.3116	FC-14.2385		BSP	1481	SGB	1155.3	R23	.0161	R13	-.5794	LSA	39.4	MSA	27.6	SSA	1.5
BDE	.3155	BRA	.4609	BC3	.2160	FSP	1603	SG1	1063.8	SG2	450.5	THA	.08	EL1	30.8	EL2	11.1	ALF	34.84

LAUNCH DATE MAY 11 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 28 1971

HELIOCENTRIC CONIC DISTANCE 415.139 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.363	GAL	-.10	AZL	91.84	HCA	136.97	SMA	187.05	ECC	.19229	INC	1.8379
V1	29.491	RP	209.24	LAP	-1.25	LOP	6.66	VP	23.644	GAP	8.77	AZP	88.66	TAL	359.36	TAP	136.34	RCA	151.08
APO	223.02	V2	26.198	RC	102.893	GL	-19.74	GP	-.10	ZAL	98.51	ZAP	130.97	ETS	180.03	ZAE	172.39	ETE	175.32
ZAC	99.99	ETC	277.67	LVI	-17.81														

PLANETOCENTRIC CONIC

C3	9.450	VHL	3.074	DLA	-30.28	RAL	338.67	RAD	6637.8	VEL	11.382	PTH	6.43	VHP	3.714	DPA	-17.41	RAP	320.68	ECC	1.1555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 13	2337.48	.75	59.60	190.23	137.57	17 27 11	1337.5	18.89	43.31
60.00	18 12 44	2112.62	5.91	44.29	195.17	129.94	18 47 56	1112.6	21.29	25.19
70.00	20 8 20	1772.49	12.06	21.26	199.71	122.20	20 37 53	772.5	24.18	359.44
78.69	23 8 44	1207.35	21.98	343.63	204.93	111.38	23 28 51	207.3	28.82	318.19
78.69	23 8 44	1207.35	21.98	343.63	204.93	111.38	23 28 51	207.3	28.82	318.19
78.69	23 8 44	1207.35	21.98	343.63	204.93	111.38	23 28 51	207.3	28.82	318.19
110.00	1 11 42	6107.35	12.06	288.09	199.71	122.20	2 53 30	5107.3	24.18	266.26

DIFFERENTIAL CORRECTIONS

TDE	-.2328	TRA	-.4299	TC3	-.1082	BAU	.0302
RDE	-.2063	RRA	.0797	RC3	.2132	FAU	.16289
FDE	-.0160	FRA	3.4787	FC-14.9235		BSP	1361
BDE	.3110	BRA	.4372	BC3	.2391	FSP	1714

MID-COURSE EXECUTION ACCURACY

SGT	1026.5	SGR	441.1	SG3	1024.3
RRT	-.0032	RRF	.0191	RTF	-.5213
SGB	1117.3	R23	-.0170	R13	.5213
SG1	1026.5	SG2	441.1	THA	179.90

ORBIT DETERMINATION ACCURACY

ST	25.8	SR	19.4	SS	36.4
CRT	.7623	CRS	-.1438	CST	.5245
LSA	39.9	MSA	27.7	SSA	1.5
EL1	30.5	EL2	10.6	ALF	34.65

LAUNCH DATE MAY 11 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 30 1971

HELIOCENTRIC CONIC DISTANCE 419.267 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.344	GAL	-.10	AZL	91.84	HCA	138.21	SMA	186.73	ECC	.19092	INC	1.8374
V1	29.491	RP	209.44	LAP	-1.22	LOP	7.90	VP	23.592	GAP	8.53	AZP	88.63	TAL	359.37	TAP	137.58	RCA	151.08
APO	222.38	V2	26.174	RC	104.913	GL	-19.84	GP	-.10	ZAL	98.54	ZAP	129.10	ETS	180.01	ZAE	170.80	ETE	176.76
ZAC	100.07	ETC	277.54	LVI	-17.63														

PLANETOCENTRIC CONIC

C3	9.341	VHL	3.056	DLA	-30.36	RAL	338.75	RAD	6637.7	VEL	11.377	PTH	6.43	VHP	3.627	DPA	-17.61	RAP	320.05	ECC	1.1537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 1	2333.35	.96	59.42	190.24	137.57	17 27 54	1333.3	19.09	43.12
60.00	18 13 45	2107.89	6.12	44.06	195.18	129.91	18 48 53	1107.9	21.48	24.93
70.00	20 9 54	1766.17	12.29	20.92	199.73	122.12	20 39 20	766.2	24.36	359.04
78.46	23 7 23	1210.45	22.09	343.91	204.89	111.38	23 27 34	210.5	28.92	318.44
78.46	23 7 23	1210.45	22.09	343.91	204.89	111.38	23 27 34	210.5	28.92	318.44
78.46	23 7 23	1210.45	22.09	343.91	204.89	111.38	23 27 34	210.5	28.92	318.44
110.00	1 13 17	6101.02	12.29	287.74	199.73	122.12	2 54 58	5101.0	24.36	265.86

DIFFERENTIAL CORRECTIONS

TDE	-.2340	TRA	-.3989	TC3	-.2116	BAU	.0373
RDE	-.2004	RRA	.0777	RC3	.2104	FAU	.17035
FDE	-.0105	FRA	3.6282	FC-15.7884		BSP	1244
BDE	.3081	BRA	.4064	BC3	.2984	FSP	1827

MID-COURSE EXECUTION ACCURACY

SGT	980.0	SGR	431.4	SG3	1076.6
RRT	.0043	RRF	.0182	RTF	-.4565
SGB	1070.7	R23	.0206	R13	-.4565
SG1	980.0	SG2	431.4	THA	.13

ORBIT DETERMINATION ACCURACY

ST	25.5	SR	19.0	SS	37.3
CRT	.7843	CRS	-.1396	CST	.4979
LSA	40.4	MSA	27.8	SSA	1.5
EL1	30.2	EL2	9.9	ALF	34.49

LAUNCH DATE MAY 11 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 1 1971

HELIOCENTRIC CONIC DISTANCE 423.403 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.327	GAL	-.10	AZL	91.84	HCA	139.44	SMA	186.44	ECC	.18967	INC	1.8369
V1	29.491	RP	209.66	LAP	-1.19	LOP	9.13	VP	23.541	GAP	8.29	AZP	88.60	TAL	359.36	TAP	136.80	RCA	151.08
APO	221.80	V2	26.150	RC	106.958	GL	-19.93	GP	-.11	ZAL	98.59	ZAP	127.19	ETS	179.99	ZAE	169.15	ETE	177.77
ZAC	100.15	ETC	277.40	LVI	-17.44														

PLANETOCENTRIC CONIC

C3	9.243	VHL	3.040	DLA	-30.42	RAL	338.86	RAD	6637.6	VEL	11.373	PTH	6.43	VHP	3.545	DPA	-17.82	RAP	319.38	ECC	1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 48	2329.89	1.13	59.28	190.28	137.57	17 28 38	1329.9	19.26	42.95
60.00	18 14 43	2103.96	6.29	43.87	195.22	129.89	18 49 47	1104.0	21.63	24.71
70.00	20 11 17	1760.99	12.48	20.63	199.77	122.05	20 40 38	761.0	24.51	358.70
78.29	23 6 33	1212.43	22.18	344.09	204.87	111.37	23 26 45	212.4	29.00	318.60
78.29	23 6 33	1212.43	22.18	344.09	204.87	111.37	23 26 45	212.4	29.00	318.60
78.29	23 6 33	1212.43	22.18	344.09	204.87	111.37	23 26 45	212.4	29.00	318.60
110.00	1 14 39	6095.85	12.48	287.46	199.77	122.05	2 56 15	5095.8	24.51	265.53

DIFFERENTIAL CORRECTIONS

TDE	-.2316	TRA	-.3684	TC3	-.3501	BAU	.0503
RDE	-.1945	RRA	.0759	RC3	.2073	FAU	.17646
FDE	-.0244	FRA	3.7893	FC-16.5275		BSP	1113
BDE	.3024	BRA	.3761	BC3	.4069	FSP	1935

MID-COURSE EXECUTION ACCURACY

SGT	940.3	SGR	421.6	SG3	1125.1
RRT	-.0008	RRF	.0225	RTF	-.5382
SGB	1030.5	R23	-.0221	R13	.3682
SG1	940.3	SG2	421.6	THA	179.97

ORBIT DETERMINATION ACCURACY

ST	24.9	SR	18.5	SS	38.3
CRT	.8017	CRS	-.1504	CST	.4629
LSA	40.7	MSA	27.8	SSA	1.5
EL1	29.6	EL2	9.3	ALF	34.64

LAUNCH DATE MAY 11 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 427.546 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.311	GAL	-.11	AZL	91.84	HCA	140.68	SMA	186.18	ECC	.18852	INC	1.8364
V1	29.491	RP	209.87	LAP	-1.16	LOP	10.36	VP	23.492	GAP	8.06	AZP	88.58	TAL	359.33	TAP	140.01	RCA	151.08
APO	221.28	V2	26.124	RC	109.028	GL	-20.01	GP	-.12	ZAL	98.67	ZAP	125.25	ETS	179.96	ZAE	167.44	ETE	178.50
ZAC	100.24	ETC	277.25	LVI	-17.23														

PLANETOCENTRIC CONIC

C3	9.156	VHL	3.026	DLA	-30.46	RAL	338.99	RAD	6637.6	VEL	11.369	PTH	6.42	VHP	3.469	DPA	-18.03	RAP	318.67	ECC	1.1507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 33	2327.05	1.28	59.16	190.34	137.56	17 29 20	1327.1	19.39	42.82
60.00	18 15 36	2100.79	6.43	43.72	195.27	129.87	18 50 36	1100.8	21.76	24.53
70.00	20 12 27	1756.95	12.63	20.41	199.82	122.00	20 41 44	757.0	24.62	358.45
78.17	23 6 11	1213.39	22.25	344.20	204.89	111.36	23 26 24	213.4	29.06	318.69
78.17	23 6 11	1213.39	22.25	344.20	204.89	111.36	23 26 24	213.4	29.06	318.69
78.17	23 6 11	1213.39	22.25	344.20	204.89	111.36	23 26 24	213.4	29.06	318.69
110.00	1 15 50	6091.81	12.63	287.24	199.82	122.00	2 57 21	5091.8	24.62	265.27

DIFFERENTIAL CORRECTIONS

TDE	-.2249	TRA	-.3350	TC3	-.4793	BAU	.0637
RDE	-.1886	RRA	.0740	RC3	.2038	FAU	.18329
FDE	-.0689	FRA	3.9478	FC-17.3310		BSP	835
BDE	.2936	BRA	.3431	BC3	.5208	FSP	1979

MID-COURSE EXECUTION ACCURACY

SGT	898.4	SGR	411.7	SG3	1175.9
RRT	-.0086	RRF	.0292	RTF	-.2687
SGB	988.2	R23	-.0262	R13	.2687
SG1	898.4	SG2	411.6	THA	179.71

ORBIT DETERMINATION ACCURACY

ST	24.0	SR	18.0	SS	39.3
CRT	.8170	CRS	-.1821	CST	.4100
LSA	41.0	MSA	27.6	SSA	1.4
EL1	28.7	EL2	8.7	ALF	35.27

LAUNCH DATE MAY 11 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 5 1971

DISTANCE 431.697 EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.08 LAL .00 LOL 229.67 VL 32.297 GAL -.11 AZL 91.84 HCA 141.91 SMA 185.94 ECC .18748 INC 1.8357 V1 29.491
RP 210.10 LAP -1.13 LOP 11.59 VP 23.443 GAP 7.83 AZP 88.56 TAL 359.29 TAP 141.20 RCA 151.08 APO 220.80 V2 26.098
RC 111.121 GL -20.08 GP -.12 ZAL 98.78 ZAP 123.28 ETS 179.93 ZAE 165.67 ETE 179.04 ZAC 100.32 ETC 277.09 LVI -17.01

PLANETOCENTRIC CONIC

C3 9.078 VHL 3.013 DLA -30.49 RAL 339.14 RAD 6637.6 VEL 11.366 PTH 6.42 VHP 3.397 DPA -18.26 RAP 317.93 ECC 1.1494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 51 17	2324.63	1.39	59.07	190.42	137.56	17 30 2	1324.8	19.50	42.71
60.00	18 16 24	2098.38	6.53	43.60	195.35	129.86	18 51 22	1098.4	21.85	24.40
70.00	20 13 26	1754.03	12.73	20.25	199.90	121.96	20 42 40	754.0	24.71	358.26
78.10	23 6 17	1213.30	22.31	344.21	204.93	111.33	23 26 30	213.3	29.10	318.69
78.10	23 6 17	1213.30	22.31	344.21	204.93	111.33	23 26 30	213.3	29.10	318.69
78.10	23 6 17	1213.30	22.31	344.21	204.93	111.33	23 26 30	213.3	29.10	318.69
110.00	1 16 48	6088.88	12.73	287.07	199.90	121.96	2 58 17	5088.9	24.71	265.08

DIFFERENTIAL CORRECTIONS

TDE -.2226 TRA -.2928 TC3 -.5716 BAU .0735
RDE -.1831 RRA .0722 RC3 .1997 FAU .19393
FDE -.0623 FRA 4.0727 FC-18.4941 BSP 633
BDE .2882 BRA .3015 BC3 .6054 FSP 2111

MID-COURSE EXECUTION ACCURACY

SGT 845.7 SGR 401.3 SG3 1237.0
RRT .0089 RRF .0229 RTF -.1584
SGB 936.0 R23 .0247 R13 -.1583
SG1 845.7 SG2 401.3 THA .31

ORBIT DETERMINATION ACCURACY

ST 23.3 SR 17.6 SS 39.9
CRT .8437 CRS -.1767 CST .3704
LSA 41.2 MSA 27.3 SSA 1.4
EL1 28.1 EL2 7.8 ALF 35.67

LAUNCH DATE MAY 11 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 7 1971

DISTANCE 435.851 EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.08 LAL .00 LOL 229.67 VL 32.285 GAL -.12 AZL 91.84 HCA 143.13 SMA 185.73 ECC .18655 INC 1.8351 V1 29.491
RP 210.33 LAP -1.10 LOP 12.82 VP 23.396 GAP 7.61 AZP 88.53 TAL 359.23 TAP 142.36 RCA 151.08 APO 220.37 V2 26.071
RC 113.239 GL -20.15 GP -.13 ZAL 98.91 ZAP 121.29 ETS 179.91 ZAE 163.86 ETE 179.44 ZAC 100.41 ETC 276.92 LVI -16.78

PLANETOCENTRIC CONIC

C3 9.011 VHL 3.002 DLA -30.49 RAL 339.31 RAD 6637.5 VEL 11.363 PTH 6.42 VHP 3.330 DPA -18.49 RAP 317.16 ECC 1.1483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 0	2323.33	1.46	59.01	190.53	137.56	17 30 44	1323.3	19.57	42.64
60.00	18 17 8	2096.85	6.60	43.53	195.45	129.85	18 52 5	1096.9	21.91	24.31
70.00	20 14 11	1752.44	12.79	20.16	199.99	121.94	20 43 23	752.4	24.75	358.16
78.10	23 6 55	1212.08	22.35	344.14	205.01	111.30	23 27 7	212.1	29.12	318.60
78.10	23 6 55	1212.08	22.35	344.14	205.01	111.30	23 27 7	212.1	29.12	318.60
78.10	23 6 55	1212.08	22.35	344.14	205.01	111.30	23 27 7	212.1	29.12	318.60
110.00	1 17 33	6087.30	12.79	286.99	199.99	121.94	2 59 1	5087.3	24.75	264.98

DIFFERENTIAL CORRECTIONS

TDE -.2327 TRA -.2680 TC3 -.7910 BAU .0982
RDE -.1773 RRA .0704 RC3 .1960 FAU .19762
FDE -.0331 FRA 4.2893 FC-18.9866 BSP 472
BDE .2926 BRA .2771 BC3 .8149 FSP 2189

MID-COURSE EXECUTION ACCURACY

SGT 880.5 SGR 390.8 SG3 1282.1
RRT .0055 RRF .0280 RTF -.0153
SGB 963.4 R23 .0281 R13 -.0152
SG1 880.5 SG2 390.8 THA .17

ORBIT DETERMINATION ACCURACY

ST 23.9 SR 17.1 SS 41.3
CRT .8677 CRS -.1565 CST .3453
LSA 42.4 MSA 27.7 SSA 1.4
EL1 28.5 EL2 7.1 ALF 34.20

LAUNCH DATE MAY 11 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 9 1971

DISTANCE 440.013 EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.08 LAL .00 LOL 229.67 VL 32.273 GAL -.13 AZL 91.83 HCA 144.36 SMA 185.53 ECC .18571 INC 1.8345 V1 29.491
RP 210.57 LAP -1.07 LOP 14.04 VP 23.349 GAP 7.40 AZP 88.51 TAL 359.15 TAP 143.51 RCA 151.08 APO 219.99 V2 26.044
RC 115.380 GL -20.20 GP -.13 ZAL 99.07 ZAP 119.27 ETS 179.88 ZAE 162.00 ETE 179.75 ZAC 100.51 ETC 276.75 LVI -16.54

PLANETOCENTRIC CONIC

C3 8.952 VHL 2.992 DLA -30.48 RAL 339.51 RAD 6637.5 VEL 11.360 PTH 6.41 VHP 3.268 DPA -18.72 RAP 316.36 ECC 1.1473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 52 42	2322.38	1.51	58.97	190.66	137.56	17 31 25	1322.4	19.61	42.60
60.00	18 17 47	2096.01	6.63	43.49	195.57	129.84	18 52 43	1096.0	21.94	24.26
70.00	20 14 45	1751.88	12.81	20.13	200.10	121.93	20 43 57	751.9	24.77	358.12
78.13	23 7 59	1209.90	22.37	343.98	205.11	111.26	23 28 9	209.9	29.12	318.44
78.13	23 7 59	1209.90	22.37	343.98	205.11	111.26	23 28 9	209.9	29.12	318.44
78.13	23 7 59	1209.90	22.37	343.98	205.11	111.26	23 28 9	209.9	29.12	318.44
110.00	1 18 7	6086.74	12.81	286.96	200.10	121.93	2 59 34	5086.7	24.77	264.95

DIFFERENTIAL CORRECTIONS

TDE -.2329 TRA -.2296 TC3 -.9540 BAU .1164
RDE -.1717 RRA .0686 RC3 .1916 FAU .20476
FDE -.0305 FRA 4.4365 FC-19.8027 BSP 268
BDE .2893 BRA .2396 BC3 .9730 FSP 2293

MID-COURSE EXECUTION ACCURACY

SGT 886.0 SGR 380.1 SG3 1334.3
RRT .0100 RRF .0290 RTF -.170
SGB 964.1 R23 .0274 R13 .1271
SG1 886.0 SG2 380.1 THA .30

ORBIT DETERMINATION ACCURACY

ST 23.6 SR 16.6 SS 42.2
CRT .8911 CRS -.1549 CST .2993
LSA 43.1 MSA 27.6 SSA 1.4
EL1 28.1 EL2 6.3 ALF 34.04

LAUNCH DATE MAY 11 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 11 1971

DISTANCE 444.179 EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.08 LAL .00 LOL 229.67 VL 32.263 GAL -.15 AZL 91.83 HCA 145.58 SMA 185.36 ECC .18496 INC 1.8337 V1 29.491
RP 210.82 LAP -1.04 LOP 15.26 VP 23.304 GAP 7.19 AZP 88.49 TAL 359.06 TAP 144.64 RCA 151.08 APO 219.65 V2 26.015
RC 117.545 GL -20.25 GP -.14 ZAL 99.25 ZAP 117.23 ETS 179.85 ZAE 160.10 ETE 179.99 ZAC 100.60 ETC 276.57 LVI -16.28

PLANETOCENTRIC CONIC

C3 8.901 VHL 2.983 DLA -30.48 RAL 339.72 RAD 6637.5 VEL 11.358 PTH 6.41 VHP 3.210 DPA -18.96 RAP 315.53 ECC 1.1468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 53 23	2322.03	1.53	58.95	190.82	137.56	17 32 5	1322.0	19.63	42.58
60.00	18 18 22	2095.91	6.64	43.48	195.71	129.84	18 53 18	1095.9	21.95	24.26
70.00	20 15 6	1752.44	12.79	20.16	200.22	121.94	20 44 19	752.4	24.75	358.16
78.22	23 9 29	1206.76	22.38	343.75	205.24	111.20	23 29 36	206.8	29.10	318.20
78.22	23 9 29	1206.76	22.38	343.75	205.24	111.20	23 29 36	206.8	29.10	318.20
78.22	23 9 29	1206.76	22.38	343.75	205.24	111.20	23 29 36	206.8	29.10	318.20
110.00	1 18 29	6087.29	12.79	286.99	200.22	121.94	2 59 56	5087.3	24.75	264.98

DIFFERENTIAL CORRECTIONS

TDE -.2355 TRA -.1908 TC3-1.1373 BAU .1372
RDE -.1661 RRA .0668 RC3 .1872 FAU .21106
FDE -.0073 FRA 4.6249 FC-20.5277 BSP 31
BDE .2882 BRA .2021 BC3 1.1527 FSP 2385

MID-COURSE EXECUTION ACCURACY

SGT 919.6 SGR 369.2 SG3 1382.9
RRT .0152 RRF .0287 RTF .2677
SGB 991.0 R23 .0239 R13 .2678
SG1 919.7 SG2 369.2 THA .42

ORBIT DETERMINATION ACCURACY

ST 23.5 SR 16.1 SS 43.2
CRT .9142 CRS -.1410 CST .2597
LSA 43.8 MSA 27.5 SSA 1.4
EL1 28.0 EL2 5.5 ALF 33.50

LAUNCH DATE MAY 11 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 13 1971

HELIOCENTRIC CONIC DISTANCE 448.350 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.254 GAL -.16 AZL 91.83 HCA 146.80 SMA 185.21 ECC .18430 INC 1.8330 V1 29.491
RP 211.07 LAP -1.00 LOP 16.48 VP 23.259 GAP 6.98 AZP 88.47 TAL 358.95 TAP 145.75 RCA 151.08 APO 219.34 V2 25.986
RC 119.734 GL -20.28 GP -.15 ZAL 99.45 ZAP 115.17 ETS 179.82 ZAE 158.16 ETE 180.18 ZAC 100.69 ETC 276.36 LVI -16.02

PLANETOCENTRIC CONIC

C3 8.858 VHL 2.976 DLA -30.40 RAL 339.96 RAD 6637.4 VEL 11.356 PTH 6.41 VHP 3.157 DPA -19.20 RAP 314.67 ECC 1.1458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 2	2322.26	1.52	58.96	190.99	137.56	17 32 44	1322.3	19.62	42.59
60.00	18 18 53	2096.53	6.61	43.51	195.87	129.85	18 53 49	1096.5	21.92	24.29
70.00	20 15 16	1754.07	12.73	20.25	200.36	121.96	20 44 31	754.1	24.70	358.26
78.36	23 11 27	1202.60	22.37	343.44	205.40	111.14	23 31 29	202.6	29.07	317.88
78.36	23 11 27	1202.60	22.37	343.44	205.40	111.14	23 31 29	202.6	29.07	317.88
78.36	23 11 27	1202.60	22.37	343.44	205.40	111.14	23 31 29	202.6	29.07	317.88
110.00	1 18 39	6088.93	12.73	287.08	200.36	121.96	3 0 8	5088.9	24.70	265.09

DIFFERENTIAL CORRECTIONS

TDE -.2363 TRA -.1473 TC3-1.3124 BAU .1569
RDE -.1605 RRA .0650 RC3 .1825 FAU .21893
FDE .0080 FRA 4.7630 FC-21.3960 BSP 231
BDE .2856 BRA .1610 BC3 1.3251 FSP 2480

MID-COURSE EXECUTION ACCURACY

SGT 961.9 SGR 358.1 SG3 1433.3
RRT .0231 RRF .0259 RTF .4041
SGB 1026.5 R23 .0151 R13 .4041
SG1 962.0 SG2 358.0 THA .57

ORBIT DETERMINATION ACCURACY

ST 23.3 SR 15.6 SS 43.8
CRT .9364 CRS -.1325 CST .2088
LSA 44.2 MSA 27.4 SSA 1.3
EL1 27.7 EL2 4.6 ALF 33.12

LAUNCH DATE MAY 11 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 15 1971

HELIOCENTRIC CONIC DISTANCE 452.525 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.246 GAL -.18 AZL 91.83 HCA 148.01 SMA 185.08 ECC .18371 INC 1.8321 V1 29.491
RP 211.33 LAP -.97 LOP 17.70 VP 23.214 GAP 6.77 AZP 88.45 TAL 358.82 TAP 146.84 RCA 151.08 APO 219.08 V2 25.957
RC 121.945 GL -20.31 GP -.15 ZAL 99.68 ZAP 113.09 ETS 179.79 ZAE 156.19 ETE 180.32 ZAC 100.78 ETC 276.19 LVI -15.75

PLANETOCENTRIC CONIC

C3 8.823 VHL 2.970 DLA -30.33 RAL 340.21 RAD 6637.4 VEL 11.355 PTH 6.41 VHP 3.109 DPA -19.44 RAP 313.79 ECC 1.1452

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 54 40	2323.05	1.48	58.99	191.19	137.56	17 33 23	1323.1	19.58	42.63
60.00	18 19 19	2097.83	6.55	43.58	196.05	129.85	18 54 17	1097.8	21.87	24.37
70.00	20 15 16	1756.72	12.63	20.40	200.51	122.00	20 44 32	756.7	24.63	358.43
78.55	23 13 51	1197.45	22.34	343.04	205.58	111.07	23 33 48	197.5	29.01	317.49
78.55	23 13 51	1197.45	22.34	343.04	205.58	111.07	23 33 48	197.5	29.01	317.49
78.55	23 13 51	1197.45	22.34	343.04	205.58	111.07	23 33 48	197.5	29.01	317.49
110.00	1 18 38	6091.58	12.63	287.22	200.51	122.00	3 0 10	5091.6	24.63	265.26

DIFFERENTIAL CORRECTIONS

TDE -.2315 TRA -.1033 TC3-1.5096 BAU .1793
RDE -.1550 RRA .0632 RC3 .1778 FAU .22432
FDE -.0381 FRA 4.9596 FC-22.0095 BSP 559
BDE .2786 BRA .1211 BC3 1.5201 FSP 2506

MID-COURSE EXECUTION ACCURACY

SGT 1028.2 SGR 347.1 SG3 1481.0
RRT .0173 RRF .0347 RTF .5220
SGB 1085.2 R23 .0244 R13 .5221
SG1 1028.2 SG2 347.0 THA .38

ORBIT DETERMINATION ACCURACY

ST 22.6 SR 15.1 SS 45.0
CRT .9545 CRS -.1598 CST .1233
LSA 45.1 MSA 26.9 SSA 1.3
EL1 26.9 EL2 3.8 ALF 33.22

LAUNCH DATE MAY 11 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 17 1971

HELIOCENTRIC CONIC DISTANCE 456.702 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.239 GAL -.20 AZL 91.83 HCA 149.23 SMA 184.96 ECC .18321 INC 1.8312 V1 29.491
RP 211.60 LAP -.94 LOP 18.91 VP 23.171 GAP 6.57 AZP 88.43 TAL 358.68 TAP 147.91 RCA 151.08 APO 218.85 V2 25.926
RC 124.177 GL -20.33 GP -.16 ZAL 99.93 ZAP 111.01 ETS 179.76 ZAE 154.20 ETE 180.44 ZAC 100.87 ETC 275.99 LVI -15.47

PLANETOCENTRIC CONIC

C3 8.796 VHL 2.966 DLA -30.25 RAL 340.49 RAD 6637.4 VEL 11.354 PTH 6.41 VHP 3.065 DPA -19.68 RAP 312.91 ECC 1.1448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 18	2324.45	1.41	59.05	191.41	137.56	17 34 2	1324.5	19.51	42.69
60.00	18 19 42	2099.89	6.46	43.68	196.25	129.87	18 54 42	1099.9	21.79	24.48
70.00	20 15 4	1760.48	12.50	20.61	200.69	122.05	20 44 24	760.5	24.52	358.67
78.80	23 16 48	1190.99	22.29	342.54	205.80	110.99	23 36 39	191.0	28.94	316.99
78.80	23 16 48	1190.99	22.29	342.54	205.80	110.99	23 36 39	191.0	28.94	316.99
78.80	23 16 48	1190.99	22.29	342.54	205.80	110.99	23 36 39	191.0	28.94	316.99
110.00	1 18 26	6095.34	12.50	287.43	200.69	122.05	3 0 1	5095.3	24.52	265.50

DIFFERENTIAL CORRECTIONS

TDE -.2392 TRA -.0604 TC3-1.7237 BAU .2037
RDE -.1493 RRA .0613 RC3 .1729 FAU .23080
FDE .0498 FRA 5.1155 FC-22.7159 BSP 777
BDE .2820 BRA .0861 BC3 1.7323 FSP 2628

MID-COURSE EXECUTION ACCURACY

SGT 1130.1 SGR 335.5 SG3 1527.2
RRT .0261 RRF .0269 RTF .5401
SGB 1178.8 R23 .0095 R13 .6101
SG1 1130.1 SG2 335.3 THA .49

ORBIT DETERMINATION ACCURACY

ST 23.2 SR 14.6 SS 45.8
CRT .9710 CRS -.1114 CST .1065
LSA 45.9 MSA 27.2 SSA 1.3
EL1 27.3 EL2 3.0 ALF 31.74

LAUNCH DATE MAY 11 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 460.883 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.233 GAL -.23 AZL 91.83 HCA 150.43 SMA 184.86 ECC .18278 INC 1.8302 V1 29.491
RP 211.87 LAP -.90 LOP 20.12 VP 23.128 GAP 6.38 AZP 88.41 TAL 358.53 TAP 148.96 RCA 151.07 APO 218.65 V2 25.896
RC 126.431 GL -20.34 GP -.17 ZAL 100.20 ZAP 108.91 ETS 179.73 ZAE 152.17 ETE 180.52 ZAC 100.96 ETC 275.79 LVI -15.18

PLANETOCENTRIC CONIC

C3 8.776 VHL 2.962 DLA -30.15 RAL 340.79 RAD 6637.4 VEL 11.353 PTH 6.41 VHP 3.025 DPA -19.92 RAP 312.00 ECC 1.1444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 53	2326.37	1.31	59.13	191.65	137.56	17 34 40	1326.4	19.42	42.78
60.00	18 20 0	2102.59	6.35	43.81	196.47	129.88	18 55 3	1102.6	21.69	24.63
70.00	20 14 42	1765.16	12.33	20.86	200.87	122.11	20 44 7	765.2	24.39	358.97
79.10	23 20 14	1183.38	22.23	341.95	206.03	110.90	23 39 57	183.4	28.85	316.41
79.10	23 20 14	1183.38	22.23	341.95	206.03	110.90	23 39 57	183.4	28.85	316.41
79.10	23 20 14	1183.38	22.23	341.95	206.03	110.90	23 39 57	183.4	28.85	316.41
110.00	1 18 4	6100.02	12.33	287.69	200.87	122.11	2 59 44	5100.0	24.39	265.79

DIFFERENTIAL CORRECTIONS

TDE -.2392 TRA -.0133 TC3-1.9452 BAU .2291
RDE -.1438 RRA .0595 RC3 .1681 FAU .23498
FDE .0688 FRA 5.2872 FC-23.1815 BSP 1067
BDE .2791 BRA .0610 BC3 1.9524 FSP 2704

MID-COURSE EXECUTION ACCURACY

SGT 1242.2 SGR 323.9 SG3 1566.0
RRT .0244 RRF .0286 RTF .6846
SGB 1283.7 R23 .0106 R13 .6847
SG1 1242.2 SG2 323.8 THA .39

ORBIT DETERMINATION ACCURACY

ST 23.2 SR 14.0 SS 46.7
CRT .9833 CRS -.1029 CST .0477
LSA 46.7 MSA 27.0 SSA 1.2
EL1 27.0 EL2 2.2 ALF 31.00

LAUNCH DATE MAY 11 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 465.067 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.228	GAL	-.25	AZL	91.83	HCA	151.64	SMA	184.78	ECC	.18242	INC	1.8293	V1	29.491
RP	212.14	LAP	-.87	LOP	21.32	VP	23.086	GAP	6.18	AZP	88.39	TAL	358.36	TAP	150.00	RCA	151.07	APO	218.49	V2	25.864
RC	128.706	GL	-20.34	GP	-.18	ZAL	100.50	ZAP	106.82	ETS	179.69	ZAE	150.13	ETE	180.59	ZAC	101.04	ETC	275.59	LVI	-14.88

PLANETOCENTRIC CONIC

C3	8.762	VHL	2.960	DLA	-30.03	RAL	341.10	RAD	6637.4	VEL	11.352	PTH	6.40	VHP	2.990	DPA	-20.16	RAP	311.09	ECC	1.1442

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 56 28	2328.83	1.19	59.23	191.91	137.56	17 35 17	1328.8	19.31	42.90
60.00	18 20 15	2105.94	6.20	43.97	196.71	129.90	18 55 21	1105.9	21.56	24.82
70.00	20 14 11	1770.76	12.13	21.17	201.07	122.18	20 43 42	770.8	24.23	359.33
79.45	23 24 9	1174.58	22.16	341.26	206.29	110.80	23 43 44	174.6	28.74	315.73
79.45	23 24 9	1174.58	22.16	341.26	206.29	110.80	23 43 44	174.6	28.74	315.73
79.45	23 24 9	1174.58	22.16	341.26	206.29	110.80	23 43 44	174.6	28.74	315.73
110.00	1 17 33	6105.62	12.13	287.99	201.07	122.18	2 59 19	5105.6	24.23	266.15

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2397	TRA	.0360	TC3	-2.1651	BAU	.2543	SGT	1365.5	SGR	312.1	SG3	1604.6	ST	23.3	SR	13.5	SS	47.6
RDE	-.1382	RRA	.0575	RC3	.1632	FAU	.23978	RRT	.0249	RRF	.0262	RTF	.7435	CRT	.9915	CRS	-.0814	CST	-.0015
FDE	.1134	FRA	5.4444	FC	-23.6913	BSP	1366	SGB	1400.7	R23	.0067	R13	.7435	LSA	47.6	MSA	26.9	SSA	1.2
BDE	.2767	BRA	.0679	BC3	2.1712	FSP	2778	SG1	1365.5	SG2	312.0	THA	.34	EL1	26.9	EL2	1.5	ALF	30.00

LAUNCH DATE MAY 11 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 469.252 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.224	GAL	-.28	AZL	91.83	HCA	152.84	SMA	184.71	ECC	.18213	INC	1.8283	V1	29.491
RP	212.43	LAP	-.83	LOP	22.53	VP	23.044	GAP	5.99	AZP	88.37	TAL	358.17	TAP	151.01	RCA	151.07	APO	218.35	V2	25.832
RC	130.999	GL	-20.33	GP	-.19	ZAL	100.62	ZAP	104.72	ETS	179.66	ZAE	148.08	ETE	180.64	ZAC	101.12	ETC	275.38	LVI	-14.59

PLANETOCENTRIC CONIC

C3	8.755	VHL	2.959	DLA	-29.90	RAL	341.43	RAD	6637.4	VEL	11.352	PTH	6.40	VHP	2.958	DPA	-20.40	RAP	310.17	ECC	1.1441

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 2	2331.81	1.04	59.36	192.18	137.57	17 35 54	1331.8	19.16	43.04
60.00	18 20 26	2109.93	6.03	44.16	196.96	129.92	18 55 36	1109.9	21.40	25.04
70.00	20 13 31	1777.24	11.89	21.52	201.29	122.26	20 43 8	777.2	24.05	359.74
79.88	23 28 42	1164.18	22.07	340.45	206.58	110.70	23 48 6	164.2	28.61	314.94
79.88	23 28 42	1164.18	22.07	340.45	206.58	110.70	23 48 6	164.2	28.61	314.94
79.88	23 28 42	1164.18	22.07	340.45	206.58	110.70	23 48 6	164.2	28.61	314.94
110.00	1 16 54	6112.10	11.89	288.35	201.29	122.25	2 58 46	5112.1	24.05	266.56

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2395	TRA	.0878	TC3	-2.3893	BAU	.2803	SGT	1500.9	SGR	300.2	SG3	1640.0	ST	23.5	SR	13.0	SS	48.2
RDE	-.1326	RRA	.0556	RC3	.1582	FAU	.24472	RRT	.0246	RRF	.0228	RTF	.7916	CRT	.9947	CRS	-.0636	CST	-.0572
FDE	.1522	FRA	5.5763	FC	-24.1986	BSP	1674	SGB	1530.7	R23	.0025	R13	.7916	LSA	48.2	MSA	26.7	SSA	1.2
BDE	.2738	BRA	.1039	BC3	2.3945	FSP	2829	SG1	1500.9	SG2	300.1	THA	.29	EL1	26.8	EL2	1.2	ALF	28.87

LAUNCH DATE MAY 11 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 473.439 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.220	GAL	-.31	AZL	91.83	HCA	154.04	SMA	184.66	ECC	.18190	INC	1.8271	V1	29.491
RP	212.72	LAP	-.80	LOP	23.73	VP	23.002	GAP	5.81	AZP	88.36	TAL	357.97	TAP	152.01	RCA	151.07	APO	218.25	V2	25.799
RC	133.312	GL	-20.32	GP	-.19	ZAL	101.15	ZAP	102.63	ETS	179.63	ZAE	146.02	ETE	180.68	ZAC	101.20	ETC	275.18	LVI	-14.29

PLANETOCENTRIC CONIC

C3	8.755	VHL	2.959	DLA	-29.75	RAL	341.78	RAD	6637.4	VEL	11.352	PTH	6.40	VHP	2.930	DPA	-20.62	RAP	309.26	ECC	1.1441

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 57 35	2335.29	.86	59.51	192.48	137.57	17 36 30	1335.3	19.00	43.21
60.00	18 20 33	2114.53	5.83	44.36	197.24	129.95	18 55 48	1114.5	21.22	25.30
70.00	20 12 44	1784.56	11.83	21.92	201.52	122.34	20 42 28	784.6	23.83	.20
80.00	23 9 25	1230.25	20.31	344.62	206.19	112.36	23 29 55	230.2	27.74	319.87
80.37	23 33 51	1192.13	21.96	339.51	206.88	110.58	23 53 3	192.1	28.47	314.01
100.00	1 56 12	3992.76	20.31	283.89	206.19	112.36	3 36 5	4992.8	27.74	258.94
110.00	1 16 6	6119.41	11.83	288.75	201.52	122.34	2 58 5	5119.4	23.83	267.03

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2392	TRA	.1405	TC3	-2.6231	BAU	.3075	SGT	1649.9	SGR	288.2	SG3	1670.8	ST	23.7	SR	12.4	SS	49.1
RDE	-.1271	RRA	.0838	RC3	.1533	FAU	.24793	RRT	.0223	RRF	.0218	RTF	.7960	CRT	.9925	CRS	-.0468	CST	-.1136
FDE	.1912	FRA	5.7303	FC	-24.8170	BSP	1969	SGB	1674.9	R23	.0025	R13	.8260	LSA	49.2	MSA	26.6	SSA	1.1
BDE	.2708	BRA	.1803	BC3	2.6275	FSP	2886	SG1	1649.9	SG2	288.1	THA	.23	EL1	26.8	EL2	1.3	ALF	27.54

LAUNCH DATE MAY 11 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC DISTANCE 477.628 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.218	GAL	-.35	AZL	91.83	HCA	155.24	SMA	184.62	ECC	.18174	INC	1.8259	V1	29.491
RP	213.01	LAP	-.76	LOP	24.92	VP	22.961	GAP	5.62	AZP	88.34	TAL	357.76	TAP	153.00	RCA	151.06	APO	218.17	V2	25.766
RC	135.643	GL	-20.29	GP	-.21	ZAL	101.51	ZAP	100.56	ETS	179.59	ZAE	143.95	ETE	180.71	ZAC	101.28	ETC	274.97	LVI	-13.99

PLANETOCENTRIC CONIC

C3	8.760	VHL	2.960	DLA	-29.58	RAL	342.15	RAD	6637.4	VEL	11.352	PTH	6.40	VHP	2.907	DPA	-20.85	RAP	308.34	ECC	1.1442

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 6	2339.28	.88	59.67	192.79	137.57	17 37 5	1339.3	18.81	43.39
60.00	18 20 38	2119.73	5.60	44.63	197.53	129.98	18 55 87	1119.7	21.02	25.59
70.00	20 11 49	1792.65	11.33	22.36	201.77	122.44	20 41 42	792.7	23.60	.71
80.00	22 58 23	1270.41	19.25	347.13	206.10	113.27	23 19 33	270.4	27.16	322.51
80.94	23 39 44	1138.12	21.84	338.42	207.21	110.46	23 58 42	138.1	28.31	312.93
100.00	1 45 11	6032.92	19.25	286.40	206.10	113.27	3 25 44	5032.9	27.16	261.78
110.00	1 15 11	6127.51	11.33	289.19	201.77	122.44	2 57 19	5127.5	23.60	267.54

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2374	TRA	.1958	TC3	-2.8574	BAU	.3351	SGT	1806.1	SGR	276.0	SG3	1697.1	ST	24.0	SR	11.9	SS	49.7
RDE	-.1215	RRA	.0515	RC3	.1483	FAU	.25109	RRT	.0193	RRF	.0201	RTF	.8552	CRT	.9845	CRS	-.0399	CST	-.1824
FDE	.2101	FRA	5.8558	FC	-24.8137	BSP	2309	SGB	1827.1	R23	.0032	R13	.8552	LSA	49.9	MSA	26.3	SSA	1.1
BDE	.2667	BRA	.2025	BC3	2.8612	FSP	2943	SG1	1806.2	SG2	276.0	THA	.17	EL1	26.7	EL2	1.9	ALF	28.11

LAUNCH DATE MAY 11 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC DISTANCE 481.817 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.216	GAL	-.38	AZL	91.82	HCA	156.43	SMA	184.59	ECC	.18163	INC	1.8244	V1	29.491
RP	213.31	LAP	-.73	LOP	26.12	VP	22.921	GAP	5.44	AZP	88.33	TAL	357.53	TAP	153.96	RCA	151.06	APO	218.11	V2	25.732
RC	137.991	GL	-20.26	GP	-.22	ZAL	101.89	ZAP	98.49	ETS	179.56	ZAE	141.89	ETE	180.73	ZAC	101.35	ETC	274.77	LVI	-13.68

PLANETOCENTRIC CONIC

C3	8.772	VHL	2.962	DLA	-29.40	RAL	342.53	RAD	6637.4	VEL	11.353	PTH	6.41	VHP	2.886	DPA	-21.06	RAP	307.44	ECC	1.1444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 58 36	2343.74	.44	59.86	193.13	137.57	17 37 40	1343.7	18.59	43.60
60.00	18 20 38	2125.50	5.35	44.91	197.83	130.00	18 56 4	1125.5	20.79	25.91
70.00	20 10 48	1801.48	11.01	22.85	202.03	122.54	20 40 49	801.5	23.34	1.27
80.00	22 50 9	1302.07	18.39	349.08	206.12	113.94	23 11 51	302.1	26.66	324.73
81.61	23 46 27	1121.74	21.71	337.16	207.56	110.33	24 5 9	121.7	28.14	311.70
100.00	1 36 56	6064.58	18.39	288.36	206.12	113.94	3 18 1	5064.6	26.66	264.00
110.00	1 14 10	6136.34	11.01	289.67	202.03	122.54	2 56 26	5136.3	23.34	268.09

DIFFERENTIAL CORRECTIONS

TDE	-.2358	TRA	.2522	TC3	-3.0953	BAU	.3634												
RDE	-.1159	RRA	.0494	RC3	.1432	FAU	.25442												
FDE	.2671	FRA	5.9788	FC	-25.1081	BSP	2634												
BDE	.2628	BRA	.2570	BC3	3.0986	FSP	2988												

MID-COURSE EXECUTION ACCURACY

SGT	1970.7	SGR	263.7	SG3	1723.1				
RRT	.0157	RRF	.0148	RTF	.8771				
SGB	1988.3	R23	.0008	R13	.8771				
SG1	1970.7	SG2	263.6	THA	.12				

ORBIT DETERMINATION ACCURACY

ST	24.5	SR	11.3	SS	50.4				
CRT	.9711	CRS	-.0152	CST	-.2316				
LSA	50.8	MSA	26.1	SSA	1.1				
EL1	26.8	EL2	2.5	ALF	24.45				

LAUNCH DATE MAY 11 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC DISTANCE 486.007 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.215	GAL	-.42	AZL	91.82	HCA	157.62	SMA	184.87	ECC	.18158	INC	1.8230	V1	29.491
RP	213.61	LAP	-.69	LOP	27.30	VP	22.881	GAP	5.26	AZP	88.31	TAL	357.29	TAP	154.91	RCA	151.06	APO	218.08	V2	25.697
RC	140.356	GL	-20.22	GP	-.23	ZAL	102.29	ZAP	96.45	ETS	179.53	ZAE	139.83	ETE	180.74	ZAC	101.41	ETC	274.57	LVI	-13.38

PLANETOCENTRIC CONIC

C3	8.790	VHL	2.965	DLA	-29.20	RAL	342.93	RAD	6637.4	VEL	11.353	PTH	6.41	VHP	2.870	DPA	-21.27	RAP	306.55	ECC	1.1447

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 6	2348.68	.19	60.06	193.47	137.58	17 38 14	1348.7	18.36	43.84
60.00	18 20 36	2131.84	5.07	45.22	198.16	130.03	18 56 8	1131.8	20.54	26.26
70.00	20 9 41	1811.01	10.66	23.36	202.30	122.64	20 39 52	811.0	23.06	1.86
80.00	22 43 10	1330.11	17.61	350.79	206.20	114.51	23 5 20	330.1	26.18	326.68
82.39	23 54 14	1102.22	21.56	335.66	207.93	110.19	24 12 36	102.2	27.95	310.23
100.00	1 29 57	6092.62	17.61	290.07	206.20	114.51	3 11 30	5092.6	26.18	265.95
110.00	1 13 3	6145.87	10.66	290.19	202.30	122.64	2 55 29	5145.9	23.06	268.69

DIFFERENTIAL CORRECTIONS

TDE	-.2331	TRA	.3107	TC3	-3.3328	BAU	.3920												
RDE	-.1103	RRA	.0472	RC3	.1382	FAU	.25644												
FDE	.3200	FRA	6.0945	FC	-25.2565	BSP	2969												
BDE	.2579	BRA	.3142	BC3	3.3357	FSP	3025												

MID-COURSE EXECUTION ACCURACY

SGT	2140.4	SGR	251.2	SG3	1742.5				
RRT	.0112	RRF	.0101	RTF	.8942				
SGB	2155.1	R23	-.0000	R13	.8942				
SG1	2140.4	SG2	251.2	THA	.08				

ORBIT DETERMINATION ACCURACY

ST	24.9	SR	10.8	SS	51.1				
CRT	.9518	CRS	.0068	CST	-.2838				
LSA	51.7	MSA	25.9	SSA	1.0				
EL1	27.0	EL2	3.1	ALF	22.66				

LAUNCH DATE MAY 11 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC DISTANCE 490.196 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.215	GAL	-.46	AZL	91.82	HCA	158.81	SMA	184.56	ECC	.18156	INC	1.8211	V1	29.491
RP	213.92	LAP	-.66	LOP	28.49	VP	22.841	GAP	5.09	AZP	88.30	TAL	357.03	TAP	155.84	RCA	151.05	APO	218.08	V2	25.662
RC	142.739	GL	-20.18	GP	-.24	ZAL	102.70	ZAP	94.43	ETS	179.50	ZAE	137.79	ETE	180.75	ZAC	101.47	ETC	274.37	LVI	-13.09

PLANETOCENTRIC CONIC

C3	8.814	VHL	2.969	DLA	-28.99	RAL	343.34	RAD	6637.4	VEL	11.354	PTH	6.41	VHP	2.856	DPA	-21.48	RAP	305.68	ECC	1.1451

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 33	2354.08	-.08	60.29	193.84	137.58	17 38 48	1354.1	18.10	44.09
60.00	18 20 31	2138.71	4.77	45.55	198.49	130.07	18 56 10	1138.7	20.27	26.63
70.00	20 8 28	1821.20	10.28	23.91	202.59	122.75	20 38 49	821.2	22.75	2.50
80.00	22 36 56	1356.14	16.86	352.37	206.32	115.01	22 59 32	356.1	25.72	328.47
83.33	0 7 18	1078.60	21.40	333.85	208.31	110.04	0 25 16	78.6	27.74	308.45
100.00	1 23 43	6118.65	16.86	291.64	206.32	115.01	3 5 42	5118.7	25.72	267.74
110.00	1 11 50	6156.06	10.28	290.74	202.59	122.75	2 54 26	5156.1	22.75	269.32

DIFFERENTIAL CORRECTIONS

TDE	-.2300	TRA	.3707	TC3	-3.5729	BAU	.4213												
RDE	-.1047	RRA	.0450	RC3	.1331	FAU	.25780												
FDE	.3798	FRA	6.2261	FC	-25.3226	BSP	3299												
BDE	.2527	BRA	.3735	BC3	3.5754	FSP	3064												

MID-COURSE EXECUTION ACCURACY

SGT	2316.6	SGR	238.7	SG3	1760.8				
RRT	.0059	RRF	.0057	RTF	.9068				
SGB	2328.9	R23	.0003	R13	.9068				
SG1	2316.6	SG2	238.7	THA	.03				

ORBIT DETERMINATION ACCURACY

ST	25.6	SR	10.2	SS	51.9				
CRT	.9276	CRS	.0307	CST	-.3321				
LSA	52.8	MSA	25.8	SSA	1.0				
EL1	27.3	EL2	3.6	ALF	20.71				

LAUNCH DATE MAY 11 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 494.386 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.215	GAL	-.50	AZL	91.82	HCA	159.99	SMA	184.57	ECC	.18164	INC	1.8193	V1	29.491
RP	214.24	LAP	-.62	LOP	29.67	VP	22.802	GAP	4.92	AZP	88.29	TAL	356.77	TAP	156.76	RCA	151.04	APO	218.09	V2	25.627
RC	145.138	GL	-20.12	GP	-.26	ZAL	103.14	ZAP	92.43	ETS	179.46	ZAE	135.75	ETE	180.76	ZAC	101.53	ETC	274.18	LVI	-12.79

PLANETOCENTRIC CONIC

C3	8.843	VHL	2.974	DLA	-28.77	RAL	343.76	RAD	6637.4	VEL	11.356	PTH	6.41	VHP	2.846	DPA	-21.67	RAP	304.83	ECC	1.1455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 0	2359.92	-.38	60.53	194.22	137.57	17 39 20	1359.9	17.82	44.36
60.00	18 20 23	2146.11	4.44	45.90	198.84	130.10	18 56 9	1146.1	19.97	27.04
70.00	20 7 11	1831.99	9.88	24.50	202.90	122.86	20 37 43	832.0	22.43	3.16
80.00	22 31 13	1380.88	16.15	353.86	206.48	115.46	22 54 14	380.9	25.25	330.16
84.50	0 18 29	1048.61	21.22	331.58	208.72	109.89	0 35 58	48.6	27.52	306.21
100.00	1 18 0	6143.39	16.15	293.13	206.48	115.46	3 0 24	5143.4	25.25	269.43
110.00	1 10 33	6166.85	9.88	291.32	202.90	122.86	2 53 20	5166.9	22.43	269.99

DIFFERENTIAL CORRECTIONS

TDE	-.2256	TRA	.4330	TC3	-3.8098	BAU	.4507												
RDE	-.0991	RRA	.0427	RC3	.1279	FAU	.25932												
FDE	.4171	FRA	6.3229	FC	-25.3878	BSP	3644												
BDE	.2464	BRA	.4351	BC3	3.8119	FSP	3093												

MID-COURSE EXECUTION ACCURACY

SGT	2495.8	SGR	226.1	SG3	1774.4				
RRT	.0000	RRF	.0007	RTF	.9187				
SGB	2506.0	R23	.0007	R13	.9187				
SG1	2495.8	SG2	226.1	THA	.00				

ORBIT DETERMINATION ACCURACY

ST	26.2	SR	9.7	SS	52.5				
CRT	.8978	CRS	.0449	CST	-.3693				
LSA	53.7	MSA	25.5	SSA	.9				
EL1	27.7	EL2	4.0	ALF	18.70				

LAUNCH DATE MAY 11 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 498.576 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.216	GAL	-.54	AZL	91.82	HCA	161.17	SMA	184.58	ECC	.18174	INC	1.8173	VI	29.491
RP	214.55	LAP	-.59	LOP	30.85	VP	22.762	GAP	4.75	AZP	88.28	TAL	356.49	TAP	157.66	RCA	151.04	APO	218.13	V2	25.591
RC	147.555	GL	-20.06	GP	-.27	ZAL	103.59	ZAP	90.46	ETS	179.43	ZAE	133.74	ETE	180.76	ZAC	101.57	ETC	273.99	LVI	-12.50

PLANETOCENTRIC CONIC

C3	8.878	VHL	2.980	DLA	-28.53	RAL	344.20	RAD	6637.5	VEL	11.357	PTH	6.41	VHP	2.839	DPA	-21.85	RAP	304.01	ECC	1.1461

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 25	2366.21	-.69	60.80	194.61	137.57	17 39 52	1366.2	17.52	44.65
60.00	18 20 12	2154.01	4.10	46.28	199.21	130.13	18 56 6	1154.0	19.66	27.47
70.00	20 5 49	1843.37	9.46	25.11	203.21	122.97	20 36 33	843.4	22.08	3.86
80.00	22 25 52	1404.77	15.44	355.28	206.67	115.88	22 49 17	404.8	24.78	331.77
86.10	0 33 24	1006.80	21.04	328.43	209.14	109.72	0 50 10	6.8	27.30	303.10
100.00	1 12 40	6167.28	15.44	294.55	206.67	115.88	2 55 27	5167.3	24.78	271.05
110.00	1 9 11	6178.23	9.46	291.93	203.21	122.97	2 52 9	5178.2	22.08	270.69

DIFFERENTIAL CORRECTIONS

TDE	-.2201	TRA	.4964	TC3	-4.0445	BAU	.4803												
RDE	-.0935	RRA	.0405	RC3	.1227	FAU	.25972												
FDE	.4836	FRA	6.4121	FC	-25.3270	BSP	3984												
BDE	.2391	BRA	.4981	BC3	4.0464	FSP	3107												

MID-COURSE EXECUTION ACCURACY

SGT	2677.4	SGR	213.3	SG3	1782.4														
RRT	-.0070	RRF	-.0064	RTF	.9275														
SGB	2685.9	R23	-.0001	R13	-.9275														
SG1	2677.4	SG2	213.3	THA	179.97														

ORBIT DETERMINATION ACCURACY

ST	27.0	SR	9.1	SS	53.2														
CRT	.8634	CRS	.0715	CST	-.4329														
LSA	54.7	MSA	25.3	SSA	.9														
EL1	28.1	EL2	4.4	ALF	16.65														

LAUNCH DATE MAY 11 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 502.765 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.218	GAL	-.58	AZL	91.82	HCA	162.35	SMA	184.61	ECC	.18189	INC	1.8151	VI	29.491
RP	214.88	LAP	-.55	LOP	32.03	VP	22.724	GAP	4.58	AZP	88.27	TAL	356.20	TAP	158.55	RCA	151.03	APO	218.19	V2	25.554
RC	149.988	GL	-19.98	GP	-.29	ZAL	104.06	ZAP	88.53	ETS	179.40	ZAE	131.75	ETE	180.76	ZAC	101.62	ETC	273.81	LVI	-12.22

PLANETOCENTRIC CONIC

C3	8.918	VHL	2.986	DLA	-28.27	RAL	344.64	RAD	6637.5	VEL	11.359	PTH	6.41	VHP	2.835	DPA	-22.03	RAP	303.21	ECC	1.1468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 49	2372.92	-1.03	61.08	195.02	137.57	17 40 22	1372.9	17.19	44.96
60.00	18 19 58	2162.40	3.73	46.69	199.59	130.16	18 56 0	1162.4	19.32	27.92
70.00	20 4 23	1855.30	9.02	25.75	203.55	123.08	20 35 18	855.3	21.71	4.59
80.00	22 20 50	1428.07	14.75	356.66	206.88	116.26	22 44 38	428.1	24.30	333.34
90.00	1 1 12	6211.38	20.35	299.97	209.39	110.07	2 44 44	5211.4	26.82	274.81
100.00	1 7 37	6190.58	14.75	295.93	206.88	116.26	2 50 48	5190.6	24.30	272.61
110.00	1 7 45	6190.16	9.02	292.57	203.55	123.08	2 50 56	5190.2	21.71	271.42

DIFFERENTIAL CORRECTIONS

TDE	-.2132	TRA	.5612	TC3	-4.2743	BAU	.5098												
RDE	-.0878	RRA	.0381	RC3	.1173	FAU	.25960												
FDE	.5420	FRA	6.4792	FC	-25.2004	BSP	4329												
BDE	.2306	BRA	.5625	BC3	4.2759	FSP	3114												

MID-COURSE EXECUTION ACCURACY

SGT	2859.9	SGR	200.5	SG3	1785.0														
RRT	-.0148	RRF	-.0139	RTF	.9351														
SGB	2866.9	R23	.0000	R13	-.9351														
SG1	2859.9	SG2	200.4	THA	179.94														

ORBIT DETERMINATION ACCURACY

ST	27.7	SR	8.5	SS	53.7														
CRT	.8245	CRS	.0946	CST	-.4780														
LSA	55.7	MSA	25.0	SSA	.8														
EL1	28.6	EL2	4.7	ALF	14.60														

LAUNCH DATE MAY 11 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 506.952 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.220	GAL	-.63	AZL	91.81	HCA	163.52	SMA	184.64	ECC	.18209	INC	1.8124	VI	29.491
RP	215.21	LAP	-.51	LOP	33.20	VP	22.685	GAP	4.41	AZP	88.26	TAL	355.90	TAP	159.42	RCA	151.02	APO	218.26	V2	25.518
RC	152.438	GL	-19.90	GP	-.31	ZAL	104.54	ZAP	86.63	ETS	179.36	ZAE	129.78	ETE	180.76	ZAC	101.65	ETC	273.63	LVI	-11.95

PLANETOCENTRIC CONIC

C3	8.964	VHL	2.994	DLA	-28.00	RAL	345.10	RAD	6637.5	VEL	11.361	PTH	6.41	VHP	2.833	DPA	-22.20	RAP	302.45	ECC	1.1475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 12	2380.06	-1.39	61.37	195.44	137.56	17 40 52	1380.1	16.85	45.29
60.00	18 19 41	2171.29	3.34	47.11	199.98	130.19	18 55 52	1171.3	18.97	28.40
70.00	20 2 53	1867.76	8.56	26.41	203.89	123.19	20 34 1	867.8	21.32	5.35
80.00	22 16 0	1450.97	14.05	358.00	207.11	116.62	22 40 11	451.0	23.81	334.87
90.00	0 34 43	1016.30	18.07	327.93	209.00	112.13	0 51 40	16.3	25.62	303.45
100.00	1 2 48	6213.48	14.05	297.28	207.11	116.62	2 46 22	5213.5	23.81	274.14
110.00	1 6 16	6202.62	8.56	293.24	203.89	123.19	2 49 38	5202.6	21.32	272.18

DIFFERENTIAL CORRECTIONS

TDE	-.2053	TRA	.6280	TC3	-4.5008	BAU	.5395												
RDE	-.0821	RRA	.0358	RC3	.1118	FAU	.25853												
FDE	.6149	FRA	6.5635	FC	-24.9687	BSP	4674												
BDE	.2211	BRA	.6290	BC3	4.5020	FSP	3125												

MID-COURSE EXECUTION ACCURACY

SGT	3044.6	SGR	187.5	SG3	1786.0														
RRT	-.0230	RRF	-.0211	RTF	.9405														
SGB	3050.3	R23	-.0006	R13	-.9405														
SG1	3044.6	SG2	187.5	THA	179.92														

ORBIT DETERMINATION ACCURACY

ST	28.6	SR	7.9	SS	54.5														
CRT	.7817	CRS	.1222	CST	-.5170														
LSA	56.9	MSA	24.8	SSA	.8														
EL1	29.3	EL2	4.8	ALF	12.58														

LAUNCH DATE MAY 11 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 13 1971

HELIOCENTRIC CONIC DISTANCE 511.139 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.222	GAL	-.68	AZL	91.81	HCA	164.69	SMA	184.68	ECC	.18232	INC	1.8095	VI	29.491
RP	215.54	LAP	-.48	LOP	34.37	VP	22.647	GAP	4.25	AZP	88.25	TAL	355.59	TAP	160.28	RCA	151.01	APO	218.36	V2	25.480
RC	154.904	GL	-19.81	GP	-.33	ZAL	105.04	ZAP	84.76	ETS	179.33	ZAE	127.84	ETE	180.76	ZAC	101.68	ETC	273.46	LVI	-11.68

PLANETOCENTRIC CONIC

C3	9.015	VHL	3.003	DLA	-27.72	RAL	345.57	RAD	6637.5	VEL	11.363	PTH	6.42	VHP	2.834	DPA	-22.36	RAP	301.72	ECC	1.1484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 32	2387.62	-1.77	61.69	195.88	137.55	17 41 20	1387.6	16.48	45.64
60.00	18 19 20	2180.65	2.93	47.56	200.39	130.21	18 55 41	1180.6	18.89	28.91
70.00	20 1 20	1880.74	8.07	27.11	204.25	123.30	20 32 41	880.7	20.92	6.14
80.00	22 11 22	1473.60	13.36	359.33	207.36	116.95	22 35 56	473.6	23.31	336.36
90.00	0 21 54	1065.35	18.78	330.95	209.02	113.10	0 39 40	65.3	24.86	306.84
100.00	0 58 10	6236.12	13.36	298.60	207.36	116.95	2 42 6	5236.1	23.31	275.64
110.00	1 4 42	6215.60	8.07	293.93	204.25	123.30	2 48 18	5215.6	20.92	272.96

DIFFERENTIAL CORRECTIONS

TDE	-.1965	TRA	.6962	TC3	-4.7246	BAU	.5696												
RDE	-.0763	RRA	.0335	RC3	.1060	FAU	.25791												
FDE	.6705	FRA	6.6310	FC	-24.7672	BSP	5012												
BDE	.2108	BRA	.6970	BC3	4.7258	FSP	3114												

MID-COURSE EXECUTION ACCURACY

SGT	3231.4	SGR	174.6	SG3	1785.7														
RRT	-.0312	RRF	-.0280	RTF	.9458														
SGB	3236.1	R23	-.0016	R13	-.9458														
SG1	3231.4	SG2	174.5	THA	179.90														

ORBIT DETERMINATION ACCURACY

ST	29.6	SR	7.4	SS	55.1														
CRT	.7364	CRS	.1425	CST	-.5591														
LSA	58.0	MSA	24.4	SSA	.7														
EL1	30.1	EL2	4.9	ALF	10.67														

LAUNCH DATE MAY 11 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE 515.324 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.225	GAL	-.73	AZL	91.81	HCA	165.86	SMA	184.74	ECC	.18260	INC	1.6053	V1	29.491
RP	215.87	LAP	-.44	LOP	35.53	VP	22.609	GAP	4.09	AZP	88.25	TAL	355.27	TAP	161.12	RCA	151.00	APO	218.47	V2	25.443
RC	157.385	GL	-19.71	GP	-.36	ZAL	105.55	ZAP	82.94	ETS	179.30	ZAE	125.92	ETE	180.76	ZAC	101.70	ETC	273.30	LVI	-11.42

PLANETOCENTRIC CONIC

C3	9.071	VHL	3.012	DLA	-27.42	RAL	346.04	RAD	6637.6	VEL	11.366	PTH	6.42	VHP	2.837	DPA	-22.52	RAP	301.02	ECC	1.1493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 50	2395.61	-2.17	62.02	196.32	137.54	17 41 46	1395.6	16.10	46.00
60.00	18 18 57	2190.49	2.49	48.03	200.80	130.24	18 55 28	1190.5	18.19	29.43
70.00	19 59 42	1894.22	7.57	27.82	204.61	123.40	20 31 16	894.2	20.49	6.95
80.00	22 6 53	1496.07	12.66	.63	207.64	117.27	22 31 49	496.1	22.80	337.63
90.00	0 12 2	1105.17	15.70	333.37	209.14	113.82	0 30 27	105.2	24.18	309.55
100.00	0 53 41	6258.58	12.66	299.90	207.64	117.27	2 38 0	5258.6	22.80	277.11
110.00	1 3 4	6229.07	7.57	294.65	204.61	123.40	2 46 54	5229.1	20.49	273.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1886	TRA	.7631	TC3	-4.9527	BAU	.6008	SGT	3421.0	SGR	161.6	SG3	1781.4	ST	30.7	SR	6.8	SS	55.4
RDE	-.0706	RRA	.0312	RC3	.0998	FAU	.25743	RRT	-.0395	RRF	-.0355	RTF	.9503	CRT	.6937	CRS	.1612	CST	-.5939
FDE	.7214	FRA	6.6681	FC-24.5676		BSP	5332	SGB	3424.9	R23	-.0021	R13	-.9503	LSA	59.0	MSA	24.2	SSA	.7
BDE	.2014	BRA	.7637	BC3	4.9537	FSP	3103	SG1	3421.1	SG2	161.4	THA	179.89	EL1	31.1	EL2	4.8	ALF	8.93

LAUNCH DATE MAY 11 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 519.507 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.229	GAL	-.78	AZL	91.80	HCA	167.02	SMA	184.79	ECC	.18292	INC	1.6015	V1	29.491
RP	216.21	LAP	-.41	LOP	36.69	VP	22.571	GAP	3.92	AZP	88.24	TAL	354.93	TAP	161.95	RCA	150.99	APO	218.60	V2	25.405
RC	159.881	GL	-19.60	GP	-.39	ZAL	106.08	ZAP	81.15	ETS	179.26	ZAE	124.04	ETE	180.76	ZAC	101.71	ETC	273.15	LVI	-11.17

PLANETOCENTRIC CONIC

C3	9.133	VHL	3.022	DLA	-27.10	RAL	346.52	RAD	6637.6	VEL	11.368	PTH	6.42	VHP	2.843	DPA	-22.66	RAP	300.37	ECC	1.1503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 6	2404.02	-2.59	62.38	196.77	137.52	17 42 10	1404.0	15.69	46.39
60.00	18 18 30	2200.80	2.04	48.52	201.22	130.26	18 55 11	1200.8	17.77	29.98
70.00	19 58 0	1908.20	7.04	28.57	204.99	123.51	20 29 49	908.2	20.04	7.79
80.00	22 2 30	1518.48	11.96	1.92	207.92	117.56	22 27 49	518.5	22.28	339.29
90.00	0 3 39	1140.52	14.72	335.50	209.31	114.42	0 22 39	140.5	23.53	311.94
100.00	0 49 18	6280.99	11.96	301.20	207.92	117.56	2 33 59	5281.0	22.28	278.57
110.00	1 1 23	6243.06	7.04	295.39	204.99	123.51	2 45 26	5243.1	20.04	274.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1767	TRA	.8338	TC3	-5.1604	BAU	.6302	SGT	3604.7	SGR	148.5	SG3	1771.0	ST	31.8	SR	6.2	SS	56.0
RDE	-.0647	RRA	.0290	RC3	.0933	FAU	.25520	RRT	-.0469	RRF	-.0412	RTF	.9538	CRT	.6435	CRS	.1845	CST	-.6290
FDE	.7868	FRA	6.7085	FC-24.1915		BSP	5676	SGB	3607.8	R23	-.0036	R13	-.9538	LSA	60.1	MSA	23.8	SSA	.6
BDE	.1882	BRA	.8343	BC3	5.1613	FSP	3087	SG1	3604.7	SG2	148.3	THA	179.89	EL1	32.1	EL2	4.7	ALF	7.31

LAUNCH DATE MAY 11 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 523.688 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.233	GAL	-.84	AZL	91.80	HCA	169.17	SMA	184.86	ECC	.18328	INC	1.7966	V1	29.491
RP	216.56	LAP	-.37	LOP	37.85	VP	22.533	GAP	3.77	AZP	88.24	TAL	354.59	TAP	162.77	RCA	150.98	APO	218.74	V2	25.366
RC	162.390	GL	-19.47	GP	-.42	ZAL	106.62	ZAP	79.41	ETS	179.23	ZAE	122.19	ETE	180.76	ZAC	101.72	ETC	273.01	LVI	-10.93

PLANETOCENTRIC CONIC

C3	9.199	VHL	3.033	DLA	-26.77	RAL	347.00	RAD	6637.6	VEL	11.371	PTH	6.42	VHP	2.851	DPA	-22.81	RAP	299.75	ECC	1.1514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 18	2412.88	-3.04	62.75	197.23	137.50	17 42 31	1412.9	15.26	46.79
60.00	18 17 58	2211.62	1.56	49.04	201.65	130.28	18 54 50	1211.6	17.33	30.55
70.00	19 56 14	1922.71	6.50	29.33	205.37	123.60	20 28 17	922.7	19.57	8.65
80.00	21 58 12	1540.93	11.25	3.21	208.23	117.84	22 23 53	540.9	21.74	340.74
90.00	23 52 12	1173.28	13.79	337.46	209.52	114.94	24 11 45	173.3	22.90	314.13
100.00	0 45 0	1015.40	11.25	324.58	208.23	117.84	1 1 55	15.4	21.74	302.11
110.00	0 59 36	6257.57	6.50	296.16	205.37	123.60	2 43 54	5257.6	19.57	275.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1639	TRA	.9058	TC3	-5.3658	BAU	.6600	SGT	3789.8	SGR	135.3	SG3	1759.9	ST	33.0	SR	5.6	SS	56.6
RDE	-.0588	RRA	.0269	RC3	.0862	FAU	.25288	RRT	-.0521	RRF	-.0441	RTF	.9567	CRT	.5935	CRS	.2061	CST	-.6611
FDE	.8526	FRA	6.7486	FC-23.7988		BSP	6014	SGB	3792.2	R23	-.0059	R13	-.9567	LSA	61.4	MSA	23.5	SSA	.6
BDE	.1741	BRA	.9062	BC3	5.3663	FSP	3073	SG1	3789.8	SG2	135.1	THA	179.89	EL1	33.2	EL2	4.5	ALF	5.88

LAUNCH DATE MAY 11 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC DISTANCE 527.867 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.237	GAL	-.89	AZL	91.79	HCA	169.33	SMA	184.93	ECC	.18368	INC	1.7904	V1	29.491
RP	216.91	LAP	-.33	LOP	39.00	VP	22.496	GAP	3.61	AZP	88.24	TAL	354.24	TAP	163.57	RCA	150.96	APO	218.90	V2	25.327
RC	164.912	GL	-19.33	GP	-.46	ZAL	107.17	ZAP	77.71	ETS	179.19	ZAE	120.37	ETE	180.77	ZAC	101.71	ETC	272.87	LVI	-10.69

PLANETOCENTRIC CONIC

C3	9.270	VHL	3.045	DLA	-26.42	RAL	347.49	RAD	6637.7	VEL	11.374	PTH	6.43	VHP	2.861	DPA	-22.95	RAP	299.18	ECC	1.1526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 27	2422.22	-3.50	63.14	197.70	137.48	17 42 49	1422.2	14.80	47.21
60.00	18 17 22	2222.97	1.06	49.58	202.09	130.29	18 54 25	1223.0	16.86	31.15
70.00	19 54 21	1937.79	5.93	30.13	205.76	123.70	20 26 39	937.8	19.08	9.54
80.00	21 53 55	1563.56	10.52	4.50	208.54	118.10	22 19 58	563.6	21.18	342.19
90.00	23 45 16	1204.48	12.89	339.30	209.75	115.39	24 5 20	204.5	22.26	316.19
100.00	0 40 43	1038.03	10.52	325.87	208.54	118.10	0 58 1	38.0	21.18	303.56
110.00	0 57 43	6272.65	5.93	296.95	205.76	123.70	2 42 16	5272.6	19.08	276.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1507	TRA	.9771	TC3	-5.5704	BAU	.6904	SGT	3975.1	SGR	122.1	SG3	1746.1	ST	34.3	SR	5.0	SS	57.2
RDE	-.0528	RRA	.0250	RC3	.0783	FAU	.25057	RRT	-.0533	RRF	-.0427	RTF	.9591	CRT	.5468	CRS	.2266	CST	-.6878
FDE	.9199	FRA	6.7700	FC-23.4017		BSP	6328	SGB	3977.0	R23	-.0085	R13	-.9591	LSA	62.7	MSA	23.2	SSA	.5
BDE	.1596	BRA	.9774	BC3	5.5710	FSP	3044	SG1	3975.1	SG2	121.9	THA	179.91	EL1	34.4	EL2	4.2	ALF	4.66

LAUNCH DATE MAY 11 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 23 1971

HELIOCENTRIC CONIC DISTANCE 532.044 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.242	GAL	-.95	AZL	91.78	HCA	170.48	SMA	185.01	ECC	.18411	INC	1.7822	V1	29.491
RP	217.26	LAP	-.30	LOP	40.15	VP	22.459	GAP	3.45	AZP	88.24	TAL	353.88	TAP	164.36	RCA	150.95	APO	219.07	V2	25.288
RC	167.446	GL	-19.17	GP	-.52	ZAL	107.73	ZAP	76.06	ETS	179.14	ZAE	118.59	ETE	180.77	ZAC	101.69	ETC	272.75	LVI	-10.46

PLANETOCENTRIC CONIC

C3	9.345	VHL	3.057	DLA	-26.05	RAL	347.98	RAD	6637.7	VEL	11.378	PTH	6.43	VHP	2.872	DPA	-23.09	RAP	298.65	ECC	1.1538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 31	2432.07	-4.00	63.55	198.17	137.45	17 43 3	1432.1	14.32	47.65
60.00	18 16 36	2234.91	.54	50.15	202.53	130.30	18 53 53	1234.9	16.37	31.78
70.00	19 52 21	1953.50	5.34	30.96	206.15	123.78	20 24 54	953.5	18.56	10.46
80.00	21 49 36	1586.50	9.79	5.80	208.85	118.35	22 16 3	586.5	20.60	343.64
90.00	23 38 40	1234.76	11.99	341.08	210.00	115.80	23 59 15	234.8	21.61	318.18
100.00	0 36 24	1060.97	9.79	327.17	208.85	118.35	0 54 5	61.0	20.60	305.01
110.00	0 55 43	1000.32	5.34	319.88	206.15	123.78	1 12 23	.3	18.56	299.38

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.1386	TRA	1.0473	TC3	-5.7758	BAU	.7216	SGT	4160.6	SGR	108.8	SG3	1729.1			ST	35.6	SR	4.4	SS	57.4
RDE	-.0467	RRA	.0233	RC3	.0694	FAU	.24825	RRT	-.0460	RRF	-.0312	RTF	.9613			CRT	.5084	CRS	.2360	CST	-.7133
FDE	.9643	FRA	6.7713	FC-22	.9977	BSP	6612	SGB	4162.1	R23	-.0132	R13	-.9613			LSA	63.7	MSA	22.9	SSA	.5
BDE	.1463	BRA	1.0476	BC3	5.7762	FSP	3000	SG1	4160.6	SG2	108.7	THA	179.93			EL1	35.7	EL2	3.8	ALF	3.66

LAUNCH DATE MAY 11 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 25 1971

HELIOCENTRIC CONIC DISTANCE 536.218 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.247	GAL	-1.01	AZL	91.78	HCA	171.63	SMA	185.09	ECC	.18458	INC	1.7750	V1	29.491
RP	217.61	LAP	-.26	LOP	41.30	VP	22.422	GAP	3.30	AZP	88.24	TAL	353.52	TAP	165.14	RCA	150.93	APO	219.26	V2	25.249
RC	169.992	GL	-18.99	GP	-.58	ZAL	108.31	ZAP	74.44	ETS	179.10	ZAE	116.85	ETE	180.78	ZAC	101.65	ETC	272.63	LVI	-10.22

PLANETOCENTRIC CONIC

C3	9.424	VHL	3.070	DLA	-25.65	RAL	348.46	RAD	6637.7	VEL	11.381	PTH	6.43	VHP	2.886	DPA	-23.24	RAP	298.16	ECC	1.1551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 27	2442.51	-4.52	63.99	198.63	137.41	17 43 10	1442.5	13.81	48.12
60.00	18 15 46	2247.53	-.02	50.76	202.96	130.30	18 53 13	1247.5	15.85	32.43
70.00	19 50 10	1969.97	4.71	31.82	206.54	123.87	20 23 0	970.0	18.01	11.42
80.00	21 45 11	1609.97	9.02	7.13	209.17	118.58	22 12 1	610.0	19.99	345.12
90.00	23 32 14	1264.71	11.10	342.83	210.26	116.18	23 53 19	264.7	20.94	320.12
100.00	0 31 59	1084.44	9.02	328.50	209.17	118.58	0 50 3	84.4	19.99	306.49
110.00	0 53 32	1016.79	4.71	320.74	206.54	123.87	1 10 29	16.8	18.01	300.34

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.1135	TRA	1.1302	TC3	-5.9314	BAU	.7473	SGT	4333.9	SGR	95.5	SG3	1710.9			ST	37.1	SR	3.8	SS	58.6
RDE	-.0405	RRA	.0221	RC3	.0591	FAU	.24349	RRT	-.0220	RRF	-.0015	RTF	.9630			CRT	.4484	CRS	.2572	CST	-.7453
FDE	1.0679	FRA	6.8222	FC-22	.3687	BSP	7030	SGB	4334.9	R23	-.0198	R13	-.9630			LSA	65.8	MSA	22.4	SSA	.4
BDE	.1205	BRA	1.1304	BC3	5.9317	FSP	3006	SG1	4333.9	SG2	95.5	THA	179.97			EL1	37.1	EL2	3.4	ALF	2.68

LAUNCH DATE MAY 11 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 27 1971

HELIOCENTRIC CONIC DISTANCE 540.391 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.252	GAL	-1.07	AZL	91.76	HCA	172.77	SMA	185.19	ECC	.18507	INC	1.7611	V1	29.491
RP	217.97	LAP	-.22	LOP	42.44	VP	22.385	GAP	3.14	AZP	88.25	TAL	353.14	TAP	165.91	RCA	150.91	APO	219.46	V2	25.209
RC	172.547	GL	-18.78	GP	-.67	ZAL	108.90	ZAP	72.87	ETS	179.04	ZAE	115.13	ETE	180.80	ZAC	101.59	ETC	272.53	LVI	-9.98

PLANETOCENTRIC CONIC

C3	9.506	VHL	3.083	DLA	-25.22	RAL	348.93	RAD	6637.8	VEL	11.384	PTH	6.44	VHP	2.901	DPA	-23.40	RAP	297.72	ECC	1.1564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 2 13	2453.65	-5.08	64.46	199.09	137.37	17 43 7	1453.7	13.26	48.61
60.00	18 14 40	2260.95	-.61	51.40	203.39	130.30	18 52 21	1260.9	15.29	33.13
70.00	19 47 44	1987.35	4.05	32.74	206.91	123.94	20 20 51	987.4	17.42	12.43
80.00	21 40 34	1634.20	8.23	8.49	209.48	118.80	22 7 48	634.2	19.35	346.63
90.00	23 25 48	1294.79	10.19	344.57	210.52	116.52	23 47 23	294.8	20.25	322.05
100.00	0 27 22	1108.67	8.23	329.86	209.48	118.80	0 45 50	108.7	19.35	308.00
110.00	0 51 6	1034.17	4.05	321.66	206.91	123.94	1 8 20	34.2	17.42	301.35

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.1069	TRA	1.1923	TC3	-6.1603	BAU	.7829	SGT	4524.1	SGR	82.5	SG3	1692.2			ST	38.5	SR	3.3	SS	57.3
RDE	-.0343	RRA	.0214	RC3	.0458	FAU	.24530	RRT	.0353	RRF	.0509	RTF	.9678			CRT	.4442	CRS	.2243	CST	-.7708
FDE	1.0209	FRA	6.7144	FC-22	.3410	BSP	7179	SGB	4524.9	R23	.0257	R13	.9675			LSA	65.6	MSA	21.7	SSA	.4
BDE	.1123	BRA	1.1925	BC3	6.1605	FSP	2844	SG1	4524.1	SG2	82.4	THA	.04			EL1	38.5	EL2	2.9	ALF	2.17

LAUNCH DATE MAY 11 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 544.558 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.258	GAL	-1.13	AZL	91.75	HCA	173.91	SMA	185.28	ECC	.18561	INC	1.7444	V1	29.491
RP	218.33	LAP	-.19	LOP	43.58	VP	22.348	GAP	2.99	AZP	88.26	TAL	352.76	TAP	166.67	RCA	150.89	APO	219.67	V2	25.169
RC	175.114	GL	-18.51	GP	-.79	ZAL	109.50	ZAP	71.35	ETS	178.97	ZAE	113.46	ETE	180.82	ZAC	101.49	ETC	272.43	LVI	-9.73

PLANETOCENTRIC CONIC

C3	9.589	VHL	3.097	DLA	-24.75	RAL	349.40	RAD	6637.8	VEL	11.388	PTH	6.44	VHP	2.917	DPA	-23.59	RAP	297.33	ECC	1.1578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 1 44	2468.85	-5.69	64.97	199.53	137.32	17 42 49	1465.8	12.67	49.15
60.00	18 13 15	2275.61	-1.25	52.10	203.79	130.28	18 51 11	1275.6	14.68	33.88
70.00	19 44 53	2006.22	3.33	33.73	207.27	124.01	20 18 19	1006.2	16.78	13.52
80.00	21 35 30	1659.99	7.38	9.93	209.76	119.01	22 3 10	660.0	18.65	348.23
90.00	23 19 3	1326.07	9.24	346.37	210.75	116.85	23 41 9	326.1	19.50	324.04
100.00	0 22 18	1134.46	7.38	331.30	209.76	119.01	0 41 13	134.5	18.65	309.60
110.00	0 48 15	1053.04	3.33	322.64	207.27	124.01	1 5 48	53.0	16.78	302.43

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.0853	TRA	1.2681	TC3	-6.3361	BAU	.8123	SGT	4700.9	SGR	70.4	SG3	1669.6			ST	40.0	SR	2.6	SS	58.1
RDE	-.0276	RRA	.0220	RC3	.0301	FAU	.24077	RRT	.1525	RRF	.1895	RTF	.9679			CRT	.4359	CRS	.2039	CST	-.7893
FDE	1.1081	FRA	6.7296	FC-21	.7375	BSP	7484	SGB	4701.4	R23	.0423	R13	.9679			LSA	67.3	MSA	21.4	SSA	.3
BDE	.0896	BRA	1.2683	BC3	6.3361	FSP	2825	SG1	4700.9	SG2	69.6	THA	.13			EL1	40.0	EL2	2.4	ALF	1.65

LAUNCH DATE MAY 11 1971 FLIGHT TIME 234.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 548.722 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.264 GAL -1.20 AZL 91.72 HCA 175.04 SMA 185.38 ECC .18617 INC 1.7215 V1 29.491
RP 218.69 LAP -.15 LOP 44.72 VP 22.312 GAP 2.84 AZP 88.28 TAL 352.37 TAP 167.41 RCA 150.87 APO 219.90 V2 25.129
RC 177.690 GL -18.18 GP -.96 ZAL 110.13 ZAP 69.87 ETS 178.87 ZAE 111.82 ETE 180.86 ZAC 101.33 ETC 272.34 LVI -9.45

PLANETOCENTRIC CONIC

C3 9.671 VHL 3.110 DLA -24.20 RAL 349.83 RAD 6637.9 VEL 11.392 PTH 6.44 VHP 2.935 DPA -23.81 RAP 296.99 ECC 1.1592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 0 48	2479.53	-6.38	65.55	199.94	137.25	17 42 8	1479.5	11.99	49.75
60.00	18 11 17	2292.05	-1.98	52.88	204.16	130.26	18 49 30	1292.1	13.99	34.72
70.00	19 41 22	2027.25	2.53	34.83	207.57	124.07	20 15 9	1027.3	16.05	14.72
80.00	21 29 41	1688.23	6.45	11.51	209.99	119.22	21 57 49	688.2	17.86	349.96
90.00	23 11 34	1359.66	8.20	348.29	210.94	117.16	23 34 13	359.7	18.67	326.16
100.00	0 16 29	1162.70	6.45	332.88	209.99	119.22	0 35 52	162.7	17.86	311.33
110.00	0 44 44	1074.07	2.53	323.74	207.57	124.07	1 2 38	74.1	16.05	303.63

DIFFERENTIAL CORRECTIONS

TDE -.0552 TRA 1.3502 TC3-6.4865 BAU .8387
RDE -.0204 RRA .0244 RC3 .0091 FAU .23524
FDE 1.2133 FRA 6.7559 FC-21.0577 BSP 7851
BDE .0589 BRA 1.3504 BC3 6.4865 FSP 2820

MID-COURSE EXECUTION ACCURACY

SGT 4870.8 SGR 62.2 SG3 1645.6
RRT .3815 RRF .4350 RTF .9683
SGB 4871.2 R23 .0709 R13 .9683
SG1 4870.8 SG2 57.5 THA .28

ORBIT DETERMINATION ACCURACY

ST 41.7 SR 2.0 SS 59.4
CRT .4734 CRS .1236 CST -.8126
LSA 69.5 MSA 20.8 SSA .3
EL1 41.7 EL2 1.8 ALF 1.31

LAUNCH DATE MAY 11 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 552.883 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.271 GAL -1.26 AZL 91.69 HCA 176.18 SMA 185.49 ECC .18676 INC 1.6732 V1 29.491
RP 219.06 LAP -.11 LOP 45.85 VP 22.275 GAP 2.69 AZP 88.32 TAL 351.97 TAP 168.14 RCA 150.85 APO 220.13 V2 25.089
RC 180.275 GL -17.70 GP -1.24 ZAL 110.77 ZAP 68.44 ETS 178.73 ZAE 110.21 ETE 180.93 ZAC 101.08 ETC 272.26 LVI -9.08

PLANETOCENTRIC CONIC

C3 9.747 VHL 3.122 DLA -23.52 RAL 350.20 RAD 6637.9 VEL 11.395 PTH 6.45 VHP 2.955 DPA -24.13 RAP 296.71 ECC 1.1604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 59 3	2495.82	-7.19	66.24	200.26	137.16	17 40 39	1495.8	11.19	50.46
60.00	18 8 19	2311.64	-2.84	53.82	204.43	130.22	18 46 50	1311.6	13.16	35.72
70.00	19 36 34	2052.19	1.58	36.13	207.78	124.12	20 10 46	1052.2	15.19	16.13
80.00	21 22 20	1721.16	5.35	13.33	210.11	119.42	21 51 1	721.2	16.93	351.96
90.00	23 2 29	1398.14	7.00	350.48	211.01	117.47	23 25 47	398.1	17.69	328.55
100.00	0 9 8	1195.63	5.35	334.70	210.11	119.42	0 29 3	195.6	16.93	313.33
110.00	0 39 56	1099.01	1.58	325.05	207.78	124.12	0 58 15	99.0	15.19	305.04

DIFFERENTIAL CORRECTIONS

TDE -.0679 TRA 1.3825 TC3-6.8272 BAU .8896
RDE -.0128 RRA .0302 RC3 -.0244 FAU .23777
FDE 1.1533 FRA 6.6106 FC-21.1191 BSP 7612
BDE .0691 BRA 1.3828 BC3 6.8272 FSP 2634

MID-COURSE EXECUTION ACCURACY

SGT 5083.7 SGR 66.7 SG3 1624.3
RRT .6943 RRF .7596 RTF .9685
SGB 5084.1 R23 .1210 R13 .9685
SG1 5083.9 SG2 48.0 THA .52

ORBIT DETERMINATION ACCURACY

ST 42.5 SR 1.5 SS 57.6
CRT .7168 CRS -.1688 CST -.8037
LSA 68.3 MSA 21.3 SSA .2
EL1 42.5 EL2 1.0 ALF 1.43

LAUNCH DATE MAY 11 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 557.041 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.277 GAL -1.33 AZL 91.62 HCA 177.30 SMA 185.60 ECC .18739 INC 1.5936 V1 29.491
RP 219.43 LAP -.08 LOP 46.98 VP 22.239 GAP 2.54 AZP 88.38 TAL 351.56 TAP 168.87 RCA 150.82 APO 220.38 V2 25.048
RC 182.871 GL -16.91 GP -1.74 ZAL 111.45 ZAP 67.05 ETS 178.47 ZAE 108.63 ETE 181.05 ZAC 100.59 ETC 272.19 LVI -8.51

PLANETOCENTRIC CONIC

C3 9.800 VHL 3.130 DLA -22.56 RAL 350.44 RAD 6637.9 VEL 11.397 PTH 6.45 VHP 2.975 DPA -24.67 RAP 296.51 ECC 1.1613

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 55 30	2517.66	-8.28	67.17	200.39	137.02	17 37 28	1517.7	10.11	51.41
60.00	18 3 5	2337.96	-3.99	55.08	204.49	130.14	18 42 3	1338.0	12.04	37.04
70.00	19 28 56	2085.57	.30	37.87	207.74	124.15	20 3 41	1085.6	14.01	18.00
80.00	21 11 31	1764.51	3.90	15.73	209.98	119.63	21 40 56	764.5	15.66	354.55
90.00	22 49 40	1447.95	5.42	353.29	210.82	117.80	23 13 48	448.0	16.37	331.61
100.00	23 54 23	1238.98	3.90	337.10	209.98	119.63	24 15 2	239.0	15.66	315.92
110.00	0 32 18	1132.39	.30	326.79	207.74	124.15	0 51 10	132.4	14.01	306.91

DIFFERENTIAL CORRECTIONS

TDE -.0712 TRA 1.4109 TC3-7.1805 BAU .9408
RDE -.0040 RRA .0434 RC3 -.0848 FAU .24013
FDE 1.1066 FRA 6.4469 FC-21.2141 BSP 7360
BDE .0713 BRA 1.4116 BC3 7.1810 FSP 2445

MID-COURSE EXECUTION ACCURACY

SGT 5295.9 SGR 101.4 SG3 1601.9
RRT .8943 RRF .9521 RTF .9693
SGB 5296.9 R23 .1903 R13 .9693
SG1 5296.7 SG2 45.3 THA .98

ORBIT DETERMINATION ACCURACY

ST 43.0 SR 1.3 SS 56.0
CRT .9876 CRS -.7232 CST -.8031
LSA 67.3 MSA 21.3 SSA .1
EL1 43.0 EL2 .2 ALF 1.77

LAUNCH DATE MAY 11 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 6 1972

HELIOCENTRIC CONIC DISTANCE 561.196 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.284 GAL -1.40 AZL 91.45 HCA 178.43 SMA 185.72 ECC .18804 INC 1.4069 V1 29.491
RP 219.80 LAP -.04 LOP 48.10 VP 22.203 GAP 2.39 AZP 88.55 TAL 351.15 TAP 169.58 RCA 150.80 APO 220.64 V2 25.007
RC 185.475 GL -15.15 GP -2.96 ZAL 112.24 ZAP 65.72 ETS 177.87 ZAE 107.06 ETE 181.37 ZAC 99.39 ETC 272.12 LVI -7.30

PLANETOCENTRIC CONIC

C3 9.776 VHL 3.127 DLA -20.70 RAL 350.24 RAD 6637.9 VEL 11.396 PTH 6.45 VHP 3.000 DPA -25.91 RAP 296.48 ECC 1.1609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 21	2556.74	-10.22	68.85	199.93	136.73	17 28 57	1556.7	8.16	53.09
60.00	17 50 53	2385.08	-6.06	57.35	203.90	129.92	18 30 39	1385.1	10.02	39.39
70.00	19 12 37	2144.84	-1.96	40.96	206.99	124.10	19 48 22	1144.8	11.88	21.26
80.00	20 50 7	1839.71	1.36	19.87	209.06	119.83	21 20 46	839.7	13.39	358.98
90.00	22 25 19	1532.62	2.72	358.04	209.82	118.16	22 50 51	532.6	14.01	336.71
100.00	23 32 58	1314.18	1.36	341.23	209.06	119.83	23 54 53	314.2	13.39	320.35
110.00	0 15 59	1191.66	-1.96	329.88	206.99	124.10	0 35 51	191.7	11.88	310.18

DIFFERENTIAL CORRECTIONS

TDE -.0719 TRA 1.4008 TC3-7.6938 BAU 1.0061
RDE .0078 RRA .0788 RC3 -.2358 FAU .24631
FDE 1.0228 FRA 6.1675 FC-21.8118 BSP 6757
BDE .0723 BRA 1.4030 BC3 7.6974 FSP 2152

MID-COURSE EXECUTION ACCURACY

SGT 5540.3 SGR 213.9 SG3 1582.6
RRT .9543 RRF .9959 RTF .9709
SGB 5544.5 R23 .2318 R13 .9710
SG1 5544.1 SG2 63.9 THA 2.11

ORBIT DETERMINATION ACCURACY

ST 42.3 SR 2.4 SS 53.1
CRT .8956 CRS -.9843 CST -.8058
LSA 64.8 MSA 20.6 SSA .1
EL1 42.4 EL2 1.1 ALF 2.95

LAUNCH DATE MAY 11 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 10 1972

HELIOCENTRIC CONIC DISTANCE 569.488 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.299	GAL	-1.54	AZL	92.79	HCA	180.67	SMA	185.96	ECC	.18942	INC	2.6371
RP	220.55	LAP	.03	LOP	50.34	VP	22.132	GAP	2.09	AZP	87.21	TAL	350.31	TAP	170.98	RCA	150.74	APO	221.19
RC	190.711	GL	-27.37	GP	6.83	ZAL	111.67	ZAP	63.31	ETS	182.64	ZAE	104.25	ETE	178.72	ZAC	109.18	ETC	272.17

V1	29.491	V2	24.925	LVI	-16.24														

PLANETOCENTRIC CONIC

C3	11.715	VHL	3.423	DLA	-31.18	RAL	357.43	RAD	6638.9	VEL	11.480	PTH	6.53	VHP	3.063	DPA	-16.30	RAP	294.47

ECC	1.1928																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 8 20	2359.69	-.36	60.52	211.34	137.57	18 47 40	1359.7	17.83	44.35
60.00	19 35 35	2127.54	5.26	45.01	216.73	130.01	20 11 3	1127.5	20.71	26.02
70.00	21 38 3	1767.14	12.26	20.97	221.88	122.13	22 7 30	767.1	24.33	359.10
76.28	0 10 6	1305.96	21.46	350.79	226.91	113.18	0 31 52	306.0	29.10	325.65
76.28	0 10 6	1305.96	21.46	350.79	226.91	113.18	0 31 52	306.0	29.10	325.65
76.28	0 10 6	1305.96	21.46	350.79	226.91	113.18	0 31 52	306.0	29.10	325.65
110.00	2 41 25	6101.99	12.26	287.80	221.88	122.13	4 23 7	5102.0	24.33	265.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.3578	TRA	.7132	TC	-10.1095	BAU	1.5941	SGT	7416.6	SGR	879.9	SG3	1760.6	ST	116.0	SR	10.2	SS	57.0
RDE	.1089	RRA	-.1516	RC3	1.1805	FAU	.36899	RRT	-.9838	RRF	-.9994	RTF	.9773	CRT	-.9632	CRS	.9964	CST	-.9369
FDE	-2.1883	FRA	3.7338	FC	-27.2677	BSP	5207	SGB	7468.6	R23	.2092	R13	-.9778	LSA	128.4	MSA	18.2	SSA	.0
BDE	1.3622	BRA	.7291	BC	310.1782	FSP	-839	SG1	7467.0	SG2	156.4	THA	173.34	EL1	116.4	EL2	2.7	ALF	175.15

LAUNCH DATE MAY 11 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC DISTANCE 573.627 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.306	GAL	-1.61	AZL	92.20	HCA	181.78	SMA	186.09	ECC	.19015	INC	2.1756
RP	220.93	LAP	.07	LOP	51.45	VP	22.097	GAP	1.95	AZP	87.80	TAL	349.88	TAP	171.66	RCA	150.71	APO	221.48
RC	193.341	GL	-22.00	GP	2.54	ZAL	113.19	ZAP	61.90	ETS	180.55	ZAE	102.83	ETE	179.88	ZAC	104.90	ETC	272.07

V1	29.491	V2	24.884	LVI	-12.23														

PLANETOCENTRIC CONIC

C3	10.982	VHL	3.314	DLA	-26.12	RAL	355.28	RAD	6638.5	VEL	11.449	PTH	6.50	VHP	3.068	DPA	-20.56	RAP	295.04

ECC	1.1807																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 32 1	2462.67	-5.53	64.84	206.98	137.33	18 13 4	1462.7	12.82	49.01
60.00	18 46 19	2265.08	-.79	51.59	211.53	130.29	19 24 4	1265.1	15.12	33.34
70.00	20 22 17	1982.91	4.22	32.50	215.32	123.92	20 55 20	982.9	17.57	12.17
80.00	22 19 59	1614.47	8.88	7.38	218.17	118.62	22 46 54	614.5	19.87	345.40
90.00	0 13 25	1261.34	11.20	342.63	219.39	116.14	0 34 27	261.3	21.02	319.90
100.00	1 6 47	1088.95	8.88	328.75	218.17	118.62	1 24 56	88.9	19.87	306.77
110.00	1 25 39	1029.72	4.22	321.42	215.32	123.92	1 42 49	29.7	17.57	301.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1890	TRA	1.7673	TC3	-7.3841	BAU	1.0854	SGT	5970.0	SGR	330.6	SG3	1484.7	ST	54.1	SR	3.6	SS	54.7
RDE	.0009	RRA	-.1230	RC3	.3479	FAU	.22468	RRT	-.9806	RRF	-.9943	RTF	.9668	CRT	-.9587	CRS	.8975	CST	-.7363
FDE	1.0063	FRA	6.4540	FC	-17.7111	BSP	7814	SGB	5979.1	R23	.2353	R13	-.9669	LSA	71.8	MSA	27.9	SSA	.1
BDE	.1890	BRA	1.7716	BC	3 7.3923	FSP	2234	SG1	5978.8	SG2	64.8	THA	176.89	EL1	54.2	EL2	1.0	ALF	176.38

LAUNCH DATE MAY 11 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 577.766 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.314	GAL	-1.69	AZL	92.07	HCA	182.89	SMA	186.22	ECC	.19091	INC	2.0522
RP	221.31	LAP	.10	LOP	52.58	VP	22.061	GAP	1.80	AZP	87.94	TAL	349.45	TAP	172.34	RCA	150.67	APO	221.78
RC	195.978	GL	-20.60	GP	1.55	ZAL	114.01	ZAP	60.69	ETS	180.06	ZAE	101.42	ETE	180.14	ZAC	103.92	ETC	272.04

V1	29.491	V2	24.842	LVI	-11.28														

PLANETOCENTRIC CONIC

C3	10.981	VHL	3.311	DLA	-24.61	RAL	355.21	RAD	6638.5	VEL	11.448	PTH	6.50	VHP	3.090	DPA	-21.55	RAP	295.11

ECC	1.1804																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 16	2495.63	-7.18	66.23	206.57	137.16	18 5 52	1495.6	11.20	50.45
60.00	18 35 32	2306.07	-2.59	53.55	210.96	130.23	19 13 58	1306.1	13.40	33.44
70.00	20 6 47	2037.81	2.13	35.38	214.54	124.10	20 40 44	1037.8	15.69	15.32
80.00	21 56 50	1693.40	6.28	11.79	217.10	119.25	22 25 3	693.4	17.72	350.27
90.00	23 39 56	1360.66	8.16	348.36	218.12	117.17	24 2 37	360.9	18.64	326.23
100.00	0 43 37	1167.67	6.28	333.16	217.10	119.25	1 3 5	167.9	17.72	311.64
110.00	1 10 9	1084.63	2.13	324.30	214.54	124.10	1 28 14	84.8	15.69	304.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0517	TRA	1.9173	TC3	-7.3141	BAU	1.0724	SGT	6084.8	SGR	238.8	SG3	1456.6	ST	55.4	SR	2.8	SS	58.7
RDE	.0081	RRA	-.0949	RC3	.2351	FAU	.21116	RRT	-.9763	RRF	-.9915	RTF	.9686	CRT	-.9844	CRS	.7041	CST	-.8139
FDE	1.3009	FRA	6.5867	FC	-16.6777	BSP	9036	SGB	6069.5	R23	.1649	R13	-.9687	LSA	76.9	MSA	24.6	SSA	.2
BDE	.0523	BRA	1.9196	BC	3 7.3178	FSP	2389	SG1	6069.3	SG2	51.6	THA	177.80	EL1	55.5	EL2	.5	ALF	177.14

LAUNCH DATE MAY 11 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 581.859 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.322	GAL	-1.76	AZL	92.01	HCA	183.99	SMA	186.36	ECC	.19169	INC	1.9959
RP	221.69	LAP	.14	LOP	53.66	VP	22.026	GAP	1.65	AZP	88.00	TAL	349.01	TAP	173.01	RCA	150.64	APO	222.08
RC	198.621	GL	-19.90	GP	1.11	ZAL	114.72	ZAP	59.53	ETS	179.84	ZAE	100.05	ETE	180.26	ZAC	103.48	ETC	272.02

V1	29.491	V2	24.801	LVI	-10.85														

PLANETOCENTRIC CONIC

C3	11.045	VHL	3.323	DLA	-23.72	RAL	355.48	RAD	6638.6	VEL	11.451	PTH	6.50	VHP	3.115	DPA	-21.99	RAP	295.13

ECC	1.1818																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 5	2516.61	-8.23	67.13	206.75	137.03	18 3 2	1516.6	10.16	51.36
60.00	18 30 42	2331.46	-3.71	54.77	211.07	130.16	19 9 34	1331.5	12.32	36.72
70.00	19 59 29	2070.44	.88	37.08	214.55	124.14	20 34 0	1070.4	14.54	17.15
80.00	21 46 0	1737.11	4.82	14.22	216.99	119.50	22 14 57	737.1	16.47	352.92
90.00	23 26 38	1412.53	6.54	351.29	217.94	117.57	23 50 10	412.5	17.31	329.44
100.00	0 32 46	1211.58	4.82	335.59	216.99	119.50	0 52 59	211.6	16.47	314.28
110.00	1 2 52	1117.26	.88	326.00	214.55	124.14	1 21 29	117.3	14.54	306.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0136	TRA	2.0218	TC3	-7.3669	BAU	1.0881	SGT	6202.6	SGR	202.3	SG3	1428.5	ST	57.6	SR	2.8	SS	60.1
RDE	.0161	RRA	-.0839	RC3	.1856	FAU	.20453	RRT	-.9600	RRF	-.9583	RTF	.9698	CRT	-.8518	CRS	.4459	CST	-.8469
FDE	1.4180	FRA	6.5866	FC	-16.0321	BSP	9567	SGB	6205.9	R23	.0970	R13	-.9698	LSA	80.0	MSA	23.1	SSA	.2
BDE	.0211	BRA	2.0235	BC	3 7.3692	FSP	2386	SG1	6205.6	SG2	56.6	THA	178.21	EL1	57.6	EL2	1.4	ALF	177.67

LAUNCH DATE MAY 11 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 586.027 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.330 GAL -1.84 AZL 91.97 HCA 185.09 SMA 186.50 ECC .19249 INC 1.9683 V1 29.491
RP 222.07 LAP .17 LOP 54.76 VP 21.991 GAP 1.50 AZP 88.04 TAL 348.57 TAP 173.66 RCA 150.60 APO 222.40 V2 24.759
RC 201.270 GL -19.44 GP .86 ZAL 115.40 ZAP 58.41 ETS 179.72 ZAE 98.71 ETE 180.32 ZAC 103.23 ETC 272.01 LVI -10.61

PLANETOCENTRIC CONIC

C3 11.167 VHL 3.342 DLA -23.05 RAL 355.88 RAD 6638.6 VEL 11.457 PTH 6.51 VHP 3.141 DPA -22.24 RAP 295.15 ECC 1.1838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 29	2533.47	-9.07	67.85	207.14	136.91	18 1 43	1533.5	9.32	52.09
60.00	18 27 54	2351.51	-4.59	55.73	211.42	130.08	19 7 6	1351.5	11.46	37.72
70.00	19 54 58	2095.59	-.08	38.39	214.83	124.15	20 29 53	1095.6	13.65	18.55
80.00	21 39 7	1769.62	3.72	16.01	217.20	119.65	22 8 36	769.6	15.51	354.86
90.00	23 18 14	1449.94	5.36	353.40	218.10	117.81	23 42 24	449.9	16.32	331.73
100.00	0 25 55	1244.09	3.72	337.38	217.20	119.65	0 46 39	244.1	15.51	316.23
110.00	0 58 20	1142.41	-.08	327.31	214.83	124.15	1 17 22	142.4	13.65	307.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0912 TRA 2.1495 TC3-7.3311 BAU 1.0947 SGT 6330.3 SGR 185.6 SG3 1400.5 ST 61.0 SR 3.0 SS 62.4
RDE .0230 RRA -.0803 RC3 .1532 FAU .19530 RRT -.9321 RRF -.9248 RTF .9702 CRT -.6612 CRS .2236 CST -.8777
FDE 1.5730 FRA 6.6398 FC-15.1412 BSP 10333 SGB 6333.0 R23 .0561 R13 -.9703 LSA 84.6 MSA 21.7 SSA .3
BDE .0940 BRA 2.1510 BC3 7.3327 FSP 2445 SG1 6332.6 SG2 67.2 THA 178.43 EL1 61.1 EL2 2.2 ALF 178.14

LAUNCH DATE MAY 11 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 590.152 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.339 GAL -1.92 AZL 91.95 HCA 186.19 SMA 186.64 ECC .19332 INC 1.9497 V1 29.491
RP 222.46 LAP .21 LOP 55.86 VP 21.957 GAP 1.36 AZP 88.06 TAL 348.12 TAP 174.32 RCA 150.56 APO 222.72 V2 24.717
RC 203.922 GL -19.10 GP .70 ZAL 116.07 ZAP 57.32 ETS 179.64 ZAE 97.41 ETE 180.36 ZAC 103.07 ETC 272.01 LVI -10.47

PLANETOCENTRIC CONIC

C3 11.309 VHL 3.363 DLA -22.47 RAL 356.33 RAD 6638.7 VEL 11.463 PTH 6.51 VHP 3.168 DPA -22.40 RAP 295.19 ECC 1.1861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 36	2548.45	-9.81	68.49	207.63	136.79	18 1 5	1548.4	8.58	52.73
60.00	18 26 2	2369.12	-5.36	56.58	211.87	130.00	19 5 31	1369.1	10.71	38.60
70.00	19 51 42	2117.30	-.91	39.53	215.24	124.14	20 26 59	1117.3	12.87	19.75
80.00	21 34 2	1797.02	2.80	17.52	217.55	119.74	22 3 59	797.0	14.69	356.48
90.00	23 12 1	1480.96	4.37	355.14	218.42	117.97	23 36 42	481.0	15.47	333.61
100.00	0 20 50	1271.50	2.80	338.89	217.55	119.74	0 42 1	271.5	14.69	317.85
110.00	0 55 4	1164.12	-.91	328.44	215.24	124.14	1 14 28	164.1	12.87	308.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1414 TRA 2.2543 TC3-7.3666 BAU 1.1140 SGT 6471.7 SGR 178.7 SG3 1372.1 ST 63.9 SR 3.4 SS 62.9
RDE .0303 RRA -.0792 RC3 .1327 FAU .19038 RRT -.8962 RRF -.8845 RTF .9717 CRT -.4923 CRS .0571 CST -.8961
FDE 1.6300 FRA 6.6073 FC-14.5732 BSP 10763 SGB 6474.2 R23 .0304 R13 -.9717 LSA 87.4 MSA 20.7 SSA .3
BDE .1446 BRA 2.2557 BC3 7.3678 FSP 2401 SG1 6473.7 SG2 79.3 THA 178.58 EL1 64.0 EL2 2.9 ALF 178.50

LAUNCH DATE MAY 11 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 594.268 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.347 GAL -2.00 AZL 91.94 HCA 187.28 SMA 186.78 ECC .19417 INC 1.9329 V1 29.491
RP 222.84 LAP .25 LOP 56.95 VP 21.922 GAP 1.21 AZP 88.08 TAL 347.67 TAP 174.96 RCA 150.52 APO 223.05 V2 24.675
RC 206.578 GL -18.81 GP .59 ZAL 116.73 ZAP 56.27 ETS 179.58 ZAE 96.14 ETE 180.36 ZAC 102.96 ETC 272.02 LVI -10.38

PLANETOCENTRIC CONIC

C3 11.468 VHL 3.386 DLA -21.95 RAL 356.80 RAD 6638.8 VEL 11.470 PTH 6.52 VHP 3.194 DPA -22.50 RAP 295.26 ECC 1.1887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 7	2562.52	-10.51	69.10	208.18	136.68	18 0 50	1562.5	7.88	53.33
60.00	18 24 41	2385.52	-6.08	57.37	212.39	129.92	19 4 26	1385.5	10.00	39.41
70.00	19 49 7	2137.27	-1.67	40.57	215.72	124.12	20 24 45	1137.3	12.15	20.85
80.00	21 29 55	1821.81	1.96	18.88	217.98	119.80	22 0 17	821.8	13.94	357.93
90.00	23 7 0	1508.69	3.48	356.70	218.83	118.08	23 32 9	508.7	14.69	335.28
100.00	0 16 43	1296.28	1.96	340.25	217.98	119.80	0 38 19	296.3	13.94	319.30
110.00	0 52 30	1184.09	-1.67	329.49	215.72	124.12	1 12 14	184.1	12.15	309.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1778 TRA 2.3479 TC3-7.4395 BAU 1.1407 SGT 6619.9 SGR 177.5 SG3 1345.1 ST 66.4 SR 3.9 SS 64.0
RDE .0375 RRA -.0798 RC3 .1172 FAU .18442 RRT -.8546 RRF -.8388 RTF .9700 CRT -.3654 CRS -.0702 CST -.9019
FDE 1.7103 FRA 6.6027 FC-13.9220 BSP 11022 SGB 6622.3 R23 .0186 R13 -.9700 LSA 89.9 MSA 20.8 SSA .4
BDE .1817 BRA 2.3493 BC3 7.4404 FSP 2388 SG1 6621.7 SG2 92.1 THA 178.69 EL1 66.4 EL2 3.6 ALF 178.78

LAUNCH DATE MAY 11 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 24 1972

HELIOCENTRIC CONIC DISTANCE 598.380 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.356 GAL -2.08 AZL 91.92 HCA 188.37 SMA 186.93 ECC .19505 INC 1.9230 V1 29.491
RP 223.23 LAP .28 LOP 58.04 VP 21.888 GAP 1.07 AZP 88.10 TAL 347.22 TAP 175.59 RCA 150.47 APO 223.39 V2 24.633
RC 209.236 GL -18.56 GP .51 ZAL 117.38 ZAP 55.25 ETS 179.54 ZAE 94.89 ETE 180.40 ZAC 102.87 ETC 272.04 LVI -10.34

PLANETOCENTRIC CONIC

C3 11.638 VHL 3.411 DLA -21.46 RAL 357.30 RAD 6638.9 VEL 11.477 PTH 6.53 VHP 3.222 DPA -22.57 RAP 295.35 ECC 1.1915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 53	2576.02	-11.17	69.69	208.76	136.56	18 0 49	1576.0	7.20	53.91
60.00	18 23 38	2401.15	-6.76	58.13	212.95	129.83	19 3 39	1401.1	9.33	40.18
70.00	19 46 59	2156.13	-2.39	41.55	216.25	124.08	20 22 55	1156.1	11.47	21.88
80.00	21 26 26	1844.89	1.18	20.15	218.47	119.84	21 57 11	844.9	13.23	359.28
90.00	23 2 44	1534.28	2.66	358.13	219.30	118.16	23 28 18	534.3	13.97	336.81
100.00	0 13 14	1319.36	1.18	341.52	218.47	119.84	0 35 13	319.4	13.23	320.65
110.00	0 50 21	1202.94	-2.39	330.47	216.25	124.08	1 10 24	202.9	11.47	310.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2286 TRA 2.4580 TC3-7.4532 BAU 1.1597 SGT 6759.0 SGR 179.8 SG3 1318.2 ST 69.7 SR 4.3 SS 65.3
RDE .0444 RRA -.0817 RC3 .1038 FAU .17767 RRT -.8110 RRF -.7918 RTF .9691 CRT -.2529 CRS -.1639 CST -.9120
FDE 1.8012 FRA 6.6096 FC-13.2170 BSP 11471 SGB 6761.4 R23 .0097 R13 -.9691 LSA 93.4 MSA 20.4 SSA .4
BDE .2328 BRA 2.4594 BC3 7.4539 FSP 2396 SG1 6760.6 SG2 105.2 THA 178.76 EL1 69.7 EL2 4.2 ALF 179.09

LAUNCH DATE MAY 11 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 602.490 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.365 GAL -2.16 AZL 91.92 HCA 189.46 SMA 187.08 ECC .19594 INC 1.9135 V1 29.491
RP 223.62 LAP .31 LOP 59.13 VP 21.854 GAP .92 AZP 88.11 TAL 346.76 TAP 176.22 RCA 150.42 APO 223.74 V2 24.592
RC 211.896 GL -18.33 GP .45 ZAL 118.03 ZAP 54.27 ETS 179.51 ZAE 93.67 ETE 180.41 ZAC 102.80 ETC 272.07 LVI -10.31

PLANETOCENTRIC CONIC

C3 11.817 VHL 3.438 DLA -21.00 RAL 357.80 RAD 6639.0 VEL 11.485 PTH 6.53 VHP 3.250 DPA -22.61 RAP 295.46 ECC 1.1945

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 47	2589.15	-11.82	70.26	209.36	136.43	18 0 56	1589.2	6.55	54.47
60.00	18 22 47	2416.27	-7.42	58.86	213.54	129.73	19 3 4	1416.3	8.68	40.92
70.00	19 45 8	2174.22	-3.08	42.50	216.80	124.03	20 21 22	1174.2	10.81	22.86
80.00	21 23 21	1866.79	.44	21.35	219.00	119.85	21 54 28	866.8	12.55	.55
90.00	22 58 58	1558.39	1.89	359.48	219.80	118.22	23 24 56	558.4	13.27	338.24
100.00	0 10 9	1341.26	.44	342.72	219.00	119.85	0 32 31	341.3	12.55	321.92
110.00	0 48 30	1221.04	-3.08	331.42	216.80	124.03	1 8 51	221.0	10.81	311.78

DIFFERENTIAL CORRECTIONS

TDE .2537 TRA 2.5435 TC3-7.5422 BAU 1.1916
RDE .0519 RRA -.0838 RC3 .0943 FAU .17525
FDE 1.7973 FRA 6.5286 FC-12.8394 BSP 11581
BDE .2590 BRA 2.5449 BC3 7.5428 FSP 2303

MID-COURSE EXECUTION ACCURACY

SGT 6905.6 SGR 184.5 SG3 1289.5
RRT -.7679 RRF -.7465 RTF .9700
SGB 6908.1 R23 .0022 R13 -.9700
SG1 6907.1 SG2 118.2 THA 178.82

ORBIT DETERMINATION ACCURACY

ST 71.7 SR 4.9 SS 64.7
CRT -.1775 CRS -.2265 CST -.9175
LSA 94.6 MSA 20.1 SSA .5
EL1 71.7 EL2 4.8 ALF 179.31

LAUNCH DATE MAY 11 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 606.593 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.374 GAL -2.24 AZL 91.91 HCA 190.54 SMA 187.23 ECC .19686 INC 1.9078 V1 29.491
RP 224.01 LAP .35 LOP 60.21 VP 21.820 GAP .77 AZP 88.12 TAL 346.30 TAP 176.84 RCA 150.37 APO 224.09 V2 24.550
RC 214.558 GL -18.12 GP .40 ZAL 118.68 ZAP 53.31 ETS 179.49 ZAE 92.48 ETE 180.42 ZAC 102.75 ETC 272.10 LVI -10.32

PLANETOCENTRIC CONIC

C3 12.005 VHL 3.465 DLA -20.54 RAL 358.31 RAD 6639.1 VEL 11.493 PTH 6.54 VHP 3.278 DPA -22.64 RAP 295.61 ECC 1.1976

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 48	2602.09	-12.46	70.83	209.99	136.30	18 1 10	1602.1	5.90	55.01
60.00	18 22 5	2431.10	-8.06	59.58	214.15	129.62	19 2 37	1431.1	8.03	41.64
70.00	19 43 29	2191.85	-3.75	43.42	217.39	123.97	20 20 1	1191.8	10.16	23.62
80.00	21 20 35	1887.93	-.28	22.51	219.55	119.86	21 52 3	887.9	11.89	1.77
90.00	22 55 34	1581.54	1.14	.77	220.34	118.26	23 21 56	581.5	12.60	339.60
100.00	0 7 23	1362.41	-.28	343.68	219.55	119.86	0 30 5	362.4	11.89	323.14
110.00	0 46 51	1238.67	-3.75	332.34	217.39	123.97	1 7 30	238.7	10.16	312.73

DIFFERENTIAL CORRECTIONS

TDE .2990 TRA 2.6503 TC3-7.5612 BAU 1.2136
RDE .0590 RRA -.0868 RC3 .0846 FAU .17008
FDE 1.8496 FRA 6.5018 FC-12.2650 BSP 11932
BDE .3048 BRA 2.6517 BC3 7.5617 FSP 2272

MID-COURSE EXECUTION ACCURACY

SGT 7043.0 SGR 190.9 SG3 1262.2
RRT -.7260 RRF -.7025 RTF .9698
SGB 7045.6 R23 -.0026 R13 -.9698
SG1 7044.3 SG2 131.3 THA 178.87

ORBIT DETERMINATION ACCURACY

ST 74.8 SR 5.4 SS 65.3
CRT -.1026 CRS -.2806 CST -.9251
LSA 97.5 MSA 19.8 SSA .5
EL1 74.8 EL2 5.4 ALF 179.57

LAUNCH DATE MAY 11 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 610.690 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.383 GAL -2.33 AZL 91.90 HCA 191.62 SMA 187.39 ECC .19780 INC 1.9025 V1 29.491
RP 224.40 LAP .38 LOP 61.29 VP 21.786 GAP .63 AZP 88.14 TAL 345.83 TAP 177.45 RCA 150.32 APO 224.45 V2 24.508
RC 217.222 GL -17.91 GP .38 ZAL 119.33 ZAP 52.36 ETS 179.47 ZAE 91.31 ETE 180.43 ZAC 102.70 ETC 272.13 LVI -10.34

PLANETOCENTRIC CONIC

C3 12.202 VHL 3.493 DLA -20.10 RAL 358.82 RAD 6639.2 VEL 11.501 PTH 6.55 VHP 3.306 DPA -22.66 RAP 295.78 ECC 1.2008

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 17 53	2614.91	-13.09	71.39	210.63	136.16	18 1 28	1614.9	5.26	55.55
60.00	18 21 30	2445.73	-8.70	60.30	214.77	129.51	19 2 15	1445.7	7.40	42.36
70.00	19 41 59	2209.13	-4.41	44.33	217.99	123.90	20 18 46	1209.1	9.52	24.75
80.00	21 18 2	1908.49	-.98	23.64	220.12	119.84	21 49 51	908.5	11.24	2.95
90.00	22 52 27	1603.93	.42	2.02	220.90	118.28	23 19 11	603.9	11.94	340.91
100.00	0 4 50	1382.96	-.98	345.01	220.12	119.84	0 27 53	383.0	11.24	324.32
110.00	0 45 21	1255.95	-4.41	333.25	217.99	123.90	1 6 17	255.9	9.52	313.66

DIFFERENTIAL CORRECTIONS

TDE .3393 TRA 2.7535 TC3-7.5926 BAU 1.2386
RDE .0663 RRA -.0901 RC3 .0763 FAU .16566
FDE 1.8879 FRA 6.4647 FC-11.7537 BSP 12213
BDE .3458 BRA 2.7550 BC3 7.5930 FSP 2232

MID-COURSE EXECUTION ACCURACY

SGT 7181.6 SGR 198.5 SG3 1235.6
RRT -.6865 RRF -.6613 RTF .9698
SGB 7184.4 R23 -.0084 R13 -.9696
SG1 7182.9 SG2 144.3 THA 178.91

ORBIT DETERMINATION ACCURACY

ST 77.7 SR 5.9 SS 65.7
CRT -.0426 CRS -.3237 CST -.9307
LSA 100.0 MSA 19.6 SSA .6
EL1 77.7 EL2 5.9 ALF 179.81

LAUNCH DATE MAY 11 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 614.783 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.392 GAL -2.41 AZL 91.90 HCA 192.70 SMA 187.84 ECC .19875 INC 1.8978 V1 29.491
RP 224.79 LAP .42 LOP 62.36 VP 21.752 GAP .48 AZP 88.15 TAL 345.36 TAP 178.06 RCA 150.27 APO 224.82 V2 24.466
RC 219.886 GL -17.72 GP .32 ZAL 119.98 ZAP 51.49 ETS 179.46 ZAE 90.17 ETE 180.43 ZAC 102.66 ETC 272.18 LVI -10.37

PLANETOCENTRIC CONIC

C3 12.407 VHL 3.522 DLA -19.67 RAL 359.33 RAD 6639.3 VEL 11.510 PTH 6.56 VHP 3.335 DPA -22.66 RAP 295.98 ECC 1.2042

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 1	2627.64	-13.71	71.96	211.28	136.02	18 1 49	1627.6	4.62	56.09
60.00	18 20 59	2460.22	-9.32	61.01	215.41	129.39	19 1 59	1460.2	6.77	43.06
70.00	19 40 36	2226.15	-5.05	45.22	218.61	123.82	20 17 42	1226.1	8.89	25.66
80.00	21 15 40	1928.59	-1.66	24.74	220.72	119.82	21 47 49	928.6	10.59	4.09
90.00	22 49 34	1628.72	-.28	3.23	221.48	118.28	23 16 40	628.7	11.29	342.18
100.00	0 2 28	1403.06	-1.66	346.11	220.72	119.82	0 25 51	403.1	10.59	325.46
110.00	0 43 58	1272.97	-5.05	334.14	218.61	123.82	1 5 11	273.0	8.89	314.58

DIFFERENTIAL CORRECTIONS

TDE .3771 TRA 2.8555 TC3-7.6265 BAU 1.2651
RDE .0737 RRA -.0936 RC3 .0688 FAU .16155
FDE 1.9167 FRA 6.4220 FC-11.2725 BSP 12447
BDE .3842 BRA 2.8570 BC3 7.6268 FSP 2184

MID-COURSE EXECUTION ACCURACY

SGT 7319.3 SGR 207.0 SG3 1209.1
RRT -.6498 RRF -.6231 RTF .9694
SGB 7322.2 R23 -.0093 R13 -.9694
SG1 7320.5 SG2 157.3 THA 178.95

ORBIT DETERMINATION ACCURACY

ST 80.5 SR 6.5 SS 65.8
CRT .0071 CRS -.3587 CST -.9352
LSA 102.3 MSA 19.4 SSA .6
EL1 80.5 EL2 6.5 ALF .03

LAUNCH DATE MAY 11 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 3 1972

HELIOCENTRIC CONIC DISTANCE 618.870 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.401 GAL -2.50 AZL 91.89 HCA 193.77 SMA 187.70 ECC .19973 INC 1.8941 V1 29.491
RP 225.18 LAP .45 LOP 63.43 VP 21.719 GAP .33 AZP 88.16 TAL 344.89 TAP 178.66 RCA 150.21 APO 225.19 V2 24.424
RC 222.551 GL -17.53 GP .30 ZAL 120.62 ZAP 50.62 ETS 179.45 ZAE 89.05 ETE 180.43 ZAC 102.62 ETC 272.23 LVI -10.42

PLANETOCENTRIC CONIC

C3 12.621 VHL 3.553 DLA -19.24 RAL 359.84 RAD 6639.4 VEL 11.519 PTH 6.57 VHP 3.364 DPA -22.66 RAP 296.20 ECC 1.2077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 12	2640.31	-14.34	72.52	211.94	135.87	18 2 12	1640.3	3.99	56.62
60.00	18 20 31	2474.59	-9.94	61.72	216.07	129.26	19 1 46	1474.6	6.14	43.76
70.00	19 39 19	2242.96	-5.69	48.11	219.24	123.73	20 16 42	1243.0	8.26	26.56
80.00	21 13 27	1948.32	-2.32	25.83	221.33	119.78	21 45 56	948.3	9.96	5.21
90.00	22 46 51	1647.03	-.97	4.42	222.08	118.26	23 14 18	647.0	10.65	343.42
100.00	0 0 15	1422.79	-2.32	347.20	221.33	119.78	0 23 58	422.8	9.96	326.58
110.00	0 42 41	1289.78	-5.69	335.03	219.24	123.73	1 4 11	289.8	8.26	315.48

DIFFERENTIAL CORRECTIONS

TDE .4179 TRA 2.9607 TC3-7.6465 BAU 1.2902
RDE .0811 RRA -.0974 RC3 .0617 FAU .15724
FDE 1.9463 FRA 6.3792 FC-10.7862 BSP 12698
BDE .4257 BRA 2.9623 BC3 7.6467 FSP 2138

MID-COURSE EXECUTION ACCURACY

SGT 7453.0 SGR 216.1 SG3 1182.5
RRT -.6156 RRF -.5877 RTF .9692
SGB 7456.2 R23 -.0116 R13 -.9691
SG1 7454.2 SG2 170.3 THA 178.98

ORBIT DETERMINATION ACCURACY

ST 83.4 SR 7.0 SS 66.0
CRT .0522 CRS -.3689 CST -.9396
LSA 104.8 MSA 19.2 SSA .7
EL1 83.4 EL2 7.0 ALF .25

LAUNCH DATE MAY 11 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 5 1972

HELIOCENTRIC CONIC DISTANCE 622.951 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.410 GAL -2.59 AZL 91.89 HCA 194.83 SMA 187.86 ECC .20073 INC 1.8905 V1 29.491
RP 225.57 LAP .48 LOP 64.50 VP 21.686 GAP .19 AZP 88.17 TAL 344.42 TAP 179.25 RCA 150.15 APO 225.57 V2 24.382
RC 225.217 GL -17.35 GP .27 ZAL 121.26 ZAP 49.78 ETS 179.45 ZAE 87.96 ETE 180.44 ZAC 102.58 ETC 272.28 LVI -10.48

PLANETOCENTRIC CONIC

C3 12.843 VHL 3.584 DLA -18.81 RAL .35 RAD 6639.5 VEL 11.529 PTH 6.58 VHP 3.394 DPA -22.65 RAP 296.44 ECC 1.2114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 25	2652.96	-14.95	73.09	212.62	135.71	18 2 38	1653.0	3.35	57.15
60.00	18 20 7	2488.90	-10.56	62.42	216.73	129.12	19 1 36	1488.9	5.51	44.45
70.00	19 38 6	2259.61	-6.32	46.99	219.89	123.63	20 15 46	1259.6	7.64	27.45
80.00	21 11 22	1967.74	-2.98	26.90	221.95	119.72	21 44 9	967.7	9.33	6.31
90.00	22 44 18	1667.93	-1.64	5.59	222.69	118.24	23 12 6	667.9	10.01	344.63
100.00	23 54 14	1442.22	-2.98	348.26	221.95	119.72	24 18 16	442.2	9.33	327.68
110.00	0 41 29	1306.43	-6.32	335.90	219.89	123.63	1 3 15	306.4	7.64	316.36

DIFFERENTIAL CORRECTIONS

TDE .4574 TRA 3.0654 TC3-7.6688 BAU 1.3167
RDE .0886 RRA -.1013 RC3 .0552 FAU .15319
FDE 1.9731 FRA 6.3344 FC-10.3265 BSP 12919
BDE .4659 BRA 3.0671 BC3 7.6690 FSP 2091

MID-COURSE EXECUTION ACCURACY

SGT 7586.3 SGR 225.7 SG3 1156.6
RRT -.5840 RRF -.5550 RTF .9688
SGB 7589.7 R23 -.0136 R13 -.9688
SG1 7587.5 SG2 183.2 THA 179.00

ORBIT DETERMINATION ACCURACY

ST 86.2 SR 7.5 SS 66.1
CRT .0910 CRS -.4151 CST -.9431
LSA 107.2 MSA 19.1 SSA .7
EL1 86.2 EL2 7.5 ALF .46

LAUNCH DATE MAY 11 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 7 1972

HELIOCENTRIC CONIC DISTANCE 627.028 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.420 GAL -2.68 AZL 91.89 HCA 195.90 SMA 188.03 ECC .20175 INC 1.8875 V1 29.491
RP 225.96 LAP .52 LOP 65.56 VP 21.653 GAP .04 AZP 88.18 TAL 343.94 TAP 179.84 RCA 150.09 APO 225.96 V2 24.340
RC 227.883 GL -17.17 GP .25 ZAL 121.90 ZAP 48.96 ETS 179.44 ZAE 86.89 ETE 180.44 ZAC 102.55 ETC 272.34 LVI -10.55

PLANETOCENTRIC CONIC

C3 13.073 VHL 3.616 DLA -18.39 RAL .86 RAD 6639.6 VEL 11.539 PTH 6.58 VHP 3.423 DPA -22.62 RAP 296.71 ECC 1.2151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 39	2665.59	-15.57	73.66	213.30	135.55	18 3 5	1665.6	2.72	57.68
60.00	18 19 45	2503.13	-11.17	63.13	217.41	128.98	19 1 28	1503.1	4.89	45.13
70.00	19 36 58	2276.12	-6.94	47.86	220.54	123.53	20 14 54	1276.1	7.02	28.32
80.00	21 9 23	1986.90	-3.63	27.95	222.59	119.66	21 42 30	986.9	8.71	7.39
90.00	22 41 53	1688.49	-2.31	6.74	223.32	118.19	23 10 2	688.5	9.38	345.81
100.00	23 52 14	1461.37	-3.63	349.32	222.59	119.66	24 16 36	461.4	8.71	328.76
110.00	0 40 20	1322.94	-6.94	336.78	220.54	123.53	1 2 23	322.9	7.02	317.24

DIFFERENTIAL CORRECTIONS

TDE .4983 TRA 3.1728 TC3-7.6831 BAU 1.3428
RDE .0962 RRA -.1054 RC3 .0489 FAU .14920
FDE 1.9970 FRA 6.2903 FC3-9.8805 BSP 13149
BDE .5075 BRA 3.1746 BC3 7.6832 FSP 2046

MID-COURSE EXECUTION ACCURACY

SGT 7717.8 SGR 235.6 SG3 1131.2
RRT -.5549 RRF -.5251 RTF .9684
SGB 7721.4 R23 -.0152 R13 -.9684
SG1 7718.9 SG2 196.0 THA 179.03

ORBIT DETERMINATION ACCURACY

ST 89.1 SR 8.1 SS 66.1
CRT .1262 CRS -.4378 CST -.9469
LSA 109.6 MSA 19.0 SSA .8
EL1 89.1 EL2 8.0 ALF .66

LAUNCH DATE MAY 11 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 9 1972

HELIOCENTRIC CONIC DISTANCE 631.095 EARTH TO MARS

RL 151.08 LAL .00 LOL 229.67 VL 32.429 GAL -2.77 AZL 91.89 HCA 196.96 SMA 188.19 ECC .20278 INC 1.8853 V1 29.491
RP 226.35 LAP .55 LOP 66.62 VP 21.620 GAP -.11 AZP 88.20 TAL 343.46 TAP 180.42 RCA 150.03 APO 226.35 V2 24.299
RC 230.548 GL -16.99 GP .23 ZAL 122.53 ZAP 48.17 ETS 179.44 ZAE 85.83 ETE 180.44 ZAC 102.52 ETC 272.41 LVI -10.64

PLANETOCENTRIC CONIC

C3 13.311 VHL 3.648 DLA -17.97 RAL 1.37 RAD 6639.7 VEL 11.549 PTH 6.59 VHP 3.453 DPA -22.60 RAP 297.00 ECC 1.2191

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 18 55	2678.20	-16.18	74.24	213.99	135.38	18 3 33	1678.2	2.08	58.21
60.00	18 19 25	2517.32	-11.78	63.84	218.09	128.83	19 1 22	1517.3	4.27	45.81
70.00	19 35 53	2292.51	-7.56	48.73	221.21	123.41	20 14 6	1292.5	6.40	29.19
80.00	21 7 29	2005.82	-4.26	28.99	223.24	119.58	21 40 55	1005.8	8.09	8.46
90.00	22 39 35	1708.74	-2.96	7.87	223.96	118.14	23 8 4	708.7	8.76	346.97
100.00	23 50 21	1480.30	-4.26	350.36	223.24	119.58	24 15 1	480.3	8.09	329.82
110.00	0 39 16	1339.33	-7.56	337.65	221.21	123.41	1 1 35	339.3	6.40	318.11

DIFFERENTIAL CORRECTIONS

TDE .5440 TRA 3.2852 TC3-7.6816 BAU 1.3670
RDE .1039 RRA -.1097 RC3 .0429 FAU .14490
FDE 2.0283 FRA 6.2513 FC3-9.4248 BSP 13423
BDE .5538 BRA 3.2870 BC3 7.6817 FSP 2011

MID-COURSE EXECUTION ACCURACY

SGT 7846.3 SGR 245.8 SG3 1106.3
RRT -.5279 RRF -.4971 RTF .9679
SGB 7850.2 R23 -.0168 R13 -.9679
SG1 7847.4 SG2 208.7 THA 179.05

ORBIT DETERMINATION ACCURACY

ST 92.3 SR 8.6 SS 66.3
CRT .1602 CRS -.4594 CST -.9497
LSA 112.4 MSA 19.0 SSA .8
EL1 92.3 EL2 8.5 ALF .86

LAUNCH DATE MAY 11 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 11 1972

HELIOCENTRIC CONIC DISTANCE 635.160 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.439	GAL	-2.86	AZL	91.88	HCA	198.02	SMA	188.36	ECC	.20384	INC	1.8832	V1	29.491
RP	226.74	LAP	.58	LOP	67.68	VP	21.588	GAP	-.25	AZP	88.21	TAL	342.98	TAP	181.00	RCA	149.96	APO	226.75	V2	24.257
RC	233.212	GL	-16.81	GP	.22	ZAL	123.17	ZAP	47.40	ETS	179.44	ZAE	84.80	ETE	180.44	ZAC	102.49	ETC	272.48	LVI	-10.73

PLANETOCENTRIC CONIC

C3	13.557	VHL	3.682	DLA	-17.56	RAL	1.88	RAD	6639.8	VEL	11.559	PTH	6.60	VHP	3.483	DPA	-22.56	RAP	297.31	ECC	1.2231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 12	2690.81	-16.79	74.81	214.69	135.20	18 4 3	1690.8	1.45	58.73
60.00	18 19 7	2531.47	-12.38	64.55	218.78	128.67	19 1 18	1531.5	3.65	46.49
70.00	19 34 52	2308.79	-8.17	49.60	221.89	123.28	20 13 20	1308.8	5.79	30.05
80.00	21 5 41	2024.54	-4.89	30.03	223.90	119.49	21 39 25	1024.5	7.47	9.50
90.00	22 37 23	1728.71	-3.60	8.99	224.61	118.07	23 6 12	728.7	8.14	348.11
100.00	23 48 33	1499.01	-4.89	351.40	223.90	119.49	24 13 32	499.0	7.47	330.87
110.00	0 38 14	1355.61	-8.17	338.51	221.89	123.28	1 0 50	355.6	5.79	318.97

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.5881	TRA	3.3972	TC3	-7.6821	BAU	1.3923	SGT	7974.0	SGR	256.2	SG3	1081.7	ST	95.3	SR	9.1	SS	66.4
RDE	.1118	RRA	-.1141	RC3	.0371	FAU	.14093	RRT	-.5030	RRF	-.4714	RTF	.9675	CRT	.1899	CRS	-.4780	CST	-.9525
FDE	2.0511	FRA	6.2070	FC3	-8.9997	BSP	13665	SGB	7978.1	R23	-.0182	R13	-.9675	LSA	115.0	MSA	18.9	SSA	.9
BDE	.5986	BRA	3.3991	BC3	7.6822	FSP	1971	SG1	7975.0	SG2	221.4	THA	179.07	EL1	95.3	EL2	9.0	ALF	1.05

LAUNCH DATE MAY 11 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 13 1972

HELIOCENTRIC CONIC DISTANCE 639.218 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.448	GAL	-2.95	AZL	91.88	HCA	199.07	SMA	188.52	ECC	.20491	INC	1.8809	V1	29.491
RP	227.13	LAP	.61	LOP	68.73	VP	21.556	GAP	-.40	AZP	88.22	TAL	342.50	TAP	181.56	RCA	149.89	APO	227.15	V2	24.215
RC	235.874	GL	-16.64	GP	.20	ZAL	123.80	ZAP	46.66	ETS	179.44	ZAE	83.79	ETE	180.43	ZAC	102.45	ETC	272.56	LVI	-10.83

PLANETOCENTRIC CONIC

C3	13.811	VHL	3.716	DLA	-17.15	RAL	2.38	RAD	6640.0	VEL	11.570	PTH	6.61	VHP	3.513	DPA	-22.53	RAP	297.64	ECC	1.2273

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 29	2703.41	-17.40	75.39	215.40	135.01	18 4 33	1703.4	.82	59.26
60.00	18 18 50	2545.58	-12.98	65.26	219.48	128.50	19 1 16	1545.6	3.03	47.17
70.00	19 33 53	2324.97	-8.77	50.46	222.57	123.14	20 12 38	1325.0	5.17	30.90
80.00	21 3 57	2043.06	-5.51	31.05	224.57	119.39	21 38 0	1043.1	6.86	10.54
90.00	22 35 17	1748.43	-4.23	10.09	225.27	117.99	23 4 25	748.4	7.53	349.23
100.00	23 46 49	1517.54	-5.51	352.42	224.57	119.39	24 12 6	517.5	6.86	331.90
110.00	0 37 15	1371.79	-8.77	339.38	222.57	123.14	1 0 7	371.8	5.17	319.82

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6307	TRA	3.5092	TC3	-7.6839	BAU	1.4188	SGT	8100.6	SGR	266.8	SG3	1057.6	ST	98.2	SR	9.7	SS	66.3
RDE	.1198	RRA	-.1185	RC3	.0317	FAU	.13713	RRT	-.4800	RRF	-.4477	RTF	.9669	CRT	.2159	CRS	-.4944	CST	-.9549
FDE	2.0690	FRA	6.1618	FC3	-8.5955	BSP	13879	SGB	8105.0	R23	-.0192	R13	-.9669	LSA	117.4	MSA	18.9	SSA	.9
BDE	.6419	BRA	3.5112	BC3	7.6840	FSP	1928	SG1	8101.6	SG2	234.0	THA	179.09	EL1	98.3	EL2	9.4	ALF	1.23

LAUNCH DATE MAY 11 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 15 1972

HELIOCENTRIC CONIC DISTANCE 643.269 EARTH TO MARS

RL	151.08	LAL	.00	LOL	229.67	VL	32.458	GAL	-3.05	AZL	91.88	HCA	200.12	SMA	188.69	ECC	.20600	INC	1.8794	V1	29.491
RP	227.52	LAP	.65	LOP	69.78	VP	21.524	GAP	-.55	AZP	88.23	TAL	342.01	TAP	182.13	RCA	149.82	APO	227.56	V2	24.174
RC	238.532	GL	-16.46	GP	.19	ZAL	124.42	ZAP	45.93	ETS	179.45	ZAE	82.79	ETE	180.43	ZAC	102.42	ETC	272.64	LVI	-10.94

PLANETOCENTRIC CONIC

C3	14.074	VHL	3.752	DLA	-16.74	RAL	2.88	RAD	6640.1	VEL	11.582	PTH	6.63	VHP	3.543	DPA	-22.48	RAP	297.99	ECC	1.2316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 19 47	2716.01	-18.00	75.98	216.11	134.82	18 5 3	1716.0	.18	59.79
60.00	18 18 39	2559.65	-13.57	65.97	220.19	128.32	19 1 15	1559.7	2.41	47.84
70.00	19 32 56	2341.07	-9.37	51.32	223.27	123.00	20 11 57	1341.1	4.56	31.75
80.00	21 2 17	2061.42	-6.12	32.07	225.25	119.28	21 36 39	1061.4	6.25	11.56
90.00	22 33 16	1767.93	-4.85	11.19	225.94	117.89	23 2 44	767.9	6.91	350.34
100.00	23 45 9	1535.89	-6.12	353.44	225.25	119.28	24 10 45	535.9	6.25	332.93
110.00	0 36 19	1387.89	-9.37	340.24	223.27	123.00	0 59 26	387.9	4.56	320.67

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6788	TRA	3.6270	TC3	-7.6894	BAU	1.4431	SGT	8224.8	SGR	277.4	SG3	1034.1	ST	101.4	SR	10.2	SS	66.4
RDE	.1278	RRA	-.1230	RC3	.0264	FAU	.13305	RRT	-.4585	RRF	-.4254	RTF	.9683	CRT	.2421	CRS	-.5104	CST	-.9573
FDE	2.0934	FRA	6.1216	FC3	-8.1841	BSP	14136	SGB	8229.5	R23	-.0203	R13	-.9663	LSA	120.2	MSA	18.8	SSA	.9
BDE	.6907	BRA	3.6291	BC3	7.6894	FSP	1892	SG1	8225.8	SG2	246.5	THA	179.11	EL1	101.5	EL2	9.9	ALF	1.41

LAUNCH DATE MAY 12 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 16 1971

HELIOCENTRIC CONIC DISTANCE 284.939 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	35.522	GAL	-1.64	AZL	91.85	HCA	89.97	SMA	268.31	ECC	.43775	INC	1.8493
RP	207.27	LAP	-1.85	LOP	320.60	VP	28.035	GAP	22.59	AZP	90.00	TAL	353.94	TAP	83.91	RCA	150.86	APO	385.76
RC	56.362	GL	-10.48	GP	-.10	ZAL	104.09	ZAP	177.30	ETS	181.98	ZAE	174.57	ETE	63.87	ZAC	99.95	ETC	277.73

V1	29.484																		
V2	26.426																		
LVI	-17.90																		

PLANETOCENTRIC CONIC

C3	39.710	VHL	6.302	DLA	-19.41	RAL	340.85	RAD	6650.6	VEL	12.633	PTH	7.48	VHP	11.363	DPA	-17.32	RAP	320.97
ECC	1.6535																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 16	2911.05	-27.05	85.70	207.45	130.76	16 47 47	1911.1	-9.58	68.01
60.00	17 1 51	2744.64	-21.13	75.77	212.51	125.15	17 47 35	1744.6	-5.72	56.70
70.00	18 20 59	2512.02	-15.53	60.72	216.33	120.81	19 2 51	1512.0	-1.96	40.68
80.00	19 55 30	2216.20	-11.17	40.78	218.85	117.87	20 32 26	1216.2	1.04	20.09
90.00	21 29 6	1914.27	-9.43	19.49	219.76	116.78	22 1 0	914.3	2.25	358.56
100.00	22 38 22	1690.67	-11.17	2.15	218.85	117.87	23 6 32	690.7	1.04	341.46
110.00	23 20 25	1558.84	-15.53	349.64	216.33	120.81	23 46 24	558.8	-1.96	329.60

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4247	TRA	-.9496	TC3	.0062	BAU	.0366	SGT	993.6	SGR	583.8	SG3	98.3	ST	23.7	SR	26.8	SS	12.5
RDE	-.5836	RRA	.2359	RC3	.0687	FAU	.03250	RRT	-.0045	RRF	.0048	RTF	-.6144	CRT	.7343	CRS	.4597	CST	.9360
FDE	.1585	FRA	.7162	FC3	-.7086	BSP	1388	SGB	1152.4	R23	-.0006	R13	.6144	LSA	34.6	MSA	15.4	SSA	1.1
BDE	.7218	BRA	.9785	BC3	.0690	FSP	117	SG1	993.6	SG2	583.8	THA	179.77	EL1	33.3	EL2	12.9	ALF	49.71

LAUNCH DATE MAY 12 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 18 1971

HELIOCENTRIC CONIC DISTANCE 286.638 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	35.312	GAL	-1.76	AZL	91.85	HCA	91.23	SMA	260.48	ECC	.42078	INC	1.8484
RP	207.18	LAP	-1.85	LOP	321.87	VP	27.779	GAP	22.06	AZP	89.96	TAL	354.04	TAP	85.27	RCA	150.87	APO	370.08
RC	56.568	GL	-10.78	GP	-.10	ZAL	104.05	ZAP	176.41	ETS	181.53	ZAE	174.16	ETE	56.00	ZAC	99.90	ETC	277.81

V1	29.484																		
V2	26.438																		
LVI	-18.00																		

PLANETOCENTRIC CONIC

C3	37.068	VHL	6.088	DLA	-19.70	RAL	340.95	RAD	6649.6	VEL	12.528	PTH	7.41	VHP	10.991	DPA	-17.21	RAP	321.34
ECC	1.6100																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 0 55	2887.59	-26.00	84.46	206.52	131.36	16 49 2	1887.6	-8.41	67.01
60.00	17 3 55	2720.03	-20.16	74.41	211.57	125.67	17 49 15	1720.0	-4.65	55.51
70.00	18 23 36	2485.76	-14.61	59.25	215.40	121.22	19 5 2	1485.8	-.96	39.31
80.00	19 58 45	2187.97	-10.27	39.17	217.94	118.19	20 35 13	1188.0	2.00	18.54
90.00	21 32 41	1884.97	-8.53	17.81	218.86	117.06	22 4 6	885.0	3.19	356.92
100.00	22 41 37	1662.44	-10.27	.54	217.94	118.19	23 9 20	662.4	2.00	339.91
110.00	23 23 3	1532.58	-14.61	348.16	215.40	121.22	23 48 35	532.6	-.96	328.23

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4192	TRA	-.9396	TC3	.0178	BAU	.0377	SGT	1018.9	SGR	586.8	SG3	105.4	ST	24.2	SR	26.9	SS	12.9
RDE	-.5663	RRA	.2288	RC3	.0739	FAU	.03358	RRT	-.0044	RRF	.0051	RTF	-.6270	CRT	.7328	CRS	.4487	CST	.9326
FDE	.1608	FRA	.7447	FC3	-.7843	BSP	1444	SGB	1175.8	R23	-.0010	R13	.6270	LSA	35.0	MSA	15.7	SSA	1.1
BDE	.7045	BRA	.9671	BC3	.0760	FSP	128	SG1	1018.9	SG2	586.8	THA	179.78	EL1	33.7	EL2	13.1	ALF	49.00

LAUNCH DATE MAY 12 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 288.609 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	35.115	GAL	-1.68	AZL	91.85	HCA	92.49	SMA	253.55	ECC	.40488	INC	1.8475
RP	207.09	LAP	-1.85	LOP	323.13	VP	27.537	GAP	21.55	AZP	89.92	TAL	354.16	TAP	86.65	RCA	150.89	APO	356.20
RC	56.856	GL	-11.08	GP	-.10	ZAL	103.98	ZAP	175.52	ETS	181.27	ZAE	173.68	ETE	49.40	ZAC	99.84	ETC	277.88

V1	29.484																		
V2	26.448																		
LVI	-18.10																		

PLANETOCENTRIC CONIC

C3	34.657	VHL	5.887	DLA	-20.00	RAL	341.02	RAD	6648.8	VEL	12.432	PTH	7.34	VHP	10.632	DPA	-17.09	RAP	321.71
ECC	1.5704																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 2 31	2864.23	-24.94	83.24	205.60	131.93	16 50 15	1864.2	-7.25	66.01
60.00	17 5 59	2695.46	-19.18	73.07	210.65	126.15	17 50 54	1695.5	-3.57	54.33
70.00	18 26 16	2459.45	-13.68	57.78	214.49	121.60	19 7 15	1459.4	.05	37.94
80.00	20 2 7	2159.52	-9.35	37.56	217.04	118.48	20 38 7	1159.5	2.96	16.97
90.00	21 36 23	1855.35	-7.61	16.13	217.98	117.32	22 7 19	855.4	4.14	355.27
100.00	22 44 57	1634.00	-9.35	358.93	217.04	118.48	23 12 11	634.0	2.96	338.35
110.00	23 25 42	1506.26	-13.68	346.70	214.49	121.60	23 50 48	506.3	.05	326.85

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4133	TRA	-.9302	TC3	.0310	BAU	.0395	SGT	1044.7	SGR	589.4	SG3	113.0	ST	24.8	SR	27.0	SS	13.3
RDE	-.5494	RRA	.2218	RC3	.0793	FAU	.03472	RRT	-.0045	RRF	.0048	RTF	-.6392	CRT	.7309	CRS	.4386	CST	.9297
FDE	.1634	FRA	.7738	FC3	-.8674	BSP	1506	SGB	1199.5	R23	-.0005	R13	.6392	LSA	35.5	MSA	16.1	SSA	1.1
BDE	.6875	BRA	.9563	BC3	.0852	FSP	139	SG1	1044.7	SG2	589.4	THA	179.79	EL1	34.1	EL2	13.4	ALF	48.31

LAUNCH DATE MAY 12 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 290.814 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	34.928	GAL	-1.60	AZL	91.85	HCA	93.76	SMA	247.38	ECC	.38998	INC	1.8465
RP	207.01	LAP	-1.84	LOP	324.40	VP	27.308	GAP	21.04	AZP	89.88	TAL	354.29	TAP	88.05	RCA	150.91	APO	343.85
RC	57.225	GL	-11.39	GP	-.10	ZAL	103.89	ZAP	174.61	ETS	181.09	ZAE	173.17	ETE	43.94	ZAC	99.79	ETC	277.96

V1	29.484																		
V2	26.457																		
LVI	-18.19																		

PLANETOCENTRIC CONIC

C3	32.454	VHL	5.697	DLA	-20.32	RAL	341.07	RAD	6647.9	VEL	12.344	PTH	7.27	VHP	10.287	DPA	-16.98	RAP	322.07
ECC	1.5341																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 4 5	2841.03	-23.88	82.05	204.71	132.46	16 51 26	1841.0	-6.09	65.03
60.00	17 8 2	2670.99	-18.19	71.76	209.74	126.60	17 52 33	1671.0	-2.49	53.16
70.00	18 28 57	2433.10	-12.73	56.32	213.60	121.96	19 9 30	1433.1	1.06	36.56
80.00	20 5 31	2130.90	-8.42	35.95	216.17	118.75	20 41 2	1130.9	3.92	15.40
90.00	21 40 12	1825.46	-6.67	14.43	217.11	117.55	22 10 38	825.5	5.10	353.59
100.00	22 48 23	1605.37	-8.42	357.32	216.17	118.75	23 15 8	605.4	3.92	336.77
110.00	23 28 23	1479.92	-12.73	345.24	213.60	121.96	23 53 3	479.9	1.06	325.48

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4076	TRA	-.9201	TC3	.0457	BAU	.0418	SGT	1069.9	SGR	591.6	SG3	121.2	ST	25.3	SR	27.0	SS	13.8
RDE	-.5331	RRA	.2150	RC3	.0849	FAU	.03595	RRT	-.0042	RRF	.0049	RTF	-.6510	CRT	.7292	CRS	.4264	CST	.9258
FDE	.1653	FRA	.8047	FC3	-.9589	BSP	1557	SGB	1222.5	R23	-.0010	R13	.6510	LSA	35.9	MSA	16.4	SSA	1.1
BDE	.6711	BRA	.9449	BC3	.0964	FSP	151	SG1	1069.9	SG2	591.6	THA	179.81	EL1	34.4	EL2	13.6	ALF	47.62

LAUNCH DATE MAY 12 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 293.223 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	34.753	GAL	-1.52	AZL	91.85	HCA	95.02	SMA	241.87	ECC	.37602	INC	1.8456	V1	29.484
RP	206.94	LAP	-1.84	LOP	325.66	VP	27.092	GAP	20.54	AZP	89.84	TAL	354.44	TAP	89.46	RCA	150.92	APO	332.81	V2	26.466
RC	57.675	GL	-11.70	GP	-.11	ZAL	103.77	ZAP	173.69	ETS	180.97	ZAE	172.64	ETE	39.42	ZAC	99.74	ETC	278.03	LVI	-18.28

PLANETOCENTRIC CONIC

C3	30.442	VHL	5.517	DLA	-20.64	RAL	341.09	RAD	6647.2	VEL	12.263	PTH	7.21	VHP	9.954	DPA	-16.88	RAP	322.41	ECC	1.5010

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 38	2818.03	-22.82	80.89	203.85	132.95	16 52 36	1818.0	-4.94	64.06
60.00	17 10 5	2646.64	-17.19	70.47	208.86	127.03	17 54 11	1646.6	-1.42	52.00
70.00	18 31 40	2406.78	-11.78	54.88	212.73	122.29	19 11 47	1406.8	2.06	35.19
80.00	20 9 1	2102.12	-7.47	34.34	215.31	118.99	20 44 3	1102.1	4.89	13.81
90.00	21 44 8	1795.30	-5.72	12.73	216.27	117.74	22 14 3	795.3	6.05	351.89
100.00	22 51 53	1576.60	-7.47	355.71	215.31	118.99	23 18 9	576.6	4.89	335.18
110.00	23 31 6	1453.60	-11.78	343.80	212.73	122.29	23 55 20	453.6	2.06	324.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4007	TRA	-.9094	TC3	.0633	BAU	.0450	SGT	1093.8	SGR	593.3	SG3	129.8	ST	25.7	SR	27.1	SS	14.2
RDE	-.5173	RRA	.2083	RC3	.0907	FAU	.03724	RRT	-.0042	RRF	.0051	RTF	-.6634	CRT	.7267	CRS	.4133	CST	.9218
FDE	.1667	FRA	.8361	FC3	-1.0592	BSP	1611	SGB	1244.3	R23	-.0011	R13	.6634	LSA	36.3	MSA	16.8	SSA	1.2
BDE	.6543	BRA	.9329	BC3	.1106	FSP	165	SG1	1093.8	SG2	593.3	THA	179.81	EL1	34.7	EL2	13.8	ALF	47.02

LAUNCH DATE MAY 12 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 295.809 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	34.588	GAL	-1.44	AZL	91.84	HCA	96.29	SMA	236.92	ECC	.36291	INC	1.8447	V1	29.484
RP	206.87	LAP	-1.83	LOP	326.93	VP	26.886	GAP	20.05	AZP	89.80	TAL	354.60	TAP	90.89	RCA	150.94	APO	322.90	V2	26.473
RC	58.203	GL	-12.01	GP	-.11	ZAL	103.62	ZAP	172.76	ETS	180.88	ZAE	172.12	ETE	35.66	ZAC	99.69	ETC	278.10	LVI	-18.37

PLANETOCENTRIC CONIC

C3	28.601	VHL	5.348	DLA	-20.98	RAL	341.10	RAD	6646.5	VEL	12.188	PTH	7.15	VHP	9.632	DPA	-16.78	RAP	322.75	ECC	1.4707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 8	2795.26	-21.76	79.77	203.00	133.42	16 53 44	1795.3	-3.80	63.10
60.00	17 12 7	2622.45	-16.20	69.20	208.01	127.42	17 55 50	1622.5	-.36	50.84
70.00	18 34 25	2380.52	-10.82	53.45	211.88	122.59	19 14 6	1380.5	3.06	33.82
80.00	20 12 36	2073.23	-6.52	32.73	214.48	119.20	20 47 9	1073.2	5.86	12.21
90.00	21 48 11	1764.92	-4.75	11.02	215.45	117.91	22 17 36	764.9	7.01	350.17
100.00	22 55 28	1547.71	-6.52	354.10	214.48	119.20	23 21 16	547.7	5.86	333.58
110.00	23 33 51	1427.33	-10.82	342.37	211.88	122.59	23 57 39	427.3	3.06	322.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3950	TRA	-.9010	TC3	.0802	BAU	.0480	SGT	1120.4	SGR	594.7	SG3	139.0	ST	26.2	SR	27.1	SS	14.6
RDE	-.5020	RRA	.2019	RC3	.0966	FAU	.03861	RRT	-.0045	RRF	.0054	RTF	-.6735	CRT	.7242	CRS	.3989	CST	.9172
FDE	.1677	FRA	.8692	FC3	-1.1687	BSP	1661	SGB	1268.4	R23	-.0012	R13	.6735	LSA	36.6	MSA	17.1	SSA	1.2
BDE	.6388	BRA	.9234	BC3	.1256	FSP	179	SG1	1120.4	SG2	594.6	THA	179.81	EL1	35.0	EL2	14.0	ALF	46.31

LAUNCH DATE MAY 12 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 298.551 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	34.432	GAL	-1.36	AZL	91.84	HCA	97.56	SMA	232.46	ECC	.35062	INC	1.8437	V1	29.484
RP	206.82	LAP	-1.83	LOP	328.20	VP	26.692	GAP	19.56	AZP	89.76	TAL	354.77	TAP	92.32	RCA	150.95	APO	313.96	V2	26.479
RC	58.807	GL	-12.33	GP	-.11	ZAL	103.46	ZAP	171.82	ETS	180.82	ZAE	171.62	ETE	32.53	ZAC	99.64	ETC	278.16	LVI	-18.45

PLANETOCENTRIC CONIC

C3	26.916	VHL	5.188	DLA	-21.33	RAL	341.08	RAD	6645.8	VEL	12.119	PTH	7.09	VHP	9.323	DPA	-16.68	RAP	323.07	ECC	1.4430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 8 37	2772.75	-20.70	78.67	202.19	133.85	16 54 50	1772.8	-2.67	62.16
60.00	17 14 9	2598.47	-15.20	67.96	207.17	127.79	17 57 28	1598.5	.70	49.70
70.00	18 37 12	2354.34	-9.86	52.04	211.05	122.87	19 16 26	1354.3	4.06	32.44
80.00	20 16 17	2044.25	-5.55	31.12	213.67	119.38	20 50 21	1044.3	6.82	10.60
90.00	21 52 22	1734.32	-3.78	9.30	214.65	118.05	22 21 18	734.3	7.97	348.43
100.00	22 59 9	1518.73	-5.55	352.49	213.67	119.38	23 24 27	518.7	6.82	331.97
110.00	23 36 38	1401.16	-9.86	340.95	211.05	122.87	23 59 59	401.2	4.06	321.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3882	TRA	-.8903	TC3	.0997	BAU	.0515	SGT	1143.9	SGR	595.6	SG3	148.9	ST	26.7	SR	27.1	SS	15.0
RDE	-.4872	RRA	.1956	RC3	.1027	FAU	.04008	RRT	-.0044	RRF	.0056	RTF	-.6840	CRT	.7216	CRS	.3842	CST	.9124
FDE	.1684	FRA	.9037	FC3	-1.2892	BSP	1714	SGB	1289.7	R23	-.0015	R13	.6840	LSA	37.0	MSA	17.5	SSA	1.2
BDE	.6230	BRA	.9115	BC3	.1431	FSP	194	SG1	1143.9	SG2	595.5	THA	179.82	EL1	35.3	EL2	14.2	ALF	45.71

LAUNCH DATE MAY 12 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 301.430 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	34.285	GAL	-1.28	AZL	91.84	HCA	98.82	SMA	228.42	ECC	.33909	INC	1.8428	V1	29.484
RP	206.77	LAP	-1.82	LOP	329.47	VP	26.508	GAP	19.08	AZP	89.72	TAL	354.95	TAP	93.77	RCA	150.97	APO	305.88	V2	26.485
RC	59.485	GL	-12.64	GP	-.12	ZAL	103.27	ZAP	170.86	ETS	180.78	ZAE	171.16	ETE	29.89	ZAC	99.59	ETC	278.23	LVI	-18.53

PLANETOCENTRIC CONIC

C3	25.372	VHL	5.037	DLA	-21.68	RAL	341.04	RAD	6645.1	VEL	12.056	PTH	7.04	VHP	9.024	DPA	-16.58	RAP	323.37	ECC	1.4176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 10 4	2750.55	-19.65	77.61	201.39	134.25	16 55 55	1750.6	-1.55	61.23
60.00	17 16 11	2574.74	-14.21	66.74	206.36	128.12	17 59 8	1574.7	1.74	48.56
70.00	18 40 1	2328.30	-8.89	50.64	210.25	123.11	19 18 49	1328.3	5.05	31.08
80.00	20 20 3	2015.21	-4.58	29.51	212.89	119.54	20 53 38	1015.2	7.78	8.98
90.00	21 56 41	1703.51	-2.79	7.58	213.88	118.15	22 25 5	703.5	8.92	346.67
100.00	23 2 55	1489.68	-4.58	350.88	212.89	119.54	23 27 45	489.7	7.78	330.35
110.00	23 39 27	1375.11	-8.89	339.56	210.25	123.11	24 2 22	375.1	5.05	319.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3812	TRA	-.8793	TC3	.1200	BAU	.0550	SGT	1166.7	SGR	596.0	SG3	159.4	ST	27.0	SR	27.1	SS	15.5
RDE	-.4730	RRA	.1895	RC3	.1089	FAU	.04159	RRT	-.0045	RRF	.0060	RTF	-.6938	CRT	.7188	CRS	.3883	CST	.9071
FDE	.1685	FRA	.9390	FC3	-1.4192	BSP	1761	SGB	1310.1	R23	-.0018	R13	.6938	LSA	37.2	MSA	17.8	SSA	1.2
BDE	.6075	BRA	.8995	BC3	.1620	FSP	211	SG1	1166.7	SG2	596.0	THA	179.82	EL1	35.5	EL2	14.4	ALF	45.13

LAUNCH DATE MAY 12 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 304.432 EARTH TO MARS

RL	181.12	LAL	.00	LOL	230.64	VL	34.147	GAL	-1.20	AZL	91.84	HCA	100.09	SMA	224.76	ECC	.32826	INC	1.8418	V1	29.484
RP	206.74	LAP	-1.81	LOP	330.73	VP	26.333	GAP	18.62	AZP	89.68	TAL	355.14	TAP	95.24	RCA	150.98	APO	298.54	V2	26.489
RC	60.233	GL	-12.95	GP	-.12	ZAL	103.06	ZAP	169.88	ETS	180.72	ZAE	170.73	ETE	27.65	ZAC	99.55	ETC	278.28	LVI	-18.60

PLANETOCENTRIC CONIC

C3	23.956	VHL	4.895	DLA	-22.05	RAL	340.98	RAD	6644.6	VEL	11.997	PTH	6.99	VHP	8.735	DPA	-16.49	RAP	323.67	ECC	1.3943

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 11 30	2728.65	-18.61	76.57	200.62	134.62	16 56 58	1726.7	-.45	60.32
60.00	17 18 12	2551.24	-13.22	65.55	205.58	128.43	18 0 43	1551.2	2.78	47.44
70.00	18 42 51	2302.37	-7.93	49.25	209.47	123.33	19 21 14	1302.4	6.03	29.71
80.00	20 23 55	1986.08	-3.60	27.90	212.13	119.66	20 57 1	986.1	8.73	7.35
90.00	22 1 9	1672.46	-1.79	5.84	213.13	118.23	22 29 2	672.5	9.87	344.89
100.00	23 6 47	1460.55	-3.60	349.27	212.13	119.66	23 31 8	460.6	8.73	328.72
110.00	23 42 18	1349.19	-7.93	338.17	209.47	123.33	24 4 47	349.2	6.03	318.63

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3672	TRA	-.8617	TC3	.1546	BAU	.0618	SGT	1179.8	SGR	596.1	SG3	170.6	ST	27.0	SR	27.1	SS	16.0
RDE	-.4591	RRA	.1836	RC3	.1155	FAU	.04322	RRT	-.0060	RRF	.0059	RTF	-.7125	CRT	.7121	CRS	.3542	CST	.9049
FDE	.1697	FRA	.9775	FC3	-1.5618	BSP	1726	SGB	1321.8	R23	-.0002	R13	.7125	LSA	37.2	MSA	18.2	SSA	1.2
BDE	.5879	BRA	.8610	BC3	.1928	FSP	230	SG1	1179.8	SG2	596.1	THA	179.77	EL1	35.4	EL2	14.5	ALF	45.17

LAUNCH DATE MAY 12 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC DISTANCE 307.543 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	34.017	GAL	-1.12	AZL	91.84	HCA	101.36	SMA	221.44	ECC	.31811	INC	1.8408	V1	29.484
RP	206.71	LAP	-1.80	LOP	332.00	VP	26.168	GAP	18.17	AZP	89.64	TAL	355.35	TAP	98.71	RCA	151.00	APO	291.88	V2	26.492
RC	61.050	GL	-13.27	GP	-.13	ZAL	102.84	ZAP	168.89	ETS	180.69	ZAE	170.36	ETE	25.74	ZAC	99.50	ETC	278.34	LVI	-18.67

PLANETOCENTRIC CONIC

C3	22.660	VHL	4.760	DLA	-22.41	RAL	340.91	RAD	6644.0	VEL	11.944	PTH	6.95	VHP	8.456	DPA	-16.40	RAP	323.94	ECC	1.3729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 53	2707.16	-17.58	75.57	199.88	134.96	16 58 0	1707.2	.63	59.42
60.00	17 20 13	2528.11	-12.24	64.38	204.82	128.70	18 2 21	1528.1	3.79	46.33
70.00	18 45 44	2276.70	-6.96	47.89	208.72	123.52	19 23 41	1276.7	7.00	28.35
80.00	20 27 53	1957.01	-2.62	26.30	211.40	119.75	21 0 30	957.0	9.68	5.71
90.00	22 5 46	1641.29	-.79	4.10	212.42	118.27	22 33 7	641.3	10.82	343.09
100.00	23 10 45	1431.48	-2.62	347.67	211.40	119.75	23 34 36	431.5	9.68	327.07
110.00	23 45 10	1323.52	-6.96	336.81	208.72	123.52	24 7 14	323.5	7.00	317.27

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3636	TRA	-.8546	TC3	.1736	BAU	.0642	SGT	1207.0	SGR	595.8	SG3	182.8	ST	27.5	SR	27.1	SS	16.4
RDE	-.4458	RRA	.1779	RC3	.1216	FAU	.04505	RRT	-.0051	RRF	.0061	RTF	-.7171	CRT	.7107	CRS	.3556	CST	.8973
FDE	.1685	FRA	1.0160	FC3	-1.7213	BSP	1808	SGB	1346.0	R23	-.0013	R13	.7171	LSA	37.6	MSA	18.5	SSA	1.3
BDE	.5753	BRA	.8729	BC3	.2119	FSP	248	SG1	1207.0	SG2	595.8	THA	179.81	EL1	35.7	EL2	14.7	ALF	44.31

LAUNCH DATE MAY 12 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC DISTANCE 310.750 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	33.894	GAL	-1.05	AZL	91.84	HCA	102.63	SMA	218.40	ECC	.30857	INC	1.8398	V1	29.484
RP	206.69	LAP	-1.80	LOP	333.27	VP	26.010	GAP	17.72	AZP	89.60	TAL	355.56	TAP	98.19	RCA	151.01	APO	285.79	V2	26.495
RC	61.933	GL	-13.58	GP	-.13	ZAL	102.60	ZAP	167.89	ETS	180.67	ZAE	170.04	ETE	24.09	ZAC	99.46	ETC	278.39	LVI	-18.73

PLANETOCENTRIC CONIC

C3	21.470	VHL	4.634	DLA	-22.79	RAL	340.81	RAD	6643.5	VEL	11.894	PTH	6.90	VHP	8.187	DPA	-16.32	RAP	324.20	ECC	1.3533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 15	2686.06	-16.56	74.59	199.16	135.27	16 59 1	1686.1	1.69	58.54
60.00	17 22 13	2505.30	-11.26	63.24	204.09	128.96	18 3 59	1505.3	4.79	45.24
70.00	18 48 38	2251.26	-6.00	46.55	208.00	123.69	19 26 9	1251.3	7.95	27.00
80.00	20 31 57	1927.92	-1.63	24.71	210.70	119.82	21 4 5	927.9	10.62	4.06
90.00	22 10 32	1609.93	.23	2.35	211.74	118.28	22 37 22	609.9	11.76	341.26
100.00	23 14 49	1402.40	-1.63	346.07	210.70	119.82	23 38 11	402.4	10.62	325.42
110.00	23 48 5	1298.08	-6.00	335.46	208.00	123.69	24 9 43	298.1	7.95	315.92

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3580	TRA	-.8453	TC3	.1955	BAU	.0671	SGT	1230.6	SGR	595.1	SG3	195.7	ST	27.9	SR	27.0	SS	16.8
RDE	-.4329	RRA	.1723	RC3	.1280	FAU	.04697	RRT	-.0048	RRF	.0059	RTF	-.7130	CRT	.7082	CRS	.3185	CST	.8909
FDE	.1677	FRA	1.0555	FC3	-1.5941	BSP	1882	SGB	1366.9	R23	-.0013	R13	.7230	LSA	37.8	MSA	18.9	SSA	1.3
BDE	.5618	BRA	.8627	BC3	.2337	FSP	269	SG1	1230.6	SG2	595.0	THA	179.83	EL1	35.9	EL2	14.8	ALF	43.64

LAUNCH DATE MAY 12 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 314.046 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	33.779	GAL	-.97	AZL	91.84	HCA	103.90	SMA	215.63	ECC	.29962	INC	1.8389	V1	29.484
RP	206.68	LAP	-1.79	LOP	334.54	VP	25.861	GAP	17.28	AZP	89.56	TAL	355.77	TAP	99.67	RCA	151.02	APO	280.24	V2	26.496
RC	62.879	GL	-13.89	GP	-.13	ZAL	102.35	ZAP	166.86	ETS	180.64	ZAE	169.78	ETE	22.67	ZAC	99.42	ETC	278.44	LVI	-18.79

PLANETOCENTRIC CONIC

C3	20.378	VHL	4.514	DLA	-23.17	RAL	340.71	RAD	6643.0	VEL	11.848	PTH	6.86	VHP	7.928	DPA	-16.25	RAP	324.44	ECC	1.3354

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 36	2665.38	-15.56	73.65	198.47	135.55	17 0 1	1665.4	2.73	57.67
60.00	17 24 13	2482.87	-10.30	62.13	203.38	129.18	18 5 36	1482.9	5.78	44.16
70.00	18 51 34	2226.07	-5.05	45.22	207.30	123.82	19 28 40	1226.1	8.89	25.66
80.00	20 36 7	1898.86	-.65	23.11	210.03	119.85	21 7 46	898.9	11.54	2.40
90.00	22 15 29	1578.38	1.24	.59	211.09	118.25	22 41 47	578.4	12.69	339.41
100.00	23 18 59	1373.33	-.65	344.48	210.03	119.85	23 41 52	373.3	11.54	323.76
110.00	23 51 1	1272.89	-5.05	334.14	207.30	123.82	24 12 13	272.9	8.89	314.57

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3515	TRA	-.8360	TC3	.2190	BAU	.0700	SGT	1253.1	SGR	593.9	SG3	209.3	ST	28.2	SR	26.9	SS	17.2
RDE	-.4205	RRA	.1670	RC3	.1344	FAU	.04900	RRT	-.0052	RRF	.0065	RTF	-.7290	CRT	.7047	CRS	.2971	CST	.8829
FDE	.1650	FRA	1.0973	FC3	-2.0817	BSP	1939	SGB	1386.7	R23	-.0016	R13	.7290	LSA	38.0	MSA	19.3	SSA	1.3
BDE	.5481	BRA	.8525	BC3	.2569	FSP	290	SG1	1253.1	SG2	593.9	THA	179.82	EL1	36.0	EL2	15.0	ALF	43.04

LAUNCH DATE MAY 12 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 317.420 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	33.670	GAL	-.90	AZL	91.84	HCA	105.17	SMA	213.09	ECC	.29122	INC	1.8379	V1	29.484
RP	206.67	LAP	-1.77	LOP	335.81	VP	25.719	GAP	16.85	AZP	89.52	TAL	356.00	TAP	101.17	RCA	151.03	APO	275.15	V2	26.496
RC	63.888	GL	-14.20	GP	-.14	ZAL	102.09	ZAP	165.82	ETS	180.63	ZAE	169.58	ETE	21.43	ZAC	99.38	ETC	278.49	LVI	-18.85

PLANETOCENTRIC CONIC

C3	19.375	VHL	4.402	DLA	-23.55	RAL	340.59	RAD	6642.6	VEL	11.806	PTH	6.83	VHP	7.677	DPA	-16.18	RAP	324.67	ECC	1.3189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 54	2645.15	-14.57	72.74	197.80	135.81	17 0 59	1645.2	3.74	56.82
60.00	17 26 12	2460.84	-9.35	61.04	202.70	129.38	16 7 13	1460.8	6.74	43.09
70.00	18 54 32	2201.17	-4.11	43.91	206.63	123.94	19 31 13	1201.2	9.81	24.32
80.00	20 40 24	1869.84	.33	21.52	209.39	119.86	21 11 34	869.8	12.46	.73
90.00	22 20 37	1546.61	2.27	358.82	210.47	118.20	22 46 24	546.6	13.61	337.54
100.00	23 23 16	1344.31	.33	342.89	209.39	119.86	23 45 40	344.3	12.46	322.09
110.00	23 53 58	1247.99	-4.11	332.83	206.63	123.94	24 14 46	248.0	9.81	313.24

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.3447	TRA	-.8255	TC3	.2451	BAU	.0732	SGT	1273.5	SGR	592.4	SG3	224.0			ST	28.5	SR	26.8	SS	17.7
RDE	-.4085	RRA	.1618	RC3	.1408	FAU	.05112	RRT	-.0053	RRF	.0071	RTF	-.7362			CRT	.7013	CRS	.2767	CST	.8752
FDE	.1627	FRA	1.1426	FC3	-2.2842	BSP	1994	SGB	1404.6	R23	-.0022	R13	.7362			LSA	38.2	HSA	19.6	SSA	1.3
BDE	.5345	BRA	.8412	BC3	.2826	FSP	314	SG1	1273.5	SG2	592.4	THA	179.82			EL1	36.1	EL2	15.1	ALF	42.50

LAUNCH DATE MAY 12 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 320.865 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	33.567	GAL	-.83	AZL	91.84	HCA	106.44	SMA	210.76	ECC	.28334	INC	1.8369	V1	29.484
RP	206.68	LAP	-1.76	LOP	337.08	VP	25.584	GAP	16.42	AZP	89.48	TAL	356.23	TAP	102.67	RCA	151.04	APO	270.48	V2	26.496
RC	64.956	GL	-14.50	GP	-.14	ZAL	101.81	ZAP	164.75	ETS	180.61	ZAE	169.45	ETE	20.35	ZAC	99.35	ETC	278.53	LVI	-18.89

PLANETOCENTRIC CONIC

C3	18.454	VHL	4.296	DLA	-23.93	RAL	340.46	RAD	6642.1	VEL	11.768	PTH	6.79	VHP	7.435	DPA	-16.12	RAP	324.87	ECC	1.3037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 11	2625.39	-13.60	71.86	197.16	136.05	17 1 57	1625.4	4.73	55.99
60.00	17 28 11	2439.24	-8.42	59.98	202.05	129.56	18 8 50	1439.2	7.68	42.04
70.00	18 57 31	2176.60	-3.17	42.62	205.99	124.02	19 33 48	1176.6	10.72	22.99
80.00	20 44 48	1840.86	1.32	19.93	208.78	119.83	21 15 28	840.9	13.36	359.05
90.00	22 25 57	1514.62	3.29	357.03	209.88	118.10	22 51 11	514.6	14.53	335.63
100.00	23 27 39	1315.33	1.32	341.30	208.78	119.83	23 49 35	315.3	13.36	320.41
110.00	0 0 53	1223.42	-3.17	331.54	205.99	124.02	0 21 17	223.4	10.72	311.91

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.3379	TRA	-.8145	TC3	.2703	BAU	.0759	SGT	1292.2	SGR	590.5	SG3	239.5			ST	28.7	SR	26.7	SS	18.2
RDE	-.3970	RRA	.1568	RC3	.1471	FAU	.05340	RRT	-.0052	RRF	.0077	RTF	-.7416			CRT	.6980	CRS	.2545	CST	.8662
FDE	.1591	FRA	1.1885	FC3	-2.5052	BSP	2039	SGB	1420.7	R23	-.0028	R13	.7416			LSA	38.3	HSA	20.0	SSA	1.3
BDE	.5213	BRA	.8295	BC3	.3077	FSP	339	SG1	1292.2	SG2	590.5	THA	179.83			EL1	36.2	EL2	15.2	ALF	41.98

LAUNCH DATE MAY 12 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 324.374 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	33.471	GAL	-.77	AZL	91.84	HCA	107.71	SMA	208.62	ECC	.27594	INC	1.8359	V1	29.484
RP	206.70	LAP	-1.75	LOP	338.35	VP	25.456	GAP	16.01	AZP	89.44	TAL	356.46	TAP	104.17	RCA	151.05	APO	266.19	V2	26.494
RC	66.082	GL	-14.81	GP	-.15	ZAL	101.53	ZAP	163.67	ETS	180.60	ZAE	169.39	ETE	19.42	ZAC	99.32	ETC	278.56	LVI	-18.93

PLANETOCENTRIC CONIC

C3	17.607	VHL	4.196	DLA	-24.31	RAL	340.31	RAD	6641.8	VEL	11.732	PTH	6.78	VHP	7.201	DPA	-16.06	RAP	325.05	ECC	1.2898

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 27	2606.13	-12.66	71.01	196.54	136.26	17 2 53	1606.1	5.70	55.18
60.00	17 30 9	2418.10	-7.50	58.95	201.42	129.71	18 10 27	1418.1	8.60	41.01
70.00	19 0 32	2152.38	-2.25	41.36	205.38	124.09	19 36 24	1152.4	11.60	21.68
80.00	20 49 18	1811.95	2.29	18.34	208.20	119.78	21 19 30	812.0	14.24	357.36
90.00	22 31 29	1482.37	4.33	355.22	209.33	117.97	22 56 12	482.4	15.43	333.70
100.00	23 32 10	1286.43	2.29	339.71	208.20	119.78	23 53 36	286.4	14.24	318.73
110.00	0 3 54	1199.20	-2.25	330.27	205.38	124.09	0 23 53	199.2	11.60	310.59

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.3307	TRA	-.8038	TC3	.2973	BAU	.0787	SGT	1310.2	SGR	588.2	SG3	256.1			ST	28.9	SR	26.6	SS	18.6
RDE	-.3858	RRA	.1520	RC3	.1533	FAU	.05580	RRT	-.0056	RRF	.0085	RTF	-.7478			CRT	.6940	CRS	.2319	CST	.8573
FDE	.1551	FRA	1.2381	FC3	-2.7435	BSP	2069	SGB	1436.2	R23	-.0032	R13	.7478			LSA	38.4	HSA	20.4	SSA	1.4
BDE	.5082	BRA	.8180	BC3	.3345	FSP	366	SG1	1310.2	SG2	588.2	THA	179.82			EL1	36.2	EL2	15.3	ALF	41.50

LAUNCH DATE MAY 12 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 327.942 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	33.380	GAL	-.70	AZL	91.83	HCA	108.98	SMA	206.65	ECC	.26900	INC	1.8348	V1	29.484
RP	206.72	LAP	-1.74	LOP	339.62	VP	25.334	GAP	15.60	AZP	89.40	TAL	356.69	TAP	105.67	RCA	151.06	APO	262.24	V2	26.491
RC	67.265	GL	-15.10	GP	-.16	ZAL	101.24	ZAP	162.56	ETS	180.59	ZAE	169.39	ETE	18.61	ZAC	99.29	ETC	278.59	LVI	-18.97

PLANETOCENTRIC CONIC

C3	16.828	VHL	4.102	DLA	-24.69	RAL	340.16	RAD	6641.4	VEL	11.699	PTH	6.73	VHP	6.975	DPA	-16.02	RAP	325.21	ECC	1.2770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 20 41	2587.39	-11.74	70.18	195.95	136.45	17 3 48	1587.4	6.63	54.39
60.00	17 32 6	2397.45	-6.60	57.95	200.82	129.85	18 12 3	1397.5	9.49	40.00
70.00	19 3 34	2128.56	-1.34	40.11	204.79	124.13	19 39 2	1128.6	12.47	20.37
80.00	20 53 56	1783.13	3.27	16.76	207.66	119.69	21 23 39	783.1	15.11	355.66
90.00	22 37 16	1449.82	5.36	353.39	208.81	117.81	23 1 26	449.8	16.32	331.72
100.00	23 36 48	1257.60	3.27	338.12	207.66	119.69	23 57 45	257.6	15.11	317.03
110.00	0 6 56	1175.36	-1.34	329.03	204.79	124.13	0 26 31	175.4	12.47	309.29

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.3238	TRA	-.7920	TC3	.3255	BAU	.0815	SGT	1326.0	SGR	585.5	SG3	274.0			ST	29.1	SR	26.4	SS	19.2
RDE	-.3751	RRA	.1474	RC3	.1593	FAU	.05844	RRT	-.0053	RRF	.0083	RTF	-.7533			CRT	.6906	CRS	.2120	CST	.8492
FDE	.1522	FRA	1.2893	FC3	-3.0064	BSP	2114	SGB	1449.5	R23	-.0033	R13	.7533			LSA	38.4	HSA	20.7	SSA	1.4
BDE	.4955	BRA	.8036	BC3	.3624	FSP	396	SG1	1326.0	SG2	585.5	THA	179.83			EL1	36.1	EL2	15.4	ALF	41.04

LAUNCH DATE MAY 12 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 331.563 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	33.295	GAL	-.64	AZL	91.83	HCA	110.25	SMA	204.84	ECC	.26249	INC	1.8338	V1	29.484
RP	206.75	LAP	-1.72	LOP	340.89	VP	25.217	GAP	15.21	AZP	89.37	TAL	356.93	TAP	107.18	RCA	151.07	APO	258.61	V2	26.487
RC	68.502	GL	-15.39	GP	-.16	ZAL	100.95	ZAP	161.42	ETS	180.58	ZAE	169.47	ETE	17.91	ZAC	99.26	ETC	278.62	LVI	-19.00

PLANETOCENTRIC CONIC

C3	16.112	VHL	4.014	DLA	-25.06	RAL	340.01	RAD	6641.1	VEL	11.669	PTH	6.70	VHP	6.757	DPA	-15.98	RAP	325.34	ECC	1.2652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 53	2569.19	-10.84	69.59	195.38	136.62	17 4 43	1569.2	7.54	53.62
60.00	17 34 2	2377.32	-5.72	56.98	200.25	129.96	18 13 39	1377.3	10.36	39.00
70.00	19 6 36	2105.15	-.44	38.89	204.24	124.15	19 41 41	1105.2	13.31	19.08
80.00	20 58 41	1754.36	4.24	15.17	207.15	119.58	21 27 55	754.4	15.96	353.95
90.00	22 43 19	1416.91	6.40	351.54	208.33	117.60	23 6 56	416.9	17.20	329.71
100.00	23 41 33	1228.85	4.24	336.54	207.15	119.58	24 2 1	228.9	15.96	315.32
110.00	0 9 59	1151.97	-.44	327.81	204.24	124.15	0 29 11	152.0	13.31	308.00

DIFFERENTIAL CORRECTIONS

TDE	-.3162	TRA	-.7803	TC3	.3512	BAU	.0836
RDE	-.3647	RRA	.1430	RC3	.1652	FAU	.06117
FDE	.1463	FRA	1.3429	FC3	-3.2866	BSP	2150
BDE	.4827	BRA	.7933	BC3	.3681	FSP	428

MID-COURSE EXECUTION ACCURACY

SGT	1339.9	SGR	582.5	SG3	292.8				
RRT	-.0061	RRF	.0093	RTF	-.7577				
SGB	1481.0	R23	-.0036	R13	.7577				
SG1	1339.9	SG2	582.5	THA	179.81				

ORBIT DETERMINATION ACCURACY

ST	29.2	SR	26.2	SS	19.6
CRT	.6864	CRS	.1871	CST	.6388
LSA	38.4	MSA	21.1	SSA	1.4
EL1	36.1	EL2	15.4	ALF	40.64

LAUNCH DATE MAY 12 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC DISTANCE 335.233 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	33.218	GAL	-.58	AZL	91.83	HCA	111.51	SMA	203.17	ECC	.25638	INC	1.8327	V1	29.484
RP	206.79	LAP	-1.71	LOP	342.16	VP	25.106	GAP	14.82	AZP	89.33	TAL	357.17	TAP	108.68	RCA	151.08	APO	255.25	V2	26.483
RC	69.791	GL	-15.68	GP	-.17	ZAL	100.68	ZAP	160.27	ETS	180.57	ZAE	169.82	ETE	17.31	ZAC	99.24	ETC	278.64	LVI	-19.02

PLANETOCENTRIC CONIC

C3	15.454	VHL	3.931	DLA	-25.43	RAL	339.84	RAD	6640.7	VEL	11.641	PTH	6.68	VHP	6.546	DPA	-15.95	RAP	325.48	ECC	1.2543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 4	2551.56	-9.96	68.63	194.84	136.77	17 5 36	1551.6	8.42	52.87
60.00	17 35 57	2357.73	-4.86	56.03	199.71	130.06	18 15 15	1357.7	11.20	38.03
70.00	19 9 40	2082.20	.43	37.69	203.71	124.15	19 44 22	1082.2	14.13	17.81
80.00	21 3 33	1725.73	5.20	13.59	206.66	119.44	21 32 19	725.7	16.80	352.23
90.00	22 49 39	1383.55	7.45	349.65	207.89	117.36	23 12 43	383.5	18.07	327.65
100.00	23 46 25	1200.20	5.20	334.96	206.66	119.44	24 6 26	200.2	16.80	313.60
110.00	0 13 2	1129.02	.43	326.61	203.71	124.15	0 31 51	129.0	14.13	306.73

DIFFERENTIAL CORRECTIONS

TDE	-.3089	TRA	-.7681	TC3	.3771	BAU	.0855
RDE	-.3547	RRA	.1388	RC3	.1708	FAU	.06408
FDE	.1404	FRA	1.3989	FC3	-3.5896	BSP	2181
BDE	.4703	BRA	.7805	BC3	.4139	FSP	461

MID-COURSE EXECUTION ACCURACY

SGT	1351.7	SGR	579.1	SG3	312.8				
RRT	-.0065	RRF	.0100	RTF	-.7618				
SGB	1470.6	R23	-.0039	R13	.7618				
SG1	1351.7	SG2	579.1	THA	179.80				

ORBIT DETERMINATION ACCURACY

ST	29.2	SR	26.1	SS	20.2
CRT	.6825	CRS	.1632	CST	.8284
LSA	38.4	MSA	21.5	SSA	1.4
EL1	36.0	EL2	15.5	ALF	40.26

LAUNCH DATE MAY 12 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC DISTANCE 338.948 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	33.140	GAL	-.52	AZL	91.83	HCA	112.78	SMA	201.62	ECC	.25065	INC	1.8316	V1	29.484
RP	206.84	LAP	-1.69	LOP	343.43	VP	25.001	GAP	14.44	AZP	89.29	TAL	357.40	TAP	110.18	RCA	151.08	APO	252.16	V2	26.477
RC	71.130	GL	-15.96	GP	-.17	ZAL	100.36	ZAP	159.08	ETS	180.56	ZAE	169.84	ETE	16.82	ZAC	99.22	ETC	278.66	LVI	-19.03

PLANETOCENTRIC CONIC

C3	14.848	VHL	3.853	DLA	-25.80	RAL	339.68	RAD	6640.5	VEL	11.615	PTH	6.66	VHP	6.343	DPA	-15.93	RAP	325.54	ECC	1.2444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 24 14	2534.51	-9.12	67.89	194.33	136.90	17 6 28	1534.5	9.27	52.14
60.00	17 37 51	2338.71	-4.03	55.12	199.19	130.13	18 16 49	1338.7	12.01	37.08
70.00	19 12 44	2059.73	1.29	36.52	203.21	124.13	19 47 4	1059.7	14.92	16.55
80.00	21 8 34	1697.18	6.15	12.00	206.22	119.27	21 36 51	697.2	17.61	350.50
90.00	22 56 20	1349.62	8.51	347.71	207.49	117.07	23 18 50	349.6	18.92	325.53
100.00	23 51 26	1171.65	6.15	333.37	206.22	119.27	24 10 58	171.6	17.61	311.87
110.00	0 16 6	1106.55	1.29	325.44	203.21	124.13	0 34 33	106.5	14.92	305.47

DIFFERENTIAL CORRECTIONS

TDE	-.3010	TRA	-.7565	TC3	.4042	BAU	.0875
RDE	-.3450	RRA	.1347	RC3	.1761	FAU	.06726
FDE	.1324	FRA	1.4601	FC3	-3.9219	BSP	2198
BDE	.4578	BRA	.7684	BC3	.4409	FSP	496

MID-COURSE EXECUTION ACCURACY

SGT	1363.2	SGR	575.4	SG3	334.5				
RRT	-.0078	RRF	.0113	RTF	-.7659				
SGB	1479.7	R23	-.0041	R13	.7659				
SG1	1363.3	SG2	575.3	THA	179.77				

ORBIT DETERMINATION ACCURACY

ST	29.2	SR	25.9	SS	20.7
CRT	.6774	CRS	.1359	CST	.8168
LSA	38.3	MSA	22.0	SSA	1.4
EL1	35.8	EL2	15.5	ALF	39.92

LAUNCH DATE MAY 12 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC DISTANCE 342.703 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	33.069	GAL	-.47	AZL	91.83	HCA	114.05	SMA	200.20	ECC	.24529	INC	1.8305	V1	29.484
RP	206.90	LAP	-1.67	LOP	344.69	VP	24.899	GAP	14.07	AZP	89.25	TAL	357.63	TAP	111.68	RCA	151.09	APO	249.30	V2	26.470
RC	72.517	GL	-16.23	GP	-.18	ZAL	100.07	ZAP	157.87	ETS	180.55	ZAE	170.14	ETE	16.43	ZAC	99.21	ETC	278.67	LVI	-19.04

PLANETOCENTRIC CONIC

C3	14.290	VHL	3.780	DLA	-26.16	RAL	339.51	RAD	6640.2	VEL	11.591	PTH	6.63	VHP	6.147	DPA	-15.91	RAP	325.60	ECC	1.2352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 25 22	2518.06	-8.30	67.19	193.84	137.02	17 7 20	1518.1	10.09	51.43
60.00	17 39 43	2320.29	-3.22	54.23	198.70	130.19	18 18 23	1320.3	12.79	36.16
70.00	19 15 48	2037.78	2.13	35.38	202.74	124.10	19 49 46	1037.8	15.69	15.31
80.00	21 13 43	1668.71	7.09	10.42	205.81	119.08	21 41 32	668.7	18.41	348.76
90.00	23 3 25	1314.95	9.58	345.73	207.13	116.74	23 25 20	314.9	19.77	323.34
100.00	0 0 31	1143.18	7.09	331.79	205.81	119.08	0 19 34	143.2	18.41	310.13
110.00	0 19 10	1084.60	2.13	324.29	202.74	124.10	0 37 15	84.6	15.69	304.23

DIFFERENTIAL CORRECTIONS

TDE	-.2951	TRA	-.7424	TC3	.4240	BAU	.0881
RDE	-.3356	RRA	.1308	RC3	.1611	FAU	.07051
FDE	.1268	FRA	1.5186	FC3	-4.2715	BSP	2228
BDE	.4469	BRA	.7539	BC3	.4610	FSP	537

MID-COURSE EXECUTION ACCURACY

SGT	1369.1	SGR	571.3	SG3	356.7				
RRT	-.0070	RRF	.0112	RTF	-.7672				
SGB	1483.5	R23	-.0047	R13	.7672				
SG1	1369.1	SG2	571.2	THA	179.80				

ORBIT DETERMINATION ACCURACY

ST	29.2	SR	25.7	SS	21.2
CRT	.6758	CRS	.1151	CST	.8058
LSA	38.2	MSA	22.3	SSA	1.5
EL1	35.7	EL2	15.5	ALF	39.53

LAUNCH DATE MAY 12 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 346,495 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	33.002	GAL	-.42	AZL	91.83	HCA	115.31	SMA	198.88	ECC	.24026	INC	1.8294	V1	29.484
RP	206.96	LAP	-1.65	LOP	345.96	VP	24.803	GAP	13.71	AZP	89.22	TAL	357.86	TAP	113.17	RCA	151.10	APO	246.66	V2	26.462
RC	73.950	GL	-16.49	GP	-.19	ZAL	99.78	ZAP	156.63	ETS	180.54	ZAE	170.52	ETE	16.13	ZAC	99.19	ETC	278.67	LVI	-19.04

PLANETOCENTRIC CONIC

C3	13.777	VHL	3.712	DLA	-26.51	RAL	339.34	RAD	6639.9	VEL	11.569	PTH	6.61	VHP	5.958	DPA	-15.91	RAP	325.62	ECC	1.2267

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 28	2302.23	-7.51	66.51	193.37	137.12	17 8 10	1502.2	10.87	50.74
60.00	17 41 34	2302.48	-2.44	53.38	198.23	130.24	18 19 57	1302.5	13.55	35.26
70.00	19 18 52	2016.38	2.95	34.26	202.31	124.04	19 52 29	1016.4	16.43	14.10
80.00	21 19 1	1640.34	8.03	8.83	205.43	118.85	21 46 21	640.3	19.18	347.01
90.00	23 10 58	1279.28	10.66	343.67	206.82	116.35	23 32 17	279.3	20.61	321.06
100.00	0 5 48	1114.81	8.03	330.20	205.43	118.85	0 24 23	114.8	19.18	308.38
110.00	0 22 15	1063.20	2.95	323.18	202.31	124.04	0 39 58	63.2	16.43	303.01

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2882	TRA	-.7293	TC3	.4447	BAU	.0888	SGT	1374.5	SGR	566.8	SG3	380.6			ST	29.2	SR	25.4	SS	21.8
RDE	-.3266	RRA	.1271	RC3	.1858	FAU	.07394	RRT	-.0077	RRF	.0122	RTF	-.7897			CRT	.6725	CRS	.0923	CST	.7949
FDE	.1199	FRA	1.5892	FC3	-4.6461	BSP	2235	SGB	1486.8	R23	-.0051	R13	.7897			LSA	38.1	MSA	22.7	SSA	1.5
BDE	.4356	BRA	.7403	BC3	.4820	FSP	575	SG1	1374.5	SG2	566.8	THA	179.78			EL1	35.5	EL2	15.5	ALF	39.20

LAUNCH DATE MAY 12 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC DISTANCE 350.322 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.940	GAL	-.37	AZL	91.83	HCA	116.58	SMA	197.66	ECC	.23555	INC	1.8282	V1	29.484
RP	207.04	LAP	-1.64	LOP	347.23	VP	24.710	GAP	13.35	AZP	89.18	TAL	358.08	TAP	114.66	RCA	151.10	APO	244.22	V2	26.454
RC	75.426	GL	-16.75	GP	-.20	ZAL	99.50	ZAP	155.36	ETS	180.53	ZAE	170.97	ETE	15.95	ZAC	99.19	ETC	278.67	LVI	-19.03

PLANETOCENTRIC CONIC

C3	13.304	VHL	3.648	DLA	-26.85	RAL	339.17	RAD	6639.7	VEL	11.549	PTH	6.59	VHP	5.775	DPA	-15.92	RAP	325.62	ECC	1.2190

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 33	2486.99	-6.75	65.87	192.93	137.21	17 9 0	1487.0	11.62	50.08
60.00	17 43 23	2285.27	-1.68	52.56	197.79	130.27	18 21 29	1285.3	14.27	34.38
70.00	19 21 56	1995.51	3.74	33.17	201.89	123.97	19 55 12	995.5	17.14	12.90
80.00	21 24 28	1611.95	8.96	7.24	205.08	118.60	21 51 20	611.9	19.94	345.24
90.00	23 19 9	1242.11	11.78	341.51	206.56	115.90	23 39 51	242.1	21.45	318.65
100.00	0 11 16	1086.42	8.96	328.61	205.08	118.60	0 29 22	86.4	19.94	306.61
110.00	0 25 18	1042.33	3.74	322.08	201.89	123.97	0 42 41	42.3	17.14	301.82

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2714	TRA	-.7087	TC3	.4852	BAU	.0927	SGT	1365.2	SGR	562.0	SG3	406.4			ST	28.4	SR	25.2	SS	22.3
RDE	-.3179	RRA	.1235	RC3	.1901	FAU	.07777	RRT	-.0122	RRF	.0158	RTF	-.7795			CRT	.6597	CRS	.0508	CST	.7799
FDE	.1012	FRA	1.6530	FC3	-5.0605	BSP	2153	SGB	1476.3	R23	-.0043	R13	.7795			LSA	37.3	MSA	23.3	SSA	1.5
BDE	.4180	BRA	.7193	BC3	.5211	FSP	616	SG1	1365.2	SG2	562.0	THA	179.65			EL1	34.6	EL2	15.5	ALF	39.86

LAUNCH DATE MAY 12 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC DISTANCE 354.181 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.881	GAL	-.32	AZL	91.83	HCA	117.84	SMA	196.53	ECC	.23115	INC	1.8271	V1	29.484
RP	207.12	LAP	-1.62	LOP	348.49	VP	24.622	GAP	13.01	AZP	89.15	TAL	358.29	TAP	116.14	RCA	151.10	APO	241.96	V2	26.444
RC	76.944	GL	-16.99	GP	-.20	ZAL	99.23	ZAP	154.06	ETS	180.52	ZAE	171.49	ETE	15.90	ZAC	99.19	ETC	278.66	LVI	-19.02

PLANETOCENTRIC CONIC

C3	12.870	VHL	3.587	DLA	-27.17	RAL	339.01	RAD	6639.5	VEL	11.530	PTH	6.58	VHP	5.600	DPA	-15.94	RAP	325.59	ECC	1.2118

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 37	2472.46	-6.02	65.25	192.52	137.28	17 9 49	1472.5	12.34	49.44
60.00	17 45 11	2268.79	-.95	51.77	197.39	130.29	18 22 59	1268.8	14.96	33.53
70.00	19 24 58	1975.35	4.51	32.11	201.51	123.89	19 57 54	975.3	17.83	11.74
80.00	21 30 4	1583.75	9.87	5.65	204.78	118.32	21 56 28	583.7	20.67	343.47
90.00	23 28 6	1203.10	12.93	339.22	206.35	115.37	23 48 9	203.1	22.29	316.10
100.00	0 16 52	1058.22	9.87	327.01	204.78	118.32	0 34 30	58.2	20.67	304.84
110.00	0 28 21	1022.17	4.51	321.03	201.51	123.89	0 45 23	22.2	17.83	300.66

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2704	TRA	-.7000	TC3	.4888	BAU	.0905	SGT	1374.4	SGR	556.9	SG3	433.7			ST	28.7	SR	24.9	SS	23.0
RDE	-.3095	RRA	.1201	RC3	.1939	FAU	.08164	RRT	-.0114	RRF	.0163	RTF	-.7758			CRT	.6617	CRS	.0344	CST	.7678
FDE	.0984	FRA	1.7302	FC3	-5.4919	BSP	2215	SGB	1482.9	R23	-.0057	R13	.7758			LSA	37.6	MSA	23.7	SSA	1.5
BDE	.4110	BRA	.7102	BC3	.5259	FSP	667	SG1	1374.4	SG2	556.9	THA	179.68			EL1	34.7	EL2	15.4	ALF	39.00

LAUNCH DATE MAY 12 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 1 1971

HELIOCENTRIC CONIC DISTANCE 358.068 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.826	GAL	-.28	AZL	91.83	HCA	119.11	SMA	195.49	ECC	.22703	INC	1.8258	V1	29.484
RP	207.21	LAP	-1.60	LOP	349.76	VP	24.537	GAP	12.67	AZP	89.11	TAL	358.50	TAP	117.61	RCA	151.11	APO	239.87	V2	26.433
RC	78.502	GL	-17.23	GP	-.21	ZAL	98.96	ZAP	152.73	ETS	180.51	ZAE	172.08	ETE	15.99	ZAC	99.19	ETC	278.65	LVI	-18.99

PLANETOCENTRIC CONIC

C3	12.470	VHL	3.531	DLA	-27.49	RAL	338.86	RAD	6639.3	VEL	11.513	PTH	6.56	VHP	5.431	DPA	-15.97	RAP	325.53	ECC	1.2052

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 29 39	2458.57	-5.33	64.67	192.14	137.35	17 10 37	1458.6	13.02	48.83
60.00	17 46 56	2252.99	-.26	51.02	197.01	130.30	18 24 29	1253.0	15.62	32.72
70.00	19 27 59	1955.83	5.25	31.08	201.16	123.80	20 0 35	955.8	18.48	10.60
80.00	21 35 51	1555.56	10.78	4.04	204.50	118.01	22 1 46	555.6	21.38	341.68
90.00	23 38 13	1160.95	14.14	336.72	206.21	114.75	23 57 34	160.9	23.14	313.31
100.00	0 22 39	1030.03	10.78	325.41	204.50	118.01	0 39 49	30.0	21.38	303.05
110.00	0 31 21	1002.65	5.25	320.00	201.16	123.80	0 48 4	2.6	18.48	299.52

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2682	TRA	-.6872	TC3	.4943	BAU	.0887	SGT	1375.2	SGR	551.4	SG3	462.1			ST	28.8	SR	24.7	SS	23.7
RDE	-.3013	RRA	.1169	RC3	.1973	FAU	.08570	RRT	-.0097	RRF	.0163	RTF	-.7731			CRT	.6641	CRS	.0199	CST	.7563
FDE	.0920	FRA	1.8069	FC3	-5.9499	BSP	2235	SGB	1481.6	R23	-.0074	R13	.7731			LSA	37.7	MSA	24.0	SSA	1.5
BDE	.4034	BRA	.6971	BC3	.5322	FSP	716	SG1	1375.2	SG2	551.4	THA	179.73			EL1	34.7	EL2	15.3	ALF	38.39

LAUNCH DATE MAY 12 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 3 1971

HELIOCENTRIC CONIC DISTANCE 361.983 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.775 GAL -.24 AZL 91.82 HCA 120.37 SMA 194.52 ECC .22318 INC 1.8246 V1 29.484
RP 207.31 LAP -1.57 LOP 381.02 VP 24.456 GAP 12.34 AZP 89.08 TAL 358.70 TAP 119.07 RCA 151.11 APO 237.94 V2 26.422
RC 80.098 GL -17.46 GP -.22 ZAL 98.71 ZAP 151.37 ETS 180.50 ZAE 172.75 ETE 16.27 ZAC 99.19 ETC 278.63 LVI -18.96

PLANETOCENTRIC CONIC

C3 12.102 VHL 3.479 DLA -27.79 RAL 338.71 RAD 6639.1 VEL 11.497 PTH 6.55 VHP 5.268 DPA -16.01 RAP 325.43 ECC 1.1992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 39	2445.34	-4.66	64.11	191.78	137.40	17 11 25	1445.3	13.67	48.24
60.00	17 48 39	2237.88	.41	50.30	196.65	130.30	18 25 57	1237.9	16.25	31.93
70.00	19 30 58	1937.00	5.96	30.09	200.84	123.69	20 3 15	937.0	19.10	9.50
80.00	21 41 49	1527.35	11.68	2.43	204.27	117.68	22 7 16	527.4	22.06	339.87
90.00	23 50 13	1113.26	15.48	333.86	206.16	113.96	24 8 46	113.5	24.04	310.10
100.00	0 28 36	1001.83	11.68	323.80	204.27	117.68	0 45 18	1.8	22.06	301.23
110.00	0 34 20	6271.86	5.96	296.91	200.84	123.69	2 18 52	5271.9	19.10	276.32

DIFFERENTIAL CORRECTIONS

TDE -.2642 TRA -.6727 TC3 .4992 BAU .0870
RDE -.2934 RRA .1138 RC3 .2001 FAU .09026
FDE .0825 FRA 1.8852 FC3-6.4567 BSP 2215
BDE .3948 BRA .6823 BC3 .5378 FSP 762

MID-COURSE EXECUTION ACCURACY

SGT 1370.7 SGR 545.7 SG3 492.7
RRT -.0091 RRF .0169 RTF -.7696
SGB 1475.3 R23 -.0086 R13 .7696
SG1 1370.7 SG2 545.6 THA 179.75

ORBIT DETERMINATION ACCURACY

ST 28.7 SR 24.4 SS 24.4
CRT .6652 CRS -.0013 CST .7413
LSA 37.6 MSA 24.4 SSA 1.5
EL1 34.5 EL2 15.2 ALF 37.99

LAUNCH DATE MAY 12 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 365.921 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.727 GAL -.20 AZL 91.82 HCA 121.63 SMA 193.63 ECC .21958 INC 1.8233 V1 29.484
RP 207.42 LAP -1.55 LOP 352.28 VP 24.377 GAP 12.02 AZP 89.04 TAL 358.89 TAP 120.52 RCA 151.11 APO 236.15 V2 26.409
RC 81.730 GL -17.68 GP -.23 ZAL 98.48 ZAP 149.97 ETS 180.49 ZAE 173.49 ETE 16.81 ZAC 99.20 ETC 278.60 LVI -18.91

PLANETOCENTRIC CONIC

C3 11.763 VHL 3.430 DLA -28.08 RAL 338.57 RAD 6638.9 VEL 11.482 PTH 6.53 VHP 5.111 DPA -16.07 RAP 325.30 ECC 1.1936

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 39	2432.79	-4.03	63.58	191.45	137.45	17 12 11	1432.8	14.29	47.68
60.00	17 50 19	2223.49	1.04	49.61	196.33	130.29	18 27 23	1223.5	16.84	31.18
70.00	19 33 54	1918.90	6.64	29.13	200.54	123.58	20 5 53	918.9	19.69	8.43
80.00	21 47 59	1499.08	12.57	.80	204.07	117.31	22 12 58	499.1	22.73	338.03
90.00	0 10 17	1052.80	17.12	330.18	206.27	112.86	0 27 50	52.8	25.07	305.97
100.00	0 34 47	6261.60	12.57	300.08	204.07	117.31	2 19 8	5261.6	22.73	277.30
110.00	0 37 16	6253.75	6.64	295.96	200.54	123.58	2 21 30	5253.8	19.69	275.25

DIFFERENTIAL CORRECTIONS

TDE -.2596 TRA -.6569 TC3 .4953 BAU .0842
RDE -.2857 RRA .1109 RC3 .2025 FAU .09458
FDE .0706 FRA 1.9692 FC3-6.9612 BSP 2208
BDE .3860 BRA .6662 BC3 .5351 FSP 814

MID-COURSE EXECUTION ACCURACY

SGT 1360.4 SGR 539.6 SG3 523.5
RRT -.0095 RRF .0193 RTF -.7657
SGB 1463.5 R23 -.0107 R13 .7657
SG1 1360.4 SG2 539.6 THA 179.74

ORBIT DETERMINATION ACCURACY

ST 28.6 SR 24.1 SS 25.0
CRT .6662 CRS -.0248 CST .7245
LSA 37.5 MSA 24.8 SSA 1.5
EL1 34.3 EL2 15.0 ALF 37.70

LAUNCH DATE MAY 12 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 369.883 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.682 GAL -.17 AZL 91.82 HCA 122.89 SMA 192.80 ECC .21622 INC 1.8221 V1 29.484
RP 207.54 LAP -1.53 LOP 353.54 VP 24.302 GAP 11.70 AZP 89.01 TAL 359.07 TAP 121.96 RCA 151.11 APO 234.49 V2 26.395
RC 83.399 GL -17.88 GP -.24 ZAL 98.26 ZAP 148.53 ETS 180.48 ZAE 174.31 ETE 17.73 ZAC 99.22 ETC 278.57 LVI -18.86

PLANETOCENTRIC CONIC

C3 11.451 VHL 3.384 DLA -28.36 RAL 338.44 RAD 6638.8 VEL 11.469 PTH 6.52 VHP 4.960 DPA -16.13 RAP 325.13 ECC 1.1885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 32 36	2420.92	-3.44	63.08	191.14	137.48	17 12 57	1420.9	14.87	47.15
60.00	17 51 57	2209.84	1.64	48.96	196.02	130.27	18 28 47	1209.8	17.40	30.46
70.00	19 36 47	1901.56	7.29	28.21	200.27	123.46	20 8 28	901.6	20.25	7.39
80.00	21 54 23	1470.67	13.45	359.15	203.91	116.91	22 18 54	470.7	23.38	336.17
87.83	0 20 53	1011.01	19.72	328.23	206.80	110.80	0 37 44	11.0	26.56	303.27
100.00	0 41 11	6233.18	13.45	298.43	203.91	116.91	2 25 4	5233.2	23.38	275.44
110.00	0 40 9	6236.42	7.29	295.04	200.27	123.46	2 24 5	5236.4	20.25	274.22

DIFFERENTIAL CORRECTIONS

TDE -.2532 TRA -.6442 TC3 .4817 BAU .0801
RDE -.2783 RRA .1081 RC3 .2043 FAU .09923
FDE .0564 FRA 2.0655 FC3-7.5022 BSP 2231
BDE .3762 BRA .6532 BC3 .5233 FSP 884

MID-COURSE EXECUTION ACCURACY

SGT 1351.5 SGR 533.2 SG3 557.1
RRT -.0148 RRF .0231 RTF -.7699
SGB 1452.9 R23 -.0097 R13 .7599
SG1 1351.5 SG2 533.2 THA 179.60

ORBIT DETERMINATION ACCURACY

ST 28.4 SR 23.8 SS 25.8
CRT .6629 CRS -.0301 CST .7098
LSA 37.4 MSA 25.3 SSA 1.5
EL1 33.9 EL2 14.9 ALF 37.47

LAUNCH DATE MAY 12 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 373.867 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.640 GAL -.13 AZL 91.82 HCA 124.15 SMA 192.03 ECC .21309 INC 1.8207 V1 29.484
RP 207.66 LAP -1.51 LOP 354.80 VP 24.230 GAP 11.40 AZP 88.98 TAL 359.23 TAP 123.38 RCA 151.11 APO 232.96 V2 26.381
RC 85.104 GL -18.08 GP -.25 ZAL 98.05 ZAP 147.06 ETS 180.47 ZAE 175.18 ETE 19.26 ZAC 99.24 ETC 278.53 LVI -18.80

PLANETOCENTRIC CONIC

C3 11.164 VHL 3.341 DLA -28.61 RAL 338.32 RAD 6638.6 VEL 11.456 PTH 6.51 VHP 4.816 DPA -16.21 RAP 324.93 ECC 1.1837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 33	2409.74	-2.88	62.62	190.86	137.51	17 13 42	1409.7	15.41	46.64
60.00	17 53 32	2196.94	2.21	48.34	195.75	130.25	18 30 9	1196.9	17.93	29.78
70.00	19 39 36	1885.03	7.91	27.33	200.03	123.33	20 11 1	885.0	20.78	6.40
80.00	22 1 4	1441.99	14.32	357.48	203.78	116.48	22 25 6	442.0	24.00	334.27
85.44	0 0 33	1070.09	20.02	332.68	206.40	110.88	0 18 23	70.1	26.86	307.66
100.00	0 47 51	6204.50	14.32	296.75	203.78	116.48	2 31 16	5204.5	24.00	273.54
110.00	0 42 58	6219.88	7.91	294.16	200.03	123.33	2 26 38	5219.9	20.78	273.22

DIFFERENTIAL CORRECTIONS

TDE -.2462 TRA -.6311 TC3 .4632 BAU .0756
RDE -.2710 RRA .1055 RC3 .2056 FAU .10406
FDE .0383 FRA 2.1740 FC3-8.0691 BSP 2259
BDE .3662 BRA .6398 BC3 .5068 FSP 970

MID-COURSE EXECUTION ACCURACY

SGT 1339.3 SGR 526.6 SG3 593.1
RRT -.0215 RRF .0286 RTF -.7540
SGB 1439.1 R23 -.0095 R13 .7541
SG1 1339.4 SG2 526.5 THA 179.43

ORBIT DETERMINATION ACCURACY

ST 28.1 SR 23.4 SS 26.8
CRT .6589 CRS -.0789 CST .6931
LSA 37.2 MSA 25.9 SSA 1.5
EL1 33.4 EL2 14.8 ALF 37.32

LAUNCH DATE MAY 12 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 377.869 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.601	GAL	-.11	AZL	91.82	HCA	125.40	SMA	191.33	ECC	.21017	INC	1.8194	V1	29.484
RP	207.80	LAP	-1.48	LOP	356.05	VP	24.160	GAP	11.10	AZP	88.95	TAL	359.39	TAP	124.79	RCA	151.11	APO	231.54	V2	26.365
RC	86.843	GL	-18.27	GP	-.26	ZAL	97.87	ZAP	145.56	ETS	180.45	ZAE	176.12	ETE	21.91	ZAC	99.27	ETC	278.48	LVI	-18.72

PLANETOCENTRIC CONIC

C3	10.901	VHL	3.302	DLA	-28.86	RAL	338.22	RAD	6638.5	VEL	11.445	PTH	6.50	VHP	4.677	DPA	-16.30	RAP	324.68	ECC	1.1794

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 27	2399.26	-2.35	62.18	190.61	137.53	17 14 27	1399.3	15.92	46.17
60.00	17 55 4	2184.82	2.74	47.76	195.50	130.22	18 31 29	1184.8	18.42	29.13
70.00	19 42 20	1869.35	8.50	26.50	199.81	123.20	20 13 29	869.3	21.27	5.45
80.00	22 8 3	1412.89	15.20	355.76	203.70	116.01	22 31 36	412.9	24.61	332.32
84.00	23 44 26	1103.19	20.30	335.22	206.03	110.96	24 2 49	103.2	27.14	310.15
100.00	0 54 51	6175.40	15.20	295.04	203.70	116.01	2 37 47	5175.4	24.61	271.60
110.00	0 45 42	6204.20	8.50	293.32	199.81	123.20	2 29 6	5204.2	21.27	272.27

DIFFERENTIAL CORRECTIONS

TDE	-.2457	TRA	-.6109	TC3	.4624	BAU	.0738
RDE	-.2640	RRA	.1029	RC3	.2062	FAU	.10986
FDE	.0391	FRA	2.2610	FC3	-8.7252	BSP	2168
BDE	.3606	BRA	.6195	BC3	.5063	FSP	1015

MID-COURSE EXECUTION ACCURACY

SGT	1319.2	SGR	519.6	SG3	630.6		
RRT	-.0145	RRF	.0259	RTF	-.7469		
SGB	1417.9	R23	-.0130	R13	.7490		
SG1	1319.2	SG2	519.5	THA	179.61		

ORBIT DETERMINATION ACCURACY

ST	28.0	SR	23.1	SS	27.4
CRT	.6688	CRS	-.0805	CST	.6823
LSA	37.3	MSA	26.0	SSA	1.6
EL1	33.3	EL2	14.4	ALF	36.93

LAUNCH DATE MAY 12 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 381.890 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.564	GAL	-.08	AZL	91.82	HCA	126.66	SMA	190.67	ECC	.20746	INC	1.8180	V1	29.484
RP	207.94	LAP	-1.46	LOP	357.31	VP	24.093	GAP	10.80	AZP	88.91	TAL	359.53	TAP	126.19	RCA	151.12	APO	230.23	V2	26.349
RC	88.616	GL	-18.45	GP	-.27	ZAL	97.70	ZAP	144.02	ETS	180.44	ZAE	177.12	ETE	26.90	ZAC	99.30	ETC	278.42	LVI	-18.64

PLANETOCENTRIC CONIC

C3	10.659	VHL	3.265	DLA	-29.08	RAL	338.13	RAD	6638.4	VEL	11.435	PTH	6.49	VHP	4.544	DPA	-16.41	RAP	324.40	ECC	1.1754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 21	2389.47	-1.86	61.77	190.38	137.55	17 15 10	1389.5	16.39	45.72
60.00	17 56 32	2173.47	3.24	47.22	195.28	130.19	18 32 46	1173.5	18.88	28.52
70.00	19 44 58	1854.55	9.05	25.71	199.62	123.07	20 15 53	854.6	21.73	4.55
80.00	22 15 28	1383.07	16.08	353.99	203.66	115.50	22 38 31	383.1	25.21	330.31
82.91	23 35 17	1126.92	20.56	337.08	205.69	111.03	23 54 4	126.9	27.41	311.95
100.00	1 2 16	6145.58	16.08	293.26	203.66	115.50	2 44 41	5145.6	25.21	269.58
110.00	0 48 20	6189.41	9.05	292.53	199.62	123.07	2 31 30	5189.4	21.73	271.37

DIFFERENTIAL CORRECTIONS

TDE	-.2430	TRA	-.5981	TC3	.4063	BAU	.0649
RDE	-.2571	RRA	.1006	RC3	.2064	FAU	.11450
FDE	.0305	FRA	2.3811	FC3	-9.2996	BSP	2125
BDE	.3538	BRA	.6065	BC3	.4557	FSP	1078

MID-COURSE EXECUTION ACCURACY

SGT	1301.9	SGR	512.4	SG3	667.8		
RRT	-.0216	RRF	.0311	RTF	-.7331		
SGB	1399.1	R23	-.0124	R13	.7332		
SG1	1301.9	SG2	512.2	THA	179.42		

ORBIT DETERMINATION ACCURACY

ST	27.9	SR	22.8	SS	28.4
CRT	.6712	CRS	-.0941	CST	.6698
LSA	37.5	MSA	26.4	SSA	1.6
EL1	33.1	EL2	14.2	ALF	36.48

LAUNCH DATE MAY 12 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 385.927 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.530	GAL	-.06	AZL	91.82	HCA	127.91	SMA	190.07	ECC	.20493	INC	1.8165	V1	29.484
RP	208.08	LAP	-1.43	LOP	358.56	VP	24.028	GAP	10.52	AZP	88.88	TAL	359.66	TAP	127.57	RCA	151.12	APO	229.02	V2	26.332
RC	90.421	GL	-18.61	GP	-.28	ZAL	97.55	ZAP	142.43	ETS	180.42	ZAE	178.12	ETE	38.33	ZAC	99.33	ETC	278.35	LVI	-18.54

PLANETOCENTRIC CONIC

C3	10.436	VHL	3.231	DLA	-29.29	RAL	338.05	RAD	6638.3	VEL	11.425	PTH	6.48	VHP	4.417	DPA	-16.53	RAP	324.08	ECC	1.1718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 36 13	2380.37	-1.40	61.39	190.18	137.56	17 15 53	1380.4	16.83	45.31
60.00	17 57 37	2162.90	3.71	46.71	195.09	130.16	18 34 0	1162.9	19.30	27.95
70.00	19 47 31	1840.65	9.56	24.96	199.45	122.94	20 18 11	840.7	22.16	3.70
80.00	22 23 27	1352.00	16.98	352.12	203.66	114.93	22 45 59	352.0	25.79	328.18
82.03	23 28 0	1145.15	20.81	338.52	205.38	111.09	23 47 5	145.1	27.66	313.34
100.00	1 10 15	6114.51	16.98	291.39	203.66	114.93	2 52 9	5114.5	25.79	267.46
110.00	0 50 53	6175.51	9.56	291.78	199.45	122.94	2 33 48	5175.5	22.16	270.52

DIFFERENTIAL CORRECTIONS

TDE	-.2309	TRA	-.5792	TC3	.4117	BAU	.0642
RDE	-.2505	RRA	.0983	RC3	.2057	FAU	.12145
FDE	-.0120	FRA	2.5091	FC3	-10.0743	BSP	2007
BDE	.3407	BRA	.5875	BC3	.4602	FSP	1143

MID-COURSE EXECUTION ACCURACY

SGT	1275.0	SGR	505.0	SG3	714.6		
RRT	-.0284	RRF	.0395	RTF	-.[illegible]32		
SGB	1371.4	R23	-.0148	R13	.7333		
SG1	1275.1	SG2	504.7	THA	179.24		

ORBIT DETERMINATION ACCURACY

ST	27.1	SR	22.4	SS	29.4
CRT	.6630	CRS	-.1453	CST	.6393
LSA	36.9	MSA	27.1	SSA	1.6
EL1	32.2	EL2	14.1	ALF	37.04

LAUNCH DATE MAY 12 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 389.979 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.499	GAL	-.04	AZL	91.82	HCA	129.16	SMA	189.51	ECC	.20259	INC	1.8150	V1	29.484
RP	208.24	LAP	-1.41	LOP	359.81	VP	23.965	GAP	10.24	AZP	88.85	TAL	359.77	TAP	128.93	RCA	151.12	APO	227.90	V2	26.313
RC	92.259	GL	-18.77	GP	-.30	ZAL	97.42	ZAP	140.81	ETS	180.41	ZAE	178.92	ETE	73.32	ZAC	99.37	ETC	278.28	LVI	-18.43

PLANETOCENTRIC CONIC

C3	10.233	VHL	3.199	DLA	-29.48	RAL	338.00	RAD	6638.2	VEL	11.416	PTH	6.47	VHP	4.295	DPA	-16.66	RAP	323.72	ECC	1.1684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 3	2372.00	-.98	61.04	190.01	137.57	17 16 35	1372.0	17.24	44.92
60.00	17 59 18	2153.17	4.13	46.24	194.92	130.12	18 35 12	1153.2	19.69	27.42
70.00	19 49 56	1827.78	10.04	24.27	199.31	122.82	20 20 23	827.8	22.55	2.90
80.00	22 32 14	1318.99	17.92	350.12	203.73	114.29	22 54 13	319.0	26.38	325.91
81.30	23 22 3	1159.55	21.04	339.68	205.11	111.14	23 41 22	159.6	27.88	314.45
100.00	1 19 2	6081.51	17.92	289.39	203.73	114.29	3 0 24	5081.5	26.38	265.18
110.00	0 53 18	6162.64	10.04	291.09	199.31	122.82	2 36 1	5162.6	22.55	269.73

DIFFERENTIAL CORRECTIONS

TDE	-.2424	TRA	-.5592	TC3	.3522	BAU	.0557
RDE	-.2438	RRA	.0962	RC3	.2046	FAU	.12727
FDE	.0160	FRA	2.6208	FC3	-10.7672	BSP	1953
BDE	.3438	BRA	.5674	BC3	.4073	FSP	1235

MID-COURSE EXECUTION ACCURACY

SGT	1250.3	SGR	497.0	SG3	755.8		
RRT	-.0140	RRF	.0352	RTF	-.7103		
SGB	1345.4	R23	-.0235	R13	.7104		
SG1	1250.3	SG2	497.0	THA	179.62		

ORBIT DETERMINATION ACCURACY

ST	27.7	SR	22.0	SS	30.3
CRT	.6918	CRS	-.1151	CST	.6325
LSA	37.9	MSA	27.0	SSA	1.6
EL1	32.8	EL2	13.5	ALF	35.73

LAUNCH DATE MAY 12 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 394.045 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.469 GAL -.02 AZL 91.81 HCA 130.41 SMA 188.99 ECC .20041 INC 1.8134 V1 29.484
RP 208.41 LAP -1.38 LOP 1.06 VP 23.904 GAP 9.96 AZP 88.82 TAL 359.87 TAP 130.28 RCA 151.12 APO 226.87 V2 26.294
RC 94.128 GL -18.92 GP -.31 ZAL 97.32 ZAP 139.15 ETS 180.39 ZAE 178.71 ETE 135.97 ZAC 99.42 ETC 278.20 LVI -18.31

PLANETOCENTRIC CONIC

C3 10.046 VHL 3.170 DLA -29.65 RAL 337.96 RAD 6638.1 VEL 11.408 PTH 6.46 VHP 4.178 DPA -16.80 RAP 323.32 ECC 1.1653

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 52	2364.29	-.60	60.72	189.86	137.57	17 17 17	1364.3	17.61	44.56
60.00	18 0 36	2144.21	4.53	45.81	194.77	130.09	18 36 20	1144.2	20.05	26.93
70.00	19 52 13	1815.85	10.48	23.62	199.19	122.69	20 22 29	815.9	22.91	2.16
80.00	22 42 37	1281.50	18.95	347.81	203.87	113.51	23 3 58	281.5	26.99	323.29
80.68	23 17 5	1171.26	21.25	340.64	204.87	111.19	23 36 36	171.3	28.08	315.36
100.00	1 29 24	6044.01	18.95	287.09	203.87	113.51	3 10 8	5044.0	26.99	262.56
110.00	0 55 35	6150.71	10.48	290.45	199.19	122.69	2 38 6	5150.7	22.91	268.99

DIFFERENTIAL CORRECTIONS

TDE -.2438 TRA -.5421 TC3 .3458 BAU .0538
RDE -.2374 RRA .0942 RC3 .2026 FAU .13475
FDE .0223 FRA 2.7635 FC-11.6128 BSP 2319
BDE .3403 BRA .5503 BC3 .4008 FSP 1520

MID-COURSE EXECUTION ACCURACY

SGT 1230.5 SGR 488.9 SG3 807.0
RRT -.0063 RRF .0359 RTF -.7060
SGB 1324.0 R23 -.0306 R13 .7060
SG1 1230.5 SG2 488.9 THA 179.83

ORBIT DETERMINATION ACCURACY

ST 27.8 SR 21.7 SS 31.4
CRT .7033 CRS -.1105 CST .6237
LSA 38.5 MSA 27.2 SSA 1.5
EL1 32.7 EL2 13.1 ALF 35.15

LAUNCH DATE MAY 12 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 398.122 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.442 GAL -.01 AZL 91.81 HCA 131.66 SMA 188.52 ECC .19840 INC 1.8118 V1 29.484
RP 208.58 LAP -1.35 LOP 2.31 VP 23.845 GAP 9.70 AZP 88.80 TAL 359.95 TAP 131.61 RCA 151.12 APO 225.92 V2 26.274
RC 96.027 GL -19.05 GP -.32 ZAL 97.24 ZAP 137.46 ETS 180.37 ZAE 177.64 ETE 161.02 ZAC 99.47 ETC 278.11 LVI -18.18

PLANETOCENTRIC CONIC

C3 9.875 VHL 3.143 DLA -29.81 RAL 337.94 RAD 6638.0 VEL 11.401 PTH 6.45 VHP 4.068 DPA -16.96 RAP 322.88 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 38 40	2357.32	-.25	60.42	189.74	137.58	17 17 57	1357.3	17.94	44.24
60.00	18 1 49	2136.11	4.88	45.42	194.65	130.05	18 37 25	1136.1	20.37	26.49
70.00	19 54 21	1805.04	10.88	23.04	199.10	122.58	20 24 26	805.0	23.23	1.49
80.00	22 57 12	1231.18	20.29	344.68	204.17	112.39	23 17 43	231.2	27.73	319.73
80.17	23 13 2	1180.56	21.43	341.40	204.66	111.22	23 32 43	180.6	28.27	316.09
100.00	1 43 59	5993.70	20.29	283.95	204.17	112.39	3 23 53	4993.7	27.73	259.01
110.00	0 57 44	6139.90	10.88	289.86	199.10	122.58	2 40 3	5139.9	23.23	268.31

DIFFERENTIAL CORRECTIONS

TDE -.2716 TRA -.5522 TC3 .0236 BAU .0269
RDE -.2306 RRA .0926 RC3 .2026 FAU .12901
FDE .1805 FRA 3.0149 FC-11.3100 BSP 2308
BDE .3563 BRA .5599 BC3 .2040 FSP 1498

MID-COURSE EXECUTION ACCURACY

SGT 1261.6 SGR 480.5 SG3 823.2
RRT -.0258 RRF .0413 RTF -.6338
SGB 1350.0 R23 -.0221 R13 .6339
SG1 1261.7 SG2 480.3 THA 179.34

ORBIT DETERMINATION ACCURACY

ST 30.3 SR 21.2 SS 34.1
CRT .7312 CRS .0343 CST .7020
LSA 43.0 MSA 26.0 SSA 1.6
EL1 34.7 EL2 12.6 ALF 31.82

LAUNCH DATE MAY 12 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 402.235 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.417 GAL .00 AZL 91.81 HCA 132.90 SMA 188.08 ECC .19654 INC 1.8101 V1 29.484
RP 208.76 LAP -1.33 LOP 3.56 VP 23.788 GAP 9.43 AZP 88.77 TAL .02 TAP 132.92 RCA 151.12 APO 225.05 V2 26.254
RC 97.955 GL -19.18 GP -.34 ZAL 97.18 ZAP 135.72 ETS 180.35 ZAE 176.33 ETE 169.92 ZAC 99.52 ETC 278.00 LVI -18.03

PLANETOCENTRIC CONIC

C3 9.719 VHL 3.118 DLA -29.94 RAL 337.94 RAD 6637.9 VEL 11.394 PTH 6.45 VHP 3.962 DPA -17.13 RAP 322.40 ECC 1.1600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 26	2351.01	.07	60.16	189.64	137.58	17 18 37	1351.0	18.25	43.95
60.00	18 2 58	2128.78	5.20	45.07	194.56	130.02	18 38 27	1128.8	20.66	26.09
70.00	19 56 20	1795.25	11.23	22.51	199.02	122.47	20 26 16	795.2	23.52	.87
79.73	23 9 42	1188.05	21.60	342.03	204.49	111.25	23 29 30	188.1	28.43	316.68
79.73	23 9 42	1188.05	21.60	342.03	204.49	111.25	23 29 30	188.1	28.43	316.68
79.73	23 9 42	1188.05	21.60	342.03	204.49	111.25	23 29 30	188.1	28.43	316.68
110.00	0 59 43	6130.11	11.23	289.33	199.02	122.47	2 41 53	5130.1	23.52	267.70

DIFFERENTIAL CORRECTIONS

TDE -.2858 TRA -.5535 TC3 .7027 BAU .0946
RDE -.2240 RRA .0912 RC3 .1908 FAU .18009
FDE .3206 FRA 3.3083 FC-16.0412 BSP 766
BDE .3631 BRA .5610 BC3 .7282 FSP 959

MID-COURSE EXECUTION ACCURACY

SGT 1358.7 SGR 470.1 SG3 1056.8
RRT .0647 RRF -.0132 RTF -.[illegible]80
SGB 1437.7 R23 .0441 R13 -.7776
SG1 1359.1 SG2 469.0 THA 1.46

ORBIT DETERMINATION ACCURACY

ST 31.6 SR 20.8 SS 37.8
CRT .7447 CRS .1325 CST .7558
LSA 47.2 MSA 25.1 SSA 1.6
EL1 35.8 EL2 12.3 ALF 29.94

LAUNCH DATE MAY 12 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 406.324 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.393 GAL .01 AZL 91.81 HCA 134.15 SMA 187.68 ECC .19482 INC 1.8084 V1 29.484
RP 208.94 LAP -1.30 LOP 4.80 VP 23.732 GAP 9.18 AZP 88.74 TAL .07 TAP 134.22 RCA 151.12 APO 224.24 V2 26.232
RC 99.910 GL -19.29 GP -.36 ZAL 97.15 ZAP 133.95 ETS 180.32 ZAE 174.92 ETE 174.13 ZAC 99.58 ETC 277.90 LVI -17.87

PLANETOCENTRIC CONIC

C3 9.577 VHL 3.095 DLA -30.06 RAL 337.97 RAD 6637.8 VEL 11.388 PTH 6.44 VHP 3.862 DPA -17.31 RAP 321.88 ECC 1.1576

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 11	2345.41	.35	59.93	189.57	137.58	17 19 17	1345.4	18.51	43.68
60.00	18 4 2	2122.31	5.49	44.76	194.49	129.99	18 39 25	1122.3	20.91	25.73
70.00	19 58 9	1786.61	11.55	22.04	198.97	122.37	20 27 56	786.6	23.77	.33
79.37	23 7 5	1193.80	21.76	342.52	204.34	111.27	23 26 59	193.8	28.57	317.13
79.37	23 7 5	1193.80	21.76	342.52	204.34	111.27	23 26 59	193.8	28.57	317.13
79.37	23 7 5	1193.80	21.76	342.52	204.34	111.27	23 26 59	193.8	28.57	317.13
110.00	1 1 31	6121.47	11.55	288.86	198.97	122.37	2 43 33	5121.5	23.77	267.16

DIFFERENTIAL CORRECTIONS

TDE -.1639 TRA -.5208 TC3 .2503 BAU .0404
RDE -.2202 RRA .0895 RC3 .1915 FAU .16555
FDE -.4626 FRA 3.4598 FC-14.9650 BSP 879
BDE .2745 BRA .5285 BC3 .3152 FSP 1254

MID-COURSE EXECUTION ACCURACY

SGT 1165.1 SGR 465.7 SG3 1027.0
RRT -.1313 RRF .1207 RTF -.6802
SGB 1254.7 R23 -.0149 R13 .6808
SG1 1167.0 SG2 460.9 THA 176.44

ORBIT DETERMINATION ACCURACY

ST 22.6 SR 20.6 SS 40.0
CRT .5623 CRS -.4823 CST .4470
LSA 42.4 MSA 27.0 SSA 1.5
EL1 27.0 EL2 14.2 ALF 40.33

LAUNCH DATE MAY 12 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 410.437 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.372	GAL	.02	AZL	91.81	HCA	135.39	SMA	187.51	ECC	.19324	INC	1.8067	V1	29.484
RP	209.14	LAP	-1.27	LOP	6.04	VP	23.678	GAP	8.93	AZP	88.71	TAL	.10	TAP	135.49	RCA	151.12	APO	223.51	V2	26.209
RC	101.892	GL	-19.39	GP	-.37	ZAL	97.14	ZAP	132.13	ETS	180.30	ZAE	173.43	ETE	176.51	ZAC	99.64	ETC	277.78	LVI	-17.70

PLANETOCENTRIC CONIC

C3	9.448	VHL	3.074	DLA	-30.15	RAL	338.01	RAD	6637.8	VEL	11.382	PTH	6.43	VHP	3.767	DPA	-17.50	RAP	321.31	ECC	1.1555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 55	2340.48	.60	59.72	189.53	137.57	17 19 55	1340.5	18.75	43.45
60.00	18 5 2	2116.65	5.73	44.49	194.44	129.96	18 40 19	1116.6	21.14	25.42
70.00	19 59 47	1779.09	11.82	21.62	198.94	122.28	20 29 26	779.1	23.99	359.86
78.08	23 5 2	1198.21	21.89	342.91	204.23	111.27	23 25 0	198.2	28.69	317.48
78.08	23 5 2	1198.21	21.89	342.91	204.23	111.27	23 25 0	198.2	28.69	317.48
78.08	23 5 2	1198.21	21.89	342.91	204.23	111.27	23 25 0	198.2	28.69	317.48
110.00	1 3 9	6113.95	11.82	288.45	198.94	122.28	2 45 3	5113.9	23.99	266.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1761	TRA	-.3298	TC3	.2106	BAU	.0358	SGT	793.8	SGR	433.8	SG3	976.8	ST	19.6	SR	20.1	SS	29.3
RDE	-.2138	RRA	.0854	RC3	.1868	FAU	.17456	RRT	.0413	RRF	.0266	RTF	-.5587	CRT	.7559	CRS	-.4642	CST	.2190
FDE	-.3297	FRA	2.5723	FC-15.9954		BSP	915	SGB	914.3	R23	.0608	R13	-.5576	LSA	31.4	MSA	25.6	SSA	1.5
BDE	.2770	BRA	.3407	BC3	.2815	FSP	1412	SG1	794.1	SG2	453.2	THA	2.00	EL1	26.3	EL2	9.8	ALF	46.03

LAUNCH DATE MAY 12 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 414.559 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.352	GAL	.02	AZL	91.80	HCA	136.63	SMA	186.98	ECC	.19179	INC	1.8047	V1	29.484
RP	209.34	LAP	-1.24	LOP	7.28	VP	23.625	GAP	8.69	AZP	88.69	TAL	.12	TAP	136.75	RCA	151.12	APO	222.84	V2	26.186
RC	103.900	GL	-19.48	GP	-.39	ZAL	97.16	ZAP	130.29	ETS	180.27	ZAE	171.87	ETE	178.00	ZAC	99.71	ETC	277.65	LVI	-17.52

PLANETOCENTRIC CONIC

C3	9.331	VHL	3.055	DLA	-30.23	RAL	338.07	RAD	6637.7	VEL	11.377	PTH	6.43	VHP	3.677	DPA	-17.71	RAP	320.71	ECC	1.1536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 41 37	2336.23	.81	59.54	189.51	137.57	17 20 33	1336.2	18.95	43.25
60.00	18 5 58	2111.80	5.94	44.25	194.42	129.93	18 41 10	1111.8	21.33	25.15
70.00	20 1 13	1772.72	12.06	21.28	198.92	122.20	20 30 46	772.7	24.17	359.45
78.84	23 3 35	1201.22	22.00	343.18	204.15	111.27	23 23 36	201.2	28.80	317.73
78.84	23 3 35	1201.22	22.00	343.18	204.15	111.27	23 23 36	201.2	28.80	317.73
78.84	23 3 35	1201.22	22.00	343.18	204.15	111.27	23 23 36	201.2	28.80	317.73
110.00	1 4 35	6107.58	12.06	288.10	198.92	122.20	2 46 23	5107.6	24.17	266.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1449	TRA	-.3539	TC3	-.0440	BAU	.0236	SGT	815.4	SGR	446.6	SG3	1019.8	ST	17.8	SR	19.8	SS	35.4
RDE	-.2087	RRA	.0845	RC3	.1841	FAU	.17312	RRT	-.1031	RRF	.0940	RTF	-.4596	CRT	.6651	CRS	-.5884	CST	.2026
FDE	-.5620	FRA	2.9817	FC-16.0626		BSP	1088	SGB	929.7	R23	-.0268	R13	.4612	LSA	37.7	MSA	23.2	SSA	1.5
BDE	.2540	BRA	.3639	BC3	.1893	FSP	1609	SG1	817.2	SG2	443.2	THA	175.42	EL1	24.3	EL2	10.8	ALF	49.44

LAUNCH DATE MAY 12 1971 FLIGHT TIME 172.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 418.689 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.334	GAL	.02	AZL	91.80	HCA	137.86	SMA	186.67	ECC	.19046	INC	1.8027	V1	29.484
RP	209.55	LAP	-1.21	LOP	8.51	VP	23.574	GAP	8.45	AZP	88.66	TAL	.12	TAP	137.98	RCA	151.12	APO	222.22	V2	26.162
RC	105.933	GL	-19.57	GP	-.41	ZAL	97.20	ZAP	128.40	ETS	180.24	ZAE	170.25	ETE	178.99	ZAC	99.78	ETC	277.51	LVI	-17.32

PLANETOCENTRIC CONIC

C3	9.225	VHL	3.037	DLA	-30.29	RAL	338.16	RAD	6637.8	VEL	11.372	PTH	6.42	VHP	3.592	DPA	-17.92	RAP	320.07	ECC	1.1518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 17	2332.65	.99	59.39	189.51	137.57	17 21 10	1332.6	19.12	43.08
60.00	18 6 49	2107.76	6.12	44.06	194.42	129.91	18 41 56	1107.8	21.48	24.92
70.00	20 2 26	1767.52	12.24	21.00	198.93	122.14	20 31 54	767.5	24.32	359.13
78.67	23 2 38	1203.07	22.10	343.36	204.10	111.26	23 22 41	203.1	28.88	317.88
78.67	23 2 38	1203.07	22.10	343.36	204.10	111.26	23 22 41	203.1	28.88	317.88
78.67	23 2 38	1203.07	22.10	343.36	204.10	111.26	23 22 41	203.1	28.88	317.88
110.00	1 5 50	6102.36	12.24	287.82	198.93	122.14	2 47 32	5102.4	24.32	265.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2385	TRA	-.3380	TC3	-.0879	BAU	.0245	SGT	866.4	SGR	434.3	SG3	1097.9	ST	25.1	SR	19.2	SS	33.4
RDE	-.2011	RRA	.0832	RC3	.1778	FAU	.18503	RRT	.0813	RRF	.0276	RTF	-.4139	CRT	.8250	CRS	-.1433	CST	.4331
FDE	-.0043	FRA	3.2437	FC-17.3641		BSP	907	SGB	969.1	R23	.0737	R13	-.4220	LSA	36.3	MSA	28.0	SSA	1.5
BDE	.3119	BRA	.3481	BC3	.1984	FSP	1694	SG1	867.3	SG2	432.4	THA	3.11	EL1	30.3	EL2	9.0	ALF	35.87

LAUNCH DATE MAY 12 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 422.829 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.318	GAL	.02	AZL	91.80	HCA	139.10	SMA	186.39	ECC	.18925	INC	1.8007	V1	29.484
RP	209.76	LAP	-1.18	LOP	9.75	VP	23.523	GAP	8.21	AZP	88.64	TAL	.10	TAP	139.20	RCA	151.12	APO	221.66	V2	26.137
RC	107.990	GL	-19.64	GP	-.43	ZAL	97.27	ZAP	126.49	ETS	180.21	ZAE	168.56	ETE	179.68	ZAC	99.85	ETC	277.37	LVI	-17.11

PLANETOCENTRIC CONIC

C3	9.130	VHL	3.022	DLA	-30.33	RAL	338.26	RAD	6637.6	VEL	11.368	PTH	6.42	VHP	3.513	DPA	-18.15	RAP	319.39	ECC	1.1503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 42 56	2329.72	1.14	59.27	189.54	137.57	17 21 46	1329.7	19.26	42.94
60.00	18 7 35	2104.53	6.26	43.90	194.44	129.89	18 42 39	1104.5	21.61	24.74
70.00	20 3 29	1763.50	12.39	20.77	198.95	122.08	20 32 53	763.5	24.44	356.87
78.56	23 2 14	1203.69	22.17	343.44	204.08	111.24	23 22 18	203.7	28.94	317.94
78.56	23 2 14	1203.69	22.17	343.44	204.08	111.24	23 22 18	203.7	28.94	317.94
78.56	23 2 14	1203.69	22.17	343.44	204.08	111.24	23 22 18	203.7	28.94	317.94
110.00	1 6 52	6098.36	12.39	287.60	198.95	122.08	2 48 30	5098.4	24.44	265.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1849	TRA	-.2694	TC3	-.3212	BAU	.0446	SGT	714.8	SGR	426.0	SG3	1092.4	ST	19.7	SR	18.8	SS	32.5
RDE	-.1966	RRA	.0807	RC3	.1733	FAU	.18809	RRT	.0178	RRF	.0603	RTF	-.1682	CRT	.8191	CRS	-.4879	CST	.0894
FDE	-.4099	FRA	2.9877	FC-17.8358		BSP	662	SGB	832.1	R23	.0650	R13	-.1676	LSA	34.2	MSA	25.0	SSA	1.5
BDE	.2699	BRA	.2813	BC3	.3650	FSP	1707	SG1	714.9	SG2	425.9	THA	.94	EL1	26.0	EL2	8.2	ALF	43.51

LAUNCH DATE MAY 12 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 426.975 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.303 GAL .01 AZL 91.80 HCA 140.33 SMA 186.14 ECC .18814 INC 1.7986 V1 29.484
RP 209.99 LAP -1.15 LOP 10.98 VP 23.474 GAP 7.98 AZP 88.62 TAL .07 TAP 140.40 RCA 151.12 APO 221.16 V2 26.111
RC 110.071 GL -19.70 GP -.45 ZAL 97.36 ZAP 124.54 ETS 180.18 ZAE 166.83 ETE 180.18 ZAC 99.92 ETC 277.22 LVI -16.88

PLANETOCENTRIC CONIC

C3 9.044 VHL 3.007 DLA -30.35 RAL 338.39 RAD 6637.5 VEL 11.364 PTH 6.42 VHP 3.438 DPA -18.38 RAP 318.67 ECC 1.1488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 43 34	2327.43	1.26	59.18	189.59	137.56	17 22 21	1327.4	19.37	42.84
60.00	18 8 16	2102.09	6.37	43.78	194.49	129.88	18 43 18	1102.1	21.71	24.60
70.00	20 4 19	1760.65	12.49	20.62	198.99	122.05	20 33 39	760.7	24.52	358.68
78.50	23 2 19	1203.24	22.23	343.43	204.09	111.21	23 22 23	203.2	28.97	317.91
78.50	23 2 19	1203.24	22.23	343.43	204.09	111.21	23 22 23	203.2	28.97	317.91
78.50	23 2 19	1203.24	22.23	343.43	204.09	111.21	23 22 23	203.2	28.97	317.91
110.00	1 7 41	6095.51	12.49	287.44	198.99	122.05	2 49 17	5095.5	24.52	265.51

DIFFERENTIAL CORRECTIONS

TDE -.1369 TRA -.4243 TC3 -.4837 BAU .0619
RDE -.1925 RRA .0839 RC3 .1683 FAU .19128
FDE -.8718 FRA 4.8196 FC-18.3094 BSP 560
BDE .2362 BRA .4325 BC3 .5121 FSP 1894

MID-COURSE EXECUTION ACCURACY

SGT 1014.9 SGR 423.2 SG3 1330.8
RRT -.2499 RRF .2249 RTF -.4049
SGB 1099.6 R23 -.1076 R13 .4107
SG1 1021.4 SG2 407.2 THA 172.92

ORBIT DETERMINATION ACCURACY

ST 19.2 SR 18.5 SS 53.7
CRT .5624 CRS -.5861 CST .3327
LSA 55.1 MSA 23.4 SSA 1.5
EL1 23.6 EL2 12.5 ALF 43.32

LAUNCH DATE MAY 12 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 431.129 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.289 GAL .00 AZL 91.80 HCA 141.56 SMA 185.91 ECC .18714 INC 1.7962 V1 29.484
RP 210.22 LAP -1.12 LOP 12.21 VP 23.426 GAP 7.76 AZP 88.59 TAL .02 TAP 141.58 RCA 151.12 APO 220.70 V2 26.088
RC 112.177 GL -19.75 GP -.47 ZAL 97.47 ZAP 122.56 ETS 180.15 ZAE 165.04 ETE 180.54 ZAC 100.00 ETC 277.05 LVI -16.64

PLANETOCENTRIC CONIC

C3 8.968 VHL 2.995 DLA -30.35 RAL 338.54 RAD 6637.5 VEL 11.361 PTH 6.41 VHP 3.368 DPA -18.62 RAP 317.92 ECC 1.1476

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 10	2325.76	1.34	59.11	189.67	137.56	17 22 56	1325.8	19.45	42.76
60.00	18 8 52	2100.40	6.44	43.70	194.55	129.87	18 43 53	1100.4	21.77	24.51
70.00	20 4 56	1758.93	12.55	20.52	199.04	122.03	20 34 15	758.9	24.57	358.57
78.50	23 2 52	1201.74	22.27	343.33	204.13	111.17	23 22 54	201.7	28.99	317.81
78.50	23 2 52	1201.74	22.27	343.33	204.13	111.17	23 22 54	201.7	28.99	317.81
78.50	23 2 52	1201.74	22.27	343.33	204.13	111.17	23 22 54	201.7	28.99	317.81
110.00	1 8 18	6093.79	12.55	287.34	199.04	122.03	2 49 52	5093.8	24.57	265.40

DIFFERENTIAL CORRECTIONS

TDE -.2893 TRA -.3236 TC3 -.2371 BAU .0337
RDE -.1824 RRA .0813 RC3 .1513 FAU .23680
FDE .4341 FRA 4.4961 FC-22.8588 BSP 387
BDE .3420 BRA .3337 BC3 .2812 FSP 1563

MID-COURSE EXECUTION ACCURACY

SGT 917.2 SGR 403.0 SG3 1465.0
RRT .1378 RRF .0390 RTF -.3644
SGB 1001.8 R23 .1018 R13 -.3613
SG1 919.2 SG2 398.3 THA 4.27

ORBIT DETERMINATION ACCURACY

ST 29.7 SR 17.7 SS 45.5
CRT .8654 CRS .1169 CST .5925
LSA 50.2 MSA 27.4 SSA 1.4
EL1 33.7 EL2 7.8 ALF 28.93

LAUNCH DATE MAY 12 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 435.282 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.277 GAL -.01 AZL 91.79 HCA 142.78 SMA 185.70 ECC .18624 INC 1.7939 V1 29.484
RP 210.45 LAP -1.09 LOP 13.43 VP 23.379 GAP 7.54 AZP 88.57 TAL 359.95 TAP 142.73 RCA 151.12 APO 220.29 V2 26.058
RC 114.307 GL -19.79 GP -.49 ZAL 97.62 ZAP 120.55 ETS 180.11 ZAE 163.20 ETE 180.80 ZAC 100.07 ETC 276.89 LVI -16.40

PLANETOCENTRIC CONIC

C3 8.902 VHL 2.984 DLA -30.33 RAL 338.72 RAD 6637.5 VEL 11.358 PTH 6.41 VHP 3.303 DPA -18.87 RAP 317.15 ECC 1.1465

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 46	2324.82	1.39	59.07	189.77	137.56	17 23 30	1324.8	19.50	42.71
60.00	18 9 24	2099.62	6.48	43.66	194.64	129.86	18 44 24	1099.6	21.80	24.47
70.00	20 5 19	1758.56	12.57	20.50	199.12	122.02	20 34 38	758.6	24.58	358.55
78.56	23 4 0	1198.96	22.29	343.13	204.20	111.11	23 23 59	199.0	28.99	317.60
78.56	23 4 0	1198.96	22.29	343.13	204.20	111.11	23 23 59	199.0	28.99	317.60
78.56	23 4 0	1198.96	22.29	343.13	204.20	111.11	23 23 59	199.0	28.99	317.60
110.00	1 8 42	6093.42	12.57	287.32	199.12	122.02	2 50 15	5093.4	24.58	265.37

DIFFERENTIAL CORRECTIONS

TDE -.2255 TRA -.2568 TC3 -.8905 BAU .1076
RDE -.1789 RRA .0787 RC3 .1565 FAU .20133
FDE -.1885 FRA 4.1735 FC-19.5796 BSP 817
BDE .2878 BRA .2686 BC3 .9041 FSP 2521

MID-COURSE EXECUTION ACCURACY

SGT 892.4 SGR 396.9 SG3 1289.8
RRT -.0027 RRF .1115 RTF .1.95
SGB 976.6 R23 -.1117 R13 -.0794
SG1 892.4 SG2 396.9 THA 179.92

ORBIT DETERMINATION ACCURACY

ST 23.3 SR 17.4 SS 40.4
CRT .8626 CRS -.2742 CST .2390
LSA 41.1 MSA 28.0 SSA 1.5
EL1 28.1 EL2 7.3 ALF 35.50

LAUNCH DATE MAY 12 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 439.448 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.266 GAL -.02 AZL 91.79 HCA 144.00 SMA 185.52 ECC .18544 INC 1.7913 V1 29.484
RP 210.70 LAP -1.05 LOP 14.65 VP 23.332 GAP 7.33 AZP 88.55 TAL 359.87 TAP 143.87 RCA 151.12 APO 219.92 V2 26.030
RC 116.460 GL -19.83 GP -.51 ZAL 97.79 ZAP 118.53 ETS 180.06 ZAE 161.33 ETE 181.00 ZAC 100.15 ETC 276.71 LVI -16.13

PLANETOCENTRIC CONIC

C3 8.844 VHL 2.974 DLA -30.29 RAL 338.91 RAD 6637.4 VEL 11.356 PTH 6.41 VHP 3.242 DPA -19.12 RAP 316.34 ECC 1.1455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 45 19	2324.44	1.41	59.05	189.89	137.56	17 24 4	1324.4	19.51	42.69
60.00	18 9 51	2099.53	6.48	43.66	194.75	129.86	18 44 51	1099.5	21.80	24.46
70.00	20 5 31	1759.23	12.54	20.54	199.20	122.03	20 34 50	759.2	24.56	358.59
78.67	23 5 35	1195.13	22.30	342.85	204.30	111.05	23 25 31	195.1	28.97	317.31
78.67	23 5 35	1195.13	22.30	342.85	204.30	111.05	23 25 31	195.1	28.97	317.31
78.67	23 5 35	1195.13	22.30	342.85	204.30	111.05	23 25 31	195.1	28.97	317.31
110.00	1 8 53	6094.09	12.54	287.36	199.20	122.03	2 50 27	5094.1	24.56	265.42

DIFFERENTIAL CORRECTIONS

TDE -.2337 TRA -.2246 TC3-1.1386 BAU .1358
RDE -.1728 RRA .0778 RC3 .1529 FAU .19630
FDE -.0276 FRA 4.4364 FC-19.2169 BSP 167
BDE .2906 BRA .2377 BC3 1.1488 FSP 2352

MID-COURSE EXECUTION ACCURACY

SGT 955.2 SGR 386.4 SG3 1306.4
RRT .0035 RRF .1194 RTF .1940
SGB 1030.4 R23 .1186 R13 .1941
SG1 955.2 SG2 386.4 THA .10

ORBIT DETERMINATION ACCURACY

ST 23.8 SR 16.9 SS 41.9
CRT .8869 CRS -.1702 CST .2926
LSA 42.7 MSA 27.9 SSA 1.4
EL1 28.4 EL2 6.5 ALF 34.23

LAUNCH DATE MAY 12 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 443.617 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.256	GAL	-.04	AZL	91.79	HCA	145.22	SMA	185.35	ECC	.18472	INC	1.7887	V1	29.484
RP	210.95	LAP	-1.02	LOP	15.87	VP	23.287	GAP	7.12	AZP	88.53	TAL	359.77	TAP	144.99	RCA	151.12	APO	219.59	V2	26.001
RC	118.637	GL	-19.85	GP	-.53	ZAL	97.98	ZAP	116.48	ETS	180.04	ZAE	159.41	ETE	181.15	ZAC	100.22	ETC	276.53	LVI	-15.86

PLANETOCENTRIC CONIC

C3	8.793	VHL	2.965	DLA	-30.24	RAL	339.13	RAD	6637.4	VEL	11.353	PTH	6.41	VHP	3.187	DPA	-19.38	RAP	315.50	ECC	1.1447

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 45 51	2324.67	1.40	59.06	190.04	137.56	17 24 36	1324.7	19.50	42.70
60.00	18 10 13	2100.20	6.45	43.69	194.88	129.87	18 45 14	1100.2	21.78	24.50
70.00	20 5 30	1761.03	12.48	20.64	199.31	122.05	20 34 51	761.0	24.51	358.71
78.83	23 7 41	1190.14	22.29	342.47	204.43	110.98	23 27 31	190.1	28.93	316.93
78.83	23 7 41	1190.14	22.29	342.47	204.43	110.98	23 27 31	190.1	28.93	316.93
78.83	23 7 41	1190.14	22.29	342.47	204.43	110.98	23 27 31	190.1	28.93	316.93
110.00	1 8 33	6095.88	12.48	287.46	199.31	122.05	2 50 29	5095.9	24.51	265.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2370	TRA	-.1853	TC3-1.2504	BAU	.1480	SGT	965.0	SGR	375.6	SG3	1375.8	ST	23.7	SR	16.4	SS	42.8
RDE	-.1672	RRA	.0766	RC3 .1438	FAU	.20871	RRT	.0378	RRF	.1220	RTF	.3129	CRT	.9105	CRS	-.1676	CST	.2421
FDE	-.0204	FRA	4.5826	FC-20.5482	BSP	121	SGB	1035.6	R23	.1081	R13	.3136	LSA	43.2	MSA	28.0	SSA	1.4
BDE	.2900	BRA	.2005	BC3 1.2587	FSP	2398	SG1	965.2	SG2	375.3	THA	.99	EL1	28.3	EL2	5.7	ALF	33.64

LAUNCH DATE MAY 12 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 447.790 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.248	GAL	-.05	AZL	91.79	HCA	146.44	SMA	185.21	ECC	.18408	INC	1.7858	V1	29.484
RP	211.20	LAP	-.99	LOP	17.09	VP	23.242	GAP	6.91	AZP	88.51	TAL	359.66	TAP	146.10	RCA	151.12	APO	219.30	V2	25.972
RC	120.836	GL	-19.86	GP	-.56	ZAL	98.19	ZAP	114.41	ETS	180.00	ZAE	157.46	ETE	181.26	ZAC	100.29	ETC	276.34	LVI	-15.58

PLANETOCENTRIC CONIC

C3	8.750	VHL	2.958	DLA	-30.16	RAL	339.36	RAD	6637.4	VEL	11.352	PTH	6.40	VHP	3.136	DPA	-19.64	RAP	314.64	ECC	1.1440

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 22	2325.49	1.35	59.10	190.20	137.56	17 25 7	1325.5	19.46	42.74
60.00	18 10 31	2101.60	6.39	43.76	195.03	129.88	18 45 33	1101.6	21.72	24.56
70.00	20 5 18	1763.90	12.37	20.79	199.43	122.09	20 34 42	763.9	24.43	358.89
79.05	23 10 18	1183.87	22.26	341.99	204.58	110.90	23 30 2	183.9	28.87	316.45
79.05	23 10 18	1183.87	22.26	341.99	204.58	110.90	23 30 2	183.9	28.87	316.45
79.05	23 10 18	1183.87	22.26	341.99	204.58	110.90	23 30 2	183.9	28.87	316.45
110.00	1 8 40	6098.76	12.37	287.62	199.43	122.09	2 50 19	5098.8	24.43	265.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2333	TRA	-.1401	TC3-1.3926	BAU	.1637	SGT	990.8	SGR	364.7	SG3	1445.6	ST	23.1	SR	15.9	SS	43.0
RDE	-.1619	RRA	.0753	RC3 .1339	FAU	.22251	RRT	.0649	RRF	.1264	RTF	.4512	CRT	.9322	CRS	-.1686	CST	.1643
FDE	-.0523	FRA	4.6881	FC-22.0145	BSP	353	SGB	1055.8	R23	.0928	R13	.4521	LSA	43.3	MSA	27.6	SSA	1.4
BDE	.2840	BRA	.1591	BC3 1.3991	FSP	2491	SG1	991.1	SG2	363.8	THA	1.58	EL1	27.6	EL2	4.8	ALF	33.79

LAUNCH DATE MAY 12 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 451.967 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.240	GAL	-.07	AZL	91.78	HCA	147.65	SMA	185.08	ECC	.18353	INC	1.7827	V1	29.484
RP	211.46	LAP	-.95	LOP	18.30	VP	23.198	GAP	6.71	AZP	88.49	TAL	359.52	TAP	147.18	RCA	151.12	APO	219.05	V2	25.942
RC	123.058	GL	-19.86	GP	-.59	ZAL	98.43	ZAP	112.33	ETS	179.96	ZAE	155.47	ETE	181.34	ZAC	100.37	ETC	276.15	LVI	-15.29

PLANETOCENTRIC CONIC

C3	8.715	VHL	2.952	DLA	-30.07	RAL	339.62	RAD	6637.4	VEL	11.350	PTH	6.40	VHP	3.089	DPA	-19.90	RAP	313.77	ECC	1.1434

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 51	2326.89	1.28	59.15	190.39	137.56	17 25 38	1326.9	19.40	42.81
60.00	18 10 44	2103.71	6.30	43.86	195.19	129.89	18 45 48	1103.7	21.64	24.70
70.00	20 4 55	1767.80	12.23	21.01	199.56	122.14	20 34 23	767.8	24.32	359.14
79.33	23 13 26	1176.36	22.21	341.41	204.75	110.81	23 33 2	176.4	28.79	315.87
79.33	23 13 26	1176.36	22.21	341.41	204.75	110.81	23 33 2	176.4	28.79	315.87
79.33	23 13 26	1176.36	22.21	341.41	204.75	110.81	23 33 2	176.4	28.79	315.87
110.00	1 8 17	6102.66	12.23	287.83	199.56	122.14	2 50 0	5102.7	24.32	265.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2364	TRA	-.0931	TC3-1.5922	BAU	.1861	SGT	1066.7	SGR	353.3	SG3	1483.7	ST	23.2	SR	15.4	SS	43.3
RDE	-.1561	RRA	.0740	RC3 .1261	FAU	.22857	RRT	.0912	RRF	.1267	RTF	.4548	CRT	.9535	CRS	-.1463	CST	.1402
FDE	.0232	FRA	4.7848	FC-22.7067	BSP	659	SGB	1123.7	R23	.0692	R13	.5654	LSA	43.5	MSA	27.5	SSA	1.3
BDE	.2833	BRA	.1189	BC3 1.5971	FSP	2525	SG1	1067.2	SG2	351.7	THA	1.94	EL1	27.5	EL2	3.9	ALF	33.00

LAUNCH DATE MAY 12 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC DISTANCE 456.145 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.233	GAL	-.10	AZL	91.78	HCA	148.87	SMA	184.97	ECC	.18305	INC	1.7795	V1	29.484
RP	211.73	LAP	-.92	LOP	19.51	VP	23.155	GAP	6.51	AZP	88.48	TAL	359.38	TAP	148.24	RCA	151.11	APO	218.83	V2	25.911
RC	125.302	GL	-19.86	GP	-.61	ZAL	98.70	ZAP	110.25	ETS	179.92	ZAE	153.46	ETE	181.40	ZAC	100.43	ETC	275.95	LVI	-14.99

PLANETOCENTRIC CONIC

C3	8.686	VHL	2.947	DLA	-29.96	RAL	339.90	RAD	6637.4	VEL	11.349	PTH	6.40	VHP	3.046	DPA	-20.16	RAP	312.88	ECC	1.1430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 19	2328.91	1.18	59.24	190.60	137.56	17 26 8	1328.9	19.30	42.91
60.00	18 10 53	2106.59	6.17	44.00	195.38	129.91	18 45 59	1106.6	21.53	24.86
70.00	20 4 20	1772.80	12.05	21.28	199.71	122.20	20 33 53	772.8	24.17	359.46
79.69	23 17 11	1167.28	22.15	340.71	204.95	110.70	23 36 39	167.3	28.69	315.18
79.69	23 17 11	1167.28	22.15	340.71	204.95	110.70	23 36 39	167.3	28.69	315.18
79.69	23 17 11	1167.28	22.15	340.71	204.95	110.70	23 36 39	167.3	28.69	315.18
110.00	1 7 43	6107.66	12.05	288.11	199.71	122.20	2 49 30	5107.7	24.17	266.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2359	TRA	-.0548	TC3-1.8380	BAU	.2139	SGT	1182.9	SGR	343.3	SG3	1520.7	ST	23.1	SR	14.9	SS	44.9
RDE	-.1508	RRA	.0732	RC3 .1195	FAU	.22995	RRT	.0933	RRF	.1509	RTF	.6372	CRT	.9668	CRS	-.1751	CST	.0595
FDE	-.0204	FRA	5.0279	FC-22.9183	BSP	855	SGB	1231.7	R23	.0864	R13	.6380	LSA	45.0	MSA	27.2	SSA	1.3
BDE	.2800	BRA	.0914	BC3 1.8418	FSP	2716	SG1	1183.3	SG2	341.6	THA	1.69	EL1	27.2	EL2	3.2	ALF	32.43

LAUNCH DATE MAY 12 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC DISTANCE 460.327 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.228 GAL -.12 AZL 91.78 HCA 150.07 SMA 184.88 ECC .18265 INC 1.7760 V1 29.484
RP 212.01 LAP -.89 LOP 20.72 VP 23.112 GAP 6.31 AZP 88.46 TAL 359.21 TAP 149.29 RCA 151.11 APO 218.65 V2 25.880
RC 127.566 GL -19.84 GP -.64 ZAL 98.99 ZAP 108.15 ETS 179.87 ZAE 151.43 ETE 181.44 ZAC 100.50 ETC 275.75 LVI -14.68

PLANETOCENTRIC CONIC

C3 8.665 VHL 2.944 DLA -29.83 RAL 340.19 RAD 6637.3 VEL 11.348 PTH 6.40 VHP 3.008 DPA -20.42 RAP 311.97 ECC 1.1426

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 45	2331.48	1.05	59.35	190.83	137.57	17 26 36	1331.5	19.18	43.03
60.00	18 10 57	2110.13	6.02	44.17	195.58	129.92	18 46 7	1110.1	21.39	25.05
70.00	20 3 36	1778.73	11.84	21.61	199.87	122.27	20 33 15	778.7	24.00	359.83
80.00	23 9 9	1196.26	21.18	342.46	204.81	111.55	23 29 5	196.3	28.18	317.24
80.11	23 21 34	1156.61	22.06	339.88	205.18	110.59	23 40 50	156.6	28.57	314.36
100.00	1 55 57	5958.77	21.18	281.74	204.81	111.55	3 35 15	4958.8	28.18	256.51
110.00	1 6 58	6113.59	11.84	288.43	199.87	122.27	2 48 52	5113.6	24.00	266.66

DIFFERENTIAL CORRECTIONS

TDE -.2389 TRA -.0073 TC3-2.0415 BAU .2368
RDE -.1450 RRA .0719 RC3 .1102 FAU .23856
FDE .0473 FRA 5.1396 FC-23.8360 BSP 1177
BDE .2794 BRA .0723 BC3 2.0445 FSP 2729

MID-COURSE EXECUTION ACCURACY

SGT 1288.8 SGR 331.6 SG3 1569.3
RRT .1184 RRF .1535 RTF .7106
SGB 1330.7 R23 .0639 R13 .7112
SG1 1289.4 SG2 329.1 THA 1.87

ORBIT DETERMINATION ACCURACY

ST 23.3 SR 14.3 SS 45.3
CRT .9803 CRS -.1409 CST .0274
LSA 45.4 MSA 27.2 SSA 1.3
EL1 27.3 EL2 2.4 ALF 31.33

LAUNCH DATE MAY 12 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 464.512 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.223 GAL -.15 AZL 91.77 HCA 151.28 SMA 184.81 ECC .18231 INC 1.7723 V1 29.484
RP 212.29 LAP -.85 LOP 21.93 VP 23.070 GAP 6.12 AZP 88.45 TAL 359.04 TAP 150.31 RCA 151.11 APO 218.50 V2 25.848
RC 129.850 GL -19.81 GP -.68 ZAL 99.29 ZAP 106.06 ETS 179.83 ZAE 149.39 ETE 181.47 ZAC 100.56 ETC 275.54 LVI -14.36

PLANETOCENTRIC CONIC

C3 8.649 VHL 2.941 DLA -29.68 RAL 340.51 RAD 6637.3 VEL 11.347 PTH 6.40 VHP 2.974 DPA -20.68 RAP 311.07 ECC 1.1423

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 9	2334.60	.90	59.48	191.07	137.57	17 27 4	1334.6	19.03	43.17
60.00	18 10 57	2114.34	5.83	44.37	195.80	129.95	18 46 11	1114.3	21.23	25.29
70.00	20 2 42	1785.59	11.59	21.98	200.05	122.35	20 32 28	785.6	23.80	.27
80.00	22 54 29	1246.85	19.88	345.66	204.54	112.75	23 15 16	246.9	27.51	320.84
80.60	23 26 38	1144.05	21.97	338.91	205.43	110.47	23 45 42	144.0	28.43	313.41
100.00	1 41 16	6009.36	19.88	284.93	204.54	112.75	3 21 26	5009.4	27.51	260.12
110.00	1 6 5	6120.45	11.59	288.80	200.05	122.35	2 48 5	5120.4	23.80	267.09

DIFFERENTIAL CORRECTIONS

TDE -.2392 TRA .0406 TC3-2.2774 BAU .2636
RDE -.1394 RRA .0709 RC3 .1028 FAU .24076
FDE .1001 FRA 5.3022 FC-24.0980 BSP 1489
BDE .2768 BRA .0817 BC3 2.2797 FSP 2789

MID-COURSE EXECUTION ACCURACY

SGT 1421.2 SGR 320.4 SG3 1598.5
RRT .1317 RRF .1654 RTF .7598
SGB 1456.9 R23 .0606 R13 .7603
SG1 1421.9 SG2 317.5 THA 1.79

ORBIT DETERMINATION ACCURACY

ST 23.4 SR 13.8 SS 46.2
CRT .9891 CRS -.1174 CST -.0140
LSA 46.3 MSA 27.1 SSA 1.2
EL1 27.1 EL2 1.8 ALF 30.34

LAUNCH DATE MAY 12 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 468.699 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.219 GAL -.18 AZL 91.77 HCA 152.48 SMA 184.74 ECC .18204 INC 1.7684 V1 29.484
RP 212.57 LAP -.82 LOP 23.13 VP 23.028 GAP 5.94 AZP 88.43 TAL 358.84 TAP 151.32 RCA 151.11 APO 218.37 V2 25.815
RC 132.153 GL -19.77 GP -.71 ZAL 99.63 ZAP 103.97 ETS 179.78 ZAE 147.33 ETE 181.49 ZAC 100.62 ETC 275.34 LVI -14.04

PLANETOCENTRIC CONIC

C3 8.640 VHL 2.939 DLA -29.51 RAL 340.84 RAD 6637.3 VEL 11.347 PTH 6.40 VHP 2.944 DPA -20.94 RAP 310.16 ECC 1.1422

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 32	2336.27	.71	59.63	191.34	137.57	17 27 31	1338.3	18.86	43.35
60.00	18 10 52	2119.23	5.62	44.61	196.04	129.97	18 46 12	1119.2	21.04	25.56
70.00	20 1 40	1793.21	11.30	22.40	200.25	122.45	20 31 33	793.2	23.58	.75
80.00	22 45 9	1280.84	18.97	347.77	204.46	113.50	23 6 30	280.8	27.00	323.24
81.19	23 32 31	1129.21	21.85	337.77	205.70	110.34	23 51 21	129.2	28.28	312.28
100.00	1 31 57	6043.36	18.97	287.05	204.46	113.50	3 12 40	5043.4	27.00	262.52
110.00	1 5 2	6128.21	11.30	289.23	200.25	122.45	2 47 10	5128.2	23.58	267.58

DIFFERENTIAL CORRECTIONS

TDE -.2375 TRA .0904 TC3-2.5032 BAU .2893
RDE -.1340 RRA .0698 RC3 .0939 FAU .24624
FDE .0723 FRA 5.4401 FC-24.6727 BSP 1792
BDE .2727 BRA .1142 BC3 2.5049 FSP 2853

MID-COURSE EXECUTION ACCURACY

SGT 1555.9 SGR 309.4 SG3 1636.8
RRT .1483 RRF .1823 RTF .8056
SGB 1586.4 R23 .0587 R13 .8060
SG1 1556.6 SG2 305.9 THA 1.76

ORBIT DETERMINATION ACCURACY

ST 23.5 SR 13.3 SS 46.9
CRT .9938 CRS -.1371 CST -.1018
LSA 47.0 MSA 26.7 SSA 1.2
EL1 26.9 EL2 1.3 ALF 29.43

LAUNCH DATE MAY 12 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 472.886 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.216 GAL -.21 AZL 91.76 HCA 153.68 SMA 184.69 ECC .18184 INC 1.7642 V1 29.484
RP 212.86 LAP -.78 LOP 24.32 VP 22.987 GAP 5.75 AZP 88.42 TAL 358.64 TAP 152.32 RCA 151.11 APO 218.28 V2 25.782
RC 134.475 GL -19.72 GP -.74 ZAL 99.98 ZAP 101.89 ETS 179.74 ZAE 145.27 ETE 181.50 ZAC 100.67 ETC 275.13 LVI -13.72

PLANETOCENTRIC CONIC

C3 8.637 VHL 2.939 DLA -29.33 RAL 341.18 RAD 6637.3 VEL 11.347 PTH 6.40 VHP 2.918 DPA -21.19 RAP 309.25 ECC 1.1421

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 53	2342.48	.50	59.81	191.62	137.57	17 27 56	1342.5	18.65	43.55
60.00	18 10 44	2124.77	5.38	44.88	196.29	130.00	18 46 8	1124.8	20.82	25.87
70.00	20 0 29	1801.95	10.99	22.87	200.45	122.54	20 30 30	802.0	23.32	1.30
80.00	22 37 27	1340.00	18.17	349.57	204.45	114.11	22 59 17	310.0	26.53	325.28
81.89	23 39 23	1111.57	21.73	336.41	205.99	110.20	23 57 55	111.6	28.10	310.95
100.00	1 24 15	6072.51	18.17	288.84	204.45	114.11	3 5 28	5072.5	26.53	264.55
110.00	1 3 51	6136.81	10.99	289.69	200.45	122.54	2 46 8	5136.8	23.32	268.12

DIFFERENTIAL CORRECTIONS

TDE -.2377 TRA .1423 TC3-2.7404 BAU .3166
RDE -.1283 RRA .0688 RC3 .0851 FAU .25036
FDE .1440 FRA 5.5796 FC-25.0953 BSP 2110
BDE .2701 BRA .1580 BC3 2.7417 FSP 2941

MID-COURSE EXECUTION ACCURACY

SGT 1706.0 SGR 297.8 SG3 1669.4
RRT .1658 RRF .1932 RTF .8373
SGB 1731.8 R23 .0508 R13 .8375
SG1 1706.7 SG2 293.6 THA 1.71

ORBIT DETERMINATION ACCURACY

ST 23.8 SR 12.7 SS 47.6
CRT .9940 CRS -.1060 CST -.1383
LSA 47.8 MSA 26.6 SSA 1.2
EL1 26.9 EL2 1.2 ALF 28.06

LAUNCH DATE MAY 12 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 28 1971

DISTANCE 477.075

HELIOCENTRIC CONIC

RL	151.12	LAL	.00	LOL	230.64	VL	32.214	GAL	-.24	AZL	91.76	HCA	154.87	SMA	184.66	ECC	.18169	INC	1.7593
RP	213.16	LAP	-.75	LOP	25.52	VP	22.946	GAP	5.57	AZP	88.41	TAL	358.42	TAP	153.29	RCA	151.11	APO	218.21
RC	136.814	GL	-19.66	GP	-.78	ZAL	100.35	ZAP	99.82	ETS	179.69	ZAE	143.20	ETE	181.50	ZAC	100.72	ETC	274.93

EARTH TO MARS

V1	29.484	VHP	2.895	DPA	-21.44	RAP	308.35	ECC	1.1422										
V2	25.749																		
LVI	-13.39																		

PLANETOCENTRIC CONIC

C3	8.640	VHL	2.939	DLA	-29.12	RAL	341.55	RAD	6637.3	VEL	11.347	PTH	6.40	VHP	2.895	DPA	-21.44	RAP	308.35

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 12	2347.23	.26	60.00	191.92	137.58	17 28 20	1347.2	18.43	43.77
60.00	18 10 30	2130.94	5.11	45.17	196.56	130.03	18 46 1	1130.9	20.58	26.21
70.00	19 59 9	1811.37	10.64	23.38	200.67	122.65	20 29 21	811.4	23.05	1.88
80.00	22 30 38	1336.80	17.42	351.20	204.48	114.64	22 52 55	336.8	26.07	327.14
82.73	23 47 29	1090.26	21.58	334.78	206.30	110.05	24 5 39	90.3	27.91	309.34
100.00	1 17 26	6099.31	17.42	290.48	204.48	114.64	2 59 5	5099.3	26.07	266.41
110.00	1 2 32	6146.23	10.64	290.20	200.67	122.65	2 44 58	5146.2	23.05	268.71

DIFFERENTIAL CORRECTIONS

TDE	-.2366	TRA	.1955	TC3	-2.9824	BAU	.3446
RDE	-.1225	RRA	.0678	RC3	.0762	FAU	.25376
FDE	.1993	FRA	5.7153	FC	-25.4277	BSP	2428
BDE	.2665	BRA	.2069	BC3	2.9833	FSP	2957

MID-COURSE EXECUTION ACCURACY

SGT	1864.6	SGR	286.3	SG3	1698.0		
RRT	.1828	RRF	.2074	RTF	.8621		
SGB	1886.5	R23	.0469	R13	.8623		
SG1	1865.4	SG2	281.3	THA	1.65		

ORBIT DETERMINATION ACCURACY

ST	24.1	SR	12.2	SS	48.4		
CRT	.9895	CRS	-.0852	CST	-.1848		
LSA	48.7	MSA	26.4	SSA	1.1		
EL1	27.0	EL2	1.6	ALF	26.61		

LAUNCH DATE MAY 12 1971 FLIGHT TIME 202.00 ARRIVAL DATE NOV 30 1971

DISTANCE 481.265

HELIOCENTRIC CONIC

RL	151.12	LAL	.00	LOL	230.64	VL	32.213	GAL	-.28	AZL	91.75	HCA	156.06	SMA	184.63	ECC	.18160	INC	1.7542
RP	213.46	LAP	-.71	LOP	26.71	VP	22.906	GAP	5.39	AZP	88.40	TAL	358.18	TAP	154.25	RCA	151.10	APO	218.16
RC	139.171	GL	-19.60	GP	-.82	ZAL	100.75	ZAP	97.76	ETS	179.64	ZAE	141.14	ETE	181.50	ZAC	100.76	ETC	274.73

EARTH TO MARS

V1	29.484	VHP	2.876	DPA	-21.69	RAP	307.46	ECC	1.1423										
V2	25.714																		
LVI	-13.07																		

PLANETOCENTRIC CONIC

C3	8.648	VHL	2.941	DLA	-28.90	RAL	341.92	RAD	6637.3	VEL	11.347	PTH	6.40	VHP	2.876	DPA	-21.69	RAP	307.46

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 29	2352.50	-.00	60.22	192.23	137.58	17 28 42	1352.5	18.18	44.01
60.00	18 10 13	2137.74	4.81	45.50	196.85	130.06	18 45 51	1137.7	20.31	26.58
70.00	19 57 43	1821.57	10.27	23.93	200.90	122.75	20 28 5	821.6	22.74	2.52
80.00	22 24 21	1362.26	16.69	352.74	204.55	115.12	22 47 3	362.3	25.60	328.89
83.76	0 1 13	1063.72	21.42	332.76	206.62	109.88	0 18 57	63.7	27.70	307.35
100.00	1 11 9	6124.77	16.69	292.01	204.55	115.12	2 53 14	5124.8	25.60	268.16
110.00	1 1 5	6156.43	10.27	290.76	200.90	122.75	2 43 42	5156.4	22.74	269.34

DIFFERENTIAL CORRECTIONS

TDE	-.2341	TRA	.2507	TC3	-3.2260	BAU	.3731
RDE	-.1170	RRA	.0668	RC3	.0675	FAU	.25566
FDE	.2241	FRA	5.8318	FC	-25.5945	BSP	2758
BDE	.2617	BRA	.2594	BC3	3.2267	FSP	2978

MID-COURSE EXECUTION ACCURACY

SGT	2029.6	SGR	275.0	SG3	1717.7		
RRT	.1998	RRF	.2253	RTF	.8824		
SGB	2048.1	R23	.0468	R13	.8825		
SG1	2030.3	SG2	269.3	THA	1.58		

ORBIT DETERMINATION ACCURACY

ST	24.5	SR	11.6	SS	49.0		
CRT	.9801	CRS	-.0804	CST	-.2479		
LSA	49.5	MSA	26.1	SSA	1.1		
EL1	27.0	EL2	2.1	ALF	25.11		

LAUNCH DATE MAY 12 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 2 1971

DISTANCE 485.455

HELIOCENTRIC CONIC

RL	151.12	LAL	.00	LOL	230.64	VL	32.212	GAL	-.32	AZL	91.75	HCA	157.25	SMA	184.62	ECC	.18157	INC	1.7488
RP	213.77	LAP	-.68	LOP	27.90	VP	22.866	GAP	5.21	AZP	88.39	TAL	357.94	TAP	155.19	RCA	151.10	APO	218.14
RC	141.545	GL	-19.51	GP	-.87	ZAL	101.16	ZAP	95.73	ETS	179.59	ZAE	139.09	ETE	181.50	ZAC	100.79	ETC	274.53

EARTH TO MARS

V1	29.484	VHP	2.861	DPA	-21.92	RAP	306.58	ECC	1.1425										
V2	25.680																		
LVI	-12.74																		

PLANETOCENTRIC CONIC

C3	8.662	VHL	2.943	DLA	-28.66	RAL	342.31	RAD	6637.3	VEL	11.348	PTH	6.40	VHP	2.861	DPA	-21.92	RAP	306.58

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 44	2358.29	-.29	60.47	192.56	137.58	17 29 3	1358.3	17.90	44.28
60.00	18 9 51	2145.16	4.48	45.86	197.14	130.09	18 45 37	1145.2	20.01	26.99
70.00	19 56 9	1832.52	9.87	24.52	201.15	122.86	20 26 42	832.5	22.41	3.20
80.00	22 18 26	1386.91	15.97	354.22	204.65	115.57	22 41 33	386.9	25.13	330.57
85.11	0 13 45	1028.58	21.24	330.11	206.97	109.71	0 30 54	28.6	27.47	304.72
100.00	1 5 14	6149.42	15.97	293.49	204.65	115.57	2 47 44	5149.4	25.13	269.84
110.00	0 59 32	6167.38	9.87	291.35	201.15	122.86	2 42 19	5167.4	22.41	270.02

DIFFERENTIAL CORRECTIONS

TDE	-.2310	TRA	.3078	TC3	-3.4698	BAU	.4018
RDE	-.1111	RRA	.0658	RC3	.0584	FAU	.25736
FDE	.3098	FRA	5.9459	FC	-25.7233	BSP	3093
BDE	.2564	BRA	.3148	BC3	3.4703	FSP	3037

MID-COURSE EXECUTION ACCURACY

SGT	2200.0	SGR	263.2	SG3	1735.9		
RRT	.2189	RRF	.2412	RTF	.8973		
SGB	2215.7	R23	.0431	R13	.8975		
SG1	2200.8	SG2	256.7	THA	1.52		

ORBIT DETERMINATION ACCURACY

ST	24.9	SR	11.0	SS	49.8		
CRT	.9662	CRS	-.0478	CST	-.2828		
LSA	50.5	MSA	26.0	SSA	1.1		
EL1	27.1	EL2	2.6	ALF	23.40		

LAUNCH DATE MAY 12 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 4 1971

DISTANCE 489.646

HELIOCENTRIC CONIC

RL	151.12	LAL	.00	LOL	230.64	VL	32.212	GAL	-.36	AZL	91.74	HCA	158.44	SMA	184.62	ECC	.18159	INC	1.7424
RP	214.08	LAP	-.64	LOP	29.08	VP	22.826	GAP	5.04	AZP	88.38	TAL	357.68	TAP	156.11	RCA	151.10	APO	218.15
RC	143.936	GL	-19.42	GP	-.91	ZAL	101.59	ZAP	93.72	ETS	179.53	ZAE	137.04	ETE	181.49	ZAC	100.81	ETC	274.33

EARTH TO MARS

V1	29.484	VHP	2.848	DPA	-22.16	RAP	305.72	ECC	1.1429										
V2	25.645																		
LVI	-12.41																		

PLANETOCENTRIC CONIC

C3	8.680	VHL	2.946	DLA	-28.41	RAL	342.72	RAD	6637.4	VEL	11.349	PTH	6.40	VHP	2.848	DPA	-22.16	RAP	305.72

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 57	2364.60	-.61	60.73	192.90	137.57	17 29 21	1364.6	17.59	44.58
60.00	18 9 25	2153.19	4.13	46.24	197.45	130.12	18 45 18	1153.2	19.69	27.42
70.00	19 54 29	1844.19	9.43	25.15	201.41	122.98	20 25 13	844.2	22.05	3.91
80.00	22 12 49	1411.03	15.26	355.65	204.77	115.98	22 36 20	411.0	24.65	332.20
87.19	0 32 35	6261.29	21.05	303.89	207.33	109.53	2 16 56	5261.3	27.22	278.53
100.00	0 59 36	6173.54	15.26	294.93	204.77	115.98	2 42 30	5173.5	24.65	271.47
110.00	0 57 51	6179.05	9.43	291.97	201.41	122.98	2 40 50	5179.1	22.05	270.74

DIFFERENTIAL CORRECTIONS

TDE	-.2274	TRA	.3662	TC3	-3.7140	BAU	.4310
RDE	-.1054	RRA	.0649	RC3	.0490	FAU	.25870
FDE	.3398	FRA	6.0485	FC	-25.8010	BSP	3428
BDE	.2507	BRA	.3719	BC3	3.7143	FSP	3069

MID-COURSE EXECUTION ACCURACY

SGT	2375.0	SGR	251.9	SG3	1750.3		
RRT	.2401	RRF	.2635	RTF	.9105		
SGB	2388.3	R23	.0438	R13	.9106		
SG1	2375.8	SG2	244.5	THA	1.47		

ORBIT DETERMINATION ACCURACY

ST	25.4	SR	10.5	SS	50.3		
CRT	.9482	CRS	-.0430	CST	-.3421		
LSA	51.3	MSA	25.6	SSA	1.0		
EL1	27.3	EL2	3.1	ALF	21.61		

LAUNCH DATE MAY 12 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 493.836 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.213 GAL -.40 AZL 91.74 HCA 159.62 SMA 184.63 ECC .18165 INC 1.7359 V1 29.484
RP 214.39 LAP -.60 LOP 30.26 VP 22.787 GAP 4.87 AZP 88.37 TAL 357.41 TAP 157.02 RCA 151.09 APO 218.17 V2 25.609
RC 146.344 GL -19.31 GP -.97 ZAL 102.05 ZAP 91.74 ETS 179.48 ZAE 135.02 ETE 181.48 ZAC 100.83 ETC 274.14 LVI -12.09

PLANETOCENTRIC CONIC

C3 8.704 VHL 2.950 DLA -28.13 RAL 343.13 RAD 6637.4 VEL 11.350 PTH 6.40 VHP 2.839 DPA -22.39 RAP 304.89 ECC 1.1433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 6	2371.44	-.95	61.01	193.25	137.57	17 29 38	1371.4	17.26	44.89
60.00	18 8 54	2161.82	3.75	46.66	197.77	130.16	18 44 56	1161.8	19.35	27.89
70.00	19 52 42	1856.57	8.97	25.81	201.68	123.09	20 23 39	856.6	21.67	4.67
80.00	22 7 23	1434.87	14.54	357.06	204.92	116.37	22 31 18	434.9	24.16	333.79
90.00	0 32 26	6267.79	18.99	303.55	206.98	111.36	2 16 53	5267.8	26.13	278.80
100.00	0 54 11	6197.38	14.54	296.33	204.92	116.37	2 37 28	5197.4	24.16	273.07
110.00	0 56 4	6191.43	8.97	292.64	201.68	123.09	2 39 16	5191.4	21.67	271.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2218 TRA .4265 TC3-3.9563 BAU .4604 SGT 2552.9 SGR 240.5 SG3 1765.1 ST 26.0 SR 9.9 SS 51.0
RDE -.0996 RRA .0641 RC3 .0388 FAU .26035 RRT .2644 RRF .2868 RTF .9212 CRT .9256 CRS -.0240 CST -.3877
FDE .4045 FRA 6.1474 FC-25.8942 BSP 3767 SGB 2564.2 R23 .0427 R13 .9213 LSA 52.3 MSA 25.3 SSA 1.0
BDE .2431 BRA .4313 BC3 3.9565 FSP 3076 SG1 2553.7 SG2 231.8 THA 1.44 EL1 27.6 EL2 3.5 ALF 19.77

LAUNCH DATE MAY 12 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 498.025 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.214 GAL -.44 AZL 91.73 HCA 160.80 SMA 184.65 ECC .18177 INC 1.7281 V1 29.484
RP 214.72 LAP -.57 LOP 31.44 VP 22.748 GAP 4.70 AZP 88.37 TAL 357.12 TAP 157.92 RCA 151.09 APO 218.22 V2 25.573
RC 148.770 GL -19.19 GP -1.02 ZAL 102.51 ZAP 89.78 ETS 179.42 ZAE 133.01 ETE 181.47 ZAC 100.83 ETC 273.95 LVI -11.77

PLANETOCENTRIC CONIC

C3 8.733 VHL 2.955 DLA -27.84 RAL 343.55 RAD 6637.4 VEL 11.351 PTH 6.40 VHP 2.833 DPA -22.61 RAP 304.09 ECC 1.1437

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 12	2378.80	-1.32	61.32	193.62	137.56	17 29 51	1378.8	16.91	45.23
60.00	18 8 18	2171.07	3.35	47.10	198.11	130.19	18 44 29	1171.1	18.97	28.39
70.00	19 50 48	1869.65	8.49	26.51	201.95	123.21	20 21 58	869.7	21.26	5.47
80.00	22 2 6	1458.58	13.82	358.45	205.09	116.73	22 26 24	458.6	23.65	335.37
90.00	0 15 33	1040.91	17.43	329.45	206.81	112.63	0 32 54	40.9	25.25	305.15
100.00	0 48 54	6221.09	13.82	297.72	205.09	116.73	2 32 35	5221.1	23.65	274.64
110.00	0 54 10	6204.51	8.49	293.34	201.95	123.21	2 37 35	5204.5	21.26	272.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2162 TRA .4873 TC3-4.1998 BAU .4904 SGT 2734.8 SGR 229.3 SG3 1771.2 ST 26.6 SR 9.3 SS 51.6
RDE -.0937 RRA .0633 RC3 .0286 FAU .26062 RRT .2912 RRF .3142 RTF .9296 CRT .9008 CRS -.0123 CST -.4345
FDE .4562 FRA 6.2254 FC-25.8360 BSP 4098 SGB 2744.4 R23 .0436 R13 .9297 LSA 53.2 MSA 25.0 SSA .9
BDE .2357 BRA .4914 BC3 4.1999 FSP 3083 SG1 2735.6 SG2 219.3 THA 1.41 EL1 28.0 EL2 3.9 ALF 17.84

LAUNCH DATE MAY 12 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 502.214 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.216 GAL -.49 AZL 91.72 HCA 161.97 SMA 184.68 ECC .18193 INC 1.7195 V1 29.484
RP 215.04 LAP -.53 LOP 32.61 VP 22.709 GAP 4.53 AZP 88.36 TAL 356.83 TAP 158.80 RCA 151.08 APO 218.28 V2 25.536
RC 151.211 GL -19.06 GP -1.09 ZAL 103.00 ZAP 87.87 ETS 179.36 ZAE 131.03 ETE 181.47 ZAC 100.82 ETC 273.77 LVI -11.45

PLANETOCENTRIC CONIC

C3 8.767 VHL 2.961 DLA -27.52 RAL 343.98 RAD 6637.4 VEL 11.352 PTH 6.41 VHP 2.830 DPA -22.83 RAP 303.31 ECC 1.1443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 15	2386.71	-1.72	61.65	193.99	137.55	17 30 2	1386.7	16.53	45.60
60.00	18 7 36	2180.95	2.91	47.57	198.45	130.21	18 43 57	1180.9	18.58	28.92
70.00	19 48 47	1883.43	7.97	27.25	202.24	123.32	20 20 10	883.4	20.83	6.30
80.00	21 56 55	1482.29	13.09	359.83	205.27	117.08	22 21 37	482.3	23.12	336.93
90.00	0 3 42	1086.10	16.22	332.22	206.80	113.48	0 21 49	86.1	24.52	308.26
100.00	0 43 43	6244.80	13.09	299.10	205.27	117.08	2 27 48	5244.8	23.12	276.21
110.00	0 52 9	6218.29	7.97	294.07	202.24	123.32	2 35 47	5218.3	20.83	273.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2086 TRA .5505 TC3-4.4372 BAU .5201 SGT 2917.2 SGR 218.4 SG3 1775.0 ST 27.3 SR 8.7 SS 52.3
RDE -.0877 RRA .0628 RC3 .0179 FAU .26012 RRT .3221 RRF .3462 RTF .9361 CRT .8723 CRS .0036 CST -.4766
FDE .5248 FRA 6.3117 FC-25.6868 BSP 4442 SGB 2925.4 R23 .0456 R13 .9362 LSA 54.3 MSA 24.7 SSA .9
BDE .2263 BRA .5541 BC3 4.4372 FSP 3095 SG1 2918.1 SG2 206.7 THA 1.39 EL1 28.4 EL2 4.1 ALF 15.91

LAUNCH DATE MAY 12 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 506.401 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.218 GAL -.54 AZL 91.71 HCA 163.14 SMA 184.72 ECC .18214 INC 1.7100 V1 29.484
RP 215.37 LAP -.50 LOP 33.78 VP 22.671 GAP 4.37 AZP 88.36 TAL 356.52 TAP 159.66 RCA 151.07 APO 218.36 V2 25.499
RC 153.669 GL -18.91 GP -1.16 ZAL 103.50 ZAP 85.98 ETS 179.30 ZAE 129.07 ETE 181.46 ZAC 100.81 ETC 273.60 LVI -11.13

PLANETOCENTRIC CONIC

C3 8.805 VHL 2.967 DLA -27.18 RAL 344.42 RAD 6637.4 VEL 11.354 PTH 6.41 VHP 2.829 DPA -23.05 RAP 302.57 ECC 1.1449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 14	2395.16	-2.15	62.01	194.37	137.54	17 30 9	1395.2	16.12	45.98
60.00	18 6 49	2191.46	2.45	48.08	198.79	130.24	18 43 20	1191.5	18.15	29.48
70.00	19 46 38	1897.92	7.43	28.02	202.53	123.43	20 18 16	897.9	20.37	7.17
80.00	21 51 48	1506.12	12.35	1.21	205.46	117.40	22 16 54	506.1	22.57	338.49
90.00	23 49 56	1125.18	15.15	334.58	206.86	114.17	24 8 41	125.2	23.82	310.91
100.00	0 38 36	6268.63	12.35	300.48	205.46	117.40	2 23 4	5268.6	22.57	277.76
110.00	0 50 0	6232.78	7.43	294.84	202.53	123.43	2 33 53	5232.8	20.37	274.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1991 TRA .6142 TC3-4.6714 BAU .5499 SGT 3100.2 SGR 207.8 SG3 1772.9 ST 28.0 SR 8.1 SS 52.9
RDE -.0816 RRA .0623 RC3 .0064 FAU .25932 RRT .3578 RRF .3822 RTF .9419 CRT .8414 CRS .0197 CST -.5156
FDE .5980 FRA 6.3630 FC-25.4975 BSP 4785 SGB 3107.1 R23 .0470 R13 .9420 LSA 55.3 MSA 24.4 SSA .8
BDE .2152 BRA .6174 BC3 4.6714 FSP 3102 SG1 3101.1 SG2 194.0 THA 1.38 EL1 28.9 EL2 4.3 ALF 14.03

LAUNCH DATE MAY 12 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 14 1971

HELIOCENTRIC CONIC DISTANCE 510.588 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.221	GAL	-.59	AZL	91.70	HCA	164.31	SMA	184.76	ECC	.18239	INC	1.6991	V1	29.484
RP	215.71	LAP	-.48	LOP	34.95	VP	22.632	GAP	4.20	AZP	88.36	TAL	356.20	TAP	160.51	RCA	151.06	APO	218.46	V2	25.461
RC	156.143	GL	-18.74	GP	-1.24	ZAL	104.02	ZAP	84.14	ETS	179.23	ZAE	127.14	ETE	181.46	ZAC	100.77	ETC	273.44	LVI	-10.81

PLANETOCENTRIC CONIC

C3	8.847	VHL	2.974	DLA	-26.82	RAL	344.86	RAD	6637.4	VEL	11.356	PTH	6.41	VHP	2.831	DPA	-23.26	RAP	301.86	ECC	1.1456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 50 7	2404.20	-2.60	62.38	194.76	137.52	17 30 11	1404.2	15.68	46.39
60.00	18 5 54	2202.63	1.96	48.61	199.14	130.26	18 42 36	1202.6	17.70	30.08
70.00	19 44 21	1913.15	6.86	28.83	202.83	123.54	20 16 14	913.2	19.88	8.08
80.00	21 46 42	1530.18	11.59	2.59	205.67	117.71	22 12 12	530.2	22.00	340.05
90.00	23 41 9	1161.07	14.14	336.73	206.96	114.75	24 0 30	161.1	23.14	313.32
100.00	0 33 29	1004.65	11.59	323.96	205.67	117.71	0 50 14	4.7	22.00	301.42
110.00	0 47 43	6248.01	6.86	295.65	202.83	123.54	2 31 51	5248.0	19.88	274.91

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1889	TRA	.6796	TC3	-4.9036	BAU	.5800	SGT	3285.4	SGR	198.0	SG3	1771.1	ST	28.9	SR	7.5	SS	53.4
RDE	-.0755	RRA	.0622	RC3	-.0063	FAU	.25872	RRT	.4009	RRF	.4266	RTF	.9472	CRT	.8103	CRS	.0254	CST	-.5581
FDE	.6567	FRA	6.4157	FC	-25.3168	BSP	5125	SGB	3291.3	R23	.0498	R13	.9472	LSA	56.3	MSA	23.9	SSA	.8
BDE	.2034	BRA	.6824	BC3	4.9037	FSP	3094	SG1	3286.3	SG2	181.3	THA	1.39	EL1	29.5	EL2	4.3	ALF	12.22

LAUNCH DATE MAY 12 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 514.772 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.224	GAL	-.64	AZL	91.69	HCA	165.47	SMA	184.82	ECC	.18268	INC	1.6861	V1	29.484
RP	216.04	LAP	-.42	LOP	36.11	VP	22.594	GAP	4.04	AZP	88.37	TAL	355.88	TAP	161.35	RCA	151.06	APO	218.58	V2	25.424
RC	158.631	GL	-18.55	GP	-1.33	ZAL	104.56	ZAP	82.33	ETS	179.16	ZAE	125.23	ETE	181.46	ZAC	100.73	ETC	273.28	LVI	-10.50

PLANETOCENTRIC CONIC

C3	8.894	VHL	2.982	DLA	-26.43	RAL	345.31	RAD	6637.5	VEL	11.358	PTH	6.41	VHP	2.835	DPA	-23.48	RAP	301.20	ECC	1.1464

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 54	2413.87	-3.09	62.79	195.15	137.50	17 30 8	1413.9	15.21	46.83
60.00	18 4 51	2214.54	1.44	49.18	199.50	130.28	18 41 45	1214.5	17.21	30.71
70.00	19 41 53	1929.19	6.25	29.68	203.13	123.64	20 14 3	929.2	19.36	9.04
80.00	21 41 33	1554.65	10.81	3.99	205.88	118.00	22 7 28	554.6	21.40	341.62
90.00	23 33 0	1195.22	13.16	338.76	207.08	115.26	23 52 55	195.2	22.45	315.58
100.00	0 28 21	1029.12	10.81	325.36	205.88	118.00	0 45 30	29.1	21.40	302.99
110.00	0 45 16	6264.05	6.25	296.50	203.13	123.64	2 29 40	5264.1	19.36	275.86

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1776	TRA	.7457	TC3	-5.1310	BAU	.6101	SGT	3470.2	SGR	189.1	SG3	1763.6	ST	29.8	SR	6.9	SS	54.1
RDE	-.0692	RRA	.0624	RC3	-.0196	FAU	.25650	RRT	.4501	RRF	.4766	RTF	.9504	CRT	.7812	CRS	.0310	CST	-.5933
FDE	.7300	FRA	6.4735	FC	-24.9681	BSP	5455	SGB	3475.3	R23	.0558	R13	.9505	LSA	57.5	MSA	23.6	SSA	.7
BDE	.1906	BRA	.7483	BC3	5.1311	FSP	3091	SG1	3471.2	SG2	168.8	THA	1.41	EL1	30.3	EL2	4.3	ALF	10.53

LAUNCH DATE MAY 12 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 518.955 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.228	GAL	-.69	AZL	91.67	HCA	166.63	SMA	184.88	ECC	.18301	INC	1.6718	V1	29.484
RP	216.39	LAP	-.39	LOP	37.27	VP	22.557	GAP	3.88	AZP	88.37	TAL	355.54	TAP	162.17	RCA	151.05	APO	218.71	V2	25.385
RC	161.134	GL	-18.33	GP	-1.44	ZAL	105.11	ZAP	80.56	ETS	179.08	ZAE	123.36	ETE	181.46	ZAC	100.66	ETC	273.13	LVI	-10.18

PLANETOCENTRIC CONIC

C3	8.944	VHL	2.991	DLA	-26.02	RAL	345.75	RAD	6637.5	VEL	11.360	PTH	6.41	VHP	2.842	DPA	-23.70	RAP	300.57	ECC	1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 34	2424.22	-3.60	63.22	195.54	137.47	17 29 58	1424.2	14.71	47.30
60.00	18 3 38	2227.22	.88	49.79	199.85	130.29	18 40 45	1227.2	16.69	31.37
70.00	19 39 14	1946.10	5.62	30.57	203.43	123.74	20 11 40	946.1	18.80	10.03
80.00	21 36 19	1579.63	10.01	5.41	206.09	118.28	22 2 39	579.6	20.77	343.21
90.00	23 25 14	1228.41	12.18	340.71	207.22	115.72	23 45 42	228.4	21.75	317.76
100.00	0 23 7	1054.10	10.01	326.78	206.09	118.28	0 40 41	54.1	20.77	304.58
110.00	0 42 37	6280.95	5.62	297.39	203.43	123.74	2 27 18	5281.0	18.80	276.85

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1617	TRA	.8146	TC3	-5.3482	BAU	.6395	SGT	3653.1	SGR	181.5	SG3	1755.7	ST	30.7	SR	6.3	SS	54.9
RDE	-.0627	RRA	.0630	RC3	-.0349	FAU	.25473	RRT	.5089	RRF	.5388	RTF	.9540	CRT	.7494	CRS	.0341	CST	-.6303
FDE	.8152	FRA	6.5162	FC	-24.6579	BSP	5803	SGB	3657.6	R23	.0609	R13	.9541	LSA	58.8	MSA	23.1	SSA	.7
BDE	.1734	BRA	.8171	BC3	5.3483	FSP	3076	SG1	3654.2	SG2	156.2	THA	1.45	EL1	31.1	EL2	4.1	ALF	8.96

LAUNCH DATE MAY 12 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 523.135 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.232	GAL	-.74	AZL	91.65	HCA	167.79	SMA	184.95	ECC	.18338	INC	1.6540	V1	29.484
RP	216.73	LAP	-.35	LOP	38.43	VP	22.519	GAP	3.72	AZP	88.38	TAL	355.19	TAP	162.98	RCA	151.03	APO	218.86	V2	25.347
RC	163.649	GL	-18.08	GP	-1.57	ZAL	105.67	ZAP	78.84	ETS	178.99	ZAE	121.52	ETE	181.47	ZAC	100.57	ETC	272.99	LVI	-9.86

PLANETOCENTRIC CONIC

C3	8.997	VHL	2.999	DLA	-25.57	RAL	346.19	RAD	6637.5	VEL	11.362	PTH	6.42	VHP	2.850	DPA	-23.94	RAP	299.99	ECC	1.1481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 49 4	2435.34	-4.16	63.69	195.93	137.44	17 29 39	1435.3	14.16	47.80
60.00	18 2 12	2240.79	.28	50.44	200.20	130.30	18 39 33	1240.8	16.13	32.08
70.00	19 36 21	1964.01	4.94	31.51	203.72	123.84	20 9 5	964.0	18.21	11.08
80.00	21 30 56	1605.38	9.17	6.87	206.30	118.54	21 57 41	605.4	20.11	344.83
90.00	23 17 36	1261.33	11.20	342.63	207.37	116.14	23 38 38	261.3	21.02	319.90
100.00	0 17 43	1079.86	9.17	328.24	206.30	118.54	0 35 43	79.9	20.11	306.20
110.00	0 39 43	1010.83	4.94	320.43	203.72	123.84	0 56 34	10.8	18.21	300.00

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1469	TRA	.8827	TC3	-5.5683	BAU	.6698	SGT	3838.1	SGR	176.1	SG3	1744.5	ST	31.7	SR	5.7	SS	55.6
RDE	-.0561	RRA	.0643	RC3	-.0519	FAU	.25238	RRT	.5751	RRF	.6082	RTF	.9566	CRT	.7287	CRS	.0210	CST	-.6639
FDE	.8860	FRA	6.5530	FC	-24.2859	BSP	6114	SGB	3842.1	R23	.0700	R13	.9566	LSA	60.1	MSA	22.7	SSA	.6
BDE	.1572	BRA	.8851	BC3	5.5686	FSP	3043	SG1	3839.4	SG2	144.0	THA	1.51	EL1	32.0	EL2	3.9	ALF	7.61

LAUNCH DATE MAY 12 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 527.314 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.236	GAL	-.80	AZL	91.63	HCA	168.94	SMA	185.02	ECC	.18378	INC	1.6331	V1	29.484
RP	217.08	LAP	-.31	LOP	39.58	VP	22.482	GAP	3.57	AZP	88.40	TAL	354.84	TAP	165.78	RCA	151.02	APO	219.03	V2	25.308
RC	166.176	GL	-17.79	GP	-1.72	ZAL	106.25	ZAP	77.16	ETS	178.90	ZAE	119.72	ETE	181.49	ZAC	100.45	ETC	272.86	LVI	-9.52

PLANETOCENTRIC CONIC

C3	9.052	VHL	3.009	DLA	-25.08	RAL	346.62	RAD	6637.5	VEL	11.365	PTH	6.42	VHP	2.861	DPA	-24.18	RAP	299.45	ECC	1.1490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 48 21	2447.35	-4.77	64.19	196.31	137.39	17 29 9	1447.4	13.57	48.33
60.00	18 0 31	2255.41	-.36	51.13	200.54	130.30	18 38 7	1255.4	15.52	32.84
70.00	19 33 8	1983.12	4.21	32.52	204.00	123.92	20 6 11	983.1	17.56	12.19
80.00	21 25 16	1632.15	8.30	8.37	206.50	118.78	21 52 29	632.2	19.40	346.51
90.00	23 9 58	1294.51	10.20	344.55	207.51	116.52	23 31 32	294.5	20.26	322.03
100.00	0 12 4	1106.62	8.30	329.74	206.50	118.78	0 30 31	106.6	19.40	307.87
110.00	0 36 30	1029.94	4.21	321.43	204.00	123.92	0 53 40	29.9	17.56	301.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1288	TRA	.9518	TC3	-5.7773	BAU	.6992	SGT	4018.8	SGR	173.5	SG3	1728.2	ST	32.8	SR	5.1	SS	56.2
RDE	-.0493	RRA	.0663	RC3	-.0715	FAU	.24950	RRT	.6478	RRF	.6834	RTF	.9591	CRT	.7150	CRS	-.0060	CST	-.6983
FDE	.9564	FRA	6.5666	FC-23	.8614	BSP	6451	SGB	4022.5	R23	.0807	R13	.9592	LSA	61.4	HSA	22.1	SSA	.6
BDE	.1379	BRA	.9542	BC3	5.7777	FSP	3026	SG1	4020.4	SG2	132.1	THA	1.60	EL1	33.1	EL2	3.6	ALF	6.46

LAUNCH DATE MAY 12 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 531.489 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.241	GAL	-.86	AZL	91.61	HCA	170.09	SMA	185.11	ECC	.18422	INC	1.6070	V1	29.484
RP	217.43	LAP	-.28	LOP	40.73	VP	22.445	GAP	3.41	AZP	88.42	TAL	354.47	TAP	164.56	RCA	151.01	APO	219.21	V2	25.269
RC	168.717	GL	-17.45	GP	-1.91	ZAL	106.85	ZAP	75.53	ETS	178.78	ZAE	117.94	ETE	181.51	ZAC	100.30	ETC	272.74	LVI	-9.17

PLANETOCENTRIC CONIC

C3	9.109	VHL	3.018	DLA	-24.53	RAL	347.04	RAD	6637.6	VEL	11.367	PTH	6.42	VHP	2.873	DPA	-24.46	RAP	298.96	ECC	1.1499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 47 22	2460.47	-5.42	64.75	196.67	137.34	17 28 23	1460.5	12.93	48.91
60.00	17 58 30	2271.31	-1.06	51.89	200.86	130.29	18 36 21	1271.3	14.86	33.66
70.00	19 29 31	2003.71	3.43	33.59	204.26	124.00	20 2 55	1003.7	16.86	13.37
80.00	21 19 14	1660.35	7.37	9.95	206.69	119.02	21 46 54	660.3	18.64	348.25
90.00	23 2 5	1328.59	9.16	346.51	207.64	116.87	23 24 14	328.6	19.44	324.20
100.00	0 6 1	1134.82	7.37	331.32	206.69	119.02	0 24 56	134.8	18.64	309.62
110.00	0 32 53	1050.53	3.43	322.51	204.26	124.00	0 50 24	50.5	16.86	302.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1094	TRA	1.0212	TC3	-5.9908	BAU	.7297	SGT	4202.5	SGR	175.2	SG3	1713.4	ST	34.0	SR	4.6	SS	56.9
RDE	-.0421	RRA	.0695	RC3	-.0951	FAU	.24694	RRT	.7239	RRF	.7622	RTF	.9611	CRT	.7195	CRS	-.0569	CST	-.7294
FDE	1.0297	FRA	6.5839	FC-23	.4692	BSP	6760	SGB	4206.2	R23	.0955	R13	.9612	LSA	62.8	HSA	21.5	SSA	.5
BDE	.1172	BRA	1.0235	BC3	5.9916	FSP	2992	SG1	4204.4	SG2	120.8	THA	1.73	EL1	34.2	EL2	3.1	ALF	5.54

LAUNCH DATE MAY 12 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 535.663 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.247	GAL	-.92	AZL	91.58	HCA	171.23	SMA	185.19	ECC	.18469	INC	1.5753	V1	29.484
RP	217.79	LAP	-.24	LOP	41.87	VP	22.408	GAP	3.26	AZP	88.44	TAL	354.10	TAP	165.33	RCA	150.99	APO	219.40	V2	25.229
RC	171.268	GL	-17.03	GP	-2.14	ZAL	107.46	ZAP	73.94	ETS	178.64	ZAE	116.21	ETE	181.55	ZAC	100.09	ETC	272.63	LVI	-8.79

PLANETOCENTRIC CONIC

C3	9.166	VHL	3.028	DLA	-23.92	RAL	347.44	RAD	6637.6	VEL	11.370	PTH	6.42	VHP	2.887	DPA	-24.77	RAP	298.52	ECC	1.1509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 46 1	2474.98	-6.15	65.36	197.00	137.27	17 27 16	1475.0	12.22	49.55
60.00	17 56 0	2288.85	-1.84	52.73	201.14	130.27	18 34 9	1288.8	14.12	34.56
70.00	19 25 20	2026.23	2.57	34.77	204.48	124.07	19 59 6	1026.2	16.09	14.66
80.00	21 12 36	1690.53	6.37	11.64	206.83	119.23	21 40 46	690.5	17.80	350.10
90.00	22 53 44	1364.31	8.05	348.55	207.74	117.20	23 16 29	364.3	18.56	326.45
100.00	23 55 27	1165.00	6.37	333.00	206.83	119.23	24 14 52	165.0	17.80	311.47
110.00	0 28 42	1073.05	2.57	323.69	204.48	124.07	0 46 35	73.0	16.09	303.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0842	TRA	1.0923	TC3	-6.1858	BAU	.7582	SGT	4378.3	SGR	182.6	SG3	1692.5	ST	35.3	SR	4.0	SS	57.6
RDE	-.0344	RRA	.0741	RC3	-.1230	FAU	.24318	RRT	.7959	RRF	.8361	RTF	.9630	CRT	.7430	CRS	-.1413	CST	-.7627
FDE	1.1122	FRA	6.5855	FC-22	.9681	BSP	7097	SGB	4382.1	R23	.1142	R13	.9631	LSA	64.4	HSA	20.8	SSA	.5
BDE	.0909	BRA	1.0948	BC3	6.1871	FSP	2963	SG1	4380.7	SG2	110.5	THA	1.90	EL1	35.4	EL2	2.7	ALF	4.83

LAUNCH DATE MAY 12 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 28 1971

HELIOCENTRIC CONIC DISTANCE 539.835 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.252	GAL	-.98	AZL	91.53	HCA	172.37	SMA	185.29	ECC	.18519	INC	1.5327	V1	29.484
RP	218.15	LAP	-.20	LOP	43.01	VP	22.371	GAP	3.11	AZP	88.48	TAL	353.72	TAP	166.10	RCA	150.97	APO	219.60	V2	25.189
RC	173.829	GL	-16.53	GP	-2.44	ZAL	108.09	ZAP	72.39	ETS	178.47	ZAE	114.50	ETE	181.61	ZAC	99.81	ETC	272.52	LVI	-8.36

PLANETOCENTRIC CONIC

C3	9.221	VHL	3.037	DLA	-23.22	RAL	347.79	RAD	6637.6	VEL	11.372	PTH	6.42	VHP	2.903	DPA	-25.13	RAP	298.13	ECC	1.1517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 44 7	2491.34	-6.97	66.05	197.29	137.19	17 25 38	1491.3	11.41	50.27
60.00	17 52 50	2308.56	-2.70	53.67	201.37	130.23	18 31 19	1308.6	13.29	35.56
70.00	19 20 20	2051.34	1.61	36.08	204.65	124.12	19 54 31	1051.3	15.22	16.08
80.00	21 5 5	1723.52	5.27	13.47	206.91	119.43	21 33 48	723.5	16.86	352.10
90.00	22 44 34	1402.64	6.85	350.73	207.78	117.50	23 7 57	402.6	17.57	328.83
100.00	23 47 57	1198.00	5.27	334.83	206.91	119.43	24 7 55	198.0	16.86	313.47
110.00	0 23 42	1098.16	1.61	325.00	204.65	124.12	0 42 0	98.2	15.22	305.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0653	TRA	1.1536	TC3	-6.4210	BAU	.7918	SGT	4564.2	SGR	198.9	SG3	1674.4	ST	36.5	SR	3.6	SS	56.7
RDE	-.0272	RRA	.0802	RC3	-.1631	FAU	.24407	RRT	.8620	RRF	.8992	RTF	.9675	CRT	.8013	CRS	-.2856	CST	-.7973
FDE	1.0984	FRA	6.4901	FC-22	.9164	BSP	7296	SGB	4568.5	R23	.1277	R13	.9676	LSA	64.7	HSA	19.6	SSA	.4
BDE	.0707	BRA	1.1564	BC3	6.4231	FSP	2821	SG1	4567.4	SG2	100.8	THA	2.15	EL1	36.6	EL2	2.1	ALF	4.49

LAUNCH DATE MAY 12 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 30 1971

HELIOCENTRIC CONIC DISTANCE 544.001 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.258	GAL	-1.04	AZL	91.48	HCA	173.51	SMA	185.38	ECC	.18573	INC	1.4747	V1	29.484
RP	218.51	LAP	-.17	LOP	44.15	VP	22.335	GAP	2.95	AZP	88.53	TAL	353.33	TAP	166.85	RCA	150.96	APO	219.82	V2	25.149
RC	176.400	GL	-15.87	GP	-2.85	ZAL	108.75	ZAP	70.89	ETS	178.25	ZAE	112.83	ETE	181.69	ZAC	99.43	ETC	272.43	LVI	-7.85

PLANETOCENTRIC CONIC

C3	9.270	VHL	3.045	DLA	-22.38	RAL	348.09	RAD	6637.7	VEL	11.374	PTH	6.43	VHP	2.921	DPA	-25.60	RAP	297.81	ECC	1.1526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 41 24	2510.53	-7.92	66.87	197.50	137.07	17 23 15	1510.5	10.46	51.10
60.00	17 48 40	2331.62	-3.72	54.78	201.53	130.16	18 27 32	1331.6	12.31	36.73
70.00	19 14 7	2080.45	.50	37.60	204.73	124.15	19 48 47	1080.4	14.19	17.71
80.00	20 56 10	1761.06	4.01	15.54	206.91	119.61	21 25 31	761.1	15.77	354.35
90.00	22 33 59	1445.54	5.50	353.15	207.73	117.78	22 58 5	445.5	16.44	331.46
100.00	23 39 2	1235.53	4.01	336.91	206.91	119.61	23 59 37	235.5	15.77	315.72
110.00	0 17 29	1127.27	.50	326.52	204.73	124.15	0 36 16	127.3	14.19	306.63

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0365	TRA	1.2183	TC3	-6.6433	BAU	.8237	SGT	4745.3	SGR	227.0	SG3	1651.7	ST	37.8	SR	3.2	SS	57.7
RDE	-.0179	RRA	.0907	RC3	-.2100	FAU	.24002	RRT	.9071	RRF	.9457	RTF	.9676	CRT	.8951	CRS	-.4878	CST	-.8200
FDE	1.1994	FRA	6.4823	FC-22	.4154	BSP	7547	SGB	4750.7	R23	.1607	R13	.9677	LSA	66.4	MSA	19.0	SSA	.4
BDE	.0406	BRA	1.2217	BC3	6.6466	FSP	2791	SG1	4749.7	SG2	95.5	THA	2.49	EL1	38.0	EL2	1.4	ALF	4.40

LAUNCH DATE MAY 12 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC DISTANCE 548.164 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.264	GAL	-1.11	AZL	91.40	HCA	174.65	SMA	185.49	ECC	.18630	INC	1.3963	V1	29.484
RP	218.88	LAP	-.13	LOP	45.26	VP	22.298	GAP	2.80	AZP	88.61	TAL	352.94	TAP	167.58	RCA	150.94	APO	220.05	V2	25.109
RC	176.981	GL	-14.97	GP	-3.42	ZAL	109.43	ZAP	69.44	ETS	177.94	ZAE	111.18	ETE	181.81	ZAC	98.88	ETC	272.34	LVI	-7.20

PLANETOCENTRIC CONIC

C3	9.308	VHL	3.051	DLA	-21.32	RAL	348.29	RAD	6637.7	VEL	11.376	PTH	6.43	VHP	2.941	DPA	-26.22	RAP	297.56	ECC	1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 22	2534.06	-9.09	67.87	197.60	136.91	17 19 36	1534.1	9.29	52.12
60.00	17 42 54	2359.81	-4.95	56.13	201.55	130.05	18 22 13	1359.8	11.11	38.13
70.00	19 5 55	2115.73	-.85	39.44	204.66	124.14	19 41 11	1115.7	12.93	19.67
80.00	20 44 59	1805.70	2.51	18.00	206.75	119.76	21 15 5	805.7	14.43	356.99
90.00	22 21 3	1495.81	3.90	355.98	207.52	118.03	22 45 59	495.8	15.05	334.51
100.00	23 27 51	1280.18	2.51	339.37	206.75	119.76	23 49 11	280.2	14.43	318.36
110.00	0 9 18	1162.55	-.85	328.36	204.66	124.14	0 28 40	162.5	12.93	308.58

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0091	TRA	1.2900	TC3	-6.8309	BAU	.8507	SGT	4912.8	SGR	273.3	SG3	1625.1	ST	39.5	SR	3.3	SS	59.2
RDE	-.0066	RRA	.1071	RC3	-.2740	FAU	.23444	RRT	.9369	RRF	.9751	RTF	.9681	CRT	.9750	CRS	-.7303	CST	-.8550
FDE	1.3267	FRA	6.4775	FC-21	.8059	BSP	7888	SGB	4920.4	R23	.1937	R13	.9683	LSA	69.0	MSA	17.7	SSA	.3
BDE	.0112	BRA	1.2944	BC3	6.8364	FSP	2765	SG1	4919.5	SG2	95.4	THA	2.98	EL1	39.6	EL2	.7	ALF	4.66

LAUNCH DATE MAY 12 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC DISTANCE 552.324 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.271	GAL	-1.17	AZL	91.28	HCA	175.78	SMA	185.60	ECC	.18689	INC	1.2739	V1	29.484
RP	219.25	LAP	-.09	LOP	46.41	VP	22.262	GAP	2.85	AZP	88.72	TAL	352.54	TAP	168.31	RCA	150.91	APO	220.29	V2	25.068
RC	181.572	GL	-13.84	GP	-4.29	ZAL	110.16	ZAP	68.05	ETS	177.48	ZAE	109.57	ETE	182.01	ZAC	98.02	ETC	272.26	LVI	-6.28

PLANETOCENTRIC CONIC

C3	9.324	VHL	3.053	DLA	-19.86	RAL	348.32	RAD	6637.7	VEL	11.377	PTH	6.43	VHP	2.963	DPA	-27.13	RAP	297.41	ECC	1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 0	2565.30	-10.64	69.22	197.48	136.65	17 13 46	1565.3	7.74	53.45
60.00	17 34 15	2397.11	-6.58	57.93	201.34	129.85	18 14 12	1397.1	9.50	39.98
70.00	18 54 15	2161.92	-2.61	41.86	204.34	124.07	19 30 17	1161.9	11.26	22.20
80.00	20 29 46	1863.01	.57	21.14	206.32	119.85	21 0 49	863.0	12.67	.33
90.00	22 3 53	1559.40	1.85	359.53	207.04	118.22	22 29 53	559.4	13.24	338.30
100.00	23 12 38	1337.48	.57	342.51	206.32	119.85	23 34 55	337.5	12.67	321.70
110.00	23 53 42	1208.74	-2.61	330.77	204.34	124.07	24 13 50	208.7	11.26	311.11

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0626	TRA	1.3505	TC3	-7.0637	BAU	.8817	SGT	5087.4	SGR	350.8	SG3	1598.2	ST	41.3	SR	4.1	SS	60.5
RDE	.0078	RRA	.1333	RC3	-.3739	FAU	.23018	RRT	.9543	RRF	.9908	RTF	.9688	CRT	.9967	CRS	-.9076	CST	-.8898
FDE	1.4509	FRA	6.4267	FC-21	.3730	BSP	8155	SGB	5099.5	R23	.2205	R13	.9691	LSA	71.7	MSA	16.0	SSA	.3
BDE	.0631	BRA	1.3570	BC3	7.0736	FSP	2715	SG1	5098.4	SG2	104.6	THA	3.77	EL1	41.5	EL2	.3	ALF	5.60

LAUNCH DATE MAY 12 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 556.481 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.278	GAL	-1.24	AZL	91.07	HCA	176.90	SMA	185.72	ECC	.18752	INC	1.0503	V1	29.484
RP	219.62	LAP	-.08	LOP	47.54	VP	22.226	GAP	2.50	AZP	88.93	TAL	352.13	TAP	169.03	RCA	150.89	APO	220.54	V2	25.028
RC	184.172	GL	-11.41	GP	-5.79	ZAL	110.95	ZAP	66.74	ETS	176.71	ZAE	107.95	ETE	182.36	ZAC	96.53	ETC	272.19	LVI	-4.80

PLANETOCENTRIC CONIC

C3	9.298	VHL	3.049	DLA	-17.57	RAL	347.97	RAD	6637.7	VEL	11.375	PTH	6.43	VHP	2.992	DPA	-28.65	RAP	297.43	ECC	1.1530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 50	2612.68	-12.98	71.30	196.95	136.19	17 3 22	1612.7	5.37	55.46
60.00	17 19 46	2453.29	-9.02	60.67	200.68	129.45	18 0 39	1453.3	7.07	42.72
70.00	18 35 32	2230.55	-5.22	45.45	203.53	123.80	19 12 42	1230.5	8.72	25.90
80.00	20 6 22	1946.22	-2.25	25.71	205.38	119.78	20 38 49	946.2	10.03	5.10
90.00	21 36 5	1650.35	-1.08	4.61	206.03	118.26	22 5 36	650.4	10.55	343.61
100.00	22 49 14	1420.69	-2.25	347.08	205.38	119.78	23 12 55	420.7	10.03	326.46
110.00	23 34 58	1277.36	-5.22	334.37	203.53	123.80	23 56 16	277.4	8.72	314.81

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1074	TRA	1.3625	TC3	-7.4783	BAU	.9322	SGT	5296.4	SGR	490.6	SG3	1568.3	ST	42.1	SR	5.8	SS	59.9
RDE	.0263	RRA	.1770	RC3	-.5598	FAU	.23082	RRT	.9636	RRF	.9975	RTF	.9696	CRT	.9785	CRS	-.9780	CST	-.9171
FDE	1.4900	FRA	6.2112	FC-21	.4912	BSP	7942	SGB	5319.1	R23	.2345	R13	.9701	LSA	72.1	MSA	14.0	SSA	.2
BDE	.1106	BRA	1.3739	BC3	7.4992	FSP	2513	SG1	5317.4	SG2	130.7	THA	5.10	EL1	42.5	EL2	1.2	ALF	7.70

LAUNCH DATE MAY 12 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 560.632 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.265	GAL	-1.31	AZL	90.63	HCA	178.02	SMA	185.83	ECC	.18817	INC	.5188	V1	29.484
RP	219.99	LAP	-.02	LOP	48.66	VP	22.190	GAP	2.36	AZP	89.37	TAL	351.71	TAP	169.74	RCA	150.87	APO	220.80	V2	24.987
RC	186.781	GL	-6.71	GP	-8.95	ZAL	111.85	ZAP	65.63	ETS	175.10	ZAE	106.28	ETE	183.11	ZAC	93.39	ETC	272.12	LVI	-1.79

PLANETOCENTRIC CONIC

C3	9.204	VHL	3.034	DLA	-13.00	RAL	346.63	RAD	6637.6	VEL	11.371	PTH	6.42	VHP	3.037	DPA	-31.79	RAP	297.85	ECC	1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 56 0	2704.59	-17.45	75.45	195.51	134.99	16 41 5	1704.6	.76	59.31
60.00	16 50 1	2560.96	-13.63	66.04	199.04	128.30	17 32 42	1561.0	2.35	47.91
70.00	17 58 36	2359.31	-10.04	52.30	201.66	122.82	18 37 55	1359.3	3.87	32.70
80.00	19 22 8	2097.86	-7.33	34.10	203.30	119.02	19 57 5	1097.9	5.03	13.58
90.00	20 50 20	1813.29	-6.29	13.74	203.87	117.63	21 20 33	813.3	5.48	352.90
100.00	22 4 59	1572.33	-7.33	355.47	203.30	119.02	22 31 12	572.3	5.03	334.95
110.00	22 58 2	1406.13	-10.04	341.22	201.66	122.82	23 21 28	406.1	3.87	321.62

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1743	TRA	1.2808	TC3	-8.2198	BAU	1.0187	SGT	5580.8	SGR	795.6	SG3	1529.6	ST	41.4	SR	9.6	SS	58.4
RDE	.0606	RRA	.2634	RC3	-.9877	FAU	.23594	RRT	.9671	RRF	.9997	RTF	.9688	CRT	.9712	CRS	-.9970	CST	-.9511
FDE	1.5473	FRA	5.7343	FC	-22.1934	BSP	6963	SGB	5637.2	R23	.2419	R13	.9700	LSA	71.5	MSA	10.5	SSA	.2
BDE	.1845	BRA	1.3076	BC3	8.2789	FSP	2132	SG1	5633.6	SG2	200.4	THA	7.86	EL1	42.4	EL2	2.2	ALF	12.74

LAUNCH DATE MAY 12 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 564.782 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.292	GAL	-1.38	AZL	89.04	HCA	179.14	SMA	185.96	ECC	.18885	INC	.7116	V1	29.484
RP	220.36	LAP	.01	LOP	49.78	VP	22.155	GAP	2.21	AZP	90.96	TAL	351.30	TAP	170.44	RCA	150.84	APO	221.08	V2	24.946
RC	189.399	GL	10.12	GP	-19.65	ZAL	112.30	ZAP	65.78	ETS	169.91	ZAE	104.03	ETE	185.62	ZAC	82.71	ETC	272.10	LVI	8.17

PLANETOCENTRIC CONIC

C3	9.491	VHL	3.081	DLA	2.80	RAL	340.74	RAD	6637.8	VEL	11.384	PTH	6.44	VHP	3.229	DPA	-42.30	RAP	300.36	ECC	1.1562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 33 42	3026.92	-32.02	92.26	193.05	127.28	15 24 9	2026.9	-15.28	73.11
60.00	15 10 19	2929.51	-27.96	86.63	196.19	120.30	15 59 9	1929.5	-13.68	65.82
70.00	15 59 16	2785.57	-24.29	77.09	198.32	114.78	16 45 41	1785.6	-12.20	55.23
80.00	17 4 33	2581.12	-21.62	62.81	199.54	111.10	17 47 34	1581.1	-11.10	40.37
90.00	18 24 40	2322.57	-20.63	44.20	199.94	109.78	19 3 23	1322.6	-10.69	21.58
100.00	19 47 25	2055.60	-21.62	24.17	199.54	111.10	20 21 40	1055.6	-11.10	1.74
110.00	20 58 42	1832.39	-24.29	6.01	198.32	114.78	21 29 14	832.4	-12.20	344.15

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3990	TRA	.7410	TC3	-9.8567	BAU	1.2981	SGT	6272.1	SGR	1903.1	SG3	1407.6	ST	43.5	SR	21.1	SS	51.5
RDE	.1826	RRA	.4367	RC3	-2.7376	FAU	.25593	RRT	.9733	RRF	1.0000	RTF	.9717	CRT	.9896	CRS	-.9999	CST	-.9903
FDE	1.6128	FRA	3.7802	FC	-23.3438	BSP	2281	SGB	6554.5	R23	.2177	R13	.9760	LSA	70.4	MSA	4.8	SSA	.2
BDE	.4388	BRA	.8601	BC3	10.2298	FSP	758	SG1	6541.1	SG2	418.5	THA	16.52	EL1	48.2	EL2	2.7	ALF	25.71

LAUNCH DATE MAY 12 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 573.064 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.307	GAL	-1.53	AZL	93.61	HCA	181.37	SMA	186.22	ECC	.19029	INC	3.5915	V1	29.484
RP	221.12	LAP	.09	LOP	52.00	VP	22.084	GAP	1.91	AZP	86.39	TAL	350.43	TAP	171.80	RCA	150.78	APO	221.65	V2	24.863
RC	194.659	GL	-33.95	GP	12.46	ZAL	110.09	ZAP	62.32	ETS	185.84	ZAE	102.38	ETE	177.70	ZAC	114.79	ETC	272.32	LVI	-21.49

PLANETOCENTRIC CONIC

C3	13.274	VHL	3.643	DLA	-36.68	RAL	1.90	RAD	6639.7	VEL	11.547	PTH	6.59	VHP	3.148	DPA	-10.71	RAP	293.76	ECC	1.2185

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 59 22	2247.16	5.28	55.81	219.94	137.35	19 36 49	1247.2	23.14	38.92
60.00	20 52 51	1944.71	13.15	36.01	227.32	128.45	21 25 16	944.7	27.52	15.35
65.61	23 14 15	1534.27	24.10	9.91	234.95	118.52	23 39 49	534.3	33.66	344.66
65.61	23 14 15	1534.27	24.10	9.91	234.95	118.52	23 39 49	534.3	33.66	344.66
65.61	23 14 15	1534.27	24.10	9.91	234.95	118.52	23 39 49	534.3	33.66	344.66
65.61	23 14 15	1534.27	24.10	9.91	234.95	118.52	23 39 49	534.3	33.66	344.66
65.61	23 14 15	1534.27	24.10	9.91	234.95	118.52	23 39 49	534.3	33.66	344.66

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.5733	TRA	1.8624	TC3	-6.3715	BAU	1.1491	SGT	5975.1	SGR	1254.3	SG3	1374.3	ST	71.3	SR	14.0	SS	49.6
RDE	-.0042	RRA	-.4740	RC3	1.1558	FAU	.22181	RRT	-.9738	RRF	-.9993	RTF	.0355	CRT	-.7588	CRS	.9869	CST	-.6439
FDE	.4282	FRA	6.0654	FC	-14.4665	BSP	7401	SGB	6105.4	R23	.2507	R13	-.9679	LSA	80.9	MSA	34.4	SSA	.1
BDE	.5733	BRA	1.9217	BC3	6.4755	FSP	1945	SG1	6099.0	SG2	279.5	THA	168.42	EL1	72.1	EL2	9.0	ALF	171.39

LAUNCH DATE MAY 12 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 577.201 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.315	GAL	-1.60	AZL	92.82	HCA	182.48	SMA	186.35	ECC	.19105	INC	2.8123	V1	29.484
RP	221.50	LAP	.12	LOP	53.11	VP	22.049	GAP	1.77	AZP	87.18	TAL	350.00	TAP	172.47	RCA	150.75	APO	221.95	V2	24.821
RC	197.299	GL	-27.41	GP	6.92	ZAL	111.98	ZAP	60.59	ETS	183.11	ZAE	101.03	ETE	179.11	ZAC	109.26	ETC	272.18	LVI	-16.33

PLANETOCENTRIC CONIC

C3	11.946	VHL	3.456	DLA	-30.69	RAL	358.69	RAD	6639.0	VEL	11.490	PTH	6.54	VHP	3.115	DPA	-16.21	RAP	294.48	ECC	1.1966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 6 30	2375.48	-1.16	61.18	212.59	137.57	18 46 6	1375.5	17.07	45.08
60.00	19 32 13	2147.42	4.39	45.97	217.91	130.10	20 8 1	1147.4	19.92	27.11
70.00	21 30 44	1798.71	11.11	22.69	222.89	122.51	22 0 42	798.7	23.42	1.09
77.55	0 20 14	1281.46	21.03	348.76	228.29	112.88	0 41 35	281.5	28.59	323.69
77.55	0 20 14	1281.46	21.03	348.76	228.29	112.88	0 41 35	281.5	28.59	323.69
77.55	0 20 14	1281.46	21.03	348.76	228.29	112.88	0 41 35	281.5	28.59	323.69
110.00	2 34 6	6133.57	11.11	289.52	222.89	122.51	4 16 19	5133.6	23.42	267.92

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2776	TRA	1.9792	TC3	-6.8224	BAU	1.0951	SGT	6083.6	SGR	738.3	SG3	1411.7	ST	62.1	SR	8.5	SS	54.5
RDE	-.0132	RRA	-.2913	RC3	.6927	FAU	.20971	RRT	-.9775	RRF	-.9978	RTF	.9678	CRT	-.8728	CRS	.9648	CST	-.7140
FDE	.9405	FRA	6.4404	FC	-15.1986	BSP	9068	SGB	6128.2	R23	.2426	R13	-.9686	LSA	77.1	MSA	31.0	SSA	.1
BDE	.2779	BRA	2.0006	BC3	6.8575	FSP	2303	SG1	6126.3	SG2	154.6	THA	173.23	EL1	62.5	EL2	4.1	ALF	173.14

LAUNCH DATE MAY 12 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 581.332 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.324 GAL -1.68 AZL 92.52 HCA 183.58 SMA 186.49 ECC .19183 INC 2.5140 V1 29.484
RP 221.88 LAP .16 LOP 54.21 VP 22.014 GAP 1.62 AZP 87.48 TAL 349.56 TAP 173.14 RCA 150.71 APO 222.26 V2 24.780
RC 199.945 GL -24.68 GP 4.75 ZAL 113.07 ZAP 59.31 ETS 182.02 ZAE 99.67 ETE 179.65 ZAC 107.10 ETC 272.13 LVI -14.31

PLANETOCENTRIC CONIC

C3 11.631 VHL 3.410 DLA -27.97 RAL 357.84 RAD 6638.9 VEL 11.477 PTH 6.53 VHP 3.127 DPA -18.36 RAP 294.77 ECC 1.1914

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 47 54	2433.04	-4.05	63.59	210.58	137.44	18 28 27	1433.0	14.27	47.69
60.00	19 6 18	2224.48	1.00	49.66	215.42	130.29	19 43 23	1224.5	16.60	31.23
70.00	20 49 22	1921.38	6.55	29.26	219.60	123.60	21 21 24	921.4	19.61	8.57
80.00	23 2 7	1505.77	12.36	1.19	223.07	117.40	23 27 13	505.8	22.58	338.47
90.00	1 19 37	1075.03	16.52	331.54	225.11	113.28	1 37 32	75.0	24.70	307.50
100.00	1 48 55	6268.28	12.36	300.46	223.07	117.40	3 33 23	5268.3	22.58	277.74
110.00	1 52 45	6256.24	6.55	296.09	219.60	123.60	3 37 1	5256.2	19.61	275.40

DIFFERENTIAL CORRECTIONS

TDE -.1553 TRA 2.0593 TC3-7.0834 BAU 1.1042
RDE -.0040 RRA -.2180 RC3 .5003 FAU .20382
FDE 1.1468 FRA 6.4791 FC-15.1711 BSP 9632
BDE .1554 BRA 2.0708 BC3 7.1010 FSP 2343

MID-COURSE EXECUTION ACCURACY

SGT 6225.3 SGR 537.1 SG3 1400.3
RRT -.9784 RRF -.9943 RTF .9690
SGB 6248.5 R23 .2220 R13 -.9693
SG1 6247.5 SG2 110.6 THA 175.17

ORBIT DETERMINATION ACCURACY

ST 60.6 SR 6.3 SS 56.5
CRT -.9629 CRS .9108 CST -.7668
LSA 78.2 MSA 26.2 SSA .2
EL1 60.9 EL2 1.7 ALF 174.33

LAUNCH DATE MAY 12 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC DISTANCE 585.459 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.332 GAL -1.75 AZL 92.36 HCA 184.68 SMA 186.63 ECC .19263 INC 2.3595 V1 29.484
RP 222.27 LAP .19 LOP 55.31 VP 21.979 GAP 1.48 AZP 87.64 TAL 349.11 TAP 173.79 RCA 150.68 APO 222.58 V2 24.738
RC 202.595 GL -23.08 GP 3.61 ZAL 113.95 ZAP 58.16 ETS 181.43 ZAE 98.34 ETE 179.93 ZAC 105.96 ETC 272.11 LVI -13.24

PLANETOCENTRIC CONIC

C3 11.564 VHL 3.401 DLA -26.30 RAL 357.66 RAD 6638.8 VEL 11.474 PTH 6.52 VHP 3.148 DPA -19.49 RAP 294.94 ECC 1.1903

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 38 31	2469.35	-5.87	65.12	209.91	137.30	18 19 41	1469.3	12.49	49.30
60.00	18 53 11	2270.76	-1.04	51.87	214.54	130.29	19 31 2	1270.8	14.88	33.63
70.00	20 29 46	1986.77	4.07	32.71	218.41	123.94	21 2 53	986.8	17.44	12.40
80.00	22 28 35	1614.88	8.86	7.40	221.33	118.63	22 55 30	614.9	19.86	345.43
90.00	0 23 6	1258.25	11.30	342.45	222.61	116.10	0 44 5	258.2	21.09	319.70
100.00	1 15 23	1089.35	8.86	328.77	221.33	118.63	1 33 32	89.3	19.86	306.80
110.00	1 33 9	1033.59	4.07	321.62	218.41	123.94	1 50 22	33.6	17.44	301.32

DIFFERENTIAL CORRECTIONS

TDE -.0535 TRA 2.1647 TC3-7.1773 BAU 1.1112
RDE .0040 RRA -.1823 RC3 .3864 FAU .19558
FDE 1.3392 FRA 6.5186 FC-14.6423 BSP 10302
BDE .0536 BRA 2.1724 BC3 7.1877 FSP 2387

MID-COURSE EXECUTION ACCURACY

SGT 6355.2 SGR 431.9 SG3 1378.0
RRT -.9755 RRF -.9872 RTF .9694
SGB 6369.9 R23 .1882 R13 -.9696
SG1 6369.2 SG2 94.8 THA 176.21

ORBIT DETERMINATION ACCURACY

ST 61.6 SR 5.2 SS 58.8
CRT -.9990 CRS .8174 CST -.8119
LSA 81.2 MSA 26.1 SSA .2
EL1 61.8 EL2 .2 ALF 175.21

LAUNCH DATE MAY 12 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 589.582 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.340 GAL -1.83 AZL 92.27 HCA 185.77 SMA 186.77 ECC .19346 INC 2.2633 V1 29.484
RP 222.65 LAP .23 LOP 56.40 VP 21.944 GAP 1.33 AZP 87.75 TAL 348.66 TAP 174.44 RCA 150.64 APO 222.90 V2 24.696
RC 209.250 GL -22.04 GP 2.90 ZAL 114.73 ZAP 57.06 ETS 181.07 ZAE 97.03 ETE 180.10 ZAC 105.25 ETC 272.10 LVI -12.59

PLANETOCENTRIC CONIC

C3 11.597 VHL 3.405 DLA -25.11 RAL 357.77 RAD 6638.9 VEL 11.475 PTH 6.52 VHP 3.172 DPA -20.19 RAP 295.08 ECC 1.1909

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 32 58	2496.41	-7.22	66.27	209.77	137.16	18 14 35	1496.4	11.16	50.49
60.00	18 45 12	2304.31	-2.52	53.47	214.28	130.24	19 23 36	1304.3	13.47	35.35
70.00	20 17 55	2031.74	2.36	35.06	217.97	124.08	20 51 46	1031.7	15.90	14.97
80.00	22 10 12	1680.31	6.71	11.07	220.66	119.16	22 38 12	680.3	18.08	349.48
90.00	23 55 0	1342.30	8.74	347.30	221.75	117.00	24 17 22	342.3	19.11	325.07
100.00	0 56 59	1154.78	6.71	332.43	220.66	119.16	1 16 14	154.8	18.08	310.84
110.00	1 21 17	1078.56	2.36	323.98	217.97	124.08	1 39 15	78.6	15.90	303.89

DIFFERENTIAL CORRECTIONS

TDE .0115 TRA 2.2548 TC3-7.2940 BAU 1.1319
RDE .0133 RRA -.1607 RC3 .3176 FAU .19119
FDE 1.4252 FRA 6.4814 FC-14.2728 BSP 10688
BDE .0176 BRA 2.2605 BC3 7.3009 FSP 2351

MID-COURSE EXECUTION ACCURACY

SGT 6498.6 SGR 369.5 SG3 1353.1
RRT -.9686 RRF -.9758 RTF .9707
SGB 6509.1 R23 .1425 R13 -.9708
SG1 6508.5 SG2 91.7 THA 176.85

ORBIT DETERMINATION ACCURACY

ST 63.3 SR 4.6 SS 59.5
CRT -.9657 CRS .6764 CST -.6418
LSA 83.5 MSA 24.5 SSA .3
EL1 63.4 EL2 1.2 ALF 175.96

LAUNCH DATE MAY 12 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 593.698 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.349 GAL -1.91 AZL 92.20 HCA 186.86 SMA 186.92 ECC .19431 INC 2.1990 V1 29.484
RP 223.04 LAP .26 LOP 57.50 VP 21.910 GAP 1.19 AZP 87.82 TAL 348.21 TAP 175.07 RCA 150.60 APO 223.24 V2 24.654
RC 207.907 GL -21.28 GP 2.41 ZAL 115.47 ZAP 56.01 ETS 180.82 ZAE 95.76 ETE 180.21 ZAC 104.76 ETC 272.11 LVI -12.17

PLANETOCENTRIC CONIC

C3 11.682 VHL 3.418 DLA -24.16 RAL 358.02 RAD 6638.9 VEL 11.479 PTH 6.53 VHP 3.197 DPA -20.66 RAP 295.22 ECC 1.1923

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 29 22	2518.70	-8.33	67.22	209.91	137.02	18 11 21	1518.7	10.05	51.45
60.00	18 39 48	2331.41	-3.71	54.77	214.34	130.16	19 18 39	1331.4	12.32	36.72
70.00	20 9 46	2066.90	1.02	36.90	217.91	124.14	20 44 13	1066.9	14.67	16.95
80.00	21 57 57	1728.34	5.11	13.73	220.45	119.46	22 26 45	728.3	16.72	352.39
90.00	23 39 43	1400.10	6.93	350.59	221.45	117.49	24 3 3	400.1	17.64	328.67
100.00	0 44 44	1202.81	5.11	335.10	220.45	119.46	1 4 47	202.8	16.72	313.76
110.00	1 13 8	1113.72	1.02	325.81	217.91	124.14	1 31 42	113.7	14.67	305.87

DIFFERENTIAL CORRECTIONS

TDE .0819 TRA 2.3624 TC3-7.3357 BAU 1.1464
RDE .0209 RRA -.1486 RC3 .2650 FAU .18381
FDE 1.5554 FRA 6.4985 FC-13.6218 BSP 11214
BDE .0846 BRA 2.3671 BC3 7.3405 FSP 2370

MID-COURSE EXECUTION ACCURACY

SGT 6633.6 SGR 329.6 SG3 1327.5
RRT -.9554 RRF -.9589 RTF .9701
SGB 6641.8 R23 .1078 R13 -.9702
SG1 6641.0 SG2 97.2 THA 177.28

ORBIT DETERMINATION ACCURACY

ST 65.9 SR 4.5 SS 61.3
CRT -.8723 CRS .5131 CST -.8656
LSA 87.0 MSA 23.5 SSA .3
EL1 66.0 EL2 2.2 ALF 176.61

LAUNCH DATE MAY 12 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC DISTANCE 597.808 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.358	GAL	-1.99	AZL	92.15	HCA	187.95	SMA	187.07	ECC	.19518	INC	2.1488
RP	223.42	LAP	.30	LOP	58.58	VP	21.876	GAP	1.04	AZP	87.87	TAL	347.75	TAP	175.70	RCA	150.55	APO	223.58
RC	210.566	GL	-20.69	GP	2.06	ZAL	116.19	ZAP	54.99	ETS	180.64	ZAE	94.52	ETE	180.29	ZAC	104.41	ETC	272.13

V1 29.484
V2 24.612
LVI -11.87

PLANETOCENTRIC CONIC

C3	11.800	VHL	3.435	DLA	-23.36	RAL	358.36	RAD	6639.0	VEL	11.484	PTH	6.53	VHP	3.224	DPA	-20.99	RAP	295.36

ECC 1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 54	2538.21	-9.30	68.05	210.21	136.87	18 9 12	1538.2	9.09	52.29
60.00	18 35 52	2354.79	-4.73	55.89	214.57	130.07	19 15 7	1354.8	11.32	37.88
70.00	20 3 43	2096.55	-.12	38.44	218.07	124.15	20 38 39	1096.5	13.62	18.61
80.00	21 48 55	1767.27	3.80	15.88	220.50	119.64	22 18 23	767.3	15.58	354.72
90.00	23 28 42	1445.42	5.50	353.15	221.44	117.78	23 52 48	445.4	16.44	331.46
100.00	0 35 43	1241.74	3.80	337.25	220.50	119.64	0 56 25	241.7	15.58	316.09
110.00	1 7 5	1143.37	-.12	327.36	218.07	124.15	1 26 8	143.4	13.62	307.52

DIFFERENTIAL CORRECTIONS

TDE	.1235	TRA	2.4483	TC3	-7.4435	BAU	1.1748
RDE	.0293	RRA	-.1405	RC3	.2282	FAU	.17859
FDE	1.6371	FRA	6.4818	FC	-13.1021	BSP	11416
BDE	.1270	BRA	2.4523	BC3	7.4470	FSP	2346

MID-COURSE EXECUTION ACCURACY

SGT	6780.9	SGR	303.5	SG3	1302.2				
RRT	-.9364	RRF	-.9365	RTF	.9685				
SGB	6787.7	R23	.0837	R13	-.9685				
SG1	6786.8	SG2	106.4	THA	177.60				

ORBIT DETERMINATION ACCURACY

ST	67.9	SR	4.5	SS	62.3				
CRT	-.7511	CRS	.3401	CST	-.8749				
LSA	89.3	MSA	23.3	SSA	.4				
EL1	68.0	EL2	3.0	ALF	177.12				

LAUNCH DATE MAY 12 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 601.916 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.366	GAL	-2.07	AZL	92.11	HCA	189.04	SMA	187.22	ECC	.19607	INC	2.1128
RP	223.81	LAP	.33	LOP	59.67	VP	21.842	GAP	.89	AZP	87.91	TAL	347.29	TAP	176.33	RCA	150.51	APO	223.93
RC	213.227	GL	-20.20	GP	1.80	ZAL	116.89	ZAP	54.01	ETS	180.51	ZAE	93.31	ETE	180.34	ZAC	104.14	ETC	272.15

V1 29.484
V2 24.571
LVI -11.67

PLANETOCENTRIC CONIC

C3	11.940	VHL	3.455	DLA	-22.65	RAL	358.74	RAD	6639.0	VEL	11.490	PTH	6.54	VHP	3.251	DPA	-21.24	RAP	295.52

ECC 1.1965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 8	2555.89	-10.18	68.81	210.61	136.73	18 7 44	1555.9	8.21	53.05
60.00	18 32 53	2375.74	-5.65	56.90	214.92	129.97	19 12 29	1375.7	10.42	38.93
70.00	19 58 58	2122.65	-1.11	39.80	218.35	124.14	20 34 21	1122.7	12.68	20.05
80.00	21 41 52	1800.63	2.68	17.72	220.71	119.75	22 11 52	800.6	14.58	356.69
90.00	23 20 12	1483.48	4.29	355.29	221.60	117.98	23 44 55	483.5	15.40	333.76
100.00	0 28 40	1275.11	2.68	339.09	220.71	119.75	0 49 55	275.1	14.58	318.06
110.00	1 2 21	1169.47	-1.11	328.72	218.35	124.14	1 21 50	169.5	12.68	308.97

DIFFERENTIAL CORRECTIONS

TDE	.1663	TRA	2.5403	TC3	-7.5190	BAU	1.2007
RDE	.0377	RRA	-.1351	RC3	.2001	FAU	.17496
FDE	1.6681	FRA	6.4237	FC	-12.6861	BSP	11658
BDE	.1705	BRA	2.5439	BC3	7.5216	FSP	2279

MID-COURSE EXECUTION ACCURACY

SGT	6921.7	SGR	286.2	SG3	1274.9				
RRT	-.9131	RRF	-.9092	RTF	.9693				
SGB	6927.6	R23	.0587	R13	-.9693				
SG1	6926.7	SG2	116.6	THA	177.84				

ORBIT DETERMINATION ACCURACY

ST	70.3	SR	4.8	SS	62.3				
CRT	-.6152	CRS	.1877	CST	-.8887				
LSA	91.4	MSA	22.4	SSA	.4				
EL1	70.3	EL2	3.8	ALF	177.58				

LAUNCH DATE MAY 12 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 29 1972

HELIOCENTRIC CONIC DISTANCE 606.017 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.375	GAL	-2.16	AZL	92.09	HCA	190.12	SMA	187.37	ECC	.19699	INC	2.0837
RP	224.20	LAP	.37	LOP	60.75	VP	21.808	GAP	.75	AZP	87.95	TAL	346.82	TAP	176.94	RCA	150.46	APO	224.28
RC	215.890	GL	-19.78	GP	1.59	ZAL	117.58	ZAP	53.07	ETS	180.40	ZAE	92.12	ETE	180.38	ZAC	103.93	ETC	272.18

V1 29.484
V2 24.529
LVI -11.93

PLANETOCENTRIC CONIC

C3	12.097	VHL	3.478	DLA	-22.01	RAL	359.16	RAD	6639.1	VEL	11.497	PTH	6.55	VHP	3.278	DPA	-21.42	RAP	295.70

ECC 1.1991

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 52	2572.42	-11.00	69.53	211.07	136.59	18 6 44	1572.4	7.38	53.75
60.00	18 30 31	2395.15	-6.50	57.84	215.35	129.86	19 10 26	1395.1	9.59	39.88
70.00	19 55 6	2146.49	-2.02	41.05	218.72	124.10	20 30 53	1146.5	11.82	21.35
80.00	21 36 4	1830.49	1.67	19.36	221.02	119.82	22 6 35	830.5	13.67	358.44
90.00	23 13 15	1517.04	3.22	357.17	221.88	118.11	23 38 32	517.0	14.46	335.78
100.00	0 22 52	1304.96	1.67	340.73	221.02	119.82	0 44 37	305.0	13.67	319.81
110.00	0 58 28	1193.31	-2.02	329.97	218.72	124.10	1 18 22	193.3	11.82	310.27

DIFFERENTIAL CORRECTIONS

TDE	.2061	TRA	2.6320	TC3	-7.5921	BAU	1.2282
RDE	.0459	RRA	-.1319	RC3	.1771	FAU	.17109
FDE	1.7094	FRA	6.3754	FC	-12.2436	BSP	11872
BDE	.2112	BRA	2.6354	BC3	7.5942	FSP	2226

MID-COURSE EXECUTION ACCURACY

SGT	7062.5	SGR	275.4	SG3	1248.5				
RRT	-.8650	RRF	-.8775	RTF	.9693				
SGB	7067.9	R23	.0418	R13	-.9693				
SG1	7066.7	SG2	128.1	THA	178.02				

ORBIT DETERMINATION ACCURACY

ST	72.6	SR	5.2	SS	62.6				
CRT	-.4906	CRS	.0595	CST	-.8979				
LSA	93.5	MSA	22.0	SSA	.5				
EL1	72.7	EL2	4.5	ALF	177.99				

LAUNCH DATE MAY 12 1971 FLIGHT TIME 264.00 ARRIVAL DATE JAN 31 1972

HELIOCENTRIC CONIC DISTANCE 610.113 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.385	GAL	-2.24	AZL	92.06	HCA	191.19	SMA	187.53	ECC	.19792	INC	2.0611
RP	224.59	LAP	.40	LOP	61.82	VP	21.774	GAP	.60	AZP	87.98	TAL	346.36	TAP	177.55	RCA	150.41	APO	224.64
RC	218.554	GL	-19.42	GP	1.43	ZAL	118.26	ZAP	52.15	ETS	180.32	ZAE	90.97	ETE	180.42	ZAC	103.75	ETC	272.22

V1 29.484
V2 24.487
LVI -11.44

PLANETOCENTRIC CONIC

C3	12.269	VHL	3.503	DLA	-21.42	RAL	359.60	RAD	6639.2	VEL	11.504	PTH	6.55	VHP	3.306	DPA	-21.56	RAP	295.90

ECC 1.2019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 55	2588.13	-11.77	70.22	211.59	136.44	18 6 3	1588.1	6.60	54.42
60.00	18 28 36	2413.46	-7.30	58.73	215.83	129.75	19 8 49	1413.5	8.80	40.78
70.00	19 51 51	2168.74	-2.87	42.21	219.16	124.05	20 27 59	1168.7	11.01	22.57
80.00	21 31 10	1857.89	.74	20.86	221.41	119.85	22 2 8	857.9	12.83	.03
90.00	23 7 24	1547.51	2.24	358.87	222.25	118.20	23 33 11	547.5	13.59	337.59
100.00	0 17 58	1332.36	.74	342.23	221.41	119.85	0 40 10	332.4	12.83	321.40
110.00	0 55 13	1215.55	-2.87	331.13	219.16	124.05	1 15 28	215.6	11.01	311.48

DIFFERENTIAL CORRECTIONS

TDE	.2537	TRA	2.7354	TC3	-7.6265	BAU	1.2512
RDE	.0536	RRA	-.1307	RC3	.1565	FAU	.16607
FDE	1.7661	FRA	6.3494	FC	-11.7185	BSP	12190
BDE	.2593	BRA	2.7386	BC3	7.6281	FSP	2198

MID-COURSE EXECUTION ACCURACY

SGT	7198.5	SGR	269.2	SG3	1222.5				
RRT	-.8532	RRF	-.8425	RTF	.9689				
SGB	7203.5	R23	.0299	R13	-.9689				
SG1	7202.2	SG2	140.3	THA	178.17				

ORBIT DETERMINATION ACCURACY

ST	75.5	SR	5.6	SS	63.2				
CRT	-.3770	CRS	-.0444	CST	-.9076				
LSA	96.2	MSA	21.5	SSA	.5				
EL1	75.5	EL2	5.2	ALF	178.40				

LAUNCH DATE MAY 12 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 2 1972

HELIOCENTRIC CONIC DISTANCE 614.204 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.394	GAL	-2.33	AZL	92.04	HCA	192.27	SMA	187.69	ECC	.19888	INC	2.0426	V1	29.484
RP	224.98	LAP	.43	LOP	62.90	VP	21.741	GAP	.46	AZP	88.00	TAL	345.89	TAP	178.15	RCA	150.36	APO	225.01	V2	24.445
RC	221.219	GL	-19.09	GP	1.29	ZAL	118.94	ZAP	51.26	ETS	180.25	ZAE	89.83	ETE	180.44	ZAC	103.61	ETC	272.26	LVI	-11.38

PLANETOCENTRIC CONIC

C3	12.452	VHL	3.529	DLA	-20.86	RAL	.06	RAD	6639.3	VEL	11.512	PTH	6.56	VHP	3.335	DPA	-21.66	RAP	296.13	ECC	1.2049

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 13	2603.25	-12.52	70.68	212.14	136.29	18 5 36	1603.2	5.84	55.06
60.00	18 27 0	2430.96	-8.06	59.58	216.36	129.62	19 7 31	1431.0	8.04	41.64
70.00	19 49 2	2189.79	-3.67	43.31	219.65	123.98	20 25 32	1189.8	10.23	23.71
80.00	21 26 55	1883.49	-.13	22.27	221.86	119.86	21 58 18	883.5	12.03	1.51
90.00	23 2 19	1575.73	1.33	.45	222.67	118.25	23 28 35	575.7	12.77	339.26
100.00	0 13 43	1357.96	-.13	343.64	221.86	119.86	0 36 20	358.0	12.03	322.88
110.00	0 52 25	1236.61	-3.67	332.23	219.65	123.98	1 13 1	236.6	10.23	312.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2998	TRA	2.8388	TC3	-7.6565	BAU	1.2748	SGT	7332.2	SGR	266.4	SG3	1196.4	ST	78.3	SR	6.0	SS	63.6
RDE	.0614	RRA	-.1305	RC3	.1392	FAU	.16165	RRT	-.8192	RRF	-.8055	RTF	.9688	CRT	-.2779	CRS	-.1283	CST	-.9161
FDE	1.8079	FRA	6.3104	FC	-11.2385	BSP	12482	SGB	7337.1	R23	.0201	R13	-.9688	LSA	98.8	MSA	21.1	SSA	.6
BDE	.3060	BRA	2.8416	BC3	7.6578	FSP	2158	SG1	7335.5	SG2	152.7	THA	178.29	EL1	78.3	EL2	5.8	ALF	178.77

LAUNCH DATE MAY 12 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 4 1972

HELIOCENTRIC CONIC DISTANCE 618.289 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.403	GAL	-2.42	AZL	92.03	HCA	193.34	SMA	187.85	ECC	.19985	INC	2.0265	V1	29.484
RP	225.37	LAP	.47	LOP	63.96	VP	21.708	GAP	.31	AZP	88.03	TAL	345.41	TAP	178.75	RCA	150.30	APO	225.39	V2	24.403
RC	223.884	GL	-18.78	GP	1.18	ZAL	119.60	ZAP	50.40	ETS	180.19	ZAE	88.72	ETE	180.46	ZAC	103.48	ETC	272.31	LVI	-11.35

PLANETOCENTRIC CONIC

C3	12.647	VHL	3.556	DLA	-20.32	RAL	.52	RAD	6639.4	VEL	11.520	PTH	6.57	VHP	3.363	DPA	-21.74	RAP	296.37	ECC	1.2081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 42	2617.93	-13.24	71.53	212.72	136.13	18 5 20	1617.9	5.11	55.68
60.00	18 25 39	2447.87	-8.79	60.40	216.91	129.49	19 6 27	1447.9	7.30	42.46
70.00	19 46 35	2209.98	-4.44	44.37	220.18	123.90	20 23 25	1210.0	9.49	24.79
80.00	21 23 9	1907.75	-.95	23.60	222.35	119.84	21 54 57	907.7	11.26	2.90
90.00	22 57 50	1602.30	.47	1.93	223.14	118.28	23 24 33	602.3	11.99	340.82
100.00	0 9 57	1382.22	-.95	344.97	222.35	119.84	0 32 59	382.2	11.26	324.27
110.00	0 49 57	1256.79	-4.44	333.29	220.18	123.90	1 10 54	256.8	9.49	313.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3421	TRA	2.9404	TC3	-7.6914	BAU	1.3006	SGT	7466.5	SGR	266.4	SG3	1170.8	ST	81.0	SR	6.5	SS	63.9
RDE	.0693	RRA	-.1310	RC3	.1243	FAU	.15747	RRT	-.7839	RRF	-.7675	RTF	.9685	CRT	-.1948	CRS	-.1969	CST	-.9224
FDE	1.8440	FRA	6.2697	FC	-10.7789	BSP	12720	SGB	7471.3	R23	.0128	R13	-.9685	LSA	101.3	MSA	20.8	SSA	.6
BDE	.3490	BRA	2.9433	BC3	7.6924	FSP	2114	SG1	7469.4	SG2	165.3	THA	178.40	EL1	81.1	EL2	6.4	ALF	179.10

LAUNCH DATE MAY 12 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 6 1972

HELIOCENTRIC CONIC DISTANCE 622.369 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.412	GAL	-2.50	AZL	92.01	HCA	194.40	SMA	188.01	ECC	.20084	INC	2.0133	V1	29.484
RP	225.76	LAP	.50	LOP	65.03	VP	21.675	GAP	.17	AZP	88.05	TAL	344.94	TAP	179.34	RCA	150.25	APO	225.77	V2	24.361
RC	226.550	GL	-18.50	GP	1.08	ZAL	120.27	ZAP	49.57	ETS	180.15	ZAE	87.63	ETE	180.47	ZAC	103.37	ETC	272.37	LVI	-11.35

PLANETOCENTRIC CONIC

C3	12.852	VHL	3.585	DLA	-19.80	RAL	1.00	RAD	6639.5	VEL	11.529	PTH	6.58	VHP	3.392	DPA	-21.80	RAP	296.63	ECC	1.2115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 20	2632.29	-13.94	72.17	213.32	135.97	18 5 12	1632.3	4.39	56.28
60.00	18 24 30	2464.33	-9.50	61.21	217.50	129.35	19 5 34	1464.3	6.59	43.26
70.00	19 44 23	2229.47	-5.18	45.40	220.73	123.81	20 21 33	1229.5	8.76	25.84
80.00	21 19 46	1930.96	-1.74	24.87	222.87	119.81	21 51 57	931.0	10.52	4.23
90.00	22 53 49	1627.57	-.34	3.34	223.65	118.28	23 20 57	627.6	11.23	342.29
100.00	0 6 34	1405.44	-1.74	346.24	222.87	119.81	0 29 59	405.4	10.52	325.60
110.00	0 47 46	1276.29	-5.18	334.31	220.73	123.81	1 9 2	276.3	8.76	314.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3898	TRA	3.0486	TC3	-7.7049	BAU	1.3240	SGT	7597.7	SGR	268.4	SG3	1145.8	ST	84.1	SR	7.0	SS	64.3
RDE	.0771	RRA	-.1324	RC3	.1106	FAU	.15289	RRT	-.7483	RRF	-.7294	RTF	.9680	CRT	-.1203	CRS	-.2546	CST	-.9266
FDE	1.8885	FRA	6.2371	FC	-10.2985	BSP	13010	SGB	7602.4	R23	.0069	R13	-.9680	LSA	104.1	MSA	20.5	SSA	.7
BDE	.3974	BRA	3.0515	BC3	7.7057	FSP	2079	SG1	7600.3	SG2	178.0	THA	178.48	EL1	84.1	EL2	7.0	ALF	179.42

LAUNCH DATE MAY 12 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 8 1972

HELIOCENTRIC CONIC DISTANCE 626.447 EARTH TO MARS

RL	151.12	LAL	.00	LOL	230.64	VL	32.422	GAL	-2.59	AZL	92.00	HCA	195.46	SMA	188.17	ECC	.20185	INC	2.0011	V1	29.484
RP	226.15	LAP	.53	LOP	66.09	VP	21.642	GAP	.02	AZP	88.07	TAL	344.46	TAP	179.92	RCA	150.19	APO	226.15	V2	24.319
RC	229.216	GL	-18.24	GP	1.00	ZAL	120.93	ZAP	48.76	ETS	180.11	ZAE	86.56	ETE	180.49	ZAC	103.28	ETC	272.43	LVI	-11.37

PLANETOCENTRIC CONIC

C3	13.068	VHL	3.615	DLA	-19.30	RAL	1.48	RAD	6639.6	VEL	11.538	PTH	6.58	VHP	3.421	DPA	-21.84	RAP	296.92	ECC	1.2151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 5	2646.40	-14.63	72.80	213.95	135.80	18 5 11	1646.4	3.68	56.88
60.00	18 23 29	2480.42	-10.19	62.01	218.11	129.20	19 4 50	1480.4	5.88	44.04
70.00	19 42 25	2248.42	-5.90	46.40	221.31	123.70	20 19 53	1248.4	8.06	26.85
80.00	21 16 42	1953.34	-2.49	26.10	223.42	119.76	21 49 15	953.3	9.80	5.50
90.00	22 50 10	1651.81	-1.12	4.69	224.18	118.26	23 17 42	651.8	10.50	343.70
100.00	0 3 29	1427.81	-2.49	347.47	223.42	119.76	0 27 17	427.8	9.80	326.87
110.00	0 45 47	1295.24	-5.90	335.31	221.31	123.70	1 7 22	295.2	8.06	315.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4295	TRA	3.1505	TC3	-7.7360	BAU	1.3516	SGT	7729.0	SGR	272.0	SG3	1120.9	ST	86.8	SR	7.5	SS	64.4
RDE	.0851	RRA	-.1340	RC3	.0990	FAU	.14914	RRT	-.7131	RRF	-.6920	RTF	.9676	CRT	-.0599	CRS	-.3015	CST	-.9329
FDE	1.9136	FRA	6.1905	FC	-9.8809	BSP	13204	SGB	7733.8	R23	.0022	R13	-.9676	LSA	106.4	MSA	20.3	SSA	.7
BDE	.4379	BRA	3.1533	BC3	7.7367	FSP	2032	SG1	7731.5	SG2	190.6	THA	178.56	EL1	86.8	EL2	7.5	ALF	179.70

LAUNCH DATE MAY 12 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 10 1972

HELIOCENTRIC CONIC DISTANCE 630.511 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.431 GAL -2.68 AZL 91.99 HCA 196.52 SMA 188.34 ECC .20289 INC 1.9909 V1 29.484
RP 226.55 LAP .57 LOP 67.15 VP 21.610 GAP -.13 AZP 88.09 TAL 343.98 TAP 180.50 RCA 150.13 APO 226.55 V2 24.278
RC 231.880 GL -17.98 GP .93 ZAL 121.59 ZAP 47.97 ETS 180.08 ZAE 85.52 ETE 180.50 ZAC 103.19 ETC 272.50 LVI -11.40

PLANETOCENTRIC CONIC

C3 13.292 VHL 3.646 DLA -18.81 RAL 1.96 RAD 6639.7 VEL 11.548 PTH 6.59 VHP 3.451 DPA -21.86 RAP 297.22 ECC 1.2188

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 54	2660.30	-15.31	73.42	214.59	135.62	18 5 15	1660.3	2.98	57.46
60.00	18 22 36	2496.22	-10.87	62.79	218.74	129.05	19 4 13	1496.2	5.19	44.80
70.00	19 40 37	2266.92	-6.59	47.37	221.92	123.59	20 18 24	1266.9	7.36	27.83
80.00	21 13 52	1975.03	-3.23	27.30	224.00	119.70	21 46 47	975.0	9.09	6.72
90.00	22 46 49	1675.20	-1.88	6.00	224.75	118.22	23 14 44	675.2	9.79	345.05
100.00	0 0 40	1449.50	-3.23	348.66	224.00	119.70	0 24 50	449.5	9.09	328.09
110.00	0 43 59	1313.74	-6.59	336.29	221.92	123.59	1 5 53	313.7	7.36	316.75

DIFFERENTIAL CORRECTIONS

TDE .4749 TRA 3.2592 TC3-7.7477 BAU 1.3769
RDE .0931 RRA -.1362 RC3 .0881 FAU .14514
FDE 1.9438 FRA 6.1499 FC3-9.4530 BSP 13448
BDE .4839 BRA 3.2620 BC3 7.7482 FSP 1991

MID-COURSE EXECUTION ACCURACY

SGT 7858.2 SGR 277.0 SG3 1096.6
RRT -.6789 RRF -.6558 RTF .9672
SGB 7863.1 R23 -.0018 R13 -.9672
SG1 7860.4 SG2 203.3 THA 178.63

ORBIT DETERMINATION ACCURACY

ST 89.7 SR 8.1 SS 64.6
CRT -.0044 CRS -.3418 CST -.9375
LSA 109.0 MSA 20.1 SSA .8
EL1 89.7 EL2 8.1 ALF 179.98

LAUNCH DATE MAY 12 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 12 1972

HELIOCENTRIC CONIC DISTANCE 634.574 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.441 GAL -2.77 AZL 91.98 HCA 197.58 SMA 188.50 ECC .20393 INC 1.9821 V1 29.484
RP 226.94 LAP .60 LOP 68.20 VP 21.577 GAP -.27 AZP 88.11 TAL 343.49 TAP 181.07 RCA 150.06 APO 226.95 V2 24.236
RC 234.543 GL -17.74 GP .86 ZAL 122.24 ZAP 47.21 ETS 180.05 ZAE 84.49 ETE 180.50 ZAC 103.11 ETC 272.57 LVI -11.45

PLANETOCENTRIC CONIC

C3 13.526 VHL 3.678 DLA -18.34 RAL 2.44 RAD 6639.8 VEL 11.558 PTH 6.60 VHP 3.480 DPA -21.87 RAP 297.55 ECC 1.2226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 49	2674.04	-15.98	74.05	215.25	135.43	18 5 23	1674.0	2.29	58.03
60.00	18 21 50	2511.78	-11.54	63.56	219.38	128.89	19 3 41	1511.8	4.51	45.55
70.00	19 38 57	2285.04	-7.28	48.33	222.54	123.46	20 17 2	1285.0	6.68	28.79
80.00	21 11 16	1996.14	-3.94	28.46	224.60	119.62	21 44 32	996.1	8.40	7.91
90.00	22 43 43	1697.89	-2.61	7.26	225.33	118.17	23 12 1	697.9	9.09	346.35
100.00	23 54 8	1470.61	-3.94	349.83	224.60	119.62	24 18 38	470.6	8.40	329.28
110.00	0 42 20	1331.86	-7.28	337.25	222.54	123.46	1 4 32	331.9	6.68	317.71

DIFFERENTIAL CORRECTIONS

TDE .5206 TRA 3.3692 TC3-7.7531 BAU 1.4020
RDE .1012 RRA -.1388 RC3 .0781 FAU .14122
FDE 1.9704 FRA 6.1055 FC3-9.0388 BSP 13686
BDE .5303 BRA 3.3720 BC3 7.7535 FSP 1948

MID-COURSE EXECUTION ACCURACY

SGT 7984.8 SGR 282.9 SG3 1072.3
RRT -.6460 RRF -.6210 RTF .9668
SGB 7989.8 R23 -.0053 R13 -.9668
SG1 7986.9 SG2 215.9 THA 178.69

ORBIT DETERMINATION ACCURACY

ST 92.7 SR 8.6 SS 64.7
CRT .0446 CRS -.3764 CST -.9416
LSA 111.6 MSA 20.0 SSA .8
EL1 92.7 EL2 8.6 ALF .24

LAUNCH DATE MAY 12 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 14 1972

HELIOCENTRIC CONIC DISTANCE 638.630 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.451 GAL -2.87 AZL 91.97 HCA 198.63 SMA 188.67 ECC .20500 INC 1.9738 V1 29.484
RP 227.33 LAP .63 LOP 69.25 VP 21.545 GAP -.42 AZP 88.13 TAL 343.01 TAP 181.64 RCA 149.99 APO 227.35 V2 24.195
RC 237.203 GL -17.51 GP .81 ZAL 122.89 ZAP 46.48 ETS 180.03 ZAE 83.48 ETE 180.51 ZAC 103.04 ETC 272.65 LVI -11.52

PLANETOCENTRIC CONIC

C3 13.769 VHL 3.711 DLA -17.87 RAL 2.93 RAD 6639.9 VEL 11.569 PTH 6.61 VHP 3.510 DPA -21.87 RAP 297.89 ECC 1.2266

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 46	2687.66	-16.64	74.67	215.92	135.24	18 5 34	1687.7	1.61	58.60
60.00	18 21 8	2527.15	-12.20	64.33	220.04	128.72	19 3 15	1527.2	3.84	46.29
70.00	19 37 26	2302.86	-7.94	49.28	223.18	123.33	20 15 48	1302.9	6.01	29.74
80.00	21 8 50	2016.77	-4.63	29.60	225.21	119.53	21 42 27	1016.8	7.73	9.07
90.00	22 40 50	1719.99	-3.32	8.50	225.94	118.10	23 9 30	720.0	8.41	347.61
100.00	23 51 42	1491.24	-4.63	350.97	225.21	119.53	24 16 33	491.2	7.73	330.44
110.00	0 40 48	1349.68	-7.94	338.20	223.18	123.33	1 3 18	349.7	6.01	318.65

DIFFERENTIAL CORRECTIONS

TDE .5644 TRA 3.4792 TC3-7.7580 BAU 1.4283
RDE .1094 RRA -.1416 RC3 .0689 FAU .13728
FDE 1.9939 FRA 6.0637 FC3-8.8316 BSP 13898
BDE .5749 BRA 3.4821 BC3 7.7593 FSP 1909

MID-COURSE EXECUTION ACCURACY

SGT 8110.4 SGR 289.7 SG3 1048.6
RRT -.6146 RRF -.5980 RTF .9681
SGB 8115.5 R23 -.0079 R13 -.9661
SG1 8112.3 SG2 228.5 THA 178.74

ORBIT DETERMINATION ACCURACY

ST 95.6 SR 9.1 SS 64.7
CRT .0867 CRS -.4062 CST -.9449
LSA 114.1 MSA 19.9 SSA .9
EL1 95.6 EL2 9.1 ALF .48

LAUNCH DATE MAY 12 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 16 1972

HELIOCENTRIC CONIC DISTANCE 642.681 EARTH TO MARS

RL 151.12 LAL .00 LOL 230.64 VL 32.461 GAL -2.96 AZL 91.97 HCA 199.68 SMA 188.84 ECC .20609 INC 1.9667 V1 29.484
RP 227.72 LAP .66 LOP 70.30 VP 21.514 GAP -.57 AZP 88.15 TAL 342.52 TAP 182.20 RCA 149.92 APO 227.76 V2 24.153
RC 239.859 GL -17.29 GP .76 ZAL 123.53 ZAP 45.76 ETS 180.01 ZAE 82.49 ETE 180.51 ZAC 102.97 ETC 272.73 LVI -11.59

PLANETOCENTRIC CONIC

C3 14.020 VHL 3.744 DLA -17.41 RAL 3.41 RAD 6640.1 VEL 11.579 PTH 6.62 VHP 3.540 DPA -21.86 RAP 298.25 ECC 1.2307

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 20 47	2701.16	-17.29	75.29	216.60	135.05	18 5 48	1701.2	.93	59.17
60.00	18 20 30	2542.35	-12.84	65.10	220.71	128.54	19 2 53	1542.3	3.17	47.02
70.00	19 36 0	2320.40	-8.60	50.22	223.83	123.18	20 14 41	1320.4	5.35	30.66
80.00	21 6 34	2036.98	-5.31	30.72	225.85	119.43	21 40 31	1037.0	7.06	10.20
90.00	22 38 8	1741.57	-4.01	9.71	226.56	118.02	23 7 10	741.6	7.74	348.84
100.00	23 49 25	1511.45	-5.31	352.08	225.85	119.43	24 14 37	511.5	7.06	331.57
110.00	0 39 23	1367.22	-8.60	339.13	223.83	123.18	1 2 10	367.2	5.35	319.58

DIFFERENTIAL CORRECTIONS

TDE .6112 TRA 3.5933 TC3-7.7539 BAU 1.4534
RDE .1177 RRA -.1447 RC3 .0603 FAU .13342
FDE 2.0164 FRA 6.0210 FC3-8.2386 BSP 14136
BDE .6224 BRA 3.5963 BC3 7.7542 FSP 1871

MID-COURSE EXECUTION ACCURACY

SGT 8234.1 SGR 297.1 SG3 1025.3
RRT -.5848 RRF -.5568 RTF .9656
SGB 8239.4 R23 -.0103 R13 -.9656
SG1 8235.9 SG2 241.0 THA 178.79

ORBIT DETERMINATION ACCURACY

ST 98.7 SR 9.7 SS 64.8
CRT .1255 CRS -.4324 CST -.9482
LSA 116.8 MSA 19.8 SSA .9
EL1 98.7 EL2 9.6 ALF .71

LAUNCH DATE MAY 13 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 283.416 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	35.456	GAL	-1.63	AZL	91.85	HCA	89.63	SMA	265.99	ECC	.43251	INC	1.8488	V1	29.478
RP	207.22	LAP	-1.85	LOP	321.23	VP	27.963	GAP	22.41	AZP	90.01	TAL	354.60	TAP	84.23	RCA	150.95	APO	381.03	V2	26.432
RC	56.455	GL	-10.60	GP	-.17	ZAL	102.97	ZAP	177.06	ETS	183.25	ZAE	174.33	ETE	57.61	ZAC	99.83	ETC	277.81	LVI	-17.94

PLANETOCENTRIC CONIC

C3	38.633	VHL	6.216	DLA	-19.59	RAL	340.74	RAD	6650.2	VEL	12.590	PTH	7.45	VHP	11.235	DPA	-17.27	RAP	321.39	ECC	1.6358

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 40	2900.37	-26.57	85.13	206.92	131.04	16 44 1	1900.4	-9.05	67.55
60.00	16 58 31	2733.25	-20.68	75.14	211.98	125.39	17 44 4	1733.3	-5.22	56.15
70.00	18 17 59	2499.62	-15.10	60.02	215.81	121.00	18 59 39	1499.6	-1.49	40.03
80.00	19 52 54	2202.59	-10.74	40.00	218.35	118.03	20 29 36	1202.6	1.50	19.35
90.00	21 26 42	1900.00	-9.00	18.67	219.27	116.92	21 58 22	900.0	2.71	357.77
100.00	22 35 45	1677.06	-10.74	1.37	218.35	118.03	23 3 43	677.1	1.50	340.71
110.00	23 17 26	1546.44	-15.10	348.94	215.81	121.00	23 43 12	546.4	-1.49	328.95

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4146	TRA	-.9312	TC3	.0140	BAU	.0368	SGT	988.2	SGR	584.7	SG3	99.7	ST	23.5	SR	26.8	SS	12.2
RDE	-.5762	RRA	.2335	RC3	.0698	FAU	.03281	RRT	-.0063	RRF	.0072	RTF	-.6124	CRT	.7323	CRS	.4432	CST	.9304
FDE	.1505	FRA	.7061	FC3	-.7353	BSP	1376	SGB	1148.2	R23	-.0013	R13	.6124	LSA	34.4	MSA	15.4	SSA	1.1
BDE	.7099	BRA	.9601	BC3	.0712	FSP	119	SG1	988.2	SG2	584.7	THA	179.67	EL1	33.2	EL2	12.9	ALF	50.08

LAUNCH DATE MAY 13 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 285.212 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	35.249	GAL	-1.55	AZL	91.85	HCA	90.90	SMA	258.41	ECC	.41581	INC	1.8472	V1	29.478
RP	207.13	LAP	-1.85	LOP	322.50	VP	27.711	GAP	21.89	AZP	89.97	TAL	354.71	TAP	85.60	RCA	150.98	APO	365.86	V2	26.443
RC	56.701	GL	-10.90	GP	-.17	ZAL	102.91	ZAP	176.17	ETS	182.56	ZAE	173.86	ETE	50.62	ZAC	99.77	ETC	277.89	LVI	-18.03

PLANETOCENTRIC CONIC

C3	36.068	VHL	6.006	DLA	-19.88	RAL	340.82	RAD	6649.3	VEL	12.488	PTH	7.38	VHP	10.866	DPA	-17.15	RAP	321.76	ECC	1.5936

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 16	2876.78	-25.51	83.89	205.98	131.63	16 45 13	1876.8	-7.87	66.55
60.00	17 0 33	2708.48	-19.70	73.78	211.03	125.90	17 45 42	1708.5	-4.14	54.96
70.00	18 20 36	2473.14	-14.17	58.54	214.88	121.41	19 1 49	1473.1	-.47	38.65
80.00	19 56 10	2174.05	-9.82	38.38	217.43	118.34	20 32 24	1174.1	2.47	17.78
90.00	21 30 19	1870.34	-8.08	16.98	218.36	117.19	22 1 30	870.3	3.66	356.11
100.00	22 39 2	1648.52	-9.82	359.75	217.43	118.34	23 6 31	648.5	2.47	339.15
110.00	23 20 3	1519.96	-14.17	347.46	214.88	121.41	23 45 23	520.0	-.47	327.57

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4090	TRA	-.9213	TC3	.0268	BAU	.0384	SGT	1013.3	SGR	587.8	SG3	107.0	ST	24.0	SR	26.9	SS	12.6
RDE	-.5592	RRA	.2265	RC3	.0750	FAU	.03394	RRT	-.0062	RRF	.0072	RTF	-.6247	CRT	.7306	CRS	.4319	CST	.9268
FDE	.1524	FRA	.7334	FC3	-.8147	BSP	1429	SGB	1171.5	R23	-.0014	R13	.6247	LSA	34.8	MSA	15.7	SSA	1.1
BDE	.6928	BRA	.9487	BC3	.0796	FSP	129	SG1	1013.3	SG2	587.8	THA	179.69	EL1	33.6	EL2	13.1	ALF	49.40

LAUNCH DATE MAY 13 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 287.268 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	35.054	GAL	-1.48	AZL	91.85	HCA	92.16	SMA	251.70	ECC	.40018	INC	1.8456	V1	29.478
RP	207.05	LAP	-1.84	LOP	323.76	VP	27.472	GAP	21.38	AZP	89.93	TAL	354.83	TAP	86.99	RCA	150.97	APO	352.42	V2	26.453
RC	57.030	GL	-11.21	GP	-.18	ZAL	102.82	ZAP	175.27	ETS	182.14	ZAE	173.34	ETE	44.84	ZAC	99.72	ETC	277.96	LVI	-18.13

PLANETOCENTRIC CONIC

C3	33.729	VHL	5.808	DLA	-20.19	RAL	340.87	RAD	6648.4	VEL	12.395	PTH	7.31	VHP	10.511	DPA	-17.05	RAP	322.12	ECC	1.5551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 49	2853.33	-24.45	82.68	205.06	132.18	16 46 23	1853.3	-6.70	65.55
60.00	17 2 35	2683.78	-18.71	72.45	210.10	126.37	17 47 19	1683.8	-3.05	53.77
70.00	18 23 15	2446.63	-13.22	57.07	213.96	121.78	19 4 2	1446.6	.54	37.27
80.00	19 59 31	2145.32	-8.89	36.76	216.53	118.62	20 35 17	1145.3	3.44	16.20
90.00	21 34 3	1840.38	-7.14	15.28	217.46	117.44	22 4 44	840.4	4.62	354.43
100.00	22 42 23	1619.79	-8.89	358.13	216.53	118.62	23 9 23	619.8	3.44	337.57
110.00	23 22 41	1493.45	-13.22	345.99	213.96	121.78	23 47 35	493.4	.54	326.19

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4033	TRA	-.9115	TC3	.0405	BAU	.0406	SGT	1038.5	SGR	590.4	SG3	114.6	ST	24.5	SR	27.0	SS	13.0
RDE	-.5426	RRA	.2196	RC3	.0804	FAU	.03508	RRT	-.0061	RRF	.0078	RTF	-.6272	CRT	.7288	CRS	.4192	CST	.9227
FDE	.1540	FRA	.7627	FC3	-.9003	BSP	1493	SGB	1194.6	R23	-.0020	R13	.6372	LSA	35.2	MSA	16.1	SSA	1.1
BDE	.6761	BRA	.9376	BC3	.0900	FSP	141	SG1	1038.5	SG2	590.4	THA	179.70	EL1	33.9	EL2	13.4	ALF	48.72

LAUNCH DATE MAY 13 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC DISTANCE 289.547 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	34.871	GAL	-1.40	AZL	91.84	HCA	93.43	SMA	245.72	ECC	.38552	INC	1.8440	V1	29.478
RP	206.97	LAP	-1.84	LOP	325.03	VP	27.246	GAP	20.87	AZP	89.89	TAL	354.98	TAP	88.40	RCA	150.99	APO	340.45	V2	26.462
RC	57.440	GL	-11.51	GP	-.18	ZAL	102.71	ZAP	174.35	ETS	181.86	ZAE	172.80	ETE	40.06	ZAC	99.66	ETC	278.03	LVI	-18.22

PLANETOCENTRIC CONIC

C3	31.594	VHL	5.621	DLA	-20.51	RAL	340.90	RAD	6647.6	VEL	12.309	PTH	7.24	VHP	10.169	DPA	-16.94	RAP	322.47	ECC	1.5199

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 0 21	2830.06	-23.38	81.49	204.16	132.70	16 47 31	1830.1	-5.54	64.56
60.00	17 4 36	2659.19	-17.71	71.13	209.19	126.81	17 48 55	1659.2	-1.97	52.60
70.00	18 25 55	2420.12	-12.26	55.61	213.06	122.13	19 6 16	1420.1	1.55	35.88
80.00	20 2 57	2116.43	-7.94	35.14	215.64	118.88	20 38 14	1116.4	4.41	14.60
90.00	21 37 54	1810.16	-6.19	13.57	216.59	117.65	22 8 5	810.2	5.58	352.73
100.00	22 45 49	1590.90	-7.94	356.51	215.64	118.88	23 12 20	590.9	4.41	335.97
110.00	23 25 22	1466.94	-12.26	344.53	213.06	122.13	23 49 49	466.9	1.55	324.80

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3965	TRA	-.9020	TC3	.0563	BAU	.0434	SGT	1063.5	SGR	592.6	SG3	122.9	ST	25.0	SR	27.1	SS	13.4
RDE	-.5266	RRA	.2129	RC3	.0860	FAU	.03635	RRT	-.0070	RRF	.0076	RTF	-.6491	CRT	.7259	CRS	.4075	CST	.9195
FDE	.1558	FRA	.7925	FC3	-.9960	BSP	1538	SGB	1217.5	R23	-.0010	R13	.6491	LSA	35.6	MSA	16.4	SSA	1.2
BDE	.6592	BRA	.9268	BC3	.1028	FSP	154	SG1	1063.5	SG2	592.6	THA	179.67	EL1	34.2	EL2	13.6	ALF	48.12

LAUNCH DATE MAY 13 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 25 1971

HELIOCENTRIC CONIC DISTANCE 292.021 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	34.698	GAL	-1.32	AZL	91.84	HCA	94.69	SMA	240.37	ECC	.37179	INC	1.8423	V1	29.478
RP	206.90	LAP	-1.84	LOP	326.30	VP	27.032	GAP	20.37	AZP	89.85	TAL	355.13	TAP	89.82	RCA	151.00	APO	329.73	V2	26.469
RC	57.930	GL	-11.82	GP	-.19	ZAL	102.57	ZAP	173.43	ETS	181.65	ZAE	172.27	ETE	36.10	ZAC	99.61	ETC	278.10	LVI	-18.30

PLANETOCENTRIC CONIC

C3	29.642	VHL	5.444	DLA	-20.85	RAL	340.90	RAD	6646.9	VEL	12.230	PTH	7.18	VHP	9.839	DPA	-16.84	RAP	322.81	ECC	1.4878

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 1 50	2807.01	-22.31	80.34	203.29	133.18	16 48 37	1807.0	-4.39	63.59
60.00	17 6 36	2634.76	-16.71	69.84	208.31	127.22	17 50 31	1634.8	-.90	51.43
70.00	18 28 38	2393.65	-11.30	54.16	212.18	122.45	19 8 31	1393.6	2.56	34.50
80.00	20 6 29	2087.41	-6.99	33.52	214.78	119.10	20 41 16	1087.4	5.38	13.00
90.00	21 41 52	1779.69	-5.22	11.85	215.74	117.83	22 11 32	779.7	6.54	351.01
100.00	22 49 20	1561.88	-6.99	354.89	214.78	119.10	23 15 22	561.9	5.38	334.37
110.00	23 28 4	1440.47	-11.30	343.08	212.18	122.45	23 52 4	440.5	2.56	323.42

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3846	TRA	-.8896	TC3	.0802	BAU	.0483	SGT	1084.0	SGR	594.4	SG3	131.7	ST	25.2	SR	27.1	SS	13.8
RDE	-.5111	RRA	.2064	RC3	.0917	FAU	.03771	RRT	-.0100	RRF	.0084	RTF	-.6654	CRT	.7196	CRS	.3908	CST	.9160
FDE	.1557	FRA	.8231	FC3	-1.1014	BSP	1617	SGB	1236.3	R23	.0011	R13	.6654	LSA	35.7	MSA	16.8	SSA	1.2
BDE	.6397	BRA	.9132	BC3	.1218	FSP	168	SG1	1084.0	SG2	594.4	THA	179.55	EL1	34.4	EL2	13.8	ALF	47.91

LAUNCH DATE MAY 13 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 27 1971

HELIOCENTRIC CONIC DISTANCE 294.665 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	34.535	GAL	-1.24	AZL	91.84	HCA	95.96	SMA	235.56	ECC	.35891	INC	1.8407	V1	29.478
RP	206.85	LAP	-1.83	LOP	327.56	VP	26.830	GAP	19.88	AZP	89.81	TAL	355.30	TAP	91.26	RCA	151.02	APO	320.11	V2	26.476
RC	58.496	GL	-12.13	GP	-.19	ZAL	102.41	ZAP	172.49	ETS	181.50	ZAE	171.75	ETE	32.80	ZAC	99.56	ETC	278.17	LVI	-18.38

PLANETOCENTRIC CONIC

C3	27.858	VHL	5.278	DLA	-21.19	RAL	340.88	RAD	6646.2	VEL	12.158	PTH	7.12	VHP	9.521	DPA	-16.74	RAP	323.13	ECC	1.4585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 3 18	2784.22	-21.24	79.23	202.44	133.63	16 49 42	1784.2	-3.24	62.64
60.00	17 8 36	2610.52	-15.70	68.58	207.44	127.61	17 52 7	1610.5	.17	50.27
70.00	18 31 21	2367.26	-10.33	52.73	211.32	122.74	19 10 49	1367.3	3.57	33.12
80.00	20 10 5	2058.29	-6.02	31.90	213.94	119.30	20 44 23	1058.3	6.35	11.38
90.00	21 45 58	1749.00	-4.25	10.12	214.92	117.98	22 15 7	749.0	7.51	349.27
100.00	22 52 57	1532.76	-6.02	353.27	213.94	119.30	23 18 29	532.8	6.35	332.75
110.00	23 30 48	1414.08	-10.33	341.65	211.32	122.74	23 54 22	414.1	3.57	322.04

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3834	TRA	-.8817	TC3	.0914	BAU	.0498	SGT	1111.9	SGR	595.8	SG3	141.0	ST	25.9	SR	27.2	SS	14.2
RDE	-.4962	RRA	.2001	RC3	.0976	FAU	.03909	RRT	-.0076	RRF	.0083	RTF	-.6704	CRT	.7207	CRS	.3781	CST	.9100
FDE	.1570	FRA	.8552	FC3	-1.2148	BSP	1641	SGB	1261.4	R23	-.0011	R13	.6704	LSA	36.3	MSA	17.1	SSA	1.2
BDE	.6270	BRA	.9041	BC3	.1337	FSP	182	SG1	1111.9	SG2	595.8	THA	179.67	EL1	34.8	EL2	14.0	ALF	46.90

LAUNCH DATE MAY 13 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 29 1971

HELIOCENTRIC CONIC DISTANCE 297.459 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	34.382	GAL	-1.16	AZL	91.84	HCA	97.23	SMA	231.22	ECC	.34683	INC	1.8390	V1	29.478
RP	206.80	LAP	-1.82	LOP	326.83	VP	26.638	GAP	19.40	AZP	89.77	TAL	355.48	TAP	92.71	RCA	151.03	APO	311.42	V2	26.482
RC	59.137	GL	-12.44	GP	-.20	ZAL	102.23	ZAP	171.54	ETS	181.38	ZAE	171.26	ETE	30.02	ZAC	99.51	ETC	278.23	LVI	-18.46

PLANETOCENTRIC CONIC

C3	26.225	VHL	5.121	DLA	-21.54	RAL	340.84	RAD	6645.5	VEL	12.091	PTH	7.07	VHP	9.214	DPA	-16.65	RAP	323.48	ECC	1.4316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 4 43	2761.72	-20.18	78.14	201.82	134.05	16 50 45	1761.7	-2.11	61.70
60.00	17 10 36	2586.51	-14.70	67.34	206.80	127.96	17 53 42	1586.8	1.23	49.13
70.00	18 34 7	2340.99	-9.36	51.32	210.49	123.00	19 13 8	1341.0	4.57	31.74
80.00	20 13 46	2029.10	-5.04	30.28	213.13	119.47	20 47 35	1029.1	7.32	9.76
90.00	21 50 11	1718.11	-3.26	8.39	214.11	118.11	22 18 49	718.1	8.47	347.81
100.00	22 56 38	1503.57	-5.04	351.65	213.13	119.47	23 21 42	503.6	7.32	331.13
110.00	23 33 33	1387.81	-9.36	340.24	210.49	123.00	23 56 41	387.8	4.57	320.66

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3772	TRA	-.8710	TC3	.1131	BAU	.0538	SGT	1139.4	SGR	596.8	SG3	151.1	ST	26.3	SR	27.2	SS	14.6
RDE	-.4817	RRA	.1940	RC3	.1036	FAU	.04060	RRT	-.0070	RRF	.0090	RTF	-.6618	CRT	.7184	CRS	.3610	CST	.9038
FDE	.1567	FRA	.8888	FC3	-1.3401	BSP	1700	SGB	1282.7	R23	-.0024	R13	.6618	LSA	36.6	MSA	17.5	SSA	1.2
BDE	.6118	BRA	.8923	BC3	.1534	FSP	198	SG1	1139.4	SG2	596.8	THA	179.71	EL1	35.1	EL2	14.2	ALF	46.29

LAUNCH DATE MAY 13 1971 FLIGHT TIME 110.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 300.384 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	34.237	GAL	-1.09	AZL	91.84	HCA	98.49	SMA	227.30	ECC	.33549	INC	1.8374	V1	29.478
RP	206.78	LAP	-1.82	LOP	330.10	VP	26.456	GAP	18.93	AZP	89.73	TAL	355.67	TAP	94.17	RCA	151.04	APO	303.55	V2	26.487
RC	59.850	GL	-12.75	GP	-.21	ZAL	102.02	ZAP	170.57	ETS	181.29	ZAE	170.81	ETE	27.68	ZAC	99.46	ETC	278.29	LVI	-18.53

PLANETOCENTRIC CONIC

C3	24.729	VHL	4.973	DLA	-21.90	RAL	340.78	RAD	6644.9	VEL	12.029	PTH	7.02	VHP	8.918	DPA	-16.55	RAP	323.74	ECC	1.4070

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 6	2739.50	-19.13	77.08	200.81	134.44	16 51 46	1739.5	-1.00	60.77
60.00	17 12 35	2562.72	-13.70	66.13	205.79	128.28	17 55 18	1562.7	2.27	47.99
70.00	18 36 55	2314.81	-8.39	49.92	209.68	123.23	19 15 29	1314.8	5.56	30.37
80.00	20 17 34	1999.79	-4.06	28.66	212.34	119.61	20 50 54	999.8	8.29	8.12
90.00	21 54 33	1686.94	-2.26	6.65	213.34	118.20	22 22 40	686.9	9.43	345.72
100.00	23 0 26	1474.26	-4.06	350.03	212.34	119.61	23 25 0	474.3	8.29	329.49
110.00	23 36 21	1361.63	-8.39	338.84	209.68	123.23	23 59 3	361.6	5.56	319.28

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3588	TRA	-.8495	TC3	.1528	BAU	.0622	SGT	1143.2	SGR	597.3	SG3	161.7	ST	26.0	SR	27.2	SS	15.1
RDE	-.4677	RRA	.1880	RC3	.1097	FAU	.04208	RRT	-.0103	RRF	.0092	RTF	-.7066	CRT	.7091	CRS	.3486	CST	.9041
FDE	.1587	FRA	.9267	FC3	-1.4731	BSP	1599	SGB	1289.9	R23	.0007	R13	.7066	LSA	36.4	MSA	17.9	SSA	1.2
BDE	.5895	BRA	.8701	BC3	.1881	FSP	217	SG1	1143.3	SG2	597.3	THA	179.58	EL1	34.8	EL2	14.3	ALF	46.72

LAUNCH DATE MAY 13 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 303.428 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	34.101	GAL	-1.01	AZL	91.84	HCA	99.76	SMA	223.74	ECC	.32486	INC	1.8357	V1	29.478
RP	206.72	LAP	-1.81	LOP	331.37	VP	26.284	GAP	18.47	AZP	89.69	TAL	355.87	TAP	95.64	RCA	151.05	APO	296.42	V2	26.491
RC	60.633	GL	-13.06	GP	-.21	ZAL	101.80	ZAP	169.58	ETS	181.22	ZAE	170.41	ETE	25.67	ZAC	99.41	ETC	278.35	LVI	-18.60

PLANETOCENTRIC CONIC

C3	23.360	VHL	4.833	DLA	-22.27	RAL	340.70	RAD	6644.3	VEL	11.973	PTH	6.97	VHP	8.632	DPA	-16.47	RAP	324.03	ECC	1.3844

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 28	2717.70	-18.08	76.06	200.04	134.79	16 52 46	1717.7	.10	59.86
60.00	17 14 33	2539.30	-12.71	64.94	205.00	128.57	17 56 53	1539.3	3.30	46.87
70.00	18 39 44	2288.91	-7.42	48.54	208.90	123.43	19 17 53	1288.9	6.54	29.00
80.00	20 21 27	1970.57	-3.08	27.05	211.58	119.71	20 54 17	970.6	9.24	6.47
90.00	21 59 4	1655.70	-1.25	4.91	212.59	118.25	22 26 39	655.7	10.38	343.92
100.00	23 4 18	1445.04	-3.08	348.42	211.58	119.71	23 28 23	445.0	9.24	327.84
110.00	23 39 10	1335.72	-7.42	337.46	208.90	123.43	24 1 26	335.7	6.54	317.92

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3562	TRA	-.8443	TC3	.1690	BAU	.0640	SGT	1172.4	SGR	597.5	SG3	173.2	ST	26.6	SR	27.1	SS	15.5
RDE	-.4542	RRA	.1823	RC3	.1159	FAU	.04385	RRT	-.0099	RRF	.0097	RTF	-.7094	CRT	.7077	CRS	.3291	CST	.8959
FDE	.1569	FRA	.9617	FC3	-1.6251	BSP	1718	SGB	1315.9	R23	-.0002	R13	.7094	LSA	36.8	NSA	18.2	SSA	1.2
BDE	.5772	BRA	.8637	BC3	.2050	FSP	235	SG1	1172.5	SG2	597.4	THA	179.61	EL1	35.1	EL2	14.5	ALF	45.79

LAUNCH DATE MAY 13 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 306.576 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	33.973	GAL	-.84	AZL	91.83	HCA	101.03	SMA	220.50	ECC	.31488	INC	1.8340	V1	29.478
RP	206.70	LAP	-1.80	LOP	332.64	VP	26.120	GAP	18.01	AZP	89.65	TAL	356.09	TAP	97.12	RCA	151.07	APO	289.93	V2	26.494
RC	61.483	GL	-13.37	GP	-.22	ZAL	101.56	ZAP	168.59	ETS	181.16	ZAE	170.06	ETE	23.94	ZAC	99.36	ETC	278.40	LVI	-18.66

PLANETOCENTRIC CONIC

C3	22.105	VHL	4.702	DLA	-22.64	RAL	340.61	RAD	6643.8	VEL	11.929	PTH	6.93	VHP	8.357	DPA	-16.39	RAP	324.30	ECC	1.3638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 8 48	2696.29	-17.05	75.06	199.29	135.12	16 53 44	1696.3	1.17	58.96
60.00	17 16 31	2516.21	-11.73	63.78	204.23	128.84	17 58 27	1516.2	4.32	45.76
70.00	18 42 34	2263.22	-6.46	47.18	208.14	123.61	19 20 18	1263.2	7.50	27.64
80.00	20 25 25	1941.34	-2.09	25.44	210.85	119.79	20 57 46	941.3	10.18	4.82
90.00	22 3 43	1624.28	-.24	3.15	211.87	118.28	22 30 47	624.3	11.33	342.10
100.00	23 8 17	1415.82	-2.09	346.81	210.85	119.79	23 31 53	415.8	10.18	326.19
110.00	23 42 1	1310.04	-6.46	336.09	208.14	123.61	24 3 51	310.0	7.50	316.55

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3521	TRA	-.8358	TC3	.1884	BAU	.0664	SGT	1197.2	SGR	597.2	SG3	185.5	ST	27.1	SR	27.1	SS	15.9
RDE	-.4411	RRA	.1767	RC3	.1221	FAU	.04573	RRT	-.0091	RRF	.0104	RTF	-.7135	CRT	.7062	CRS	.3076	CST	.8867
FDE	.1542	FRA	.9984	FC3	-1.7908	BSP	1802	SGB	1337.9	R23	-.0017	R13	.7135	LSA	37.1	NSA	18.6	SSA	1.3
BDE	.5644	BRA	.8542	BC3	.2245	FSP	254	SG1	1197.2	SG2	597.2	THA	179.65	EL1	35.4	EL2	14.7	ALF	45.01

LAUNCH DATE MAY 13 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 309.818 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	33.853	GAL	-.86	AZL	91.83	HCA	102.30	SMA	217.84	ECC	.30552	INC	1.8324	V1	29.478
RP	206.68	LAP	-1.79	LOP	333.91	VP	25.985	GAP	17.57	AZP	89.61	TAL	356.30	TAP	98.68	RCA	151.08	APO	284.00	V2	26.496
RC	62.398	GL	-13.68	GP	-.23	ZAL	101.30	ZAP	167.57	ETS	181.11	ZAE	168.76	ETE	22.45	ZAC	99.32	ETC	278.45	LVI	-18.72

PLANETOCENTRIC CONIC

C3	20.954	VHL	4.578	DLA	-23.02	RAL	340.49	RAD	6643.3	VEL	11.872	PTH	6.89	VHP	8.090	DPA	-16.31	RAP	324.55	ECC	1.3448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 10 6	2675.29	-16.04	74.10	198.57	135.42	16 54 41	1675.3	2.23	58.09
60.00	17 18 28	2493.48	-10.76	62.65	203.50	129.08	18 0 2	1493.5	5.31	44.67
70.00	18 45 27	2237.78	-5.49	45.83	207.41	123.76	19 22 44	1237.8	8.45	26.28
80.00	20 29 30	1912.13	-1.19	23.84	210.14	119.84	21 1 22	912.1	11.12	3.16
90.00	22 8 33	1592.66	.78	1.39	211.19	118.27	22 35 5	592.7	12.27	340.25
100.00	23 12 22	1386.60	-1.10	345.21	210.14	119.84	23 35 28	386.6	11.12	324.52
110.00	23 44 53	1284.60	-5.49	334.75	207.41	123.76	24 6 18	284.6	8.45	315.20

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3466	TRA	-.8272	TC3	.2119	BAU	.0694	SGT	1221.3	SGR	596.5	SG3	198.6	ST	27.5	SR	27.0	SS	16.3
RDE	-.4286	RRA	.1714	RC3	.1283	FAU	.04770	RRT	-.0091	RRF	.0109	RTF	-.7199	CRT	.7033	CRS	.2877	CST	.8790
FDE	.1522	FRA	1.0384	FC3	-1.9706	BSP	1871	SGB	1359.2	R23	-.0023	R13	.7199	LSA	37.3	NSA	19.0	SSA	1.3
BDE	.5512	BRA	.8448	BC3	.2477	FSP	273	SG1	1221.3	SG2	596.5	THA	179.66	EL1	35.6	EL2	14.8	ALF	44.35

LAUNCH DATE MAY 13 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 8 1971

HELIOCENTRIC CONIC DISTANCE 313.145 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	33.739	GAL	-.79	AZL	91.83	HCA	103.57	SMA	214.84	ECC	.29674	INC	1.8307	V1	29.478
RP	206.67	LAP	-1.78	LOP	335.18	VP	25.818	GAP	17.13	AZP	89.57	TAL	356.53	TAP	100.10	RCA	151.09	APO	278.59	V2	26.496
RC	63.376	GL	-13.98	GP	-.24	ZAL	101.03	ZAP	166.53	ETS	181.07	ZAE	169.53	ETE	21.14	ZAC	99.28	ETC	278.50	LVI	-18.77

PLANETOCENTRIC CONIC

C3	19.897	VHL	4.461	DLA	-23.40	RAL	340.37	RAD	6642.8	VEL	11.828	PTH	6.85	VHP	7.833	DPA	-16.25	RAP	324.78	ECC	1.3275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 11 22	2654.73	-16.04	73.17	197.87	135.69	16 55 37	1654.7	3.26	57.23
60.00	17 20 24	2471.14	-9.79	61.55	202.78	129.29	18 1 36	1471.1	6.29	43.59
70.00	18 48 20	2212.62	-4.54	44.51	206.71	123.89	19 25 13	1212.6	9.39	24.93
80.00	20 33 41	1882.96	-.11	22.24	209.47	119.86	21 5 4	883.0	12.04	1.48
90.00	22 13 33	1560.85	1.81	359.61	210.53	118.23	22 39 34	560.8	13.20	338.38
100.00	23 16 33	1357.43	-.11	343.61	209.47	119.86	23 39 10	357.4	12.04	322.85
110.00	23 47 47	1259.44	-4.54	333.43	206.71	123.89	24 8 46	259.4	9.39	313.85

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3400	TRA	-.8172	TC3	.2363	BAU	.0723	SGT	1242.3	SGR	595.5	SG3	212.5	ST	27.8	SR	27.0	SS	16.8
RDE	-.4164	RRA	.1662	RC3	.1345	FAU	.04977	RRT	-.0096	RRF	.0120	RTF	-.7259	CRT	.6998	CRS	.2645	CST	.8698
FDE	.1485	FRA	1.0792	FC3	-2.1653	BSP	1920	SGB	1377.6	R23	-.0029	R13	.7259	LSA	37.5	NSA	19.4	SSA	1.3
BDE	.5376	BRA	.8339	BC3	.2719	FSP	296	SG1	1242.3	SG2	595.4	THA	179.66	EL1	35.7	EL2	15.0	ALF	43.81

LAUNCH DATE MAY 13 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 10 1971

HELIOCENTRIC CONIC DISTANCE 316.547 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	33.632	GAL	-.72	AZL	91.83	HCA	104.84	SMA	212.36	ECC	.28850	INC	1.8290
RP	206.68	LAP	-1.77	LOP	336.45	VP	25.677	GAP	16.70	AZP	89.53	TAL	356.76	TAP	101.60	RCA	151.10	APO	273.63
RC	64.414	GL	-14.28	GP	-.25	ZAL	100.75	ZAP	165.48	ETS	181.03	ZAE	169.36	ETE	20.00	ZAC	99.24	ETC	278.54

V1	29.478																		
V2	26.496																		
LVI	-18.82																		

PLANETOCENTRIC CONIC

C3	18.927	VHL	4.351	DLA	-23.78	RAL	340.23	RAD	6642.4	VEL	11.788	PTH	6.81	VHP	7.585	DPA	-16.18	RAP	324.99
ECC	1.3115																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 37	2634.65	-14.06	72.27	197.20	135.94	16 56 32	1634.6	4.27	56.38
60.00	17 22 20	2449.23	-8.85	60.47	202.10	129.48	18 3 9	1449.2	7.24	42.53
70.00	18 51 16	2187.79	-3.60	43.21	206.04	123.99	19 27 43	1187.8	10.31	23.60
80.00	20 37 58	1853.84	.88	20.64	208.82	119.85	21 8 52	853.8	12.95	359.80
90.00	22 18 44	1528.83	2.84	357.83	209.91	118.15	22 44 13	528.8	14.12	336.48
100.00	23 20 50	1328.31	.88	342.01	208.82	119.85	23 42 58	328.3	12.95	321.17
110.00	23 50 42	1234.61	-3.60	332.13	206.04	123.99	24 11 17	234.6	10.31	312.52

DIFFERENTIAL CORRECTIONS

TDE	-.3335	TRA	-.8066	TC3	.2620	BAU	.0752												
RDE	-.4047	RRA	.1612	RC3	.1405	FAU	.05197												
FDE	.1455	FRA	1.1218	FC3	-2.3770	BSP	1961												
BDE	.5244	BRA	.8225	BC3	.2973	FSP	319												

MID-COURSE EXECUTION ACCURACY

SGT	1261.8	SGR	594.0	SG3	227.3						
RRT	-.0097	RRF	.0124	RTF	-.7319						
SGB	1394.6	R23	-.0033	R13	.7319						
SG1	1261.8	SG2	594.0	THA	179.66						

ORBIT DETERMINATION ACCURACY

ST	28.0	SR	26.9	SS	17.2						
CRT	.6966	CRS	.2436	CST	.8613						
LSA	37.6	MSA	19.7	SSA	1.3						
EL1	35.8	EL2	15.1	ALF	43.28						

LAUNCH DATE MAY 13 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 12 1971

HELIOCENTRIC CONIC DISTANCE 320.017 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	33.532	GAL	-.66	AZL	91.83	HCA	106.11	SMA	210.09	ECC	.28076	INC	1.8272
RP	206.69	LAP	-1.76	LOP	337.72	VP	25.544	GAP	16.28	AZP	89.49	TAL	357.00	TAP	103.11	RCA	151.10	APO	269.07
RC	65.512	GL	-14.58	GP	-.25	ZAL	100.46	ZAP	164.40	ETS	181.00	ZAE	169.26	ETE	19.00	ZAC	99.20	ETC	278.58

V1	29.478																		
V2	26.495																		
LVI	-18.86																		

PLANETOCENTRIC CONIC

C3	18.037	VHL	4.247	DLA	-24.16	RAL	340.07	RAD	6641.9	VEL	11.750	PTH	6.78	VHP	7.346	DPA	-16.13	RAP	325.19
ECC	1.2968																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 50	2615.06	-13.10	71.40	196.55	136.16	16 57 25	1615.1	5.25	55.56
60.00	17 24 15	2427.79	-7.92	59.42	201.44	129.65	18 4 42	1427.8	8.18	41.48
70.00	18 54 12	2163.31	-2.66	41.93	205.39	124.06	19 30 16	1163.3	11.20	22.27
80.00	20 42 22	1824.79	1.86	19.05	208.21	119.81	21 12 47	824.8	13.85	358.11
90.00	22 24 8	1496.58	3.87	356.02	209.32	118.04	22 49 4	496.6	15.03	334.55
100.00	23 25 14	1299.26	1.86	340.41	208.21	119.81	23 46 53	299.3	13.85	319.48
110.00	23 53 39	1210.13	-2.66	330.85	205.39	124.06	24 13 49	210.1	11.20	311.19

DIFFERENTIAL CORRECTIONS

TDE	-.3257	TRA	-.7955	TC3	.2888	BAU	.0781												
RDE	-.3934	RRA	.1564	RC3	.1465	FAU	.05426												
FDE	.1408	FRA	1.1678	FC3	-2.6044	BSP	2007												
BDE	.5108	BRA	.8107	BC3	.3238	FSP	344												

MID-COURSE EXECUTION ACCURACY

SGT	1279.4	SGR	592.2	SG3	243.0						
RRT	-.0108	RRF	.0139	RTF	-.7384						
SGB	1409.8	R23	-.0037	R13	.7384						
SG1	1279.4	SG2	592.1	THA	179.64						

ORBIT DETERMINATION ACCURACY

ST	28.2	SR	26.8	SS	17.6						
CRT	.6921	CRS	.2189	CST	.8516						
LSA	37.6	MSA	20.1	SSA	1.4						
EL1	35.8	EL2	15.2	ALF	42.87						

LAUNCH DATE MAY 13 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 14 1971

HELIOCENTRIC CONIC DISTANCE 323.551 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	33.437	GAL	-.59	AZL	91.83	HCA	107.38	SMA	208.00	ECC	.27351	INC	1.8254
RP	206.71	LAP	-1.74	LOP	338.99	VP	25.418	GAP	15.87	AZP	89.45	TAL	357.24	TAP	104.61	RCA	151.11	APO	264.89
RC	66.667	GL	-14.87	GP	-.26	ZAL	100.17	ZAP	163.30	ETS	180.97	ZAE	169.23	ETE	18.13	ZAC	99.16	ETC	278.61

V1	29.478																		
V2	26.493																		
LVI	-18.89																		

PLANETOCENTRIC CONIC

C3	17.218	VHL	4.149	DLA	-24.54	RAL	339.91	RAD	6641.8	VEL	11.715	PTH	6.75	VHP	7.114	DPA	-16.08	RAP	325.36
ECC	1.2834																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 1	2595.99	-12.16	70.56	195.93	136.36	16 58 17	1596.0	6.20	54.75
60.00	17 26 8	2406.83	-7.01	58.40	200.81	129.79	18 6 15	1406.8	9.08	40.46
70.00	18 57 10	2139.22	-1.75	40.67	204.77	124.11	19 32 49	1139.2	12.08	20.96
80.00	20 46 53	1795.83	2.84	17.45	207.63	119.73	21 16 49	795.8	14.73	356.41
90.00	22 29 45	1464.07	4.91	354.20	208.77	117.89	22 54 9	464.1	15.93	332.59
100.00	23 29 45	1270.31	2.84	338.82	207.63	119.73	23 50 55	270.3	14.73	317.78
110.00	0 0 32	1186.04	-1.75	329.59	204.77	124.11	0 20 18	186.0	12.08	309.87

DIFFERENTIAL CORRECTIONS

TDE	-.3195	TRA	-.7850	TC3	.3191	BAU	.0814												
RDE	-.3825	RRA	.1517	RC3	.1523	FAU	.05687												
FDE	.1371	FRA	1.2163	FC3	-2.8595	BSP	2051												
BDE	.4984	BRA	.7995	BC3	.3536	FSP	372												

MID-COURSE EXECUTION ACCURACY

SGT	1297.9	SGR	589.9	SG3	260.3						
RRT	-.0104	RRF	.0142	RTF	-.7447						
SGB	1425.6	R23	-.0045	R13	.7447						
SG1	1297.9	SG2	589.9	THA	179.66						

ORBIT DETERMINATION ACCURACY

ST	28.4	SR	26.6	SS	18.1						
CRT	.6887	CRS	.1973	CST	.8424						
LSA	37.7	MSA	20.5	SSA	1.4						
EL1	35.8	EL2	15.3	ALF	42.35						

LAUNCH DATE MAY 13 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 327.140 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	33.348	GAL	-.53	AZL	91.82	HCA	108.65	SMA	206.08	ECC	.26670	INC	1.8237
RP	206.73	LAP	-1.73	LOP	340.26	VP	25.297	GAP	15.47	AZP	89.42	TAL	357.48	TAP	106.12	RCA	151.12	APO	261.04
RC	67.877	GL	-15.16	GP	-.27	ZAL	99.87	ZAP	162.18	ETS	180.95	ZAE	169.27	ETE	17.36	ZAC	99.13	ETC	278.64

V1	29.478																		
V2	26.489																		
LVI	-18.92																		

PLANETOCENTRIC CONIC

C3	16.466	VHL	4.058	DLA	-24.91	RAL	339.74	RAD	6641.2	VEL	11.684	PTH	6.72	VHP	6.891	DPA	-16.04	RAP	325.51
ECC	1.2710																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 10	2577.47	-11.25	69.75	195.33	136.54	16 59 8	1577.5	7.13	53.97
60.00	17 28 1	2386.38	-6.11	57.41	200.20	129.91	18 7 47	1386.4	9.97	39.45
70.00	19 0 8	2115.54	-.84	39.43	204.19	124.14	19 35 24	1115.5	12.94	19.66
80.00	20 51 31	1766.98	3.81	15.87	207.08	119.64	21 20 58	767.0	15.59	354.70
90.00	22 35 36	1431.24	5.95	352.35	208.25	117.70	22 59 28	431.2	16.82	330.59
100.00	23 34 22	1241.45	3.81	337.23	207.08	119.64	23 55 4	241.4	15.59	316.07
110.00	0 3 30	1162.36	-.84	328.35	204.19	124.14	0 22 53	162.4	12.94	308.57

DIFFERENTIAL CORRECTIONS

TDE	-.3121	TRA	-.7732	TC3	.3441	BAU	.0833												
RDE	-.3720	RRA	.1473	RC3	.1579	FAU	.05949												
FDE	.1317	FRA	1.2667	FC3	-3.1276	BSP	2081												
BDE	.4656	BRA	.7871	BC3	.3786	FSP	402												

MID-COURSE EXECUTION ACCURACY

SGT	1312.0	SGR	587.4	SG3	278.2						
RRT	-.0114	RRF	.0155	RTF	-.7492						
SGB	1437.5	R23	-.0048	R13	.7492						
SG1	1312.0	SG2	587.3	THA	179.63						

ORBIT DETERMINATION ACCURACY

ST	28.5	SR	26.5	SS	18.6						
CRT	.6846	CRS	.1729	CST	.8320						
LSA	37.7	MSA	20.9	SSA	1.4						
EL1	35.7	EL2	15.4	ALF	41.96						

LAUNCH DATE MAY 13 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 18 1971

DISTANCE 330.781

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	33.264	GAL	-.47	AZL	91.82	HCA	109.91	SMA	204.31	ECC	.26032	INC	1.8218	V1	29.478
RP	206.77	LAP	-1.71	LOP	341.53	VP	25.182	GAP	15.07	AZP	89.38	TAL	357.72	TAP	107.63	RCA	151.13	APO	257.50	V2	26.485
RC	69.140	GL	-15.44	GP	-.28	ZAL	99.56	ZAP	161.04	ETS	180.93	ZAE	169.38	ETE	16.69	ZAC	99.10	ETC	278.67	LVI	-18.94

PLANETOCENTRIC CONIC

C3	15.774	VHL	3.972	DLA	-25.28	RAL	339.57	RAD	6640.9	VEL	11.654	PTH	6.69	VHP	6.675	DPA	-16.01	RAP	325.63	ECC	1.2596

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 17 18	2559.51	-10.36	68.97	194.76	136.70	16 59 57	1559.5	8.03	53.21
60.00	17 29 52	2366.48	-5.24	56.45	199.63	130.02	18 9 19	1366.5	10.82	38.47
70.00	19 3 7	2092.32	.05	38.22	203.63	124.15	19 38 0	1092.3	13.77	18.37
80.00	20 36 16	1738.22	4.78	14.28	206.56	119.51	21 25 14	738.2	16.43	352.98
90.00	22 41 45	1398.03	7.00	350.47	207.78	117.47	23 5 3	398.0	17.69	328.54
100.00	23 39 7	1212.69	4.78	335.65	206.56	119.51	23 59 20	212.7	16.43	314.35
110.00	0 6 30	1139.14	.05	327.14	203.63	124.15	0 25 29	139.1	13.77	307.29

DIFFERENTIAL CORRECTIONS

TDE	-.3053	TRA	-.7623	TC3	.3736	BAU	.0860
RDE	-.3619	RRA	.1431	RC3	.1633	FAU	.06239
FDE	.1273	FRA	1.3189	FC3	-3.4242	BSP	2131
BDE	.4735	BRA	.7756	BC3	.4078	FSP	437

MID-COURSE EXECUTION ACCURACY

SGT	1327.1	SGR	584.4	SG3	297.5		
RRT	-.0118	RRF	.0157	RTF	-.7543		
SGB	1450.0	R23	-.0046	R13	.7543		
SG1	1327.1	SG2	584.3	THA	179.63		

ORBIT DETERMINATION ACCURACY

ST	28.6	SR	26.3	SS	19.1
CRT	.6806	CRS	.1519	CST	.8232
LSA	37.7	MSA	21.3	SSA	1.4
EL1	35.7	EL2	15.5	ALF	41.53

LAUNCH DATE MAY 13 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 20 1971

DISTANCE 334.470

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	33.185	GAL	-.41	AZL	91.82	HCA	111.18	SMA	202.68	ECC	.25434	INC	1.8199	V1	29.478
RP	206.81	LAP	-1.70	LOP	342.79	VP	25.072	GAP	14.69	AZP	89.34	TAL	357.96	TAP	109.14	RCA	151.13	APO	254.23	V2	26.480
RC	70.455	GL	-15.72	GP	-.29	ZAL	99.26	ZAP	159.87	ETS	180.91	ZAE	169.57	ETE	16.11	ZAC	99.08	ETC	278.68	LVI	-18.96

PLANETOCENTRIC CONIC

C3	15.138	VHL	3.891	DLA	-25.65	RAL	339.39	RAD	6640.6	VEL	11.627	PTH	6.67	VHP	6.467	DPA	-15.99	RAP	325.73	ECC	1.2491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 24	2542.14	-9.50	68.22	194.21	136.84	17 0 46	1542.1	8.89	52.46
60.00	17 31 43	2347.15	-4.40	55.52	199.08	130.10	18 10 50	1347.2	11.65	37.50
70.00	19 6 7	2069.59	.91	37.04	203.09	124.14	19 40 36	1069.6	14.57	17.10
80.00	21 1 8	1709.58	5.74	12.69	206.08	119.35	21 29 38	709.6	17.26	351.26
90.00	22 48 12	1364.32	8.05	348.55	207.34	117.20	23 10 56	364.3	18.56	326.45
100.00	23 44 0	1184.05	5.74	334.06	206.08	119.35	24 3 44	184.1	17.26	312.63
110.00	0 9 29	1116.41	.91	325.95	203.09	124.14	0 28 5	116.4	14.57	306.02

DIFFERENTIAL CORRECTIONS

TDE	-.2971	TRA	-.7513	TC3	.3947	BAU	.0868
RDE	-.3522	RRA	.1390	RC3	.1684	FAU	.06519
FDE	.1170	FRA	1.3768	FC3	-3.7283	BSP	2146
BDE	.4607	BRA	.7640	BC3	.4291	FSP	467

MID-COURSE EXECUTION ACCURACY

SGT	1338.6	SGR	581.1	SG3	317.5		
RRT	-.0149	RRF	.0193	RTF	-.7576		
SGB	1459.3	R23	-.0054	R13	.7576		
SG1	1338.7	SG2	581.0	THA	179.54		

ORBIT DETERMINATION ACCURACY

ST	28.6	SR	26.2	SS	19.6
CRT	.6747	CRS	.1191	CST	.8088
LSA	37.5	MSA	21.8	SSA	1.4
EL1	35.5	EL2	15.6	ALF	41.23

LAUNCH DATE MAY 13 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 22 1971

DISTANCE 338.201

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	33.111	GAL	-.36	AZL	91.82	HCA	112.45	SMA	201.17	ECC	.24873	INC	1.8181	V1	29.478
RP	206.87	LAP	-1.68	LOP	344.06	VP	24.968	GAP	14.31	AZP	89.31	TAL	358.19	TAP	110.64	RCA	151.14	APO	251.21	V2	26.474
RC	71.818	GL	-15.98	GP	-.31	ZAL	98.96	ZAP	158.67	ETS	180.89	ZAE	169.83	ETE	15.63	ZAC	99.06	ETC	278.70	LVI	-18.96

PLANETOCENTRIC CONIC

C3	14.553	VHL	3.815	DLA	-26.01	RAL	339.20	RAD	6640.3	VEL	11.602	PTH	6.64	VHP	6.267	DPA	-15.97	RAP	325.81	ECC	1.2395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 28	2525.37	-8.66	67.50	193.69	136.97	17 1 34	1525.4	9.72	51.74
60.00	17 33 31	2328.42	-3.58	54.62	198.55	130.17	18 12 20	1328.4	12.45	36.57
70.00	19 9 6	2047.38	1.76	35.88	202.59	124.11	19 43 14	1047.4	15.35	15.86
80.00	21 6 8	1681.06	6.69	11.11	205.63	119.17	21 34 10	681.1	18.06	349.52
90.00	22 55 0	1329.98	9.12	346.39	206.94	116.89	23 17 10	330.0	19.41	324.29
100.00	23 49 0	1155.53	6.69	332.48	205.63	119.17	24 8 16	155.5	18.06	310.89
110.00	0 12 29	1094.20	1.76	324.80	202.59	124.11	0 30 43	94.2	15.35	304.77

DIFFERENTIAL CORRECTIONS

TDE	-.2906	TRA	-.7368	TC3	.4187	BAU	.0882
RDE	-.3427	RRA	.1351	RC3	.1731	FAU	.06848
FDE	.1101	FRA	1.4305	FC3	-4.0736	BSP	2173
BDE	.4493	BRA	.7491	BC3	.4531	FSP	506

MID-COURSE EXECUTION ACCURACY

SGT	1344.9	SGR	577.4	SG3	339.1		
RRT	-.0145	RRF	.0195	RTF	-.7595		
SGB	1463.6	R23	-.0060	R13	.7595		
SG1	1344.9	SG2	577.3	THA	179.56		

ORBIT DETERMINATION ACCURACY

ST	28.6	SR	26.0	SS	20.1
CRT	.6724	CRS	.0958	CST	.7867
LSA	37.4	MSA	22.1	SSA	1.5
EL1	35.4	EL2	15.5	ALF	40.91

LAUNCH DATE MAY 13 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 24 1971

DISTANCE 341.972

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	33.042	GAL	-.31	AZL	91.82	HCA	113.72	SMA	199.78	ECC	.24348	INC	1.8162	V1	29.478
RP	206.93	LAP	-1.66	LOP	345.33	VP	24.868	GAP	13.94	AZP	89.27	TAL	358.43	TAP	112.15	RCA	151.14	APO	248.42	V2	26.466
RC	73.228	GL	-16.24	GP	-.32	ZAL	98.66	ZAP	157.45	ETS	180.87	ZAE	170.17	ETE	15.22	ZAC	99.04	ETC	278.71	LVI	-18.96

PLANETOCENTRIC CONIC

C3	14.015	VHL	3.744	DLA	-26.36	RAL	339.02	RAD	6640.1	VEL	11.579	PTH	6.62	VHP	6.073	DPA	-15.97	RAP	325.85	ECC	1.2306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 20 31	2509.23	-7.86	66.81	193.19	137.08	17 2 20	1509.2	10.52	51.04
60.00	17 35 18	2310.31	-2.78	53.76	198.06	130.22	18 13 48	1310.3	13.22	35.65
70.00	19 12 6	2025.72	2.59	34.75	202.12	124.07	19 45 51	1025.7	16.11	14.63
80.00	21 11 17	1652.66	7.62	9.52	205.22	118.96	21 38 49	652.7	18.85	347.78
90.00	23 2 15	1294.81	10.19	344.57	206.58	116.52	23 23 49	294.8	20.25	322.05
100.00	23 54 9	1127.13	7.62	330.89	205.22	118.96	24 12 56	127.1	18.85	309.14
110.00	0 15 28	1072.54	2.59	323.66	202.12	124.07	0 33 20	72.5	16.11	303.55

DIFFERENTIAL CORRECTIONS

TDE	-.2824	TRA	-.7244	TC3	.4385	BAU	.0886
RDE	-.3336	RRA	.1314	RC3	.1775	FAU	.07163
FDE	.0989	FRA	1.4906	FC3	-4.4250	BSP	2193
BDE	.4371	BRA	.7363	BC3	.4731	FSP	543

MID-COURSE EXECUTION ACCURACY

SGT	1351.2	SGR	573.4	SG3	361.3		
RRT	-.0174	RRF	.0225	RTF	-.7618		
SGB	1467.8	R23	-.0063	R13	.7618		
SG1	1351.2	SG2	573.3	THA	179.48		

ORBIT DETERMINATION ACCURACY

ST	28.5	SR	25.8	SS	20.6
CRT	.6669	CRS	.0650	CST	.7824
LSA	37.2	MSA	22.6	SSA	1.5
EL1	35.1	EL2	15.6	ALF	40.69

LAUNCH DATE MAY 13 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC DISTANCE 345.779 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.977	GAL	-.26	AZL	91.81	HCA	114.98	SMA	198.49	ECC	.23855	INC	1.8142	V1	29.478
RP	207.00	LAP	-1.64	LOP	346.59	VP	24.772	GAP	13.58	AZP	89.23	TAL	358.66	TAP	113.64	RCA	151.14	APO	245.84	V2	26.458
RC	74.683	GL	-16.50	GP	-.33	ZAL	98.36	ZAP	156.19	ETS	180.86	ZAE	170.58	ETE	14.91	ZAC	99.03	ETC	278.71	LVI	-18.95

PLANETOCENTRIC CONIC

C3	13.518	VHL	3.677	DLA	-26.70	RAL	338.83	RAD	6639.8	VEL	11.558	PTH	6.60	VHP	5.886	DPA	-15.98	RAP	325.87	ECC	1.2225

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 32	2493.65	-7.08	66.15	192.72	137.17	17 3 5	1493.7	11.29	50.37
60.00	17 37 3	2292.76	-2.01	52.92	197.58	130.26	18 15 16	1292.8	13.96	34.76
70.00	19 15 5	2004.55	3.40	33.64	201.67	124.00	19 48 29	1004.6	16.84	13.42
80.00	21 16 35	1624.22	8.56	7.93	204.83	118.71	21 43 39	624.2	19.61	346.01
90.00	23 10 3	1258.30	11.29	342.45	206.27	116.10	23 31 1	258.3	21.09	319.70
100.00	0 3 23	1098.69	8.56	329.30	204.83	118.71	0 21 41	98.7	19.61	307.38
110.00	0 18 27	1051.37	3.40	322.56	201.67	124.00	0 35 58	51.4	16.84	302.34

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2655	TRA	-.6985	TC3	.5046	BAU	.0969	SGT	1339.3	SGR	569.0	SG3	386.6	ST	27.6	SR	25.5	SS	21.1
RDE	-.3248	RRA	.1279	RC3	.1814	FAU	.07557	RRT	-.0169	RRF	.0227	RTF	-.7809	CRT	.6562	CRS	.0415	CST	.7767
FDE	.0907	FRA	1.5527	FC3	-4.8395	BSP	2047	SGB	1455.2	R23	-.0067	R13	.7809	LSA	36.4	MSA	23.0	SSA	1.5
BDE	.4195	BRA	.7101	BC3	.5362	FSP	586	SG1	1339.3	SG2	568.9	THA	179.50	EL1	34.2	EL2	15.5	ALF	41.59

LAUNCH DATE MAY 13 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 28 1971

HELIOCENTRIC CONIC DISTANCE 349.619 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.916	GAL	-.21	AZL	91.81	HCA	116.25	SMA	197.30	ECC	.23395	INC	1.8122	V1	29.478
RP	207.08	LAP	-1.63	LOP	347.86	VP	24.681	GAP	13.23	AZP	89.20	TAL	358.88	TAP	115.13	RCA	151.14	APO	243.46	V2	26.449
RC	76.180	GL	-16.74	GP	-.34	ZAL	98.08	ZAP	154.91	ETS	180.84	ZAE	171.07	ETE	14.69	ZAC	99.01	ETC	278.70	LVI	-18.94

PLANETOCENTRIC CONIC

C3	13.063	VHL	3.614	DLA	-27.03	RAL	338.66	RAD	6639.6	VEL	11.538	PTH	6.58	VHP	5.706	DPA	-16.00	RAP	325.85	ECC	1.2150

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 31	2478.82	-6.34	65.52	192.28	137.25	17 3 50	1478.8	12.03	49.72
60.00	17 38 47	2276.00	-1.27	52.12	197.14	130.28	18 16 43	1276.0	14.66	33.90
70.00	19 18 2	1984.15	4.17	32.57	201.26	123.93	19 51 6	984.1	17.53	12.25
80.00	21 22 0	1596.09	9.47	6.34	204.49	118.45	21 48 36	596.1	20.35	344.25
90.00	23 18 29	1220.43	12.42	340.24	206.02	115.61	23 38 50	220.4	21.92	317.24
100.00	0 8 48	1070.57	9.47	327.71	204.49	118.45	0 26 38	70.6	20.35	305.62
110.00	0 21 24	1030.97	4.17	321.49	201.26	123.93	0 38 35	31.0	17.53	301.16

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2639	TRA	-.6911	TC3	.5050	BAU	.0939	SGT	1349.5	SGR	564.3	SG3	412.7	ST	27.9	SR	25.3	SS	21.8
RDE	-.3163	RRA	.1245	RC3	.1848	FAU	.07945	RRT	-.0184	RRF	.0242	RTF	-.7742	CRT	.6565	CRS	.0187	CST	.7618
FDE	.0823	FRA	1.6205	FC3	-5.2654	BSP	2136	SGB	1462.7	R23	-.0069	R13	.7743	LSA	36.6	MSA	23.4	SSA	1.5
BDE	.4120	BRA	.7023	BC3	.5378	FSP	628	SG1	1349.6	SG2	564.2	THA	179.47	EL1	34.3	EL2	15.5	ALF	40.75

LAUNCH DATE MAY 13 1971 FLIGHT TIME 140.00 ARRIVAL DATE SEP 30 1971

HELIOCENTRIC CONIC DISTANCE 353.490 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.858	GAL	-.17	AZL	91.81	HCA	117.51	SMA	196.20	ECC	.22965	INC	1.8102	V1	29.478
RP	207.17	LAP	-1.61	LOP	349.12	VP	24.593	GAP	12.89	AZP	89.16	TAL	359.10	TAP	116.81	RCA	151.15	APO	241.26	V2	26.439
RC	77.718	GL	-16.97	GP	-.36	ZAL	97.80	ZAP	153.80	ETS	180.83	ZAE	171.62	ETE	14.58	ZAC	99.01	ETC	278.69	LVI	-18.91

PLANETOCENTRIC CONIC

C3	12.644	VHL	3.556	DLA	-27.35	RAL	338.48	RAD	6639.4	VEL	11.520	PTH	6.57	VHP	5.533	DPA	-16.03	RAP	325.81	ECC	1.2081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 29	2464.64	-5.63	64.92	191.86	137.32	17 4 34	1464.6	12.73	49.10
60.00	17 40 28	2259.90	-.56	51.35	196.73	130.30	18 18 8	1259.9	15.33	33.08
70.00	19 20 57	1964.39	4.92	31.53	200.87	123.84	19 53 42	964.4	18.19	11.10
80.00	21 27 34	1568.03	10.38	4.75	204.18	118.15	21 53 42	568.0	21.07	342.47
90.00	23 27 52	1180.08	13.59	337.86	205.82	115.04	23 47 32	180.1	22.76	314.58
100.00	0 14 22	1042.50	10.38	326.12	204.18	118.15	0 31 44	42.5	21.07	303.84
110.00	0 24 20	1011.21	4.92	320.45	200.87	123.84	0 41 11	11.2	18.19	300.02

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2609	TRA	-.6812	TC3	.5079	BAU	.0915	SGT	1354.5	SGR	559.3	SG3	440.4	ST	28.0	SR	25.0	SS	22.4
RDE	-.3081	RRA	.1213	RC3	.1878	FAU	.08347	RRT	-.0198	RRF	.0282	RTF	-.7795	CRT	.6563	CRS	-.0145	CST	.7401
FDE	.0670	FRA	1.6948	FC3	-5.7151	BSP	2229	SGB	1465.4	R23	-.0098	R13	.7696	LSA	36.6	MSA	24.0	SSA	1.5
BDE	.4038	BRA	.6920	BC3	.5415	FSP	689	SG1	1354.5	SG2	559.2	THA	179.43	EL1	34.3	EL2	15.5	ALF	40.11

LAUNCH DATE MAY 13 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 357.389 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.804	GAL	-.13	AZL	91.81	HCA	118.77	SMA	195.19	ECC	.22562	INC	1.8081	V1	29.478
RP	207.26	LAP	-1.58	LOP	350.39	VP	24.509	GAP	12.56	AZP	89.13	TAL	359.31	TAP	118.08	RCA	151.15	APO	239.22	V2	26.428
RC	79.295	GL	-17.20	GP	-.37	ZAL	97.54	ZAP	152.25	ETS	180.81	ZAE	172.26	ETE	14.60	ZAC	99.01	ETC	278.68	LVI	-18.87

PLANETOCENTRIC CONIC

C3	12.257	VHL	3.501	DLA	-27.66	RAL	338.31	RAD	6639.2	VEL	11.504	PTH	6.55	VHP	5.366	DPA	-16.07	RAP	325.73	ECC	1.2017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 24 26	2451.12	-4.95	64.35	191.47	137.38	17 5 17	1451.1	13.39	48.50
60.00	17 42 6	2244.51	.12	50.61	196.34	130.30	18 19 31	1244.5	15.97	32.28
70.00	19 23 51	1945.32	5.64	30.53	200.51	123.74	19 56 16	945.3	18.83	9.99
80.00	21 33 19	1540.01	11.28	3.16	203.90	117.83	21 58 59	540.0	21.76	340.68
90.00	23 38 42	1135.68	14.86	335.21	205.70	114.34	23 57 37	135.7	23.62	311.62
100.00	0 20 6	1014.48	11.28	324.52	203.90	117.83	0 37 1	14.5	21.76	302.05
110.00	0 27 13	6280.18	5.64	297.35	200.51	123.74	2 11 53	5280.2	18.83	276.81

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2557	TRA	-.6726	TC3	.5102	BAU	.0892	SGT	1359.0	SGR	554.0	SG3	469.7	ST	28.0	SR	24.8	SS	23.2
RDE	-.3002	RRA	.1183	RC3	.1903	FAU	.08745	RRT	-.0246	RRF	.0330	RTF	-.7680	CRT	.6520	CRS	-.0404	CST	.7264
FDE	.0550	FRA	1.7818	FC3	-6.1768	BSP	2258	SGB	1467.6	R23	-.0103	R13	.7680	LSA	36.5	MSA	24.5	SSA	1.5
BDE	.3943	BRA	.6829	BC3	.5445	FSP	739	SG1	1359.1	SG2	553.8	THA	179.31	EL1	34.1	EL2	15.5	ALF	39.64

LAUNCH DATE MAY 13 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 361.313 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.754	GAL	-.09	AZL	91.81	HCA	120.03	SMA	194.24	ECC	.22186	INC	1.8060	V1	29.478
RP	207.37	LAP	-1.56	LOP	351.65	VP	24.429	GAP	12.23	AZP	89.10	TAL	359.51	TAP	119.54	RCA	151.15	APO	237.34	V2	26.415
RC	80.909	GL	-17.41	GP	-.39	ZAL	97.28	ZAP	150.87	ETS	180.80	ZAE	172.96	ETE	14.79	ZAC	99.01	ETC	278.65	LVI	-18.83

PLANETOCENTRIC CONIC

C3	11.902	VHL	3.450	DLA	-27.95	RAL	338.15	RAD	6639.0	VEL	11.488	PTH	6.54	VHP	5.205	DPA	-16.12	RAP	325.62	ECC	1.1959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 25 21	2438.29	-4.31	63.81	191.11	137.43	17 5 59	1438.3	14.02	47.93
60.00	17 43 42	2229.84	.76	49.91	195.98	130.29	18 20 52	1229.8	16.58	31.51
70.00	19 26 42	1926.98	6.34	29.56	200.18	123.63	19 58 49	927.0	19.43	8.90
80.00	21 39 14	1512.01	12.16	1.55	203.66	117.48	22 4 26	512.0	22.43	338.87
90.00	23 52 10	1083.33	16.30	332.05	205.69	113.43	24 10 13	83.3	24.56	308.07
100.00	0 26 2	6274.52	12.16	300.82	203.66	117.48	2 10 36	5274.5	22.43	278.15
110.00	0 30 4	6261.84	6.34	296.38	200.18	123.63	2 14 26	5261.8	19.43	275.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2570	TRA	-.6580	TC3	.4965	BAU	.0847	SGT	1352.7	SGR	548.2	SG3	498.2	ST	28.3	SR	24.5	SS	23.9
RDE	-.2924	RRA	.1155	RC3	.1922	FAU	.09143	RRT	-.0213	RRF	.0315	RTF	-.7607	CRT	.6608	CRS	-.0347	CST	.7224
FDE	.0615	FRA	1.8568	FC3	-6.6506	BSP	2212	SGB	1459.6	R23	-.0121	R13	.7608	LSA	36.9	MSA	24.6	SSA	1.5
BDE	.3893	BRA	.6680	BC3	.5324	FSP	786	SG1	1352.8	SG2	548.1	THA	179.41	EL1	34.2	EL2	15.2	ALF	38.85

LAUNCH DATE MAY 13 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 365.263 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.707	GAL	-.05	AZL	91.80	HCA	121.29	SMA	193.37	ECC	.21835	INC	1.8038	V1	29.478
RP	207.48	LAP	-1.54	LOP	352.91	VP	24.351	GAP	11.91	AZP	89.06	TAL	359.70	TAP	120.99	RCA	151.15	APO	235.59	V2	26.402
RC	82.560	GL	-17.61	GP	-.40	ZAL	97.05	ZAP	149.46	ETS	180.78	ZAE	173.74	ETE	15.20	ZAC	99.01	ETC	278.62	LVI	-18.78

PLANETOCENTRIC CONIC

C3	11.575	VHL	3.402	DLA	-28.23	RAL	338.00	RAD	6638.8	VEL	11.474	PTH	6.52	VHP	5.051	DPA	-16.19	RAP	325.48	ECC	1.1905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 14	2426.14	-3.70	63.30	190.77	137.47	17 6 40	1426.1	14.61	47.38
60.00	17 45 16	2215.92	1.38	49.25	195.65	130.28	18 22 11	1215.9	17.15	30.78
70.00	19 29 29	1909.41	7.00	28.63	199.88	123.51	20 1 18	909.4	20.00	7.86
80.00	21 45 21	1483.98	13.04	359.93	203.46	117.10	22 10 5	484.0	23.08	337.04
90.00	0 18 7	1003.88	18.38	327.15	205.99	111.87	0 34 51	3.9	25.80	302.58
100.00	0 32 9	6246.49	13.04	299.20	203.46	117.10	2 16 15	5246.5	23.08	276.32
110.00	0 32 51	6244.26	7.00	295.45	199.88	123.51	2 16 56	5244.3	20.00	274.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2503	TRA	-.6567	TC3	.4791	BAU	.0800	SGT	1363.6	SGR	542.5	SG3	531.5	ST	28.3	SR	24.2	SS	25.0
RDE	-.2850	RRA	.1129	RC3	.1937	FAU	.09527	RRT	-.0345	RRF	.0448	RTF	-.7578	CRT	.6501	CRS	-.0808	CST	.7001
FDE	.0348	FRA	1.9807	FC3	-7.1252	BSP	2132	SGB	1467.6	R23	-.0138	R13	.7579	LSA	36.8	MSA	25.6	SSA	1.5
BDE	.3793	BRA	.6663	BC3	.5168	FSP	828	SG1	1363.8	SG2	542.1	THA	179.07	EL1	33.9	EL2	15.3	ALF	38.28

LAUNCH DATE MAY 13 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 369.233 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.663	GAL	-.02	AZL	91.80	HCA	122.55	SMA	192.57	ECC	.21507	INC	1.8016	V1	29.478
RP	207.60	LAP	-1.52	LOP	354.17	VP	24.277	GAP	11.60	AZP	89.03	TAL	359.87	TAP	122.43	RCA	151.15	APO	233.98	V2	26.388
RC	84.247	GL	-17.61	GP	-.42	ZAL	96.83	ZAP	148.01	ETS	180.77	ZAE	174.59	ETE	15.96	ZAC	99.03	ETC	278.59	LVI	-18.71

PLANETOCENTRIC CONIC

C3	11.274	VHL	3.358	DLA	-28.49	RAL	337.86	RAD	6638.7	VEL	11.461	PTH	6.51	VHP	4.902	DPA	-16.27	RAP	325.30	ECC	1.1855

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 5	2414.69	-3.13	62.82	190.46	137.50	17 7 20	1414.7	15.17	46.87
60.00	17 46 46	2202.75	1.95	48.62	195.34	130.26	18 23 29	1202.8	17.69	30.09
70.00	19 32 12	1892.65	7.63	27.74	199.60	123.39	20 3 45	892.7	20.54	6.86
80.00	21 51 41	1455.86	13.90	358.29	203.29	116.69	22 15 57	455.9	23.70	335.19
86.42	0 2 54	1045.91	18.89	330.85	206.04	110.83	0 20 20	45.9	26.72	305.86
100.00	0 38 29	6218.37	13.90	297.56	203.29	116.69	2 22 7	5218.4	23.70	274.46
110.00	0 35 35	6227.51	7.63	294.56	199.60	123.39	2 19 22	5227.5	20.54	273.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2550	TRA	-.6508	TC3	.3867	BAU	.0693	SGT	1361.3	SGR	536.2	SG3	557.4	ST	28.9	SR	23.9	SS	26.2
RDE	-.2776	RRA	.1104	RC3	.1932	FAU	.09699	RRT	-.0421	RRF	.0485	RTF	-.7691	CRT	.6588	CRS	-.0477	CST	.7154
FDE	.0617	FRA	2.0978	FC3	-7.4477	BSP	2623	SGB	1463.1	R23	-.0117	R13	.7392	LSA	37.9	MSA	25.5	SSA	1.6
BDE	.3769	BRA	.6601	BC3	.4331	FSP	1029	SG1	1361.5	SG2	535.6	THA	178.88	EL1	34.3	EL2	15.1	ALF	36.98

LAUNCH DATE MAY 13 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 10 1971

HELIOCENTRIC CONIC DISTANCE 373.225 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.622	GAL	.01	AZL	91.80	HCA	123.81	SMA	191.82	ECC	.21202	INC	1.7993	V1	29.478
RP	207.73	LAP	-1.50	LOP	355.43	VP	24.205	GAP	11.29	AZP	89.00	TAL	.04	TAP	123.85	RCA	151.15	APO	232.49	V2	26.373
RC	85.969	GL	-17.99	GP	-.44	ZAL	96.62	ZAP	146.52	ETS	180.75	ZAE	175.51	ETE	17.29	ZAC	99.04	ETC	278.54	LVI	-18.64

PLANETOCENTRIC CONIC

C3	10.997	VHL	3.316	DLA	-28.73	RAL	337.74	RAD	6638.6	VEL	11.449	PTH	6.50	VHP	4.760	DPA	-16.36	RAP	325.08	ECC	1.1810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 56	2403.95	-2.59	62.37	190.17	137.52	17 8 0	1403.9	15.69	46.38
60.00	17 48 13	2190.36	2.50	48.03	195.06	130.24	18 24 43	1190.4	18.19	29.43
70.00	19 34 51	1876.75	8.22	26.89	199.35	123.27	20 6 8	876.7	21.04	5.90
80.00	21 58 17	1427.52	14.76	356.63	203.16	116.25	22 22 4	427.5	24.31	333.30
84.70	23 44 16	1086.67	20.17	333.95	205.64	110.90	24 2 23	86.7	27.01	308.90
100.00	0 45 4	6190.03	14.76	295.90	203.16	116.25	2 28 14	5190.0	24.31	272.58
110.00	0 38 13	6211.61	8.22	293.72	199.35	123.27	2 21 45	5211.6	21.04	272.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3780	TRA	-.6068	TC3	.6519	BAU	.0999	SGT	1429.4	SGR	526.8	SG3	631.3	ST	37.3	SR	23.5	SS	30.7
RDE	-.2690	RRA	.1079	RC3	.1923	FAU	.11307	RRT	.1388	RRF	-.0543	RTF	-.7773	CRT	.8029	CRS	.3934	CST	.8607
FDE	.4435	FRA	2.1498	FC3	-8.9013	BSP	1399	SGB	1523.4	R23	.0708	R13	-.7759	LSA	49.6	MSA	20.6	SSA	1.5
BDE	.4640	BRA	.6164	BC3	.6797	FSP	711	SG1	1431.6	SG2	520.9	THA	3.36	EL1	42.3	EL2	12.3	ALF	29.58

LAUNCH DATE MAY 13 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 12 1971

HELIOCENTRIC CONIC DISTANCE 377.236 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.584	GAL	.03	AZL	91.80	HCA	125.07	SMA	191.13	ECC	.20917	INC	1.7969	V1	29.478
RP	207.86	LAP	-1.47	LOP	356.68	VP	24.136	GAP	10.99	AZP	88.97	TAL	.19	TAP	125.26	RCA	151.15	APO	231.11	V2	26.357
RC	87.725	GL	-18.16	GP	-.46	ZAL	96.44	ZAP	145.00	ETS	180.73	ZAE	176.49	ETE	19.73	ZAC	99.06	ETC	278.49	LVI	-18.55

PLANETOCENTRIC CONIC

C3	10.743	VHL	3.278	DLA	-28.96	RAL	337.63	RAD	6638.4	VEL	11.438	PTH	6.49	VHP	4.623	DPA	-16.47	RAP	324.82	ECC	1.1768

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 44	2393.91	-2.08	61.95	189.91	137.54	17 8 38	1393.9	16.18	45.93
60.00	17 49 36	2178.77	3.01	47.47	194.81	130.21	18 25 55	1178.8	18.66	28.81
70.00	19 37 24	1861.74	8.78	26.09	199.12	123.14	20 8 25	861.7	21.51	4.99
80.00	22 5 11	1398.82	15.62	354.93	203.07	115.77	22 28 29	398.8	24.90	331.37
83.49	23 33 58	1113.67	20.44	336.05	205.26	110.97	23 52 32	113.7	27.28	310.94
100.00	0 51 58	6161.33	15.62	294.20	203.07	115.77	2 34 40	5161.3	24.90	270.65
110.00	0 40 46	6196.60	8.78	292.92	199.12	123.14	2 24 3	5196.6	21.51	271.81

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2137	TRA	-.5755	TC3	.4853	BAU	.0750	SGT	1250.1	SGR	523.0	SG3	634.9	ST	25.4	SR	23.3	SS	26.1
RDE	-.2642	RRA	.1053	RC3	.1931	FAU	.11293	RRT	-.0445	RRF	.0577	RTF	-.7367	CRT	.6361	CRS	-.2550	CST	.5779
FDE	-.0930	FRA	2.1464	FC3	-9.1005	BSP	1960	SGB	1355.1	R23	-.0181	R13	.7369	LSA	33.3	MSA	27.7	SSA	1.6
BDE	.3398	BRA	.5850	BC3	.5223	FSP	970	SG1	1250.3	SG2	522.4	THA	178.71	EL1	31.2	EL2	14.6	ALF	41.09

LAUNCH DATE MAY 13 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 14 1971

HELIOCENTRIC CONIC DISTANCE 381.264 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.548	GAL	.06	AZL	91.79	HCA	126.32	SMA	190.49	ECC	.20653	INC	1.7945	V1	29.478
RP	208.01	LAP	-1.45	LOP	357.94	VP	24.070	GAP	10.70	AZP	88.94	TAL	.33	TAP	126.65	RCA	151.15	APO	229.83	V2	26.340
RC	89.514	GL	-18.33	GP	-.48	ZAL	96.27	ZAP	143.44	ETS	180.71	ZAE	177.52	ETE	24.76	ZAC	99.09	ETC	278.43	LVI	-18.48

PLANETOCENTRIC CONIC

C3	10.509	VHL	3.242	DLA	-29.17	RAL	337.53	RAD	6638.3	VEL	11.426	PTH	6.48	VHP	4.492	DPA	-16.58	RAP	324.53	ECC	1.1730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 29 31	2384.58	-1.61	61.56	189.68	137.56	17 9 16	1384.6	16.63	45.50
60.00	17 50 56	2167.97	3.48	46.95	194.58	130.18	18 27 4	1168.0	19.10	28.22
70.00	19 39 50	1847.67	9.30	25.34	198.92	123.01	20 10 38	847.7	21.95	4.13
80.00	22 12 28	1369.48	16.48	353.17	203.02	115.26	22 35 17	369.5	25.47	329.38
82.53	23 25 57	1133.78	20.69	337.64	204.92	111.03	23 44 51	133.8	27.53	312.48
100.00	0 59 15	6131.99	16.48	292.45	203.02	115.26	2 41 27	5132.0	25.47	268.65
110.00	0 43 12	6182.53	9.30	292.16	198.92	123.01	2 26 15	5182.5	21.95	270.95

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2248	TRA	-.5697	TC3	.4540	BAU	.0692	SGT	1254.7	SGR	515.6	SG3	678.3	ST	26.3	SR	22.9	SS	27.3
RDE	-.2572	RRA	.1033	RC3	.1917	FAU	.11857	RRT	-.0369	RRF	.0547	RTF	-.7288	CRT	.6574	CRS	-.1942	CST	.6058
FDE	-.0483	FRA	2.2916	FC3	-9.7677	BSP	2003	SGB	1356.5	R23	-.0224	R13	.7290	LSA	34.9	MSA	27.3	SSA	1.6
BDE	.3417	BRA	.5790	BC3	.4928	FSP	1083	SG1	1254.9	SG2	515.2	THA	178.96	EL1	31.9	EL2	14.3	ALF	39.05

LAUNCH DATE MAY 13 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 16 1971

HELIOCENTRIC CONIC DISTANCE 385.308 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.515	GAL	.08	AZL	91.79	HCA	127.57	SMA	189.90	ECC	.20407	INC	1.7920	V1	29.478
RP	208.16	LAP	-1.42	LOP	359.19	VP	24.005	GAP	10.42	AZP	88.91	TAL	.45	TAP	128.03	RCA	151.15	APO	228.65	V2	26.323
RC	91.337	GL	-18.48	GP	-.50	ZAL	96.13	ZAP	141.84	ETS	180.69	ZAE	178.57	ETE	38.52	ZAC	99.12	ETC	278.36	LVI	-18.34

PLANETOCENTRIC CONIC

C3	10.294	VHL	3.208	DLA	-29.36	RAL	337.45	RAD	6638.2	VEL	11.419	PTH	6.47	VHP	4.367	DPA	-16.72	RAP	324.19	ECC	1.1694

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 17	2375.94	-1.18	61.20	189.47	137.56	17 9 53	1375.9	17.05	45.10
60.00	17 52 13	2157.97	3.92	46.47	194.37	130.14	18 28 11	1158.0	19.50	27.68
70.00	19 42 10	1834.56	9.79	24.63	198.75	122.88	20 12 44	834.6	22.35	3.32
80.00	22 20 18	1336.98	17.36	351.33	203.02	114.68	22 42 37	339.0	26.03	327.29
81.75	23 19 27	1149.44	20.93	338.89	204.61	111.08	23 38 37	149.4	27.76	313.68
100.00	1 7 5	6101.49	17.36	290.61	203.02	114.68	2 48 47	5101.5	26.03	266.56
110.00	0 45 32	6169.41	9.79	291.46	198.75	122.88	2 28 21	5169.4	22.35	270.15

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2109	TRA	-.5371	TC3	.4073	BAU	.0618	SGT	1192.2	SGR	508.4	SG3	713.4	ST	25.0	SR	22.6	SS	27.8
RDE	-.2509	RRA	.1012	RC3	.1898	FAU	.12406	RRT	-.0455	RRF	.0634	RTF	-.7107	CRT	.6542	CRS	-.2548	CST	.5585
FDE	-.1006	FRA	2.3564	FC3	-10.4337	BSP	1826	SGB	1296.1	R23	-.0239	R13	.7110	LSA	33.5	MSA	28.0	SSA	1.6
BDE	.3277	BRA	.5465	BC3	.4493	FSP	1128	SG1	1192.5	SG2	507.8	THA	178.64	EL1	30.7	EL2	13.9	ALF	40.56

LAUNCH DATE MAY 13 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 389.367 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.484	GAL	.09	AZL	91.79	HCA	128.82	SMA	189.36	ECC	.20179	INC	1.7894	V1	29.478
RP	208.32	LAP	-1.39	LOP	.44	VP	23.943	GAP	10.14	AZP	88.88	TAL	.56	TAP	129.39	RCA	151.15	APO	227.57	V2	26.304
RC	93.190	GL	-18.62	GP	-.52	ZAL	96.01	ZAP	140.21	ETS	180.67	ZAE	179.25	ETE	95.95	ZAC	99.15	ETC	278.28	LVI	-18.22

PLANETOCENTRIC CONIC

C3	10.097	VHL	3.178	DLA	-29.54	RAL	337.39	RAD	6638.1	VEL	11.410	PTH	6.46	VHP	4.247	DPA	-16.86	RAP	323.82	ECC	1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 1	2368.05	-.78	60.87	189.30	137.57	17 10 29	1368.0	17.43	44.74
60.00	17 53 25	2148.82	4.32	46.03	194.20	130.11	18 29 14	1148.8	19.87	27.19
70.00	19 44 21	1822.50	10.23	23.98	198.59	122.76	20 14 43	822.5	22.71	2.58
80.00	22 28 54	1306.62	18.26	349.36	203.07	114.04	22 50 41	306.6	26.58	325.04
81.10	23 14 8	1161.89	21.14	339.90	204.34	111.12	23 33 30	161.9	27.96	314.64
100.00	1 15 42	6069.13	18.26	288.63	203.07	114.04	2 56 51	5069.1	26.58	264.32
110.00	0 47 43	6157.36	10.23	290.81	198.59	122.76	2 30 20	5157.4	22.71	269.40

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2224	TRA	-.5317	TC3	.3764	BAU	.0567	SGT	1196.8	SGR	500.6	SG3	765.5	ST	26.0	SR	22.2	SS	29.1
RDE	-.2442	RRA	.0995	RC3	.1867	FAU	.13138	RRT	-.0371	RRF	.0618	RTF	-.6998	CRT	.6757	CRS	-.2036	CST	.5781
FDE	-.0596	FRA	2.5184	FC3	-11.2648	BSP	1793	SGB	1297.2	R23	-.0304	R13	.7001	LSA	35.2	MSA	27.8	SSA	1.6
BDE	.3304	BRA	.5409	BC3	.4202	FSP	1206	SG1	1196.9	SG2	500.1	THA	178.92	EL1	31.4	EL2	13.6	ALF	38.48

LAUNCH DATE MAY 13 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 393,440 EARTH TO MARS

RL 151.15 LAL .00 LOL 231.60 VL 32.455 GAL .11 AZL 91.78 HCA 130.07 SMA 188.86 ECC .19967 INC 1.7867 V1 29.478
RP 208.49 LAP -1.37 LOP 1.69 VP 23.883 GAP 9.87 AZP 88.85 TAL .66 TAP 130.73 RCA 151.15 APO 226.57 V2 26.284
RC 95.074 GL -18.74 GP -.54 ZAL 95.91 ZAP 138.53 ETS 180.64 ZAE 178.52 ETE 155.77 ZAC 99.19 ETC 278.19 LVI -18.09

PLANETOCENTRIC CONIC

C3 9.917 VHL 3.149 DLA -29.69 RAL 337.35 RAD 6638.0 VEL 11.402 PTH 6.45 VHP 4.133 DPA -17.02 RAP 323.41 ECC 1.1632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 43	2360.84	-.42	60.57	189.14	137.57	17 11 4	1360.8	17.77	44.40
60.00	17 54 33	2140.49	4.69	45.63	194.05	130.07	18 30 13	1140.5	20.20	26.73
70.00	19 46 23	1811.48	10.64	23.39	198.46	122.65	20 16 35	811.5	23.04	1.89
80.00	22 39 3	1269.93	19.27	347.10	203.19	113.26	23 0 13	269.9	27.17	322.48
80.56	23 9 44	1171.84	21.33	340.72	204.09	111.15	23 29 16	171.8	28.15	315.42
100.00	1 25 51	6032.44	19.27	286.37	203.19	113.26	3 6 23	5032.4	27.17	261.75
110.00	0 49 46	6146.34	10.64	290.21	198.46	122.65	2 32 12	5146.3	23.04	268.71

DIFFERENTIAL CORRECTIONS

TDE -.2175 TRA -.5152 TC3 .3112 BAU .0479
RDE -.2381 RRA .0979 RC3 .1834 FAU .13712
FDE -.0923 FRA 2.6617 FC-11.9712 BSP 1777
BDE .3225 BRA .5244 BC3 .3612 FSP 1307

MID-COURSE EXECUTION ACCURACY

SGT 1166.0 SGR 492.9 SG3 810.3
RRT -.0472 RRF .0746 RTF -.6792
SGB 1265.9 R23 -.0356 R13 .6796
SG1 1166.3 SG2 492.3 THA 178.61

ORBIT DETERMINATION ACCURACY

ST 25.6 SR 21.9 SS 30.3
CRT .6774 CRS -.2356 CST .5492
LSA 35.3 MSA 28.3 SSA 1.6
EL1 30.9 EL2 13.3 ALF 38.49

LAUNCH DATE MAY 13 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 397,525 EARTH TO MARS

RL 151.15 LAL .00 LOL 231.60 VL 32.429 GAL .12 AZL 91.78 HCA 131.32 SMA 188.40 ECC .19772 INC 1.7840 V1 29.478
RP 208.67 LAP -1.34 LOP 2.93 VP 23.824 GAP 9.60 AZP 88.82 TAL .73 TAP 132.05 RCA 151.15 APO 225.65 V2 26.264
RC 96.988 GL -18.86 GP -.57 ZAL 95.84 ZAP 136.82 ETS 180.62 ZAE 177.27 ETE 170.10 ZAC 99.23 ETC 278.10 LVI -17.94

PLANETOCENTRIC CONIC

C3 9.751 VHL 3.123 DLA -29.83 RAL 337.33 RAD 6637.9 VEL 11.395 PTH 6.45 VHP 4.024 DPA -17.19 RAP 322.95 ECC 1.1605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 32 24	2354.34	-.10	60.30	189.01	137.58	17 11 38	1354.3	18.09	44.10
60.00	17 55 36	2132.98	5.02	45.27	193.92	130.04	18 31 9	1133.0	20.49	26.32
70.00	19 48 16	1801.56	11.00	22.85	198.35	122.54	20 18 18	801.6	23.34	1.27
80.00	22 54 4	1218.30	20.62	343.86	203.51	112.08	23 14 22	218.3	27.90	318.81
80.10	23 6 10	1179.63	21.51	341.37	203.88	111.18	23 25 50	179.6	28.32	316.03
100.00	1 40 51	5980.81	20.62	283.14	203.51	112.08	3 20 32	4980.8	27.90	258.09
110.00	0 51 38	6136.42	11.00	289.67	198.35	122.54	2 33 55	5136.4	23.34	268.09

DIFFERENTIAL CORRECTIONS

TDE -.2170 TRA -.4920 TC3 .2403 BAU .0391
RDE -.2319 RRA .0962 RC3 .1792 FAU .14375
FDE -.1060 FRA 2.7697 FC-12.7626 BSP 1683
BDE .3176 BRA .5013 BC3 .2998 FSP 1388

MID-COURSE EXECUTION ACCURACY

SGT 1124.2 SGR 484.8 SG3 854.8
RRT -.0469 RRF .0798 RTF -.6486
SGB 1224.3 R23 -.0425 R13 .6491
SG1 1124.5 SG2 484.2 THA 178.58

ORBIT DETERMINATION ACCURACY

ST 25.3 SR 21.5 SS 31.0
CRT .6913 CRS -.2467 CST .5232
LSA 35.4 MSA 28.5 SSA 1.6
EL1 30.6 EL2 12.8 ALF 38.35

LAUNCH DATE MAY 13 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 401,622 EARTH TO MARS

RL 151.15 LAL .00 LOL 231.60 VL 32.404 GAL .13 AZL 91.78 HCA 132.56 SMA 187.97 ECC .19591 INC 1.7811 V1 29.478
RP 208.85 LAP -1.31 LOP 4.18 VP 23.767 GAP 9.35 AZP 88.80 TAL .80 TAP 133.36 RCA 151.15 APO 224.80 V2 26.243
RC 98.929 GL -18.97 GP -.59 ZAL 95.79 ZAP 135.07 ETS 180.59 ZAE 175.90 ETE 175.34 ZAC 99.28 ETC 277.99 LVI -17.78

PLANETOCENTRIC CONIC

C3 9.600 VHL 3.098 DLA -29.94 RAL 337.33 RAD 6637.8 VEL 11.389 PTH 6.44 VHP 3.920 DPA -17.38 RAP 322.46 ECC 1.1580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 4	2348.53	.20	60.06	188.91	137.58	17 12 12	1348.5	18.37	43.83
60.00	17 56 35	2126.29	5.31	44.95	193.82	130.01	18 32 2	1126.3	20.76	25.95
70.00	19 49 59	1792.76	11.33	22.37	198.27	122.44	20 19 52	792.8	23.60	.72
79.72	23 3 17	1185.72	21.67	341.88	203.71	111.19	23 23 3	185.7	28.46	316.51
79.72	23 3 17	1185.72	21.67	341.88	203.71	111.19	23 23 3	185.7	28.46	316.51
79.72	23 3 17	1185.72	21.67	341.88	203.71	111.19	23 23 3	185.7	28.46	316.51
110.00	0 53 21	6127.58	11.33	289.19	198.27	122.44	2 35 29	5127.6	23.60	267.54

DIFFERENTIAL CORRECTIONS

TDE -.2148 TRA -.4657 TC3 .1822 BAU .0323
RDE -.2259 RRA .0947 RC3 .1741 FAU .15132
FDE -.1245 FRA 2.8789 FC-13.6462 BSP 1494
BDE .3116 BRA .4752 BC3 .2520 FSP 1438

MID-COURSE EXECUTION ACCURACY

SGT 1076.0 SGR 476.5 SG3 903.3
RRT -.0445 RRF .0853 RTF -.6195
SGB 1176.8 R23 -.0511 R13 .6201
SG1 1076.3 SG2 475.9 THA 178.60

ORBIT DETERMINATION ACCURACY

ST 24.8 SR 21.1 SS 31.8
CRT .7050 CRS -.2616 CST .4933
LSA 35.4 MSA 28.6 SSA 1.6
EL1 30.2 EL2 12.3 ALF 38.51

LAUNCH DATE MAY 13 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 26 1971

HELIOCENTRIC CONIC DISTANCE 405,730 EARTH TO MARS

RL 151.15 LAL .00 LOL 231.60 VL 32.382 GAL .14 AZL 91.78 HCA 133.80 SMA 187.58 ECC .19424 INC 1.7781 V1 29.478
RP 209.04 LAP -1.28 LOP 5.42 VP 23.712 GAP 9.09 AZP 88.77 TAL .84 TAP 134.64 RCA 151.15 APO 224.02 V2 26.221
RC 100.898 GL -19.07 GP -.62 ZAL 95.76 ZAP 133.28 ETS 180.56 ZAE 174.44 ETE 177.93 ZAC 99.32 ETC 277.88 LVI -17.61

PLANETOCENTRIC CONIC

C3 9.462 VHL 3.076 DLA -30.04 RAL 337.35 RAD 6637.8 VEL 11.383 PTH 6.44 VHP 3.822 DPA -17.57 RAP 321.92 ECC 1.1557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 42	2343.44	.45	59.85	188.84	137.57	17 12 45	1343.4	18.61	43.59
60.00	17 57 30	2120.47	5.57	44.67	193.74	129.98	18 32 50	1120.5	20.99	25.63
70.00	19 51 30	1785.10	11.61	21.95	198.20	122.35	20 21 15	785.1	23.82	.24
79.42	23 1 4	1190.21	21.80	342.28	203.56	111.19	23 20 55	190.2	28.58	316.87
79.42	23 1 4	1190.21	21.80	342.28	203.56	111.19	23 20 55	190.2	28.58	316.87
79.42	23 1 4	1190.21	21.80	342.28	203.56	111.19	23 20 55	190.2	28.58	316.87
110.00	0 54 32	6119.95	11.61	288.78	198.20	122.35	2 36 52	5120.0	23.82	267.06

DIFFERENTIAL CORRECTIONS

TDE -.2135 TRA -.4446 TC3 .0608 BAU .0227
RDE -.2201 RRA .0933 RC3 .1692 FAU .15663
FDE -.1508 FRA 3.0199 FC-14.3305 BSP 1438
BDE .3066 BRA .4543 BC3 .1798 FSP 1548

MID-COURSE EXECUTION ACCURACY

SGT 1036.6 SGR 468.2 SG3 946.6
RRT -.0519 RRF .0979 RTF -.5665
SGB 1137.4 R23 -.0611 R13 .5674
SG1 1037.0 SG2 467.4 THA 178.32

ORBIT DETERMINATION ACCURACY

ST 24.5 SR 20.7 SS 32.8
CRT .7172 CRS -.2815 CST .4597
LSA 35.8 MSA 28.7 SSA 1.6
EL1 29.8 EL2 11.9 ALF 38.36

LAUNCH DATE MAY 13 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 28 1971

HELIOCENTRIC CONIC DISTANCE 409.847 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.361	GAL	.14	AZL	91.78	HCA	135.04	SMA	187.23	ECC	.19271	INC	1.7750	V1	29.478
RP	209.24	LAP	-1.25	LOP	6.66	VP	23.658	GAP	8.85	AZP	88.74	TAL	.87	TAP	135.91	RCA	151.15	APO	223.31	V2	26.198
RC	102.893	GL	-19.15	GP	-.65	ZAL	95.76	ZAP	131.45	ETS	180.53	ZAE	172.91	ETE	179.42	ZAC	99.38	ETC	277.76	LVI	-17.42

PLANETOCENTRIC CONIC

C3	9.337	VHL	3.056	DLA	-30.12	RAL	337.39	RAD	6637.7	VEL	11.377	PTH	6.43	VHP	3.729	DPA	-17.78	RAP	321.34	ECC	1.1537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 18	2339.02	.67	59.66	188.79	137.57	17 13 17	1339.0	18.82	43.38
60.00	17 58 20	2115.47	5.78	44.43	193.69	129.95	18 33 35	1115.5	21.18	25.35
70.00	19 52 50	1778.62	11.84	21.60	198.15	122.27	20 22 28	778.6	24.01	359.83
79.19	22 59 29	1193.19	21.92	342.55	203.45	111.19	23 19 22	193.2	28.69	317.11
79.19	22 59 29	1193.19	21.92	342.55	203.45	111.19	23 19 22	193.2	28.69	317.11
79.19	22 59 29	1193.19	21.92	342.55	203.45	111.19	23 19 22	193.2	28.69	317.11
110.00	0 56 12	6113.47	11.84	288.42	198.15	122.27	2 38 5	5113.5	24.01	266.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2179	TRA	-.4190	TC3	-.0302	BAU	.0207	SGT	996.1	SGR	459.2	SG3	999.0	ST	24.6	SR	20.3	SS	33.6
RDE	-.2141	RRA	.0920	RC3	.1627	FAU	.16457	RRT	-.0414	RRF	.1013	RTF	-.5147	CRT	.7411	CRS	-.2646	CST	.4439
FDE	-.1355	FRA	3.1510	FC-15.2590		BSP	1298	SGB	1096.8	R23	-.0743	R13	.5156	LSA	36.3	MSA	28.7	SSA	1.6
BDE	.3055	BRA	.4289	BC3	.1655	FSP	1634	SG1	996.3	SG2	458.7	THA	178.61	EL1	29.8	EL2	11.2	ALF	37.75

LAUNCH DATE MAY 13 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 30 1971

HELIOCENTRIC CONIC DISTANCE 413.974 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.342	GAL	.14	AZL	91.77	HCA	136.28	SMA	186.90	ECC	.19131	INC	1.7718	V1	29.478
RP	209.44	LAP	-1.22	LOP	7.90	VP	23.606	GAP	8.60	AZP	88.72	TAL	.88	TAP	137.16	RCA	151.15	APO	222.66	V2	26.174
RC	104.913	GL	-19.22	GP	-.68	ZAL	95.79	ZAP	129.59	ETS	180.50	ZAE	171.31	ETE	180.35	ZAC	99.43	ETC	277.63	LVI	-17.22

PLANETOCENTRIC CONIC

C3	9.223	VHL	3.037	DLA	-30.17	RAL	337.45	RAD	6637.6	VEL	11.372	PTH	6.42	VHP	3.641	DPA	-18.01	RAP	320.73	ECC	1.1518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 53	2335.29	.86	59.50	188.76	137.57	17 13 48	1335.3	19.00	43.21
60.00	17 59 5	2111.29	5.97	44.23	193.65	129.93	18 34 16	1111.3	21.35	25.12
70.00	19 53 57	1773.32	12.03	21.31	198.12	122.21	20 23 31	773.3	24.16	359.49
79.01	22 58 26	1194.97	22.02	342.72	203.36	111.17	23 18 21	195.0	28.77	317.26
79.01	22 58 26	1194.97	22.02	342.72	203.36	111.17	23 18 21	195.0	28.77	317.26
79.01	22 58 26	1194.97	22.02	342.72	203.36	111.17	23 18 21	195.0	28.77	317.26
110.00	0 57 20	6108.18	12.03	288.13	198.12	122.21	2 39 8	5108.2	24.16	266.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2114	TRA	-.3952	TC3	-.1364	BAU	.0255	SGT	953.7	SGR	450.7	SG3	1050.2	ST	23.8	SR	19.9	SS	34.7
RDE	-.2086	RRA	.0909	RC3	.1559	FAU	.17173	RRT	-.0512	RRF	.1166	RTF	-.4531	CRT	.7480	CRS	-.3032	CST	.3977
FDE	-.1867	FRA	3.2961	FC-16.1201		BSP	1144	SGB	1054.9	R23	-.0868	R13	.4544	LSA	36.7	MSA	28.6	SSA	1.6
BDE	.2969	BRA	.4055	BC3	.2071	FSP	1712	SG1	954.1	SG2	450.0	THA	178.22	EL1	29.1	EL2	10.8	ALF	38.29

LAUNCH DATE MAY 13 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 1 1971

HELIOCENTRIC CONIC DISTANCE 418.108 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.324	GAL	.14	AZL	91.77	HCA	137.51	SMA	186.61	ECC	.19002	INC	1.7684	V1	29.478
RP	209.66	LAP	-1.19	LOP	9.13	VP	23.555	GAP	8.37	AZP	88.70	TAL	.88	TAP	138.39	RCA	151.15	APO	222.06	V2	26.150
RC	106.958	GL	-19.29	GP	-.71	ZAL	95.84	ZAP	127.70	ETS	180.47	ZAE	169.66	ETE	180.97	ZAC	99.49	ETC	277.49	LVI	-17.00

PLANETOCENTRIC CONIC

C3	9.120	VHL	3.020	DLA	-30.21	RAL	337.54	RAD	6637.6	VEL	11.368	PTH	6.42	VHP	3.559	DPA	-18.24	RAP	320.08	ECC	1.1501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 27	2332.23	1.02	59.38	188.76	137.57	17 14 19	1332.2	19.14	43.06
60.00	17 59 45	2107.94	6.11	44.06	193.64	129.91	18 34 53	1107.9	21.48	24.93
70.00	19 54 52	1769.23	12.18	21.09	198.11	122.16	20 24 22	769.2	24.27	359.23
78.90	22 57 55	1195.50	22.10	342.79	203.31	111.14	23 17 51	195.5	28.83	317.31
78.90	22 57 55	1195.50	22.10	342.79	203.31	111.14	23 17 51	195.5	28.83	317.31
78.90	22 57 55	1195.50	22.10	342.79	203.31	111.14	23 17 51	195.5	28.83	317.31
110.00	0 58 15	6104.09	12.18	287.91	198.11	122.16	2 39 59	5104.1	24.27	266.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2162	TRA	-.3671	TC3	-.2526	BAU	.0357	SGT	917.2	SGR	441.5	SG3	1104.7	ST	23.8	SR	19.5	SS	35.6
RDE	-.2027	RRA	.0898	RC3	.1482	FAU	.17973	RRT	-.0368	RRF	.1230	RTF	-.[illegible]43	CRT	.7740	CRS	-.2871	CST	.3759
FDE	-.1713	FRA	3.4443	FC-17.0616		BSP	1017	SGB	1017.9	R23	-.1052	R13	.3755	LSA	37.3	MSA	28.6	SSA	1.5
BDE	.2964	BRA	.3780	BC3	.2928	FSP	1833	SG1	917.4	SG2	441.1	THA	178.68	EL1	29.0	EL2	10.1	ALF	37.65

LAUNCH DATE MAY 13 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 422.251 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.309	GAL	.14	AZL	91.76	HCA	138.75	SMA	186.34	ECC	.18885	INC	1.7648	V1	29.478
RP	209.87	LAP	-1.16	LOP	10.36	VP	23.505	GAP	8.14	AZP	88.67	TAL	.85	TAP	139.60	RCA	151.15	APO	221.53	V2	26.124
RC	109.028	GL	-19.34	GP	-.74	ZAL	95.92	ZAP	125.77	ETS	180.43	ZAE	167.95	ETE	181.39	ZAC	99.55	ETC	277.34	LVI	-16.78

PLANETOCENTRIC CONIC

C3	9.027	VHL	3.004	DLA	-30.23	RAL	337.65	RAD	6637.5	VEL	11.364	PTH	6.42	VHP	3.481	DPA	-18.48	RAP	319.39	ECC	1.1486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 35 59	2329.83	1.14	59.28	188.79	137.57	17 14 48	1329.8	19.26	42.95
60.00	18 0 20	2105.40	6.22	43.94	193.66	129.90	18 35 25	1105.4	21.58	24.79
70.00	19 55 35	1766.33	12.29	20.93	198.12	122.12	20 25 1	766.3	24.36	359.05
78.85	22 57 58	1194.75	22.16	342.76	203.29	111.11	23 17 53	194.8	28.87	317.26
78.85	22 57 58	1194.75	22.16	342.76	203.29	111.11	23 17 53	194.8	28.87	317.26
78.85	22 57 58	1194.75	22.16	342.76	203.29	111.11	23 17 53	194.8	28.87	317.26
110.00	0 58 57	6101.19	12.29	287.75	198.12	122.12	2 40 38	5101.2	24.36	265.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2182	TRA	-.3363	TC3	-.4008	BAU	.0513	SGT	884.5	SGR	432.2	SG3	1150.1	ST	23.6	SR	19.0	SS	36.3
RDE	-.1970	RRA	.0888	RC3	.1407	FAU	.18584	RRT	-.0248	RRF	.1325	RTF	-.2678	CRT	.7979	CRS	-.2808	CST	.3456
FDE	-.1662	FRA	3.5790	FC-17.8232		BSP	779	SGB	984.4	R23	-.1238	R13	.2688	LSA	37.7	MSA	28.5	SSA	1.5
BDE	.2940	BRA	.3479	BC3	.4248	FSP	1874	SG1	884.6	SG2	432.0	THA	179.09	EL1	28.8	EL2	9.4	ALF	37.37

LAUNCH DATE MAY 13 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 426.400 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.294	GAL	.13	AZL	91.76	HCA	139.98	SMA	186.09	ECC	.18778	INC	1.7611	V1	29.478
RP	210.10	LAP	-1.15	LOP	11.39	VP	23.456	GAP	7.91	AZP	88.65	TAL	.82	TAP	140.79	RCA	151.15	APO	221.04	V2	26.098
RC	111.121	GL	-19.38	GP	-.78	ZAL	96.02	ZAP	123.81	ETS	180.39	ZAE	166.19	ETE	181.69	ZAC	99.61	ETC	277.18	LVI	-16.53

PLANETOCENTRIC CONIC

C3	8.943	VHL	2.991	DLA	-30.23	RAL	337.78	RAD	6637.5	VEL	11.360	PTH	6.41	VHP	3.408	DPA	-18.73	RAP	318.66	ECC	1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 36 29	2328.07	1.22	59.20	188.83	137.56	17 15 17	1328.1	19.34	42.87
60.00	18 0 50	2103.66	6.30	43.86	193.69	129.89	18 35 54	1103.7	21.64	24.69
70.00	19 56 4	1764.62	12.35	20.83	198.14	122.10	20 25 29	764.6	24.41	358.94
78.85	22 58 31	1192.86	22.20	342.64	203.29	111.06	23 18 24	192.9	28.89	317.12
78.85	22 58 31	1192.86	22.20	342.64	203.29	111.06	23 18 24	192.9	28.89	317.12
78.85	22 58 31	1192.86	22.20	342.64	203.29	111.06	23 18 24	192.9	28.89	317.12
110.00	0 59 27	6099.48	12.35	287.66	198.14	122.10	2 41 6	5099.5	24.41	265.76

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2153	TRA	-.3054	TC3	-.5452	BAU	.0671	SGT	857.4	SGR	423.1	SG3	1203.4	ST	23.0	SR	18.6	SS	37.4
RDE	-.1916	RRA	.0879	RC3	.1321	FAU	.19319	RRT	-.0178	RRF	.1482	RTF	-.1516	CRT	.8160	CRS	-.3020	CST	.2951
FDE	-.1995	FRA	3.7394	FC-18.7007		BSP	618	SGB	956.1	R23	-.1447	R13	.1524	LSA	38.5	MSA	28.1	SSA	1.5
BDE	.2882	BRA	.3178	BC3	.5610	FSP	1999	SG1	857.4	SG2	423.0	THA	179.33	EL1	28.2	EL2	8.7	ALF	37.64

LAUNCH DATE MAY 13 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 430.557 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.281	GAL	.12	AZL	91.76	HCA	141.20	SMA	185.87	ECC	.18682	INC	1.7572	V1	29.478
RP	210.33	LAP	-1.10	LOP	12.82	VP	23.408	GAP	7.69	AZP	88.63	TAL	.76	TAP	141.96	RCA	151.15	APO	220.60	V2	26.071
RC	113.239	GL	-19.41	GP	-.81	ZAL	96.14	ZAP	121.82	ETS	180.35	ZAE	164.38	ETE	181.90	ZAC	99.67	ETC	277.02	LVI	-16.28

PLANETOCENTRIC CONIC

C3	8.869	VHL	2.978	DLA	-30.21	RAL	337.93	RAD	6637.5	VEL	11.357	PTH	6.41	VHP	3.340	DPA	-18.99	RAP	317.90	ECC	1.1460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 36 58	2326.94	1.28	59.16	188.90	137.56	17 15 45	1326.9	19.40	42.81
60.00	18 1 15	2102.69	6.34	43.81	193.75	129.88	18 36 18	1102.7	21.68	24.64
70.00	19 56 21	1764.05	12.37	20.80	198.18	122.09	20 25 45	764.1	24.42	358.90
78.91	22 59 34	1189.77	22.23	342.42	203.33	111.00	23 19 24	189.8	28.88	316.89
78.91	22 59 34	1189.77	22.23	342.42	203.33	111.00	23 19 24	189.8	28.88	316.89
78.91	22 59 34	1189.77	22.23	342.42	203.33	111.00	23 19 24	189.8	28.88	316.89
110.00	0 59 44	6098.91	12.37	287.63	198.18	122.09	2 41 22	5098.9	24.42	265.72

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2127	TRA	-.2618	TC3	-.6754	BAU	.0814	SGT	818.0	SGR	413.2	SG3	1249.7	ST	22.3	SR	18.1	SS	37.4
RDE	-.1861	RRA	.0867	RC3	.1225	FAU	.20155	RRT	.0137	RRF	.1541	RTF	-.0051	CRT	.8445	CRS	-.3059	CST	.2409
FDE	-.2056	FRA	3.8039	FC-19.6750		BSP	296	SGB	916.4	R23	.1542	R13	-.0044	LSA	38.2	MSA	27.6	SSA	1.5
BDE	.2826	BRA	.2758	BC3	.6865	FSP	2013	SG1	818.0	SG2	413.2	THA	.53	EL1	27.6	EL2	7.8	ALF	38.14

LAUNCH DATE MAY 13 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 434.717 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.269	GAL	.11	AZL	91.75	HCA	142.43	SMA	185.68	ECC	.18596	INC	1.7531	V1	29.478
RP	210.57	LAP	-1.07	LOP	14.04	VP	23.361	GAP	7.47	AZP	88.61	TAL	.69	TAP	143.11	RCA	151.15	APO	220.20	V2	26.044
RC	115.380	GL	-19.44	GP	-.85	ZAL	96.30	ZAP	119.81	ETS	180.31	ZAE	162.52	ETE	182.05	ZAC	99.73	ETC	276.85	LVI	-16.01

PLANETOCENTRIC CONIC

C3	8.803	VHL	2.967	DLA	-30.16	RAL	338.10	RAD	6637.4	VEL	11.354	PTH	6.41	VHP	3.277	DPA	-19.25	RAP	317.12	ECC	1.1449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 26	2326.55	1.30	59.14	189.00	137.56	17 16 12	1326.5	19.41	42.79
60.00	18 1 35	2102.63	6.35	43.81	193.83	129.88	18 36 38	1102.6	21.68	24.64
70.00	19 56 24	1764.85	12.34	20.85	198.24	122.10	20 25 49	764.8	24.40	358.95
79.04	23 1 14	1185.31	22.23	342.09	203.40	110.93	23 21 0	185.3	28.86	316.55
79.04	23 1 14	1185.31	22.23	342.09	203.40	110.93	23 21 0	185.3	28.86	316.55
79.04	23 1 14	1185.31	22.23	342.09	203.40	110.93	23 21 0	185.3	28.86	316.55
110.00	0 59 46	6099.70	12.34	287.67	198.24	122.10	2 41 26	5099.7	24.40	265.77

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2234	TRA	-.2435	TC3	-.9022	BAU	.1070	SGT	876.7	SGR	404.1	SG3	1302.6	ST	23.1	SR	17.7	SS	39.4
RDE	-.1803	RRA	.0866	RC3	.1147	FAU	.20541	RRT	.0242	RRF	.1748	RTF	-.01	CRT	.8637	CRS	-.2763	CST	.2345
FDE	-.1663	FRA	4.0911	FC-20.2009		BSP	292	SGB	985.4	R23	.1712	R13	.1212	LSA	40.1	MSA	28.1	SSA	1.5
BDE	.2671	BRA	.2585	BC3	.9095	FSP	2228	SG1	876.8	SG2	404.0	THA	.81	EL1	28.1	EL2	7.3	ALF	36.29

LAUNCH DATE MAY 13 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 11 1971

HELIOCENTRIC CONIC DISTANCE 438.883 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.259	GAL	.09	AZL	91.75	HCA	143.65	SMA	185.50	ECC	.18518	INC	1.7488	V1	29.478
RP	210.82	LAP	-1.04	LOP	15.26	VP	23.315	GAP	7.26	AZP	88.59	TAL	.60	TAP	144.24	RCA	151.15	APO	219.85	V2	26.015
RC	117.545	GL	-19.45	GP	-.89	ZAL	96.48	ZAP	117.77	ETS	180.26	ZAE	160.63	ETE	182.15	ZAC	99.79	ETC	276.67	LVI	-15.73

PLANETOCENTRIC CONIC

C3	8.745	VHL	2.957	DLA	-30.10	RAL	338.30	RAD	6637.4	VEL	11.351	PTH	6.40	VHP	3.218	DPA	-19.52	RAP	316.30	ECC	1.1439

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 51	2326.72	1.29	59.15	189.11	137.56	17 16 38	1326.7	19.41	42.80
60.00	18 1 51	2103.27	6.32	43.84	193.93	129.89	18 36 54	1103.3	21.66	24.67
70.00	19 56 16	1766.67	12.27	20.95	198.31	122.12	20 25 42	766.7	24.35	359.07
79.23	23 3 25	1179.60	22.22	341.66	203.49	110.85	23 23 5	179.6	28.81	316.12
79.23	23 3 25	1179.60	22.22	341.66	203.49	110.85	23 23 5	179.6	28.81	316.12
79.23	23 3 25	1179.60	22.22	341.66	203.49	110.85	23 23 5	179.6	28.81	316.12
110.00	0 59 38	6101.53	12.27	287.77	198.31	122.12	2 41 19	5101.5	24.35	265.89

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2265	TRA	-.2027	TC3	-1.0685	BAU	.1255	SGT	893.3	SGR	393.7	SG3	1352.2	ST	23.0	SR	17.2	SS	39.5
RDE	-.1747	RRA	.0856	RC3	.1037	FAU	.21450	RRT	.0647	RRF	.1801	RTF	.2731	CRT	.8910	CRS	-.2585	CST	.1957
FDE	-.1397	FRA	4.1679	FC-21.2340		BSP	135	SGB	976.3	R23	.1585	R13	.2756	LSA	40.0	MSA	27.9	SSA	1.5
BDE	.2860	BRA	.2200	BC3	1.0735	FSP	2313	SG1	893.8	SG2	392.7	THA	2.03	EL1	28.0	EL2	6.4	ALF	35.79

LAUNCH DATE MAY 13 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 13 1971

HELIOCENTRIC CONIC DISTANCE 443.053 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.249	GAL	.08	AZL	91.74	HCA	144.87	SMA	185.34	ECC	.18449	INC	1.7442
RP	211.07	LAP	-1.00	LOP	16.48	VP	23.270	GAP	7.05	AZP	88.57	TAL	.49	TAP	145.36	RCA	151.15	APO	219.54
RC	119.734	GL	-19.44	GP	-.93	ZAL	96.69	ZAP	115.72	ETS	180.22	ZAE	158.69	ETE	182.22	ZAC	99.65	ETC	276.49

V1	29.478
V2	25.986
LVI	-15.44

PLANETOCENTRIC CONIC

C3	8.695	VHL	2.949	DLA	-30.02	RAL	338.52	RAD	6637.4	VEL	11.349	PTH	6.40	VHP	3.164	DPA	-19.80	RAP	315.46	ECC	1.1431

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 38 16	2327.52	1.25	58.18	189.25	137.56	17 17 3	1327.5	19.37	42.84
60.00	18 2 1	2104.68	6.26	43.91	194.04	129.89	18 37 6	1104.7	21.60	24.75
70.00	19 55 55	1769.62	12.17	21.11	198.40	122.16	20 25 24	769.6	24.26	359.25
79.47	23 6 8	1172.63	22.19	341.13	203.61	110.76	23 25 40	172.6	28.75	315.59
79.47	23 6 8	1172.63	22.19	341.13	203.61	110.76	23 25 40	172.6	28.75	315.59
79.47	23 6 8	1172.63	22.19	341.13	203.61	110.76	23 25 40	172.6	28.75	315.59
110.00	0 59 17	6104.48	12.17	287.93	198.40	122.16	2 41 1	5104.5	24.26	266.08

DIFFERENTIAL CORRECTIONS

TDE	-.2271	TRA	-.1655	TC3	-1.2543	BAU	.1462
RDE	-.1694	RRA	.0849	RC3	.0934	FAU	.22125
FDE	-.1663	FRA	4.3116	FC	-22.0283	BSP	292
BDE	.2833	BRA	.1860	BC3	1.2578	FSP	2322

MID-COURSE EXECUTION ACCURACY

SGT	938.0	SGR	384.2	SG3	1399.8
RRT	.0936	RRF	.1983	RTF	.4053
SGB	1013.6	R23	.1535	R13	.4082
SG1	938.8	SG2	382.2	THA	2.63

ORBIT DETERMINATION ACCURACY

ST	22.8	SR	16.7	SS	40.3
CRT	.9120	CRS	-.2759	CST	.1283
LSA	40.6	MSA	27.7	SSA	1.4
EL1	27.7	EL2	5.6	ALF	35.46

LAUNCH DATE MAY 13 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 15 1971

HELIOCENTRIC CONIC DISTANCE 447.228 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.241	GAL	.06	AZL	91.74	HCA	146.08	SMA	185.21	ECC	.18389	INC	1.7393
RP	211.33	LAP	-.97	LOP	17.70	VP	23.225	GAP	6.84	AZP	88.56	TAL	.37	TAP	146.45	RCA	151.15	APO	219.26
RC	121.945	GL	-19.43	GP	-.97	ZAL	96.91	ZAP	113.65	ETS	180.17	ZAE	156.73	ETE	182.26	ZAC	99.90	ETC	276.30

V1	29.478
V2	25.957
LVI	-15.14

PLANETOCENTRIC CONIC

C3	8.652	VHL	2.941	DLA	-29.92	RAL	338.75	RAD	6637.3	VEL	11.347	PTH	6.40	VHP	3.115	DPA	-20.08	RAP	314.60	ECC	1.1424

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 38 38	2328.92	1.18	59.24	189.41	137.56	17 17 27	1328.9	19.30	42.91
60.00	18 2 6	2106.84	6.16	44.01	194.18	129.91	18 37 13	1106.8	21.52	24.87
70.00	19 55 22	1773.65	12.02	21.33	198.50	122.21	20 24 56	773.7	24.15	359.51
79.79	23 9 29	1164.03	22.14	340.47	203.75	110.66	23 28 53	164.0	28.66	314.93
79.79	23 9 29	1164.03	22.14	340.47	203.75	110.66	23 28 53	164.0	28.66	314.93
79.79	23 9 29	1164.03	22.14	340.47	203.75	110.66	23 28 53	164.0	28.66	314.93
110.00	0 58 44	6108.51	12.02	288.15	198.50	122.21	2 40 33	5108.5	24.15	266.34

DIFFERENTIAL CORRECTIONS

TDE	-.2272	TRA	-.1252	TC3	-1.4789	BAU	.1713
RDE	-.1640	RRA	.0842	RC3	.0843	FAU	.22471
FDE	-.1847	FRA	4.4470	FC	-22.4843	BSP	604
BDE	.2802	BRA	.1509	BC3	1.4813	FSP	2337

MID-COURSE EXECUTION ACCURACY

SGT	1015.8	SGR	374.7	SG3	1432.7
RRT	.1182	RRF	.2174	RTF	.5257
SGB	1082.7	R23	.1467	R13	.5285
SG1	1016.9	SG2	371.6	THA	2.88

ORBIT DETERMINATION ACCURACY

ST	22.6	SR	16.2	SS	41.0
CRT	.9325	CRS	-.2879	CST	.0608
LSA	41.3	MSA	27.3	SSA	1.4
EL1	27.4	EL2	4.8	ALF	35.10

LAUNCH DATE MAY 13 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 17 1971

HELIOCENTRIC CONIC DISTANCE 451.407 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.234	GAL	.04	AZL	91.73	HCA	147.30	SMA	185.09	ECC	.18336	INC	1.7342
RP	211.60	LAP	-.94	LOP	18.91	VP	23.181	GAP	6.64	AZP	88.54	TAL	.23	TAP	147.53	RCA	151.15	APO	219.03
RC	124.177	GL	-19.41	GP	-1.02	ZAL	97.17	ZAP	111.56	ETS	180.12	ZAE	154.73	ETE	182.28	ZAC	99.96	ETC	276.10

V1	29.478
V2	25.926
LVI	-14.83

PLANETOCENTRIC CONIC

C3	8.616	VHL	2.935	DLA	-29.80	RAL	339.01	RAD	6637.3	VEL	11.346	PTH	6.40	VHP	3.070	DPA	-20.36	RAP	313.73	ECC	1.1418

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 38 59	2330.91	1.08	59.32	189.59	137.57	17 17 50	1330.9	19.21	43.00
60.00	18 2 7	2109.71	6.04	44.15	194.33	129.92	18 37 17	1109.7	21.41	25.03
70.00	19 54 39	1778.70	11.84	21.60	198.61	122.27	20 24 17	778.7	24.00	359.83
80.00	22 57 8	1205.93	20.94	343.08	203.44	111.79	23 17 14	205.9	28.06	317.93
80.18	23 13 26	1153.87	22.07	339.69	203.92	110.55	23 32 40	153.9	28.56	314.16
100.00	1 43 56	5968.44	20.94	282.35	203.44	111.79	3 23 24	4968.4	28.06	257.20
110.00	0 58 1	6113.56	11.84	288.43	198.61	122.27	2 39 54	5113.6	24.00	266.66

DIFFERENTIAL CORRECTIONS

TDE	-.2276	TRA	-.0757	TC3	-1.6577	BAU	.1911
RDE	-.1583	RRA	.0828	RC3	.0707	FAU	.23552
FDE	-.1351	FRA	4.4318	FC	-23.6644	BSP	867
BDE	.2772	BRA	.1122	BC3	1.6592	FSP	2440

MID-COURSE EXECUTION ACCURACY

SGT	1083.2	SGR	363.2	SG3	1477.6
RRT	.1656	RRF	.2192	RTF	.5.46
SGB	1142.5	R23	.1008	R13	.6468
SG1	1085.1	SG2	357.6	THA	3.57

ORBIT DETERMINATION ACCURACY

ST	22.4	SR	15.7	SS	40.2
CRT	.9550	CRS	-.2606	CST	.0172
LSA	40.4	MSA	27.0	SSA	1.4
EL1	27.1	EL2	3.9	ALF	34.60

LAUNCH DATE MAY 13 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 455.588 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.228	GAL	.01	AZL	91.73	HCA	148.50	SMA	184.99	ECC	.18291	INC	1.7287
RP	211.87	LAP	-.90	LOP	20.12	VP	23.138	GAP	6.45	AZP	88.53	TAL	.07	TAP	148.58	RCA	151.15	APO	218.82
RC	126.431	GL	-19.38	GP	-1.06	ZAL	97.45	ZAP	109.48	ETS	180.06	ZAE	152.72	ETE	182.30	ZAC	100.01	ETC	275.90

V1	29.478
V2	25.896
LVI	-14.51

PLANETOCENTRIC CONIC

C3	8.587	VHL	2.930	DLA	-29.66	RAL	339.29	RAD	6637.3	VEL	11.344	PTH	6.40	VHP	3.029	DPA	-20.64	RAP	312.84	ECC	1.1413

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 18	2333.53	.95	59.43	189.79	137.57	17 18 11	1333.5	19.08	43.12
60.00	18 2 3	2113.38	5.88	44.33	194.51	129.94	18 37 16	1113.4	21.27	25.23
70.00	19 53 44	1784.85	11.61	21.94	198.74	122.35	20 23 29	784.9	23.83	.22
80.00	22 44 42	1248.66	19.83	345.77	203.20	112.79	23 5 31	248.7	27.48	320.97
80.65	23 18 12	1141.55	21.99	338.74	204.11	110.43	23 37 13	141.5	28.43	313.22
100.00	1 31 30	6011.17	19.83	285.05	203.20	112.79	3 11 41	5011.2	27.48	260.25
110.00	0 57 6	6119.71	11.61	288.76	198.74	122.35	2 39 6	5119.7	23.83	267.04

DIFFERENTIAL CORRECTIONS

TDE	-.2142	TRA	-.0883	TC3	-1.8056	BAU	.2074
RDE	-.1565	RRA	.0888	RC3	.0487	FAU	.26020
FDE	-.7253	FRA	5.7310	FC	-26.2338	BSP	1104
BDE	.2653	BRA	.1252	BC3	1.8062	FSP	2600

MID-COURSE EXECUTION ACCURACY

SGT	1155.3	SGR	366.6	SG3	1738.1
RRT	.1377	RRF	.3486	RTF	.6153
SGB	1212.1	R23	.2570	R13	.6193
SG1	1156.5	SG2	362.7	THA	2.78

ORBIT DETERMINATION ACCURACY

ST	21.2	SR	15.6	SS	54.2
CRT	.9417	CRS	-.5146	CST	-.2149
LSA	55.2	MSA	24.3	SSA	1.4
EL1	26.0	EL2	4.3	ALF	35.82

LAUNCH DATE MAY 13 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 459.770 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.223	GAL	-.01	AZL	91.72	HCA	149.71	SMA	184.90	ECC	.18253	INC	1.7230	V1	29.478
RP	212.14	LAP	-.87	LOP	21.32	VP	23.096	GAP	6.25	AZP	88.51	TAL	359.91	TAP	149.62	RCA	151.15	APO	218.65	V2	25.884
RC	128.706	GL	-19.33	GP	-1.11	ZAL	97.75	ZAP	107.39	ETS	180.01	ZAE	150.68	ETE	182.30	ZAC	100.05	ETC	275.70	LVI	-14.18

PLANETOCENTRIC CONIC

C3	8.564	VHL	2.926	DLA	-29.51	RAL	339.58	RAD	6637.3	VEL	11.343	PTH	6.40	VHP	2.992	DPA	-20.92	RAP	311.94	ECC	1.1409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 35	2336.71	.79	59.56	190.00	137.57	17 18 32	1336.7	18.93	43.27
60.00	18 1 54	2117.72	5.69	44.54	194.70	129.97	18 37 12	1117.7	21.10	25.48
70.00	19 52 39	1791.93	11.36	22.33	198.89	122.43	20 22 31	791.9	23.62	.67
80.00	22 35 55	1280.13	16.99	347.73	203.08	113.48	22 57 15	280.1	27.01	323.19
81.21	23 23 46	1126.98	21.89	337.62	204.33	110.29	23 42 33	127.0	28.29	312.12
100.00	1 22 43	6042.64	16.99	287.00	203.08	113.48	3 3 25	5042.6	27.01	262.47
110.00	0 56 2	6126.78	11.36	289.15	198.89	122.43	2 38 8	5126.8	23.62	267.49

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2385	TRA	-.0134	TC3	-2.1932	BAU	.2512	SGT	1366.2	SGR	347.4	SG3	1563.9	ST	23.4	SR	14.6	SS	47.2
RDE	-.1466	RRA	.0856	RC3	.0590	FAU	.22753	RRT	.1769	RRF	.2966	RTF	.6839	CRT	.9727	CRS	-.1952	CST	.0107
FDE	.0011	FRA	5.3788	FC	-23.0011	BSP	1289	SGB	1409.7	R23	.1703	R13	.6860	LSA	47.3	MSA	27.4	SSA	1.3
BDE	.2800	BRA	.0867	BC3	2.1940	FSP	2783	SG1	1367.7	SG2	341.6	THA	2.75	EL1	27.5	EL2	2.9	ALF	31.69

LAUNCH DATE MAY 13 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 463.955 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.219	GAL	-.04	AZL	91.72	HCA	150.91	SMA	184.83	ECC	.18222	INC	1.7166	V1	29.478
RP	212.43	LAP	-.83	LOP	22.53	VP	23.054	GAP	6.06	AZP	88.50	TAL	359.72	TAP	150.64	RCA	151.15	APO	218.51	V2	25.832
RC	130.999	GL	-19.28	GP	-1.17	ZAL	98.07	ZAP	105.30	ETS	179.95	ZAE	148.63	ETE	182.29	ZAC	100.09	ETC	275.50	LVI	-13.85

PLANETOCENTRIC CONIC

C3	8.547	VHL	2.923	DLA	-29.33	RAL	339.90	RAD	6637.3	VEL	11.343	PTH	6.40	VHP	2.960	DPA	-21.20	RAP	311.03	ECC	1.1407

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 50	2340.48	.60	59.72	190.24	137.57	17 18 50	1340.5	18.75	43.45
60.00	18 1 40	2122.76	5.47	44.78	194.90	129.99	18 37 3	1122.8	20.90	25.75
70.00	19 51 25	1799.93	11.06	22.76	199.05	122.52	20 21 25	799.9	23.38	1.17
80.00	22 28 25	1307.91	16.23	349.44	203.03	114.06	22 50 13	307.9	26.56	325.13
81.89	23 30 18	1109.65	21.77	336.29	204.56	110.15	23 48 48	109.6	28.12	310.81
100.00	1 15 13	6070.42	16.23	288.71	203.03	114.06	2 56 24	5070.4	26.56	264.41
110.00	0 54 47	6134.79	11.06	289.58	199.05	122.52	2 37 2	5134.8	23.38	267.99

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2399	TRA	.0430	TC3	-2.3743	BAU	.2713	SGT	1468.9	SGR	334.7	SG3	1615.0	ST	23.6	SR	14.1	SS	45.3
RDE	-.1408	RRA	.0836	RC3	.0393	FAU	.24580	RRT	.2361	RRF	.2935	RTF	.7753	CRT	.9862	CRS	-.1653	CST	-.0383
FDE	.0607	FRA	5.2158	FC	-24.8978	BSP	1593	SGB	1506.5	R23	.1040	R13	.7766	LSA	45.4	MSA	27.3	SSA	1.3
BDE	.2782	BRA	.0940	BC3	2.3746	FSP	2888	SG1	1471.1	SG2	324.7	THA	3.24	EL1	27.4	EL2	2.0	ALF	30.62

LAUNCH DATE MAY 13 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 468.143 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.215	GAL	-.07	AZL	91.71	HCA	152.11	SMA	184.77	ECC	.18197	INC	1.7098	V1	29.478
RP	212.72	LAP	-.80	LOP	23.73	VP	23.012	GAP	5.86	AZP	88.49	TAL	359.52	TAP	151.64	RCA	151.15	APO	218.40	V2	25.799
RC	133.312	GL	-19.21	GP	-1.22	ZAL	98.41	ZAP	103.21	ETS	179.89	ZAE	146.57	ETE	182.27	ZAC	100.12	ETC	275.29	LVI	-13.51

PLANETOCENTRIC CONIC

C3	8.536	VHL	2.922	DLA	-29.13	RAL	340.23	RAD	6637.3	VEL	11.342	PTH	6.40	VHP	2.931	DPA	-21.48	RAP	310.13	ECC	1.1405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 3	2344.81	.38	59.90	190.49	137.57	17 19 7	1344.8	18.54	43.65
60.00	18 1 21	2128.49	5.21	45.06	195.13	130.02	18 36 50	1128.5	20.67	26.07
70.00	19 50 2	1808.84	10.74	23.24	199.22	122.62	20 20 11	808.8	23.12	1.73
80.00	22 21 38	1333.88	17.50	351.02	203.02	114.58	22 43 52	333.9	26.12	326.94
82.71	23 38 6	1088.58	21.64	334.68	204.82	109.99	23 56 14	88.6	27.94	309.22
100.00	1 8 26	6096.39	17.50	290.30	203.02	114.58	2 50 2	5096.4	26.12	266.21
110.00	0 53 24	6143.70	10.74	290.07	199.22	122.62	2 35 48	5143.7	23.12	268.55

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2391	TRA	.0924	TC3	-2.6163	BAU	.2986	SGT	1612.4	SGR	324.7	SG3	1640.0	ST	23.8	SR	13.6	SS	45.6
RDE	-.1353	RRA	.0831	RC3	.0277	FAU	.24938	RRT	.2642	RRF	.3143	RTF	.8164	CRT	.9923	CRS	-.1587	CST	-.0957
FDE	.0858	FRA	5.3046	FC	-25.2941	BSP	1935	SGB	1644.8	R23	.0935	R13	.8174	LSA	45.8	MSA	27.1	SSA	1.3
BDE	.2747	BRA	.1242	BC3	2.6165	FSP	2803	SG1	1614.8	SG2	312.7	THA	3.16	EL1	27.3	EL2	1.5	ALF	29.61

LAUNCH DATE MAY 13 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC DISTANCE 472.331 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.212	GAL	-.11	AZL	91.70	HCA	153.31	SMA	184.73	ECC	.18179	INC	1.7025	V1	29.478
RP	213.01	LAP	-.76	LOP	24.92	VP	22.971	GAP	5.69	AZP	88.48	TAL	359.31	TAP	152.62	RCA	151.15	APO	218.31	V2	25.766
RC	135.643	GL	-19.13	GP	-1.26	ZAL	98.78	ZAP	101.14	ETS	179.83	ZAE	144.50	ETE	182.26	ZAC	100.15	ETC	275.09	LVI	-13.16

PLANETOCENTRIC CONIC

C3	8.530	VHL	2.921	DLA	-28.91	RAL	340.57	RAD	6637.3	VEL	11.342	PTH	6.39	VHP	2.906	DPA	-21.75	RAP	309.23	ECC	1.1404

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 13	2349.71	.14	60.11	190.76	137.58	17 19 23	1349.7	18.31	43.88
60.00	18 0 58	2134.90	4.93	45.37	195.36	130.05	18 36 33	1134.9	20.42	26.42
70.00	19 48 30	1818.61	10.38	23.77	199.41	122.72	20 18 49	818.6	22.83	2.33
80.00	22 15 18	1358.81	16.79	352.53	203.04	115.06	22 37 56	358.8	25.67	328.65
83.73	23 47 40	1062.10	21.49	332.67	205.10	109.82	24 5 22	62.1	27.73	307.23
100.00	1 2 5	6121.32	16.79	291.81	203.04	115.06	2 44 7	5121.3	25.67	267.92
110.00	0 51 52	6153.47	10.38	290.60	199.41	122.72	2 34 26	5153.5	22.83	269.16

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2369	TRA	.1427	TC3	-2.8677	BAU	.3270	SGT	1767.6	SGR	315.9	SG3	1659.1	ST	23.9	SR	13.0	SS	46.6
RDE	-.1299	RRA	.0831	RC3	.0180	FAU	.24907	RRT	.2873	RRF	.3453	RTF	.8425	CRT	.9942	CRS	-.1742	CST	-.1741
FDE	.0739	FRA	5.4770	FC	-25.2791	BSP	2240	SGB	1795.6	R23	.1002	R13	.8434	LSA	47.0	MSA	26.5	SSA	1.2
BDE	.2702	BRA	.1652	BC3	2.8678	FSP	2898	SG1	1770.0	SG2	302.2	THA	3.03	EL1	27.2	EL2	1.2	ALF	28.60

LAUNCH DATE MAY 13 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC DISTANCE 476.521 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.211	GAL	-.14	AZL	91.69	HCA	154.50	SMA	184.70	ECC	.18166	INC	1.6946	V1	29.478
RP	213.31	LAP	-.73	LOP	26.12	VP	22.930	GAP	5.51	AZP	88.47	TAL	359.08	TAP	153.59	RCA	151.15	APO	218.25	V2	25.732
RC	137.991	GL	-18.04	GP	-1.35	ZAL	99.17	ZAP	99.07	ETS	179.76	ZAE	142.44	ETE	182.23	ZAC	100.17	ETC	274.89	LVI	-12.81

PLANETOCENTRIC CONIC

C3	8.530	VHL	2.921	DLA	-28.67	RAL	340.93	RAD	6637.3	VEL	11.342	PTH	6.39	VHP	2.885	DPA	-22.02	RAP	308.34	ECC	1.1404

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 21	2355.19	-.14	60.34	191.05	137.58	17 19 36	1355.2	18.05	44.14
60.00	18 0 29	2142.00	4.62	45.71	195.62	130.08	18 36 11	1142.0	20.14	26.81
70.00	19 46 50	1829.23	9.99	24.35	199.61	122.83	20 17 19	829.2	22.51	2.99
80.00	22 9 16	1383.16	16.08	353.99	203.09	115.50	22 32 19	383.2	25.21	330.31
85.06	0 3 52	1027.11	21.32	330.03	205.39	109.64	0 20 59	27.1	27.50	304.62
100.00	0 56 3	6145.67	16.08	293.27	203.09	115.50	2 38 29	5145.7	25.21	269.59
110.00	0 50 12	6164.09	9.99	291.17	199.61	122.83	2 32 56	5164.1	22.51	269.82

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2356	TRA	.1945	TC3	-3.1091	BAU	.3545	SGT	1923.8	SGR	305.5	SG3	1686.2	ST	24.2	SR	12.5	SS	46.8
RDE	-.1240	RRA	.0827	RC3	.0041	FAU	.25435	RRT	.3208	RRF	.3660	RTF	.8693	CRT	.9923	CRS	-.1437	CST	-.2060
FDE	.1495	FRA	5.5390	FC	-25.8158	BSP	2557	SGB	1947.9	R23	.0852	R13	.8700	LSA	47.2	MSA	26.4	SSA	1.2
BDE	.2663	BRA	.2114	BC3	3.1091	FSP	2947	SG1	1926.4	SG2	289.0	THA	2.98	EL1	27.2	EL2	1.4	ALF	27.19

LAUNCH DATE MAY 13 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC DISTANCE 480.711 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.210	GAL	-.18	AZL	91.69	HCA	155.69	SMA	184.68	ECC	.18159	INC	1.6863	V1	29.478
RP	213.61	LAP	-.69	LOP	27.30	VP	22.890	GAP	5.33	AZP	88.46	TAL	358.84	TAP	154.54	RCA	151.15	APO	218.22	V2	25.697
RC	140.356	GL	-18.93	GP	-1.41	ZAL	99.58	ZAP	97.03	ETS	179.69	ZAE	140.38	ETE	182.21	ZAC	100.18	ETC	274.69	LVI	-12.46

PLANETOCENTRIC CONIC

C3	8.535	VHL	2.921	DLA	-28.42	RAL	341.31	RAD	6637.3	VEL	11.342	PTH	6.40	VHP	2.867	DPA	-22.29	RAP	307.46	ECC	1.1405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 26	2361.22	-.44	60.59	191.34	137.57	17 19 47	1361.2	17.76	44.42
60.00	17 59 55	2149.75	4.28	46.08	195.88	130.11	18 35 45	1149.8	19.83	27.24
70.00	19 45 2	1840.65	9.56	24.96	199.82	122.94	20 15 42	840.7	22.16	3.70
80.00	22 3 28	1407.15	15.37	355.42	203.17	115.92	22 26 55	407.2	24.73	331.94
87.11	0 22 21	6260.27	21.13	303.84	205.70	109.45	2 6 42	5260.3	27.26	278.46
100.00	0 50 15	6169.67	15.37	294.70	203.17	115.92	2 33 5	5169.7	24.73	271.21
110.00	0 48 24	6175.51	9.56	291.78	199.82	122.94	2 31 19	5175.5	22.16	270.52

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2325	TRA	.2490	TC3	-3.3542	BAU	.3827	SGT	2087.3	SGR	296.5	SG3	1709.3	ST	24.5	SR	11.9	SS	47.6
RDE	-.1182	RRA	.0828	RC3	-.0085	FAU	.25634	RRT	.3522	RRF	.3967	RTF	.8872	CRT	.9862	CRS	-.1351	CST	-.2602
FDE	.1906	FRA	5.6799	FC	-26.0025	BSP	2894	SGB	2108.3	R23	.0841	R13	.8878	LSA	48.3	MSA	26.0	SSA	1.1
BDE	.2608	BRA	.2624	BC3	3.3542	FSP	2989	SG1	2090.0	SG2	277.1	THA	2.92	EL1	27.1	EL2	1.6	ALF	25.80

LAUNCH DATE MAY 13 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC DISTANCE 484.902 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.209	GAL	-.22	AZL	91.68	HCA	156.88	SMA	184.67	ECC	.18157	INC	1.6767	V1	29.478
RP	213.92	LAP	-.66	LOP	28.49	VP	22.850	GAP	5.16	AZP	88.46	TAL	358.59	TAP	155.47	RCA	151.14	APO	218.21	V2	25.662
RC	142.739	GL	-18.81	GP	-1.49	ZAL	100.01	ZAP	95.01	ETS	179.62	ZAE	138.33	ETE	182.19	ZAC	100.18	ETC	274.49	LVI	-12.11

PLANETOCENTRIC CONIC

C3	8.545	VHL	2.923	DLA	-28.14	RAL	341.69	RAD	6637.3	VEL	11.343	PTH	6.40	VHP	2.853	DPA	-22.56	RAP	306.60	ECC	1.1406

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 27	2367.83	-.77	60.86	191.65	137.57	17 19 55	1367.8	17.44	44.73
60.00	17 59 16	2158.18	3.91	46.48	196.15	130.14	18 35 14	1158.2	19.49	27.70
70.00	19 43 5	1852.87	9.11	25.62	200.04	123.06	20 13 58	852.9	21.79	4.45
80.00	21 57 49	1431.00	14.66	356.83	203.27	116.31	22 21 40	431.0	24.24	333.54
90.00	0 23 8	6263.05	19.11	303.25	205.31	111.25	2 7 31	5263.1	26.19	278.46
100.00	0 44 37	6193.52	14.66	296.11	203.27	116.31	2 27 51	5193.5	24.24	272.81
110.00	0 46 27	6187.73	9.11	292.44	200.04	123.06	2 29 35	5187.7	21.79	271.27

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2292	TRA	.3031	TC3	-3.6068	BAU	.4120	SGT	2258.8	SGR	287.1	SG3	1726.2	ST	24.8	SR	11.3	SS	48.1
RDE	-.1123	RRA	.0827	RC3	-.0221	FAU	.25881	RRT	.3855	RRF	.4259	RTF	.9025	CRT	.9765	CRS	-.1167	CST	-.3012
FDE	.2521	FRA	5.7603	FC	-26.2222	BSP	3215	SGB	2277.0	R23	.0793	R13	.9030	LSA	48.9	MSA	25.8	SSA	1.1
BDE	.2593	BRA	.3142	BC3	3.6069	FSP	2999	SG1	2261.5	SG2	264.6	THA	2.84	EL1	27.2	EL2	2.2	ALF	24.22

LAUNCH DATE MAY 13 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 489.093 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.209	GAL	-.26	AZL	91.67	HCA	158.06	SMA	184.68	ECC	.18160	INC	1.6663	V1	29.478
RP	214.24	LAP	-.62	LOP	29.67	VP	22.811	GAP	4.99	AZP	88.45	TAL	358.32	TAP	156.39	RCA	151.14	APO	218.22	V2	25.627
RC	145.138	GL	-18.67	GP	-1.57	ZAL	100.46	ZAP	93.01	ETS	179.55	ZAE	136.29	ETE	182.17	ZAC	100.17	ETC	274.29	LVI	-11.76

PLANETOCENTRIC CONIC

C3	8.559	VHL	2.926	DLA	-27.83	RAL	342.09	RAD	6637.3	VEL	11.343	PTH	6.40	VHP	2.842	DPA	-22.82	RAP	305.76	ECC	1.1409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 26	2375.01	-1.13	61.16	191.98	137.57	17 20 1	1375.0	17.09	45.06
60.00	17 58 31	2167.28	3.51	46.92	196.44	130.17	18 34 38	1167.3	19.13	28.19
70.00	19 41 1	1865.87	8.63	26.31	200.27	123.17	20 12 7	865.9	21.38	5.24
80.00	21 52 18	1454.84	13.93	358.23	203.38	116.68	22 16 33	454.8	23.73	335.12
90.00	0 5 43	1037.26	17.53	329.22	205.09	112.56	0 23 1	37.3	25.31	304.90
100.00	0 39 6	6217.35	13.93	297.50	203.38	116.68	2 22 43	5217.3	23.73	274.40
110.00	0 44 23	6200.73	8.63	293.14	200.27	123.17	2 27 44	5200.7	21.38	272.06

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2246	TRA	.3604	TC3	-3.8576	BAU	.4414	SGT	2434.2	SGR	278.7	SG3	1746.3	ST	25.3	SR	10.8	SS	49.0
RDE	-.1063	RRA	.0832	RC3	-.0363	FAU	.26072	RRT	.4222	RRF	.4812	RTF	.9138	CRT	.9632	CRS	-.0996	CST	-.3429
FDE	.3212	FRA	5.8877	FC	-26.3707	BSP	3556	SGB	2450.1	R23	.0785	R13	.9142	LSA	50.0	MSA	25.5	SSA	1.1
BDE	.2485	BRA	.3698	BC3	3.8578	FSP	3053	SG1	2437.1	SG2	252.4	THA	2.80	EL1	27.3	EL2	2.7	ALF	22.54

LAUNCH DATE MAY 13 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 493.283 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.210	GAL	-.30	AZL	91.66	HCA	159.24	SMA	184.69	ECC	.18169	INC	1.6550	V1	29.478
RP	214.55	LAP	-.59	LOP	30.85	VP	22.772	GAP	4.82	AZP	88.45	TAL	358.05	TAP	157.29	RCA	151.14	APO	218.25	V2	25.591
RC	147.555	GL	-18.52	GP	-1.65	ZAL	100.92	ZAP	91.04	ETS	179.47	ZAE	134.27	ETE	182.14	ZAC	100.15	ETC	274.10	LVI	-11.41

PLANETOCENTRIC CONIC

C3	8.579	VHL	2.929	DLA	-27.51	RAL	342.49	RAD	6637.3	VEL	11.344	PTH	6.40	VHP	2.834	DPA	-23.08	RAP	304.94	ECC	1.1412

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 20	2382.78	-1.52	61.49	192.31	137.56	17 20 3	1382.8	16.72	45.42
60.00	17 57 40	2177.07	3.08	47.39	196.74	130.20	18 33 57	1177.1	18.73	28.71
70.00	19 38 48	1879.66	8.11	27.05	200.51	123.29	20 10 8	879.7	20.95	6.08
80.00	21 46 51	1478.78	13.20	359.63	203.51	117.03	22 11 30	478.8	23.20	336.70
90.00	23 49 34	1083.06	16.31	332.03	205.03	113.43	24 7 37	83.1	24.57	308.05
100.00	0 33 39	6241.29	13.20	298.90	203.51	117.03	2 17 40	5241.3	23.20	275.98
110.00	0 42 10	6214.52	8.11	293.87	200.51	123.29	2 25 45	5214.5	20.95	272.90

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2185	TRA	.4181	TC3	-4.1052	BAU	.4709	SGT	2610.7	SGR	270.3	SG3	1751.6	ST	25.7	SR	10.2	SS	49.5
RDE	-.1001	RRA	.0835	RC3	-.0501	FAU	.26073	RRT	.4590	RRF	.4961	RTF	.9230	CRT	.9466	CRS	-.0790	CST	-.3797
FDE	.3998	FRA	5.9604	FC-26.3125		BSP	3900	SGB	2624.7	R23	.0775	R13	.9234	LSA	50.8	MSA	25.2	SSA	1.0
BDE	.2403	BRA	.4263	BC3	4.1055	FSP	3094	SG1	2613.7	SG2	239.9	THA	2.74	EL1	27.5	EL2	3.1	ALF	20.81

LAUNCH DATE MAY 13 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 497.472 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.212	GAL	-.35	AZL	91.64	HCA	160.42	SMA	184.72	ECC	.18182	INC	1.6422	V1	29.478
RP	214.88	LAP	-.55	LOP	32.03	VP	22.733	GAP	4.65	AZP	88.45	TAL	357.76	TAP	158.18	RCA	151.13	APO	218.30	V2	25.554
RC	149.988	GL	-18.35	GP	-1.75	ZAL	101.41	ZAP	89.11	ETS	179.39	ZAE	132.27	ETE	182.13	ZAC	100.11	ETC	273.92	LVI	-11.05

PLANETOCENTRIC CONIC

C3	8.602	VHL	2.933	DLA	-27.16	RAL	342.91	RAD	6637.3	VEL	11.345	PTH	6.40	VHP	2.828	DPA	-23.34	RAP	304.16	ECC	1.1416

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 40 9	2391.16	-1.95	61.84	192.65	137.55	17 20 0	1391.2	16.31	45.80
60.00	17 56 42	2187.56	2.62	47.89	197.04	130.23	18 33 9	1187.6	18.31	29.28
70.00	19 36 27	1894.25	7.57	27.82	200.75	123.40	20 8 1	894.2	20.49	6.95
80.00	21 41 27	1502.93	12.45	1.02	203.66	117.36	22 6 30	502.9	22.64	338.28
90.00	23 39 22	1122.70	15.22	334.43	205.03	114.13	23 58 4	122.7	23.87	310.74
100.00	0 28 15	6265.44	12.45	300.30	203.66	117.36	2 12 40	5265.4	22.64	277.56
110.00	0 39 49	6229.10	7.57	294.65	200.75	123.40	2 23 38	5229.1	20.49	273.78

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2113	TRA	.4773	TC3	-4.3530	BAU	.5007	SGT	2790.8	SGR	263.1	SG3	1756.6	ST	26.2	SR	9.6	SS	50.1
RDE	-.0940	RRA	.0840	RC3	-.0651	FAU	.26080	RRT	.4993	RRF	.5361	RTF	.9310	CRT	.9274	CRS	-.0713	CST	-.4255
FDE	.4586	FRA	6.0339	FC-26.2466		BSP	4227	SGB	2803.2	R23	.0786	R13	.9313	LSA	51.7	MSA	24.8	SSA	1.0
BDE	.2313	BRA	.4846	BC3	4.3535	FSP	3071	SG1	2793.9	SG2	227.7	THA	2.71	EL1	27.7	EL2	3.4	ALF	19.03

LAUNCH DATE MAY 13 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 501.661 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.214	GAL	-.39	AZL	91.63	HCA	161.59	SMA	184.75	ECC	.18199	INC	1.6280	V1	29.478
RP	215.21	LAP	-.51	LOP	33.20	VP	22.694	GAP	4.48	AZP	88.45	TAL	357.46	TAP	159.05	RCA	151.13	APO	218.37	V2	25.518
RC	152.436	GL	-18.16	GP	-1.86	ZAL	101.91	ZAP	87.20	ETS	179.31	ZAE	130.30	ETE	182.11	ZAC	100.06	ETC	273.74	LVI	-10.70

PLANETOCENTRIC CONIC

C3	8.630	VHL	2.938	DLA	-26.79	RAL	343.32	RAD	6637.3	VEL	11.346	PTH	6.40	VHP	2.826	DPA	-23.60	RAP	303.40	ECC	1.1420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 53	2400.17	-2.40	62.21	193.00	137.53	17 19 53	1400.2	15.88	46.21
60.00	17 55 36	2198.79	2.13	48.43	197.35	130.25	18 32 14	1198.8	17.85	29.87
70.00	19 33 56	1909.65	6.99	28.64	201.00	123.52	20 5 45	909.7	19.99	7.88
80.00	21 36 3	1527.40	11.68	2.43	203.81	117.68	22 1 30	527.4	22.06	339.88
90.00	23 30 14	1159.18	14.19	336.62	205.08	114.72	23 49 33	159.2	23.17	313.19
100.00	0 22 50	1001.88	11.68	323.80	203.81	117.68	0 39 32	1.9	22.06	301.24
110.00	0 37 18	6244.51	6.99	295.47	201.00	123.52	2 21 22	5244.5	19.99	274.70

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2029	TRA	.5386	TC3	-4.5988	BAU	.5307	SGT	2973.6	SGR	257.2	SG3	1763.0	ST	26.8	SR	9.0	SS	50.9
RDE	-.0878	RRA	.0851	RC3	-.0814	FAU	.26079	RRT	.5436	RRF	.5808	RTF	.9374	CRT	.9064	CRS	-.0685	CST	-.4700
FDE	.5234	FRA	6.1249	FC-26.1612		BSP	4554	SGB	2984.7	R23	.0818	R13	.9376	LSA	52.8	MSA	24.4	SSA	.9
BDE	.2210	BRA	.5453	BC3	4.5995	FSP	3061	SG1	2976.9	SG2	215.7	THA	2.71	EL1	28.1	EL2	3.6	ALF	17.22

LAUNCH DATE MAY 13 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 13 1971

HELIOCENTRIC CONIC DISTANCE 505.848 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.216	GAL	-.44	AZL	91.61	HCA	162.76	SMA	184.79	ECC	.18221	INC	1.6121	V1	29.478
RP	215.54	LAP	-.48	LOP	34.37	VP	22.656	GAP	4.32	AZP	88.46	TAL	357.14	TAP	159.90	RCA	151.12	APO	218.46	V2	25.480
RC	154.904	GL	-17.94	GP	-1.98	ZAL	102.43	ZAP	85.34	ETS	179.22	ZAE	128.35	ETE	182.10	ZAC	100.00	ETC	273.58	LVI	-10.34

PLANETOCENTRIC CONIC

C3	8.662	VHL	2.943	DLA	-26.39	RAL	343.75	RAD	6637.3	VEL	11.348	PTH	6.40	VHP	2.826	DPA	-23.86	RAP	302.68	ECC	1.1426

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 30	2409.86	-2.88	62.62	193.35	137.51	17 19 40	1409.9	15.40	46.65
60.00	17 54 21	2210.78	1.60	49.00	197.66	130.27	18 31 12	1210.8	17.36	30.51
70.00	19 31 14	1925.91	6.38	29.50	201.26	123.62	20 3 20	925.9	19.47	8.84
80.00	21 30 36	1552.31	10.88	3.86	203.97	117.98	21 56 28	552.3	21.46	341.47
90.00	23 21 44	1193.89	13.19	338.68	205.16	115.24	23 41 38	193.9	22.48	315.49
100.00	0 17 23	1026.78	10.88	325.23	203.97	117.98	0 34 30	26.8	21.46	302.84
110.00	0 34 36	6260.77	6.38	298.33	201.26	123.62	2 18 57	5260.8	19.47	275.67

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1927	TRA	.6007	TC3	-4.8398	BAU	.5606	SGT	3156.0	SGR	252.4	SG3	1761.2	ST	27.4	SR	8.4	SS	51.4
RDE	-.0815	RRA	.0863	RC3	-.0986	FAU	.25991	RRT	.5896	RRF	.6273	RTF	.9431	CRT	.8840	CRS	-.0680	CST	-.5162
FDE	.5810	FRA	6.1811	FC-25.9777		BSP	4901	SGB	3166.1	R23	.0853	R13	.9433	LSA	53.8	MSA	23.9	SSA	.9
BDE	.2092	BRA	.6069	BC3	4.8408	FSP	3073	SG1	3159.8	SG2	203.7	THA	2.71	EL1	28.5	EL2	3.8	ALF	15.45

LAUNCH DATE MAY 13 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE 510.034 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.219	GAL	-.49	AZL	91.59	HCA	163.93	SMA	184.84	ECC	.18247	INC	1.5941	V1	29.478
RP	215.87	LAP	-.44	LOP	35.53	VP	22.618	GAP	4.16	AZP	88.47	TAL	356.82	TAP	160.75	RCA	151.11	APO	218.57	V2	25.443
RC	157.385	GL	-17.69	GP	-2.11	ZAL	102.97	ZAP	83.51	ETS	179.12	ZAE	126.43	ETE	182.09	ZAC	99.91	ETC	273.41	LVI	-9.98

PLANETOCENTRIC CONIC

C3	8.697	VHL	2.949	DLA	-25.95	RAL	344.17	RAD	6637.4	VEL	11.349	PTH	6.40	VHP	2.829	DPA	-24.12	RAP	302.00	ECC	1.1431

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 39 0	2420.27	-3.41	63.06	193.70	137.48	17 19 20	1420.3	14.90	47.12
60.00	17 52 56	2223.62	1.04	49.81	197.97	130.29	18 30 0	1223.6	16.84	31.19
70.00	19 28 20	1943.12	5.73	30.41	201.51	123.73	20 0 43	943.1	18.90	9.86
80.00	21 25 3	1577.80	10.07	5.31	204.14	118.26	21 51 21	577.8	20.82	343.09
90.00	23 13 37	1227.68	12.20	340.67	205.25	115.71	23 34 5	227.7	21.76	317.71
100.00	0 11 51	1052.27	10.07	326.68	204.14	118.26	0 29 23	52.3	20.82	304.46
110.00	0 31 42	6277.97	5.73	297.24	201.51	123.73	2 16 20	5278.0	18.90	276.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1791	TRA	.6641	TC3	-5.0753	BAU	.5903	SGT	3337.8	SGR	249.0	SG3	1757.0	ST	28.0	SR	7.8	SS	52.2
RDE	-.0747	RRA	.0880	RC3	-.1173	FAU	.25852	RRT	.6382	RRF	.6755	RTF	.9474	CRT	.8605	CRS	-.0608	CST	-.5517
FDE	.6774	FRA	6.2335	FC	-25.7343	BSP	5244	SGB	3347.1	R23	.0894	R13	.9476	LSA	55.0	MSA	23.5	SSA	.8
BDE	.1941	BRA	.6699	BC3	5.0766	FSP	3074	SG1	3341.6	SG2	191.5	THA	2.73	EL1	28.8	EL2	3.9	ALF	13.70

LAUNCH DATE MAY 13 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 514.218 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.223	GAL	-.54	AZL	91.57	HCA	165.09	SMA	184.90	ECC	.18277	INC	1.5733	V1	29.478
RP	216.21	LAP	-.41	LOP	36.69	VP	22.580	GAP	4.00	AZP	88.48	TAL	356.49	TAP	161.58	RCA	151.11	APO	218.69	V2	25.405
RC	159.881	GL	-17.42	GP	-2.26	ZAL	103.53	ZAP	81.72	ETS	179.01	ZAE	124.53	ETE	182.08	ZAC	99.80	ETC	273.26	LVI	-9.62

PLANETOCENTRIC CONIC

C3	8.735	VHL	2.956	DLA	-25.49	RAL	344.59	RAD	6637.4	VEL	11.351	PTH	6.40	VHP	2.834	DPA	-24.40	RAP	301.36	ECC	1.1438

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 38 20	2431.48	-3.97	63.53	194.05	137.45	17 18 51	1431.5	14.35	47.62
60.00	17 51 19	2237.37	.43	50.27	198.28	130.30	18 28 36	1237.4	16.27	31.91
70.00	19 25 12	1961.35	5.04	31.37	201.76	123.82	19 57 53	961.3	18.30	10.92
80.00	21 19 21	1604.04	9.22	6.79	204.31	118.53	21 46 5	604.0	20.14	344.75
90.00	23 5 41	1261.14	11.21	342.62	205.35	116.13	23 26 42	261.1	21.02	319.89
100.00	0 6 9	1078.51	9.22	328.16	204.31	118.53	0 24 8	78.5	20.14	306.12
110.00	0 28 34	1008.17	5.04	320.29	201.76	123.82	0 45 22	8.2	18.30	299.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1649	TRA	.7284	TC3	-5.3043	BAU	.6197	SGT	3518.6	SGR	248.0	SG3	1747.1	ST	28.8	SR	7.2	SS	52.9
RDE	-.0679	RRA	.0903	RC3	-.1371	FAU	.25596	RRT	.6871	RRF	.7256	RTF	.9508	CRT	.8402	CRS	-.0713	CST	-.5926
FDE	.7527	FRA	6.2798	FC	-25.3681	BSP	5586	SGB	3527.3	R23	.0971	R13	.9511	LSA	56.2	MSA	22.9	SSA	.8
BDE	.1783	BRA	.7340	BC3	5.3061	FSP	3069	SG1	3522.7	SG2	180.0	THA	2.78	EL1	29.4	EL2	3.8	ALF	12.07

LAUNCH DATE MAY 13 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 518.400 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.227	GAL	-.60	AZL	91.55	HCA	166.25	SMA	184.96	ECC	.18310	INC	1.5491	V1	29.478
RP	216.56	LAP	-.37	LOP	37.85	VP	22.542	GAP	3.84	AZP	88.50	TAL	356.15	TAP	162.39	RCA	151.10	APO	218.83	V2	25.368
RC	162.390	GL	-17.10	GP	-2.44	ZAL	104.10	ZAP	79.98	ETS	178.89	ZAE	122.67	ETE	182.09	ZAC	99.67	ETC	273.11	LVI	-9.24

PLANETOCENTRIC CONIC

C3	8.776	VHL	2.962	DLA	-24.98	RAL	345.00	RAD	6637.4	VEL	11.353	PTH	6.41	VHP	2.841	DPA	-24.68	RAP	300.76	ECC	1.1444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 37 28	2443.59	-4.58	64.04	194.39	137.41	17 18 12	1443.6	13.76	48.16
60.00	17 49 27	2252.16	-.22	50.98	198.58	130.30	18 26 59	1252.2	15.66	32.67
70.00	19 21 46	1980.75	4.30	32.39	202.00	123.91	19 54 47	980.8	17.64	12.05
80.00	21 13 26	1631.24	8.33	8.32	204.47	118.78	21 40 38	631.2	19.43	346.45
90.00	22 57 46	1294.76	10.19	344.57	205.46	116.52	23 19 21	294.8	20.25	322.05
100.00	0 0 14	1105.71	8.33	329.69	204.47	118.78	0 18 40	105.7	19.43	307.82
110.00	0 25 8	1027.57	4.30	321.31	202.00	123.91	0 42 16	27.6	17.64	300.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1490	TRA	.7930	TC3	-5.5363	BAU	.6498	SGT	3702.1	SGR	250.1	SG3	1738.3	ST	29.6	SR	6.6	SS	53.5
RDE	-.0610	RRA	.0932	RC3	-.1608	FAU	.25451	RRT	.7378	RRF	.7764	RTF	.9546	CRT	.8247	CRS	-.0961	CST	-.6346
FDE	.8177	FRA	6.3058	FC	-25.1062	BSP	5915	SGB	3710.5	R23	.1046	R13	.9548	LSA	57.3	MSA	22.3	SSA	.8
BDE	.1610	BRA	.7985	BC3	5.5367	FSP	3043	SG1	3706.7	SG2	168.6	THA	2.86	EL1	30.1	EL2	3.7	ALF	10.60

LAUNCH DATE MAY 13 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC DISTANCE 522.580 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.231	GAL	-.65	AZL	91.52	HCA	167.40	SMA	185.04	ECC	.18348	INC	1.5203	V1	29.478
RP	216.91	LAP	-.33	LOP	39.01	VP	22.505	GAP	3.68	AZP	88.52	TAL	355.79	TAP	163.19	RCA	151.09	APO	218.99	V2	25.327
RC	164.912	GL	-16.74	GP	-2.65	ZAL	104.68	ZAP	78.28	ETS	178.75	ZAE	120.84	ETE	182.10	ZAC	99.50	ETC	272.98	LVI	-8.85

PLANETOCENTRIC CONIC

C3	8.819	VHL	2.970	DLA	-24.42	RAL	345.41	RAD	6637.4	VEL	11.355	PTH	6.41	VHP	2.851	DPA	-24.99	RAP	300.21	ECC	1.1451

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 36 22	2456.76	-5.24	64.59	194.73	137.36	17 17 19	1456.8	13.11	48.75
60.00	17 47 17	2268.18	-.93	51.74	198.87	130.29	18 25 5	1268.2	14.99	33.50
70.00	19 17 58	2001.55	3.51	33.48	202.23	123.99	19 51 20	1001.5	16.94	13.25
80.00	21 7 12	1659.69	7.39	9.92	204.62	119.01	21 34 52	659.7	18.65	348.21
90.00	22 49 43	1329.06	9.14	346.54	205.55	116.88	23 11 52	329.1	19.43	324.23
100.00	23 50 4	1134.16	7.39	331.28	204.62	119.01	24 8 58	134.2	18.65	309.58
110.00	0 21 20	1048.36	3.51	322.40	202.23	123.99	0 38 49	48.4	16.94	302.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1306	TRA	.8583	TC3	-5.7601	BAU	.6795	SGT	3882.7	SGR	255.7	SG3	1723.7	ST	30.5	SR	6.0	SS	54.3
RDE	-.0536	RRA	.0972	RC3	-.1863	FAU	.25127	RRT	.7849	RRF	.8248	RTF	.9567	CRT	.8180	CRS	-.1328	CST	-.6716
FDE	.9008	FRA	6.3379	FC	-24.6660	BSP	6242	SGB	3891.1	R23	.1172	R13	.9570	LSA	58.7	MSA	21.7	SSA	.7
BDE	.1412	BRA	.8638	BC3	5.7631	FSP	3028	SG1	3887.9	SG2	158.2	THA	2.96	EL1	30.9	EL2	3.4	ALF	9.30

LAUNCH DATE MAY 13 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 23 1971

HELIOCENTRIC CONIC DISTANCE 526.758 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.236	GAL	-.71	AZL	91.49	HCA	168.55	SMA	185.12	ECC	.18389	INC	1.4852	V1	29.478
RP	217.26	LAP	-.30	LOP	40.16	VP	22.468	GAP	3.53	AZP	88.54	TAL	355.43	TAP	163.98	RCA	151.08	APO	219.16	V2	25.288
RC	167.446	GL	-16.32	GP	-2.89	ZAL	105.29	ZAP	76.62	ETS	178.60	ZAE	119.05	ETE	182.12	ZAC	99.28	ETC	272.85	LVI	-8.44

PLANETOCENTRIC CONIC

C3	8.863	VHL	2.977	DLA	-23.80	RAL	345.79	RAD	6637.5	VEL	11.357	PTH	6.41	VHP	2.862	DPA	-25.33	RAP	299.71	ECC	1.1459

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 34 57	2471.19	-5.96	65.20	195.04	137.29	17 16 8	1471.2	12.40	49.38
60.00	17 44 43	2285.65	-1.70	52.58	199.13	130.27	18 22 48	1285.7	14.26	34.40
70.00	19 13 42	2024.01	2.65	34.66	202.43	124.06	19 47 26	1024.0	16.17	14.53
80.00	21 0 30	1689.76	6.40	11.59	204.74	119.23	21 28 40	689.8	17.82	350.05
90.00	22 41 20	1364.55	8.05	348.57	205.63	117.20	23 4 5	364.5	18.55	326.46
100.00	23 43 22	1164.23	6.40	332.96	204.74	119.23	24 2 47	164.2	17.82	311.42
110.00	0 17 5	1070.83	2.65	323.57	202.43	124.06	0 34 56	70.8	16.17	303.45

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.1116	TRA	.9214	TC3	-5.9983	BAU	.7112	SGT	4069.2	SGR	266.4	SG3	1711.4			ST	31.5	SR	5.5	SS	54.9
RDE	-.0460	RRA	.1022	RC3	-.2184	FAU	.24980	RRT	.8303	RRF	.8699	RTF	.9594			CRT	.8257	CRS	-.1941	CST	-.7067
FDE	.9700	FRA	6.3398	FC	-24.3990	BSP	6520	SGB	4077.9	R23	.1297	R13	.9597			LSA	59.9	MSA	21.0	SSA	.7
BDE	.1207	BRA	.9271	BC3	6.0023	FSP	2974	SG1	4075.2	SG2	148.3	THA	3.12			EL1	31.8	EL2	3.1	ALF	8.27

LAUNCH DATE MAY 13 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 25 1971

HELIOCENTRIC CONIC DISTANCE 530.933 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.241	GAL	-.77	AZL	91.45	HCA	169.70	SMA	185.20	ECC	.18433	INC	1.4446	V1	29.478
RP	217.61	LAP	-.26	LOP	41.30	VP	22.431	GAP	3.37	AZP	88.58	TAL	355.07	TAP	164.76	RCA	151.06	APO	219.34	V2	25.249
RC	169.992	GL	-15.81	GP	-3.19	ZAL	105.91	ZAP	75.01	ETS	178.42	ZAE	117.28	ETE	182.16	ZAC	99.01	ETC	272.73	LVI	-7.99

PLANETOCENTRIC CONIC

C3	8.907	VHL	2.985	DLA	-23.11	RAL	346.15	RAD	6637.5	VEL	11.358	PTH	6.41	VHP	2.875	DPA	-25.71	RAP	299.26	ECC	1.1466

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 33 7	2487.19	-6.76	65.88	195.32	137.21	17 14 34	1487.2	11.61	50.09
60.00	17 41 38	2304.96	-2.54	53.50	199.36	130.23	18 20 3	1305.0	13.44	35.38
70.00	19 8 50	2048.60	1.72	35.94	202.59	124.12	19 42 59	1048.6	15.31	15.92
80.00	20 53 11	1722.01	5.32	13.38	204.83	119.42	21 21 53	722.0	16.90	352.01
90.00	22 32 26	1401.93	6.88	350.69	205.68	117.50	22 55 47	401.9	17.59	328.79
100.00	23 36 3	1196.48	5.32	334.75	204.83	119.42	23 56 0	196.5	16.90	313.38
110.00	0 12 12	1095.41	1.72	324.86	202.59	124.12	0 30 28	95.4	15.31	304.84

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.0845	TRA	.9898	TC3	-6.2033	BAU	.7393	SGT	4243.2	SGR	282.9	SG3	1691.3			ST	32.5	SR	5.0	SS	55.7
RDE	-.0377	RRA	.1091	RC3	-.2536	FAU	.24580	RRT	.8687	RRF	.9084	RTF	.9614			CRT	.8429	CRS	-.2830	CST	-.7479
FDE	1.0601	FRA	6.3507	FC	-23.8905	BSP	6870	SGB	4252.7	R23	.1460	R13	.9617			LSA	61.5	MSA	20.1	SSA	.6
BDE	.0925	BRA	.9958	BC3	6.2085	FSP	2952	SG1	4250.4	SG2	139.9	THA	3.32			EL1	32.8	EL2	2.7	ALF	7.41

LAUNCH DATE MAY 13 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 27 1971

HELIOCENTRIC CONIC DISTANCE 535.105 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.246	GAL	-.83	AZL	91.39	HCA	170.84	SMA	185.29	ECC	.18481	INC	1.3943	V1	29.478
RP	217.97	LAP	-.22	LOP	42.44	VP	22.394	GAP	3.22	AZP	88.62	TAL	354.69	TAP	165.53	RCA	151.05	APO	219.54	V2	25.209
RC	172.547	GL	-15.20	GP	-3.56	ZAL	106.55	ZAP	73.44	ETS	178.20	ZAE	115.55	ETE	182.21	ZAC	98.67	ETC	272.62	LVI	-7.49

PLANETOCENTRIC CONIC

C3	8.950	VHL	2.992	DLA	-22.31	RAL	346.48	RAD	6637.5	VEL	11.360	PTH	6.41	VHP	2.891	DPA	-26.15	RAP	298.86	ECC	1.1473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 43	2505.25	-7.66	66.64	195.56	137.10	17 12 28	1505.3	10.72	50.87
60.00	17 37 52	2326.66	-3.50	54.54	199.55	130.17	18 16 39	1326.7	12.52	36.46
70.00	19 3 8	2075.98	.67	37.37	202.71	124.15	19 37 44	1076.0	14.35	17.46
80.00	20 44 59	1757.25	4.14	15.33	204.87	119.60	21 14 16	757.3	15.88	354.12
90.00	22 22 40	1442.14	5.81	352.96	205.67	117.76	22 48 42	442.1	16.53	331.26
100.00	23 27 50	1231.72	4.14	336.70	204.87	119.60	23 48 22	231.7	15.88	315.49
110.00	0 6 30	1122.80	.67	326.29	202.71	124.15	0 25 13	122.8	14.35	306.38

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.0511	TRA	1.0595	TC3	-6.4031	BAU	.7669	SGT	4415.7	SGR	307.6	SG3	1670.7			ST	33.8	SR	4.6	SS	57.0
RDE	-.0283	RRA	.1185	RC3	-.2964	FAU	.24152	RRT	.9005	RRF	.9399	RTF	.9630			CRT	.8794	CRS	-.4117	CST	-.7890
FDE	1.1686	FRA	6.3624	FC	-23.3632	BSP	7227	SGB	4426.4	R23	.1654	R13	.9633			LSA	63.6	MSA	19.0	SSA	.6
BDE	.0584	BRA	1.0661	BC3	6.4100	FSP	2927	SG1	4424.4	SG2	133.5	THA	3.59			EL1	34.0	EL2	2.2	ALF	6.83

LAUNCH DATE MAY 13 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 539.276 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.252	GAL	-.89	AZL	91.33	HCA	171.98	SMA	185.39	ECC	.18532	INC	1.3271	V1	29.478
RP	218.33	LAP	-.19	LOP	43.58	VP	22.387	GAP	3.07	AZP	88.68	TAL	354.31	TAP	166.29	RCA	151.03	APO	219.75	V2	25.169
RC	175.114	GL	-14.44	GP	-4.03	ZAL	107.20	ZAP	71.92	ETS	177.93	ZAE	113.85	ETE	182.29	ZAC	98.22	ETC	272.52	LVI	-6.91

PLANETOCENTRIC CONIC

C3	8.988	VHL	2.998	DLA	-21.38	RAL	346.74	RAD	6637.5	VEL	11.362	PTH	6.41	VHP	2.908	DPA	-26.69	RAP	298.52	ECC	1.1479

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 30	2526.08	-8.70	67.53	195.74	136.96	17 9 36	1526.1	9.69	51.77
60.00	17 33 7	2351.59	-4.59	55.74	199.66	130.08	18 12 19	1351.6	11.46	37.73
70.00	18 56 16	2107.14	-.52	39.00	202.74	124.15	19 31 23	1107.1	13.24	19.19
80.00	20 35 29	1796.64	2.81	17.50	204.82	119.74	21 5 25	796.6	14.70	356.46
90.00	22 11 38	1486.47	4.20	355.45	205.58	117.99	22 36 25	486.5	15.31	333.94
100.00	23 18 21	1271.11	2.81	338.87	204.82	119.74	23 39 32	271.1	14.70	317.63
110.00	23 55 43	1153.96	-.52	327.91	202.74	124.15	24 14 56	154.0	13.24	308.11

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.0242	TRA	1.1150	TC3	-6.6588	BAU	.8013	SGT	4602.1	SGR	344.3	SG3	1652.7			ST	34.9	SR	4.4	SS	56.3
RDE	-.0196	RRA	.1294	RC3	-.3600	FAU	.24236	RRT	.9286	RRF	.9637	RTF	.9674			CRT	.9277	CRS	-.5682	CST	-.8270
FDE	1.1812	FRA	6.2561	FC	-23.3450	BSP	7431	SGB	4615.0	R23	.1743	R13	.9678			LSA	64.1	MSA	17.6	SSA	.5
BDE	.0312	BRA	1.1225	BC3	6.6685	FSP	2797	SG1	4613.2	SG2	127.5	THA	3.98			EL1	35.2	EL2	1.6	ALF	6.70

LAUNCH DATE MAY 13 1971 FLIGHT TIME 232.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 543.442 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.258	GAL	-.95	AZL	91.24	HCA	173.11	SMA	185.49	ECC	.18586	INC	1.2395
RP	218.69	LAP	-.15	LOP	44.72	VP	22.321	GAP	2.92	AZP	88.77	TAL	353.91	TAP	167.03	RCA	151.02	APO	219.97
RC	177.690	GL	-13.46	GP	-4.66	ZAL	107.69	ZAP	70.46	ETS	177.58	ZAE	112.18	ETE	182.40	ZAC	97.62	ETC	272.43

V1	29.478	V2	25.129	LVI	-6.20														

PLANETOCENTRIC CONIC

C3	9.019	VHL	3.003	DLA	-20.23	RAL	346.92	RAD	6637.5	VEL	11.363	PTH	6.42	VHP	2.928	DPA	-27.36	RAP	298.26

ECC	1.1484																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 8	2551.04	-9.94	68.61	195.82	136.77	17 5 39	1551.0	8.45	52.84
60.00	17 26 56	2381.34	-5.89	57.17	199.67	129.94	18 6 38	1381.3	10.18	39.20
70.00	18 47 41	2143.97	-1.93	40.92	202.67	124.11	19 23 25	1144.0	11.91	21.22
80.00	20 24 3	1842.40	1.26	20.01	204.66	119.83	20 54 45	842.4	13.31	359.14
90.00	21 58 37	1537.31	2.57	356.30	205.38	118.17	22 24 15	537.3	13.88	336.99
100.00	23 6 55	1316.87	1.26	341.38	204.66	119.83	23 28 51	316.9	13.31	320.50
110.00	23 47 7	1190.79	-1.93	329.84	202.67	124.11	24 6 58	190.8	11.91	310.13

DIFFERENTIAL CORRECTIONS

TDE	.0192	TRA	1.1783	TC3	-6.8827	BAU	.8315												

RDE	-.0073	RRA	.1470	RC3	-.4328	FAU	.23791												
FDE	1.3073	FRA	6.2421	FC-22	.8364	BSP	7727												
BDE	.0205	BRA	1.1875	BC3	6.8963	FSP	2765												

MID-COURSE EXECUTION ACCURACY

SGT	4778.2	SGR	396.3	SG3	1628.9														

RRT	.9453	RRF	.9801	RTF	.9680														

SGB	4794.6	R23	.1975	R13	.9684														

SG1	4792.9	SG2	128.9	THA	4.49														

ORBIT DETERMINATION ACCURACY

ST	36.5	SR	4.6	SS	57.8														

CRT	.9758	CRS	-.7442	CST	-.8625														

LSA	66.6	MSA	16.3	SSA	.5														

EL1	36.8	EL2	1.0	ALF	6.94														

LAUNCH DATE MAY 13 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 547.604 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.265	GAL	-1.02	AZL	91.12	HCA	174.25	SMA	185.60	ECC	.18643	INC	1.1200
RP	219.06	LAP	-.11	LOP	45.85	VP	22.285	GAP	2.77	AZP	88.88	TAL	353.52	TAP	167.76	RCA	151.00	APO	220.20
RC	180.275	GL	-12.12	GP	-5.52	ZAL	108.61	ZAP	69.05	ETS	177.11	ZAE	110.54	ETE	182.57	ZAC	96.77	ETC	272.35

V1	29.478	V2	25.089	LVI	-5.28														

PLANETOCENTRIC CONIC

C3	9.038	VHL	3.006	DLA	-18.76	RAL	346.96	RAD	6637.5	VEL	11.364	PTH	6.42	VHP	2.951	DPA	-28.27	RAP	298.09

ECC	1.1487																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 54	2582.40	-11.49	69.97	195.75	136.50	16 59 57	1582.4	6.88	54.18
60.00	17 18 31	2418.54	-7.52	58.97	199.52	129.71	17 58 50	1418.5	8.58	41.03
70.00	18 36 25	2189.53	-3.66	43.30	202.42	123.98	19 12 55	1189.5	10.24	23.69
80.00	20 9 34	1898.00	-.62	23.06	204.31	119.85	20 41 12	898.0	11.57	2.35
90.00	21 42 27	1598.36	.60	1.71	204.99	118.27	22 9 6	598.4	12.10	340.59
100.00	22 52 26	1372.47	-.62	344.43	204.31	119.85	23 15 19	372.5	11.57	323.71
110.00	23 35 52	1236.35	-3.66	332.22	202.42	123.98	23 56 28	236.4	10.24	312.61

DIFFERENTIAL CORRECTIONS

TDE	.0798	TRA	1.2442	TC3	-7.0797	BAU	.8578												

RDE	.0085	RRA	.1728	RC3	-.5282	FAU	.23112												
FDE	1.4630	FRA	6.2283	FC-22	.1380	BSP	8092												
BDE	.0802	BRA	1.2562	BC3	7.0993	FSP	2745												

MID-COURSE EXECUTION ACCURACY

SGT	4941.2	SGR	471.3	SG3	1598.1														

RRT	.9556	RRF	.9903	RTF	.9681														

SGB	4963.6	R23	.2187	R13	.9687														

SG1	4961.7	SG2	138.3	THA	5.21														

ORBIT DETERMINATION ACCURACY

ST	38.9	SR	5.3	SS	59.9														

CRT	.9961	CRS	-.8656	CST	-.9039														

LSA	70.1	MSA	14.3	SSA	.4														

EL1	39.2	EL2	.5	ALF	7.74														

LAUNCH DATE MAY 13 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 551.763 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.271	GAL	-1.08	AZL	90.94	HCA	175.37	SMA	185.71	ECC	.18703	INC	.9278
RP	219.43	LAP	-.08	LOP	46.98	VP	22.249	GAP	2.62	AZP	89.08	TAL	353.11	TAP	168.48	RCA	150.98	APO	220.45
RC	182.871	GL	-10.18	GP	-6.79	ZAL	108.36	ZAP	67.72	ETS	176.42	ZAE	108.91	ETE	182.83	ZAC	95.52	ETC	272.28

V1	29.478	V2	25.048	LVI	-4.00														

PLANETOCENTRIC CONIC

C3	9.039	VHL	3.007	DLA	-16.72	RAL	346.76	RAD	6637.5	VEL	11.364	PTH	6.42	VHP	2.978	DPA	-29.57	RAP	298.05

ECC	1.1488																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 31	2624.60	-13.58	71.83	195.44	136.05	16 51 16	1624.6	4.76	55.97
60.00	17 6 18	2468.51	-9.68	61.42	199.11	129.31	17 47 26	1468.5	6.40	43.46
70.00	18 20 38	2250.00	-5.96	46.48	201.89	123.69	18 56 8	1250.0	8.00	26.93
80.00	19 49 57	1970.44	-3.07	27.04	203.68	119.71	20 22 47	970.4	9.24	6.47
90.00	21 20 55	1676.99	-1.94	6.10	204.30	118.22	21 48 52	677.0	9.74	345.15
100.00	22 32 49	1444.91	-3.07	348.41	203.68	119.71	22 56 53	444.9	9.24	327.83
110.00	23 20 4	1296.82	-5.96	335.40	201.89	123.69	23 41 41	296.8	8.00	315.85

DIFFERENTIAL CORRECTIONS

TDE	.1265	TRA	1.2665	TC3	-7.4504	BAU	.9042												

RDE	.0265	RRA	.2081	RC3	-.6904	FAU	.23068												
FDE	1.5292	FRA	6.0550	FC-22	.0935	BSP	8000												
BDE	.1293	BRA	1.2835	BC3	7.4823	FSP	2577												

MID-COURSE EXECUTION ACCURACY

SGT	5145.6	SGR	588.5	SG3	1569.9														

RRT	.9627	RRF	.9961	RTF	.9888														

SGB	5179.3	R23	.2310	R13	.9696														

SG1	5176.9	SG2	158.3	THA	6.29														

ORBIT DETERMINATION ACCURACY

ST	40.2	SR	6.7	SS	60.0														

CRT	.9943	CRS	-.9977	CST	-.9302														

LSA	71.4	MSA	12.5	SSA	.4														

EL1	40.8	EL2	.7	ALF	9.45														

LAUNCH DATE MAY 13 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 6 1972

HELIOCENTRIC CONIC DISTANCE 555.917 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.278	GAL	-1.15	AZL	90.65	HCA	176.50	SMA	185.83	ECC	.18766	INC	.6273
RP	219.80	LAP	-.04	LOP	48.10	VP	22.213	GAP	2.47	AZP	89.35	TAL	352.70	TAP	169.19	RCA	150.96	APO	220.70
RC	185.475	GL	-7.02	GP	-8.86	ZAL	110.17	ZAP	66.51	ETS	175.32	ZAE	107.27	ETE	183.26	ZAC	93.46	ETC	272.21

V1	29.478	V2	25.007	LVI	-2.00														

PLANETOCENTRIC CONIC

C3	9.017	VHL	3.003	DLA	-13.57	RAL	346.08	RAD	6637.5	VEL	11.363	PTH	6.42	VHP	3.015	DPA	-31.64	RAP	298.22

ECC	1.1484																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 6	2689.07	-16.70	74.73	194.74	135.22	16 36 55	1689.1	1.54	58.66
60.00	16 46 48	2543.58	-12.89	65.16	198.27	128.52	17 29 12	1543.6	3.12	47.07
70.00	17 56 13	2339.51	-9.31	51.24	200.90	123.01	18 35 13	1339.5	4.62	31.67
80.00	19 20 33	2075.53	-6.59	32.86	202.56	119.19	19 55 9	1075.5	5.78	12.34
90.00	20 49 8	1789.76	-5.54	12.42	203.13	117.78	21 18 58	789.8	6.23	351.57
100.00	22 3 25	1550.00	-6.59	354.22	202.56	119.19	22 29 15	550.0	5.78	333.71
110.00	22 55 40	1386.33	-9.31	340.16	200.90	123.01	23 18 46	386.3	4.62	320.58

DIFFERENTIAL CORRECTIONS

TDE	.2470	TRA	1.3053	TC3	-7.7060	BAU	.9357												

RDE	.0612	RRA	.2703	RC3	-.9305	FAU	.22305												
FDE	1.7638	FRA	5.9219	FC-21	.4144	BSP	8314												
BDE	.2544	BRA	1.3330	BC3	7.7619	FSP	2518												

MID-COURSE EXECUTION ACCURACY

SGT	5310.8	SGR	779.4	SG3	1526.4														

RRT	.9665	RRF	.9988	RTF	.9689														

SGB	5367.7	R23	.2377	R13	.9702														

SG1	5364.0	SG2	198.0	THA	8.08														

ORBIT DETERMINATION ACCURACY

ST	45.6	SR	9.9	SS	63.7														

CRT	.9943	CRS	-.9902	CST	-.9728														

LSA	78.5	MSA	8.7	SSA	.4														

EL1	46.7	EL2	1.0	ALF	12.19														

LAUNCH DATE MAY 13 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 10 1972

HELIOCENTRIC CONIC DISTANCE 564.216 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.293	GAL	-1.29	AZL	88.53	HCA	178.73	SMA	186.08	ECC	.18900	INC	1.4477	V1	29.478
RP	220.55	LAP	.03	LOP	50.34	VP	22.142	GAP	2.17	AZP	91.47	TAL	351.86	TAP	170.59	RCA	150.91	APO	221.24	V2	24.925
RC	190.711	GL	15.33	GP	-22.74	ZAL	110.89	ZAP	66.04	ETS	168.40	ZAE	103.30	ETE	186.20	ZAC	79.60	ETC	272.17	LVI	10.95

PLANETOCENTRIC CONIC

C3	9.759	VHL	3.124	DLA	7.60	RAL	338.74	RAD	6637.9	VEL	11.396	PTH	6.45	VHP	3.309	DPA	-45.28	RAP	301.58	ECC	1.1606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 4 3	3128.35	-36.03	98.63	193.39	123.47	14 56 12	2128.3	-20.15	77.83
60.00	14 35 28	3044.76	-31.69	94.11	196.40	116.33	15 26 13	2044.8	-18.45	71.83
70.00	15 18 34	2917.97	-27.78	85.79	198.35	110.71	16 7 12	1918.0	-16.87	62.65
80.00	16 18 29	2730.29	-24.95	72.63	199.43	106.96	17 4 0	1730.3	-15.69	49.06
90.00	17 36 15	2479.33	-23.88	54.53	199.77	105.61	18 17 35	1479.3	-15.24	30.83
100.00	19 1 21	2204.76	-24.95	34.00	199.43	106.96	19 38 6	1204.8	-15.69	10.43
110.00	20 18 1	1964.78	-27.78	14.71	198.35	110.71	20 50 45	964.8	-16.87	351.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1055	TRA	1.1421	TC3	-7.7070	BAU	1.0521	SGT	5636.0	SGR	2046.0	SG3	1238.0	ST	106.5	SR	43.1	SS	87.5
RDE	.4287	RRA	.6327	RC3	-2.3726	FAU	.18539	RRT	.9718	RRF	.9999	RTF	.9696	CRT	.9931	CRS	-1.0000	CST	-.9932
FDE	3.0461	FRA	4.4743	FC3	-16.4454	BSP	8910	SGB	5995.8	R23	.2185	R13	.9758	LSA	144.2	MSA	8.4	SSA	.1
BDE	1.1857	BRA	1.3057	BC3	8.0639	FSP	1937	SG1	5978.6	SG2	454.6	THA	19.55	EL1	114.8	EL2	4.7	ALF	21.95

LAUNCH DATE MAY 13 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 572.500 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.309	GAL	-1.44	AZL	96.22	HCA	180.96	SMA	186.34	ECC	.19044	INC	6.2233	V1	29.478
RP	221.31	LAP	.10	LOP	52.56	VP	22.071	GAP	1.88	AZP	83.78	TAL	350.98	TAP	171.94	RCA	150.85	APO	221.82	V2	24.842
RC	195.978	GL	-50.44	GP	28.33	ZAL	105.29	ZAP	65.35	ETS	193.45	ZAE	101.52	ETE	174.26	ZAC	130.59	ETC	273.06	LVI	-36.16

PLANETOCENTRIC CONIC

C3	20.627	VHL	4.542	DLA	-50.21	RAL	15.03	RAD	6643.1	VEL	11.859	PTH	6.87	VHP	3.547	DPA	5.07	RAP	292.00	ECC	1.3395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.62	22 44 26	1846.76	27.05	39.99	259.85	134.06	23 15 13	846.8	42.37	16.98
46.62	22 44 26	1846.76	27.05	39.99	259.85	134.06	23 15 13	846.8	42.37	16.98
46.62	22 44 26	1846.76	27.05	39.99	259.85	134.06	23 15 13	846.8	42.37	16.98
46.62	22 44 26	1846.76	27.05	39.99	259.85	134.06	23 15 13	846.8	42.37	16.98
46.62	22 44 26	1846.76	27.05	39.99	259.85	134.06	23 15 13	846.8	42.37	16.98
46.62	22 44 26	1846.76	27.05	39.99	259.85	134.06	23 15 13	846.8	42.37	16.98
46.62	22 44 26	1846.76	27.05	39.99	259.85	134.06	23 15 13	846.8	42.37	16.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5678	TRA	2.3577	TC3	-3.8641	BAU	1.1415	SGT	5867.6	SGR	2652.6	SG3	1035.1	ST	78.5	SR	36.2	SS	52.6
RDE	-.1917	RRA	-1.1524	RC3	1.4845	FAU	.15695	RRT	-.9712	RRF	-.9993	RTF	.9622	CRT	-.6865	CRS	.9934	CST	-.5986
FDE	1.1979	FRA	5.2094	FC3	-6.5875	BSP	10869	SGB	6439.3	R23	.2335	R13	-.9723	LSA	91.9	MSA	42.6	SSA	.0
BDE	.5993	BRA	2.6242	BC3	4.1394	FSP	1894	SG1	6413.3	SG2	578.7	THA	156.09	EL1	82.8	EL2	25.0	ALF	160.60

LAUNCH DATE MAY 13 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 576.633 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.317	GAL	-1.51	AZL	93.88	HCA	182.06	SMA	186.47	ECC	.19120	INC	3.3749	V1	29.478
RP	221.69	LAP	.14	LOP	53.66	VP	22.036	GAP	1.74	AZP	86.12	TAL	350.55	TAP	172.61	RCA	150.82	APO	222.13	V2	24.801
RC	198.621	GL	-35.89	GP	14.15	ZAL	109.41	ZAP	61.10	ETS	187.18	ZAE	100.59	ETE	177.79	ZAC	116.47	ETC	272.40	LVI	-23.10

PLANETOCENTRIC CONIC

C3	13.917	VHL	3.730	DLA	-38.08	RAL	3.72	RAD	6640.0	VEL	11.575	PTH	6.62	VHP	3.199	DPA	-9.02	RAP	293.67	ECC	1.2290

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 14 4	2218.41	6.72	54.60	223.27	137.21	19 51 3	1218.4	24.46	37.47
60.00	21 20 30	1881.04	15.82	32.75	231.71	127.56	21 51 51	881.0	29.66	11.33
63.36	23 6 5	1578.33	24.59	13.80	237.96	120.04	23 32 23	578.3	34.72	348.62
63.36	23 6 5	1578.33	24.59	13.80	237.96	120.04	23 32 23	578.3	34.72	348.62
63.36	23 6 5	1578.33	24.59	13.80	237.96	120.04	23 32 23	578.3	34.72	348.62
63.36	23 6 5	1578.33	24.59	13.80	237.96	120.04	23 32 23	578.3	34.72	348.62
63.36	23 6 5	1578.33	24.59	13.80	237.96	120.04	23 32 23	578.3	34.72	348.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4946	TRA	2.1093	TC3	-5.9008	BAU	1.1181	SGT	6074.4	SGR	1393.5	SG3	1310.1	ST	72.8	SR	16.8	SS	52.5
RDE	-.0300	RRA	-.5652	RC3	1.1399	FAU	.19723	RRT	-.9745	RRF	-.9991	RTF	.9659	CRT	-.7729	CRS	.9860	CST	-.6564
FDE	.7427	FRA	6.1676	FC3	-12.2692	BSP	9564	SGB	6232.2	R23	.2471	R13	-.9687	LSA	84.1	MSA	35.5	SSA	.1
BDE	.4955	BRA	2.1837	BC3	6.0099	FSP	2209	SG1	6224.7	SG2	305.3	THA	167.37	EL1	73.9	EL2	10.5	ALF	169.71

LAUNCH DATE MAY 13 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 580.762 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.325	GAL	-1.59	AZL	93.17	HCA	183.16	SMA	186.61	ECC	.19198	INC	3.1651	V1	29.478
RP	222.07	LAP	.17	LOP	54.76	VP	22.001	GAP	1.59	AZP	86.83	TAL	350.10	TAP	173.27	RCA	150.79	APO	222.44	V2	24.759
RC	201.270	GL	-30.23	GP	9.27	ZAL	111.17	ZAP	59.36	ETS	184.74	ZAE	99.28	ETE	176.95	ZAC	111.60	ETC	272.27	LVI	-18.58

PLANETOCENTRIC CONIC

C3	12.618	VHL	3.552	DLA	-32.91	RAL	.87	RAD	6639.4	VEL	11.519	PTH	6.57	VHP	3.161	DPA	-13.86	RAP	294.32	ECC	1.2077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 24 54	2333.46	.95	89.43	216.26	137.57	19 3 47	1333.5	19.09	43.12
60.00	19 58 14	2085.01	7.11	42.96	222.14	129.77	20 32 59	1085.0	22.37	23.65
70.00	22 21 26	1663.04	15.95	15.17	228.49	120.61	22 49 9	663.0	27.13	352.30
72.42	23 46 3	1402.79	22.12	358.49	231.93	115.01	24 9 26	402.8	30.45	333.36
72.42	23 46 3	1402.79	22.12	358.49	231.93	115.01	24 9 26	402.8	30.45	333.36
72.42	23 46 3	1402.79	22.12	358.49	231.93	115.01	24 9 26	402.8	30.45	333.36
110.00	3 24 48	5997.90	15.95	281.99	228.49	120.61	5 4 46	4997.9	27.13	259.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3461	TRA	2.1100	TC3	-6.6360	BAU	1.1282	SGT	6242.7	SGR	947.5	SG3	1348.3	ST	67.3	SR	11.2	SS	53.6
RDE	-.0170	RRA	-.3842	RC3	.8354	FAU	.19974	RRT	-.9763	RRF	-.9979	RTF	.9667	CRT	-.8514	CRS	.9873	CST	-.6907
FDE	.9016	FRA	6.3022	FC3	-13.7050	BSP	9662	SGB	6314.2	R23	.2455	R13	-.9679	LSA	80.3	MSA	32.9	SSA	.1
BDE	.3466	BRA	2.1447	BC3	6.6883	FSP	2264	SG1	6310.9	SG2	202.9	THA	171.56	EL1	68.0	EL2	5.8	ALF	171.88

LAUNCH DATE MAY 13 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 584.888 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.333	GAL	-1.67	AZL	92.63	HCA	184.26	SMA	186.76	ECC	.19278	INC	2.8289
RP	222.46	LAP	.21	LOP	55.86	VP	21.967	GAP	1.45	AZP	87.18	TAL	349.65	TAP	173.92	RCA	150.75	APO	222.76
RC	203.922	GL	-27.22	GP	6.85	ZAL	112.35	ZAP	58.05	ETS	185.49	ZAE	97.96	ETE	179.51	ZAC	109.19	ETC	272.22

V1	29.478																		
V2	24.717																		
LVI	-16.34																		

PLANETOCENTRIC CONIC

C3	12.177	VHL	3.489	DLA	-29.99	RAL	359.82	RAD	6639.1	VEL	11.500	PTH	6.55	VHP	3.166	DPA	-16.25	RAP	294.68
ECC	1.2004																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 3 3	2396.05	-2.19	62.04	213.65	137.54	18 42 59	1396.1	16.07	46.02
60.00	19 26 42	2173.49	3.24	47.22	218.87	130.19	20 2 55	1173.5	18.88	28.52
70.00	21 20 22	1639.10	9.62	24.88	223.63	122.93	21 51 1	839.1	22.21	3.60
79.59	0 35 54	1237.60	20.47	345.23	229.50	112.41	0 56 32	237.6	27.89	320.25
79.59	0 35 54	1237.60	20.47	345.23	229.50	112.41	0 56 32	237.6	27.89	320.25
79.59	0 35 54	1237.60	20.47	345.23	229.50	112.41	0 56 32	237.6	27.89	320.25
110.00	2 23 44	6173.96	9.62	291.70	223.63	122.93	4 6 38	5174.0	22.21	270.43

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1916	TRA	2.2112	TC3	-6.8549	BAU	1.1207	SGT	6388.5	SGR	725.1	SG3	1344.0	ST	65.2	SR	8.7	SS	56.2
RDE	-.0120	RRA	-.3033	RC3	.6323	FAU	.19237	RRT	-.9778	RRF	-.9955	RTF	.9685	CRT	-.9363	CRS	.9347	CST	-.7511
FDE	1.1488	FRA	6.4020	FC	-13.6774	BSP	10555	SGB	6409.6	R23	.2287	R13	-.9691	LSA	81.2	MSA	30.0	SSA	.2
BDE	.1919	BRA	2.2319	BC3	6.8840	FSP	2364	SG1	6407.8	SG2	150.9	THA	173.64	EL1	65.7	EL2	3.0	ALF	172.66

LAUNCH DATE MAY 13 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 589.008 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.342	GAL	-1.75	AZL	92.63	HCA	185.36	SMA	186.90	ECC	.19360	INC	2.6291
RP	222.84	LAP	.25	LOP	56.95	VP	21.932	GAP	1.30	AZP	87.38	TAL	349.20	TAP	174.56	RCA	150.72	APO	223.09
RC	206.578	GL	-25.33	GP	5.41	ZAL	113.30	ZAP	56.89	ETS	182.74	ZAE	96.66	ETE	179.83	ZAC	107.75	ETC	272.20

V1	29.478																		
V2	24.675																		
LVI	-15.02																		

PLANETOCENTRIC CONIC

C3	12.019	VHL	3.467	DLA	-26.03	RAL	359.45	RAD	6639.1	VEL	11.493	PTH	6.54	VHP	3.183	DPA	-17.67	RAP	294.93
ECC	1.1978																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 50 44	2438.42	-4.32	63.82	212.52	137.43	18 31 23	1438.4	14.01	47.93
60.00	19 9 18	2229.43	.78	49.89	217.42	130.29	19 46 28	1229.4	16.60	31.49
70.00	20 52 40	1925.46	6.39	29.48	221.65	123.62	21 24 45	925.5	19.48	8.81
80.00	23 6 11	1507.45	12.30	1.29	225.17	117.42	23 31 18	507.4	22.54	338.58
90.00	1 26 16	1068.35	16.70	331.13	227.32	113.16	1 44 4	68.3	24.81	307.04
100.00	1 52 58	6269.96	12.30	300.56	225.17	117.42	3 37 28	5270.0	22.54	277.85
110.00	1 56 2	6260.32	6.39	296.30	221.65	123.62	3 40 23	5260.3	19.48	275.64

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.0984	TRA	2.2943	TC3	-7.0465	BAU	1.1352	SGT	6507.7	SGR	593.9	SG3	1327.2	ST	65.4	SR	7.2	SS	57.8
RDE	-.0031	RRA	-.2555	RC3	.5074	FAU	.18674	RRT	-.9763	RRF	-.9910	RTF	.9686	CRT	-.9864	CRS	.8769	CST	-.7886
FDE	1.3014	FRA	6.4167	FC	-13.4512	BSP	11005	SGB	6534.8	R23	.2076	R13	-.9690	LSA	82.9	MSA	26.2	SSA	.2
BDE	.0984	BRA	2.3085	BC3	7.0647	FSP	2377	SG1	6533.5	SG2	128.0	THA	174.91	EL1	65.7	EL2	1.2	ALF	173.80

LAUNCH DATE MAY 13 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 24 1972

HELIOCENTRIC CONIC DISTANCE 593.121 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.350	GAL	-1.83	AZL	92.50	HCA	186.44	SMA	187.05	ECC	.19445	INC	2.4955
RP	223.23	LAP	.28	LOP	58.04	VP	21.898	GAP	1.16	AZP	87.52	TAL	348.74	TAP	175.19	RCA	150.68	APO	223.42
RC	209.236	GL	-24.00	GP	4.46	ZAL	114.15	ZAP	55.81	ETS	182.24	ZAE	95.40	ETE	180.04	ZAC	106.80	ETC	272.20

V1	29.478																		
V2	24.633																		
LVI	-14.16																		

PLANETOCENTRIC CONIC

C3	11.990	VHL	3.463	DLA	-26.58	RAL	359.40	RAD	6639.1	VEL	11.492	PTH	6.54	VHP	3.208	DPA	-18.60	RAP	295.15
ECC	1.1973																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 42 56	2470.73	-5.94	65.18	212.06	137.29	18 24 6	1470.7	12.43	49.36
60.00	18 58 11	2270.56	-1.03	51.86	216.77	130.29	19 36 2	1270.6	14.89	33.62
70.00	20 35 45	1983.67	4.19	32.54	220.71	123.93	21 8 49	983.7	17.55	12.22
80.00	22 36 24	1606.05	9.15	6.91	223.74	118.54	23 3 10	606.1	20.09	344.88
90.00	0 32 50	1243.24	11.74	341.58	225.10	115.91	0 53 33	243.2	21.42	318.73
100.00	1 23 11	1080.52	9.15	328.27	223.74	118.54	1 41 12	80.5	20.09	306.24
110.00	1 39 7	1030.49	4.19	321.46	220.71	123.93	1 56 18	30.5	17.55	301.14

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.0299	TRA	2.3751	TC3	-7.2097	BAU	1.1577	SGT	6651.6	SGR	509.0	SG3	1306.8	ST	66.4	SR	6.3	SS	59.4
RDE	.0057	RRA	-.2256	RC3	.4204	FAU	.18098	RRT	-.9713	RRF	-.9837	RTF	.9671	CRT	-.9983	CRS	.7893	CST	-.8114
FDE	1.4346	FRA	6.4229	FC	-13.0675	BSP	11313	SGB	6671.0	R23	.1852	R13	-.9673	LSA	85.1	MSA	27.2	SSA	.3
BDE	.0304	BRA	2.3858	BC3	7.2219	FSP	2384	SG1	6669.9	SG2	120.8	THA	175.75	EL1	66.7	EL2	.4	ALF	174.59

LAUNCH DATE MAY 13 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 597.233 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.359	GAL	-1.91	AZL	92.40	HCA	187.53	SMA	187.20	ECC	.19532	INC	2.4018
RP	223.62	LAP	.31	LOP	59.13	VP	21.864	GAP	1.01	AZP	87.62	TAL	348.28	TAP	175.82	RCA	150.64	APO	223.76
RC	211.896	GL	-23.01	GP	3.79	ZAL	114.95	ZAP	54.78	ETS	181.88	ZAE	94.16	ETE	180.18	ZAC	106.12	ETC	272.22

V1	29.478																		
V2	24.592																		
LVI	-13.57																		

PLANETOCENTRIC CONIC

C3	12.031	VHL	3.469	DLA	-25.42	RAL	359.53	RAD	6639.1	VEL	11.494	PTH	6.54	VHP	3.229	DPA	-19.25	RAP	295.36
ECC	1.1980																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 35	2497.24	-7.26	66.30	211.95	137.15	18 19 12	1497.2	11.12	50.52
60.00	18 50 26	2303.49	-2.48	53.43	216.53	130.24	19 28 49	1303.5	13.50	35.31
70.00	20 24 6	2028.09	2.50	34.87	220.30	124.07	20 57 54	1028.1	16.03	14.76
80.00	22 17 55	1671.85	6.99	10.60	223.07	119.10	22 45 47	671.9	18.32	348.96
90.00	0 7 53	1329.87	9.12	346.58	224.22	116.89	0 30 3	329.9	19.41	324.28
100.00	1 4 43	1146.32	6.99	331.96	223.07	119.10	1 23 49	146.3	18.32	310.33
110.00	1 27 28	1074.90	2.50	323.79	220.30	124.07	1 45 23	74.9	16.03	303.68

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.0272	TRA	2.4587	TC3	-7.3412	BAU	1.1822	SGT	6794.0	SGR	450.5	SG3	1283.0	ST	67.9	SR	5.8	SS	59.9
RDE	.0153	RRA	-.2047	RC3	.3594	FAU	.17742	RRT	-.9645	RRF	-.9732	RTF	.9679	CRT	-.9667	CRS	.6703	CST	-.8351
FDE	1.4990	FRA	6.3748	FC	-12.7668	BSP	11573	SGB	6808.9	R23	.1491	R13	-.9680	LSA	87.0	MSA	25.9	SSA	.3
BDE	.0313	BRA	2.4672	BC3	7.3499	FSP	2328	SG1	6807.9	SG2	118.8	THA	176.34	EL1	68.1	EL2	1.5	ALF	175.30

LAUNCH DATE MAY 13 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 601.339 EARTH TO MARS

RL 151.15 LAL .00 LOL 231.60 VL 32.368 GAL -1.99 AZL 92.33 HCA 188.61 SMA 187.35 ECC .19621 INC 2.3316 V1 29.478
RP 224.01 LAP .35 LOP 60.21 VP 21.830 GAP .87 AZP 87.69 TAL 347.82 TAP 176.44 RCA 150.59 APO 224.11 V2 24.550
RC 214.558 GL -22.22 GP 3.26 ZAL 115.70 ZAP 53.80 ETS 181.61 ZAE 92.96 ETE 180.28 ZAC 105.61 ETC 272.24 LVI -13.15

PLANETOCENTRIC CONIC

C3 12.116 VHL 3.481 DLA -24.44 RAL 359.76 RAD 6639.1 VEL 11.498 PTH 6.55 VHP 3.254 DPA -19.73 RAP 295.56 ECC 1.1994

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 45	2520.18	-8.40	67.28	212.07	137.01	18 15 45	1520.2	9.98	51.52
60.00	18 44 42	2331.48	-3.71	54.77	216.55	130.16	19 23 33	1331.5	12.32	36.72
70.00	20 15 27	2064.65	1.10	36.78	220.20	124.14	20 49 52	1064.6	14.75	16.83
80.00	22 4 47	1722.48	5.31	13.41	222.81	119.43	22 33 30	722.5	16.89	352.04
90.00	23 47 22	1391.62	7.20	350.11	223.84	117.42	24 10 34	391.6	17.86	328.15
100.00	0 51 35	1196.95	5.31	334.78	222.81	119.43	1 11 32	197.0	16.89	313.40
110.00	1 18 50	1111.46	1.10	325.70	220.20	124.14	1 37 21	111.5	14.75	305.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0772 TRA 2.5448 TC3-7.4522 BAU 1.2081 SGT 6935.6 SGR 409.0 SG3 1258.2 ST 69.7 SR 5.6 SS 60.2
RDE .0246 RRA -.1903 RC3 .3122 FAU .17397 RRT -.9538 RRF -.9589 RTF .9685 CRT -.8928 CRS .5310 CST -.8540
FDE 1.5470 FRA 6.3228 FC-12.4309 BSP 11805 SGB 6947.6 R23 .1159 R13 -.9686 LSA 88.9 MSA 24.8 SSA .4
BDE .0810 BRA 2.5519 BC3 7.4587 FSP 2268 SG1 6946.5 SG2 122.6 THA 176.78 EL1 69.9 EL2 2.5 ALF 175.93

LAUNCH DATE MAY 13 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 605.439 EARTH TO MARS

RL 151.15 LAL .00 LOL 231.60 VL 32.377 GAL -2.07 AZL 92.28 HCA 189.69 SMA 187.51 ECC .19712 INC 2.2761 V1 29.478
RP 224.40 LAP .38 LOP 61.29 VP 21.796 GAP .72 AZP 87.76 TAL 347.36 TAP 177.05 RCA 150.55 APO 224.47 V2 24.508
RC 217.222 GL -21.57 GP 2.89 ZAL 116.44 ZAP 52.85 ETS 181.40 ZAE 91.78 ETE 180.36 ZAC 105.21 ETC 272.27 LVI -12.84

PLANETOCENTRIC CONIC

C3 12.231 VHL 3.497 DLA -23.59 RAL .07 RAD 6639.2 VEL 11.502 PTH 6.55 VHP 3.281 DPA -20.09 RAP 295.78 ECC 1.2013

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 30 54	2540.78	-9.43	68.16	212.32	136.85	18 13 14	1540.8	8.96	52.40
60.00	18 40 16	2356.26	-4.80	55.96	216.74	130.06	19 19 33	1356.3	11.26	37.96
70.00	20 8 43	2096.26	-.10	38.43	220.29	124.15	20 43 39	1096.3	13.63	18.59
80.00	21 54 44	1764.43	3.90	15.73	222.78	119.63	22 24 9	764.4	15.67	354.55
90.00	23 35 3	1440.88	5.65	352.89	223.74	117.76	23 59 4	440.9	16.56	331.18
100.00	0 41 32	1238.90	3.90	337.09	222.78	119.63	1 2 11	238.9	15.67	315.92
110.00	1 12 5	1143.08	-.10	327.35	220.29	124.15	1 31 8	143.1	13.63	307.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1194 TRA 2.6282 TC3-7.5629 BAU 1.2375 SGT 7077.9 SGR 378.9 SG3 1233.5 ST 71.6 SR 5.6 SS 60.5
RDE .0335 RRA -.1801 RC3 .2745 FAU .17052 RRT -.9388 RRF -.9406 RTF .9684 CRT -.7928 CRS .3853 CST -.8664
FDE 1.5940 FRA 6.2724 FC-12.0691 BSP 11955 SGB 7088.1 R23 .0904 R13 -.9685 LSA 90.7 MSA 24.2 SSA .4
BDE .1240 BRA 2.6344 BC3 7.5679 FSP 2208 SG1 7086.9 SG2 130.3 THA 177.12 EL1 71.7 EL2 3.4 ALF 176.47

LAUNCH DATE MAY 13 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 609.533 EARTH TO MARS

RL 151.15 LAL .00 LOL 231.60 VL 32.387 GAL -2.16 AZL 92.23 HCA 190.77 SMA 187.67 ECC .19805 INC 2.2323 V1 29.478
RP 224.79 LAP .42 LOP 62.36 VP 21.763 GAP .58 AZP 87.81 TAL 346.89 TAP 177.65 RCA 150.50 APO 224.83 V2 24.466
RC 219.866 GL -21.02 GP 2.58 ZAL 117.16 ZAP 51.93 ETS 181.24 ZAE 90.62 ETE 180.42 ZAC 104.89 ETC 272.31 LVI -12.61

PLANETOCENTRIC CONIC

C3 12.370 VHL 3.517 DLA -22.82 RAL .43 RAD 6639.2 VEL 11.508 PTH 6.56 VHP 3.308 DPA -20.37 RAP 296.01 ECC 1.2036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 43	2559.73	-10.37	68.98	212.67	136.70	18 11 23	1559.7	8.02	53.21
60.00	18 36 45	2378.81	-5.78	57.05	217.04	129.95	19 16 24	1378.8	10.29	39.08
70.00	20 3 15	2124.51	-1.18	39.90	220.51	124.14	20 38 40	1124.5	12.61	20.15
80.00	21 46 41	1800.81	2.67	17.73	222.92	119.75	22 16 42	800.8	14.58	356.70
90.00	23 25 20	1482.60	4.32	355.24	223.83	117.98	23 50 3	482.6	15.42	333.71
100.00	0 33 29	1275.29	2.67	339.10	222.92	119.75	0 54 44	275.3	14.58	318.07
110.00	1 6 38	1171.33	-1.18	328.82	220.51	124.14	1 26 9	171.3	12.61	309.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1671 TRA 2.7218 TC3-7.6308 BAU 1.2626 SGT 7213.1 SGR 357.1 SG3 1208.0 ST 73.9 SR 5.7 SS 61.0
RDE .0419 RRA -.1734 RC3 .2419 FAU .16605 RRT -.9197 RRF -.9182 RTF .9680 CRT -.6787 CRS .2489 CST -.8790
FDE 1.6499 FRA 6.2342 FC-11.6218 BSP 12208 SGB 7221.9 R23 .0702 R13 -.9681 LSA 93.0 MSA 23.6 SSA .5
BDE .1723 BRA 2.7273 BC3 7.6347 FSP 2169 SG1 7220.6 SG2 140.0 THA 177.39 EL1 74.0 EL2 4.2 ALF 176.98

LAUNCH DATE MAY 13 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 3 1972

HELIOCENTRIC CONIC DISTANCE 613.623 EARTH TO MARS

RL 151.15 LAL .00 LOL 231.60 VL 32.398 GAL -2.24 AZL 92.20 HCA 191.84 SMA 187.83 ECC .19900 INC 2.1977 V1 29.478
RP 225.18 LAP .45 LOP 63.43 VP 21.730 GAP .43 AZP 87.85 TAL 346.41 TAP 178.25 RCA 150.45 APO 225.20 V2 24.424
RC 222.551 GL -20.93 GP 2.33 ZAL 117.87 ZAP 51.05 ETS 181.10 ZAE 89.49 ETE 180.46 ZAC 104.62 ETC 272.35 LVI -12.48

PLANETOCENTRIC CONIC

C3 12.526 VHL 3.539 DLA -22.12 RAL .82 RAD 6639.3 VEL 11.515 PTH 6.56 VHP 3.335 DPA -20.59 RAP 296.26 ECC 1.2061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 27 3	2577.49	-11.25	69.75	213.10	136.54	18 10 0	1577.5	7.13	53.97
60.00	18 33 53	2399.74	-6.70	58.06	217.42	129.83	19 13 53	1399.7	9.39	40.11
70.00	19 58 42	2150.36	-2.17	41.25	220.83	124.09	20 34 33	1150.4	11.68	21.57
80.00	21 40 0	1833.37	1.57	19.52	223.16	119.82	22 10 33	833.4	13.59	358.61
90.00	23 17 21	1519.33	3.14	357.29	224.04	118.12	23 42 41	519.3	14.39	335.92
100.00	0 26 47	1307.84	1.57	340.89	223.16	119.82	0 48 35	307.8	13.59	319.98
110.00	1 2 5	1197.17	-2.17	330.17	220.83	124.09	1 22 2	197.2	11.68	310.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2201 TRA 2.8257 TC3-7.6656 BAU 1.2842 SGT 7345.3 SGR 341.6 SG3 1183.0 ST 76.6 SR 6.0 SS 61.6
RDE .0500 RRA -.1690 RC3 .2138 FAU .16135 RRT -.8971 RRF -.8924 RTF .9680 CRT -.5608 CRS .1288 CST -.8922
FDE 1.7044 FRA 6.2047 FC-11.1514 BSP 12539 SGB 7353.2 R23 .0535 R13 -.9680 LSA 95.8 MSA 22.9 SSA .5
BDE .2257 BRA 2.8307 BC3 7.6686 FSP 2136 SG1 7351.6 SG2 150.8 THA 177.61 EL1 76.7 EL2 5.0 ALF 177.47

LAUNCH DATE MAY 13 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 5 1972

HELIOCENTRIC CONIC DISTANCE 617.706 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.405	GAL	-2.33	AZL	92.17	HCA	192.91	SMA	187.99	ECC	.19997	INC	2.1677
RP	225.57	LAP	.48	LOP	64.50	VP	21.697	GAP	.29	AZP	87.89	TAL	345.94	TAP	178.84	RCA	150.40	APO	225.58
RC	225.217	GL	-20.10	GP	2.11	ZAL	118.57	ZAP	50.20	ETS	180.99	ZAE	88.39	ETE	180.50	ZAC	104.40	ETC	272.40

V1	29.478																		
V2	24.382																		
LVI	-12.34																		

PLANETOCENTRIC CONIC

C3	12.698	VHL	3.563	DLA	-21.47	RAL	1.23	RAD	6639.4	VEL	11.523	PTH	6.57	VHP	3.363	DPA	-20.76	RAP	296.53
ECC	1.2090																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 43	2594.39	-12.08	70.49	213.57	136.38	18 8 58	1594.4	6.29	54.69
60.00	18 31 29	2419.50	-7.56	59.02	217.86	129.71	19 11 49	1419.5	8.54	41.08
70.00	19 54 51	2174.45	-3.09	42.51	221.22	124.03	20 31 5	1174.5	10.80	22.88
80.00	21 34 18	1863.18	.56	21.15	223.50	119.85	22 5 21	863.2	12.66	.34
90.00	23 10 36	1552.56	2.07	359.15	224.34	118.21	23 36 29	552.6	13.44	337.89
100.00	0 21 6	1337.66	.56	342.52	223.50	119.85	0 43 23	337.7	12.66	321.71
110.00	0 58 13	1221.27	-3.09	331.43	221.22	124.03	1 18 34	221.3	10.80	311.79

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2648	TRA	2.9228	TC3	-7.7177	BAU	1.3106	SGT	7479.0	SGR	330.8	SG3	1158.4	ST	79.1	SR	6.4	SS	61.9
RDE	.0582	RRA	-.1659	RC3	.1906	FAU	.15733	RRT	-.8712	RRF	-.8633	RTF	.9676	CRT	-.4528	CRS	.0232	CST	-.9008
FDE	1.7487	FRA	6.1637	FC-10	.7265	BSP	12757	SGB	7486.3	R23	.0407	R13	-.9676	LSA	98.1	MSA	22.5	SSA	.6
BDE	.2711	BRA	2.9275	BC3	7.7201	FSP	2091	SG1	7484.6	SG2	162.3	THA	177.79	EL1	79.2	EL2	5.7	ALF	177.91

LAUNCH DATE MAY 13 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 7 1972

HELIOCENTRIC CONIC DISTANCE 621.784 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.415	GAL	-2.42	AZL	92.14	HCA	193.97	SMA	188.15	ECC	.20096	INC	2.1426
RP	225.96	LAP	.52	LOP	65.56	VP	21.664	GAP	.14	AZP	87.92	TAL	345.46	TAP	179.43	RCA	150.34	APO	225.96
RC	227.883	GL	-19.72	GP	1.94	ZAL	119.26	ZAP	49.37	ETS	180.90	ZAE	87.30	ETE	180.53	ZAC	104.21	ETC	272.46

V1	29.478																		
V2	24.340																		
LVI	-12.26																		

PLANETOCENTRIC CONIC

C3	12.884	VHL	3.589	DLA	-20.85	RAL	1.66	RAD	6639.5	VEL	11.531	PTH	6.58	VHP	3.392	DPA	-20.90	RAP	296.81
ECC	1.2120																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 41	2610.62	-12.88	71.20	214.10	136.21	18 8 12	1610.6	5.47	55.37
60.00	18 29 28	2438.35	-8.38	59.94	218.35	129.57	19 10 6	1438.3	7.72	42.00
70.00	19 51 29	2197.21	-3.96	43.70	221.67	123.95	20 28 6	1197.2	9.96	24.11
80.00	21 29 21	1890.93	-.36	22.68	223.89	119.86	22 0 52	890.9	11.79	1.94
90.00	23 4 45	1583.19	1.09	.86	224.71	118.26	23 31 8	583.2	12.55	339.70
100.00	0 16 9	1365.40	-.38	344.04	223.89	119.86	0 38 54	365.4	11.79	323.31
110.00	0 54 52	1244.02	-3.96	332.62	221.67	123.95	1 15 36	244.0	9.96	313.02

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3123	TRA	3.0266	TC3	-7.7478	BAU	1.3348	SGT	7610.0	SGR	323.8	SG3	1134.0	ST	81.9	SR	6.8	SS	62.3
RDE	.0664	RRA	-.1643	RC3	.1699	FAU	.15295	RRT	-.8426	RRF	-.8319	RTF	.9671	CRT	-.3537	CRS	-.0653	CST	-.9094
FDE	1.7914	FRA	6.1306	FC-10	.2775	BSP	13029	SGB	7616.9	R23	.0308	R13	-.9672	LSA	100.7	MSA	22.1	SSA	.7
BDE	.3192	BRA	3.0311	BC3	7.7497	FSP	2058	SG1	7614.9	SG2	174.2	THA	177.95	EL1	81.9	EL2	6.3	ALF	178.32

LAUNCH DATE MAY 13 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 9 1972

HELIOCENTRIC CONIC DISTANCE 625.826 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.424	GAL	-2.51	AZL	92.12	HCA	195.03	SMA	188.32	ECC	.20197	INC	2.1210
RP	226.35	LAP	.55	LOP	66.62	VP	21.631	GAP	-.00	AZP	87.95	TAL	344.98	TAP	180.01	RCA	150.28	APO	226.35
RC	230.548	GL	-19.36	GP	1.79	ZAL	119.94	ZAP	48.57	ETS	180.82	ZAE	86.24	ETE	180.55	ZAC	104.05	ETC	272.52

V1	29.478																		
V2	24.299																		
LVI	-12.22																		

PLANETOCENTRIC CONIC

C3	13.081	VHL	3.617	DLA	-20.26	RAL	2.11	RAD	6639.6	VEL	11.539	PTH	6.59	VHP	3.420	DPA	-21.01	RAP	297.12
ECC	1.2153																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 51	2626.32	-13.65	71.90	214.65	136.03	18 7 38	1626.3	4.69	56.03
60.00	18 27 43	2456.48	-9.16	60.83	218.88	129.42	19 8 40	1456.5	6.93	42.88
70.00	19 48 32	2216.90	-4.78	44.84	222.16	123.86	20 25 31	1218.9	9.16	25.27
80.00	21 24 59	1917.07	-1.27	24.11	224.34	119.83	21 56 56	917.1	10.96	3.44
90.00	22 59 36	1611.84	.16	2.48	225.14	118.28	23 26 28	611.8	11.70	341.38
100.00	0 11 46	1391.54	-1.27	345.48	224.34	119.83	0 34 58	391.5	10.96	324.81
110.00	0 51 55	1265.72	-4.78	333.76	222.16	123.86	1 13 0	265.7	9.16	314.19

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3584	TRA	3.1301	TC3	-7.7758	BAU	1.3601	SGT	7739.4	SGR	319.7	SG3	1109.8	ST	84.6	SR	7.2	SS	62.6
RDE	.0743	RRA	-.1635	RC3	.1518	FAU	.14889	RRT	-.8122	RRF	-.7987	RTF	.9667	CRT	-.2655	CRS	-.1403	CST	-.9164
FDE	1.8282	FRA	6.0906	FC-10	.9536	BSP	13262	SGB	7746.0	R23	.0224	R13	-.9667	LSA	103.3	MSA	21.7	SSA	.7
BDE	.3660	BRA	3.1343	BC3	7.7773	FSP	2015	SG1	7743.7	SG2	186.4	THA	178.08	EL1	84.7	EL2	7.0	ALF	178.69

LAUNCH DATE MAY 13 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 11 1972

HELIOCENTRIC CONIC DISTANCE 629.923 EARTH TO MARS

RL	151.15	LAL	.00	LOL	231.60	VL	32.434	GAL	-2.60	AZL	92.10	HCA	196.09	SMA	188.48	ECC	.20299	INC	2.1021
RP	226.74	LAP	.58	LOP	67.68	VP	21.599	GAP	-.15	AZP	87.98	TAL	344.50	TAP	180.58	RCA	150.22	APO	226.74
RC	233.212	GL	-19.03	GP	1.65	ZAL	120.62	ZAP	47.79	ETS	180.75	ZAE	85.20	ETE	180.56	ZAC	103.90	ETC	272.59

V1	29.478																		
V2	24.257																		
LVI	-12.20																		

PLANETOCENTRIC CONIC

C3	13.290	VHL	3.646	DLA	-19.70	RAL	2.56	RAD	6639.7	VEL	11.548	PTH	6.59	VHP	3.449	DPA	-21.09	RAP	297.44
ECC	1.2187																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 12	2641.61	-14.40	72.58	215.23	135.85	18 7 14	1641.6	3.92	56.68
60.00	18 26 13	2474.05	-9.92	61.69	219.44	129.26	19 7 27	1474.0	6.16	43.73
70.00	19 45 55	2239.76	-5.57	45.94	222.68	123.75	20 23 14	1239.8	8.38	26.39
80.00	21 21 4	1941.95	-2.11	25.48	224.83	119.79	21 53 26	941.9	10.17	4.85
90.00	22 55 0	1638.94	-.71	3.97	225.61	118.27	23 22 19	638.9	10.89	342.95
100.00	0 7 52	1416.42	-2.11	346.85	224.83	119.79	0 31 28	416.4	10.17	326.22
110.00	0 49 17	1286.58	-5.57	334.86	222.68	123.75	1 10 43	286.6	8.38	315.31

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.4044	TRA	3.2349	TC3	-7.7982	BAU	1.3858	SGT	7867.3	SGR	318.1	SG3	1085.9	ST	87.4	SR	7.7	SS	62.8
RDE	.0828	RRA	-.1634	RC3	.1358	FAU	.14498	RRT	-.7807	RRF	-.7645	RTF	.9663	CRT	-.1876	CRS	-.2039	CST	-.9225
FDE	1.8625	FRA	6.0488	FC-10	9.4441	BSP	13492	SGB	7873.8	R23	.0154	R13	-.9663	LSA	105.8	MSA	21.5	SSA	.7
BDE	.4128	BRA	3.2390	BC3	7.7994	FSP	1973	SG1	7871.2	SG2	198.7	THA	178.19	EL1	87.4	EL2	7.5	ALF	179.05

LAUNCH DATE MAY 13 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 13 1972

HELIOCENTRIC CONIC DISTANCE 633.984 EARTH TO MARS

RL 151.15 LAL .00 LOL 231.60 VL 32.443 GAL -2.69 AZL 92.09 HCA 197.14 SMA 188.65 ECC .20404 INC 2.0856 V1 29.478
RP 227.13 LAP .61 LOP 68.73 VP 21.567 GAP -.29 AZP 88.01 TAL 344.01 TAP 181.15 RCA 150.16 APO 227.14 V2 24.215
RC 235.874 GL -18.72 GP 1.54 ZAL 121.29 ZAP 47.04 ETS 180.70 ZAE 84.18 ETE 180.58 ZAC 103.77 ETC 272.66 LVI -12.20

PLANETOCENTRIC CONIC

C3 13.510 VHL 3.676 DLA -19.16 RAL 3.02 RAD 6639.8 VEL 11.557 PTH 6.60 VHP 3.478 DPA -21.15 RAP 297.78 ECC 1.2223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 41	2656.57	-15.13	73.25	215.84	135.67	18 6 58	1656.6	3.17	57.30
60.00	18 24 54	2491.15	-10.66	62.54	220.02	129.10	19 6 25	1491.1	5.41	44.56
70.00	19 43 33	2259.94	-6.33	47.00	223.24	123.63	20 21 13	1259.9	7.63	27.46
80.00	21 17 32	1965.79	-2.91	26.79	225.36	119.73	21 50 18	965.8	9.39	6.20
90.00	22 50 51	1664.77	-1.54	5.41	226.12	118.24	23 18 36	664.8	10.11	344.45
100.00	0 4 19	1440.27	-2.91	348.16	225.36	119.73	0 28 20	440.3	9.39	327.57
110.00	0 46 55	1306.75	-6.33	335.92	223.24	123.63	1 8 42	306.8	7.63	316.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4499 TRA 3.3414 TC3-7.8178 BAU 1.4121 SGT 7995.3 SGR 318.5 SG3 1062.6 ST 90.3 SR 8.2 SS 63.0
RDE .0911 RRA -.1640 RC3 .1214 FAU .14127 RRT -.7486 RRF -.7300 RTF .9659 CRT -.1193 CRS -.2574 CST -.9279
FDE 1.8913 FRA 6.0073 FC3-9.0530 BSP 13701 SGB 8001.6 R23 .0096 R13 -.9659 LSA 108.3 MSA 21.2 SSA .8
BDE .4590 BRA 3.3454 BC3 7.8187 FSP 1929 SG1 7998.9 SG2 211.0 THA 178.29 EL1 90.3 EL2 8.1 ALF 179.38

LAUNCH DATE MAY 13 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 15 1972

HELIOCENTRIC CONIC DISTANCE 638.039 EARTH TO MARS

RL 151.15 LAL .00 LOL 231.60 VL 32.453 GAL -2.78 AZL 92.07 HCA 198.19 SMA 188.82 ECC .20510 INC 2.0712 V1 29.478
RP 227.52 LAP .65 LOP 69.78 VP 21.535 GAP -.44 AZP 88.03 TAL 343.52 TAP 181.71 RCA 150.09 APO 227.55 V2 24.174
RC 238.532 GL -18.43 GP 1.44 ZAL 121.96 ZAP 46.31 ETS 180.65 ZAE 83.18 ETE 180.59 ZAC 103.65 ETC 272.74 LVI -12.23

PLANETOCENTRIC CONIC

C3 13.739 VHL 3.707 DLA -18.63 RAL 3.48 RAD 6639.9 VEL 11.567 PTH 6.61 VHP 3.507 DPA -21.19 RAP 298.14 ECC 1.2261

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 22 17	2671.26	-15.84	73.92	216.46	135.47	18 6 49	1671.3	2.43	57.92
60.00	18 23 44	2507.87	-11.37	63.37	220.63	128.93	19 5 32	1507.9	4.68	45.36
70.00	19 41 24	2279.54	-7.07	48.04	223.82	123.50	20 19 24	1279.5	6.89	28.50
80.00	21 14 18	1988.79	-3.69	28.05	225.91	119.65	21 47 27	988.8	8.65	7.50
90.00	22 47 3	1689.57	-2.34	6.80	226.66	118.19	23 15 13	689.6	9.35	345.87
100.00	0 1 6	1463.26	-3.69	349.42	225.91	119.65	0 25 29	463.3	8.65	328.67
110.00	0 44 46	1326.36	-7.07	336.96	223.82	123.50	1 6 53	326.4	6.89	317.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4990 TRA 3.4534 TC3-7.8170 BAU 1.4360 SGT 8118.7 SGR 320.4 SG3 1039.4 ST 93.3 SR 8.7 SS 63.2
RDE .0994 RRA -.1653 RC3 .1079 FAU .13705 RRT -.7165 RRF -.6957 RTF .9652 CRT -.0576 CRS -.3035 CST -.9330
FDE 1.9237 FRA 5.9713 FC3-8.6359 BSP 13964 SGB 8125.0 R23 .0052 R13 -.9652 LSA 111.1 MSA 21.0 SSA .8
BDE .5088 BRA 3.4574 BC3 7.8178 FSP 1897 SG1 8122.0 SG2 223.4 THA 178.38 EL1 93.3 EL2 8.7 ALF 179.69

LAUNCH DATE MAY 13 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 17 1972

HELIOCENTRIC CONIC DISTANCE 642.088 EARTH TO MARS

RL 151.15 LAL .00 LOL 231.60 VL 32.463 GAL -2.88 AZL 92.06 HCA 199.23 SMA 188.99 ECC .20618 INC 2.0581 V1 29.478
RP 227.91 LAP .68 LOP 70.82 VP 21.503 GAP -.59 AZP 88.06 TAL 343.04 TAP 182.27 RCA 150.03 APO 227.96 V2 24.133
RC 241.186 GL -18.15 GP 1.35 ZAL 122.62 ZAP 45.60 ETS 180.60 ZAE 82.19 ETE 180.60 ZAC 103.54 ETC 272.82 LVI -12.27

PLANETOCENTRIC CONIC

C3 13.979 VHL 3.739 DLA -18.12 RAL 3.95 RAD 6640.0 VEL 11.578 PTH 6.62 VHP 3.537 DPA -21.22 RAP 298.51 ECC 1.2301

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 21 59	2685.72	-16.54	74.58	217.11	135.27	18 6 45	1685.7	1.71	58.52
60.00	18 22 42	2524.28	-12.07	64.19	221.26	128.75	19 4 46	1524.3	3.96	46.15
70.00	19 39 26	2298.66	-7.79	49.06	224.43	123.36	20 17 45	1298.7	6.17	29.51
80.00	21 11 20	2011.07	-4.44	29.28	226.49	119.56	21 44 51	1011.1	7.91	8.75
90.00	22 43 34	1713.50	-3.11	8.14	227.22	118.12	23 12 8	713.5	8.61	347.24
100.00	23 54 12	1485.54	-4.44	350.65	226.49	119.56	24 18 57	485.5	7.91	330.12
110.00	0 42 49	1345.48	-7.79	337.97	224.43	123.36	1 5 14	345.5	6.17	318.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5455 TRA 3.5644 TC3-7.8208 BAU 1.4617 SGT 8242.2 SGR 323.7 SG3 1016.6 ST 96.2 SR 9.2 SS 63.3
RDE .1078 RRA -.1668 RC3 .0958 FAU .13333 RRT -.6848 RRF -.6620 RTF .9647 CRT -.0040 CRS -.3428 CST -.9373
FDE 1.9474 FRA 5.9291 FC3-8.2577 BSP 14188 SGB 8248.5 R23 .0011 R13 -.9647 LSA 113.6 MSA 20.8 SSA .9
BDE .5561 BRA 3.5683 BC3 7.8214 FSP 1859 SG1 8245.1 SG2 235.8 THA 178.46 EL1 96.2 EL2 9.2 ALF 179.98

LAUNCH DATE MAY 14 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 18 1971

HELIOCENTRIC CONIC DISTANCE 281.919 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	35.390	GAL	-1.42	AZL	91.85	HCA	89.30	SMA	263.72	ECC	.42731	INC	1.8481	V1	29.471
RP	207.18	LAP	-1.85	LOP	321.87	VP	27.892	GAP	22.24	AZP	90.02	TAL	355.26	TAP	84.56	RCA	151.03	APO	376.41	V2	26.438
RC	56.568	GL	-10.72	GP	-.24	ZAL	101.83	ZAP	176.82	ETS	184.34	ZAE	174.04	ETE	51.98	ZAC	99.70	ETC	277.89	LVI	-17.97

PLANETOCENTRIC CONIC

C3	37.597	VHL	6.132	DLA	-19.78	RAL	340.60	RAD	6649.8	VEL	12.549	PTH	7.42	VHP	11.107	DPA	-17.21	RAP	321.80	ECC	1.6187

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 0	2889.55	-26.09	84.56	206.37	131.31	16 40 10	1889.5	-8.51	67.09
60.00	16 55 8	2721.68	-20.22	74.50	211.43	125.63	17 40 29	1721.7	-4.72	55.59
70.00	18 14 58	2486.98	-14.66	59.31	215.28	121.20	18 56 25	1487.0	-1.00	39.37
80.00	19 50 17	2188.65	-10.29	39.21	217.83	118.18	20 26 46	1188.6	1.97	18.58
90.00	21 24 19	1885.35	-8.54	17.84	218.75	117.06	21 55 44	885.4	3.18	356.95
100.00	22 33 9	1663.12	-10.29	.58	217.83	118.18	23 0 52	663.1	1.97	339.95
110.00	23 14 24	1533.79	-14.66	348.23	215.28	121.20	23 39 58	533.8	-1.00	328.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4080	TRA	-.9134	TC3	.0222	BAU	.0373	SGT	983.2	SGR	585.6	SG3	101.1	ST	23.3	SR	26.8	SS	11.9
RDE	-.5690	RRA	.2310	RC3	.0708	FAU	.03314	RRT	-.0078	RRF	.0092	RTF	-.6098	CRT	.7302	CRS	.4264	CST	.9244
FDE	.1425	FRA	.6949	FC3	-.7632	BSP	1370	SGB	1144.3	R23	-.0018	R13	.6098	LSA	34.2	MSA	15.3	SSA	1.1
BDE	.6984	BRA	.9422	BC3	.0742	FSP	121	SG1	983.2	SG2	585.5	THA	179.59	EL1	33.1	EL2	12.9	ALF	80.45

LAUNCH DATE MAY 14 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 283.808 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	35.186	GAL	-1.34	AZL	91.85	HCA	90.56	SMA	256.39	ECC	.41089	INC	1.8458	V1	29.471
RP	207.09	LAP	-1.85	LOP	323.13	VP	27.642	GAP	21.72	AZP	89.98	TAL	355.38	TAP	85.95	RCA	151.04	APO	361.74	V2	26.448
RC	56.856	GL	-11.02	GP	-.25	ZAL	101.75	ZAP	175.92	ETS	183.48	ZAE	173.52	ETE	45.85	ZAC	99.64	ETC	277.98	LVI	-18.06

PLANETOCENTRIC CONIC

C3	35.108	VHL	5.925	DLA	-20.08	RAL	340.66	RAD	6648.9	VEL	12.450	PTH	7.35	VHP	10.742	DPA	-17.11	RAP	322.16	ECC	1.5778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 53 33	2865.85	-25.02	83.32	205.42	131.89	16 41 19	1865.9	-7.33	66.08
60.00	16 57 8	2696.77	-19.25	73.14	210.47	126.13	17 42 5	1696.8	-3.62	54.40
70.00	18 17 34	2460.29	-13.71	57.83	214.33	121.59	18 58 35	1460.3	.02	37.98
80.00	19 53 35	2159.81	-9.36	37.58	216.90	118.48	20 29 35	1159.8	2.95	16.99
90.00	21 27 58	1855.33	-7.61	16.13	217.84	117.32	21 58 54	855.3	4.14	355.26
100.00	22 36 27	1634.28	-9.36	358.95	216.90	118.48	23 3 41	634.3	2.95	338.36
110.00	23 17 1	1507.11	-13.71	346.74	214.33	121.59	23 42 8	507.1	.02	326.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3985	TRA	-.9036	TC3	.0383	BAU	.0393	SGT	1007.9	SGR	588.7	SG3	108.5	ST	23.8	SR	26.9	SS	12.3
RDE	-.5523	RRA	.2241	RC3	.0760	FAU	.03429	RRT	-.0087	RRF	.0095	RTF	-.6224	CRT	.7277	CRS	.4141	CST	.9208
FDE	.1441	FRA	.7225	FC3	-.8455	BSP	1422	SGB	1167.2	R23	-.0013	R13	.6224	LSA	34.5	MSA	15.7	SSA	1.1
BDE	.6810	BRA	.9310	BC3	.0838	FSP	132	SG1	1007.9	SG2	588.7	THA	179.56	EL1	33.4	EL2	13.1	ALF	49.84

LAUNCH DATE MAY 14 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 285.945 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	34.994	GAL	-1.27	AZL	91.84	HCA	91.83	SMA	249.89	ECC	.39551	INC	1.8435	V1	29.471
RP	207.01	LAP	-1.84	LOP	324.40	VP	27.407	GAP	21.21	AZP	89.94	TAL	355.52	TAP	87.35	RCA	151.05	APO	348.72	V2	26.457
RC	57.225	GL	-11.33	GP	-.26	ZAL	101.64	ZAP	175.01	ETS	182.94	ZAE	172.97	ETE	40.79	ZAC	99.59	ETC	278.04	LVI	-18.15

PLANETOCENTRIC CONIC

C3	32.839	VHL	5.731	DLA	-20.40	RAL	340.69	RAD	6648.1	VEL	12.359	PTH	7.28	VHP	10.390	DPA	-17.00	RAP	322.52	ECC	1.5404

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 3	2842.32	-23.94	82.11	204.49	132.43	16 42 26	1842.3	-6.15	65.08
60.00	16 59 7	2671.95	-18.23	71.81	209.54	126.59	17 43 39	1671.9	-2.53	53.21
70.00	18 20 12	2433.59	-12.75	56.35	213.41	121.96	19 0 46	1433.6	1.04	36.59
80.00	19 56 57	2130.79	-8.41	35.94	215.99	118.75	20 32 28	1130.8	3.93	15.40
90.00	21 31 45	1825.03	-6.66	14.41	216.94	117.55	22 2 10	825.0	5.11	353.56
100.00	22 39 49	1605.27	-8.41	357.31	215.99	118.75	23 6 34	605.3	3.93	336.77
110.00	23 19 39	1480.41	-12.75	345.27	213.41	121.96	23 44 19	480.4	1.04	325.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3927	TRA	-.8937	TC3	.0506	BAU	.0421	SGT	1032.6	SGR	591.4	SG3	116.3	ST	24.3	SR	27.0	SS	12.7
RDE	-.5361	RRA	.2174	RC3	.0814	FAU	.03350	RRT	-.0086	RRF	.0099	RTF	-.6351	CRT	.7258	CRS	.4010	CST	.9169
FDE	.1454	FRA	.7511	FC3	-.9358	BSP	1482	SGB	1190.0	R23	-.0018	R13	.6351	LSA	34.9	MSA	16.1	SSA	1.1
BDE	.6645	BRA	.9197	BC3	.0958	FSP	144	SG1	1032.6	SG2	591.4	THA	179.58	EL1	33.8	EL2	13.4	ALF	49.19

LAUNCH DATE MAY 14 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 288.296 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	34.813	GAL	-1.19	AZL	91.84	HCA	93.09	SMA	244.08	ECC	.38110	INC	1.8412	V1	29.471
RP	206.94	LAP	-1.84	LOP	325.66	VP	27.184	GAP	20.70	AZP	89.90	TAL	355.67	TAP	88.77	RCA	151.06	APO	337.11	V2	26.466
RC	57.675	GL	-11.63	GP	-.26	ZAL	101.51	ZAP	174.09	ETS	182.56	ZAE	172.43	ETE	36.61	ZAC	99.53	ETC	278.11	LVI	-18.24

PLANETOCENTRIC CONIC

C3	30.768	VHL	5.547	DLA	-20.72	RAL	340.69	RAD	6647.3	VEL	12.276	PTH	7.22	VHP	10.051	DPA	-16.90	RAP	322.86	ECC	1.5064

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 56 32	2819.00	-22.87	80.94	203.59	132.93	16 43 31	1819.0	-4.99	64.10
60.00	17 1 6	2647.27	-17.22	70.50	208.62	127.02	17 45 13	1647.3	-1.45	52.03
70.00	18 22 52	2406.92	-11.79	54.89	212.50	122.29	19 2 59	1406.9	2.06	35.20
80.00	20 0 24	2101.64	-7.46	34.31	215.10	119.00	20 35 26	1101.6	4.91	13.79
90.00	21 35 38	1794.46	-5.69	12.68	216.06	117.75	22 5 32	794.5	6.08	351.84
100.00	22 43 16	1576.11	-7.46	355.68	215.10	119.00	23 9 32	576.1	4.91	335.16
110.00	23 22 18	1453.74	-11.79	343.81	212.50	122.29	23 46 32	453.7	2.06	324.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3861	TRA	-.8833	TC3	.0677	BAU	.0483	SGT	1056.6	SGR	593.7	SG3	124.7	ST	24.7	SR	27.1	SS	13.1
RDE	-.5204	RRA	.2109	RC3	.0869	FAU	.03678	RRT	-.0089	RRF	.0107	RTF	-.6468	CRT	.7232	CRS	.3849	CST	.9111
FDE	.1453	FRA	.7797	FC3	-1.0348	BSP	1525	SGB	1211.9	R23	-.0023	R13	.6468	LSA	35.3	MSA	16.4	SSA	1.2
BDE	.6480	BRA	.9081	BC3	.1102	FSP	156	SG1	1056.6	SG2	593.7	THA	179.56	EL1	34.1	EL2	13.6	ALF	48.61

LAUNCH DATE MAY 14 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 290.833 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	34.643	GAL	-1.12	AZL	91.84	HCA	94.36	SMA	238.89	ECC	.36760	INC	1.8389	V1	29.471
RP	206.87	LAP	-1.83	LOP	326.93	VP	26.973	GAP	20.21	AZP	89.86	TAL	355.84	TAP	90.20	RCA	151.08	APO	326.71	V2	26.473
RC	58.203	GL	-11.94	GP	-.27	ZAL	101.35	ZAP	173.15	ETS	182.29	ZAE	171.89	ETE	33.14	ZAC	99.47	ETC	278.17	LVI	-18.32

PLANETOCENTRIC CONIC

C3	28.877	VHL	5.374	DLA	-21.06	RAL	340.67	RAD	6646.6	VEL	12.199	PTH	7.16	VHP	9.725	DPA	-16.80	RAP	323.19	ECC	1.4752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 58	2795.92	-21.79	79.80	202.71	133.40	16 44 34	1795.9	-3.83	63.13
60.00	17 3 4	2622.76	-16.21	69.22	207.73	127.42	17 46 47	1622.8	-.37	50.86
70.00	18 25 33	2380.31	-10.81	53.44	211.61	122.60	19 5 13	1380.3	3.07	33.80
80.00	20 3 56	2072.38	-6.49	32.68	214.23	119.21	20 38 29	1072.4	5.88	12.17
90.00	21 39 38	1763.69	-4.71	10.95	215.20	117.92	22 9 2	763.7	7.05	350.10
100.00	22 46 48	1546.85	-6.49	354.05	214.23	119.21	23 12 35	546.9	5.88	333.53
110.00	23 24 59	1427.13	-10.81	342.36	211.61	122.60	23 48 46	427.1	3.07	322.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3706	TRA	-.8697	TC3	.0868	BAU	.0490	SGT	1076.6	SGR	595.5	SG3	133.6	ST	25.1	SR	27.2	SS	13.5
RDE	-.5052	RRA	.2045	RC3	.0926	FAU	.03812	RRT	-.0085	RRF	.0112	RTF	-.6592	CRT	.7210	CRS	.3700	CST	.9059
FDE	.1458	FRA	.8102	FC3	-1.1430	BSP	1541	SGB	1230.3	R23	-.0031	R13	.6593	LSA	35.6	MSA	16.8	SSA	1.2
BDE	.6313	BRA	.8934	BC3	.1270	FSP	169	SG1	1076.6	SG2	595.5	THA	179.61	EL1	34.3	EL2	13.8	ALF	48.14

LAUNCH DATE MAY 14 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 293.533 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	34.483	GAL	-1.04	AZL	91.84	HCA	95.63	SMA	234.22	ECC	.35494	INC	1.8366	V1	29.471
RP	206.82	LAP	-1.83	LOP	328.20	VP	26.773	GAP	19.72	AZP	89.82	TAL	356.01	TAP	91.64	RCA	151.09	APO	317.36	V2	26.479
RC	58.807	GL	-12.24	GP	-.28	ZAL	101.17	ZAP	172.21	ETS	182.08	ZAE	171.38	ETE	30.23	ZAC	99.42	ETC	278.24	LVI	-18.39

PLANETOCENTRIC CONIC

C3	27.147	VHL	5.210	DLA	-21.41	RAL	340.63	RAD	6645.9	VEL	12.129	PTH	7.10	VHP	9.410	DPA	-16.71	RAP	323.51	ECC	1.4468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 22	2773.12	-20.72	78.69	201.85	133.84	16 45 35	1773.1	-2.69	62.17
60.00	17 5 2	2598.48	-15.20	67.96	206.86	127.78	17 48 20	1598.5	.70	49.70
70.00	18 28 15	2353.81	-9.84	52.01	210.75	122.87	19 7 29	1353.8	4.08	32.42
80.00	20 7 33	2043.04	-5.51	31.05	213.39	119.39	20 41 36	1043.0	6.86	10.54
90.00	21 43 46	1732.70	-3.72	9.21	214.37	118.05	22 12 39	732.7	8.02	348.34
100.00	22 50 25	1517.51	-5.51	352.42	213.39	119.39	23 15 43	517.5	6.86	331.90
110.00	23 27 42	1400.63	-9.84	340.93	210.75	122.87	23 51 2	400.6	4.08	321.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3722	TRA	-.8634	TC3	.1059	BAU	.0525	SGT	1104.4	SGR	597.0	SG3	143.3	ST	25.5	SR	27.2	SS	13.9
RDE	-.4905	RRA	.1984	RC3	.0984	FAU	.03962	RRT	-.0104	RRF	.0118	RTF	-.6693	CRT	.7168	CRS	.3533	CST	.9010
FDE	.1457	FRA	.8424	FC3	-1.2635	BSP	1625	SGB	1255.4	R23	-.0019	R13	.6693	LSA	35.9	MSA	17.2	SSA	1.2
BDE	.6157	BRA	.8859	BC3	.1446	FSP	185	SG1	1104.5	SG2	596.9	THA	179.54	EL1	34.6	EL2	14.0	ALF	47.50

LAUNCH DATE MAY 14 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 296.378 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	34.332	GAL	-.97	AZL	91.83	HCA	96.90	SMA	230.01	ECC	.34307	INC	1.8342	V1	29.471
RP	206.77	LAP	-1.82	LOP	329.47	VP	26.583	GAP	19.24	AZP	89.78	TAL	356.20	TAP	93.10	RCA	151.10	APO	308.92	V2	26.485
RC	59.485	GL	-12.55	GP	-.29	ZAL	100.96	ZAP	171.24	ETS	181.92	ZAE	170.90	ETE	27.76	ZAC	99.37	ETC	278.30	LVI	-18.46

PLANETOCENTRIC CONIC

C3	25.566	VHL	5.056	DLA	-21.77	RAL	340.57	RAD	6645.2	VEL	12.064	PTH	7.05	VHP	9.106	DPA	-16.62	RAP	323.82	ECC	1.4208

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 0 44	2750.64	-19.86	77.61	201.03	134.25	16 46 34	1750.6	-1.56	61.23
60.00	17 6 59	2574.46	-14.20	66.73	206.01	128.12	17 49 53	1574.5	1.76	48.55
70.00	18 31 0	2327.46	-8.86	50.59	209.91	123.12	19 9 47	1327.5	5.08	31.03
80.00	20 11 16	2013.65	-4.53	29.43	212.57	119.54	20 44 50	1013.6	7.83	8.89
90.00	21 48 2	1701.52	-2.72	7.47	213.56	118.16	22 16 23	701.5	8.98	346.56
100.00	22 54 8	1488.12	-4.53	350.79	212.57	119.54	23 18 56	488.1	7.83	330.26
110.00	23 30 26	1374.28	-8.86	339.51	209.91	123.12	23 53 20	374.3	5.08	319.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3665	TRA	-.8533	TC3	.1268	BAU	.0561	SGT	1128.3	SGR	598.0	SG3	153.3	ST	26.0	SR	27.2	SS	14.3
RDE	-.4764	RRA	.1924	RC3	.1043	FAU	.04113	RRT	-.0099	RRF	.0121	RTF	-.6790	CRT	.7147	CRS	.3371	CST	.8949
FDE	.1453	FRA	.8741	FC3	-1.3929	BSP	1681	SGB	1277.0	R23	-.0028	R13	.6791	LSA	36.2	MSA	17.5	SSA	1.2
BDE	.6010	BRA	.8747	BC3	.1642	FSP	201	SG1	1128.3	SG2	598.0	THA	179.58	EL1	34.9	EL2	14.2	ALF	46.86

LAUNCH DATE MAY 14 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 299.348 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	34.180	GAL	-.90	AZL	91.83	HCA	98.16	SMA	226.19	ECC	.33193	INC	1.8319	V1	29.471
RP	206.74	LAP	-1.81	LOP	330.73	VP	26.404	GAP	18.77	AZP	89.74	TAL	356.41	TAP	94.57	RCA	151.11	APO	301.27	V2	26.489
RC	60.233	GL	-12.86	GP	-.30	ZAL	100.74	ZAP	170.27	ETS	181.79	ZAE	170.47	ETE	25.66	ZAC	99.32	ETC	278.36	LVI	-18.53

PLANETOCENTRIC CONIC

C3	24.117	VHL	4.911	DLA	-22.13	RAL	340.49	RAD	6644.6	VEL	12.004	PTH	7.00	VHP	8.813	DPA	-16.53	RAP	324.11	ECC	1.3969

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 2 3	2728.46	-18.60	76.56	200.22	134.62	16 47 32	1728.5	-.44	60.31
60.00	17 8 55	2550.67	-13.19	65.52	205.19	128.43	17 51 25	1550.7	2.80	47.41
70.00	18 33 46	2301.23	-7.88	49.19	209.09	123.34	19 12 7	1301.2	6.07	29.65
80.00	20 15 4	1984.16	-3.53	27.80	211.77	119.67	20 48 8	984.2	8.80	7.24
90.00	21 52 27	1670.07	-1.71	5.71	212.78	118.23	22 20 17	670.1	9.95	344.75
100.00	22 57 56	1458.64	-3.53	349.17	211.77	119.67	23 22 15	458.6	8.80	328.61
110.00	23 33 12	1348.05	-7.88	338.11	209.09	123.34	23 55 40	348.0	6.07	318.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3484	TRA	-.8324	TC3	.1665	BAU	.0644	SGT	1136.2	SGR	598.6	SG3	164.2	ST	25.7	SR	27.2	SS	14.7
RDE	-.4627	RRA	.1866	RC3	.1103	FAU	.04271	RRT	-.0135	RRF	.0133	RTF	-.7028	CRT	.7050	CRS	.3196	CST	.8929
FDE	.1450	FRA	.9110	FC3	-1.5333	BSP	1601	SGB	1284.3	R23	-.0002	R13	.7029	LSA	36.0	MSA	17.9	SSA	1.2
BDE	.5792	BRA	.8530	BC3	.1997	FSP	221	SG1	1136.3	SG2	598.5	THA	179.43	EL1	34.6	EL2	14.3	ALF	47.33

LAUNCH DATE MAY 14 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC DISTANCE 302.433 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 34.056 GAL -.82 AZL 91.83 HCA 99.43 SMA 222.72 ECC .32149 INC 1.8295 V1 29.471
RP 206.71 LAP -1.80 LOP 332.00 VP 26.234 GAP 18.31 AZP 89.70 TAL 356.62 TAP 96.05 RCA 151.12 APO 294.33 V2 26.492
RC 61.050 GL -13.16 GP -.31 ZAL 100.50 ZAP 169.28 ETS 181.69 ZAE 170.09 ETE 23.85 ZAC 99.27 ETC 278.41 LVI -18.59

PLANETOCENTRIC CONIC

C3 22.792 VHL 4.774 DLA -22.50 RAL 340.39 RAD 6644.1 VEL 11.949 PTH 6.95 VHP 8.530 DPA -16.45 RAP 324.38 ECC 1.3751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 3 21	2706.73	-17.56	75.55	199.44	134.96	16 48 28	1706.7	.65	59.40
60.00	17 10 50	2527.29	-12.20	64.34	204.40	128.71	17 52 57	1527.3	3.83	46.29
70.00	18 36 33	2275.29	-6.91	47.82	208.31	123.53	19 14 28	1275.3	7.05	28.28
80.00	20 18 58	1954.78	-2.54	26.18	211.01	119.76	20 51 32	954.8	9.75	5.58
90.00	21 57 0	1638.56	-.70	3.95	212.03	118.27	22 24 18	638.6	10.90	342.93
100.00	23 1 49	1429.25	-2.54	347.55	211.01	119.76	23 25 39	429.3	9.75	320.95
110.00	23 35 59	1322.11	-6.91	336.73	208.31	123.53	23 58 1	322.1	7.05	317.20

DIFFERENTIAL CORRECTIONS

TDE -.3457 TRA -.8265 TC3 .1833 BAU .0661
RDE -.4495 RRA .1810 RC3 .1163 FAU .04449
FDE .1427 FRA .9457 FC3-1.6898 BSP 1702
BDE .5670 BRA .8461 BC3 .2171 FSP 236

MID-COURSE EXECUTION ACCURACY

SGT 1164.2 SGR 598.8 SG3 175.8
RRT -.0131 RRF .0141 RTF -.7058
SGB 1309.2 R23 -.0015 R13 .7058
SG1 1164.3 SG2 598.7 THA 179.47

ORBIT DETERMINATION ACCURACY

ST 26.3 SR 27.2 SS 15.1
CRT .7038 CRS .2990 CST .8639
LSA 36.3 MSA 18.3 SSA 1.3
EL1 34.9 EL2 14.5 ALF 46.43

LAUNCH DATE MAY 14 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC DISTANCE 305.617 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 33.930 GAL -.75 AZL 91.83 HCA 100.70 SMA 219.57 ECC .31170 INC 1.8271 V1 29.471
RP 206.69 LAP -1.80 LOP 333.27 VP 26.072 GAP 17.86 AZP 89.66 TAL 356.84 TAP 97.54 RCA 151.13 APO 288.01 V2 26.495
RC 61.933 GL -13.47 GP -.32 ZAL 100.24 ZAP 168.27 ETS 181.61 ZAE 169.76 ETE 22.28 ZAC 99.22 ETC 278.46 LVI -18.65

PLANETOCENTRIC CONIC

C3 21.577 VHL 4.645 DLA -22.87 RAL 340.27 RAD 6643.5 VEL 11.898 PTH 6.91 VHP 8.257 DPA -16.38 RAP 324.64 ECC 1.3551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 4 37	2685.41	-16.53	74.57	198.68	135.28	16 49 23	1685.4	1.72	58.51
60.00	17 12 44	2504.26	-11.22	63.19	203.63	128.97	17 54 29	1504.3	4.84	45.19
70.00	18 39 22	2249.60	-5.94	46.46	207.55	123.69	19 16 51	1249.6	8.01	28.91
80.00	20 22 57	1925.41	-1.55	24.57	210.27	119.82	20 55 2	925.4	10.70	3.91
90.00	22 1 42	1606.87	.32	2.18	211.31	118.28	22 28 29	606.9	11.85	341.08
100.00	23 5 49	1399.88	-1.55	345.94	210.27	119.82	23 29 9	399.9	10.70	325.28
110.00	23 38 48	1296.42	-5.94	335.38	207.55	123.69	24 0 24	296.4	8.01	315.83

DIFFERENTIAL CORRECTIONS

TDE -.3410 TRA -.8186 TC3 .2049 BAU .0689
RDE -.4367 RRA .1756 RC3 .1223 FAU .04643
FDE .1393 FRA .9818 FC3-1.8629 BSP 1786
BDE .5541 BRA .8372 BC3 .2387 FSP 257

MID-COURSE EXECUTION ACCURACY

SGT 1189.1 SGR 598.6 SG3 188.4
RRT -.0132 RRF .0151 RTF -.7106
SGB 1331.3 R23 -.0025 R13 .7106
SG1 1189.2 SG2 598.5 THA 179.49

ORBIT DETERMINATION ACCURACY

ST 26.7 SR 27.2 SS 15.5
CRT .7013 CRS .2760 CST .8742
LSA 36.6 MSA 18.7 SSA 1.3
EL1 35.1 EL2 14.7 ALF 45.71

LAUNCH DATE MAY 14 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 308.893 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 33.811 GAL -.68 AZL 91.82 HCA 101.97 SMA 216.69 ECC .30251 INC 1.8247 V1 29.471
RP 206.68 LAP -1.79 LOP 334.54 VP 25.919 GAP 17.41 AZP 89.62 TAL 357.06 TAP 99.04 RCA 151.14 APO 282.24 V2 26.496
RC 62.879 GL -13.77 GP -.33 ZAL 99.97 ZAP 167.24 ETS 181.53 ZAE 169.50 ETE 20.92 ZAC 99.17 ETC 278.51 LVI -18.70

PLANETOCENTRIC CONIC

C3 20.463 VHL 4.524 DLA -23.25 RAL 340.14 RAD 6643.0 VEL 11.852 PTH 6.87 VHP 7.994 DPA -16.31 RAP 324.89 ECC 1.3368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 51	2664.53	-15.52	73.61	197.96	135.56	16 50 16	1664.5	2.77	57.64
60.00	17 14 38	2481.62	-10.25	62.06	202.68	129.19	17 55 59	1481.6	5.83	44.10
70.00	18 42 12	2224.16	-4.98	45.12	206.81	123.83	19 19 16	1224.2	8.96	25.55
80.00	20 27 2	1896.07	-.55	22.96	209.56	119.85	20 58 38	896.1	11.63	2.24
90.00	22 8 35	1574.99	1.35	.40	210.62	118.25	22 32 50	575.0	12.79	339.22
100.00	23 9 54	1370.54	-.55	344.33	209.56	119.85	23 32 45	370.5	11.63	323.60
110.00	23 41 38	1271.00	-4.98	334.04	206.81	123.83	24 2 49	271.0	8.96	314.47

DIFFERENTIAL CORRECTIONS

TDE -.3393 TRA -.8088 TC3 .2284 BAU .0717
RDE -.4244 RRA .1704 RC3 .1283 FAU .04839
FDE .1359 FRA 1.0201 FC3-2.0474 BSP 1851
BDE .5409 BRA .8265 BC3 .2620 FSP 278

MID-COURSE EXECUTION ACCURACY

SGT 1210.9 SGR 598.0 SG3 201.5
RRT -.0132 RRF .0163 RTF -.7167
SGB 1350.5 R23 -.0037 R13 .7167
SG1 1210.9 SG2 597.9 THA 179.51

ORBIT DETERMINATION ACCURACY

ST 27.0 SR 27.1 SS 15.9
CRT .6985 CRS .2531 CST .8646
LSA 36.8 MSA 19.1 SSA 1.3
EL1 35.3 EL2 14.9 ALF 45.12

LAUNCH DATE MAY 14 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 312.249 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 33.700 GAL -.61 AZL 91.82 HCA 103.24 SMA 214.05 ECC .29389 INC 1.8223 V1 29.471
RP 206.67 LAP -1.77 LOP 335.81 VP 25.774 GAP 16.98 AZP 89.58 TAL 357.30 TAP 100.54 RCA 151.15 APO 276.96 V2 26.496
RC 63.888 GL -14.07 GP -.34 ZAL 99.69 ZAP 166.20 ETS 181.47 ZAE 169.30 ETE 19.72 ZAC 99.13 ETC 278.56 LVI -18.75

PLANETOCENTRIC CONIC

C3 19.441 VHL 4.409 DLA -23.63 RAL 339.99 RAD 6642.6 VEL 11.809 PTH 6.83 VHP 7.740 DPA -16.25 RAP 325.11 ECC 1.3200

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 3	2644.12	-14.52	72.69	197.25	135.82	16 51 7	1644.1	3.79	56.78
60.00	17 16 31	2459.40	-9.29	60.97	202.17	129.39	17 57 30	1459.4	6.80	43.02
70.00	18 45 3	2199.08	-4.03	43.80	206.11	123.94	19 21 42	1199.1	9.89	24.21
80.00	20 31 14	1866.79	.44	21.35	208.89	119.85	21 2 21	866.8	12.55	.55
90.00	22 11 39	1542.92	2.39	358.61	209.97	118.19	22 37 22	542.9	13.72	337.32
100.00	23 14 6	1341.26	.44	342.72	208.89	119.85	23 36 27	341.3	12.55	321.92
110.00	23 44 30	1245.90	-4.03	332.72	206.11	123.94	24 5 16	245.9	9.89	313.12

DIFFERENTIAL CORRECTIONS

TDE -.3290 TRA -.7987 TC3 .2540 BAU .0747
RDE -.4126 RRA .1653 RC3 .1342 FAU .05056
FDE .1324 FRA 1.0599 FC3-2.2514 BSP 1900
BDE .5277 BRA .8156 BC3 .2873 FSP 301

MID-COURSE EXECUTION ACCURACY

SGT 1231.3 SGR 597.0 SG3 215.7
RRT -.0135 RRF .0170 RTF -.7226
SGB 1368.4 R23 -.0042 R13 .7227
SG1 1231.4 SG2 596.9 THA 179.51

ORBIT DETERMINATION ACCURACY

ST 27.3 SR 27.0 SS 16.3
CRT .6952 CRS .2309 CST .8554
LSA 36.9 MSA 19.4 SSA 1.3
EL1 35.4 EL2 15.0 ALF 44.59

LAUNCH DATE MAY 14 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 315.679 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	33.395	GAL	-.55	AZL	91.82	HCA	104.51	SMA	211.64	ECC	.28580	INC	1.8189	V1	29.471
RP	206.68	LAP	-1.76	LOP	337.08	VP	25.635	GAP	16.55	AZP	89.54	TAL	357.54	TAP	102.05	RCA	151.15	APO	272.13	V2	26.496
RC	64.956	GL	-14.36	GP	-.35	ZAL	99.39	ZAP	168.13	ETS	181.42	ZAE	169.16	ETE	18.66	ZAC	99.09	ETC	278.60	LVI	-18.79

PLANETOCENTRIC CONIC

C3	18.503	VHL	4.302	DLA	-24.01	RAL	339.83	RAD	6642.2	VEL	11.770	PTH	6.80	VHP	7.494	DPA	-16.19	RAP	325.31	ECC	1.3045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 8 13	2624.20	-13.55	71.81	196.57	136.06	16 51 58	1624.2	4.79	55.94
60.00	17 18 22	2437.64	-8.35	59.90	201.48	129.57	17 59 0	1437.6	7.75	41.96
70.00	18 47 56	2174.33	-3.09	42.50	205.43	124.03	19 24 10	1174.3	10.80	22.87
80.00	20 35 32	1837.59	1.43	19.75	208.24	119.83	21 6 9	837.6	13.46	358.66
90.00	22 16 54	1510.64	3.42	356.81	209.34	118.09	22 42 5	510.6	14.64	335.40
100.00	23 18 24	1312.06	1.43	341.12	208.24	119.83	23 40 16	312.1	13.46	320.22
110.00	23 47 22	1221.15	-3.09	331.42	205.43	124.03	24 7 43	221.2	10.80	311.79

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3225	TRA	-.7864	TC3	.2794	BAU	.0773	SGT	1250.6	SGR	595.6	SG3	230.7	ST	27.5	SR	26.9	SS	16.7
RDE	-.4012	RRA	.1605	RC3	.1400	FAU	.05277	RRT	-.0141	RRF	.0187	RTF	-.7287	CRT	.6916	CRS	.2060	CST	.8447
FDE	.1278	FRA	1.1034	FC3	-2.4690	BSP	1949	SGB	1385.2	R23	-.0054	R13	.7287	LSA	37.0	MSA	19.8	SSA	1.4
BDE	.5147	BRA	.8046	BC3	.3125	FSP	326	SG1	1250.6	SG2	595.6	THA	179.50	EL1	35.4	EL2	15.1	ALF	44.08

LAUNCH DATE MAY 14 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 319.175 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	33.496	GAL	-.48	AZL	91.82	HCA	105.78	SMA	209.42	ECC	.27822	INC	1.8174	V1	29.471
RP	206.70	LAP	-1.75	LOP	338.35	VP	25.504	GAP	16.14	AZP	89.51	TAL	357.78	TAP	103.56	RCA	151.16	APO	267.69	V2	26.494
RC	66.082	GL	-14.65	GP	-.37	ZAL	99.09	ZAP	164.04	ETS	181.38	ZAE	169.09	ETE	17.72	ZAC	99.05	ETC	278.63	LVI	-18.82

PLANETOCENTRIC CONIC

C3	17.642	VHL	4.200	DLA	-24.39	RAL	339.66	RAD	6641.8	VEL	11.733	PTH	6.76	VHP	7.257	DPA	-16.14	RAP	325.50	ECC	1.2903

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 9 22	2604.80	-12.59	70.95	195.92	136.27	16 52 46	1604.8	5.76	55.13
60.00	17 20 13	2416.36	-7.42	58.87	200.81	129.73	18 0 29	1416.4	8.67	40.92
70.00	18 50 49	2149.96	-2.16	41.23	204.78	124.09	19 26 39	1150.0	11.69	21.54
80.00	20 39 56	1808.48	2.41	18.15	207.62	119.77	21 10 5	808.5	14.35	357.15
90.00	22 22 22	1478.12	4.46	354.99	208.75	117.95	22 47 0	478.1	15.55	333.44
100.00	23 22 48	1282.95	2.41	339.52	207.62	119.77	23 44 11	283.0	14.35	318.52
110.00	23 50 16	1196.78	-2.16	330.15	204.78	124.09	24 10 13	196.8	11.69	310.46

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3142	TRA	-.7772	TC3	.3105	BAU	.0809	SGT	1267.6	SGR	593.9	SG3	246.9	ST	27.6	SR	26.8	SS	17.1
RDE	-.3901	RRA	.1558	RC3	.1456	FAU	.05526	RRT	-.0156	RRF	.0200	RTF	-.7355	CRT	.6862	CRS	.1789	CST	.8338
FDE	.1215	FRA	1.1466	FC3	-2.7117	BSP	1986	SGB	1399.8	R23	-.0054	R13	.7356	LSA	36.9	MSA	20.3	SSA	1.4
BDE	.5009	BRA	.7927	BC3	.3429	FSP	350	SG1	1267.7	SG2	593.8	THA	179.46	EL1	35.4	EL2	15.3	ALF	43.76

LAUNCH DATE MAY 14 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 322.731 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	33.403	GAL	-.42	AZL	91.81	HCA	107.05	SMA	207.39	ECC	.27111	INC	1.8148	V1	29.471
RP	206.72	LAP	-1.74	LOP	339.62	VP	25.379	GAP	15.73	AZP	89.47	TAL	358.02	TAP	105.07	RCA	151.16	APO	263.61	V2	26.491
RC	67.265	GL	-14.93	GP	-.38	ZAL	98.78	ZAP	162.93	ETS	181.34	ZAE	169.10	ETE	16.89	ZAC	99.01	ETC	278.66	LVI	-18.85

PLANETOCENTRIC CONIC

C3	16.851	VHL	4.105	DLA	-24.77	RAL	339.48	RAD	6641.4	VEL	11.700	PTH	6.73	VHP	7.029	DPA	-16.10	RAP	325.66	ECC	1.2773

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 10 28	2585.95	-11.66	70.12	195.29	136.46	16 53 34	1585.9	6.71	54.33
60.00	17 22 2	2395.60	-6.52	57.86	200.17	129.86	18 1 58	1395.6	9.57	39.91
70.00	18 53 44	2126.02	-1.24	39.98	204.16	124.13	19 29 10	1126.0	12.56	20.23
80.00	20 44 27	1779.48	5.39	16.55	207.04	119.68	21 14 7	779.5	15.22	355.44
90.00	22 28 4	1445.33	5.51	353.14	208.20	117.78	22 52 9	445.3	16.44	331.45
100.00	23 27 19	1253.95	3.39	337.92	207.04	119.68	23 48 13	254.0	15.22	316.81
110.00	23 53 10	1172.83	-1.24	328.90	204.16	124.13	24 12 43	172.8	12.56	309.15

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3071	TRA	-.7688	TC3	.3338	BAU	.0828	SGT	1282.3	SGR	591.7	SG3	263.5	ST	27.6	SR	26.7	SS	17.8
RDE	-.3795	RRA	.1514	RC3	.1510	FAU	.05767	RRT	-.0169	RRF	.0215	RTF	-.7397	CRT	.6822	CRS	.1650	CST	.8235
FDE	.1163	FRA	1.1918	FC3	-2.9627	BSP	2019	SGB	1412.3	R23	-.0056	R13	.7397	LSA	36.9	MSA	20.6	SSA	1.4
BDE	.4882	BRA	.7806	BC3	.3664	FSP	377	SG1	1282.4	SG2	591.6	THA	179.43	EL1	35.3	EL2	15.3	ALF	43.37

LAUNCH DATE MAY 14 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 326.342 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	33.315	GAL	-.36	AZL	91.81	HCA	108.32	SMA	205.51	ECC	.26444	INC	1.8123	V1	29.471
RP	206.75	LAP	-1.72	LOP	340.89	VP	25.260	GAP	15.33	AZP	89.43	TAL	358.27	TAP	106.59	RCA	151.17	APO	259.86	V2	26.487
RC	68.502	GL	-15.21	GP	-.39	ZAL	98.47	ZAP	161.80	ETS	181.30	ZAE	169.17	ETE	16.16	ZAC	98.98	ETC	278.69	LVI	-18.87

PLANETOCENTRIC CONIC

C3	16.124	VHL	4.016	DLA	-25.14	RAL	339.29	RAD	6641.1	VEL	11.669	PTH	6.71	VHP	6.808	DPA	-16.07	RAP	325.80	ECC	1.2654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 11 32	2567.66	-10.76	69.32	194.69	136.63	16 54 20	1567.7	7.62	53.55
60.00	17 23 50	2375.38	-5.63	56.88	199.56	129.97	18 3 26	1375.4	10.44	38.91
70.00	18 56 39	2102.52	-.34	38.75	203.56	124.15	19 31 41	1102.5	13.40	18.94
80.00	20 49 5	1750.60	4.36	14.96	206.49	119.57	21 18 16	750.6	16.07	353.72
90.00	22 34 1	1412.20	6.55	351.27	207.68	117.57	22 57 33	412.2	17.32	329.42
100.00	23 31 57	1225.07	4.36	336.33	206.49	119.57	23 52 22	225.1	16.07	315.09
110.00	0 0 1	1149.34	-.34	327.67	203.56	124.15	0 19 10	149.3	13.40	307.85

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2993	TRA	-.7560	TC3	.3662	BAU	.0858	SGT	1299.5	SGR	589.2	SG3	282.8	ST	27.8	SR	26.8	SS	18.1
RDE	-.3693	RRA	.1471	RC3	.1561	FAU	.06064	RRT	-.0189	RRF	.0237	RTF	-.7462	CRT	.6761	CRS	.1256	CST	.8111
FDE	.1086	FRA	1.2452	FC3	-3.2556	BSP	2065	SGB	1426.9	R23	-.0059	R13	.7463	LSA	36.9	MSA	21.1	SSA	1.4
BDE	.4753	BRA	.7702	BC3	.3981	FSP	411	SG1	1299.6	SG2	589.1	THA	179.38	EL1	35.2	EL2	15.5	ALF	43.02

LAUNCH DATE MAY 14 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC DISTANCE 330.003 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 33.233 GAL -.30 AZL 91.81 HCA 109.58 SMA 203.79 ECC .25818 INC 1.8097 V1 29.471
RP 206.79 LAP -1.71 LOP 342.16 VP 25.146 GAP 14.94 AZP 89.39 TAL 358.52 TAP 108.10 RCA 151.17 APO 256.40 V2 26.483
RC 69.791 GL -15.48 GP -.41 ZAL 98.15 ZAP 160.64 ETS 181.27 ZAE 169.32 ETE 15.51 ZAC 98.95 ETC 278.71 LVI -18.88

PLANETOCENTRIC CONIC

C3 15.456 VHL 3.931 DLA -25.51 RAL 339.09 RAD 6640.7 VEL 11.641 PTH 6.68 VHP 6.595 DPA -16.05 RAP 325.91 ECC 1.2544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 35	2549.96	-9.88	68.56	194.11	136.78	16 55 5	1550.0	8.50	52.80
60.00	17 25 37	2355.73	-4.77	55.94	198.98	130.07	18 4 52	1355.7	11.28	37.93
70.00	18 59 34	2079.51	.54	37.55	203.00	124.15	19 34 13	1079.5	14.22	17.66
80.00	20 53 50	1721.85	5.33	13.37	205.97	119.42	21 22 32	721.8	16.91	352.00
90.00	22 40 15	1378.64	7.61	349.37	207.21	117.32	23 3 14	378.6	18.19	327.34
100.00	23 36 42	1196.32	5.33	334.74	205.97	119.42	23 56 38	196.3	16.91	313.37
110.00	0 2 56	1126.33	.54	326.47	203.00	124.15	0 21 42	126.3	14.22	306.56

DIFFERENTIAL CORRECTIONS

TDE -.2927 TRA -.7448 TC3 .3860 BAU .0864
RDE -.3594 RRA .1431 RC3 .1610 FAU .06334
FDE .1031 FRA 1.2984 FC3-3.5480 BSP 2099
BDE .4635 BRA .7585 BC3 .4182 FSP 445

MID-COURSE EXECUTION ACCURACY

SGT 1311.7 SGR 586.3 SG3 301.8
RRT -.0208 RRF .0256 RTF -.7491
SGB 1436.8 R23 -.0061 R13 .7492
SG1 1311.8 SG2 586.2 THA 179.33

ORBIT DETERMINATION ACCURACY

ST 27.9 SR 26.4 SS 18.6
CRT .6722 CRS .1029 CST .8009
LSA 36.8 NSA 21.5 SSA 1.4
EL1 35.2 EL2 15.5 ALF 42.62

LAUNCH DATE MAY 14 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC DISTANCE 333.709 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 33.156 GAL -.25 AZL 91.81 HCA 110.85 SMA 202.20 ECC .25233 INC 1.8071 V1 29.471
RP 206.84 LAP -1.69 LOP 343.43 VP 25.038 GAP 14.56 AZP 89.36 TAL 358.76 TAP 109.61 RCA 151.18 APO 253.21 V2 26.477
RC 71.130 GL -15.75 GP -.42 ZAL 97.84 ZAP 159.46 ETS 181.24 ZAE 169.54 ETE 14.95 ZAC 98.92 ETC 278.73 LVI -18.89

PLANETOCENTRIC CONIC

C3 14.842 VHL 3.853 DLA -25.87 RAL 338.90 RAD 6640.5 VEL 11.614 PTH 6.66 VHP 6.389 DPA -16.03 RAP 326.00 ECC 1.2443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 36	2532.87	-9.04	67.82	193.56	136.91	16 55 49	1532.9	9.35	52.06
60.00	17 27 22	2336.68	-3.94	55.02	198.42	130.14	18 6 18	1336.7	12.10	36.98
70.00	19 2 29	2057.02	1.40	36.38	202.46	124.13	19 36 46	1057.0	15.02	16.40
80.00	20 58 43	1693.23	6.28	11.79	205.48	119.25	21 26 56	693.2	17.72	350.26
90.00	22 46 50	1344.54	8.67	347.42	206.77	117.02	23 9 14	344.5	19.05	325.21
100.00	23 41 34	1167.70	6.28	333.15	205.48	119.25	24 1 2	167.7	17.72	311.63
110.00	0 5 51	1103.84	1.40	325.30	202.46	124.13	0 24 15	103.8	15.02	305.32

DIFFERENTIAL CORRECTIONS

TDE -.2856 TRA -.7313 TC3 .4155 BAU .0887
RDE -.3499 RRA .1392 RC3 .1655 FAU .06658
FDE .0939 FRA 1.3463 FC3-3.8837 BSP 2150
BDE .4517 BRA .7444 BC3 .4473 FSP 483

MID-COURSE EXECUTION ACCURACY

SGT 1320.5 SGR 583.1 SG3 322.4
RRT -.0210 RRF .0265 RTF -.7523
SGB 1443.5 R23 -.0069 R13 .7523
SG1 1320.6 SG2 582.9 THA 179.34

ORBIT DETERMINATION ACCURACY

ST 27.9 SR 26.2 SS 19.0
CRT .6686 CRS .0747 CST .7867
LSA 36.7 NSA 21.9 SSA 1.5
EL1 35.0 EL2 15.6 ALF 42.35

LAUNCH DATE MAY 14 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC DISTANCE 337.457 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 33.083 GAL -.20 AZL 91.80 HCA 112.12 SMA 200.73 ECC .24684 INC 1.8045 V1 29.471
RP 206.90 LAP -1.67 LOP 344.69 VP 24.935 GAP 14.18 AZP 89.32 TAL 359.00 TAP 111.12 RCA 151.18 APO 250.27 V2 26.470
RC 72.517 GL -16.00 GP -.44 ZAL 97.53 ZAP 158.25 ETS 181.22 ZAE 169.84 ETE 14.45 ZAC 98.89 ETC 278.74 LVI -18.89

PLANETOCENTRIC CONIC

C3 14.277 VHL 3.778 DLA -26.22 RAL 338.70 RAD 6640.2 VEL 11.590 PTH 6.63 VHP 6.191 DPA -16.03 RAP 326.06 ECC 1.2350

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 35	2516.40	-8.22	67.12	193.03	137.03	16 56 32	1516.4	10.17	51.35
60.00	17 29 5	2318.26	-3.13	54.14	197.90	130.20	18 7 43	1318.3	12.88	36.05
70.00	19 5 23	2035.08	2.23	35.24	201.95	124.09	19 39 19	1035.1	15.78	15.16
80.00	21 3 42	1664.76	7.23	10.20	205.03	119.05	21 31 27	664.8	18.52	348.52
90.00	22 53 48	1309.73	9.74	345.43	206.37	116.68	23 15 37	309.7	19.90	323.00
100.00	23 46 34	1139.23	7.23	331.57	205.03	119.05	24 5 33	139.2	18.52	309.89
110.00	0 8 46	1081.90	2.23	324.15	201.95	124.09	0 26 48	81.9	15.78	304.08

DIFFERENTIAL CORRECTIONS

TDE -.2805 TRA -.7211 TC3 .4338 BAU .0889
RDE -.3407 RRA .1355 RC3 .1697 FAU .06947
FDE .0871 FRA 1.4091 FC3-4.2123 BSP 2138
BDE .4414 BRA .7337 BC3 .4658 FSP 514

MID-COURSE EXECUTION ACCURACY

SGT 1331.9 SGR 579.5 SG3 343.7
RRT -.0225 RRF .0300 RTF -.7555
SGB 1452.5 R23 -.0091 R13 .7555
SG1 1332.0 SG2 579.3 THA 179.31

ORBIT DETERMINATION ACCURACY

ST 28.1 SR 26.1 SS 19.8
CRT .6658 CRS .0510 CST .7743
LSA 36.7 NSA 22.4 SSA 1.5
EL1 35.0 EL2 15.6 ALF 41.84

LAUNCH DATE MAY 14 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 341.243 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 33.015 GAL -.15 AZL 91.80 HCA 113.38 SMA 199.37 ECC .24170 INC 1.8017 V1 29.471
RP 206.96 LAP -1.65 LOP 345.96 VP 24.836 GAP 13.82 AZP 89.28 TAL 359.24 TAP 112.62 RCA 151.18 APO 247.55 V2 26.462
RC 73.950 GL -16.25 GP -.46 ZAL 97.22 ZAP 157.01 ETS 181.19 ZAE 170.21 ETE 14.03 ZAC 98.87 ETC 278.74 LVI -18.88

PLANETOCENTRIC CONIC

C3 13.757 VHL 3.709 DLA -26.57 RAL 338.50 RAD 6639.9 VEL 11.568 PTH 6.61 VHP 5.999 DPA -16.04 RAP 326.10 ECC 1.2264

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 33	2500.57	-7.43	66.44	192.53	137.13	16 57 13	1500.6	10.95	50.67
60.00	17 30 46	2300.48	-2.35	53.29	197.39	130.24	18 9 7	1300.5	13.63	35.15
70.00	19 8 17	2013.74	3.05	34.12	201.48	124.03	19 41 51	1013.7	16.52	13.95
80.00	21 8 50	1636.42	8.16	8.61	204.61	118.82	21 36 6	636.4	19.29	346.77
90.00	23 1 14	1273.95	10.82	343.36	206.02	116.29	23 22 28	274.0	20.73	320.71
100.00	23 51 42	1110.89	8.16	329.98	204.61	118.82	24 10 13	110.9	19.29	308.14
110.00	0 11 40	1060.56	3.05	323.04	201.48	124.03	0 29 20	60.6	16.52	302.86

DIFFERENTIAL CORRECTIONS

TDE -.2690 TRA -.7074 TC3 .4583 BAU .0901
RDE -.3319 RRA .1320 RC3 .1732 FAU .07320
FDE .0690 FRA 1.4709 FC3-4.6067 BSP 2161
BDE .4272 BRA .7196 BC3 .4900 FSP 557

MID-COURSE EXECUTION ACCURACY

SGT 1334.6 SGR 575.6 SG3 368.0
RRT -.0283 RRF .0348 RTF -.7582
SGB 1453.4 R23 -.0084 R13 .7583
SG1 1334.7 SG2 575.3 THA 179.14

ORBIT DETERMINATION ACCURACY

ST 27.7 SR 25.9 SS 20.1
CRT .6559 CRS .0073 CST .7547
LSA 36.2 NSA 23.0 SSA 1.5
EL1 34.5 EL2 15.7 ALF 42.00

LAUNCH DATE MAY 14 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC DISTANCE 345.084 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.951	GAL	-.10	AZL	91.80	HCA	114.65	SMA	198.11	ECC	.23688	INC	1.7990	V1	29.471
RP	207.04	LAP	-1.64	LOP	347.23	VP	24.741	GAP	13.46	AZP	89.25	TAL	359.47	TAP	114.12	RCA	151.18	APO	245.04	V2	26.454
RC	75.426	GL	-16.49	GP	-.47	ZAL	96.92	ZAP	155.75	ETS	181.17	ZAE	170.66	ETE	13.69	ZAC	98.85	ETC	278.74	LVI	-18.86

PLANETOCENTRIC CONIC

C3	13.278	VHL	3.644	DLA	-26.90	RAL	338.30	RAD	6639.7	VEL	11.547	PTH	6.59	VHP	5.615	DPA	-16.05	RAP	326.10	ECC	1.2185

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 28	2485.34	-6.67	65.80	192.05	137.22	16 57 53	1485.3	11.71	50.00
60.00	17 32 26	2283.30	-1.59	52.46	196.92	130.27	18 10 29	1283.3	14.35	34.28
70.00	19 11 10	1992.93	3.84	33.03	201.02	123.96	19 44 23	992.9	17.23	12.75
80.00	21 14 7	1608.09	9.08	7.02	204.23	118.56	21 40 55	608.1	20.04	345.00
90.00	23 9 18	1236.64	11.94	341.19	205.72	115.83	23 29 55	236.6	21.57	318.30
100.00	0 0 55	1082.56	9.08	328.39	204.23	118.56	0 18 57	82.6	20.04	306.37
110.00	0 14 33	1039.75	3.84	321.95	201.02	123.96	0 31 52	39.8	17.23	301.67

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2509	TRA	-.6852	TC3	.5030	BAU	.0946	SGT	1322.7	SGR	571.4	SG3	392.0	ST	26.8	SR	25.6	SS	20.7
RDE	-.3233	RRA	.1286	RC3	.1765	FAU	.07663	RRT	-.0348	RRF	.0386	RTF	-.7730	CRT	.6401	CR8	-.0221	CST	.7491
FDE	.0569	FRA	1.5349	FC3	-4.9963	BSP	2053	SGB	1440.8	R23	-.0055	R13	.7731	LSA	35.3	MSA	23.5	SSA	1.5
BDE	.4092	BRA	.6972	BC3	.5331	FSP	605	SG1	1322.9	SG2	571.0	THA	176.94	EL1	33.6	EL2	15.7	ALF	43.06

LAUNCH DATE MAY 14 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC DISTANCE 348.917 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.891	GAL	-.06	AZL	91.80	HCA	115.91	SMA	196.95	ECC	.23238	INC	1.7961	V1	29.471
RP	207.12	LAP	-1.62	LOP	348.49	VP	24.651	GAP	13.11	AZP	89.21	TAL	359.70	TAP	115.61	RCA	151.18	APO	242.72	V2	26.444
RC	76.944	GL	-16.72	GP	-.49	ZAL	96.63	ZAP	154.45	ETS	181.15	ZAE	171.18	ETE	13.43	ZAC	98.84	ETC	278.73	LVI	-18.83

PLANETOCENTRIC CONIC

C3	12.838	VHL	3.583	DLA	-27.22	RAL	338.10	RAD	6639.5	VEL	11.529	PTH	6.58	VHP	5.637	DPA	-16.08	RAP	326.07	ECC	1.2113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 17 22	2470.86	-5.94	65.18	191.60	137.29	16 58 33	1470.9	12.42	49.37
60.00	17 34 2	2266.91	-.87	51.68	196.47	130.29	18 11 49	1266.9	15.04	33.44
70.00	19 14 1	1972.92	4.60	31.98	200.60	123.88	19 46 54	972.9	17.91	11.60
80.00	21 19 31	1580.08	9.99	5.44	203.88	118.28	21 45 51	580.1	20.76	343.24
90.00	23 18 7	1197.61	13.09	338.90	205.47	115.29	23 38 5	197.6	22.40	315.74
100.00	0 6 19	1054.55	9.99	326.81	203.88	118.28	0 23 53	54.6	20.76	304.61
110.00	0 17 23	1019.74	4.60	320.90	200.60	123.88	0 34 23	19.7	17.91	300.51

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2591	TRA	-.6756	TC3	.4699	BAU	.0895	SGT	1330.8	SGR	566.7	SG3	414.6	ST	27.6	SR	25.4	SS	21.2
RDE	-.3150	RRA	.1254	RC3	.1793	FAU	.07975	RRT	-.0267	RRF	.0366	RTF	-.7618	CRT	.6563	CR8	-.0160	CST	.7376
FDE	.0615	FRA	1.5887	FC3	-5.3777	BSP	2208	SGB	1446.4	R23	-.0118	R13	.7619	LSA	36.0	MSA	23.6	SSA	1.5
BDE	.4079	BRA	.6871	BC3	.5217	FSP	673	SG1	1330.9	SG2	566.4	THA	179.20	EL1	34.2	EL2	15.5	ALF	41.41

LAUNCH DATE MAY 14 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 1 1971

HELIOCENTRIC CONIC DISTANCE 352.799 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.835	GAL	-.02	AZL	91.79	HCA	117.18	SMA	195.88	ECC	.22818	INC	1.7932	V1	29.471
RP	207.21	LAP	-1.60	LOP	349.76	VP	24.564	GAP	12.77	AZP	89.18	TAL	359.91	TAP	117.09	RCA	151.18	APO	240.57	V2	26.433
RC	78.502	GL	-16.94	GP	-.51	ZAL	96.35	ZAP	153.12	ETS	181.13	ZAE	171.78	ETE	13.25	ZAC	98.83	ETC	278.72	LVI	-18.80

PLANETOCENTRIC CONIC

C3	12.433	VHL	3.526	DLA	-27.53	RAL	337.92	RAD	6639.3	VEL	11.511	PTH	6.56	VHP	5.466	DPA	-16.12	RAP	326.02	ECC	1.2046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 14	2457.05	-5.25	64.60	191.18	137.35	16 59 11	1457.0	13.10	48.76
60.00	17 35 37	2251.23	-.18	50.93	196.05	130.30	18 13 8	1251.2	15.69	32.83
70.00	19 16 50	1953.60	5.33	30.96	200.21	123.79	19 49 23	953.6	18.55	10.47
80.00	21 25 4	1552.17	10.89	3.85	203.56	117.97	21 50 56	552.2	21.46	341.46
90.00	23 28 5	1155.45	14.30	336.40	205.29	114.66	23 47 20	155.4	23.25	312.94
100.00	0 11 51	1026.64	10.89	325.22	203.56	117.97	0 28 58	26.6	21.46	302.63
110.00	0 20 12	1000.41	5.33	319.88	200.21	123.79	0 36 53	.4	18.55	299.39

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2703	TRA	-.6754	TC3	.5727	BAU	.0998	SGT	1374.0	SGR	581.6	SG3	456.7	ST	28.8	SR	25.2	SS	22.6
RDE	-.3069	RRA	.1227	RC3	.1808	FAU	.08657	RRT	-.0100	RRF	.0363	RTF	-.7784	CRT	.6703	CR8	-.0130	CST	.7286
FDE	.0701	FRA	1.7137	FC3	-6.0277	BSP	2537	SGB	1484.3	R23	-.0270	R13	.7784	LSA	37.3	MSA	24.1	SSA	1.5
BDE	.4090	BRA	.6865	BC3	.6005	FSP	776	SG1	1374.0	SG2	581.6	THA	179.72	EL1	35.0	EL2	15.3	ALF	39.34

LAUNCH DATE MAY 14 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 3 1971

HELIOCENTRIC CONIC DISTANCE 356.712 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.783	GAL	.02	AZL	91.79	HCA	118.44	SMA	194.89	ECC	.22424	INC	1.7903	V1	29.471
RP	207.31	LAP	-1.57	LOP	351.02	VP	24.482	GAP	12.44	AZP	89.15	TAL	.12	TAP	118.56	RCA	151.18	APO	238.59	V2	26.422
RC	80.098	GL	-17.15	GP	-.53	ZAL	96.08	ZAP	151.76	ETS	181.11	ZAE	172.45	ETE	13.17	ZAC	98.82	ETC	278.70	LVI	-18.75

PLANETOCENTRIC CONIC

C3	12.061	VHL	3.473	DLA	-27.82	RAL	337.74	RAD	6639.1	VEL	11.495	PTH	6.54	VHP	5.302	DPA	-16.18	RAP	325.93	ECC	1.1985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 5	2443.92	-4.89	64.05	190.78	137.41	16 59 49	1443.9	13.74	48.18
60.00	17 37 9	2236.27	.48	50.22	195.66	130.30	18 14 25	1236.3	16.31	31.85
70.00	19 19 36	1935.00	6.03	29.98	199.84	123.68	19 51 51	935.0	19.17	9.38
80.00	21 30 46	1524.33	11.77	2.26	203.28	117.64	21 56 10	524.3	22.14	339.67
90.00	23 39 58	1107.89	15.63	333.53	205.20	113.87	23 58 25	107.7	24.14	309.72
100.00	0 17 34	6286.84	11.77	301.83	203.28	117.64	2 2 21	5286.8	22.14	278.94
110.00	0 22 58	6269.86	6.03	296.81	199.84	123.68	2 7 28	5269.9	19.17	276.20

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2255	TRA	-.6291	TC3	.6026	BAU	.1015	SGT	1300.4	SGR	556.6	SG3	477.0	ST	25.6	SR	24.9	SS	21.2
RDE	-.2997	RRA	.1191	RC3	.1814	FAU	.09244	RRT	-.0333	RRF	.0437	RTF	-.7613	CRT	.6279	CR8	-.2165	CST	.6175
FDE	-.0487	FRA	1.6291	FC3	-6.6353	BSP	1808	SGB	1414.5	R23	-.0126	R13	.7614	LSA	33.0	MSA	25.2	SSA	1.6
BDE	.3751	BRA	.6403	BC3	.6293	FSP	677	SG1	1300.5	SG2	556.2	THA	179.00	EL1	32.3	EL2	15.4	ALF	43.79

LAUNCH DATE MAY 14 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 360.646 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.733	GAL	.06	AZL	91.79	HCA	119.70	SMA	193.97	ECC	.22057	INC	1.7873	V1	29.471
RP	207.42	LAP	-1.55	LOP	352.28	VP	24.402	GAP	12.12	AZP	89.11	TAL	.32	TAP	120.02	RCA	151.18	APO	236.75	V2	26.409
RC	81.730	GL	-17.35	GP	-.56	ZAL	95.83	ZAP	150.37	ETS	181.08	ZAE	173.19	ETE	13.24	ZAC	98.82	ETC	278.67	LVI	-18.70

PLANETOCENTRIC CONIC

C3 11.718 VHL 3.423 DLA -28.10 RAL 337.57 RAD 6638.9 VEL 11.480 PTH 6.53 VHP 5.143 DPA -16.24 RAP 325.80 ECC 1.1928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 54	2431.49	-3.97	63.53	190.41	137.45	17 0 25	1431.5	14.35	47.62
60.00	17 38 38	2222.06	1.10	49.54	195.29	130.29	18 15 40	1222.1	16.90	31.10
70.00	19 22 18	1917.18	6.71	29.04	199.51	123.57	19 54 15	917.2	19.75	8.32
80.00	21 36 38	1496.55	12.64	.66	203.04	117.27	22 1 35	496.6	22.79	337.87
90.00	0 0 4	1046.64	17.28	329.80	205.28	112.74	0 17 31	46.6	25.16	305.55
100.00	0 23 26	6259.06	12.64	299.93	203.04	117.27	2 7 45	5259.1	22.79	277.14
110.00	0 25 40	6252.04	6.71	295.87	199.51	123.57	2 9 52	5252.0	19.75	275.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2244	TRA	-.6203	TC3	.5311	BAU	.0880	SGT	1287.8	SGR	551.2	SG3	502.8	ST	25.8	SR	24.7	SS	22.5
RDE	-.2921	RRA	.1167	RC3	.1832	FAU	.09419	RRT	-.0443	RRF	.0552	RTF	-.7523	CRT	.6297	CRS	-.2008	CST	.6286
FDE	-.0422	FRA	1.7607	FC3	-6.9589	BSP	2008	SGB	1400.8	R23	-.0144	R13	.7525	LSA	33.4	MSA	25.8	SSA	1.6
BDE	.3683	BRA	.6312	BC3	.5618	FSP	758	SG1	1288.1	SG2	550.6	THA	178.67	EL1	32.2	EL2	15.3	ALF	43.01

LAUNCH DATE MAY 14 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 364.604 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.687	GAL	.09	AZL	91.78	HCA	120.96	SMA	193.12	ECC	.21715	INC	1.7843	V1	29.471
RP	207.54	LAP	-1.53	LOP	353.54	VP	24.325	GAP	11.80	AZP	89.08	TAL	.51	TAP	121.47	RCA	151.18	APO	235.05	V2	26.395
RC	83.399	GL	-17.54	GP	-.58	ZAL	95.59	ZAP	148.94	ETS	181.06	ZAE	174.01	ETE	13.49	ZAC	98.82	ETC	278.64	LVI	-18.63

PLANETOCENTRIC CONIC

C3 11.402 VHL 3.377 DLA -28.37 RAL 337.41 RAD 6638.8 VEL 11.467 PTH 6.52 VHP 4.991 DPA -16.32 RAP 325.65 ECC 1.1876

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 20 41	2419.76	-3.38	63.04	190.07	137.48	17 1 1	1419.8	14.92	47.10
60.00	17 40 4	2208.61	1.70	48.90	194.95	130.27	18 16 52	1208.6	17.45	30.40
70.00	19 24 56	1900.17	7.35	28.14	199.19	123.45	19 56 37	900.2	20.30	7.31
80.00	21 42 42	1468.78	13.51	359.04	202.83	116.88	22 7 11	468.8	23.42	338.04
87.68	0 7 35	1014.41	19.75	328.49	205.71	110.79	0 24 29	14.4	26.58	303.52
100.00	0 29 30	6231.30	13.51	298.32	202.83	116.88	2 13 21	5231.3	23.42	275.32
110.00	0 28 19	6235.03	7.35	294.96	199.19	123.45	2 12 14	5235.0	20.30	274.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2293	TRA	-.6162	TC3	.5287	BAU	.0853	SGT	1300.3	SGR	545.2	SG3	538.3	ST	26.4	SR	24.4	SS	23.5
RDE	-.2847	RRA	.1143	RC3	.1838	FAU	.09914	RRT	-.0422	RRF	.0529	RTF	-.7510	CRT	.6388	CRS	-.1805	CST	.6511
FDE	-.0177	FRA	1.8681	FC3	-7.5274	BSP	2014	SGB	1410.0	R23	-.0145	R13	.7511	LSA	34.3	MSA	25.8	SSA	1.6
BDE	.3655	BRA	.6267	BC3	.5596	FSP	815	SG1	1300.5	SG2	544.6	THA	178.77	EL1	32.5	EL2	15.2	ALF	41.46

LAUNCH DATE MAY 14 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 368.585 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.644	GAL	.12	AZL	91.78	HCA	122.22	SMA	192.33	ECC	.21395	INC	1.7811	V1	29.471
RP	207.66	LAP	-1.51	LOP	354.80	VP	24.252	GAP	11.49	AZP	89.05	TAL	.69	TAP	122.90	RCA	151.18	APO	233.48	V2	26.381
RC	85.104	GL	-17.72	GP	-.60	ZAL	95.37	ZAP	147.47	ETS	181.04	ZAE	174.89	ETE	14.02	ZAC	98.83	ETC	278.60	LVI	-18.56

PLANETOCENTRIC CONIC

C3 11.111 VHL 3.333 DLA -28.62 RAL 337.26 RAD 6638.6 VEL 11.454 PTH 6.50 VHP 4.845 DPA -16.41 RAP 325.45 ECC 1.1829

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 27	2408.75	-2.83	62.57	189.75	137.51	17 1 35	1408.7	15.46	46.80
60.00	17 41 26	2195.95	2.25	48.29	194.64	130.25	18 18 2	1195.9	17.97	29.72
70.00	19 27 30	1884.03	7.95	27.28	198.91	123.33	19 58 54	884.0	20.81	6.34
80.00	21 48 58	1440.97	14.36	357.42	202.66	116.46	22 12 59	441.0	24.03	334.20
85.44	23 44 30	1069.18	20.04	332.62	205.27	110.86	24 2 19	69.2	26.87	307.59
100.00	0 35 46	6203.48	14.36	296.69	202.66	116.46	2 19 9	5203.5	24.03	273.47
110.00	0 30 52	6218.88	7.95	294.11	198.91	123.33	2 14 31	5218.9	20.81	273.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2261	TRA	-.5987	TC3	.5147	BAU	.0811	SGT	1282.8	SGR	539.1	SG3	571.6	ST	26.3	SR	24.1	SS	24.2
RDE	-.2776	RRA	.1120	RC3	.1827	FAU	.10405	RRT	-.0407	RRF	.0585	RTF	-.[illegible]26	CRT	.6463	CRS	-.1879	CST	.6222
FDE	-.0367	FRA	1.9487	FC3	-8.1068	BSP	2073	SGB	1391.4	R23	-.0218	R13	.7428	LSA	34.1	MSA	26.3	SSA	1.6
BDE	.3593	BRA	.6090	BC3	.5462	FSP	896	SG1	1283.0	SG2	538.5	THA	178.81	EL1	32.4	EL2	14.9	ALF	41.06

LAUNCH DATE MAY 14 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 372.585 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.604	GAL	.15	AZL	91.78	HCA	123.47	SMA	191.60	ECC	.21097	INC	1.7778	V1	29.471
RP	207.80	LAP	-1.48	LOP	356.05	VP	24.181	GAP	11.19	AZP	89.02	TAL	.85	TAP	124.32	RCA	151.18	APO	232.03	V2	26.365
RC	86.843	GL	-17.89	GP	-.63	ZAL	95.17	ZAP	145.97	ETS	181.02	ZAE	175.85	ETE	15.06	ZAC	98.84	ETC	278.55	LVI	-18.47

PLANETOCENTRIC CONIC

C3 10.844 VHL 3.293 DLA -28.85 RAL 337.13 RAD 6638.5 VEL 11.443 PTH 6.49 VHP 4.704 DPA -16.52 RAP 325.22 ECC 1.1785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 10	2398.45	-2.31	62.14	189.46	137.53	17 2 9	1398.4	15.96	46.13
60.00	17 42 45	2184.08	2.78	47.72	194.35	130.22	18 19 9	1184.1	18.45	29.09
70.00	19 29 58	1868.78	8.52	26.47	198.65	123.20	20 1 6	868.8	21.29	5.42
80.00	21 55 28	1413.00	15.20	355.77	202.52	116.01	22 19 1	413.0	24.61	332.33
84.06	23 32 41	1100.60	20.32	335.04	204.86	110.93	23 51 2	100.6	27.15	309.96
100.00	0 42 16	6175.51	15.20	295.04	202.52	116.01	2 25 12	5175.5	24.61	271.60
110.00	0 33 20	6203.64	8.52	293.29	198.65	123.20	2 16 43	5203.6	21.29	272.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2235	TRA	-.5909	TC3	.5008	BAU	.0772	SGT	1279.8	SGR	532.8	SG3	612.5	ST	26.2	SR	23.8	SS	25.4
RDE	-.2708	RRA	.1100	RC3	.1812	FAU	.10978	RRT	-.0496	RRF	.0670	RTF	-.7383	CRT	.6417	CRS	-.2073	CST	.6113
FDE	-.0524	FRA	2.0712	FC3	-8.7641	BSP	2048	SGB	1386.2	R23	-.0227	R13	.7385	LSA	34.2	MSA	27.0	SSA	1.6
BDE	.3511	BRA	.6011	BC3	.5326	FSP	972	SG1	1280.1	SG2	532.0	THA	178.57	EL1	32.1	EL2	14.9	ALF	40.64

LAUNCH DATE MAY 14 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 376.603 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.567	GAL	.17	AZL	91.77	HCA	124.73	SMA	190.93	ECC	.20820	INC	1.7745	V1	29.471
RP	207.94	LAP	-1.46	LOP	357.31	VP	24.112	GAP	10.89	AZP	88.99	TAL	1.00	TAP	125.73	RCA	151.18	APO	230.68	V2	26.349
RC	88.616	GL	-18.05	GP	-.66	ZAL	94.99	ZAP	144.43	ETS	181.00	ZAE	176.87	ETE	17.13	ZAC	98.86	ETC	278.49	LVI	-18.37

PLANETOCENTRIC CONIC

C3	10.398	VHL	3.255	DLA	-29.06	RAL	337.01	RAD	6638.3	VEL	11.432	PTH	6.48	VHP	4.570	DPA	-16.63	RAP	324.95	ECC	1.1744

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 33	2380.86	-1.83	61.74	189.20	137.55	17 2 42	1388.9	16.42	45.69
60.00	17 44 1	2173.03	3.26	47.20	194.09	130.19	18 20 14	1173.0	18.90	28.50
70.00	19 32 19	1854.48	9.05	25.70	198.42	123.07	20 3 13	854.5	21.74	4.55
80.00	22 2 16	1384.73	16.03	354.09	202.43	115.83	22 25 20	384.7	25.17	330.42
83.02	23 23 50	1122.95	20.58	336.79	204.48	110.98	23 42 33	123.0	27.40	311.65
100.00	0 49 3	6147.24	16.03	293.36	202.43	115.83	2 31 31	5147.2	25.17	269.69
110.00	0 35 41	6189.34	9.05	292.53	198.42	123.07	2 18 51	5189.3	21.74	271.37

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2184	TRA	-.5708	TC3	.4769	BAU	.0722	SGT	1250.9	SGR	526.2	SG3	648.7	ST	25.8	SR	23.5	SS	26.1
RDE	-.2641	RRA	.1079	RC3	.1791	FAU	.11517	RRT	-.0527	RRF	.0737	RTF	-.7280	CRT	.6446	CRS	-.2367	CST	.5841
FDE	-.0766	FRA	2.1556	FC3	-9.4081	BSP	1970	SGB	1357.1	R23	-.0271	R13	.7283	LSA	33.7	MSA	27.5	SSA	1.6
BDE	.3427	BRA	.5809	BC3	.5094	FSP	1021	SG1	1251.3	SG2	525.3	THA	178.46	EL1	31.7	EL2	14.6	ALF	40.78

LAUNCH DATE MAY 14 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 380.639 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.532	GAL	.19	AZL	91.77	HCA	125.98	SMA	190.31	ECC	.20562	INC	1.7711	V1	29.471
RP	208.08	LAP	-1.43	LOP	358.56	VP	24.046	GAP	10.60	AZP	88.96	TAL	1.14	TAP	127.12	RCA	151.18	APO	229.44	V2	26.332
RC	90.421	GL	-18.19	GP	-.69	ZAL	94.82	ZAP	142.85	ETS	180.97	ZAE	177.95	ETE	21.98	ZAC	98.88	ETC	278.43	LVI	-18.26

PLANETOCENTRIC CONIC

C3	10.372	VHL	3.220	DLA	-29.26	RAL	336.90	RAD	6638.2	VEL	11.422	PTH	6.47	VHP	4.441	DPA	-16.77	RAP	324.64	ECC	1.1707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 33	2379.94	-1.38	61.37	188.96	137.56	17 3 13	1379.9	16.85	45.29
60.00	17 45 12	2162.72	3.71	46.70	193.85	130.16	18 21 15	1162.7	19.31	27.94
70.00	19 34 34	1841.05	9.55	24.98	198.20	122.95	20 5 15	841.1	22.15	3.72
80.00	22 9 29	1355.63	16.88	352.34	202.37	115.00	22 32 4	355.6	25.73	328.43
82.18	23 16 40	1140.23	20.82	338.16	204.13	111.03	23 35 41	140.2	27.64	312.98
100.00	0 56 16	6118.14	16.88	291.61	202.37	115.00	2 38 15	5118.1	25.73	267.71
110.00	0 37 56	6175.91	9.55	291.81	198.20	122.95	2 20 52	5175.9	22.15	270.55

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2068	TRA	-.5400	TC3	.4897	BAU	.0722	SGT	1203.1	SGR	519.2	SG3	688.2	ST	24.7	SR	23.1	SS	26.7
RDE	-.2576	RRA	.1059	RC3	.1760	FAU	.12152	RRT	-.0535	RRF	.0776	RTF	-.7316	CRT	.6432	CRS	-.2585	CST	.5672
FDE	-.0963	FRA	2.2324	FC3	-10.1432	BSP	1776	SGB	1310.3	R23	-.0296	R13	.7321	LSA	32.9	MSA	27.9	SSA	1.6
BDE	.3303	BRA	.5503	BC3	.5204	FSP	1079	SG1	1203.5	SG2	518.3	THA	178.38	EL1	30.7	EL2	14.3	ALF	42.06

LAUNCH DATE MAY 14 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 384.689 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.499	GAL	.21	AZL	91.77	HCA	127.23	SMA	189.74	ECC	.20323	INC	1.7675	V1	29.471
RP	208.24	LAP	-1.41	LOP	359.81	VP	23.983	GAP	10.32	AZP	88.93	TAL	1.26	TAP	128.49	RCA	151.18	APO	228.30	V2	26.313
RC	92.259	GL	-18.33	GP	-.72	ZAL	94.69	ZAP	141.24	ETS	180.95	ZAE	179.04	ETE	39.59	ZAC	98.90	ETC	278.36	LVI	-18.14

PLANETOCENTRIC CONIC

C3	10.164	VHL	3.188	DLA	-29.43	RAL	336.82	RAD	6638.1	VEL	11.413	PTH	6.46	VHP	4.318	DPA	-16.91	RAP	324.29	ECC	1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 24 13	2371.84	-.97	61.03	188.75	137.57	17 3 44	1371.8	17.25	44.91
60.00	17 46 20	2153.38	4.12	46.25	193.65	130.13	18 22 13	1153.4	19.68	27.43
70.00	19 36 39	1828.85	10.00	24.33	198.02	122.83	20 7 8	828.8	22.52	2.97
80.00	22 17 4	1326.05	17.72	350.55	202.35	114.43	22 39 10	326.0	26.25	326.39
81.49	23 10 59	1153.44	21.04	339.23	203.83	111.07	23 30 12	153.4	27.85	313.99
100.00	1 3 52	6088.56	17.72	289.82	202.35	114.43	2 45 21	5088.6	26.25	265.67
110.00	0 40 2	6163.70	10.00	291.15	198.02	122.83	2 22 45	5163.7	22.52	269.79

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2126	TRA	-.5365	TC3	.4087	BAU	.0603	SGT	1199.8	SGR	512.2	SG3	729.3	ST	25.3	SR	22.8	SS	27.8
RDE	-.2512	RRA	.1043	RC3	.1727	FAU	.12677	RRT	-.0604	RRF	.0877	RTF	-.7134	CRT	.6542	CRS	-.2657	CST	.5490
FDE	-.1070	FRA	2.3653	FC3	-10.7973	BSP	1818	SGB	1304.5	R23	-.0359	R13	.7040	LSA	33.6	MSA	28.3	SSA	1.6
BDE	.3291	BRA	.5466	BC3	.4437	FSP	1160	SG1	1200.3	SG2	511.0	THA	178.20	EL1	31.0	EL2	14.1	ALF	40.46

LAUNCH DATE MAY 14 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 388.754 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.469	GAL	.23	AZL	91.76	HCA	128.48	SMA	189.21	ECC	.20101	INC	1.7639	V1	29.471
RP	208.41	LAP	-1.38	LOP	1.06	VP	23.921	GAP	10.05	AZP	88.90	TAL	1.36	TAP	129.84	RCA	151.18	APO	227.24	V2	26.294
RC	94.128	GL	-18.45	GP	-.75	ZAL	94.57	ZAP	139.59	ETS	180.92	ZAE	179.33	ETE	136.52	ZAC	98.93	ETC	278.26	LVI	-18.01

PLANETOCENTRIC CONIC

C3	9.974	VHL	3.158	DLA	-29.59	RAL	336.76	RAD	6638.0	VEL	11.405	PTH	6.46	VHP	4.200	DPA	-17.07	RAP	323.91	ECC	1.1641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 24 50	2364.42	-.60	60.72	188.57	137.57	17 4 15	1364.4	17.60	44.57
60.00	17 47 23	2144.82	4.50	45.84	193.46	130.09	18 23 7	1144.8	20.02	26.97
70.00	19 38 36	1817.64	10.41	23.72	197.86	122.71	20 8 54	817.6	22.86	2.27
80.00	22 25 28	1294.45	18.60	348.61	202.39	113.79	22 47 3	294.4	26.78	324.20
80.92	23 6 15	1164.00	21.23	340.09	203.55	111.10	23 25 39	164.0	28.04	314.81
100.00	1 12 16	6056.96	18.60	287.89	202.39	113.79	2 53 13	5057.0	26.78	263.47
110.00	0 41 59	6152.50	10.41	290.54	197.86	122.71	2 24 31	5152.5	22.86	269.10

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2104	TRA	-.5176	TC3	.3426	BAU	.0509	SGT	1165.6	SGR	504.9	SG3	770.5	ST	25.0	SR	22.5	SS	28.6
RDE	-.2451	RRA	.1027	RC3	.1684	FAU	.13272	RRT	-.0657	RRF	.0967	RTF	-.6778	CRT	.6620	CRS	-.2882	CST	.5202
FDE	-.1311	FRA	2.4684	FC3	-11.5201	BSP	1789	SGB	1270.2	R23	-.0420	R13	.6785	LSA	33.5	MSA	28.7	SSA	1.6
BDE	.3230	BRA	.5277	BC3	.3818	FSP	1242	SG1	1166.2	SG2	503.5	THA	178.00	EL1	30.7	EL2	13.7	ALF	40.34

LAUNCH DATE MAY 14 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 392.832 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.442	GAL	.24	AZL	91.76	HCA	129.73	SMA	188.72	ECC	.19896	INC	1.7601
RP	208.58	LAP	-1.35	LOP	2.31	VP	23.861	GAP	9.78	AZP	88.87	TAL	1.45	TAP	131.18	RCA	151.18	APO	226.27
RC	96.027	GL	-18.56	GP	-.78	ZAL	94.48	ZAP	137.90	ETS	180.89	ZAE	178.18	ETE	170.05	ZAC	98.96	ETC	278.19

V1	29.471	V2	26.274	LVI	-17.86														

PLANETOCENTRIC CONIC

C3	9.799	VHL	3.130	DLA	-29.72	RAL	336.71	RAD	6637.9	VEL	11.397	PTH	6.45	VHP	4.088	DPA	-17.25	RAP	323.48
ECC	1.1613																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 25 26	2357.70	-.26	60.44	188.41	137.58	17 4 44	1357.7	17.93	44.26
60.00	17 48 21	2137.10	4.84	45.47	193.30	130.06	18 23 58	1137.1	20.33	26.54
70.00	19 40 24	1807.50	10.79	23.17	197.71	122.60	20 10 31	807.5	23.16	1.64
80.00	22 35 23	1258.57	19.57	346.39	202.51	113.01	22 56 22	258.6	27.34	321.67
80.44	23 2 24	1172.24	21.42	340.78	203.31	111.12	23 21 56	172.2	28.21	315.46
100.00	1 22 11	6021.08	19.57	285.67	202.51	113.01	3 2 32	5021.1	27.34	260.95
110.00	0 43 46	6142.36	10.79	290.00	197.71	122.60	2 26 9	5142.4	23.16	268.47

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2087	TRA	-.4984	TC3	.2851	BAU	.0430	SGT	1132.0	SGR	497.3	SG3	816.3	ST	24.8	SR	22.1	SS	29.6
RDE	-.2390	RRA	.1013	RC3	.1631	FAU	.13946	RRT	-.0691	RRF	.1061	RTF	-.6538	CRT	.6711	CRS	-.3066	CST	.4930
FDE	-.1537	FRA	2.5849	FC-12.3212		BSP	1672	SGB	1236.4	R23	-.0503	R13	.6548	LSA	33.7	MSA	29.0	SSA	1.6
BDE	.3173	BRA	.5086	BC3	.3285	FSP	1312	SG1	1132.6	SG2	495.9	THA	177.85	EL1	30.4	EL2	13.4	ALF	40.19

LAUNCH DATE MAY 14 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 396.922 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.416	GAL	.25	AZL	91.76	HCA	130.98	SMA	188.28	ECC	.19706	INC	1.7562
RP	208.76	LAP	-1.33	LOP	3.56	VP	23.803	GAP	9.51	AZP	88.85	TAL	1.52	TAP	132.50	RCA	151.17	APO	225.38
RC	97.955	GL	-18.66	GP	-.81	ZAL	94.41	ZAP	136.17	ETS	180.86	ZAE	176.84	ETE	176.97	ZAC	98.99	ETC	278.09

V1	29.471	V2	26.254	LVI	-17.70														

PLANETOCENTRIC CONIC

C3	9.639	VHL	3.105	DLA	-29.84	RAL	336.69	RAD	6637.9	VEL	11.390	PTH	6.44	VHP	3.981	DPA	-17.43	RAP	323.01
ECC	1.1586																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 1	2351.69	.04	60.19	188.28	137.58	17 5 12	1351.7	18.21	43.98
60.00	17 49 15	2130.21	5.14	45.14	193.17	130.03	18 24 46	1130.2	20.60	26.17
70.00	19 42 1	1798.50	11.12	22.68	197.59	122.50	20 12 0	798.5	23.43	1.08
80.00	22 50 59	1205.13	20.96	343.03	202.83	111.77	23 11 4	205.1	28.07	317.87
80.05	22 59 19	1178.55	21.58	341.32	203.09	111.13	23 18 57	178.6	28.36	315.96
100.00	1 37 47	5967.64	20.96	282.30	202.83	111.77	3 17 15	4967.6	28.07	257.15
110.00	0 45 23	6133.36	11.12	289.51	197.59	122.50	2 27 37	5133.4	23.43	267.90

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2116	TRA	-.4778	TC3	.2181	BAU	.0346	SGT	1097.3	SGR	489.3	SG3	862.9	ST	24.8	SR	21.7	SS	30.3
RDE	-.2329	RRA	.1000	RC3	.1570	FAU	.14631	RRT	-.0655	RRF	.1116	RTF	-.6247	CRT	.6892	CRS	-.2955	CST	.4815
FDE	-.1477	FRA	2.7041	FC-13.1410		BSP	1576	SGB	1201.5	R23	-.0607	R13	.6258	LSA	34.1	MSA	29.0	SSA	1.6
BDE	.3147	BRA	.4881	BC3	.2687	FSP	1393	SG1	1097.9	SG2	488.0	THA	177.91	EL1	30.3	EL2	12.9	ALF	39.59

LAUNCH DATE MAY 14 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 401.025 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.392	GAL	.26	AZL	91.75	HCA	132.22	SMA	187.86	ECC	.19530	INC	1.7521
RP	208.94	LAP	-1.30	LOP	4.80	VP	23.747	GAP	9.26	AZP	88.82	TAL	1.58	TAP	133.80	RCA	151.17	APO	224.56
RC	99.910	GL	-18.75	GP	-.85	ZAL	94.37	ZAP	134.40	ETS	180.83	ZAE	175.41	ETE	179.71	ZAC	99.03	ETC	277.98

V1	29.471	V2	26.232	LVI	-17.52														

PLANETOCENTRIC CONIC

C3	9.492	VHL	3.081	DLA	-29.94	RAL	336.69	RAD	6637.8	VEL	11.384	PTH	6.44	VHP	3.880	DPA	-17.63	RAP	322.50
ECC	1.1562																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 26 33	2346.38	.30	59.97	188.17	137.58	17 5 40	1346.4	18.47	43.73
60.00	17 50 5	2124.16	5.40	44.85	193.06	130.00	18 25 29	1124.2	20.84	25.83
70.00	19 43 27	1790.64	11.40	22.26	197.49	122.41	20 13 18	790.6	23.66	.58
79.73	22 56 52	1183.31	21.72	341.73	202.91	111.13	23 16 35	183.3	28.48	316.33
79.73	22 56 52	1183.31	21.72	341.73	202.91	111.13	23 16 35	183.3	28.48	316.33
79.73	22 56 52	1183.31	21.72	341.73	202.91	111.13	23 16 35	183.3	28.48	316.33
110.00	0 46 50	6125.50	11.40	289.08	197.49	122.41	2 28 55	5125.5	23.66	267.41

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2093	TRA	-.4544	TC3	.1466	BAU	.0266	SGT	1053.9	SGR	481.4	SG3	911.8	ST	24.3	SR	21.3	SS	31.3
RDE	-.2270	RRA	.0988	RC3	.1501	FAU	.15330	RRT	-.0674	RRF	.1227	RTF	-.5931	CRT	.7008	CRS	-.3060	CST	.4573
FDE	-.1640	FRA	2.8365	FC-13.9815		BSP	1460	SGB	1158.6	R23	-.0724	R13	.5945	LSA	34.4	MSA	29.0	SSA	1.6
BDE	.3088	BRA	.4650	BC3	.2098	FSP	1485	SG1	1054.5	SG2	480.1	THA	177.77	EL1	29.9	EL2	12.4	ALF	39.68

LAUNCH DATE MAY 14 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 405.137 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.370	GAL	.26	AZL	91.75	HCA	133.46	SMA	187.49	ECC	.19369	INC	1.7480
RP	209.14	LAP	-1.27	LOP	6.04	VP	23.692	GAP	9.01	AZP	88.80	TAL	1.62	TAP	135.08	RCA	151.17	APO	223.80
RC	101.892	GL	-18.83	GP	-.89	ZAL	94.35	ZAP	132.60	ETS	180.79	ZAE	173.91	ETE	181.11	ZAC	99.07	ETC	277.86

V1	29.471	V2	26.209	LVI	-17.33														

PLANETOCENTRIC CONIC

C3	9.359	VHL	3.059	DLA	-30.02	RAL	336.71	RAD	6637.7	VEL	11.378	PTH	6.43	VHP	3.784	DPA	-17.85	RAP	321.95
ECC	1.1540																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 5	2341.79	.54	59.78	188.09	137.57	17 6 7	1341.8	18.69	43.51
60.00	17 50 50	2118.99	5.63	44.60	192.97	129.97	18 26 9	1119.0	21.05	25.55
70.00	19 44 41	1784.02	11.64	21.89	197.42	122.34	20 14 25	784.0	23.85	.17
79.49	22 55 5	1186.45	21.84	342.01	202.77	111.12	23 14 52	186.5	28.59	316.59
79.49	22 55 5	1186.45	21.84	342.01	202.77	111.12	23 14 52	186.5	28.59	316.59
79.49	22 55 5	1186.45	21.84	342.01	202.77	111.12	23 14 52	186.5	28.59	316.59
110.00	0 48 4	6118.88	11.64	288.72	197.42	122.34	2 30 2	5118.9	23.85	266.99

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2114	TRA	-.4324	TC3	.0346	BAU	.0184	SGT	1015.9	SGR	473.3	SG3	957.6	ST	24.3	SR	21.0	SS	32.2
RDE	-.2212	RRA	.0978	RC3	.1428	FAU	.15978	RRT	-.0663	RRF	.1340	RTF	-.5367	CRT	.7190	CRS	-.3162	CST	.4243
FDE	-.1801	FRA	2.9584	FC-14.7807		BSP	1391	SGB	1120.8	R23	-.0888	R13	.5384	LSA	34.8	MSA	29.1	SSA	1.6
BDE	.3060	BRA	.4433	BC3	.1470	FSP	1585	SG1	1016.5	SG2	472.0	THA	177.74	EL1	29.8	EL2	11.9	ALF	39.22

LAUNCH DATE MAY 14 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 409.258 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.350	GAL	.26	AZL	91.74	HCA	134.70	SMA	187.14	ECC	.19221	INC	1.7436	V1	29.471
RP	209.34	LAP	-1.24	LOP	7.28	VP	23.639	GAP	8.76	AZP	88.77	TAL	1.64	TAP	136.34	RCA	151.17	APO	223.11	V2	26.186
RC	103.900	GL	-18.90	GP	-.93	ZAL	94.36	ZAP	130.76	ETS	180.76	ZAE	172.35	ETE	181.91	ZAC	99.11	ETC	277.74	LVI	-17.13

PLANETOCENTRIC CONIC

C3	9.237	VHL	3.039	DLA	-30.08	RAL	336.75	RAD	6637.6	VEL	11.373	PTH	6.43	VHP	3.693	DPA	-18.07	RAP	321.36	ECC	1.1520

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 35	2337.88	.73	59.61	188.04	137.57	17 6 33	1337.9	18.87	43.33
60.00	17 51 29	2114.64	5.82	44.39	192.91	129.95	18 26 44	1114.6	21.22	25.30
70.00	19 45 43	1778.57	11.84	21.60	197.35	122.27	20 15 22	778.6	24.01	359.82
79.31	22 53 55	1188.16	21.94	342.18	202.65	111.10	23 13 43	188.2	28.67	316.73
79.31	22 53 55	1188.16	21.94	342.18	202.65	111.10	23 13 43	188.2	28.67	316.73
79.31	22 53 55	1188.16	21.94	342.18	202.65	111.10	23 13 43	188.2	28.67	316.73
110.00	0 49 6	6113.43	11.84	288.42	197.35	122.27	2 30 59	5113.4	24.01	266.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2116	TRA	-.4089	TC3	-.0747	BAU	.0190	SGT	977.1	SGR	465.1	SG3	1007.0	ST	24.0	SR	20.6	SS	33.1
RDE	-.2155	RRA	.0969	RC3	.1347	FAU	.16671	RRT	-.0653	RRF	.1464	RTF	-.4771	CRT	.7351	CRS	-.3221	CST	.3971
FDE	-.1925	FRA	3.0962	FC-15.6250		BSP	1234	SGB	1082.1	R23	-.1064	R13	.4792	LSA	35.3	MSA	29.1	SSA	1.6
BDE	.3020	BRA	.4202	BC3	.1540	FSP	1664	SG1	977.7	SG2	463.8	THA	177.70	EL1	29.5	EL2	11.3	ALF	39.03

LAUNCH DATE MAY 14 1971 FLIGHT TIME 170.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 413.389 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.332	GAL	.26	AZL	91.74	HCA	135.93	SMA	186.83	ECC	.19085	INC	1.7391	V1	29.471
RP	209.55	LAP	-1.21	LOP	8.51	VP	23.587	GAP	8.52	AZP	88.75	TAL	1.65	TAP	137.58	RCA	151.17	APO	222.48	V2	26.162
RC	105.933	GL	-18.95	GP	-.97	ZAL	94.40	ZAP	128.88	ETS	180.72	ZAE	170.72	ETE	182.41	ZAC	99.15	ETC	277.60	LVI	-16.91

PLANETOCENTRIC CONIC

C3	9.126	VHL	3.021	DLA	-30.11	RAL	336.81	RAD	6637.6	VEL	11.368	PTH	6.42	VHP	3.607	DPA	-18.31	RAP	320.74	ECC	1.1502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 3	2334.66	.89	59.48	188.01	137.57	17 6 58	1334.7	19.03	43.18
60.00	17 52 4	2111.13	5.97	44.22	192.87	129.93	18 27 15	1111.1	21.35	25.11
70.00	19 46 33	1774.33	12.00	21.37	197.31	122.22	20 16 7	774.3	24.13	359.55
79.19	22 53 19	1188.52	22.03	342.24	202.56	111.07	23 13 8	188.5	28.73	316.77
79.19	22 53 19	1188.52	22.03	342.24	202.56	111.07	23 13 8	188.5	28.73	316.77
79.19	22 53 19	1188.52	22.03	342.24	202.56	111.07	23 13 8	188.5	28.73	316.77
110.00	0 49 55	6109.19	12.00	288.19	197.31	122.22	2 31 44	5109.2	24.13	266.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2127	TRA	-.3837	TC3	-.1909	BAU	.0279	SGT	940.2	SGR	456.7	SG3	1057.8	ST	23.8	SR	20.2	SS	34.0
RDE	-.2099	RRA	.0961	RC3	.1257	FAU	.17393	RRT	-.0593	RRF	.1592	RTF	-.4055	CRT	.7540	CRS	-.3243	CST	.3684
FDE	-.2007	FRA	3.2370	FC-16.5000		BSP	1070	SGB	1045.2	R23	-.1280	R13	.4079	LSA	35.9	MSA	29.0	SSA	1.6
BDE	.2988	BRA	.3956	BC3	.2288	FSP	1740	SG1	940.7	SG2	455.7	THA	177.84	EL1	29.3	EL2	10.8	ALF	38.75

LAUNCH DATE MAY 14 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 417.527 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.315	GAL	.26	AZL	91.73	HCA	137.17	SMA	186.54	ECC	.18980	INC	1.7343	V1	29.471
RP	209.76	LAP	-1.18	LOP	9.75	VP	23.536	GAP	8.29	AZP	88.73	TAL	1.64	TAP	138.81	RCA	151.17	APO	221.91	V2	26.137
RC	107.990	GL	-19.00	GP	-1.01	ZAL	94.46	ZAP	126.97	ETS	180.68	ZAE	169.04	ETE	182.73	ZAC	99.20	ETC	277.46	LVI	-16.68

PLANETOCENTRIC CONIC

C3	9.025	VHL	3.004	DLA	-30.13	RAL	336.90	RAD	6637.5	VEL	11.364	PTH	6.42	VHP	3.526	DPA	-18.56	RAP	320.07	ECC	1.1485

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 30	2332.11	1.02	59.37	188.00	137.57	17 7 22	1332.1	19.15	43.06
60.00	17 52 34	2108.45	6.09	44.09	192.86	129.92	18 27 42	1108.4	21.46	24.96
70.00	19 47 9	1771.32	12.11	21.20	197.29	122.18	20 16 41	771.3	24.22	359.36
79.14	22 53 16	1187.64	22.09	342.21	202.51	111.03	23 13 4	187.6	28.78	316.71
79.14	22 53 16	1187.64	22.09	342.21	202.51	111.03	23 13 4	187.6	28.78	316.71
79.14	22 53 16	1187.64	22.09	342.21	202.51	111.03	23 13 4	187.6	28.78	316.71
110.00	0 50 32	6106.18	12.11	288.02	197.29	122.18	2 32 18	5106.2	24.22	266.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2122	TRA	-.3557	TC3	-.3258	BAU	.0417	SGT	904.0	SGR	448.4	SG3	1106.1	ST	23.4	SR	19.7	SS	34.9
RDE	-.2044	RRA	.0854	RC3	.1162	FAU	.18073	RRT	-.0516	RRF	.1746	RTF	-.4125	CRT	.7729	CRS	-.3390	CST	.3260
FDE	-.2243	FRA	3.3697	FC-17.3365		BSP	914	SGB	1009.1	R23	-.1534	R13	.3151	LSA	36.4	MSA	28.8	SSA	1.6
BDE	.2946	BRA	.3683	BC3	.3459	FSP	1836	SG1	904.4	SG2	447.6	THA	178.06	EL1	28.9	EL2	10.1	ALF	38.76

LAUNCH DATE MAY 14 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 421.673 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.299	GAL	.26	AZL	91.73	HCA	136.40	SMA	186.28	ECC	.18847	INC	1.7293	V1	29.471
RP	209.99	LAP	-1.15	LOP	10.98	VP	23.486	GAP	8.06	AZP	88.71	TAL	1.61	TAP	140.01	RCA	151.17	APO	221.39	V2	26.111
RC	110.071	GL	-19.03	GP	-1.06	ZAL	94.55	ZAP	125.03	ETS	180.63	ZAE	167.31	ETE	182.93	ZAC	99.25	ETC	277.31	LVI	-16.44

PLANETOCENTRIC CONIC

C3	8.934	VHL	2.989	DLA	-30.13	RAL	337.01	RAD	6637.5	VEL	11.360	PTH	6.41	VHP	3.450	DPA	-18.81	RAP	319.37	ECC	1.1470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 55	2330.23	1.12	59.29	188.02	137.57	17 7 45	1330.2	19.24	42.97
60.00	17 52 58	2106.59	6.17	44.00	192.86	129.91	18 28 5	1106.6	21.53	24.86
70.00	19 47 33	1769.51	12.17	21.10	197.28	122.16	20 17 2	769.5	24.27	359.25
79.15	22 53 45	1185.58	22.14	342.07	202.48	110.98	23 13 30	185.6	28.79	316.56
79.15	22 53 45	1185.58	22.14	342.07	202.48	110.98	23 13 30	185.6	28.79	316.56
79.15	22 53 45	1185.58	22.14	342.07	202.48	110.98	23 13 30	185.6	28.79	316.56
110.00	0 50 55	6104.37	12.17	287.93	197.28	122.16	2 32 40	5104.4	24.27	266.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2131	TRA	-.3274	TC3	-.4598	BAU	.0563	SGT	876.9	SGR	439.8	SG3	1160.0	ST	23.1	SR	19.3	SS	35.9
RDE	-.1988	RRA	.0948	RC3	.1056	FAU	.18846	RRT	-.0368	RRF	.1900	RTF	-.2105	CRT	.7937	CRS	-.3420	CST	.2907
FDE	-.2339	FRA	3.5209	FC-18.2613		BSP	734	SGB	981.0	R23	-.1798	R13	.2128	LSA	37.1	MSA	28.6	SSA	1.6
BDE	.2915	BRA	.3409	BC3	.4717	FSP	1928	SG1	877.1	SG2	439.4	THA	178.59	EL1	28.6	EL2	9.5	ALF	38.55

LAUNCH DATE MAY 14 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 425.825 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.265 GAL .25 AZL 91.72 HCA 139.63 SMA 186.05 ECC .18744 INC 1.7242 V1 29.471
RP 210.22 LAP -1.12 LOP 12.21 VP 23.437 GAP 7.83 AZP 88.69 TAL 1.56 TAP 141.19 RCA 151.17 APO 220.92 V2 26.085
RC 112.177 GL -19.06 GP -1.11 ZAL 94.66 ZAP 123.06 ETS 180.59 ZAE 165.52 ETE 183.06 ZAC 99.30 ETC 277.15 LVI -16.18

PLANETOCENTRIC CONIC

C3 8.853 VHL 2.975 DLA -30.11 RAL 337.14 RAD 6637.4 VEL 11.356 PTH 6.41 VHP 3.379 DPA -19.08 RAP 318.64 ECC 1.1457

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 29 18	2329.00	1.18	59.24	188.06	137.56	17 8 7	1329.0	19.30	42.91
60.00	17 53 18	2105.54	6.22	43.95	192.89	129.90	18 28 23	1105.5	21.57	24.80
70.00	19 47 44	1768.90	12.19	21.07	197.29	122.15	20 17 12	768.9	24.28	359.21
79.22	22 54 48	1182.13	22.16	341.82	202.49	110.91	23 14 30	182.1	28.79	316.30
79.22	22 54 48	1182.13	22.16	341.82	202.49	110.91	23 14 30	182.1	28.79	316.30
79.22	22 54 48	1182.13	22.16	341.82	202.49	110.91	23 14 30	182.1	28.79	316.30
110.00	0 51 6	6103.76	12.19	287.89	197.29	122.15	2 32 50	5103.8	24.28	266.03

DIFFERENTIAL CORRECTIONS

TDE -.2140 TRA -.2943 TC3 -.5986 BAU .0717
RDE -.1933 RRA .0942 RC3 .0941 FAU .19642
FDE -.2350 FRA 3.6484 FC-19.2086 BSP 505
BDE .2884 BRA .3090 BC3 .6059 FSP 1996

MID-COURSE EXECUTION ACCURACY

SGT 852.0 SGR 431.0 SG3 1212.1
RRT -.0108 RRF .2038 RTF -.0869
SGB 954.8 R23 -.2025 R13 .0897
SG1 852.0 SG2 430.9 THA 179.58

ORBIT DETERMINATION ACCURACY

ST 22.8 SR 18.9 SS 36.5
CRT .8179 CRS -.3401 CST .2527
LSA 37.5 MSA 28.3 SSA 1.6
EL1 28.3 EL2 8.8 ALF 38.41

LAUNCH DATE MAY 14 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 429.984 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.273 GAL .24 AZL 91.72 HCA 140.85 SMA 185.84 ECC .18652 INC 1.7187 V1 29.471
RP 210.45 LAP -1.09 LOP 13.43 VP 23.390 GAP 7.61 AZP 88.67 TAL 1.50 TAP 142.36 RCA 151.18 APO 220.50 V2 26.058
RC 114.307 GL -19.07 GP -1.16 ZAL 94.80 ZAP 121.06 ETS 180.54 ZAE 163.69 ETE 183.14 ZAC 99.34 ETC 276.98 LVI -15.91

PLANETOCENTRIC CONIC

C3 8.779 VHL 2.963 DLA -30.06 RAL 337.29 RAD 6637.4 VEL 11.353 PTH 6.41 VHP 3.313 DPA -19.36 RAP 317.87 ECC 1.1445

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 29 40	2328.40	1.21	59.22	188.12	137.56	17 8 28	1328.4	19.33	42.88
60.00	17 53 32	2105.26	6.23	43.93	192.93	129.90	18 28 38	1105.3	21.58	24.78
70.00	19 47 42	1769.43	12.17	21.10	197.31	122.16	20 17 11	769.4	24.27	359.24
79.35	22 56 22	1177.44	22.17	341.48	202.52	110.84	23 16 0	177.4	28.77	315.95
79.35	22 56 22	1177.44	22.17	341.48	202.52	110.84	23 16 0	177.4	28.77	315.95
79.35	22 56 22	1177.44	22.17	341.48	202.52	110.84	23 16 0	177.4	28.77	315.95
110.00	0 51 4	6104.29	12.17	287.92	197.31	122.16	2 32 48	5104.3	24.27	266.07

DIFFERENTIAL CORRECTIONS

TDE -.2099 TRA -.2569 TC3 -.7445 BAU .0879
RDE -.1880 RRA .0937 RC3 .0823 FAU .20372
FDE -.2600 FRA 3.7729 FC-20.0894 BSP 265
BDE .2818 BRA .2734 BC3 .7491 FSP 2070

MID-COURSE EXECUTION ACCURACY

SGT 829.9 SGR 422.4 SG3 1261.1
RRT .0169 RRF .2217 RTF .0511
SGB 931.2 R23 .2205 R13 .0524
SG1 830.0 SG2 422.3 THA .67

ORBIT DETERMINATION ACCURACY

ST 22.1 SR 18.4 SS 37.3
CRT .8402 CRS -.3551 CST .1974
LSA 38.1 MSA 27.6 SSA 1.5
EL1 27.6 EL2 8.0 ALF 38.97

LAUNCH DATE MAY 14 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 434.146 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.262 GAL .22 AZL 91.71 HCA 142.07 SMA 185.65 ECC .18569 INC 1.7129 V1 29.471
RP 210.70 LAP -1.05 LOP 14.65 VP 23.343 GAP 7.40 AZP 88.65 TAL 1.42 TAP 143.50 RCA 151.18 APO 220.12 V2 26.030
RC 116.460 GL -19.07 GP -1.21 ZAL 94.97 ZAP 119.04 ETS 180.49 ZAE 161.82 ETE 183.18 ZAC 99.39 ETC 276.81 LVI -15.62

PLANETOCENTRIC CONIC

C3 8.715 VHL 2.952 DLA -30.00 RAL 337.47 RAD 6637.4 VEL 11.350 PTH 6.40 VHP 3.251 DPA -19.64 RAP 317.08 ECC 1.1434

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 1	2328.54	1.20	59.22	188.22	137.56	17 8 49	1328.5	19.32	42.89
60.00	17 53 42	2105.90	6.20	43.97	193.01	129.90	18 28 48	1105.9	21.56	24.82
70.00	19 47 26	1771.32	12.11	21.20	197.35	122.18	20 16 57	771.3	24.22	359.36
79.55	22 58 38	1171.11	22.16	341.00	202.58	110.75	23 18 9	171.1	28.72	315.47
79.55	22 58 38	1171.11	22.16	341.00	202.58	110.75	23 18 9	171.1	28.72	315.47
79.55	22 58 38	1171.11	22.16	341.00	202.58	110.75	23 18 9	171.1	28.72	315.47
110.00	0 50 48	6106.18	12.11	288.02	197.35	122.18	2 32 34	5106.2	24.22	266.19

DIFFERENTIAL CORRECTIONS

TDE -.2218 TRA -.2322 TC3 -.9686 BAU .1132
RDE -.1823 RRA .0936 RC3 .0717 FAU .20867
FDE -.2256 FRA 3.9490 FC-20.7295 BSP 214
BDE .2871 BRA .2503 BC3 .9713 FSP 2213

MID-COURSE EXECUTION ACCURACY

SGT 885.0 SGR 413.5 SG3 1305.5
RRT .0518 RRF .2390 RTF .[illegible]32
SGB 976.8 R23 .2265 R13 .1965
SG1 885.3 SG2 412.8 THA 1.77

ORBIT DETERMINATION ACCURACY

ST 22.9 SR 18.0 SS 38.1
CRT .8652 CRS -.3295 CST .1784
LSA 38.8 MSA 28.2 SSA 1.5
EL1 28.2 EL2 7.3 ALF 37.08

LAUNCH DATE MAY 14 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 438.315 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.252 GAL .21 AZL 91.71 HCA 143.29 SMA 185.48 ECC .18495 INC 1.7069 V1 29.471
RP 210.95 LAP -1.02 LOP 15.87 VP 23.297 GAP 7.19 AZP 88.63 TAL 1.32 TAP 144.62 RCA 151.18 APO 219.79 V2 26.001
RC 118.637 GL -19.06 GP -1.26 ZAL 95.16 ZAP 117.00 ETS 180.43 ZAE 159.91 ETE 183.20 ZAC 99.44 ETC 276.63 LVI -15.33

PLANETOCENTRIC CONIC

C3 8.657 VHL 2.942 DLA -29.91 RAL 337.67 RAD 6637.3 VEL 11.348 PTH 6.40 VHP 3.195 DPA -19.93 RAP 316.26 ECC 1.1425

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 19	2329.26	1.16	59.25	188.33	137.57	17 9 8	1329.3	19.29	42.92
60.00	17 53 46	2107.25	6.14	44.03	193.10	129.91	18 28 53	1107.2	21.50	24.89
70.00	19 46 58	1774.24	12.00	21.36	197.41	122.22	20 16 32	774.2	24.13	359.55
79.82	23 1 27	1163.41	22.13	340.42	202.67	110.66	23 20 50	163.4	28.65	314.89
79.82	23 1 27	1163.41	22.13	340.42	202.67	110.66	23 20 50	163.4	28.65	314.89
79.82	23 1 27	1163.41	22.13	340.42	202.67	110.66	23 20 50	163.4	28.65	314.89
110.00	0 50 20	6109.10	12.00	288.18	197.41	122.22	2 32 9	5109.1	24.13	266.37

DIFFERENTIAL CORRECTIONS

TDE -.2259 TRA -.1977 TC3-1.1598 BAU .1344
RDE -.1766 RRA .0935 RC3 .0593 FAU .21527
FDE -.1933 FRA 4.1060 FC-21.5263 BSP 207
BDE .2867 BRA .2187 BC3 1.1613 FSP 2304

MID-COURSE EXECUTION ACCURACY

SGT 925.5 SGR 404.5 SG3 1354.3
RRT .0913 RRF .2563 RTF .3249
SGB 1010.0 R23 .2206 R13 .3297
SG1 926.4 SG2 402.4 THA 2.82

ORBIT DETERMINATION ACCURACY

ST 23.0 SR 17.5 SS 38.9
CRT .8881 CRS -.3079 CST .1507
LSA 39.4 MSA 28.1 SSA 1.5
EL1 28.1 EL2 6.6 ALF 36.31

LAUNCH DATE MAY 14 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 442.487 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.243	GAL	.19	AZL	91.70	HCA	144.51	SMA	185.33	ECC	.18429	INC	1.7005	V1	29.471
RP	211.20	LAP	-.99	LOP	17.09	VP	23.252	GAP	6.98	AZP	88.62	TAL	1.21	TAP	145.72	RCA	151.18	APO	219.49	V2	25.972
RC	120.836	GL	-19.03	GP	-1.32	ZAL	95.37	ZAP	114.94	ETS	180.38	ZAE	157.96	ETE	183.19	ZAC	99.48	ETC	276.44	LVI	-15.02

PLANETOCENTRIC CONIC

C3	8.607	VHL	2.934	DLA	-29.81	RAL	337.89	RAD	6637.3	VEL	11.345	PTH	6.40	VHP	3.142	DPA	-20.22	RAP	315.42	ECC	1.1417

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 36	2330.60	1.10	59.31	188.46	137.57	17 9 26	1330.6	19.22	42.99
60.00	17 53 45	2109.37	6.05	44.13	193.20	129.92	18 28 54	1109.4	21.42	25.01
70.00	19 46 18	1778.27	11.85	21.58	197.48	122.27	20 15 57	778.3	24.02	359.80
80.00	22 49 26	1203.51	21.00	342.93	202.33	111.73	23 9 29	203.5	28.09	317.76
80.16	23 4 56	1153.98	22.08	339.70	202.78	110.55	23 24 10	154.0	28.57	314.17
100.00	1 36 13	5966.02	21.00	282.20	202.33	111.73	3 15 39	4966.0	28.09	257.03
110.00	0 49 41	6113.13	11.85	288.40	197.48	122.27	2 31 34	5113.1	24.02	266.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2287	TRA	-.1605	TC3-1.3535	BAU	.1558	SGT	980.2	SGR	395.6	SG3	1401.3	ST	23.0	SR	17.0	SS	39.5
RDE	-.1711	RRA	.0933	RC3 .0460	FAU	.22214	RRT	.1342	RRF	.2754	RTF	.4481	CRT	.9100	CRS	-.3005	CST	.1074
FDE	-.1799	FRA	4.2390	FC-22.3432	BSP	417	SGB	1057.0	R23	.2057	R13	.4535	LSA	39.9	MSA	28.0	SSA	1.5
BDE	.2856	BRA	.1856	BC3 1.3543	FSP	2351	SG1	981.9	SG2	391.3	THA	3.69	EL1	28.0	EL2	5.8	ALF	35.67

LAUNCH DATE MAY 14 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 446.664 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.235	GAL	.17	AZL	91.69	HCA	145.73	SMA	185.20	ECC	.18371	INC	1.6937	V1	29.471
RP	211.46	LAP	-.95	LOP	18.30	VP	23.208	GAP	6.78	AZP	88.60	TAL	1.08	TAP	146.81	RCA	151.18	APO	219.23	V2	25.942
RC	123.058	GL	-19.00	GP	-1.38	ZAL	95.61	ZAP	112.87	ETS	180.32	ZAE	155.98	ETE	183.18	ZAC	99.52	ETC	276.25	LVI	-14.70

PLANETOCENTRIC CONIC

C3	8.564	VHL	2.926	DLA	-29.68	RAL	338.13	RAD	6637.3	VEL	11.343	PTH	6.40	VHP	3.095	DPA	-20.51	RAP	314.55	ECC	1.1409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 51	2332.56	1.00	59.39	188.61	137.57	17 9 43	1332.6	19.13	43.08
60.00	17 53 39	2112.25	5.93	44.27	193.33	129.94	18 28 51	1112.3	21.31	25.17
70.00	19 45 27	1783.38	11.67	21.86	197.57	122.33	20 15 11	783.4	23.87	.13
80.00	22 37 40	1243.25	19.98	345.43	202.06	112.66	22 58 23	243.2	27.56	320.59
80.58	23 9 6	1142.77	22.02	338.84	202.92	110.43	23 28 8	142.8	28.46	313.32
100.00	1 24 28	6005.76	19.98	284.71	202.06	112.66	3 4 34	5005.8	27.56	259.86
110.00	0 48 50	6118.23	11.67	288.68	197.57	122.33	2 30 48	5118.2	23.87	266.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2284	TRA	-.1238	TC3-1.5588	BAU	.1785	SGT	1053.7	SGR	387.7	SG3	1453.2	ST	22.8	SR	16.5	SS	40.7
RDE	-.1659	RRA	.0936	RC3 .0322	FAU	.22865	RRT	.1693	RRF	.3029	RTF	.5488	CRT	.9278	CRS	-.3107	CST	.0497
FDE	-.1949	FRA	4.4317	FC-23.1131	BSP	644	SGB	1122.8	R23	.1988	R13	.5541	LSA	41.1	MSA	27.6	SSA	1.5
BDE	.2823	BRA	.1552	BC3 1.5592	FSP	2461	SG1	1056.1	SG2	381.2	THA	4.10	EL1	27.7	EL2	5.1	ALF	35.32

LAUNCH DATE MAY 14 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC DISTANCE 450.844 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.228	GAL	.15	AZL	91.69	HCA	146.94	SMA	185.09	ECC	.18321	INC	1.6864	V1	29.471
RP	211.73	LAP	-.92	LOP	19.51	VP	23.165	GAP	6.58	AZP	88.59	TAL	.94	TAP	147.88	RCA	151.18	APO	219.00	V2	25.911
RC	125.302	GL	-18.96	GP	-1.44	ZAL	95.88	ZAP	110.79	ETS	180.26	ZAE	153.97	ETE	183.15	ZAC	99.55	ETC	276.06	LVI	-14.37

PLANETOCENTRIC CONIC

C3	8.528	VHL	2.920	DLA	-29.54	RAL	338.39	RAD	6637.3	VEL	11.342	PTH	6.39	VHP	3.051	DPA	-20.81	RAP	313.68	ECC	1.1403

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 4	2335.11	.87	59.50	188.78	137.57	17 9 59	1335.1	19.01	43.20
60.00	17 53 28	2115.86	5.77	44.45	193.47	129.96	18 28 44	1115.9	21.17	25.37
70.00	19 44 26	1789.49	11.45	22.19	197.67	122.40	20 14 15	789.5	23.69	.51
80.00	22 29 8	1273.13	19.18	347.30	201.90	113.33	22 50 21	273.1	27.12	322.70
81.09	23 14 4	1129.34	21.93	337.81	203.06	110.30	23 32 53	129.3	28.33	312.30
100.00	1 15 56	6035.64	19.18	286.57	201.90	113.33	2 56 31	5035.6	27.12	261.97
110.00	0 47 48	6124.35	11.45	289.02	197.67	122.40	2 29 52	5124.3	23.69	267.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2260	TRA	-.0792	TC3-1.7714	BAU	.2020	SGT	1141.2	SGR	376.8	SG3	1488.2	ST	22.6	SR	16.1	SS	41.0
RDE	-.1605	RRA	.0932	RC3 .0186	FAU	.23408	RRT	.2129	RRF	.3234	RTF	.5764	CRT	.9479	CRS	-.3111	CST	-.0117
FDE	-.1907	FRA	4.5204	FC-23.7642	BSP	952	SGB	1202.4	R23	.1736	R13	.6510	LSA	41.4	MSA	27.1	SSA	1.4
BDE	.2788	BRA	.1223	BC3 1.7715	FSP	2493	SG1	1144.4	SG2	369.1	THA	4.51	EL1	27.4	EL2	4.2	ALF	34.93

LAUNCH DATE MAY 14 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC DISTANCE 455.026 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.223	GAL	.12	AZL	91.68	HCA	148.14	SMA	185.00	ECC	.18279	INC	1.6788	V1	29.471
RP	212.01	LAP	-.89	LOP	20.72	VP	23.122	GAP	6.38	AZP	88.57	TAL	.78	TAP	148.92	RCA	151.18	APO	218.81	V2	25.880
RC	127.566	GL	-18.90	GP	-1.51	ZAL	96.17	ZAP	108.70	ETS	180.19	ZAE	151.95	ETE	183.12	ZAC	99.58	ETC	275.86	LVI	-14.03

PLANETOCENTRIC CONIC

C3	8.497	VHL	2.915	DLA	-29.37	RAL	338.67	RAD	6637.3	VEL	11.341	PTH	6.39	VHP	3.012	DPA	-21.11	RAP	312.79	ECC	1.1398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 15	2338.32	.71	59.63	188.97	137.57	17 10 13	1338.3	18.85	43.38
60.00	17 53 12	2120.27	5.57	44.66	193.64	129.98	18 28 32	1120.3	21.00	25.62
70.00	19 43 13	1796.68	11.18	22.58	197.79	122.48	20 13 9	796.7	23.48	.97
80.00	22 21 40	1300.09	18.45	348.96	201.81	113.90	22 43 20	300.1	26.69	324.59
81.71	23 20 3	1113.07	21.83	336.56	203.27	110.15	23 38 36	113.1	28.18	311.07
100.00	1 8 28	6062.60	18.45	288.23	201.81	113.90	2 49 30	5062.6	26.69	263.66
110.00	0 46 35	6131.55	11.18	289.41	197.79	122.48	2 28 46	6131.6	23.48	267.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2341	TRA	-.0407	TC3-2.0098	BAU	.2283	SGT	1262.0	SGR	369.8	SG3	1531.2	ST	23.1	SR	15.5	SS	41.6
RDE	-.1546	RRA	.0934	RC3 .0041	FAU	.23981	RRT	.2521	RRF	.3450	RTF	.7083	CRT	.9623	CRS	-.2776	CST	-.0280
FDE	-.1270	FRA	4.6697	FC-24.4425	BSP	1188	SGB	1315.1	R23	.1560	R13	.7121	LSA	41.9	MSA	27.3	SSA	1.4
BDE	.2806	BRA	.1019	BC3 2.0095	FSP	2620	SG1	1265.8	SG2	356.8	THA	4.59	EL1	27.6	EL2	3.5	ALF	33.48

LAUNCH DATE MAY 14 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 459.211 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.218	GAL	.09	AZL	91.67	HCA	149.35	SMA	184.92	ECC	.18243	INC	1.6707
RP	212.29	LAP	-.85	LOP	21.93	VP	23.079	GAP	6.19	AZP	88.56	TAL	.60	TAP	149.95	RCA	151.18	APO	218.65
RC	129.850	GL	-18.83	GP	-1.58	ZAL	96.48	ZAP	106.61	ETS	180.12	ZAE	149.90	ETE	183.08	ZAC	99.61	ETC	275.65

V1	29.471																		
V2	25.848																		
LVI	-13.69																		

PLANETOCENTRIC CONIC

C3	8.473	VHL	2.911	DLA	-29.19	RAL	338.96	RAD	6637.2	VEL	11.339	PTH	6.39	VHP	2.977	DPA	-21.41	RAP	311.89

ECC	1.1394																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 23	2342.09	.52	59.79	189.18	137.57	17 10 25	1342.1	18.67	43.53
60.00	17 52 51	2125.37	5.35	44.91	193.82	130.00	18 28 16	1125.4	20.79	25.90
70.00	19 41 50	1804.81	10.88	23.03	197.92	122.57	20 11 55	804.8	23.24	1.47
80.00	22 14 53	1325.29	17.74	350.50	201.76	114.41	22 36 58	325.3	26.27	326.34
82.46	23 27 10	1093.45	21.71	335.07	203.48	110.00	23 45 24	93.4	28.01	309.59
100.00	1 1 41	6087.80	17.74	289.78	201.76	114.41	2 43 8	5087.8	26.27	265.62
110.00	0 45 12	6139.67	10.88	289.85	197.92	122.57	2 27 32	5139.7	23.24	268.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2352	TRA	.0016	TC3	-2.2434	BAU	.2541	SGT	1385.7	SGR	361.9	SG3	1572.0	ST	23.2	SR	15.0	SS	42.6
RDE	-.1490	RRA	.0940	RC3	-.0102	FAU	.24454	RRT	.2877	RRF	.3733	RTF	.7585	CRT	.9743	CRS	-.2658	CST	-.0705
FDE	-.0965	FRA	4.8466	FC	-24.9858	BSP	1459	SGB	1432.2	R23	.1467	R13	.7616	LSA	42.9	MSA	27.1	SSA	1.4
BDE	.2785	BRA	.0940	BC3	2.2434	FSP	2681	SG1	1389.8	SG2	345.5	THA	4.58	EL1	27.5	EL2	2.9	ALF	32.57

LAUNCH DATE MAY 14 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 463.398 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.214	GAL	.06	AZL	91.66	HCA	150.55	SMA	184.85	ECC	.18214	INC	1.6621
RP	212.57	LAP	-.82	LOP	23.13	VP	23.037	GAP	6.00	AZP	88.55	TAL	.41	TAP	150.96	RCA	151.18	APO	218.52
RC	132.153	GL	-18.74	GP	-1.65	ZAL	96.82	ZAP	104.53	ETS	180.05	ZAE	147.85	ETE	183.04	ZAC	99.63	ETC	275.45

V1	29.471																		
V2	25.815																		
LVI	-13.33																		

PLANETOCENTRIC CONIC

C3	8.454	VHL	2.908	DLA	-28.98	RAL	339.28	RAD	6637.2	VEL	11.339	PTH	6.39	VHP	2.946	DPA	-21.71	RAP	310.99

ECC	1.1391																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 29	2346.47	.30	59.97	189.41	137.58	17 10 36	1346.5	18.46	43.73
60.00	17 52 25	2131.19	5.10	45.19	194.01	130.03	18 27 56	1131.2	20.57	26.22
70.00	19 40 18	1813.87	10.55	23.52	198.06	122.67	20 10 32	813.9	22.97	2.04
80.00	22 8 29	1349.65	17.05	351.98	201.73	114.89	22 30 59	349.7	25.84	328.02
83.39	23 35 52	1069.07	21.57	333.22	203.70	109.83	23 53 41	69.1	27.81	307.76
100.00	0 55 17	6112.18	17.05	291.25	201.73	114.89	2 37 9	5112.2	25.84	267.30
110.00	0 43 40	6148.73	10.55	290.34	198.06	122.67	2 26 9	5148.7	22.97	268.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2363	TRA	.0485	TC3	-2.4749	BAU	.2797	SGT	1516.6	SGR	352.2	SG3	1599.5	ST	23.4	SR	14.4	SS	42.4
RDE	-.1430	RRA	.0936	RC3	-.0260	FAU	.24990	RRT	.3294	RRF	.3919	RTF	.8062	CRT	.9846	CRS	-.2272	CST	-.0917
FDE	-.0173	FRA	4.8882	FC	-25.5902	BSP	1781	SGB	1557.0	R23	.1197	R13	.8084	LSA	42.7	MSA	27.1	SSA	1.3
BDE	.2762	BRA	.1054	BC3	2.4750	FSP	2696	SG1	1521.3	SG2	331.5	THA	4.59	EL1	27.4	EL2	2.2	ALF	31.45

LAUNCH DATE MAY 14 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 467.586 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.211	GAL	.03	AZL	91.65	HCA	151.75	SMA	184.80	ECC	.18192	INC	1.6527
RP	212.86	LAP	-.78	LOP	24.32	VP	22.996	GAP	5.82	AZP	88.54	TAL	.20	TAP	151.95	RCA	151.18	APO	218.42
RC	134.475	GL	-18.65	GP	-1.73	ZAL	97.18	ZAP	102.45	ETS	179.98	ZAE	145.79	ETE	183.00	ZAC	99.64	ETC	275.25

V1	29.471																		
V2	25.782																		
LVI	-12.98																		

PLANETOCENTRIC CONIC

C3	8.441	VHL	2.905	DLA	-28.75	RAL	339.61	RAD	6637.2	VEL	11.338	PTH	6.39	VHP	2.919	DPA	-22.01	RAP	310.10

ECC	1.1389																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 33	2351.44	.05	60.18	189.65	137.58	17 10 44	1351.4	18.23	43.97
60.00	17 51 53	2137.73	4.81	45.50	194.22	130.06	18 27 31	1137.7	20.31	26.58
70.00	19 38 37	1823.83	10.19	24.05	198.22	122.78	20 9 1	823.8	22.67	2.66
80.00	22 2 23	1373.55	16.36	353.42	201.74	115.33	22 25 16	373.6	25.39	329.66
84.59	23 46 54	1037.48	21.42	330.83	203.95	109.65	24 4 11	37.5	27.60	305.40
100.00	0 49 10	6136.06	16.36	292.69	201.74	115.33	2 31 26	5136.1	25.39	268.93
110.00	0 41 59	6158.69	10.19	290.88	198.22	122.78	2 24 38	5158.7	22.67	269.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2390	TRA	.0928	TC3	-2.7000	BAU	.3048	SGT	1651.4	SGR	343.6	SG3	1671.3	ST	23.9	SR	13.8	SS	43.0
RDE	-.1366	RRA	.0939	RC3	-.0302	FAU	.26397	RRT	.3822	RRF	.4197	RTF	.8436	CRT	.9906	CRS	-.1768	CST	-.0925
FDE	.0891	FRA	5.0039	FC	-27.0725	BSP	2089	SGB	1686.8	R23	.0920	R13	.8451	LSA	43.2	MSA	27.3	SSA	1.3
BDE	.2753	BRA	.1320	BC3	2.7005	FSP	2674	SG1	1656.8	SG2	316.5	THA	4.72	EL1	27.6	EL2	1.6	ALF	29.97

LAUNCH DATE MAY 14 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 471.767 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.209	GAL	-.00	AZL	91.64	HCA	152.94	SMA	184.76	ECC	.18175	INC	1.6425
RP	213.16	LAP	-.75	LOP	25.52	VP	22.955	GAP	5.64	AZP	88.54	TAL	359.99	TAP	152.93	RCA	151.18	APO	218.35
RC	136.814	GL	-18.54	GP	-1.81	ZAL	97.56	ZAP	100.38	ETS	179.90	ZAE	143.72	ETE	182.95	ZAC	99.64	ETC	275.04

V1	29.471																		
V2	25.749																		
LVI	-12.61																		

PLANETOCENTRIC CONIC

C3	8.433	VHL	2.904	DLA	-28.50	RAL	339.95	RAD	6637.2	VEL	11.338	PTH	6.39	VHP	2.895	DPA	-22.30	RAP	309.21

ECC	1.1388																		
INJ 2 LONG																			

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 34	2357.00	-.23	60.41	189.91	137.58	17 10 51	1357.0	17.96	44.22
60.00	17 51 16	2144.97	4.49	45.85	194.44	130.09	18 27 1	1145.0	20.02	26.98
70.00	19 36 46	1834.67	9.79	24.64	198.39	122.89	20 7 21	834.7	22.34	3.33
80.00	21 56 28	1397.22	15.67	354.83	201.77	115.75	22 19 45	397.2	24.93	331.26
86.30	0 6 17	6279.83	21.24	305.32	204.22	109.46	1 50 57	5279.8	27.36	279.91
100.00	0 43 16	6159.73	15.67	294.11	201.77	115.75	2 25 55	5159.7	24.93	270.54
110.00	0 40 9	6169.53	9.79	291.46	198.39	122.89	2 22 58	5169.5	22.34	270.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2454	TRA	.1441	TC3	-3.0214	BAU	.3407	SGT	1849.0	SGR	331.9	SG3	1583.1	ST	24.8	SR	12.9	SS	48.2
RDE	-.1266	RRA	.0970	RC3	-.0308	FAU	.22870	RRT	.3631	RRF	.4300	RTF	.8065	CRT	.9929	CRS	.0446	CST	.0906
FDE	.5752	FRA	5.4281	FC	-23.4775	BSP	2317	SGB	1878.5	R23	.1382	R13	.8081	LSA	48.2	MSA	27.8	SSA	1.3
BDE	.2762	BRA	.1737	BC3	3.0216	FSP	4112	SG1	1853.0	SG2	308.6	THA	3.84	EL1	28.0	EL2	1.4	ALF	27.37

LAUNCH DATE MAY 14 1971 FLIGHT TIME 200.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 475.964 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.207	GAL	-.04	AZL	91.63	HCA	154.13	SMA	184.74	ECC	.18164	INC	1.6316	V1	29.471
RP	213.46	LAP	-.71	LOP	26.71	VP	22.915	GAP	5.46	AZP	88.53	TAL	359.75	TAP	153.89	RCA	151.18	APO	218.30	V2	25.714
RC	139.171	GL	-18.41	GP	-1.90	ZAL	97.96	ZAP	98.33	ETS	179.82	ZAE	141.66	ETE	182.91	ZAC	99.63	ETC	274.64	LVI	-12.24

PLANETOCENTRIC CONIC

C3	8.431	VHL	2.904	DLA	-28.23	RAL	340.31	RAD	6637.2	VEL	11.338	PTH	6.39	VHP	2.875	DPA	-22.59	RAP	308.32	ECC	1.1387

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 31	2363.16	-.54	60.67	190.18	137.57	17 10 54	1363.2	17.66	44.51
60.00	17 50 33	2152.92	4.14	46.23	194.68	130.12	18 26 26	1152.9	19.70	27.41
70.00	19 34 48	1846.36	9.35	25.27	198.57	123.00	20 5 34	846.4	21.99	4.05
80.00	21 50 42	1420.81	14.96	356.23	201.82	116.14	22 14 23	420.8	24.45	332.85
90.00	0 23 51	6227.51	19.97	301.00	204.08	110.45	2 7 39	5227.5	26.63	275.96
100.00	0 37 30	6183.32	14.96	295.50	201.82	116.14	2 20 33	5183.3	24.45	272.13
110.00	0 38 10	6181.22	9.35	292.09	198.57	123.00	2 21 11	5181.2	21.99	270.87

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2340	TRA	.1922	TC3	-3.2444	BAU	.3658	SGT	1987.0	SGR	332.2	SG3	1668.1	ST	24.1	SR	12.9	SS	45.7
RDE	-.1261	RRA	.0968	RC3	-.0647	FAU	.25125	RRT	.4227	RRF	.4944	RTF	.8709	CRT	.9935	CRS	-.2173	CST	-.2459
FDE	.0659	FRA	5.4366	FC-2	5.8013	BSP	2701	SGB	2014.6	R23	.1298	R13	.8724	LSA	46.4	HSA	26.1	SSA	1.3
BDE	.2658	BRA	.2152	BC3	3.2451	FSP	3099	SG1	1992.1	SG2	300.3	THA	4.14	EL1	27.3	EL2	1.3	ALF	27.96

LAUNCH DATE MAY 14 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 480.155 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.206	GAL	-.08	AZL	91.62	HCA	155.32	SMA	184.73	ECC	.18159	INC	1.6196	V1	29.471
RP	213.77	LAP	-.68	LOP	27.90	VP	22.875	GAP	5.28	AZP	88.53	TAL	359.51	TAP	154.83	RCA	151.18	APO	218.27	V2	25.680
RC	141.545	GL	-18.27	GP	-1.99	ZAL	98.39	ZAP	96.29	ETS	179.74	ZAE	139.60	ETE	182.87	ZAC	99.62	ETC	274.64	LVI	-11.87

PLANETOCENTRIC CONIC

C3	8.433	VHL	2.904	DLA	-27.93	RAL	340.68	RAD	6637.2	VEL	11.338	PTH	6.39	VHP	2.859	DPA	-22.89	RAP	307.46	ECC	1.1388

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 25	2369.93	-.88	60.95	190.47	137.57	17 10 55	1369.9	17.34	44.82
60.00	17 49 45	2161.58	3.76	46.65	194.93	130.15	18 25 46	1161.6	19.36	27.88
70.00	19 32 40	1858.90	8.89	25.94	198.76	123.11	20 3 39	858.9	21.60	4.81
80.00	21 45 3	1444.45	14.25	357.62	201.89	116.52	22 9 7	444.4	23.95	334.43
90.00	0 1 25	1017.34	18.04	327.99	203.68	112.15	0 18 22	17.3	25.61	303.52
100.00	0 31 50	6206.96	14.25	296.90	201.89	116.52	2 15 17	5207.0	23.95	273.71
110.00	0 36 2	6193.76	8.89	292.76	198.76	123.11	2 19 16	5193.8	21.60	271.64

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2319	TRA	.2456	TC3	-3.4910	BAU	.3937	SGT	2149.6	SGR	325.1	SG3	1712.3	ST	24.5	SR	12.2	SS	46.9
RDE	-.1191	RRA	.0981	RC3	-.0855	FAU	.25799	RRT	.4699	RRF	.5268	RTF	.8880	CRT	.9904	CRS	-.1526	CST	-.2357
FDE	.2274	FRA	5.5915	FC-2	6.4864	BSP	3014	SGB	2174.1	R23	.1156	R13	.8892	LSA	47.5	HSA	26.4	SSA	1.2
BDE	.2607	BRA	.2645	BC3	3.4920	FSP	2996	SG1	2155.2	SG2	286.2	THA	4.14	EL1	27.3	EL2	1.5	ALF	26.33

LAUNCH DATE MAY 14 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 484.346 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.206	GAL	-.12	AZL	91.61	HCA	156.51	SMA	184.72	ECC	.18158	INC	1.6067	V1	29.471
RP	214.08	LAP	-.64	LOP	29.08	VP	22.835	GAP	5.11	AZP	88.53	TAL	359.25	TAP	155.75	RCA	151.18	APO	218.27	V2	25.645
RC	143.936	GL	-18.11	GP	-2.09	ZAL	98.83	ZAP	94.29	ETS	179.65	ZAE	137.56	ETE	182.82	ZAC	99.59	ETC	274.45	LVI	-11.50

PLANETOCENTRIC CONIC

C3	8.439	VHL	2.905	DLA	-27.62	RAL	341.06	RAD	6637.2	VEL	11.338	PTH	6.39	VHP	2.846	DPA	-23.18	RAP	306.61	ECC	1.1389

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 15	2377.30	-1.25	61.26	190.77	137.56	17 10 52	1377.3	16.98	45.16
60.00	17 48 50	2170.95	3.35	47.10	195.19	130.18	18 25 1	1170.9	18.98	28.39
70.00	19 30 24	1872.26	8.39	26.65	198.96	123.23	20 1 36	872.3	21.18	5.63
80.00	21 39 27	1468.23	13.52	359.01	201.98	116.88	22 3 56	468.2	23.43	336.01
90.00	23 44 2	1066.50	16.75	331.02	203.54	113.12	24 1 48	66.5	24.84	306.91
100.00	0 26 15	6230.74	13.52	298.29	201.98	116.88	2 10 6	5230.7	23.43	275.28
110.00	0 33 46	6207.12	8.39	293.48	198.96	123.23	2 17 13	5207.1	21.18	272.43

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2269	TRA	.2981	TC3	-3.7423	BAU	.4224	SGT	2316.9	SGR	318.2	SG3	1718.5	ST	24.7	SR	11.6	SS	47.2
RDE	-.1129	RRA	.0986	RC3	-.1016	FAU	.25875	RRT	.5069	RRF	.5583	RTF	.8926	CRT	.9838	CRS	-.1313	CST	-.2713
FDE	.3000	FRA	5.6367	FC-2	6.5445	BSP	3345	SGB	2338.7	R23	.1094	R13	.9035	LSA	47.9	HSA	26.0	SSA	1.2
BDE	.2535	BRA	.3140	BC3	3.7437	FSP	3008	SG1	2322.6	SG2	273.6	THA	4.04	EL1	27.2	EL2	1.9	ALF	24.93

LAUNCH DATE MAY 14 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 488.537 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.207	GAL	-.16	AZL	91.59	HCA	157.69	SMA	184.73	ECC	.18163	INC	1.5924	V1	29.471
RP	214.39	LAP	-.60	LOP	30.26	VP	22.795	GAP	4.94	AZP	88.53	TAL	358.97	TAP	156.66	RCA	151.18	APO	218.29	V2	25.609
RC	146.344	GL	-17.93	GP	-2.20	ZAL	99.29	ZAP	92.30	ETS	179.55	ZAE	135.53	ETE	182.79	ZAC	99.55	ETC	274.26	LVI	-11.12

PLANETOCENTRIC CONIC

C3	8.450	VHL	2.907	DLA	-27.27	RAL	341.45	RAD	6637.2	VEL	11.338	PTH	6.39	VHP	2.836	DPA	-23.46	RAP	305.79	ECC	1.1391

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 31 0	2385.30	-1.65	61.59	191.07	137.55	17 10 46	1385.3	16.60	45.53
60.00	17 47 48	2181.05	2.91	47.58	195.46	130.21	18 24 9	1181.0	18.57	28.93
70.00	19 27 59	1886.46	7.86	27.41	199.17	123.34	19 59 25	886.5	20.74	6.49
80.00	21 33 55	1492.24	12.78	.41	202.09	117.22	21 58 47	492.2	22.89	337.58
90.00	23 33 9	1107.69	15.63	333.53	203.50	113.87	23 51 37	107.7	24.14	309.72
100.00	0 20 42	6254.75	12.78	299.68	202.09	117.22	2 4 57	5254.8	22.89	276.86
110.00	0 31 21	6221.32	7.86	294.23	199.17	123.34	2 15 2	5221.3	20.74	273.31

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2228	TRA	.3529	TC3	-4.0029	BAU	.4524	SGT	2494.2	SGR	314.7	SG3	1741.9	ST	25.1	SR	11.1	SS	47.5
RDE	-.1076	RRA	.0998	RC3	-.1224	FAU	.26275	RRT	.5503	RRF	.6000	RTF	.9170	CRT	.9743	CRS	-.1577	CST	-.3500
FDE	.2825	FRA	5.7257	FC-2	6.9195	BSP	3676	SGB	2514.0	R23	.1074	R13	.9179	LSA	48.7	HSA	25.4	SSA	1.1
BDE	.2474	BRA	.3668	BC3	4.0047	FSP	3029	SG1	2500.3	SG2	262.1	THA	4.02	EL1	27.4	EL2	2.3	ALF	23.47

LAUNCH DATE MAY 14 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 492.727 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.208	GAL	-.20	AZL	91.58	HCA	158.87	SMA	184.75	ECC	.18173	INC	1.5767
RP	214.72	LAP	-.57	LOP	31.44	VP	22.756	GAP	4.77	AZP	88.53	TAL	358.69	TAP	157.56	RCA	151.18	APO	218.33
RC	148.770	GL	-17.74	GP	-2.32	ZAL	99.78	ZAP	90.35	ETS	179.45	ZAE	133.52	ETE	182.75	ZAC	99.49	ETC	274.07

V1 29.471 V2 25.573 LVI -10.75

PLANETOCENTRIC CONIC

C3 8.465 VHL 2.910 DLA -26.90 RAL 341.85 RAD 6637.2 VEL 11.339 PTH 6.39 VHP 2.829 DPA -23.75 RAP 304.99 ECC 1.1393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 41	2393.96	-2.09	61.96	191.39	137.54	17 10 34	1394.0	16.18	45.93
60.00	17 46 38	2191.90	2.43	48.10	195.73	130.24	18 23 10	1191.9	18.13	29.51
70.00	19 25 24	1901.51	7.30	28.21	199.39	123.46	19 57 5	901.5	20.26	7.39
80.00	21 28 22	1516.60	12.02	1.81	202.21	117.54	21 53 38	516.6	22.32	339.17
90.00	23 23 34	1145.06	14.59	335.78	203.50	114.50	23 42 40	145.1	23.45	312.25
100.00	0 15 10	6279.11	12.02	301.09	202.21	117.54	1 59 49	5279.1	22.32	278.44
110.00	0 28 46	6236.37	7.30	295.03	199.39	123.46	2 12 43	5236.4	20.26	274.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2162	TRA	.4090	TC3-4.2578	BAU	.4821	SGT	2671.3	SGR	310.2	SG3	1746.1	ST	25.5	SR	10.5	SS	48.1
RDE	-.1011	RRA	.1012	RC3 -.1403	FAU	.26260	RRT	.5900	RRF	.6365	RTF	.9256	CRT	.9621	CRS	-.1384	CST	-.3821
FDE	.3675	FRA	5.7934	FC-26.8552	BSP	4016	SGB	2689.2	R23	.1061	R13	.9263	LSA	49.4	MSA	25.1	SSA	1.1
BDE	.2387	BRA	.4213	BC3 4.2601	FSP	3062	SG1	2677.6	SG2	249.8	THA	3.95	EL1	27.5	EL2	2.7	ALF	21.83

LAUNCH DATE MAY 14 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 496.916 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.210	GAL	-.25	AZL	91.56	HCA	160.04	SMA	184.78	ECC	.18187	INC	1.5594
RP	215.04	LAP	-.53	LOP	32.61	VP	22.718	GAP	4.60	AZP	88.53	TAL	358.39	TAP	158.44	RCA	151.17	APO	218.39
RC	151.211	GL	-17.52	GP	-2.45	ZAL	100.28	ZAP	88.43	ETS	179.35	ZAE	131.53	ETE	182.72	ZAC	99.42	ETC	273.89

V1 29.471 V2 25.536 LVI -10.37

PLANETOCENTRIC CONIC

C3 8.484 VHL 2.913 DLA -26.51 RAL 342.26 RAD 6637.3 VEL 11.340 PTH 6.39 VHP 2.825 DPA -24.04 RAP 304.22 ECC 1.1396

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 30 15	2403.29	-2.55	62.35	191.71	137.52	17 10 18	1403.3	15.72	46.35
60.00	17 45 21	2203.54	1.92	48.66	196.01	130.26	18 22 4	1203.5	17.66	30.13
70.00	19 22 39	1917.43	6.70	29.05	199.61	123.57	19 54 36	917.4	19.74	8.34
80.00	21 22 47	1541.38	11.23	3.23	202.33	117.85	21 48 29	541.4	21.73	340.77
90.00	23 14 45	1180.31	13.59	337.87	203.53	115.04	23 34 25	180.3	22.75	314.60
100.00	0 9 35	1015.85	11.23	324.60	202.33	117.85	0 26 31	15.9	21.73	302.14
110.00	0 26 1	6252.29	6.70	295.88	199.61	123.57	2 10 13	5252.3	19.74	275.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2073	TRA	.4656	TC3-4.5061	BAU	.5114	SGT	2846.8	SGR	306.5	SG3	1741.7	ST	25.8	SR	9.9	SS	48.6
RDE	-.0945	RRA	.1027	RC3 -.1582	FAU	.26103	RRT	.6287	RRF	.6735	RTF	.9324	CRT	.9473	CRS	-.1229	CST	-.4167
FDE	.4520	FRA	5.8403	FC-26.6350	BSP	4362	SGB	2863.3	R23	.1070	R13	.9330	LSA	50.1	MSA	24.7	SSA	1.0
BDE	.2278	BRA	.4768	BC3 4.5089	FSP	3077	SG1	2853.4	SG2	237.8	THA	3.90	EL1	27.5	EL2	3.0	ALF	20.19

LAUNCH DATE MAY 14 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 501.105 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.212	GAL	-.29	AZL	91.54	HCA	161.21	SMA	184.82	ECC	.18206	INC	1.5398
RP	215.37	LAP	-.50	LOP	33.78	VP	22.679	GAP	4.44	AZP	88.54	TAL	358.09	TAP	159.30	RCA	151.17	APO	218.47
RC	153.669	GL	-17.27	GP	-2.59	ZAL	100.80	ZAP	86.54	ETS	179.24	ZAE	129.56	ETE	182.69	ZAC	99.33	ETC	273.72

V1 29.471 V2 25.499 LVI -9.98

PLANETOCENTRIC CONIC

C3 8.507 VHL 2.917 DLA -26.08 RAL 342.67 RAD 6637.3 VEL 11.341 PTH 6.39 VHP 2.823 DPA -24.33 RAP 303.49 ECC 1.1400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 29 42	2413.34	-3.06	62.77	192.03	137.50	17 9 55	1413.3	15.24	46.81
60.00	17 43 53	2216.00	1.37	49.25	196.29	130.28	18 20 49	1216.0	17.15	30.79
70.00	19 19 42	1934.28	6.06	29.95	199.83	123.68	19 51 57	934.3	19.19	9.34
80.00	21 17 9	1568.69	10.42	4.68	202.47	118.14	21 43 16	566.7	21.10	342.39
90.00	23 6 24	1214.38	12.60	339.89	203.59	115.53	23 26 38	214.4	22.05	316.84
100.00	0 3 57	1041.16	10.42	326.05	202.47	118.14	0 21 18	41.2	21.10	303.76
110.00	0 23 5	6269.14	6.06	296.77	199.83	123.68	2 7 34	5269.1	19.19	276.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1979	TRA	.5245	TC3-4.7595	BAU	.5417	SGT	3029.1	SGR	306.0	SG3	1747.3	ST	26.3	SR	9.3	SS	49.3
RDE	-.0880	RRA	.1050	RC3 -.1797	FAU	.26104	RRT	.6708	RRF	.7151	RTF	.9385	CRT	.9316	CRS	-.1250	CST	-.4620
FDE	.5160	FRA	5.9236	FC-26.5643	BSP	4688	SGB	3044.5	R23	.1105	R13	.9391	LSA	51.2	MSA	24.2	SSA	1.0
BDE	.2166	BRA	.5349	BC3 4.7628	FSP	3075	SG1	3036.1	SG2	226.4	THA	3.90	EL1	27.7	EL2	3.2	ALF	18.51

LAUNCH DATE MAY 14 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 14 1971

HELIOCENTRIC CONIC DISTANCE 505.292 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.215	GAL	-.34	AZL	91.52	HCA	162.38	SMA	184.86	ECC	.18229	INC	1.5178
RP	215.71	LAP	-.46	LOP	34.95	VP	22.641	GAP	4.27	AZP	88.55	TAL	357.77	TAP	160.15	RCA	151.17	APO	218.56
RC	156.143	GL	-16.99	GP	-2.76	ZAL	101.33	ZAP	84.70	ETS	179.12	ZAE	127.62	ETE	182.67	ZAC	99.22	ETC	273.55

V1 29.471 V2 25.461 LVI -9.59

PLANETOCENTRIC CONIC

C3 8.534 VHL 2.921 DLA -25.62 RAL 343.07 RAD 6637.3 VEL 11.342 PTH 6.40 VHP 2.825 DPA -24.63 RAP 302.79 ECC 1.1404

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 29 1	2424.17	-3.60	63.22	192.36	137.47	17 9 25	1424.2	14.71	47.30
60.00	17 42 15	2229.36	.78	49.89	196.58	130.29	18 19 25	1229.4	16.60	31.49
70.00	19 16 33	1952.12	5.39	30.89	200.05	123.78	19 49 5	952.1	18.60	10.38
80.00	21 11 23	1592.68	9.59	6.15	202.61	118.41	21 37 56	592.7	20.44	344.03
90.00	22 58 18	1247.92	11.60	341.85	203.66	115.97	23 19 5	247.9	21.32	319.03
100.00	23 54 15	1067.15	9.59	327.52	202.61	118.41	24 12 2	67.2	20.44	305.40
110.00	0 19 55	6286.98	5.39	297.71	200.05	123.78	2 4 42	5287.0	18.60	277.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1865	TRA	.5842	TC3-5.0049	BAU	.5714	SGT	3209.2	SGR	306.8	SG3	1742.5	ST	26.8	SR	8.7	SS	50.0
RDE	-.0813	RRA	.1077	RC3 -.2012	FAU	.25921	RRT	.7108	RRF	.7550	RTF	.9431	CRT	.9152	CRS	-.1287	CST	-.5041
FDE	.5892	FRA	5.9831	FC-26.2972	BSP	5011	SGB	3223.8	R23	.1160	R13	.9436	LSA	52.3	MSA	23.7	SSA	1.0
BDE	.2034	BRA	.5941	BC3 5.0089	FSP	3052	SG1	3216.6	SG2	215.3	THA	3.90	EL1	28.0	EL2	3.4	ALF	16.83

LAUNCH DATE MAY 14 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 509.477 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.218	GAL	-.39	AZL	91.49	HCA	163.54	SMA	184.92	ECC	.18256	INC	1.4931	V1	29.471
RP	216.04	LAP	-.42	LOP	36.11	VP	22.603	GAP	4.11	AZP	88.57	TAL	357.44	TAP	160.98	RCA	151.16	APO	218.68	V2	25.424
RC	158.631	GL	-16.68	GP	-2.94	ZAL	101.89	ZAP	82.89	ETS	178.99	ZAE	125.71	ETE	182.65	ZAC	99.09	ETC	273.39	LVI	-9.19

PLANETOCENTRIC CONIC

C3	8.563	VHL	2.926	DLA	-25.12	RAL	343.48	RAD	6637.3	VEL	11.343	PTH	6.40	VHP	2.828	DPA	-24.94	RAP	302.14	ECC	1.1409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 28 9	2435.85	-4.19	63.71	192.69	137.44	17 8 45	1435.8	14.14	47.82
60.00	17 40 24	2243.69	.15	50.57	196.86	130.30	18 17 48	1243.7	16.01	32.24
70.00	19 13 8	1971.04	4.67	31.88	200.27	123.87	19 45 59	971.0	17.97	11.49
80.00	21 5 28	1619.48	8.71	7.66	202.75	118.67	21 32 27	619.5	19.74	345.72
90.00	22 50 18	1281.36	10.60	343.79	203.74	116.37	23 11 40	281.4	20.56	321.19
100.00	23 48 20	1093.95	8.71	329.03	202.75	118.67	24 6 34	94.0	19.74	307.08
110.00	0 16 31	1017.86	4.67	320.80	200.27	123.87	0 33 28	17.9	17.97	300.41

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1726	TRA	.6440	TC3	-5.2530	BAU	.6019	SGT	3391.9	SGR	310.2	SG3	1740.0	ST	27.3	SR	8.1	SS	50.6
RDE	-.0743	RRA	.1107	RC3	-.2273	FAU	.25888	RRT	.7525	RRF	.7947	RTF	.9482	CRT	.8990	CRS	-.1383	CST	-.5463
FDE	.6647	FRA	6.0159	FC	-26.1744	BSP	5331	SGB	3406.0	R23	.1194	R13	.9487	LSA	53.2	MSA	23.0	SSA	.9
BDE	.1879	BRA	.6534	BC3	5.2579	FSP	3018	SG1	3399.9	SG2	203.8	THA	3.95	EL1	28.2	EL2	3.4	ALF	15.21

LAUNCH DATE MAY 14 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 513.661 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.222	GAL	-.45	AZL	91.47	HCA	164.70	SMA	184.98	ECC	.18287	INC	1.4650	V1	29.471
RP	216.39	LAP	-.39	LOP	37.27	VP	22.565	GAP	3.95	AZP	88.59	TAL	357.10	TAP	161.81	RCA	151.15	APO	218.81	V2	25.385
RC	161.134	GL	-16.32	GP	-3.14	ZAL	102.46	ZAP	81.12	ETS	178.84	ZAE	123.83	ETE	182.64	ZAC	98.93	ETC	273.24	LVI	-8.79

PLANETOCENTRIC CONIC

C3	8.595	VHL	2.932	DLA	-24.57	RAL	343.88	RAD	6637.3	VEL	11.345	PTH	6.40	VHP	2.834	DPA	-25.27	RAP	301.52	ECC	1.1414

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 27 6	2448.48	-4.82	64.24	193.00	137.39	17 7 54	1448.5	13.52	48.38
60.00	17 38 18	2259.12	-.53	51.31	197.13	130.30	18 15 57	1259.1	15.37	33.04
70.00	19 9 26	1991.20	3.90	32.94	200.49	123.96	19 42 37	991.2	17.29	12.65
80.00	20 59 18	1647.31	7.80	9.22	202.88	118.91	21 26 46	647.3	18.99	347.45
90.00	22 42 17	1315.17	9.57	345.74	203.82	116.74	23 4 12	315.2	19.77	323.35
100.00	23 42 10	1121.78	7.80	330.59	202.88	118.91	24 0 52	121.8	18.99	308.81
110.00	0 12 48	1038.02	3.90	321.86	200.49	123.96	0 30 6	38.0	17.29	301.57

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1560	TRA	.7065	TC3	-5.4889	BAU	.6314	SGT	3571.6	SGR	316.4	SG3	1730.3	ST	27.8	SR	7.5	SS	51.4
RDE	-.0670	RRA	.1148	RC3	-.2535	FAU	.25632	RRT	.7902	RRF	.8324	RTF	.9515	CRT	.8845	CRS	-.1589	CST	-.5905
FDE	.7465	FRA	6.0633	FC	-25.8191	BSP	5683	SGB	3585.5	R23	.1277	R13	.9520	LSA	54.5	MSA	22.4	SSA	.9
BDE	.1698	BRA	.7158	BC3	5.4948	FSP	3028	SG1	3580.3	SG2	193.4	THA	4.02	EL1	28.6	EL2	3.4	ALF	13.64

LAUNCH DATE MAY 14 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 517.843 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.226	GAL	-.50	AZL	91.43	HCA	165.86	SMA	185.05	ECC	.18321	INC	1.4319	V1	29.471
RP	216.73	LAP	-.35	LOP	38.43	VP	22.528	GAP	3.80	AZP	88.61	TAL	356.76	TAP	162.62	RCA	151.15	APO	218.95	V2	25.347
RC	163.649	GL	-15.92	GP	-3.38	ZAL	103.05	ZAP	79.40	ETS	178.69	ZAE	121.98	ETE	182.64	ZAC	98.73	ETC	273.10	LVI	-8.36

PLANETOCENTRIC CONIC

C3	8.629	VHL	2.937	DLA	-23.98	RAL	344.27	RAD	6637.3	VEL	11.346	PTH	6.40	VHP	2.842	DPA	-25.61	RAP	300.95	ECC	1.1420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 25 47	2462.21	-5.51	64.82	193.31	137.33	17 6 50	1462.2	12.84	48.99
60.00	17 35 53	2275.81	-1.26	52.11	197.39	130.28	18 13 48	1275.8	14.67	33.89
70.00	19 5 21	2012.77	3.08	34.07	200.68	124.03	19 38 54	1012.8	16.55	13.89
80.00	20 52 49	1676.42	6.84	10.85	203.00	119.13	21 20 46	676.4	18.19	349.24
90.00	22 34 6	1349.74	8.51	347.72	203.90	117.07	22 56 36	349.7	18.92	325.53
100.00	23 35 41	1150.89	6.84	332.22	203.00	119.13	23 54 52	150.9	18.19	310.61
110.00	0 8 43	1059.59	3.08	322.99	200.68	124.03	0 26 23	59.6	16.55	302.81

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1385	TRA	.7671	TC3	-5.7360	BAU	.6625	SGT	3756.4	SGR	326.7	SG3	1722.3	ST	28.5	SR	7.0	SS	52.0
RDE	-.0594	RRA	.1196	RC3	-.2857	FAU	.25514	RRT	.8269	RRF	.8678	RTF	.9550	CRT	.8769	CRS	-.1940	CST	-.6316
FDE	.8239	FRA	6.0829	FC	-25.5992	BSP	5987	SGB	3770.6	R23	.1356	R13	.9555	LSA	55.7	MSA	21.7	SSA	.8
BDE	.1507	BRA	.7764	BC3	5.7431	FSP	2990	SG1	3766.1	SG2	183.3	THA	4.12	EL1	29.1	EL2	3.3	ALF	12.23

LAUNCH DATE MAY 14 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 522.022 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.230	GAL	-.56	AZL	91.39	HCA	167.01	SMA	185.13	ECC	.18359	INC	1.3939	V1	29.471
RP	217.08	LAP	-.31	LOP	39.58	VP	22.491	GAP	3.64	AZP	88.64	TAL	356.40	TAP	163.41	RCA	151.14	APO	219.11	V2	25.308
RC	166.178	GL	-15.46	GP	-3.65	ZAL	103.65	ZAP	77.72	ETS	178.51	ZAE	120.16	ETE	182.65	ZAC	98.49	ETC	272.97	LVI	-7.91

PLANETOCENTRIC CONIC

C3	8.664	VHL	2.943	DLA	-23.32	RAL	344.65	RAD	6637.3	VEL	11.348	PTH	6.40	VHP	2.853	DPA	-25.98	RAP	300.43	ECC	1.1426

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 24 10	2477.24	-6.26	65.45	193.60	137.26	17 5 28	1477.2	12.10	49.65
60.00	17 33 4	2293.99	-2.06	52.98	197.63	130.26	18 11 18	1294.0	13.91	34.82
70.00	19 0 49	2036.02	2.20	35.28	200.86	124.09	19 34 45	1036.0	15.75	15.21
80.00	20 45 54	1707.15	5.82	12.56	203.10	119.34	21 14 22	707.1	17.33	351.11
90.00	22 25 37	1385.56	7.39	349.76	203.96	117.37	22 48 42	385.6	18.02	327.77
100.00	23 28 46	1181.62	5.82	333.93	203.10	119.34	23 48 28	181.6	17.33	312.48
110.00	0 4 12	1082.84	2.20	324.20	200.86	124.09	0 22 14	82.8	15.75	304.13

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1147	TRA	.8312	TC3	-5.9587	BAU	.6912	SGT	3931.8	SGR	340.8	SG3	1705.9	ST	29.2	SR	6.4	SS	53.1
RDE	-.0510	RRA	.1258	RC3	-.3185	FAU	.25131	RRT	.8561	RRF	.8990	RTF	.9570	CRT	.8737	CRS	-.2432	CST	-.6748
FDE	.9307	FRA	6.1148	FC	-25.1125	BSP	6334	SGB	3946.6	R23	.1484	R13	.9575	LSA	57.3	MSA	20.8	SSA	.8
BDE	.1255	BRA	.8407	BC3	5.9672	FSP	2982	SG1	3942.7	SG2	174.5	THA	4.26	EL1	29.7	EL2	3.0	ALF	10.94

LAUNCH DATE MAY 14 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 526.199 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.235	GAL	-.62	AZL	91.35	HCA	168.16	SMA	185.21	ECC	.18401	INC	1.3481	V1	29.471
RP	217.43	LAP	-.28	LOP	40.73	VP	22.454	GAP	3.49	AZP	88.68	TAL	356.04	TAP	164.19	RCA	151.13	APO	219.29	V2	25.269
RC	168.717	GL	-14.91	GP	-3.98	ZAL	104.28	ZAP	76.08	ETS	178.30	ZAE	118.37	ETE	182.68	ZAC	98.19	ETC	272.85	LVI	-7.43

PLANETOCENTRIC CONIC

C3	8.700	VHL	2.950	DLA	-22.59	RAL	349.00	RAD	6637.4	VEL	11.349	PTH	6.40	VHP	2.865	DPA	-26.40	RAP	299.96	ECC	1.1432

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 9	2493.83	-7.09	66.16	193.87	137.17	17 3 43	1493.8	11.29	50.38
60.00	17 29 47	2313.98	-2.94	53.93	197.85	130.21	18 8 21	1314.0	13.06	35.84
70.00	18 55 43	2081.35	1.23	36.61	201.01	124.13	19 30 4	1061.3	14.87	16.64
80.00	20 38 24	1739.96	4.72	14.37	203.18	119.52	21 7 24	740.0	16.38	353.09
90.00	22 16 37	1423.20	6.21	351.89	203.99	117.65	22 40 20	423.2	17.03	330.10
100.00	23 21 16	1214.44	4.72	335.74	203.18	119.52	23 41 31	214.4	16.38	314.46
110.00	23 55 9	1108.16	1.23	325.52	201.01	124.13	24 13 37	108.2	14.87	305.56

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0899	TRA	.8951	TC3	-6.1910	BAU	.7213	SGT	4112.8	SGR	361.6	SG3	1691.8	ST	30.1	SR	5.9	SS	54.1
RDE	-.0423	RRA	.1338	RC3	-.3588	FAU	.24838	RRT	.8858	RRF	.9264	RTF	.9591	CRT	.8841	CRS	-.3242	CST	-.7194
FDE	1.0185	FRA	6.1401	FC-24.7169		BSP	6645	SGB	4128.6	R23	.1626	R13	.9596	LSA	58.9	MSA	19.9	SSA	.7
BDE	.0993	BRA	.9050	BC3	6.2014	FSP	2946	SG1	4125.3	SG2	167.3	THA	4.46	EL1	30.5	EL2	2.7	ALF	9.92

LAUNCH DATE MAY 14 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 530.373 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.241	GAL	-.68	AZL	91.29	HCA	169.30	SMA	185.30	ECC	.18446	INC	1.2936	V1	29.471
RP	217.79	LAP	-.24	LOP	41.87	VP	22.417	GAP	3.33	AZP	88.73	TAL	355.66	TAP	164.97	RCA	151.12	APO	219.48	V2	25.229
RC	171.268	GL	-14.27	GP	-4.37	ZAL	104.92	ZAP	74.50	ETS	178.06	ZAE	116.62	ETE	182.71	ZAC	97.83	ETC	272.73	LVI	-6.90

PLANETOCENTRIC CONIC

C3	8.735	VHL	2.956	DLA	-21.76	RAL	345.31	RAD	6637.4	VEL	11.351	PTH	6.40	VHP	2.880	DPA	-26.86	RAP	299.54	ECC	1.1438

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 37	2512.40	-8.02	66.95	194.10	137.06	17 1 29	1512.4	10.37	51.18
60.00	17 25 51	2336.24	-3.92	55.00	198.02	130.14	18 4 47	1336.2	12.12	36.96
70.00	18 49 51	2089.28	.16	38.06	201.11	124.15	19 24 41	1089.3	13.88	18.20
80.00	20 30 7	1775.52	3.52	18.34	203.21	119.67	20 59 42	775.5	15.34	355.21
90.00	22 6 52	1463.41	4.93	354.16	203.98	117.88	22 31 16	463.4	15.95	332.55
100.00	23 12 59	1249.99	3.52	337.70	203.21	119.67	23 33 49	250.0	15.34	316.58
110.00	23 49 18	1136.10	.16	326.98	201.11	124.15	24 8 14	136.1	13.88	307.12

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0590	TRA	.9578	TC3	-6.4128	BAU	.7504	SGT	4287.1	SGR	388.7	SG3	1671.1	ST	31.1	SR	5.5	SS	55.2
RDE	-.0327	RRA	.1434	RC3	-.4057	FAU	.24469	RRT	.9089	RRF	.9486	RTF	.9610	CRT	.9054	CRS	-.4309	CST	-.7639
FDE	1.1212	FRA	6.1331	FC-24.2511		BSP	6986	SGB	4304.7	R23	.1772	R13	.9615	LSA	60.7	MSA	18.8	SSA	.7
BDE	.0674	BRA	.9685	BC3	6.4256	FSP	2927	SG1	4301.6	SG2	161.5	THA	4.72	EL1	31.5	EL2	2.3	ALF	9.17

LAUNCH DATE MAY 14 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 28 1971

HELIOCENTRIC CONIC DISTANCE 534.544 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.246	GAL	-.74	AZL	91.23	HCA	170.45	SMA	185.39	ECC	.18495	INC	1.2260	V1	29.471
RP	218.15	LAP	-.20	LOP	43.01	VP	22.380	GAP	3.18	AZP	88.79	TAL	355.28	TAP	165.73	RCA	151.10	APO	219.68	V2	25.189
RC	173.829	GL	-13.49	GP	-4.85	ZAL	105.58	ZAP	72.96	ETS	177.77	ZAE	114.90	ETE	182.77	ZAC	97.37	ETC	272.63	LVI	-6.30

PLANETOCENTRIC CONIC

C3	8.768	VHL	2.961	DLA	-20.80	RAL	345.58	RAD	6637.4	VEL	11.352	PTH	6.41	VHP	2.896	DPA	-27.41	RAP	299.19	ECC	1.1443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 22	2533.54	-9.07	67.85	194.28	136.91	16 58 36	1533.5	9.32	52.09
60.00	17 21 4	2361.48	-5.03	56.21	198.14	130.04	18 0 26	1361.5	11.04	38.22
70.00	18 42 59	2120.65	-1.04	39.70	201.16	124.14	19 18 20	1120.6	12.75	19.94
80.00	20 20 44	1814.76	2.20	18.50	203.18	119.78	20 50 58	814.8	14.16	357.52
90.00	21 56 4	1507.25	3.53	356.62	203.92	118.08	22 21 11	507.3	14.73	335.19
100.00	23 3 35	1289.23	2.20	339.86	203.18	119.78	23 25 5	289.2	14.16	318.89
110.00	23 42 26	1167.47	-1.04	328.62	201.16	124.14	24 1 53	167.5	12.75	308.85

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0247	TRA	1.0205	TC3	-6.6405	BAU	.7803	SGT	4464.3	SGR	426.3	SG3	1651.6	ST	32.3	SR	5.3	SS	56.1
RDE	-.0223	RRA	.1560	RC3	-.4643	FAU	.24142	RRT	.9277	RRF	.9662	RTF	.9629	CRT	.9372	CRS	-.5679	CST	-.8096
FDE	1.2110	FRA	6.1234	FC-23.8364		BSP	7293	SGB	4484.6	R23	.1921	R13	.9636	LSA	62.6	MSA	17.5	SSA	.7
BDE	.0332	BRA	1.0324	BC3	6.6567	FSP	2878	SG1	4481.8	SG2	158.5	THA	5.07	EL1	32.7	EL2	1.8	ALF	8.79

LAUNCH DATE MAY 14 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 30 1971

HELIOCENTRIC CONIC DISTANCE 538.715 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.252	GAL	-.80	AZL	91.14	HCA	171.58	SMA	185.49	ECC	.18546	INC	1.1395	V1	29.471
RP	218.51	LAP	-.17	LOP	44.15	VP	22.344	GAP	3.03	AZP	88.87	TAL	354.89	TAP	166.48	RCA	151.09	APO	219.89	V2	25.149
RC	176.400	GL	-12.51	GP	-5.46	ZAL	106.25	ZAP	71.47	ETS	177.41	ZAE	113.20	ETE	182.86	ZAC	96.79	ETC	272.53	LVI	-5.60

PLANETOCENTRIC CONIC

C3	8.798	VHL	2.966	DLA	-19.67	RAL	345.77	RAD	6637.4	VEL	11.354	PTH	6.41	VHP	2.915	DPA	-28.08	RAP	298.89	ECC	1.1448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 8	2558.16	-10.29	68.91	194.39	136.71	16 54 47	1558.2	8.09	53.15
60.00	17 15 6	2390.73	-6.30	57.62	198.18	129.89	17 54 57	1390.7	9.78	39.67
70.00	18 34 43	2156.66	-2.41	41.58	201.12	124.08	19 10 40	1156.7	11.45	21.91
80.00	20 9 48	1859.09	.70	20.93	203.06	119.85	20 40 47	859.1	12.79	.10
90.00	21 43 42	1556.21	1.96	359.36	203.76	118.22	22 9 38	556.2	13.34	338.11
100.00	22 52 40	1333.56	.70	342.30	203.06	119.85	23 14 53	333.6	12.79	321.47
110.00	23 34 10	1203.47	-2.41	330.50	201.12	124.08	23 54 13	203.5	11.45	310.83

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0101	TRA	1.0723	TC3	-6.8965	BAU	.8137	SGT	4645.0	SGR	476.8	SG3	1629.3	ST	33.6	SR	5.4	SS	55.7
RDE	-.0122	RRA	.1701	RC3	-.5461	FAU	.24111	RRT	.9449	RRF	.9791	RTF	.9673	CRT	.9649	CRS	-.7024	CST	-.8547
FDE	1.2369	FRA	6.0063	FC-23.7269		BSP	7490	SGB	4669.4	R23	.1959	R13	.9679	LSA	63.3	MSA	15.7	SSA	.6
BDE	.0159	BRA	1.0857	BC3	6.9181	FSP	2732	SG1	4666.8	SG2	155.4	THA	5.55	EL1	34.0	EL2	1.4	ALF	8.82

LAUNCH DATE MAY 14 1971 FLIGHT TIME 232.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC — DISTANCE 542.879 — EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.258	GAL	-.86	AZL	91.03	HCA	172.72	SMA	185.60	ECC	.18600	INC	1.0257	V1	29.471
RP	218.88	LAP	-.13	LOP	45.28	VP	22.307	GAP	2.88	AZP	88.98	TAL	354.50	TAP	167.21	RCA	151.07	APO	220.12	V2	25.109
RC	178.981	GL	-11.27	GP	-6.25	ZAL	106.96	ZAP	70.04	ETS	176.96	ZAE	111.54	ETE	182.98	ZAC	96.02	ETC	272.44	LVI	-4.74

PLANETOCENTRIC CONIC

C3	8.821	VHL	2.970	DLA	-18.27	RAL	345.86	RAD	6637.4	VEL	11.355	PTH	6.41	VHP	2.937	DPA	-28.92	RAP	298.69	ECC	1.1452

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 31	2587.92	-11.76	70.21	194.39	136.44	16 49 38	1587.9	6.61	54.41
60.00	17 7 26	2425.91	-7.84	59.33	198.11	129.66	17 47 52	1425.9	8.26	41.39
70.00	18 24 26	2199.52	-4.04	43.82	200.96	123.94	19 1 6	1199.5	9.87	24.23
80.00	19 56 37	1911.03	-1.06	23.78	202.82	119.84	20 28 28	911.0	11.16	3.09
90.00	21 29 0	1612.99	.13	2.52	203.48	118.28	21 55 53	613.0	11.67	341.44
100.00	22 39 29	1385.50	-1.06	345.15	202.82	119.84	23 2 34	385.5	11.16	324.46
110.00	23 23 53	1246.34	-4.04	332.74	200.96	123.94	23 44 39	246.3	9.87	313.15

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	.0601	TRA	1.1274	TC3	-7.1356	BAU	.8449	SGT	4819.3	SGR	544.5	SG3	1601.4	ST	35.4	SR	5.9	SS	57.4
RDE	.0028	RRA	.1923	RC3	-.6384	FAU	.23596	RRT	.9538	RRF	.9881	RTF	.9674	CRT	.9894	CRS	-.8361	CST	-.8929
FDE	1.3761	FRA	5.9734	FC	-23.1574	BSP	7753	SGB	4850.0	R23	.2143	R13	.9681	LSA	66.2	MSA	14.1	SSA	.6
BDE	.0602	BRA	1.1437	BC3	7.1641	FSP	2691	SG1	4847.2	SG2	162.6	THA	6.16	EL1	35.9	EL2	.8	ALF	9.35

LAUNCH DATE MAY 14 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC — DISTANCE 547.040 — EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.265	GAL	-.93	AZL	90.88	HCA	173.85	SMA	185.71	ECC	.18658	INC	.8704	V1	29.471
RP	219.25	LAP	-.09	LOP	46.41	VP	22.271	GAP	2.73	AZP	89.13	TAL	354.09	TAP	167.94	RCA	151.06	APO	220.36	V2	25.068
RC	181.572	GL	-9.59	GP	-7.33	ZAL	107.69	ZAP	68.68	ETS	176.35	ZAE	109.89	ETE	183.17	ZAC	94.96	ETC	272.36	LVI	-3.64

PLANETOCENTRIC CONIC

C3	8.837	VHL	2.973	DLA	-16.48	RAL	345.78	RAD	6637.4	VEL	11.355	PTH	6.41	VHP	2.963	DPA	-30.02	RAP	298.58	ECC	1.1454

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 43	2625.48	-13.61	71.86	194.25	136.04	16 42 28	1625.5	4.73	56.00
60.00	16 57 10	2470.06	-9.75	61.49	197.88	129.30	17 38 20	1470.1	6.34	43.54
70.00	18 11 5	2252.74	-6.06	46.62	200.64	123.68	18 48 38	1252.7	7.89	27.08
80.00	19 39 59	1974.49	-3.21	27.27	202.40	119.70	20 12 54	974.5	9.11	6.69
90.00	21 10 45	1681.70	-2.09	6.36	203.02	118.21	21 38 46	681.7	9.59	345.42
100.00	22 22 51	1448.96	-3.21	348.63	202.40	119.70	22 47 0	449.0	9.11	328.06
110.00	23 10 32	1299.55	-6.06	335.54	200.64	123.68	23 32 11	299.6	7.89	316.00

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	.1241	TRA	1.1766	TC3	-7.3877	BAU	.8774	SGT	4994.2	SGR	639.8	SG3	1570.7	ST	38.0	SR	7.1	SS	59.3
RDE	.0219	RRA	.2226	RC3	-.7657	FAU	.23098	RRT	.9602	RRF	.9939	RTF	.9677	CRT	.9968	CRS	-.9271	CST	-.9316
FDE	1.5252	FRA	5.9049	FC	-22.6291	BSP	8012	SGB	5035.0	R23	.2275	R13	.9687	LSA	69.8	MSA	12.0	SSA	.6
BDE	.1260	BRA	1.1975	BC3	7.4273	FSP	2642	SG1	5031.8	SG2	177.3	THA	7.02	EL1	38.7	EL2	.6	ALF	10.50

LAUNCH DATE MAY 14 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC — DISTANCE 551.198 — EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.272	GAL	-.99	AZL	90.66	HCA	174.97	SMA	185.82	ECC	.18718	INC	.6459	V1	29.471
RP	219.62	LAP	-.06	LOP	47.54	VP	22.235	GAP	2.58	AZP	89.34	TAL	353.68	TAP	168.66	RCA	151.04	APO	220.60	V2	25.028
RC	184.172	GL	-7.19	GP	-8.86	ZAL	108.45	ZAP	67.41	ETS	175.50	ZAE	108.26	ETE	183.44	ZAC	93.44	ETC	272.29	LVI	-2.12

PLANETOCENTRIC CONIC

C3	8.844	VHL	2.974	DLA	-14.02	RAL	345.43	RAD	6637.4	VEL	11.356	PTH	6.41	VHP	2.995	DPA	-31.58	RAP	298.63	ECC	1.1455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 47 22	2676.12	-16.08	74.14	193.90	135.41	16 31 59	1676.1	2.19	58.12
60.00	16 42 39	2529.14	-12.28	64.43	197.43	128.69	17 24 48	1529.1	3.75	46.38
70.00	17 52 43	2323.11	-8.70	50.36	200.07	123.16	18 31 27	1323.1	5.24	30.60
80.00	19 17 43	2057.06	-5.98	31.63	201.73	119.31	19 52 0	1057.1	6.39	11.32
90.00	20 46 37	1770.28	-4.92	11.32	202.31	117.88	21 16 7	770.3	6.84	350.47
100.00	22 0 35	1531.53	-5.98	353.20	201.73	119.31	22 26 7	531.5	6.39	332.68
110.00	22 52 10	1369.93	-8.70	339.28	200.07	123.16	23 15 0	369.9	5.24	319.72

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	.2152	TRA	1.2181	TC3	-7.6439	BAU	.9107	SGT	5166.5	SGR	779.3	SG3	1534.2	ST	42.3	SR	9.3	SS	62.0
RDE	.0491	RRA	.2665	RC3	-.9485	FAU	.22532	RRT	.9647	RRF	.9973	RTF	.9683	CRT	.9974	CRS	-.9747	CST	-.9677
FDE	1.7133	FRA	5.7927	FC	-22.0569	BSP	8268	SGB	5225.0	R23	.2344	R13	.9697	LSA	75.1	MSA	9.0	SSA	.6
BDE	.2207	BRA	1.2469	BC3	7.7026	FSP	2565	SG1	5221.0	SG2	203.0	THA	8.29	EL1	43.3	EL2	.7	ALF	12.33

LAUNCH DATE MAY 14 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC — DISTANCE 555.351 — EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.279	GAL	-1.06	AZL	90.32	HCA	176.09	SMA	185.94	ECC	.18781	INC	.2511	V1	29.471
RP	219.99	LAP	-.02	LOP	48.66	VP	22.200	GAP	2.43	AZP	89.68	TAL	353.27	TAP	169.36	RCA	151.02	APO	220.86	V2	24.987
RC	186.781	GL	-3.46	GP	-11.24	ZAL	109.22	ZAP	66.30	ETS	174.20	ZAE	106.60	ETE	183.89	ZAC	91.08	ETC	272.24	LVI	.16

PLANETOCENTRIC CONIC

C3	8.857	VHL	2.976	DLA	-10.33	RAL	344.57	RAD	6637.4	VEL	11.356	PTH	6.41	VHP	3.041	DPA	-33.95	RAP	298.92	ECC	1.1458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 34	2751.40	-19.69	77.65	193.25	134.23	16 15 25	1751.4	-1.59	61.27
60.00	16 20 24	2616.20	-15.94	68.88	196.66	127.52	17 4 0	1616.2	-.08	50.54
70.00	17 25 16	2425.40	-12.46	55.90	199.16	122.06	18 5 43	1425.4	1.35	36.16
80.00	18 45 16	2175.08	-9.86	38.44	200.70	118.33	19 21 31	1175.1	2.43	17.84
90.00	20 11 51	1895.75	-8.86	18.43	201.23	116.96	20 43 27	895.8	2.85	357.53
100.00	21 28 8	1649.56	-9.86	359.81	200.70	118.33	21 55 37	649.6	2.43	339.20
110.00	22 24 44	1472.22	-12.46	344.82	199.16	122.06	22 49 17	472.2	1.35	325.08

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	.3381	TRA	1.2249	TC3	-7.9739	BAU	.9556	SGT	5357.0	SGR	999.1	SG3	1486.7	ST	49.0	SR	13.2	SS	65.2
RDE	.0914	RRA	.3316	RC3	-1.2418	FAU	.22018	RRT	.9674	RRF	.9990	RTF	.9685	CRT	.9981	CRS	-.9933	CST	-.9912
FDE	1.9306	FRA	5.5556	FC	-21.5203	BSP	8307	SGB	5449.3	R23	.2372	R13	.9705	LSA	82.4	MSA	5.3	SSA	.7
BDE	.3502	BRA	1.2690	BC3	8.0701	FSP	2411	SG1	5443.6	SG2	248.9	THA	10.25	EL1	50.7	EL2	.8	ALF	15.01

LAUNCH DATE MAY 14 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 559.500 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.286	GAL	-1.13	AZL	89.70	HCA	177.21	SMA	186.06	ECC	.18847	INC	.1931
RP	220.36	LAP	.01	LOP	49.78	VP	22.164	GAP	2.29	AZP	90.29	TAL	352.85	TAP	170.06	RCA	151.00	APO	221.13
RC	189.399	GL	3.18	GP	-15.39	ZAL	109.89	ZAP	65.54	ETS	171.99	ZAE	104.85	ETE	184.69	ZAC	86.94	ETC	272.19

V1	29.471																		
V2	24.948																		
LVI	4.07																		

PLANETOCENTRIC CONIC

C3	8.969	VHL	2.995	DLA	-3.93	RAL	342.64	RAD	6637.5	VEL	11.361	PTH	6.41	VHP	3.123	DPA	-38.05	RAP	299.74

ECC	1.1476																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 57 58	2882.03	-25.75	84.16	192.39	131.50	15 46 0	1882.0	-8.14	66.77
60.00	15 41 43	2765.65	-21.95	76.94	195.65	124.69	16 27 49	1765.6	-6.64	57.72
70.00	16 38 36	2598.37	-18.48	69.68	197.96	119.25	17 21 55	1598.4	-5.24	45.20
80.00	17 51 8	2371.32	-15.94	49.83	199.34	115.59	18 30 39	1371.3	-4.20	28.62
90.00	19 14 24	2102.61	-14.98	30.54	199.80	114.27	19 49 27	1102.6	-3.81	9.08
100.00	20 34 0	1845.79	-15.94	11.20	199.34	115.59	21 4 45	845.8	-4.20	349.99
110.00	21 38 3	1645.19	-18.48	354.60	197.96	119.25	22 5 28	645.2	-5.24	334.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5867	TRA	1.2043	TC3	-8.1662	BAU	1.0005	SGT	5524.4	SGR	1378.0	SG3	1400.6	ST	66.4	SR	21.8	SS	72.9
RDE	.1845	RRA	.4432	RC3	-1.7123	FAU	.20781	RRT	.9689	RRF	.9997	RTF	.9682	CRT	.9966	CRS	-.9991	CST	-.9986
FDE	2.3520	FRA	5.1672	FC	-20.0579	BSP	6547	SGB	5693.6	R23	.2356	R13	.9716	LSA	100.9	MSA	2.8	SSA	.7
BDE	.6150	BRA	1.2833	BC3	8.3438	FSP	2248	SG1	5684.0	SG2	331.5	THA	13.63	EL1	69.8	EL2	1.7	ALF	18.16

LAUNCH DATE MAY 14 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 563.644 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.294	GAL	-1.20	AZL	88.28	HCA	178.32	SMA	186.19	ECC	.18915	INC	1.7041
RP	220.74	LAP	.05	LOP	50.89	VP	22.129	GAP	2.14	AZP	91.72	TAL	352.42	TAP	170.75	RCA	150.97	APO	221.41
RC	192.025	GL	17.94	GP	-24.25	ZAL	109.64	ZAP	66.03	ETS	167.58	ZAE	102.72	ETE	186.36	ZAC	78.09	ETC	272.23

V1	29.471																		
V2	24.904																		
LVI	12.27																		

PLANETOCENTRIC CONIC

C3	9.925	VHL	3.150	DLA	9.99	RAL	337.68	RAD	6638.0	VEL	11.403	PTH	6.45	VHP	3.354	DPA	-46.70	RAP	302.33

ECC	1.1633																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 46 52	3179.82	-37.90	102.12	193.77	121.25	14 39 52	2179.8	-22.57	80.34
60.00	14 15 35	3103.42	-33.39	98.15	196.68	114.02	15 7 18	2103.4	-20.80	75.02
70.00	14 55 36	2985.67	-29.33	90.45	198.52	108.35	15 45 22	1985.7	-19.14	66.58
80.00	15 52 38	2807.02	-26.37	77.89	199.51	104.54	16 39 25	1807.0	-17.90	53.68
90.00	17 9 6	2560.22	-25.25	60.06	199.82	103.17	17 51 46	1560.2	-17.43	35.76
100.00	18 35 29	2281.50	-26.37	39.26	199.51	104.54	19 13 31	1281.5	-17.90	15.05
110.00	19 55 2	2032.49	-29.33	19.37	198.52	108.35	20 28 55	1032.5	-19.14	355.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2075	TRA	1.0637	TC3	-7.6838	BAU	1.0714	SGT	5667.5	SGR	2158.8	SG3	1188.2	ST	113.9	SR	47.7	SS	89.7
RDE	.4856	RRA	.6490	RC3	-2.4811	FAU	.17886	RRT	.9695	RRF	.9999	RTF	.9667	CRT	.9922	CRS	-1.0000	CST	-.9925
FDE	3.1509	FRA	4.1826	FC	-15.6015	BSP	8949	SGB	6064.7	R23	.2261	R13	.9741	LSA	152.3	MSA	9.4	SSA	.1
BDE	1.3015	BRA	1.2461	BC3	8.0744	FSP	1873	SG1	6044.5	SG2	495.8	THA	20.41	EL1	123.4	EL2	5.5	ALF	22.62

LAUNCH DATE MAY 14 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 567.775 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.302	GAL	-1.27	AZL	81.32	HCA	179.43	SMA	186.32	ECC	.18985	INC	8.6487
RP	221.12	LAP	.09	LOP	52.00	VP	22.093	GAP	2.00	AZP	98.68	TAL	352.00	TAP	171.43	RCA	150.95	APO	221.70
RC	194.659	GL	61.09	GP	-30.10	ZAL	101.38	ZAP	74.21	ETS	159.09	ZAE	99.04	ETE	191.83	ZAC	52.17	ETC	273.36

V1	29.471																		
V2	24.863																		
LVI	38.22																		

PLANETOCENTRIC CONIC

C3	31.019	VHL	5.569	DLA	49.35	RAL	316.23	RAD	6647.4	VEL	12.286	PTH	7.22	VHP	5.260	DPA	-70.41	RAP	324.00

ECC	1.5105																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.70	6 51 33	4582.58	-21.91	212.64	206.04	44.60	8 7 56	3582.6	-38.13	191.73
47.70	6 51 33	4582.58	-21.91	212.64	206.04	44.60	8 7 56	3582.6	-38.13	191.73
47.70	6 51 33	4582.58	-21.91	212.64	206.04	44.60	8 7 56	3582.6	-38.13	191.73
47.70	6 51 33	4582.58	-21.91	212.64	206.04	44.60	8 7 56	3582.6	-38.13	191.73
47.70	6 51 33	4582.58	-21.91	212.64	206.04	44.60	8 7 56	3582.6	-38.13	191.73
47.70	6 51 33	4582.58	-21.91	212.64	206.04	44.60	8 7 56	3582.6	-38.13	191.73
47.70	6 51 33	4582.58	-21.91	212.64	206.04	44.60	8 7 56	3582.6	-38.13	191.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.9185	TRA	-.6319	TC3	-3.6274	BAU	1.8160	SGT	5794.2	SGR	3999.9	SG3	362.3	ST	202.2	SR	145.0	SS	68.9
RDE	2.8162	RRA	.2345	RC3	-2.4534	FAU	.09107	RRT	.9644	RRF	.9981	RTF	.5463	CRT	.9937	CRS	-.9997	CST	-.9905
FDE	2.9410	FRA	.4083	FC3	-2.5419	BSP	951	SGB	7040.7	R23	.2415	R13	.9704	LSA	257.8	MSA	14.8	SSA	.0
BDE	4.8255	BRA	.6740	BC3	4.3792	FSP	76	SG1	6985.9	SG2	877.0	THA	34.27	EL1	248.5	EL2	13.2	ALF	35.59

LAUNCH DATE MAY 14 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 576.063 EARTH TO MARS

RL	151.18	LAL	.00	LOL	232.57	VL	32.318	GAL	-1.43	AZL	95.47	HCA	181.65	SMA	186.60	ECC	.19135	INC	5.4525
RP	221.88	LAP	.16	LOP	54.21	VP	22.023	GAP	1.71	AZP	84.54	TAL	351.09	TAP	172.75	RCA	150.89	APO	222.30
RC	199.945	GL	-46.28	GP	23.96	ZAL	106.17	ZAP	62.84	ETS	192.33	ZAE	100.04	ETE	176.03	ZAC	126.23	ETC	272.86

V1	29.471																		
V2	24.780																		
LVI	-32.23																		

PLANETOCENTRIC CONIC

C3	18.129	VHL	4.258	DLA	-46.72	RAL	11.59	RAD	6642.0	VEL	11.754	PTH	6.78	VHP	3.423	DPA	.75	RAP	292.64

ECC	1.2984																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 42 36	1928.18	20.89	41.58	247.26	133.77	22 14 44	928.2	36.61	20.49
51.12	22 41 59	1779.09	26.86	33.15	253.09	129.79	23 11 38	779.1	40.60	9.08
51.12	22 41 59	1779.09	26.86	33.15	253.09	129.79	23 11 38	779.1	40.60	9.08
51.12	22 41 59	1779.09	26.86	33.15	253.09	129.79	23 11 38	779.1	40.60	9.08
51.12	22 41 59	1779.09	26.86	33.15	253.09	129.79	23 11 38	779.1	40.60	9.08
51.12	22 41 59	1779.09	26.86	33.15	253.09	129.79	23 11 38	779.1	40.60	9.08
51.12	22 41 59	1779.09	26.86	33.15	253.09	129.79	23 11 38	779.1	40.60	9.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8160	TRA	2.1433	TC3	-4.9400	BAU	1.2565	SGT	6050.0	SGR	2216.1	SG3	1093.6	ST	83.9	SR	26.6	SS	46.4
RDE	-.0324	RRA	-.8992	RC3	1.5726	FAU	.18581	RRT	-.9705	RRF	-.9992	RTF	.9609	CRT	-.6997	CRS	.9879	CST	-.5804
FDE	.5489	FRA	5.1592	FC3	-8.8731	BSP	8232	SGB	6443.1	R23	.2494	R13	-.9683	LSA	91.6	MSA	38.8	SSA	.1
BDE	.8166	BRA	2.3242	BC3	5.1842	FSP	1617	SG1	6423.5	SG2	503.1	THA	160.30	EL1	86.0	EL2	18.6	ALF	166.85

LAUNCH DATE MAY 14 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC DISTANCE 580.191 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.326 GAL -1.50 AZL 94.02 HCA 182.75 SMA 186.74 ECC .19213 INC 4.0139 V1 29.471
RP 222.27 LAP .19 LOP 55.31 VP 21.989 GAP 1.56 AZP 85.99 TAL 350.65 TAP 173.40 RCA 150.86 APO 222.62 V2 24.738
RC 202.595 GL -36.80 GP 14.92 ZAL 108.97 ZAP 99.84 ETS 188.10 ZAE 98.88 ETE 178.11 ZAC 117.23 ETC 272.48 LVI -23.90

PLANETOCENTRIC CONIC

C3 14.297 VHL 3.781 DLA -38.60 RAL 4.91 RAD 6640.2 VEL 11.591 PTH 6.63 VHP 3.238 DPA -8.22 RAP 293.75 ECC 1.2353

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 19 19	2209.44	7.17	54.22	225.15	137.16	19 56 9	1209.4	24.87	37.00
60.00	21 32 18	1854.35	16.92	31.36	234.15	127.14	22 3 12	854.4	30.52	9.59
62.56	23 2 58	1595.58	24.69	15.29	239.73	120.66	23 29 34	595.6	35.06	350.17
62.56	23 2 58	1595.58	24.69	15.29	239.73	120.66	23 29 34	595.6	35.06	350.17
62.56	23 2 58	1595.58	24.69	15.29	239.73	120.66	23 29 34	595.6	35.06	350.17
62.56	23 2 58	1595.58	24.69	15.29	239.73	120.66	23 29 34	595.6	35.06	350.17
62.56	23 2 58	1595.58	24.69	15.29	239.73	120.66	23 29 34	595.6	35.06	350.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3252 TRA 2.2076 TC3-5.9137 BAU 1.1515 SGT 6241.3 SGR 1446.5 SG3 1258.8 ST 75.8 SR 17.5 SS 51.4
RDE -.0276 RRA -.5955 RC3 1.1508 FAU .19006 RRT -.9748 RRF -.9988 RTF .9657 CRT -.7821 CRS .9820 CST -.6503
FDE .7394 FRA 5.9981 FC-11.5092 BSP 10037 SGB 6406.8 R23 .2470 R13 -.9685 LSA 86.1 MSA 35.7 SSA .1
BDE .5260 BRA 2.2866 BC3 6.0246 FSP 2149 SG1 6399.0 SG2 314.5 THA 167.24 EL1 77.1 EL2 10.7 ALF 169.57

LAUNCH DATE MAY 14 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 584.316 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.335 GAL -1.58 AZL 93.40 HCA 183.85 SMA 186.88 ECC .19293 INC 3.3943 V1 29.471
RP 222.65 LAP .23 LOP 56.40 VP 21.954 GAP 1.42 AZP 86.61 TAL 350.20 TAP 174.05 RCA 150.83 APO 222.94 V2 24.696
RC 205.250 GL -31.95 GP 10.72 ZAL 110.57 ZAP 98.15 ETS 185.95 ZAE 97.58 ETE 179.04 ZAC 113.03 ETC 272.37 LVI -20.01

PLANETOCENTRIC CONIC

C3 13.116 VHL 3.622 DLA -34.14 RAL 2.48 RAD 6639.6 VEL 11.541 PTH 6.59 VHP 3.204 DPA -12.39 RAP 294.34 ECC 1.2159

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 35 31	2310.96	2.08	58.49	218.87	137.54	19 14 2	1311.0	20.15	42.05
60.00	20 14 7	2048.46	8.70	41.17	225.17	129.51	20 48 15	1048.5	23.76	21.56
70.00	23 26 35	1478.34	22.01	4.28	234.15	116.80	23 51 14	478.3	31.09	339.40
70.02	23 33 39	1456.82	22.65	2.94	234.49	116.26	23 57 56	456.8	31.43	337.82
70.02	23 33 39	1456.82	22.65	2.94	234.49	116.26	23 57 56	456.8	31.43	337.82
70.02	23 33 39	1456.82	22.65	2.94	234.49	116.26	23 57 56	456.8	31.43	337.82
110.00	4 29 58	5813.19	22.01	271.10	234.15	116.80	6 6 51	4813.2	31.09	246.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3905 TRA 2.2217 TC3-6.5556 BAU 1.1605 SGT 6400.3 SGR 1067.4 SG3 1291.1 ST 71.2 SR 12.7 SS 52.0
RDE -.0155 RRA -.4393 RC3 .9091 FAU .19323 RRT -.9775 RRF -.9978 RTF .9681 CRT -.8541 CRS .9643 CST -.6862
FDE .8477 FRA 6.1046 FC-12.7547 BSP 10208 SGB 6488.7 R23 .2383 R13 -.9695 LSA 82.7 MSA 33.1 SSA .1
BDE .3908 BRA 2.2647 BC3 6.6183 FSP 2176 SG1 6484.9 SG2 222.4 THA 170.73 EL1 72.0 EL2 6.5 ALF 171.26

LAUNCH DATE MAY 14 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 588.434 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.343 GAL -1.66 AZL 93.05 HCA 184.94 SMA 187.03 ECC .19376 INC 3.0513 V1 29.471
RP 223.04 LAP .26 LOP 57.50 VP 21.920 GAP 1.27 AZP 86.96 TAL 349.75 TAP 174.68 RCA 150.79 APO 223.27 V2 24.654
RC 207.907 GL -29.00 GP 8.32 ZAL 111.76 ZAP 96.84 ETS 184.68 ZAE 96.30 ETE 179.55 ZAC 110.63 ETC 272.32 LVI -17.80

PLANETOCENTRIC CONIC

C3 12.630 VHL 3.554 DLA -31.28 RAL 1.42 RAD 6639.4 VEL 11.520 PTH 6.57 VHP 3.205 DPA -14.76 RAP 294.74 ECC 1.2079

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 13 3	2373.25	-1.05	61.09	216.10	137.57	18 52 36	1373.2	17.18	44.98
60.00	19 40 36	2140.25	4.70	45.62	221.61	130.07	20 16 17	1140.2	20.21	26.72
70.00	21 43 55	1777.31	11.89	21.53	226.91	122.26	22 13 33	777.3	24.04	359.74
76.04	0 12 30	1327.29	21.09	352.23	231.99	113.65	0 34 37	327.3	28.97	327.22
76.04	0 12 30	1327.29	21.09	352.23	231.99	113.65	0 34 37	327.3	28.97	327.22
76.04	0 12 30	1327.29	21.09	352.23	231.99	113.65	0 34 37	327.3	28.97	327.22
110.00	2 47 18	6112.17	11.89	288.35	226.91	122.26	4 29 10	5112.2	24.04	266.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2692 TRA 2.2915 TC3-6.8786 BAU 1.1679 SGT 6540.5 SGR 850.2 SG3 1290.9 ST 68.8 SR 10.2 SS 53.9
RDE -.0103 RRA -.3583 RC3 .7251 FAU .18823 RRT -.9773 RRF -.9956 RTF .9679 CRT -.9196 CRS .9346 CST -.7205
FDE 1.0388 FRA 6.1892 FC-12.9027 BSP 10701 SGB 6595.5 R23 .2312 R13 -.9687 LSA 82.1 MSA 31.6 SSA .2
BDE .2694 BRA 2.3193 BC3 6.9167 FSP 2239 SG1 6593.1 SG2 178.5 THA 172.75 EL1 69.4 EL2 4.0 ALF 172.21

LAUNCH DATE MAY 14 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC DISTANCE 592.546 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.352 GAL -1.74 AZL 92.84 HCA 186.02 SMA 187.18 ECC .19460 INC 2.8329 V1 29.471
RP 223.42 LAP .30 LOP 58.58 VP 21.886 GAP 1.13 AZP 87.18 TAL 349.29 TAP 175.31 RCA 150.75 APO 223.61 V2 24.612
RC 210.566 GL -26.99 GP 6.77 ZAL 112.75 ZAP 95.69 ETS 183.85 ZAE 95.04 ETE 179.87 ZAC 109.09 ETC 272.31 LVI -16.40

PLANETOCENTRIC CONIC

C3 12.420 VHL 3.524 DLA -29.23 RAL .96 RAD 6639.3 VEL 11.511 PTH 6.56 VHP 3.219 DPA -16.27 RAP 295.05 ECC 1.2044

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 59 24	2417.84	-3.28	62.95	214.73	137.49	18 39 42	1417.8	15.02	47.01
60.00	19 20 59	2200.79	2.04	48.52	219.84	130.26	19 57 40	1200.8	17.77	29.98
70.00	21 10 13	1879.50	8.12	27.04	224.40	123.29	21 41 33	879.5	20.96	6.07
80.00	23 44 29	1396.13	15.70	354.77	228.78	115.73	24 7 45	396.1	24.95	331.19
82.27	0 57 21	1175.13	19.87	340.34	230.71	111.89	1 16 56	175.1	27.15	315.45
100.00	2 31 17	6158.64	15.70	294.04	228.78	115.73	4 13 55	5158.6	24.95	270.47
110.00	2 13 35	6214.36	8.12	293.86	224.40	123.29	3 57 10	5214.4	20.96	272.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1715 TRA 2.3735 TC3-7.0876 BAU 1.1810 SGT 6677.4 SGR 710.9 SG3 1278.4 ST 68.2 SR 8.6 SS 55.8
RDE -.0039 RRA -.3084 RC3 .5941 FAU .18198 RRT -.9754 RRF -.9919 RTF .9667 CRT -.9700 CRS .8884 CST -.7516
FDE 1.2133 FRA 6.2367 FC-12.6846 BSP 11155 SGB 6715.2 R23 .2197 R13 -.9673 LSA 83.2 MSA 30.4 SSA .2
BDE .1715 BRA 2.3935 BC3 7.1125 FSP 2281 SG1 6713.4 SG2 155.9 THA 174.07 EL1 68.7 EL2 2.1 ALF 172.98

LAUNCH DATE MAY 14 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 596.655 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.361 GAL -1.82 AZL 92.68 HCA 187.11 SMA 187.33 ECC .19547 INC 2.6825 V1 29.471
RP 223.81 LAP .33 LOP 59.67 VP 21.852 GAP .99 AZP 87.34 TAL 348.82 TAP 175.93 RCA 150.71 APO 223.95 V2 24.571
RC 213.227 GL -25.53 GP 5.70 ZAL 113.64 ZAP 54.63 ETS 183.27 ZAE 93.81 ETE 180.08 ZAC 108.01 ETC 272.32 LVI -15.44

PLANETOCENTRIC CONIC

C3 12.348 VHL 3.514 DLA -27.65 RAL .83 RAD 6639.2 VEL 11.508 PTH 6.56 VHP 3.238 DPA -17.32 RAP 295.32 ECC 1.2032

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 50 18	2452.73	-5.03	64.42	214.06	137.37	18 31 10	1452.7	13.31	48.57
60.00	19 7 58	2246.13	.04	50.69	218.94	130.30	19 45 24	1246.1	15.91	32.36
70.00	20 49 42	1946.97	5.58	30.61	223.11	123.75	21 22 9	947.0	18.77	10.08
80.00	22 59 9	1541.72	11.22	3.25	226.51	117.85	23 24 50	541.7	21.72	340.79
90.00	1 8 25	1137.52	14.80	335.32	228.31	114.37	1 27 23	137.5	23.59	311.74
100.00	1 45 56	1016.19	11.22	324.62	226.51	117.85	2 2 53	16.2	21.72	302.16
110.00	1 53 4	6281.82	5.58	297.44	223.11	123.75	3 37 46	5281.8	18.77	276.91

DIFFERENTIAL CORRECTIONS

TDE -.0889 TRA 2.4624 TC3-7.2356 BAU 1.1973
RDE .0043 RRA -.2742 RC3 .5006 FAU .17705
FDE 1.3328 FRA 6.2388 FC-12.4129 BSP 11578
BDE .0890 BRA 2.4776 BC3 7.2529 FSP 2275

MID-COURSE EXECUTION ACCURACY

SGT 6813.6 SGR 615.3 SG3 1260.1
RRT -.9727 RRF -.9863 RTF .9671
SGB 6841.4 R23 .1947 R13 -.9674
SG1 6839.9 SG2 142.3 THA 174.98

ORBIT DETERMINATION ACCURACY

ST 68.8 SR 7.6 SS 57.1
CRT -.9973 CRS .8211 CST -.7851
LSA 85.0 MSA 28.8 SSA .3
EL1 69.2 EL2 .6 ALF 173.71

LAUNCH DATE MAY 14 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 29 1972

HELIOCENTRIC CONIC DISTANCE 600.756 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.370 GAL -1.90 AZL 92.57 HCA 188.19 SMA 187.49 ECC .19636 INC 2.5707 V1 29.471
RP 224.20 LAP .37 LOP 60.75 VP 21.818 GAP .84 AZP 87.45 TAL 348.36 TAP 176.54 RCA 150.67 APO 224.30 V2 24.529
RC 215.890 GL -24.39 GP 4.90 ZAL 114.47 ZAP 53.63 ETS 182.84 ZAE 92.61 ETE 180.23 ZAC 107.21 ETC 272.33 LVI -14.76

PLANETOCENTRIC CONIC

C3 12.357 VHL 3.515 DLA -26.37 RAL .88 RAD 6639.2 VEL 11.508 PTH 6.56 VHP 3.261 DPA -18.08 RAP 295.59 ECC 1.2034

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 43 50	2481.81	-6.49	65.65	213.79	137.24	18 25 12	1481.8	11.88	49.85
60.00	18 58 39	2282.84	-1.57	52.44	218.50	130.28	19 36 41	1282.8	14.37	34.25
70.00	20 35 28	1998.17	3.64	33.30	222.45	123.98	21 8 46	998.2	17.05	13.05
80.00	22 34 42	1624.94	8.53	7.97	225.45	118.72	23 1 47	624.9	19.59	346.06
90.00	0 29 39	1266.91	11.04	342.95	226.76	116.20	0 50 46	266.9	20.89	320.26
100.00	1 21 30	1099.41	8.53	329.34	225.45	118.72	1 39 49	99.4	19.59	307.42
110.00	1 38 50	1044.99	3.64	322.22	222.45	123.98	1 56 15	45.0	17.05	301.97

DIFFERENTIAL CORRECTIONS

TDE -.0203 TRA 2.5508 TC3-7.3592 BAU 1.2177
RDE .0121 RRA -.2508 RC3 .4271 FAU .17111
FDE 1.4555 FRA 6.2471 FC-11.9885 BSP 11916
BDE .0237 BRA 2.5631 BC3 7.3715 FSP 2281

MID-COURSE EXECUTION ACCURACY

SGT 6950.0 SGR 546.5 SG3 1239.6
RRT -.9665 RRF -.9781 RTF .9655
SGB 6971.5 R23 .1736 R13 -.9657
SG1 6970.0 SG2 139.8 THA 175.65

ORBIT DETERMINATION ACCURACY

ST 70.1 SR 6.9 SS 58.6
CRT -.9919 CRS .7319 CST -.8073
LSA 87.2 MSA 28.0 SSA .4
EL1 70.4 EL2 .9 ALF 174.40

LAUNCH DATE MAY 14 1971 FLIGHT TIME 262.00 ARRIVAL DATE JAN 31 1972

HELIOCENTRIC CONIC DISTANCE 604.858 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.379 GAL -1.99 AZL 92.49 HCA 189.27 SMA 187.64 ECC .19726 INC 2.4852 V1 29.471
RP 224.59 LAP .40 LOP 61.82 VP 21.785 GAP .70 AZP 87.55 TAL 347.89 TAP 177.15 RCA 150.63 APO 224.66 V2 24.487
RC 218.554 GL -23.48 GP 4.30 ZAL 115.26 ZAP 52.67 ETS 182.51 ZAE 91.43 ETE 180.35 ZAC 106.60 ETC 272.36 LVI -14.25

PLANETOCENTRIC CONIC

C3 12.415 VHL 3.524 DLA -25.28 RAL 1.05 RAD 6639.3 VEL 11.510 PTH 6.56 VHP 3.286 DPA -18.66 RAP 295.84 ECC 1.2043

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 39 3	2506.99	-7.75	66.72	213.76	137.09	18 20 50	1507.0	10.64	50.95
60.00	18 51 38	2313.98	-2.94	53.93	218.36	130.21	19 30 11	1314.0	13.06	35.84
70.00	20 24 52	2039.86	2.05	35.48	222.14	124.10	20 58 51	1039.9	15.62	15.43
80.00	22 17 59	1685.82	6.53	11.37	224.91	119.20	22 46 5	685.8	17.93	349.81
90.00	0 7 23	1345.67	8.63	347.49	226.04	117.03	0 29 48	345.7	19.02	325.28
100.00	1 4 46	1160.29	6.53	332.74	224.91	119.20	1 24 7	160.3	17.93	311.18
110.00	1 28 14	1086.67	2.05	324.40	222.14	124.10	1 46 21	86.7	15.62	304.35

DIFFERENTIAL CORRECTIONS

TDE .0218 TRA 2.6218 TC3-7.5186 BAU 1.2495
RDE .0229 RRA -.2311 RC3 .3781 FAU .17009
FDE 1.4621 FRA 6.1517 FC-11.8604 BSP 11997
BDE .0316 BRA 2.6320 BC3 7.5281 FSP 2179

MID-COURSE EXECUTION ACCURACY

SGT 7092.5 SGR 495.1 SG3 1215.4
RRT -.9597 RRF -.9672 RTF .9675
SGB 7109.8 R23 .1366 R13 -.9676
SG1 7108.4 SG2 138.8 THA 176.17

ORBIT DETERMINATION ACCURACY

ST 71.2 SR 6.5 SS 58.1
CRT -.9499 CRS .6140 CST -.8274
LSA 88.2 MSA 26.6 SSA .4
EL1 71.5 EL2 2.0 ALF 175.02

LAUNCH DATE MAY 14 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 2 1972

HELIOCENTRIC CONIC DISTANCE 608.951 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.388 GAL -2.07 AZL 92.42 HCA 190.34 SMA 187.80 ECC .19819 INC 2.4182 V1 29.471
RP 224.98 LAP .43 LOP 62.90 VP 21.751 GAP .55 AZP 87.62 TAL 347.42 TAP 177.75 RCA 150.58 APO 225.02 V2 24.445
RC 221.219 GL -22.72 GP 3.82 ZAL 116.03 ZAP 51.75 ETS 182.24 ZAE 90.28 ETE 180.43 ZAC 106.11 ETC 272.40 LVI -13.87

PLANETOCENTRIC CONIC

C3 12.511 VHL 3.537 DLA -24.32 RAL 1.31 RAD 6639.3 VEL 11.515 PTH 6.56 VHP 3.311 DPA -19.10 RAP 296.11 ECC 1.2059

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 25	2529.58	-8.87	67.68	213.91	136.94	18 17 34	1529.6	9.52	51.92
60.00	18 46 8	2341.47	-4.15	55.25	218.42	130.12	19 25 10	1341.5	11.89	37.22
70.00	20 16 34	2075.61	.68	37.35	222.08	124.15	20 51 10	1075.6	14.36	17.44
80.00	22 5 25	1734.98	4.89	14.10	224.69	119.49	22 34 19	735.0	16.53	352.79
90.00	23 47 39	1405.24	6.77	350.68	225.72	117.52	24 11 4	405.2	17.51	328.99
100.00	0 52 12	1209.45	4.89	335.47	224.69	119.49	1 12 22	209.4	16.53	314.16
110.00	1 19 56	1122.43	.68	326.27	222.08	124.15	1 38 39	122.4	14.36	306.36

DIFFERENTIAL CORRECTIONS

TDE .0807 TRA 2.7170 TC3-7.5957 BAU 1.2716
RDE .0311 RRA -.2186 RC3 .3314 FAU .16544
FDE 1.5378 FRA 6.1270 FC-11.4483 BSP 12297
BDE .0865 BRA 2.7257 BC3 7.6029 FSP 2146

MID-COURSE EXECUTION ACCURACY

SGT 7226.1 SGR 456.7 SG3 1192.3
RRT -.9486 RRF -.9531 RTF .9672
SGB 7240.5 R23 .1114 R13 -.9674
SG1 7239.1 SG2 144.3 THA 176.57

ORBIT DETERMINATION ACCURACY

ST 73.2 SR 6.4 SS 58.9
CRT -.8781 CRS .4913 CST -.8464
LSA 90.6 MSA 25.7 SSA .5
EL1 73.4 EL2 3.0 ALF 175.63

LAUNCH DATE MAY 14 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 4 1972

HELIOCENTRIC CONIC DISTANCE 613.039 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.398 GAL -2.16 AZL 92.36 HCA 191.41 SMA 187.97 ECC .19914 INC 2.3632 V1 29.471
RP 225.37 LAP .47 LOP 63.97 VP 21.718 GAP .41 AZP 87.68 TAL 346.94 TAP 178.35 RCA 150.53 APO 225.40 V2 24.403
RC 223.884 GL -22.07 GP 3.43 ZAL 116.77 ZAP 50.86 ETS 182.03 ZAE 89.16 ETE 180.50 ZAC 105.71 ETC 272.44 LVI -13.59

PLANETOCENTRIC CONIC

C3 12.633 VHL 3.554 DLA -23.47 RAL 1.62 RAD 6639.4 VEL 11.520 PTH 6.57 VHP 3.338 DPA -19.45 RAP 296.39 ECC 1.2079

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 32 34	2550.28	-9.90	68.57	214.17	136.78	18 15 4	1550.3	8.49	52.81
60.00	18 41 44	2366.34	-5.24	56.45	218.62	130.02	19 21 10	1366.3	10.83	38.46
70.00	20 9 51	2107.27	-.53	39.00	222.18	124.15	20 44 59	1107.3	13.23	19.20
80.00	21 55 27	1776.80	3.48	16.41	224.68	119.67	22 25 4	776.8	15.30	355.28
90.00	23 35 29	1454.15	5.23	353.64	225.64	117.83	23 59 43	454.2	16.20	331.99
100.00	0 42 15	1251.27	3.48	337.78	224.68	119.67	1 3 6	251.3	15.30	316.65
110.00	1 13 14	1154.09	-.53	327.92	222.18	124.15	1 32 28	154.1	13.23	308.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1295 TRA 2.8081 TC3-7.6776 BAU 1.2976 SGT 7360.9 SGR 427.4 SG3 1168.6 ST 75.2 SR 6.4 SS 59.3
RDE .0398 RRA -.2090 RC3 .2938 FAU .16159 RRT -.9342 RRF -.9358 RTF .9671 CRT -.7855 CRS .3641 CST -.8609
FDE 1.5877 FRA 6.0868 FC-11.0733 BSP 12518 SGB 7373.3 R23 .0893 R13 -.9672 LSA 92.7 MSA 25.0 SSA .5
BDE .1355 BRA 2.8159 BC3 7.6832 FSP 2101 SG1 7371.7 SG2 152.2 THA 176.89 EL1 75.4 EL2 3.9 ALF 176.18

LAUNCH DATE MAY 14 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 6 1972

HELIOCENTRIC CONIC DISTANCE 617.121 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.407 GAL -2.25 AZL 92.32 HCA 192.47 SMA 188.13 ECC .20010 INC 2.3176 V1 29.471
RP 225.76 LAP .50 LOP 65.03 VP 21.685 GAP .27 AZP 87.74 TAL 346.46 TAP 178.94 RCA 150.48 APO 225.77 V2 24.361
RC 226.550 GL -21.50 GP 3.11 ZAL 117.50 ZAP 50.01 ETS 181.85 ZAE 88.06 ETE 180.55 ZAC 105.38 ETC 272.50 LVI -13.38

PLANETOCENTRIC CONIC

C3 12.777 VHL 3.574 DLA -22.69 RAL 1.97 RAD 6639.4 VEL 11.526 PTH 6.57 VHP 3.365 DPA -19.73 RAP 296.68 ECC 1.2103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 30 19	2569.60	-10.86	69.41	214.53	136.61	18 13 8	1569.6	7.52	53.64
60.00	18 38 6	2389.31	-6.24	57.55	218.91	129.90	19 17 56	1389.3	9.84	39.60
70.00	20 4 17	2135.99	-1.62	40.50	222.40	124.12	20 39 53	1136.0	12.20	20.78
80.00	21 47 16	1813.66	2.24	18.43	224.81	119.78	22 17 30	813.7	14.19	357.46
90.00	23 25 39	1496.30	3.88	356.00	225.72	118.03	23 50 36	496.3	15.04	334.54
100.00	0 34 4	1288.13	2.24	339.80	224.81	119.78	0 55 32	288.1	14.19	318.83
110.00	1 7 39	1182.81	-1.62	329.42	222.40	124.12	1 27 22	182.8	12.20	309.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1768 TRA 2.9014 TC3-7.7486 BAU 1.3244 SGT 7495.0 SGR 405.2 SG3 1145.1 ST 77.4 SR 6.5 SS 59.7
RDE .0483 RRA -.2020 RC3 .2619 FAU .15785 RRT -.9167 RRF -.9152 RTF .9669 CRT -.6827 CRS .2426 CST -.8732
FDE 1.6340 FRA 6.0460 FC-10.6955 BSP 12723 SGB 7506.0 R23 .0711 R13 -.9670 LSA 94.8 MSA 24.4 SSA .6
BDE .1833 BRA 2.9084 BC3 7.7531 FSP 2055 SG1 7504.2 SG2 161.7 THA 177.16 EL1 77.5 EL2 4.8 ALF 176.69

LAUNCH DATE MAY 14 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 8 1972

HELIOCENTRIC CONIC DISTANCE 621.198 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.417 GAL -2.33 AZL 92.28 HCA 193.54 SMA 188.29 ECC .20109 INC 2.2797 V1 29.471
RP 226.15 LAP .53 LOP 66.09 VP 21.653 GAP .12 AZP 87.78 TAL 345.98 TAP 179.52 RCA 150.43 APO 226.16 V2 24.319
RC 229.216 GL -20.99 GP 2.85 ZAL 118.22 ZAP 49.19 ETS 181.70 ZAE 86.98 ETE 180.59 ZAC 105.10 ETC 272.55 LVI -13.22

PLANETOCENTRIC CONIC

C3 12.939 VHL 3.597 DLA -21.96 RAL 2.35 RAD 6639.5 VEL 11.533 PTH 6.58 VHP 3.392 DPA -19.95 RAP 296.98 ECC 1.2129

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 30	2587.86	-11.76	70.20	214.94	136.44	18 11 38	1587.9	6.61	54.41
60.00	18 35 4	2410.82	-7.18	58.60	219.29	129.76	19 15 15	1410.8	8.91	40.65
70.00	19 59 32	2162.52	-2.63	41.89	222.71	124.06	20 35 35	1162.5	11.23	22.23
80.00	21 40 22	1846.97	1.11	20.26	225.05	119.84	22 11 9	847.0	13.17	359.40
90.00	23 17 27	1533.80	2.68	358.10	225.92	118.16	23 43 1	533.8	13.98	336.78
100.00	0 27 9	1321.45	1.11	341.63	225.05	119.84	0 49 11	321.4	13.17	320.77
110.00	1 2 35	1209.33	-2.63	330.80	222.71	124.06	1 23 4	209.3	11.23	311.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2295 TRA 3.0032 TC3-7.7864 BAU 1.3475 SGT 7623.4 SGR 388.4 SG3 1121.5 ST 79.9 SR 6.8 SS 60.2
RDE .0565 RRA -.1971 RC3 .2331 FAU .15339 RRT -.8960 RRF -.8915 RTF .9664 CRT -.5765 CRS .1325 CST -.8691
FDE 1.6891 FRA 6.0151 FC-10.2635 BSP 13013 SGB 7633.3 R23 .0565 R13 -.9665 LSA 97.5 MSA 23.8 SSA .6
BDE .2363 BRA 3.0097 BC3 7.7898 FSP 2026 SG1 7631.3 SG2 172.3 THA 177.39 EL1 80.0 EL2 5.5 ALF 177.18

LAUNCH DATE MAY 14 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 10 1972

HELIOCENTRIC CONIC DISTANCE 625.265 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.426 GAL -2.42 AZL 92.25 HCA 194.59 SMA 188.46 ECC .20209 INC 2.2472 V1 29.471
RP 226.55 LAP .57 LOP 67.15 VP 21.620 GAP -.02 AZP 87.82 TAL 345.50 TAP 180.10 RCA 150.37 APO 226.55 V2 24.278
RC 231.880 GL -20.54 GP 2.62 ZAL 118.93 ZAP 48.39 ETS 181.58 ZAE 85.92 ETE 180.62 ZAC 104.86 ETC 272.62 LVI -13.11

PLANETOCENTRIC CONIC

C3 13.116 VHL 3.622 DLA -21.28 RAL 2.75 RAD 6639.6 VEL 11.541 PTH 6.59 VHP 3.420 DPA -20.13 RAP 297.31 ECC 1.2159

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 27 2	2605.30	-12.62	70.97	215.41	136.27	18 10 27	1605.3	5.74	55.15
60.00	18 32 30	2431.21	-8.07	59.59	219.72	129.62	19 13 1	1431.2	8.03	41.65
70.00	19 55 27	2187.36	-3.58	43.19	223.09	123.99	20 31 54	1187.4	10.32	23.57
80.00	21 34 25	1877.63	.07	21.95	225.36	119.86	22 5 42	877.6	12.21	1.18
90.00	23 10 26	1567.91	1.58	.01	226.20	118.24	23 36 34	567.9	13.00	338.80
100.00	0 21 13	1352.10	.07	343.31	225.36	119.86	0 43 45	352.1	12.21	322.54
110.00	0 58 49	1234.18	-3.58	332.10	223.09	123.99	1 19 23	234.2	10.32	312.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2785 TRA 3.1056 TC3-7.8210 BAU 1.3719 SGT 7751.7 SGR 376.0 SG3 1098.1 ST 82.5 SR 7.1 SS 60.6
RDE .0648 RRA -.1937 RC3 .2083 FAU .14920 RRT -.8725 RRF -.8652 RTF .9660 CRT -.4749 CRS .0354 CST -.8953
FDE 1.7307 FRA 5.9813 FC3-9.8486 BSP 13258 SGB 7760.8 R23 .0447 R13 -.9660 LSA 100.0 MSA 23.3 SSA .7
BDE .2860 BRA 3.1117 BC3 7.8238 FSP 1986 SG1 7758.6 SG2 183.5 THA 177.58 EL1 82.6 EL2 6.3 ALF 177.64

LAUNCH DATE MAY 14 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 12 1972

HELIOCENTRIC CONIC DISTANCE 629.333 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.436 GAL -2.51 AZL 92.22 HCA 195.65 SMA 188.63 ECC .20311 INC 2.2189 V1 29.471
RP 226.94 LAP .60 LOP 68.20 VP 21.588 GAP -.17 AZP 87.86 TAL 345.02 TAP 180.67 RCA 150.32 APO 226.94 V2 24.236
RC 234.543 GL -20.12 GP 2.42 ZAL 119.63 ZAP 47.62 ETS 181.47 ZAE 84.89 ETE 180.65 ZAC 104.64 ETC 272.68 LVI -13.03

PLANETOCENTRIC CONIC

C3 13.306 VHL 3.648 DLA -20.64 RAL 3.17 RAD 6639.7 VEL 11.549 PTH 6.59 VHP 3.448 DPA -20.28 RAP 297.65 ECC 1.2190

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 50	2622.09	-13.44	71.71	215.93	136.08	18 9 32	1622.1	4.90	55.86
60.00	18 30 17	2450.71	-8.91	60.54	220.20	129.47	19 11 8	1450.7	7.18	42.60
70.00	19 51 52	2210.88	-4.48	44.42	223.52	123.89	20 28 43	1210.9	9.45	24.84
80.00	21 29 12	1906.24	-.90	23.52	225.75	119.85	22 0 58	906.2	11.31	2.82
90.00	23 4 19	1599.44	.56	1.77	226.56	118.27	23 30 58	599.4	12.07	340.68
100.00	0 16 0	1380.72	-.90	344.88	225.75	119.85	0 39 1	380.7	11.31	324.19
110.00	0 55 14	1257.70	-4.48	333.34	223.52	123.89	1 16 12	257.7	9.45	313.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3265 TRA 3.2081 TC3-7.8524 BAU 1.3973 SGT 7878.8 SGR 367.1 SG3 1074.8 ST 85.2 SR 7.5 SS 60.9
RDE .0732 RRA -.1912 RC3 .1867 FAU .14531 RRT -.8468 RRF -.8366 RTF .9656 CRT -.3807 CRS -.0498 CST -.9036
FDE 1.7693 FRA 5.9416 FC3-9.4540 BSP 13488 SGB 7887.4 R23 .0346 R13 -.9656 LSA 102.5 MSA 22.9 SSA .7
BDE .3347 BRA 3.2138 BC3 7.8547 FSP 1947 SG1 7885.0 SG2 195.1 THA 177.74 EL1 85.2 EL2 6.9 ALF 178.07

LAUNCH DATE MAY 14 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 14 1972

HELIOCENTRIC CONIC DISTANCE 633.393 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.446 GAL -2.61 AZL 92.19 HCA 196.70 SMA 188.80 ECC .20414 INC 2.1944 V1 29.471
RP 227.33 LAP .63 LOP 69.25 VP 21.556 GAP -.32 AZP 87.90 TAL 344.53 TAP 181.23 RCA 150.26 APO 227.34 V2 24.195
RC 237.203 GL -19.74 GP 2.25 ZAL 120.32 ZAP 46.87 ETS 181.38 ZAE 83.87 ETE 180.67 ZAC 104.46 ETC 272.76 LVI -12.99

PLANETOCENTRIC CONIC

C3 13.510 VHL 3.676 DLA -20.03 RAL 3.61 RAD 6639.8 VEL 11.557 PTH 6.60 VHP 3.477 DPA -20.39 RAP 298.00 ECC 1.2223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 51	2638.36	-14.24	72.44	216.47	135.89	18 8 50	1638.4	4.08	56.54
60.00	18 28 21	2469.49	-9.72	61.47	220.72	129.31	19 9 31	1469.5	6.36	43.51
70.00	19 48 41	2233.33	-5.33	45.60	224.00	123.79	20 25 55	1233.3	8.62	26.04
80.00	21 24 35	1933.24	-1.81	25.00	226.18	119.81	21 56 48	933.2	10.44	4.36
90.00	22 58 54	1628.98	-.39	3.42	226.97	118.28	23 26 3	629.0	11.19	342.37
100.00	0 11 22	1407.71	-1.81	346.37	226.18	119.81	0 34 50	407.7	10.44	325.73
110.00	0 52 4	1280.15	-5.33	334.52	224.00	123.79	1 13 24	280.2	8.62	314.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3774 TRA 3.3161 TC3-7.8677 BAU 1.4213 SGT 8004.2 SGR 361.3 SG3 1052.1 ST 88.0 SR 7.9 SS 61.3
RDE .0815 RRA -.1899 RC3 .1669 FAU .14114 RRT -.8192 RRF -.8063 RTF .9650 CRT -.2939 CRS -.1231 CST -.9115
FDE 1.8101 FRA 5.9093 FC3-9.0446 BSP 13744 SGB 8012.4 R23 .0266 R13 -.9650 LSA 105.2 MSA 22.5 SSA .8
BDE .3861 BRA 3.3216 BC3 7.8695 FSP 1913 SG1 8009.7 SG2 207.0 THA 177.88 EL1 88.1 EL2 7.6 ALF 178.47

LAUNCH DATE MAY 14 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 16 1972

HELIOCENTRIC CONIC DISTANCE 637.446 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.456 GAL -2.70 AZL 92.17 HCA 197.75 SMA 188.97 ECC .20520 INC 2.1725 V1 29.471
RP 227.72 LAP .66 LOP 70.30 VP 21.525 GAP -.46 AZP 87.93 TAL 344.04 TAP 181.79 RCA 150.19 APO 227.74 V2 24.153
RC 239.859 GL -19.38 GP 2.10 ZAL 121.01 ZAP 46.14 ETS 181.30 ZAE 82.87 ETE 180.68 ZAC 104.29 ETC 272.84 LVI -12.97

PLANETOCENTRIC CONIC

C3 13.725 VHL 3.705 DLA -19.44 RAL 4.05 RAD 6639.9 VEL 11.567 PTH 6.61 VHP 3.505 DPA -20.48 RAP 298.37 ECC 1.2259

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 24 3	2654.20	-15.01	73.15	217.05	135.70	18 8 17	1654.2	3.29	57.20
60.00	18 26 40	2487.68	-10.51	62.36	221.27	129.13	19 8 8	1487.7	5.57	44.39
70.00	19 45 51	2254.92	-6.14	46.74	224.52	123.66	20 23 26	1254.9	7.81	27.20
80.00	21 20 25	1958.92	-2.68	26.41	226.66	119.75	21 53 4	958.9	9.62	5.81
90.00	22 54 3	1656.90	-1.29	4.97	227.43	118.25	23 21 40	656.9	10.35	343.99
100.00	0 7 13	1433.39	-2.68	347.78	226.66	119.75	0 31 7	433.4	9.62	327.18
110.00	0 49 13	1301.73	-6.14	335.66	224.52	123.66	1 10 55	301.7	7.81	316.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4246 TRA 3.4220 TC3-7.8851 BAU 1.4470 SGT 8127.8 SGR 357.7 SG3 1029.2 ST 90.8 SR 8.4 SS 61.4
RDE .0900 RRA -.1892 RC3 .1496 FAU .13735 RRT -.7903 RRF -.7748 RTF .9644 CRT -.2169 CRS -.1863 CST -.9178
FDE 1.8397 FRA 5.8670 FC3-8.6641 BSP 13955 SGB 8135.7 R23 .0197 R13 -.9645 LSA 107.7 MSA 22.2 SSA .8
BDE .4340 BRA 3.4272 BC3 7.8865 FSP 1871 SG1 8132.7 SG2 219.1 THA 178.01 EL1 90.8 EL2 8.2 ALF 178.84

LAUNCH DATE MAY 14 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 18 1972

HELIOCENTRIC CONIC DISTANCE 641.494 EARTH TO MARS

RL 151.18 LAL .00 LOL 232.57 VL 32.465 GAL -2.79 AZL 92.15 HCA 198.79 SMA 189.14 ECC .20627 INC 2.1530 V1 29.471
RP 228.10 LAP .69 LOP 71.34 VP 21.493 GAP -.61 AZP 87.96 TAL 343.55 TAP 182.34 RCA 150.13 APO 228.15 V2 24.112
RC 242.511 GL -19.04 GP 1.97 ZAL 121.69 ZAP 45.44 ETS 181.23 ZAE 81.89 ETE 180.70 ZAC 104.13 ETC 272.92 LVI -12.97

PLANETOCENTRIC CONIC

C3 13.951 VHL 3.735 DLA -18.87 RAL 4.49 RAD 6640.0 VEL 11.576 PTH 6.62 VHP 3.534 DPA -20.55 RAP 298.76 ECC 1.2296

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 23 24	2669.68	-15.77	73.85	217.65	135.49	18 7 53	1669.7	2.51	57.85
60.00	18 25 11	2505.38	-11.27	63.24	221.85	128.95	19 6 56	1505.4	4.79	45.24
70.00	19 43 17	2275.77	-6.93	47.84	225.06	123.53	20 21 13	1275.8	7.03	28.30
80.00	21 16 40	1983.52	-3.51	27.76	227.17	119.67	21 49 43	983.5	8.82	7.20
90.00	22 49 40	1683.51	-2.15	6.46	227.93	118.21	23 17 43	683.5	9.54	345.52
100.00	0 3 27	1457.99	-3.51	349.13	227.17	119.67	0 27 45	458.0	8.82	328.57
110.00	0 46 39	1322.59	-6.93	336.76	225.06	123.53	1 8 42	322.6	7.03	317.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4716 TRA 3.5304 TC3-7.8986 BAU 1.4733 SGT 8251.8 SGR 356.3 SG3 1007.2 ST 93.6 SR 8.9 SS 61.6
RDE .0985 RRA -.1892 RC3 .1339 FAU .13371 RRT -.7606 RRF -.7427 RTF .9639 CRT -.1484 CRS -.2405 CST -.9234
FDE 1.8678 FRA 5.8280 FC3-8.2979 BSP 14161 SGB 8259.5 R23 .0138 R13 -.9639 LSA 110.2 MSA 21.9 SSA .8
BDE .4818 BRA 3.5354 BC3 7.8997 FSP 1832 SG1 8256.2 SG2 231.2 THA 178.12 EL1 93.6 EL2 8.8 ALF 179.19

LAUNCH DATE MAY 15 1971 FLIGHT TIME 94.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 278.742 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 35.537 GAL -1.27 AZL 91.85 HCA 87.71 SMA 269.53 ECC .43941 INC 1.8503 V1 29.464
RP 207.22 LAP -1.85 LOP 321.23 VP 28.080 GAP 22.59 AZP 90.07 TAL 355.82 TAP 83.53 RCA 151.09 APO 387.96 V2 26.432
RC 56.455 GL -10.55 GP -.31 ZAL 100.73 ZAP 177.46 ETS 186.95 ZAE 174.21 ETE 53.46 ZAC 99.63 ETC 277.89 LVI -17.91

PLANETOCENTRIC CONIC

C3 39.252 VHL 6.265 DLA -19.68 RAL 340.38 RAD 6650.4 VEL 12.615 PTH 7.47 VHP 11.356 DPA -17.27 RAP 321.84 ECC 1.6460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 46 44	2902.55	-26.67	85.25	206.78	130.98	16 35 6	1902.5	-9.16	67.65
60.00	16 49 42	2735.08	-20.75	75.24	211.85	125.36	17 35 17	1735.1	-5.30	56.24
70.00	18 9 21	2500.95	-15.15	60.10	215.70	120.98	18 51 2	1501.0	-1.54	40.10
80.00	19 44 27	2203.32	-10.76	40.05	218.24	118.02	20 21 10	1203.3	1.48	19.39
90.00	21 18 21	1900.40	-9.01	18.70	219.17	116.92	21 50 1	900.4	2.70	357.79
100.00	22 27 19	1677.79	-10.76	1.41	218.24	118.02	22 55 16	677.8	1.48	340.75
110.00	23 8 47	1547.77	-15.15	349.02	215.70	120.98	23 34 35	547.8	-1.54	329.02

DIFFERENTIAL CORRECTIONS

TDE -.4009 TRA -.9058 TC3 .0186 BAU .0363
RDE -.5790 RRA .2355 RC3 .0667 FAU .03238
FDE .1335 FRA .6581 FC3 -.7141 BSP 1306
BDE .7043 BRA .9359 BC3 .0692 FSP 113

MID-COURSE EXECUTION ACCURACY

SGT 953.3 SGR 582.8 SG3 95.6
RRT -.0091 RRF .0105 RTF -.5953
SGB 1117.4 R23 -.0018 R13 .5954
SG1 953.3 SG2 582.8 THA 179.49

ORBIT DETERMINATION ACCURACY

ST 22.6 SR 26.7 SS 11.2
CRT .7298 CRS .4217 CST .9224
LSA 33.5 MSA 15.0 SSA 1.1
EL1 32.6 EL2 12.6 ALF 51.48

LAUNCH DATE MAY 15 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 280.446 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 35.324 GAL -1.21 AZL 91.85 HCA 88.97 SMA 261.50 ECC .42216 INC 1.8473 V1 29.464
RP 207.13 LAP -1.85 LOP 322.50 VP 27.820 GAP 22.06 AZP 90.03 TAL 355.94 TAP 84.91 RCA 151.10 APO 371.89 V2 26.443
RC 56.701 GL -10.85 GP -.32 ZAL 100.65 ZAP 176.56 ETS 185.29 ZAE 173.70 ETE 46.97 ZAC 99.57 ETC 277.97 LVI -18.00

PLANETOCENTRIC CONIC

C3 36.601 VHL 6.050 DLA -19.97 RAL 340.43 RAD 6649.5 VEL 12.510 PTH 7.39 VHP 10.980 DPA -17.16 RAP 322.21 ECC 1.6024

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 48 16	2878.61	-25.60	83.98	205.80	131.58	16 36 14	1878.6	-7.97	66.62
60.00	16 51 41	2709.95	-19.76	73.86	210.87	125.87	17 36 51	1710.0	-4.20	55.03
70.00	18 11 55	2474.10	-14.20	58.59	214.73	121.39	18 53 9	1474.1	-.51	38.70
80.00	19 47 41	2174.38	-9.83	38.40	217.29	118.33	20 23 55	1174.4	2.46	17.80
90.00	21 21 57	1870.32	-8.08	16.98	218.23	117.19	21 53 7	870.3	3.66	356.10
100.00	22 30 33	1648.85	-9.83	359.77	217.29	118.33	22 58 2	648.8	2.46	339.16
110.00	23 11 21	1520.92	-14.20	347.51	214.73	121.39	23 36 42	520.9	-.51	327.62

DIFFERENTIAL CORRECTIONS

TDE -.3946 TRA -.8957 TC3 .0312 BAU .0383
RDE -.5621 RRA .2286 RC3 .0717 FAU .03352
FDE .1345 FRA .6842 FC3 -.7928 BSP 1356
BDE .6867 BRA .9244 BC3 .0782 FSP 123

MID-COURSE EXECUTION ACCURACY

SGT 977.6 SGR 586.5 SG3 102.7
RRT -.0099 RRF .0111 RTF -.6080
SGB 1140.0 R23 -.0017 R13 .6080
SG1 977.6 SG2 586.4 THA 179.47

ORBIT DETERMINATION ACCURACY

ST 23.1 SR 26.8 SS 11.6
CRT .7275 CRS .4083 CST .9182
LSA 33.9 MSA 15.3 SSA 1.1
EL1 33.0 EL2 12.9 ALF 50.89

LAUNCH DATE MAY 15 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 282.425 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 35.123 GAL -1.13 AZL 91.84 HCA 90.23 SMA 254.40 ECC .40601 INC 1.8443 V1 29.464
RP 207.05 LAP -1.84 LOP 323.76 VP 27.574 GAP 21.55 AZP 89.99 TAL 356.07 TAP 86.30 RCA 151.11 APO 357.69 V2 26.453
RC 57.030 GL -11.15 GP -.33 ZAL 100.55 ZAP 175.66 ETS 184.31 ZAE 173.15 ETE 41.62 ZAC 99.51 ETC 278.04 LVI -18.09

PLANETOCENTRIC CONIC

C3 34.187 VHL 5.847 DLA -20.28 RAL 340.47 RAD 6648.6 VEL 12.413 PTH 7.32 VHP 10.618 DPA -17.06 RAP 322.56 ECC 1.5626

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 49 45	2854.82	-24.51	82.75	204.84	132.14	16 37 20	1854.8	-6.78	65.61
60.00	16 53 39	2684.90	-18.75	72.51	209.90	126.35	17 38 24	1684.9	-3.10	53.83
70.00	18 14 30	2447.21	-13.24	57.10	213.77	121.77	18 55 18	1447.2	.52	37.30
80.00	19 50 59	2145.24	-8.89	36.76	216.35	118.62	20 26 44	1145.2	3.44	16.20
90.00	21 25 38	1839.94	-7.13	15.25	217.30	117.44	21 56 18	839.9	4.63	354.40
100.00	22 33 51	1619.71	-8.89	358.13	216.35	118.62	23 0 51	619.7	3.44	337.56
110.00	23 13 57	1494.03	-13.24	346.02	213.77	121.77	23 38 51	494.0	.52	326.22

DIFFERENTIAL CORRECTIONS

TDE -.3881 TRA -.8857 TC3 .0454 BAU .0408
RDE -.5456 RRA .2218 RC3 .0769 FAU .03464
FDE .1352 FRA .7103 FC3 -.8772 BSP 1412
BDE .6696 BRA .9131 BC3 .0893 FSP 134

MID-COURSE EXECUTION ACCURACY

SGT 1001.8 SGR 589.6 SG3 110.0
RRT -.0106 RRF .0118 RTF -.6207
SGB 1162.5 R23 -.0017 R13 .6207
SG1 1001.9 SG2 589.6 THA 179.45

ORBIT DETERMINATION ACCURACY

ST 23.5 SR 27.0 SS 12.0
CRT .7250 CRS .3943 CST .9137
LSA 34.3 MSA 15.7 SSA 1.1
EL1 33.3 EL2 13.1 ALF 50.31

LAUNCH DATE MAY 15 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC DISTANCE 284.640 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 34.934 GAL -1.06 AZL 91.84 HCA 91.50 SMA 248.11 ECC .39089 INC 1.8413 V1 29.464
RP 206.97 LAP -1.84 LOP 325.03 VP 27.341 GAP 21.04 AZP 89.95 TAL 356.22 TAP 87.71 RCA 151.12 APO 345.09 V2 26.462
RC 57.440 GL -11.45 GP -.34 ZAL 100.43 ZAP 174.74 ETS 183.67 ZAE 172.59 ETE 37.21 ZAC 99.45 ETC 278.11 LVI -18.17

PLANETOCENTRIC CONIC

C3 31.986 VHL 5.656 DLA -20.61 RAL 340.47 RAD 6647.8 VEL 12.325 PTH 7.25 VHP 10.270 DPA -16.96 RAP 322.91 ECC 1.5264

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 13	2831.22	-23.43	81.55	203.91	132.67	16 38 24	1831.2	-5.60	64.61
60.00	16 55 36	2659.98	-17.74	71.17	208.95	126.80	17 39 56	1660.0	-2.01	52.64
70.00	18 17 7	2420.34	-12.27	55.62	212.84	122.13	18 57 28	1420.3	1.54	35.90
80.00	19 54 23	2115.95	-7.93	35.11	215.43	118.88	20 29 39	1116.0	4.43	14.58
90.00	21 29 27	1809.29	-6.16	13.52	216.39	117.65	21 59 36	809.3	5.61	352.68
100.00	22 37 15	1590.43	-7.93	356.48	215.43	118.88	23 3 45	590.4	4.43	335.95
110.00	23 16 34	1467.16	-12.27	344.54	212.84	122.13	23 41 1	467.2	1.54	324.81

DIFFERENTIAL CORRECTIONS

TDE -.3819 TRA -.8755 TC3 .0612 BAU .0438
RDE -.5297 RRA .2152 RC3 .0823 FAU .03591
FDE .1358 FRA .7383 FC3 -.9718 BSP 1460
BDE .6530 BRA .9016 BC3 .1025 FSP 147

MID-COURSE EXECUTION ACCURACY

SGT 1025.9 SGR 592.4 SG3 118.0
RRT -.0110 RRF .0124 RTF -.6327
SGB 1184.6 R23 -.0020 R13 .6327
SG1 1025.9 SG2 592.3 THA 179.45

ORBIT DETERMINATION ACCURACY

ST 24.0 SR 27.1 SS 12.3
CRT .7226 CRS .3795 CST .9087
LSA 34.7 MSA 16.1 SSA 1.2
EL1 33.6 EL2 13.4 ALF 49.72

LAUNCH DATE MAY 15 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 25 1971

HELIOCENTRIC CONIC DISTANCE 287.060 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 34.756 GAL -.99 AZL 91.84 HCA 92.76 SMA 242.48 ECC .37672 INC 1.8383 V1 29.464
RP 206.90 LAP -1.84 LOP 326.30 VP 27.121 GAP 20.53 AZP 89.91 TAL 356.38 TAP 89.14 RCA 151.13 APO 333.83 V2 26.469
RC 57.930 GL -11.75 GP -.35 ZAL 100.27 ZAP 173.81 ETS 183.22 ZAE 172.04 ETE 33.55 ZAC 99.40 ETC 278.18 LVI -18.25

PLANETOCENTRIC CONIC

C3 29.978 VHL 5.475 DLA -20.94 RAL 340.46 RAD 6647.0 VEL 12.244 PTH 7.19 VHP 9.935 DPA -16.86 RAP 323.25 ECC 1.4934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 38	2807.85	-22.35	80.39	203.00	133.16	16 39 25	1807.9	-4.43	63.63
60.00	16 57 33	2635.21	-16.72	69.87	208.03	127.22	17 41 28	1635.2	-.92	51.45
70.00	18 19 46	2393.52	-11.30	54.16	211.92	122.45	18 59 39	1393.5	2.57	34.50
80.00	19 57 51	2086.55	-6.96	33.47	214.54	119.11	20 32 37	1086.5	5.41	12.95
90.00	21 33 22	1778.41	-5.18	11.78	215.51	117.84	22 3 1	778.4	6.58	350.93
100.00	22 40 43	1561.02	-6.96	354.84	214.54	119.11	23 6 44	561.0	5.41	334.32
110.00	23 19 12	1440.34	-11.30	343.08	211.92	122.45	23 43 12	440.3	2.57	323.41

DIFFERENTIAL CORRECTIONS

TDE -.3754 TRA -.8664 TC3 .0789 BAU .0473
RDE -.5144 RRA .2088 RC3 .0878 FAU .03719
FDE .1359 FRA .7672 FC3-1.0741 BSP 1503
BDE .6368 BRA .8912 BC3 .1180 FSP 159

MID-COURSE EXECUTION ACCURACY

SGT 1050.8 SGR 594.7 SG3 126.5
RRT -.0119 RRF .0133 RTF -.6450
SGB 1207.4 R23 -.0020 R13 .6450
SG1 1050.8 SG2 594.7 THA 179.43

ORBIT DETERMINATION ACCURACY

ST 24.4 SR 27.1 SS 12.7
CRT .7196 CRS .3636 CST .9036
LSA 35.0 MSA 16.5 SSA 1.2
EL1 33.9 EL2 13.6 ALF 49.14

LAUNCH DATE MAY 15 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 27 1971

HELIOCENTRIC CONIC DISTANCE 289.659 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 34.588 GAL -.92 AZL 91.84 HCA 94.03 SMA 237.44 ECC .36345 INC 1.8353 V1 29.464
RP 206.85 LAP -1.83 LOP 327.56 VP 26.913 GAP 20.04 AZP 89.87 TAL 356.55 TAP 90.58 RCA 151.14 APO 323.74 V2 26.476
RC 58.496 GL -12.05 GP -.36 ZAL 100.09 ZAP 172.87 ETS 182.89 ZAE 171.50 ETE 30.49 ZAC 99.34 ETC 278.24 LVI -18.33

PLANETOCENTRIC CONIC

C3 28.145 VHL 5.305 DLA -21.28 RAL 340.42 RAD 6646.3 VEL 12.169 PTH 7.13 VHP 9.611 DPA -16.77 RAP 323.57 ECC 1.4632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 54 0	2784.76	-21.27	79.25	202.11	133.62	16 40 25	1784.8	-3.27	62.66
60.00	16 59 28	2610.66	-15.71	68.59	207.13	127.60	17 42 59	1610.7	.16	50.28
70.00	18 22 25	2366.79	-10.32	52.71	211.03	122.74	19 1 52	1366.8	3.59	33.10
80.00	20 1 24	2057.05	-5.98	31.83	213.66	119.31	20 35 41	1057.0	6.39	11.32
90.00	21 37 25	1747.31	-4.19	10.03	214.64	117.99	22 6 32	747.3	7.56	349.17
100.00	22 44 16	1531.52	-5.98	353.20	213.66	119.31	23 9 47	531.5	6.39	332.68
110.00	23 21 52	1413.61	-10.32	341.63	211.03	122.74	23 45 25	413.6	3.59	322.01

DIFFERENTIAL CORRECTIONS

TDE -.3699 TRA -.8553 TC3 .0987 BAU .0511
RDE -.4995 RRA .2026 RC3 .0934 FAU .03861
FDE .1350 FRA .7970 FC3-1.1875 BSP 1564
BDE .6215 BRA .8790 BC3 .1359 FSP 173

MID-COURSE EXECUTION ACCURACY

SGT 1074.0 SGR 596.6 SG3 135.6
RRT -.0109 RRF .0143 RTF -.6563
SGB 1228.6 R23 -.0040 R13 .6563
SG1 1074.0 SG2 596.6 THA 179.50

ORBIT DETERMINATION ACCURACY

ST 24.9 SR 27.2 SS 13.1
CRT .7180 CRS .3454 CST .8963
LSA 35.3 MSA 16.8 SSA 1.2
EL1 34.2 EL2 13.8 ALF 48.51

LAUNCH DATE MAY 15 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 29 1971

HELIOCENTRIC CONIC DISTANCE 292.414 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 34.431 GAL -.85 AZL 91.83 HCA 95.30 SMA 232.91 ECC .35102 INC 1.8323 V1 29.464
RP 206.80 LAP -1.82 LOP 328.83 VP 26.716 GAP 19.56 AZP 89.83 TAL 356.74 TAP 92.04 RCA 151.15 APO 314.66 V2 26.482
RC 59.137 GL -12.35 GP -.37 ZAL 99.89 ZAP 171.92 ETS 182.63 ZAE 171.00 ETE 27.91 ZAC 99.29 ETC 278.31 LVI -18.40

PLANETOCENTRIC CONIC

C3 26.469 VHL 5.145 DLA -21.64 RAL 340.35 RAD 6645.6 VEL 12.101 PTH 7.08 VHP 9.300 DPA -16.68 RAP 323.88 ECC 1.4356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 21	2761.97	-20.19	78.15	201.25	134.05	16 41 23	1762.0	-2.13	61.71
60.00	17 1 23	2586.35	-14.70	67.33	206.25	127.96	17 44 29	1586.3	1.23	49.12
70.00	18 25 7	2340.20	-9.33	51.28	210.16	123.00	19 4 7	1340.2	4.60	31.70
80.00	20 5 2	2027.49	-4.99	30.19	212.81	119.48	20 38 49	1027.5	7.37	9.67
90.00	21 41 36	1716.02	-3.19	8.28	213.81	118.11	22 10 12	716.0	8.53	347.39
100.00	22 47 54	1501.97	-4.99	351.56	212.81	119.48	23 12 56	502.0	7.37	331.04
110.00	23 24 33	1387.02	-9.33	340.19	210.16	123.00	23 47 40	387.0	4.60	320.62

DIFFERENTIAL CORRECTIONS

TDE -.3622 TRA -.8454 TC3 .1191 BAU .0548
RDE -.4851 RRA .1966 RC3 .0991 FAU .04012
FDE .1345 FRA .8276 FC3-1.3122 BSP 1622
BDE .6054 BRA .8679 BC3 .1550 FSP 189

MID-COURSE EXECUTION ACCURACY

SGT 1097.0 SGR 598.1 SG3 145.3
RRT -.0124 RRF .0148 RTF -.6667
SGB 1249.5 R23 -.0031 R13 .6667
SG1 1097.1 SG2 598.1 THA 179.45

ORBIT DETERMINATION ACCURACY

ST 25.3 SR 27.2 SS 13.5
CRT .7140 CRS .3283 CST .8909
LSA 35.6 MSA 17.2 SSA 1.2
EL1 34.4 EL2 14.0 ALF 48.04

LAUNCH DATE MAY 15 1971 FLIGHT TIME 108.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 295.307 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 34.282 GAL -.77 AZL 91.83 HCA 96.57 SMA 228.81 ECC .33936 INC 1.8293 V1 29.464
RP 206.75 LAP -1.82 LOP 330.10 VP 26.529 GAP 19.08 AZP 89.79 TAL 356.94 TAP 93.51 RCA 151.16 APO 306.46 V2 26.487
RC 59.850 GL -12.66 GP -.38 ZAL 99.67 ZAP 170.95 ETS 182.44 ZAE 170.54 ETE 25.71 ZAC 99.23 ETC 278.36 LVI -18.47

PLANETOCENTRIC CONIC

C3 24.937 VHL 4.994 DLA -22.00 RAL 340.27 RAD 6645.0 VEL 12.038 PTH 7.03 VHP 8.999 DPA -16.59 RAP 324.18 ECC 1.4104

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 56 39	2739.52	-19.13	77.08	200.41	134.44	16 42 18	1739.5	-1.00	60.77
60.00	17 3 17	2562.32	-13.69	66.11	205.40	128.28	17 45 59	1562.3	2.29	47.97
70.00	18 27 50	2313.77	-8.35	49.86	209.31	123.24	19 6 23	1313.8	5.60	30.31
80.00	20 8 45	1997.91	-4.00	28.56	211.99	119.61	20 42 3	997.9	8.35	8.01
90.00	21 45 54	1684.55	-2.18	6.52	212.99	118.20	22 13 59	684.5	9.50	345.58
100.00	22 51 37	1472.38	-4.00	349.93	211.99	119.61	23 16 9	472.4	8.35	329.38
110.00	23 27 16	1360.59	-8.35	338.78	209.31	123.24	23 49 56	360.6	5.60	319.23

DIFFERENTIAL CORRECTIONS

TDE -.3554 TRA -.8354 TC3 .1397 BAU .0583
RDE -.4713 RRA .1908 RC3 .1049 FAU .04169
FDE .1317 FRA .8608 FC3-1.4474 BSP 1667
BDE .5903 BRA .8569 BC3 .1747 FSP 205

MID-COURSE EXECUTION ACCURACY

SGT 1120.0 SGR 599.2 SG3 155.7
RRT -.0132 RRF .0169 RTF -.6761
SGB 1270.2 R23 -.0044 R13 .6761
SG1 1120.0 SG2 599.2 THA 179.43

ORBIT DETERMINATION ACCURACY

ST 25.6 SR 27.3 SS 13.8
CRT .7106 CRS .3048 CST .8818
LSA 35.8 MSA 17.6 SSA 1.2
EL1 34.6 EL2 14.2 ALF 47.51

LAUNCH DATE MAY 15 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 2 1971

DISTANCE 298.321

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 34.142 GAL -.70 AZL 91.83 HCA 97.83 SMA 225.10 ECC .32841 INC 1.8262 V1 29.464
RP 206.72 LAP -1.81 LOP 331.37 VP 26.352 GAP 18.61 AZP 89.75 TAL 357.15 TAP 94.99 RCA 151.17 APO 299.02 V2 26.491
RC 60.633 GL -12.96 GP -.39 ZAL 99.43 ZAP 169.96 ETS 182.28 ZAE 170.13 ETE 23.82 ZAC 99.18 ETC 278.42 LVI -18.53

PLANETOCENTRIC CONIC

C3 23.534 VHL 4.851 DLA -22.37 RAL 340.16 RAD 6644.4 VEL 11.980 PTH 6.98 VHP 8.709 DPA -16.51 RAP 324.46 ECC 1.3873

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 55	2717.41	-18.07	76.04	199.60	134.80	16 43 12	1717.4	.11	59.85
60.00	17 5 10	2538.57	-12.68	64.91	204.57	128.58	17 47 28	1538.6	3.34	46.83
70.00	18 30 34	2287.51	-7.37	48.46	208.49	123.44	19 8 41	1287.5	6.59	28.92
80.00	20 12 34	1968.26	-3.00	26.92	211.19	119.72	20 45 22	968.3	9.31	6.34
90.00	21 50 22	1652.83	-1.16	4.75	212.21	118.26	22 17 55	652.8	10.47	343.76
100.00	22 55 26	1442.73	-3.00	348.29	211.19	119.72	23 19 29	442.7	9.31	327.71
110.00	23 30 0	1334.32	-7.37	337.38	208.49	123.44	23 52 14	334.3	6.59	317.84

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.3385 TRA -.8152 TC3 .1812 BAU .0668 — SGT 1129.1 SGR 599.9 SG3 166.7 — ST 25.4 SR 27.3 SS 14.3
RDE -.4579 RRA .1851 RC3 .1107 FAU .04334 — RRT -.0163 RRF .0171 RTF -.6995 — CRT .7013 CRS .2897 CST .8808
FDE .1317 FRA .8949 FC3-1.5945 BSP 1601 — SG8 1278.6 R23 -.0013 R13 .6995 — LSA 35.6 MSA 18.0 SSA 1.2
BDE .5694 BRA .8360 BC3 .2124 FSP 224 — SG1 1129.2 SG2 599.8 THA 179.31 — EL1 34.4 EL2 14.3 ALF 47.94

LAUNCH DATE MAY 15 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 4 1971

DISTANCE 301.445

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 34.011 GAL -.63 AZL 91.82 HCA 99.10 SMA 221.72 ECC .31816 INC 1.8231 V1 29.464
RP 206.70 LAP -1.80 LOP 332.64 VP 26.184 GAP 18.15 AZP 89.71 TAL 357.37 TAP 96.48 RCA 151.18 APO 292.27 V2 26.494
RC 61.483 GL -13.26 GP -.40 ZAL 99.17 ZAP 168.96 ETS 182.14 ZAE 169.78 ETE 22.18 ZAC 99.13 ETC 278.47 LVI -18.58

PLANETOCENTRIC CONIC

C3 22.251 VHL 4.717 DLA -22.74 RAL 340.04 RAD 6643.8 VEL 11.927 PTH 6.93 VHP 8.429 DPA -16.44 RAP 324.73 ECC 1.3662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 9	2695.77	-17.03	75.04	198.82	135.13	16 44 4	1695.8	1.20	58.94
60.00	17 7 2	2515.24	-11.69	63.74	203.77	128.85	17 48 57	1515.2	4.36	45.71
70.00	18 33 19	2261.55	-6.39	47.09	207.70	123.62	19 11 1	1261.6	7.56	27.55
80.00	20 16 28	1938.72	-2.00	25.30	210.42	119.80	20 48 47	938.7	10.27	4.67
90.00	21 54 58	1621.04	-.13	2.97	211.46	118.28	22 21 59	621.0	11.43	341.91
100.00	22 59 20	1413.19	-2.00	346.67	210.42	119.80	23 22 54	413.2	10.27	326.04
110.00	23 32 46	1308.37	-6.39	336.01	207.70	123.62	23 54 34	308.4	7.56	316.47

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.3361 TRA -.8081 TC3 .1988 BAU .0685 — SGT 1155.2 SGR 600.2 SG3 178.4 — ST 25.9 SR 27.3 SS 14.6
RDE -.4450 RRA .1796 RC3 .1166 FAU .04516 — RRT -.0152 RRF .0178 RTF -.7021 — CRT .7008 CRS .2684 CST .8705
FDE .1289 FRA .9276 FC3-1.7569 BSP 1695 — SG8 1301.8 R23 -.0032 R13 .7021 — LSA 35.9 MSA 18.3 SSA 1.3
BDE .5577 BRA .8279 BC3 .2304 FSP 242 — SG1 1155.3 SG2 600.1 THA 179.38 — EL1 34.7 EL2 14.5 ALF 47.06

LAUNCH DATE MAY 15 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 6 1971

DISTANCE 304.666

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 33.887 GAL -.57 AZL 91.82 HCA 100.37 SMA 218.65 ECC .30855 INC 1.8201 V1 29.464
RP 206.68 LAP -1.79 LOP 333.91 VP 26.025 GAP 17.70 AZP 89.67 TAL 357.60 TAP 97.97 RCA 151.19 APO 286.12 V2 26.496
RC 62.398 GL -13.56 GP -.42 ZAL 98.89 ZAP 167.94 ETS 182.04 ZAE 169.48 ETE 20.75 ZAC 99.08 ETC 278.52 LVI -18.63

PLANETOCENTRIC CONIC

C3 21.076 VHL 4.591 DLA -23.11 RAL 339.90 RAD 6643.3 VEL 11.878 PTH 6.89 VHP 8.159 DPA -16.37 RAP 324.98 ECC 1.3469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 0 20	2674.56	-16.00	74.07	198.06	135.43	16 44 55	1674.6	2.27	58.06
60.00	17 8 53	2492.29	-10.70	62.59	203.00	129.09	17 50 25	1492.3	5.36	44.61
70.00	18 36 6	2235.87	-5.42	45.73	206.93	123.77	19 13 22	1235.9	8.52	26.18
80.00	20 20 29	1909.21	-1.00	23.68	209.68	119.84	20 52 18	909.2	11.21	2.99
90.00	21 59 44	1589.07	.90	1.19	210.73	118.27	22 26 13	589.1	12.38	340.04
100.00	23 3 20	1383.68	-1.00	345.05	209.68	119.84	23 26 24	383.7	11.21	324.36
110.00	23 35 32	1282.69	-5.42	334.65	206.93	123.77	23 56 55	282.7	8.52	315.10

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.3303 TRA -.7998 TC3 .2203 BAU .0710 — SGT 1178.2 SGR 600.0 SG3 191.1 — ST 26.3 SR 27.2 SS 15.0
RDE -.4325 RRA .1744 RC3 .1224 FAU .04712 — RRT -.0162 RRF .0187 RTF -.[illegible]70 — CRT .6974 CRS .2464 CST .8616
FDE .1258 FRA .9630 FC3-1.9356 BSP 1764 — SG8 1322.2 R23 -.0032 R13 .7070 — LSA 36.1 MSA 18.7 SSA 1.3
BDE .5443 BRA .8184 BC3 .2520 FSP 261 — SG1 1178.3 SG2 599.9 THA 179.36 — EL1 34.9 EL2 14.7 ALF 46.47

LAUNCH DATE MAY 15 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 8 1971

DISTANCE 307.973

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 33.770 GAL -.50 AZL 91.82 HCA 101.64 SMA 215.85 ECC .29953 INC 1.8169 V1 29.464
RP 206.67 LAP -1.78 LOP 335.18 VP 25.873 GAP 17.26 AZP 89.63 TAL 357.84 TAP 99.48 RCA 151.19 APO 280.50 V2 26.496
RC 63.376 GL -13.85 GP -.43 ZAL 98.61 ZAP 166.90 ETS 181.95 ZAE 169.25 ETE 19.49 ZAC 99.03 ETC 278.57 LVI -18.68

PLANETOCENTRIC CONIC

C3 19.998 VHL 4.472 DLA -23.49 RAL 339.75 RAD 6642.8 VEL 11.833 PTH 6.85 VHP 7.898 DPA -16.31 RAP 326.22 ECC 1.3291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 1 30	2653.82	-14.99	73.13	197.32	135.70	16 45 44	1653.8	3.31	57.19
60.00	17 10 42	2469.76	-9.74	61.48	202.25	129.30	17 51 52	1469.8	6.35	43.52
70.00	18 38 54	2210.50	-4.46	44.40	206.19	123.90	19 15 44	1210.5	9.47	24.82
80.00	20 24 35	1879.76	-.00	22.06	208.97	119.86	20 55 54	879.8	12.14	1.30
90.00	22 4 40	1556.93	1.93	359.40	210.04	118.22	22 30 37	556.9	13.32	338.15
100.00	23 7 26	1354.23	-.00	343.43	208.97	119.86	23 30 1	354.2	12.14	322.67
110.00	23 38 20	1257.32	-4.46	333.32	206.19	123.90	23 59 17	257.3	9.47	313.74

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.3249 TRA -.7918 TC3 .2430 BAU .0734 — SGT 1201.7 SGR 599.5 SG3 204.5 — ST 26.6 SR 27.2 SS 15.4
RDE -.4205 RRA .1693 RC3 .1281 FAU .04914 — RRT -.0173 RRF .0209 RTF -.7123 — CRT .6939 CRS .2196 CST .8500
FDE .1209 FRA 1.0020 FC3-2.1275 BSP 1834 — SG8 1342.9 R23 -.0045 R13 .7124 — LSA 36.3 MSA 19.1 SSA 1.3
BDE .5314 BRA .8097 BC3 .2747 FSP 284 — SG1 1201.8 SG2 599.4 THA 179.34 — EL1 35.0 EL2 14.9 ALF 45.85

LAUNCH DATE MAY 15 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 10 1971

HELIOCENTRIC CONIC DISTANCE 311.359 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 33.661 GAL -.43 AZL 91.81 HCA 102.91 SMA 213.28 ECC .29108 INC 1.8138 V1 29.464
RP 206.68 LAP -1.77 LOP 336.45 VP 25.730 GAP 16.63 AZP 89.59 TAL 358.08 TAP 100.99 RCA 151.20 APO 275.36 V2 26.496
RC 64.414 GL -14.14 GP -.45 ZAL 98.31 ZAP 165.85 ETS 181.87 ZAE 169.08 ETE 18.37 ZAC 98.98 ETC 278.61 LVI -18.72

PLANETOCENTRIC CONIC

C3 19.010 VHL 4.360 DLA -23.87 RAL 339.58 RAD 6642.4 VEL 11.791 PTH 6.81 VHP 7.647 DPA -16.25 RAP 325.43 ECC 1.3128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 2 38	2633.56	-14.01	72.22	196.61	135.95	16 46 31	1633.6	4.32	56.34
60.00	17 12 31	2447.68	-8.78	60.39	201.53	129.49	17 53 19	1447.7	7.31	42.45
70.00	18 41 43	2185.47	-3.51	43.09	205.48	123.99	19 18 8	1185.5	10.39	23.47
80.00	20 28 47	1850.38	.99	20.45	208.29	119.84	20 59 37	850.4	13.06	359.60
90.00	22 9 47	1524.59	2.97	357.59	209.39	118.14	22 35 12	524.6	14.24	336.23
100.00	23 11 39	1324.85	.99	341.82	208.29	119.84	23 33 43	324.9	13.06	320.97
110.00	23 41 9	1232.29	-3.51	332.01	205.48	123.99	24 1 41	232.3	10.39	312.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3180 TRA -.7813 TC3 .2728 BAU .0772 SGT 1221.4 SGR 598.6 SG3 219.0 ST 26.8 SR 27.1 SS 15.8
RDE -.4090 RRA .1645 RC3 .1337 FAU .05136 RRT -.0178 RRF .0227 RTF -.7202 CRT .6898 CRS .1928 CST .8385
FDE .1155 FRA 1.0418 FC3-2.3390 BSP 1889 SGB 1360.2 R23 -.0058 R13 .7202 LSA 36.3 MSA 19.5 SSA 1.3
BDE .5180 BRA .7984 BC3 .3038 FSP 308 SG1 1221.5 SG2 598.5 THA 179.34 EL1 35.1 EL2 15.0 ALF 45.41

LAUNCH DATE MAY 15 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 12 1971

HELIOCENTRIC CONIC DISTANCE 314.816 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 33.557 GAL -.37 AZL 91.81 HCA 104.18 SMA 210.93 ECC .28315 INC 1.8107 V1 29.464
RP 206.69 LAP -1.76 LOP 337.72 VP 25.593 GAP 16.41 AZP 89.56 TAL 358.32 TAP 102.50 RCA 151.20 APO 270.65 V2 26.495
RC 65.512 GL -14.43 GP -.46 ZAL 98.00 ZAP 164.77 ETS 181.80 ZAE 168.97 ETE 17.38 ZAC 98.94 ETC 278.65 LVI -18.75

PLANETOCENTRIC CONIC

C3 18.103 VHL 4.255 DLA -24.25 RAL 339.40 RAD 6642.0 VEL 11.753 PTH 6.78 VHP 7.404 DPA -16.20 RAP 325.63 ECC 1.2979

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 3 43	2613.83	-13.04	71.35	195.93	136.17	16 47 17	1613.8	5.31	55.51
60.00	17 14 19	2426.08	-7.84	59.34	200.83	129.66	17 54 45	1426.1	8.25	41.40
70.00	18 44 32	2160.82	-2.57	41.80	204.80	124.07	19 20 33	1160.8	11.30	22.14
80.00	20 33 5	1821.11	1.98	18.84	207.64	119.80	21 3 26	821.1	13.96	357.89
90.00	22 15 7	1492.04	4.02	355.77	208.76	118.02	22 39 59	492.0	15.16	334.28
100.00	23 15 57	1295.58	1.98	340.21	207.64	119.80	23 37 32	295.6	13.96	319.26
110.00	23 43 59	1207.64	-2.57	330.72	204.80	124.07	24 4 6	207.6	11.30	311.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3100 TRA -.7704 TC3 .3002 BAU .0801 SGT 1238.7 SGR 597.3 SG3 234.5 ST 27.0 SR 27.0 SS 16.2
RDE -.3979 RRA .1598 RC3 .1391 FAU .05374 RRT -.0197 RRF .0248 RTF -.7260 CRT .6846 CRS .1637 CST .8262
FDE .1088 FRA 1.0832 FC3-2.5701 BSP 1927 SGB 1375.1 R23 -.0061 R13 .7261 LSA 36.3 MSA 20.0 SSA 1.4
BDE .5044 BRA .7868 BC3 .3309 FSP 331 SG1 1238.7 SG2 597.1 THA 179.29 EL1 35.0 EL2 15.2 ALF 45.08

LAUNCH DATE MAY 15 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 14 1971

HELIOCENTRIC CONIC DISTANCE 318.337 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 33.460 GAL -.31 AZL 91.81 HCA 105.45 SMA 208.77 ECC .27571 INC 1.8074 V1 29.464
RP 206.71 LAP -1.74 LOP 338.99 VP 25.463 GAP 15.99 AZP 89.52 TAL 358.57 TAP 104.02 RCA 151.21 APO 266.33 V2 26.493
RC 66.667 GL -14.71 GP -.48 ZAL 97.68 ZAP 163.67 ETS 181.74 ZAE 168.94 ETE 16.50 ZAC 98.90 ETC 278.68 LVI -18.78

PLANETOCENTRIC CONIC

C3 17.271 VHL 4.156 DLA -24.63 RAL 339.20 RAD 6641.6 VEL 11.718 PTH 6.75 VHP 7.170 DPA -16.16 RAP 325.80 ECC 1.2642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 4 47	2594.64	-12.09	70.50	195.27	136.38	16 48 1	1594.6	6.27	54.70
60.00	17 16 5	2404.99	-6.93	58.31	200.16	129.80	17 56 10	1405.0	9.16	40.37
70.00	18 47 23	2136.59	-1.65	40.53	204.14	124.12	19 22 59	1136.6	12.18	20.81
80.00	20 37 30	1791.98	2.97	17.24	207.02	119.72	21 7 22	792.0	14.85	356.18
90.00	22 20 39	1459.24	5.06	353.92	208.17	117.86	22 44 59	459.2	16.06	332.30
100.00	23 20 22	1266.42	2.97	338.61	207.02	119.72	23 41 28	266.4	14.85	317.55
110.00	23 46 49	1183.41	-1.65	329.45	204.14	124.12	24 6 32	183.4	12.18	309.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3045 TRA -.7600 TC3 .3265 BAU .0824 SGT 1256.4 SGR 595.6 SG3 250.4 ST 27.2 SR 26.9 SS 16.6
RDE -.3871 RRA .1553 RC3 .1443 FAU .05611 RRT -.0199 RRF .0248 RTF -.7314 CRT .6817 CRS .1478 CST .8193
FDE .1069 FRA 1.1250 FC3-2.8126 BSP 1985 SGB 1390.4 R23 -.0060 R13 .7314 LSA 36.4 MSA 20.3 SSA 1.4
BDE .4925 BRA .7757 BC3 .3569 FSP 359 SG1 1256.5 SG2 595.4 THA 179.30 EL1 35.1 EL2 15.3 ALF 44.56

LAUNCH DATE MAY 15 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 321.915 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 33.369 GAL -.25 AZL 91.80 HCA 106.72 SMA 206.78 ECC .26874 INC 1.8042 V1 29.464
RP 206.73 LAP -1.73 LOP 340.26 VP 25.340 GAP 15.59 AZP 89.48 TAL 358.82 TAP 105.54 RCA 151.21 APO 262.35 V2 26.489
RC 67.877 GL -14.99 GP -.50 ZAL 97.36 ZAP 162.55 ETS 181.69 ZAE 168.98 ETE 15.71 ZAC 98.86 ETC 278.71 LVI -18.80

PLANETOCENTRIC CONIC

C3 16.506 VHL 4.063 DLA -25.00 RAL 339.00 RAD 6641.2 VEL 11.685 PTH 6.72 VHP 6.944 DPA -16.13 RAP 325.95 ECC 1.2716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 48	2576.02	-11.17	69.69	194.63	136.56	16 48 44	1576.0	7.20	53.91
60.00	17 17 50	2384.45	-6.03	57.32	199.52	129.92	17 57 34	1384.5	10.05	39.36
70.00	18 50 13	2112.81	-.74	39.29	203.52	124.15	19 25 26	1112.8	13.04	19.51
80.00	20 42 1	1762.92	3.95	15.64	206.43	119.62	21 11 24	762.9	15.71	354.46
90.00	22 26 26	1426.14	6.11	352.06	207.62	117.66	22 50 13	426.1	16.95	330.28
100.00	23 24 53	1237.39	3.95	337.01	206.43	119.62	23 45 30	237.4	15.71	315.83
110.00	23 49 40	1159.63	-.74	328.21	203.52	124.15	24 8 59	159.6	13.04	308.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2968 TRA -.7495 TC3 .3536 BAU .0847 SGT 1271.9 SGR 593.5 SG3 268.2 ST 27.3 SR 26.8 SS 17.1
RDE -.3768 RRA .1510 RC3 .1493 FAU .05885 RRT -.0223 RRF .0280 RTF -.7359 CRT .6762 CRS .1135 CST .8037
FDE .0974 FRA 1.1724 FC3-3.0867 BSP 2025 SGB 1403.6 R23 -.0070 R13 .7359 LSA 36.3 MSA 20.8 SSA 1.4
BDE .4796 BRA .7645 BC3 .3838 FSP 390 SG1 1272.0 SG2 593.3 THA 179.24 EL1 35.0 EL2 15.4 ALF 44.25

LAUNCH DATE MAY 15 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 325.547 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 33.283 GAL -.19 AZL 91.80 HCA 107.99 SMA 204.95 ECC .26221 INC 1.8009 V1 29.464
RP 206.77 LAP -1.71 LOP 341.53 VP 25.222 GAP 15.19 AZP 89.44 TAL 359.08 TAP 107.06 RCA 151.21 APO 258.69 V2 26.485
RC 69.140 GL -15.25 GP -.51 ZAL 97.04 ZAP 161.41 ETS 181.65 ZAE 169.09 ETE 15.00 ZAC 98.82 ETC 278.73 LVI -18.81

PLANETOCENTRIC CONIC

C3 15.804 VHL 3.975 DLA -25.37 RAL 338.80 RAD 6640.9 VEL 11.655 PTH 6.69 VHP 6.725 DPA -16.10 RAP 326.08 ECC 1.2601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 48	2557.98	-10.28	68.90	194.02	136.72	16 49 26	1558.0	8.10	53.14
60.00	17 19 33	2364.48	-5.16	56.36	198.90	130.03	17 58 57	1364.5	10.91	38.37
70.00	18 53 4	2089.51	.15	38.08	202.92	124.15	19 27 54	1089.5	13.87	18.21
80.00	20 46 39	1734.03	4.92	14.05	205.88	119.49	21 15 33	734.0	16.56	352.73
90.00	22 32 30	1392.67	7.17	350.16	207.10	117.43	22 55 42	392.7	17.83	328.21
100.00	23 29 31	1208.50	4.92	335.41	205.88	119.49	23 49 40	208.5	16.56	314.10
110.00	23 52 31	1136.33	.15	326.99	202.92	124.15	24 11 27	136.3	13.87	307.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2885 TRA -.7385 TC3 .3750 BAU .0856 SGT 1284.2 SGR 591.1 SG3 285.9 ST 27.3 SR 26.7 SS 17.5
RDE -.3668 RRA .1469 RC3 .1540 FAU .06137 RRT -.0260 RRF .0314 RTF -.7396 CRT .6699 CRS .0828 CST .7903
FDE .0884 FRA 1.2202 FC3-3.3616 BSP 2038 SGB 1413.7 R23 -.0070 R13 .7396 LSA 36.2 MSA 21.2 SSA 1.4
BDE .4666 BRA .7529 BC3 .4054 FSP 418 SG1 1284.3 SG2 590.8 THA 179.13 EL1 34.9 EL2 15.5 ALF 44.02

LAUNCH DATE MAY 15 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 329.226 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 33.202 GAL -.14 AZL 91.80 HCA 109.25 SMA 203.27 ECC .25609 INC 1.7976 V1 29.464
RP 206.81 LAP -1.70 LOP 342.79 VP 25.110 GAP 14.80 AZP 89.41 TAL 359.33 TAP 108.58 RCA 151.22 APO 255.32 V2 26.480
RC 70.455 GL -15.52 GP -.53 ZAL 96.71 ZAP 160.24 ETS 181.60 ZAE 169.27 ETE 14.37 ZAC 98.79 ETC 278.75 LVI -18.82

PLANETOCENTRIC CONIC

C3 15.158 VHL 3.893 DLA -25.73 RAL 338.58 RAD 6640.6 VEL 11.628 PTH 6.67 VHP 6.515 DPA -16.09 RAP 326.18 ECC 1.2495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 45	2540.56	-9.42	68.15	193.44	136.86	16 50 6	1540.6	8.97	52.39
60.00	17 21 14	2345.11	-4.31	55.42	198.32	130.11	18 0 20	1345.1	11.74	37.40
70.00	18 55 55	2066.74	1.02	36.89	202.35	124.14	19 30 22	1066.7	14.68	16.94
80.00	20 51 24	1705.29	5.88	12.45	205.36	119.33	21 19 50	705.3	17.38	351.00
90.00	22 38 52	1358.73	8.23	348.23	206.63	117.15	23 1 30	358.7	18.70	326.10
100.00	23 34 16	1179.76	5.88	333.82	205.36	119.33	23 53 56	179.8	17.38	312.36
110.00	23 55 22	1113.55	1.02	325.81	202.35	124.14	24 13 55	113.6	14.68	305.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2832 TRA -.7250 TC3 .4051 BAU .0881 SGT 1294.6 SGR 588.3 SG3 305.7 ST 27.4 SR 26.5 SS 18.0
RDE -.3572 RRA .1430 RC3 .1583 FAU .06441 RRT -.0246 RRF .0328 RTF -.7443 CRT .6685 CRS .0583 CST .7762
FDE .0815 FRA 1.2693 FC3-3.6787 BSP 2130 SGB 1422.0 R23 -.0097 R13 .7444 LSA 36.2 MSA 21.6 SSA 1.5
BDE .4558 BRA .7390 BC3 .4349 FSP 458 SG1 1294.7 SG2 588.1 THA 179.19 EL1 34.8 EL2 15.5 ALF 43.62

LAUNCH DATE MAY 15 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 332.950 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 33.126 GAL -.09 AZL 91.79 HCA 110.52 SMA 201.72 ECC .25035 INC 1.7942 V1 29.464
RP 206.87 LAP -1.68 LOP 344.06 VP 25.003 GAP 14.43 AZP 89.37 TAL 359.57 TAP 110.10 RCA 151.22 APO 252.22 V2 26.474
RC 71.818 GL -15.77 GP -.55 ZAL 96.39 ZAP 159.04 ETS 181.57 ZAE 169.53 ETE 13.80 ZAC 98.76 ETC 278.76 LVI -18.82

PLANETOCENTRIC CONIC

C3 14.565 VHL 3.816 DLA -26.09 RAL 338.37 RAD 6640.3 VEL 11.603 PTH 6.64 VHP 6.312 DPA -16.09 RAP 326.26 ECC 1.2397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 8 41	2523.76	-8.58	67.43	192.88	136.98	16 50 45	1523.8	9.80	51.67
60.00	17 22 54	2326.36	-3.48	54.53	197.75	130.18	18 1 40	1326.4	12.54	36.46
70.00	18 58 46	2044.51	1.87	35.73	201.81	124.11	19 32 50	1044.5	15.45	15.69
80.00	20 56 16	1676.70	6.83	10.87	204.87	119.14	21 24 13	676.7	18.19	349.25
90.00	22 45 35	1324.18	9.29	346.26	206.19	116.83	23 7 39	324.2	19.55	323.92
100.00	23 39 8	1151.17	6.83	332.23	204.87	119.14	23 58 19	151.2	18.19	310.62
110.00	0 2 8	1091.33	1.87	324.65	201.81	124.11	0 20 19	91.3	15.45	304.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2798 TRA -.7199 TC3 .4206 BAU .0878 SGT 1314.4 SGR 585.2 SG3 326.5 ST 27.7 SR 26.4 SS 18.6
RDE -.3479 RRA .1393 RC3 .1622 FAU .06735 RRT -.0274 RRF .0364 RTF -.7450 CRT .6654 CRS .0338 CST .7634
FDE .0744 FRA 1.3286 FC3-4.0033 BSP 2189 SGB 1438.7 R23 -.0110 R13 .7450 LSA 36.3 MSA 22.1 SSA 1.5
BDE .4465 BRA .7332 BC3 .4508 FSP 508 SG1 1314.5 SG2 584.9 THA 179.13 EL1 34.9 EL2 15.6 ALF 42.85

LAUNCH DATE MAY 15 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC DISTANCE 336.714 EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 33.055 GAL -.04 AZL 91.79 HCA 111.79 SMA 200.28 ECC .24498 INC 1.7907 V1 29.464
RP 206.93 LAP -1.66 LOP 345.33 VP 24.901 GAP 14.06 AZP 89.34 TAL 359.82 TAP 111.61 RCA 151.22 APO 249.35 V2 26.466
RC 73.228 GL -16.01 GP -.58 ZAL 96.07 ZAP 157.82 ETS 181.53 ZAE 169.87 ETE 13.30 ZAC 98.73 ETC 278.77 LVI -18.81

PLANETOCENTRIC CONIC

C3 14.019 VHL 3.744 DLA -26.44 RAL 338.15 RAD 6640.1 VEL 11.579 PTH 6.62 VHP 6.116 DPA -16.09 RAP 326.31 ECC 1.2307

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 9 35	2507.61	-7.78	66.74	192.35	137.09	16 51 22	1507.6	10.60	50.97
60.00	17 24 32	2308.26	-2.69	53.66	197.22	130.23	18 3 0	1308.3	13.30	35.55
70.00	19 1 35	2022.89	2.70	34.60	201.30	124.06	19 35 18	1022.9	16.21	14.47
80.00	21 1 16	1648.28	7.77	9.28	204.41	118.92	21 28 44	648.3	18.97	347.51
90.00	22 52 44	1288.80	10.37	344.22	205.80	116.46	23 14 13	288.8	20.39	321.67
100.00	23 44 8	1122.76	7.77	330.65	204.41	118.92	24 2 50	122.8	18.97	308.87
110.00	0 4 57	1069.70	2.70	323.52	201.30	124.06	0 22 47	69.7	16.21	303.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2669 TRA -.7187 TC3 .4131 BAU .0834 SGT 1330.8 SGR 581.9 SG3 348.2 ST 27.5 SR 26.2 SS 19.5
RDE -.3390 RRA .1360 RC3 .1660 FAU .06967 RRT -.0453 RRF .0494 RTF -.7467 CRT .6467 CRS -.0109 CST .7506
FDE .0580 FRA 1.4161 FC3-4.3025 BSP 2329 SGB 1452.5 R23 -.0076 R13 .7468 LSA 35.9 MSA 23.0 SSA 1.5
BDE .4315 BRA .7315 BC3 .4452 FSP 552 SG1 1331.1 SG2 581.2 THA 178.60 EL1 34.5 EL2 15.9 ALF 42.80

LAUNCH DATE MAY 15 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC DISTANCE 340.520 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.988	GAL	.01	AZL	91.79	HCA	113.05	SMA	198.96	ECC	.23995	INC	1.7872
RP	207.00	LAP	-1.64	LOP	348.59	VP	24.804	GAP	13.69	AZP	89.30	TAL	.06	TAP	113.11	RCA	151.22	APO	246.70
RC	74.683	GL	-16.25	GP	-.60	ZAL	95.76	ZAP	156.57	ETS	181.50	ZAE	170.28	ETE	12.85	ZAC	98.70	ETC	278.78

V1	29.464																		
V2	26.458																		
LVI	-18.79																		

PLANETOCENTRIC CONIC

C3	13.517	VHL	3.677	DLA	-26.77	RAL	337.94	RAD	6639.8	VEL	11.558	PTH	6.60	VHP	5.927	DPA	-16.11	RAP	326.33
ECC	1.2225																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 10 27	2492.12	-7.00	66.08	191.84	137.18	16 51 59	1492.1	11.37	50.30
60.00	17 26 7	2290.83	-1.92	52.82	196.71	130.26	18 4 18	1290.8	14.04	34.66
70.00	19 4 23	2001.89	3.50	33.50	200.81	124.00	19 37 45	1001.9	16.93	13.27
80.00	21 6 23	1620.03	8.70	7.69	203.99	118.68	21 33 23	620.0	19.72	345.75
90.00	23 0 25	1252.29	11.47	342.10	205.45	116.03	23 21 17	252.3	21.22	319.31
100.00	23 49 15	1094.50	8.70	329.06	203.99	118.68	24 7 29	94.5	19.72	307.12
110.00	0 7 46	1048.70	3.50	322.42	200.81	124.00	0 25 14	48.7	16.93	302.19

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1304	TRA	-.7157	TC3	.7772	BAU	.1436	SGT	1388.7	SGR	579.4	SG3	406.2	ST	21.3	SR	26.1	SS	20.9
RDE	-.3321	RRA	.1322	RC3	.1645	FAU	.08497	RRT	-.1416	RRF	.0943	RTF	-.8073	CRT	.3560	CRS	-.5317	CST	.5946
FDE	-.2191	FRA	1.4003	FC3	-5.4422	BSP	1596	SGB	1504.7	R23	.0439	R13	.8064	LSA	29.6	MSA	26.4	SSA	1.6
BDE	.3568	BRA	.7278	BC3	.7944	FSP	435	SG1	1391.6	SG2	572.4	THA	175.93	EL1	28.2	EL2	18.4	ALF	59.86

LAUNCH DATE MAY 15 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 28 1971

HELIOCENTRIC CONIC DISTANCE 344.351 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.926	GAL	.06	AZL	91.78	HCA	114.32	SMA	197.73	ECC	.23524	INC	1.7837
RP	207.08	LAP	-1.63	LOP	347.86	VP	24.710	GAP	13.34	AZP	89.27	TAL	.30	TAP	114.61	RCA	151.22	APO	244.25
RC	76.180	GL	-16.48	GP	-.62	ZAL	95.45	ZAP	155.28	ETS	181.47	ZAE	170.76	ETE	12.47	ZAC	98.68	ETC	278.77

V1	29.464																		
V2	26.449																		
LVI	-18.76																		

PLANETOCENTRIC CONIC

C3	13.055	VHL	3.613	DLA	-27.10	RAL	337.72	RAD	6639.6	VEL	11.538	PTH	6.58	VHP	5.744	DPA	-16.13	RAP	326.32
ECC	1.2149																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 11 16	2477.25	-6.26	65.45	191.36	137.26	16 52 34	1477.2	12.10	49.65
60.00	17 27 40	2274.04	-1.18	52.02	196.23	130.29	18 5 34	1274.0	14.74	33.80
70.00	19 7 10	1981.47	4.27	32.43	200.35	123.92	19 40 12	981.5	17.62	12.09
80.00	21 11 39	1591.82	9.61	6.10	203.60	118.40	21 38 11	591.8	20.46	343.98
90.00	23 8 49	1213.95	12.61	339.86	205.16	115.52	23 29 3	214.0	22.06	316.81
100.00	23 54 31	1066.29	9.61	327.47	203.60	118.40	24 12 17	66.3	20.46	305.35
110.00	0 10 32	1028.29	4.27	321.35	200.35	123.92	0 27 41	28.3	17.62	301.01

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2324	TRA	-.6440	TC3	.6041	BAU	.1095	SGT	1281.6	SGR	573.4	SG3	402.6	ST	25.2	SR	25.8	SS	19.2
RDE	-.3222	RRA	.1289	RC3	.1695	FAU	.08134	RRT	-.0293	RRF	.0367	RTF	-.7767	CRT	.6331	CRS	-.1046	CST	.6975
FDE	.0130	FRA	1.4335	FC3	-5.3942	BSP	1928	SGB	1404.0	R23	-.0083	R13	.7768	LSA	33.5	MSA	23.4	SSA	1.5
BDE	.3973	BRA	.6568	BC3	.6275	FSP	594	SG1	1281.7	SG2	573.1	THA	179.06	EL1	32.6	EL2	15.4	ALF	45.99

LAUNCH DATE MAY 15 1971 FLIGHT TIME 138.00 ARRIVAL DATE SEP 30 1971

HELIOCENTRIC CONIC DISTANCE 348.217 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.867	GAL	.10	AZL	91.78	HCA	115.58	SMA	196.60	ECC	.23085	INC	1.7800
RP	207.17	LAP	-1.61	LOP	349.12	VP	24.621	GAP	12.99	AZP	89.23	TAL	.52	TAP	116.10	RCA	151.22	APO	241.99
RC	77.718	GL	-16.69	GP	-.65	ZAL	95.15	ZAP	153.97	ETS	181.44	ZAE	171.32	ETE	12.14	ZAC	98.67	ETC	278.76

V1	29.464																		
V2	26.439																		
LVI	-18.72																		

PLANETOCENTRIC CONIC

C3	12.630	VHL	3.554	DLA	-27.41	RAL	337.52	RAD	6639.4	VEL	11.520	PTH	6.57	VHP	5.569	DPA	-16.17	RAP	326.28
ECC	1.2079																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 5	2463.14	-5.56	64.86	190.90	137.33	16 53 8	1463.1	12.80	49.03
60.00	17 29 11	2258.06	-.48	51.26	195.78	130.30	18 6 49	1258.1	15.41	32.98
70.00	19 9 54	1961.88	5.02	31.40	199.93	123.83	19 42 36	961.9	18.28	10.95
80.00	21 17 1	1563.94	10.51	4.52	203.25	118.11	21 43 5	563.9	21.17	342.21
90.00	23 18 8	1173.39	13.79	337.46	204.92	114.94	23 37 41	173.4	22.89	314.14
100.00	0 3 49	1036.41	10.51	325.89	203.25	118.11	0 21 7	36.4	21.17	303.58
110.00	0 13 16	1008.70	5.02	320.32	199.93	123.83	0 30 5	8.7	18.28	299.87

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2327	TRA	-.6454	TC3	.5417	BAU	.0960	SGT	1289.4	SGR	569.3	SG3	423.2	ST	25.7	SR	25.6	SS	20.2
RDE	-.3143	RRA	.1260	RC3	.1722	FAU	.08290	RRT	-.0424	RRF	.0531	RTF	-.[illegible]96	CRT	.6311	CRS	-.1507	CST	.6659
FDE	-.0099	FRA	1.5262	FC3	-5.6823	BSP	2017	SGB	1409.5	R23	-.0132	R13	.7597	LSA	33.6	MSA	24.3	SSA	1.5
BDE	.3910	BRA	.6576	BC3	.5684	FSP	634	SG1	1289.7	SG2	568.7	THA	178.67	EL1	32.7	EL2	15.6	ALF	44.74

LAUNCH DATE MAY 15 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 352.111 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.812	GAL	.14	AZL	91.78	HCA	116.85	SMA	195.55	ECC	.22674	INC	1.7763
RP	207.26	LAP	-1.58	LOP	350.39	VP	24.535	GAP	12.66	AZP	89.20	TAL	.74	TAP	117.58	RCA	151.21	APO	239.89
RC	79.295	GL	-16.90	GP	-.67	ZAL	94.87	ZAP	152.63	ETS	181.42	ZAE	171.95	ETE	11.88	ZAC	98.65	ETC	278.75

V1	29.464																		
V2	26.428																		
LVI	-18.68																		

PLANETOCENTRIC CONIC

C3	12.240	VHL	3.499	DLA	-27.71	RAL	337.32	RAD	6639.2	VEL	11.503	PTH	6.55	VHP	5.400	DPA	-16.22	RAP	326.22
ECC	1.2014																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 51	2449.72	-4.88	64.29	190.48	137.38	16 53 41	1449.7	13.46	48.44
60.00	17 30 39	2242.80	.19	50.53	195.35	130.30	18 8 1	1242.8	16.04	32.19
70.00	19 12 35	1943.01	5.73	30.41	199.53	123.73	19 44 58	943.0	18.90	9.85
80.00	21 22 32	1536.19	11.40	2.94	202.94	117.78	21 48 8	536.2	21.85	340.43
90.00	23 28 55	1128.61	15.05	334.79	204.77	114.23	23 47 44	128.6	23.76	311.14
100.00	0 9 20	1010.66	11.40	324.31	202.94	117.78	0 26 11	10.7	21.85	301.80
110.00	0 15 58	6277.87	5.73	297.23	199.53	123.73	2 0 35	5277.9	18.90	276.67

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2311	TRA	-.6384	TC3	.5543	BAU	.0950	SGT	1299.3	SGR	564.4	SG3	454.2	ST	25.9	SR	25.3	SS	21.0
RDE	-.3065	RRA	.1233	RC3	.1730	FAU	.08772	RRT	-.0443	RRF	.0549	RTF	-.7578	CRT	.6310	CRS	-.1595	CST	.6592
FDE	-.0149	FRA	1.6031	FC3	-6.2043	BSP	2043	SGB	1416.6	R23	-.0136	R13	.7579	LSA	33.7	MSA	24.8	SSA	1.6
BDE	.3838	BRA	.6502	BC3	.5806	FSP	685	SG1	1299.6	SG2	563.7	THA	178.64	EL1	32.7	EL2	15.6	ALF	43.94

LAUNCH DATE MAY 15 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 4 1971

DISTANCE 356.033

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.761	GAL	.17	AZL	91.77	HCA	118.11	SMA	194.59	ECC	.22290	INC 1.7726	V1	29.464
RP	207.37	LAP	-1.56	LOP	351.65	VP	24.453	GAP	12.33	AZP	89.16	TAL	.95	TAP	119.05	RCA	151.21	APO 237.98	V2	26.415
RC	80.909	GL	-17.10	GP	-.70	ZAL	94.60	ZAP	151.26	ETS	181.39	ZAE	172.66	ETE	11.69	ZAC	98.64	ETC 278.72	LVI	-18.62

PLANETOCENTRIC CONIC

C3	11.880	VHL	3.447	DLA	-27.99	RAL	337.13	RAD	6639.0	VEL	11.487	PTH	6.54	VHP	5.238	DPA	-16.29	RAP 326.11	ECC 1.1955

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 36	2437.00	-4.25	63.76	190.08	137.43	16 54 13	1437.0	14.08	47.87
60.00	17 32 3	2228.30	.83	49.84	194.95	130.29	18 9 12	1228.3	16.64	31.43
70.00	19 15 13	1924.92	6.41	29.45	199.16	123.62	19 47 18	924.9	19.50	8.78
80.00	21 28 12	1508.55	12.27	1.35	202.65	117.43	21 53 21	508.6	22.51	338.65
90.00	23 42 33	1075.31	16.52	331.56	204.73	113.29	24 0 28	75.3	24.70	307.52
100.00	0 15 0	6271.06	12.27	300.62	202.65	117.43	1 59 31	5271.1	22.51	277.92
110.00	0 18 35	6259.78	6.41	296.27	199.16	123.62	2 2 55	5259.8	19.50	275.61

DIFFERENTIAL CORRECTIONS

TDE	-.2329	TRA	-.6356	TC3	.5583	BAU	.0928
RDE	-.2988	RRA	.1208	RC3	.1734	FAU	.09212
FDE	-.0160	FRA	1.7006	FC3	-6.7130	BSP	2087
BDE	.3789	BRA	.6470	BC3	.5846	FSP	745

MID-COURSE EXECUTION ACCURACY

SGT	1315.2	SGR	559.3	SG3	486.2
RRT	-.0459	RRF	.0598	RTF	-.7568
SGB	1429.2	R23	-.0174	R13	.7571
SG1	1315.5	SG2	558.6	THA	178.64

ORBIT DETERMINATION ACCURACY

ST	26.4	SR	25.1	SS	22.0
CRT	.6340	CRS	-.1608	CST	.6555
LSA	34.2	MSA	25.3	SSA	1.6
EL1	32.9	EL2	15.6	ALF	42.66

LAUNCH DATE MAY 15 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 6 1971

DISTANCE 359.978

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.712	GAL	.21	AZL	91.77	HCA	119.37	SMA	193.69	ECC	.21932	INC 1.7687	V1	29.464
RP	207.48	LAP	-1.54	LOP	352.91	VP	24.375	GAP	12.00	AZP	89.13	TAL	1.15	TAP	120.51	RCA	151.21	APO 236.17	V2	26.402
RC	82.560	GL	-17.28	GP	-.73	ZAL	94.35	ZAP	149.85	ETS	181.36	ZAE	173.43	ETE	11.60	ZAC	98.64	ETC 278.69	LVI	-18.56

PLANETOCENTRIC CONIC

C3	11.548	VHL	3.398	DLA	-28.26	RAL	336.95	RAD	6638.8	VEL	11.473	PTH	6.52	VHP	5.082	DPA	-16.37	RAP 325.98	ECC 1.1901

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 19	2424.98	-3.64	63.25	189.70	137.47	16 54 44	1425.0	14.67	47.33
60.00	17 33 25	2214.56	1.43	49.18	194.58	130.28	18 10 20	1214.6	17.21	30.71
70.00	19 17 47	1907.65	7.06	28.54	198.81	123.50	19 49 34	907.6	20.06	7.76
80.00	21 34 2	1481.01	13.13	359.76	202.41	117.06	21 58 43	481.0	23.15	336.85
90.00	0 11 7	6275.00	18.81	304.00	205.07	111.51	1 55 42	5275.0	26.04	279.30
100.00	0 20 50	6243.52	13.13	299.03	202.41	117.06	2 4 53	5243.5	23.15	276.12
110.00	0 21 9	6242.51	7.06	295.36	198.81	123.50	2 5 11	5242.5	20.06	274.58

DIFFERENTIAL CORRECTIONS

TDE	-.2264	TRA	-.6195	TC3	.5420	BAU	.0879
RDE	-.2916	RRA	.1183	RC3	.1733	FAU	.09627
FDE	-.0418	FRA	1.7700	FC3	-7.2169	BSP	2056
BDE	.3692	BRA	.6307	BC3	.5691	FSP	799

MID-COURSE EXECUTION ACCURACY

SGT	1299.0	SGR	554.0	SG3	515.1
RRT	-.0520	RRF	.0678	RTF	-.7486
SGB	1412.2	R23	-.0203	R13	.7489
SG1	1299.4	SG2	553.1	THA	178.45

ORBIT DETERMINATION ACCURACY

ST	26.1	SR	24.8	SS	22.6
CRT	.6314	CRS	-.2019	CST	.6260
LSA	33.7	MSA	25.9	SSA	1.6
EL1	32.5	EL2	15.4	ALF	42.73

LAUNCH DATE MAY 15 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 8 1971

DISTANCE 363.946

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.667	GAL	.24	AZL	91.76	HCA	120.63	SMA	192.86	ECC	.21597	INC 1.7647	V1	29.464
RP	207.60	LAP	-1.52	LOP	354.17	VP	24.299	GAP	11.69	AZP	89.10	TAL	1.33	TAP	121.96	RCA	151.21	APO 234.52	V2	26.388
RC	84.247	GL	-17.46	GP	-.76	ZAL	94.11	ZAP	148.40	ETS	181.34	ZAE	174.28	ETE	11.64	ZAC	98.63	ETC 278.66	LVI	-18.48

PLANETOCENTRIC CONIC

C3	11.244	VHL	3.353	DLA	-28.51	RAL	336.78	RAD	6638.7	VEL	11.460	PTH	6.51	VHP	4.932	DPA	-16.46	RAP 325.80	ECC 1.1850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 0	2413.69	-3.08	62.78	189.35	137.50	16 55 14	1413.7	15.22	46.82
60.00	17 34 43	2201.61	2.00	48.56	194.23	130.26	18 11 25	1201.6	17.74	30.02
70.00	19 20 15	1891.24	7.68	27.67	198.49	123.38	19 51 47	891.2	20.58	6.77
80.00	21 40 2	1453.52	13.97	358.15	202.19	116.66	22 4 15	453.5	23.76	335.03
86.26	23 45 24	1049.80	19.91	331.14	204.92	110.83	24 2 53	49.8	26.74	306.15
100.00	0 26 50	6216.03	13.97	297.43	202.19	116.66	2 10 26	5216.0	23.76	274.31
110.00	0 23 38	6226.10	7.68	294.49	198.49	123.38	2 7 24	5226.1	20.58	273.60

DIFFERENTIAL CORRECTIONS

TDE	-.2230	TRA	-.6039	TC3	.5383	BAU	.0849
RDE	-.2845	RRA	.1160	RC3	.1722	FAU	.10119
FDE	-.0531	FRA	1.8438	FC3	-7.7912	BSP	2051
BDE	.3615	BRA	.6149	BC3	.5651	FSP	855

MID-COURSE EXECUTION ACCURACY

SGT	1286.2	SGR	548.3	SG3	547.6
RRT	-.0537	RRF	.0717	RTF	-.7436
SGB	1398.2	R23	-.0230	R13	.7439
SG1	1286.6	SG2	547.3	THA	178.40

ORBIT DETERMINATION ACCURACY

ST	26.0	SR	24.5	SS	23.2
CRT	.6338	CRS	-.2173	CST	.6111
LSA	33.5	MSA	26.3	SSA	1.6
EL1	32.3	EL2	15.3	ALF	42.48

LAUNCH DATE MAY 15 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 10 1971

DISTANCE 367.935

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.625	GAL	.26	AZL	91.76	HCA	121.88	SMA	192.10	ECC	.21286	INC 1.7606	V1	29.464
RP	207.73	LAP	-1.50	LOP	355.43	VP	24.226	GAP	11.38	AZP	89.07	TAL	1.51	TAP	123.39	RCA	151.21	APO 232.99	V2	26.373
RC	85.969	GL	-17.62	GP	-.79	ZAL	93.89	ZAP	146.92	ETS	181.31	ZAE	175.21	ETE	11.88	ZAC	98.64	ETC 278.61	LVI	-18.40

PLANETOCENTRIC CONIC

C3	10.963	VHL	3.311	DLA	-28.74	RAL	336.62	RAD	6638.5	VEL	11.448	PTH	6.50	VHP	4.788	DPA	-16.56	RAP 325.59	ECC 1.1804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 39	2403.11	-2.55	62.34	189.03	137.52	16 55 43	1403.1	15.73	46.34
60.00	17 35 58	2189.47	2.54	47.98	193.91	130.23	18 12 28	1189.5	18.23	29.38
70.00	19 22 39	1875.73	8.26	26.84	198.20	123.26	19 53 54	875.7	21.07	5.84
80.00	21 46 13	1426.04	14.81	356.54	202.02	116.23	22 9 59	426.0	24.34	333.20
84.65	23 31 33	1087.33	20.20	334.01	204.48	110.89	23 49 40	87.3	27.02	308.96
100.00	0 33 1	6188.55	14.81	295.81	202.02	116.23	2 16 10	5188.6	24.34	272.48
110.00	0 26 1	6210.59	8.26	293.66	198.20	123.26	2 9 31	5210.6	21.07	272.66

DIFFERENTIAL CORRECTIONS

TDE	-.2217	TRA	-.5882	TC3	.5292	BAU	.0815
RDE	-.2776	RRA	.1139	RC3	.1702	FAU	.10661
FDE	-.0650	FRA	1.9275	FC3	-8.4187	BSP	2004
BDE	.3553	BRA	.5992	BC3	.5559	FSP	914

MID-COURSE EXECUTION ACCURACY

SGT	1271.9	SGR	542.3	SG3	583.2
RRT	-.0538	RRF	.0767	RTF	-.7369
SGB	1382.7	R23	-.0283	R13	.7373
SG1	1272.3	SG2	541.3	THA	178.40

ORBIT DETERMINATION ACCURACY

ST	25.9	SR	24.3	SS	24.0
CRT	.6398	CRS	-.2320	CST	.5928
LSA	33.4	MSA	26.7	SSA	1.6
EL1	32.2	EL2	15.0	ALF	42.05

LAUNCH DATE MAY 15 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 12 1971

HELIOCENTRIC CONIC DISTANCE 371.943 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.586	GAL	.29	AZL	91.76	HCA	123.14	SMA	191.39	ECC	.20996	INC	1.7565
RP	207.86	LAP	-1.47	LOP	356.68	VP	24.156	GAP	11.08	AZP	89.04	TAL	1.67	TAP	124.81	RCA	151.21	APO	231.57
RC	87.725	GL	-17.78	GP	-.82	ZAL	93.69	ZAP	145.40	ETS	181.28	ZAE	176.20	ETE	12.49	ZAC	98.64	ETC	278.56

V1	29.464																		
V2	26.357																		
LVI	-18.30																		

PLANETOCENTRIC CONIC

C3	10.705	VHL	3.272	DLA	-28.96	RAL	336.48	RAD	6638.4	VEL	11.437	PTH	6.49	VHP	4.650	DPA	-16.68	RAP	325.35
ECC	1.1762																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 17	2393.26	-2.05	61.93	188.73	137.54	16 56 11	1393.3	16.21	45.90
60.00	17 37 9	2178.14	3.04	47.44	193.62	130.21	18 13 27	1178.1	18.69	28.77
70.00	19 24 55	1861.17	8.80	26.06	197.93	123.13	19 55 56	861.2	21.53	4.95
80.00	21 52 38	1398.48	15.63	354.91	201.87	115.77	22 15 56	398.5	24.90	331.35
83.50	23 21 40	1112.55	20.46	335.97	204.07	110.95	23 40 12	112.5	27.28	310.86
100.00	0 39 26	6160.99	15.63	294.18	201.87	115.77	2 22 6	5161.0	24.90	270.62
110.00	0 28 18	6196.03	8.80	292.89	197.93	123.13	2 11 34	5196.0	21.53	271.78

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2172	TRA	-.5734	TC3	.5030	BAU	.0759	SGT	1253.1	SGR	536.1	SG3	619.1	ST	25.7	SR	24.0	SS	24.8
RDE	-.2716	RRA	.1119	RC3	.1676	FAU	.11179	RRT	-.0603	RRF	.0853	RTF	-.7270	CRT	.6400	CRS	-.2574	CST	.5713
FDE	-.0859	FRA	2.0191	FC3	-9.0406	BSP	1990	SGB	1362.9	R23	-.0318	R13	.7275	LSA	33.1	MSA	27.4	SSA	1.6
BDE	.3473	BRA	.5843	BC3	.5302	FSP	981	SG1	1253.6	SG2	534.9	THA	178.19	EL1	31.8	EL2	14.9	ALF	41.96

LAUNCH DATE MAY 15 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 14 1971

HELIOCENTRIC CONIC DISTANCE 375.969 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.550	GAL	.31	AZL	91.75	HCA	124.39	SMA	190.74	ECC	.20726	INC	1.7522
RP	208.01	LAP	-1.45	LOP	357.94	VP	24.088	GAP	10.79	AZP	89.01	TAL	1.82	TAP	126.21	RCA	151.20	APO	230.27
RC	89.514	GL	-17.92	GP	-.86	ZAL	93.51	ZAP	143.85	ETS	181.25	ZAE	177.26	ETE	13.89	ZAC	98.65	ETC	278.50

V1	29.464																		
V2	26.340																		
LVI	-18.19																		

PLANETOCENTRIC CONIC

C3	10.467	VHL	3.235	DLA	-29.15	RAL	336.36	RAD	6638.3	VEL	11.426	PTH	6.48	VHP	4.517	DPA	-16.81	RAP	325.06
ECC	1.1723																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 53	2384.14	-1.59	61.54	188.47	137.56	16 56 37	1384.1	16.65	45.48
60.00	17 38 16	2167.64	3.50	46.94	193.36	130.17	18 14 24	1167.6	19.11	28.21
70.00	19 27 5	1847.60	9.31	25.33	197.69	123.01	19 57 52	847.6	21.95	4.12
80.00	21 59 18	1370.69	16.44	353.25	201.77	115.28	22 22 9	370.7	25.44	329.46
82.60	23 13 58	1131.17	20.71	337.45	203.69	111.00	23 32 49	131.2	27.52	312.28
100.00	0 46 6	6133.20	16.44	292.52	201.77	115.28	2 28 19	5133.2	25.44	268.74
110.00	0 30 27	6182.46	9.31	292.16	197.69	123.01	2 13 29	5182.5	21.95	270.95

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2142	TRA	-.5572	TC3	.4754	BAU	.0704	SGT	1231.0	SGR	529.6	SG3	657.3	ST	25.4	SR	23.7	SS	25.6
RDE	-.2645	RRA	.1101	RC3	.1641	FAU	.11747	RRT	-.0645	RRF	.0922	RTF	-.7157	CRT	.6438	CRS	-.2720	CST	.5547
FDE	-.1002	FRA	2.1101	FC3	-9.7163	BSP	1909	SGB	1340.1	R23	-.0357	R13	.7163	LSA	32.9	MSA	27.8	SSA	1.7
BDE	.3403	BRA	.5680	BC3	.5030	FSP	1037	SG1	1231.6	SG2	528.3	THA	178.05	EL1	31.5	EL2	14.6	ALF	41.78

LAUNCH DATE MAY 15 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 16 1971

HELIOCENTRIC CONIC DISTANCE 380.012 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.516	GAL	.33	AZL	91.75	HCA	125.64	SMA	190.13	ECC	.20474	INC	1.7478
RP	208.16	LAP	-1.42	LOP	359.19	VP	24.023	GAP	10.50	AZP	88.98	TAL	1.95	TAP	127.60	RCA	151.20	APO	229.06
RC	91.337	GL	-18.05	GP	-.90	ZAL	93.35	ZAP	142.25	ETS	181.22	ZAE	178.39	ETE	17.89	ZAC	98.66	ETC	278.43

V1	29.464																		
V2	26.323																		
LVI	-18.07																		

PLANETOCENTRIC CONIC

C3	10.248	VHL	3.201	DLA	-29.34	RAL	336.25	RAD	6638.2	VEL	11.417	PTH	6.47	VHP	4.390	DPA	-16.96	RAP	324.74
ECC	1.1687																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 17 28	2375.69	-1.17	61.19	188.22	137.57	16 57 3	1375.7	17.06	45.09
60.00	17 39 19	2157.92	3.92	46.47	193.11	130.14	18 15 17	1157.9	19.50	27.68
70.00	19 29 7	1834.97	9.77	24.65	197.47	122.89	19 59 42	835.0	22.34	3.35
80.00	22 6 21	1342.19	17.26	351.53	201.70	114.74	22 28 44	342.2	25.97	327.51
81.86	23 7 38	1145.86	20.93	338.62	203.34	111.04	23 26 44	145.9	27.74	313.41
100.00	0 53 9	6104.70	17.26	290.80	201.70	114.74	2 34 54	5104.7	25.97	266.78
110.00	0 32 29	6169.83	9.77	291.48	197.47	122.89	2 15 19	5169.8	22.34	270.17

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2003	TRA	-.5295	TC3	.4796	BAU	.0692	SGT	1185.1	SGR	523.1	SG3	698.5	ST	24.2	SR	23.4	SS	26.4
RDE	-.2583	RRA	.1084	RC3	.1593	FAU	.12395	RRT	-.0724	RRF	.1023	RTF	-.7176	CRT	.6360	CRS	-.3115	CST	.5284
FDE	-.1359	FRA	2.1971	FC3	-10.4711	BSP	1695	SGB	1295.4	R23	-.0380	R13	.7183	LSA	31.8	MSA	28.5	SSA	1.6
BDE	.3269	BRA	.5404	BC3	.5054	FSP	1086	SG1	1185.9	SG2	521.4	THA	177.73	EL1	30.4	EL2	14.3	ALF	43.32

LAUNCH DATE MAY 15 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 384.068 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.484	GAL	.35	AZL	91.74	HCA	126.89	SMA	189.57	ECC	.20242	INC	1.7432
RP	208.32	LAP	-1.39	LOP	.44	VP	23.960	GAP	10.22	AZP	88.95	TAL	2.07	TAP	128.98	RCA	151.20	APO	227.95
RC	93.190	GL	-18.16	GP	-.93	ZAL	93.22	ZAP	140.63	ETS	181.19	ZAE	179.52	ETE	44.26	ZAC	98.68	ETC	278.35

V1	29.464																		
V2	26.304																		
LVI	-17.93																		

PLANETOCENTRIC CONIC

C3	10.048	VHL	3.170	DLA	-29.49	RAL	336.17	RAD	6638.1	VEL	11.408	PTH	6.46	VHP	4.269	DPA	-17.12	RAP	324.38
ECC	1.1654																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 1	2368.07	-.79	60.87	188.01	137.57	16 57 29	1368.1	17.43	44.74
60.00	17 40 18	2149.15	4.31	46.05	192.90	130.11	18 16 7	1149.2	19.85	27.20
70.00	19 30 59	1823.57	10.20	24.04	197.28	122.77	20 1 22	823.6	22.68	2.64
80.00	22 13 45	1313.32	18.08	349.77	201.68	114.17	22 35 39	313.3	26.47	325.51
81.26	23 2 37	1156.93	21.14	339.53	203.03	111.06	23 21 54	156.9	27.93	314.27
100.00	1 0 33	6075.83	18.08	289.05	201.68	114.17	2 41 49	5075.8	26.47	264.79
110.00	0 34 21	6158.43	10.20	290.86	197.28	122.77	2 17 0	5158.4	22.68	269.47

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2083	TRA	-.5195	TC3	.3950	BAU	.0570	SGT	1169.8	SGR	516.1	SG3	737.8	ST	24.8	SR	23.0	SS	27.2
RDE	-.2519	RRA	.1070	RC3	.1545	FAU	.12938	RRT	-.0725	RRF	.1097	RTF	-.6850	CRT	.6559	CRS	-.3051	CST	.5117
FDE	-.1356	FRA	2.3054	FC3	-11.1476	BSP	1779	SGB	1278.6	R23	-.0483	R13	.6859	LSA	32.5	MSA	28.7	SSA	1.7
BDE	.3269	BRA	.5304	BC3	.4242	FSP	1186	SG1	1170.6	SG2	514.4	THA	177.73	EL1	30.8	EL2	14.0	ALF	41.69

LAUNCH DATE MAY 15 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC — DISTANCE 388.139 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.455 GAL .36 AZL 91.74 HCA 128.14 SMA 189.06 ECC .20026 INC 1.7386 V1 29.464
RP 208.49 LAP -1.37 LOP 1.69 VP 23.899 GAP 9.95 AZP 88.93 TAL 2.17 TAP 130.31 RCA 151.20 APO 226.92 V2 26.284
RC 95.074 GL -18.27 GP -.97 ZAL 93.11 ZAP 138.96 ETS 181.16 ZAE 179.07 ETE 169.13 ZAC 98.70 ETC 278.27 LVI -17.78

PLANETOCENTRIC CONIC

C3 9.863 VHL 3.141 DLA -29.63 RAL 336.10 RAD 6638.0 VEL 11.400 PTH 6.45 VHP 4.154 DPA -17.29 RAP 323.98 ECC 1.1623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 32	2361.13	-.44	60.58	187.82	137.57	16 57 53	1361.1	17.76	44.42
60.00	17 41 12	2141.20	4.66	45.67	192.71	130.08	18 16 53	1141.2	20.17	26.77
70.00	19 32 42	1813.22	10.58	23.48	197.10	122.67	20 2 55	813.2	22.99	2.00
80.00	22 21 54	1282.61	18.92	347.88	201.71	113.53	22 43 17	282.6	26.97	323.37
80.76	22 58 27	1165.75	21.32	340.26	202.75	111.08	23 17 52	165.7	28.11	314.96
100.00	1 8 42	6045.13	18.92	287.16	201.71	113.53	2 49 27	5045.1	26.97	262.64
110.00	0 36 4	6148.08	10.58	290.30	197.10	122.67	2 18 32	5148.1	22.99	268.82

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2071 TRA -.5046 TC3 .3293 BAU .0476 — SGT 1143.2 SGR 509.2 SG3 781.0 — ST 24.7 SR 22.7 SS 28.2
RDE -.2459 RRA .1057 RC3 .1485 FAU .13548 — RRT -.0794 RRF .1227 RTF -.6594 — CRT .6626 CRS -.3293 CST .4818
FDE -.1632 FRA 2.4215 FC-11.8919 BSP 1719 — SGB 1251.5 R23 -.0577 R13 .6607 — LSA 32.6 MSA 29.2 SSA 1.7
BDE .3215 BRA .5155 BC3 .3612 FSP 1263 — SG1 1144.1 SG2 507.2 THA 177.48 — EL1 30.6 EL2 13.7 ALF 41.36

LAUNCH DATE MAY 15 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC — DISTANCE 392.223 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.428 GAL .37 AZL 91.73 HCA 129.39 SMA 188.59 ECC .19827 INC 1.7337 V1 29.464
RP 208.67 LAP -1.34 LOP 2.93 VP 23.839 GAP 9.68 AZP 88.90 TAL 2.25 TAP 131.64 RCA 151.20 APO 225.98 V2 26.264
RC 96.988 GL -18.37 GP -1.02 ZAL 93.03 ZAP 137.25 ETS 181.13 ZAE 177.75 ETE 179.50 ZAC 98.72 ETC 278.18 LVI -17.62

PLANETOCENTRIC CONIC

C3 9.694 VHL 3.113 DLA -29.75 RAL 336.05 RAD 6637.9 VEL 11.393 PTH 6.44 VHP 4.044 DPA -17.48 RAP 323.53 ECC 1.1595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 1	2354.89	-.12	60.32	187.66	137.58	16 58 16	1354.9	18.06	44.13
60.00	17 42 1	2134.07	4.97	45.33	192.54	130.05	18 17 35	1134.1	20.45	26.38
70.00	19 34 14	1803.96	10.92	22.98	196.95	122.56	20 4 18	804.0	23.27	1.42
80.00	22 31 32	1247.71	19.86	345.71	201.80	112.77	22 52 20	247.7	27.50	320.91
80.34	22 55 5	1172.45	21.49	340.83	202.51	111.09	23 14 38	172.5	28.26	315.48
100.00	1 18 20	6010.22	19.86	284.99	201.80	112.77	2 58 30	5010.2	27.50	260.18
110.00	0 37 37	6138.82	10.92	289.80	196.95	122.56	2 19 56	5138.8	23.27	268.25

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2048 TRA -.4814 TC3 .2790 BAU .0405 — SGT 1101.6 SGR 501.8 SG3 826.5 — ST 24.3 SR 22.3 SS 28.9
RDE -.2400 RRA .1045 RC3 .1412 FAU .14252 — RRT -.0802 RRF .1315 RTF -.6367 — CRT .6737 CRS -.3381 CST .4602
FDE -.1769 FRA 2.5219 FC-12.7280 BSP 1605 — SGB 1210.5 R23 -.0674 R13 .6383 — LSA 32.6 MSA 29.3 SSA 1.7
BDE .3155 BRA .4926 BC3 .3127 FSP 1341 — SG1 1102.5 SG2 499.8 THA 177.37 — EL1 30.2 EL2 13.3 ALF 41.46

LAUNCH DATE MAY 15 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC — DISTANCE 396.319 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.403 GAL .38 AZL 91.73 HCA 130.63 SMA 188.16 ECC .19642 INC 1.7287 V1 29.464
RP 208.65 LAP -1.31 LOP 4.18 VP 23.782 GAP 9.42 AZP 88.87 TAL 2.32 TAP 132.95 RCA 151.20 APO 225.11 V2 26.243
RC 98.929 GL -18.45 GP -1.06 ZAL 92.97 ZAP 135.51 ETS 181.09 ZAE 176.35 ETE 182.12 ZAC 98.75 ETC 278.07 LVI -17.45

PLANETOCENTRIC CONIC

C3 9.539 VHL 3.088 DLA -29.85 RAL 336.03 RAD 6637.8 VEL 11.386 PTH 6.44 VHP 3.939 DPA -17.68 RAP 323.05 ECC 1.1570

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 30	2349.39	.15	60.09	187.52	137.58	16 58 39	1349.4	18.32	43.87
60.00	17 42 46	2127.83	5.24	45.02	192.40	130.02	18 18 14	1127.8	20.70	26.04
70.00	19 35 36	1795.92	11.21	22.54	196.82	122.47	20 5 32	795.9	23.50	.92
80.00	22 47 59	1191.64	21.29	342.17	202.15	111.44	23 7 51	191.6	28.23	316.90
80.02	22 52 27	1177.38	21.63	341.25	202.29	111.09	23 12 5	177.4	28.39	315.87
100.00	1 34 47	5954.14	21.29	281.44	202.15	111.44	3 14 1	4954.1	28.23	256.18
110.00	0 38 56	6130.79	11.21	289.37	196.82	122.47	2 21 9	5130.8	23.50	267.74

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2049 TRA -.4633 TC3 .1899 BAU .0296 — SGT 1067.9 SGR 494.5 SG3 871.7 — ST 24.1 SR 22.0 SS 29.8
RDE -.2342 RRA .1035 RC3 .1335 FAU .14891 — RRT -.0845 RRF .1451 RTF -.6578 — CRT .6855 CRS -.3540 CST .4306
FDE -.1996 FRA 2.6428 FC-13.5152 BSP 1520 — SGB 1176.9 R23 -.0812 R13 .5998 — LSA 32.9 MSA 29.5 SSA 1.7
BDE .3112 BRA .4748 BC3 .2322 FSP 1419 — SG1 1069.0 SG2 492.3 THA 177.16 — EL1 30.0 EL2 12.9 ALF 41.11

LAUNCH DATE MAY 15 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 26 1971

HELIOCENTRIC CONIC — DISTANCE 400.426 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.380 GAL .39 AZL 91.72 HCA 131.88 SMA 187.76 ECC .19472 INC 1.7234 V1 29.464
RP 209.04 LAP -1.28 LOP 5.42 VP 23.726 GAP 9.17 AZP 88.85 TAL 2.37 TAP 134.25 RCA 151.20 APO 224.32 V2 26.221
RC 100.898 GL -18.52 GP -1.11 ZAL 92.93 ZAP 133.72 ETS 181.05 ZAE 174.88 ETE 183.21 ZAC 98.78 ETC 277.96 LVI -17.26

PLANETOCENTRIC CONIC

C3 9.396 VHL 3.065 DLA -29.93 RAL 336.02 RAD 6637.7 VEL 11.380 PTH 6.43 VHP 3.840 DPA -17.90 RAP 322.53 ECC 1.1546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 56	2344.57	.40	59.89	187.41	137.57	16 59 1	1344.6	18.55	43.64
60.00	17 43 26	2122.41	5.48	44.76	192.29	129.99	18 18 49	1122.4	20.91	25.74
70.00	19 36 46	1789.03	11.46	22.17	196.71	122.40	20 6 35	789.0	23.70	.48
79.76	22 50 28	1180.72	21.76	341.55	202.11	111.08	23 10 9	180.7	28.50	316.14
79.76	22 50 28	1180.72	21.76	341.55	202.11	111.08	23 10 9	180.7	28.50	316.14
79.76	22 50 28	1180.72	21.76	341.55	202.11	111.08	23 10 9	180.7	28.50	316.14
110.00	0 40 8	6123.89	11.46	288.99	196.71	122.40	2 22 12	5123.9	23.70	267.31

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2009 TRA -.4382 TC3 .1204 BAU .0217 — SGT 1019.8 SGR 487.1 SG3 920.6 — ST 23.5 SR 21.6 SS 30.7
RDE -.2286 RRA .1026 RC3 .1244 FAU .15634 — RRT -.0867 RRF .1587 RTF -.5625 — CRT .6961 CRS -.3743 CST .3972
FDE -.2280 FRA 2.7567 FC-14.4048 BSP 1352 — SGB 1130.1 R23 -.0961 R13 .5651 — LSA 33.2 MSA 29.3 SSA 1.7
BDE .3043 BRA .4501 BC3 .1731 FSP 1490 — SG1 1020.9 SG2 484.7 THA 176.94 — EL1 29.4 EL2 12.4 ALF 41.52

LAUNCH DATE MAY 15 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 28 1971

HELIOCENTRIC CONIC DISTANCE 404.542 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.358	GAL	.39	AZL	91.72	HCA	133.11	SMA	187.39	ECC	.19316	INC	1.7181	V1	29.464
RP	209.24	LAP	-1.25	LOP	6.66	VP	23.671	GAP	8.92	AZP	88.83	TAL	2.41	TAP	135.52	RCA	151.20	APO	223.59	V2	26.198
RC	102.893	GL	-18.58	GP	-1.16	ZAL	92.93	ZAP	131.90	ETS	181.01	ZAE	173.35	ETE	183.76	ZAC	98.81	ETC	277.84	LVI	-17.05

PLANETOCENTRIC CONIC

C3	9.266	VHL	3.044	DLA	-29.99	RAL	336.04	RAD	6637.7	VEL	11.374	PTH	6.43	VHP	3.746	DPA	-18.12	RAP	321.97	ECC	1.1525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 20 21	2340.48	.60	59.72	187.33	137.57	16 59 22	1340.5	18.75	43.45
60.00	17 44 1	2117.88	5.68	44.54	192.20	129.97	18 19 19	1117.9	21.09	25.48
70.00	19 37 43	1783.41	11.67	21.86	196.62	122.33	20 7 26	783.4	23.87	.13
79.57	22 49 9	1182.49	21.87	341.73	201.96	111.05	23 8 51	182.5	28.59	316.29
79.57	22 49 9	1182.49	21.87	341.73	201.96	111.05	23 8 51	182.5	28.59	316.29
79.57	22 49 9	1182.49	21.87	341.73	201.96	111.05	23 8 51	182.5	28.59	316.29
110.00	0 41 5	6118.27	11.67	288.69	196.62	122.33	2 23 3	5118.3	23.87	266.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2069	TRA	-.4195	TC3	.0047	BAU	.0143	SGT	991.3	SGR	479.3	SG3	967.9	ST	23.8	SR	21.2	SS	31.5
RDE	-.2227	RRA	.1019	RC3	.1152	FAU	.16293	RRT	-.0809	RRF	.1707	RTF	-.5032	CRT	.7182	CRS	-.3627	CST	.3795
FDE	-.2226	FRA	2.8895	FC-15.2222		BSP	1287	SGB	1101.1	R23	-.1180	R13	.5062	LSA	33.8	MSA	29.4	SSA	1.7
BDE	.3040	BRA	.4317	BC3	.1153	FSP	1591	SG1	992.3	SG2	477.2	THA	177.08	EL1	29.6	EL2	11.9	ALF	40.47

LAUNCH DATE MAY 15 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 30 1971

HELIOCENTRIC CONIC DISTANCE 408.668 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.339	GAL	.39	AZL	91.71	HCA	134.35	SMA	187.06	ECC	.19172	INC	1.7125	V1	29.464
RP	209.44	LAP	-1.22	LOP	7.90	VP	23.618	GAP	8.68	AZP	88.80	TAL	2.42	TAP	136.78	RCA	151.20	APO	222.92	V2	26.174
RC	104.913	GL	-18.63	GP	-1.21	ZAL	92.94	ZAP	130.05	ETS	180.97	ZAE	171.76	ETE	184.05	ZAC	98.84	ETC	277.71	LVI	-16.84

PLANETOCENTRIC CONIC

C3	9.148	VHL	3.025	DLA	-30.03	RAL	336.09	RAD	6637.6	VEL	11.369	PTH	6.42	VHP	3.657	DPA	-18.36	RAP	321.37	ECC	1.1505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 20 44	2337.08	.77	59.58	187.27	137.57	16 59 42	1337.1	18.91	43.29
60.00	17 44 31	2114.18	5.84	44.37	192.13	129.95	18 19 45	1114.2	21.23	25.28
70.00	19 38 28	1778.98	11.83	21.62	196.54	122.28	20 8 7	779.0	23.99	359.85
79.45	22 48 24	1182.89	21.96	341.80	201.84	111.02	23 8 7	182.9	28.65	316.33
79.45	22 48 24	1182.89	21.96	341.80	201.84	111.02	23 8 7	182.9	28.65	316.33
79.45	22 48 24	1182.89	21.96	341.80	201.84	111.02	23 8 7	182.9	28.65	316.33
110.00	0 41 50	6113.84	11.83	288.44	196.54	122.28	2 23 44	5113.8	23.99	266.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2064	TRA	-.3963	TC3	-.1110	BAU	.0187	SGT	953.5	SGR	471.7	SG3	1016.5	ST	23.5	SR	20.8	SS	32.5
RDE	-.2172	RRA	.1013	RC3	.1050	FAU	.16975	RRT	-.0792	RRF	.1876	RTF	-.4368	CRT	.7335	CRS	-.3767	CST	.3446
FDE	-.2461	FRA	3.0228	FC-16.0652		BSP	1139	SGB	1063.8	R23	-.1424	R13	.4406	LSA	34.5	MSA	29.2	SSA	1.7
BDE	.2996	BRA	.4090	BC3	.1528	FSP	1676	SG1	954.5	SG2	469.8	THA	177.04	EL1	29.3	EL2	11.4	ALF	40.37

LAUNCH DATE MAY 15 1971 FLIGHT TIME 170.00 ARRIVAL DATE NOV 1 1971

HELIOCENTRIC CONIC DISTANCE 412.802 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.321	GAL	.39	AZL	91.71	HCA	135.59	SMA	186.76	ECC	.19041	INC	1.7067	V1	29.464
RP	209.66	LAP	-1.19	LOP	9.13	VP	23.567	GAP	8.44	AZP	88.78	TAL	2.42	TAP	136.01	RCA	151.20	APO	222.92	V2	26.150
RC	106.958	GL	-18.67	GP	-1.26	ZAL	92.99	ZAP	128.16	ETS	180.93	ZAE	170.11	ETE	184.21	ZAC	98.88	ETC	277.58	LVI	-16.61

PLANETOCENTRIC CONIC

C3	9.040	VHL	3.007	DLA	-30.05	RAL	336.15	RAD	6637.5	VEL	11.364	PTH	6.42	VHP	3.573	DPA	-18.62	RAP	320.73	ECC	1.1488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 6	2334.36	.91	59.47	187.24	137.57	17 0 1	1334.4	19.04	43.16
60.00	17 44 56	2111.33	5.97	44.23	192.08	129.93	18 20 7	1111.3	21.35	25.12
70.00	19 38 59	1775.79	11.94	21.44	196.49	122.24	20 8 35	775.8	24.09	359.65
79.39	22 48 14	1181.98	22.02	341.76	201.76	110.97	23 7 56	182.0	28.69	316.27
79.39	22 48 14	1181.98	22.02	341.76	201.76	110.97	23 7 56	182.0	28.69	316.27
79.39	22 48 14	1181.98	22.02	341.76	201.76	110.97	23 7 56	182.0	28.69	316.27
110.00	0 42 22	6110.64	11.94	288.27	196.49	122.24	2 24 12	5110.6	24.09	266.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2098	TRA	-.3715	TC3	-.2390	BAU	.0310	SGT	921.6	SGR	463.8	SG3	1065.5	ST	23.5	SR	20.4	SS	33.3
RDE	-.2116	RRA	.1009	RC3	.0940	FAU	.17668	RRT	-.0868	RRF	.2023	RTF	-.[illegible]52	CRT	.7556	CRS	-.3700	CST	.3198
FDE	-.2447	FRA	3.1581	FC-16.9209		BSP	990	SGB	1031.7	R23	-.1710	R13	.3592	LSA	35.0	MSA	29.2	SSA	1.6
BDE	.2980	BRA	.3849	BC3	.2568	FSP	1767	SG1	922.3	SG2	462.4	THA	177.43	EL1	29.2	EL2	10.8	ALF	39.81

LAUNCH DATE MAY 15 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 416.944 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.305	GAL	.38	AZL	91.70	HCA	136.82	SMA	186.48	ECC	.18921	INC	1.7006	V1	29.464
RP	209.87	LAP	-1.16	LOP	10.36	VP	23.516	GAP	8.21	AZP	88.76	TAL	2.41	TAP	139.22	RCA	151.20	APO	221.76	V2	26.124
RC	109.028	GL	-18.70	GP	-1.32	ZAL	93.06	ZAP	126.24	ETS	180.88	ZAE	168.40	ETE	184.28	ZAC	98.91	ETC	277.43	LVI	-16.36

PLANETOCENTRIC CONIC

C3	8.941	VHL	2.990	DLA	-30.05	RAL	336.24	RAD	6637.5	VEL	11.360	PTH	6.41	VHP	3.494	DPA	-18.88	RAP	320.05	ECC	1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 26	2332.32	1.01	59.38	187.23	137.57	17 0 19	1332.3	19.14	43.07
60.00	17 45 16	2109.31	6.05	44.13	192.06	129.92	18 20 25	1109.3	21.42	25.01
70.00	19 39 18	1773.82	12.02	21.34	196.45	122.21	20 8 52	773.8	24.14	359.52
79.40	22 48 39	1179.64	22.08	341.60	201.70	110.92	23 8 19	179.6	28.71	316.10
79.40	22 48 39	1179.64	22.08	341.60	201.70	110.92	23 8 19	179.6	28.71	316.10
79.40	22 48 39	1179.64	22.08	341.60	201.70	110.92	23 8 19	179.6	28.71	316.10
110.00	0 42 40	6108.67	12.02	288.16	196.45	122.21	2 24 29	5108.7	24.14	266.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2101	TRA	-.3449	TC3	-.3721	BAU	.0455	SGT	891.2	SGR	456.1	SG3	1117.0	ST	23.2	SR	20.0	SS	34.2
RDE	-.2062	RRA	.1006	RC3	.0818	FAU	.18414	RRT	-.0535	RRF	.2205	RTF	-.2598	CRT	.7745	CRS	-.3789	CST	.2822
FDE	-.2625	FRA	3.2951	FC-17.8287		BSP	834	SGB	1001.1	R23	-.2020	R13	.2636	LSA	35.7	MSA	28.9	SSA	1.6
BDE	.2944	BRA	.3592	BC3	.3809	FSP	1866	SG1	891.7	SG2	455.2	THA	177.88	EL1	28.9	EL2	10.2	ALF	39.67

LAUNCH DATE MAY 15 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC — DISTANCE 421.093 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.290 GAL .38 AZL 91.69 HCA 138.05 SMA 186.23 ECC .18812 INC 1.6943 V1 29.464
RP 210.10 LAP -1.13 LOP 11.58 VP 23.467 GAP 7.98 AZP 88.74 TAL 2.37 TAP 140.42 RCA 151.20 APO 221.26 V2 26.098
RC 111.121 GL -18.72 GP -1.38 ZAL 93.16 ZAP 124.29 ETS 180.83 ZAE 166.64 ETE 184.30 ZAC 98.95 ETC 277.26 LVI -16.10

PLANETOCENTRIC CONIC

C3 8.853 VHL 2.975 DLA -30.02 RAL 336.35 RAD 6637.4 VEL 11.356 PTH 6.41 VHP 3.420 DPA -19.16 RAP 319.34 ECC 1.1457

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 45	2330.95	1.08	59.32	187.24	137.57	17 0 36	1331.0	19.20	43.00
60.00	17 45 30	2108.12	6.11	44.07	192.06	129.91	18 20 39	1108.1	21.47	24.94
70.00	19 39 24	1773.07	12.04	21.30	196.43	122.20	20 8 57	773.1	24.17	359.47
79.48	22 49 40	1175.94	22.11	341.34	201.67	110.85	23 9 15	175.9	28.71	315.83
79.48	22 49 40	1175.94	22.11	341.34	201.67	110.85	23 9 15	175.9	28.71	315.83
79.48	22 49 40	1175.94	22.11	341.34	201.67	110.85	23 9 15	175.9	28.71	315.83
110.00	0 42 46	6107.92	12.04	288.12	196.43	122.20	2 24 34	5107.9	24.17	266.30

DIFFERENTIAL CORRECTIONS

TDE -.2127 TRA -.3160 TC3 -.5167 BAU .0617
RDE -.2006 RRA .1003 RC3 .0690 FAU .19148
FDE -.2614 FRA 3.4305 FC-18.7254 BSP 647
BDE .2924 BRA .3315 BC3 .5213 FSP 1947

MID-COURSE EXECUTION ACCURACY

SGT 869.6 SGR 448.1 SG3 1167.6
RRT -.0286 RRF .2377 RTF -.1472
SGB 978.2 R23 -.2320 R13 .1496
SG1 869.7 SG2 447.8 THA 178.85

ORBIT DETERMINATION ACCURACY

ST 23.0 SR 19.6 SS 35.0
CRT .7978 CRS -.3741 CST .2505
LSA 36.2 MSA 28.7 SSA 1.6
EL1 28.7 EL2 9.5 ALF 39.26

LAUNCH DATE MAY 15 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC — DISTANCE 425.248 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.277 GAL .37 AZL 91.69 HCA 139.28 SMA 186.00 ECC .18713 INC 1.6876 V1 29.464
RP 210.33 LAP -1.10 LOP 12.82 VP 23.419 GAP 7.76 AZP 88.72 TAL 2.32 TAP 141.59 RCA 151.20 APO 220.81 V2 26.071
RC 113.239 GL -18.72 GP -1.44 ZAL 93.28 ZAP 122.31 ETS 180.77 ZAE 164.84 ETE 184.29 ZAC 98.99 ETC 277.11 LVI -15.82

PLANETOCENTRIC CONIC

C3 8.772 VHL 2.962 DLA -29.98 RAL 336.48 RAD 6637.4 VEL 11.353 PTH 6.41 VHP 3.351 DPA -19.44 RAP 318.60 ECC 1.1444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 2	2330.24	1.12	59.29	187.28	137.57	17 0 52	1330.2	19.24	42.97
60.00	17 45 40	2107.73	6.12	44.05	192.08	129.91	18 20 48	1107.7	21.49	24.92
70.00	19 39 17	1773.50	12.03	21.32	196.43	122.21	20 8 50	773.5	24.15	359.50
79.61	22 51 12	1170.99	22.12	340.97	201.67	110.77	23 10 43	171.0	28.69	315.46
79.61	22 51 12	1170.99	22.12	340.97	201.67	110.77	23 10 43	171.0	28.69	315.46
79.61	22 51 12	1170.99	22.12	340.97	201.67	110.77	23 10 43	171.0	28.69	315.46
110.00	0 42 39	6108.36	12.03	288.14	196.43	122.21	2 24 27	5108.4	24.15	266.33

DIFFERENTIAL CORRECTIONS

TDE -.2127 TRA -.2841 TC3 -.6692 BAU .0788
RDE -.1953 RRA .1001 RC3 .0556 FAU .19862
FDE -.2737 FRA 3.5595 FC-19.6018 BSP 449
BDE .2888 BRA .3012 BC3 .6715 FSP 2033

MID-COURSE EXECUTION ACCURACY

SGT 853.8 SGR 440.2 SG3 1216.7
RRT .0015 RRF .2573 RTF -.0185
SGB 960.6 R23 .2573 R13 -.0184
SG1 853.8 SG2 440.2 THA .06

ORBIT DETERMINATION ACCURACY

ST 22.7 SR 19.2 SS 35.7
CRT .8199 CRS -.3799 CST .2072
LSA 36.8 MSA 28.3 SSA 1.6
EL1 28.4 EL2 8.8 ALF 39.21

LAUNCH DATE MAY 15 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC — DISTANCE 429.410 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.265 GAL .35 AZL 91.68 HCA 140.50 SMA 185.80 ECC .18623 INC 1.6807 V1 29.464
RP 210.57 LAP -1.07 LOP 14.04 VP 23.371 GAP 7.54 AZP 88.70 TAL 2.25 TAP 142.75 RCA 151.20 APO 220.40 V2 26.044
RC 115.380 GL -18.71 GP -1.50 ZAL 93.43 ZAP 120.30 ETS 180.71 ZAE 162.98 ETE 184.26 ZAC 99.02 ETC 276.94 LVI -15.54

PLANETOCENTRIC CONIC

C3 8.700 VHL 2.950 DLA -29.92 RAL 336.64 RAD 6637.4 VEL 11.349 PTH 6.40 VHP 3.286 DPA -19.73 RAP 317.83 ECC 1.1432

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 17	2330.15	1.12	59.29	187.34	137.57	17 1 7	1330.1	19.24	42.96
60.00	17 45 44	2108.12	6.11	44.07	192.11	129.91	18 20 52	1108.1	21.47	24.94
70.00	19 38 57	1775.08	11.97	21.41	196.44	122.23	20 8 32	775.1	24.11	359.60
79.81	22 53 21	1164.50	22.11	340.49	201.70	110.68	23 12 46	164.5	28.65	314.97
79.81	22 53 21	1164.50	22.11	340.49	201.70	110.68	23 12 46	164.5	28.65	314.97
79.81	22 53 21	1164.50	22.11	340.49	201.70	110.68	23 12 46	164.5	28.65	314.97
110.00	0 42 19	6109.94	11.97	288.23	196.44	122.23	2 24 9	5109.9	24.11	266.43

DIFFERENTIAL CORRECTIONS

TDE -.2079 TRA -.2463 TC3 -.8107 BAU .0944
RDE -.1902 RRA .0998 RC3 .0405 FAU .20669
FDE -.3115 FRA 3.6674 FC-20.5670 BSP 221
BDE .2818 BRA .2657 BC3 .8117 FSP 2071

MID-COURSE EXECUTION ACCURACY

SGT 834.5 SGR 432.6 SG3 1267.2
RRT .0397 RRF .2793 RTF -.[illegible]34
SGB 940.0 R23 .2728 R13 .1274
SG1 834.7 SG2 432.2 THA 1.61

ORBIT DETERMINATION ACCURACY

ST 21.8 SR 18.8 SS 36.4
CRT .8421 CRS -.4036 CST .1417
LSA 37.4 MSA 27.5 SSA 1.6
EL1 27.7 EL2 8.0 ALF 39.51

LAUNCH DATE MAY 15 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 11 1971

HELIOCENTRIC CONIC — DISTANCE 433.575 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.254 GAL .34 AZL 91.67 HCA 141.72 SMA 185.62 ECC .18544 INC 1.6734 V1 29.464
RP 210.82 LAP -1.04 LOP 15.26 VP 23.325 GAP 7.33 AZP 88.69 TAL 2.16 TAP 143.88 RCA 151.20 APO 220.04 V2 26.015
RC 117.545 GL -18.69 GP -1.57 ZAL 93.61 ZAP 118.27 ETS 180.66 ZAE 161.10 ETE 184.21 ZAC 99.05 ETC 276.77 LVI -15.24

PLANETOCENTRIC CONIC

C3 8.636 VHL 2.939 DLA -29.83 RAL 336.82 RAD 6637.3 VEL 11.347 PTH 6.40 VHP 3.227 DPA -20.03 RAP 317.03 ECC 1.1421

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 31	2330.81	1.09	59.32	187.43	137.57	17 1 22	1330.8	19.21	43.00
60.00	17 45 43	2109.44	6.05	44.14	192.18	129.92	18 20 53	1109.4	21.42	25.02
70.00	19 38 23	1778.01	11.86	21.57	196.47	122.26	20 8 1	778.0	24.02	359.79
80.00	22 44 16	1194.45	21.22	342.35	201.41	111.51	23 4 11	194.4	28.20	317.11
80.10	22 56 15	1156.19	22.08	339.86	201.76	110.58	23 15 31	156.2	28.58	314.34
100.00	1 31 4	5956.96	21.22	281.62	201.41	111.51	3 10 21	4957.0	28.20	256.38
110.00	0 41 45	6112.87	11.86	288.39	196.47	122.26	2 23 38	5112.9	24.02	266.61

DIFFERENTIAL CORRECTIONS

TDE -.2210 TRA -.2251 TC3-1.0370 BAU .1198
RDE -.1844 RRA .1005 RC3 .0272 FAU .21207
FDE -.2586 FRA 3.8691 FC-21.2579 BSP 220
BDE .2878 BRA .2465 BC3 1.0373 FSP 2222

MID-COURSE EXECUTION ACCURACY

SGT 901.7 SGR 424.8 SG3 1315.9
RRT .0804 RRF .3006 RTF .2500
SGB 996.7 R23 .2757 R13 .2564
SG1 902.5 SG2 423.0 THA 2.78

ORBIT DETERMINATION ACCURACY

ST 22.9 SR 18.3 SS 37.4
CRT .8645 CRS -.3646 CST .1401
LSA 38.2 MSA 28.2 SSA 1.6
EL1 28.3 EL2 7.4 ALF 37.71

LAUNCH DATE MAY 15 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 13 1971

HELIOCENTRIC CONIC DISTANCE 437.745 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.244	GAL	.32	AZL	91.67	HCA	142.94	SMA	185.46	ECC	.18473	INC	1.6657
RP	211.07	LAP	-1.00	LOP	16.48	VP	23.280	GAP	7.12	AZP	88.67	TAL	2.06	TAP	145.00	RCA	151.20	APO	219.72
RC	119.734	GL	-18.66	GP	-1.64	ZAL	93.81	ZAP	116.22	ETS	180.59	ZAE	159.17	ETE	184.16	ZAC	99.08	ETC	276.59

V1	29.464																		
V2	25.986																		
LVI	-14.92																		

PLANETOCENTRIC CONIC

C3	8.580	VHL	2.929	DLA	-29.72	RAL	337.02	RAD	6637.3	VEL	11.344	PTH	6.40	VHP	3.172	DPA	-20.33	RAP	316.20
ECC	1.1412																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 43	2332.05	1.02	59.37	187.53	137.57	17 1 35	1332.1	19.15	43.05
60.00	17 45 37	2111.48	5.96	44.24	192.26	129.93	18 20 49	1111.5	21.34	25.13
70.00	19 37 38	1781.96	11.72	21.78	196.51	122.31	20 7 20	782.0	23.91	.04
80.00	22 32 20	1233.97	20.22	344.85	201.08	112.45	22 52 54	234.0	27.69	319.93
80.46	22 59 48	1146.16	22.04	339.10	201.85	110.46	23 18 54	146.2	28.49	313.57
100.00	1 19 7	5996.48	20.22	284.13	201.08	112.45	2 59 4	4996.5	27.69	259.20
110.00	0 41 0	6116.82	11.72	288.61	196.51	122.31	2 22 57	5116.8	23.91	266.86

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	-.2247	TRA	-.1912	TC3	-1.2375	BAU	.1420	SGT	950.9	SGR	417.0	SG3	1360.9	ST	22.9	SR	17.8	SS	38.1
RDE	-.1788	RRA	.1008	RC3	.0126	FAU	.21802	RRT	.1276	RRF	.3229	RTF	.3775	CRT	.8868	CRS	-.3518	CST	.1069
FDE	-.2394	FRA	4.0153	FC	-21.9994	BSP	329	SGB	1038.3	R23	.2657	R13	.3856	LSA	38.7	MSA	28.1	SSA	1.5
BDE	.2871	BRA	.2161	BC3	1.2376	FSP	2298	SG1	952.7	SG2	412.8	THA	3.94	EL1	28.3	EL2	6.7	ALF	36.98

LAUNCH DATE MAY 15 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 15 1971

HELIOCENTRIC CONIC DISTANCE 441.920 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.236	GAL	.30	AZL	91.66	HCA	144.15	SMA	185.32	ECC	.18410	INC	1.6575
RP	211.33	LAP	-.97	LOP	17.70	VP	23.235	GAP	6.91	AZP	88.66	TAL	1.94	TAP	146.09	RCA	151.20	APO	219.44
RC	121.945	GL	-18.62	GP	-1.71	ZAL	94.04	ZAP	114.16	ETS	180.53	ZAE	157.21	ETE	184.09	ZAC	99.11	ETC	276.40

V1	29.464																		
V2	25.957																		
LVI	-14.60																		

PLANETOCENTRIC CONIC

C3	8.530	VHL	2.921	DLA	-29.59	RAL	337.24	RAD	6637.3	VEL	11.342	PTH	6.39	VHP	3.122	DPA	-20.64	RAP	315.36
ECC	1.1404																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 52	2333.92	.93	59.45	187.66	137.57	17 1 46	1333.9	19.06	43.14
60.00	17 45 26	2114.29	5.84	44.37	192.36	129.95	18 20 40	1114.3	21.23	25.29
70.00	19 36 42	1787.00	11.54	22.06	196.57	122.37	20 6 29	787.0	23.76	.36
80.00	22 23 50	1262.91	19.45	346.66	200.89	113.11	22 44 53	262.9	27.27	321.98
80.90	23 4 5	1134.15	21.97	338.18	201.96	110.34	23 23 0	134.2	28.38	312.66
100.00	1 10 38	6025.43	19.45	285.94	200.89	113.11	2 51 4	5025.4	27.27	261.26
110.00	0 40 4	6121.86	11.54	288.88	196.57	122.37	2 22 6	5121.9	23.76	267.18

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	-.2262	TRA	-.1546	TC3	-1.4344	BAU	.1636	SGT	1010.2	SGR	409.7	SG3	1409.2	ST	22.8	SR	17.4	SS	38.8
RDE	-.1735	RRA	.1010	RC3	-.0040	FAU	.22529	RRT	.1777	RRF	.3481	RTF	.4943	CRT	.9077	CRS	-.3568	CST	.0527
FDE	-.2460	FRA	4.1437	FC	-22.8667	BSP	530	SGB	1090.2	R23	.2475	R13	.5030	LSA	39.4	MSA	27.8	SSA	1.5
BDE	.2851	BRA	.1847	BC3	1.4344	FSP	2394	SG1	1013.4	SG2	402.0	THA	4.89	EL1	28.1	EL2	5.9	ALF	36.51

LAUNCH DATE MAY 15 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 17 1971

HELIOCENTRIC CONIC DISTANCE 446.098 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.229	GAL	.28	AZL	91.65	HCA	145.37	SMA	185.20	ECC	.18356	INC	1.6488
RP	211.60	LAP	-.94	LOP	18.91	VP	23.191	GAP	6.71	AZP	88.64	TAL	1.80	TAP	147.17	RCA	151.21	APO	219.19
RC	124.177	GL	-18.56	GP	-1.78	ZAL	94.29	ZAP	112.09	ETS	180.45	ZAE	155.22	ETE	184.02	ZAC	99.13	ETC	276.21

V1	29.464																		
V2	25.926																		
LVI	-14.26																		

PLANETOCENTRIC CONIC

C3	8.486	VHL	2.913	DLA	-29.44	RAL	337.49	RAD	6637.3	VEL	11.340	PTH	6.39	VHP	3.075	DPA	-20.95	RAP	314.49
ECC	1.1397																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 0	2336.42	.81	59.55	187.81	137.57	17 1 57	1336.4	18.94	43.26
60.00	17 45 9	2117.86	5.68	44.54	192.48	129.97	18 20 27	1117.9	21.09	25.48
70.00	19 35 34	1793.21	11.31	22.39	196.65	122.44	20 5 27	793.2	23.58	.74
80.00	22 16 28	1288.76	18.76	348.26	200.75	113.67	22 37 57	288.8	26.88	323.80
81.44	23 9 17	1119.66	21.89	337.07	202.09	110.20	23 27 56	119.7	28.25	311.57
100.00	1 3 16	6051.27	18.76	287.54	200.75	113.67	2 44 7	5051.3	26.88	263.07
110.00	0 38 56	6127.96	11.31	289.21	196.65	122.44	2 21 4	5128.0	23.58	267.56

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	-.2290	TRA	-.1172	TC3	-1.6542	BAU	.1877	SGT	1096.2	SGR	402.4	SG3	1449.6	ST	22.9	SR	16.9	SS	39.4
RDE	-.1680	RRA	.1015	RC3	-.0194	FAU	.23043	RRT	.2246	RRF	.3734	RTF	.5092	CRT	.9270	CRS	-.3458	CST	.0141
FDE	-.2252	FRA	4.2865	FC	-23.5074	BSP	787	SGB	1167.8	R23	.2275	R13	.5971	LSA	40.0	MSA	27.7	SSA	1.5
BDE	.2840	BRA	.1550	BC3	1.6543	FSP	2450	SG1	1100.5	SG2	390.6	THA	5.40	EL1	28.0	EL2	5.2	ALF	35.74

LAUNCH DATE MAY 15 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 450.280 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.222	GAL	.26	AZL	91.64	HCA	146.58	SMA	185.10	ECC	.18308	INC	1.6397
RP	211.87	LAP	-.90	LOP	20.12	VP	23.147	GAP	6.51	AZP	88.63	TAL	1.65	TAP	148.23	RCA	151.21	APO	218.98
RC	126.431	GL	-18.49	GP	-1.86	ZAL	94.57	ZAP	110.00	ETS	180.38	ZAE	153.20	ETE	183.95	ZAC	99.15	ETC	276.01

V1	29.464																		
V2	25.896																		
LVI	-13.92																		

PLANETOCENTRIC CONIC

C3	8.449	VHL	2.907	DLA	-29.27	RAL	337.75	RAD	6637.2	VEL	11.338	PTH	6.39	VHP	3.034	DPA	-21.27	RAP	313.62
ECC	1.1390																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 6	2339.52	.65	59.68	187.97	137.57	17 2 5	1339.5	18.80	43.41
60.00	17 44 48	2122.17	5.49	44.75	192.61	129.99	18 20 10	1122.2	20.92	25.72
70.00	19 34 15	1800.20	11.05	22.78	196.73	122.52	20 4 16	800.2	23.38	1.19
80.00	22 9 42	1313.10	18.08	349.76	200.65	114.17	22 31 35	313.1	26.48	325.50
82.10	23 15 31	1102.17	21.79	335.74	202.25	110.05	23 33 53	102.2	28.09	310.25
100.00	0 56 30	6075.61	18.08	289.03	200.65	114.17	2 37 45	5075.6	26.48	264.77
110.00	0 37 38	6135.06	11.05	289.60	196.73	122.52	2 19 53	5135.1	23.38	268.01

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	-.2277	TRA	-.0746	TC3	-1.8657	BAU	.2108	SGT	1185.8	SGR	395.4	SG3	1490.6	ST	22.6	SR	16.4	SS	39.9
RDE	-.1628	RRA	.1018	RC3	-.0368	FAU	.23670	RRT	.2741	RRF	.4006	RTF	.6758	CRT	.9457	CRS	-.3538	CST	-.0505
FDE	-.2335	FRA	4.3943	FC	-24.2544	BSP	1081	SGB	1250.0	R23	.2020	R13	.6826	LSA	40.5	MSA	27.0	SSA	1.5
BDE	.2799	BRA	.1262	BC3	1.8660	FSP	2502	SG1	1191.3	SG2	378.5	THA	5.81	EL1	27.6	EL2	4.4	ALF	35.46

LAUNCH DATE MAY 15 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC — DISTANCE 454.463 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.217 GAL .23 AZL 91.63 HCA 147.78 SMA 185.01 ECC .18268 INC 1.6300 V1 29.464
RP 212.14 LAP -.87 LOP 21.32 VP 23.105 GAP 6.32 AZP 88.62 TAL 1.48 TAP 149.27 RCA 151.21 APO 218.80 V2 25.864
RC 128.706 GL -18.41 GP -1.95 ZAL 94.88 ZAP 107.92 ETS 180.30 ZAE 151.17 ETE 183.88 ZAC 99.17 ETC 275.81 LVI -13.56

PLANETOCENTRIC CONIC

C3 8.418 VHL 2.901 DLA -29.08 RAL 338.03 RAD 6637.2 VEL 11.337 PTH 6.39 VHP 2.996 DPA -21.58 RAP 312.73 ECC 1.1385

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 9	2343.28	.46	59.84	188.16	137.57	17 2 12	1343.3	18.62	43.58
60.00	17 44 21	2127.29	5.27	45.00	192.77	130.01	18 19 48	1127.3	20.72	26.01
70.00	19 32 46	1808.38	10.75	23.22	196.84	122.61	20 2 55	808.4	23.13	1.70
80.00	22 3 15	1336.96	17.41	351.21	200.58	114.64	22 25 32	337.0	26.06	327.15
82.92	23 23 8	1080.61	21.66	334.10	202.43	109.89	23 41 8	80.6	27.92	308.63
100.00	0 50 2	6099.47	17.41	290.49	200.58	114.64	2 31 42	5099.5	26.06	266.42
110.00	0 36 8	6143.24	10.75	290.04	196.84	122.61	2 18 32	5143.2	23.13	268.52

DIFFERENTIAL CORRECTIONS

TDE -.2340 TRA -.0383 TC3-2.1145 BAU .2380
RDE -.1568 RRA .1029 RC3 -.0528 FAU .24082
FDE -.1605 FRA 4.5703 FC-24.7674 BSP 1308
BDE .2816 BRA .1098 BC3 2.1151 FSP 2617

MID-COURSE EXECUTION ACCURACY

SGT 1313.9 SGR 388.4 SG3 1529.3
RRT .3145 RRF .4275 RTF .7260
SGB 1370.1 R23 .1894 R13 .7316
SG1 1320.1 SG2 366.9 THA 5.76

ORBIT DETERMINATION ACCURACY

ST 23.2 SR 15.9 SS 40.7
CRT .9589 CRS -.3153 CST -.0561
LSA 41.2 MSA 27.4 SSA 1.5
EL1 27.9 EL2 3.8 ALF 33.95

LAUNCH DATE MAY 15 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC — DISTANCE 458.649 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.213 GAL .20 AZL 91.62 HCA 148.99 SMA 184.93 ECC .18235 INC 1.6197 V1 29.464
RP 212.43 LAP -.83 LOP 22.53 VP 23.062 GAP 6.13 AZP 88.61 TAL 1.30 TAP 150.29 RCA 151.21 APO 218.66 V2 25.832
RC 130.999 GL -18.32 GP -2.03 ZAL 95.20 ZAP 105.83 ETS 180.22 ZAE 149.12 ETE 183.81 ZAC 99.17 ETC 275.61 LVI -13.20

PLANETOCENTRIC CONIC

C3 8.392 VHL 2.897 DLA -28.87 RAL 338.33 RAD 6637.2 VEL 11.336 PTH 6.39 VHP 2.963 DPA -21.90 RAP 311.84 ECC 1.1381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 10	2347.63	.24	60.02	188.36	137.58	17 2 18	1347.6	18.41	43.79
60.00	17 43 48	2133.11	5.01	45.28	192.94	130.04	18 19 21	1133.1	20.49	26.33
70.00	19 31 8	1817.46	10.42	23.71	196.96	122.71	20 1 25	817.5	22.86	2.26
80.00	21 57 5	1360.30	16.74	352.62	200.55	115.09	22 19 45	360.3	25.64	328.75
83.94	23 32 35	1053.45	21.52	332.05	202.63	109.72	23 50 8	53.4	27.72	306.59
100.00	0 43 52	6122.81	16.74	291.90	200.55	115.09	2 25 55	5122.8	25.64	268.03
110.00	0 34 30	6152.32	10.42	290.53	196.96	122.71	2 17 2	5152.3	22.86	269.09

DIFFERENTIAL CORRECTIONS

TDE -.2354 TRA .0038 TC3-2.3447 BAU .2632
RDE -.1511 RRA .1037 RC3 -.0721 FAU .24719
FDE -.1255 FRA 4.7030 FC-25.4997 BSP 1599
BDE .2798 BRA .1037 BC3 2.3458 FSP 2669

MID-COURSE EXECUTION ACCURACY

SGT 1436.1 SGR 382.0 SG3 1572.3
RRT .3608 RRF .4572 RTF .7759
SGB 1486.1 R23 .1705 R13 .7804
SG1 1443.2 SG2 354.5 THA 5.84

ORBIT DETERMINATION ACCURACY

ST 23.4 SR 15.4 SS 41.3
CRT .9714 CRS -.3014 CST -.0941
LSA 41.8 MSA 27.2 SSA 1.4
EL1 27.8 EL2 3.1 ALF 32.99

LAUNCH DATE MAY 15 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC — DISTANCE 462.836 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.209 GAL .17 AZL 91.61 HCA 150.19 SMA 184.88 ECC .18208 INC 1.6085 V1 29.464
RP 212.72 LAP -.80 LOP 23.73 VP 23.021 GAP 5.94 AZP 88.60 TAL 1.10 TAP 151.29 RCA 151.21 APO 218.54 V2 25.799
RC 133.312 GL -18.21 GP -2.13 ZAL 95.55 ZAP 103.75 ETS 180.14 ZAE 147.06 ETE 183.73 ZAC 99.17 ETC 275.40 LVI -12.83

PLANETOCENTRIC CONIC

C3 8.372 VHL 2.893 DLA -28.63 RAL 338.64 RAD 6637.2 VEL 11.335 PTH 6.39 VHP 2.933 DPA -22.21 RAP 310.94 ECC 1.1378

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 8	2352.59	-.01	60.23	188.58	137.58	17 2 21	1352.6	18.17	44.02
60.00	17 43 10	2139.67	4.73	45.59	193.12	130.07	18 18 50	1139.7	20.23	26.69
70.00	19 29 19	1827.48	10.05	24.25	197.09	122.81	19 59 47	827.5	22.56	2.88
80.00	21 51 6	1383.49	16.07	354.01	200.53	115.51	22 14 9	383.5	25.20	330.33
85.32	23 45 4	1016.73	21.37	329.29	202.85	109.53	24 2 1	16.7	27.50	303.86
100.00	0 37 53	6146.00	16.07	293.29	200.53	115.51	2 20 19	5146.0	25.20	269.61
110.00	0 32 42	6162.34	10.05	291.08	197.09	122.81	2 15 24	5162.3	22.56	269.71

DIFFERENTIAL CORRECTIONS

TDE -.2366 TRA .0479 TC3-2.5983 BAU .2910
RDE -.1454 RRA .1048 RC3 -.0882 FAU .24973
FDE -.0691 FRA 4.8487 FC-25.8231 BSP 1895
BDE .2777 BRA .1152 BC3 2.5998 FSP 2747

MID-COURSE EXECUTION ACCURACY

SGT 1578.6 SGR 376.1 SG3 1600.2
RRT .3996 RRF .4881 RTF .8118
SGB 1622.8 R23 .1611 R13 .8154
SG1 1586.1 SG2 343.1 THA 5.71

ORBIT DETERMINATION ACCURACY

ST 23.6 SR 14.8 SS 42.0
CRT .9811 CRS -.2889 CST -.1337
LSA 42.6 MSA 27.0 SSA 1.4
EL1 27.8 EL2 2.4 ALF 31.94

LAUNCH DATE MAY 15 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC — DISTANCE 467.025 — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.206 GAL .14 AZL 91.60 HCA 151.38 SMA 184.83 ECC .18188 INC 1.5966 V1 29.464
RP 213.01 LAP -.76 LOP 24.92 VP 22.980 GAP 5.76 AZP 88.60 TAL .89 TAP 152.27 RCA 151.21 APO 218.45 V2 25.768
RC 135.643 GL -18.09 GP -2.22 ZAL 95.92 ZAP 101.68 ETS 180.05 ZAE 144.99 ETE 183.66 ZAC 99.16 ETC 275.20 LVI -12.45

PLANETOCENTRIC CONIC

C3 8.357 VHL 2.891 DLA -28.38 RAL 338.98 RAD 6637.2 VEL 11.334 PTH 6.39 VHP 2.907 DPA -22.53 RAP 310.05 ECC 1.1375

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 23 3	2358.17	-.29	60.46	188.82	137.58	17 2 21	1358.2	17.90	44.28
60.00	17 42 27	2146.96	4.41	45.94	193.32	130.10	18 18 14	1147.0	19.94	27.08
70.00	19 27 22	1838.41	9.65	24.84	197.23	122.92	19 58 0	838.4	22.23	3.56
80.00	21 45 15	1406.66	15.39	355.39	200.54	115.91	22 8 41	406.7	24.74	331.90
87.57	0 9 2	6243.90	21.19	302.67	203.09	109.33	1 53 5	5243.9	27.26	277.27
100.00	0 32 2	6169.17	15.39	294.67	200.54	115.91	2 14 52	5169.2	24.74	271.18
110.00	0 30 44	6173.26	9.65	291.66	197.23	122.92	2 13 38	5173.3	22.23	270.38

DIFFERENTIAL CORRECTIONS

TDE -.2365 TRA .0932 TC3-2.8449 BAU .3181
RDE -.1403 RRA .1053 RC3 -.1082 FAU .25478
FDE -.0979 FRA 4.9147 FC-26.3923 BSP 2189
BDE .2750 BRA .1406 BC3 2.8469 FSP 2801

MID-COURSE EXECUTION ACCURACY

SGT 1723.2 SGR 370.7 SG3 1628.9
RRT .4430 RRF .5199 RTF .8469
SGB 1762.6 R23 .1454 R13 .8498
SG1 1731.3 SG2 330.8 THA 5.65

ORBIT DETERMINATION ACCURACY

ST 23.8 SR 14.3 SS 42.2
CRT .9885 CRS -.3021 CST -.2021
LSA 43.0 MSA 26.5 SSA 1.4
EL1 27.7 EL2 1.9 ALF 30.97

LAUNCH DATE MAY 15 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC DISTANCE 471.216 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.205	GAL	.10	AZL	91.58	HCA	152.88	SMA	184.80	ECC	.18173	INC	1.5839	V1	29.464
RP	213.31	LAP	-.73	LOP	26.12	VP	22.939	GAP	5.58	AZP	88.59	TAL	.66	TAP	153.24	RCA	151.22	APO	218.38	V2	25.732
RC	137.991	GL	-17.95	GP	-2.33	ZAL	96.32	ZAP	99.62	ETS	179.96	ZAE	142.93	ETE	183.59	ZAC	99.14	ETC	275.00	LVI	-12.07

PLANETOCENTRIC CONIC

C3	8.347	VHL	2.889	DLA	-26.09	RAL	339.32	RAD	6637.2	VEL	11.334	PTH	6.39	VHP	2.885	DPA	-22.84	RAP	309.17	ECC	1.1374

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 55	2364.36	-.60	60.72	189.07	137.57	17 2 19	1364.4	17.61	44.57
60.00	17 41 38	2154.98	4.05	46.33	193.54	130.13	18 17 33	1155.0	19.62	27.52
70.00	19 25 16	1850.21	9.21	25.47	197.39	123.03	19 56 6	850.2	21.87	4.28
80.00	21 39 30	1429.91	14.69	356.77	200.57	116.29	22 3 20	429.9	24.26	333.46
90.00	0 2 28	6269.52	18.95	303.66	202.54	111.39	1 46 58	5269.5	26.11	278.92
100.00	0 26 18	6192.42	14.69	296.04	200.57	116.29	2 9 30	5192.4	24.26	272.74
110.00	0 28 38	6185.07	9.21	292.30	197.39	123.03	2 11 43	5185.1	21.87	271.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2363	TRA	.1406	TC3	-3.1002	BAU	.3463	SGT	1878.4	SGR	365.2	SG3	1665.1	ST	24.1	SR	13.7	SS	42.9
RDE	-.1336	RRA	.1067	RC3	-.1293	FAU	.25982	RRT	.4867	RRF	.5513	RTF	.8692	CRT	.9925	CRS	-.2523	CST	-.2019
FDE	.0150	FRA	5.0518	FC	-26.9466	BSP	2499	SGB	1913.6	R23	.1325	R13	.8715	LSA	43.5	MSA	26.6	SSA	1.3
BDE	.2715	BRA	.1765	BC3	3.1029	FSP	2835	SG1	1887.1	SG2	317.5	THA	5.56	EL1	27.7	EL2	1.5	ALF	29.62

LAUNCH DATE MAY 15 1971 FLIGHT TIME 200.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC DISTANCE 475.406 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.203	GAL	.07	AZL	91.57	HCA	153.77	SMA	184.78	ECC	.18164	INC	1.5702	V1	29.464
RP	213.61	LAP	-.69	LOP	27.30	VP	22.899	GAP	5.40	AZP	88.59	TAL	.42	TAP	154.19	RCA	151.22	APO	218.34	V2	25.697
RC	140.356	GL	-17.79	GP	-2.44	ZAL	96.74	ZAP	97.58	ETS	179.86	ZAE	140.87	ETE	183.53	ZAC	99.11	ETC	274.80	LVI	-11.69

PLANETOCENTRIC CONIC

C3	8.342	VHL	2.888	DLA	-27.79	RAL	339.68	RAD	6637.2	VEL	11.334	PTH	6.39	VHP	2.867	DPA	-23.15	RAP	308.30	ECC	1.1373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 43	2371.18	-.94	61.00	189.33	137.57	17 2 14	1371.2	17.28	44.88
60.00	17 40 42	2163.73	3.67	46.75	193.76	130.16	18 16 46	1163.7	19.27	28.00
70.00	19 23 1	1862.89	8.74	26.15	197.55	123.15	19 54 3	862.9	21.48	5.06
80.00	21 33 50	1453.33	13.98	358.14	200.63	116.65	21 58 3	453.3	23.76	335.02
90.00	23 42 10	1039.45	17.47	329.36	202.29	112.60	23 59 29	39.5	25.28	305.05
100.00	0 20 37	6215.84	13.98	297.42	200.63	116.65	2 4 13	5215.8	23.76	274.30
110.00	0 26 23	6197.75	8.74	292.98	197.55	123.15	2 9 41	5197.7	21.48	271.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2337	TRA	.1888	TC3	-3.3579	BAU	.3749	SGT	2038.8	SGR	359.5	SG3	1678.8	ST	24.2	SR	13.2	SS	42.6
RDE	-.1278	RRA	.1069	RC3	-.1496	FAU	.26296	RRT	.5276	RRF	.5807	RTF	.8919	CRT	.9938	CRS	-.2385	CST	-.2432
FDE	.0598	FRA	5.0653	FC	-27.2901	BSP	2820	SGB	2070.2	R23	.1171	R13	.8936	LSA	43.5	MSA	26.2	SSA	1.3
BDE	.2664	BRA	.2170	BC3	3.3612	FSP	2816	SG1	2047.8	SG2	304.0	THA	5.43	EL1	27.5	EL2	1.3	ALF	28.47

LAUNCH DATE MAY 15 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC DISTANCE 479.598 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.203	GAL	.03	AZL	91.56	HCA	154.95	SMA	184.77	ECC	.18160	INC	1.5552	V1	29.464
RP	213.92	LAP	-.66	LOP	28.49	VP	22.859	GAP	5.23	AZP	88.59	TAL	.17	TAP	155.12	RCA	151.22	APO	218.33	V2	25.662
RC	142.739	GL	-17.61	GP	-2.55	ZAL	97.17	ZAP	95.56	ETS	179.76	ZAE	138.82	ETE	183.47	ZAC	99.07	ETC	274.60	LVI	-11.30

PLANETOCENTRIC CONIC

C3	8.341	VHL	2.888	DLA	-27.46	RAL	340.05	RAD	6637.2	VEL	11.334	PTH	6.39	VHP	2.852	DPA	-23.47	RAP	307.45	ECC	1.1373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 27	2378.63	-1.32	61.31	189.61	137.56	17 2 6	1378.6	16.92	45.23
60.00	17 39 40	2173.23	3.25	47.21	194.00	130.19	18 15 53	1173.2	18.89	28.51
70.00	19 20 36	1876.42	8.23	26.88	197.73	123.26	19 51 53	876.4	21.05	5.88
80.00	21 28 12	1476.99	13.25	359.52	200.69	117.00	21 52 49	477.0	23.24	336.58
90.00	23 30 6	1083.88	16.29	332.08	202.17	113.44	23 48 10	83.9	24.55	308.10
100.00	0 15 0	6239.51	13.25	298.80	200.69	117.00	1 58 59	5239.5	23.24	275.86
110.00	0 23 59	6211.28	8.23	293.70	197.73	123.26	2 7 30	5211.3	21.05	272.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2321	TRA	.2416	TC3	-3.6266	BAU	.4049	SGT	2211.8	SGR	358.1	SG3	1695.5	ST	24.6	SR	12.8	SS	42.7
RDE	-.1238	RRA	.1078	RC3	-.1709	FAU	.26588	RRT	.5684	RRF	.6200	RTF	.8927	CRT	.9919	CRS	-.3076	CST	-.3692
FDE	-.0479	FRA	5.1196	FC	-27.5955	BSP	3108	SGB	2240.6	R23	.1118	R13	.9142	LSA	44.4	MSA	24.9	SSA	1.2
BDE	.2631	BRA	.2646	BC3	3.6307	FSP	2643	SG1	2221.3	SG2	293.4	THA	5.35	EL1	27.7	EL2	1.4	ALF	27.38

LAUNCH DATE MAY 15 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 483.786 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.203	GAL	-.01	AZL	91.54	HCA	156.13	SMA	184.77	ECC	.18161	INC	1.5388	V1	29.464
RP	214.24	LAP	-.62	LOP	29.67	VP	22.819	GAP	5.05	AZP	88.59	TAL	359.91	TAP	156.04	RCA	151.22	APO	218.33	V2	25.627
RC	145.138	GL	-17.42	GP	-2.68	ZAL	97.63	ZAP	93.56	ETS	179.65	ZAE	136.78	ETE	183.41	ZAC	99.02	ETC	274.41	LVI	-10.90

PLANETOCENTRIC CONIC

C3	8.345	VHL	2.889	DLA	-27.10	RAL	340.43	RAD	6637.2	VEL	11.334	PTH	6.39	VHP	2.840	DPA	-23.78	RAP	306.62	ECC	1.1373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 22 6	2386.73	-1.72	61.65	189.89	137.55	17 1 53	1386.7	16.53	45.60
60.00	17 38 31	2183.48	2.80	47.70	194.24	130.22	18 14 55	1183.5	18.47	29.06
70.00	19 18 3	1890.83	7.70	27.64	197.92	123.38	19 49 34	890.8	20.60	6.75
80.00	21 22 35	1500.98	12.51	.91	200.78	117.33	21 47 36	501.0	22.69	338.15
90.00	23 19 50	1122.86	15.21	334.44	202.12	114.13	23 38 33	122.9	23.86	310.75
100.00	0 9 23	6263.50	12.51	300.19	200.78	117.33	1 53 46	5263.5	22.69	277.43
110.00	0 21 25	6225.68	7.70	294.47	197.92	123.38	2 5 11	5225.7	20.60	273.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2246	TRA	.2979	TC3	-3.8829	BAU	.4336	SGT	2381.5	SGR	354.9	SG3	1682.8	ST	24.6	SR	11.9	SS	47.1
RDE	-.1140	RRA	.1149	RC3	-.1662	FAU	.24800	RRT	.5752	RRF	.6536	RTF	.8933	CRT	.9879	CRS	-.1760	CST	-.2779
FDE	.2888	FRA	5.6425	FC	-25.7281	BSP	3545	SGB	2407.8	R23	.1614	R13	.8950	LSA	47.9	MSA	26.0	SSA	1.2
BDE	.2519	BRA	.3193	BC3	3.8864	FSP	3316	SG1	2390.3	SG2	289.2	THA	4.97	EL1	27.3	EL2	1.7	ALF	25.70

LAUNCH DATE MAY 15 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 7 1971

DISTANCE 487.978

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.204 GAL -.06 AZL 91.52 HCA 157.31 SMA 184.79 ECC .18168 INC 1.5210 V1 29.464
RP 214.55 LAP -.59 LOP 30.85 VP 22.780 GAP 4.88 AZP 88.60 TAL 359.63 TAP 156.94 RCA 151.22 APO 218.36 V2 25.591
RC 147.555 GL -17.20 GP -2.81 ZAL 98.11 ZAP 91.59 ETS 179.54 ZAE 134.75 ETE 183.35 ZAC 98.95 ETC 274.22 LVI -10.51

PLANETOCENTRIC CONIC

C3 8.353 VHL 2.890 DLA -26.72 RAL 340.82 RAD 6637.2 VEL 11.334 PTH 6.39 VHP 2.831 DPA -24.09 RAP 305.81 ECC 1.1375

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 40	2395.51	-2.16	62.02	190.19	137.54	17 1 36	1395.5	16.10	46.00
60.00	17 37 14	2194.51	2.32	48.22	194.50	130.25	18 13 49	1194.5	18.03	29.65
70.00	19 15 19	1906.10	7.12	28.45	198.11	123.49	19 47 6	906.1	20.11	7.66
80.00	21 16 58	1525.37	11.74	2.32	200.87	117.65	21 42 23	525.4	22.11	339.74
90.00	23 10 35	1158.96	14.20	336.61	202.11	114.72	23 29 54	159.0	23.18	313.17
100.00	0 3 45	6287.88	11.74	301.59	200.87	117.65	1 48 33	5287.9	22.11	279.01
110.00	0 18 42	6240.96	7.12	295.28	198.11	123.49	2 2 43	5241.0	20.11	274.49

DIFFERENTIAL CORRECTIONS

TDE -.2172 TRA .3455 TC3-4.1468 BAU .4636
RDE -.1072 RRA .1152 RC3 -.2072 FAU .26340
FDE .3896 FRA 5.5788 FC-27.3012 BSP 3843
BDE .2422 BRA .3642 BC3 4.1519 FSP 3119

MID-COURSE EXECUTION ACCURACY

SGT 2553.1 SGR 353.4 SG3 1734.4
RRT .6369 RRF .6897 RTF .9168
SGB 2577.5 R23 .1285 R13 .9181
SG1 2563.2 SG2 271.3 THA 5.09

ORBIT DETERMINATION ACCURACY

ST 24.7 SR 11.3 SS 46.8
CRT .9813 CRS -.1419 CST -.2947
LSA 47.6 MSA 25.6 SSA 1.2
EL1 27.1 EL2 2.0 ALF 24.33

LAUNCH DATE MAY 15 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 9 1971

DISTANCE 492.169

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.205 GAL -.10 AZL 91.50 HCA 158.49 SMA 184.81 ECC .18179 INC 1.5014 V1 29.464
RP 214.88 LAP -.55 LOP 32.03 VP 22.741 GAP 4.72 AZP 88.60 TAL 359.34 TAP 157.83 RCA 151.22 APO 218.41 V2 25.554
RC 149.988 GL -16.96 GP -2.96 ZAL 98.60 ZAP 89.65 ETS 179.42 ZAE 132.75 ETE 183.30 ZAC 98.86 ETC 274.04 LVI -10.11

PLANETOCENTRIC CONIC

C3 8.364 VHL 2.892 DLA -26.31 RAL 341.21 RAD 6637.2 VEL 11.335 PTH 6.39 VHP 2.825 DPA -24.40 RAP 305.03 ECC 1.1377

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 21 8	2404.99	-2.64	62.42	190.49	137.52	17 1 13	1405.0	15.64	46.43
60.00	17 35 49	2206.35	1.80	48.79	194.75	130.27	18 12 35	1206.4	17.54	30.28
70.00	19 12 26	1922.29	6.51	29.31	198.31	123.60	19 44 28	922.3	19.58	8.63
80.00	21 11 17	1550.24	10.95	3.74	200.98	117.95	21 37 8	550.2	21.51	341.34
90.00	23 1 56	1193.45	13.21	338.65	202.14	115.23	23 21 49	193.4	22.49	315.47
100.00	23 54 9	1024.71	10.95	325.11	200.98	117.95	24 11 14	24.7	21.51	302.71
110.00	0 15 48	6257.14	6.51	296.14	198.31	123.60	2 0 5	5257.1	19.58	275.45

DIFFERENTIAL CORRECTIONS

TDE -.2138 TRA .3992 TC3-4.3948 BAU .4921
RDE -.1028 RRA .1169 RC3 -.2232 FAU .25908
FDE .3093 FRA 5.6055 FC-26.8165 BSP 4187
BDE .2372 BRA .4159 BC3 4.4005 FSP 3133

MID-COURSE EXECUTION ACCURACY

SGT 2723.9 SGR 353.4 SG3 1716.0
RRT .6674 RRF .7237 RTF .9261
SGB 2746.7 R23 .1341 R13 .9272
SG1 2734.2 SG2 262.2 THA 4.99

ORBIT DETERMINATION ACCURACY

ST 25.3 SR 10.9 SS 46.3
CRT .9724 CRS -.1997 CST -.3961
LSA 47.9 MSA 24.7 SSA 1.2
EL1 27.4 EL2 2.3 ALF 22.93

LAUNCH DATE MAY 15 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 11 1971

DISTANCE 496.358

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.207 GAL -.15 AZL 91.48 HCA 159.66 SMA 184.84 ECC .18194 INC 1.4794 V1 29.464
RP 215.21 LAP -.51 LOP 33.20 VP 22.702 GAP 4.55 AZP 88.61 TAL 359.04 TAP 158.70 RCA 151.21 APO 218.48 V2 25.518
RC 152.438 GL -16.70 GP -3.12 ZAL 99.12 ZAP 87.75 ETS 179.29 ZAE 130.77 ETE 183.26 ZAC 98.76 ETC 273.86 LVI -9.70

PLANETOCENTRIC CONIC

C3 8.379 VHL 2.895 DLA -25.87 RAL 341.61 RAD 6637.2 VEL 11.335 PTH 6.39 VHP 2.822 DPA -24.72 RAP 304.28 ECC 1.1379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 20 29	2415.21	-3.15	62.84	190.80	137.50	17 0 44	1415.2	15.14	46.89
60.00	17 34 14	2219.05	1.24	49.40	195.02	130.29	18 11 13	1219.0	17.02	30.95
70.00	19 9 20	1939.42	5.87	30.22	198.51	123.71	19 41 40	939.4	19.02	9.64
80.00	21 5 33	1575.70	10.13	5.19	201.09	118.24	21 31 48	575.7	20.87	342.96
90.00	22 53 39	1227.06	12.22	340.63	202.18	115.70	23 14 6	227.1	21.78	317.67
100.00	23 48 25	1050.17	10.13	326.56	201.09	118.24	24 5 55	50.2	20.87	304.33
110.00	0 12 42	6274.28	5.87	297.04	198.51	123.71	1 57 17	5274.3	19.02	276.46

DIFFERENTIAL CORRECTIONS

TDE -.2024 TRA .4547 TC3-4.6573 BAU .5225
RDE -.0948 RRA .1200 RC3 -.2500 FAU .26092
FDE .4657 FRA 5.6928 FC-26.9580 BSP 4486
BDE .2235 BRA .4703 BC3 4.6640 FSP 3061

MID-COURSE EXECUTION ACCURACY

SGT 2903.6 SGR 354.7 SG3 1730.7
RRT .7082 RRF .7587 RTF .9425
SGB 2925.2 R23 .1322 R13 .9335
SG1 2914.6 SG2 249.5 THA 4.98

ORBIT DETERMINATION ACCURACY

ST 25.4 SR 10.2 SS 47.9
CRT .9612 CRS -.1592 CST -.4029
LSA 49.0 MSA 24.5 SSA 1.1
EL1 27.2 EL2 2.6 ALF 21.33

LAUNCH DATE MAY 15 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 13 1971

DISTANCE 500.547

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.210 GAL -.20 AZL 91.46 HCA 160.83 SMA 184.89 ECC .18214 INC 1.4555 V1 29.464
RP 215.54 LAP -.48 LOP 34.37 VP 22.664 GAP 4.39 AZP 88.63 TAL 358.72 TAP 159.55 RCA 151.21 APO 218.56 V2 25.480
RC 154.904 GL -16.40 GP -3.30 ZAL 99.65 ZAP 85.88 ETS 179.15 ZAE 128.81 ETE 183.22 ZAC 98.63 ETC 273.69 LVI -9.29

PLANETOCENTRIC CONIC

C3 8.398 VHL 2.898 DLA -25.39 RAL 342.01 RAD 6637.2 VEL 11.336 PTH 6.39 VHP 2.822 DPA -25.04 RAP 303.57 ECC 1.1382

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 19 41	2426.23	-3.71	63.31	191.10	137.47	17 0 7	1426.2	14.61	47.39
60.00	17 32 28	2232.65	.64	50.05	195.28	130.30	18 9 41	1232.7	16.46	31.66
70.00	19 6 2	1957.56	5.18	31.17	198.71	123.81	19 38 39	957.6	18.42	10.70
80.00	20 59 41	1601.85	9.29	6.67	201.21	118.50	21 26 23	601.8	20.20	344.61
90.00	22 45 35	1260.30	11.23	342.57	202.24	116.12	23 6 35	260.3	21.04	319.83
100.00	23 42 33	1076.32	9.29	328.04	201.21	118.50	24 0 29	76.3	20.20	305.98
110.00	0 9 24	1004.37	5.18	320.09	198.71	123.81	0 26 9	4.4	18.42	299.62

DIFFERENTIAL CORRECTIONS

TDE -.1921 TRA .5103 TC3-4.9088 BAU .5520
RDE -.0864 RRA .1228 RC3 -.2745 FAU .25965
FDE .5094 FRA 5.7246 FC-26.7678 BSP 4813
BDE .2114 BRA .5249 BC3 4.9165 FSP 3038

MID-COURSE EXECUTION ACCURACY

SGT 3079.9 SGR 357.9 SG3 1725.1
RRT .7432 RRF .7919 RTF .9391
SGB 3100.6 R23 .1343 R13 .9400
SG1 3091.4 SG2 238.6 THA 4.97

ORBIT DETERMINATION ACCURACY

ST 25.7 SR 9.6 SS 47.8
CRT .9485 CRS -.1711 CST -.4554
LSA 49.6 MSA 23.8 SSA 1.1
EL1 27.3 EL2 2.9 ALF 19.81

LAUNCH DATE MAY 15 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE 504.733 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.213	GAL	-.25	AZL	91.43	HCA	162.00	SMA	184.94	ECC	.18238	INC	1.4281	V1	29.464
RP	215.87	LAP	-.44	LOP	35.53	VP	22.626	GAP	4.23	AZP	88.64	TAL	358.40	TAP	160.40	RCA	151.21	APO	218.67	V2	25.443
RC	157.385	GL	-16.06	GP	-3.50	ZAL	100.21	ZAP	84.06	ETS	179.01	ZAE	126.88	ETE	183.19	ZAC	98.48	ETC	273.53	LVI	-8.87

PLANETOCENTRIC CONIC

C3	8.419	VHL	2.902	DLA	-24.87	RAL	342.41	RAD	6637.2	VEL	11.337	PTH	6.39	VHP	2.824	DPA	-25.38	RAP	302.90	ECC	1.1386

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 18 43	2438.12	-4.30	63.81	191.41	137.43	16 59 21	1438.1	14.03	47.92
60.00	17 30 29	2247.26	-.00	50.74	195.54	130.30	18 7 56	1247.3	15.86	32.42
70.00	19 2 29	1976.80	4.45	32.18	198.91	123.90	19 35 25	976.8	17.78	11.82
80.00	20 53 39	1628.84	8.41	8.19	201.34	118.76	21 20 48	628.8	19.49	346.30
90.00	22 37 36	1293.59	10.23	344.50	202.30	116.51	22 59 10	293.6	20.28	321.97
100.00	23 36 31	1103.31	8.41	329.56	201.34	118.76	23 54 54	103.3	19.49	307.67
110.00	0 5 51	1023.61	4.45	321.10	198.91	123.90	0 22 55	23.6	17.78	300.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1797	TRA	.5669	TC3	-5.1713	BAU	.5831	SGT	3264.2	SGR	364.6	SG3	1729.1	ST	26.0	SR	9.0	SS	48.4
RDE	-.0813	RRA	.1265	RC3	-.3051	FAU	.26041	RRT	.7798	RRF	.8255	RTF	.9448	CRT	.9359	CRS	-.1789	CST	-.4973
FDE	.5844	FRA	5.7699	FC	-26.7771	BSP	5129	SGB	3284.5	R23	.1359	R13	.9457	LSA	50.6	MSA	23.2	SSA	1.0
BDE	.1972	BRA	.5809	BC3	5.1803	FSP	3012	SG1	3276.6	SG2	227.4	THA	5.00	EL1	27.4	EL2	3.0	ALF	18.23

LAUNCH DATE MAY 15 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 508.918 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.216	GAL	-.30	AZL	91.40	HCA	163.16	SMA	184.99	ECC	.18266	INC	1.3972	V1	29.464
RP	216.21	LAP	-.41	LOP	36.69	VP	22.588	GAP	4.07	AZP	88.66	TAL	358.07	TAP	161.23	RCA	151.20	APO	218.79	V2	25.405
RC	159.881	GL	-15.69	GP	-3.72	ZAL	100.78	ZAP	82.27	ETS	178.85	ZAE	124.98	ETE	183.16	ZAC	98.31	ETC	273.37	LVI	-8.44

PLANETOCENTRIC CONIC

C3	8.444	VHL	2.906	DLA	-24.31	RAL	342.80	RAD	6637.2	VEL	11.338	PTH	6.39	VHP	2.828	DPA	-25.72	RAP	302.26	ECC	1.1390

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 17 34	2450.98	-4.95	64.35	191.72	137.38	16 58 25	1451.0	13.40	48.49
60.00	17 28 16	2262.96	-.70	51.49	195.80	130.30	18 5 58	1263.0	15.21	33.23
70.00	18 56 38	1997.26	3.67	33.26	199.11	123.98	19 31 55	997.3	17.09	13.00
80.00	20 47 24	1656.85	7.49	9.76	201.45	118.99	21 15 1	656.9	18.73	348.04
90.00	22 29 35	1327.28	9.20	346.44	202.37	116.86	22 51 42	327.3	19.47	324.12
100.00	23 30 16	1131.32	7.49	331.13	201.45	118.99	23 49 7	131.3	18.73	309.40
110.00	0 2 0	1044.07	3.67	322.17	199.11	123.98	0 19 24	44.1	17.09	301.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1643	TRA	.6261	TC3	-5.4209	BAU	.6131	SGT	3444.6	SGR	373.8	SG3	1724.2	ST	26.4	SR	8.4	SS	49.3
RDE	-.0738	RRA	.1313	RC3	-.3346	FAU	.25844	RRT	.8113	RRF	.8564	RTF	.9483	CRT	.9237	CRS	-.1945	CST	-.5405
FDE	.6727	FRA	5.8343	FC	-26.4980	BSP	5477	SGB	3464.8	R23	.1436	R13	.9491	LSA	51.9	MSA	22.6	SSA	1.0
BDE	.1801	BRA	.6397	BC3	5.4312	FSP	3030	SG1	3458.0	SG2	217.7	THA	5.05	EL1	27.5	EL2	3.1	ALF	16.66

LAUNCH DATE MAY 15 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 513.101 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.220	GAL	-.35	AZL	91.36	HCA	164.32	SMA	185.06	ECC	.18298	INC	1.3626	V1	29.464
RP	216.56	LAP	-.37	LOP	37.85	VP	22.551	GAP	3.91	AZP	88.69	TAL	357.72	TAP	162.04	RCA	151.20	APO	218.92	V2	25.366
RC	162.390	GL	-15.27	GP	-3.98	ZAL	101.36	ZAP	80.52	ETS	178.67	ZAE	123.11	ETE	183.14	ZAC	98.10	ETC	273.23	LVI	-8.00

PLANETOCENTRIC CONIC

C3	8.470	VHL	2.910	DLA	-23.69	RAL	343.19	RAD	6637.2	VEL	11.339	PTH	6.39	VHP	2.835	DPA	-26.09	RAP	301.67	ECC	1.1394

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 16 10	2464.92	-5.64	64.93	192.01	137.32	16 57 15	1464.9	12.71	49.11
60.00	17 25 44	2279.90	-1.44	52.30	196.05	130.28	18 3 44	1279.9	14.50	34.10
70.00	18 54 27	2019.10	2.84	34.40	199.29	124.05	19 28 6	1019.1	16.34	14.25
80.00	20 40 51	1686.10	6.52	11.39	201.56	119.20	21 8 57	686.1	17.92	349.83
90.00	22 21 25	1361.74	8.13	348.41	202.44	117.18	22 44 6	361.7	18.62	326.29
100.00	23 23 43	1160.57	6.52	332.76	201.56	119.20	23 43 3	160.6	17.92	311.20
110.00	23 53 53	1065.92	2.84	323.32	199.29	124.05	24 11 39	65.9	16.34	303.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1443	TRA	.6860	TC3	-5.6593	BAU	.6422	SGT	3620.4	SGR	385.3	SG3	1711.9	ST	26.8	SR	7.8	SS	50.3
RDE	-.0656	RRA	.1367	RC3	-.3682	FAU	.25555	RRT	.8403	RRF	.8841	RTF	.9515	CRT	.9113	CRS	-.2165	CST	-.9891
FDE	.7758	FRA	5.8674	FC	-26.1193	BSP	5803	SGB	3640.9	R23	.1511	R13	.9522	LSA	53.2	MSA	21.8	SSA	.9
BDE	.1586	BRA	.6995	BC3	5.6711	FSP	2997	SG1	3634.9	SG2	208.1	THA	5.13	EL1	27.7	EL2	3.1	ALF	15.13

LAUNCH DATE MAY 15 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC DISTANCE 517.283 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.225	GAL	-.41	AZL	91.32	HCA	165.47	SMA	185.13	ECC	.18333	INC	1.3223	V1	29.464
RP	216.91	LAP	-.33	LOP	39.01	VP	22.513	GAP	3.75	AZP	88.72	TAL	357.37	TAP	162.84	RCA	151.19	APO	219.07	V2	25.327
RC	164.912	GL	-14.78	GP	-4.27	ZAL	101.97	ZAP	78.82	ETS	178.47	ZAE	121.27	ETE	183.14	ZAC	97.85	ETC	273.09	LVI	-7.53

PLANETOCENTRIC CONIC

C3	8.499	VHL	2.915	DLA	-23.02	RAL	343.56	RAD	6637.3	VEL	11.341	PTH	6.39	VHP	2.844	DPA	-26.48	RAP	301.13	ECC	1.1399

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 29	2480.12	-6.41	65.58	192.29	137.25	16 55 49	1480.1	11.96	49.78
60.00	17 22 51	2298.29	-2.25	53.18	196.28	130.25	18 1 9	1298.3	13.72	35.04
70.00	18 49 50	2042.56	1.95	35.63	199.46	124.10	19 23 53	1042.6	15.52	15.58
80.00	20 33 54	1716.87	5.49	13.10	201.66	119.39	21 2 31	716.9	17.05	351.70
90.00	22 12 57	1397.37	7.02	350.43	202.49	117.46	22 36 15	397.4	17.71	328.50
100.00	23 16 46	1191.34	5.49	334.47	201.66	119.39	23 36 37	191.3	17.05	313.07
110.00	23 49 16	1089.38	1.95	324.54	199.46	124.10	24 7 26	89.4	15.52	304.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1238	TRA	.7450	TC3	-5.9049	BAU	.6725	SGT	3800.5	SGR	402.0	SG3	1701.0	ST	27.3	SR	7.3	SS	51.0
RDE	-.0576	RRA	.1430	RC3	-.4043	FAU	.25364	RRT	.8672	RRF	.9094	RTF	.9549	CRT	.9052	CRS	-.2623	CST	-.6349
FDE	.8534	FRA	5.8835	FC	-25.8369	BSP	6128	SGB	3821.7	R23	.1589	R13	.9556	LSA	54.4	MSA	20.9	SSA	.9
BDE	.1365	BRA	.7586	BC3	5.9188	FSP	2973	SG1	3816.5	SG2	199.3	THA	5.25	EL1	28.1	EL2	3.0	ALF	13.75

LAUNCH DATE MAY 15 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 23 1971

DISTANCE 521.461

HELIOCENTRIC CONIC

RL	151.22	LAL	.00	LOL	233.53	VL	32.229	GAL	-.46	AZL	91.28	HCA	166.62	SMA	185.21	ECC	.18372	INC	1.2791
RP	217.26	LAP	-.30	LOP	40.16	VP	22.476	GAP	3.60	AZP	88.76	TAL	357.01	TAP	163.63	RCA	151.19	APO	219.24
RC	167.446	GL	-14.22	GP	-4.60	ZAL	102.59	ZAP	77.16	ETS	178.25	ZAE	119.47	ETE	183.14	ZAC	97.54	ETC	272.96

EARTH TO MARS

V1	29.464																		
V2	25.288																		
LVI	-7.03																		

PLANETOCENTRIC CONIC

C3	8.528	VHL	2.920	DLA	-22.28	RAL	343.91	RAD	6637.3	VEL	11.342	PTH	6.39	VHP	2.856	DPA	-26.91	RAP	300.64
ECC	1.1404																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 25	2496.83	-7.24	66.28	192.56	137.15	16 54 2	1496.8	11.14	50.51
60.00	17 19 31	2318.39	-3.13	54.14	196.49	130.20	17 58 9	1318.4	12.87	36.06
70.00	18 44 42	2067.96	.98	36.95	199.61	124.14	19 19 10	1068.0	14.63	17.01
80.00	20 26 26	1749.56	4.40	14.91	201.73	119.56	20 55 36	749.6	16.10	353.66
90.00	22 4 4	1434.66	5.84	352.54	202.53	117.72	22 27 59	434.7	16.73	330.80
100.00	23 9 18	1224.04	4.40	336.27	201.73	119.56	23 29 42	224.0	16.10	315.03
110.00	23 44 8	1114.78	.98	325.87	199.61	124.14	24 2 43	114.8	14.63	305.93

DIFFERENTIAL CORRECTIONS

TDE	-.0993	TRA	.8040	TC3	-6.1450	BAU	.7025
RDE	-.0486	RRA	.1507	RC3	-.4457	FAU	.25049
FDE	.9510	FRA	5.8928	FC	-25.4277	BSP	6447
BDE	.1106	BRA	.8180	DC3	6.1612	FSP	2948

MID-COURSE EXECUTION ACCURACY

SGT	3978.1	SGR	423.0	SG3	1684.6		
RRT	.8900	RRF	.9312	RTF	.9571		
SGB	4000.5	R23	.1698	R13	.9579		
SG1	3995.9	SG2	192.0	THA	5.42		

ORBIT DETERMINATION ACCURACY

ST	27.9	SR	6.8	SS	51.9		
CRT	.9062	CRS	-.3243	CST	-.6818		
LSA	55.9	MSA	19.9	SSA	.9		
EL1	28.6	EL2	2.8	ALF	12.53		

LAUNCH DATE MAY 15 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 25 1971

DISTANCE 525.637

HELIOCENTRIC CONIC

RL	151.22	LAL	.00	LOL	233.53	VL	32.235	GAL	-.52	AZL	91.22	HCA	167.77	SMA	185.30	ECC	.18414	INC	1.2202
RP	217.61	LAP	-.26	LOP	41.30	VP	22.439	GAP	3.44	AZP	88.81	TAL	356.64	TAP	164.41	RCA	151.18	APO	219.42
RC	169.992	GL	-13.57	GP	-4.99	ZAL	103.23	ZAP	75.55	ETS	178.00	ZAE	117.69	ETE	183.16	ZAC	97.18	ETC	272.84

EARTH TO MARS

V1	29.464																		
V2	25.249																		
LVI	-6.49																		

PLANETOCENTRIC CONIC

C3	8.558	VHL	2.925	DLA	-21.44	RAL	344.23	RAD	6637.3	VEL	11.343	PTH	6.40	VHP	2.869	DPA	-27.39	RAP	300.20
ECC	1.1409																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 9 54	2515.36	-8.16	67.07	192.79	137.04	16 51 49	1515.4	10.22	51.31
60.00	17 15 37	2340.59	-4.11	55.21	196.67	130.13	17 54 37	1340.6	11.93	37.18
70.00	18 38 55	2095.72	-.08	38.40	199.72	124.15	19 13 50	1095.7	13.65	18.56
80.00	20 18 17	1784.70	3.21	16.84	201.77	119.70	20 48 2	784.7	15.06	355.75
90.00	21 54 33	1474.20	4.59	354.77	202.53	117.94	22 19 7	474.2	15.65	333.20
100.00	23 1 9	1259.16	3.21	338.21	201.77	119.70	23 22 9	259.2	15.06	317.12
110.00	23 38 21	1142.54	-.08	327.32	199.72	124.15	23 57 23	142.5	13.65	307.48

DIFFERENTIAL CORRECTIONS

TDE	-.0686	TRA	.8664	TC3	-6.3717	BAU	.7312
RDE	-.0386	RRA	.1607	RC3	-.4928	FAU	.24660
FDE	1.0604	FRA	5.9169	FC	-24.9453	BSP	6793
BDE	.0787	BRA	.8812	DC3	6.3908	FSP	2932

MID-COURSE EXECUTION ACCURACY

SGT	4152.1	SGR	450.7	SG3	1667.2		
RRT	.9091	RRF	.9497	RTF	.9589		
SGB	4176.5	R23	.1829	R13	.9598		
SG1	4172.3	SG2	186.8	THA	5.65		

ORBIT DETERMINATION ACCURACY

ST	28.7	SR	6.3	SS	53.2		
CRT	.9146	CRS	-.4138	CST	-.7349		
LSA	57.9	MSA	18.7	SSA	.8		
EL1	29.3	EL2	2.5	ALF	11.51		

LAUNCH DATE MAY 15 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 27 1971

DISTANCE 529.811

HELIOCENTRIC CONIC

RL	151.22	LAL	.00	LOL	233.53	VL	32.240	GAL	-.58	AZL	91.15	HCA	168.91	SMA	185.39	ECC	.18460	INC	1.1536
RP	217.97	LAP	-.22	LOP	42.44	VP	22.402	GAP	3.29	AZP	88.87	TAL	356.26	TAP	165.17	RCA	151.17	APO	219.61
RC	172.547	GL	-12.80	GP	-5.46	ZAL	103.88	ZAP	73.99	ETS	177.70	ZAE	115.95	ETE	183.19	ZAC	96.74	ETC	272.73

EARTH TO MARS

V1	29.464																		
V2	25.209																		
LVI	-5.90																		

PLANETOCENTRIC CONIC

C3	8.588	VHL	2.931	DLA	-20.49	RAL	344.51	RAD	6637.3	VEL	11.345	PTH	6.40	VHP	2.885	DPA	-27.93	RAP	299.81
ECC	1.1413																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 47	2536.18	-9.20	67.97	192.99	136.89	16 49 3	1536.2	9.19	52.21
60.00	17 10 59	2365.42	-5.20	56.40	196.81	130.02	17 50 25	1365.4	10.87	38.41
70.00	18 32 16	2126.49	-1.26	40.00	199.79	124.13	19 7 42	1126.5	12.54	20.26
80.00	20 9 14	1822.98	1.92	18.95	201.77	119.80	20 39 37	823.0	13.90	358.00
90.00	21 44 9	1516.81	3.22	357.15	202.49	118.11	22 9 26	516.8	14.46	335.77
100.00	22 52 6	1297.45	1.92	340.32	201.77	119.80	23 13 44	297.5	13.90	319.37
110.00	23 31 42	1173.31	-1.26	328.92	199.79	124.13	23 51 16	173.3	12.54	309.18

DIFFERENTIAL CORRECTIONS

TDE	-.0361	TRA	.9291	TC3	-6.6070	BAU	.7612
RDE	-.0282	RRA	.1724	RC3	-.5505	FAU	.24323
FDE	1.1503	FRA	5.9045	FC	-24.5195	BSP	7098
BDE	.0458	BRA	.9410	DC3	6.6299	FSP	2885

MID-COURSE EXECUTION ACCURACY

SGT	4327.7	SGR	486.5	SG3	1647.2		
RRT	.9253	RRF	.9647	RTF	.9610		
SGB	4354.9	R23	.1949	R13	.9619		
SG1	4351.1	SG2	183.5	THA	5.98		

ORBIT DETERMINATION ACCURACY

ST	29.7	SR	6.1	SS	54.2		
CRT	.9334	CRS	-.5277	CST	-.7858		
LSA	59.6	MSA	17.4	SSA	.8		
EL1	30.3	EL2	2.1	ALF	10.86		

LAUNCH DATE MAY 15 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 29 1971

DISTANCE 533.981

HELIOCENTRIC CONIC

RL	151.22	LAL	.00	LOL	233.53	VL	32.248	GAL	-.64	AZL	91.07	HCA	170.05	SMA	185.49	ECC	.18509	INC	1.0717
RP	218.33	LAP	-.19	LOP	43.58	VP	22.366	GAP	3.14	AZP	88.94	TAL	355.88	TAP	165.93	RCA	151.16	APO	219.82
RC	175.114	GL	-11.87	GP	-6.04	ZAL	104.56	ZAP	72.48	ETS	177.35	ZAE	114.24	ETE	183.25	ZAC	96.19	ETC	272.63

EARTH TO MARS

V1	29.464																		
V2	25.169																		
LVI	-5.22																		

PLANETOCENTRIC CONIC

C3	8.616	VHL	2.935	DLA	-19.39	RAL	344.73	RAD	6637.3	VEL	11.346	PTH	6.40	VHP	2.903	DPA	-28.57	RAP	299.50
ECC	1.1418																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 2 51	2560.01	-10.38	68.99	193.13	136.70	16 45 31	1560.0	8.00	53.23
60.00	17 5 24	2393.68	-6.43	57.77	196.89	129.87	17 45 18	1393.7	9.65	39.81
70.00	18 24 29	2161.18	-2.58	41.82	199.79	124.07	19 0 30	1161.2	11.28	22.15
80.00	19 58 58	1865.50	.48	21.28	201.71	119.85	20 30 3	865.5	12.59	.48
90.00	21 32 32	1563.65	1.72	359.77	202.39	118.23	21 58 36	563.6	13.12	338.55
100.00	22 41 50	1339.97	.48	342.65	201.71	119.85	23 4 10	340.0	12.59	321.84
110.00	23 23 56	1207.99	-2.58	330.73	199.79	124.07	23 44 4	208.0	11.28	311.07

DIFFERENTIAL CORRECTIONS

TDE	.0042	TRA	.9835	TC3	-6.8419	BAU	.7914
RDE	-.0158	RRA	.1876	RC3	-.6194	FAU	.23930
FDE	1.2693	FRA	5.8920	FC	-24.0442	BSP	7388
BDE	.0164	BRA	1.0012	DC3	6.8699	FSP	2832

MID-COURSE EXECUTION ACCURACY

SGT	4502.9	SGR	532.9	SG3	1625.7		
RRT	.9380	RRF	.9765	RTF	.9623		
SGB	4534.3	R23	.2087	R13	.9632		
SG1	4530.6	SG2	183.6	THA	6.34		

ORBIT DETERMINATION ACCURACY

ST	31.1	SR	6.1	SS	55.7		
CRT	.9585	CRS	-.6595	CST	-.8343		
LSA	62.0	MSA	15.9	SSA	.8		
EL1	31.7	EL2	1.7	ALF	10.59		

LAUNCH DATE MAY 15 1971 FLIGHT TIME 230.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 538.148 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.252	GAL	-.71	AZL	90.97	HCA	171.19	SMA	185.59	ECC	.18561	INC	.9699
RP	218.69	LAP	-.15	LOP	44.72	VP	22.330	GAP	2.99	AZP	89.04	TAL	355.48	TAP	166.67	RCA	151.14	APO	220.04
RC	177.690	GL	-10.72	GP	-6.75	ZAL	105.25	ZAP	71.03	ETS	176.91	ZAE	112.55	ETE	183.33	ZAC	95.50	ETC	272.54

V1	29.464	V2	25.129	LVI	-4.43														

PLANETOCENTRIC CONIC

C3	8.642	VHL	2.940	DLA	-18.08	RAL	344.87	RAD	6637.3	VEL	11.347	PTH	6.40	VHP	2.924	DPA	-29.33	RAP	299.25

ECC	1.1422

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 50	2587.90	-11.76	70.21	193.20	136.44	16 40 58	1587.9	6.61	54.41
60.00	16 58 29	2426.60	-7.87	58.36	196.89	129.65	17 38 56	1426.6	8.23	41.42
70.00	18 15 10	2201.19	-4.11	43.91	199.72	123.94	18 51 51	1201.2	9.81	24.32
80.00	19 46 59	1913.83	-1.16	23.93	201.56	119.84	20 18 53	913.8	11.07	3.25
90.00	21 19 11	1616.39	.02	2.71	202.21	118.28	21 46 7	616.4	11.57	341.64
100.00	22 29 51	1386.30	-1.16	345.30	201.56	119.84	22 52 59	386.3	11.07	324.62
110.00	23 14 36	1248.01	-4.11	332.83	199.72	123.94	23 35 24	248.0	9.81	313.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0523	TRA	1.0393	TC3	-7.0768	BAU	.8217	SGT	4675.8	SGR	593.1	SG3	1600.8	ST	33.0	SR	6.4	SS	57.0
RDE	-.0017	RRA	.2067	RC3	-.7058	FAU	.23533	RRT	.9481	RRF	.9852	RTF	.9639	CRT	.9792	CRS	-.7863	CST	-.8823
FDE	1.3842	FRA	5.8505	FC-23	5.5749	BSP	7703	SGB	4713.3	R23	.2196	R13	.9650	LSA	64.7	MSA	14.1	SSA	.7
BDE	.0523	BRA	1.0596	BC3	7.1119	FSP	2790	SG1	4709.5	SG2	187.3	THA	6.87	EL1	33.6	EL2	1.3	ALF	10.76

LAUNCH DATE MAY 15 1971 FLIGHT TIME 232.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 542.314 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.259	GAL	-.77	AZL	90.84	HCA	172.32	SMA	185.70	ECC	.18616	INC	.8384
RP	219.06	LAP	-.11	LOP	45.85	VP	22.293	GAP	2.84	AZP	89.17	TAL	355.08	TAP	167.40	RCA	151.13	APO	220.27
RC	180.275	GL	-9.26	GP	-7.67	ZAL	105.96	ZAP	69.64	ETS	176.37	ZAE	110.89	ETE	183.46	ZAC	94.60	ETC	272.45

V1	29.464	V2	25.089	LVI	-3.46														

PLANETOCENTRIC CONIC

C3	8.664	VHL	2.944	DLA	-16.49	RAL	344.89	RAD	6637.3	VEL	11.348	PTH	6.40	VHP	2.948	DPA	-30.29	RAP	299.09

ECC	1.1426

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 15	2621.56	-13.42	71.69	193.17	136.09	16 34 56	1621.6	4.93	55.83
60.00	16 49 42	2466.10	-9.58	61.30	196.79	129.34	17 30 48	1466.1	6.51	43.38
70.00	18 3 39	2248.74	-5.91	46.41	199.53	123.70	18 41 7	1248.7	8.04	26.87
80.00	19 32 34	1970.44	-3.07	27.04	201.29	119.71	20 5 24	970.4	9.24	6.47
90.00	21 3 19	1677.64	-1.96	6.13	201.91	118.22	21 31 17	677.6	9.72	345.19
100.00	22 15 25	1444.91	-3.07	348.41	201.29	119.71	22 39 30	444.9	9.24	327.83
110.00	23 3 5	1295.55	-5.91	335.33	199.53	123.70	23 24 41	295.6	8.04	315.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1080	TRA	1.0868	TC3	-7.3264	BAU	.8540	SGT	4849.2	SGR	672.9	SG3	1572.5	ST	35.3	SR	7.1	SS	57.6
RDE	.0137	RRA	.2294	RC3	-.8238	FAU	.23297	RRT	.9576	RRF	.9913	RTF	.9673	CRT	.9898	CRS	-.8808	CST	-.9269
FDE	1.4632	FRA	5.7312	FC-23	5.2776	BSP	7928	SGB	4895.6	R23	.2204	R13	.9685	LSA	66.9	MSA	11.8	SSA	.7
BDE	.1089	BRA	1.1108	BC3	7.3726	FSP	2661	SG1	4891.9	SG2	192.1	THA	7.58	EL1	36.0	EL2	1.0	ALF	11.34

LAUNCH DATE MAY 15 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 546.473 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.265	GAL	-.84	AZL	90.67	HCA	173.44	SMA	185.81	ECC	.18673	INC	.6613
RP	219.43	LAP	-.08	LOP	46.98	VP	22.257	GAP	2.69	AZP	89.34	TAL	354.68	TAP	168.12	RCA	151.11	APO	220.51
RC	182.871	GL	-7.32	GP	-8.89	ZAL	106.70	ZAP	68.32	ETS	175.66	ZAE	109.25	ETE	183.64	ZAC	93.39	ETC	272.38

V1	29.464	V2	25.048	LVI	-2.22														

PLANETOCENTRIC CONIC

C3	8.685	VHL	2.947	DLA	-14.45	RAL	344.73	RAD	6637.4	VEL	11.349	PTH	6.40	VHP	2.977	DPA	-31.54	RAP	299.04

ECC	1.1429

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 20	2664.00	-15.49	73.59	193.02	135.57	16 26 44	1664.0	2.80	57.61
60.00	16 38 8	2515.61	-11.70	63.75	196.55	128.84	17 20 4	1515.6	4.34	45.73
70.00	17 48 51	2307.71	-8.13	49.54	199.20	123.29	18 27 19	1307.7	5.83	29.99
80.00	19 14 29	2039.69	-5.40	30.87	200.87	119.41	19 48 29	1039.7	6.97	10.35
90.00	20 43 41	1751.95	-4.34	10.29	201.45	117.97	21 12 53	752.0	7.42	349.43
100.00	21 57 21	1514.16	-5.40	352.23	200.87	119.41	22 22 35	514.2	6.97	331.72
110.00	22 48 18	1354.53	-8.13	338.46	199.20	123.29	23 10 52	354.5	5.83	318.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1878	TRA	1.1367	TC3	-7.5598	BAU	.8849	SGT	5019.5	SGR	781.8	SG3	1540.6	ST	39.4	SR	8.8	SS	60.5
RDE	.0377	RRA	.2642	RC3	-.9666	FAU	.22695	RRT	.9621	RRF	.9953	RTF	.9675	CRT	.9956	CRS	-.9489	CST	-.9824
FDE	1.6501	FRA	5.6759	FC-22	6.6229	BSP	8248	SGB	5080.0	R23	.2306	R13	.9689	LSA	72.1	MSA	9.2	SSA	.7
BDE	.1915	BRA	1.1670	BC3	7.6214	FSP	2623	SG1	5075.6	SG2	210.9	THA	8.54	EL1	40.3	EL2	.8	ALF	12.55

LAUNCH DATE MAY 15 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 6 1972

HELIOCENTRIC CONIC DISTANCE 550.629 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.272	GAL	-.90	AZL	90.42	HCA	174.57	SMA	185.93	ECC	.18734	INC	.4191
RP	219.80	LAP	-.04	LOP	48.10	VP	22.222	GAP	2.55	AZP	89.58	TAL	354.26	TAP	168.83	RCA	151.10	APO	220.76
RC	185.475	GL	-4.61	GP	-10.59	ZAL	107.45	ZAP	67.12	ETS	174.69	ZAE	107.61	ETE	183.91	ZAC	91.71	ETC	272.32

V1	29.464	V2	25.007	LVI	-.56														

PLANETOCENTRIC CONIC

C3	8.709	VHL	2.951	DLA	-11.69	RAL	344.29	RAD	6637.4	VEL	11.350	PTH	6.40	VHP	3.014	DPA	-33.26	RAP	299.16

ECC	1.1433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 43	2720.67	-18.23	76.20	192.70	134.75	16 15 4	1720.7	-.05	59.98
60.00	16 22 9	2581.24	-14.48	67.07	196.14	128.03	17 5 10	1581.2	1.46	48.88
70.00	17 28 53	2385.03	-10.99	53.70	198.67	122.54	18 8 36	1385.0	2.89	34.05
80.00	18 50 37	2129.20	-8.36	35.85	200.25	118.77	19 26 6	1129.2	3.98	15.31
90.00	20 18 0	1847.29	-7.36	15.67	200.79	117.38	20 48 47	847.3	4.40	354.81
100.00	21 33 29	1603.67	-8.36	357.22	200.25	118.77	22 0 13	603.7	3.98	336.68
110.00	22 28 20	1431.85	-10.99	342.61	198.67	122.54	22 52 12	431.8	2.89	322.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3070	TRA	1.1850	TC3	-7.7395	BAU	.9111	SGT	5171.3	SGR	932.6	SG3	1496.0	ST	46.7	SR	11.8	SS	64.9
RDE	.0735	RRA	.3131	RC3	-1.1542	FAU	.21811	RRT	.9653	RRF	.9978	RTF	.9677	CRT	.9970	CRS	-.9829	CST	-.9882
FDE	1.9044	FRA	5.5794	FC-21	6.6809	BSP	8676	SGB	5254.7	R23	.2359	R13	.9696	LSA	80.6	MSA	6.0	SSA	.9
BDE	.3157	BRA	1.2257	BC3	7.8251	FSP	2581	SG1	5249.2	SG2	240.1	THA	9.90	EL1	48.1	EL2	.9	ALF	14.13

LAUNCH DATE MAY 15 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 8 1972

DISTANCE 554.782

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.280 GAL -.97 AZL 90.05 HCA 175.69 SMA 186.05 ECC .18797 INC .0000 V1 29.464
RP 220.18 LAP -.00 LOP 49.22 VP 22.186 GAP 2.40 AZP 89.95 TAL 353.84 TAP 169.53 RCA 151.08 APO 221.02 V2 24.966
RC 188.089 GL -.54 GP -13.13 ZAL 108.18 ZAP 66.09 ETS 173.27 ZAE 105.96 ETE 184.33 ZAC 89.18 ETC 272.27 LVI 1.86

PLANETOCENTRIC CONIC

C3 8.766 VHL 2.961 DLA -7.67 RAL 343.34 RAD 6637.4 VEL 11.352 PTH 6.41 VHP 3.067 DPA -35.78 RAP 299.53 ECC 1.1443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 39	2802.93	-22.12	80.14	192.21	133.26	15 57 22	1802.9	-4.18	63.42
60.00	15 58 28	2675.73	-18.38	72.01	195.54	126.52	16 43 4	1675.7	-2.70	53.39
70.00	16 59 56	2495.03	-14.94	59.77	197.94	121.08	17 41 31	1495.0	-1.31	39.79
80.00	18 16 40	2254.80	-12.39	43.00	199.41	117.38	18 54 15	1254.8	-.27	22.21
90.00	19 41 48	1980.12	-11.43	23.30	199.90	116.04	20 14 48	980.1	.13	2.24
100.00	20 59 32	1729.27	-12.39	4.37	199.41	117.38	21 28 21	729.3	-.27	343.58
110.00	21 59 22	1541.84	-14.94	348.68	197.94	121.08	22 25 4	541.8	-1.31	328.71

DIFFERENTIAL CORRECTIONS

TDE .4620 TRA 1.1995 TC3-7.9718 BAU .9495
RDE .1280 RRA .3821 RC3-1.4461 FAU .21028
FDE 2.1759 FRA 5.3544 FC-20.7668 BSP 8913
BDE .4794 BRA 1.2589 BC3 8.1019 FSP 2460

MID-COURSE EXECUTION ACCURACY

SGT 5345.0 SGR 1162.4 SG3 1441.2
RRT .9675 RRF .9991 RTF .9679
SGB 5469.9 R23 .2369 R13 .9706
SG1 5462.3 SG2 287.7 THA 11.92

ORBIT DETERMINATION ACCURACY

ST 57.3 SR 16.7 SS 69.7
CRT .9966 CRS -.9955 CST -.9982
LSA 91.7 MSA 2.7 SSA 1.3
EL1 59.7 EL2 1.3 ALF 16.24

LAUNCH DATE MAY 15 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 10 1972

DISTANCE 558.930

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.287 GAL -1.04 AZL 89.42 HCA 176.80 SMA 186.18 ECC .18863 INC .5846 V1 29.464
RP 220.55 LAP .03 LOP 50.34 VP 22.151 GAP 2.25 AZP 90.58 TAL 353.42 TAP 170.22 RCA 151.06 APO 221.30 V2 24.925
RC 190.711 GL 6.26 GP -17.27 ZAL 108.75 ZAP 65.44 ETS 171.01 ZAE 104.22 ETE 185.03 ZAC 85.05 ETC 272.24 LVI 5.76

PLANETOCENTRIC CONIC

C3 8.975 VHL 2.996 DLA -1.12 RAL 341.39 RAD 6637.5 VEL 11.361 PTH 6.41 VHP 3.159 DPA -39.86 RAP 300.44 ECC 1.1477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 38 44	2938.22	-28.25	87.18	191.81	130.02	15 27 42	1938.2	-10.93	69.19
60.00	15 19 30	2829.79	-24.38	80.61	195.01	123.14	16 6 40	1829.8	-9.42	60.84
70.00	16 13 3	2672.32	-20.88	70.08	197.24	117.66	16 57 35	1672.3	-8.03	49.12
80.00	17 22 32	2454.76	-18.32	54.88	198.55	114.00	18 3 26	1454.8	-6.99	33.24
90.00	18 44 29	2190.32	-17.36	35.88	198.99	112.68	19 20 59	1190.3	-6.60	14.02
100.00	20 5 24	1929.23	-18.32	16.25	198.55	114.00	20 37 33	929.2	-6.99	354.61
110.00	21 12 29	1719.14	-20.88	358.99	197.24	117.66	21 41 8	719.1	-8.03	338.04

DIFFERENTIAL CORRECTIONS

TDE .7585 TRA 1.2023 TC3-7.9495 BAU .9797
RDE .2409 RRA .4929 RC3-1.8614 FAU .19492
FDE 2.6372 FRA 4.9819 FC-18.8018 BSP 9552
BDE .7959 BRA 1.2994 BC3 8.1646 FSP 2332

MID-COURSE EXECUTION ACCURACY

SGT 5484.6 SGR 1531.4 SG3 1347.3
RRT .9702 RRF .9997 RTF .9692
SGB 5694.4 R23 .2285 R13 .9733
SG1 5683.2 SG2 357.9 THA 15.22

ORBIT DETERMINATION ACCURACY

ST 80.6 SR 27.1 SS 79.2
CRT .9940 CRS -.9994 CST -.9970
LSA 116.2 MSA 4.8 SSA .4
EL1 85.0 EL2 2.8 ALF 18.48

LAUNCH DATE MAY 15 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 12 1972

DISTANCE 563.073

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.295 GAL -1.11 AZL 88.12 HCA 177.92 SMA 186.31 ECC .18931 INC 1.8685 V1 29.464
RP 220.93 LAP .07 LOP 51.45 VP 22.115 GAP 2.11 AZP 91.88 TAL 352.99 TAP 170.91 RCA 151.04 APO 221.58 V2 24.884
RC 193.341 GL 19.52 GP -25.11 ZAL 108.48 ZAP 65.89 ETS 167.02 ZAE 102.20 ETE 186.36 ZAC 77.22 ETC 272.28 LVI 13.01

PLANETOCENTRIC CONIC

C3 10.017 VHL 3.165 DLA 11.42 RAL 337.00 RAD 6638.1 VEL 11.407 PTH 6.46 VHP 3.382 DPA -47.51 RAP 302.87 ECC 1.1649

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 34 43	3210.51	-38.96	104.29	194.01	119.82	14 28 13	2210.5	-23.99	81.88
60.00	14 1 46	3138.52	-34.33	100.65	196.85	112.55	14 54 4	2138.5	-22.16	76.98
70.00	14 39 52	3026.41	-30.16	93.33	198.61	106.84	15 30 18	2026.4	-20.46	69.00
80.00	15 35 4	2853.48	-27.12	81.14	199.54	103.00	16 22 37	1853.5	-19.18	56.54
90.00	16 50 43	2609.34	-25.97	63.47	199.82	101.60	17 34 12	1609.3	-18.69	38.81
100.00	18 17 56	2327.95	-27.12	42.51	199.54	103.00	18 56 44	1327.9	-19.18	17.91
110.00	19 39 18	2073.22	-30.16	22.25	198.61	106.84	20 13 52	1073.2	-20.46	357.92

DIFFERENTIAL CORRECTIONS

TDE 1.3107 TRA 1.0399 TC3-7.5497 BAU 1.0656
RDE .5256 RRA .6554 RC3-2.5113 FAU .17261
FDE 3.2374 FRA 3.9994 FC-14.9178 BSP 9516
BDE 1.4122 BRA 1.2292 BC3 7.9564 FSP 1882

MID-COURSE EXECUTION ACCURACY

SGT 5670.7 SGR 2213.1 SG3 1153.0
RRT .9705 RRF .9999 RTF .9676
SGB 6007.3 R23 .2219 R13 .9750
SG1 6066.8 SG2 498.8 THA 20.89

ORBIT DETERMINATION ACCURACY

ST 122.3 SR 51.0 SS 91.6
CRT .9920 CRS -1.0000 CST -.9923
LSA 160.8 MSA 9.9 SSA .1
EL1 132.4 EL2 6.0 ALF 22.51

LAUNCH DATE MAY 15 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 14 1972

DISTANCE 567.210

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.303 GAL -1.19 AZL 83.91 HCA 179.02 SMA 186.44 ECC .19002 INC 6.1040 V1 29.464
RP 221.31 LAP .10 LOP 52.56 VP 22.080 GAP 1.96 AZP 96.09 TAL 352.57 TAP 171.59 RCA 151.01 APO 221.87 V2 24.842
RC 195.978 GL 50.25 GP -43.30 ZAL 103.55 ZAP 70.95 ETS 159.97 ZAE 99.32 ETE 189.61 ZAC 59.00 ETC 272.86 LVI 29.35

PLANETOCENTRIC CONIC

C3 19.848 VHL 4.455 DLA 39.77 RAL 323.47 RAD 6642.8 VEL 11.826 PTH 6.85 VHP 4.441 DPA -64.59 RAP 314.54 ECC 1.3266

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	10 5 43	4014.37	-42.75	175.63	216.32	66.73	11 12 37	3014.4	-47.54	141.78
60.00	8 48 7	4223.70	-27.44	184.72	206.83	59.24	9 58 30	3223.7	-37.55	158.71
60.79	8 7 27	4338.50	-22.60	191.08	203.47	56.37	9 19 46	3338.5	-34.36	167.10
60.79	8 7 27	4338.50	-22.60	191.08	203.47	56.37	9 19 46	3338.5	-34.36	167.10
60.79	8 7 27	4338.50	-22.60	191.08	203.47	56.37	9 19 46	3338.5	-34.36	167.10
60.79	8 7 27	4338.50	-22.60	191.08	203.47	56.37	9 19 46	3338.5	-34.36	167.10
60.79	8 7 27	4338.50	-22.60	191.08	203.47	56.37	9 19 46	3338.5	-34.36	167.10

DIFFERENTIAL CORRECTIONS

TDE 3.7407 TRA .7581 TC3-3.5023 BAU 1.0595
RDE 2.1965 RRA .9713 RC3-1.9172 FAU .08044
FDE 4.0884 FRA 1.9654 FC3-3.5085 BSP 14821
BDE 4.3379 BRA 1.2321 BC3 3.9927 FSP 1287

MID-COURSE EXECUTION ACCURACY

SGT 5872.9 SGR 3679.5 SG3 600.0
RRT .9710 RRF .9993 RTF .9616
SGB 6930.4 R23 .2091 R13 .9779
SG1 6889.6 SG2 750.4 THA 31.73

ORBIT DETERMINATION ACCURACY

ST 241.3 SR 143.4 SS 102.7
CRT .9958 CRS -.9999 CST -.9943
LSA 298.6 MSA 13.8 SSA .0
EL1 280.5 EL2 11.3 ALF 30.66

LAUNCH DATE MAY 15 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 575.496 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.319	GAL	-1.34	AZL	98.10	HCA	181.24	SMA	186.72	ECC	.19152	INC	8.0870	V1	29.464
RP	222.07	LAP	.17	LOP	54.76	VP	22.010	GAP	1.68	AZP	81.90	TAL	351.64	TAP	172.88	RCA	150.96	APO	222.48	V2	24.759
RC	201.270	GL	-58.69	GP	36.80	ZAL	102.26	ZAP	66.76	ETS	197.81	ZAE	99.37	ETE	173.58	ZAC	138.97	ETC	273.95	LVI	-43.99

PLANETOCENTRIC CONIC

C3	28.379	VHL	5.327	DLA	-55.90	RAL	25.11	RAD	6646.4	VEL	12.179	PTH	7.14	VHP	4.001	DPA	13.57	RAP	291.48	ECC	1.4670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.55	22 55 48	1971.42	25.22	51.30	276.50	141.70	23 28 40	971.4	43.33	31.45
39.55	22 55 48	1971.42	25.22	51.30	276.50	141.70	23 28 40	971.4	43.33	31.45
39.55	22 55 48	1971.42	25.22	51.30	276.50	141.70	23 28 40	971.4	43.33	31.45
39.55	22 55 48	1971.42	25.22	51.30	276.50	141.70	23 28 40	971.4	43.33	31.45
39.55	22 55 48	1971.42	25.22	51.30	276.50	141.70	23 28 40	971.4	43.33	31.45
39.55	22 55 48	1971.42	25.22	51.30	276.50	141.70	23 28 40	971.4	43.33	31.45
39.55	22 55 48	1971.42	25.22	51.30	276.50	141.70	23 28 40	971.4	43.33	31.45

DIFFERENTIAL CORRECTIONS

TDE	-.6715	TRA	2.3899	TC3	-3.3576	BAU	1.4135												
RDE	-.3538	RRA	-1.3757	RC3	1.6143	FAU	.13899												
FDE	1.3426	FRA	3.6621	FC3	-4.2400	BSP	8283												
BDE	.7590	BRA	2.7576	BC3	3.7255	FSP	1052												

MID-COURSE EXECUTION ACCURACY

SGT	5859.6	SGR	3172.8	SG3	732.3						
RRT	-.9669	RRF	-.9987	RTF	.9528						
SGB	6663.5	R23	.2482	R13	-.9686						
SG1	6624.9	SG2	716.3	THA	152.01						

ORBIT DETERMINATION ACCURACY

ST	77.9	SR	44.0	SS	44.2		
CRT	-.5982	CRS	.9884	CST	-.4695		
LSA	88.2	MSA	46.5	SSA	.0		
EL1	83.1	EL2	33.0	ALF	157.60		

LAUNCH DATE MAY 15 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 579.618 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.327	GAL	-1.42	AZL	95.16	HCA	182.34	SMA	186.86	ECC	.19229	INC	5.1606	V1	29.464
RP	222.46	LAP	.21	LOP	55.86	VP	21.976	GAP	1.53	AZP	84.84	TAL	351.20	TAP	173.53	RCA	150.93	APO	222.80	V2	24.717
RC	203.922	GL	-44.43	GP	22.02	ZAL	106.42	ZAP	61.06	ETS	192.09	ZAE	98.46	ETE	177.09	ZAC	124.29	ETC	272.82	LVI	-30.53

PLANETOCENTRIC CONIC

C3	17.263	VHL	4.155	DLA	-44.98	RAL	10.55	RAD	6641.6	VEL	11.717	PTH	6.75	VHP	3.395	DPA	-1.15	RAP	293.07	ECC	1.2841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 54 12	2023.23	16.35	46.05	240.98	135.33	21 27 55	1023.2	32.92	26.57
53.43	22 42 24	1745.91	26.50	29.72	250.61	127.78	23 11 30	745.9	39.50	5.32
53.43	22 42 24	1745.91	26.50	29.72	250.61	127.78	23 11 30	745.9	39.50	5.32
53.43	22 42 24	1745.91	26.50	29.72	250.61	127.78	23 11 30	745.9	39.50	5.32
53.43	22 42 24	1745.91	26.50	29.72	250.61	127.78	23 11 30	745.9	39.50	5.32
53.43	22 42 24	1745.91	26.50	29.72	250.61	127.78	23 11 30	745.9	39.50	5.32
53.43	22 42 24	1745.91	26.50	29.72	250.61	127.78	23 11 30	745.9	39.50	5.32

DIFFERENTIAL CORRECTIONS

TDE	-.6812	TRA	2.3425	TC3	-4.9791	BAU	1.1930												
RDE	-.0568	RRA	-.8676	RC3	1.3887	FAU	.17243												
FDE	.7616	FRA	5.4642	FC3	-8.6473	BSP	10491												
BDE	.6836	BRA	2.4980	BC3	5.1691	FSP	1944												

MID-COURSE EXECUTION ACCURACY

SGT	6233.7	SGR	2049.2	SG3	1114.0						
RRT	-.9728	RRF	-.9990	RTF	.9630						
SGB	6561.9	R23	.2472	R13	-.9687						
SG1	6546.3	SG2	452.1	THA	162.18						

ORBIT DETERMINATION ACCURACY

ST	83.3	SR	25.7	SS	49.4		
CRT	-.7302	CRS	.9866	CST	-.6088		
LSA	92.4	MSA	38.8	SSA	.1		
EL1	85.5	EL2	17.1	ALF	166.75		

LAUNCH DATE MAY 15 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 583.741 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.336	GAL	-1.49	AZL	94.10	HCA	183.43	SMA	187.01	ECC	.19309	INC	4.0987	V1	29.464
RP	222.84	LAP	.25	LOP	56.95	VP	21.942	GAP	1.39	AZP	85.90	TAL	350.75	TAP	174.18	RCA	150.90	APO	223.12	V2	24.675
RC	206.578	GL	-37.31	GP	15.35	ZAL	108.61	ZAP	58.59	ETS	188.84	ZAE	97.22	ETE	178.51	ZAC	117.64	ETC	272.58	LVI	-24.39

PLANETOCENTRIC CONIC

C3	14.568	VHL	3.817	DLA	-38.78	RAL	5.85	RAD	6640.3	VEL	11.603	PTH	6.64	VHP	3.273	DPA	-7.76	RAP	293.94	ECC	1.2397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 20 41	2208.39	7.22	54.17	226.43	137.16	19 57 29	1208.4	24.92	36.95
60.00	21 36 16	1846.21	17.25	30.93	235.67	127.00	22 7 2	846.2	30.78	9.05
62.28	23 1 27	1603.54	24.65	15.92	241.00	120.93	23 28 10	603.5	35.13	350.86
62.28	23 1 27	1603.54	24.65	15.92	241.00	120.93	23 28 10	603.5	35.13	350.86
62.28	23 1 27	1603.54	24.65	15.92	241.00	120.93	23 28 10	603.5	35.13	350.86
62.28	23 1 27	1603.54	24.65	15.92	241.00	120.93	23 28 10	603.5	35.13	350.86
62.28	23 1 27	1603.54	24.65	15.92	241.00	120.93	23 28 10	603.5	35.13	350.86

DIFFERENTIAL CORRECTIONS

TDE	-.5797	TRA	2.2679	TC3	-6.0500	BAU	1.2000												
RDE	-.0159	RRA	-.6041	RC3	1.1685	FAU	.18790												
FDE	.6559	FRA	5.7706	FC3	-11.1669	BSP	10096												
BDE	.5799	BRA	2.3470	BC3	6.1618	FSP	2009												

MID-COURSE EXECUTION ACCURACY

SGT	6415.3	SGR	1466.0	SG3	1213.0						
RRT	-.9759	RRF	-.9985	RTF	.9563						
SGB	6580.7	R23	.2440	R13	-.9690						
SG1	6573.2	SG2	312.3	THA	167.40						

ORBIT DETERMINATION ACCURACY

ST	78.9	SR	17.5	SS	49.3		
CRT	-.7945	CRS	.9763	CST	-.6444		
LSA	87.9	MSA	35.2	SSA	.1		
EL1	80.2	EL2	10.5	ALF	169.81		

LAUNCH DATE MAY 15 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 24 1972

HELIOCENTRIC CONIC DISTANCE 587.856 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.345	GAL	-1.57	AZL	93.56	HCA	184.52	SMA	187.16	ECC	.19392	INC	3.5569	V1	29.464
RP	223.23	LAP	.28	LOP	58.04	VP	21.907	GAP	1.25	AZP	86.45	TAL	350.29	TAP	174.81	RCA	150.87	APO	223.45	V2	24.633
RC	209.236	GL	-33.09	GP	11.68	ZAL	110.10	ZAP	56.98	ETS	186.93	ZAE	95.95	ETE	179.25	ZAC	113.98	ETC	272.47	LVI	-21.02

PLANETOCENTRIC CONIC

C3	13.508	VHL	3.675	DLA	-34.86	RAL	3.78	RAD	6639.8	VEL	11.557	PTH	6.60	VHP	3.243	DPA	-11.39	RAP	294.50	ECC	1.2223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 41 44	2298.95	2.69	57.99	220.86	137.52	19 20 3	1299.0	20.72	41.47
60.00	20 23 53	2026.94	9.63	40.12	227.46	129.33	20 57 40	1026.9	24.56	20.30
68.71	23 27 10	1486.70	22.89	5.42	236.45	117.04	23 51 57	486.7	31.97	340.33
68.71	23 27 10	1486.70	22.89	5.42	236.45	117.04	23 51 57	486.7	31.97	340.33
68.71	23 27 10	1486.70	22.89	5.42	236.45	117.04	23 51 57	486.7	31.97	340.33
68.71	23 27 10	1486.70	22.89	5.42	236.45	117.04	23 51 57	486.7	31.97	340.33
68.71	23 27 10	1486.70	22.89	5.42	236.45	117.04	23 51 57	486.7	31.97	340.33

DIFFERENTIAL CORRECTIONS

TDE	-.3940	TRA	2.3558	TC3	-6.4443	BAU	1.1756												
RDE	-.0211	RRA	-.4844	RC3	.9194	FAU	.18139												
FDE	.9300	FRA	6.0365	FC3	-11.6250	BSP	11107												
BDE	.3945	BRA	2.4050	BC3	6.5096	FSP	2219												

MID-COURSE EXECUTION ACCURACY

SGT	6545.8	SGR	1142.2	SG3	1242.0						
RRT	-.9763	RRF	-.9974	RTF	.9662						
SGB	6644.8	R23	.2438	R13	-.9677						
SG1	6640.3	SG2	243.5	THA	170.32						

ORBIT DETERMINATION ACCURACY

ST	74.2	SR	13.9	SS	52.4		
CRT	-.8547	CRS	.9611	CST	-.6784		
LSA	85.3	MSA	34.2	SSA	.2		
EL1	75.1	EL2	7.1	ALF	170.79		

LAUNCH DATE MAY 15 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 591.963 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.354	GAL	-1.65	AZL	93.22	HCA	185.60	SMA	187.31	ECC	.19476	INC	3.2229	V1	29.464
RP	223.62	LAP	.31	LOP	59.13	VP	21.873	GAP	1.10	AZP	86.79	TAL	349.82	TAP	175.43	RCA	150.83	APO	223.79	V2	24.591
RC	211.896	GL	-30.28	GP	9.39	ZAL	111.28	ZAP	55.69	ETS	185.69	ZAE	94.70	ETE	179.70	ZAC	111.69	ETC	272.43	LVI	-16.93

PLANETOCENTRIC CONIC

C3	13.015	VHL	3.608	DLA	-32.13	RAL	2.77	RAD	6639.6	VEL	11.536	PTH	6.58	VHP	3.242	DPA	-13.64	RAP	294.92	ECC	1.2142

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 19 42	2359.23	-.34	60.50	218.11	137.58	18 59 2	1359.2	17.85	44.33
60.00	19 50 8	2118.56	5.65	44.58	223.85	129.97	20 25 27	1118.6	21.06	25.52
70.00	22 2 9	1729.86	13.60	18.92	229.65	121.64	22 30 58	729.9	25.38	356.70
74.08	0 0 32	1375.84	21.44	356.09	234.04	114.52	0 23 28	375.8	29.64	331.08
74.08	0 0 32	1375.84	21.44	356.09	234.04	114.52	0 23 28	375.8	29.64	331.08
74.08	0 0 32	1375.84	21.44	356.09	234.04	114.52	0 23 28	375.8	29.64	331.08
110.00	3 5 31	6064.72	13.60	285.74	229.65	121.64	4 46 36	5064.7	25.38	263.53

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2812	TRA	2.4201	TC3	-6.7754	BAU	1.1861	SGT	6685.5	SGR	938.0	SG3	1244.7	ST	72.0	SR	11.6	SS	54.9
RDE	-.0175	RRA	-.4082	RC3	.7502	FAU	.17528	RRT	-.9741	RRF	-.9952	RTF	.9630	CRT	-.9062	CRS	.9352	CST	-.6982
FDE	1.1444	FRA	6.1602	FC-	11.6594	BSP	11522	SGB	6751.0	R23	.2488	R13	-.9640	LSA	84.9	MSA	33.7	SSA	.2
BDE	.2817	BRA	2.4542	BC3	6.8168	FSP	2320	SG1	6747.7	SG2	210.3	THA	172.21	EL1	72.8	EL2	4.9	ALF	171.66

LAUNCH DATE MAY 15 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 596.074 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.363	GAL	-1.73	AZL	93.00	HCA	186.69	SMA	187.46	ECC	.19562	INC	3.0009	V1	29.464
RP	224.01	LAP	.35	LOP	60.21	VP	21.840	GAP	.96	AZP	87.02	TAL	349.36	TAP	176.05	RCA	150.79	APO	224.14	V2	24.550
RC	214.558	GL	-28.27	GP	7.82	ZAL	112.28	ZAP	54.55	ETS	184.83	ZAE	93.47	ETE	179.99	ZAC	110.12	ETC	272.43	LVI	-17.52

PLANETOCENTRIC CONIC

C3	12.776	VHL	3.574	DLA	-30.08	RAL	2.29	RAD	6639.4	VEL	11.526	PTH	6.57	VHP	3.254	DPA	-15.18	RAP	295.26	ECC	1.2103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 5 33	2404.16	-2.60	62.38	216.63	137.52	18 45 37	1404.2	15.68	46.39
60.00	19 29 28	2160.91	2.92	47.57	221.92	130.21	20 5 49	1160.9	18.58	28.92
70.00	21 23 43	1844.80	9.41	25.18	226.77	122.98	21 54 27	844.8	22.03	3.95
79.30	0 35 47	1254.59	20.26	346.40	232.68	112.72	0 56 41	254.6	27.84	321.50
79.30	0 35 47	1254.59	20.26	346.40	232.68	112.72	0 56 41	254.6	27.84	321.50
79.30	0 35 47	1254.59	20.26	346.40	232.68	112.72	0 56 41	254.6	27.84	321.50
110.00	2 27 5	6179.66	9.41	292.01	226.77	122.98	4 10 5	5179.7	22.03	270.78

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1882	TRA	2.4946	TC3	-7.0035	BAU	1.2012	SGT	6819.9	SGR	797.3	SG3	1231.6	ST	71.3	SR	9.8	SS	55.3
RDE	-.0067	RRA	-.3526	RC3	.6394	FAU	.17369	RRT	-.9754	RRF	-.9920	RTF	.9663	CRT	-.9636	CRS	.8940	CST	-.7430
FDE	1.2169	FRA	6.1219	FC-	11.7700	BSP	11896	SGB	6866.3	R23	.2215	R13	-.9669	LSA	85.3	MSA	31.2	SSA	.3
BDE	.1883	BRA	2.5194	BC3	7.0326	FSP	2265	SG1	6864.1	SG2	174.8	THA	173.49	EL1	72.0	EL2	2.6	ALF	172.42

LAUNCH DATE MAY 15 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 600.175 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.372	GAL	-1.82	AZL	92.84	HCA	187.76	SMA	187.62	ECC	.19651	INC	2.8369	V1	29.464
RP	224.40	LAP	.38	LOP	61.29	VP	21.806	GAP	.82	AZP	87.19	TAL	348.89	TAP	176.66	RCA	150.75	APO	224.49	V2	24.508
RC	217.222	GL	-26.74	GP	6.69	ZAL	113.19	ZAP	53.51	ETS	184.20	ZAE	92.27	ETE	180.20	ZAC	108.98	ETC	272.44	LVI	-16.52

PLANETOCENTRIC CONIC

C3	12.676	VHL	3.560	DLA	-28.44	RAL	2.11	RAD	6639.4	VEL	11.522	PTH	6.57	VHP	3.272	DPA	-16.28	RAP	295.58	ECC	1.2086

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 55 43	2440.36	-4.41	63.90	215.83	137.42	18 36 24	1440.4	13.92	48.02
60.00	19 15 17	2228.70	.81	49.86	220.85	130.29	19 52 26	1228.7	16.63	31.45
70.00	21 0 32	1919.21	6.63	29.15	225.23	123.58	21 32 31	919.2	19.68	8.44
80.00	23 19 22	1484.42	13.02	359.95	229.03	117.11	23 44 7	484.4	23.07	337.07
86.82	1 35 4	1059.89	19.25	331.61	231.94	111.35	1 52 44	59.9	26.37	306.81
100.00	2 6 10	6246.93	13.02	299.23	229.03	117.11	3 50 17	5246.9	23.07	276.35
110.00	2 3 54	6254.07	6.63	295.97	225.23	123.58	3 48 8	5254.1	19.68	275.27

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1298	TRA	2.5548	TC3	-7.2443	BAU	1.2313	SGT	6965.4	SGR	697.4	SG3	1215.8	ST	71.3	SR	8.7	SS	56.0
RDE	.0027	RRA	-.3148	RC3	.5518	FAU	.17055	RRT	-.9720	RRF	-.9870	RTF	.9649	CRT	-.9918	CRS	.8337	CST	-.7601
FDE	1.3076	FRA	6.1034	FC-	11.6478	BSP	11966	SGB	7000.2	R23	.2066	R13	-.9654	LSA	85.9	MSA	30.4	SSA	.3
BDE	.1298	BRA	2.5741	BC3	7.2653	FSP	2231	SG1	6998.3	SG2	163.0	THA	174.44	EL1	71.8	EL2	1.1	ALF	173.13

LAUNCH DATE MAY 15 1971 FLIGHT TIME 262.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 604.274 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.381	GAL	-1.90	AZL	92.72	HCA	188.84	SMA	187.78	ECC	.19741	INC	2.7150	V1	29.464
RP	224.79	LAP	.42	LOP	62.36	VP	21.773	GAP	.67	AZP	87.32	TAL	348.42	TAP	177.26	RCA	150.71	APO	224.85	V2	24.466
RC	219.886	GL	-25.52	GP	5.83	ZAL	114.04	ZAP	52.53	ETS	183.72	ZAE	91.09	ETE	180.35	ZAC	108.11	ETC	272.46	LVI	-15.78

PLANETOCENTRIC CONIC

C3	12.660	VHL	3.558	DLA	-27.09	RAL	2.12	RAD	6639.4	VEL	11.521	PTH	6.57	VHP	3.294	DPA	-17.10	RAP	295.89	ECC	1.2083

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 48 33	2470.84	-5.94	65.18	215.45	137.29	18 29 44	1470.8	12.42	49.37
60.00	19 4 56	2267.68	-.90	51.72	220.28	130.29	19 42 43	1267.7	15.01	33.48
70.00	20 44 24	1975.21	4.51	32.10	224.37	123.89	21 17 19	975.2	17.83	11.73
80.00	22 48 48	1585.77	9.81	5.76	227.59	118.34	23 15 14	585.8	20.62	343.60
90.00	0 49 49	1208.21	12.78	339.52	229.13	115.44	1 9 57	208.2	22.18	316.44
100.00	1 35 36	1060.24	9.81	327.13	227.59	118.34	1 53 16	60.2	20.62	304.97
110.00	1 47 46	1022.03	4.51	321.02	224.37	123.89	2 4 48	22.0	17.83	300.65

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0721	TRA	2.6286	TC3	-7.4161	BAU	1.2578	SGT	7104.1	SGR	622.6	SG3	1195.3	ST	72.0	SR	7.9	SS	56.0
RDE	.0131	RRA	-.2864	RC3	.4844	FAU	.16855	RRT	-.9687	RRF	-.9801	RTF	.9665	CRT	-.9976	CRS	.7531	CST	-.7868
FDE	1.3477	FRA	6.0411	FC-	11.5261	BSP	12134	SGB	7131.3	R23	.1752	R13	-.9668	LSA	86.9	MSA	28.8	SSA	.4
BDE	.0733	BRA	2.6441	BC3	7.4319	FSP	2156	SG1	7129.6	SG2	154.0	THA	175.15	EL1	72.4	EL2	.5	ALF	173.78

LAUNCH DATE MAY 15 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 3 1972

HELIOCENTRIC CONIC DISTANCE 608.365 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.390	GAL	-1.99	AZL	92.62	HCA	189.91	SMA	187.94	ECC	.19834	INC	2.6193	V1	29.464
RP	223.18	LAP	.45	LOP	63.43	VP	21.740	GAP	.53	AZP	87.42	TAL	347.95	TAP	177.86	RCA	150.67	APO	225.22	V2	24.424
RC	222.551	GL	-24.53	GP	5.16	ZAL	114.86	ZAP	51.60	ETS	183.34	ZAE	89.95	ETE	180.46	ZAC	107.43	ETC	272.50	LVI	-18.23

PLANETOCENTRIC CONIC

C3	12.699	VHL	3.564	DLA	-25.92	RAL	2.25	RAD	6639.4	VEL	11.523	PTH	6.57	VHP	3.317	DPA	-17.73	RAP	296.19	ECC	1.2090

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 43 8	2497.53	-7.27	66.31	215.33	137.15	18 24 45	1497.5	11.10	50.54
60.00	18 57 0	2301.04	-2.37	53.31	220.02	130.24	19 35 21	1301.0	13.61	35.18
70.00	20 32 18	2020.83	2.78	34.49	223.92	124.05	21 5 59	1020.8	16.28	14.35
80.00	22 28 51	1656.04	7.51	9.71	226.84	118.98	22 56 27	656.0	18.75	347.99
90.00	0 21 12	1306.42	9.84	345.24	228.08	116.65	0 42 58	306.4	19.98	322.79
100.00	1 15 39	1130.51	7.51	331.08	226.84	118.98	1 34 29	130.5	18.75	309.35
110.00	1 35 41	1067.64	2.78	323.41	223.92	124.05	1 53 28	67.6	16.28	303.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0141	TRA	2.7126	TC3	-7.5414	BAU	1.2824	SGT	7239.2	SGR	565.8	SG3	1174.2	ST	73.2	SR	7.4	SS	56.7
RDE	.0218	RRA	-.2665	RC3	.4254	FAU	.16470	RRT	-.9621	RRF	-.9709	RTF	.9663	CRT	-.9738	CRS	.6570	CST	-.8081
FDE	1.4160	FRA	6.0109	FC	-11.2277	BSP	12365	SGB	7261.3	R23	.1496	R13	-.9666	LSA	88.6	MSA	27.8	SSA	.4
BDE	.0260	BRA	2.7257	BC3	7.5534	FSP	2118	SG1	7259.6	SG2	153.9	THA	175.70	EL1	73.5	EL2	1.7	ALF	174.40

LAUNCH DATE MAY 15 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 5 1972

HELIOCENTRIC CONIC DISTANCE 612.452 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.400	GAL	-2.07	AZL	92.54	HCA	190.98	SMA	188.10	ECC	.19928	INC	2.5423	V1	29.464
RP	225.57	LAP	.48	LOP	64.50	VP	21.707	GAP	.39	AZP	87.50	TAL	347.47	TAP	178.45	RCA	150.62	APO	225.59	V2	24.382
RC	225.217	GL	-23.69	GP	4.62	ZAL	115.64	ZAP	50.70	ETS	183.03	ZAE	88.83	ETE	180.55	ZAC	106.88	ETC	272.54	LVI	-14.81

PLANETOCENTRIC CONIC

C3	12.778	VHL	3.575	DLA	-24.90	RAL	2.47	RAD	6639.4	VEL	11.526	PTH	6.57	VHP	3.342	DPA	-18.23	RAP	296.50	ECC	1.2103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 38 54	2521.51	-8.47	67.34	215.39	137.00	18 20 56	1521.5	9.92	51.57
60.00	18 50 44	2330.48	-3.67	54.72	219.99	130.16	19 29 34	1330.5	12.36	36.67
70.00	20 22 49	2059.74	1.29	36.52	223.74	124.13	20 57 9	1059.7	14.92	16.55
80.00	22 14 8	1711.35	5.68	12.79	226.46	119.36	22 42 39	711.3	17.21	351.36
90.00	0 2 7	1375.75	7.70	349.20	227.55	117.30	0 25 3	375.7	18.27	327.16
100.00	1 0 56	1185.82	5.68	334.16	226.46	119.36	1 20 42	185.8	17.21	312.73
110.00	1 26 11	1106.56	1.29	325.44	223.74	124.13	1 44 38	106.6	14.92	305.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0414	TRA	2.8004	TC3	-7.6452	BAU	1.3077	SGT	7373.4	SGR	521.8	SG3	1152.6	ST	74.8	SR	7.1	SS	57.3
RDE	.0304	RRA	-.2515	RC3	.3765	FAU	.16095	RRT	-.9531	RRF	-.9591	RTF	.9662	CRT	-.9223	CRS	.5479	CST	-.8265
FDE	1.4804	FRA	5.9775	FC	-10.9041	BSP	12590	SGB	7391.9	R23	.1251	R13	-.9663	LSA	90.5	MSA	27.0	SSA	.5
BDE	.0514	BRA	2.8117	BC3	7.6544	FSP	2077	SG1	7390.2	SG2	157.6	THA	176.14	EL1	75.0	EL2	2.7	ALF	174.98

LAUNCH DATE MAY 15 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 7 1972

HELIOCENTRIC CONIC DISTANCE 616.532 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.409	GAL	-2.16	AZL	92.48	HCA	192.04	SMA	188.27	ECC	.20024	INC	2.4790	V1	29.464
RP	225.96	LAP	.52	LOP	65.56	VP	21.674	GAP	.24	AZP	87.58	TAL	346.99	TAP	179.03	RCA	150.57	APO	225.97	V2	24.340
RC	227.883	GL	-22.97	GP	4.18	ZAL	116.41	ZAP	49.85	ETS	182.78	ZAE	87.73	ETE	180.61	ZAC	106.43	ETC	272.59	LVI	-14.48

PLANETOCENTRIC CONIC

C3	12.888	VHL	3.590	DLA	-23.98	RAL	2.75	RAD	6639.5	VEL	11.531	PTH	6.58	VHP	3.368	DPA	-18.63	RAP	296.81	ECC	1.2121

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 35 34	2543.49	-9.56	68.28	215.59	136.83	18 17 57	1543.5	8.82	52.52
60.00	18 45 39	2357.10	-4.83	56.00	220.10	130.06	19 24 56	1357.1	11.22	38.00
70.00	20 15 7	2094.06	-.02	38.31	223.74	124.15	20 50 1	1094.1	13.71	18.47
80.00	22 2 35	1757.72	4.12	15.36	226.32	119.60	22 31 53	757.7	15.86	354.15
90.00	23 43 52	1431.05	5.96	352.34	227.33	117.70	24 7 43	431.0	16.82	330.58
100.00	0 49 23	1232.19	4.12	336.72	226.32	119.60	1 9 55	232.2	15.86	315.52
110.00	1 18 29	1140.88	-.02	327.23	223.74	124.15	1 37 30	140.9	13.71	307.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0945	TRA	2.8915	TC3	-7.7276	BAU	1.3327	SGT	7504.5	SGR	487.3	SG3	1130.1	ST	76.6	SR	7.0	SS	57.8
RDE	.0388	RRA	-.2401	RC3	.3347	FAU	.15696	RRT	-.9412	RRF	-.9445	RTF	.9658	CRT	-.8482	CRS	.4324	CST	-.8426
FDE	1.5382	FRA	5.9424	FC	-10.5437	BSP	12827	SGB	7520.3	R23	.1036	R13	-.9659	LSA	92.6	MSA	26.2	SSA	.5
BDE	.1022	BRA	2.9015	BC3	7.7349	FSP	2042	SG1	7518.5	SG2	164.3	THA	176.50	EL1	76.8	EL2	3.7	ALF	175.54

LAUNCH DATE MAY 15 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 9 1972

HELIOCENTRIC CONIC DISTANCE 620.607 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.53	VL	32.419	GAL	-2.25	AZL	92.43	HCA	193.10	SMA	188.43	ECC	.20122	INC	2.4262	V1	29.464
RP	226.35	LAP	.55	LOP	66.62	VP	21.641	GAP	.10	AZP	87.64	TAL	346.51	TAP	179.61	RCA	150.52	APO	226.35	V2	24.298
RC	230.548	GL	-22.34	GP	3.81	ZAL	117.16	ZAP	49.02	ETS	182.57	ZAE	86.66	ETE	180.66	ZAC	106.04	ETC	272.65	LVI	-14.23

PLANETOCENTRIC CONIC

C3	13.021	VHL	3.608	DLA	-23.14	RAL	3.07	RAD	6639.6	VEL	11.536	PTH	6.58	VHP	3.394	DPA	-18.95	RAP	297.14	ECC	1.2143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 32 52	2563.98	-10.58	69.16	215.88	136.66	18 15 36	1564.0	7.80	53.40
60.00	18 41 26	2381.61	-5.91	57.18	220.33	129.94	19 21 8	1381.6	10.17	39.22
70.00	20 8 42	2125.04	-1.20	39.93	223.88	124.14	20 44 7	1125.0	12.59	20.18
80.00	21 53 9	1798.15	2.76	17.58	226.35	119.74	22 23 7	798.1	14.66	356.55
90.00	23 32 27	1477.87	4.47	354.97	227.30	117.95	23 57 5	477.9	15.55	333.43
100.00	0 39 57	1272.62	2.76	338.95	226.35	119.74	1 1 10	272.6	14.66	317.91
110.00	1 12 5	1171.86	-1.20	328.85	223.88	124.14	1 31 37	171.9	12.59	309.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1488	TRA	2.9880	TC3	-7.7878	BAU	1.3567	SGT	7633.1	SGR	460.1	SG3	1107.6	ST	78.7	SR	7.1	SS	58.3
RDE	.0472	RRA	-.2315	RC3	.2984	FAU	.15285	RRT	-.9267	RRF	-.9270	RTF	.9654	CRT	-.7583	CRS	.3177	CST	-.8576
FDE	1.5948	FRA	5.9095	FC	-10.1626	BSP	13077	SGB	7646.9	R23	.0850	R13	-.9655	LSA	94.9	MSA	25.5	SSA	.6
BDE	.1561	BRA	2.9970	BC3	7.7936	FSP	2005	SG1	7645.0	SG2	172.7	THA	176.80	EL1	78.9	EL2	4.6	ALF	176.09

LAUNCH DATE MAY 15 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 11 1972

DISTANCE 624.675

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.429 GAL -2.34 AZL 92.38 HCA 194.16 SMA 188.60 ECC .20221 INC 2.3816 V1 29.464
RP 226.74 LAP .58 LOP 67.68 VP 21.609 GAP -.05 AZP 87.69 TAL 346.03 TAP 180.18 RCA 150.46 APO 226.74 V2 24.257
RC 233.212 GL -21.77 GP 3.50 ZAL 117.89 ZAP 46.23 ETS 182.39 ZAE 85.61 ETE 180.71 ZAC 105.72 ETC 272.71 LVI -14.04

PLANETOCENTRIC CONIC

C3 13.173 VHL 3.630 DLA -22.36 RAL 3.43 RAD 6639.6 VEL 11.543 PTH 6.59 VHP 3.421 DPA -19.21 RAP 297.49 ECC 1.2168

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 30 40	2583.30	-11.53	70.01	216.25	136.49	18 13 43	1583.3	6.84	54.22
60.00	18 37 53	2404.51	-6.91	58.29	220.64	129.80	19 17 58	1404.5	9.18	40.34
70.00	20 3 16	2153.52	-2.29	41.42	224.12	124.09	20 39 9	1153.5	11.56	21.74
80.00	21 45 14	1834.37	1.54	19.57	226.51	119.82	22 15 49	834.4	13.56	358.67
90.00	23 23 1	1519.00	3.15	357.28	227.41	118.12	23 48 20	519.0	14.40	335.90
100.00	0 32 2	1308.84	1.54	340.94	226.51	119.82	0 53 51	308.8	13.56	320.04
110.00	1 6 38	1200.33	-2.29	330.33	224.12	124.09	1 26 39	200.3	11.56	310.66

DIFFERENTIAL CORRECTIONS

TDE .2030 TRA 3.0898 TC3-7.8292 BAU 1.3796
RDE .0555 RRA -.2251 RC3 .2664 FAU .14859
FDE 1.6462 FRA 5.8807 FC3-9.7655 BSP 13351
BDE .2104 BRA 3.0980 BC3 7.8337 FSP 1972

MID-COURSE EXECUTION ACCURACY

SGT 7759.9 SGR 439.0 SG3 1085.2
RRT -.9093 RRF -.9069 RTF .9650
SGB 7772.3 R23 .0694 R13 -.9651
SG1 7770.2 SG2 182.4 THA 177.05

ORBIT DETERMINATION ACCURACY

ST 81.2 SR 7.2 SS 58.9
CRT -.6604 CRS .2094 CST -.8712
LSA 97.4 MSA 24.9 SSA .6
EL1 81.3 EL2 5.4 ALF 176.61

LAUNCH DATE MAY 15 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 13 1972

DISTANCE 628.740

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.438 GAL -2.43 AZL 92.34 HCA 195.21 SMA 188.77 ECC .20323 INC 2.3424 V1 29.464
RP 227.13 LAP .61 LOP 68.73 VP 21.577 GAP -.19 AZP 87.74 TAL 345.54 TAP 180.75 RCA 150.41 APO 227.14 V2 24.215
RC 235.874 GL -21.26 GP 3.23 ZAL 118.62 ZAP 47.46 ETS 182.24 ZAE 84.58 ETE 180.74 ZAC 105.43 ETC 272.78 LVI -13.91

PLANETOCENTRIC CONIC

C3 13.343 VHL 3.653 DLA -21.63 RAL 3.81 RAD 6639.7 VEL 11.550 PTH 6.60 VHP 3.449 DPA -19.42 RAP 297.84 ECC 1.2196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 51	2601.71	-12.44	70.81	216.68	136.30	18 12 12	1601.7	5.92	55.00
60.00	18 34 52	2426.14	-7.85	59.34	221.03	129.66	19 15 18	1426.1	8.25	41.40
70.00	19 58 34	2180.06	-3.30	42.80	224.44	124.01	20 34 54	1180.1	10.59	23.18
80.00	21 38 27	1867.46	.41	21.39	226.76	119.86	22 9 35	867.5	12.53	.59
90.00	23 15 0	1556.04	1.96	359.35	227.62	118.22	23 40 56	556.0	13.34	338.10
100.00	0 25 15	1341.93	.41	342.76	226.76	119.86	0 47 37	341.9	12.53	321.96
110.00	1 1 56	1226.88	-3.30	331.72	224.44	124.01	1 22 23	226.9	10.59	312.10

DIFFERENTIAL CORRECTIONS

TDE .2489 TRA 3.1857 TC3-7.8865 BAU 1.4075
RDE .0642 RRA -.2199 RC3 .2399 FAU .14526
FDE 1.6812 FRA 5.8382 FC3-9.4251 BSP 13524
BDE .2571 BRA 3.1933 BC3 7.8901 FSP 1925

MID-COURSE EXECUTION ACCURACY

SGT 7889.3 SGR 422.6 SG3 1063.1
RRT -.8895 RRF -.8841 RTF .9647
SGB 7900.6 R23 .0558 R13 -.9648
SG1 7898.3 SG2 192.9 THA 177.27

ORBIT DETERMINATION ACCURACY

ST 83.4 SR 7.5 SS 59.1
CRT -.5634 CRS .1086 CST -.8813
LSA 99.6 MSA 24.4 SSA .7
EL1 83.5 EL2 6.2 ALF 177.08

LAUNCH DATE MAY 15 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 15 1972

DISTANCE 632.798

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.448 GAL -2.52 AZL 92.31 HCA 196.26 SMA 188.94 ECC .20426 INC 2.3089 V1 29.464
RP 227.52 LAP .65 LOP 69.78 VP 21.546 GAP -.34 AZP 87.78 TAL 345.05 TAP 181.31 RCA 150.35 APO 227.54 V2 24.174
RC 238.532 GL -20.80 GP 3.00 ZAL 119.33 ZAP 46.71 ETS 182.11 ZAE 83.56 ETE 180.77 ZAC 105.18 ETC 272.85 LVI -13.81

PLANETOCENTRIC CONIC

C3 13.528 VHL 3.678 DLA -20.94 RAL 4.21 RAD 6639.8 VEL 11.558 PTH 6.60 VHP 3.476 DPA -19.60 RAP 298.21 ECC 1.2226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 27 20	2619.37	-13.31	71.59	217.16	136.11	18 11 0	1619.4	5.03	55.74
60.00	18 32 15	2446.75	-8.74	60.35	221.47	129.50	19 13 2	1446.7	7.35	42.41
70.00	19 54 28	2205.08	-4.26	44.12	224.83	123.92	20 31 13	1205.1	9.67	24.53
80.00	21 32 32	1898.14	-.62	23.07	227.09	119.85	22 4 10	898.1	11.56	2.35
90.00	23 8 3	1590.03	.87	1.24	227.92	118.27	23 34 33	590.0	12.35	340.10
100.00	0 19 20	1372.61	-.62	344.44	227.09	119.85	0 42 12	372.6	11.56	323.72
110.00	0 57 50	1251.90	-4.26	333.03	224.83	123.92	1 18 42	251.9	9.67	313.45

DIFFERENTIAL CORRECTIONS

TDE .3019 TRA 3.2914 TC3-7.9100 BAU 1.4311
RDE .0725 RRA -.2165 RC3 .2150 FAU .14111
FDE 1.7265 FRA 5.8072 FC3-9.0308 BSP 13783
BDE .3105 BRA 3.2985 BC3 7.9129 FSP 1893

MID-COURSE EXECUTION ACCURACY

SGT 8013.4 SGR 410.0 SG3 1041.0
RRT -.8671 RRF -.8590 RTF .9641
SGB 8023.9 R23 .0451 R13 -.9642
SG1 8021.3 SG2 204.0 THA 177.46

ORBIT DETERMINATION ACCURACY

ST 86.1 SR 7.8 SS 59.5
CRT -.4679 CRS .0193 CST -.8916
LSA 102.2 MSA 23.9 SSA .7
EL1 86.2 EL2 6.9 ALF 177.55

LAUNCH DATE MAY 15 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 17 1972

DISTANCE 636.850

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.22 LAL .00 LOL 233.53 VL 32.458 GAL -2.61 AZL 92.28 HCA 197.31 SMA 189.11 ECC .20531 INC 2.2792 V1 29.464
RP 227.91 LAP .68 LOP 70.82 VP 21.514 GAP -.48 AZP 87.82 TAL 344.56 TAP 181.87 RCA 150.29 APO 227.94 V2 24.133
RC 241.186 GL -20.37 GP 2.79 ZAL 120.04 ZAP 45.99 ETS 181.99 ZAE 82.57 ETE 180.79 ZAC 104.96 ETC 272.93 LVI -13.74

PLANETOCENTRIC CONIC

C3 13.726 VHL 3.705 DLA -20.28 RAL 4.62 RAD 6639.9 VEL 11.567 PTH 6.61 VHP 3.504 DPA -19.74 RAP 298.60 ECC 1.2259

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 5	2636.44	-14.15	72.35	217.67	135.92	18 10 2	1636.4	4.18	56.46
60.00	18 29 59	2466.54	-9.60	61.32	221.95	129.33	19 11 5	1466.5	6.49	43.37
70.00	19 50 49	2228.87	-5.16	45.37	225.27	123.81	20 27 58	1228.9	8.79	25.81
80.00	21 27 18	1926.92	-1.60	24.65	227.48	119.82	21 59 25	926.9	10.65	4.00
90.00	23 1 57	1621.63	-.15	3.01	228.28	118.28	23 28 58	621.6	11.41	341.95
100.00	0 14 6	1401.39	-1.60	346.02	227.48	119.82	0 37 27	401.4	10.65	325.37
110.00	0 54 12	1275.68	-5.16	334.28	225.27	123.81	1 15 27	275.7	8.79	314.72

DIFFERENTIAL CORRECTIONS

TDE .3522 TRA 3.3966 TC3-7.9326 BAU 1.4561
RDE .0810 RRA -.2139 RC3 .1930 FAU .13721
FDE 1.7638 FRA 5.7718 FC3-8.6545 BSP 14009
BDE .3614 BRA 3.4033 BC3 7.9350 FSP 1856

MID-COURSE EXECUTION ACCURACY

SGT 8136.7 SGR 400.7 SG3 1019.1
RRT -.8427 RRF -.8320 RTF .9635
SGB 8146.6 R23 .0361 R13 -.9635
SG1 8143.7 SG2 215.5 THA 177.62

ORBIT DETERMINATION ACCURACY

ST 88.7 SR 8.2 SS 59.8
CRT -.3789 CRS -.0597 CST -.9001
LSA 104.8 MSA 23.5 SSA .8
EL1 88.8 EL2 7.6 ALF 177.98

LAUNCH DATE MAY 15 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 19 1972

HELIOCENTRIC CONIC DISTANCE 640.896 EARTH TO MARS

RL	151.22	LAL	.00	LOL	233.83	VL	32.468	GAL	-2.71	AZL	92.25	HCA	198.35	SHA	189.29	ECC	.20637	INC	2.2830	V1	29.464
RP	228.30	LAP	.71	LOP	71.86	VP	21.483	GAP	-.63	AZP	87.86	TAL	344.07	TAP	182.42	RCA	150.22	APO	228.35	V2	24.092
RC	243.834	GL	-19.97	GP	2.61	ZAL	120.74	ZAP	48.29	ETS	181.89	ZAE	81.60	ETE	180.80	ZAC	104.76	ETC	273.02	LVI	-13.70

PLANETOCENTRIC CONIC

C3	13.937	VHL	3.733	DLA	-19.65	RAL	9.05	RAD	6640.0	VEL	11.576	PTH	6.62	VHP	3.532	DPA	-19.85	RAP	299.00	ECC	1.2284

LNCH AZMTH	LNCH TIME	L-1 TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 25 3	2653.01	-14.95	73.09	218.22	135.71	18 9 16	1653.0	3.35	57.15
60.00	18 27 59	2485.63	-10.42	62.26	222.47	129.15	19 9 24	1485.6	5.66	44.29
70.00	19 47 35	2251.63	-6.02	46.56	225.75	123.68	20 25 6	1251.6	7.94	27.02
80.00	21 22 38	1954.15	-2.52	26.15	227.92	119.76	21 55 12	954.2	9.77	5.55
90.00	22 56 30	1651.33	-1.11	4.66	228.70	118.26	23 24 2	651.3	10.52	343.67
100.00	0 9 25	1428.63	-2.52	347.52	227.92	119.76	0 33 14	428.6	9.77	326.91
110.00	0 50 57	1298.45	-6.02	335.48	225.75	123.68	1 12 35	298.4	7.94	315.94

DIFFERENTIAL CORRECTIONS

TDE	.4026	TRA	3.5044	TC3	-7.9484	BAU	1.4813												
RDE	.0895	RRA	-.2123	RC3	.1733	FAU	.13350												
FDE	1.7980	FRA	5.7359	FC3	-8.2927	BSP	14235												
BDE	.4124	BRA	3.5108	BC3	7.9503	FSP	1820												

MID-COURSE EXECUTION ACCURACY

SGT	8259.4	SGR	394.1	SG3	997.7														
RRT	-.8168	RRF	-.8034	RTF	.9629														
SGB	8268.8	R23	.0281	R13	-.9630														
SG1	8265.7	SG2	227.2	THA	177.77														

ORBIT DETERMINATION ACCURACY

ST	91.5	SR	8.6	SS	60.1														
CRT	-.2969	CRS	-.1289	CST	-.9077														
LSA	107.4	MSA	23.1	SSA	.8														
EL1	91.5	EL2	8.2	ALF	178.39														

LAUNCH DATE MAY 16 1971 FLIGHT TIME 94.00 ARRIVAL DATE AUG 18 1971

HELIOCENTRIC CONIC DISTANCE 277.192 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	35.468	GAL	-1.06	AZL	91.85	HCA	87.37	SMA	267.08	ECC	.43401	INC	1.8499	V1	29.458
RP	207.18	LAP	-1.85	LOP	321.87	VP	28.005	GAP	22.41	AZP	90.08	TAL	356.50	TAP	83.87	RCA	151.17	APO	383.00	V2	26.438
RC	56.868	GL	-10.67	GP	-.38	ZAL	99.55	ZAP	177.20	ETS	187.87	ZAE	173.89	ETE	48.22	ZAC	99.50	ETC	277.97	LVI	-17.94

PLANETOCENTRIC CONIC

C3	38.220	VHL	6.182	DLA	-19.88	RAL	340.20	RAD	6650.0	VEL	12.574	PTH	7.44	VHP	11.226	DPA	-17.22	RAP	322.25	ECC	1.8290

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 58	2891.61	-26.18	84.67	206.19	131.26	16 31 10	1891.6	-8.61	67.18
60.00	16 46 14	2723.35	-20.29	74.59	211.27	125.60	17 31 38	1723.4	-4.79	55.67
70.00	18 6 16	2488.07	-14.69	59.38	215.14	121.18	18 47 44	1488.1	-1.04	39.43
80.00	19 41 49	2189.04	-10.31	39.23	217.70	118.18	20 18 18	1189.0	1.96	18.60
90.00	21 15 58	1885.36	-8.54	17.84	218.63	117.06	21 47 23	885.4	3.18	356.95
100.00	22 24 41	1663.51	-10.31	.60	217.70	118.18	22 52 24	663.5	1.96	339.97
110.00	23 5 43	1534.89	-14.69	348.29	215.14	121.18	23 31 18	534.9	-1.04	328.35

DIFFERENTIAL CORRECTIONS

TDE	-.3903	TRA	-.8882	TC3	.0265	BAU	.0371
RDE	-.5720	RRA	.2329	RC3	.0676	FAU	.03272
FDE	.1253	FRA	.6472	FC3	-.7412	BSP	1289
BDE	.6925	BRA	.9182	BC3	.0726	FSP	115

MID-COURSE EXECUTION ACCURACY

SGT	947.6	SGR	583.7	SG3	97.0
RRT	-.0115	RRF	.0126	RTF	-.5924
SGB	1113.0	R23	-.0016	R13	.5924
SG1	947.7	SG2	583.6	THA	179.35

ORBIT DETERMINATION ACCURACY

ST	22.4	SR	26.7	SS	10.9
CRT	.7269	CRS	.4020	CST	.9154
LSA	33.3	MSA	15.0	SSA	1.1
EL1	32.5	EL2	12.6	ALF	51.95

LAUNCH DATE MAY 16 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 278.995 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	35.258	GAL	-.99	AZL	91.85	HCA	88.64	SMA	259.32	ECC	.41704	INC	1.8462	V1	29.458
RP	207.09	LAP	-1.85	LOP	323.13	VP	27.748	GAP	21.89	AZP	90.04	TAL	356.63	TAP	85.26	RCA	151.17	APO	367.47	V2	26.448
RC	56.856	GL	-10.97	GP	-.39	ZAL	99.45	ZAP	176.30	ETS	186.12	ZAE	173.34	ETE	42.55	ZAC	99.44	ETC	278.04	LVI	-18.03

PLANETOCENTRIC CONIC

C3	35.647	VHL	5.971	DLA	-20.18	RAL	340.24	RAD	6649.1	VEL	12.472	PTH	7.37	VHP	10.854	DPA	-17.12	RAP	322.61	ECC	1.5867

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 27	2867.57	-25.10	83.41	205.20	131.85	16 32 14	1867.6	-7.42	66.15
60.00	16 48 11	2698.08	-19.28	73.22	210.28	126.10	17 33 9	1698.1	-3.68	54.46
70.00	18 8 50	2461.00	-13.73	57.87	214.16	121.58	18 49 51	1461.0	-.01	38.02
80.00	19 45 4	2159.79	-9.36	37.58	216.73	118.48	20 21 4	1159.8	2.95	16.99
90.00	21 19 35	1854.91	-7.60	16.10	217.68	117.32	21 50 30	854.9	4.16	355.24
100.00	22 27 56	1634.26	-9.36	358.95	216.73	118.48	22 55 10	634.3	2.95	338.36
110.00	23 8 16	1507.82	-13.73	346.78	214.16	121.58	23 33 24	507.8	-.01	326.94

DIFFERENTIAL CORRECTIONS

TDE	-.3843	TRA	-.8786	TC3	.0406	BAU	.0396
RDE	-.5554	RRA	.2261	RC3	.0726	FAU	.03385
FDE	.1253	FRA	.6726	FC3	-.8222	BSP	1344
BDE	.6753	BRA	.9072	BC3	.0831	FSP	125

MID-COURSE EXECUTION ACCURACY

SGT	972.2	SGR	587.3	SG3	104.1
RRT	-.0121	RRF	.0139	RTF	-.6059
SGB	1135.9	R23	-.0023	R13	.6059
SG1	972.3	SG2	587.3	THA	179.34

ORBIT DETERMINATION ACCURACY

ST	22.8	SR	26.9	SS	11.3
CRT	.7245	CRS	.3855	CST	.9098
LSA	33.7	MSA	15.3	SSA	1.1
EL1	32.8	EL2	12.9	ALF	51.36

LAUNCH DATE MAY 16 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 281.061 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	35.060	GAL	-.92	AZL	91.84	HCA	89.90	SMA	252.46	ECC	.40117	INC	1.8426	V1	29.458
RP	207.01	LAP	-1.84	LOP	324.40	VP	27.505	GAP	21.37	AZP	90.00	TAL	356.77	TAP	86.67	RCA	151.18	APO	353.74	V2	26.457
RC	57.225	GL	-11.26	GP	-.41	ZAL	99.33	ZAP	175.39	ETS	185.05	ZAE	172.77	ETE	37.89	ZAC	99.38	ETC	278.11	LVI	-18.11

PLANETOCENTRIC CONIC

C3	33.305	VHL	5.771	DLA	-20.50	RAL	340.25	RAD	6648.3	VEL	12.378	PTH	7.30	VHP	10.496	DPA	-17.02	RAP	322.96	ECC	1.5481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 53	2843.70	-24.01	82.18	204.24	132.40	16 33 17	1843.7	-6.22	65.14
60.00	16 50 7	2672.91	-18.27	71.86	209.30	126.57	17 34 40	1672.9	-2.58	53.25
70.00	18 11 24	2433.93	-12.76	56.37	213.19	121.95	18 51 58	1433.9	1.03	36.61
80.00	19 48 24	2130.37	-8.40	35.92	215.79	118.76	20 23 54	1130.4	3.94	15.37
90.00	21 23 19	1824.17	-6.63	14.36	216.74	117.55	21 53 43	824.2	5.14	353.51
100.00	22 31 16	1604.84	-8.40	357.29	215.79	118.76	22 58 0	604.8	3.94	336.74
110.00	23 10 50	1480.75	-12.76	345.29	213.19	121.95	23 35 31	480.7	1.03	325.52

DIFFERENTIAL CORRECTIONS

TDE	-.3788	TRA	-.8688	TC3	.0552	BAU	.0425
RDE	-.5392	RRA	.2195	RC3	.0778	FAU	.03502
FDE	.1259	FRA	.6982	FC3	-.9103	BSP	1398
BDE	.6590	BRA	.8961	BC3	.0954	FSP	137

MID-COURSE EXECUTION ACCURACY

SGT	996.8	SGR	590.6	SG3	111.6
RRT	-.0122	RRF	.0144	RTF	-.[illegible]81
SGB	1158.6	R23	-.0028	R13	.6181
SG1	996.8	SG2	590.5	THA	179.36

ORBIT DETERMINATION ACCURACY

ST	23.3	SR	27.0	SS	11.6
CRT	.7226	CRS	.3715	CST	.9048
LSA	34.1	MSA	15.7	SSA	1.1
EL1	33.2	EL2	13.1	ALF	50.72

LAUNCH DATE MAY 16 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 283.353 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	34.874	GAL	-.86	AZL	91.84	HCA	91.17	SMA	246.36	ECC	.38630	INC	1.8389	V1	29.458
RP	206.94	LAP	-1.84	LOP	325.66	VP	27.276	GAP	20.87	AZP	89.96	TAL	356.93	TAP	88.09	RCA	151.19	APO	341.53	V2	26.466
RC	57.675	GL	-11.56	GP	-.42	ZAL	99.18	ZAP	174.47	ETS	184.34	ZAE	172.20	ETE	34.04	ZAC	99.32	ETC	278.18	LVI	-18.19

PLANETOCENTRIC CONIC

C3	31.170	VHL	5.583	DLA	-20.83	RAL	340.23	RAD	6647.5	VEL	12.292	PTH	7.23	VHP	10.151	DPA	-16.92	RAP	323.30	ECC	1.5130

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 47 17	2820.05	-22.91	80.99	203.30	132.91	16 34 17	1820.0	-5.04	64.14
60.00	16 52 1	2647.88	-17.25	70.53	208.35	127.01	17 36 9	1647.9	-1.48	52.06
70.00	18 14 0	2406.90	-11.79	54.89	212.25	122.29	18 54 7	1406.9	2.06	35.19
80.00	19 51 48	2100.81	-7.43	34.27	214.86	119.00	20 26 49	1100.8	4.93	13.74
90.00	21 27 10	1793.21	-5.65	12.61	215.83	117.76	21 57 3	793.2	6.12	351.77
100.00	22 34 40	1575.28	-7.43	355.63	214.86	119.00	23 0 55	575.3	4.93	335.11
110.00	23 13 26	1453.71	-11.79	343.60	212.25	122.29	23 37 40	453.7	2.06	324.11

DIFFERENTIAL CORRECTIONS

TDE	-.3717	TRA	-.8579	TC3	.0721	BAU	.0458
RDE	-.5237	RRA	.2130	RC3	.0831	FAU	.03629
FDE	.1262	FRA	.7260	FC3	-1.0080	BSP	1451
BDE	.6422	BRA	.8840	BC3	.1100	FSP	148

MID-COURSE EXECUTION ACCURACY

SGT	1019.5	SGR	593.4	SG3	119.7
RRT	-.0130	RRF	.0152	RTF	-.6308
SGB	1179.6	R23	-.0028	R13	.6309
SG1	1019.5	SG2	593.3	THA	179.35

ORBIT DETERMINATION ACCURACY

ST	23.7	SR	27.1	SS	12.0
CRT	.7197	CRS	.3561	CST	.8997
LSA	34.4	MSA	16.1	SSA	1.2
EL1	33.5	EL2	13.3	ALF	50.23

LAUNCH DATE MAY 16 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 285.840 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	34.699	GAL	-.79	AZL	91.84	HCA	92.43	SMA	240.91	ECC	.37239	INC	1.8352	V1	29.458
RP	206.87	LAP	-1.83	LOP	326.93	VP	27.058	GAP	20.37	AZP	89.92	TAL	357.10	TAP	89.53	RCA	151.20	APO	330.62	V2	26.473
RC	58.203	GL	-11.86	GP	-.43	ZAL	99.01	ZAP	173.53	ETS	183.83	ZAE	171.64	ETE	30.82	ZAC	99.26	ETC	278.25	LVI	-18.27

PLANETOCENTRIC CONIC

C3	29.223	VHL	5.406	DLA	-21.17	RAL	340.19	RAD	6646.7	VEL	12.213	PTH	7.17	VHP	9.819	DPA	-16.83	RAP	323.63	ECC	1.4809

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 48 38	2796.65	-21.83	79.83	202.38	133.39	16 35 15	1796.7	-3.87	63.16
60.00	16 53 55	2623.06	-16.22	69.23	207.42	127.41	17 37 38	1623.1	-.38	50.87
70.00	18 16 37	2379.94	-10.80	53.42	211.32	122.60	18 56 17	1379.9	3.09	33.78
80.00	19 55 17	2071.15	-6.45	32.61	213.96	119.22	20 29 48	1071.2	5.92	12.10
90.00	21 31 8	1761.98	-4.66	10.85	214.94	117.92	22 0 30	762.0	7.10	350.00
100.00	22 38 9	1545.63	-6.45	353.98	213.96	119.22	23 3 54	545.6	5.92	333.47
110.00	23 16 3	1426.76	-10.80	342.34	211.32	122.60	23 39 50	426.8	3.09	322.70

DIFFERENTIAL CORRECTIONS

TDE	-.3645	TRA	-.8478	TC3	.0870	BAU	.0485												
RDE	-.5086	RRA	.2068	RC3	.0885	FAU	.03764												
FDE	.1248	FRA	.7540	FC3	-1.1151	BSP	1503												
BDE	.6257	BRA	.8727	BC3	.1241	FSP	162												

MID-COURSE EXECUTION ACCURACY

SGT	1042.4	SGR	595.8	SG3	128.3						
RRT	-.0148	RRF	.0166	RTF	-.6397						
SGB	1200.7	R23	-.0025	R13	.6397						
SG1	1042.5	SG2	595.7	THA	179.28						

ORBIT DETERMINATION ACCURACY

ST	24.1	SR	27.2	SS	12.4						
CRT	.7162	CRS	.3364	CST	.8928						
LSA	34.7	MSA	16.5	SSA	1.2						
EL1	33.7	EL2	13.6	ALF	49.74						

LAUNCH DATE MAY 16 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 288.498 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	34.534	GAL	-.72	AZL	91.83	HCA	93.70	SMA	236.02	ECC	.35935	INC	1.8315	V1	29.458
RP	206.82	LAP	-1.83	LOP	328.20	VP	26.853	GAP	19.86	AZP	89.86	TAL	357.29	TAP	90.99	RCA	151.21	APO	320.83	V2	26.470
RC	58.807	GL	-12.16	GP	-.44	ZAL	98.81	ZAP	172.58	ETS	183.45	ZAE	171.12	ETE	28.11	ZAC	99.21	ETC	278.31	LVI	-18.34

PLANETOCENTRIC CONIC

C3	27.446	VHL	5.239	DLA	-21.52	RAL	340.13	RAD	6646.0	VEL	12.141	PTH	7.11	VHP	9.499	DPA	-16.74	RAP	323.94	ECC	1.4817

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 49 57	2773.56	-20.74	78.71	201.49	133.83	16 36 11	1773.6	-2.71	62.19
60.00	16 55 48	2598.46	-15.20	67.96	206.51	127.79	17 39 6	1598.5	.70	49.70
70.00	18 19 16	2353.10	-9.81	51.97	210.42	122.88	18 58 29	1353.1	4.11	32.38
80.00	19 58 51	2041.43	-5.46	30.96	213.08	119.40	20 32 52	1041.4	6.91	10.45
90.00	21 35 13	1730.57	-3.66	9.09	214.07	118.06	22 4 4	730.6	8.08	348.22
100.00	22 41 43	1515.90	-5.46	352.33	213.08	119.40	23 6 59	515.9	6.91	331.81
110.00	23 18 42	1399.92	-9.81	340.89	210.42	122.88	23 42 2	399.9	4.11	321.30

DIFFERENTIAL CORRECTIONS

TDE	-.3577	TRA	-.8385	TC3	.1097	BAU	.0530												
RDE	-.4940	RRA	.2007	RC3	.0941	FAU	.03910												
FDE	.1239	FRA	.7823	FC3	-1.2333	BSP	1547												
BDE	.6099	BRA	.8621	BC3	.1445	FSP	176												

MID-COURSE EXECUTION ACCURACY

SGT	1066.7	SGR	597.8	SG3	137.5						
RRT	-.0154	RRF	.0172	RTF	-.6526						
SGB	1222.8	R23	-.0025	R13	.6526						
SG1	1066.7	SG2	597.7	THA	179.28						

ORBIT DETERMINATION ACCURACY

ST	24.5	SR	27.2	SS	12.7						
CRT	.7126	CRS	.3187	CST	.8868						
LSA	34.9	MSA	16.8	SSA	1.2						
EL1	34.0	EL2	13.8	ALF	49.22						

LAUNCH DATE MAY 16 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 291.306 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	34.379	GAL	-.65	AZL	91.83	HCA	94.97	SMA	231.61	ECC	.34713	INC	1.8278	V1	29.458
RP	206.77	LAP	-1.82	LOP	329.47	VP	26.658	GAP	19.39	AZP	89.84	TAL	357.48	TAP	92.45	RCA	151.21	APO	312.01	V2	26.485
RC	59.485	GL	-12.46	GP	-.46	ZAL	98.59	ZAP	171.62	ETS	183.16	ZAE	170.64	ETE	25.81	ZAC	99.15	ETC	278.37	LVI	-18.40

PLANETOCENTRIC CONIC

C3	25.823	VHL	5.082	DLA	-21.87	RAL	340.04	RAD	6645.3	VEL	12.074	PTH	7.06	VHP	9.190	DPA	-16.65	RAP	324.25	ECC	1.4250

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 14	2750.79	-19.66	77.62	200.62	134.24	16 37 5	1750.8	-1.56	61.24
60.00	16 57 40	2574.14	-14.18	66.71	205.63	128.13	17 40 34	1574.1	1.77	48.54
70.00	18 21 55	2326.43	-8.82	50.54	209.55	123.13	19 0 42	1326.4	5.12	30.98
80.00	20 2 30	2011.67	-4.46	29.32	212.22	119.55	20 36 1	1011.7	7.90	8.78
90.00	21 39 26	1698.97	-2.64	7.32	213.23	118.17	22 7 45	699.0	9.06	346.41
100.00	22 45 22	1486.14	-4.46	350.68	212.22	119.55	23 10 8	486.1	7.90	330.15
110.00	23 21 22	1373.25	-8.82	339.46	209.55	123.13	23 44 15	373.2	5.12	319.90

DIFFERENTIAL CORRECTIONS

TDE	-.3518	TRA	-.8274	TC3	.1312	BAU	.0569												
RDE	-.4800	RRA	.1948	RC3	.0997	FAU	.04060												
FDE	.1222	FRA	.8124	FC3	-1.3613	BSP	1606												
BDE	.5951	BRA	.8500	BC3	.1648	FSP	193												

MID-COURSE EXECUTION ACCURACY

SGT	1088.9	SGR	599.3	SG3	147.3						
RRT	-.0149	RRF	.0185	RTF	-.6532						
SGB	1243.0	R23	-.0043	R13	.6633						
SG1	1089.0	SG2	599.2	THA	179.33						

ORBIT DETERMINATION ACCURACY

ST	24.9	SR	27.3	SS	13.1						
CRT	.7106	CRS	.2986	CST	.8783						
LSA	35.2	MSA	17.2	SSA	1.2						
EL1	34.2	EL2	14.0	ALF	48.66						

LAUNCH DATE MAY 16 1971 FLIGHT TIME 108.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 294.246 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	34.233	GAL	-.58	AZL	91.82	HCA	96.24	SMA	227.63	ECC	.33568	INC	1.8241	V1	29.458
RP	206.74	LAP	-1.81	LOP	330.73	VP	26.474	GAP	18.92	AZP	89.80	TAL	357.69	TAP	93.93	RCA	151.22	APO	304.04	V2	26.489
RC	60.233	GL	-12.76	GP	-.47	ZAL	98.35	ZAP	170.64	ETS	182.92	ZAE	170.20	ETE	23.83	ZAC	99.09	ETC	278.43	LVI	-18.46

PLANETOCENTRIC CONIC

C3	24.339	VHL	4.933	DLA	-22.24	RAL	339.93	RAD	6644.7	VEL	12.013	PTH	7.00	VHP	8.892	DPA	-16.57	RAP	324.54	ECC	1.4008

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 28	2728.40	-18.60	76.56	199.78	134.62	16 37 57	1728.4	-.44	60.30
60.00	16 59 30	2550.13	-13.17	65.49	204.77	128.44	17 42 0	1550.1	2.83	47.39
70.00	18 24 36	2299.95	-7.84	49.13	208.70	123.35	19 2 56	1300.0	6.12	29.58
80.00	20 6 14	1981.90	-3.46	27.67	211.39	119.68	20 39 16	981.9	8.87	7.11
90.00	21 43 48	1667.20	-1.62	5.55	212.41	118.24	22 11 35	667.2	10.03	344.59
100.00	22 49 6	1456.37	-3.46	349.04	211.39	119.68	23 13 22	456.4	8.87	328.48
110.00	23 24 3	1346.77	-7.84	338.04	208.70	123.35	23 46 30	346.8	6.12	318.50

DIFFERENTIAL CORRECTIONS

TDE	-.3433	TRA	-.8168	TC3	.1557	BAU	.0612												
RDE	-.4665	RRA	.1891	RC3	.1053	FAU	.04225												
FDE	.1185	FRA	.8426	FC3	-1.5028	BSP	1641												
BDE	.5791	BRA	.8384	BC3	.1880	FSP	207												

MID-COURSE EXECUTION ACCURACY

SGT	1110.4	SGR	600.5	SG3	157.8						
RRT	-.0168	RRF	.0202	RTF	-.6737						
SGB	1262.3	R23	-.0042	R13	.6738						
SG1	1110.4	SG2	600.3	THA	179.26						

ORBIT DETERMINATION ACCURACY

ST	25.2	SR	27.3	SS	13.4						
CRT	.7055	CRS	.2737	CST	.8694						
LSA	35.3	MSA	17.6	SSA	1.3						
EL1	34.3	EL2	14.2	ALF	48.31						

LAUNCH DATE MAY 16 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 3 1971

DISTANCE 297.303

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 34.095 GAL -.51 AZL 91.82 HCA 97.51 SMA 224.02 ECC .32493 INC 1.8204 V1 29.458
RP 206.71 LAP -1.80 LOP 332.00 VP 26.299 GAP 18.46 AZP 89.76 TAL 357.91 TAP 95.42 RCA 151.23 APO 296.81 V2 26.492
RC 61.050 GL -13.06 GP -.49 ZAL 98.08 ZAP 169.64 ETS 182.73 ZAE 169.81 ETE 22.12 ZAC 99.04 ETC 278.48 LVI -18.52

PLANETOCENTRIC CONIC

C3 22.980 VHL 4.794 DLA -22.61 RAL 339.80 RAD 6644.1 VEL 11.957 PTH 6.96 VHP 8.605 DPA -16.50 RAP 324.81 ECC 1.3782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 53 40	2706.38	-17.54	75.53	198.96	134.97	16 38 47	1706.4	.67	59.39
60.00	17 1 20	2526.43	-12.16	64.30	203.94	128.72	17 43 26	1526.4	3.87	46.25
70.00	18 27 19	2273.66	-6.85	47.73	207.87	123.54	19 5 12	1273.7	7.11	28.19
80.00	20 10 4	1952.09	-2.45	26.03	210.59	119.77	20 42 36	952.1	9.84	5.43
90.00	21 48 18	1635.21	-.59	3.76	211.62	118.27	22 15 34	635.2	11.00	342.73
100.00	22 52 56	1426.56	-2.45	347.40	210.59	119.77	23 16 42	426.6	9.84	328.80
110.00	23 26 45	1320.48	-6.85	336.65	207.87	123.54	23 48 46	320.5	7.11	317.11

DIFFERENTIAL CORRECTIONS

TDE -.3287 TRA -.7988 TC3 .1947 BAU .0688
RDE -.4534 RRA .1836 RC3 .1110 FAU .04398
FDE .1180 FRA .8790 FC3-1.6569 BSP 1600
BDE .5600 BRA .8196 BC3 .2241 FSP 228

MID-COURSE EXECUTION ACCURACY

SGT 1121.9 SGR 601.2 SG3 169.3
RRT -.0194 RRF .0213 RTF -.6955
SGB 1272.8 R23 -.0024 R13 .6956
SG1 1122.0 SG2 601.0 THA 179.17

ORBIT DETERMINATION ACCURACY

ST 25.0 SR 27.3 SS 13.8
CRT .6972 CRS .2565 CST .8666
LSA 35.2 MSA 18.0 SSA 1.3
EL1 34.2 EL2 14.4 ALF 48.59

LAUNCH DATE MAY 16 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 5 1971

DISTANCE 300.466

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 33.966 GAL -.44 AZL 91.82 HCA 98.77 SMA 220.74 ECC .31487 INC 1.8166 V1 29.458
RP 206.69 LAP -1.80 LOP 333.27 VP 26.134 GAP 18.00 AZP 89.72 TAL 358.14 TAP 96.92 RCA 151.23 APO 290.24 V2 26.495
RC 61.933 GL -13.35 GP -.50 ZAL 97.81 ZAP 168.63 ETS 182.58 ZAE 169.48 ETE 20.63 ZAC 98.98 ETC 278.53 LVI -18.57

PLANETOCENTRIC CONIC

C3 21.739 VHL 4.662 DLA -22.98 RAL 339.66 RAD 6643.6 VEL 11.905 PTH 6.91 VHP 8.328 DPA -16.43 RAP 325.07 ECC 1.3578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 54 50	2684.84	-16.50	74.54	198.17	135.28	16 39 35	1684.8	1.75	58.49
60.00	17 3 8	2503.17	-11.17	63.13	203.13	128.98	17 44 52	1503.2	4.89	45.13
70.00	18 30 2	2247.71	-5.87	46.36	207.07	123.71	19 7 30	1247.7	8.08	26.81
80.00	20 13 59	1922.40	-1.45	24.40	209.82	119.83	20 46 1	922.4	10.79	3.74
90.00	21 52 58	1603.14	.45	1.97	210.87	118.28	22 19 41	603.1	11.96	340.87
100.00	22 56 51	1396.87	-1.45	345.77	209.82	119.83	23 20 8	396.9	10.79	325.11
110.00	23 29 29	1294.53	-5.87	335.28	207.07	123.71	23 51 3	294.5	8.08	315.73

DIFFERENTIAL CORRECTIONS

TDE -.3239 TRA -.7917 TC3 .2144 BAU .0709
RDE -.4408 RRA .1783 RC3 .1166 FAU .04584
FDE .1133 FRA .9124 FC3-1.8255 BSP 1680
BDE .5470 BRA .8115 BC3 .2441 FSP 246

MID-COURSE EXECUTION ACCURACY

SGT 1146.8 SGR 601.5 SG3 181.2
RRT -.0205 RRF .0232 RTF -.6995
SGB 1295.0 R23 -.0034 R13 .6996
SG1 1146.9 SG2 601.4 THA 179.15

ORBIT DETERMINATION ACCURACY

ST 25.4 SR 27.3 SS 14.2
CRT .6941 CRS .2298 CST .8550
LSA 35.4 MSA 18.4 SSA 1.3
EL1 34.4 EL2 14.6 ALF 47.92

LAUNCH DATE MAY 16 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 7 1971

DISTANCE 303.721

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 33.844 GAL -.38 AZL 91.81 HCA 100.04 SMA 217.74 ECC .30544 INC 1.8128 V1 29.458
RP 206.68 LAP -1.79 LOP 334.54 VP 25.976 GAP 17.55 AZP 89.68 TAL 358.38 TAP 98.42 RCA 151.24 APO 284.25 V2 26.496
RC 62.879 GL -13.64 GP -.52 ZAL 97.52 ZAP 167.60 ETS 182.45 ZAE 169.22 ETE 19.31 ZAC 98.93 ETC 278.58 LVI -18.61

PLANETOCENTRIC CONIC

C3 20.601 VHL 4.539 DLA -23.36 RAL 339.50 RAD 6643.1 VEL 11.858 PTH 6.87 VHP 8.061 DPA -16.37 RAP 325.31 ECC 1.3390

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 57	2663.76	-15.48	73.58	197.41	135.57	16 40 21	1663.8	2.81	57.60
60.00	17 4 56	2480.33	-10.19	62.00	202.35	129.21	17 46 16	1480.3	5.89	44.03
70.00	18 32 47	2222.06	-4.90	45.01	206.30	123.84	19 9 49	1222.1	9.04	25.44
80.00	20 18 0	1892.76	-.44	22.78	209.07	119.85	20 49 32	892.8	11.73	2.05
90.00	21 57 47	1570.90	1.48	.18	210.14	118.24	22 23 58	570.9	12.91	338.97
100.00	23 0 52	1367.24	-.44	344.15	209.07	119.85	23 23 39	367.2	11.73	323.41
110.00	23 32 13	1268.88	-4.90	333.93	206.30	123.84	23 53 22	268.9	9.04	314.36

DIFFERENTIAL CORRECTIONS

TDE -.3188 TRA -.7826 TC3 .2351 BAU .0730
RDE -.4286 RRA .1732 RC3 .1222 FAU .04776
FDE .1073 FRA .9454 FC3-2.0073 BSP 1758
BDE .5342 BRA .8015 BC3 .2649 FSP 268

MID-COURSE EXECUTION ACCURACY

SGT 1168.5 SGR 601.5 SG3 193.7
RRT -.0210 RRF .0253 RTF -.7031
SGB 1314.2 R23 -.0052 R13 .7031
SG1 1168.6 SG2 601.3 THA 179.16

ORBIT DETERMINATION ACCURACY

ST 25.8 SR 27.3 SS 14.5
CRT .6915 CRS .2007 CST .8413
LSA 35.6 MSA 18.8 SSA 1.3
EL1 34.5 EL2 14.7 ALF 47.32

LAUNCH DATE MAY 16 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 9 1971

DISTANCE 307.060

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 33.729 GAL -.31 AZL 91.81 HCA 101.31 SMA 215.01 ECC .29660 INC 1.8090 V1 29.458
RP 206.67 LAP -1.77 LOP 335.81 VP 25.827 GAP 17.11 AZP 89.65 TAL 358.62 TAP 99.94 RCA 151.24 APO 278.78 V2 26.496
RC 63.888 GL -13.93 GP -.54 ZAL 97.21 ZAP 166.56 ETS 182.34 ZAE 169.01 ETE 18.15 ZAC 98.88 ETC 278.62 LVI -18.65

PLANETOCENTRIC CONIC

C3 19.559 VHL 4.423 DLA -23.74 RAL 339.32 RAD 6642.6 VEL 11.814 PTH 6.83 VHP 7.804 DPA -16.31 RAP 325.54 ECC 1.3219

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 3	2643.17	-14.47	72.65	196.67	135.84	16 41 6	1643.2	3.84	56.74
60.00	17 6 42	2457.92	-9.22	60.90	201.60	129.41	17 47 40	1457.5	6.87	42.95
70.00	18 35 32	2196.75	-3.94	43.68	205.56	123.95	19 12 9	1196.8	9.98	24.08
80.00	20 22 6	1863.21	.56	21.16	208.36	119.85	20 53 10	863.2	12.66	.34
90.00	22 2 47	1538.48	2.53	358.37	209.45	118.18	22 28 26	538.5	13.85	337.06
100.00	23 4 58	1337.68	.56	342.52	208.36	119.85	23 27 16	337.7	12.66	321.71
110.00	23 34 58	1243.57	-3.94	332.60	205.56	123.95	23 55 42	243.6	9.98	313.00

DIFFERENTIAL CORRECTIONS

TDE -.3140 TRA -.7741 TC3 .2617 BAU .0761
RDE -.4169 RRA .1682 RC3 .1276 FAU .04987
FDE .1060 FRA .9823 FC3-2.2073 BSP 1824
BDE .5220 BRA .7922 BC3 .2912 FSP 292

MID-COURSE EXECUTION ACCURACY

SGT 1191.4 SGR 601.0 SG3 207.4
RRT -.0210 RRF .0253 RTF -.7101
SGB 1334.4 R23 -.0054 R13 .7102
SG1 1191.5 SG2 600.8 THA 179.19

ORBIT DETERMINATION ACCURACY

ST 26.2 SR 27.2 SS 14.9
CRT .6888 CRS .1847 CST .8345
LSA 35.8 MSA 19.2 SSA 1.3
EL1 34.7 EL2 14.9 ALF 46.70

LAUNCH DATE MAY 16 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 310.475 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	33.621	GAL	-.25	AZL	91.81	HCA	102.98	SMA	212.51	ECC	.28830	INC	1.0052	V1	29.458
RP	206.68	LAP	-1.76	LOP	337.08	VP	25.686	GAP	18.68	AZP	89.61	TAL	358.87	TAP	101.45	RCA	151.24	APO	273.78	V2	26.496
RC	64.956	GL	-14.21	GP	-.55	ZAL	96.90	ZAP	165.49	ETS	182.25	ZAE	168.87	ETE	17.11	ZAC	98.83	ETC	278.66	LVI	-18.68

PLANETOCENTRIC CONIC

C3	18.603	VHL	4.313	DLA	-24.12	RAL	339.13	RAD	6642.2	VEL	11.774	PTH	6.80	VHP	7.555	DPA	-16.26	RAP	325.74	ECC	1.3062

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 5	2623.09	-13.49	71.76	195.95	136.07	16 41 49	1623.1	4.85	55.90
60.00	17 8 26	2436.00	-8.27	59.82	200.87	129.58	17 49 2	1436.0	7.82	41.88
70.00	18 38 18	2171.82	-2.99	42.37	204.84	124.04	19 14 30	1171.8	10.89	22.73
80.00	20 26 19	1833.75	1.56	19.54	207.67	119.82	20 56 53	833.8	13.57	358.63
90.00	22 7 59	1505.86	3.57	356.54	208.79	118.07	22 33 5	505.9	14.77	335.11
100.00	23 9 11	1308.22	1.56	340.91	207.67	119.82	23 30 59	308.2	13.57	320.00
110.00	23 37 44	1218.64	-2.99	331.29	204.84	124.04	23 58 3	218.6	10.89	311.65

DIFFERENTIAL CORRECTIONS

TDE	-.3063	TRA	-.7654	TC3	.2871	BAU	.0787
RDE	-.4057	RRA	.1635	RC3	.1328	FAU	.05221
FDE	.0951	FRA	1.0216	FC3	-2.4299	BSP	1865
BDE	.5083	BRA	.7827	BC3	.3163	FSP	311

MID-COURSE EXECUTION ACCURACY

SGT	1211.6	SGR	600.2	SG3	222.3
RRT	-.0241	RRF	.0296	RTF	-.7143
SGB	1352.1	R23	-.0068	R13	.7144
SG1	1211.7	SG2	600.0	THA	179.09

ORBIT DETERMINATION ACCURACY

ST	26.3	SR	27.2	SS	15.3
CRT	.6827	CRS	.1432	CST	.8156
LSA	35.7	MSA	19.7	SSA	1.4
EL1	34.7	EL2	15.1	ALF	46.34

LAUNCH DATE MAY 16 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 313.958 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	33.520	GAL	-.19	AZL	91.80	HCA	103.85	SMA	210.22	ECC	.28053	INC	1.8013	V1	29.458
RP	206.70	LAP	-1.75	LOP	338.35	VP	25.551	GAP	16.26	AZP	89.57	TAL	359.12	TAP	102.98	RCA	151.25	APO	269.19	V2	26.494
RC	66.082	GL	-14.49	GP	-.57	ZAL	96.57	ZAP	164.40	ETS	182.17	ZAE	168.80	ETE	16.17	ZAC	98.79	ETC	278.70	LVI	-18.71

PLANETOCENTRIC CONIC

C3	17.726	VHL	4.210	DLA	-24.50	RAL	338.93	RAD	6641.8	VEL	11.737	PTH	6.77	VHP	7.315	DPA	-16.22	RAP	325.93	ECC	1.2917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 6	2603.56	-12.53	70.89	195.26	136.28	16 42 30	1603.6	5.83	55.07
60.00	17 10 10	2414.59	-7.34	58.78	200.17	129.74	17 50 24	1414.6	8.75	40.84
70.00	18 41 4	2147.30	-2.05	41.09	204.15	124.10	19 16 52	1147.3	11.79	21.40
80.00	20 30 38	1804.41	2.55	17.93	207.02	119.76	21 0 42	804.4	14.47	356.91
90.00	22 13 23	1473.03	4.62	354.70	208.17	117.93	22 37 56	473.0	15.69	333.13
100.00	23 13 30	1278.89	2.55	339.29	207.02	119.76	23 34 49	278.9	14.47	318.28
110.00	23 40 31	1194.12	-2.05	330.01	204.15	124.10	24 0 25	194.1	11.79	310.32

DIFFERENTIAL CORRECTIONS

TDE	-.3001	TRA	-.7577	TC3	.3124	BAU	.0809
RDE	-.3948	RRA	.1590	RC3	.1379	FAU	.05444
FDE	.0909	FRA	1.0664	FC3	-2.6590	BSP	1929
BDE	.4959	BRA	.7742	BC3	.3415	FSP	340

MID-COURSE EXECUTION ACCURACY

SGT	1232.9	SGR	599.0	SG3	237.8
RRT	-.0265	RRF	.0321	RTF	-.7212
SGB	1370.7	R23	-.0071	R13	.7213
SG1	1233.0	SG2	598.7	THA	179.04

ORBIT DETERMINATION ACCURACY

ST	26.6	SR	27.1	SS	15.8
CRT	.6776	CRS	.1205	CST	.8063
LSA	35.8	MSA	20.1	SSA	1.4
EL1	34.8	EL2	15.2	ALF	45.84

LAUNCH DATE MAY 16 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 317.502 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	33.425	GAL	-.13	AZL	91.80	HCA	105.12	SMA	208.11	ECC	.27324	INC	1.7973	V1	29.458
RP	206.72	LAP	-1.74	LOP	339.62	VP	25.423	GAP	15.85	AZP	89.53	TAL	359.38	TAP	104.50	RCA	151.25	APO	264.98	V2	26.491
RC	67.265	GL	-14.77	GP	-.59	ZAL	96.25	ZAP	163.29	ETS	182.10	ZAE	168.81	ETE	15.33	ZAC	98.74	ETC	278.73	LVI	-18.73

PLANETOCENTRIC CONIC

C3	16.922	VHL	4.114	DLA	-24.87	RAL	338.72	RAD	6641.4	VEL	11.703	PTH	6.74	VHP	7.083	DPA	-16.18	RAP	326.09	ECC	1.2785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 0 5	2584.60	-11.60	70.06	194.59	136.47	16 43 9	1584.6	6.77	54.27
60.00	17 11 51	2393.72	-6.43	57.77	199.49	129.87	17 51 45	1393.7	9.65	39.81
70.00	18 43 51	2123.22	-1.13	39.83	203.49	124.14	19 19 15	1123.2	12.66	20.08
80.00	20 35 3	1775.22	3.53	16.32	206.40	119.67	21 4 38	775.2	15.35	355.19
90.00	22 19 1	1439.92	5.68	352.84	207.58	117.75	22 43 1	439.9	16.59	331.12
100.00	23 17 55	1249.69	3.53	337.69	206.40	119.67	23 38 44	249.7	15.35	316.56
110.00	23 43 18	1170.04	-1.13	328.75	203.49	124.14	24 2 48	170.0	12.66	309.00

DIFFERENTIAL CORRECTIONS

TDE	-.2934	TRA	-.7439	TC3	.3362	BAU	.0826
RDE	-.3844	RRA	.1547	RC3	.1428	FAU	.05662
FDE	.0856	FRA	1.1074	FC3	-2.8966	BSP	1937
BDE	.4836	BRA	.7599	BC3	.3653	FSP	364

MID-COURSE EXECUTION ACCURACY

SGT	1244.2	SGR	597.3	SG3	253.1
RRT	-.0269	RRF	.0342	RTF	-.[illegible]69
SGB	1380.2	R23	-.0089	R13	.7270
SG1	1244.3	SG2	597.1	THA	179.04

ORBIT DETERMINATION ACCURACY

ST	26.7	SR	27.0	SS	16.2
CRT	.6749	CRS	.0971	CST	.7947
LSA	35.8	MSA	20.5	SSA	1.4
EL1	34.7	EL2	15.3	ALF	45.53

LAUNCH DATE MAY 16 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 321.102 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	33.335	GAL	-.08	AZL	91.79	HCA	106.39	SMA	208.18	ECC	.26641	INC	1.7934	V1	29.458
RP	206.75	LAP	-1.72	LOP	340.89	VP	25.301	GAP	15.45	AZP	89.49	TAL	359.64	TAP	106.03	RCA	151.25	APO	261.11	V2	26.487
RC	68.502	GL	-15.03	GP	-.62	ZAL	95.91	ZAP	162.16	ETS	182.03	ZAE	168.88	ETE	14.57	ZAC	98.70	ETC	278.75	LVI	-18.74

PLANETOCENTRIC CONIC

C3	16.183	VHL	4.023	DLA	-25.24	RAL	338.50	RAD	6641.1	VEL	11.672	PTH	6.71	VHP	6.859	DPA	-16.16	RAP	326.23	ECC	1.2663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 1 1	2566.23	-10.69	69.26	193.95	136.64	16 43 48	1566.2	7.69	53.49
60.00	17 13 31	2373.42	-5.55	56.79	198.85	129.98	17 53 5	1373.4	10.52	38.81
70.00	18 46 38	2099.63	-.23	38.60	202.86	124.15	19 21 38	1099.6	13.51	18.78
80.00	20 39 35	1746.16	4.51	14.72	205.81	119.55	21 8 41	746.2	16.20	353.46
90.00	22 24 54	1406.49	6.73	350.95	207.02	117.53	22 48 20	406.5	17.47	329.07
100.00	23 22 26	1220.63	4.51	336.09	205.81	119.55	23 42 47	220.6	16.20	314.83
110.00	23 46 5	1146.45	-.23	327.52	202.86	124.15	24 5 11	146.4	13.51	307.69

DIFFERENTIAL CORRECTIONS

TDE	-.2848	TRA	-.7311	TC3	.3594	BAU	.0840
RDE	-.3743	RRA	.1505	RC3	.1473	FAU	.05952
FDE	.0739	FRA	1.1475	FC3	-3.1842	BSP	2050
BDE	.4703	BRA	.7464	BC3	.3884	FSP	407

MID-COURSE EXECUTION ACCURACY

SGT	1254.4	SGR	595.4	SG3	271.0
RRT	-.0300	RRF	.0368	RTF	-.7278
SGB	1388.5	R23	-.0086	R13	.7279
SG1	1254.5	SG2	595.0	THA	178.95

ORBIT DETERMINATION ACCURACY

ST	26.6	SR	26.9	SS	16.5
CRT	.6690	CRS	.0594	CST	.7762
LSA	35.6	MSA	20.9	SSA	1.4
EL1	34.6	EL2	15.4	ALF	45.41

LAUNCH DATE MAY 16 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 19 1971

DISTANCE 324.755

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 33.251 GAL -.02 AZL 91.79 HCA 107.66 SMA 204.40 ECC .26002 INC 1.7893 V1 29.458
RP 206.79 LAP -1.71 LOP 342.16 VP 25.185 GAP 13.06 AZP 89.46 TAL 359.89 TAP 107.55 RCA 151.25 APO 257.54 V2 26.483
RC 69.791 GL -15.29 GP -.64 ZAL 95.58 ZAP 161.00 ETS 181.98 ZAE 169.03 ETE 13.88 ZAC 98.66 ETC 278.77 LVI -18.75

PLANETOCENTRIC CONIC

C3 15.504 VHL 3.938 DLA -25.61 RAL 338.27 RAD 6640.8 VEL 11.643 PTH 6.68 VHP 6.644 DPA -16.14 RAP 326.35 ECC 1.2552

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 1 56	2548.47	-9.81	68.49	193.34	136.79	16 44 24	1548.5	8.58	52.73
60.00	17 15 9	2353.71	-4.69	55.84	198.22	130.07	17 54 23	1353.7	11.37	37.83
70.00	18 49 25	2076.56	.65	37.40	202.26	124.15	19 24 2	1076.6	14.33	17.49
80.00	20 44 13	1717.28	5.48	13.12	205.25	119.40	21 12 50	717.3	17.04	351.72
90.00	22 31 4	1372.65	7.79	349.03	206.51	117.27	22 53 57	372.6	18.35	326.97
100.00	23 27 5	1191.75	5.48	334.49	205.25	119.40	23 46 56	191.7	17.04	313.09
110.00	23 48 51	1123.38	.65	326.32	202.26	124.15	24 7 35	123.4	14.33	306.41

DIFFERENTIAL CORRECTIONS

TDE -.3051 TRA -.7247 TC3 .4007 BAU .0888
RDE -.3643 RRA .1466 RC3 .1511 FAU .06298
FDE .1046 FRA 1.1918 FC3-3.5169 BSP 2132
BDE .4752 BRA .7394 BC3 .4283 FSP 451

MID-COURSE EXECUTION ACCURACY

SGT 1290.0 SGR 592.6 SG3 291.6
RRT -.0049 RRF .0223 RTF -.7327
SGB 1419.6 R23 -.0178 R13 .7328
SG1 1290.0 SG2 592.6 THA 179.84

ORBIT DETERMINATION ACCURACY

ST 28.3 SR 26.7 SS 17.3
CRT .6954 CRS .1242 CST .7941
LSA 37.2 MSA 20.6 SSA 1.5
EL1 35.9 EL2 15.2 ALF 42.68

LAUNCH DATE MAY 16 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 21 1971

DISTANCE 328.454

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 33.171 GAL .03 AZL 91.79 HCA 108.92 SMA 202.75 ECC .25402 INC 1.7852 V1 29.458
RP 206.84 LAP -1.69 LOP 343.43 VP 25.074 GAP 14.67 AZP 89.42 TAL .15 TAP 109.07 RCA 151.25 APO 254.26 V2 26.477
RC 71.130 GL -15.54 GP -.66 ZAL 95.24 ZAP 159.82 ETS 181.93 ZAE 169.25 ETE 13.25 ZAC 98.63 ETC 278.79 LVI -18.75

PLANETOCENTRIC CONIC

C3 14.881 VHL 3.858 DLA -25.96 RAL 338.04 RAD 6640.5 VEL 11.616 PTH 6.66 VHP 6.435 DPA -16.14 RAP 326.44 ECC 1.2449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 2 48	2531.34	-8.96	67.76	192.75	136.93	16 44 59	1531.3	9.43	52.00
60.00	17 16 45	2334.64	-3.85	54.92	197.63	130.15	17 55 40	1334.6	12.18	36.88
70.00	18 52 11	2054.04	1.51	36.23	201.68	124.12	19 26 25	1054.0	15.12	16.23
80.00	20 48 58	1688.56	6.44	11.53	204.73	119.22	21 17 6	688.6	17.85	349.98
90.00	22 37 35	1338.27	8.86	347.07	206.04	116.97	22 59 53	338.3	19.20	324.81
100.00	23 31 49	1163.03	6.44	332.89	204.73	119.22	23 51 13	163.0	17.85	311.35
110.00	23 51 38	1100.86	1.51	325.14	201.68	124.12	24 9 59	100.9	15.12	305.15

DIFFERENTIAL CORRECTIONS

TDE -.2535 TRA -.6731 TC3 .4362 BAU .0921
RDE -.3555 RRA .1427 RC3 .1549 FAU .06572
FDE .0311 FRA 1.2167 FC3-3.8235 BSP 1975
BDE .4366 BRA .6880 BC3 .4629 FSP 449

MID-COURSE EXECUTION ACCURACY

SGT 1221.2 SGR 590.4 SG3 308.4
RRT -.0320 RRF .0459 RTF -.7444
SGB 1356.5 R23 -.0148 R13 .7446
SG1 1221.4 SG2 590.0 THA 178.84

ORBIT DETERMINATION ACCURACY

ST 25.2 SR 26.6 SS 17.0
CRT .6538 CRS -.0550 CST .7137
LSA 34.0 MSA 21.8 SSA 1.5
EL1 33.3 EL2 15.2 ALF 47.50

LAUNCH DATE MAY 16 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 23 1971

DISTANCE 332.195

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 33.097 GAL .08 AZL 91.78 HCA 110.19 SMA 201.24 ECC .24841 INC 1.7811 V1 29.458
RP 206.90 LAP -1.67 LOP 344.70 VP 24.968 GAP 14.29 AZP 89.39 TAL .40 TAP 110.59 RCA 151.25 APO 251.23 V2 26.470
RC 72.517 GL -15.78 GP -.69 ZAL 94.91 ZAP 158.61 ETS 181.88 ZAE 169.54 ETE 12.67 ZAC 98.59 ETC 278.80 LVI -18.74

PLANETOCENTRIC CONIC

C3 14.308 VHL 3.783 DLA -26.31 RAL 337.81 RAD 6640.2 VEL 11.592 PTH 6.63 VHP 6.235 DPA -16.14 RAP 326.51 ECC 1.2355

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 3 38	2514.86	-8.14	67.05	192.18	137.04	16 45 33	1514.9	10.25	51.29
60.00	17 18 19	2316.21	-3.04	54.04	197.06	130.21	17 56 56	1316.2	12.97	35.95
70.00	18 54 57	2032.12	2.35	35.08	201.14	124.08	19 28 49	1032.1	15.89	14.99
80.00	20 53 49	1660.02	7.38	9.94	204.24	119.01	21 21 30	660.0	18.65	348.23
90.00	22 44 29	1303.18	9.94	345.05	205.60	116.61	23 6 12	303.2	20.05	322.59
100.00	23 36 41	1134.49	7.38	331.30	204.24	119.01	23 55 36	134.5	18.65	309.60
110.00	23 54 23	1078.94	2.35	324.00	201.14	124.08	24 12 22	78.9	15.89	303.91

DIFFERENTIAL CORRECTIONS

TDE -.2611 TRA -.6879 TC3 .4691 BAU .0983
RDE -.3463 RRA .1382 RC3 .1575 FAU .07042
FDE .0392 FRA 1.2777 FC3-4.2608 BSP 2009
BDE .4338 BRA .7019 BC3 .5139 FSP 488

MID-COURSE EXECUTION ACCURACY

SGT 1282.5 SGR 587.1 SG3 335.2
RRT -.0290 RRF .0407 RTF -.[illegible]88
SGB 1410.5 R23 -.0132 R13 .7489
SG1 1282.6 SG2 586.8 THA 179.04

ORBIT DETERMINATION ACCURACY

ST 26.4 SR 26.5 SS 17.7
CRT .6552 CRS -.0408 CST .7221
LSA 34.9 MSA 22.2 SSA 1.5
EL1 34.0 EL2 15.5 ALF 45.16

LAUNCH DATE MAY 16 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 25 1971

DISTANCE 335.974

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 33.027 GAL .13 AZL 91.78 HCA 111.46 SMA 199.84 ECC .24316 INC 1.7769 V1 29.458
RP 206.96 LAP -1.65 LOP 345.96 VP 24.868 GAP 13.93 AZP 89.35 TAL .65 TAP 112.11 RCA 151.25 APO 248.43 V2 26.462
RC 73.950 GL -16.01 GP -.71 ZAL 94.58 ZAP 157.37 ETS 181.84 ZAE 169.91 ETE 12.15 ZAC 98.56 ETC 278.81 LVI -18.72

PLANETOCENTRIC CONIC

C3 13.781 VHL 3.712 DLA -26.65 RAL 337.58 RAD 6633.9 VEL 11.569 PTH 6.61 VHP 6.041 DPA -16.16 RAP 326.55 ECC 1.2268

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 4 27	2499.05	-7.35	66.38	191.65	137.14	16 46 6	1499.0	11.03	50.60
60.00	17 19 51	2298.47	-2.26	53.19	196.52	130.25	17 58 10	1298.5	13.72	35.05
70.00	18 57 41	2010.83	3.16	33.97	200.62	124.03	19 31 12	1010.8	16.62	13.78
80.00	20 58 48	1631.68	8.31	8.35	203.78	118.78	21 26 0	631.7	19.41	346.48
90.00	22 51 51	1267.12	11.03	342.97	205.22	116.21	23 12 58	267.1	20.89	320.27
100.00	23 41 40	1106.15	8.31	329.72	203.78	118.78	24 0 6	106.1	19.41	307.84
110.00	0 1 3	1057.65	3.16	322.88	200.62	124.03	0 18 41	57.6	16.62	302.70

DIFFERENTIAL CORRECTIONS

TDE -.2491 TRA -.6790 TC3 .4821 BAU .0936
RDE -.3378 RRA .1359 RC3 .1605 FAU .07292
FDE .0146 FRA 1.3349 FC3-4.5812 BSP 2053
BDE .4197 BRA .6925 BC3 .5082 FSP 526

MID-COURSE EXECUTION ACCURACY

SGT 1284.9 SGR 584.0 SG3 355.0
RRT -.0426 RRF .0515 RTF -.7442
SGB 1411.4 R23 -.0116 R13 .7444
SG1 1285.2 SG2 583.3 THA 178.60

ORBIT DETERMINATION ACCURACY

ST 26.1 SR 26.3 SS 18.3
CRT .6408 CRS -.0995 CST .6940
LSA 34.3 MSA 22.9 SSA 1.5
EL1 33.5 EL2 15.7 ALF 45.41

LAUNCH DATE MAY 16 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 27 1971

DISTANCE 339.790

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.962	GAL	.17	AZL	91.77	HCA	112.72	SMA	198.55	ECC	.23824	INC	1.7726
RP	207.04	LAP	-1.64	LOP	347.23	VP	24.771	GAP	13.57	AZP	89.32	TAL	.89	TAP	113.61	RCA	151.25	APO	245.85
RC	75.426	GL	-16.24	GP	-.74	ZAL	94.27	ZAP	156.11	ETS	181.80	ZAE	170.36	ETE	11.67	ZAC	98.53	ETC	278.81

V1	29.458																		
V2	26.454																		
LVI	-18.69																		

PLANETOCENTRIC CONIC

C3	13.296	VHL	3.646	DLA	-26.98	RAL	337.35	RAD	6639.7	VEL	11.548	PTH	6.59	VHP	5.855	DPA	-16.18	RAP	326.56

ECC	1.2188																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 13	2483.91	-6.59	65.74	191.13	137.23	16 46 37	1483.9	11.78	49.94
60.00	17 21 21	2281.42	-1.51	52.37	196.01	130.28	17 59 22	1281.4	14.43	34.18
70.00	19 0 23	1990.20	3.94	32.89	200.13	123.95	19 33 33	990.2	17.32	12.60
80.00	21 3 55	1603.52	9.23	6.76	203.36	118.52	21 30 38	603.5	20.16	344.72
90.00	22 59 50	1229.69	12.15	340.78	204.88	115.74	23 20 20	229.7	21.72	317.85
100.00	23 46 46	1077.99	9.23	328.13	203.36	118.52	24 4 44	78.0	20.16	306.08
110.00	0 3 45	1037.02	3.94	321.80	200.13	123.95	0 21 2	37.0	17.32	301.51

DIFFERENTIAL CORRECTIONS

TDE	-.2452	TRA	-.6649	TC3	.5189	BAU	.0966				
RDE	-.3294	RRA	.1326	RC3	.1624	FAU	.07700				
FDE	.0055	FRA	1.3861	FC3	-5.0136	BSP	2091				
BDE	.4106	BRA	.6780	BC3	.5437	FSP	577				

MID-COURSE EXECUTION ACCURACY

SGT	1290.8	SGR	580.1	SG3	380.0						
RRT	-.0400	RRF	.0525	RTF	-.7490						
SGB	1415.2	R23	-.0150	R13	.7492						
SG1	1291.1	SG2	579.6	THA	178.71						

ORBIT DETERMINATION ACCURACY

ST	26.1	SR	26.1	SS	18.8		
CRT	.6412	CRS	-.1203	CST	.6785		
LSA	34.2	MSA	23.3	SSA	1.6		
EL1	33.4	EL2	15.6	ALF	45.04		

LAUNCH DATE MAY 16 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 29 1971

DISTANCE 343.639

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.900	GAL	.21	AZL	91.77	HCA	113.99	SMA	197.35	ECC	.23364	INC	1.7683
RP	207.12	LAP	-1.62	LOP	348.49	VP	24.679	GAP	13.22	AZP	89.28	TAL	1.13	TAP	115.12	RCA	151.24	APO	243.46
RC	76.944	GL	-16.45	GP	-.77	ZAL	93.95	ZAP	154.81	ETS	181.77	ZAE	170.88	ETE	11.23	ZAC	98.51	ETC	278.80

V1	29.458																		
V2	26.444																		
LVI	-18.66																		

PLANETOCENTRIC CONIC

C3	12.849	VHL	3.585	DLA	-27.29	RAL	337.12	RAD	6639.5	VEL	11.529	PTH	6.58	VHP	5.675	DPA	-16.22	RAP	326.53

ECC	1.2115																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 57	2469.42	-5.87	65.12	190.64	137.30	16 47 6	1469.4	12.49	49.31
60.00	17 22 47	2265.03	-.79	51.59	195.52	130.29	18 0 32	1265.0	15.12	33.34
70.00	19 3 3	1970.20	4.70	31.84	199.67	123.87	19 35 53	970.2	18.00	11.44
80.00	21 9 9	1575.43	10.14	5.17	202.97	118.23	21 35 25	575.4	20.88	342.94
90.00	23 8 40	1190.02	13.31	338.45	204.60	115.19	23 28 30	190.0	22.56	315.24
100.00	23 52 1	1049.91	10.14	326.54	202.97	118.23	24 9 31	49.9	20.88	304.31
110.00	0 6 25	1017.02	4.70	320.75	199.67	123.87	0 23 22	17.0	18.00	300.36

DIFFERENTIAL CORRECTIONS

TDE	-.2297	TRA	-.6449	TC3	.5623	BAU	.1006				
RDE	-.3213	RRA	.1297	RC3	.1639	FAU	.08080				
FDE	-.0084	FRA	1.4512	FC3	-5.4439	BSP	1924				
BDE	.3949	BRA	.6578	BC3	.5857	FSP	603				

MID-COURSE EXECUTION ACCURACY

SGT	1281.7	SGR	576.1	SG3	405.7						
RRT	-.0469	RRF	.0581	RTF	-.7638						
SGB	1405.2	R23	-.0132	R13	.7640						
SG1	1282.0	SG2	575.3	THA	178.49						

ORBIT DETERMINATION ACCURACY

ST	25.3	SR	25.9	SS	19.4		
CRT	.6262	CRS	-.1493	CST	.6714		
LSA	33.4	MSA	23.9	SSA	1.5		
EL1	32.7	EL2	15.7	ALF	46.10		

LAUNCH DATE MAY 16 1971 FLIGHT TIME 138.00 ARRIVAL DATE OCT 1 1971

DISTANCE 347.517

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.843	GAL	.25	AZL	91.76	HCA	115.25	SMA	196.25	ECC	.22935	INC	1.7638
RP	207.21	LAP	-1.60	LOP	349.76	VP	24.591	GAP	12.87	AZP	89.25	TAL	1.36	TAP	116.61	RCA	151.24	APO	241.26
RC	78.502	GL	-16.66	GP	-.80	ZAL	93.65	ZAP	153.49	ETS	181.73	ZAE	171.47	ETE	10.83	ZAC	98.49	ETC	278.79

V1	29.458																		
V2	26.433																		
LVI	-18.61																		

PLANETOCENTRIC CONIC

C3	12.439	VHL	3.527	DLA	-27.59	RAL	336.90	RAD	6639.3	VEL	11.511	PTH	6.56	VHP	5.502	DPA	-16.27	RAP	326.48

ECC	1.2047																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 40	2455.69	-5.18	64.54	190.19	137.36	16 47 35	1455.7	13.16	48.70
60.00	17 24 11	2249.48	-.10	50.85	195.06	130.30	18 1 41	1249.5	15.77	32.54
70.00	19 5 40	1951.06	5.43	30.83	199.24	123.77	19 38 11	951.1	18.64	10.32
80.00	21 14 30	1547.71	11.03	3.60	202.62	117.92	21 40 18	547.7	21.57	341.17
90.00	23 18 40	1147.32	14.53	335.91	204.38	114.53	23 37 47	147.3	23.40	312.40
100.00	0 1 18	1022.18	11.03	324.98	202.62	117.92	0 18 20	22.2	21.57	302.54
110.00	0 9 2	6285.92	5.43	297.65	199.24	123.77	1 53 48	5285.9	18.64	277.15

DIFFERENTIAL CORRECTIONS

TDE	-.2275	TRA	-.6383	TC3	.5604	BAU	.0971				
RDE	-.3135	RRA	.1269	RC3	.1647	FAU	.08485				
FDE	-.0248	FRA	1.5177	FC3	-5.9049	BSP	1987				
BDE	.3874	BRA	.6508	BC3	.5841	FSP	655				

MID-COURSE EXECUTION ACCURACY

SGT	1289.1	SGR	571.8	SG3	432.8						
RRT	-.0515	RRF	.0641	RTF	-.7668						
SGB	1410.3	R23	-.0157	R13	.7570						
SG1	1289.6	SG2	570.9	THA	178.37						

ORBIT DETERMINATION ACCURACY

ST	25.5	SR	25.7	SS	20.1		
CRT	.6249	CRS	-.1803	CST	.6490		
LSA	33.3	MSA	24.5	SSA	1.6		
EL1	32.6	EL2	15.7	ALF	45.38		

LAUNCH DATE MAY 16 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 3 1971

DISTANCE 351.423

HELIOCENTRIC CONIC — EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.789	GAL	.29	AZL	91.76	HCA	116.51	SMA	195.23	ECC	.22533	INC	1.7593
RP	207.31	LAP	-1.57	LOP	351.02	VP	24.506	GAP	12.54	AZP	89.21	TAL	1.57	TAP	118.09	RCA	151.24	APO	239.22
RC	80.098	GL	-16.85	GP	-.83	ZAL	93.37	ZAP	152.13	ETS	181.70	ZAE	172.14	ETE	10.47	ZAC	98.47	ETC	278.77

V1	29.458																		
V2	26.422																		
LVI	-18.56																		

PLANETOCENTRIC CONIC

C3	12.062	VHL	3.473	DLA	-27.88	RAL	336.69	RAD	6639.1	VEL	11.495	PTH	6.54	VHP	5.335	DPA	-16.33	RAP	326.40

ECC	1.1985																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 20	2442.68	-4.53	64.00	189.75	137.41	16 48 3	1442.7	13.80	48.12
60.00	17 25 32	2234.67	.55	50.14	194.63	130.30	18 2 47	1234.7	16.38	31.76
70.00	19 8 13	1932.69	6.12	29.86	198.83	123.67	19 40 26	932.7	19.24	9.24
80.00	21 19 59	1520.14	11.90	2.02	202.30	117.58	21 45 20	520.1	22.24	339.40
90.00	23 30 44	1098.51	15.89	332.97	204.27	113.71	23 49 3	98.5	24.30	309.10
100.00	0 6 47	6282.65	11.90	301.29	202.30	117.58	1 51 30	5282.6	22.24	278.67
110.00	0 11 35	6267.55	6.12	296.69	198.83	123.67	1 56 3	5267.6	19.24	276.07

DIFFERENTIAL CORRECTIONS

TDE	-.2282	TRA	-.6266	TC3	.5553	BAU	.0934				
RDE	-.3059	RRA	.1243	RC3	.1648	FAU	.08900				
FDE	-.0331	FRA	1.5825	FC3	-6.3878	BSP	1991				
BDE	.3817	BRA	.6388	BC3	.5792	FSP	697				

MID-COURSE EXECUTION ACCURACY

SGT	1287.7	SGR	567.1	SG3	460.5						
RRT	-.0507	RRF	.0677	RTF	-.7495						
SGB	1407.0	R23	-.0206	R13	.7498						
SG1	1288.1	SG2	566.2	THA	178.41						

ORBIT DETERMINATION ACCURACY

ST	25.7	SR	25.5	SS	20.7		
CRT	.6317	CRS	-.1942	CST	.6315		
LSA	33.4	MSA	24.9	SSA	1.6		
EL1	32.7	EL2	15.5	ALF	44.53		

LAUNCH DATE MAY 16 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC — DISTANCE 355.355 — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.739 GAL .32 AZL 91.75 HCA 117.77 SMA 194.29 ECC .22159 INC 1.7547 V1 29.458
RP 207.42 LAP -1.55 LOP 352.28 VP 24.425 GAP 12.21 AZP 89.18 TAL 1.78 TAP 119.56 RCA 151.24 APO 237.34 V2 26.409
RC 81.730 GL -17.03 GP -.87 ZAL 93.10 ZAP 150.74 ETS 181.67 ZAE 172.88 ETE 10.14 ZAC 98.46 ETC 278.74 LVI -18.49

PLANETOCENTRIC CONIC

C3 11.715 VHL 3.423 DLA -28.15 RAL 336.49 RAD 6638.9 VEL 11.480 PTH 6.53 VHP 5.175 DPA -16.41 RAP 326.28 ECC 1.1928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 59	2430.37	-3.91	63.48	189.35	137.45	16 48 29	1430.4	14.40	47.57
60.00	17 26 50	2220.64	1.17	49.47	194.23	130.29	18 3 50	1220.6	16.96	31.03
70.00	19 10 42	1915.14	6.78	28.93	198.45	123.55	19 42 38	915.1	19.82	8.20
80.00	21 25 37	1492.72	12.76	.43	202.01	117.22	21 50 30	492.7	22.88	337.62
90.00	23 47 55	1033.76	17.62	329.01	204.34	112.49	24 5 9	33.8	25.36	304.66
100.00	0 12 25	6255.23	12.76	299.71	202.01	117.22	1 56 40	5255.2	22.88	276.89
110.00	0 14 5	6250.00	6.78	295.76	198.45	123.55	1 58 15	5250.0	19.82	275.03

DIFFERENTIAL CORRECTIONS

TDE -.2241 TRA -.6152 TC3 .5546 BAU .0906
RDE -.2986 RRA .1218 RC3 .1642 FAU .09350
FDE -.0489 FRA 1.6511 FC3-6.9096 BSP 2007
BDE .3734 BRA .6272 BC3 .5784 FSP 748

MID-COURSE EXECUTION ACCURACY

SGT 1284.3 SGR 562.1 SG3 490.3
RRT -.0553 RRF .0735 RTF -.7446
SGB 1401.9 R23 -.0226 R13 .7450
SG1 1284.7 SG2 561.1 THA 178.29

ORBIT DETERMINATION ACCURACY

ST 25.7 SR 25.2 SS 21.3
CRT .6300 CRS -.2195 CST .6129
LSA 33.2 MSA 25.4 SSA 1.6
EL1 32.5 EL2 15.5 ALF 44.21

LAUNCH DATE MAY 16 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC — DISTANCE 359.311 — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.692 GAL .35 AZL 91.75 HCA 119.03 SMA 193.42 ECC .21809 INC 1.7500 V1 29.458
RP 207.54 LAP -1.53 LOP 353.54 VP 24.347 GAP 11.89 AZP 89.15 TAL 1.98 TAP 121.01 RCA 151.23 APO 235.60 V2 26.395
RC 83.399 GL -17.20 GP -.90 ZAL 92.84 ZAP 149.31 ETS 181.63 ZAE 173.69 ETE 9.86 ZAC 98.45 ETC 278.71 LVI -18.42

PLANETOCENTRIC CONIC

C3 11.395 VHL 3.376 DLA -28.40 RAL 336.30 RAD 6638.8 VEL 11.466 PTH 6.52 VHP 5.021 DPA -16.50 RAP 326.13 ECC 1.1875

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 8 36	2418.79	-3.33	62.99	188.97	137.49	16 48 55	1418.8	14.97	47.05
60.00	17 28 4	2207.39	1.75	48.84	193.85	130.27	18 4 51	1207.4	17.50	30.33
70.00	19 13 7	1898.45	7.41	28.05	198.10	123.44	19 44 45	898.4	20.35	7.21
80.00	21 31 24	1465.43	13.61	358.85	201.76	116.83	21 55 49	465.4	23.49	335.82
87.23	23 47 39	1026.33	19.78	329.37	204.60	110.81	24 4 45	26.3	26.61	304.40
100.00	0 18 11	6227.95	13.61	298.12	201.76	116.83	2 1 59	5227.9	23.49	275.10
110.00	0 16 29	6233.30	7.41	294.87	198.10	123.44	2 0 22	5233.3	20.35	274.03

DIFFERENTIAL CORRECTIONS

TDE -.2184 TRA -.6019 TC3 .5484 BAU .0871
RDE -.2916 RRA .1195 RC3 .1627 FAU .09813
FDE -.0728 FRA 1.7247 FC3-7.4553 BSP 2008
BDE .3643 BRA .6137 BC3 .5720 FSP 808

MID-COURSE EXECUTION ACCURACY

SGT 1274.2 SGR 557.0 SG3 521.5
RRT -.0617 RRF .0821 RTF -.7390
SGB 1390.7 R23 -.0258 R13 .7395
SG1 1274.8 SG2 555.7 THA 178.09

ORBIT DETERMINATION ACCURACY

ST 25.4 SR 25.0 SS 22.1
CRT .6268 CRS -.2553 CST .5867
LSA 32.8 MSA 26.1 SSA 1.6
EL1 32.2 EL2 15.4 ALF 44.17

LAUNCH DATE MAY 16 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC — DISTANCE 363.288 — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.648 GAL .38 AZL 91.75 HCA 120.29 SMA 192.61 ECC .21483 INC 1.7451 V1 29.458
RP 207.66 LAP -1.51 LOP 354.80 VP 24.272 GAP 11.58 AZP 89.12 TAL 2.17 TAP 122.46 RCA 151.23 APO 233.99 V2 26.361
RC 85.104 GL -17.36 GP -.94 ZAL 92.61 ZAP 147.85 ETS 181.60 ZAE 174.58 ETE 9.63 ZAC 98.44 ETC 278.67 LVI -18.33

PLANETOCENTRIC CONIC

C3 11.100 VHL 3.332 DLA -28.64 RAL 336.12 RAD 6638.6 VEL 11.454 PTH 6.50 VHP 4.873 DPA -16.60 RAP 325.95 ECC 1.1827

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 9 11	2407.94	-2.79	62.54	188.61	137.51	16 49 19	1407.9	15.50	46.56
60.00	17 29 14	2194.96	2.30	48.25	193.50	130.25	18 5 49	1195.0	18.01	29.67
70.00	19 15 26	1882.66	8.00	27.21	197.78	123.31	19 46 48	882.7	20.86	6.26
80.00	21 37 20	1438.26	14.44	357.26	201.54	116.42	22 1 18	438.3	24.08	334.02
85.26	23 30 38	1073.69	20.07	332.96	204.12	110.88	23 48 31	73.7	26.90	307.93
100.00	0 24 7	6200.77	14.44	296.53	201.54	116.42	2 7 28	5200.8	24.08	273.29
110.00	0 18 48	6217.52	8.00	294.03	197.78	123.31	2 2 25	5217.5	20.86	273.08

DIFFERENTIAL CORRECTIONS

TDE -.2157 TRA -.5892 TC3 .5399 BAU .0836
RDE -.2847 RRA .1175 RC3 .1603 FAU .10330
FDE -.0670 FRA 1.8086 FC3-8.0564 BSP 1983
BDE .3572 BRA .6008 BC3 .5632 FSP 863

MID-COURSE EXECUTION ACCURACY

SGT 1264.9 SGR 551.5 SG3 555.9
RRT -.0656 RRF .0890 RTF -.[illegible]32
SGB 1379.9 R23 -.0297 R13 .7337
SG1 1265.5 SG2 550.0 THA 177.98

ORBIT DETERMINATION ACCURACY

ST 25.4 SR 24.7 SS 22.9
CRT .6284 CRS -.2723 CST .5706
LSA 32.6 MSA 26.6 SSA 1.7
EL1 32.0 EL2 15.3 ALF 43.80

LAUNCH DATE MAY 16 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC — DISTANCE 367.286 — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.607 GAL .41 AZL 91.74 HCA 121.55 SMA 191.86 ECC .21180 INC 1.7401 V1 29.458
RP 207.80 LAP -1.48 LOP 356.05 VP 24.200 GAP 11.27 AZP 89.09 TAL 2.34 TAP 123.89 RCA 151.23 APO 232.50 V2 26.365
RC 86.843 GL -17.51 GP -.98 ZAL 92.39 ZAP 146.35 ETS 181.57 ZAE 175.54 ETE 9.46 ZAC 98.44 ETC 278.62 LVI -18.23

PLANETOCENTRIC CONIC

C3 10.829 VHL 3.291 DLA -28.86 RAL 335.96 RAD 6638.5 VEL 11.442 PTH 6.49 VHP 4.732 DPA -16.72 RAP 325.72 ECC 1.1782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 9 44	2397.82	-2.28	62.12	188.29	137.53	16 49 42	1397.8	15.99	46.10
60.00	17 30 21	2183.35	2.81	47.69	193.17	130.22	18 6 45	1183.4	18.48	29.05
70.00	19 17 38	1867.82	8.56	26.42	197.48	123.19	19 48 46	867.8	21.32	5.36
80.00	21 43 26	1411.14	15.25	355.66	201.36	115.98	22 6 57	411.1	24.65	332.20
83.98	23 19 32	1102.37	20.34	335.18	203.68	110.93	23 37 54	102.4	27.16	310.09
100.00	0 30 14	6173.66	15.25	294.93	201.36	115.98	2 13 7	5173.7	24.65	271.48
110.00	0 21 0	6202.68	8.56	293.24	197.48	123.19	2 4 23	5202.7	21.32	272.18

DIFFERENTIAL CORRECTIONS

TDE -.2117 TRA -.5735 TC3 .5203 BAU .0787
RDE -.2781 RRA .1155 RC3 .1572 FAU .10844
FDE -.1066 FRA 1.8858 FC3-8.6693 BSP 1952
BDE .3495 BRA .5850 BC3 .5436 FSP 925

MID-COURSE EXECUTION ACCURACY

SGT 1246.3 SGR 545.8 SG3 590.1
RRT -.0706 RRF .0968 RTF -.7237
SGB 1360.5 R23 -.0337 R13 .7244
SG1 1247.0 SG2 544.1 THA 177.81

ORBIT DETERMINATION ACCURACY

ST 25.1 SR 24.5 SS 23.6
CRT .6298 CRS -.2960 CST .5486
LSA 32.3 MSA 27.2 SSA 1.7
EL1 31.7 EL2 15.1 ALF 43.72

LAUNCH DATE MAY 16 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 371.302 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.568 GAL .43 AZL 91.74 HCA 122.80 SMA 191.18 ECC .20897 INC 1.7350 V1 29.458
RP 207.94 LAP -1.46 LOP 357.31 VP 24.131 GAP 10.98 AZP 89.06 TAL 2.50 TAP 125.30 RCA 151.23 APO 231.13 V2 26.349
RC 88.616 GL -17.85 GP -1.02 ZAL 92.19 ZAP 144.82 ETS 181.54 ZAE 176.56 ETE 9.42 ZAC 98.44 ETC 278.56 LVI -18.12

PLANETOCENTRIC CONIC

C3 10.579 VHL 3.253 DLA -29.06 RAL 335.81 RAD 6638.3 VEL 11.431 PTH 6.48 VHP 4.596 DPA -16.85 RAP 325.46 ECC 1.1741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 10 16	2388.43	-1.81	61.72	187.99	137.55	16 50 4	1388.4	16.44	45.68
60.00	17 31 24	2172.58	3.28	47.17	192.88	130.19	18 7 37	1172.6	18.91	28.47
70.00	19 19 43	1853.98	9.07	25.68	197.20	123.07	19 50 37	854.0	21.75	4.51
80.00	21 49 44	1384.02	16.05	354.04	201.21	115.52	22 12 48	384.0	25.19	330.37
83.01	23 11 5	1122.93	20.59	336.79	203.26	110.98	23 29 48	122.9	27.41	311.65
100.00	0 36 32	6146.53	16.05	293.32	201.21	115.52	2 18 58	5146.5	25.19	269.64
110.00	0 23 6	6188.84	9.07	292.50	197.20	123.07	2 6 14	5188.8	21.75	271.34

DIFFERENTIAL CORRECTIONS

TDE -.2073 TRA -.5581 TC3 .5011 BAU .0741
RDE -.2716 RRA .1138 RC3 .1531 FAU .11401
FDE -.1297 FRA 1.9712 FC3-9.3296 BSP 1909
BDE .3417 BRA .5696 BC3 .5240 FSP 990

MID-COURSE EXECUTION ACCURACY

SGT 1226.7 SGR 539.8 SG3 627.0
RRT -.0767 RRF .1062 RTF -.7148
SGB 1340.3 R23 -.0384 R13 .7156
SG1 1227.6 SG2 537.9 THA 177.61

ORBIT DETERMINATION ACCURACY

ST 24.9 SR 24.2 SS 24.4
CRT .6304 CRS -.3216 CST .5253
LSA 31.9 MSA 27.8 SSA 1.7
EL1 31.3 EL2 14.9 ALF 43.71

LAUNCH DATE MAY 16 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 375.335 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.533 GAL .45 AZL 91.73 HCA 124.05 SMA 190.54 ECC .20634 INC 1.7298 V1 29.456
RP 208.08 LAP -1.43 LOP 358.56 VP 24.064 GAP 10.69 AZP 89.03 TAL 2.64 TAP 126.70 RCA 151.22 APO 229.86 V2 26.332
RC 90.421 GL -17.77 GP -1.06 ZAL 92.02 ZAP 143.25 ETS 181.50 ZAE 177.68 ETE 9.64 ZAC 98.44 ETC 278.90 LVI -18.00

PLANETOCENTRIC CONIC

C3 10.349 VHL 3.217 DLA -29.24 RAL 335.68 RAD 6638.2 VEL 11.421 PTH 6.47 VHP 4.465 DPA -16.99 RAP 325.17 ECC 1.1703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 10 46	2379.78	-1.37	61.36	187.72	137.56	16 50 26	1379.8	16.86	45.28
60.00	17 32 23	2162.65	3.72	46.70	192.60	130.16	18 8 25	1162.6	19.31	27.94
70.00	19 21 41	1841.17	9.55	24.99	196.95	122.95	19 52 22	841.2	22.15	3.73
80.00	21 56 16	1356.77	16.85	352.41	201.10	115.02	22 18 53	356.8	25.70	328.51
82.22	23 4 20	1138.58	20.82	338.04	202.88	111.01	23 23 18	138.6	27.63	312.85
100.00	0 43 4	6119.28	16.85	291.68	201.10	115.02	2 25 3	5119.3	25.70	267.78
110.00	0 25 3	6176.02	9.55	291.81	196.95	122.95	2 7 59	5176.0	22.15	270.55

DIFFERENTIAL CORRECTIONS

TDE -.2054 TRA -.5422 TC3 .4721 BAU .0685
RDE -.2653 RRA .1122 RC3 .1479 FAU .11993
FDE -.1475 FRA 2.0641 FC-10.0320 BSP 1858
BDE .3355 BRA .5537 BC3 .4947 FSP 1058

MID-COURSE EXECUTION ACCURACY

SGT 1204.6 SGR 533.6 SG3 666.4
RRT -.0805 RRF .1154 RTF -.7026
SGB 1317.5 R23 -.0453 R13 .7036
SG1 1205.5 SG2 531.5 THA 177.46

ORBIT DETERMINATION ACCURACY

ST 24.7 SR 23.9 SS 25.2
CRT .6361 CRS -.3377 CST .5043
LSA 31.7 MSA 28.4 SSA 1.7
EL1 31.1 EL2 14.6 ALF 43.45

LAUNCH DATE MAY 16 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 379.384 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.500 GAL .47 AZL 91.72 HCA 125.31 SMA 189.95 ECC .20390 INC 1.7245 V1 29.458
RP 208.24 LAP -1.41 LOP 359.81 VP 23.999 GAP 10.40 AZP 89.00 TAL 2.77 TAP 128.08 RCA 151.22 APO 228.68 V2 26.313
RC 92.259 GL -17.89 GP -1.11 ZAL 91.86 ZAP 141.64 ETS 181.47 ZAE 178.83 ETE 10.96 ZAC 98.45 ETC 278.43 LVI -17.86

PLANETOCENTRIC CONIC

C3 10.138 VHL 3.184 DLA -29.41 RAL 335.57 RAD 6638.1 VEL 11.412 PTH 6.46 VHP 4.341 DPA -17.15 RAP 324.83 ECC 1.1668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 11 14	2371.81	-.97	61.03	187.47	137.57	16 50 46	1371.8	17.25	44.91
60.00	17 33 17	2153.51	4.12	46.26	192.35	130.13	18 9 11	1153.5	19.68	27.44
70.00	19 23 30	1829.34	9.98	24.35	196.72	122.83	19 53 59	829.3	22.51	3.00
80.00	22 3 9	1328.96	17.64	350.72	201.02	114.49	22 25 18	329.0	26.20	326.60
81.57	22 58 46	1150.83	21.03	339.04	202.53	111.04	23 17 57	150.8	27.83	313.80
100.00	0 49 57	6091.47	17.64	290.00	201.02	114.49	2 31 28	5091.5	26.20	265.87
110.00	0 26 52	6164.20	9.98	291.18	196.72	122.83	2 9 36	5164.2	22.51	269.82

DIFFERENTIAL CORRECTIONS

TDE -.1935 TRA -.5149 TC3 .4650 BAU .0659
RDE -.2592 RRA .1106 RC3 .1417 FAU .12628
FDE -.1601 FRA 2.1395 FC-10.7844 BSP 1685
BDE .3235 BRA .5267 BC3 .4861 FSP 1117

MID-COURSE EXECUTION ACCURACY

SGT 1157.7 SGR 527.3 SG3 706.1
RRT -.0883 RRF .1257 RTF -.[illegible]98
SGB 1272.2 R23 -.0481 R13 .7011
SG1 1158.9 SG2 524.7 THA 177.10

ORBIT DETERMINATION ACCURACY

ST 23.6 SR 23.6 SS 25.9
CRT .6312 CRS -.3711 CST .4785
LSA 30.6 MSA 29.1 SSA 1.7
EL1 30.1 EL2 14.3 ALF 44.91

LAUNCH DATE MAY 16 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 383.447 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.469 GAL .48 AZL 91.72 HCA 126.56 SMA 189.41 ECC .20164 INC 1.7189 V1 29.458
RP 208.41 LAP -1.38 LOP 1.06 VP 23.936 GAP 10.13 AZP 88.98 TAL 2.88 TAP 129.44 RCA 151.22 APO 227.60 V2 26.294
RC 94.128 GL -17.99 GP -1.16 ZAL 91.74 ZAP 139.99 ETS 181.43 ZAE 179.91 ETE 143.98 ZAC 98.46 ETC 278.35 LVI -17.72

PLANETOCENTRIC CONIC

C3 9.944 VHL 3.153 DLA -29.55 RAL 335.48 RAD 6638.0 VEL 11.404 PTH 6.46 VHP 4.222 DPA -17.32 RAP 324.45 ECC 1.1636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 11 41	2364.66	-.61	60.73	187.25	137.57	16 51 5	1364.7	17.59	44.58
60.00	17 34 7	2145.34	4.48	45.87	192.14	130.09	18 9 52	1145.3	20.00	27.00
70.00	19 25 8	1818.78	10.37	23.78	196.52	122.72	19 55 27	818.8	22.82	2.35
80.00	22 10 18	1300.95	18.42	349.01	200.99	113.92	22 31 59	300.9	26.68	324.65
81.05	22 54 20	1160.09	21.23	339.80	202.22	111.06	23 13 40	160.1	28.01	314.52
100.00	0 57 6	6063.46	18.42	288.29	200.99	113.92	2 38 9	5063.5	26.68	263.92
110.00	0 28 30	6153.64	10.37	290.61	196.52	122.72	2 11 4	5153.6	22.82	269.17

DIFFERENTIAL CORRECTIONS

TDE -.1994 TRA -.5061 TC3 .3824 BAU .0539
RDE -.2532 RRA .1095 RC3 .1351 FAU .13211
FDE -.1925 FRA 2.2520 FC-11.5018 BSP 1712
BDE .3223 BRA .5178 BC3 .4056 FSP 1200

MID-COURSE EXECUTION ACCURACY

SGT 1143.1 SGR 520.7 SG3 747.6
RRT -.0917 RRF .1374 RTF -.6667
SGB 1256.2 R23 -.0607 R13 .6684
SG1 1144.4 SG2 518.0 THA 176.99

ORBIT DETERMINATION ACCURACY

ST 24.1 SR 23.3 SS 26.8
CRT .6471 CRS -.3762 CST .4553
LSA 31.1 MSA 29.5 SSA 1.7
EL1 30.4 EL2 14.1 ALF 43.46

LAUNCH DATE MAY 16 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 387.524 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.441 GAL .50 AZL 91.71 HCA 127.80 SMA 188.91 ECC .19954 INC 1.7132 V1 29.458
RP 208.58 LAP -1.35 LOP 2.31 VP 23.876 GAP 9.86 AZP 88.95 TAL 2.98 TAP 130.78 RCA 151.22 APO 226.61 V2 26.274
RC 96.027 GL -18.08 GP -1.20 ZAL 91.64 ZAP 138.31 ETS 181.39 ZAE 178.63 ETE 184.66 ZAC 98.48 ETC 278.26 LVI -17.56

PLANETOCENTRIC CONIC

C3 9.765 VHL 3.125 DLA -29.67 RAL 335.41 RAD 6637.9 VEL 11.396 PTH 6.45 VHP 4.109 DPA -17.51 RAP 324.04 ECC 1.1607

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 6	2358.21	-.29	60.46	187.06	137.58	16 51 24	1358.2	17.90	44.28
60.00	17 34 52	2137.99	4.80	45.51	191.94	130.06	18 10 30	1138.0	20.30	26.59
70.00	19 26 36	1809.30	10.72	23.27	196.33	122.62	19 56 46	809.3	23.11	1.76
80.00	22 18 7	1271.38	19.23	347.19	201.00	113.29	22 39 19	271.4	27.15	322.58
80.62	22 50 43	1167.16	21.40	340.40	201.94	111.06	23 10 10	167.2	28.17	315.07
100.00	1 4 55	6033.89	19.23	286.46	201.00	113.29	2 45 29	5033.9	27.15	261.85
110.00	0 29 59	6144.16	10.72	290.09	196.33	122.62	2 12 23	5144.2	23.11	268.58

DIFFERENTIAL CORRECTIONS

TDE -.2007 TRA -.4891 TC3 .3191 BAU .0448
RDE -.2472 RRA .1085 RC3 .1272 FAU .13855
FDE -.2051 FRA 2.3572 FC-12.2840 BSP 1638
BDE .3184 BRA .5009 BC3 .3435 FSP 1273

MID-COURSE EXECUTION ACCURACY

SGT 1113.7 SGR 513.9 SG3 791.0
RRT -.0935 RRF .1484 RTF -.6400
SGB 1226.6 R23 -.0729 R13 .6421
SG1 1115.0 SG2 511.1 THA 176.87

ORBIT DETERMINATION ACCURACY

ST 24.1 SR 22.9 SS 27.6
CRT .6602 CRS -.3818 CST .4342
LSA 31.2 MSA 29.8 SSA 1.7
EL1 30.3 EL2 13.7 ALF 42.92

LAUNCH DATE MAY 16 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 391.614 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.414 GAL .51 AZL 91.71 HCA 129.05 SMA 188.45 ECC .19760 INC 1.7074 V1 29.458
RP 208.76 LAP -1.33 LOP 3.56 VP 23.817 GAP 9.59 AZP 88.92 TAL 3.06 TAP 132.11 RCA 151.21 APO 225.69 V2 26.254
RC 97.955 GL -18.16 GP -1.26 ZAL 91.55 ZAP 136.59 ETS 181.35 ZAE 177.25 ETE 185.76 ZAC 98.49 ETC 278.16 LVI -17.38

PLANETOCENTRIC CONIC

C3 9.600 VHL 3.098 DLA -29.78 RAL 335.36 RAD 6637.8 VEL 11.389 PTH 6.44 VHP 4.001 DPA -17.72 RAP 323.58 ECC 1.1580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 29	2352.43	.00	60.22	186.89	137.58	16 51 41	1352.4	18.18	44.01
60.00	17 35 33	2131.44	5.09	45.20	191.77	130.03	18 11 4	1131.4	20.56	26.23
70.00	19 27 54	1800.91	11.03	22.81	196.17	122.53	19 57 55	800.9	23.36	1.23
80.00	22 27 24	1237.68	20.12	345.08	201.08	112.54	22 48 2	237.7	27.64	320.19
80.27	22 47 47	1172.54	21.55	340.86	201.69	111.06	23 7 20	172.5	28.31	315.50
100.00	1 14 12	6000.19	20.12	284.36	201.08	112.54	2 54 12	5000.2	27.64	259.47
110.00	0 31 17	6135.77	11.03	289.64	196.17	122.53	2 13 32	5135.8	23.36	268.05

DIFFERENTIAL CORRECTIONS

TDE -.1907 TRA -.4621 TC3 .2840 BAU .0395
RDE -.2416 RRA .1074 RC3 .1178 FAU .14589
FDE -.2448 FRA 2.4541 FC-13.1562 BSP 1446
BDE .3078 BRA .4744 BC3 .3074 FSP 1341

MID-COURSE EXECUTION ACCURACY

SGT 1060.4 SGR 507.3 SG3 837.7
RRT -.1021 RRF .1634 RTF -.6246
SGB 1175.5 R23 -.0814 R13 .6273
SG1 1062.0 SG2 503.8 THA 176.39

ORBIT DETERMINATION ACCURACY

ST 23.0 SR 22.6 SS 28.5
CRT .6602 CRS -.4146 CST .4016
LSA 31.4 MSA 29.4 SSA 1.7
EL1 29.4 EL2 13.3 ALF 44.24

LAUNCH DATE MAY 16 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 395.715 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.390 GAL .51 AZL 91.70 HCA 130.29 SMA 188.03 ECC .19582 INC 1.7012 V1 29.458
RP 208.94 LAP -1.30 LOP 4.80 VP 23.760 GAP 9.33 AZP 88.90 TAL 3.12 TAP 133.41 RCA 151.21 APO 224.85 V2 26.232
RC 99.910 GL -18.23 GP -1.31 ZAL 91.51 ZAP 134.83 ETS 181.31 ZAE 175.82 ETE 186.01 ZAC 98.51 ETC 278.06 LVI -17.19

PLANETOCENTRIC CONIC

C3 9.450 VHL 3.074 DLA -29.86 RAL 335.34 RAD 6637.8 VEL 11.382 PTH 6.43 VHP 3.898 DPA -17.93 RAP 323.08 ECC 1.1555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 51	2347.45	.25	60.01	186.75	137.58	16 51 59	1347.5	18.42	43.78
60.00	17 36 9	2125.86	5.33	44.93	191.62	130.01	18 11 34	1125.9	20.78	25.93
70.00	19 29 0	1793.85	11.29	22.43	196.03	122.45	19 58 54	793.8	23.56	.79
80.00	22 45 39	1175.97	21.68	341.17	201.48	111.05	23 5 15	176.0	28.42	315.77
80.00	22 45 39	1175.97	21.68	341.17	201.48	111.05	23 5 15	176.0	28.42	315.77
80.00	22 45 39	1175.97	21.68	341.17	201.48	111.05	23 5 15	176.0	28.42	315.77
110.00	0 32 22	6128.73	11.29	289.26	196.03	122.45	2 14 31	5128.7	23.56	267.61

DIFFERENTIAL CORRECTIONS

TDE -.1991 TRA -.4506 TC3 .1639 BAU .0249
RDE -.2358 RRA .1068 RC3 .1089 FAU .15170
FDE -.2499 FRA 2.5804 FC-13.8970 BSP 1443
BDE .3086 BRA .4631 BC3 .1967 FSP 1436

MID-COURSE EXECUTION ACCURACY

SGT 1042.0 SGR 500.3 SG3 881.0
RRT -.1006 RRF .1775 RTF -.5[illegible]02
SGB 1155.8 R23 -.1037 R13 .5736
SG1 1043.5 SG2 497.0 THA 176.42

ORBIT DETERMINATION ACCURACY

ST 23.6 SR 22.2 SS 29.4
CRT .6825 CRS -.4103 CST .3782
LSA 32.1 MSA 29.7 SSA 1.7
EL1 29.7 EL2 12.9 ALF 42.58

LAUNCH DATE MAY 16 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 399.826 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.367 GAL .52 AZL 91.70 HCA 131.53 SMA 187.65 ECC .19417 INC 1.6949 V1 29.458
RP 209.14 LAP -1.27 LOP 6.04 VP 23.705 GAP 9.08 AZP 88.88 TAL 3.17 TAP 134.70 RCA 151.21 APO 224.08 V2 26.209
RC 101.892 GL -18.28 GP -1.37 ZAL 91.48 ZAP 133.03 ETS 181.27 ZAE 174.32 ETE 186.04 ZAC 98.53 ETC 277.94 LVI -16.99

PLANETOCENTRIC CONIC

C3 9.312 VHL 3.052 DLA -29.92 RAL 335.34 RAD 6637.7 VEL 11.376 PTH 6.43 VHP 3.801 DPA -18.16 RAP 322.55 ECC 1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 11	2343.12	.47	59.83	186.64	137.57	16 52 14	1343.1	18.62	43.58
60.00	17 36 39	2121.06	5.54	44.70	191.50	129.98	18 12 0	1121.1	20.96	25.66
70.00	19 29 54	1787.94	11.50	22.11	195.91	122.38	19 59 42	787.9	23.74	.41
79.80	22 44 8	1177.88	21.80	341.36	201.30	111.02	23 3 46	177.9	28.51	315.93
79.80	22 44 8	1177.88	21.80	341.36	201.30	111.02	23 3 46	177.9	28.51	315.93
79.80	22 44 8	1177.88	21.80	341.36	201.30	111.02	23 3 46	177.9	28.51	315.93
110.00	0 33 16	6122.79	11.50	288.93	195.91	122.38	2 15 19	5122.8	23.74	267.24

DIFFERENTIAL CORRECTIONS

TDE -.1975 TRA -.4266 TC3 .0894 BAU .0165
RDE -.2302 RRA .1061 RC3 .0976 FAU .15922
FDE -.2644 FRA 2.6948 FC-14.8028 BSP 1289
BDE .3033 BRA .4396 BC3 .1324 FSP 1517

MID-COURSE EXECUTION ACCURACY

SGT 997.3 SGR 493.2 SG3 930.3
RRT -.0997 RRF .1918 RTF -.5312
SGB 1112.6 R23 -.1226 R13 .5354
SG1 998.9 SG2 489.9 THA 176.28

ORBIT DETERMINATION ACCURACY

ST 23.1 SR 21.9 SS 30.2
CRT .6964 CRS -.4158 CST .3544
LSA 32.6 MSA 29.3 SSA 1.7
EL1 29.3 EL2 12.4 ALF 42.69

LAUNCH DATE MAY 16 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 403.947 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.347	GAL	.52	AZL	91.69	HCA	132.77	SMA	187.30	ECC	.19265	INC	1.6884	V1	29.458
RP	209.34	LAP	-1.24	LOP	7.28	VP	23.651	GAP	8.84	AZP	88.85	TAL	3.20	TAP	135.97	RCA	151.21	APO	223.38	V2	26.186
RC	103.900	GL	-18.33	GP	-1.43	ZAL	91.48	ZAP	131.20	ETS	181.22	ZAE	172.76	ETE	185.99	ZAC	98.55	ETC	277.82	LVI	-16.77

PLANETOCENTRIC CONIC

C3	9.186	VHL	3.031	DLA	-29.96	RAL	335.36	RAD	6637.6	VEL	11.371	PTH	6.42	VHP	3.709	DPA	-18.41	RAP	321.97	ECC	1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 30	2339.54	.65	59.68	186.55	137.57	16 52 30	1339.5	18.80	43.41
60.00	17 37 5	2117.18	5.71	44.51	191.41	129.96	18 12 22	1117.2	21.12	25.49
70.00	19 30 34	1783.31	11.67	21.86	195.81	122.33	20 0 18	783.3	23.87	.12
79.67	22 43 14	1178.38	21.89	341.43	201.15	110.98	23 2 53	178.4	28.57	315.98
79.67	22 43 14	1178.38	21.89	341.43	201.15	110.98	23 2 53	178.4	28.57	315.98
79.67	22 43 14	1178.38	21.89	341.43	201.15	110.98	23 2 53	178.4	28.57	315.98
110.00	0 33 57	6118.17	11.67	288.68	195.81	122.33	2 15 55	5118.2	23.87	266.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2020	TRA	-.4079	TC3	-.0339	BAU	.0114	SGT	968.8	SGR	486.1	SG3	977.4	ST	23.3	SR	21.5	SS	31.1
RDE	-.2246	RRA	.1058	RC3	.0864	FAU	.16583	RRT	-.0943	RRF	.2084	RTF	-.4645	CRT	.7166	CRS	-.4166	CST	.3265
FDE	-.2745	FRA	2.8235	FC-15.6298		BSP	1208	SGB	1083.9	R23	-.1507	R13	.4695	LSA	33.2	MSA	29.4	SSA	1.7
BDE	.3020	BRA	.4214	BC3	.0928	FSP	1614	SG1	970.2	SG2	483.2	THA	176.40	EL1	29.4	EL2	11.9	ALF	41.82

LAUNCH DATE MAY 16 1971 FLIGHT TIME 168.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 408.077 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.328	GAL	.52	AZL	91.68	HCA	134.01	SMA	186.97	ECC	.19126	INC	1.6816	V1	29.458
RP	209.55	LAP	-1.21	LOP	8.51	VP	23.598	GAP	8.59	AZP	88.83	TAL	3.21	TAP	137.22	RCA	151.21	APO	222.74	V2	26.162
RC	105.933	GL	-18.36	GP	-1.49	ZAL	91.51	ZAP	129.33	ETS	181.17	ZAE	171.14	ETE	185.89	ZAC	98.58	ETC	277.69	LVI	-16.54

PLANETOCENTRIC CONIC

C3	9.070	VHL	3.012	DLA	-29.98	RAL	335.40	RAD	6637.6	VEL	11.366	PTH	6.42	VHP	3.622	DPA	-18.66	RAP	321.36	ECC	1.1493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 47	2336.63	.79	59.56	186.49	137.57	16 52 44	1336.6	18.93	43.27
60.00	17 37 25	2114.12	5.84	44.36	191.33	129.95	18 12 40	1114.1	21.24	25.28
70.00	19 31 2	1779.89	11.79	21.67	195.72	122.29	20 0 42	779.9	23.97	359.91
79.61	22 42 57	1177.38	21.96	341.39	201.03	110.94	23 2 35	177.4	28.62	315.92
79.61	22 42 57	1177.38	21.96	341.39	201.03	110.94	23 2 35	177.4	28.62	315.92
79.61	22 42 57	1177.38	21.96	341.39	201.03	110.94	23 2 35	177.4	28.62	315.92
110.00	0 34 24	6114.75	11.79	288.49	195.72	122.29	2 16 19	5114.7	23.97	266.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2037	TRA	-.3847	TC3	-.1552	BAU	.0209	SGT	934.3	SGR	479.0	SG3	1024.9	ST	23.2	SR	21.1	SS	31.9
RDE	-.2191	RRA	.1055	RC3	.0742	FAU	.17264	RRT	-.0856	RRF	.2258	RTF	-.3906	CRT	.7355	CRS	-.4203	CST	.2962
FDE	-.2870	FRA	2.9470	FC-16.4782		BSP	1061	SGB	1049.9	R23	-.1812	R13	.3963	LSA	33.8	MSA	29.2	SSA	1.7
BDE	.2992	BRA	.3989	BC3	.1721	FSP	1697	SG1	935.5	SG2	476.6	THA	176.61	EL1	29.2	EL2	11.3	ALF	41.45

LAUNCH DATE MAY 16 1971 FLIGHT TIME 170.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 412.214 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.311	GAL	.51	AZL	91.67	HCA	135.24	SMA	186.68	ECC	.18999	INC	1.6746	V1	29.458
RP	209.76	LAP	-1.18	LOP	9.75	VP	23.547	GAP	8.36	AZP	88.81	TAL	3.20	TAP	138.44	RCA	151.21	APO	222.15	V2	26.137
RC	107.990	GL	-18.38	GP	-1.55	ZAL	91.56	ZAP	127.42	ETS	181.12	ZAE	169.46	ETE	185.78	ZAC	98.60	ETC	277.55	LVI	-16.29

PLANETOCENTRIC CONIC

C3	8.965	VHL	2.994	DLA	-29.98	RAL	335.47	RAD	6637.5	VEL	11.361	PTH	6.41	VHP	3.540	DPA	-18.93	RAP	320.71	ECC	1.1475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 3	2334.41	.91	59.47	186.46	137.57	16 52 57	1334.4	19.04	43.17
60.00	17 37 41	2111.91	5.94	44.26	191.28	129.93	18 12 53	1111.9	21.32	25.15
70.00	19 31 17	1777.70	11.87	21.55	195.66	122.26	20 0 55	777.7	24.03	359.77
79.61	22 43 16	1174.98	22.02	341.23	200.95	110.88	23 2 51	175.0	28.64	315.74
79.61	22 43 16	1174.98	22.02	341.23	200.95	110.88	23 2 51	175.0	28.64	315.74
79.61	22 43 16	1174.98	22.02	341.23	200.95	110.88	23 2 51	175.0	28.64	315.74
110.00	0 34 39	6112.56	11.87	288.37	195.66	122.26	2 16 32	5112.6	24.03	266.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2047	TRA	-.3600	TC3	-.2814	BAU	.0345	SGT	902.5	SGR	472.0	SG3	1075.6	ST	22.9	SR	20.7	SS	32.8
RDE	-.2138	RRA	.1053	RC3	.0605	FAU	.18014	RRT	-.0724	RRF	.2454	RTF	-.3041	CRT	.7544	CRS	-.4295	CST	.2590
FDE	-.3087	FRA	3.0741	FC-17.3965		BSP	909	SGB	1018.4	R23	-.2157	R13	.3100	LSA	34.5	MSA	28.9	SSA	1.7
BDE	.2960	BRA	.3751	BC3	.2878	FSP	1785	SG1	903.4	SG2	470.3	THA	177.03	EL1	29.0	EL2	10.8	ALF	41.21

LAUNCH DATE MAY 16 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 416.360 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.295	GAL	.50	AZL	91.67	HCA	136.47	SMA	186.42	ECC	.18884	INC	1.6672	V1	29.458
RP	209.99	LAP	-1.15	LOP	10.98	VP	23.497	GAP	8.13	AZP	88.79	TAL	3.18	TAP	139.65	RCA	151.21	APO	221.62	V2	26.111
RC	110.071	GL	-18.39	GP	-1.62	ZAL	91.64	ZAP	125.49	ETS	181.06	ZAE	167.73	ETE	185.66	ZAC	98.63	ETC	277.40	LVI	-16.03

PLANETOCENTRIC CONIC

C3	8.869	VHL	2.978	DLA	-29.96	RAL	335.56	RAD	6637.5	VEL	11.357	PTH	6.41	VHP	3.463	DPA	-19.21	RAP	320.02	ECC	1.1460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 17	2332.87	.98	59.40	186.44	137.57	16 53 10	1332.9	19.11	43.09
60.00	17 37 51	2110.54	6.00	44.19	191.25	129.93	18 13 2	1110.5	21.38	25.08
70.00	19 31 19	1776.75	11.91	21.50	195.61	122.25	20 0 56	776.8	24.06	359.71
79.69	22 44 10	1171.21	22.05	340.96	200.89	110.81	23 3 41	171.2	28.65	315.46
79.69	22 44 10	1171.21	22.05	340.96	200.89	110.81	23 3 41	171.2	28.65	315.46
79.69	22 44 10	1171.21	22.05	340.96	200.89	110.81	23 3 41	171.2	28.65	315.46
110.00	0 34 41	6111.61	11.91	288.32	195.61	122.25	2 16 33	5111.6	24.06	266.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2083	TRA	-.3341	TC3	-.4224	BAU	.0504	SGT	880.0	SGR	464.7	SG3	1125.4	ST	22.9	SR	20.3	SS	33.5
RDE	-.2082	RRA	.1053	RC3	.0463	FAU	.18727	RRT	-.0486	RRF	.2640	RTF	-.2019	CRT	.7772	CRS	-.4197	CST	.2345
FDE	-.3017	FRA	3.2087	FC-18.2812		BSP	751	SGB	995.2	R23	-.2507	R13	.2067	LSA	35.0	MSA	28.8	SSA	1.7
BDE	.2945	BRA	.3503	BC3	.4250	FSP	1880	SG1	880.4	SG2	463.9	THA	177.97	EL1	28.9	EL2	10.1	ALF	40.61

LAUNCH DATE MAY 16 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC — DISTANCE 420.512 — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.261 GAL .50 AZL 91.66 HCA 137.70 SMA 186.18 ECC .18778 INC 1.6594 V1 29.458
RP 210.22 LAP -1.12 LOP 12.21 VP 23.446 GAP 7.90 AZP 88.77 TAL 3.14 TAP 140.84 RCA 151.21 APO 221.14 V2 26.085
RC 112.177 GL -18.39 GP -1.69 ZAL 91.75 ZAP 123.53 ETS 181.01 ZAE 165.95 ETE 185.53 ZAC 98.65 ETC 277.24 LVI -15.76

PLANETOCENTRIC CONIC

C3 8.781 VHL 2.963 DLA -29.91 RAL 335.67 RAD 6637.4 VEL 11.353 PTH 6.41 VHP 3.391 DPA -19.50 RAP 319.30 ECC 1.1445

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 29	2332.00	1.03	59.37	186.46	137.57	16 53 21	1332.0	19.15	43.05
60.00	17 37 56	2110.00	6.02	44.16	191.24	129.92	18 13 6	1110.0	21.40	25.05
70.00	19 31 8	1777.02	11.90	21.51	195.57	122.25	20 0 45	777.0	24.05	359.72
79.82	22 45 40	1166.01	22.06	340.58	200.86	110.72	23 5 6	166.0	28.62	315.07
79.82	22 45 40	1166.01	22.06	340.58	200.86	110.72	23 5 6	166.0	28.62	315.07
79.82	22 45 40	1166.01	22.06	340.58	200.86	110.72	23 5 6	166.0	28.62	315.07
110.00	0 34 30	6111.87	11.90	288.34	195.57	122.25	2 16 22	5111.9	24.05	266.55

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2109 TRA -.3066 TC3 -.5711 BAU .0671 — SGT 865.1 SGR 457.6 SG3 1176.3 — ST 22.8 SR 19.9 SS 34.3
RDE -.2029 RRA .1054 RC3 .0310 FAU .19472 — RRT -.0179 RRF .2850 RTF -.0853 — CRT .7994 CRS -.4187 CST .1999
FDE -.3069 FRA 3.3414 FC-19.1971 BSP 562 — SGB 978.7 R23 -.2830 R13 .0872 — LSA 35.6 MSA 28.6 SSA 1.7
BDE .2926 BRA .3242 BC3 .5719 FSP 1959 — SG1 865.2 SG2 457.5 THA 179.25 — EL1 28.8 EL2 9.5 ALF 40.16

LAUNCH DATE MAY 16 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC — DISTANCE 424.670 — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.268 GAL .48 AZL 91.65 HCA 138.92 SMA 185.96 ECC .18683 INC 1.6514 V1 29.458
RP 210.45 LAP -1.09 LOP 13.43 VP 23.400 GAP 7.68 AZP 88.75 TAL 3.08 TAP 142.00 RCA 151.22 APO 220.70 V2 26.058
RC 114.307 GL -18.37 GP -1.77 ZAL 91.88 ZAP 121.54 ETS 180.94 ZAE 164.13 ETE 185.40 ZAC 98.68 ETC 277.08 LVI -15.47

PLANETOCENTRIC CONIC

C3 8.703 VHL 2.950 DLA -29.85 RAL 335.81 RAD 6637.4 VEL 11.350 PTH 6.40 VHP 3.324 DPA -19.80 RAP 318.55 ECC 1.1432

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 40	2331.78	1.04	59.36	186.49	137.57	16 53 32	1331.8	19.17	43.04
60.00	17 37 56	2110.26	6.01	44.18	191.26	129.93	18 13 6	1110.3	21.39	25.06
70.00	19 30 43	1778.46	11.85	21.59	195.56	122.27	20 0 22	778.5	24.01	359.82
80.00	22 41 11	1180.35	21.57	341.45	200.66	111.16	23 0 51	180.4	28.37	316.09
80.03	22 47 47	1159.28	22.06	340.08	200.86	110.63	23 7 6	159.3	28.58	314.57
100.00	1 27 59	5942.86	21.57	280.72	200.66	111.16	3 7 1	4942.9	28.37	255.37
110.00	0 34 6	6113.32	11.85	288.41	195.56	122.27	2 15 59	5113.3	24.01	266.64

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2100 TRA -.2752 TC3 -.7338 BAU .0854 — SGT 856.5 SGR 451.0 SG3 1223.4 — ST 22.4 SR 19.5 SS 35.1
RDE -.1978 RRA .1055 RC3 .0154 FAU .20152 — RRT .0185 RRF .3091 RTF .0498 — CRT .8204 CRS -.4338 CST .1475
FDE -.3335 FRA 3.4643 FC-20.0469 BSP 375 — SGB 968.0 R23 .3079 R13 .0520 — LSA 36.4 MSA 28.1 SSA 1.6
BDE .2885 BRA .2947 BC3 .7339 FSP 2041 — SG1 856.6 SG2 450.9 THA .77 — EL1 28.4 EL2 8.8 ALF 40.23

LAUNCH DATE MAY 16 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC — DISTANCE 428.834 — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.257 GAL .47 AZL 91.64 HCA 140.15 SMA 185.77 ECC .18597 INC 1.6430 V1 29.458
RP 210.70 LAP -1.05 LOP 14.65 VP 23.353 GAP 7.47 AZP 88.74 TAL 3.00 TAP 143.15 RCA 151.22 APO 220.31 V2 26.030
RC 116.460 GL -18.35 GP -1.84 ZAL 92.04 ZAP 119.52 ETS 180.88 ZAE 162.26 ETE 185.28 ZAC 98.70 ETC 276.90 LVI -15.16

PLANETOCENTRIC CONIC

C3 8.632 VHL 2.938 DLA -29.76 RAL 335.97 RAD 6637.3 VEL 11.346 PTH 6.40 VHP 3.261 DPA -20.11 RAP 317.77 ECC 1.1421

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 49	2332.20	1.02	59.38	186.55	137.57	16 53 41	1332.2	19.15	43.06
60.00	17 37 51	2111.31	5.97	44.23	191.29	129.93	18 13 2	1111.3	21.35	25.12
70.00	19 30 7	1781.03	11.75	21.73	195.56	122.30	19 59 48	781.0	23.94	359.98
80.00	22 28 17	1222.02	20.53	344.10	200.25	112.17	22 48 39	222.0	27.85	319.08
80.31	22 50 33	1150.88	22.04	339.45	200.89	110.53	23 9 43	150.9	28.52	313.93
100.00	1 15 5	5984.54	20.53	283.37	200.25	112.17	2 54 49	4984.5	27.85	258.35
110.00	0 33 29	6115.89	11.75	288.56	195.56	122.30	2 15 25	5115.9	23.94	266.80

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2067 TRA -.2383 TC3 -.8773 BAU .1012 — SGT 845.5 SGR 444.3 SG3 1276.1 — ST 21.7 SR 19.1 SS 35.6
RDE -.1927 RRA .1055 RC3 -.0031 FAU .21022 — RRT .0680 RRF .3527 RTF .[illegible]06 — CRT .8435 CRS -.4479 CST .0897
FDE -.3583 FRA 3.5658 FC-21.0849 BSP 245 — SGB 955.1 R23 .3155 R13 .1988 — LSA 37.0 MSA 27.2 SSA 1.6
BDE .2826 BRA .2606 BC3 .8773 FSP 2077 — SG1 846.2 SG2 442.9 THA 2.82 — EL1 27.8 EL2 8.0 ALF 40.71

LAUNCH DATE MAY 16 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC — DISTANCE 433.001 — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.246 GAL .45 AZL 91.63 HCA 141.37 SMA 185.59 ECC .18521 INC 1.6342 V1 29.458
RP 210.95 LAP -1.02 LOP 15.87 VP 23.307 GAP 7.25 AZP 88.72 TAL 2.91 TAP 144.27 RCA 151.22 APO 219.97 V2 26.001
RC 118.837 GL -18.31 GP -1.92 ZAL 92.24 ZAP 117.49 ETS 180.81 ZAE 160.35 ETE 185.15 ZAC 98.72 ETC 276.73 LVI -14.85

PLANETOCENTRIC CONIC

C3 8.568 VHL 2.927 DLA -29.65 RAL 336.16 RAD 6637.3 VEL 11.344 PTH 6.40 VHP 3.203 DPA -20.42 RAP 316.97 ECC 1.1410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 57	2333.36	.96	59.42	186.63	137.57	16 53 50	1333.4	19.09	43.12
60.00	17 37 40	2113.28	5.88	44.32	191.35	129.94	18 12 53	1113.3	21.27	25.23
70.00	19 29 17	1784.94	11.61	21.94	195.58	122.35	19 59 2	784.9	23.82	.23
80.00	22 19 39	1250.66	19.78	345.90	200.01	112.83	22 40 30	250.7	27.45	321.11
80.69	22 54 11	1140.26	21.99	338.64	200.95	110.41	23 13 11	140.3	28.43	313.13
100.00	1 6 27	6013.17	19.78	285.17	200.01	112.83	2 46 40	5013.2	27.45	260.39
110.00	0 32 40	6119.80	11.61	288.77	195.58	122.35	2 14 39	5119.8	23.82	267.05

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2197 TRA -.2166 TC3-1.1105 BAU .1272 — SGT 919.6 SGR 437.6 SG3 1321.1 — ST 22.7 SR 18.6 SS 36.5
RDE -.1869 RRA .1066 RC3 -.0183 FAU .21522 — RRT .1173 RRF .3569 RTF .3142 — CRT .8659 CRS -.4138 CST .0836
FDE -.3128 FRA 3.7510 FC-21.7450 BSP 287 — SGB 1018.4 R23 .3114 R13 .3249 — LSA 37.5 MSA 28.0 SSA 1.6
BDE .2885 BRA .2414 BC3 1.1107 FSP 2231 — SG1 921.5 SG2 433.7 THA 4.11 — EL1 28.4 EL2 7.5 ALF 38.50

LAUNCH DATE MAY 16 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 437.174 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.237 GAL .44 AZL 91.62 HCA 142.58 SMA 185.44 ECC .18493 INC 1.6248 V1 29.458
RP 211.20 LAP -.99 LOP 17.09 VP 23.262 GAP 7.05 AZP 88.71 TAL 2.80 TAP 145.38 RCA 151.22 APO 219.66 V2 25.972
RC 120.836 GL -18.26 GP -2.01 ZAL 92.45 ZAP 115.44 ETS 180.73 ZAE 158.41 ETE 185.03 ZAC 98.74 ETC 276.54 LVI -14.52

PLANETOCENTRIC CONIC

C3 8.512 VHL 2.918 DLA -29.52 RAL 336.36 RAD 6637.3 VEL 11.341 PTH 6.39 VHP 3.150 DPA -20.74 RAP 316.14 ECC 1.1401

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 2	2335.11	.87	59.50	186.73	137.57	16 53 57	1335.1	19.01	43.20
60.00	17 37 24	2115.97	5.76	44.45	191.42	129.96	18 12 40	1116.0	21.16	25.38
70.00	19 28 16	1789.86	11.43	22.21	195.61	122.40	19 58 6	789.9	23.68	.54
80.00	22 12 20	1275.52	19.12	347.44	199.82	113.38	22 33 36	275.5	27.08	322.87
81.14	22 58 32	1127.68	21.93	337.69	201.03	110.28	23 17 20	127.7	28.32	312.17
100.00	0 59 8	6038.03	19.12	286.72	199.82	113.38	2 39 46	5038.0	27.08	262.14
110.00	0 31 39	6124.71	11.43	289.04	195.61	122.40	2 13 43	5124.7	23.68	267.36

DIFFERENTIAL CORRECTIONS

TDE -.2233 TRA -.1842 TC3-1.3118 BAU .1493
RDE -.1814 RRA .1073 RC3 -.0363 FAU .22182
FDE -.2991 FRA 3.8970 FC-22.5613 BSP 437
BDE .2877 BRA .2131 BC3 1.3123 FSP 2322

MID-COURSE EXECUTION ACCURACY

SGT 975.2 SGR 431.3 SG3 1368.9
RRT .1707 RRF .3830 RTF .4323
SGB 1066.3 R23 .2962 R13 .4446
SG1 978.6 SG2 423.5 THA 5.32

ORBIT DETERMINATION ACCURACY

ST 22.8 SR 18.2 SS 37.2
CRT .8868 CRS -.4039 CST .0500
LSA 38.1 MSA 27.9 SSA 1.6
EL1 28.4 EL2 6.8 ALF 37.75

LAUNCH DATE MAY 16 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 441.350 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.229 GAL .41 AZL 91.62 HCA 143.80 SMA 185.31 ECC .18394 INC 1.6150 V1 29.458
RP 211.46 LAP -.95 LOP 18.30 VP 23.217 GAP 6.84 AZP 88.70 TAL 2.67 TAP 146.47 RCA 151.22 APO 219.40 V2 25.942
RC 123.058 GL -18.20 GP -2.09 ZAL 92.69 ZAP 113.37 ETS 180.66 ZAE 156.43 ETE 184.91 ZAC 98.75 ETC 276.35 LVI -14.18

PLANETOCENTRIC CONIC

C3 8.462 VHL 2.909 DLA -29.37 RAL 336.59 RAD 6637.2 VEL 11.339 PTH 6.39 VHP 3.102 DPA -21.06 RAP 315.29 ECC 1.1393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 5	2337.50	.75	59.60	186.86	137.57	16 54 3	1337.5	18.89	43.31
60.00	17 37 3	2119.44	5.61	44.62	191.52	129.97	18 12 23	1119.4	21.03	25.57
70.00	19 27 4	1795.83	11.21	22.54	195.66	122.47	19 57 0	795.8	23.50	.91
80.00	22 5 34	1299.10	18.47	348.90	199.68	113.88	22 27 13	299.1	26.71	324.52
81.71	23 3 51	1112.41	21.85	336.52	201.14	110.13	23 22 23	112.4	28.19	311.02
100.00	0 52 22	6061.61	18.47	288.17	199.68	113.88	2 33 23	5061.6	26.71	263.79
110.00	0 30 26	6130.70	11.21	289.36	195.66	122.47	2 12 37	5130.7	23.50	267.74

DIFFERENTIAL CORRECTIONS

TDE -.2269 TRA -.1489 TC3-1.5253 BAU .1727
RDE -.1759 RRA .1080 RC3 -.0541 FAU .22747
FDE -.2766 FRA 4.0242 FC-23.2727 BSP 660
BDE .2871 BRA .1839 BC3 1.5262 FSP 2394

MID-COURSE EXECUTION ACCURACY

SGT 1049.0 SGR 425.0 SG3 1410.1
RRT .2258 RRF .4086 RTF .5373
SGB 1131.8 R23 .2720 R13 .5492
SG1 1054.2 SG2 412.0 THA 6.17

ORBIT DETERMINATION ACCURACY

ST 22.9 SR 17.7 SS 37.7
CRT .9074 CRS -.3905 CST .0164
LSA 38.5 MSA 27.8 SSA 1.6
EL1 28.4 EL2 6.0 ALF 36.94

LAUNCH DATE MAY 16 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC DISTANCE 445.530 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.222 GAL .39 AZL 91.60 HCA 145.01 SMA 185.20 ECC .18342 INC 1.6046 V1 29.458
RP 211.73 LAP -.92 LOP 19.51 VP 23.173 GAP 6.64 AZP 88.69 TAL 2.53 TAP 147.54 RCA 151.23 APO 219.16 V2 25.911
RC 125.302 GL -18.12 GP -2.18 ZAL 92.96 ZAP 111.29 ETS 180.58 ZAE 154.43 ETE 184.80 ZAC 98.76 ETC 276.16 LVI -13.82

PLANETOCENTRIC CONIC

C3 8.418 VHL 2.901 DLA -29.20 RAL 336.83 RAD 6637.2 VEL 11.337 PTH 6.39 VHP 3.057 DPA -21.39 RAP 314.42 ECC 1.1385

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 6	2340.51	.60	59.72	187.00	137.57	16 54 7	1340.5	18.75	43.45
60.00	17 36 37	2123.68	5.43	44.82	191.63	130.00	18 12 1	1123.7	20.86	25.61
70.00	19 25 41	1802.87	10.96	22.92	195.73	122.55	19 55 44	802.9	23.30	1.35
80.00	21 59 8	1322.06	17.83	350.30	199.57	114.35	22 21 10	322.1	26.32	326.12
82.40	23 10 17	1093.90	21.75	335.12	201.27	109.98	23 28 31	93.9	28.03	309.63
100.00	0 45 56	6084.57	17.83	289.58	199.57	114.35	2 27 21	5084.6	26.32	265.39
110.00	0 29 3	6137.73	10.96	289.74	195.73	122.55	2 11 21	5137.7	23.30	268.18

DIFFERENTIAL CORRECTIONS

TDE -.2291 TRA -.1123 TC3-1.7418 BAU .1962
RDE -.1705 RRA .1089 RC3 -.0736 FAU .23378
FDE -.2629 FRA 4.1604 FC-24.0421 BSP 909
BDE .2856 BRA .1564 BC3 1.7433 FSP 2468

MID-COURSE EXECUTION ACCURACY

SGT 1136.2 SGR 419.4 SG3 1454.7
RRT .2789 RRF .4574 RTF .6144
SGB 1211.1 R23 .2482 R13 .6351
SG1 1143.0 SG2 400.3 THA 6.70

ORBIT DETERMINATION ACCURACY

ST 23.0 SR 17.2 SS 38.3
CRT .9258 CRS -.3839 CST -.0243
LSA 39.1 MSA 27.6 SSA 1.6
EL1 28.2 EL2 5.3 ALF 36.24

LAUNCH DATE MAY 16 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC DISTANCE 449.713 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.217 GAL .37 AZL 91.59 HCA 146.22 SMA 185.10 ECC .18297 INC 1.5935 V1 29.458
RP 212.01 LAP -.89 LOP 20.72 VP 23.130 GAP 6.45 AZP 88.68 TAL 2.37 TAP 148.59 RCA 151.23 APO 218.97 V2 25.880
RC 127.566 GL -18.03 GP -2.26 ZAL 93.24 ZAP 109.21 ETS 180.49 ZAE 152.41 ETE 184.68 ZAC 98.76 ETC 275.96 LVI -13.46

PLANETOCENTRIC CONIC

C3 8.380 VHL 2.895 DLA -29.01 RAL 337.10 RAD 6637.2 VEL 11.335 PTH 6.39 VHP 3.017 DPA -21.72 RAP 313.54 ECC 1.1378

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 5	2344.14	.42	59.87	187.16	137.57	16 54 9	1344.1	18.58	43.62
60.00	17 36 5	2128.66	5.21	45.06	191.76	130.02	18 11 34	1128.7	20.67	26.08
70.00	19 24 8	1810.88	10.66	23.35	195.80	122.64	19 54 19	810.9	23.06	1.85
80.00	21 52 57	1344.68	17.19	351.68	199.49	114.79	22 15 22	344.7	25.93	327.68
83.25	23 18 11	1071.06	21.63	333.39	201.42	109.81	23 36 2	71.1	27.86	307.91
100.00	0 39 45	6107.19	17.19	290.95	199.49	114.79	2 21 32	5107.2	25.93	266.95
110.00	0 27 30	6145.74	10.66	290.18	195.80	122.64	2 9 56	5145.7	23.06	268.68

DIFFERENTIAL CORRECTIONS

TDE -.2288 TRA -.0724 TC3-1.9611 BAU .2200
RDE -.1654 RRA .1096 RC3 -.0938 FAU .23982
FDE -.2680 FRA 4.2707 FC-24.7741 BSP 1201
BDE .2823 BRA .1314 BC3 1.9633 FSP 2519

MID-COURSE EXECUTION ACCURACY

SGT 1233.3 SGR 414.3 SG3 1495.1
RRT .3313 RRF .4674 RTF .7002
SGB 1301.0 R23 .2223 R13 .7093
SG1 1241.8 SG2 388.2 THA 7.04

ORBIT DETERMINATION ACCURACY

ST 22.8 SR 16.8 SS 38.8
CRT .9432 CRS -.3902 CST -.0826
LSA 39.7 MSA 27.0 SSA 1.5
EL1 28.0 EL2 4.6 ALF 35.82

LAUNCH DATE MAY 16 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 453.897 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.212	GAL	.34	AZL	91.58	HCA	147.42	SMA	185.02	ECC	.18259	INC	1.5818	V1	29.458
RP	212.29	LAP	-.85	LOP	21.93	VP	23.087	GAP	6.26	AZP	88.67	TAL	2.19	TAP	149.61	RCA	151.23	APO	218.80	V2	25.848
RC	129.850	GL	-17.93	GP	-2.38	ZAL	93.56	ZAP	107.13	ETS	180.40	ZAE	150.37	ETE	184.57	ZAC	98.76	ETC	275.76	LVI	-13.09

PLANETOCENTRIC CONIC

C3	8.348	VHL	2.889	DLA	-28.79	RAL	337.38	RAD	6637.2	VEL	11.334	PTH	6.39	VHP	2.981	DPA	-22.05	RAP	312.66	ECC	1.1374

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 15 2	2348.43	.20	60.05	187.35	137.58	16 54 10	1348.4	18.37	43.82
60.00	17 35 28	2134.44	4.95	45.34	191.91	130.05	18 11 3	1134.4	20.44	26.40
70.00	19 22 24	1819.95	10.33	23.85	195.90	122.74	19 52 44	820.0	22.79	2.42
80.00	21 46 53	1367.39	16.54	353.05	199.43	115.22	22 9 41	367.4	25.51	329.24
84.36	23 28 16	1041.52	21.49	331.16	201.59	109.63	23 45 37	41.5	27.66	305.71
100.00	0 33 41	6129.90	16.54	292.32	199.43	115.22	2 15 51	5129.9	25.51	268.51
110.00	0 25 46	6154.81	10.33	290.67	195.90	122.74	2 8 21	5154.8	22.79	269.24

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2344	TRA	-.0362	TC3	-2.2138	BAU	.2474	SGT	1363.6	SGR	409.1	SG3	1532.5	ST	23.4	SR	16.2	SS	39.5
RDE	-.1593	RRA	.1112	RC3	-.1127	FAU	.24402	RRT	.3757	RRF	.4968	RTF	.7473	CRT	.9562	CRS	-.3580	CST	-.0924
FDE	-.2056	FRA	4.4328	FC	-25.3052	BSP	1435	SGB	1423.7	R23	.2079	R13	.7547	LSA	40.3	MSA	27.3	SSA	1.5
BDE	.2835	BRA	.1169	BC3	2.2167	FSP	2623	SG1	1373.0	SG2	376.6	THA	6.96	EL1	28.2	EL2	3.9	ALF	34.39

LAUNCH DATE MAY 16 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 458.084 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.208	GAL	.31	AZL	91.57	HCA	148.62	SMA	184.95	ECC	.18228	INC	1.5695	V1	29.458
RP	212.57	LAP	-.82	LOP	23.13	VP	23.045	GAP	6.07	AZP	88.66	TAL	2.00	TAP	150.63	RCA	151.24	APO	218.66	V2	25.815
RC	132.153	GL	-17.81	GP	-2.48	ZAL	93.90	ZAP	105.04	ETS	180.31	ZAE	148.31	ETE	184.47	ZAC	98.74	ETC	275.56	LVI	-12.71

PLANETOCENTRIC CONIC

C3	8.322	VHL	2.885	DLA	-28.55	RAL	337.68	RAD	6637.2	VEL	11.333	PTH	6.39	VHP	2.949	DPA	-22.38	RAP	311.77	ECC	1.1370

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 56	2353.33	-.04	60.26	187.54	137.58	16 54 9	1353.3	18.14	44.05
60.00	17 34 46	2140.95	4.67	45.66	192.07	130.08	18 10 27	1141.0	20.18	26.76
70.00	19 20 31	1829.93	9.96	24.38	196.01	122.84	19 51 1	829.9	22.49	3.04
80.00	21 40 59	1390.02	15.88	354.40	199.40	115.62	22 4 9	390.0	25.07	330.78
85.89	23 42 5	1000.12	21.34	328.06	201.79	109.44	23 58 46	.1	27.43	302.63
100.00	0 27 47	6152.53	15.88	293.68	199.40	115.62	2 10 19	5152.5	25.07	270.05
110.00	0 23 53	6164.79	9.96	291.21	196.01	122.84	2 6 38	5164.8	22.49	269.86

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2360	TRA	.0049	TC3	-2.4575	BAU	.2738	SGT	1493.3	SGR	404.6	SG3	1566.7	ST	23.5	SR	15.7	SS	40.0
RDE	-.1536	RRA	.1125	RC3	-.1331	FAU	.24845	RRT	.4214	RRF	.5274	RTF	.7907	CRT	.9685	CRS	-.3425	CST	-.1252
FDE	-.1676	FRA	4.5604	FC	-25.8471	BSP	1731	SGB	1547.2	R23	.1908	R13	.7967	LSA	40.8	MSA	27.1	SSA	1.5
BDE	.2816	BRA	.1126	BC3	2.4611	FSP	2661	SG1	1503.6	SG2	364.4	THA	6.92	EL1	28.1	EL2	3.3	ALF	33.43

LAUNCH DATE MAY 16 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 462.273 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.205	GAL	.28	AZL	91.56	HCA	149.82	SMA	184.90	ECC	.18204	INC	1.5562	V1	29.458
RP	212.86	LAP	-.78	LOP	24.32	VP	23.004	GAP	5.88	AZP	88.65	TAL	1.80	TAP	151.62	RCA	151.24	APO	218.56	V2	25.782
RC	134.475	GL	-17.67	GP	-2.59	ZAL	94.26	ZAP	102.97	ETS	180.21	ZAE	146.25	ETE	184.37	ZAC	98.72	ETC	275.35	LVI	-12.33

PLANETOCENTRIC CONIC

C3	8.300	VHL	2.881	DLA	-28.29	RAL	338.00	RAD	6637.2	VEL	11.332	PTH	6.39	VHP	2.921	DPA	-22.71	RAP	310.89	ECC	1.1366

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 46	2358.85	-.32	60.49	187.76	137.58	16 54 5	1358.8	17.87	44.31
60.00	17 33 57	2148.20	4.35	46.00	192.25	130.11	18 9 46	1148.2	19.89	27.15
70.00	19 18 29	1840.82	9.56	24.97	196.13	122.95	19 49 9	840.8	22.16	3.71
80.00	21 35 11	1412.76	15.20	355.75	199.39	116.01	21 58 44	412.8	24.62	332.31
89.22	0 15 6	6197.60	21.16	299.27	202.00	109.23	1 58 23	5197.6	27.19	273.87
100.00	0 21 59	6175.27	15.20	295.03	199.39	116.01	2 4 54	5175.3	24.62	271.59
110.00	0 21 51	6175.68	9.56	291.79	196.13	122.95	2 4 46	5175.7	22.16	270.53

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2363	TRA	.0472	TC3	-2.7090	BAU	.3011	SGT	1633.6	SGR	401.0	SG3	1598.7	ST	23.7	SR	13.2	SS	40.7
RDE	-.1479	RRA	.1141	RC3	-.1538	FAU	.25233	RRT	.4642	RRF	.5595	RTF	.8245	CRT	.9782	CRS	-.3292	CST	-.1598
FDE	-.1292	FRA	4.6931	FC	-26.3186	BSP	2025	SGB	1682.1	R23	.1784	R13	.8293	LSA	41.5	MSA	26.9	SSA	1.4
BDE	.2788	BRA	.1235	BC3	2.7133	FSP	2721	SG1	1644.7	SG2	352.8	THA	6.82	EL1	28.0	EL2	2.7	ALF	32.48

LAUNCH DATE MAY 16 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 466.463 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.202	GAL	.24	AZL	91.54	HCA	151.02	SMA	184.86	ECC	.18185	INC	1.5418	V1	29.458
RP	213.16	LAP	-.75	LOP	25.52	VP	22.963	GAP	5.70	AZP	88.65	TAL	1.58	TAP	152.60	RCA	151.24	APO	218.48	V2	25.749
RC	136.814	GL	-17.52	GP	-2.71	ZAL	94.65	ZAP	100.90	ETS	180.11	ZAE	144.19	ETE	184.27	ZAC	98.69	ETC	275.15	LVI	-11.94

PLANETOCENTRIC CONIC

C3	8.284	VHL	2.878	DLA	-28.00	RAL	338.33	RAD	6637.1	VEL	11.331	PTH	6.38	VHP	2.897	DPA	-23.04	RAP	310.00	ECC	1.1363

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 34	2365.00	-.63	60.75	187.99	137.57	16 53 59	1365.0	17.57	44.60
60.00	17 33 3	2156.20	4.00	46.39	192.44	130.14	18 9 0	1156.2	19.57	27.59
70.00	19 16 17	1852.63	9.12	25.60	196.26	123.06	19 47 10	852.6	21.79	4.43
80.00	21 29 27	1435.70	14.51	357.11	199.41	116.38	21 53 23	435.7	24.14	333.85
90.00	23 44 23	1000.55	18.47	326.94	201.25	111.80	24 1 3	.6	25.85	302.35
100.00	0 16 15	6198.21	14.51	296.38	199.41	116.38	1 59 33	5198.2	24.14	273.12
110.00	0 19 39	6187.49	9.12	292.43	196.26	123.06	2 2 47	5187.5	21.79	271.26

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2367	TRA	.0912	TC3	-2.9662	BAU	.3291	SGT	1783.1	SGR	397.0	SG3	1621.6	ST	23.9	SR	14.7	SS	41.0
RDE	-.1419	RRA	.1154	RC3	-.1745	FAU	.25525	RRT	.5059	RRF	.5893	RTF	.8517	CRT	.9856	CRS	-.3067	CST	-.1855
FDE	-.0713	FRA	4.7858	FC	-26.6765	BSP	2324	SGB	1826.8	R23	.1647	R13	.8556	LSA	41.8	MSA	26.8	SSA	1.4
BDE	.2759	BRA	.1471	BC3	2.9713	FSP	2779	SG1	1794.8	SG2	340.2	THA	6.67	EL1	28.0	EL2	2.1	ALF	31.35

LAUNCH DATE MAY 16 1971 FLIGHT TIME 198.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 470.654 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.201	GAL	.21	AZL	91.53	HCA	152.21	SMA	184.83	ECC	.18172	INC	1.5265	V1	29.458
RP	213.46	LAP	-.71	LOP	26.71	VP	22.922	GAP	5.32	AZP	88.65	TAL	1.35	TAP	153.55	RCA	151.24	APO	218.42	V2	25.714
RC	139.171	GL	-17.36	GP	-2.83	ZAL	95.06	ZAP	98.85	ETS	180.00	ZAE	142.12	ETE	184.18	ZAC	98.65	ETC	274.95	LVI	-11.54

PLANETOCENTRIC CONIC

C3	8.272	VHL	2.876	DLA	-27.69	RAL	338.68	RAD	6637.1	VEL	11.331	PTH	6.38	VHP	2.876	DPA	-23.37	RAP	309.13	ECC	1.1361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 14 17	2371.79	-.97	61.03	188.23	137.57	16 53 49	1371.8	17.25	44.91
60.00	17 32 3	2164.96	3.62	46.81	192.64	130.17	18 8 8	1165.0	19.22	28.06
70.00	19 13 57	1865.32	8.65	26.28	196.41	123.17	19 45 2	865.3	21.40	5.21
80.00	21 23 46	1458.89	13.81	358.47	199.44	116.74	21 48 5	458.9	23.64	335.39
90.00	23 29 53	1052.18	17.13	330.14	201.03	112.85	23 47 25	52.2	25.08	305.93
100.00	0 10 34	6221.40	13.81	297.74	199.44	116.74	1 54 15	5221.4	23.64	274.66
110.00	0 17 19	6200.18	8.65	293.11	196.41	123.17	2 0 39	5200.2	21.40	272.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2363	TRA	.1364	TC3	-3.2271	BAU	.3575	SGT	1939.4	SGR	395.0	SG3	1651.5	ST	24.1	SR	14.1	SS	41.5
RDE	-.1360	RRA	.1172	RC3	-.1983	FAU	.25945	RRT	.5486	RRF	.6229	RTF	.8741	CRT	.9906	CRS	-.2957	CST	-.2218
FDE	-.0289	FRA	4.8972	FC-27	.1550	BSP	2630	SGB	1979.2	R23	.1546	R13	.8772	LSA	42.4	MSA	26.5	SSA	1.4
BDE	.2726	BRA	.1799	BC3	3.2332	FSP	2834	SG1	1951.8	SG2	328.1	THA	6.56	EL1	27.9	EL2	1.7	ALF	30.20

LAUNCH DATE MAY 16 1971 FLIGHT TIME 200.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 474.845 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.200	GAL	.17	AZL	91.51	HCA	153.40	SMA	184.82	ECC	.18165	INC	1.5099	V1	29.458
RP	213.77	LAP	-.68	LOP	27.90	VP	22.882	GAP	5.34	AZP	88.65	TAL	1.10	TAP	154.50	RCA	151.25	APO	218.39	V2	25.680
RC	141.545	GL	-17.17	GP	-2.96	ZAL	95.49	ZAP	96.82	ETS	179.89	ZAE	140.07	ETE	184.10	ZAC	98.60	ETC	274.75	LVI	-11.14

PLANETOCENTRIC CONIC

C3	8.264	VHL	2.875	DLA	-27.36	RAL	339.04	RAD	6637.1	VEL	11.330	PTH	6.38	VHP	2.859	DPA	-23.70	RAP	308.27	ECC	1.1360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 57	2379.23	-1.35	61.34	188.49	137.56	16 53 36	1379.2	16.89	45.25
60.00	17 30 56	2174.46	3.20	47.26	192.86	130.20	18 7 10	1174.5	18.84	28.57
70.00	19 11 27	1878.89	8.14	27.01	196.56	123.28	19 42 46	878.9	20.97	6.03
80.00	21 18 7	1482.39	13.08	359.84	199.49	117.08	21 42 49	482.4	23.11	336.94
90.00	23 18 29	1094.21	16.00	332.71	200.92	113.63	23 36 43	94.2	24.38	308.81
100.00	0 4 54	6244.90	13.08	299.11	199.49	117.08	1 48 59	5244.9	23.11	276.21
110.00	0 14 49	6213.75	8.14	293.83	196.56	123.28	1 58 23	5213.7	20.97	272.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2342	TRA	.1828	TC3	-3.4902	BAU	.3864	SGT	2100.7	SGR	392.5	SG3	1663.1	ST	24.3	SR	13.6	SS	41.8
RDE	-.1300	RRA	.1189	RC3	-.2186	FAU	.26023	RRT	.5853	RRF	.6536	RTF	.8906	CRT	.9931	CRS	-.2800	CST	-.2533
FDE	.0253	FRA	4.9797	FC-27	.2609	BSP	2948	SGB	2137.1	R23	.1483	R13	.8932	LSA	42.8	MSA	26.2	SSA	1.4
BDE	.2679	BRA	.2181	BC3	3.4970	FSP	2858	SG1	2113.5	SG2	316.4	THA	6.38	EL1	27.8	EL2	1.4	ALF	29.04

LAUNCH DATE MAY 16 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 479.036 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.200	GAL	.13	AZL	91.49	HCA	154.58	SMA	184.82	ECC	.18163	INC	1.4919	V1	29.458
RP	214.08	LAP	-.64	LOP	29.08	VP	22.843	GAP	5.17	AZP	88.65	TAL	.84	TAP	155.42	RCA	151.25	APO	218.38	V2	25.645
RC	143.936	GL	-16.96	GP	-3.10	ZAL	95.94	ZAP	94.82	ETS	179.77	ZAE	138.02	ETE	184.01	ZAC	98.54	ETC	274.56	LVI	-10.73

PLANETOCENTRIC CONIC

C3	8.261	VHL	2.874	DLA	-26.99	RAL	339.41	RAD	6637.1	VEL	11.330	PTH	6.38	VHP	2.845	DPA	-24.03	RAP	307.43	ECC	1.1360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 32	2387.33	-1.75	61.68	188.76	137.55	16 53 19	1387.3	16.50	45.63
60.00	17 29 42	2184.74	2.75	47.76	193.08	130.22	18 6 7	1184.7	18.42	29.13
70.00	19 8 48	1893.34	7.60	27.78	196.73	123.40	19 40 21	893.3	20.52	6.90
80.00	21 12 28	1506.25	12.34	1.22	199.55	117.40	21 37 34	506.3	22.56	338.50
90.00	23 8 33	1131.69	14.96	334.99	200.86	114.28	23 27 25	131.9	23.70	311.36
100.00	23 55 19	6268.77	12.34	300.49	199.55	117.40	25 39 48	5268.8	22.56	277.77
110.00	0 12 10	6228.20	7.60	294.60	196.73	123.40	1 55 58	5228.2	20.52	273.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2317	TRA	.2311	TC3	-3.7562	BAU	.4157	SGT	2267.8	SGR	393.2	SG3	1687.1	ST	24.6	SR	13.0	SS	42.5
RDE	-.1241	RRA	.1214	RC3	-.2435	FAU	.26302	RRT	.6246	RRF	.6886	RTF	.9046	CRT	.9933	CRS	-.2782	CST	-.2971
FDE	.0616	FRA	5.1002	FC-27	.5645	BSP	3262	SGB	2301.6	R23	.1449	R13	.9068	LSA	43.7	MSA	25.8	SSA	1.3
BDE	.2629	BRA	.2611	BC3	3.7641	FSP	2896	SG1	2281.3	SG2	305.3	THA	6.29	EL1	27.8	EL2	1.3	ALF	27.83

LAUNCH DATE MAY 16 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 483.228 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.200	GAL	.09	AZL	91.47	HCA	155.76	SMA	184.82	ECC	.18166	INC	1.4726	V1	29.458
RP	214.39	LAP	-.60	LOP	30.26	VP	22.803	GAP	5.00	AZP	88.66	TAL	.57	TAP	156.53	RCA	151.25	APO	218.40	V2	25.609
RC	146.344	GL	-16.74	GP	-3.25	ZAL	96.41	ZAP	92.83	ETS	179.64	ZAE	135.99	ETE	183.94	ZAC	98.46	ETC	274.37	LVI	-10.32

PLANETOCENTRIC CONIC

C3	8.262	VHL	2.874	DLA	-26.60	RAL	339.79	RAD	6637.1	VEL	11.330	PTH	6.38	VHP	2.834	DPA	-24.36	RAP	306.62	ECC	1.1360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 13 2	2396.12	-2.19	62.05	189.04	137.54	16 52 58	1396.1	16.07	46.03
60.00	17 28 20	2195.81	2.26	48.29	193.32	130.25	18 4 56	1195.8	17.97	29.72
70.00	19 5 59	1908.68	7.03	28.59	196.90	123.51	19 37 48	908.7	20.02	7.82
80.00	21 6 47	1530.56	11.58	2.61	199.63	117.72	21 32 18	530.6	21.99	340.07
90.00	22 59 28	1167.18	13.96	337.10	200.84	114.84	23 18 55	167.2	23.02	313.72
100.00	23 49 39	1005.03	11.58	323.98	199.63	117.72	24 6 24	5.0	21.99	301.44
110.00	0 9 22	6243.54	7.03	295.42	196.90	123.51	1 53 25	5243.5	20.02	274.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2264	TRA	.2790	TC3	-4.0252	BAU	.4456	SGT	2438.2	SGR	393.1	SG3	1703.2	ST	24.7	SR	12.4	SS	42.3
RDE	-.1179	RRA	.1227	RC3	-.2723	FAU	.26707	RRT	.6660	RRF	.7197	RTF	.9197	CRT	.9910	CRS	-.2636	CST	-.3307
FDE	.1187	FRA	5.1085	FC-27	.9858	BSP	3598	SGB	2469.7	R23	.1318	R13	.9215	LSA	43.7	MSA	25.3	SSA	1.3
BDE	.2553	BRA	.3047	BC3	4.0344	FSP	2938	SG1	2452.4	SG2	291.5	THA	6.22	EL1	27.6	EL2	1.5	ALF	26.66

LAUNCH DATE MAY 16 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 8 1971

DISTANCE 487.419

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.201 GAL .04 AZL 91.45 HCA 156.94 SMA 184.84 ECC .18173 INC 1.4514 V1 29.458
RP 214.72 LAP -.57 LOP 31.44 VP 22.764 GAP 4.83 AZP 88.66 TAL .28 TAP 157.22 RCA 151.25 APO 218.43 V2 25.573
RC 148.770 GL -16.48 GP -3.41 ZAL 96.90 ZAP 90.88 ETS 179.51 ZAE 133.97 ETE 183.87 ZAC 98.36 ETC 274.18 LVI -9.91

PLANETOCENTRIC CONIC

C3 8.266 VHL 2.875 DLA -26.18 RAL 340.18 RAD 6637.1 VEL 11.330 PTH 6.38 VHP 2.827 DPA -24.70 RAP 305.83 ECC 1.1360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 12 25	2405.62	-2.67	62.44	189.32	137.52	16 52 31	1405.6	15.61	46.46
60.00	17 26 50	2207.71	1.74	48.85	193.56	130.27	18 3 38	1207.7	17.49	30.35
70.00	19 3 0	1924.94	6.41	29.45	197.08	123.62	19 35 5	924.9	19.50	8.78
80.00	21 1 5	1555.38	10.79	4.03	199.72	118.01	21 27 0	555.4	21.38	341.67
90.00	22 50 55	1201.12	12.98	339.10	200.85	115.34	23 10 57	201.1	22.33	315.97
100.00	23 43 56	1029.85	10.79	325.40	199.72	118.01	24 1 6	29.8	21.38	303.03
110.00	0 6 23	6259.79	6.41	296.28	197.08	123.62	1 50 42	5259.8	19.50	275.61

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2250 TRA .3322 TC3-4.3028 BAU .4767 | SGT 2620.5 SGR 402.3 SG3 1735.8 | ST 25.3 SR 12.1 SS 43.7
RDE -.1141 RRA .1275 RC3 -.3013 FAU .26985 | RRT .7014 RRF .7607 RTF .9288 | CRT .9870 CRS -.3368 CST -.4418
FDE .0239 FRA 5.3196 FC-28.2612 BSP 3864 | SGB 2651.2 R23 .1423 R13 .9306 | LSA 45.9 MSA 24.1 SSA 1.3
BDE .2523 BRA .3558 BC3 4.3134 FSP 2837 | SG1 2635.8 SG2 285.1 THA 6.22 | EL1 28.0 EL2 1.8 ALF 25.47

LAUNCH DATE MAY 16 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 10 1971

DISTANCE 491.576

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.203 GAL -.00 AZL 91.43 HCA 158.11 SMA 184.87 ECC .18186 INC 1.4281 V1 29.458
RP 215.04 LAP -.53 LOP 32.61 VP 22.725 GAP 4.66 AZP 88.67 TAL 359.99 TAP 158.10 RCA 151.25 APO 218.49 V2 25.536
RC 151.211 GL -16.20 GP -3.58 ZAL 97.41 ZAP 88.96 ETS 179.37 ZAE 131.98 ETE 183.80 ZAC 98.25 ETC 274.00 LVI -9.49

PLANETOCENTRIC CONIC

C3 8.275 VHL 2.877 DLA -25.73 RAL 340.57 RAD 6637.1 VEL 11.331 PTH 6.38 VHP 2.822 DPA -25.03 RAP 305.06 ECC 1.1362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 11 42	2415.88	-3.19	62.87	189.61	137.49	16 51 58	1415.9	15.11	46.92
60.00	17 25 10	2220.46	1.18	49.46	193.81	130.29	18 2 11	1220.5	16.97	31.02
70.00	18 59 50	1942.15	5.76	30.36	197.27	123.72	19 32 12	942.1	18.93	9.80
80.00	20 55 17	1580.80	9.97	5.48	199.82	118.29	21 21 38	580.8	20.74	343.28
90.00	22 42 43	1234.33	12.01	341.06	200.88	115.80	23 3 17	234.3	21.62	318.15
100.00	23 38 9	1055.27	9.97	326.85	199.82	118.29	23 55 44	55.3	20.74	304.65
110.00	0 3 12	6277.00	5.76	297.18	197.27	123.72	1 47 49	5277.0	18.93	276.62

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.1998 TRA .3836 TC3-4.4250 BAU .4902 | SGT 2712.7 SGR 370.9 SG3 1525.8 | ST 23.9 SR 10.6 SS 46.8
RDE -.0967 RRA .1296 RC3 -.2348 FAU .21705 | RRT .6597 RRF .7438 RTF .8913 | CRT .9791 CRS -.0383 CST -.1977
FDE .7164 FRA 5.3351 FC-22.7084 BSP 4600 | SGB 2737.9 R23 .1990 R13 .8932 | LSA 47.1 MSA 25.5 SSA 1.2
BDE .2219 BRA .4050 BC3 4.4312 FSP 3688 | SG1 2723.8 SG2 277.6 THA 5.21 | EL1 26.1 EL2 2.0 ALF 23.50

LAUNCH DATE MAY 16 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 12 1971

DISTANCE 495.797

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.205 GAL -.05 AZL 91.40 HCA 159.28 SMA 184.91 ECC .18202 INC 1.4021 V1 29.458
RP 215.37 LAP -.50 LOP 33.78 VP 22.687 GAP 4.50 AZP 88.69 TAL 359.68 TAP 158.96 RCA 151.25 APO 218.57 V2 25.499
RC 153.669 GL -15.89 GP -3.77 ZAL 97.94 ZAP 87.07 ETS 179.22 ZAE 130.01 ETE 183.74 ZAC 98.12 ETC 273.83 LVI -9.06

PLANETOCENTRIC CONIC

C3 8.286 VHL 2.879 DLA -25.24 RAL 340.96 RAD 6637.1 VEL 11.331 PTH 6.38 VHP 2.820 DPA -25.37 RAP 304.34 ECC 1.1364

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 10 51	2426.94	-3.74	63.34	189.91	137.46	16 51 18	1426.9	14.57	47.42
60.00	17 23 20	2234.13	.57	50.12	194.05	130.30	18 0 34	1234.1	16.40	31.74
70.00	18 56 27	1960.36	5.08	31.32	197.46	123.82	19 29 8	960.4	18.33	10.87
80.00	20 49 23	1606.92	9.12	6.96	199.92	118.55	21 16 10	606.9	20.07	344.93
90.00	22 34 42	1267.27	11.02	342.97	200.92	116.21	22 55 49	267.3	20.89	320.28
100.00	23 32 15	1081.39	9.12	328.32	199.92	118.55	23 50 16	81.4	20.07	306.30
110.00	23 55 54	1007.18	5.08	320.24	197.46	123.82	24 12 41	7.2	18.33	299.78

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.1984 TRA .4414 TC3-4.8080 BAU .5340 | SGT 2960.0 SGR 404.0 SG3 1715.9 | ST 24.9 SR 10.5 SS 46.0
RDE -.0957 RRA .1352 RC3 -.3407 FAU .26095 | RRT .7585 RRF .8122 RTF .9435 | CRT .9711 CRS -.1960 CST -.3953
FDE .4533 FRA 5.5144 FC-27.2634 BSP 4630 | SGB 2987.4 R23 .1511 R13 .9350 | LSA 47.5 MSA 24.3 SSA 1.2
BDE .2202 BRA .4617 BC3 4.8201 FSP 3077 | SG1 2975.9 SG2 261.9 THA 5.96 | EL1 26.9 EL2 2.3 ALF 22.49

LAUNCH DATE MAY 16 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 14 1971

DISTANCE 499.985

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.208 GAL -.10 AZL 91.37 HCA 160.45 SMA 184.95 ECC .18223 INC 1.3737 V1 29.458
RP 215.71 LAP -.46 LOP 34.95 VP 22.649 GAP 4.34 AZP 88.71 TAL 359.36 TAP 159.81 RCA 151.25 APO 218.66 V2 25.461
RC 156.143 GL -15.55 GP -3.98 ZAL 98.49 ZAP 85.23 ETS 179.06 ZAE 128.06 ETE 183.69 ZAC 97.96 ETC 273.66 LVI -8.63

PLANETOCENTRIC CONIC

C3 8.301 VHL 2.881 DLA -24.71 RAL 341.35 RAD 6637.2 VEL 11.332 PTH 6.39 VHP 2.821 DPA -25.72 RAP 303.64 ECC 1.1366

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 9 50	2438.86	-4.34	63.84	190.20	137.43	16 50 29	1438.9	13.99	47.95
60.00	17 21 18	2248.79	-.07	50.82	194.30	130.30	17 58 47	1248.8	15.80	32.50
70.00	18 52 50	1979.66	4.34	32.33	197.64	123.91	19 25 50	979.7	17.68	11.99
80.00	20 43 19	1633.87	8.24	8.47	200.03	118.80	21 10 33	633.9	19.35	346.61
90.00	22 26 45	1300.29	10.03	344.88	200.98	116.58	22 48 25	300.3	20.12	322.40
100.00	23 26 11	1108.34	8.24	329.84	200.03	118.80	23 44 39	108.3	19.35	307.98
110.00	23 52 16	1026.48	4.34	321.25	197.64	123.91	24 9 23	26.5	17.68	300.90

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.1865 TRA .4944 TC3-5.0550 BAU .5625 | SGT 3129.6 SGR 408.9 SG3 1699.1 | ST 25.0 SR 9.9 SS 46.4
RDE -.0884 RRA .1386 RC3 -.3649 FAU .25724 | RRT .7862 RRF .8380 RTF .9383 | CRT .9612 CRS -.1958 CST -.4340
FDE .5313 FRA 5.5313 FC-26.8281 BSP 4935 | SGB 3156.2 R23 .1546 R13 .9396 | LSA 48.2 MSA 23.7 SSA 1.1
BDE .2064 BRA .5135 BC3 5.0682 FSP 3011 | SG1 3146.1 SG2 251.4 THA 5.90 | EL1 26.8 EL2 2.6 ALF 21.03

LAUNCH DATE MAY 16 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 504.172 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.211	GAL	-.15	AZL	91.34	HCA	161.61	SMA	185.01	ECC	.18248	INC	1.3416	V1	29.458
RP	216.04	LAP	-.42	LOP	36.11	VP	22.611	GAP	4.18	AZP	88.73	TAL	359.03	TAP	160.65	RCA	151.25	APO	218.77	V2	25.424
RC	158.631	GL	-15.16	GP	-4.22	ZAL	99.05	ZAP	83.42	ETS	178.88	ZAE	126.14	ETE	183.65	ZAC	97.78	ETC	273.50	LVI	-8.18

PLANETOCENTRIC CONIC

C3	8.319	VHL	2.884	DLA	-24.14	RAL	341.74	RAD	6637.2	VEL	11.333	PTH	6.39	VHP	2.824	DPA	-26.09	RAP	302.99	ECC	1.1369

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 8 38	2451.73	-4.98	64.38	190.50	137.38	16 49 29	1451.7	13.36	48.53
60.00	17 19 1	2264.53	-.77	51.57	194.55	130.29	17 56 46	1264.5	15.14	33.31
70.00	18 48 57	2000.16	3.56	33.41	197.83	123.99	19 22 17	1000.2	16.99	13.17
80.00	20 37 3	1661.80	7.32	10.03	200.14	119.03	21 4 45	661.8	18.60	348.34
90.00	22 18 47	1333.70	9.00	346.80	201.04	116.92	22 41 1	333.7	19.32	324.52
100.00	23 19 55	1136.27	7.32	331.40	200.14	119.03	23 38 51	136.3	18.60	309.71
110.00	23 48 23	1046.97	3.56	322.33	197.83	123.99	24 5 50	47.0	16.99	302.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1727	TRA	.5502	TC3	-5.3234	BAU	.5937	SGT	3313.9	SGR	421.2	SG3	1706.8	ST	25.3	SR	9.3	SS	47.2
RDE	-.0811	RRA	.1436	RC3	-.4017	FAU	.25841	RRT	.8177	RRF	.8662	RTF	.9441	CRT	.9507	CRS	-.2120	CST	-.4831
FDE	.6020	FRA	5.5917	FC	-26.8924	BSP	5296	SGB	3340.6	R23	.1566	R13	.9453	LSA	49.3	HSA	22.9	SSA	1.1
BDE	.1908	BRA	.5686	BC3	5.3385	FSP	3052	SG1	3331.9	SG2	241.2	THA	5.96	EL1	26.8	EL2	2.7	ALF	19.56

LAUNCH DATE MAY 16 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 508.356 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.215	GAL	-.20	AZL	91.31	HCA	162.77	SMA	185.07	ECC	.18277	INC	1.3054	V1	29.458
RP	216.39	LAP	-.39	LOP	37.27	VP	22.573	GAP	4.02	AZP	88.75	TAL	358.69	TAP	161.47	RCA	151.24	APO	218.90	V2	25.385
RC	161.134	GL	-14.73	GP	-4.47	ZAL	99.63	ZAP	81.65	ETS	178.69	ZAE	124.26	ETE	183.61	ZAC	97.56	ETC	273.35	LVI	-7.72

PLANETOCENTRIC CONIC

C3	8.339	VHL	2.888	DLA	-23.52	RAL	342.13	RAD	6637.2	VEL	11.334	PTH	6.39	VHP	2.829	DPA	-26.47	RAP	302.38	ECC	1.1372

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 12	2465.67	-5.68	64.97	190.79	137.32	16 48 18	1465.7	12.67	49.14
60.00	17 16 28	2281.47	-1.51	52.38	194.79	130.28	17 54 29	1281.5	14.43	34.18
70.00	18 44 44	2021.98	2.73	34.55	198.01	124.06	19 18 26	1022.0	16.24	14.42
80.00	20 30 31	1690.90	6.36	11.66	200.25	119.23	20 58 42	690.9	17.79	350.12
90.00	22 10 41	1367.84	7.94	348.75	201.10	117.23	22 33 29	367.8	18.47	326.67
100.00	23 13 23	1165.37	6.36	333.02	200.25	119.23	23 32 48	165.4	17.79	311.49
110.00	23 44 10	1068.80	2.73	323.47	198.01	124.06	24 1 59	68.8	16.24	303.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1565	TRA	.6078	TC3	-5.5819	BAU	.6242	SGT	3495.6	SGR	436.3	SG3	1705.9	ST	25.6	SR	8.8	SS	48.1
RDE	-.0736	RRA	.1497	RC3	-.4382	FAU	.25741	RRT	.8441	RRF	.8913	RTF	.9482	CRT	.9404	CRS	-.2407	CST	-.5373
FDE	.6705	FRA	5.6569	FC	-26.7235	BSP	5581	SGB	3522.8	R23	.1629	R13	.9494	LSA	50.5	HSA	22.1	SSA	1.1
BDE	.1729	BRA	.6260	BC3	5.5991	FSP	2985	SG1	3515.1	SG2	232.6	THA	6.04	EL1	26.9	EL2	2.8	ALF	18.10

LAUNCH DATE MAY 16 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 512.539 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.219	GAL	-.26	AZL	91.26	HCA	163.93	SMA	185.14	ECC	.18310	INC	1.2645	V1	29.458
RP	216.73	LAP	-.35	LOP	38.43	VP	22.536	GAP	3.86	AZP	88.78	TAL	358.35	TAP	162.28	RCA	151.24	APO	219.04	V2	25.347
RC	163.649	GL	-14.24	GP	-4.77	ZAL	100.24	ZAP	79.93	ETS	178.48	ZAE	122.40	ETE	183.59	ZAC	97.31	ETC	273.21	LVI	-7.25

PLANETOCENTRIC CONIC

C3	8.362	VHL	2.892	DLA	-22.85	RAL	342.50	RAD	6637.2	VEL	11.335	PTH	6.39	VHP	2.837	DPA	-26.87	RAP	301.82	ECC	1.1376

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 31	2480.81	-8.44	65.61	191.06	137.24	16 46 52	1480.8	11.93	49.81
60.00	17 13 35	2299.79	-2.32	53.25	195.02	130.25	17 51 55	1299.8	13.66	35.12
70.00	18 40 8	2045.32	1.84	35.77	198.17	124.11	19 14 14	1045.3	15.43	15.74
80.00	20 23 38	1721.41	5.34	13.35	200.34	119.42	20 52 20	721.4	16.92	351.97
90.00	22 2 20	1403.05	6.84	350.75	201.16	117.51	22 25 43	403.0	17.56	328.85
100.00	23 6 30	1195.88	5.34	334.72	200.34	119.42	23 26 26	195.9	16.92	313.34
110.00	23 39 35	1092.14	1.84	324.69	198.17	124.11	23 57 47	92.1	15.43	304.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1360	TRA	.6613	TC3	-5.8312	BAU	.6540	SGT	3669.8	SGR	491.6	SG3	1689.8	ST	25.7	SR	8.2	SS	48.6
RDE	-.0651	RRA	.1552	RC3	-.4765	FAU	.25508	RRT	.8681	RRF	.9123	RTF	.9521	CRT	.9307	CRS	-.2648	CST	-.5819
FDE	.7669	FRA	5.6376	FC	-26.4100	BSP	5906	SGB	3697.4	R23	.1668	R13	.9532	LSA	51.4	HSA	21.2	SSA	1.0
BDE	.1508	BRA	.6793	BC3	5.8507	FSP	2959	SG1	3690.7	SG2	222.9	THA	6.12	EL1	26.8	EL2	2.9	ALF	16.67

LAUNCH DATE MAY 16 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 516.719 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.224	GAL	-.31	AZL	91.22	HCA	165.08	SMA	185.22	ECC	.18346	INC	1.2167	V1	29.458
RP	217.08	LAP	-.31	LOP	39.58	VP	22.498	GAP	3.71	AZP	88.82	TAL	357.99	TAP	163.07	RCA	151.24	APO	219.20	V2	25.308
RC	166.178	GL	-13.68	GP	-5.10	ZAL	100.85	ZAP	78.25	ETS	178.25	ZAE	120.57	ETE	183.57	ZAC	97.01	ETC	273.08	LVI	-6.74

PLANETOCENTRIC CONIC

C3	8.386	VHL	2.896	DLA	-22.10	RAL	342.85	RAD	6637.2	VEL	11.336	PTH	6.39	VHP	2.847	DPA	-27.30	RAP	301.30	ECC	1.1380

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 3 29	2497.36	-7.27	66.31	191.33	137.15	16 45 7	1497.4	11.11	50.53
60.00	17 10 18	2319.70	-3.19	54.21	195.23	130.20	17 48 57	1319.7	12.82	36.13
70.00	18 35 5	2070.45	.88	37.08	198.32	124.14	19 9 35	1070.5	14.54	17.15
80.00	20 16 18	1753.65	4.26	15.13	200.42	119.58	20 45 32	753.7	15.98	353.91
90.00	21 53 38	1439.72	5.68	352.82	201.20	117.75	22 17 38	439.7	16.59	331.11
100.00	22 59 10	1228.12	4.26	336.50	200.42	119.58	23 19 38	228.1	15.98	315.28
110.00	23 34 31	1117.27	.88	326.00	198.32	124.14	23 53 8	117.3	14.54	306.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1138	TRA	.7180	TC3	-6.0853	BAU	.6847	SGT	3850.1	SGR	473.6	SG3	1679.0	ST	26.1	SR	7.6	SS	49.7
RDE	-.0562	RRA	.1631	RC3	-.5197	FAU	.25258	RRT	.8884	RRF	.9317	RTF	.9545	CRT	.9265	CRS	-.3154	CST	-.6329
FDE	.8599	FRA	5.6708	FC	-26.0763	BSP	6223	SGB	3879.1	R23	.1766	R13	.9556	LSA	52.9	HSA	20.2	SSA	1.0
BDE	.1269	BRA	.7364	BC3	6.1074	FSP	2942	SG1	3873.1	SG2	216.2	THA	6.26	EL1	27.1	EL2	2.8	ALF	15.32

LAUNCH DATE MAY 16 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 24 1971

DISTANCE 520.898

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.229 GAL -.37 AZL 91.16 HCA 166.23 SMA 185.30 ECC .18386 INC 1.1627 V1 29.458
RP 217.43 LAP -.28 LOP 40.73 VP 22.461 GAP 3.55 AZP 88.87 TAL 357.62 TAP 163.85 RCA 151.23 APO 219.37 V2 25.289
RC 168.717 GL -13.04 GP -5.49 ZAL 101.49 ZAP 76.62 ETS 177.99 ZAE 118.77 ETE 183.57 ZAC 96.66 ETC 272.95 LVI -6.21

PLANETOCENTRIC CONIC

C3 8.411 VHL 2.900 DLA -21.28 RAL 343.18 RAD 6637.2 VEL 11.337 PTH 6.39 VHP 2.860 DPA -27.78 RAP 300.84 ECC 1.1384

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 1 4	2515.58	-8.17	67.08	191.57	137.04	16 42 59	1515.6	10.21	51.32
60.00	17 6 31	2341.52	-4.15	55.25	195.42	130.12	17 45 32	1341.5	11.89	37.22
70.00	18 29 27	2097.71	-.16	38.50	198.44	124.15	19 4 25	1097.7	13.58	18.67
80.00	20 8 24	1788.04	3.10	17.03	200.48	119.71	20 38 12	788.0	14.96	355.95
90.00	21 44 25	1478.34	4.45	355.00	201.22	117.96	22 9 3	478.3	15.54	333.45
100.00	22 51 16	1262.51	3.10	338.39	200.48	119.71	23 12 18	262.5	14.96	317.32
110.00	23 28 53	1144.53	-.16	327.42	198.45	124.15	23 47 58	144.5	13.58	307.59

DIFFERENTIAL CORRECTIONS

TDE -.0854 TRA .7772 TC3-6.3254 BAU .7142
RDE -.0465 RRA .1726 RC3 -.5685 FAU .24960
FDE .9614 FRA 5.6949 FC-25.6907 BSP 6560
BDE .0972 BRA .7961 BC3 6.3509 FSP 2915

MID-COURSE EXECUTION ACCURACY

SGT 4025.5 SGR 501.1 SG3 1665.2
RRT .9064 RRF .9483 RTF .9570
SGB 4056.6 R23 .1858 R13 .9581
SG1 4051.1 SG2 210.4 THA 6.45

ORBIT DETERMINATION ACCURACY

ST 26.7 SR 7.2 SS 50.8
CRT .9252 CRS -.3857 CST -.6917
LSA 54.6 MSA 19.0 SSA 1.0
EL1 27.5 EL2 2.6 ALF 14.10

LAUNCH DATE MAY 16 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 26 1971

DISTANCE 525.073

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.234 GAL -.43 AZL 91.10 HCA 167.38 SMA 185.39 ECC .18429 INC 1.0989 V1 29.458
RP 217.79 LAP -.24 LOP 41.87 VP 22.425 GAP 3.40 AZP 88.93 TAL 357.25 TAP 164.62 RCA 151.22 APO 219.55 V2 25.229
RC 171.268 GL -12.30 GP -5.94 ZAL 102.14 ZAP 75.03 ETS 177.69 ZAE 117.01 ETE 183.58 ZAC 96.24 ETC 272.84 LVI -5.62

PLANETOCENTRIC CONIC

C3 8.437 VHL 2.905 DLA -20.35 RAL 343.48 RAD 6637.2 VEL 11.338 PTH 6.39 VHP 2.874 DPA -28.31 RAP 300.43 ECC 1.1389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 7	2535.84	-9.18	67.95	191.79	136.89	16 40 23	1535.8	9.20	52.19
60.00	17 2 7	2365.66	-5.21	56.41	195.58	130.02	17 41 33	1365.7	10.86	38.43
70.00	18 23 6	2127.58	-1.30	40.06	198.54	124.13	18 58 34	1127.6	12.50	20.32
80.00	19 59 44	1825.14	1.85	19.07	200.50	119.81	20 30 9	825.1	13.84	358.13
90.00	21 34 28	1519.57	3.14	357.31	201.22	118.12	21 59 48	519.6	14.39	335.93
100.00	22 42 36	1299.61	1.85	340.43	200.50	119.81	23 4 16	299.6	13.84	319.50
110.00	23 22 32	1174.40	-1.30	328.98	198.54	124.13	23 42 7	174.4	12.50	309.24

DIFFERENTIAL CORRECTIONS

TDE -.0529 TRA .8349 TC3-6.5591 BAU .7432
RDE -.0359 RRA .1837 RC3 -.6224 FAU .24548
FDE 1.0666 FRA 5.6965 FC-25.1879 BSP 6886
BDE .0639 BRA .8549 BC3 6.5886 FSP 2885

MID-COURSE EXECUTION ACCURACY

SGT 4197.1 SGR 534.0 SG3 1644.3
RRT .9210 RRF .9618 RTF .9589
SGB 4230.9 R23 .1966 R13 .9600
SG1 4225.9 SG2 206.7 THA 6.70

ORBIT DETERMINATION ACCURACY

ST 27.5 SR 6.8 SS 52.0
CRT .9317 CRS -.4780 CST -.7499
LSA 56.5 MSA 17.6 SSA .9
EL1 28.2 EL2 2.4 ALF 13.11

LAUNCH DATE MAY 16 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 28 1971

DISTANCE 529.245

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.240 GAL -.49 AZL 91.02 HCA 168.52 SMA 185.48 ECC .18475 INC 1.0207 V1 29.458
RP 218.15 LAP -.20 LOP 43.01 VP 22.388 GAP 3.25 AZP 89.00 TAL 356.86 TAP 165.38 RCA 151.22 APO 219.75 V2 25.189
RC 173.829 GL -11.42 GP -6.47 ZAL 102.81 ZAP 73.50 ETS 177.35 ZAE 115.28 ETE 183.60 ZAC 95.73 ETC 272.73 LVI -4.97

PLANETOCENTRIC CONIC

C3 8.464 VHL 2.909 DLA -19.29 RAL 343.73 RAD 6637.2 VEL 11.339 PTH 6.39 VHP 2.891 DPA -28.91 RAP 300.08 ECC 1.1393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 54 31	2558.67	-10.32	68.93	191.96	136.71	16 37 10	1558.7	8.07	53.17
60.00	16 56 55	2392.72	-6.39	57.72	195.70	129.88	17 36 48	1392.7	9.69	39.76
70.00	18 15 50	2160.76	-2.57	41.79	198.58	124.07	18 51 50	1160.8	11.30	22.13
80.00	19 50 6	1865.74	.47	21.29	200.48	119.85	20 21 11	865.7	12.58	.49
90.00	21 23 34	1564.24	1.70	359.80	201.16	118.23	21 49 38	564.2	13.10	338.58
100.00	22 32 57	1340.21	.47	342.66	200.48	119.85	22 55 18	340.2	12.58	321.86
110.00	23 15 16	1207.58	-2.57	330.71	198.58	124.07	23 35 24	207.6	11.30	311.05

DIFFERENTIAL CORRECTIONS

TDE -.0177 TRA .8867 TC3-6.8167 BAU .7753
RDE -.0239 RRA .1967 RC3 -.6908 FAU .24265
FDE 1.1787 FRA 5.6660 FC-24.8200 BSP 7153
BDE .0298 BRA .9082 BC3 6.8516 FSP 2831

MID-COURSE EXECUTION ACCURACY

SGT 4376.7 SGR 576.4 SG3 1625.0
RRT .9336 RRF .9730 RTF .9606
SGB 4414.5 R23 .2071 R13 .9618
SG1 4409.8 SG2 205.0 THA 7.02

ORBIT DETERMINATION ACCURACY

ST 28.4 SR 6.6 SS 53.2
CRT .9486 CRS -.5896 CST -.8002
LSA 58.5 MSA 16.3 SSA .9
EL1 29.1 EL2 2.0 ALF 12.51

LAUNCH DATE MAY 16 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 30 1971

DISTANCE 533.415

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.246 GAL -.55 AZL 90.93 HCA 169.65 SMA 185.58 ECC .18524 INC .9303 V1 29.458
RP 218.51 LAP -.17 LOP 44.15 VP 22.352 GAP 3.10 AZP 89.08 TAL 356.47 TAP 166.13 RCA 151.21 APO 219.96 V2 25.149
RC 176.400 GL -10.36 GP -7.12 ZAL 103.50 ZAP 72.02 ETS 176.94 ZAE 113.58 ETE 183.65 ZAC 95.10 ETC 272.64 LVI -4.23

PLANETOCENTRIC CONIC

C3 8.490 VHL 2.914 DLA -18.07 RAL 343.92 RAD 6637.3 VEL 11.340 PTH 6.39 VHP 2.911 DPA -29.62 RAP 299.79 ECC 1.1397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 50 3	2584.81	-11.61	70.07	192.09	136.47	16 33 8	1584.8	6.76	54.28
60.00	16 50 41	2423.56	-7.73	59.22	195.76	129.68	17 31 5	1423.6	8.36	41.28
70.00	18 7 21	2198.22	-3.99	43.76	198.57	123.95	18 43 59	1198.2	9.92	24.16
80.00	19 39 8	1910.94	-1.06	23.77	200.40	119.84	20 10 59	910.9	11.16	3.09
90.00	21 11 19	1613.54	.11	2.55	201.05	118.28	21 38 13	613.5	11.65	341.47
100.00	22 22 0	1385.41	-1.06	345.14	200.40	119.84	22 45 5	385.4	11.16	324.46
110.00	23 6 47	1245.04	-3.99	332.67	198.57	123.95	23 27 32	245.0	9.92	313.08

DIFFERENTIAL CORRECTIONS

TDE .0330 TRA .9468 TC3-7.0307 BAU .8027
RDE -.0094 RRA .2139 RC3 -.7668 FAU .23774
FDE 1.3237 FRA 5.6571 FC-24.2443 BSP 7512
BDE .0344 BRA .9706 BC3 7.0724 FSP 2793

MID-COURSE EXECUTION ACCURACY

SGT 4541.5 SGR 629.1 SG3 1600.9
RRT .9436 RRF .9817 RTF .9622
SGB 4584.9 R23 .2169 R13 .9635
SG1 4580.2 SG2 206.4 THA 7.46

ORBIT DETERMINATION ACCURACY

ST 30.2 SR 6.7 SS 55.2
CRT .9646 CRS -.7164 CST -.8615
LSA 61.6 MSA 14.4 SSA .9
EL1 30.9 EL2 1.7 ALF 12.18

LAUNCH DATE MAY 16 1971 FLIGHT TIME 230.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC DISTANCE 537.581 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.252	GAL	-.61	AZL	90.02	HCA	170.79	SMA	185.69	ECC	.18577	INC	.8143	V1	29.456
RP	218.88	LAP	-.13	LOP	45.28	VP	22.315	GAP	2.95	AZP	89.19	TAL	356.07	TAP	166.86	RCA	151.19	APO	220.18	V2	25.109
RC	178.981	GL	-9.06	GP	-7.92	ZAL	104.20	ZAP	70.60	ETS	176.44	ZAE	111.90	ETE	183.73	ZAC	94.33	ETC	272.55	LVI	-3.37

PLANETOCENTRIC CONIC

C3	8.515	VHL	2.918	DLA	-16.62	RAL	344.02	RAD	6637.3	VEL	11.341	PTH	6.39	VHP	2.933	DPA	-30.47	RAP	299.59	ECC	1.1401

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 25	2618.44	-13.12	71.42	192.15	136.16	16 20 0	1615.4	5.23	55.58
60.00	16 43 3	2480.49	-9.29	60.97	195.75	129.39	17 24 3	1459.5	6.80	43.03
70.00	17 57 13	2241.47	-5.63	46.03	198.49	123.74	18 34 34	1241.5	8.32	26.48
80.00	19 26 22	1962.43	-2.80	26.60	200.25	119.74	19 59 4	962.4	9.50	6.01
90.00	20 57 15	1669.26	-1.69	5.66	200.86	118.23	21 25 4	669.3	9.97	344.70
100.00	22 9 14	1436.91	-2.80	347.97	200.25	119.74	22 33 11	436.9	9.50	327.38
110.00	22 56 39	1288.28	-5.63	334.95	198.49	123.74	23 18 8	288.3	8.32	315.40

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0869	TRA	.9990	TC3	-7.2681	BAU	.8332	SGT	4713.0	SGR	696.7	SG3	1574.3	ST	32.5	SR	7.3	SS	57.1
RDE	.0071	RRA	.2350	RC3	-.8623	FAU	.23309	RRT	.9511	RRF	.9882	RTF	.9633	CRT	.9807	CRS	-.8292	CST	-.9094
FDE	1.4566	FRA	5.6180	FC-23	.6987	BSP	7802	SGB	4764.2	R23	.2270	R13	.9647	LSA	64.9	MSA	12.4	SSA	.9
BDE	.0872	BRA	1.0262	BC3	7.3191	FSP	2739	SG1	4759.4	SG2	213.2	THA	8.02	EL1	33.3	EL2	1.4	ALF	12.44

LAUNCH DATE MAY 16 1971 FLIGHT TIME 232.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC DISTANCE 541.745 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.259	GAL	-.68	AZL	90.67	HCA	171.92	SMA	185.80	ECC	.18632	INC	.6633	V1	29.456
RP	219.25	LAP	-.09	LOP	46.41	VP	22.279	GAP	2.80	AZP	89.34	TAL	355.67	TAP	167.59	RCA	151.18	APO	220.42	V2	25.068
RC	181.572	GL	-7.43	GP	-8.93	ZAL	104.92	ZAP	69.24	ETS	175.82	ZAE	110.25	ETE	183.84	ZAC	93.33	ETC	272.47	LVI	-2.32

PLANETOCENTRIC CONIC

C3	8.541	VHL	2.922	DLA	-14.86	RAL	343.99	RAD	6637.3	VEL	11.342	PTH	6.40	VHP	2.960	DPA	-31.52	RAP	299.47	ECC	1.1406

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 7	2652.32	-14.92	75.06	192.12	135.72	16 21 19	1652.3	3.38	57.13
60.00	16 33 26	2502.53	-11.14	63.10	195.65	128.98	17 15 9	1502.5	4.92	45.10
70.00	17 44 47	2292.77	-7.57	48.74	198.30	123.40	18 23 0	1292.8	6.39	29.20
80.00	19 11 4	2022.75	-4.83	29.93	199.99	119.50	19 44 46	1022.8	7.53	9.40
90.00	20 40 33	1734.05	-3.77	9.29	200.57	118.05	21 9 27	734.0	7.97	348.41
100.00	21 53 55	1497.22	-4.83	351.30	199.99	119.50	22 18 53	497.2	7.53	330.77
110.00	22 44 14	1339.59	-7.57	337.66	198.30	123.40	23 6 33	339.6	6.39	318.12

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1412	TRA	1.0347	TC3	-7.5532	BAU	.8700	SGT	4896.2	SGR	786.2	SG3	1546.7	ST	35.0	SR	8.2	SS	57.1
RDE	.0230	RRA	.2581	RC3	-1.0005	FAU	.23196	RRT	.9594	RRF	.9928	RTF	.9670	CRT	.9877	CRS	-.9028	CST	-.9480
FDE	1.5065	FRA	5.4645	FC-23	.5126	BSP	7952	SGB	4958.9	R23	.2242	R13	.9686	LSA	66.7	MSA	10.0	SSA	.9
BDE	.1430	BRA	1.0665	BC3	7.6192	FSP	2593	SG1	4954.0	SG2	219.2	THA	8.77	EL1	36.0	EL2	1.2	ALF	13.07

LAUNCH DATE MAY 16 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 545.904 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.266	GAL	-.75	AZL	90.48	HCA	173.04	SMA	185.92	ECC	.18690	INC	.4708	V1	29.456
RP	219.62	LAP	-.06	LOP	47.54	VP	22.243	GAP	2.66	AZP	89.52	TAL	355.26	TAP	168.30	RCA	151.17	APO	220.66	V2	25.028
RC	184.172	GL	-5.29	GP	-10.26	ZAL	105.69	ZAP	67.98	ETS	175.03	ZAE	108.61	ETE	184.01	ZAC	92.03	ETC	272.40	LVI	-.99

PLANETOCENTRIC CONIC

C3	8.571	VHL	2.928	DLA	-12.63	RAL	343.78	RAD	6637.3	VEL	11.344	PTH	6.40	VHP	2.992	DPA	-32.86	RAP	299.47	ECC	1.1411

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 27 25	2698.58	-17.16	75.17	191.99	135.08	16 12 24	1698.6	1.06	59.06
60.00	16 20 58	2556.16	-13.43	65.80	195.44	128.36	17 3 34	1556.2	2.56	47.68
70.00	17 29 2	2356.09	-9.92	52.13	198.00	122.85	18 8 18	1356.1	3.99	32.54
80.00	18 52 2	2096.28	-7.28	34.01	199.61	119.04	19 26 58	1096.3	5.09	13.49
90.00	20 19 59	1812.49	-6.26	13.70	200.16	117.63	20 50 12	812.5	5.51	352.86
100.00	21 34 53	1570.75	-7.28	355.38	199.61	119.04	22 1 4	570.8	5.09	334.86
110.00	22 28 28	1402.91	-9.92	341.05	198.00	122.85	22 51 51	402.9	3.99	321.45

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2365	TRA	1.0848	TC3	-7.7553	BAU	.8984	SGT	5056.5	SGR	902.5	SG3	1510.4	ST	40.6	SR	10.3	SS	61.0
RDE	.0519	RRA	.2950	RC3	-1.1509	FAU	.22460	RRT	.9630	RRF	.9960	RTF	.9671	CRT	.9930	CRS	-.9597	CST	-.9790
FDE	1.7328	FRA	5.4084	FC-22	.6866	BSP	8330	SGB	5136.4	R23	.2321	R13	.9690	LSA	73.6	MSA	7.2	SSA	1.0
BDE	.2421	BRA	1.1242	BC3	7.8403	FSP	2559	SG1	5130.8	SG2	239.8	THA	9.77	EL1	41.8	EL2	1.2	ALF	14.12

LAUNCH DATE MAY 16 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 550.058 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.273	GAL	-.81	AZL	90.21	HCA	174.17	SMA	186.04	ECC	.18751	INC	.1740	V1	29.458
RP	219.99	LAP	-.02	LOP	48.66	VP	22.208	GAP	2.51	AZP	89.79	TAL	354.84	TAP	169.01	RCA	151.15	APO	220.92	V2	24.987
RC	186.781	GL	-2.36	GP	-12.06	ZAL	106.39	ZAP	66.83	ETS	173.97	ZAE	106.99	ETE	184.26	ZAC	90.24	ETC	272.35	LVI	.76

PLANETOCENTRIC CONIC

C3	8.617	VHL	2.936	DLA	-9.66	RAL	343.28	RAD	6637.3	VEL	11.346	PTH	6.40	VHP	3.033	DPA	-34.67	RAP	299.65	ECC	1.1418

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 14 0	2759.60	-20.08	78.04	191.75	134.09	15 59 59	1759.6	-2.01	61.61
60.00	16 4 4	2626.44	-16.36	69.41	195.11	127.36	16 47 50	1626.4	-.53	51.03
70.00	17 8 5	2438.22	-12.92	56.61	197.57	121.89	17 48 43	1438.2	.86	36.83
80.00	18 27 13	2190.51	-10.35	39.32	199.09	118.16	19 3 43	1190.5	1.91	18.68
90.00	19 53 25	1912.39	-9.38	19.38	199.60	116.80	20 25 17	912.4	2.31	358.46
100.00	21 10 5	1664.98	-10.35	.69	199.09	118.16	21 37 50	665.0	1.91	340.05
110.00	22 7 31	1485.04	-12.92	345.52	197.57	121.89	22 32 16	485.0	.86	325.75

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3496	TRA	1.1116	TC3	-7.9913	BAU	.9339	SGT	5227.0	SGR	1062.3	SG3	1464.9	ST	48.0	SR	13.5	SS	64.7
RDE	.0900	RRA	.3422	RC3	-1.3610	FAU	.21754	RRT	.9653	RRF	.9980	RTF	.9671	CRT	.9944	CRS	-.9856	CST	-.9944
FDE	1.9484	FRA	5.2576	FC-21	.8550	BSP	8559	SGB	5333.8	R23	.2370	R13	.9695	LSA	81.5	MSA	4.3	SSA	1.3
BDE	.3610	BRA	1.1630	BC3	8.1063	FSP	2468	SG1	5326.9	SG2	272.1	THA	11.13	EL1	49.8	EL2	1.4	ALF	15.63

LAUNCH DATE MAY 16 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 9 1972

DISTANCE 554.209

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.280 GAL -.88 AZL 89.83 HCA 175.28 SMA 186.16 ECC .18814 INC .1418 V1 29.458
RP 220.36 LAP .01 LOP 49.78 VP 22.172 GAP 2.36 AZP 90.17 TAL 354.42 TAP 169.70 RCA 151.14 APO 221.19 V2 24.946
RC 189.399 GL 1.90 GP -14.66 ZAL 107.08 ZAP 65.87 ETS 172.47 ZAE 105.34 ETE 184.63 ZAC 87.65 ETC 272.30 LVI 3.23

PLANETOCENTRIC CONIC

C3 8.717 VHL 2.953 DLA -5.46 RAL 342.29 RAD 6637.4 VEL 11.350 PTH 6.40 VHP 3.091 DPA -37.25 RAP 300.08 ECC 1.1435

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 54 20	2846.05	-24.11	82.30	191.44	132.34	15 41 46	1846.1	-6.34	65.24
60.00	15 39 44	2725.29	-20.37	74.70	194.72	125.56	16 25 9	1725.3	-4.88	55.77
70.00	16 38 28	2552.60	-16.93	63.03	197.05	120.11	17 21 0	1552.6	-3.51	42.80
80.00	17 52 41	2320.25	-14.41	46.81	198.46	116.44	18 31 21	1320.3	-2.48	25.81
90.00	19 16 42	2049.16	-13.46	27.35	198.94	115.11	19 50 51	1049.2	-2.09	6.09
100.00	20 35 33	1794.73	-14.41	8.18	198.46	116.44	21 5 27	794.7	-2.48	347.17
110.00	21 37 54	1599.42	-16.93	351.95	197.05	120.11	22 4 34	599.4	-3.51	331.72

DIFFERENTIAL CORRECTIONS

TDE .5353 TRA 1.1383 TC3-8.0993 BAU .9629
RDE .1550 RRA .4123 RC3-1.6326 FAU .20593
FDE 2.2826 FRA 5.0692 FC-20.4515 BSP 9044
BDE .5573 BRA 1.2107 BC3 8.2622 FSP 2406

MID-COURSE EXECUTION ACCURACY

SGT 5373.7 SGR 1290.7 SG3 1401.5
RRT .9670 RRF .9991 RTF .9670
SGB 5526.6 R23 .2383 R13 .9703
SG1 5517.3 SG2 320.4 THA 13.12

ORBIT DETERMINATION ACCURACY

ST 62.1 SR 19.3 SS 71.3
CRT .9936 CRS -.9963 CST -.9987
LSA 96.5 MSA 2.7 SSA 1.4
EL1 65.0 EL2 2.1 ALF 17.21

LAUNCH DATE MAY 16 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 11 1972

DISTANCE 558.355

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.288 GAL -.95 AZL 89.20 HCA 176.40 SMA 186.29 ECC .18880 INC .7954 V1 29.458
RP 220.74 LAP .05 LOP 50.89 VP 22.137 GAP 2.22 AZP 90.80 TAL 353.99 TAP 170.39 RCA 151.12 APO 221.46 V2 24.904
RC 192.025 GL 8.64 GP -18.69 ZAL 107.59 ZAP 65.30 ETS 170.23 ZAE 103.62 ETE 185.23 ZAC 83.63 ETC 272.28 LVI 7.01

PLANETOCENTRIC CONIC

C3 9.004 VHL 3.001 DLA 1.04 RAL 340.39 RAD 6637.5 VEL 11.363 PTH 6.42 VHP 3.189 DPA -41.21 RAP 301.04 ECC 1.1482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 22 57	2981.81	-30.13	89.63	191.47	128.74	15 12 39	1981.8	-13.07	71.10
60.00	15 1 26	2879.45	-26.20	83.56	194.62	121.79	15 49 25	1879.5	-11.56	63.30
70.00	15 52 26	2729.44	-22.64	73.57	196.79	116.28	16 37 56	1729.4	-10.15	52.18
80.00	16 59 37	2519.10	-20.05	58.87	198.05	112.60	17 41 36	1519.1	-9.10	36.85
90.00	18 20 33	2257.90	-19.08	40.09	198.47	111.27	18 58 11	1257.9	-8.71	17.86
100.00	19 42 29	1993.57	-20.05	20.24	198.05	112.60	20 15 42	993.6	-9.10	358.22
110.00	20 51 53	1776.26	-22.64	2.49	196.79	116.28	21 21 29	776.3	-10.15	341.10

DIFFERENTIAL CORRECTIONS

TDE .8285 TRA 1.1250 TC3-8.0626 BAU 1.0005
RDE .2749 RRA .5128 RC3-2.0211 FAU .19115
FDE 2.7197 FRA 4.6840 FC-18.3789 BSP 9509
BDE .8729 BRA 1.2363 BC3 8.3121 FSP 2248

MID-COURSE EXECUTION ACCURACY

SGT 5525.4 SGR 1644.9 SG3 1306.4
RRT .9686 RRF .9997 RTF .9671
SGB 5765.1 R23 .2339 R13 .9719
SG1 5751.6 SG2 393.1 THA 16.16

ORBIT DETERMINATION ACCURACY

ST 85.7 SR 30.1 SS 80.7
CRT .9921 CRS -.9994 CST -.9956
LSA 121.3 MSA 6.0 SSA .4
EL1 90.8 EL2 3.6 ALF 19.26

LAUNCH DATE MAY 16 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 13 1972

DISTANCE 562.496

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.296 GAL -1.02 AZL 88.02 HCA 177.51 SMA 186.42 ECC .18948 INC 1.9628 V1 29.458
RP 221.12 LAP .09 LOP 52.00 VP 22.102 GAP 2.07 AZP 91.98 TAL 353.56 TAP 171.07 RCA 151.10 APO 221.75 V2 24.863
RC 194.659 GL 20.57 GP -25.67 ZAL 107.37 ZAP 65.68 ETS 166.59 ZAE 101.71 ETE 186.27 ZAC 76.65 ETC 272.33 LVI 13.47

PLANETOCENTRIC CONIC

C3 10.070 VHL 3.173 DLA 12.36 RAL 336.49 RAD 6638.1 VEL 11.409 PTH 6.46 VHP 3.401 DPA -48.01 RAP 303.31 ECC 1.1657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 25 8	3230.60	-39.63	105.75	194.13	118.84	14 18 58	2230.6	-24.90	82.91
60.00	13 51 4	3161.59	-34.92	102.32	196.92	111.55	14 43 45	2161.6	-23.05	78.29
70.00	14 27 51	3053.31	-30.68	95.25	198.62	105.80	15 18 45	2053.3	-21.31	70.63
80.00	15 21 48	2884.32	-27.57	83.32	199.50	101.94	16 9 52	1884.3	-20.00	58.47
90.00	16 36 52	2642.04	-26.40	65.77	199.76	100.53	17 20 54	1642.0	-19.50	40.87
100.00	18 4 40	2358.79	-27.57	44.68	199.50	101.94	18 43 58	1358.8	-20.00	19.83
110.00	19 27 18	2100.13	-30.68	24.17	198.62	105.80	20 2 18	1100.1	-21.31	359.55

DIFFERENTIAL CORRECTIONS

TDE 1.3128 TRA .9430 TC3-7.7461 BAU 1.1001
RDE .5332 RRA .6347 RC3-2.6026 FAU .17318
FDE 3.1861 FRA 3.7414 FC-14.6884 BSP 9052
BDE 1.4170 BRA 1.1387 BC3 8.1716 FSP 1773

MID-COURSE EXECUTION ACCURACY

SGT 5729.3 SGR 2243.1 SG3 1127.2
RRT .9685 RRF .9998 RTF .9652
SGB 6152.8 R23 .2298 R13 .9732
SG1 6130.6 SG2 521.7 THA 20.93

ORBIT DETERMINATION ACCURACY

ST 121.6 SR 51.3 SS 90.0
CRT .9911 CRS -1.0000 CST -.9916
LSA 159.4 MSA 10.3 SSA .1
EL1 131.8 EL2 6.3 ALF 22.75

LAUNCH DATE MAY 16 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 15 1972

DISTANCE 566.630

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.304 GAL -1.10 AZL 84.98 HCA 178.61 SMA 186.56 ECC .19019 INC 5.0101 V1 29.458
RP 221.50 LAP .12 LOP 53.11 VP 22.087 GAP 1.93 AZP 95.02 TAL 353.13 TAP 171.74 RCA 151.08 APO 222.04 V2 24.821
RC 197.299 GL 44.34 GP -39.62 ZAL 104.14 ZAP 69.21 ETS 160.69 ZAE 99.30 ETE 188.46 ZAC 62.68 ETC 272.71 LVI 26.06

PLANETOCENTRIC CONIC

C3 16.358 VHL 4.044 DLA 34.40 RAL 326.63 RAD 6641.2 VEL 11.679 PTH 6.71 VHP 4.134 DPA -61.21 RAP 311.30 ECC 1.2692

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	10 57 21	3820.69	-46.64	158.67	212.48	79.29	12 1 1	2820.7	-45.47	123.62
60.00	10 36 40	3875.95	-37.18	160.51	209.36	73.18	11 41 16	2875.9	-40.18	129.80
69.54	9 2 1	4158.30	-21.30	175.65	201.95	62.32	10 11 19	3158.3	-30.80	151.07
69.54	9 2 1	4158.30	-21.30	175.65	201.95	62.32	10 11 19	3158.3	-30.80	151.07
69.54	9 2 1	4158.30	-21.30	175.65	201.95	62.32	10 11 19	3158.3	-30.80	151.07
69.54	9 2 1	4158.30	-21.30	175.65	201.95	62.32	10 11 19	3158.3	-30.80	151.07
69.54	9 2 1	4158.30	-21.30	175.65	201.95	62.32	10 11 19	3158.3	-30.80	151.07

DIFFERENTIAL CORRECTIONS

TDE 2.7945 TRA .4720 TC3-5.1749 BAU 1.2669
RDE 1.5368 RRA .7389 RC3-2.6043 FAU .11706
FDE 3.7369 FRA 1.9334 FC3-6.1953 BSP 9026
BDE 3.1892 BRA .8768 BC3 5.7933 FSP 1022

MID-COURSE EXECUTION ACCURACY

SGT 5818.2 SGR 3284.4 SG3 692.1
RRT .9663 RRF .9995 RTF .9576
SGB 6681.2 R23 .2285 R13 .9735
SG1 6640.0 SG2 740.9 THA 29.01

ORBIT DETERMINATION ACCURACY

ST 198.4 SR 110.5 SS 96.2
CRT .9938 CRS -.9999 CST -.9922
LSA 246.3 MSA 13.8 SSA .0
EL1 226.9 EL2 10.8 ALF 29.04

LAUNCH DATE MAY 16 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 579.045 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.329 GAL -1.33 AZL 96.80 HCA 181.92 SMA 186.99 ECC .19247 INC 6.7957 V1 29.458
RP 222.65 LAP .23 LOP 56.41 VP 21.963 GAP 1.50 AZP 83.20 TAL 351.75 TAP 173.67 RCA 151.00 APO 222.97 V2 24.696
RC 205.250 GL -53.18 GP 30.79 ZAL 103.55 ZAP 63.45 ETS 196.45 ZAE 98.04 ETE 175.78 ZAC 133.00 ETC 273.45 LVI -38.65

PLANETOCENTRIC CONIC

C3 22.859 VHL 4.781 DLA -51.82 RAL 18.83 RAD 6644.1 VEL 11.952 PTH 6.95 VHP 3.710 DPA 7.61 RAP 292.29 ECC 1.3762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.58	22 41 25	1886.32	26.51	43.50	265.72	136.31	23 12 51	886.3	42.68	21.35
44.58	22 41 25	1886.32	26.51	43.50	265.72	136.31	23 12 51	886.3	42.68	21.35
44.58	22 41 25	1886.32	26.51	43.50	265.72	136.31	23 12 51	886.3	42.68	21.35
44.58	22 41 25	1886.32	26.51	43.50	265.72	136.31	23 12 51	886.3	42.68	21.35
44.58	22 41 25	1886.32	26.51	43.50	265.72	136.31	23 12 51	886.3	42.68	21.35
44.58	22 41 25	1886.32	26.51	43.50	265.72	136.31	23 12 51	886.3	42.68	21.35
44.58	22 41 25	1886.32	26.51	43.50	265.72	136.31	23 12 51	886.3	42.68	21.35

DIFFERENTIAL CORRECTIONS

TDE -.7771 TRA 2.4644 TC3-3.9823 BAU 1.3040
RDE -.1574 RRA-1.1860 RC3 1.5317 FAU .14971
FDE .9962 FRA 4.4453 FC3-5.6697 BSP 10117
BDE .7929 BRA 2.7349 BC3 4.2667 FSP 1468

MID-COURSE EXECUTION ACCURACY

SGT 6180.0 SGR 2732.5 SG3 885.7
RRT -.9703 RRF -.9988 RTF .9582
SGB 6757.2 R23 .2480 R13 -.9686
SG1 6729.9 SG2 606.9 THA 156.58

ORBIT DETERMINATION ACCURACY

ST 85.7 SR 35.8 SS 45.7
CRT -.6665 CRS .9863 CST -.5346
LSA 94.2 MSA 42.8 SSA .1
EL1 89.2 EL2 25.6 ALF 162.98

LAUNCH DATE MAY 16 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 583.164 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.337 GAL -1.41 AZL 95.00 HCA 183.01 SMA 187.13 ECC .19326 INC 5.0013 V1 29.458
RP 223.04 LAP .26 LOP 57.50 VP 21.929 GAP 1.36 AZP 85.00 TAL 351.30 TAP 174.31 RCA 150.97 APO 223.30 V2 24.654
RC 207.907 GL -43.37 GP 20.90 ZAL 106.46 ZAP 59.54 ETS 192.16 ZAE 96.87 ETE 177.89 ZAC 123.16 ETC 272.85 LVI -29.61

PLANETOCENTRIC CONIC

C3 16.864 VHL 4.107 DLA -43.86 RAL 10.24 RAD 6641.4 VEL 11.700 PTH 6.73 VHP 3.394 DPA -2.22 RAP 293.46 ECC 1.2775

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 30 55	2068.20	14.16	48.08	238.35	135.91	21 5 23	1068.2	31.07	29.26
54.96	22 43 5	1725.08	26.15	27.52	249.49	126.56	23 11 50	725.1	38.71	2.99
54.96	22 43 5	1725.08	26.15	27.52	249.49	126.56	23 11 50	725.1	38.71	2.99
54.96	22 43 5	1725.08	26.15	27.52	249.49	126.56	23 11 50	725.1	38.71	2.99
54.96	22 43 5	1725.08	26.15	27.52	249.49	126.56	23 11 50	725.1	38.71	2.99
54.96	22 43 5	1725.08	26.15	27.52	249.49	126.56	23 11 50	725.1	38.71	2.99
54.96	22 43 5	1725.08	26.15	27.52	249.49	126.56	23 11 50	725.1	38.71	2.99

DIFFERENTIAL CORRECTIONS

TDE -.7097 TRA 2.3870 TC3-5.2647 BAU 1.2255
RDE -.0331 RRA -.8129 RC3 1.3536 FAU .17322
FDE .6614 FRA 5.3634 FC3-8.8926 BSP 10617
BDE .7105 BRA 2.5217 BC3 5.4360 FSP 1869

MID-COURSE EXECUTION ACCURACY

SGT 6404.2 SGR 1926.8 SG3 1099.4
RRT -.9747 RRF -.9988 RTF .9646
SGB 6687.8 R23 .2445 R13 -.9692
SG1 6675.0 SG2 413.2 THA 163.59

ORBIT DETERMINATION ACCURACY

ST 85.4 SR 23.8 SS 47.7
CRT -.7544 CRS .9820 CST -.6168
LSA 93.6 MSA 37.2 SSA .1
EL1 87.3 EL2 15.3 ALF 167.76

LAUNCH DATE MAY 16 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC DISTANCE 587.276 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.346 GAL -1.49 AZL 94.16 HCA 184.10 SMA 187.29 ECC .19408 INC 4.1593 V1 29.458
RP 223.42 LAP .30 LOP 58.58 VP 21.895 GAP 1.22 AZP 85.85 TAL 350.84 TAP 174.94 RCA 150.94 APO 223.63 V2 24.612
RC 210.566 GL -37.63 GP 15.60 ZAL 108.32 ZAP 57.38 ETS 189.50 ZAE 95.61 ETE 178.93 ZAC 117.87 ETC 272.65 LVI -24.74

PLANETOCENTRIC CONIC

C3 14.783 VHL 3.845 DLA -38.78 RAL 6.66 RAD 6640.4 VEL 11.612 PTH 6.65 VHP 3.305 DPA -7.46 RAP 294.20 ECC 1.2433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 20 3	2211.48	7.07	54.30	227.40	137.17	19 56 54	1211.5	24.78	37.11
60.00	21 35 43	1849.06	17.14	31.08	236.68	127.05	22 6 32	849.1	30.69	9.24
62.27	23 0 42	1606.97	24.54	16.13	242.02	121.03	23 27 29	607.0	35.07	351.12
62.27	23 0 42	1606.97	24.54	16.13	242.02	121.03	23 27 29	607.0	35.07	351.12
62.27	23 0 42	1606.97	24.54	16.13	242.02	121.03	23 27 29	607.0	35.07	351.12
62.27	23 0 42	1606.97	24.54	16.13	242.02	121.03	23 27 29	607.0	35.07	351.12
62.27	23 0 42	1606.97	24.54	16.13	242.02	121.03	23 27 29	607.0	35.07	351.12

DIFFERENTIAL CORRECTIONS

TDE -.5913 TRA 2.3665 TC3-6.0905 BAU 1.2245
RDE -.0171 RRA -.6191 RC3 1.1373 FAU .17913
FDE .7115 FRA 5.6863 FC-10.4905 BSP 10679
BDE .5915 BRA 2.4461 BC3 6.1958 FSP 2019

MID-COURSE EXECUTION ACCURACY

SGT 6570.9 SGR 1471.8 SG3 1173.1
RRT -.9748 RRF -.9981 RTF .9642
SGB 6733.7 R23 .2512 R13 -.9668
SG1 6726.1 SG2 320.7 THA 167.65

ORBIT DETERMINATION ACCURACY

ST 81.2 SR 17.8 SS 49.1
CRT -.7988 CRS .9709 CST -.6315
LSA 89.6 MSA 35.9 SSA .1
EL1 82.5 EL2 10.6 ALF 169.88

LAUNCH DATE MAY 16 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 591.390 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.355 GAL -1.57 AZL 93.68 HCA 185.18 SMA 187.44 ECC .19492 INC 3.6746 V1 29.458
RP 223.81 LAP .33 LOP 59.67 VP 21.861 GAP 1.07 AZP 86.34 TAL 350.38 TAP 175.56 RCA 150.90 APO 223.98 V2 24.571
RC 213.227 GL -33.89 GP 12.37 ZAL 109.70 ZAP 55.84 ETS 187.77 ZAE 94.36 ETE 179.53 ZAC 114.64 ETC 272.58 LVI -21.78

PLANETOCENTRIC CONIC

C3 13.832 VHL 3.719 DLA -35.29 RAL 4.88 RAD 6640.0 VEL 11.571 PTH 6.62 VHP 3.280 DPA -10.66 RAP 294.74 ECC 1.2276

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 45 13	2293.11	2.98	57.74	222.45	137.51	19 23 26	1293.1	21.00	41.19
60.00	20 29 40	2014.92	10.15	39.52	229.25	129.21	21 3 15	1014.9	25.01	19.60
67.96	23 23 20	1504.82	22.98	6.90	238.04	117.54	23 48 25	504.8	32.26	341.85
67.96	23 23 20	1504.82	22.98	6.90	238.04	117.54	23 48 25	504.8	32.26	341.85
67.96	23 23 20	1504.82	22.98	6.90	238.04	117.54	23 48 25	504.8	32.26	341.85
67.96	23 23 20	1504.82	22.98	6.90	238.04	117.54	23 48 25	504.8	32.26	341.85
67.96	23 23 20	1504.82	22.98	6.90	238.04	117.54	23 48 25	504.8	32.26	341.85

DIFFERENTIAL CORRECTIONS

TDE -.4607 TRA 2.4118 TC3-6.5662 BAU 1.2272
RDE -.0096 RRA -.5024 RC3 .9611 FAU .18074
FDE .8027 FRA 5.7728 FC-11.3120 BSP 11083
BDE .4608 BRA 2.4636 BC3 6.6362 FSP 2035

MID-COURSE EXECUTION ACCURACY

SGT 6714.0 SGR 1187.6 SG3 1194.2
RRT -.9779 RRF -.9970 RTF .9678
SGB 6818.2 R23 .2356 R13 -.9693
SG1 6813.8 SG2 244.7 THA 170.17

ORBIT DETERMINATION ACCURACY

ST 77.3 SR 14.3 SS 49.6
CRT -.8629 CRS .9527 CST -.6688
LSA 86.7 MSA 33.6 SSA .2
EL1 78.3 EL2 7.1 ALF 170.86

LAUNCH DATE MAY 16 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 29 1972

HELIOCENTRIC CONIC DISTANCE 595.491 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.364 GAL -1.65 AZL 93.36 HCA 186.26 SMA 187.60 ECC .19579 INC 3.3565 V1 29.458
RP 224.20 LAP .37 LOP 60.75 VP 21.827 GAP .93 AZP 86.66 TAL 349.91 TAP 176.17 RCA 150.87 APO 224.32 V2 24.529
RC 215.890 GL -31.24 GP 10.20 ZAL 110.85 ZAP 54.58 ETS 186.57 ZAE 93.14 ETE 179.91 ZAC 112.48 ETC 272.55 LVI -19.82

PLANETOCENTRIC CONIC

C3 13.348 VHL 3.653 DLA -32.70 RAL 3.96 RAD 6639.7 VEL 11.551 PTH 6.60 VHP 3.279 DPA -12.78 RAP 295.17 ECC 1.2197

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 24 3	2350.83	.08	60.15	219.80	137.58	19 3 14	1350.8	18.26	43.94
60.00	19 56 34	2104.57	6.26	43.90	225.71	129.89	20 31 39	1104.6	21.61	24.74
70.00	22 16 16	1693.03	14.90	16.86	231.97	121.09	22 44 29	693.0	26.36	354.29
72.86	23 49 23	1406.15	21.64	358.50	235.76	115.13	24 12 49	406.2	30.07	333.51
72.86	23 49 23	1406.15	21.64	358.50	235.76	115.13	24 12 49	406.2	30.07	333.51
72.86	23 49 23	1406.15	21.64	358.50	235.76	115.13	24 12 49	406.2	30.07	333.51
110.00	3 19 38	6027.89	14.90	283.69	231.97	121.09	5 0 6	5027.9	26.36	261.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3441 TRA 2.4849 TC3-6.8669 BAU 1.2337 SGT 6849.2 SGR 998.1 SG3 1197.1 ST 74.9 SR 12.2 SS 52.1
RDE -.0097 RRA -.4344 RC3 .7989 FAU .17423 RRT -.9756 RRF -.9948 RTF .9648 CRT -.9080 CRS .9263 CST -.6838
FDE 1.0167 FRA 5.9087 FC-11.3006 BSP 11591 SGB 6921.6 R23 .2394 R13 -.9659 LSA 85.7 MSA 33.6 SSA .2
BDE .3443 BRA 2.5226 BC3 6.9132 FSP 2147 SG1 6918.2 SG2 217.1 THA 171.90 EL1 75.7 EL2 5.1 ALF 171.55

LAUNCH DATE MAY 16 1971 FLIGHT TIME 260.00 ARRIVAL DATE JAN 31 1972

HELIOCENTRIC CONIC DISTANCE 599.591 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.374 GAL -1.73 AZL 93.13 HCA 187.34 SMA 187.75 ECC .19667 INC 3.1330 V1 29.458
RP 224.59 LAP .40 LOP 61.82 VP 21.794 GAP .79 AZP 86.89 TAL 349.43 TAP 176.77 RCA 150.83 APO 224.68 V2 24.487
RC 218.554 GL -29.26 GP 8.66 ZAL 111.86 ZAP 53.46 ETS 185.70 ZAE 91.94 ETE 180.18 ZAC 110.93 ETC 272.55 LVI -18.45

PLANETOCENTRIC CONIC

C3 13.096 VHL 3.619 DLA -30.67 RAL 3.48 RAD 6639.6 VEL 11.540 PTH 6.59 VHP 3.289 DPA -14.29 RAP 295.56 ECC 1.2155

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 9 50	2395.46	-2.16	62.02	218.28	137.54	18 49 45	1395.5	16.10	46.00
60.00	19 35 30	2167.52	3.50	46.93	223.72	130.17	20 11 37	1167.5	19.12	28.20
70.00	21 33 53	1819.16	10.36	23.80	228.82	122.73	22 4 12	819.2	22.81	2.37
77.60	0 23 57	1300.09	20.49	349.91	234.40	113.34	0 45 37	300.1	28.30	325.01
77.60	0 23 57	1300.09	20.49	349.91	234.40	113.34	0 45 37	300.1	28.30	325.01
77.60	0 23 57	1300.09	20.49	349.91	234.40	113.34	0 45 37	300.1	28.30	325.01
110.00	2 37 15	6154.02	10.36	290.63	228.82	122.73	4 19 49	5154.0	22.81	269.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2521 TRA 2.5589 TC3-7.1002 BAU 1.2489 SGT 6982.5 SGR 862.0 SG3 1187.4 ST 73.8 SR 10.6 SS 53.3
RDE -.0032 RRA -.3836 RC3 .6832 FAU .17013 RRT -.9744 RRF -.9916 RTF .9646 CRT -.9553 CRS .8874 CST -.7126
FDE 1.1424 FRA 5.9347 FC-11.2464 BSP 11948 SGB 7035.5 R23 .2268 R13 -.9654 LSA 85.7 MSA 32.5 SSA .3
BDE .2521 BRA 2.5874 BC3 7.1330 FSP 2155 SG1 7032.9 SG2 192.4 THA 173.14 EL1 74.5 EL2 3.1 ALF 172.16

LAUNCH DATE MAY 16 1971 FLIGHT TIME 262.00 ARRIVAL DATE FEB 2 1972

HELIOCENTRIC CONIC DISTANCE 603.687 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.383 GAL -1.81 AZL 92.97 HCA 188.41 SMA 187.91 ECC .19757 INC 2.9666 V1 29.458
RP 224.98 LAP .43 LOP 62.90 VP 21.761 GAP .65 AZP 87.06 TAL 348.96 TAP 177.37 RCA 150.79 APO 225.04 V2 24.445
RC 221.219 GL -27.71 GP 7.50 ZAL 112.79 ZAP 52.44 ETS 185.05 ZAE 90.77 ETE 180.37 ZAC 109.77 ETC 272.37 LVI -17.44

PLANETOCENTRIC CONIC

C3 12.978 VHL 3.602 DLA -29.02 RAL 3.29 RAD 6639.5 VEL 11.535 PTH 6.58 VHP 3.306 DPA -15.40 RAP 295.91 ECC 1.2136

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 59 39	2432.07	-4.00	63.55	217.42	137.45	18 40 11	1432.1	14.32	47.65
60.00	19 20 41	2216.48	1.35	49.27	222.56	130.28	19 57 38	1216.5	17.13	30.81
70.00	21 8 48	1898.48	7.41	28.05	227.11	123.44	21 40 27	898.5	20.35	7.21
80.00	23 37 57	1431.24	14.65	356.85	231.34	116.31	24 1 49	431.2	24.23	333.55
83.18	1 6 3	1161.09	19.50	339.15	233.61	111.93	1 25 24	161.1	26.83	314.34
100.00	2 24 45	6193.75	14.65	296.12	231.34	116.31	4 7 59	5193.8	24.23	272.83
110.00	2 12 11	6233.34	7.41	294.87	227.11	123.44	3 56 4	5233.3	20.35	274.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1835 TRA 2.6265 TC3-7.3150 BAU 1.2734 SGT 7119.3 SGR 760.7 SG3 1171.6 ST 73.6 SR 9.4 SS 53.6
RDE .0061 RRA -.3446 RC3 .5981 FAU .16795 RRT -.9728 RRF -.9871 RTF .9658 CRT -.9883 CRS .8314 CST -.7399
FDE 1.2089 FRA 5.8961 FC-11.2038 BSP 12133 SGB 7159.9 R23 .2036 R13 -.9661 LSA 86.1 MSA 31.0 SSA .3
BDE .1836 BRA 2.6490 BC3 7.3394 FSP 2104 SG1 7157.7 SG2 175.3 THA 174.06 EL1 74.1 EL2 1.4 ALF 172.77

LAUNCH DATE MAY 16 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 4 1972

HELIOCENTRIC CONIC DISTANCE 607.777 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.392 GAL -1.90 AZL 92.84 HCA 189.48 SMA 188.08 ECC .19849 INC 2.8371 V1 29.458
RP 225.37 LAP .47 LOP 63.97 VP 21.728 GAP .50 AZP 87.20 TAL 348.49 TAP 177.97 RCA 150.75 APO 225.41 V2 24.403
RC 223.884 GL -26.46 GP 6.61 ZAL 113.66 ZAP 51.48 ETS 184.53 ZAE 89.63 ETE 180.50 ZAC 108.86 ETC 272.60 LVI -16.68

PLANETOCENTRIC CONIC

C3 12.945 VHL 3.598 DLA -27.63 RAL 3.27 RAD 6639.5 VEL 11.533 PTH 6.58 VHP 3.326 DPA -16.25 RAP 296.25 ECC 1.2130

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 52 3	2463.41	-5.57	64.87	216.96	137.33	18 33 6	1463.4	12.79	49.04
60.00	19 9 39	2256.97	-.43	51.21	221.89	130.30	19 47 16	1257.0	15.46	32.92
70.00	20 51 17	1958.12	5.16	31.20	226.11	123.81	21 23 55	958.1	18.40	10.73
80.00	23 0 28	1553.67	10.84	3.94	229.54	117.99	23 26 22	553.7	21.42	341.56
90.00	1 9 14	1151.10	14.42	336.14	231.36	114.59	1 28 25	151.1	23.33	312.65
100.00	1 47 16	1028.14	10.84	325.30	229.54	117.99	2 4 24	28.1	21.42	302.92
110.00	1 54 39	1004.93	5.16	320.12	226.11	123.81	2 11 24	4.9	18.40	299.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1245 TRA 2.6985 TC3-7.4953 BAU 1.3003 SGT 7256.4 SGR 683.7 SG3 1153.6 ST 73.9 SR 8.6 SS 54.2
RDE .0149 RRA -.3163 RC3 .5267 FAU .16484 RRT -.9688 RRF -.9808 RTF .9653 CRT -.9990 CRS .7592 CST -.7609
FDE 1.2788 FRA 5.8668 FC-11.0247 BSP 12279 SGB 7288.5 R23 .1818 R13 -.9657 LSA 87.0 MSA 30.1 SSA .4
BDE .1254 BRA 2.7170 BC3 7.5137 FSP 2062 SG1 7286.5 SG2 168.7 THA 174.78 EL1 74.4 EL2 .4 ALF 173.34

LAUNCH DATE MAY 16 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 6 1972

HELIOCENTRIC CONIC DISTANCE 611.862 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.402	GAL	-1.99	AZL	92.74	HCA	190.55	SMA	188.24	ECC	.19942	INC	2.7348	V1	29.458
RP	225.76	LAP	.50	LOP	65.03	VP	21.695	GAP	.36	AZP	87.31	TAL	348.01	TAP	178.55	RCA	150.70	APO	225.78	V2	24.361
RC	226.850	GL	-25.42	GP	5.90	ZAL	114.49	ZAP	50.56	ETS	184.12	ZAE	88.51	ETE	180.61	ZAC	108.14	ETC	272.64	LVI	-16.10

PLANETOCENTRIC CONIC

C3	12.969	VHL	3.601	DLA	-26.42	RAL	3.38	RAD	6639.5	VEL	11.534	PTH	6.58	VHP	3.349	DPA	-16.92	RAP	296.59	ECC	1.2134

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 46 11	2491.04	-6.95	66.04	216.78	137.19	18 27 42	1491.0	11.42	50.25
60.00	19 1 5	2291.78	-1.96	52.67	221.55	130.26	19 39 17	1291.8	14.00	34.71
70.00	20 38 5	2006.58	3.32	33.74	225.55	124.01	21 11 32	1006.6	16.77	13.54
80.00	22 37 39	1632.33	8.29	8.38	228.60	118.79	23 4 52	632.3	19.40	346.52
90.00	0 32 56	1273.21	10.85	343.32	229.95	116.28	0 54 10	273.2	20.75	320.67
100.00	1 24 27	1106.80	8.29	329.75	228.60	118.79	1 42 54	106.8	19.40	307.88
110.00	1 41 27	1053.40	3.32	322.66	225.55	124.01	1 59 1	53.4	16.77	302.45

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.0610	TRA	2.7858	TC3-7.6159	BAU 1.3229	SGT	7388.6	SGR	623.9 SG3 1134.5	ST	74.8	SR	8.1 SS 54.9
RDE	.0230	RRA	-.2955	RC3 .4651	FAU .16093	RRT	-.9631	RRF	-.9726 RTF .9652	CRT	-.9856	CRS	.6740 CST -.7846
FDE	1.3525	FRA	5.8475	FC-10.7426	BSP 12547	SGB	7414.9	R23	.1578 R13 -.9655	LSA	88.5	MSA	29.0 SSA .4
BDE	.0652	BRA	2.8014	BC3 7.6301	FSP 2032	SG1	7413.0	SG2	167.3 THA 175.35	EL1	75.3	EL2	1.4 ALF 173.91

LAUNCH DATE MAY 16 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 8 1972

HELIOCENTRIC CONIC DISTANCE 615.941 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.411	GAL	-2.07	AZL	92.65	HCA	191.61	SMA	188.41	ECC	.20038	INC	2.6516	V1	29.458
RP	226.15	LAP	.53	LOP	66.09	VP	21.663	GAP	.22	AZP	87.40	TAL	347.52	TAP	179.13	RCA	150.65	APO	226.16	V2	24.319
RC	229.216	GL	-24.53	GP	5.32	ZAL	115.29	ZAP	49.71	ETS	183.78	ZAE	87.42	ETE	180.69	ZAC	107.54	ETC	272.69	LVI	-15.65

PLANETOCENTRIC CONIC

C3	13.035	VHL	3.610	DLA	-25.35	RAL	3.57	RAD	6639.6	VEL	11.537	PTH	6.58	VHP	3.373	DPA	-17.45	RAP	296.94	ECC	1.2145

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 41 33	2519.98	-8.19	67.10	216.78	137.03	18 23 29	1516.0	10.19	51.34
60.00	18 54 15	2322.62	-3.32	54.35	221.44	130.19	19 32 57	1322.6	12.69	36.27
70.00	20 27 41	2047.90	1.74	35.90	225.28	124.11	21 1 49	1047.9	15.34	15.88
80.00	22 21 8	1692.84	6.29	11.76	228.09	119.25	22 49 21	692.8	17.73	350.24
90.00	0 10 47	1351.84	8.44	347.84	229.25	117.09	0 33 19	351.8	18.87	325.67
100.00	1 7 55	1167.31	6.29	333.13	228.09	119.25	1 27 23	167.3	17.73	311.61
110.00	1 31 3	1094.72	1.74	324.82	225.28	124.11	1 49 18	94.7	15.34	304.80

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.0023	TRA	2.8780	TC3-7.7056	BAU 1.3448	SGT	7516.6	SGR	576.2 SG3 1113.9	ST	76.3	SR	7.8 SS 55.7
RDE	.0308	RRA	-.2796	RC3 .4121	FAU .15662	RRT	-.9552	RRF	-.9621 RTF .9648	CRT	-.9473	CRS	.5772 CST -.8058
FDE	1.4298	FRA	5.8258	FC-10.4019	BSP 12848	SGB	7538.7	R23	.1352 R13 -.9651	LSA	90.5	MSA	28.2 SSA .5
BDE	.0309	BRA	2.8916	BC3 7.7166	FSP 2010	SG1	7536.7	SG2	170.2 THA 175.81	EL1	76.6	EL2	2.5 ALF 174.48

LAUNCH DATE MAY 16 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 10 1972

HELIOCENTRIC CONIC DISTANCE 620.015 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.421	GAL	-2.16	AZL	92.58	HCA	192.67	SMA	188.58	ECC	.20135	INC	2.5819	V1	29.458
RP	226.55	LAP	.57	LOP	67.15	VP	21.630	GAP	.07	AZP	87.48	TAL	347.04	TAP	179.71	RCA	150.60	APO	226.55	V2	24.278
RC	231.880	GL	-23.75	GP	4.83	ZAL	116.07	ZAP	48.88	ETS	183.50	ZAE	86.35	ETE	180.76	ZAC	107.05	ETC	272.75	LVI	-15.30

PLANETOCENTRIC CONIC

C3	13.133	VHL	3.624	DLA	-24.38	RAL	3.82	RAD	6639.6	VEL	11.541	PTH	6.59	VHP	3.398	DPA	-17.88	RAP	297.29	ECC	1.2161

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 49	2538.89	-9.33	68.08	216.92	136.87	18 20 8	1538.9	9.05	52.32
60.00	18 48 39	2350.53	-4.55	55.69	221.49	130.09	19 27 49	1350.5	11.51	37.67
70.00	20 19 13	2084.26	.35	37.80	225.20	124.15	20 53 57	1084.3	14.06	17.92
80.00	22 8 16	1742.97	4.62	14.54	227.85	119.53	22 37 19	743.0	16.30	353.27
90.00	23 50 39	1412.75	6.54	351.30	228.90	117.58	24 14 12	412.7	17.31	329.45
100.00	0 55 3	1217.44	4.62	335.91	227.85	119.53	1 15 21	217.4	16.30	314.64
110.00	1 22 35	1131.07	.35	326.72	225.20	124.15	1 41 26	131.1	14.06	306.84

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.0567	TRA	2.9677	TC3-7.7950	BAU 1.3702	SGT	7646.1	SGR	538.2 SG3 1092.8	ST	77.9	SR	7.6 SS 56.2
RDE	.0393	RRA	-.2668	RC3 .3683	FAU .15295	RRT	-.9450	RRF	-.9492 RTF .9646	CRT	-.8870	CRS	.4712 CST -.8233
FDE	1.4852	FRA	5.7913	FC-10.0825	BSP 13049	SGB	7665.0	R23	.1137 R13 -.9647	LSA	92.4	MSA	27.4 SSA .5
BDE	.0690	BRA	2.9797	BC3 7.8037	FSP 1967	SG1	7663.0	SG2	175.7 THA 176.19	EL1	78.2	EL2	3.5 ALF 175.03

LAUNCH DATE MAY 16 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 12 1972

HELIOCENTRIC CONIC DISTANCE 624.081 EARTH TO MARS

RL	151.25	LAL	.00	LOL	234.49	VL	32.431	GAL	-2.25	AZL	92.52	HCA	193.72	SMA	188.74	ECC	.20235	INC	2.5234	V1	29.458
RP	226.94	LAP	.60	LOP	68.20	VP	21.598	GAP	-.07	AZP	87.55	TAL	346.56	TAP	180.28	RCA	150.55	APO	226.94	V2	24.236
RC	234.543	GL	-23.07	GP	4.43	ZAL	116.84	ZAP	48.09	ETS	183.26	ZAE	85.30	ETE	180.81	ZAC	106.62	ETC	272.81	LVI	-15.03

PLANETOCENTRIC CONIC

C3	13.257	VHL	3.641	DLA	-23.49	RAL	4.12	RAD	6639.7	VEL	11.547	PTH	6.59	VHP	3.424	DPA	-18.24	RAP	297.66	ECC	1.2182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 34 47	2560.26	-10.39	69.00	217.17	136.70	18 17 27	1560.3	7.99	53.24
60.00	18 43 58	2376.23	-5.67	56.92	221.67	129.97	19 23 35	1376.2	10.40	38.95
70.00	20 12 9	2117.02	-.90	39.51	225.28	124.14	20 47 26	1117.0	12.88	19.74
80.00	21 57 48	1786.34	3.16	16.93	227.80	119.71	22 27 35	786.3	15.01	355.85
90.00	23 37 53	1463.55	4.93	354.17	228.78	117.88	24 2 16	463.6	15.95	332.56
100.00	0 44 36	1260.81	3.16	338.30	227.80	119.71	1 5 37	260.8	15.01	317.22
110.00	1 15 31	1163.84	-.90	328.43	225.28	124.14	1 34 55	163.8	12.88	308.65

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.1152	TRA	3.0675	TC3-7.8497	BAU 1.3925	SGT	7772.3	SGR	507.8 SG3 1071.8	ST	79.9	SR	7.6 SS 56.9
RDE	.0474	RRA	-.2573	RC3 .3290	FAU .14871	RRT	-.9323	RRF	-.9338 RTF .9641	CRT	-.8093	CRS	.3649 CST -.8406
FDE	1.5458	FRA	5.7689	FC3-9.7114	BSP 13337	SGB	7788.8	R23	.0954 R13 -.9642	LSA	94.7	MSA	26.6 SSA .6
BDE	.1246	BRA	3.0782	BC3 7.8566	FSP 1941	SG1	7786.7	SG2	183.4 THA 176.51	EL1	80.2	EL2	4.5 ALF 175.58

LAUNCH DATE MAY 16 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 14 1972

HELIOCENTRIC CONIC DISTANCE 628.144 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.441 GAL -2.34 AZL 92.47 HCA 194.77 SMA 188.92 ECC .20335 INC 2.4730 V1 29.458
RP 227.33 LAP .63 LOP 69.25 VP 21.566 GAP -.21 AZP 87.61 TAL 346.07 TAP 180.84 RCA 150.50 APO 227.33 V2 24.195
RC 237.203 GL -22.46 GP 4.08 ZAL 117.59 ZAP 47.32 ETS 183.05 ZAE 84.27 ETE 180.85 ZAC 106.26 ETC 272.88 LVI -14.82

PLANETOCENTRIC CONIC

C3 13.402 VHL 3.661 DLA -22.66 RAL 4.46 RAD 6639.8 VEL 11,553 PTH 6.60 VHP 3.450 DPA -18.53 RAP 298.03 ECC 1.2208

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 32 16	2580.41	-11.39	69.88	217.50	136.51	18 15 16	1580.4	6.98	54.09
60.00	18 40 1	2400.22	-6.72	58.08	221.94	129.83	19 20 1	1400.2	9.37	40.13
70.00	20 6 8	2147.06	-2.05	41.08	225.46	124.10	20 41 55	1147.1	11.80	21.39
80.00	21 49 3	1824.96	1.85	19.06	227.90	119.81	22 19 28	825.0	13.84	356.12
90.00	23 27 24	1507.75	3.51	356.65	228.81	118.08	23 52 32	507.7	14.72	335.22
100.00	0 35 51	1299.43	1.85	340.42	227.90	119.81	0 57 30	299.4	13.84	319.49
110.00	1 9 30	1193.88	-2.05	330.00	225.46	124.10	1 29 24	193.9	11.80	310.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1695 TRA 3.1660 TC3-7.9002 BAU 1.4165 SGT 7897.0 SGR 483.3 SG3 1050.3 ST 82.1 SR 7.7 SS 57.4
RDE .0557 RRA -.2497 RC3 .2949 FAU .14464 RRT -.9170 RRF -.9159 RTF .9635 CRT -.7214 CRS .2600 CST -.8548
FDE 1.5976 FRA 5.7388 FC3-9.3432 BSP 13573 SGB 7911.7 R23 .0798 R13 -.9636 LSA 97.0 MSA 26.0 SSA .6
BDE .1784 BRA 3.1758 BC3 7.9057 FSP 1905 SG1 7909.4 SG2 192.4 THA 176.79 EL1 82.3 EL2 5.3 ALF 176.11

LAUNCH DATE MAY 16 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 16 1972

HELIOCENTRIC CONIC DISTANCE 632.200 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.451 GAL -2.43 AZL 92.43 HCA 195.82 SMA 189.09 ECC .20438 INC 2.4290 V1 29.458
RP 227.72 LAP .66 LOP 70.30 VP 21.535 GAP -.36 AZP 87.66 TAL 345.58 TAP 181.40 RCA 150.44 APO 227.73 V2 24.153
RC 239.859 GL -21.91 GP 3.78 ZAL 118.32 ZAP 46.57 ETS 182.88 ZAE 83.26 ETE 180.88 ZAC 105.94 ETC 272.95 LVI -14.66

PLANETOCENTRIC CONIC

C3 13.566 VHL 3.683 DLA -21.89 RAL 4.82 RAD 6639.8 VEL 11.560 PTH 6.60 VHP 3.477 DPA -18.77 RAP 298.42 ECC 1.2233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 30 11	2599.58	-12.34	70.72	217.90	136.33	18 13 30	1599.6	6.03	54.91
60.00	18 36 38	2422.84	-7.70	59.18	222.28	129.68	19 17 1	1422.8	8.39	41.24
70.00	20 0 56	2174.99	-3.11	42.54	225.74	124.03	20 37 11	1175.0	10.78	22.90
80.00	21 41 34	1860.06	.67	20.98	228.09	119.85	22 12 34	860.1	12.76	.16
90.00	23 18 33	1547.25	2.25	358.86	228.97	118.20	23 44 20	547.3	13.59	337.58
100.00	0 28 22	1334.53	.67	342.35	228.09	119.85	0 50 37	334.5	12.76	321.53
110.00	1 4 19	1221.81	-3.11	331.46	225.74	124.03	1 24 41	221.8	10.78	311.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2188 TRA 3.2624 TC3-7.9549 BAU 1.4435 SGT 8023.1 SGR 463.7 SG3 1029.1 ST 84.2 SR 7.9 SS 57.6
RDE .0644 RRA -.2434 RC3 .2660 FAU .14132 RRT -.8996 RRF -.8956 RTF .9632 CRT -.6295 CRS .1603 CST -.8666
FDE 1.6354 FRA 5.6979 FC3-9.0186 BSP 13760 SGB 8036.5 R23 .0653 R13 -.9633 LSA 99.2 MSA 25.4 SSA .7
BDE .2280 BRA 3.2715 BC3 7.9594 FSP 1863 SG1 8033.9 SG2 202.2 THA 177.02 EL1 84.4 EL2 6.1 ALF 176.60

LAUNCH DATE MAY 16 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 18 1972

HELIOCENTRIC CONIC DISTANCE 636.251 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.460 GAL -2.53 AZL 92.39 HCA 196.86 SMA 189.26 ECC .20542 INC 2.3907 V1 29.458
RP 228.10 LAP .69 LOP 71.34 VP 21.504 GAP -.50 AZP 87.71 TAL 345.09 TAP 181.95 RCA 150.38 APO 228.14 V2 24.112
RC 242.511 GL -21.40 GP 3.52 ZAL 119.05 ZAP 45.85 ETS 182.72 ZAE 82.27 ETE 180.90 ZAC 105.66 ETC 273.03 LVI -14.54

PLANETOCENTRIC CONIC

C3 13.745 VHL 3.707 DLA -21.17 RAL 5.20 RAD 6639.9 VEL 11.568 PTH 6.61 VHP 3.504 DPA -18.96 RAP 298.82 ECC 1.2262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 28 25	2617.95	-13.24	71.53	218.34	136.13	18 12 3	1618.0	5.11	55.68
60.00	18 33 42	2444.35	-8.64	60.23	222.69	129.52	19 14 26	1444.4	7.46	42.29
70.00	19 56 24	2201.24	-4.11	43.91	226.08	123.94	20 33 5	1201.2	9.81	24.32
80.00	21 35 4	1892.46	-.43	22.76	228.37	119.85	22 6 36	892.5	11.74	2.03
90.00	23 10 55	1583.28	1.09	.87	229.22	118.26	23 37 18	583.3	12.55	339.70
100.00	0 21 51	1368.93	-.43	344.13	228.37	119.85	0 44 38	366.9	11.74	323.40
110.00	0 59 46	1248.06	-4.11	332.83	226.08	123.94	1 20 34	248.1	9.81	313.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2715 TRA 3.3666 TC3-7.9858 BAU 1.4681 SGT 8146.6 SGR 448.3 SG3 1008.2 ST 86.7 SR 8.2 SS 58.0
RDE .0728 RRA -.2389 RC3 .2393 FAU .13750 RRT -.8798 RRF -.8730 RTF .9626 CRT -.5372 CRS .0701 CST -.8779
FDE 1.6776 FRA 5.6672 FC3-8.6604 BSP 13992 SGB 8158.9 R23 .0537 R13 -.9627 LSA 101.7 MSA 24.9 SSA .7
BDE .2811 BRA 3.3750 BC3 7.9894 FSP 1828 SG1 8156.1 SG2 212.9 THA 177.23 EL1 86.8 EL2 6.9 ALF 177.08

LAUNCH DATE MAY 16 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 20 1972

HELIOCENTRIC CONIC DISTANCE 640.295 EARTH TO MARS

RL 151.25 LAL .00 LOL 234.49 VL 32.470 GAL -2.62 AZL 92.36 HCA 197.90 SMA 189.44 ECC .20648 INC 2.3570 V1 29.458
RP 228.49 LAP .72 LOP 72.38 VP 21.473 GAP -.65 AZP 87.76 TAL 344.59 TAP 182.50 RCA 150.32 APO 228.55 V2 24.071
RC 245.157 GL -20.94 GP 3.29 ZAL 119.77 ZAP 45.16 ETS 182.59 ZAE 81.30 ETE 180.92 ZAC 105.41 ETC 273.11 LVI -14.46

PLANETOCENTRIC CONIC

C3 13.939 VHL 3.733 DLA -20.48 RAL 5.60 RAD 6640.0 VEL 11.576 PTH 6.62 VHP 3.532 DPA -19.12 RAP 299.23 ECC 1.2294

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 26 57	2635.67	-14.11	72.32	218.84	135.93	18 10 52	1635.7	4.22	56.43
60.00	18 31 8	2464.97	-9.53	61.24	223.14	129.35	19 12 13	1465.0	6.56	43.29
70.00	19 52 23	2226.12	-5.05	45.22	226.49	123.82	20 29 29	1226.1	8.89	25.66
80.00	21 29 19	1922.72	-1.46	24.42	228.72	119.83	22 1 22	922.7	10.78	3.76
90.00	23 4 13	1616.62	.01	2.73	229.54	118.28	23 31 10	616.6	11.56	341.65
100.00	0 16 7	1397.19	-1.46	345.79	228.72	119.83	0 39 24	397.2	10.78	325.13
110.00	0 55 45	1272.94	-5.05	334.14	226.49	123.82	1 16 58	272.9	8.89	314.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3242 TRA 3.4725 TC3-8.0080 BAU 1.4928 SGT 8268.1 SGR 436.2 SG3 987.3 ST 89.3 SR 8.5 SS 58.4
RDE .0813 RRA -.2355 RC3 .2154 FAU .13373 RRT -.8579 RRF -.8485 RTF .9621 CRT -.4480 CRS -.0113 CST -.8878
FDE 1.7161 FRA 5.6335 FC3-8.3064 BSP 14223 SGB 8279.6 R23 .0438 R13 -.9621 LSA 104.2 MSA 24.4 SSA .8
BDE .3342 BRA 3.4805 BC3 8.0109 FSP 1794 SG1 8276.5 SG2 223.9 THA 177.41 EL1 89.4 EL2 7.6 ALF 177.54

LAUNCH DATE MAY 17 1971 FLIGHT TIME 92.00 ARRIVAL DATE AUG 17 1971

HELIOCENTRIC CONIC DISTANCE 274.080 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	35.620	GAL	-.90	AZL	91.85	HCA	85.78	SMA	273.21	ECC	.44649	INC	1.8538	V1	29.481
RP	207.22	LAP	-1.85	LOP	321.23	VP	28.198	GAP	22.77	AZP	90.14	TAL	357.07	TAP	82.85	RCA	151.22	APO	395.19	V2	26.432
RC	56.455	GL	-10.90	GP	-.45	ZAL	98.42	ZAP	177.83	ETS	191.89	ZAE	174.07	ETE	49.58	ZAC	99.44	ETC	277.97	LVI	-17.89

PLANETOCENTRIC CONIC

C3	39.976	VHL	6.323	DLA	-19.79	RAL	339.95	RAD	6650.7	VEL	12.643	PTH	7.49	VHP	11.480	DPA	-17.28	RAP	322.28	ECC	1.6579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 39	2904.87	-26.77	85.37	206.61	130.92	16 26 4	1904.9	-9.27	67.75
60.00	16 40 47	2736.97	-20.83	75.34	211.70	125.32	17 26 24	1737.0	-5.39	56.33
70.00	18 0 39	2502.21	-15.19	60.17	215.57	120.96	18 42 21	1502.2	-1.58	40.17
80.00	19 35 59	2203.82	-10.78	40.07	218.13	118.01	20 12 43	1203.8	1.46	19.41
90.00	21 10 1	1900.49	-9.01	18.70	219.06	116.92	21 41 42	900.5	2.70	357.79
100.00	22 18 51	1678.29	-10.78	1.44	218.13	118.01	22 46 49	678.3	1.46	340.78
110.00	23 0 5	1549.03	-15.19	349.09	215.57	120.96	23 25 54	549.0	-1.58	329.09

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3863	TRA	-.8813	TC3	.0225	BAU	.0360	SGT	918.6	SGR	580.4	SG3	91.7	ST	21.6	SR	26.6	SS	10.3
RDE	-.5821	RRA	.2371	RC3	.0636	FAU	.03198	RRT	-.0129	RRF	.0140	RTF	-.5773	CRT	.7262	CRS	.3949	CST	.9124
FDE	.1166	FRA	.6130	FC3	-.6926	BSP	1220	SGB	1086.5	R23	-.0016	R13	.5774	LSA	32.7	MSA	14.6	SSA	1.1
BDE	.6986	BRA	.9127	BC3	.0674	FSP	107	SG1	918.6	SG2	580.3	THA	179.22	EL1	32.0	EL2	12.4	ALF	52.97

LAUNCH DATE MAY 17 1971 FLIGHT TIME 94.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 275.668 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	35.400	GAL	-.84	AZL	91.85	HCA	87.04	SMA	264.69	ECC	.42865	INC	1.8494	V1	29.451
RP	207.13	LAP	-1.85	LOP	322.50	VP	27.930	GAP	22.24	AZP	90.10	TAL	357.19	TAP	84.23	RCA	151.23	APO	378.15	V2	26.443
RC	56.701	GL	-10.79	GP	-.46	ZAL	98.34	ZAP	176.94	ETS	188.63	ZAE	173.52	ETE	43.59	ZAC	99.38	ETC	278.04	LVI	-17.97

PLANETOCENTRIC CONIC

C3	37.230	VHL	6.102	DLA	-20.08	RAL	339.99	RAD	6649.7	VEL	12.535	PTH	7.41	VHP	11.097	DPA	-17.18	RAP	322.65	ECC	1.6127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 39 7	2880.58	-25.68	84.09	205.59	131.53	16 27 8	1880.6	-8.06	66.71
60.00	16 42 43	2711.48	-19.82	73.94	210.68	125.84	17 27 54	1711.5	-4.27	55.10
70.00	18 3 10	2474.97	-14.23	58.64	214.56	121.38	18 44 25	1475.0	-.54	38.75
80.00	19 39 11	2174.45	-9.84	38.41	217.14	118.33	20 15 26	1174.5	2.45	17.80
90.00	21 13 35	1869.95	-8.07	16.96	218.08	117.20	21 44 45	870.0	3.67	356.08
100.00	22 22 3	1648.93	-9.84	359.77	217.14	118.33	22 49 32	648.9	2.45	339.17
110.00	23 2 36	1521.79	-14.23	347.56	214.56	121.38	23 27 58	521.8	-.54	327.66

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3809	TRA	-.8718	TC3	.0360	BAU	.0385	SGT	943.2	SGR	584.5	SG3	98.3	ST	22.2	SR	26.8	SS	10.6
RDE	-.5652	RRA	.2302	RC3	.0684	FAU	.03303	RRT	-.0130	RRF	.0153	RTF	-.5910	CRT	.7244	CRS	.3782	CST	.9062
FDE	.1162	FRA	.6357	FC3	-.7681	BSP	1278	SGB	1109.6	R23	-.0028	R13	.5910	LSA	33.1	MSA	14.9	SSA	1.1
BDE	.6816	BRA	.9017	BC3	.0773	FSP	117	SG1	943.2	SG2	584.4	THA	179.25	EL1	32.4	EL2	12.6	ALF	52.35

LAUNCH DATE MAY 17 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 277.567 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	35.193	GAL	-.78	AZL	91.85	HCA	88.31	SMA	257.19	ECC	.41198	INC	1.8451	V1	29.451
RP	207.05	LAP	-1.84	LOP	323.76	VP	27.676	GAP	21.72	AZP	90.05	TAL	357.33	TAP	85.63	RCA	151.24	APO	363.15	V2	26.493
RC	57.030	GL	-11.08	GP	-.47	ZAL	98.22	ZAP	176.03	ETS	186.85	ZAE	172.95	ETE	38.66	ZAC	99.31	ETC	278.12	LVI	-18.05

PLANETOCENTRIC CONIC

C3	34.733	VHL	5.893	DLA	-20.40	RAL	340.01	RAD	6648.8	VEL	12.435	PTH	7.34	VHP	10.728	DPA	-17.08	RAP	323.00	ECC	1.5716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 40 33	2856.45	-24.59	82.84	204.59	132.11	16 28 9	1856.4	-6.86	65.68
60.00	16 44 37	2686.07	-18.80	72.57	209.67	126.33	17 29 23	1686.1	-3.15	53.88
70.00	18 5 42	2447.70	-13.26	57.13	213.56	121.77	18 46 30	1447.7	.50	37.32
80.00	19 42 29	2144.90	-8.88	36.73	216.16	118.62	20 18 14	1144.9	3.45	16.17
90.00	21 17 15	1839.13	-7.10	15.21	217.12	117.45	21 47 54	839.1	4.66	354.39
100.00	22 25 19	1619.37	-8.88	358.11	216.16	118.62	22 52 16	619.4	3.45	337.54
110.00	23 5 8	1494.52	-13.26	346.05	213.56	121.77	23 30 3	494.5	.50	326.24

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3751	TRA	-.8618	TC3	.0497	BAU	.0412	SGT	967.2	SGR	588.2	SG3	105.5	ST	22.6	SR	26.9	SS	11.0
RDE	-.5489	RRA	.2236	RC3	.0734	FAU	.03420	RRT	-.0134	RRF	.0158	RTF	-.5934	CRT	.7223	CRS	.3643	CST	.9014
FDE	.1169	FRA	.6607	FC3	-.8525	BSP	1339	SGB	1132.0	R23	-.0029	R13	.6034	LSA	33.5	MSA	15.3	SSA	1.1
BDE	.6648	BRA	.8903	BC3	.0886	FSP	127	SG1	967.2	SG2	588.1	THA	179.26	EL1	32.7	EL2	12.9	ALF	51.77

LAUNCH DATE MAY 17 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC DISTANCE 279.717 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	34.998	GAL	-.71	AZL	91.84	HCA	89.57	SMA	250.55	ECC	.39637	INC	1.8407	V1	29.451
RP	206.97	LAP	-1.84	LOP	325.03	VP	27.437	GAP	21.20	AZP	90.01	TAL	357.48	TAP	87.05	RCA	151.24	APO	349.87	V2	26.462
RC	57.440	GL	-11.38	GP	-.49	ZAL	98.08	ZAP	175.11	ETS	185.72	ZAE	172.37	ETE	34.59	ZAC	99.25	ETC	278.18	LVI	-18.13

PLANETOCENTRIC CONIC

C3	32.461	VHL	5.697	DLA	-20.72	RAL	339.99	RAD	6647.9	VEL	12.344	PTH	7.27	VHP	10.374	DPA	-16.98	RAP	323.34	ECC	1.5342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 41 56	2832.51	-23.49	81.62	203.62	132.64	16 29 8	1832.5	-5.66	64.67
60.00	16 46 30	2660.79	-17.77	71.22	208.69	126.79	17 30 51	1660.8	-2.04	52.67
70.00	18 8 16	2420.45	-12.28	55.63	212.59	122.12	18 48 36	1420.5	1.54	35.90
80.00	19 45 48	2115.19	-7.90	35.07	215.21	118.89	20 21 3	1115.2	4.45	14.54
90.00	21 21 1	1808.04	-6.12	13.45	216.17	117.66	21 51 9	808.0	5.65	352.61
100.00	22 28 40	1589.67	-7.90	356.44	215.21	118.89	22 55 9	589.7	4.45	335.90
110.00	23 7 42	1467.27	-12.28	344.55	212.59	122.12	23 32 9	467.3	1.54	324.82

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3685	TRA	-.8521	TC3	.0649	BAU	.0442	SGT	991.1	SGR	591.5	SG3	113.2	ST	23.1	SR	27.0	SS	11.3
RDE	-.5331	RRA	.2171	RC3	.0785	FAU	.03541	RRT	-.0146	RRF	.0172	RTF	-.6155	CRT	.7193	CRS	.3463	CST	.8950
FDE	.1163	FRA	.6864	FC3	-.9444	BSP	1391	SGB	1154.2	R23	-.0032	R13	.6155	LSA	33.8	MSA	15.7	SSA	1.1
BDE	.6481	BRA	.8793	BC3	.1019	FSP	139	SG1	991.1	SG2	591.4	THA	179.23	EL1	33.0	EL2	13.1	ALF	51.24

LAUNCH DATE MAY 17 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 25 1971

DISTANCE 282.082

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 34.814 GAL -.65 AZL 91.84 HCA 90.84 SMA 244.64 ECC .38176 INC 1.6364 V1 29.451
RP 206.90 LAP -1.84 LOP 326.30 VP 27.210 GAP 20.70 AZP 89.97 TAL 357.65 TAP 88.49 RCA 151.25 APO 338.04 V2 26.469
RC 57.930 GL -11.68 GP -.50 ZAL 97.91 ZAP 174.18 ETS 184.95 ZAE 171.80 ETE 31.21 ZAC 99.19 ETC 278.25 LVI -18.20

PLANETOCENTRIC CONIC

C3 30.391 VHL 5.513 DLA -21.06 RAL 339.95 RAD 6647.2 VEL 12.261 PTH 7.20 VHP 10.032 DPA -16.89 RAP 323.68 ECC 1.5002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 43 16	2808.82	-22.39	80.43	202.67	133.14	16 30 5	1808.8	-4.48	63.67
60.00	16 48 22	2635.69	-16.74	69.89	207.73	127.21	17 32 18	1635.7	-.94	51.48
70.00	18 10 50	2393.27	-11.29	54.14	211.64	122.45	18 30 43	1393.3	2.58	34.48
80.00	19 49 13	2085.38	-6.92	33.40	214.28	119.12	20 23 58	1085.4	5.45	12.89
90.00	21 24 54	1776.71	-5.13	11.68	215.25	117.85	21 54 31	776.7	6.64	350.84
100.00	22 32 5	1559.85	-6.92	354.77	214.28	119.12	22 58 5	559.8	5.45	334.26
110.00	23 10 16	1440.09	-11.29	343.06	211.64	122.45	23 34 17	440.1	2.58	323.40

DIFFERENTIAL CORRECTIONS

TDE -.3612 TRA -.8409 TC3 .0831 BAU .0479
RDE -.5178 RRA .2108 RC3 .0838 FAU .03676
FDE .1156 FRA .7131 FC3-1.0472 BSP 1433
BDE .6313 BRA .8669 BC3 .1180 FSP 153

MID-COURSE EXECUTION ACCURACY

SGT 1013.1 SGR 594.4 SG3 121.5
RRT -.0155 RRF .0181 RTF -.6279
SGB 1174.5 R23 -.0033 R13 .6279
SG1 1013.1 SG2 594.3 THA 179.20

ORBIT DETERMINATION ACCURACY

ST 23.4 SR 27.1 SS 11.7
CRT .7161 CRS .3284 CST .8887
LSA 34.1 MSA 16.1 SSA 1.2
EL1 33.3 EL2 13.3 ALF 50.80

LAUNCH DATE MAY 17 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 27 1971

DISTANCE 284.634

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 34.642 GAL -.58 AZL 91.83 HCA 92.10 SMA 239.36 ECC .36809 INC 1.8320 V1 29.451
RP 206.85 LAP -1.83 LOP 327.56 VP 26.996 GAP 20.20 AZP 89.93 TAL 357.83 TAP 89.94 RCA 151.25 APO 327.47 V2 26.476
RC 58.496 GL -11.97 GP -.52 ZAL 97.71 ZAP 173.24 ETS 184.40 ZAE 171.25 ETE 28.37 ZAC 99.13 ETC 278.32 LVI -18.27

PLANETOCENTRIC CONIC

C3 28.503 VHL 5.339 DLA -21.40 RAL 339.89 RAD 6646.4 VEL 12.184 PTH 7.14 VHP 9.703 DPA -16.80 RAP 324.00 ECC 1.4691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 34	2785.42	-21.30	79.28	201.75	133.61	16 30 59	1785.4	-3.30	62.69
60.00	16 50 13	2610.81	-15.72	68.60	206.79	127.60	17 33 44	1610.8	.16	50.29
70.00	18 13 26	2366.20	-10.30	52.68	210.71	122.75	18 52 52	1366.2	3.61	33.07
80.00	19 52 43	2055.48	-5.92	31.74	213.36	119.32	20 26 58	1055.5	6.45	11.23
90.00	21 28 55	1745.18	-4.12	9.91	214.35	118.00	21 58 0	745.2	7.63	349.05
100.00	22 35 35	1529.95	-5.92	353.11	213.36	119.32	23 1 5	530.0	6.45	332.60
110.00	23 12 52	1413.01	-10.30	341.59	210.71	122.75	23 36 25	413.0	3.61	321.98

DIFFERENTIAL CORRECTIONS

TDE -.3569 TRA -.8329 TC3 .1050 BAU .0525
RDE -.5031 RRA .2047 RC3 .0891 FAU .03818
FDE .1141 FRA .7397 FC3-1.1597 BSP 1483
BDE .6168 BRA .8577 BC3 .1378 FSP 165

MID-COURSE EXECUTION ACCURACY

SGT 1039.7 SGR 596.8 SG3 130.3
RRT -.0146 RRF .0191 RTF -.6404
SGB 1198.8 R23 -.0052 R13 .6404
SG1 1039.7 SG2 596.7 THA 179.29

ORBIT DETERMINATION ACCURACY

ST 24.0 SR 27.2 SS 12.0
CRT .7143 CRS .3089 CST .8806
LSA 34.5 MSA 16.5 SSA 1.2
EL1 33.6 EL2 13.6 ALF 50.08

LAUNCH DATE MAY 17 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 29 1971

DISTANCE 287.350

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 34.480 GAL -.52 AZL 91.83 HCA 93.37 SMA 234.61 ECC .35528 INC 1.8276 V1 29.451
RP 206.80 LAP -1.82 LOP 328.83 VP 26.793 GAP 19.71 AZP 89.89 TAL 358.03 TAP 91.40 RCA 151.26 APO 317.97 V2 26.482
RC 59.137 GL -12.27 GP -.53 ZAL 97.49 ZAP 172.28 ETS 183.97 ZAE 170.74 ETE 25.97 ZAC 99.07 ETC 278.38 LVI -18.34

PLANETOCENTRIC CONIC

C3 26.781 VHL 5.175 DLA -21.76 RAL 339.80 RAD 6645.7 VEL 12.114 PTH 7.09 VHP 9.387 DPA -16.71 RAP 324.31 ECC 1.4407

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 49	2762.34	-20.21	78.17	200.65	134.04	16 31 52	1762.3	-2.14	61.72
60.00	16 52 3	2586.20	-14.69	67.33	205.88	127.96	17 35 9	1586.2	1.24	49.11
70.00	18 16 3	2339.27	-9.30	51.23	209.80	123.01	18 55 2	1339.3	4.63	31.65
80.00	19 56 18	2025.54	-4.92	30.08	212.48	119.49	20 30 3	1025.5	7.44	9.56
90.00	21 33 3	1713.46	-3.11	8.13	213.48	118.12	22 1 36	713.5	8.61	347.24
100.00	22 39 9	1500.01	-4.92	351.45	212.48	119.49	23 4 9	500.0	7.44	330.93
110.00	23 15 29	1386.09	-9.30	340.14	209.80	123.01	23 38 35	386.1	4.63	320.57

DIFFERENTIAL CORRECTIONS

TDE -.3476 TRA -.8203 TC3 .1239 BAU .0558
RDE -.4889 RRA .1987 RC3 .0946 FAU .03963
FDE .1114 FRA .7668 FC3-1.2811 BSP 1534
BDE .5999 BRA .8441 BC3 .1558 FSP 179

MID-COURSE EXECUTION ACCURACY

SGT 1058.7 SGR 598.9 SG3 139.6
RRT -.0170 RRF .0206 RTF -.6499
SGB 1216.3 R23 -.0044 R13 .6500
SG1 1058.8 SG2 598.7 THA 179.19

ORBIT DETERMINATION ACCURACY

ST 24.2 SR 27.3 SS 12.3
CRT .7096 CRS .2863 CST .8726
LSA 34.6 MSA 16.8 SSA 1.2
EL1 33.8 EL2 13.8 ALF 49.83

LAUNCH DATE MAY 17 1971 FLIGHT TIME 106.00 ARRIVAL DATE AUG 31 1971

DISTANCE 290.209

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 34.327 GAL -.45 AZL 91.82 HCA 94.64 SMA 230.34 ECC .34328 INC 1.8232 V1 29.451
RP 206.75 LAP -1.82 LOP 330.10 VP 26.601 GAP 19.23 AZP 89.85 TAL 358.24 TAP 92.88 RCA 151.26 APO 309.41 V2 26.487
RC 59.850 GL -12.56 GP -.55 ZAL 97.25 ZAP 171.31 ETS 183.65 ZAE 170.28 ETE 23.90 ZAC 99.01 ETC 278.43 LVI -18.40

PLANETOCENTRIC CONIC

C3 25.208 VHL 5.021 DLA -22.12 RAL 339.69 RAD 6645.1 VEL 12.049 PTH 7.03 VHP 9.081 DPA -16.63 RAP 324.60 ECC 1.4149

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 47 2	2739.62	-19.13	77.09	199.98	134.43	16 32 41	1739.6	-1.00	60.77
60.00	16 53 52	2561.89	-13.67	66.09	204.99	128.29	17 36 34	1561.9	2.31	47.95
70.00	18 18 41	2312.53	-8.31	49.80	208.92	123.25	18 57 14	1312.5	5.65	30.25
80.00	19 59 57	1995.58	-3.92	28.43	211.62	119.62	20 33 13	995.6	8.42	7.88
90.00	21 37 19	1681.56	-2.08	6.35	212.63	118.21	22 5 20	681.6	9.60	345.41
100.00	22 42 49	1470.05	-3.92	349.80	211.62	119.62	23 7 19	470.1	8.42	329.25
110.00	23 18 7	1359.35	-8.31	338.71	208.92	123.25	23 40 47	359.3	5.65	319.16

DIFFERENTIAL CORRECTIONS

TDE -.3417 TRA -.8107 TC3 .1447 BAU .0593
RDE -.4751 RRA .1930 RC3 .1001 FAU .04117
FDE .1114 FRA .7975 FC3-1.4138 BSP 1590
BDE .5852 BRA .8334 BC3 .1759 FSP 196

MID-COURSE EXECUTION ACCURACY

SGT 1081.9 SGR 600.5 SG3 149.6
RRT -.0175 RRF .0211 RTF -.6604
SGB 1237.3 R23 -.0044 R13 .6605
SG1 1081.9 SG2 600.3 THA 179.20

ORBIT DETERMINATION ACCURACY

ST 24.6 SR 27.3 SS 12.7
CRT .7067 CRS .2713 CST .8671
LSA 34.9 MSA 17.2 SSA 1.2
EL1 34.0 EL2 14.0 ALF 49.28

LAUNCH DATE MAY 17 1971 FLIGHT TIME 108.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 293.195 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	34.183	GAL	-.38	AZL	91.82	HCA	95.91	SMA	226.47	ECC	.33204	INC	1.8188	V1	29.451
RP	206.72	LAP	-1.81	LOP	331.37	VP	26.419	GAP	18.76	AZP	89.81	TAL	358.46	TAP	94.37	RCA	151.27	APO	301.66	V2	26.491
RC	60.633	GL	-12.86	GP	-.56	ZAL	96.99	ZAP	170.32	ETS	183.39	ZAE	169.86	ETE	22.12	ZAC	98.95	ETC	278.49	LVI	-18.45

PLANETOCENTRIC CONIC

C3	23.771	VHL	4.876	DLA	-22.49	RAL	339.56	RAD	6644.5	VEL	11.990	PTH	6.99	VHP	8.787	DPA	-16.56	RAP	324.89	ECC	1.3912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 48 12	2717.30	-18.06	76.04	199.13	134.80	16 33 29	1717.3	.12	59.84
60.00	16 55 39	2537.92	-12.65	64.87	204.13	128.59	17 37 57	1537.9	3.36	46.80
70.00	18 21 20	2286.02	-7.31	48.38	208.06	123.45	18 59 26	1286.0	6.65	28.89
80.00	20 3 42	1965.63	-2.91	26.78	210.78	119.73	20 36 28	965.6	9.40	6.19
90.00	21 41 43	1649.50	-1.05	4.56	211.81	118.26	22 9 13	649.5	10.57	343.56
100.00	22 46 34	1440.11	-2.91	348.15	210.78	119.73	23 10 34	440.1	9.40	327.56
110.00	23 20 47	1332.83	-7.31	337.30	208.06	123.45	23 42 59	332.8	6.65	317.76

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY			
TDE	-.3348	TRA	-.8017	TC3	.1694	BAU	.0634	SGT	1105.4	SGR	601.7	SG3	160.5	ST	24.9	SR	27.4	SS	13.1
RDE	-.4619	RRA	.1874	RC3	.1055	FAU	.04293	RRT	-.0188	RRF	.0224	RTF	-.6705	CRT	.7026	CRS	.2491	CST	.8586
FDE	.1088	FRA	.8289	FC3	-1.5634	BSP	1630	SGB	1258.5	R23	-.0045	R13	.6706	LSA	35.1	MSA	17.6	SSA	1.3
BDE	.5705	BRA	.8234	BC3	.1995	FSP	212	SG1	1105.5	SG2	601.5	THA	179.17	EL1	34.2	EL2	14.2	ALF	48.81

LAUNCH DATE MAY 17 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 296.294 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	34.048	GAL	-.32	AZL	91.81	HCA	97.18	SMA	222.95	ECC	.32150	INC	1.8144	V1	29.451
RP	206.70	LAP	-1.80	LOP	332.64	VP	26.247	GAP	18.30	AZP	89.77	TAL	358.69	TAP	95.86	RCA	151.27	APO	294.63	V2	26.494
RC	61.483	GL	-13.15	GP	-.58	ZAL	96.71	ZAP	169.32	ETS	183.17	ZAE	169.50	ETE	20.56	ZAC	98.90	ETC	278.54	LVI	-18.50

PLANETOCENTRIC CONIC

C3	22.456	VHL	4.739	DLA	-22.86	RAL	339.41	RAD	6643.9	VEL	11.935	PTH	6.94	VHP	8.502	DPA	-16.49	RAP	325.15	ECC	1.3696

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 49 20	2695.38	-17.01	75.02	198.31	135.13	16 34 15	1695.4	1.22	58.93
60.00	16 57 25	2514.29	-11.65	63.69	203.28	128.86	17 39 19	1514.3	4.40	45.67
70.00	18 24 1	2259.73	-6.32	46.99	207.23	123.63	19 1 40	1259.7	7.63	27.45
80.00	20 7 33	1935.67	-1.90	25.13	209.97	119.80	20 39 49	935.7	10.37	4.50
90.00	21 46 17	1617.22	-.01	2.76	211.02	118.28	22 13 14	617.2	11.54	341.69
100.00	22 50 25	1410.14	-1.90	346.50	209.97	119.80	23 13 55	410.1	10.37	325.86
110.00	23 23 27	1306.54	-6.32	335.91	207.23	123.63	23 45 13	306.5	7.63	316.37

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY			
TDE	-.3193	TRA	-.7822	TC3	.2076	BAU	.0707	SGT	1114.0	SGR	602.5	SG3	171.1	ST	24.7	SR	27.4	SS	13.4
RDE	-.4491	RRA	.1820	RC3	.1110	FAU	.04446	RRT	-.0220	RRF	.0248	RTF	-.6908	CRT	.6936	CRS	.2227	CST	.8512
FDE	.1043	FRA	.8586	FC3	-1.7140	BSP	1606	SGB	1266.5	R23	-.0034	R13	.6909	LSA	34.8	MSA	18.0	SSA	1.3
BDE	.5511	BRA	.8031	BC3	.2355	FSP	234	SG1	1114.2	SG2	602.3	THA	179.04	EL1	34.0	EL2	14.3	ALF	49.25

LAUNCH DATE MAY 17 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 299.494 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	33.921	GAL	-.26	AZL	91.81	HCA	98.45	SMA	219.76	ECC	.31163	INC	1.8100	V1	29.451
RP	206.68	LAP	-1.79	LOP	333.91	VP	26.083	GAP	17.84	AZP	89.73	TAL	358.93	TAP	97.37	RCA	151.28	APO	288.24	V2	26.496
RC	62.398	GL	-13.44	GP	-.60	ZAL	96.42	ZAP	168.29	ETS	183.00	ZAE	169.20	ETE	19.19	ZAC	98.84	ETC	278.59	LVI	-18.55

PLANETOCENTRIC CONIC

C3	21.254	VHL	4.610	DLA	-23.24	RAL	339.24	RAD	6643.4	VEL	11.885	PTH	6.90	VHP	8.229	DPA	-16.42	RAP	325.40	ECC	1.3498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 50 25	2673.96	-15.97	74.04	197.51	135.44	16 34 59	1674.0	2.30	58.03
60.00	16 59 10	2491.12	-10.65	62.54	202.47	129.10	17 40 41	1491.1	5.42	44.55
70.00	18 26 42	2233.80	-5.34	45.62	206.43	123.78	19 3 55	1233.8	8.60	26.07
80.00	20 11 29	1905.85	-.89	23.49	209.20	119.85	20 43 15	905.8	11.32	2.80
90.00	21 51 0	1584.88	1.03	.96	210.26	118.26	22 17 25	584.9	12.50	339.80
100.00	22 54 21	1380.32	-.89	344.86	209.20	119.85	23 17 21	380.3	11.32	324.16
110.00	23 26 8	1280.62	-5.34	334.54	206.43	123.78	23 47 29	280.6	8.60	314.99

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY			
TDE	-.3156	TRA	-.7781	TC3	.2304	BAU	.0733	SGT	1143.1	SGR	602.9	SG3	184.8	ST	25.2	SR	27.4	SS	13.8
RDE	-.4368	RRA	.1769	RC3	.1163	FAU	.04670	RRT	-.0233	RRF	.0261	RTF	-.6957	CRT	.6901	CRS	.2000	CST	.8415
FDE	.1016	FRA	.8970	FC3	-1.9023	BSP	1676	SGB	1292.3	R23	-.0036	R13	.6958	LSA	35.1	MSA	18.4	SSA	1.3
BDE	.5389	BRA	.7980	BC3	.2581	FSP	252	SG1	1143.2	SG2	602.7	THA	179.02	EL1	34.2	EL2	14.6	ALF	48.47

LAUNCH DATE MAY 17 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 8 1971

HELIOCENTRIC CONIC DISTANCE 302.783 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	33.801	GAL	-.19	AZL	91.81	HCA	99.71	SMA	216.85	ECC	.30237	INC	1.8055	V1	29.451
RP	206.67	LAP	-1.78	LOP	335.18	VP	25.928	GAP	17.40	AZP	89.70	TAL	359.17	TAP	98.89	RCA	151.28	APO	282.42	V2	26.496
RC	63.376	GL	-13.72	GP	-.62	ZAL	96.11	ZAP	167.26	ETS	182.85	ZAE	168.97	ETE	17.97	ZAC	98.79	ETC	278.64	LVI	-18.59

PLANETOCENTRIC CONIC

C3	20.153	VHL	4.489	DLA	-23.61	RAL	339.06	RAD	6642.9	VEL	11.839	PTH	6.86	VHP	7.964	DPA	-16.37	RAP	325.64	ECC	1.3317

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 26	2653.03	-14.96	73.09	196.74	135.71	16 35 41	1653.0	3.35	57.15
60.00	17 0 53	2468.39	-9.68	61.41	201.69	129.32	17 42 2	1468.4	6.41	43.46
70.00	18 29 23	2208.20	-4.37	44.28	205.65	123.91	19 6 12	1208.2	9.55	24.70
80.00	20 15 30	1876.10	.12	21.86	208.45	119.86	20 46 46	876.1	12.26	1.09
90.00	21 55 53	1552.36	2.08	359.14	209.54	118.21	22 21 45	552.4	13.45	337.88
100.00	22 58 22	1350.57	.12	343.23	208.45	119.86	23 20 53	350.6	12.26	322.46
110.00	23 28 50	1255.02	-4.37	333.20	205.65	123.91	23 49 45	255.0	9.55	313.62

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY			
TDE	-.3097	TRA	-.7673	TC3	.2549	BAU	.0761	SGT	1162.2	SGR	602.9	SG3	196.8	ST	25.4	SR	27.4	SS	14.0
RDE	-.4250	RRA	.1719	RC3	.1217	FAU	.04858	RRT	-.0236	RRF	.0294	RTF	-.7003	CRT	.6872	CRS	.1622	CST	.8226
FDE	.0922	FRA	.9260	FC3	-2.0867	BSP	1754	SGB	1309.3	R23	-.0068	R13	.7004	LSA	35.2	MSA	18.8	SSA	1.3
BDE	.5259	BRA	.7863	BC3	.2825	FSP	271	SG1	1162.4	SG2	602.7	THA	179.04	EL1	34.3	EL2	14.7	ALF	48.01

LAUNCH DATE MAY 17 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 10 1971

DISTANCE 306.153

HELIOCENTRIC CONIC

RL	151.28	LAL	.00	LOL	235.46	VL	33.688	GAL	-.13	AZL	91.80	HCA	100.98	SMA	214.19	ECC	.29370	INC	1.6010
RP	206.68	LAP	-1.77	LOP	336.45	VP	25.781	GAP	16.96	AZP	89.66	TAL	359.42	TAP	100.41	RCA	151.28	APO	277.10
RC	64.414	GL	-14.00	GP	-.64	ZAL	95.79	ZAP	166.20	ETS	182.72	ZAE	168.79	ETE	16.88	ZAC	98.73	ETC	278.68

EARTH TO MARS

V1	29.451	V2	26.496	LVI	-18.62				

PLANETOCENTRIC CONIC

C3	19.145	VHL	4.376	DLA	-23.99	RAL	338.86	RAD	6642.5	VEL	11.797	PTH	6.82	VHP	7.709	DPA	-16.32	RAP	325.85

ECC	1.3151																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 28	2632.61	-13.96	72.18	195.99	135.96	16 36 21	1632.6	4.37	56.30
60.00	17 2 35	2446.14	-8.71	60.32	200.93	129.51	17 43 21	1446.1	7.38	42.36
70.00	18 32 6	2182.98	-3.41	42.96	204.90	124.00	19 8 29	1183.0	10.48	23.34
80.00	20 19 38	1846.45	1.13	20.24	207.73	119.84	20 50 24	846.5	13.18	359.37
90.00	22 0 57	1519.66	3.13	357.31	208.84	118.12	22 26 17	519.7	14.38	335.94
100.00	23 2 29	1320.92	1.13	341.60	207.73	119.84	23 24 30	320.9	13.18	320.74
110.00	23 31 32	1229.80	-3.41	331.87	204.90	124.00	23 52 2	229.8	10.48	312.25

DIFFERENTIAL CORRECTIONS

TDE	-.3050	TRA	-.7592	TC3	.2812	BAU	.0789	TDE	-.4136	RRA	.1671	RC3	.1267	FAU	.05100	FDE	.0875	FRA	.9607
FC3	-2.3060	BSP	1827	BDE	.5139	BRA	.7774	BC3	.3084	FSP	301								

MID-COURSE EXECUTION ACCURACY

SGT	1185.0	SGR	602.5	SG3	211.3	RRT	-.0239	RRF	.0299	RTF	-.7042	SGB	1329.4	R23	-.0072	R13	.7042	SG1	1185.1
SG2	602.3	THA	179.06																

ORBIT DETERMINATION ACCURACY

ST	25.8	SR	27.3	SS	14.4	CRT	.6843	CRS	.1378	CST	.8107	LSA	35.3	MSA	19.2	SSA	1.4	EL1	34.5
EL2	14.9	ALF	47.40																

LAUNCH DATE MAY 17 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 12 1971

DISTANCE 309.596

HELIOCENTRIC CONIC

RL	151.28	LAL	.00	LOL	235.46	VL	33.582	GAL	-.07	AZL	91.80	HCA	102.25	SMA	211.75	ECC	.28557	INC	1.7964
RP	206.69	LAP	-1.76	LOP	337.72	VP	25.641	GAP	16.54	AZP	89.62	TAL	359.68	TAP	101.93	RCA	151.28	APO	272.22
RC	65.512	GL	-14.28	GP	-.66	ZAL	95.46	ZAP	165.12	ETS	182.61	ZAE	168.69	ETE	15.90	ZAC	98.68	ETC	278.71

EARTH TO MARS

V1	29.451	V2	26.495	LVI	-18.65

PLANETOCENTRIC CONIC

C3	18.221	VHL	4.269	DLA	-24.37	RAL	338.65	RAD	6642.0	VEL	11.758	PTH	6.79	VHP	7.463	DPA	-16.27	RAP	326.05

ECC	1.2999																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 53 26	2612.74	-12.98	71.30	195.27	136.19	16 36 59	1612.7	5.37	55.46
60.00	17 4 15	2424.40	-7.77	59.26	200.19	129.67	17 44 40	1424.4	8.32	41.32
70.00	18 34 49	2158.16	-2.47	41.66	204.18	124.08	19 10 47	1158.2	11.39	21.99
80.00	20 23 51	1816.93	2.13	18.61	207.05	119.79	20 54 8	816.9	14.09	357.65
90.00	22 6 13	1486.75	4.19	355.47	208.18	117.99	22 31 0	486.8	15.31	333.96
100.00	23 6 43	1291.40	2.13	339.98	207.05	119.79	23 28 14	291.4	14.09	319.02
110.00	23 34 15	1204.98	-2.47	330.58	204.18	124.08	23 54 20	205.0	11.39	310.91

DIFFERENTIAL CORRECTIONS

TDE	-.3000	TRA	-.7537	TC3	.2914	BAU	.0779	TDE	-.4026	RRA	.1627	RC3	.1318	FAU	.05281	FDE	.0883	FRA	1.0162
FC3	-2.5093	BSP	1933	BDE	.5021	BRA	.7710	BC3	.3198	FSP	323								

MID-COURSE EXECUTION ACCURACY

SGT	1207.2	SGR	601.8	SG3	226.1	RRT	-.0285	RRF	.0343	RTF	-.7103	SGB	1348.9	R23	-.0074	R13	.7104	SG1	1207.4
SG2	601.4	THA	178.92																

ORBIT DETERMINATION ACCURACY

ST	26.1	SR	27.3	SS	15.1	CRT	.6797	CRS	.1249	CST	.8071	LSA	35.5	MSA	19.7	SSA	1.4	EL1	34.6
EL2	15.1	ALF	46.77																

LAUNCH DATE MAY 17 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 14 1971

DISTANCE 313.103

HELIOCENTRIC CONIC

RL	151.28	LAL	.00	LOL	235.46	VL	33.483	GAL	-.01	AZL	91.79	HCA	103.52	SMA	209.52	ECC	.27795	INC	1.7918
RP	206.71	LAP	-1.74	LOP	338.99	VP	25.508	GAP	16.12	AZP	89.58	TAL	359.94	TAP	103.46	RCA	151.28	APO	267.76
RC	66.667	GL	-14.55	GP	-.69	ZAL	95.12	ZAP	164.02	ETS	182.52	ZAE	168.65	ETE	15.02	ZAC	98.64	ETC	278.75

EARTH TO MARS

V1	29.451	V2	26.493	LVI	-18.66

PLANETOCENTRIC CONIC

C3	17.373	VHL	4.168	DLA	-24.75	RAL	338.42	RAD	6641.6	VEL	11.722	PTH	6.75	VHP	7.226	DPA	-16.24	RAP	326.22

ECC	1.2859																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 54 22	2593.43	-12.03	70.45	194.57	136.39	16 37 36	1593.4	6.33	54.65
60.00	17 5 54	2403.19	-6.85	58.23	199.49	129.81	17 45 57	1403.2	9.24	40.28
70.00	18 37 32	2133.79	-1.54	40.39	203.49	124.12	19 13 6	1133.8	12.28	20.66
80.00	20 28 10	1787.54	3.12	17.00	206.39	119.71	20 57 58	787.5	14.98	355.92
90.00	22 11 42	1453.61	5.24	353.61	207.56	117.83	22 35 56	453.6	16.22	331.95
100.00	23 11 2	1262.01	3.12	338.37	206.39	119.71	23 32 4	262.0	14.98	317.29
110.00	23 36 58	1180.61	-1.54	329.30	203.49	124.12	23 56 39	180.6	12.28	309.58

DIFFERENTIAL CORRECTIONS

TDE	-.2961	TRA	-.7504	TC3	.2568	BAU	.0676	TDE	-.3919	RRA	.1585	RC3	.1368	FAU	.05449	FDE	.0887	FRA	1.0804
FC3	-2.7156	BSP	2258	BDE	.4912	BRA	.7670	BC3	.2910	FSP	416								

MID-COURSE EXECUTION ACCURACY

SGT	1225.5	SGR	600.7	SG3	241.5	RRT	-.0393	RRF	.0409	RTF	-.6982	SGB	1364.8	R23	-.0048	R13	.6983	SG1	1225.8
SG2	600.1	THA	178.55																

ORBIT DETERMINATION ACCURACY

ST	26.5	SR	27.2	SS	15.9	CRT	.6750	CRS	.1105	CST	.8023	LSA	35.8	MSA	20.3	SSA	1.4	EL1	34.8
EL2	15.3	ALF	46.00																

LAUNCH DATE MAY 17 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 16 1971

DISTANCE 316.673

HELIOCENTRIC CONIC

RL	151.28	LAL	.00	LOL	235.46	VL	33.389	GAL	.04	AZL	91.79	HCA	104.79	SMA	207.47	ECC	.27081	INC	1.7871
RP	206.73	LAP	-1.73	LOP	340.26	VP	25.382	GAP	15.71	AZP	89.54	TAL	.20	TAP	104.99	RCA	151.28	APO	263.65
RC	67.877	GL	-14.81	GP	-.71	ZAL	94.78	ZAP	162.90	ETS	182.44	ZAE	168.69	ETE	14.21	ZAC	98.59	ETC	278.77

EARTH TO MARS

V1	29.451	V2	26.489	LVI	-18.68

PLANETOCENTRIC CONIC

C3	16.595	VHL	4.074	DLA	-25.12	RAL	338.19	RAD	6641.3	VEL	11.689	PTH	6.72	VHP	6.997	DPA	-16.21	RAP	326.38

ECC	1.2731																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 16	2574.72	-11.11	69.63	193.90	136.57	16 38 11	1574.7	7.27	53.85
60.00	17 7 31	2382.56	-5.95	57.23	198.81	129.93	17 47 13	1382.6	10.13	39.26
70.00	18 40 15	2109.90	-.63	39.14	202.83	124.15	19 15 25	1109.9	13.14	19.34
80.00	20 32 35	1758.31	4.10	15.39	205.77	119.60	21 1 54	758.3	15.85	354.18
90.00	22 17 26	1420.17	6.30	351.72	206.97	117.63	22 41 6	420.2	17.11	329.91
100.00	23 15 27	1232.78	4.10	336.76	205.77	119.60	23 36 0	232.8	15.85	315.55
110.00	23 39 42	1156.71	-.63	328.06	202.83	124.15	23 58 58	156.7	13.14	308.26

DIFFERENTIAL CORRECTIONS

TDE	-.2707	TRA	-.6855	TC3	.3792	BAU	.0897	TDE	-.3821	RRA	.1535	RC3	.1402	FAU	.05889	FDE	.0398	FRA	1.0167
FC3	-3.0720	BSP	1759	BDE	.4683	BRA	.7025	BC3	.4043	FSP	351								

MID-COURSE EXECUTION ACCURACY

SGT	1172.3	SGR	598.9	SG3	255.7	RRT	-.0198	RRF	.0341	RTF	-.7136	SGB	1316.4	R23	-.0149	R13	.7138	SG1	1172.4
SG2	598.8	THA	179.21																

ORBIT DETERMINATION ACCURACY

ST	24.9	SR	27.1	SS	14.6	CRT	.6746	CRS	-.0135	CST	.7222	LSA	34.1	MSA	19.9	SSA	1.5	EL1	33.7
EL2	14.8	ALF	48.68																

LAUNCH DATE MAY 17 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 320.295 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	33.301	GAL	.10	AZL	91.78	HCA	106.06	SMA	205.58	ECC	.26412	INC	1.7825
RP	206.77	LAP	-1.71	LOP	341.53	VP	25.261	GAP	15.31	AZP	89.51	TAL	.46	TAP	106.52	RCA	151.28	APO	259.88
RC	69.140	GL	-15.07	GP	-.74	ZAL	94.43	ZAP	161.76	ETS	182.37	ZAE	168.80	ETE	13.47	ZAC	98.55	ETC	278.80

V1	29.451	V2	26.485	LVI	-18.68														

PLANETOCENTRIC CONIC

C3	15.881	VHL	3.985	DLA	-25.48	RAL	337.95	RAD	6640.9	VEL	11.659	PTH	6.70	VHP	6.776	DPA	-16.20	RAP	326.51

ECC	1.2614																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 56 7	2556.62	-10.21	68.85	193.25	136.73	16 38 44	1556.6	8.17	53.08
60.00	17 9 6	2362.53	-5.07	56.26	198.15	130.03	17 48 28	1362.5	10.99	38.27
70.00	18 42 58	2086.52	.27	37.92	202.19	124.15	19 17 45	1086.5	13.97	18.05
80.00	20 37 7	1729.25	5.08	13.78	205.17	119.46	21 5 56	729.3	16.70	352.44
90.00	22 23 26	1386.38	7.36	349.81	206.42	117.38	22 46 32	386.4	17.99	327.82
100.00	23 19 59	1203.72	5.08	335.15	205.17	119.46	23 40 3	203.7	16.70	313.81
110.00	23 42 25	1133.34	.27	326.84	202.19	124.15	24 1 18	133.3	13.97	306.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2639	TRA	-.7069	TC3	.4205	BAU	.0944	SGT	1234.5	SGR	597.2	SG3	277.7	ST	25.4	SR	27.0	SS	15.8
RDE	-.3723	RRA	.1499	RC3	.1441	FAU	.06175	RRT	-.0370	RRF	.0438	RTF	-.7340	CRT	.6521	CRS	-.0261	CST	.7346
FDE	.0392	FRA	1.1107	FC3	-3.3661	BSP	1856	SGB	1371.4	R23	-.0084	R13	.7341	LSA	34.3	NSA	21.1	SSA	1.5
BDE	.4563	BRA	.7226	BC3	.4445	FSP	389	SG1	1234.7	SG2	596.7	THA	178.66	EL1	33.7	EL2	15.4	ALF	47.67

LAUNCH DATE MAY 17 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 323.967 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	33.218	GAL	.15	AZL	91.78	HCA	107.33	SMA	203.84	ECC	.25786	INC	1.7777
RP	206.81	LAP	-1.70	LOP	342.79	VP	25.147	GAP	14.92	AZP	89.47	TAL	.72	TAP	108.05	RCA	151.28	APO	256.41
RC	70.455	GL	-15.31	GP	-.76	ZAL	94.09	ZAP	160.59	ETS	182.30	ZAE	168.98	ETE	12.78	ZAC	98.50	ETC	278.81

V1	29.451	V2	26.460	LVI	-18.68														

PLANETOCENTRIC CONIC

C3	15.226	VHL	3.902	DLA	-25.84	RAL	337.71	RAD	6640.6	VEL	11.631	PTH	6.67	VHP	6.562	DPA	-16.19	RAP	326.61

ECC	1.2506																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 56 56	2539.16	-9.35	68.09	192.63	136.87	16 39 15	1539.2	9.04	52.33
60.00	17 10 39	2343.12	-4.22	55.33	197.53	130.12	17 49 42	1343.1	11.82	37.30
70.00	18 45 40	2063.71	1.14	36.73	201.58	124.14	19 20 4	1063.7	14.78	16.77
80.00	20 41 45	1700.38	6.04	12.18	204.62	119.30	21 10 6	700.4	17.52	350.70
90.00	22 29 45	1352.11	8.43	347.86	205.91	117.09	22 52 17	352.1	18.86	325.68
100.00	23 24 37	1174.85	6.04	333.55	204.62	119.30	23 44 12	174.9	17.52	312.07
110.00	23 45 7	1110.52	1.14	325.65	201.58	124.14	24 3 37	110.5	14.78	305.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2581	TRA	-.6932	TC3	.4197	BAU	.0906	SGT	1236.9	SGR	595.1	SG3	294.0	ST	25.4	SR	26.9	SS	16.2
RDE	-.3629	RRA	.1461	RC3	.1480	FAU	.06396	RRT	-.0406	RRF	.0505	RTF	-.7283	CRT	.6496	CRS	-.0729	CST	.7044
FDE	.0225	FRA	1.1509	FC3	-3.6367	BSP	1931	SGB	1372.6	R23	-.0121	R13	.7285	LSA	34.1	NSA	21.5	SSA	1.5
BDE	.4453	BRA	.7084	BC3	.4450	FSP	424	SG1	1237.3	SG2	594.4	THA	178.55	EL1	33.6	EL2	15.5	ALF	47.43

LAUNCH DATE MAY 17 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 327.683 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	33.141	GAL	.20	AZL	91.77	HCA	108.59	SMA	202.24	ECC	.25200	INC	1.7729
RP	206.87	LAP	-1.68	LOP	344.06	VP	25.037	GAP	14.54	AZP	89.43	TAL	.98	TAP	109.58	RCA	151.28	APO	253.21
RC	71.818	GL	-15.55	GP	-.79	ZAL	93.75	ZAP	159.39	ETS	182.24	ZAE	169.24	ETE	12.15	ZAC	98.47	ETC	278.83

V1	29.451	V2	26.474	LVI	-18.67														

PLANETOCENTRIC CONIC

C3	14.623	VHL	3.824	DLA	-26.19	RAL	337.46	RAD	6640.3	VEL	11.605	PTH	6.65	VHP	6.357	DPA	-16.19	RAP	326.69

ECC	1.2407																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 43	2522.34	-8.51	67.37	192.04	136.99	16 39 45	1522.3	9.87	51.61
60.00	17 12 9	2324.36	-3.40	54.43	196.93	130.18	17 50 54	1324.4	12.62	36.36
70.00	18 48 22	2041.48	1.99	35.57	201.00	124.10	19 22 23	1041.5	15.56	15.52
80.00	20 46 30	1671.70	7.00	10.59	204.09	119.10	21 14 22	671.7	18.32	348.95
90.00	22 36 25	1317.23	9.51	345.86	205.44	116.76	22 58 22	317.2	19.72	323.48
100.00	23 29 22	1146.17	7.00	331.96	204.09	119.10	23 48 28	146.2	18.32	310.32
110.00	23 47 48	1088.30	1.99	324.49	201.00	124.10	24 5 56	88.3	15.56	304.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2554	TRA	-.6883	TC3	.4580	BAU	.0943	SGT	1261.0	SGR	592.4	SG3	316.1	ST	25.8	SR	26.7	SS	16.8
RDE	-.3538	RRA	.1426	RC3	.1508	FAU	.06741	RRT	-.0407	RRF	.0518	RTF	-.7367	CRT	.6468	CRS	-.0823	CST	.7004
FDE	.0201	FRA	1.2080	FC3	-3.9909	BSP	1939	SGB	1393.3	R23	-.0133	R13	.7369	LSA	34.3	NSA	22.0	SSA	1.5
BDE	.4363	BRA	.7030	BC3	.4822	FSP	457	SG1	1261.3	SG2	591.8	THA	178.59	EL1	33.7	EL2	15.6	ALF	46.65

LAUNCH DATE MAY 17 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC DISTANCE 331.440 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	33.068	GAL	.24	AZL	91.77	HCA	109.86	SMA	200.77	ECC	.24651	INC	1.7679
RP	206.93	LAP	-1.66	LOP	345.33	VP	24.933	GAP	14.16	AZP	89.40	TAL	1.24	TAP	111.10	RCA	151.28	APO	250.26
RC	73.228	GL	-15.78	GP	-.82	ZAL	93.41	ZAP	158.17	ETS	182.19	ZAE	169.57	ETE	11.56	ZAC	98.43	ETC	278.84

V1	29.451	V2	26.466	LVI	-18.65														

PLANETOCENTRIC CONIC

C3	14.070	VHL	3.751	DLA	-26.53	RAL	337.21	RAD	6640.1	VEL	11.581	PTH	6.62	VHP	6.159	DPA	-16.20	RAP	326.75

ECC	1.2316																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 28	2506.20	-7.71	66.68	191.47	137.10	16 40 14	1506.2	10.67	50.91
60.00	17 13 37	2306.29	-2.60	53.56	196.35	130.23	17 52 4	1306.3	13.39	35.45
70.00	18 51 2	2019.88	2.81	34.44	200.45	124.05	19 24 42	1019.9	16.31	14.30
80.00	20 51 22	1643.23	7.93	9.00	203.60	118.88	21 18 45	643.2	19.10	347.19
90.00	22 43 32	1281.50	10.60	343.80	205.01	116.37	23 4 53	281.5	20.56	321.20
100.00	23 34 14	1117.70	7.93	330.36	203.60	118.88	23 52 51	117.7	19.10	308.56
110.00	23 50 28	1066.70	2.81	323.36	200.45	124.05	24 8 15	66.7	16.31	303.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2487	TRA	-.6759	TC3	.4776	BAU	.0943	SGT	1266.6	SGR	589.5	SG3	337.8	ST	25.7	SR	26.6	SS	17.3
RDE	-.3450	RRA	.1392	RC3	.1533	FAU	.07076	RRT	-.0440	RRF	.0557	RTF	-.7379	CRT	.6421	CRS	-.1125	CST	.6830
FDE	.0082	FRA	1.2581	FC3	-4.3538	BSP	1960	SGB	1397.0	R23	-.0143	R13	.7381	LSA	34.1	NSA	22.5	SSA	1.5
BDE	.4253	BRA	.6901	BC3	.5016	FSP	491	SG1	1266.9	SG2	588.7	THA	178.50	EL1	33.5	EL2	15.6	ALF	46.51

LAUNCH DATE MAY 17 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 26 1971

DISTANCE 335.236

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 33.000 GAL .29 AZL 91.76 HCA 111.13 SMA 199.40 ECC .24137 INC 1.7630 V1 29.451
RP 207.00 LAP -1.64 LOP 346.59 VP 24.834 GAP 13.80 AZP 89.36 TAL 1.49 TAP 112.62 RCA 151.27 APO 247.53 V2 26.498
RC 74.683 GL -16.00 GP -.85 ZAL 93.07 ZAP 156.92 ETS 182.14 ZAE 169.98 ETE 11.00 ZAC 98.40 ETC 278.84 LVI -18.63

PLANETOCENTRIC CONIC

C3 13.561 VHL 3.682 DLA -26.86 RAL 336.96 RAD 6639.8 VEL 11.560 PTH 6.60 VHP 5.968 DPA -16.23 RAP 326.77 ECC 1.2232

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 10	2490.74	-6.94	66.03	190.92	137.19	16 40 41	1490.7	11.44	50.24
60.00	17 15 3	2288.91	-1.84	52.73	195.81	130.27	17 53 12	1288.9	14.12	34.56
70.00	18 53 40	1998.95	3.61	33.35	199.93	123.99	19 26 59	999.0	17.03	13.10
80.00	20 56 20	1614.97	8.86	7.41	203.14	118.63	21 23 15	615.0	19.86	345.43
90.00	22 51 11	1244.60	11.70	341.66	204.63	115.93	23 11 55	244.6	21.39	318.82
100.00	23 39 12	1089.44	8.86	328.78	203.14	118.63	23 57 21	89.4	19.86	306.80
110.00	23 53 6	1045.77	3.61	322.26	199.93	123.99	24 10 32	45.8	17.03	302.02

DIFFERENTIAL CORRECTIONS

TDE -.2441 TRA -.6650 TC3 .5039 BAU .0956
RDE -.3366 RRA .1360 RC3 .1552 FAU .07428
FDE -.0014 FRA 1.3109 FC3-4.7420 BSP 1999
BDE .4158 BRA .6788 BC3 .5273 FSP 535

MID-COURSE EXECUTION ACCURACY

SGT 1275.6 SGR 586.1 SG3 360.7
RRT -.0452 RRF .0590 RTF -.7413
SGB 1403.8 R23 -.0165 R13 .7415
SG1 1276.0 SG2 585.4 THA 178.49

ORBIT DETERMINATION ACCURACY

ST 25.8 SR 26.4 SS 17.9
CRT .6397 CRS -.1352 CST .6685
LSA 34.0 MSA 22.9 SSA 1.6
EL1 33.4 EL2 15.7 ALF 46.14

LAUNCH DATE MAY 17 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 28 1971

DISTANCE 339.065

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.935 GAL .33 AZL 91.76 HCA 112.39 SMA 198.14 ECC .23657 INC 1.7580 V1 29.451
RP 207.08 LAP -1.63 LOP 347.86 VP 24.738 GAP 13.44 AZP 89.33 TAL 1.73 TAP 114.13 RCA 151.27 APO 245.02 V2 26.449
RC 76.180 GL -16.21 GP -.89 ZAL 92.75 ZAP 155.64 ETS 182.09 ZAE 170.46 ETE 10.48 ZAC 98.37 ETC 278.84 LVI -18.59

PLANETOCENTRIC CONIC

C3 13.093 VHL 3.618 DLA -27.18 RAL 336.72 RAD 6639.6 VEL 11.540 PTH 6.59 VHP 5.783 DPA -16.26 RAP 326.77 ECC 1.2155

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 51	2475.97	-6.20	65.40	190.41	137.27	16 41 7	1476.0	12.17	49.59
60.00	17 16 26	2272.27	-1.11	51.94	195.29	130.29	17 54 18	1272.3	14.82	33.71
70.00	18 56 16	1978.73	4.38	32.29	199.44	123.91	19 29 14	978.7	17.71	11.93
80.00	21 1 25	1586.93	9.77	5.83	202.72	118.35	21 27 52	586.9	20.59	343.67
90.00	22 59 33	1205.98	12.84	339.39	204.30	115.41	23 19 39	206.0	22.23	316.29
100.00	23 44 17	1061.40	9.77	327.19	202.72	118.35	24 1 59	61.4	20.59	305.04
110.00	23 55 42	1025.55	4.38	321.20	199.44	123.91	24 12 47	25.6	17.71	300.85

DIFFERENTIAL CORRECTIONS

TDE -.2368 TRA -.6515 TC3 .5211 BAU .0952
RDE -.3285 RRA .1330 RC3 .1564 FAU .07815
FDE -.0172 FRA 1.3624 FC3-5.1674 BSP 1998
BDE .4049 BRA .6649 BC3 .5440 FSP 573

MID-COURSE EXECUTION ACCURACY

SGT 1275.8 SGR 582.5 SG3 385.1
RRT -.0495 RRF .0636 RTF -.7408
SGB 1402.5 R23 -.0173 R13 .7411
SG1 1276.2 SG2 581.6 THA 178.36

ORBIT DETERMINATION ACCURACY

ST 25.6 SR 26.2 SS 18.4
CRT .6342 CRS -.1693 CST .6479
LSA 33.6 MSA 23.4 SSA 1.6
EL1 33.1 EL2 15.7 ALF 46.17

LAUNCH DATE MAY 17 1971 FLIGHT TIME 136.00 ARRIVAL DATE SEP 30 1971

DISTANCE 342.928

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.875 GAL .37 AZL 91.75 HCA 113.66 SMA 196.98 ECC .23207 INC 1.7528 V1 29.451
RP 207.17 LAP -1.61 LOP 349.12 VP 24.647 GAP 13.09 AZP 89.30 TAL 1.97 TAP 115.63 RCA 151.27 APO 242.69 V2 26.439
RC 77.718 GL -16.42 GP -.92 ZAL 92.43 ZAP 154.33 ETS 182.05 ZAE 171.02 ETE 9.97 ZAC 98.34 ETC 278.83 LVI -18.55

PLANETOCENTRIC CONIC

C3 12.661 VHL 3.558 DLA -27.49 RAL 336.48 RAD 6639.4 VEL 11.521 PTH 6.57 VHP 5.606 DPA -16.31 RAP 326.74 ECC 1.2084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 0 29	2461.88	-5.49	64.81	189.91	137.33	16 41 31	1461.9	12.86	48.97
60.00	17 17 46	2256.31	-.40	51.18	194.80	130.30	17 55 22	1256.3	15.48	32.89
70.00	18 58 49	1959.19	5.12	31.26	198.97	123.81	19 31 28	959.2	18.37	10.80
80.00	21 6 39	1558.99	10.67	4.24	202.32	118.05	21 32 38	559.0	21.29	341.90
90.00	23 8 59	1164.50	14.04	336.94	204.04	114.80	23 28 23	164.5	23.07	313.54
100.00	23 49 31	1033.46	10.67	325.61	202.32	118.05	24 6 44	33.5	21.29	303.26
110.00	0 2 11	1006.01	5.12	320.18	198.97	123.81	0 18 57	6.0	18.37	299.71

DIFFERENTIAL CORRECTIONS

TDE -.2211 TRA -.6303 TC3 .5726 BAU .1005
RDE -.3207 RRA .1301 RC3 .1567 FAU .08244
FDE -.0351 FRA 1.4173 FC3-5.6366 BSP 1899
BDE .3895 BRA .6435 BC3 .5936 FSP 615

MID-COURSE EXECUTION ACCURACY

SGT 1265.5 SGR 578.6 SG3 411.8
RRT -.0559 RRF .0687 RTF -.[illegible]97
SGB 1391.5 R23 -.0154 R13 .7560
SG1 1266.0 SG2 577.5 THA 178.15

ORBIT DETERMINATION ACCURACY

ST 24.7 SR 26.1 SS 19.0
CRT .6188 CRS -.2045 CST .6357
LSA 32.7 MSA 24.0 SSA 1.6
EL1 32.3 EL2 15.7 ALF 47.42

LAUNCH DATE MAY 17 1971 FLIGHT TIME 138.00 ARRIVAL DATE OCT 2 1971

DISTANCE 346.818

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.819 GAL .41 AZL 91.75 HCA 114.92 SMA 195.91 ECC .22788 INC 1.7476 V1 29.451
RP 207.26 LAP -1.58 LOP 350.39 VP 24.560 GAP 12.75 AZP 89.26 TAL 2.20 TAP 117.12 RCA 151.26 APO 240.55 V2 26.428
RC 79.295 GL -16.61 GP -.96 ZAL 92.13 ZAP 152.99 ETS 182.01 ZAE 171.65 ETE 9.48 ZAC 98.31 ETC 278.81 LVI -18.49

PLANETOCENTRIC CONIC

C3 12.265 VHL 3.502 DLA -27.78 RAL 336.25 RAD 6639.2 VEL 11.504 PTH 6.55 VHP 5.435 DPA -16.37 RAP 326.67 ECC 1.2019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 1 6	2448.56	-4.83	64.24	189.45	137.39	16 41 55	1448.6	13.51	48.38
60.00	17 19 3	2241.20	.26	50.45	194.33	130.30	17 56 24	1241.2	16.11	32.11
70.00	19 1 18	1940.53	5.83	30.28	198.53	123.71	19 33 38	940.5	18.99	9.70
80.00	21 11 58	1531.42	11.55	2.66	201.97	117.73	21 37 30	531.4	21.97	340.13
90.00	23 19 58	1118.64	15.33	334.19	203.85	114.06	23 38 37	118.6	23.94	310.47
100.00	23 54 50	1005.90	11.55	324.03	201.97	117.73	24 11 36	5.9	21.97	301.50
110.00	0 4 40	6275.39	5.83	297.10	198.53	123.71	1 49 16	5275.4	18.99	276.53

DIFFERENTIAL CORRECTIONS

TDE -.2202 TRA -.6211 TC3 .5635 BAU .0959
RDE -.3131 RRA .1275 RC3 .1567 FAU .08633
FDE -.0529 FRA 1.4776 FC3-6.0938 BSP 1945
BDE .3828 BRA .6340 BC3 .5849 FSP 662

MID-COURSE EXECUTION ACCURACY

SGT 1266.6 SGR 574.4 SG3 437.9
RRT -.0588 RRF .0755 RTF -.7463
SGB 1390.8 R23 -.0203 R13 .7467
SG1 1267.2 SG2 573.2 THA 178.08

ORBIT DETERMINATION ACCURACY

ST 24.9 SR 25.9 SS 19.6
CRT .6214 CRS -.2362 CST .6077
LSA 32.7 MSA 24.5 SSA 1.6
EL1 32.3 EL2 15.6 ALF 46.68

LAUNCH DATE MAY 17 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 350.736 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.766 GAL .44 AZL 91.74 HCA 116.18 SMA 194.91 ECC .22396 INC 1.7423 V1 29.451
RP 207.37 LAP -1.56 LOP 351.65 VP 24.477 GAP 12.42 AZP 89.23 TAL 2.42 TAP 118.60 RCA 151.26 APO 238.56 V2 26.415
RC 80.909 GL -16.78 GP -1.00 ZAL 91.84 ZAP 151.61 ETS 181.97 ZAE 172.35 ETE 9.00 ZAC 98.29 ETC 278.79 LVI -18.43

PLANETOCENTRIC CONIC

C3 11.901 VHL 3.450 DLA -28.05 RAL 336.03 RAD 6639.0 VEL 11.488 PTH 6.54 VHP 5.271 DPA -16.45 RAP 326.58 ECC 1.1959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 1 41	2435.96	-4.19	63.71	189.01	137.44	16 42 17	1436.0	14.13	47.82
60.00	17 20 17	2226.87	.89	49.77	193.90	130.29	17 57 24	1226.9	16.70	31.36
70.00	19 3 43	1922.69	6.50	29.33	198.12	123.60	19 35 46	922.7	19.57	8.65
80.00	21 17 25	1504.06	12.41	1.09	201.64	117.38	21 42 29	504.1	22.62	338.35
90.00	23 34 18	1062.62	16.86	330.78	203.81	113.05	23 52 0	62.6	24.91	306.65
100.00	0 4 13	6266.57	12.41	300.36	201.64	117.38	1 48 40	5266.6	22.62	277.63
110.00	0 7 5	6257.54	6.50	296.16	198.12	123.60	1 51 23	5257.5	19.57	275.47

DIFFERENTIAL CORRECTIONS

TDE -.2167 TRA -.6124 TC3 .5653 BAU .0933
RDE -.3058 RRA .1251 RC3 .1557 FAU .09071
FDE -.0687 FRA 1.5490 FC3-6.5989 BSP 1976
BDE .3748 BRA .6251 BC3 .5864 FSP 714

MID-COURSE EXECUTION ACCURACY

SGT 1268.9 SGR 570.0 SG3 467.2
RRT -.0644 RRF .0827 RTF -.7425
SGB 1391.0 R23 -.0230 R13 .7430
SG1 1269.5 SG2 568.5 THA 177.93

ORBIT DETERMINATION ACCURACY

ST 25.0 SR 25.6 SS 20.3
CRT .6189 CRS -.2606 CST .5900
LSA 32.5 MSA 25.1 SSA 1.6
EL1 32.2 EL2 15.6 ALF 46.24

LAUNCH DATE MAY 17 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 354.678 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.717 GAL .47 AZL 91.74 HCA 117.44 SMA 193.99 ECC .22031 INC 1.7368 V1 29.451
RP 207.48 LAP -1.54 LOP 352.91 VP 24.396 GAP 12.10 AZP 89.20 TAL 2.63 TAP 120.07 RCA 151.25 APO 236.73 V2 26.402
RC 82.560 GL -16.95 GP -1.04 ZAL 91.57 ZAP 150.21 ETS 181.93 ZAE 173.12 ETE 8.50 ZAC 98.28 ETC 278.76 LVI -18.38

PLANETOCENTRIC CONIC

C3 11.565 VHL 3.401 DLA -28.31 RAL 335.82 RAD 6638.8 VEL 11.474 PTH 6.52 VHP 5.113 DPA -16.53 RAP 326.45 ECC 1.1903

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 2 13	2424.09	-3.60	63.22	188.60	137.47	16 42 37	1424.1	14.71	47.29
60.00	17 21 27	2213.32	1.49	49.12	193.49	130.28	17 58 21	1213.3	17.26	30.64
70.00	19 6 3	1905.70	7.14	28.43	197.73	123.49	19 37 49	905.7	20.12	7.64
80.00	21 23 0	1476.88	13.26	359.52	201.36	117.00	21 47 37	476.9	23.24	336.88
88.69	23 54 2	6277.79	19.64	304.54	204.30	110.81	25 38 40	5277.8	26.49	279.60
100.00	0 9 46	6239.39	13.26	298.79	201.36	117.00	1 53 47	5239.4	23.24	275.85
110.00	0 9 26	6240.56	7.14	295.26	197.73	123.49	1 53 26	5240.6	20.12	274.46

DIFFERENTIAL CORRECTIONS

TDE -.2135 TRA -.6007 TC3 .5612 BAU .0900
RDE -.2987 RRA .1228 RC3 .1536 FAU .09541
FDE -.0856 FRA 1.6182 FC3-7.1423 BSP 1981
BDE .3672 BRA .6131 BC3 .5819 FSP 767

MID-COURSE EXECUTION ACCURACY

SGT 1263.6 SGR 565.2 SG3 497.9
RRT -.0688 RRF .0897 RTF -.7364
SGB 1384.2 R23 -.0264 R13 .7370
SG1 1264.3 SG2 563.5 THA 177.80

ORBIT DETERMINATION ACCURACY

ST 24.9 SR 25.4 SS 21.0
CRT .6189 CRS -.2846 CST .5697
LSA 32.3 MSA 25.7 SSA 1.7
EL1 32.0 EL2 15.5 ALF 45.89

LAUNCH DATE MAY 17 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 358.644 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.671 GAL .50 AZL 91.73 HCA 118.70 SMA 193.14 ECC .21690 INC 1.7312 V1 29.451
RP 207.60 LAP -1.52 LOP 354.17 VP 24.319 GAP 11.78 AZP 89.17 TAL 2.83 TAP 121.52 RCA 151.25 APO 235.04 V2 26.388
RC 84.247 GL -17.11 GP -1.08 ZAL 91.32 ZAP 148.76 ETS 181.90 ZAE 173.97 ETE 7.98 ZAC 98.26 ETC 278.72 LVI -18.27

PLANETOCENTRIC CONIC

C3 11.256 VHL 3.355 DLA -28.55 RAL 335.62 RAD 6638.7 VEL 11.460 PTH 6.51 VHP 4.962 DPA -16.63 RAP 326.28 ECC 1.1852

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 2 44	2412.95	-3.04	62.75	188.22	137.50	16 42 57	1412.9	15.25	46.79
60.00	17 22 34	2200.60	2.05	48.51	193.10	130.26	17 59 14	1200.6	17.78	29.97
70.00	19 8 18	1889.62	7.74	27.58	197.38	123.37	19 39 48	889.6	20.63	6.68
80.00	21 28 43	1449.88	14.08	357.94	201.10	116.60	21 52 53	449.9	23.83	334.79
85.92	23 30 7	1059.01	19.94	331.83	203.79	110.87	23 47 46	59.0	26.78	306.83
100.00	0 15 31	6212.39	14.08	297.21	201.10	116.60	1 59 3	5212.4	23.83	274.07
110.00	0 11 40	6224.48	7.74	294.40	197.38	123.37	1 55 25	5224.5	20.63	273.50

DIFFERENTIAL CORRECTIONS

TDE -.2096 TRA -.5880 TC3 .5555 BAU .0866
RDE -.2919 RRA .1207 RC3 .1511 FAU .10031
FDE -.1074 FRA 1.6905 FC3-7.7155 BSP 1972
BDE .3593 BRA .6003 BC3 .5757 FSP 825

MID-COURSE EXECUTION ACCURACY

SGT 1254.5 SGR 560.2 SG3 530.1
RRT -.0742 RRF .0983 RTF -.[illegible]04
SGB 1373.9 R23 -.0309 R13 .7311
SG1 1255.4 SG2 558.3 THA 177.64

ORBIT DETERMINATION ACCURACY

ST 24.8 SR 25.2 SS 21.8
CRT .6181 CRS -.3139 CST .9450
LSA 32.0 MSA 26.3 SSA 1.7
EL1 31.8 EL2 15.4 ALF 45.70

LAUNCH DATE MAY 17 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 10 1971

HELIOCENTRIC CONIC DISTANCE 362.630 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.628 GAL .53 AZL 91.73 HCA 119.96 SMA 192.36 ECC .21372 INC 1.7256 V1 29.451
RP 207.73 LAP -1.50 LOP 355.43 VP 24.245 GAP 11.47 AZP 89.14 TAL 3.01 TAP 122.96 RCA 151.25 APO 233.47 V2 26.373
RC 85.969 GL -17.25 GP -1.12 ZAL 91.08 ZAP 147.29 ETS 181.86 ZAE 174.89 ETE 7.39 ZAC 98.25 ETC 278.68 LVI -18.17

PLANETOCENTRIC CONIC

C3 10.971 VHL 3.312 DLA -28.77 RAL 335.43 RAD 6638.5 VEL 11.448 PTH 6.50 VHP 4.816 DPA -16.75 RAP 326.08 ECC 1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 3 13	2402.55	-2.52	62.31	187.86	137.53	16 43 16	1402.5	15.76	46.32
60.00	17 23 37	2188.69	2.57	47.95	192.75	130.23	18 0 5	1188.7	18.26	29.34
70.00	19 10 27	1874.49	8.31	26.77	197.04	123.25	19 41 41	874.5	21.11	5.76
80.00	21 34 35	1423.04	14.90	356.36	200.88	116.18	21 58 18	423.0	24.40	333.00
84.47	23 17 28	1092.26	20.21	334.38	203.31	110.92	23 35 40	92.3	27.05	309.32
100.00	0 21 23	6185.56	14.90	295.64	200.88	116.18	2 4 28	5185.6	24.40	272.28
110.00	0 13 49	6209.35	8.31	293.60	197.04	123.25	1 57 18	5209.4	21.11	272.59

DIFFERENTIAL CORRECTIONS

TDE -.2060 TRA -.5729 TC3 .5450 BAU .0828
RDE -.2852 RRA .1188 RC3 .1474 FAU .10551
FDE -.1269 FRA 1.7605 FC3-8.3254 BSP 1940
BDE .3518 BRA .5850 BC3 .5646 FSP 883

MID-COURSE EXECUTION ACCURACY

SGT 1239.1 SGR 554.9 SG3 563.5
RRT -.0784 RRF .1061 RTF -.7228
SGB 1357.6 R23 -.0354 R13 .7236
SG1 1240.0 SG2 552.8 THA 177.49

ORBIT DETERMINATION ACCURACY

ST 24.6 SR 24.9 SS 22.4
CRT .6197 CRS -.3372 CST .5224
LSA 31.7 MSA 26.8 SSA 1.7
EL1 31.5 EL2 15.3 ALF 45.60

LAUNCH DATE MAY 17 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 12 1971

HELIOCENTRIC CONIC DISTANCE 366.636 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.588 GAL .55 AZL 91.72 HCA 121.21 SMA 191.63 ECC .21076 INC 1.7197 V1 29.451
RP 207.86 LAP -1.47 LOP 356.68 VP 24.174 GAP 11.17 AZP 89.11 TAL 3.18 TAP 124.39 RCA 151.24 APO 232.02 V2 26.357
RC 87.725 GL -17.39 GP -1.17 ZAL 90.67 ZAP 145.77 ETS 181.82 ZAE 175.88 ETE 6.67 ZAC 98.24 ETC 278.63 LVI -18.06

PLANETOCENTRIC CONIC

C3 10.709 VHL 3.272 DLA -28.98 RAL 335.27 RAD 6638.4 VEL 11.437 PTH 6.49 VHP 4.676 DPA -16.88 RAP 325.84 ECC 1.1762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 3 41	2392.89	-2.03	61.91	187.53	137.54	16 43 34	1392.9	16.23	45.88
60.00	17 24 36	2177.63	3.06	47.42	192.42	130.20	18 0 53	1177.6	18.71	28.74
70.00	19 12 28	1860.36	8.83	26.02	196.74	123.13	19 43 28	860.4	21.55	4.90
80.00	21 40 36	1396.34	15.69	354.78	200.69	115.73	22 3 52	396.3	24.95	331.20
83.41	23 8 11	1115.09	20.47	336.17	202.86	110.97	23 26 46	115.1	27.30	311.05
100.00	0 27 23	6158.85	15.69	294.05	200.69	115.73	2 10 2	5158.9	24.95	270.48
110.00	0 15 50	6195.22	8.83	292.84	196.74	123.13	1 59 5	5195.2	21.55	271.73

DIFFERENTIAL CORRECTIONS

TDE -.2030 TRA -.5578 TC3 .5269 BAU .0782
RDE -.2788 RRA .1170 RC3 .1428 FAU .11096
FDE -.1460 FRA 1.8381 FC3-8.9701 BSP 1897
BDE .3448 BRA .5700 BC3 .5459 FSP 940

MID-COURSE EXECUTION ACCURACY

SGT 1221.3 SGR 549.4 SG3 599.0
RRT -.0832 RRF .1149 RTF -.7134
SGB 1339.2 R23 -.0408 R13 .7145
SG1 1222.4 SG2 547.0 THA 177.32

ORBIT DETERMINATION ACCURACY

ST 24.4 SR 24.7 SS 23.2
CRT .6225 CRS -.3570 CST .5011
LSA 31.4 MSA 27.4 SSA 1.7
EL1 31.3 EL2 15.1 ALF 45.44

LAUNCH DATE MAY 17 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 14 1971

HELIOCENTRIC CONIC DISTANCE 370.660 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.551 GAL .57 AZL 91.71 HCA 122.47 SMA 190.96 ECC .20801 INC 1.7137 V1 29.451
RP 208.01 LAP -1.45 LOP 357.94 VP 24.105 GAP 10.87 AZP 89.08 TAL 3.33 TAP 125.80 RCA 151.24 APO 230.68 V2 26.340
RC 89.514 GL -17.51 GP -1.22 ZAL 90.67 ZAP 144.22 ETS 181.78 ZAE 176.94 ETE 5.64 ZAC 98.24 ETC 278.57 LVI -17.94

PLANETOCENTRIC CONIC

C3 10.468 VHL 3.235 DLA -29.16 RAL 335.11 RAD 6638.3 VEL 11.426 PTH 6.48 VHP 4.543 DPA -17.02 RAP 325.57 ECC 1.1723

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 4 6	2383.97	-1.58	61.54	187.22	137.56	16 43 50	1384.0	16.66	45.47
60.00	17 25 30	2167.42	3.51	46.93	192.11	130.17	18 1 38	1167.4	19.12	28.20
70.00	19 14 21	1847.25	9.32	25.32	196.45	123.01	19 45 9	847.3	21.96	4.10
80.00	21 46 46	1369.71	16.47	353.19	200.54	115.26	22 9 36	369.7	25.46	329.40
82.57	23 0 51	1132.13	20.71	337.52	202.45	111.00	23 19 43	132.1	27.53	312.36
100.00	0 33 34	6132.23	16.47	292.46	200.54	115.26	2 15 46	5132.2	25.46	268.67
110.00	0 17 44	6182.11	9.32	292.14	196.45	123.01	2 0 46	5182.1	21.96	270.93

DIFFERENTIAL CORRECTIONS

TDE -.2001 TRA -.5431 TC3 .4992 BAU .0725
RDE -.2725 RRA .1155 RC3 .1374 FAU .11648
FDE -.1682 FRA 1.9222 FC3-9.6337 BSP 1867
BDE .3381 BRA .5552 BC3 .5177 FSP 1010

MID-COURSE EXECUTION ACCURACY

SGT 1201.2 SGR 543.7 SG3 635.8
RRT -.0891 RRF .1256 RTF -.7016
SGB 1318.5 R23 -.0473 R13 .7029
SG1 1202.4 SG2 541.0 THA 177.10

ORBIT DETERMINATION ACCURACY

ST 24.2 SR 24.4 SS 24.0
CRT .6255 CRS -.3785 CST .4776
LSA 31.1 MSA 28.0 SSA 1.7
EL1 31.0 EL2 14.9 ALF 45.29

LAUNCH DATE MAY 17 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 16 1971

HELIOCENTRIC CONIC DISTANCE 374.700 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.516 GAL .59 AZL 91.71 HCA 123.72 SMA 190.34 ECC .20546 INC 1.7076 V1 29.451
RP 208.16 LAP -1.42 LOP 359.19 VP 24.039 GAP 10.59 AZP 89.05 TAL 3.48 TAP 127.19 RCA 151.24 APO 229.45 V2 26.323
RC 91.337 GL -17.62 GP -1.27 ZAL 90.50 ZAP 142.64 ETS 181.74 ZAE 178.07 ETE 3.67 ZAC 98.24 ETC 278.50 LVI -17.80

PLANETOCENTRIC CONIC

C3 10.245 VHL 3.201 DLA -29.33 RAL 334.98 RAD 6638.2 VEL 11.417 PTH 6.47 VHP 4.415 DPA -17.18 RAP 325.26 ECC 1.1686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 4 30	2375.80	-1.17	61.20	186.95	137.57	16 44 6	1375.8	17.05	45.10
60.00	17 26 21	2158.07	3.92	46.48	191.84	130.14	18 2 19	1158.1	19.50	27.69
70.00	19 16 6	1835.22	9.77	24.67	196.19	122.89	19 46 41	835.2	22.33	3.36
80.00	21 53 9	1343.09	17.24	351.58	200.42	114.76	22 15 32	343.1	25.95	327.57
81.89	22 54 56	1145.12	20.93	338.57	202.07	111.03	23 14 1	145.1	27.73	313.36
100.00	0 39 56	6105.60	17.24	290.86	200.42	114.76	2 21 42	5105.6	25.95	266.84
110.00	0 19 28	6170.08	9.77	291.49	196.19	122.89	2 2 18	5170.1	22.33	270.19

DIFFERENTIAL CORRECTIONS

TDE -.1978 TRA -.5283 TC3 .4610 BAU .0656
RDE -.2664 RRA .1141 RC3 .1309 FAU .12228
FDE -.1901 FRA 2.0144 FC-10.3325 BSP 1796
BDE .3317 BRA .5405 BC3 .4792 FSP 1073

MID-COURSE EXECUTION ACCURACY

SGT 1178.5 SGR 537.8 SG3 674.7
RRT -.0958 RRF .1375 RTF -.[illegible]65
SGB 1295.4 R23 -.0549 R13 .6881
SG1 1179.9 SG2 534.7 THA 176.85

ORBIT DETERMINATION ACCURACY

ST 24.0 SR 24.1 SS 24.8
CRT .6296 CRS -.3969 CST .4593
LSA 30.8 MSA 28.7 SSA 1.7
EL1 30.7 EL2 14.7 ALF 45.10

LAUNCH DATE MAY 17 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 378.756 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.484 GAL .61 AZL 91.70 HCA 124.97 SMA 189.77 ECC .20308 INC 1.7013 V1 29.451
RP 208.32 LAP -1.39 LOP .44 VP 23.975 GAP 10.30 AZP 89.02 TAL 3.60 TAP 128.57 RCA 151.23 APO 228.31 V2 26.304
RC 93.190 GL -17.72 GP -1.32 ZAL 90.35 ZAP 141.01 ETS 181.70 ZAE 179.26 ETE 355.92 ZAC 98.24 ETC 278.42 LVI -17.66

PLANETOCENTRIC CONIC

C3 10.041 VHL 3.169 DLA -29.48 RAL 334.87 RAD 6638.1 VEL 11.408 PTH 6.46 VHP 4.292 DPA -17.35 RAP 324.90 ECC 1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 4 52	2368.32	-.80	60.88	186.70	137.57	16 44 20	1368.3	17.41	44.75
60.00	17 27 6	2149.53	4.29	46.07	191.58	130.11	18 2 56	1149.5	19.84	27.22
70.00	19 17 42	1824.24	10.17	24.08	195.96	122.78	19 48 6	824.2	22.66	2.68
80.00	21 59 48	1316.09	18.00	349.94	200.33	114.23	22 21 44	316.1	26.43	325.70
81.32	22 50 2	1155.31	21.13	339.40	201.72	111.05	23 9 17	155.3	27.92	314.15
100.00	0 46 36	6078.60	18.00	289.21	200.33	114.23	2 27 55	5078.6	26.43	264.98
110.00	0 21 4	6159.09	10.17	290.90	195.96	122.78	2 3 43	5159.1	22.66	269.51

DIFFERENTIAL CORRECTIONS

TDE -.1879 TRA -.5034 TC3 .4525 BAU .0629
RDE -.2605 RRA .1128 RC3 .1228 FAU .12897
FDE -.2228 FRA 2.0933 FC-11.1204 BSP 1636
BDE .3212 BRA .5159 BC3 .4688 FSP 1133

MID-COURSE EXECUTION ACCURACY

SGT 1136.2 SGR 531.8 SG3 716.3
RRT -.1036 RRF .1497 RTF -.6826
SGB 1254.5 R23 -.0598 R13 .6846
SG1 1137.9 SG2 528.2 THA 176.46

ORBIT DETERMINATION ACCURACY

ST 23.1 SR 23.8 SS 25.6
CRT .6266 CRS -.4270 CST .4291
LSA 30.0 MSA 29.2 SSA 1.7
EL1 29.9 EL2 14.3 ALF 46.34

LAUNCH DATE MAY 17 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 382.826 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.454	GAL	.62	AZL	91.69	HCA	126.22	SMA	189.25	ECC	.20089	INC	1.6947	V1	29.451
RP	208.49	LAP	-1.37	LOP	1.69	VP	23.913	GAP	10.03	AZP	89.00	TAL	3.71	TAP	129.93	RCA	151.23	APO	227.26	V2	26.284
RC	95.074	GL	-17.80	GP	-1.38	ZAL	90.23	ZAP	139.35	ETS	181.66	ZAE	179.44	ETE	203.73	ZAC	98.24	ETC	278.34	LVI	-17.50

PLANETOCENTRIC CONIC

C3	9.852	VHL	3.139	DLA	-29.60	RAL	334.78	RAD	6638.0	VEL	11.400	PTH	6.45	VHP	4.175	DPA	-17.54	RAP	324.81	ECC	1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 13	2361.65	-.46	60.61	186.48	137.57	16 44 34	1361.7	17.74	44.44
60.00	17 27 48	2141.95	4.63	45.70	191.36	130.08	18 3 30	1142.0	20.14	26.81
70.00	19 19 6	1814.52	10.53	23.55	195.74	122.68	19 49 21	814.5	22.95	2.08
80.00	22 6 40	1289.13	18.75	348.28	200.29	113.67	22 28 9	289.1	26.87	323.82
80.87	22 46 9	1162.61	21.30	340.03	201.41	111.05	23 5 32	162.8	28.08	314.73
100.00	0 53 28	6051.64	18.75	287.56	200.29	113.67	2 34 19	5051.6	26.87	263.10
110.00	0 22 29	6149.38	10.53	290.38	195.74	122.68	2 4 58	5149.4	22.95	268.90

DIFFERENTIAL CORRECTIONS

TDE	-.1937	TRA	-.4928	TC3	.3708	BAU	.0811
RDE	-.2545	RRA	.1118	RC3	.1146	FAU	.13486
FDE	-.2327	FRA	2.1966	FC-11.8505		BSP	1647
BDE	.3198	BRA	.5054	BC3	.3881	FSP	1217

MID-COURSE EXECUTION ACCURACY

SGT	1117.9	SGR	525.5	SG3	757.1				
RRT	-.1054	RRF	.1618	RTF	-.6485				
SGB	1235.2	R23	-.0748	R13	.6510				
SG1	1119.6	SG2	521.8	THA	176.37				

ORBIT DETERMINATION ACCURACY

ST	23.5	SR	23.5	SS	26.4
CRT	.6441	CRS	-.4277	CST	.4076
LSA	30.2	MSA	29.8	SSA	1.7
EL1	30.1	EL2	14.0	ALF	44.95

LAUNCH DATE MAY 17 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 386.908 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.426	GAL	.63	AZL	91.69	HCA	127.46	SMA	188.76	ECC	.19885	INC	1.6880	V1	29.451
RP	208.67	LAP	-1.34	LOP	2.93	VP	23.853	GAP	9.76	AZP	88.97	TAL	3.80	TAP	131.26	RCA	151.23	APO	226.30	V2	26.264
RC	96.988	GL	-17.88	GP	-1.44	ZAL	90.14	ZAP	137.65	ETS	181.62	ZAE	178.11	ETE	192.27	ZAC	98.25	ETC	278.25	LVI	-17.32

PLANETOCENTRIC CONIC

C3	9.679	VHL	3.111	DLA	-29.71	RAL	334.71	RAD	6637.9	VEL	11.392	PTH	6.44	VHP	4.064	DPA	-17.74	RAP	324.08	ECC	1.1593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 32	2355.68	-.16	60.36	186.28	137.58	16 44 48	1355.7	18.02	44.16
60.00	17 28 24	2135.21	4.92	45.38	191.16	130.05	18 3 59	1135.2	20.41	26.44
70.00	19 20 20	1805.94	10.84	23.09	195.55	122.59	19 50 26	805.9	23.21	1.54
80.00	22 14 3	1261.06	19.50	346.59	200.28	113.07	22 35 4	261.1	27.30	321.85
80.50	22 43 3	1168.32	21.46	340.51	201.13	111.05	23 2 32	168.3	28.22	315.17
100.00	1 0 50	6023.58	19.50	285.82	200.28	113.07	2 41 14	5023.6	27.30	261.12
110.00	0 23 42	6140.79	10.84	289.91	195.55	122.59	2 6 3	5140.8	23.21	268.37

DIFFERENTIAL CORRECTIONS

TDE	-.1942	TRA	-.4758	TC3	.3018	BAU	.0413
RDE	-.2488	RRA	.1110	RC3	.1050	FAU	.14135
FDE	-.2522	FRA	2.2977	FC-12.6423		BSP	1589
BDE	.3156	BRA	.4886	BC3	.3195	FSP	1302

MID-COURSE EXECUTION ACCURACY

SGT	1086.7	SGR	519.2	SG3	800.5				
RRT	-.1086	RRF	.1758	RTF	-.6184				
SGB	1204.4	R23	-.0896	R13	.6215				
SG1	1088.6	SG2	515.2	THA	176.17				

ORBIT DETERMINATION ACCURACY

ST	23.4	SR	23.2	SS	27.2
CRT	.6561	CRS	-.4387	CST	.3817
LSA	30.6	MSA	29.8	SSA	1.6
EL1	30.0	EL2	13.7	ALF	44.53

LAUNCH DATE MAY 17 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 391.003 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.401	GAL	.64	AZL	91.68	HCA	128.71	SMA	188.32	ECC	.19697	INC	1.6811	V1	29.451
RP	208.85	LAP	-1.31	LOP	4.18	VP	23.795	GAP	9.50	AZP	88.95	TAL	3.88	TAP	132.58	RCA	151.23	APO	225.41	V2	26.243
RC	98.929	GL	-17.94	GP	-1.50	ZAL	90.07	ZAP	135.91	ETS	181.57	ZAE	176.72	ETE	190.04	ZAC	98.26	ETC	278.15	LVI	-17.14

PLANETOCENTRIC CONIC

C3	9.520	VHL	3.085	DLA	-29.79	RAL	334.66	RAD	6637.8	VEL	11.385	PTH	6.44	VHP	3.958	DPA	-17.96	RAP	323.61	ECC	1.1567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 49	2350.44	.10	60.14	186.11	137.58	16 45 0	1350.4	18.27	43.92
60.00	17 28 56	2129.34	5.18	45.10	190.98	130.02	18 4 25	1129.3	20.64	26.12
70.00	19 21 23	1798.54	11.11	22.69	195.38	122.50	19 51 21	798.5	23.43	1.08
80.00	22 22 25	1230.40	20.31	344.63	200.33	112.37	22 42 55	230.4	27.74	319.68
80.22	22 40 41	1172.03	21.60	340.84	200.88	111.03	23 0 13	172.0	28.34	315.47
100.00	1 9 13	5992.91	20.31	283.90	200.33	112.37	2 49 6	4992.9	27.74	258.95
110.00	0 24 45	6133.40	11.11	289.51	195.38	122.50	2 6 58	5133.4	23.43	267.91

DIFFERENTIAL CORRECTIONS

TDE	-.1947	TRA	-.4582	TC3	.2247	BAU	.0310
RDE	-.2432	RRA	.1104	RC3	.0944	FAU	.14800
FDE	-.2720	FRA	2.4084	FC-13.4587		BSP	1489
BDE	.3115	BRA	.4713	BC3	.2437	FSP	1380

MID-COURSE EXECUTION ACCURACY

SGT	1054.1	SGR	512.9	SG3	845.6				
RRT	-.1114	RRF	.1915	RTF	-.5937				
SGB	1172.3	R23	-.1073	R13	.5877				
SG1	1056.1	SG2	508.7	THA	175.96				

ORBIT DETERMINATION ACCURACY

ST	23.3	SR	22.9	SS	28.1
CRT	.6685	CRS	-.4484	CST	.3562
LSA	31.2	MSA	29.6	SSA	1.8
EL1	29.8	EL2	13.3	ALF	44.16

LAUNCH DATE MAY 17 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 26 1971

HELIOCENTRIC CONIC DISTANCE 395.109 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.377	GAL	.64	AZL	91.67	HCA	129.95	SMA	187.91	ECC	.19524	INC	1.6739	V1	29.451
RP	209.04	LAP	-1.28	LOP	5.42	VP	23.738	GAP	9.24	AZP	88.92	TAL	3.93	TAP	133.88	RCA	151.22	APO	224.60	V2	26.221
RC	100.898	GL	-17.99	GP	-1.56	ZAL	90.02	ZAP	134.13	ETS	181.52	ZAE	175.25	ETE	188.99	ZAC	98.27	ETC	278.04	LVI	-16.93

PLANETOCENTRIC CONIC

C3	9.374	VHL	3.062	DLA	-29.86	RAL	334.63	RAD	6637.7	VEL	11.379	PTH	6.43	VHP	3.858	DPA	-18.19	RAP	323.10	ECC	1.1543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 5	2345.90	.33	59.95	185.97	137.58	16 45 11	1345.9	18.49	43.71
60.00	17 29 22	2124.32	5.40	44.86	190.83	130.00	18 4 47	1124.3	20.84	25.84
70.00	19 22 13	1792.38	11.34	22.35	195.23	122.43	19 52 5	792.4	23.61	.69
80.00	22 36 24	1182.39	21.52	341.58	200.59	111.21	22 56 6	182.4	28.34	316.24
80.01	22 38 57	1174.21	21.72	341.05	200.67	111.00	22 58 31	174.2	28.43	315.65
100.00	1 23 11	5944.89	21.52	280.85	200.59	111.21	3 2 16	4944.9	28.34	255.51
110.00	0 25 35	6127.23	11.34	289.17	195.23	122.43	2 7 42	5127.2	23.61	267.52

DIFFERENTIAL CORRECTIONS

TDE	-.1949	TRA	-.4376	TC3	.1405	BAU	.0204
RDE	-.2376	RRA	.1098	RC3	.0827	FAU	.15488
FDE	-.2914	FRA	2.5128	FC-14.3043		BSP	1369
BDE	.3073	BRA	.4512	BC3	.1630	FSP	1456

MID-COURSE EXECUTION ACCURACY

SGT	1016.0	SGR	506.4	SG3	891.3				
RRT	-.1111	RRF	.2074	RTF	-.5415				
SGB	1135.2	R23	-.1285	R13	.5465				
SG1	1018.0	SG2	502.2	THA	175.81				

ORBIT DETERMINATION ACCURACY

ST	23.1	SR	22.5	SS	28.9
CRT	.6831	CRS	-.4577	CST	.3276
LSA	31.8	MSA	29.3	SSA	1.8
EL1	29.6	EL2	12.8	ALF	43.94

LAUNCH DATE MAY 17 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 28 1971

HELIOCENTRIC CONIC DISTANCE 399.225 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.355 GAL .64 AZL 91.67 HCA 131.19 SMA 187.54 ECC .19364 INC 1.6666 V1 29.451
RP 209.24 LAP -1.25 LOP 6.66 VP 23.683 GAP 8.99 AZP 88.90 TAL 3.98 TAP 135.16 RCA 151.22 APO 223.85 V2 26.198
RC 102.893 GL -18.03 GP -1.63 ZAL 90.00 ZAP 132.32 ETS 181.47 ZAE 173.72 ETE 188.33 ZAC 98.28 ETC 277.92 LVI -16.71

PLANETOCENTRIC CONIC

C3 9.239 VHL 3.040 DLA -29.90 RAL 334.63 RAD 6637.6 VEL 11.373 PTH 6.43 VHP 3.762 DPA -18.44 RAP 322.55 ECC 1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 19	2342.07	.52	59.79	185.86	137.57	16 45 21	1342.1	18.67	43.53
60.00	17 29 44	2120.16	5.58	44.65	190.71	129.98	18 5 4	1120.2	21.00	25.61
70.00	19 22 51	1787.40	11.52	22.08	195.10	122.38	19 52 38	787.4	23.75	.38
79.86	22 37 52	1174.85	21.82	341.14	200.48	110.97	22 57 26	174.9	28.51	315.71
79.86	22 37 52	1174.85	21.82	341.14	200.48	110.97	22 57 26	174.9	28.51	315.71
79.86	22 37 52	1174.85	21.82	341.14	200.48	110.97	22 57 26	174.9	28.51	315.71
110.00	0 26 13	6122.25	11.52	288.90	195.10	122.38	2 8 15	5122.3	23.75	267.20

DIFFERENTIAL CORRECTIONS

TDE -.1922 TRA -.4125 TC3 .0628 BAU .0116
RDE -.2322 RRA .1093 RC3 .0693 FAU .16253
FDE -.3162 FRA 2.6126 FC-15.2297 BSP 1190
BDE .3015 BRA .4267 BC3 .0935 FSP 1527

MID-COURSE EXECUTION ACCURACY

SGT 968.0 SGR 499.9 SG3 939.9
RRT -.1092 RRF .2244 RTF -.4968
SGB 1089.5 R23 -.1517 R13 .5032
SG1 970.1 SG2 495.8 THA 175.63

ORBIT DETERMINATION ACCURACY

ST 22.6 SR 22.2 SS 29.7
CRT .6966 CRS -.4715 CST .2946
LSA 32.5 MSA 28.7 SSA 1.7
EL1 29.1 EL2 12.3 ALF 44.28

LAUNCH DATE MAY 17 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 30 1971

HELIOCENTRIC CONIC DISTANCE 403.350 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.335 GAL .64 AZL 91.66 HCA 132.42 SMA 187.20 ECC .19217 INC 1.6589 V1 29.451
RP 209.44 LAP -1.22 LOP 7.90 VP 23.630 GAP 8.75 AZP 88.88 TAL 4.00 TAP 136.42 RCA 151.22 APO 223.17 V2 26.174
RC 104.913 GL -18.06 GP -1.70 ZAL 90.02 ZAP 130.47 ETS 181.42 ZAE 172.14 ETE 187.85 ZAC 98.30 ETC 277.79 LVI -16.48

PLANETOCENTRIC CONIC

C3 9.116 VHL 3.019 DLA -29.92 RAL 334.65 RAD 6637.6 VEL 11.368 PTH 6.42 VHP 3.672 DPA -18.70 RAP 321.96 ECC 1.1500

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 32	2338.97	.68	59.66	185.77	137.57	16 45 31	1339.0	18.82	43.38
60.00	17 30 1	2116.91	5.72	44.50	190.60	129.96	18 5 17	1116.9	21.13	25.43
70.00	19 23 15	1783.76	11.65	21.88	194.98	122.33	19 52 59	783.8	23.86	.15
79.80	22 37 26	1173.90	21.90	341.10	200.34	110.92	22 57 0	173.9	28.55	315.65
79.80	22 37 26	1173.90	21.90	341.10	200.34	110.92	22 57 0	173.9	28.55	315.65
79.80	22 37 26	1173.90	21.90	341.10	200.34	110.92	22 57 0	173.9	28.55	315.65
110.00	0 26 38	6118.61	11.65	288.70	194.98	122.33	2 8 36	5118.6	23.86	266.97

DIFFERENTIAL CORRECTIONS

TDE -.1980 TRA -.3964 TC3 -.0747 BAU .0114
RDE -.2267 RRA .1093 RC3 .0566 FAU .16870
FDE -.3234 FRA 2.7476 FC-16.0210 BSP 1123
BDE .3010 BRA .4112 BC3 .0937 FSP 1627

MID-COURSE EXECUTION ACCURACY

SGT 946.9 SGR 493.5 SG3 985.7
RRT -.1018 RRF .2438 RTF -.4216
SGB 1067.8 R23 -.1860 R13 .4289
SG1 948.7 SG2 490.0 THA 175.86

ORBIT DETERMINATION ACCURACY

ST 22.9 SR 21.8 SS 30.6
CRT .7169 CRS -.4676 CST .2711
LSA 33.1 MSA 28.9 SSA 1.7
EL1 29.3 EL2 11.9 ALF 43.13

LAUNCH DATE MAY 17 1971 FLIGHT TIME 168.00 ARRIVAL DATE NOV 1 1971

HELIOCENTRIC CONIC DISTANCE 407.484 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.317 GAL .64 AZL 91.65 HCA 133.66 SMA 186.89 ECC .19083 INC 1.6510 V1 29.451
RP 209.66 LAP -1.19 LOP 9.13 VP 23.578 GAP 8.51 AZP 88.86 TAL 4.00 TAP 137.66 RCA 151.22 APO 222.55 V2 26.150
RC 106.958 GL -18.08 GP -1.77 ZAL 90.05 ZAP 128.59 ETS 181.36 ZAE 170.49 ETE 187.47 ZAC 98.31 ETC 277.66 LVI -16.24

PLANETOCENTRIC CONIC

C3 9.004 VHL 3.001 DLA -29.92 RAL 334.70 RAD 6637.5 VEL 11.363 PTH 6.42 VHP 3.587 DPA -18.97 RAP 321.34 ECC 1.1482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 44	2336.55	.80	59.56	185.70	137.57	16 45 40	1336.6	18.94	43.27
60.00	17 30 12	2114.48	5.83	44.38	190.52	129.95	18 5 27	1114.5	21.22	25.30
70.00	19 23 27	1781.31	11.74	21.75	194.89	122.30	19 53 9	781.3	23.93	360.00
79.79	22 37 36	1171.57	21.96	340.95	200.22	110.86	22 57 8	171.6	28.58	315.48
79.79	22 37 36	1171.57	21.96	340.95	200.22	110.86	22 57 8	171.6	28.58	315.48
79.79	22 37 36	1171.57	21.96	340.95	200.22	110.86	22 57 8	171.6	28.58	315.48
110.00	0 26 49	6116.17	11.74	288.57	194.89	122.30	2 8 46	5116.2	23.93	266.82

DIFFERENTIAL CORRECTIONS

TDE -.2005 TRA -.3730 TC3 -.1945 BAU .0239
RDE -.2213 RRA .1092 RC3 .0418 FAU .17601
FDE -.3340 FRA 2.8623 FC-16.9248 BSP 985
BDE .2986 BRA .3886 BC3 .1989 FSP 1719

MID-COURSE EXECUTION ACCURACY

SGT 914.0 SGR 486.9 SG3 1034.4
RRT -.0872 RRF .2627 RTF -.5129
SGB 1035.6 R23 -.2219 R13 .3507
SG1 915.3 SG2 484.3 THA 176.31

ORBIT DETERMINATION ACCURACY

ST 22.8 SR 21.4 SS 31.3
CRT .7376 CRS -.4687 CST .2405
LSA 33.6 MSA 28.8 SSA 1.7
EL1 29.2 EL2 11.3 ALF 42.67

LAUNCH DATE MAY 17 1971 FLIGHT TIME 170.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 411.625 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.301 GAL .64 AZL 91.64 HCA 134.89 SMA 186.61 ECC .18960 INC 1.6428 V1 29.451
RP 209.87 LAP -1.16 LOP 10.36 VP 23.527 GAP 8.28 AZP 88.84 TAL 3.99 TAP 138.88 RCA 151.22 APO 221.99 V2 26.124
RC 109.028 GL -18.08 GP -1.85 ZAL 90.12 ZAP 126.68 ETS 181.30 ZAE 168.79 ETE 187.15 ZAC 98.33 ETC 277.51 LVI -15.97

PLANETOCENTRIC CONIC

C3 8.900 VHL 2.983 DLA -29.90 RAL 334.77 RAD 6637.5 VEL 11.358 PTH 6.41 VHP 3.508 DPA -19.25 RAP 320.66 ECC 1.1465

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 54	2334.82	.89	59.49	185.67	137.57	16 45 48	1334.8	19.02	43.16
60.00	17 30 18	2112.90	5.90	44.30	190.47	129.94	18 5 31	1112.9	21.28	25.21
70.00	19 23 26	1780.12	11.79	21.68	194.81	122.29	19 53 6	780.1	23.96	359.92
79.86	22 38 23	1167.76	22.00	340.69	200.13	110.78	22 57 51	167.8	28.59	315.20
79.86	22 38 23	1167.76	22.00	340.69	200.13	110.78	22 57 51	167.8	28.59	315.20
79.86	22 38 23	1167.76	22.00	340.69	200.13	110.78	22 57 51	167.8	28.59	315.20
110.00	0 26 48	6114.97	11.79	288.51	194.81	122.29	2 8 43	5115.0	23.96	266.74

DIFFERENTIAL CORRECTIONS

TDE -.2030 TRA -.3488 TC3 -.3282 BAU .0392
RDE -.2160 RRA .1093 RC3 .0261 FAU .18332
FDE -.3441 FRA 2.9853 FC-17.8312 BSP 818
BDE .2964 BRA .3655 BC3 .3293 FSP 1799

MID-COURSE EXECUTION ACCURACY

SGT 887.4 SGR 480.5 SG3 1083.9
RRT -.0665 RRF .2836 RTF -.2488
SGB 1009.2 R23 -.2607 R13 .2560
SG1 888.3 SG2 479.0 THA 177.09

ORBIT DETERMINATION ACCURACY

ST 22.7 SR 21.1 SS 32.1
CRT .7585 CRS -.4692 CST .2089
LSA 34.2 MSA 28.6 SSA 1.7
EL1 29.0 EL2 10.7 ALF 42.20

LAUNCH DATE MAY 17 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 415.774 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.285 GAL .63 AZL 91.63 HCA 136.12 SMA 186.38 ECC .18849 INC 1.6340 V1 29.451
RP 210.10 LAP -1.13 LOP 11.59 VP 23.477 GAP 8.05 AZP 88.82 TAL 3.96 TAP 140.08 RCA 151.23 APO 221.46 V2 26.098
RC 111.121 GL -18.07 GP -1.93 ZAL 90.21 ZAP 124.73 ETS 181.24 ZAE 167.04 ETE 186.87 ZAC 98.34 ETC 277.36 LVI -15.70

PLANETOCENTRIC CONIC

C3 8.807 VHL 2.968 DLA -29.86 RAL 334.86 RAD 6637.4 VEL 11.354 PTH 6.41 VHP 3.433 DPA -19.54 RAP 319.98 ECC 1.1449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 2	2333.77	.94	59.44	185.65	137.57	16 45 56	1333.8	19.07	43.14
60.00	17 30 20	2112.17	5.93	44.27	190.43	129.94	18 5 32	1112.2	21.31	25.17
70.00	19 23 11	1780.15	11.79	21.68	194.76	122.29	19 52 52	780.1	23.96	359.92
79.99	22 39 47	1162.44	22.01	340.30	200.07	110.70	22 59 10	162.4	28.57	314.80
79.99	22 39 47	1162.44	22.01	340.30	200.07	110.70	22 59 10	162.4	28.57	314.80
79.99	22 39 47	1162.44	22.01	340.30	200.07	110.70	22 59 10	162.4	28.57	314.80
110.00	0 26 34	6115.00	11.79	288.51	194.76	122.29	2 8 29	5115.0	23.96	266.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2053 TRA -.3246 TC3 -.4740 BAU .0558 SGT 870.9 SGR 474.6 SG3 1134.9 ST 22.6 SR 20.7 SS 32.9
RDE -.2108 RRA .1096 RC3 .0094 FAU .19070 RRT -.0403 RRF .3074 RTF -.1413 CRT .7783 CRS -.4731 CST .1737
FDE -.3590 FRA 3.1207 FC-18.7472 BSP 669 SGB 991.8 R23 -.2995 R13 .1464 LSA 34.9 MSA 28.3 SSA 1.7
BDE .2942 BRA .3426 BC3 .4741 FSP 1896 SG1 871.2 SG2 474.0 THA 178.21 EL1 28.9 EL2 10.2 ALF 41.74

LAUNCH DATE MAY 17 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 419.929 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.272 GAL .62 AZL 91.63 HCA 137.35 SMA 186.12 ECC .18747 INC 1.6251 V1 29.451
RP 210.33 LAP -1.10 LOP 12.82 VP 23.428 GAP 7.82 AZP 88.80 TAL 3.91 TAP 141.26 RCA 151.23 APO 221.01 V2 26.071
RC 113.239 GL -18.05 GP -2.01 ZAL 90.33 ZAP 122.76 ETS 181.17 ZAE 165.24 ETE 186.63 ZAC 98.36 ETC 277.20 LVI -15.41

PLANETOCENTRIC CONIC

C3 8.721 VHL 2.953 DLA -29.80 RAL 334.98 RAD 6637.4 VEL 11.350 PTH 6.40 VHP 3.363 DPA -19.85 RAP 319.25 ECC 1.1435

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 8	2333.39	.96	59.43	185.66	137.57	16 46 2	1333.4	19.09	43.12
60.00	17 30 15	2112.25	5.93	44.27	190.42	129.94	18 5 28	1112.3	21.31	25.17
70.00	19 22 44	1781.38	11.74	21.75	194.71	122.30	19 52 25	781.4	23.93	.00
80.00	22 24 18	1211.59	20.79	343.44	199.53	111.92	22 44 29	211.6	27.99	318.33
80.20	22 41 30	1155.54	22.01	339.78	200.04	110.60	23 1 6	155.5	28.53	314.28
100.00	1 11 5	5974.10	20.79	282.71	199.53	111.92	2 50 39	4974.1	27.99	257.61
110.00	0 26 6	6116.24	11.74	288.57	194.71	122.30	2 8 3	5116.2	23.93	266.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2075 TRA -.2970 TC3 -.6344 BAU .0740 SGT 862.2 SGR 468.5 SG3 1181.7 ST 22.5 SR 20.3 SS 33.6
RDE -.2055 RRA .1100 RC3 -.0075 FAU .19740 RRT -.0027 RRF .3307 RTF -.0164 CRT .8004 CRS -.4733 CST .1374
FDE -.3669 FRA 3.2444 FC-19.5957 BSP 499 SGB 981.3 R23 -.3306 R13 .0167 LSA 35.5 MSA 28.1 SSA 1.7
BDE .2921 BRA .3167 BC3 .6345 FSP 1983 SG1 862.2 SG2 468.5 THA 179.88 EL1 28.7 EL2 9.5 ALF 41.34

LAUNCH DATE MAY 17 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 424.090 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.259 GAL .60 AZL 91.62 HCA 138.57 SMA 185.91 ECC .18656 INC 1.6157 V1 29.451
RP 210.57 LAP -1.07 LOP 14.04 VP 23.381 GAP 7.61 AZP 88.79 TAL 3.84 TAP 142.42 RCA 151.23 APO 220.60 V2 26.044
RC 115.380 GL -18.02 GP -2.10 ZAL 90.47 ZAP 120.76 ETS 181.10 ZAE 163.40 ETE 186.40 ZAC 98.37 ETC 277.03 LVI -15.10

PLANETOCENTRIC CONIC

C3 8.644 VHL 2.940 DLA -29.71 RAL 335.12 RAD 6637.3 VEL 11.347 PTH 6.40 VHP 3.297 DPA -20.16 RAP 318.49 ECC 1.1423

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 13	2333.66	.94	59.44	185.69	137.57	16 46 7	1333.7	19.08	43.13
60.00	17 30 6	2113.15	5.89	44.32	190.43	129.94	18 5 19	1113.2	21.27	25.22
70.00	19 22 4	1783.79	11.65	21.88	194.69	122.33	19 51 48	783.8	23.86	.15
80.00	22 16 8	1237.78	20.12	345.09	199.25	112.54	22 36 46	237.8	27.64	320.20
80.49	22 44 35	1146.85	22.00	339.13	200.04	110.49	23 3 42	146.8	28.47	313.62
100.00	1 2 56	6000.29	20.12	284.36	199.25	112.54	2 42 56	5000.3	27.64	259.48
110.00	0 25 27	6118.64	11.65	288.71	194.69	122.33	2 7 25	5118.6	23.86	266.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2087 TRA -.2667 TC3 -.7932 BAU .0917 SGT 860.8 SGR 462.7 SG3 1232.3 ST 22.2 SR 19.9 SS 34.3
RDE -.2003 RRA .1104 RC3 -.0266 FAU .20512 RRT .0449 RRF .3553 RTF -.54 CRT .8229 CRS -.4753 CST .0982
FDE -.3763 FRA 3.3630 FC-20.5447 BSP 334 SGB 977.3 R23 .3484 R13 .1218 LSA 36.0 MSA 27.7 SSA 1.7
BDE .2893 BRA .2886 BC3 .7936 FSP 2053 SG1 861.2 SG2 462.0 THA 1.94 EL1 28.5 EL2 8.8 ALF 41.10

LAUNCH DATE MAY 17 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 11 1971

HELIOCENTRIC CONIC DISTANCE 428.257 EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.248 GAL .59 AZL 91.61 HCA 139.79 SMA 185.73 ECC .18574 INC 1.6058 V1 29.451
RP 210.82 LAP -1.04 LOP 15.26 VP 23.334 GAP 7.39 AZP 88.77 TAL 3.76 TAP 143.55 RCA 151.23 APO 220.23 V2 26.015
RC 117.545 GL -17.98 GP -2.18 ZAL 90.64 ZAP 118.73 ETS 181.03 ZAE 161.51 ETE 186.19 ZAC 98.38 ETC 276.86 LVI -14.78

PLANETOCENTRIC CONIC

C3 8.573 VHL 2.928 DLA -29.61 RAL 335.28 RAD 6637.3 VEL 11.344 PTH 6.40 VHP 3.237 DPA -20.48 RAP 317.70 ECC 1.1411

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 16	2334.57	.90	59.47	185.75	137.57	16 46 11	1334.6	19.03	43.17
60.00	17 29 52	2114.83	5.81	44.40	190.46	129.95	18 5 7	1114.8	21.21	25.32
70.00	19 21 12	1787.31	11.53	22.07	194.68	122.37	19 51 0	787.3	23.75	.37
80.00	22 9 3	1261.02	19.51	346.54	199.02	113.06	22 30 4	261.0	27.30	321.85
80.85	22 48 2	1136.34	21.96	338.34	200.07	110.38	23 6 58	136.3	28.38	312.83
100.00	0 55 51	6023.53	19.51	285.82	199.02	113.06	2 36 14	5023.5	27.30	261.12
110.00	0 24 35	6122.16	11.53	288.90	194.68	122.37	2 6 37	5122.2	23.75	267.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2056 TRA -.2305 TC3 -.9453 BAU .1085 SGT 858.7 SGR 457.4 SG3 1283.1 ST 21.6 SR 19.5 SS 34.9
RDE -.1955 RRA .1107 RC3 -.0475 FAU .21343 RRT .1021 RRF .3822 RTF .2564 CRT .8456 CRS -.4938 CST .0330
FDE -.4086 FRA 3.4590 FC-21.5521 BSP 314 SGB 972.9 R23 .3474 R13 .2704 LSA 36.7 MSA 26.7 SSA 1.7
BDE .2837 BRA .2557 BC3 .9465 FSP 2097 SG1 860.5 SG2 454.0 THA 4.32 EL1 27.9 EL2 8.0 ALF 41.56

LAUNCH DATE MAY 17 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 13 1971

DISTANCE 432.425

EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.28 LAL .00 LOL 235.46 VL 32.239 GAL .57 AZL 91.60 HCA 141.01 SMA 185.57 ECC .18501 INC 1.5956 V1 29.451
RP 211.07 LAP -1.00 LOP 16.48 VP 23.288 GAP 7.18 AZP 88.76 TAL 3.66 TAP 144.67 RCA 151.24 APO 219.90 V2 25.986
RC 119.734 GL -17.92 GP -2.28 ZAL 90.84 ZAP 116.69 ETS 180.95 ZAE 159.59 ETE 186.01 ZAC 98.39 ETC 276.68 LVI -14.45

PLANETOCENTRIC CONIC

C3 8.911 VHL 2.917 DLA -29.48 RAL 338.48 RAD 6637.3 VEL 11.341 PTH 6.39 VHP 3.181 DPA -20.81 RAP 316.89 ECC 1.1401

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 18	2336.22	.82	59.54	185.83	137.57	16 46 14	1336.2	18.95	43.25
60.00	17 29 32	2117.43	5.70	44.52	190.51	129.96	18 4 50	1117.4	21.11	25.46
70.00	19 20 8	1792.15	11.35	22.34	194.69	122.43	19 50 0	792.2	23.61	.68
80.00	22 2 14	1283.99	18.89	347.97	198.84	113.56	22 23 38	284.0	26.95	323.46
81.32	22 52 28	1123.16	21.90	337.34	200.13	110.24	23 11 12	123.2	28.27	311.83
100.00	0 49 2	6046.50	18.89	287.24	198.84	113.56	2 29 48	5046.5	26.95	262.74
110.00	0 23 30	6126.99	11.35	289.16	194.69	122.43	2 5 37	5127.0	23.61	267.50

DIFFERENTIAL CORRECTIONS

TDE -.2208 TRA -.2112 TC3-1.1925 BAU .1359
RDE -.1893 RRA .1124 RC3 -.0638 FAU .21747
FDE -.3358 FRA 3.6597 FC-22.1222 BSP 381
BDE .2908 BRA .2393 BC3 1.1942 FSP 2249

MID-COURSE EXECUTION ACCURACY

SGT 948.3 SGR 451.6 SG3 1325.1
RRT .1548 RRF .4071 RTF .3667
SGB 1050.3 R23 .3381 R13 .3820
SG1 951.6 SG2 444.6 THA 5.40

ORBIT DETERMINATION ACCURACY

ST 22.9 SR 19.0 SS 35.6
CRT .8669 CRS -.4412 CST .0507
LSA 36.9 MSA 26.0 SSA 1.7
EL1 28.7 EL2 7.5 ALF 38.91

LAUNCH DATE MAY 17 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 15 1971

DISTANCE 436.600

EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.28 LAL .00 LOL 235.46 VL 32.230 GAL .55 AZL 91.58 HCA 142.23 SMA 185.42 ECC .18436 INC 1.5846 V1 29.451
RP 211.33 LAP -.97 LOP 17.70 VP 23.243 GAP 6.98 AZP 88.75 TAL 3.54 TAP 145.77 RCA 151.24 APO 219.61 V2 25.957
RC 121.945 GL -17.85 GP -2.37 ZAL 91.07 ZAP 114.64 ETS 180.86 ZAE 157.63 ETE 185.83 ZAC 98.39 ETC 276.49 LVI -14.11

PLANETOCENTRIC CONIC

C3 8.454 VHL 2.908 DLA -29.33 RAL 335.68 RAD 6637.2 VEL 11.339 PTH 6.39 VHP 3.129 DPA -21.14 RAP 316.06 ECC 1.1391

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 17	2338.45	.70	59.64	185.93	137.57	16 46 16	1338.5	18.85	43.36
60.00	17 29 8	2120.74	5.55	44.68	190.58	129.98	18 4 28	1120.7	20.98	25.64
70.00	19 18 52	1797.94	11.14	22.65	194.72	122.50	19 48 50	797.9	23.44	1.04
80.00	21 55 50	1306.05	18.28	349.33	198.68	114.03	22 17 36	306.0	26.59	325.01
81.90	22 57 49	1107.47	21.82	336.15	200.21	110.09	23 16 16	107.5	28.14	310.65
100.00	0 42 38	6068.56	18.28	288.60	198.68	114.03	2 23 46	5068.6	26.59	264.28
110.00	0 22 14	6132.80	11.14	289.48	194.72	122.50	2 4 27	5132.8	23.44	267.87

DIFFERENTIAL CORRECTIONS

TDE -.2231 TRA -.1780 TC3-1.3971 BAU .1582
RDE -.1841 RRA .1132 RC3 -.0843 FAU .22399
FDE -.3404 FRA 3.7744 FC-22.9364 BSP 560
BDE .2893 BRA .2110 BC3 1.3996 FSP 2326

MID-COURSE EXECUTION ACCURACY

SGT 1007.6 SGR 446.7 SG3 1369.2
RRT .2143 RRF .4351 RTF .4821
SGB 1102.2 R23 .3152 R13 .4985
SG1 1013.2 SG2 433.9 THA 6.65

ORBIT DETERMINATION ACCURACY

ST 22.8 SR 18.5 SS 36.2
CRT .8876 CRS -.4438 CST .0035
LSA 37.5 MSA 27.7 SSA 1.7
EL1 28.6 EL2 6.8 ALF 38.36

LAUNCH DATE MAY 17 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 17 1971

DISTANCE 440.778

EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.28 LAL .00 LOL 235.46 VL 32.223 GAL .53 AZL 91.57 HCA 143.44 SMA 185.30 ECC .18379 INC 1.5732 V1 29.451
RP 211.60 LAP -.94 LOP 18.91 VP 23.199 GAP 6.77 AZP 88.74 TAL 3.41 TAP 146.85 RCA 151.24 APO 219.35 V2 25.926
RC 124.177 GL -17.77 GP -2.48 ZAL 91.32 ZAP 112.57 ETS 180.78 ZAE 155.64 ETE 185.66 ZAC 98.39 ETC 276.30 LVI -13.75

PLANETOCENTRIC CONIC

C3 8.404 VHL 2.899 DLA -29.15 RAL 335.91 RAD 6637.2 VEL 11.336 PTH 6.39 VHP 3.082 DPA -21.48 RAP 315.21 ECC 1.1383

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 15	2341.33	.56	59.76	186.05	137.57	16 46 16	1341.3	18.71	43.49
60.00	17 28 37	2124.84	5.37	44.88	190.67	130.00	18 4 2	1124.8	20.82	25.87
70.00	19 17 26	1804.81	10.88	23.03	194.76	122.57	19 47 31	804.8	23.24	1.47
80.00	21 49 38	1327.97	17.67	350.66	198.56	114.47	22 11 45	328.0	26.22	326.53
82.61	23 4 20	1088.33	21.72	334.69	200.31	109.94	23 22 28	88.3	27.99	309.21
100.00	0 36 25	6090.48	17.67	289.94	198.56	114.47	2 17 56	5090.5	26.22	265.80
110.00	0 20 48	6139.67	10.88	289.85	194.76	122.57	2 3 8	5139.7	23.24	268.30

DIFFERENTIAL CORRECTIONS

TDE -.2269 TRA -.1449 TC3-1.6131 BAU .1816
RDE -.1786 RRA .1144 RC3 -.1053 FAU .23001
FDE -.3177 FRA 3.9150 FC-23.6937 BSP 784
BDE .2868 BRA .1847 BC3 1.6165 FSP 2413

MID-COURSE EXECUTION ACCURACY

SGT 1087.8 SGR 442.1 SG3 1413.4
RRT .2712 RRF .4639 RTF .5145
SGB 1174.2 R23 .2909 R13 .5898
SG1 1095.6 SG2 422.5 THA 7.40

ORBIT DETERMINATION ACCURACY

ST 23.0 SR 18.1 SS 36.8
CRT .9065 CRS -.4296 CST -.0248
LSA 38.0 MSA 27.6 SSA 1.6
EL1 28.6 EL2 6.1 ALF 37.50

LAUNCH DATE MAY 17 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 19 1971

DISTANCE 444.960

EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.28 LAL .00 LOL 235.46 VL 32.216 GAL .50 AZL 91.56 HCA 144.65 SMA 185.19 ECC .18330 INC 1.5611 V1 29.451
RP 211.87 LAP -.90 LOP 20.12 VP 23.155 GAP 6.58 AZP 88.73 TAL 3.26 TAP 147.90 RCA 151.25 APO 219.14 V2 25.896
RC 126.431 GL -17.67 GP -2.58 ZAL 91.60 ZAP 110.49 ETS 180.68 ZAE 153.63 ETE 185.50 ZAC 98.39 ETC 276.11 LVI -13.39

PLANETOCENTRIC CONIC

C3 8.360 VHL 2.891 DLA -28.96 RAL 336.16 RAD 6637.2 VEL 11.335 PTH 6.39 VHP 3.040 DPA -21.82 RAP 314.34 ECC 1.1376

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 10	2344.84	.38	59.90	186.19	137.57	16 46 15	1344.8	18.54	43.66
60.00	17 28 2	2129.71	5.16	45.12	190.78	130.02	18 3 32	1129.7	20.62	26.14
70.00	19 15 49	1812.70	10.60	23.45	194.81	122.66	19 46 2	812.7	23.01	1.97
80.00	21 43 34	1349.86	17.05	351.99	198.46	114.89	22 6 4	349.9	25.83	328.04
83.49	23 12 27	1064.42	21.61	332.89	200.44	109.76	23 30 12	64.4	27.81	307.42
100.00	0 30 22	6112.37	17.05	291.27	198.46	114.89	2 12 14	5112.4	25.83	267.31
110.00	0 19 11	6147.56	10.60	290.28	194.81	122.66	2 1 39	5147.6	23.01	268.79

DIFFERENTIAL CORRECTIONS

TDE -.2299 TRA -.1093 TC3-1.8374 BAU .2059
RDE -.1731 RRA .1157 RC3 -.1268 FAU .23570
FDE -.2930 FRA 4.0438 FC-24.4072 BSP 1041
BDE .2878 BRA .1592 BC3 1.8418 FSP 2470

MID-COURSE EXECUTION ACCURACY

SGT 1182.3 SGR 437.9 SG3 1454.6
RRT .3271 RRF .4930 RTF .6529
SGB 1260.8 R23 .2644 R13 .6662
SG1 1192.1 SG2 410.4 THA 7.84

ORBIT DETERMINATION ACCURACY

ST 23.1 SR 17.6 SS 37.3
CRT .9243 CRS -.4164 CST -.0564
LSA 38.4 MSA 27.5 SSA 1.6
EL1 28.6 EL2 5.4 ALF 36.66

LAUNCH DATE MAY 17 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC — DISTANCE 449.144 — EARTH TO MARS

RL 151.28 LAL .00 LOL 238.46 VL 32.211 GAL .48 AZL 91.55 HCA 145.86 SMA 185.10 ECC .18288 INC 1.5483 V1 29.451
RP 212.14 LAP -.87 LOP 21.32 VP 23.112 GAP 6.38 AZP 88.72 TAL 3.09 TAP 148.95 RCA 151.25 APO 218.95 V2 25.864
RC 128.706 GL -17.56 GP -2.69 ZAL 91.90 ZAP 108.41 ETS 180.59 ZAE 151.60 ETE 185.35 ZAC 98.37 ETC 275.91 LVI -13.01

PLANETOCENTRIC CONIC

C3 8.322 VHL 2.885 DLA -28.74 RAL 336.43 RAD 6637.2 VEL 11.333 PTH 6.39 VHP 3.001 DPA -22.16 RAP 313.46 ECC 1.1370

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 7 3	2348.97	.17	60.08	186.35	137.58	16 46 11	1349.0	18.34	43.85
60.00	17 27 21	2135.32	4.92	45.39	190.90	130.05	18 2 57	1135.3	20.40	26.45
70.00	19 14 2	1821.56	10.27	23.93	194.88	122.75	19 44 24	821.6	22.74	2.52
80.00	21 37 39	1371.79	16.41	353.31	198.38	115.30	22 0 30	371.8	25.42	329.54
84.64	23 22 51	1033.49	21.47	330.56	200.59	109.58	23 40 4	33.5	27.61	305.11
100.00	0 24 26	6134.30	16.41	292.59	198.38	115.30	2 6 41	5134.3	25.42	268.81
110.00	0 17 24	6156.42	10.27	290.76	194.88	122.75	2 0 1	5156.4	22.74	269.34

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2295 TRA -.0703 TC3-2.0577 BAU .2295 — SGT 1281.6 SGR 434.8 SG3 1498.1 — ST 23.0 SR 17.2 SS 37.8
RDE -.1680 RRA .1169 RC3 -.1512 FAU .24249 — RRT .3831 RRF .5247 RTF .7222 — CRT .9411 CRS -.4209 CST -.1104
FDE -.2951 FRA 4.1519 FC-25.2263 BSP 1333 — SGB 1353.3 R23 .2363 R13 .7334 — LSA 39.0 MSA 26.9 SSA 1.6
BDE .2844 BRA .1364 BC3 2.0632 FSP 2521 — SG1 1293.5 SG2 397.9 THA 8.19 — EL1 28.3 EL2 4.7 ALF 36.25

LAUNCH DATE MAY 17 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC — DISTANCE 453.330 — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.206 GAL .45 AZL 91.53 HCA 147.06 SMA 185.02 ECC .18252 INC 1.5348 V1 29.451
RP 212.43 LAP -.83 LOP 22.53 VP 23.070 GAP 6.19 AZP 88.71 TAL 2.91 TAP 149.97 RCA 151.25 APO 218.80 V2 25.832
RC 130.999 GL -17.43 GP -2.80 ZAL 92.23 ZAP 106.33 ETS 180.49 ZAE 149.55 ETE 185.21 ZAC 98.35 ETC 275.71 LVI -12.63

PLANETOCENTRIC CONIC

C3 8.289 VHL 2.879 DLA -28.50 RAL 336.72 RAD 6637.1 VEL 11.331 PTH 6.38 VHP 2.967 DPA -22.51 RAP 312.58 ECC 1.1364

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 53	2353.78	-.07	60.28	186.53	137.58	16 46 7	1353.8	18.11	44.07
60.00	17 26 35	2141.75	4.63	45.69	191.05	130.08	18 2 17	1141.7	20.15	26.80
70.00	19 12 6	1831.46	9.90	24.47	194.97	122.85	19 42 37	831.5	22.44	3.13
80.00	21 31 46	1394.04	15.76	354.64	198.33	115.69	21 55 0	394.0	24.99	331.05
86.31	23 37 44	6276.43	21.31	305.10	200.76	109.38	25 22 20	5276.4	27.39	279.67
100.00	0 18 34	6156.55	15.76	293.92	198.33	115.69	2 1 11	5156.6	24.99	270.32
110.00	0 15 28	6166.32	9.90	291.29	194.97	122.85	1 58 14	5166.3	22.44	269.95

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2349 TRA -.0353 TC3-2.3175 BAU .2575 — SGT 1416.2 SGR 431.6 SG3 1532.4 — ST 23.5 SR 16.6 SS 38.4
RDE -.1620 RRA .1190 RC3 -.1721 FAU .24611 — RRT .4275 RRF .5548 RTF .7640 — CRT .9535 CRS -.3905 CST -.1183
FDE -.2356 FRA 4.3107 FC-25.7050 BSP 1572 — SGB 1480.5 R23 .2232 R13 .7730 — LSA 39.5 MSA 27.2 SSA 1.6
BDE .2853 BRA .1241 BC3 2.3239 FSP 2629 — SG1 1429.1 SG2 386.6 THA 8.01 — EL1 28.5 EL2 4.1 ALF 34.84

LAUNCH DATE MAY 17 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC — DISTANCE 457.518 — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.203 GAL .42 AZL 91.52 HCA 148.26 SMA 184.96 ECC .18224 INC 1.5202 V1 29.451
RP 212.72 LAP -.80 LOP 23.73 VP 23.028 GAP 6.01 AZP 88.71 TAL 2.71 TAP 150.97 RCA 151.26 APO 218.67 V2 25.799
RC 133.312 GL -17.29 GP -2.93 ZAL 92.58 ZAP 104.25 ETS 180.38 ZAE 147.50 ETE 185.08 ZAC 98.32 ETC 275.51 LVI -12.24

PLANETOCENTRIC CONIC

C3 8.261 VHL 2.874 DLA -28.24 RAL 337.03 RAD 6637.1 VEL 11.330 PTH 6.38 VHP 2.937 DPA -22.85 RAP 311.70 ECC 1.1360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 40	2359.19	-.34	60.50	186.73	137.58	16 45 59	1359.2	17.85	44.33
60.00	17 25 43	2148.90	4.32	46.04	191.20	130.11	18 1 32	1148.9	19.86	27.19
70.00	19 10 0	1842.25	9.51	25.05	195.07	122.96	19 40 42	842.2	22.11	3.80
80.00	21 26 0	1416.40	15.10	355.97	198.31	116.07	21 49 36	416.4	24.54	332.56
90.00	0 0 4	6220.12	20.14	300.53	200.57	110.28	1 43 44	5220.1	26.72	275.43
100.00	0 12 47	6178.91	15.10	295.24	198.31	116.07	1 55 46	5178.9	24.54	271.83
110.00	0 13 22	6177.10	9.51	291.87	195.07	122.96	1 56 19	5177.1	22.11	270.62

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2366 TRA .0046 TC3-2.5675 BAU .2844 — SGT 1549.5 SGR 428.6 SG3 1562.3 — ST 23.7 SR 16.1 SS 38.7
RDE -.1562 RRA .1204 RC3 -.1951 FAU .25033 — RRT .4747 RRF .5844 RTF .8147 — CRT .9656 CRS -.3751 CST -.1488
FDE -.1974 FRA 4.4064 FC-26.2338 BSP 1857 — SGB 1607.7 R23 .2030 R13 .8119 — LSA 39.8 MSA 27.1 SSA 1.5
BDE .2836 BRA .1204 BC3 2.5749 FSP 2678 — SG1 1563.6 SG2 373.9 THA 7.94 — EL1 28.4 EL2 3.5 ALF 33.85

LAUNCH DATE MAY 17 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC — DISTANCE 461.707 — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.200 GAL .38 AZL 91.50 HCA 149.46 SMA 184.92 ECC .18201 INC 1.5048 V1 29.451
RP 213.01 LAP -.76 LOP 24.92 VP 22.987 GAP 5.82 AZP 88.70 TAL 2.50 TAP 151.95 RCA 151.26 APO 218.58 V2 25.766
RC 135.643 GL -17.14 GP -3.05 ZAL 92.96 ZAP 102.18 ETS 180.27 ZAE 145.43 ETE 184.95 ZAC 98.29 ETC 275.31 LVI -11.84

PLANETOCENTRIC CONIC

C3 8.238 VHL 2.870 DLA -27.95 RAL 337.35 RAD 6637.1 VEL 11.329 PTH 6.38 VHP 2.910 DPA -23.20 RAP 310.82 ECC 1.1356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 24	2365.24	-.64	60.76	186.94	137.57	16 45 49	1365.2	17.56	44.61
60.00	17 24 46	2156.80	3.97	46.42	191.37	130.14	18 0 42	1156.8	19.55	27.62
70.00	19 7 45	1853.95	9.07	25.67	195.18	123.07	19 38 39	854.0	21.75	4.51
80.00	21 20 16	1439.02	14.41	357.30	198.30	116.43	21 44 15	439.0	24.07	334.07
90.00	23 33 10	1010.44	18.22	327.56	200.08	112.01	23 50 1	10.4	25.71	303.04
100.00	0 7 4	6201.53	14.41	296.58	198.30	116.43	1 50 26	5201.5	24.07	273.34
110.00	0 11 7	6188.81	9.07	292.50	195.18	123.07	1 54 16	5188.8	21.75	271.34

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2373 TRA .0459 TC3-2.8228 BAU .3118 — SGT 1691.4 SGR 427.3 SG3 1593.8 — ST 23.9 SR 15.6 SS 39.3
RDE -.1505 RRA .1224 RC3 -.2191 FAU .25432 — RRT .5187 RRF .6164 RTF .8357 — CRT .9754 CRS -.3632 CST -.1817
FDE -.1616 FRA 4.5304 FC-26.7257 BSP 2153 — SGB 1744.6 R23 .1895 R13 .8415 — LSA 40.4 MSA 26.8 SSA 1.5
BDE .2810 BRA .1307 BC3 2.8313 FSP 2723 — SG1 1706.6 SG2 362.1 THA 7.82 — EL1 28.4 EL2 2.9 ALF 32.89

LAUNCH DATE MAY 17 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC — DISTANCE 465.898 — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.198 GAL .35 AZL 91.49 HCA 150.65 SMA 184.89 ECC .18184 INC 1.4884 V1 29.481
RP 213.31 LAP -.73 LOP 26.12 VP 22.946 GAP 5.64 AZP 88.70 TAL 2.27 TAP 152.92 RCA 151.26 APO 218.51 V2 25.732
RC 137.991 GL -16.96 GP -3.18 ZAL 93.35 ZAP 100.13 ETS 180.15 ZAE 143.37 ETE 184.83 ZAC 98.24 ETC 275.10 LVI -11.43

PLANETOCENTRIC CONIC

C3 8.220 VHL 2.867 DLA -27.63 RAL 337.68 RAD 6637.1 VEL 11.328 PTH 6.38 VHP 2.867 DPA -23.55 RAP 309.95 ECC 1.1383

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 6 4	2371.94	-.98	61.04	187.17	137.57	16 45 36	1371.9	17.24	44.92
60.00	17 23 42	2165.47	3.59	46.83	191.56	130.17	17 59 47	1165.5	19.20	28.09
70.00	19 5 21	1966.56	8.60	26.35	195.31	123.18	19 36 27	866.6	21.36	5.28
80.00	21 14 35	1461.95	13.72	358.65	198.31	116.78	21 38 57	461.9	23.57	335.59
90.00	23 19 31	1059.06	16.95	330.57	199.87	112.98	23 37 10	59.1	24.97	306.40
100.00	0 1 23	6224.46	13.72	297.92	198.31	116.78	1 45 7	5224.5	23.57	274.87
110.00	0 8 43	6201.41	8.60	293.17	195.31	123.18	1 52 4	5201.4	21.36	272.11

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2371 TRA .0884 TC3-3.0838 BAU .3399 — SGT 1841.5 SGR 425.7 SG3 1617.7 — ST 24.0 SR 15.0 SS 39.7
RDE -.1442 RRA .1245 RC3 -.2425 FAU .25898 — RRT .5592 RRF .6462 RTF .8589 — CRT .9828 CRS -.3327 CST -.1941
FDE -.0887 FRA 4.6431 FC-27.0651 BSP 2457 — SGB 1890.1 R23 .1783 R13 .8637 — LSA 40.7 MSA 26.8 SSA 1.5
BDE .2775 BRA .1527 BC3 3.0933 FSP 2766 — SG1 1857.4 SG2 349.9 THA 7.64 — EL1 28.2 EL2 2.4 ALF 31.80

LAUNCH DATE MAY 17 1971 FLIGHT TIME 198.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC — DISTANCE 470.089 — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.197 GAL .31 AZL 91.47 HCA 151.84 SMA 184.86 ECC .18173 INC 1.4707 V1 29.451
RP 213.61 LAP -.69 LOP 27.30 VP 22.906 GAP 5.46 AZP 88.70 TAL 2.03 TAP 153.87 RCA 151.27 APO 218.46 V2 25.697
RC 140.356 GL -16.77 GP -3.32 ZAL 93.77 ZAP 98.09 ETS 180.03 ZAE 141.31 ETE 184.72 ZAC 98.18 ETC 274.91 LVI -11.02

PLANETOCENTRIC CONIC

C3 8.206 VHL 2.865 DLA -27.30 RAL 338.03 RAD 6637.1 VEL 11.328 PTH 6.38 VHP 2.868 DPA -23.89 RAP 309.08 ECC 1.1351

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 41	2379.30	-1.35	61.34	187.41	137.56	16 45 20	1379.3	16.89	45.26
60.00	17 22 31	2174.91	3.18	47.29	191.76	130.20	17 58 46	1174.9	18.82	28.60
70.00	19 2 48	1880.05	8.10	27.07	195.45	123.29	19 34 8	880.1	20.94	6.10
80.00	21 8 55	1485.23	13.00	.00	198.35	117.12	21 33 40	485.2	23.05	337.12
90.00	23 8 28	1099.73	15.85	333.05	199.75	113.73	23 26 47	99.7	24.28	309.18
100.00	23 51 47	6247.74	13.00	299.28	198.35	117.12	25 35 55	5247.7	23.05	276.40
110.00	0 6 10	6214.91	8.10	293.89	195.45	123.29	1 49 45	5214.9	20.94	272.92

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2359 TRA .1326 TC3-3.3487 BAU .3685 — SGT 1998.1 SGR 426.1 SG3 1638.7 — ST 24.2 SR 14.5 SS 40.3
RDE -.1383 RRA .1271 RC3 -.2659 FAU .25883 — RRT .5969 RRF .6778 RTF .8776 — CRT .9883 CRS -.3238 CST -.2293
FDE -.0486 FRA 4.7641 FC-27.3065 BSP 2771 — SGB 2043.0 R23 .1724 R13 .8816 — LSA 41.4 MSA 26.5 SSA 1.4
BDE .2735 BRA .1836 BC3 3.3592 FSP 2831 — SG1 2014.7 SG2 339.0 THA 7.47 — EL1 28.1 EL2 1.9 ALF 30.77

LAUNCH DATE MAY 17 1971 FLIGHT TIME 200.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC — DISTANCE 474.281 — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.196 GAL .27 AZL 91.45 HCA 153.02 SMA 184.86 ECC .18168 INC 1.4515 V1 29.451
RP 213.92 LAP -.66 LOP 28.49 VP 22.866 GAP 5.29 AZP 88.71 TAL 1.78 TAP 154.80 RCA 151.27 APO 218.44 V2 25.662
RC 142.739 GL -16.55 GP -3.47 ZAL 94.21 ZAP 96.07 ETS 179.90 ZAE 139.26 ETE 184.61 ZAC 98.11 ETC 274.71 LVI -10.60

PLANETOCENTRIC CONIC

C3 8.196 VHL 2.863 DLA -26.93 RAL 338.39 RAD 6637.1 VEL 11.327 PTH 6.38 VHP 2.852 DPA -24.24 RAP 308.24 ECC 1.1349

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 5 13	2387.33	-1.75	61.68	187.66	137.55	16 45 0	1387.3	16.50	45.62
60.00	17 21 14	2185.12	2.73	47.77	191.97	130.22	17 57 39	1185.1	18.41	29.15
70.00	19 0 6	1894.44	7.56	27.84	195.59	123.41	19 31 40	894.4	20.48	6.97
80.00	21 3 15	1508.92	12.26	1.37	198.39	117.44	21 28 24	508.9	22.50	338.67
90.00	22 58 42	1136.60	14.83	335.27	199.68	114.36	23 17 39	136.6	23.61	311.68
100.00	23 46 7	6271.43	12.26	300.64	198.39	117.44	25 30 38	5271.4	22.50	277.95
110.00	0 3 28	6229.30	7.56	294.66	195.59	123.41	1 47 17	5229.3	20.48	273.79

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2337 TRA .1771 TC3-3.6168 BAU .3976 — SGT 2160.0 SGR 426.6 SG3 1656.3 — ST 24.3 SR 13.9 SS 40.6
RDE -.1322 RRA .1292 RC3 -.2919 FAU .26121 — RRT .6350 RRF .7076 RTF .9043 — CRT .9917 CRS -.3096 CST -.2590
FDE .0034 FRA 4.8375 FC-27.5898 BSP 3084 — SGB 2201.7 R23 .1636 R13 .8976 — LSA 41.8 MSA 26.2 SSA 1.4
BDE .2685 BRA .2192 BC3 3.6285 FSP 2864 — SG1 2177.3 SG2 327.0 THA 7.31 — EL1 28.0 EL2 1.6 ALF 29.69

LAUNCH DATE MAY 17 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC — DISTANCE 478.473 — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.196 GAL .23 AZL 91.43 HCA 154.21 SMA 184.86 ECC .18167 INC 1.4309 V1 29.451
RP 214.24 LAP -.62 LOP 29.67 VP 22.826 GAP 5.12 AZP 88.71 TAL 1.51 TAP 155.72 RCA 151.28 APO 218.44 V2 25.627
RC 145.138 GL -16.32 GP -3.63 ZAL 94.68 ZAP 94.07 ETS 179.76 ZAE 137.22 ETE 184.51 ZAC 98.02 ETC 274.52 LVI -10.18

PLANETOCENTRIC CONIC

C3 8.191 VHL 2.862 DLA -26.53 RAL 338.77 RAD 6637.1 VEL 11.327 PTH 6.38 VHP 2.839 DPA -24.59 RAP 307.41 ECC 1.1348

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 4 40	2396.04	-2.19	62.04	187.92	137.54	16 44 36	1396.0	16.08	46.02
60.00	17 19 49	2196.13	2.25	48.30	192.19	130.25	17 56 26	1196.1	17.96	29.73
70.00	18 57 14	1909.72	6.99	28.65	195.75	123.52	19 29 4	909.7	19.99	7.88
80.00	20 57 34	1533.06	11.50	2.76	198.46	117.75	21 23 7	533.1	21.93	340.23
90.00	22 49 44	1171.33	13.84	337.34	199.65	114.91	23 9 15	171.3	22.94	314.00
100.00	23 40 26	1007.53	11.50	324.13	198.46	117.75	23 57 13	7.5	21.93	301.60
110.00	0 0 36	6244.58	6.99	295.47	195.75	123.52	1 44 41	5244.6	19.99	274.70

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2300 TRA .2238 TC3-3.8855 BAU .4269 — SGT 2325.8 SGR 429.1 SG3 1673.3 — ST 24.4 SR 13.4 SS 41.2
RDE -.1258 RRA .1322 RC3 -.3181 FAU .26267 — RRT .6705 RRF .7382 RTF .9063 — CRT .9930 CRS -.2935 CST -.2652
FDE .0678 FRA 4.9470 FC-27.7625 BSP 3405 — SGB 2365.1 R23 .1605 R13 .9092 — LSA 42.4 MSA 25.9 SSA 1.4
BDE .2622 BRA .2600 BC3 3.8985 FSP 2917 — SG1 2343.9 SG2 315.9 THA 7.18 — EL1 27.8 EL2 1.4 ALF 28.55

LAUNCH DATE MAY 17 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 482.664 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.197	GAL	.19	AZL	91.41	HCA	155.39	SMA	184.87	ECC	.18172	INC	1.4085	V1	29.451
RP	214.55	LAP	-.59	LOP	30.85	VP	22.787	GAP	4.95	AZP	88.72	TAL	1.24	TAP	156.62	RCA	151.28	APO	218.47	V2	25.591
RC	147.555	GL	-16.06	GP	-3.80	ZAL	95.16	ZAP	92.11	ETS	179.62	ZAE	135.19	ETE	184.42	ZAC	97.92	ETC	274.33	LVI	-9.75

PLANETOCENTRIC CONIC

C3	8.189	VHL	2.862	DLA	-26.11	RAL	339.14	RAD	6637.1	VEL	11.327	PTH	6.38	VHP	2.830	DPA	-24.93	RAP	306.61	ECC	1.1348

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 4 1	2405.48	-2.66	62.44	188.19	137.52	16 44 6	1405.5	15.62	46.45
60.00	17 18 17	2207.96	1.73	48.87	192.41	130.27	17 55 4	1208.0	17.48	30.36
70.00	18 54 12	1925.92	6.38	29.50	195.92	123.62	19 26 18	925.9	19.47	8.84
80.00	20 51 50	1557.73	10.71	4.17	198.53	118.04	21 17 48	557.7	21.32	341.82
90.00	22 41 16	1204.83	12.88	339.32	199.65	115.40	23 1 20	204.8	22.25	316.22
100.00	23 34 42	1032.20	10.71	325.54	198.53	118.04	23 51 54	32.2	21.32	303.18
110.00	23 53 38	6260.78	6.38	296.33	195.92	123.62	25 37 59	5260.8	19.47	275.67

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2249	TRA	.2717	TC3	-4.1566	BAU	.4566	SGT	2495.8	SGR	432.7	SG3	1685.8	ST	24.5	SR	12.8	SS	41.6
RDE	-.1195	RRA	.1351	RC3	-.3463	FAU	.26413	RRT	.7054	RRF	.7674	RTF	.9176	CRT	.9922	CRS	-.2832	CST	-.3184
FDE	.1251	FRA	5.0190	FC-	27.9231	BSP	3721	SGB	2533.1	R23	.1557	R13	.9200	LSA	43.0	MSA	25.4	SSA	1.4
BDE	.2547	BRA	.3034	BC3	4.1710	FSP	2918	SG1	2514.7	SG2	304.4	THA	7.08	EL1	27.6	EL2	1.4	ALF	27.41

LAUNCH DATE MAY 17 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 486.855 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.198	GAL	.15	AZL	91.38	HCA	156.56	SMA	184.90	ECC	.18181	INC	1.3839	V1	29.451
RP	214.88	LAP	-.55	LOP	32.03	VP	22.748	GAP	4.78	AZP	88.73	TAL	.94	TAP	157.51	RCA	151.28	APO	218.51	V2	25.554
RC	149.988	GL	-15.77	GP	-3.99	ZAL	95.67	ZAP	90.17	ETS	179.46	ZAE	133.19	ETE	184.33	ZAC	97.80	ETC	274.14	LVI	-9.32

PLANETOCENTRIC CONIC

C3	8.191	VHL	2.862	DLA	-25.65	RAL	339.53	RAD	6637.1	VEL	11.327	PTH	6.38	VHP	2.823	DPA	-25.28	RAP	305.83	ECC	1.1348

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 3 15	2415.66	-3.18	62.86	188.47	137.50	16 43 31	1415.7	15.12	46.91
60.00	17 16 34	2220.66	1.17	49.47	192.65	130.29	17 53 35	1220.7	16.96	31.03
70.00	18 50 59	1943.06	5.73	30.41	196.09	123.73	19 23 22	943.1	18.90	9.85
80.00	20 46 2	1583.00	9.90	5.60	198.62	118.31	21 12 25	583.0	20.69	343.42
90.00	22 33 6	1237.69	11.91	341.25	199.66	115.84	22 53 44	237.7	21.55	318.37
100.00	23 28 54	1057.47	9.90	326.97	198.62	118.31	23 46 31	57.5	20.69	304.79
110.00	23 50 26	6277.92	5.73	297.23	196.09	123.73	25 35 4	5277.9	18.90	276.68

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2193	TRA	.3222	TC3	-4.4262	BAU	.4864	SGT	2669.0	SGR	439.6	SG3	1699.5	ST	24.7	SR	12.2	SS	42.5
RDE	-.1132	RRA	.1395	RC3	-.3745	FAU	.26441	RRT	.7366	RRF	.7973	RTF	.9250	CRT	.9897	CRS	-.2848	CST	-.3599
FDE	.1745	FRA	5.1518	FC-	27.9458	BSP	4032	SGB	2705.0	R23	.1591	R13	.9272	LSA	44.1	MSA	24.9	SSA	1.3
BDE	.2467	BRA	.3511	BC3	4.4420	FSP	2898	SG1	2688.8	SG2	295.1	THA	7.00	EL1	27.5	EL2	1.6	ALF	26.21

LAUNCH DATE MAY 17 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 491.045 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.200	GAL	.10	AZL	91.36	HCA	157.74	SMA	184.93	ECC	.18194	INC	1.3572	V1	29.451
RP	215.21	LAP	-.51	LOP	33.20	VP	22.709	GAP	4.61	AZP	88.74	TAL	.64	TAP	158.38	RCA	151.28	APO	218.57	V2	25.518
RC	152.438	GL	-15.45	GP	-4.18	ZAL	96.19	ZAP	88.27	ETS	179.30	ZAE	131.20	ETE	184.26	ZAC	97.66	ETC	273.97	LVI	-8.88

PLANETOCENTRIC CONIC

C3	8.197	VHL	2.863	DLA	-25.16	RAL	339.92	RAD	6637.1	VEL	11.327	PTH	6.38	VHP	2.820	DPA	-25.64	RAP	305.09	ECC	1.1349

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 2 22	2426.65	-3.73	63.32	188.75	137.46	16 42 49	1426.6	14.59	47.41
60.00	17 14 42	2234.26	.57	50.12	192.88	130.30	17 51 57	1234.3	16.40	31.74
70.00	18 47 35	1961.20	5.04	31.36	196.27	123.82	19 20 16	961.2	18.30	10.91
80.00	20 40 7	1608.96	9.06	7.07	198.71	118.57	21 6 56	609.0	20.01	345.06
90.00	22 25 8	1270.30	10.93	343.15	199.70	116.24	22 46 18	270.3	20.82	320.48
100.00	23 22 59	1083.43	9.06	328.44	198.71	118.57	23 41 3	83.4	20.01	306.43
110.00	23 47 1	1008.02	5.04	320.28	196.27	123.82	24 3 49	8.0	18.30	299.83

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2133	TRA	.3729	TC3	-4.7012	BAU	.5171	SGT	2847.5	SGR	447.7	SG3	1708.2	ST	25.0	SR	11.7	SS	42.7
RDE	-.1073	RRA	.1430	RC3	-.4075	FAU	.26582	RRT	.7690	RRF	.8249	RTF	.9341	CRT	.9854	CRS	-.2986	CST	-.4131
FDE	.1971	FRA	5.2021	FC-	28.0761	BSP	4346	SGB	2882.5	R23	.1554	R13	.9361	LSA	44.7	MSA	24.2	SSA	1.3
BDE	.2387	BRA	.3994	BC3	4.7188	FSP	2891	SG1	2868.4	SG2	284.1	THA	6.96	EL1	27.6	EL2	1.8	ALF	24.96

LAUNCH DATE MAY 17 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 13 1971

HELIOCENTRIC CONIC DISTANCE 495.235 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.203	GAL	.05	AZL	91.33	HCA	158.90	SMA	184.97	ECC	.18212	INC	1.3275	V1	29.451
RP	215.54	LAP	-.48	LOP	34.37	VP	22.671	GAP	4.45	AZP	88.76	TAL	.33	TAP	159.23	RCA	151.28	APO	218.66	V2	25.480
RC	154.904	GL	-15.10	GP	-4.40	ZAL	96.73	ZAP	86.40	ETS	179.13	ZAE	129.24	ETE	184.18	ZAC	97.50	ETC	273.60	LVI	-8.44

PLANETOCENTRIC CONIC

C3	8.205	VHL	2.864	DLA	-24.63	RAL	340.31	RAD	6637.1	VEL	11.328	PTH	6.38	VHP	2.819	DPA	-26.00	RAP	304.38	ECC	1.1350

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 1 20	2438.48	-4.32	63.82	189.04	137.43	16 41 59	1438.5	14.01	47.94
60.00	17 12 39	2248.82	-.07	50.82	193.12	130.30	17 50 7	1248.8	15.79	32.50
70.00	18 43 57	1980.40	4.31	32.37	196.44	123.91	19 16 57	980.4	17.66	12.03
80.00	20 34 5	1635.72	8.18	8.57	198.81	118.81	21 1 20	635.7	19.31	346.73
90.00	22 17 15	1302.98	9.94	345.04	199.75	116.61	22 38 58	303.0	20.06	322.57
100.00	23 16 56	1110.19	8.18	329.94	198.81	118.81	23 35 27	110.2	19.31	308.10
110.00	23 43 23	1027.22	4.31	321.29	196.44	123.91	24 0 30	27.2	17.66	300.95

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1991	TRA	.4207	TC3	-4.9633	BAU	.5465	SGT	3016.8	SGR	452.2	SG3	1695.3	ST	24.6	SR	11.0	SS	43.1
RDE	-.0987	RRA	.1461	RC3	-.4352	FAU	.26533	RRT	.7955	RRF	.8468	RTF	.9391	CRT	.9785	CRS	-.2549	CST	-.4126
FDE	.3460	FRA	5.2045	FC-	27.7835	BSP	4649	SGB	3050.5	R23	.1546	R13	.9408	LSA	44.9	MSA	23.8	SSA	1.3
BDE	.2222	BRA	.4453	BC3	4.9824	FSP	2874	SG1	3038.3	SG2	272.0	THA	6.85	EL1	26.9	EL2	2.1	ALF	23.73

LAUNCH DATE MAY 17 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE .000 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.206	GAL	.00	AZL	91.30	HCA	160.07	SMA	185.02	ECC	.18234	INC	1.2950	V1	29.451
RP	215.87	LAP	-.44	LOP	35.53	VP	22.633	GAP	4.29	AZP	88.78	TAL	.00	TAP	160.07	RCA	151.28	APO	218.76	V2	29.443
RC	157.385	GL	-14.71	GP	-4.64	ZAL	97.29	ZAP	84.57	ETS	178.94	ZAE	127.31	ETE	184.12	ZAC	97.32	ETC	273.64	LVI	-7.99

PLANETOCENTRIC CONIC

C3	8.217	VHL	2.867	DLA	-24.06	RAL	340.70	RAD	6637.1	VEL	11.328	PTH	6.38	VHP	2.820	DPA	-26.38	RAP	303.71	ECC	1.1352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	16 0 8	2451.24	-4.96	64.36	189.33	137.38	16 40 59	1451.2	13.38	48.50
60.00	17 10 22	2264.44	-.76	51.56	193.36	130.29	17 48 6	1264.4	15.14	33.31
70.00	18 40 4	2000.74	3.54	33.44	196.62	123.99	19 13 24	1000.7	16.97	13.20
80.00	20 27 51	1663.41	7.27	10.12	198.92	119.04	20 55 34	663.4	18.55	348.44
90.00	22 9 21	1336.04	8.93	346.94	199.81	116.94	22 31 37	336.0	19.26	324.67
100.00	23 10 43	1137.88	7.27	331.49	198.92	119.04	23 29 40	137.9	18.55	309.81
110.00	23 39 30	1047.56	3.54	322.36	196.62	123.99	23 56 57	47.6	16.97	302.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1887	TRA	.4824	TC3	-4.8966	BAU	.5390	SGT	3022.9	SGR	422.4	SG3	1439.1	ST	25.0	SR	10.3	SS	45.5
RDE	-.0897	RRA	.1551	RC3	-.3071	FAU	.19160	RRT	.7208	RRF	.8405	RTF	.8883	CRT	.9734	CRS	-.2468	CST	-.4252
FDE	.4925	FRA	5.4537	FC	-20.1876	BSP	3952	SGB	3052.3	R23	.2802	R13	.8911	LSA	47.2	MSA	23.8	SSA	1.3
BDE	.2089	BRA	.5068	BC3	4.9062	FSP	1298	SG1	3038.3	SG2	291.3	THA	5.80	EL1	26.9	EL2	2.2	ALF	22.05

LAUNCH DATE MAY 17 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 503.608 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.209	GAL	-.05	AZL	91.26	HCA	161.23	SMA	185.08	ECC	.18260	INC	1.2584	V1	29.451
RP	216.21	LAP	-.41	LOP	36.69	VP	22.595	GAP	4.13	AZP	88.81	TAL	359.67	TAP	160.90	RCA	151.28	APO	218.87	V2	25.405
RC	159.881	GL	-14.28	GP	-4.90	ZAL	97.87	ZAP	82.78	ETS	178.74	ZAE	125.40	ETE	184.06	ZAC	97.10	ETC	273.48	LVI	-7.52

PLANETOCENTRIC CONIC

C3	8.231	VHL	2.869	DLA	-23.44	RAL	341.08	RAD	6637.1	VEL	11.329	PTH	6.38	VHP	2.825	DPA	-26.77	RAP	303.08	ECC	1.1355

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 43	2465.03	-5.65	64.94	189.61	137.32	16 39 48	1465.0	12.71	49.11
60.00	17 7 50	2281.22	-1.50	52.37	193.60	130.28	17 45 51	1281.2	14.44	34.17
70.00	18 35 53	2022.36	2.72	34.57	196.79	124.06	19 9 35	1022.4	16.22	14.44
80.00	20 21 23	1692.19	6.32	11.73	199.02	119.24	20 49 35	692.2	17.75	350.20
90.00	22 1 21	1369.75	7.88	348.86	199.87	117.25	22 24 10	369.8	18.42	326.79
100.00	23 4 14	1166.67	6.32	333.10	199.02	119.24	23 23 41	166.7	17.75	311.57
110.00	23 35 19	1069.18	2.72	323.49	196.79	124.06	23 53 8	69.2	16.22	303.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1637	TRA	.5347	TC3	-5.4788	BAU	.6054	SGT	3368.2	SGR	477.4	SG3	1692.4	ST	24.4	SR	9.6	SS	46.6
RDE	-.0802	RRA	.1598	RC3	-.4968	FAU	.25720	RRT	.8417	RRF	.8927	RTF	.9427	CRT	.9606	CRS	-.2289	CST	-.4627
FDE	.6520	FRA	5.4560	FC	-27.0517	BSP	5343	SGB	3401.8	R23	.1753	R13	.9443	LSA	48.4	MSA	22.7	SSA	1.2
BDE	.1823	BRA	.5581	BC3	5.5012	FSP	2927	SG1	3392.2	SG2	256.0	THA	6.84	EL1	26.1	EL2	2.5	ALF	20.85

LAUNCH DATE MAY 17 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 507.792 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.213	GAL	-.10	AZL	91.22	HCA	162.39	SMA	185.14	ECC	.18290	INC	1.2173	V1	29.451
RP	216.56	LAP	-.37	LOP	37.85	VP	22.558	GAP	3.97	AZP	88.84	TAL	359.32	TAP	161.71	RCA	151.28	APO	219.01	V2	25.366
RC	162.390	GL	-13.79	GP	-5.19	ZAL	98.47	ZAP	81.04	ETS	178.53	ZAE	123.52	ETE	184.02	ZAC	96.85	ETC	273.33	LVI	-7.04

PLANETOCENTRIC CONIC

C3	8.248	VHL	2.872	DLA	-22.77	RAL	341.46	RAD	6637.1	VEL	11.330	PTH	6.38	VHP	2.831	DPA	-27.18	RAP	302.50	ECC	1.1357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 4	2479.96	-6.40	65.57	189.89	137.25	16 38 24	1480.0	11.97	49.77
60.00	17 5 0	2299.30	-2.30	53.23	193.83	130.25	17 43 19	1299.3	13.68	35.09
70.00	18 31 21	2045.40	1.84	35.77	196.96	124.11	19 5 27	1045.4	15.42	15.74
80.00	20 14 36	1722.28	5.31	13.40	199.12	119.42	20 43 18	722.3	16.90	352.02
90.00	21 53 9	1404.41	6.80	350.83	199.93	117.52	22 16 33	404.4	17.53	328.94
100.00	22 57 28	1196.75	5.31	334.76	199.12	119.42	23 17 25	196.7	16.90	313.39
110.00	23 30 48	1092.22	1.84	324.69	196.96	124.11	23 49 0	92.2	15.42	304.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1439	TRA	.5821	TC3	-5.7384	BAU	.6356	SGT	3540.1	SGR	492.1	SG3	1678.9	ST	24.2	SR	8.9	SS	46.9
RDE	-.0715	RRA	.1640	RC3	-.5390	FAU	.25642	RRT	.8698	RRF	.9116	RTF	.9483	CRT	.9501	CRS	-.2397	CST	-.5057
FDE	.7492	FRA	5.3975	FC	-26.9140	BSP	5677	SGB	3574.2	R23	.1732	R13	.9497	LSA	49.0	MSA	21.7	SSA	1.1
BDE	.1607	BRA	.6048	BC3	5.7636	FSP	2932	SG1	3565.8	SG2	244.5	THA	6.90	EL1	25.7	EL2	2.6	ALF	19.48

LAUNCH DATE MAY 17 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC DISTANCE 511.974 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.218	GAL	-.16	AZL	91.17	HCA	163.54	SMA	185.22	ECC	.18323	INC	1.1709	V1	29.451
RP	216.91	LAP	-.33	LOP	39.01	VP	22.521	GAP	3.82	AZP	88.88	TAL	358.97	TAP	162.51	RCA	151.28	APO	219.15	V2	25.327
RC	164.912	GL	-13.24	GP	-5.52	ZAL	99.08	ZAP	79.34	ETS	178.29	ZAE	121.68	ETE	183.98	ZAC	96.56	ETC	273.20	LVI	-6.53

PLANETOCENTRIC CONIC

C3	8.267	VHL	2.875	DLA	-22.03	RAL	341.82	RAD	6637.1	VEL	11.330	PTH	6.38	VHP	2.840	DPA	-27.61	RAP	301.98	ECC	1.1361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 7	2496.20	-7.21	66.26	190.16	137.16	16 36 43	1496.2	11.17	50.48
60.00	17 1 48	2318.85	-3.16	54.17	194.04	130.20	17 40 27	1318.9	12.85	36.08
70.00	18 26 25	2070.08	.90	37.06	197.12	124.14	19 0 55	1070.1	14.56	17.13
80.00	20 7 27	1753.92	4.25	15.15	199.20	119.58	20 36 41	753.9	15.98	353.92
90.00	21 44 39	1440.37	5.66	352.86	199.98	117.75	22 8 40	440.4	16.57	331.15
100.00	22 50 19	1228.39	4.25	336.51	199.20	119.58	23 10 47	228.4	15.98	315.29
110.00	23 25 52	1116.90	.90	325.98	197.12	124.14	23 44 29	116.9	14.56	306.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1263	TRA	.6391	TC3	-5.9944	BAU	.6657	SGT	3719.3	SGR	515.3	SG3	1671.0	ST	24.7	SR	8.5	SS	47.5
RDE	-.0642	RRA	.1722	RC3	-.5824	FAU	.25409	RRT	.8844	RRF	.9297	RTF	.9518	CRT	.9426	CRS	-.2987	CST	-.5783
FDE	.7799	FRA	5.4550	FC	-26.6084	BSP	6049	SGB	3754.8	R23	.1810	R13	.9532	LSA	50.1	MSA	20.6	SSA	1.1
BDE	.1417	BRA	.6619	BC3	6.0226	FSP	2957	SG1	3747.2	SG2	238.7	THA	7.01	EL1	26.0	EL2	2.7	ALF	18.15

LAUNCH DATE MAY 17 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 23 1971

HELIOCENTRIC CONIC DISTANCE 516.154 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.223	GAL	-.22	AZL	91.12	HCA	164.69	SMA	185.30	ECC	.18360	INC	1.1181
RP	217.26	LAP	-.30	LOP	40.16	VP	22.483	GAP	3.66	AZP	88.92	TAL	358.61	TAP	163.30	RCA	151.26	APO	219.32
RC	167.446	GL	-12.62	GP	-8.89	ZAL	99.71	ZAP	77.68	ETS	176.02	ZAE	119.86	ETE	183.95	ZAC	96.22	ETC	273.07

V1	29.481
V2	25.286
LVI	-6.00

PLANETOCENTRIC CONIC

C3	8.288	VHL	2.879	DLA	-21.22	RAL	342.16	RAD	6637.1	VEL	11.331	PTH	6.38	VHP	2.851	DPA	-28.08	RAP	301.47	ECC	1.1364

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 49	2513.97	-8.09	87.01	190.41	137.05	16 34 43	1514.0	10.29	51.28
60.00	16 58 11	2340.14	-4.09	85.19	194.24	130.13	17 37 11	1340.1	11.95	37.15
70.00	18 21 0	2096.67	-.12	38.45	197.25	124.15	18 55 56	1096.7	13.61	18.61
80.00	19 59 48	1787.45	3.12	16.99	199.27	119.71	20 29 35	787.4	14.98	355.91
90.00	21 35 44	1478.01	4.47	354.98	200.01	117.95	22 0 22	478.0	15.55	333.43
100.00	22 42 40	1261.91	3.12	338.36	199.27	119.71	23 3 42	261.9	14.98	317.28
110.00	23 20 26	1143.49	-.12	327.37	197.25	124.15	23 39 29	143.5	13.61	307.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0994	TRA	.6927	TC3	-6.2496	BAU	.6960	SGT	3895.5	SGR	541.0	SG3	1658.6	ST	24.9	SR	7.9	SS	48.6
RDE	-.0544	RRA	.1805	RC3	-.6324	FAU	.25196	RRT	.9022	RRF	.9450	RTF	.9549	CRT	.9353	CRS	-.3475	CST	-.6369
FDE	.8892	FRA	5.4577	FC	-26.3180	BSP	6360	SGB	3932.9	R23	.1865	R13	.9563	LSA	51.6	MSA	19.4	SSA	1.1
BDE	.1133	BRA	.7158	BC3	6.2816	FSP	2911	SG1	3926.1	SG2	231.6	THA	7.17	EL1	26.0	EL2	2.7	ALF	16.79

LAUNCH DATE MAY 17 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 25 1971

HELIOCENTRIC CONIC DISTANCE 520.331 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.228	GAL	-.27	AZL	91.06	HCA	165.84	SMA	185.38	ECC	.18400	INC	1.0563
RP	217.61	LAP	-.26	LOP	41.30	VP	22.447	GAP	3.51	AZP	88.97	TAL	358.24	TAP	164.08	RCA	151.27	APO	219.49
RC	169.992	GL	-11.90	GP	-6.32	ZAL	100.36	ZAP	76.08	ETS	177.73	ZAE	118.08	ETE	183.94	ZAC	95.83	ETC	272.95

V1	29.481
V2	25.249
LVI	-5.43

PLANETOCENTRIC CONIC

C3	8.311	VHL	2.883	DLA	-20.32	RAL	342.47	RAD	6637.2	VEL	11.332	PTH	6.39	VHP	2.864	DPA	-28.59	RAP	301.03	ECC	1.1368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 50 4	2533.55	-9.07	87.85	190.65	136.91	16 32 18	1533.6	9.32	52.09
60.00	16 54 1	2363.48	-5.11	86.31	194.42	130.03	17 33 25	1363.5	10.95	38.32
70.00	18 14 57	2125.56	-1.22	39.96	197.37	124.13	18 50 23	1125.6	12.58	20.21
80.00	19 51 32	1823.31	1.91	18.97	199.32	119.80	20 21 55	823.3	13.89	358.02
90.00	21 26 14	1517.84	3.19	357.21	200.03	118.11	21 51 31	517.8	14.44	335.83
100.00	22 34 24	1297.78	1.91	340.33	199.32	119.80	22 56 1	297.8	13.89	319.39
110.00	23 14 24	1172.38	-1.22	328.87	197.37	124.13	23 33 56	172.4	12.58	309.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0693	TRA	.7470	TC3	-6.4941	BAU	.7255	SGT	4067.5	SGR	571.2	SG3	1638.9	ST	25.4	SR	7.5	SS	50.0
RDE	-.0435	RRA	.1908	RC3	-.6837	FAU	.24776	RRT	.9158	RRF	.9579	RTF	.9564	CRT	.9350	CRS	-.4214	CST	-.6967
FDE	1.0070	FRA	5.4690	FC	-25.8095	BSP	6660	SGB	4107.4	R23	.1973	R13	.9579	LSA	53.5	MSA	18.1	SSA	1.1
BDE	.0818	BRA	.7709	BC3	6.5300	FSP	2874	SG1	4101.1	SG2	227.5	THA	7.35	EL1	26.3	EL2	2.6	ALF	15.55

LAUNCH DATE MAY 17 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 27 1971

HELIOCENTRIC CONIC DISTANCE 524.506 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.233	GAL	-.33	AZL	90.99	HCA	166.98	SMA	185.48	ECC	.18444	INC	.9850
RP	217.97	LAP	-.22	LOP	42.44	VP	22.410	GAP	3.36	AZP	89.04	TAL	357.86	TAP	164.84	RCA	151.27	APO	219.69
RC	172.547	GL	-11.08	GP	-6.82	ZAL	101.02	ZAP	74.52	ETS	177.39	ZAE	116.33	ETE	183.94	ZAC	95.36	ETC	272.84

V1	29.481
V2	25.209
LVI	-4.81

PLANETOCENTRIC CONIC

C3	8.334	VHL	2.887	DLA	-19.31	RAL	342.75	RAD	6637.2	VEL	11.333	PTH	6.39	VHP	2.880	DPA	-29.17	RAP	300.65	ECC	1.1372

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 46 47	2555.35	-10.15	88.79	190.85	136.74	16 29 22	1555.4	8.23	53.03
60.00	16 49 12	2389.33	-6.24	87.56	194.57	129.90	17 29 2	1389.3	9.84	39.60
70.00	18 8 9	2157.26	-2.43	41.61	197.45	124.08	18 44 6	1157.3	11.43	21.94
80.00	19 42 29	1862.10	.60	21.09	199.34	119.85	20 13 31	862.1	12.70	.27
90.00	21 15 57	1560.53	1.82	359.60	200.02	118.23	21 41 57	560.5	13.21	338.36
100.00	22 25 19	1336.57	.60	342.46	199.34	119.85	22 47 36	336.6	12.70	321.65
110.00	23 7 35	1204.08	-2.43	330.53	197.45	124.08	23 27 39	204.1	11.43	310.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0345	TRA	.8000	TC3	-6.7366	BAU	.7552	SGT	4238.4	SGR	608.9	SG3	1618.1	ST	26.1	SR	7.2	SS	51.0
RDE	-.0323	RRA	.2023	RC3	-.7461	FAU	.24425	RRT	.9284	RRF	.9687	RTF	.9588	CRT	.9385	CRS	-.9171	CST	-.7639
FDE	1.1050	FRA	5.4490	FC	-25.3722	BSP	6979	SGB	4281.9	R23	.2047	R13	.9603	LSA	55.3	MSA	16.6	SSA	1.0
BDE	.0472	BRA	.8252	BC3	6.7778	FSP	2833	SG1	4276.0	SG2	224.3	THA	7.62	EL1	27.0	EL2	2.4	ALF	14.56

LAUNCH DATE MAY 17 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 528.677 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.239	GAL	-.39	AZL	90.90	HCA	168.12	SMA	185.57	ECC	.18491	INC	.9006
RP	218.33	LAP	-.19	LOP	43.58	VP	22.373	GAP	3.21	AZP	89.12	TAL	357.47	TAP	165.59	RCA	151.26	APO	219.89
RC	175.114	GL	-10.10	GP	-7.41	ZAL	101.70	ZAP	73.01	ETS	176.99	ZAE	114.61	ETE	183.95	ZAC	94.79	ETC	272.74

V1	29.481
V2	25.169
LVI	-4.12

PLANETOCENTRIC CONIC

C3	8.359	VHL	2.891	DLA	-18.17	RAL	342.98	RAD	6637.2	VEL	11.335	PTH	6.39	VHP	2.898	DPA	-29.82	RAP	300.33	ECC	1.1376

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 47	2579.93	-11.37	89.86	191.02	136.52	16 25 47	1579.9	7.01	54.07
60.00	16 43 33	2418.32	-7.51	88.96	194.68	129.71	17 23 52	1418.3	8.59	41.02
70.00	18 0 23	2192.49	-3.78	43.46	197.49	123.97	18 36 55	1192.5	10.13	23.85
80.00	19 32 21	1904.64	-.85	23.43	199.32	119.85	20 4 5	904.6	11.36	2.73
90.00	21 4 38	1606.94	.32	2.19	199.96	118.28	21 31 25	606.9	11.85	341.09
100.00	22 15 13	1379.11	-.85	344.80	199.32	119.85	22 38 12	379.1	11.36	324.09
110.00	22 59 49	1239.31	-3.78	332.37	197.49	123.97	23 20 28	239.3	10.13	312.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0092	TRA	.8550	TC3	-6.9795	BAU	.7853	SGT	4412.2	SGR	657.2	SG3	1600.4	ST	27.4	SR	7.1	SS	52.9
RDE	-.0185	RRA	.2173	RC3	-.8207	FAU	.24089	RRT	.9389	RRF	.9777	RTF	.9607	CRT	.9498	CRS	-.6341	CST	-.8285
FDE	1.2396	FRA	5.4439	FC	-24.9495	BSP	7301	SGB	4460.9	R23	.2130	R13	.9622	LSA	58.1	MSA	14.8	SSA	1.0
BDE	.0207	BRA	.8822	BC3	7.0276	FSP	2793	SG1	4455.3	SG2	224.0	THA	7.98	EL1	28.3	EL2	2.2	ALF	13.85

LAUNCH DATE MAY 17 1971 FLIGHT TIME 228.00 ARRIVAL DATE DEC 31 1971

DISTANCE 532.845

HELIOCENTRIC CONIC

RL	151.28	LAL	.00	LOL	235.46	VL	32.245	GAL	-.46	AZL	90.80	HCA	169.26	SMA	185.68	ECC	.18541	INC	.7980
RP	218.69	LAP	-.15	LOP	44.72	VP	22.337	GAP	3.06	AZP	89.21	TAL	357.07	TAP	166.33	RCA	151.25	APO	220.10
RC	177.690	GL	-8.94	GP	-8.11	ZAL	102.40	ZAP	71.56	ETS	176.53	ZAE	112.92	ETE	183.99	ZAC	94.11	ETC	272.64

EARTH TO MARS

V1	29.451																		
V2	25.129																		
LVI	-3.33																		

PLANETOCENTRIC CONIC

C3	8.385	VHL	2.898	DLA	-16.84	RAL	343.14	RAD	6637.2	VEL	11.336	PTH	6.39	VHP	2.919	DPA	-30.58	RAP	300.08
ECC	1.1380																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 53	2608.08	-12.76	71.09	191.14	136.24	16 21 21	1608.1	5.60	55.27
60.00	16 36 49	2451.36	-8.94	60.58	194.74	129.46	17 17 40	1451.4	7.15	42.63
70.00	17 51 20	2232.28	-5.29	45.54	197.48	123.79	18 28 32	1232.3	8.66	25.99
80.00	19 20 51	1952.08	-2.45	26.03	199.24	119.77	19 53 24	952.1	9.84	5.43
90.00	20 51 55	1658.31	-1.33	5.05	199.86	118.25	21 19 34	658.3	10.30	344.07
100.00	22 3 43	1426.55	-2.45	347.40	199.24	119.77	22 27 30	426.6	9.84	326.80
110.00	22 50 46	1279.10	-5.29	334.46	197.48	123.79	23 12 5	279.1	8.66	314.91

DIFFERENTIAL CORRECTIONS

TDE	.0584	TRA	.9069	TC3	-7.2108	BAU	.8146	SGT	4579.0	SGR	714.2	SG3	1572.8	ST	29.4	SR	7.3	SS	54.6
RDE	-.0033	RRA	.2352	RC3	-.9033	FAU	.23571	RRT	.9465	RRF	.9845	RTF	.9618	CRT	.9645	CRS	-.7527	CST	-.8856
FDE	1.3653	FRA	5.4171	FC	-24.3373	BSP	7628	SGB	4634.4	R23	.2231	R13	.9634	LSA	61.1	MSA	12.9	SSA	1.0
BDE	.0585	BRA	.9369	BC3	7.2672	FSP	2762	SG1	4628.7	SG2	228.1	THA	8.42	EL1	30.2	EL2	1.9	ALF	13.61

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE MAY 17 1971 FLIGHT TIME 230.00 ARRIVAL DATE JAN 2 1972

DISTANCE 537.010

HELIOCENTRIC CONIC

RL	151.28	LAL	.00	LOL	235.46	VL	32.252	GAL	-.52	AZL	90.67	HCA	170.39	SMA	185.79	ECC	.18593	INC	.6695
RP	219.06	LAP	-.11	LOP	45.85	VP	22.301	GAP	2.91	AZP	89.34	TAL	356.67	TAP	167.06	RCA	151.24	APO	220.33
RC	180.275	GL	-7.52	GP	-8.98	ZAL	103.11	ZAP	70.18	ETS	175.98	ZAE	111.26	ETE	184.05	ZAC	93.27	ETC	272.56

EARTH TO MARS

V1	29.451																		
V2	25.089																		
LVI	-2.41																		

PLANETOCENTRIC CONIC

C3	8.412	VHL	2.900	DLA	-15.27	RAL	343.22	RAD	6637.2	VEL	11.337	PTH	6.39	VHP	2.943	DPA	-31.49	RAP	299.91
ECC	1.1384																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 45	2641.01	-14.37	72.56	191.21	135.86	16 15 46	1641.0	3.95	56.65
60.00	16 28 36	2489.80	-10.60	62.47	194.74	129.11	17 10 6	1489.8	5.47	44.49
70.00	17 40 36	2278.17	-7.02	47.97	197.40	123.51	18 18 34	1278.2	6.94	28.43
80.00	19 7 31	2006.13	-4.27	29.01	199.10	119.58	19 40 57	1006.1	8.08	8.47
90.00	20 37 19	1716.43	-3.20	8.30	199.69	118.11	21 5 55	716.4	8.52	347.41
100.00	21 50 22	1480.60	-4.27	350.38	199.10	119.58	22 15 3	480.6	8.08	329.84
110.00	22 40 2	1324.98	-7.02	336.89	197.40	123.51	23 2 7	325.0	6.94	317.35

DIFFERENTIAL CORRECTIONS

TDE	.1145	TRA	.9543	TC3	-7.4629	BAU	.8470	SGT	4755.1	SGR	788.8	SG3	1547.9	ST	32.1	SR	8.1	SS	56.5
RDE	.0144	RRA	.2574	RC3	-1.0104	FAU	.23167	RRT	.9528	RRF	.9899	RTF	.9629	CRT	.9779	CRS	-.8532	CST	-.9312
FDE	1.4921	FRA	5.3724	FC	-23.8413	BSP	7869	SGB	4820.1	R23	.2308	R13	.9648	LSA	64.6	MSA	10.9	SSA	1.1
BDE	.1154	BRA	.9884	BC3	7.5310	FSP	2682	SG1	4814.3	SG2	236.5	THA	9.00	EL1	33.0	EL2	1.6	ALF	13.87

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE MAY 17 1971 FLIGHT TIME 232.00 ARRIVAL DATE JAN 4 1972

DISTANCE 541.174

HELIOCENTRIC CONIC

RL	151.28	LAL	.00	LOL	235.46	VL	32.259	GAL	-.59	AZL	90.52	HCA	171.52	SMA	185.90	ECC	.18649	INC	.5121
RP	219.43	LAP	-.08	LOP	46.98	VP	22.265	GAP	2.76	AZP	89.49	TAL	356.26	TAP	167.78	RCA	151.23	APO	220.57
RC	182.871	GL	-5.74	GP	-10.06	ZAL	103.83	ZAP	68.86	ETS	175.30	ZAE	109.61	ETE	184.15	ZAC	92.20	ETC	272.49

EARTH TO MARS

V1	29.451																		
V2	25.048																		
LVI	-1.30																		

PLANETOCENTRIC CONIC

C3	8.444	VHL	2.906	DLA	-13.36	RAL	343.15	RAD	6637.2	VEL	11.338	PTH	6.39	VHP	2.972	DPA	-32.61	RAP	299.83
ECC	1.1390																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 23 56	2680.52	-16.29	74.34	191.20	135.35	16 8 36	1680.5	1.97	58.31
60.00	16 18 24	2535.67	-12.56	64.76	194.66	128.62	17 0 39	1535.7	3.46	46.70
70.00	17 27 31	2332.44	-9.05	50.86	197.24	123.08	18 6 24	1332.4	4.89	31.29
80.00	18 51 35	2069.33	-6.39	32.51	198.87	119.23	19 26 4	1069.3	5.99	12.00
90.00	20 20 2	1783.97	-5.36	12.09	199.43	117.81	20 49 46	784.0	6.41	351.25
100.00	21 34 27	1543.60	-6.39	353.88	198.87	119.23	22 0 10	543.8	5.99	333.37
110.00	22 26 58	1379.25	-9.05	339.78	197.24	123.08	22 49 57	379.3	4.89	320.21

DIFFERENTIAL CORRECTIONS

TDE	.1868	TRA	.9960	TC3	-7.7045	BAU	.8794	SGT	4925.3	SGR	883.7	SG3	1518.8	ST	36.1	SR	9.3	SS	57.9
RDE	.0347	RRA	.2823	RC3	-1.1530	FAU	.22894	RRT	.9604	RRF	.9937	RTF	.9667	CRT	.9833	CRS	-.9211	CST	-.9686
FDE	1.6021	FRA	5.2433	FC	-23.4728	BSP	8129	SGB	5004.0	R23	.2262	R13	.9686	LSA	68.3	MSA	8.2	SSA	1.1
BDE	.1900	BRA	1.0352	BC3	7.7903	FSP	2560	SG1	4998.1	SG2	242.7	THA	9.80	EL1	37.2	EL2	1.6	ALF	14.24

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE MAY 17 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 6 1972

DISTANCE 545.331

HELIOCENTRIC CONIC

RL	151.28	LAL	.00	LOL	235.46	VL	32.266	GAL	-.65	AZL	90.31	HCA	172.64	SMA	186.02	ECC	.18707	INC	.3022
RP	219.80	LAP	-.04	LOP	48.10	VP	22.229	GAP	2.62	AZP	89.69	TAL	355.85	TAP	168.49	RCA	151.22	APO	220.82
RC	185.475	GL	-3.45	GP	-11.45	ZAL	104.56	ZAP	67.64	ETS	174.44	ZAE	107.99	ETE	184.30	ZAC	90.82	ETC	272.43

EARTH TO MARS

V1	29.451																		
V2	25.007																		
LVI	.08																		

PLANETOCENTRIC CONIC

C3	8.486	VHL	2.913	DLA	-11.00	RAL	342.91	RAD	6637.3	VEL	11.340	PTH	6.39	VHP	3.007	DPA	-34.02	RAP	299.88
ECC	1.1397																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 13 41	2729.72	-18.66	76.62	191.11	134.60	15 59 11	1729.7	-.51	60.36
60.00	16 5 18	2592.45	-14.95	67.65	194.51	127.87	16 48 31	1592.4	.97	49.41
70.00	17 11 6	2399.01	-11.50	54.46	197.00	122.38	17 51 5	1399.0	2.36	34.78
80.00	18 31 55	2146.01	-8.91	36.80	198.55	118.61	19 7 41	1146.0	3.41	16.24
90.00	19 58 54	1865.43	-7.92	16.70	199.08	117.24	20 29 59	865.4	3.82	355.83
100.00	21 14 47	1620.48	-8.91	358.17	198.55	118.61	21 41 48	620.5	3.41	337.60
110.00	22 10 32	1445.83	-11.50	343.37	197.00	122.38	22 34 38	445.8	2.36	323.70

DIFFERENTIAL CORRECTIONS

TDE	.2825	TRA	1.0358	TC3	-7.9118	BAU	.9098	SGT	5085.7	SGR	1003.2	SG3	1477.6	ST	42.3	SR	11.6	SS	61.3
RDE	.0651	RRA	.3184	RC3	-1.3107	FAU	.22155	RRT	.9634	RRF	.9963	RTF	.9668	CRT	.9885	CRS	-.9661	CST	-.9893
FDE	1.7982	FRA	5.1521	FC	-22.6021	BSP	8459	SGB	5183.7	R23	.2326	R13	.9691	LSA	75.1	MSA	5.5	SSA	1.4
BDE	.2899	BRA	1.0837	BC3	8.0196	FSP	2512	SG1	5176.9	SG2	264.4	THA	10.79	EL1	43.8	EL2	1.7	ALF	15.16

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE MAY 17 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 8 1972

HELIOCENTRIC CONIC DISTANCE 549.485 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.273	GAL	-.72	AZL	90.03	HCA	173.76	SMA	186.14	ECC	.18768	INC	.0000	V1	29.451
RP	220.18	LAP	-.00	LOP	49.22	VP	22.194	GAP	2.47	AZP	89.97	TAL	355.43	TAP	169.19	RCA	151.21	APO	221.08	V2	24.966
RC	188.089	GL	-.38	GP	-13.31	ZAL	105.28	ZAP	66.54	ETS	173.32	ZAE	106.37	ETE	184.51	ZAC	88.98	ETC	272.36	LVI	1.88

PLANETOCENTRIC CONIC

C3	8.555	VHL	2.925	DLA	-7.89	RAL	342.37	RAD	6637.3	VEL	11.343	PTH	6.40	VHP	3.051	DPA	-35.87	RAP	300.10	ECC	1.1408

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 59 47	2793.78	-21.69	79.69	190.97	133.45	15 46 21	1793.8	-3.72	63.04
60.00	15 47 52	2665.92	-17.98	71.49	194.28	126.70	16 32 18	1665.9	-2.27	52.92
70.00	16 49 36	2484.38	-14.56	59.17	196.68	121.24	17 31 1	1484.4	-.90	39.24
80.00	18 6 36	2243.33	-12.03	42.34	198.15	117.53	18 44 0	1243.3	.12	21.58
90.00	19 31 52	1968.27	-11.07	22.61	198.64	116.19	20 4 40	968.3	.51	1.58
100.00	20 49 28	1717.80	-12.03	3.71	198.15	117.53	21 18 6	717.8	.12	342.95
110.00	21 49 3	1531.20	-14.56	348.09	196.68	121.24	22 14 34	531.2	-.90	326.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4126	TRA	1.0660	TC3	-8.1018	BAU	.9428	SGT	5249.7	SGR	1166.9	SG3	1431.4	ST	51.8	SR	15.3	SS	66.1
RDE	.1095	RRA	.3665	RC3	-1.5199	FAU	.21359	RRT	.9655	RRF	.9980	RTF	.9669	CRT	.9906	CRS	-.9881	CST	-.9978
FDE	2.0493	FRA	5.0181	FC	-21.6151	BSP	8775	SGB	5377.8	R23	.2363	R13	.9697	LSA	85.3	MSA	2.9	SSA	1.9
BDE	.4268	BRA	1.1272	BC3	8.2432	FSP	2435	SG1	5369.6	SG2	296.9	THA	12.15	EL1	54.0	EL2	2.0	ALF	16.36

LAUNCH DATE MAY 17 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 10 1972

HELIOCENTRIC CONIC DISTANCE 553.634 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.281	GAL	-.79	AZL	89.64	HCA	174.88	SMA	186.27	ECC	.18832	INC	.3546	V1	29.451
RP	220.55	LAP	.03	LOP	50.34	VP	22.158	GAP	2.33	AZP	90.36	TAL	355.00	TAP	169.88	RCA	151.19	APO	221.35	V2	24.925
RC	190.711	GL	3.96	GP	-15.91	ZAL	105.95	ZAP	65.64	ETS	171.78	ZAE	104.74	ETE	184.83	ZAC	86.39	ETC	272.34	LVI	4.35

PLANETOCENTRIC CONIC

C3	8.694	VHL	2.949	DLA	-3.61	RAL	341.38	RAD	6637.4	VEL	11.349	PTH	6.40	VHP	3.114	DPA	-38.45	RAP	300.59	ECC	1.1431

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 39 57	2882.50	-25.77	84.19	190.86	131.49	15 28 0	1882.5	-8.16	66.79
60.00	15 23 22	2767.03	-22.00	77.02	194.09	124.66	16 9 29	1767.0	-6.70	57.78
70.00	16 19 52	2600.89	-18.56	65.83	196.38	119.20	17 3 13	1600.9	-5.34	45.34
80.00	17 32 2	2374.93	-16.04	50.05	197.74	115.52	18 11 37	1374.9	-4.33	28.82
90.00	18 55 10	2106.72	-15.09	30.79	198.20	114.20	19 30 16	1106.7	-3.94	9.31
100.00	20 14 54	1849.41	-16.04	11.42	197.74	115.52	20 45 43	849.4	-4.33	350.18
110.00	21 19 18	1647.71	-18.56	354.75	196.38	119.20	21 46 46	647.7	-5.34	334.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6019	TRA	1.0840	TC3	-8.1922	BAU	.9746	SGT	5400.1	SGR	1392.6	SG3	1366.0	ST	66.9	SR	21.5	SS	72.4
RDE	.1782	RRA	.4318	RC3	-1.7887	FAU	.20264	RRT	.9674	RRF	.9991	RTF	.9672	CRT	.9906	CRS	-.9968	CST	-.9977
FDE	2.3573	FRA	4.8012	FC	-20.1785	BSP	9192	SGB	5576.8	R23	.2355	R13	.9709	LSA	100.8	MSA	3.9	SSA	1.0
BDE	.6277	BRA	1.1669	BC3	8.3852	FSP	2339	SG1	5566.3	SG2	342.1	THA	14.06	EL1	70.2	EL2	2.8	ALF	17.67

LAUNCH DATE MAY 17 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC DISTANCE 557.780 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.288	GAL	-.86	AZL	89.03	HCA	175.99	SMA	186.40	ECC	.18898	INC	.9647	V1	29.451
RP	220.93	LAP	.07	LOP	51.45	VP	22.123	GAP	2.18	AZP	90.97	TAL	354.57	TAP	170.56	RCA	151.18	APO	221.63	V2	24.884
RC	193.341	GL	10.52	GP	-19.78	ZAL	106.43	ZAP	65.12	ETS	169.58	ZAE	103.06	ETE	185.32	ZAC	82.53	ETC	272.33	LVI	7.97

PLANETOCENTRIC CONIC

C3	9.039	VHL	3.006	DLA	2.74	RAL	339.56	RAD	6637.5	VEL	11.364	PTH	6.42	VHP	3.215	DPA	-42.25	RAP	301.56	ECC	1.1488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 9 32	3016.36	-31.59	91.64	191.24	127.63	14 59 48	2016.4	-14.77	72.64
60.00	14 46 12	2918.79	-27.59	85.96	194.36	120.63	15 34 51	1918.8	-13.23	65.28
70.00	15 35 12	2774.67	-23.98	76.40	196.48	115.08	16 21 27	1774.7	-11.81	54.64
80.00	16 40 33	2570.04	-21.35	62.10	197.70	111.38	17 23 23	1570.0	-10.75	39.74
90.00	18 0 42	2311.40	-20.37	43.48	198.09	110.05	18 39 13	1311.4	-10.35	20.93
100.00	19 23 25	2044.51	-21.35	23.46	197.70	111.38	19 57 29	1044.5	-10.75	1.11
110.00	20 34 38	1821.49	-23.98	5.32	196.48	115.08	21 5 0	821.5	-11.81	343.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8742	TRA	1.0437	TC3	-8.2003	BAU	1.0250	SGT	5572.6	SGR	1728.4	SG3	1271.4	ST	88.8	SR	31.9	SS	80.1
RDE	.2956	RRA	.5158	RC3	-2.1693	FAU	.19040	RRT	.9687	RRF	.9996	RTF	.9870	CRT	.9902	CRS	-.9994	CST	-.9942
FDE	2.7203	FRA	4.3669	FC	-18.2362	BSP	9342	SGB	5834.5	R23	.2325	R13	.9722	LSA	123.5	MSA	7.0	SSA	.4
BDE	.9229	BRA	1.1642	BC3	8.4824	FSP	2120	SG1	5820.0	SG2	410.9	THA	16.81	EL1	94.3	EL2	4.2	ALF	19.60

LAUNCH DATE MAY 17 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 561.919 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.298	GAL	-.93	AZL	87.95	HCA	177.10	SMA	186.54	ECC	.18966	INC	2.0487	V1	29.451
RP	221.31	LAP	.10	LOP	52.56	VP	22.088	GAP	2.04	AZP	92.05	TAL	354.13	TAP	171.23	RCA	151.16	APO	221.92	V2	24.842
RC	195.978	GL	21.34	GP	-26.05	ZAL	106.28	ZAP	65.44	ETS	166.24	ZAE	101.24	ETE	186.13	ZAC	76.27	ETC	272.38	LVI	13.75

PLANETOCENTRIC CONIC

C3	10.095	VHL	3.177	DLA	13.02	RAL	336.09	RAD	6638.1	VEL	11.410	PTH	6.46	VHP	3.416	DPA	-48.33	RAP	303.68	ECC	1.1661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 17 0	3244.52	-40.09	106.77	194.17	118.15	14 11 4	2244.5	-25.54	83.63
60.00	13 42 8	3177.63	-35.31	103.50	196.91	110.83	14 35 5	2177.6	-23.66	79.21
70.00	14 17 59	3072.11	-31.02	96.61	198.57	105.07	15 9 11	2072.1	-21.89	71.77
80.00	15 11 0	2905.98	-27.87	84.86	199.42	101.18	15 59 26	1906.0	-20.56	59.83
90.00	16 25 39	2665.07	-26.67	67.40	199.66	99.76	17 10 4	1665.1	-20.05	42.33
100.00	17 53 52	2380.46	-27.87	46.23	199.42	101.18	18 33 33	1380.5	-20.56	21.20
110.00	19 17 25	2118.93	-31.02	25.53	198.57	105.07	19 52 44	1118.9	-21.89	.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4127	TRA	.9622	TC3	-7.5352	BAU	1.0732	SGT	5708.6	SGR	2250.2	SG3	1103.2	ST	130.3	SR	54.0	SS	92.9
RDE	.5643	RRA	.6435	RC3	-2.5420	FAU	.16500	RRT	.9691	RRF	.9998	RTF	.9657	CRT	.9914	CRS	-1.0000	CST	-.9920
FDE	3.2970	FRA	3.6975	FC	-14.1507	BSP	10024	SGB	6136.1	R23	.2276	R13	.9736	LSA	168.6	MSA	10.6	SSA	.1
BDE	1.5213	BRA	1.1575	BC3	7.9524	FSP	1872	SG1	6114.2	SG2	518.7	THA	21.06	EL1	140.9	EL2	6.5	ALF	22.37

LAUNCH DATE MAY 17 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 566.051 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.305	GAL	-1.01	AZL	85.56	HCA	178.20	SMA	186.67	ECC	.19037	INC	4.4300	V1	29.451
RP	221.69	LAP	.14	LOP	53.66	VP	22.053	GAP	1.89	AZP	94.44	TAL	353.70	TAP	171.89	RCA	151.14	APO	222.21	V2	24.801
RC	198.621	GL	40.68	GP	-37.32	ZAL	104.07	ZAP	68.07	ETS	161.17	ZAE	99.13	ETE	187.69	ZAC	64.98	ETC	272.67	LVI	23.96

PLANETOCENTRIC CONIC

C3	14.697	VHL	3.834	DLA	31.04	RAL	328.37	RAD	6640.4	VEL	11.608	PTH	6.65	VHP	3.977	DPA	-59.04	RAP	309.77	ECC	1.2419

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	11 21 46	3713.81	-47.51	148.50	208.97	87.07	12 23 40	2713.8	-43.07	114.46
60.00	11 14 8	3734.21	-39.38	149.13	207.76	80.62	12 16 22	2734.2	-38.92	117.97
70.00	10 57 19	3783.88	-30.56	150.71	205.34	73.96	12 0 23	2783.9	-34.15	122.57
76.63	9 51 14	3990.72	-20.04	162.15	201.08	65.79	10 57 45	2990.7	-28.26	137.46
76.63	9 51 14	3990.72	-20.04	162.15	201.08	65.79	10 57 45	2990.7	-28.26	137.46
76.63	9 51 14	3990.72	-20.04	162.15	201.08	65.79	10 57 45	2990.7	-28.26	137.46
110.00	15 56 45	2830.70	-30.56	79.63	205.34	73.96	16 43 56	1830.7	-34.15	51.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.5654	TRA	.5738	TC3	-5.6196	BAU	1.2193	SGT	5853.8	SGR	3104.2	SG3	758.0	ST	192.4	SR	100.8	SS	98.3
RDE	1.3240	RRA	.7353	RC3	-2.6329	FAU	.12304	RRT	.9668	RRF	.9996	RTF	.9591	CRT	.9935	CRS	-.9999	CST	-.9922
FDE	3.7467	FRA	2.1999	FC3	-7.2480	BSP	9758	SGB	6625.9	R23	.2293	R13	.9733	LSA	238.0	MSA	13.5	SSA	.0
BDE	2.6869	BRA	.9327	BC3	6.2058	FSP	1195	SG1	6588.4	SG2	704.3	THA	27.48	EL1	217.0	EL2	10.2	ALF	27.57

LAUNCH DATE MAY 17 1971 FLIGHT TIME 250.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 578.471 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.330	GAL	-1.24	AZL	99.33	HCA	181.51	SMA	187.11	ECC	.19265	INC	9.3229	V1	29.451
RP	222.84	LAP	.25	LOP	56.95	VP	21.950	GAP	1.47	AZP	80.67	TAL	352.29	TAP	173.81	RCA	151.06	APO	223.15	V2	24.675
RC	206.578	GL	-63.02	GP	41.13	ZAL	100.44	ZAP	67.38	ETS	200.40	ZAE	97.71	ETE	173.96	ZAC	143.22	ETC	274.76	LVI	-48.10

PLANETOCENTRIC CONIC

C3	34.589	VHL	5.881	DLA	-58.44	RAL	31.70	RAD	6648.7	VEL	12.430	PTH	7.33	VHP	4.351	DPA	17.97	RAP	291.52	ECC	1.5693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.47	23 5 58	2037.63	23.23	56.40	286.39	145.28	23 39 56	1037.6	42.59	38.57
36.47	23 5 58	2037.63	23.23	56.40	286.39	145.28	23 39 56	1037.6	42.59	38.57
36.47	23 5 58	2037.63	23.23	56.40	286.39	145.28	23 39 56	1037.6	42.59	38.57
36.47	23 5 58	2037.63	23.23	56.40	286.39	145.28	23 39 56	1037.6	42.59	38.57
36.47	23 5 58	2037.63	23.23	56.40	286.39	145.28	23 39 56	1037.6	42.59	38.57
36.47	23 5 58	2037.63	23.23	56.40	286.39	145.28	23 39 56	1037.6	42.59	38.57
36.47	23 5 58	2037.63	23.23	56.40	286.39	145.28	23 39 56	1037.6	42.59	38.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4887	TRA	2.6067	TC3	-2.9216	BAU	1.5185	SGT	5964.6	SGR	3426.2	SG3	578.0	ST	76.7	SR	52.5	SS	43.5
RDE	-.6118	RRA	-1.5454	RC3	1.4992	FAU	.11462	RRT	-.9656	RRF	-.9977	RTF	.9461	CRT	-.6066	CRS	.9867	CST	-.4693
FDE	1.6494	FRA	2.9810	FC3	-2.8688	BSP	8763	SGB	6878.6	R23	.2623	R13	-.9649	LSA	90.6	MSA	48.2	SSA	.0
BDE	.7830	BRA	3.0304	BC3	3.2838	FSP	850	SG1	6834.4	SG2	777.9	THA	150.57	EL1	85.0	EL2	37.7	ALF	151.33

LAUNCH DATE MAY 17 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 24 1972

HELIOCENTRIC CONIC DISTANCE 582.583 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.339	GAL	-1.32	AZL	96.19	HCA	182.60	SMA	187.26	ECC	.19344	INC	6.1915	V1	29.451
RP	223.23	LAP	.28	LOP	58.04	VP	21.916	GAP	1.33	AZP	83.81	TAL	351.84	TAP	174.44	RCA	151.04	APO	223.48	V2	24.633
RC	209.236	GL	-50.14	GP	27.51	ZAL	104.13	ZAP	61.22	ETS	195.79	ZAE	96.56	ETE	177.14	ZAC	129.72	ETC	273.30	LVI	-35.78

PLANETOCENTRIC CONIC

C3	20.642	VHL	4.543	DLA	-49.28	RAL	16.16	RAD	6643.1	VEL	11.859	PTH	6.87	VHP	3.604	DPA	4.39	RAP	292.91	ECC	1.3397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.79	22 37 2	1837.83	26.64	38.66	260.57	133.13	23 7 40	837.8	41.66	15.53
47.79	22 37 2	1837.83	26.64	38.66	260.57	133.13	23 7 40	837.8	41.66	15.53
47.79	22 37 2	1837.83	26.64	38.66	260.57	133.13	23 7 40	837.8	41.66	15.53
47.79	22 37 2	1837.83	26.64	38.66	260.57	133.13	23 7 40	837.8	41.66	15.53
47.79	22 37 2	1837.83	26.64	38.66	260.57	133.13	23 7 40	837.8	41.66	15.53
47.79	22 37 2	1837.83	26.64	38.66	260.57	133.13	23 7 40	837.8	41.66	15.53
47.79	22 37 2	1837.83	26.64	38.66	260.57	133.13	23 7 40	837.8	41.66	15.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7651	TRA	2.5595	TC3	-4.3361	BAU	1.2596	SGT	6398.5	SGR	2464.0	SG3	946.7	ST	88.7	SR	32.2	SS	47.0
RDE	-.1087	RRA	-1.0818	RC3	1.4257	FAU	.14950	RRT	-.9718	RRF	-.9987	RTF	.9598	CRT	-.7040	CRS	.9842	CST	-.3671
FDE	.9170	FRA	4.8038	FC3	-6.2701	BSP	11444	SGB	6856.5	R23	.2510	R13	-.9678	LSA	97.1	MSA	41.2	SSA	.1
BDE	.7728	BRA	2.7787	BC3	4.5645	FSP	1711	SG1	6834.9	SG2	543.9	THA	159.35	EL1	91.8	EL2	22.1	ALF	164.78

LAUNCH DATE MAY 17 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 586.695 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.348	GAL	-1.40	AZL	94.91	HCA	183.68	SMA	187.41	ECC	.19426	INC	4.9051	V1	29.451
RP	223.62	LAP	.31	LOP	59.13	VP	21.882	GAP	1.19	AZP	85.10	TAL	351.39	TAP	175.07	RCA	151.01	APO	223.82	V2	24.592
RC	211.896	GL	-42.67	GP	20.16	ZAL	106.42	ZAP	58.16	ETS	192.38	ZAE	95.31	ETE	178.57	ZAC	122.41	ETC	272.90	LVI	-29.06

PLANETOCENTRIC CONIC

C3	16.659	VHL	4.081	DLA	-43.02	RAL	10.25	RAD	6641.3	VEL	11.692	PTH	6.73	VHP	3.403	DPA	-2.90	RAP	293.85	ECC	1.2742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 15 27	2098.75	12.66	49.44	236.94	136.26	20 50 26	1098.8	29.77	31.02
56.11	22 43 51	1709.88	25.84	25.90	248.99	125.68	23 12 21	709.9	38.09	1.30
56.11	22 43 51	1709.88	25.84	25.90	248.99	125.68	23 12 21	709.9	38.09	1.30
56.11	22 43 51	1709.88	25.84	25.90	248.99	125.68	23 12 21	709.9	38.09	1.30
56.11	22 43 51	1709.88	25.84	25.90	248.99	125.68	23 12 21	709.9	38.09	1.30
56.11	22 43 51	1709.88	25.84	25.90	248.99	125.68	23 12 21	709.9	38.09	1.30
56.11	22 43 51	1709.88	25.84	25.90	248.99	125.68	23 12 21	709.9	38.09	1.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7119	TRA	2.4681	TC3	-5.4381	BAU	1.2447	SGT	6570.0	SGR	1847.1	SG3	1082.6	ST	87.1	SR	22.9	SS	47.6
RDE	-.0299	RRA	-.7904	RC3	1.2886	FAU	.16762	RRT	-.9740	RRF	-.9985	RTF	.9629	CRT	-.7631	CRS	.9772	CST	-.6086
FDE	.6942	FRA	5.3490	FC3	-8.7113	BSP	11166	SGB	6824.7	R23	.2519	R13	-.9671	LSA	94.8	MSA	37.4	SSA	.1
BDE	.7125	BRA	2.5916	BC3	5.5887	FSP	1905	SG1	6812.8	SG2	403.2	THA	164.63	EL1	88.9	EL2	14.5	ALF	168.34

LAUNCH DATE MAY 17 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 590.804 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.357	GAL	-1.48	AZL	94.21	HCA	184.76	SMA	187.57	ECC	.19510	INC	4.2070	V1	29.491
RP	224.01	LAP	.35	LOP	60.21	VP	21.849	GAP	1.04	AZP	85.81	TAL	350.92	TAP	175.68	RCA	150.97	APO	224.16	V2	24.550
RC	214.558	GL	-37.84	GP	15.76	ZAL	108.06	ZAP	56.21	ETS	190.10	ZAE	94.05	ETE	179.36	ZAC	118.01	ETC	272.75	LVI	-25.02

PLANETOCENTRIC CONIC

C3	14.966	VHL	3.869	DLA	-38.69	RAL	7.40	RAD	6640.5	VEL	11.620	PTH	6.66	VHP	3.335	DPA	-7.26	RAP	294.52	ECC	1.2463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 18 16	2216.87	6.80	54.53	228.19	137.20	19 55 13	1216.9	24.53	37.39
60.00	21 32 35	1858.12	16.77	31.56	237.39	127.20	22 3 33	858.1	30.40	9.84
62.41	23 0 24	1607.76	24.39	16.10	242.90	121.02	23 27 11	607.8	34.93	351.14
62.41	23 0 24	1607.76	24.39	16.10	242.90	121.02	23 27 11	607.8	34.93	351.14
62.41	23 0 24	1607.76	24.39	16.10	242.90	121.02	23 27 11	607.8	34.93	351.14
62.41	23 0 24	1607.76	24.39	16.10	242.90	121.02	23 27 11	607.8	34.93	351.14
62.41	23 0 24	1607.76	24.39	16.10	242.90	121.02	23 27 11	607.8	34.93	351.14

DIFFERENTIAL CORRECTIONS

TDE	-.5857	TRA	2.4774	TC3	-6.1024	BAU	1.2409
RDE	-.0169	RRA	-.6286	RC3	1.1076	FAU	.17205
FDE	.7457	FRA	5.5802	FC3	-9.9529	BSP	11436
BDE	.5859	BRA	2.5559	BC3	6.2021	FSP	2001

MID-COURSE EXECUTION ACCURACY

SGT	6718.9	SGR	1469.0	SG3	1135.2
RRT	-.9759	RRF	-.9977	RTF	.9648
SGB	6877.6	R23	.2479	R13	-.9673
SG1	6870.5	SG2	313.6	THA	167.93

ORBIT DETERMINATION ACCURACY

ST	83.1	SR	18.0	SS	48.6
CRT	-.8142	CRS	.9653	CST	-.6345
LSA	91.2	MSA	35.6	SSA	.2
EL1	84.4	EL2	10.3	ALF	169.85

LAUNCH DATE MAY 17 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 594.905 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.366	GAL	-1.56	AZL	93.77	HCA	185.84	SMA	187.73	ECC	.19596	INC	3.7669	V1	29.451
RP	224.40	LAP	.38	LOP	61.29	VP	21.815	GAP	.90	AZP	86.25	TAL	350.45	TAP	176.29	RCA	150.94	APO	224.51	V2	24.508
RC	217.222	GL	-34.48	GP	12.87	ZAL	109.37	ZAP	54.74	ETS	188.52	ZAE	92.82	ETE	179.85	ZAC	115.12	ETC	272.69	LVI	-22.40

PLANETOCENTRIC CONIC

C3	14.110	VHL	3.756	DLA	-35.52	RAL	5.87	RAD	6640.1	VEL	11.583	PTH	6.63	VHP	3.314	DPA	-10.10	RAP	295.05	ECC	1.2322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 46 52	2291.48	3.06	57.67	223.78	137.50	19 25 3	1291.5	21.07	41.11
60.00	20 32 38	2009.74	10.37	39.27	230.71	129.17	21 6 8	1009.7	25.20	19.29
67.56	23 21 6	1515.90	22.98	7.78	239.39	117.85	23 46 22	515.9	32.39	342.77
67.56	23 21 6	1515.90	22.98	7.78	239.39	117.85	23 46 22	515.9	32.39	342.77
67.56	23 21 6	1515.90	22.98	7.78	239.39	117.85	23 46 22	515.9	32.39	342.77
67.56	23 21 6	1515.90	22.98	7.78	239.39	117.85	23 46 22	515.9	32.39	342.77
67.56	23 21 6	1515.90	22.98	7.78	239.39	117.85	23 46 22	515.9	32.39	342.77

DIFFERENTIAL CORRECTIONS

TDE	-.4782	TRA	2.5125	TC3	-6.5741	BAU	1.2529
RDE	-.0121	RRA	-.5280	RC3	.9467	FAU	.17109
FDE	.8715	FRA	5.7043	FC3	-10.4975	BSP	11669
BDE	.4783	BRA	2.5674	BC3	6.6420	FSP	2066

MID-COURSE EXECUTION ACCURACY

SGT	6862.5	SGR	1218.6	SG3	1153.5
RRT	-.9755	RRF	-.9964	RTF	.9639
SGB	6969.8	R23	.2483	R13	-.9656
SG1	6964.8	SG2	264.4	THA	170.16

ORBIT DETERMINATION ACCURACY

ST	79.8	SR	14.9	SS	49.8
CRT	-.8590	CRS	.9461	CST	-.6472
LSA	88.6	MSA	35.0	SSA	.2
EL1	80.9	EL2	7.5	ALF	170.81

LAUNCH DATE MAY 17 1971 FLIGHT TIME 260.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 599.003 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.375	GAL	-1.64	AZL	93.47	HCA	186.91	SMA	187.89	ECC	.19683	INC	3.4654	V1	29.451
RP	224.79	LAP	.42	LOP	62.36	VP	21.782	GAP	.76	AZP	86.56	TAL	349.98	TAP	176.89	RCA	150.90	APO	224.87	V2	24.466
RC	219.886	GL	-31.99	GP	10.83	ZAL	110.49	ZAP	53.51	ETS	187.37	ZAE	91.62	ETE	180.17	ZAC	113.08	ETC	272.68	LVI	-20.57

PLANETOCENTRIC CONIC

C3	13.643	VHL	3.694	DLA	-33.06	RAL	5.02	RAD	6639.9	VEL	11.563	PTH	6.61	VHP	3.313	DPA	-12.09	RAP	295.50	ECC	1.2245

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 26 43	2346.52	.30	59.97	221.26	137.58	19 5 50	1346.5	18.46	43.74
60.00	20 0 41	2096.44	6.62	43.51	227.30	129.85	20 35 37	1096.4	21.92	24.29
70.00	22 26 42	1666.02	15.85	15.34	233.94	120.66	22 54 28	666.0	27.05	352.50
72.11	23 44 53	1425.81	21.73	.06	237.25	115.55	24 8 39	425.8	30.32	335.10
72.11	23 44 53	1425.81	21.73	.06	237.25	115.55	24 8 39	425.8	30.32	335.10
72.11	23 44 53	1425.81	21.73	.06	237.25	115.55	24 8 39	425.8	30.32	335.10
110.00	3 30 5	6000.87	15.85	282.16	233.94	120.66	5 10 5	5000.9	27.05	259.32

DIFFERENTIAL CORRECTIONS

TDE	-.3762	TRA	2.5739	TC3	-6.8928	BAU	1.2660
RDE	-.0074	RRA	-.4596	RC3	.8135	FAU	.16814
FDE	1.0023	FRA	5.7653	FC3	-10.6691	BSP	11999
BDE	.3763	BRA	2.6146	BC3	6.9406	FSP	2091

MID-COURSE EXECUTION ACCURACY

SGT	6997.4	SGR	1041.6	SG3	1154.0
RRT	-.9750	RRF	-.9942	RTF	.9636
SGB	7074.5	R23	.2416	R13	-.9647
SG1	7070.8	SG2	229.3	THA	171.73

ORBIT DETERMINATION ACCURACY

ST	77.6	SR	12.8	SS	51.1
CRT	-.9081	CRS	.9187	CST	-.6695
LSA	87.3	MSA	34.2	SSA	.2
EL1	78.4	EL2	5.3	ALF	171.43

LAUNCH DATE MAY 17 1971 FLIGHT TIME 262.00 ARRIVAL DATE FEB 3 1972

HELIOCENTRIC CONIC DISTANCE 603.098 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.385	GAL	-1.73	AZL	93.25	HCA	187.99	SMA	188.05	ECC	.19773	INC	3.2455	V1	29.451
RP	225.18	LAP	.45	LOP	63.43	VP	21.749	GAP	.62	AZP	86.79	TAL	349.50	TAP	177.49	RCA	150.87	APO	225.23	V2	24.424
RC	222.551	GL	-30.06	GP	9.33	ZAL	111.49	ZAP	52.42	ETS	186.50	ZAE	90.45	ETE	180.40	ZAC	111.57	ETC	272.68	LVI	-19.25

PLANETOCENTRIC CONIC

C3	13.387	VHL	3.659	DLA	-31.09	RAL	4.57	RAD	6639.7	VEL	11.552	PTH	6.60	VHP	3.323	DPA	-13.55	RAP	295.91	ECC	1.2203

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 12 42	2390.34	-1.90	61.80	219.75	137.55	18 52 32	1390.3	16.35	45.76
60.00	19 39 39	2158.96	3.88	46.52	225.30	130.15	20 15 38	1159.0	19.46	27.74
70.00	21 41 19	1800.87	11.03	22.81	230.60	122.53	22 11 20	800.9	23.36	1.23
76.51	0 16 37	1329.33	20.63	352.17	235.93	113.79	0 38 46	329.3	28.61	327.29
76.51	0 16 37	1329.33	20.63	352.17	235.93	113.79	0 38 46	329.3	28.61	327.29
76.51	0 16 37	1329.33	20.63	352.17	235.93	113.79	0 38 46	329.3	28.61	327.29
110.00	2 44 42	6135.73	11.03	289.64	230.60	122.53	4 26 57	5135.7	23.36	268.05

DIFFERENTIAL CORRECTIONS

TDE	-.2925	TRA	2.6395	TC3	-7.1457	BAU	1.2852
RDE	.0003	RRA	-.4087	RC3	.7104	FAU	.16578
FDE	1.0899	FRA	5.7616	FC3	-10.7209	BSP	12262
BDE	.2925	BRA	2.6709	BC3	7.1809	FSP	2071

MID-COURSE EXECUTION ACCURACY

SGT	7130.7	SGR	910.5	SG3	1144.5
RRT	-.9744	RRF	-.9911	RTF	.9644
SGB	7188.6	R23	.2251	R13	-.9652
SG1	7185.8	SG2	203.1	THA	172.90

ORBIT DETERMINATION ACCURACY

ST	76.3	SR	11.2	SS	51.7
CRT	-.9539	CRS	.8794	CST	-.6972
LSA	86.9	MSA	32.8	SSA	.3
EL1	77.1	EL2	3.3	ALF	171.99

LAUNCH DATE MAY 17 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 5 1972

HELIOCENTRIC CONIC — DISTANCE 607.186 — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.394 GAL -1.81 AZL 93.08 HCA 189.05 SMA 188.21 ECC .19865 INC 3.0771 V1 29.451
RP 225.57 LAP .48 LOP 64.50 VP 21.716 GAP .48 AZP 86.96 TAL 349.02 TAP 178.08 RCA 150.82 APO 225.60 V2 24.382
RC 225.217 GL -28.52 GP 8.18 ZAL 112.42 ZAP 51.42 ETS 185.83 ZAE 89.31 ETE 180.57 ZAC 110.41 ETC 272.71 LVI -18.25

PLANETOCENTRIC CONIC

C3 13.258 VHL 3.641 DLA -29.44 RAL 4.37 RAD 6639.7 VEL 11.547 PTH 6.59 VHP 3.339 DPA -14.65 RAP 296.30 ECC 1.2182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 2 23	2426.99	-3.74	63.34	218.86	137.46	18 42 50	1427.0	14.57	47.42
60.00	19 24 32	2208.44	1.70	48.89	224.09	130.27	20 1 21	1208.4	17.46	30.39
70.00	21 14 56	1883.71	7.96	27.26	228.78	123.32	21 46 20	883.7	20.82	6.32
80.00	23 55 47	1379.57	16.19	353.78	233.51	115.44	24 18 46	379.6	25.27	330.07
81.45	0 52 40	1210.02	19.65	342.82	235.12	112.38	1 12 50	210.0	27.15	318.03
100.00	2 42 34	6142.08	16.19	293.05	233.51	115.44	4 24 56	5142.1	25.27	269.34
110.00	2 18 18	6218.57	7.96	294.09	228.78	123.32	4 1 57	5218.6	20.82	273.14

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2232 TRA 2.7069 TC3-7.3613 BAU 1.3095 — SGT 7265.3 SGR 810.7 SG3 1130.5 — ST 75.9 SR 10.1 SS 52.3
RDE .0083 RRA -.3711 RC3 .6256 FAU .16293 — RRT -.9722 RRF -.9867 RTF .9643 — CRT -.9849 CRS .8267 CST -.7196
FDE 1.1716 FRA 5.7454 FC-10.6393 BSP 12421 — SGB 7310.4 R23 .2075 R13 -.9648 — LSA 87.1 MSA 31.9 SSA .3
BDE .2233 BRA 2.7323 BC3 7.3879 FSP 2034 — SG1 7308.0 SG2 188.8 THA 173.80 — EL1 76.5 EL2 1.7 ALF 172.52

LAUNCH DATE MAY 17 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 7 1972

HELIOCENTRIC CONIC — DISTANCE 611.269 — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.404 GAL -1.90 AZL 92.95 HCA 190.12 SMA 188.38 ECC .19958 INC 2.9449 V1 29.451
RP 225.96 LAP .52 LOP 65.56 VP 21.683 GAP .33 AZP 87.10 TAL 348.54 TAP 178.66 RCA 150.78 APO 225.97 V2 24.340
RC 227.883 GL -27.24 GP 7.27 ZAL 113.30 ZAP 50.49 ETS 185.29 ZAE 88.20 ETE 180.69 ZAC 109.49 ETC 272.74 LVI -17.49

PLANETOCENTRIC CONIC

C3 13.213 VHL 3.635 DLA -28.03 RAL 4.35 RAD 6639.7 VEL 11.545 PTH 6.59 VHP 3.358 DPA -15.51 RAP 296.67 ECC 1.2174

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 54 32	2458.73	-5.33	64.67	218.36	137.35	18 35 31	1458.7	13.02	48.83
60.00	19 13 6	2249.76	-.11	50.86	223.37	130.30	19 50 35	1249.8	15.76	32.55
70.00	20 56 26	1945.85	5.62	30.56	227.70	123.74	21 28 52	945.8	18.81	10.02
80.00	23 9 54	1527.96	11.66	2.47	231.32	117.68	23 35 22	528.0	22.05	339.90
90.00	1 29 50	1089.36	16.14	332.42	233.53	113.54	1 48 0	89.4	24.46	308.48
100.00	1 56 42	1002.43	11.66	323.83	231.32	117.68	2 13 25	2.4	22.05	301.27
110.00	1 59 49	6280.70	5.62	297.38	227.70	123.74	3 44 29	5280.7	18.81	276.84

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.1519 TRA 2.7899 TC3-7.5134 BAU 1.3307 — SGT 7396.8 SGR 733.5 SG3 1114.7 — ST 76.1 SR 9.3 SS 53.2
RDE .0156 RRA -.3435 RC3 .5522 FAU .15919 — RRT -.9685 RRF -.9808 RTF .9640 — CRT -.9987 CRS .7619 CST -.7448
FDE 1.2586 FRA 5.7384 FC-10.4305 BSP 12712 — SGB 7433.1 R23 .1868 R13 -.9645 — LSA 88.1 MSA 30.9 SSA .4
BDE .1527 BRA 2.8110 BC3 7.5336 FSP 2017 — SG1 7430.8 SG2 181.8 THA 174.51 — EL1 76.7 EL2 .5 ALF 173.04

LAUNCH DATE MAY 17 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 9 1972

HELIOCENTRIC CONIC — DISTANCE 615.346 — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.414 GAL -1.99 AZL 92.84 HCA 191.18 SMA 188.55 ECC .20053 INC 2.8375 V1 29.451
RP 226.35 LAP .55 LOP 66.62 VP 21.651 GAP .19 AZP 87.22 TAL 348.06 TAP 179.24 RCA 150.74 APO 226.35 V2 24.299
RC 230.548 GL -26.17 GP 6.53 ZAL 114.15 ZAP 49.61 ETS 184.85 ZAE 87.11 ETE 180.79 ZAC 108.74 ETC 272.79 LVI -16.90

PLANETOCENTRIC CONIC

C3 13.225 VHL 3.637 DLA -26.79 RAL 4.44 RAD 6639.7 VEL 11.545 PTH 6.59 VHP 3.380 DPA -16.20 RAP 297.05 ECC 1.2177

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 48 23	2486.93	-6.75	65.86	218.12	137.21	18 29 50	1486.9	11.63	50.07
60.00	19 4 6	2285.53	-1.69	52.57	222.97	130.27	19 42 12	1285.5	14.26	34.39
70.00	20 42 27	1996.37	3.71	33.21	227.05	123.98	21 15 43	996.4	17.12	12.95
80.00	22 44 35	1614.07	8.89	7.36	230.22	118.62	23 11 29	614.1	19.88	345.38
90.00	0 42 43	1245.78	11.67	341.72	231.68	115.94	1 3 29	245.8	21.37	318.89
100.00	1 31 22	1088.54	8.89	328.73	230.22	118.62	1 49 31	88.5	19.88	306.75
110.00	1 45 49	1043.19	3.71	322.13	227.05	123.98	2 3 12	43.2	17.12	301.87

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.0927 TRA 2.8687 TC3-7.6565 BAU 1.3566 — SGT 7527.8 SGR 671.6 SG3 1096.1 — ST 76.8 SR 8.7 SS 53.7
RDE .0240 RRA -.3212 RC3 .4924 FAU .15604 — RRT -.9633 RRF -.9731 RTF .9639 — CRT -.9914 CRS .6817 CST -.7658
FDE 1.3222 FRA 5.7052 FC-10.2145 BSP 12890 — SGB 7557.7 R23 .1839 R13 -.9643 — LSA 89.2 MSA 30.0 SSA .4
BDE .0957 BRA 2.8866 BC3 7.6723 FSP 1976 — SG1 7555.6 SG2 179.6 THA 175.09 — EL1 77.2 EL2 1.1 ALF 173.57

LAUNCH DATE MAY 17 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 11 1972

HELIOCENTRIC CONIC — DISTANCE 619.419 — EARTH TO MARS

RL 151.28 LAL .00 LOL 235.46 VL 32.423 GAL -2.07 AZL 92.75 HCA 192.23 SMA 188.71 ECC .20150 INC 2.7490 V1 29.451
RP 226.74 LAP .58 LOP 67.68 VP 21.619 GAP .05 AZP 87.31 TAL 347.57 TAP 179.81 RCA 150.69 APO 226.74 V2 24.257
RC 233.212 GL -25.24 GP 5.92 ZAL 114.96 ZAP 48.77 ETS 184.49 ZAE 86.04 ETE 180.86 ZAC 108.12 ETC 272.85 LVI -16.43

PLANETOCENTRIC CONIC

C3 13.281 VHL 3.644 DLA -25.68 RAL 4.61 RAD 6639.7 VEL 11.548 PTH 6.59 VHP 3.403 DPA -16.75 RAP 297.43 ECC 1.2186

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 43 28	2512.53	-8.02	66.95	218.08	137.06	18 25 20	1512.5	10.36	51.19
60.00	18 56 51	2317.35	-3.09	54.09	222.81	130.20	19 35 28	1317.4	12.92	36.01
70.00	20 31 21	2039.47	2.07	35.46	226.71	124.10	21 5 21	1039.5	15.63	15.41
80.00	22 26 34	1678.88	6.76	10.99	229.60	119.15	22 54 33	678.9	18.12	349.39
90.00	0 17 43	1333.11	9.02	346.77	230.82	116.92	0 39 56	333.1	19.33	324.49
100.00	1 13 22	1153.35	6.76	332.36	229.60	119.15	1 32 35	153.4	18.12	310.76
110.00	1 34 44	1086.28	2.07	324.38	226.71	124.10	1 52 50	86.3	15.63	304.33

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.0312 TRA 2.9586 TC3-7.7576 BAU 1.3796 — SGT 7655.9 SGR 622.0 SG3 1077.1 — ST 77.9 SR 8.4 SS 54.4
RDE .0319 RRA -.3044 RC3 .4390 FAU .15206 — RRT -.9560 RRF -.9634 RTF .9634 — CRT -.9618 CRS .5924 CST -.7872
FDE 1.3903 FRA 5.6871 FC3-9.9118 BSP 13135 — SGB 7681.1 R23 .1427 R13 -.9637 — LSA 90.8 MSA 29.1 SSA .5
BDE .0447 BRA 2.9742 BC3 7.7700 FSP 1947 — SG1 7679.0 SG2 181.9 THA 175.56 — EL1 78.3 EL2 2.3 ALF 174.10

LAUNCH DATE MAY 17 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 13 1972

HELIOCENTRIC CONIC DISTANCE 623.484 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.453	GAL	-2.16	AZL	92.67	HCA	193.28	SMA	188.89	ECC	.20249	INC	2.6748
RP	227.13	LAP	.61	LOP	68.73	VP	21.587	GAP	-.09	AZP	87.40	TAL	347.09	TAP	180.37	RCA	150.64	APO	227.13
RC	235.874	GL	-24.43	GP	5.41	ZAL	115.76	ZAP	47.97	ETS	184.18	ZAE	84.99	ETE	180.92	ZAC	107.59	ETC	272.91

V1	29.491																		
V2	24.215																		
LVI	-16.07																		

PLANETOCENTRIC CONIC

C3	13.371	VHL	3.657	DLA	-24.68	RAL	4.85	RAD	6639.7	VEL	11.551	PTH	6.60	VHP	3.428	DPA	-17.21	RAP	297.81

ECC	1.2200																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 39 27	2536.12	-9.20	67.96	218.19	136.89	18 21 43	1536.1	9.19	52.20
60.00	18 50 51	2346.22	-4.36	55.48	222.81	130.10	19 29 57	1346.2	11.69	37.46
70.00	20 22 18	2077.39	.62	37.44	226.57	124.15	20 56 55	1077.4	14.30	17.54
80.00	22 12 38	1732.07	4.98	13.94	229.29	119.48	22 41 30	732.1	16.61	352.61
90.00	23 55 57	1398.84	8.97	350.51	230.37	117.48	24 19 16	398.8	17.67	328.59
100.00	0 59 26	1206.54	4.98	335.31	229.29	119.48	1 19 32	206.5	16.61	313.98
110.00	1 25 40	1124.21	.62	326.36	226.57	124.15	1 44 24	124.2	14.30	306.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0292	TRA	3.0520	TC3	-7.8366	BAU	1.4026	SGT	7781.1	SGR	581.6	SG3	1057.1	ST	79.4	SR	8.2	SS	55.0
RDE	.0399	RRA	-.2910	RC3	.3930	FAU	.14819	RRT	-.9468	RRF	-.9516	RTF	.9631	CRT	-.9111	CRS	.4950	CST	-.8070
FDE	1.4533	FRA	5.6603	FC3	-9.5949	BSP	13392	SGB	7802.9	R23	.1219	R13	-.9633	LSA	92.8	MSA	28.3	SSA	.5
BDE	.0495	BRA	3.0658	BC3	7.8465	FSP	1916	SG1	7800.6	SG2	186.7	THA	175.95	EL1	79.8	EL2	3.3	ALF	174.64

LAUNCH DATE MAY 17 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 15 1972

HELIOCENTRIC CONIC DISTANCE 627.545 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.443	GAL	-2.25	AZL	92.61	HCA	194.33	SMA	189.06	ECC	.20349	INC	2.6109
RP	227.52	LAP	.65	LOP	69.78	VP	21.555	GAP	-.24	AZP	87.47	TAL	346.60	TAP	180.93	RCA	150.59	APO	227.53
RC	238.932	GL	-23.71	GP	4.98	ZAL	116.53	ZAP	47.19	ETS	183.92	ZAE	83.97	ETE	180.97	ZAC	107.14	ETC	272.98

V1	29.451																		
V2	24.174																		
LVI	-15.78																		

PLANETOCENTRIC CONIC

C3	13.487	VHL	3.672	DLA	-23.76	RAL	5.13	RAD	6639.8	VEL	11.556	PTH	6.60	VHP	3.453	DPA	-17.58	RAP	298.21

ECC	1.2220																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 36 9	2558.15	-10.29	68.91	218.40	136.71	18 18 47	1558.1	8.09	53.15
60.00	18 45 50	2372.83	-5.52	56.76	222.94	129.98	19 25 23	1372.8	10.55	38.78
70.00	20 14 42	2111.54	-.69	39.22	228.60	124.15	20 49 54	1111.5	13.08	19.43
80.00	22 1 20	1777.81	3.45	16.46	229.17	119.68	22 30 58	777.8	15.27	355.34
90.00	23 42 4	1452.96	5.26	353.57	230.17	117.83	24 6 17	453.0	16.23	331.91
100.00	0 48 8	1252.28	3.45	337.83	229.17	119.68	1 9 0	252.3	15.27	316.71
110.00	1 18 5	1150.36	-.69	328.14	226.60	124.15	1 37 23	158.4	13.08	308.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0809	TRA	3.1419	TC3	-7.9206	BAU	1.4296	SGT	7908.4	SGR	548.7	SG3	1037.0	ST	81.1	SR	8.1	SS	55.4
RDE	.0485	RRA	-.2800	RC3	.3541	FAU	.14482	RRT	-.9354	RRF	-.9376	RTF	.9627	CRT	-.8443	CRS	.3927	CST	-.8226
FDE	1.5003	FRA	5.6254	FC3	-9.2961	BSP	13558	SGB	7927.4	R23	.1035	R13	-.9628	LSA	94.6	MSA	27.6	SSA	.6
BDE	.0943	BRA	3.1543	BC3	7.9285	FSP	1873	SG1	7925.0	SG2	193.6	THA	176.28	EL1	81.3	EL2	4.3	ALF	175.16

LAUNCH DATE MAY 17 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 17 1972

HELIOCENTRIC CONIC DISTANCE 631.600 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.453	GAL	-2.35	AZL	92.56	HCA	195.38	SMA	189.23	ECC	.20451	INC	2.5560
RP	227.91	LAP	.68	LOP	70.82	VP	21.524	GAP	-.38	AZP	87.53	TAL	346.11	TAP	181.49	RCA	150.53	APO	227.93
RC	241.186	GL	-23.07	GP	4.61	ZAL	117.30	ZAP	46.45	ETS	183.69	ZAE	82.97	ETE	181.00	ZAC	106.74	ETC	273.05

V1	29.451																		
V2	24.133																		
LVI	-15.55																		

PLANETOCENTRIC CONIC

C3	13.626	VHL	3.691	DLA	-22.90	RAL	5.45	RAD	6639.9	VEL	11.562	PTH	6.61	VHP	3.479	DPA	-17.89	RAP	298.61

ECC	1.2242																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 33 24	2578.94	-11.32	69.81	218.70	136.53	18 16 23	1578.9	7.06	54.03
60.00	18 41 33	2397.67	-6.61	57.96	223.17	129.85	19 21 31	1397.7	9.48	40.01
70.00	20 8 15	2142.82	-1.88	40.86	226.74	124.11	20 43 57	1142.8	11.95	21.15
80.00	21 51 55	1818.37	2.08	18.69	229.21	119.79	22 22 13	818.4	14.05	357.73
90.00	23 30 43	1499.67	3.77	356.19	230.15	118.05	23 55 43	499.7	14.95	334.74
100.00	0 38 42	1292.85	2.08	340.06	229.21	119.79	1 0 15	292.8	14.05	319.10
110.00	1 11 37	1189.64	-1.88	329.78	226.74	124.11	1 31 26	189.6	11.95	310.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1357	TRA	3.2389	TC3	-7.9782	BAU	1.4545	SGT	8032.5	SGR	521.9	SG3	1018.8	ST	83.0	SR	8.2	SS	55.9
RDE	.0568	RRA	-.2714	RC3	.3189	FAU	.14112	RRT	-.9218	RRF	-.9213	RTF	.9621	CRT	-.7651	CRS	.2922	CST	-.8378
FDE	1.5306	FRA	5.5952	FC3	-8.9666	BSP	13777	SGB	8049.5	R23	.0873	R13	-.9623	LSA	96.7	MSA	26.9	SSA	.6
BDE	.1471	BRA	3.2503	BC3	7.9846	FSP	1839	SG1	8046.9	SG2	202.0	THA	176.57	EL1	83.2	EL2	5.2	ALF	175.68

LAUNCH DATE MAY 17 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 19 1972

HELIOCENTRIC CONIC DISTANCE 635.648 EARTH TO MARS

RL	151.28	LAL	.00	LOL	235.46	VL	32.463	GAL	-2.44	AZL	92.51	HCA	196.42	SMA	189.41	ECC	.20554	INC	2.5085
RP	228.30	LAP	.71	LOP	71.87	VP	21.493	GAP	-.53	AZP	87.59	TAL	345.61	TAP	182.03	RCA	150.47	APO	228.34
RC	243.834	GL	-22.48	GP	4.28	ZAL	118.05	ZAP	45.73	ETS	183.50	ZAE	81.98	ETE	181.03	ZAC	106.40	ETC	273.13

V1	29.451																		
V2	24.092																		
LVI	-15.37																		

PLANETOCENTRIC CONIC

C3	13.783	VHL	3.713	DLA	-22.10	RAL	5.80	RAD	6639.9	VEL	11.569	PTH	6.61	VHP	3.505	DPA	-18.15	RAP	299.03

ECC	1.2268																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 31 5	2598.71	-12.29	70.68	219.07	136.33	18 14 24	1598.7	6.07	54.87
60.00	18 37 53	2421.08	-7.63	59.10	223.49	129.69	19 18 14	1421.1	8.47	41.16
70.00	20 2 39	2171.87	-2.99	42.38	226.98	124.04	20 38 51	1171.9	10.89	22.74
80.00	21 43 52	1855.11	.83	20.71	229.36	119.85	22 14 47	855.1	12.91	359.87
90.00	23 21 11	1541.21	2.44	358.52	230.25	118.18	23 46 52	541.2	13.77	337.22
100.00	0 30 39	1329.59	.83	342.08	229.36	119.85	0 52 49	329.6	12.91	321.24
110.00	1 6 1	1218.68	-2.99	331.29	226.98	124.04	1 26 20	218.7	10.89	311.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1926	TRA	3.3425	TC3	-8.0134	BAU	1.4776	SGT	8154.0	SGR	500.1	SG3	996.7	ST	85.3	SR	8.3	SS	56.4
RDE	.0651	RRA	-.2649	RC3	.2869	FAU	.13719	RRT	-.9059	RRF	-.9027	RTF	.9616	CRT	-.6782	CRS	.1969	CST	-.8526
FDE	1.5982	FRA	5.5691	FC3	-8.6171	BSP	14041	SGB	8169.3	R23	.0734	R13	-.9617	LSA	99.1	MSA	26.3	SSA	.7
BDE	.2033	BRA	3.3530	BC3	8.0186	FSP	1810	SG1	8166.5	SG2	211.5	THA	176.82	EL1	85.5	EL2	6.1	ALF	176.20

LAUNCH DATE MAY 17 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 21 1972

DISTANCE 639.691

EARTH TO MARS

HELIOCENTRIC CONIC

RL	151.28	LAL	.00	LOL	235.46	VL	32.473	GAL	-2.53	AZL	92.47	HCA	197.46	SMA	189.58	ECC	.20660	INC 2.4662 V1 29.451
RP	228.69	LAP	.74	LOP	78.90	VP	21.462	GAP	-.67	AZP	87.65	TAL	345.12	TAP	182.58	RCA	150.41	APO 228.75 V2 24.051
RC	246.477	GL	-21.94	GP	4.00	ZAL	118.78	ZAP	45.03	ETS	183.32	ZAE	81.01	ETE	181.06	ZAC	106.09	ETC 273.21 LVI -15.24

PLANETOCENTRIC CONIC

C3	13.958	VHL	3.736	DLA	-21.34	RAL	6.17	RAD	6640.0	VEL	11.577	PTH	6.62	VHP	3.532	DPA	-18.36	RAP 299.46 ECC 1.2297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 29 7	2617.66	-13.23	71.52	219.49	136.13	18 12 45	1617.7	5.12	55.67
60.00	18 34 41	2443.33	-8.59	60.18	223.86	129.53	19 15 24	1443.3	7.50	42.24
70.00	19 57 45	2199.12	-4.03	43.80	227.29	123.94	20 34 24	1199.1	9.89	24.21
80.00	21 36 52	1888.93	-.31	22.57	229.60	119.86	22 8 21	888.9	11.86	1.83
90.00	23 12 58	1578.93	1.23	.62	230.46	118.26	23 39 17	578.9	12.67	339.45
100.00	0 23 40	1363.40	-.31	343.93	229.60	119.86	0 46 23	363.4	11.86	323.19
110.00	1 1 7	1245.94	-4.03	332.72	227.29	123.94	1 21 53	245.9	9.89	313.13

DIFFERENTIAL CORRECTIONS

TDE	.2458	TRA	3.4445	TC3	-8.0503	BAU	1.5030
RDE	.0735	RRA	-.2595	RC3	.2590	FAU	.13361
FDE	1.6404	FRA	5.5370	FC3	-8.2873	BSP	14255
BDE	.2566	BRA	3.4543	BC3	8.0545	FSP	1776

MID-COURSE EXECUTION ACCURACY

SGT	8275.8	SGR	482.4	SG3	976.7		
RRT	-.8879	RRF	-.8820	RTF	.9610		
SGB	8289.9	R23	.0612	R13	-.9611		
SG1	8286.9	SG2	221.6	THA	177.04		

ORBIT DETERMINATION ACCURACY

ST	87.6	SR	8.5	SS	56.8		
CRT	-.5901	CRS	.1068	CST	-.8645		
LSA	101.5	MSA	25.8	BSA	.7		
EL1	87.7	EL2	6.9	ALF	176.69		

LAUNCH DATE MAY 18 1971 FLIGHT TIME 92.00 ARRIVAL DATE AUG 18 1971

HELIOCENTRIC CONIC — DISTANCE 272.454 — EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	35.548	GAL	-.68	AZL	91.85	HCA	85.45	SMA	270.57	ECC	.44088	INC	1.8538	V1	29.445
RP	207.18	LAP	-1.85	LOP	321.87	VP	28.119	GAP	22.59	AZP	90.15	TAL	357.76	TAP	83.21	RCA	151.28	APO	389.86	V2	26.438
RC	56.568	GL	-10.62	GP	-.52	ZAL	97.21	ZAP	177.56	ETS	192.40	ZAE	173.72	ETE	44.73	ZAC	99.31	ETC	278.05	LVI	-17.92

PLANETOCENTRIC CONIC

C3	38.948	VHL	6.241	DLA	-20.00	RAL	339.74	RAD	6650.3	VEL	12.603	PTH	7.46	VHP	11.347	DPA	-17.23	RAP	322.68	ECC	1.6410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 33 47	2893.85	-26.28	84.79	205.99	131.20	16 22 1	1893.9	-8.72	67.27
60.00	16 37 15	2725.11	-20.36	74.69	211.09	125.56	17 22 40	1725.1	-4.87	55.76
70.00	17 57 31	2489.12	-14.73	59.43	214.98	121.17	18 39 0	1489.1	-1.08	39.48
80.00	19 33 20	2189.25	-10.31	39.25	217.56	118.18	20 9 49	1189.2	1.95	18.61
90.00	21 7 37	1885.10	-8.54	17.82	218.50	117.06	21 39 2	885.1	3.19	356.93
100.00	22 16 12	1663.72	-10.31	.61	217.56	118.18	22 43 56	663.7	1.95	339.98
110.00	22 56 57	1535.94	-14.73	348.35	214.98	121.17	23 22 33	535.9	-1.08	328.40

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.3770	TRA	-.8659	TC3	.0313	BAU	.0373	SGT	914.8	SGR	581.1	SG3	92.9	ST	21.5	SR	26.6	SS	10.0
RDE	-.5752	RRA	.2343	RC3	.0644	FAU	.03225	RRT	-.0146	RRF	.0164	RTF	-.5764	CRT	.7234	CRS	.3721	CST	.9036
FDE	.1084	FRA	.6022	FC3	-.7168	BSP	1210	SGB	1083.8	R23	-.0023	R13	.5765	LSA	32.5	MSA	14.6	SSA	1.1
BDE	.6877	BRA	.8970	BC3	.0716	FSP	109	SG1	914.9	SG2	581.0	THA	179.11	EL1	31.9	EL2	12.4	ALF	53.36

LAUNCH DATE MAY 18 1971 FLIGHT TIME 94.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC — DISTANCE 274.169 — EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	35.331	GAL	-.63	AZL	91.85	HCA	86.71	SMA	262.35	ECC	.42334	INC	1.8488	V1	29.445
RP	207.09	LAP	-1.85	LOP	323.13	VP	27.854	GAP	22.06	AZP	90.11	TAL	357.89	TAP	84.60	RCA	151.29	APO	373.41	V2	26.448
RC	56.856	GL	-10.91	GP	-.54	ZAL	97.10	ZAP	176.67	ETS	189.28	ZAE	173.14	ETE	39.52	ZAC	99.25	ETC	278.12	LVI	-18.00

PLANETOCENTRIC CONIC

C3	36.282	VHL	6.023	DLA	-20.30	RAL	339.76	RAD	6649.4	VEL	12.497	PTH	7.38	VHP	10.968	DPA	-17.13	RAP	323.04	ECC	1.5971

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 35 12	2869.46	-25.18	83.51	204.96	131.80	16 23 2	1869.5	-7.51	66.23
60.00	16 39 8	2699.47	-19.34	73.29	210.06	126.07	17 24 7	1699.5	-3.74	54.53
70.00	18 0 1	2461.67	-13.76	57.90	213.96	121.57	18 41 3	1461.7	-.03	38.05
80.00	19 36 33	2159.56	-9.35	37.56	216.56	118.48	20 12 32	1159.6	2.96	16.98
90.00	21 11 13	1854.18	-7.57	16.06	217.51	117.33	21 42 7	854.2	4.18	355.20
100.00	22 19 25	1634.03	-9.35	358.93	216.56	118.48	22 46 39	634.0	2.96	338.35
110.00	22 59 27	1508.49	-13.76	346.82	213.96	121.57	23 24 36	508.5	-.03	326.97

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.3712	TRA	-.8555	TC3	.0448	BAU	.0400	SGT	938.3	SGR	585.3	SG3	99.8	ST	21.9	SR	26.8	SS	10.3
RDE	-.5586	RRA	.2276	RC3	.0691	FAU	.03341	RRT	-.0149	RRF	.0171	RTF	-.5887	CRT	.7215	CRS	.3564	CST	.8978
FDE	.1083	FRA	.6248	FC3	-.7971	BSP	1274	SGB	1105.9	R23	-.0028	R13	.5888	LSA	32.9	MSA	14.9	SSA	1.1
BDE	.6707	BRA	.8853	BC3	.0824	FSP	118	SG1	938.4	SG2	585.2	THA	179.13	EL1	32.2	EL2	12.6	ALF	52.80

LAUNCH DATE MAY 18 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC — DISTANCE 276.161 — EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	35.127	GAL	-.57	AZL	91.84	HCA	87.98	SMA	255.11	ECC	.40695	INC	1.8437	V1	29.445
RP	207.01	LAP	-1.84	LOP	324.40	VP	27.604	GAP	21.54	AZP	90.07	TAL	358.04	TAP	86.02	RCA	151.29	APO	358.92	V2	26.457
RC	57.225	GL	-11.20	GP	-.55	ZAL	96.96	ZAP	175.75	ETS	187.49	ZAE	172.55	ETE	35.23	ZAC	99.18	ETC	278.19	LVI	-18.07

PLANETOCENTRIC CONIC

C3	33.860	VHL	5.819	DLA	-20.62	RAL	339.75	RAD	6648.5	VEL	12.400	PTH	7.31	VHP	10.603	DPA	-17.04	RAP	323.38	ECC	1.5572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 34	2845.25	-24.08	82.26	203.96	132.36	16 24 0	1845.2	-6.30	65.21
60.00	16 40 59	2673.94	-18.31	71.92	209.05	126.55	17 25 33	1673.9	-2.62	53.30
70.00	18 2 32	2434.21	-12.77	56.38	212.96	121.95	18 43 6	1434.2	1.01	36.62
80.00	19 39 50	2129.71	-8.38	35.88	215.57	118.76	20 15 19	1129.7	3.96	15.34
90.00	21 14 55	1822.98	-6.59	14.29	216.54	117.56	21 45 18	823.0	5.17	353.45
100.00	22 22 42	1604.18	-8.38	357.25	215.57	118.76	22 49 26	604.2	3.96	336.71
110.00	23 1 59	1481.03	-12.77	345.30	212.96	121.95	23 26 40	481.0	1.01	325.54

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.3649	TRA	-.8453	TC3	.0595	BAU	.0430	SGT	961.7	SGR	589.1	SG3	107.0	ST	22.4	SR	26.9	SS	10.7
RDE	-.5426	RRA	.2211	RC3	.0741	FAU	.03456	RRT	-.0157	RRF	.0171	RTF	-.5910	CRT	.7169	CRS	.3435	CST	.8956
FDE	.1089	FRA	.6477	FC3	-.8837	BSP	1322	SGB	1127.8	R23	-.0020	R13	.6010	LSA	33.2	MSA	15.3	SSA	1.1
BDE	.6539	BRA	.8738	BC3	.0950	FSP	129	SG1	961.8	SG2	589.0	THA	179.12	EL1	32.6	EL2	12.9	ALF	52.28

LAUNCH DATE MAY 18 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC — DISTANCE 278.391 — EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	34.935	GAL	-.50	AZL	91.84	HCA	89.24	SMA	248.68	ECC	.39162	INC	1.8387	V1	29.445
RP	206.94	LAP	-1.84	LOP	325.66	VP	27.368	GAP	21.03	AZP	90.02	TAL	358.21	TAP	87.45	RCA	151.29	APO	346.07	V2	26.466
RC	57.675	GL	-11.49	GP	-.57	ZAL	96.80	ZAP	174.83	ETS	186.33	ZAE	171.96	ETE	31.67	ZAC	99.12	ETC	278.25	LVI	-18.15

PLANETOCENTRIC CONIC

C3	31.655	VHL	5.626	DLA	-20.95	RAL	339.71	RAD	6647.6	VEL	12.312	PTH	7.24	VHP	10.252	DPA	-16.94	RAP	323.72	ECC	1.5210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 54	2821.27	-22.97	81.05	202.98	132.89	16 24 55	1821.3	-5.10	64.19
60.00	16 42 50	2648.57	-17.27	70.57	208.06	127.00	17 26 58	1648.6	-1.51	52.09
70.00	18 5 4	2406.80	-11.78	54.88	211.98	122.29	18 45 11	1406.8	2.06	35.19
80.00	19 43 11	2099.73	-7.39	34.21	214.61	119.01	20 18 11	1099.7	4.97	13.68
90.00	21 18 44	1791.56	-5.60	12.52	215.59	117.76	21 48 35	791.6	6.17	351.68
100.00	22 26 3	1574.21	-7.39	355.57	214.61	119.01	22 52 17	574.2	4.97	335.05
110.00	23 4 31	1453.62	-11.78	343.80	211.98	122.29	23 28 44	453.6	2.06	324.11

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.3579	TRA	-.8346	TC3	.0767	BAU	.0467	SGT	984.1	SGR	592.5	SG3	115.0	ST	22.8	SR	27.1	SS	11.0
RDE	-.5272	RRA	.2147	RC3	.0792	FAU	.03587	RRT	-.0167	RRF	.0207	RTF	-.6139	CRT	.7158	CRS	.3148	CST	.8819
FDE	.1054	FRA	.6748	FC3	-.9809	BSP	1372	SGB	1148.7	R23	-.0046	R13	.6140	LSA	33.5	MSA	15.7	SSA	1.2
BDE	.6372	BRA	.8618	BC3	.1102	FSP	142	SG1	984.2	SG2	592.3	THA	179.10	EL1	32.9	EL2	13.1	ALF	51.83

LAUNCH DATE MAY 18 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 280.827 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 34.755 GAL -.44 AZL 91.83 HCA 90.51 SMA 242.96 ECC .37727 INC 1.8336 V1 29.445
RP 206.87 LAP -1.83 LOP 326.93 VP 27.144 GAP 20.53 AZP 89.98 TAL 358.39 TAP 88.89 RCA 151.30 APO 334.62 V2 26.473
RC 58.203 GL -11.78 GP -.58 ZAL 96.61 ZAP 173.89 ETS 185.52 ZAE 171.40 ETE 28.69 ZAC 99.06 ETC 278.32 LVI -18.21

PLANETOCENTRIC CONIC

C3 29.648 VHL 5.445 DLA -21.29 RAL 339.64 RAD 6646.9 VEL 12.230 PTH 7.18 VHP 9.914 DPA -16.85 RAP 324.05 ECC 1.4879

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 39 10	2797.56	-21.87	79.88	202.03	133.37	16 25 48	1797.6	-3.91	63.20
60.00	16 44 39	2623.42	-16.24	69.25	207.09	127.41	17 20 22	1623.4	-.40	50.89
70.00	18 7 38	2379.49	-10.78	53.40	211.02	122.60	18 47 17	1379.5	3.10	33.76
80.00	19 46 37	2069.67	-6.40	32.53	213.67	119.23	20 21 7	1069.7	5.97	12.02
90.00	21 22 40	1759.88	-4.59	10.74	214.66	117.93	21 52 0	759.9	7.17	349.88
100.00	22 29 29	1544.14	-6.40	353.90	213.67	119.23	22 55 13	544.1	5.97	333.38
110.00	23 7 4	1426.31	-10.78	342.31	211.02	122.60	23 30 50	426.3	3.10	322.68

DIFFERENTIAL CORRECTIONS

TDE -.3516 TRA -.8245 TC3 .0938 BAU .0500
RDE -.5123 RRA .2085 RC3 .0844 FAU .03723
FDE .1042 FRA .6991 FC3-1.0871 BSP 1433
BDE .6213 BRA .8505 BC3 .1262 FSP 154

MID-COURSE EXECUTION ACCURACY

SGT 1007.2 SGR 595.4 SG3 123.3
RRT -.0175 RRF .0213 RTF -.6238
SGB 1170.0 R23 -.0045 R13 .6239
SG1 1007.3 SG2 595.2 THA 179.09

ORBIT DETERMINATION ACCURACY

ST 23.2 SR 27.2 SS 11.3
CRT .7129 CRS .2967 CST .8750
LSA 33.8 MSA 16.1 SSA 1.2
EL1 33.1 EL2 13.3 ALF 51.33

LAUNCH DATE MAY 18 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 283.442 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 34.585 GAL -.38 AZL 91.83 HCA 91.77 SMA 237.84 ECC .36384 INC 1.8286 V1 29.445
RP 206.82 LAP -1.83 LOP 328.20 VP 26.933 GAP 20.03 AZP 89.94 TAL 358.58 TAP 90.36 RCA 151.30 APO 324.37 V2 26.479
RC 58.807 GL -12.08 GP -.60 ZAL 96.39 ZAP 172.94 ETS 184.92 ZAE 170.86 ETE 26.17 ZAC 98.99 ETC 278.38 LVI -18.28

PLANETOCENTRIC CONIC

C3 27.818 VHL 5.274 DLA -21.64 RAL 339.56 RAD 6646.1 VEL 12.156 PTH 7.12 VHP 9.589 DPA -16.77 RAP 324.36 ECC 1.4578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 40 24	2774.16	-20.77	78.74	201.10	133.82	16 26 38	1774.2	-2.74	62.22
60.00	16 46 27	2598.51	-15.20	67.96	206.14	127.78	17 29 46	1598.5	.70	49.70
70.00	18 10 12	2352.31	-9.78	51.93	210.08	122.89	18 49 24	1352.3	4.14	32.34
80.00	19 50 8	2039.54	-5.39	30.86	212.75	119.41	20 24 8	1039.5	6.98	10.34
90.00	21 26 43	1728.03	-3.58	8.95	213.75	118.07	21 55 31	728.0	8.16	348.07
100.00	22 33 0	1514.01	-5.39	352.23	212.75	119.41	22 58 14	514.0	6.98	331.71
110.00	23 9 38	1399.13	-9.78	340.85	210.08	122.89	23 32 57	399.1	4.14	321.26

DIFFERENTIAL CORRECTIONS

TDE -.3456 TRA -.8175 TC3 .1119 BAU .0533
RDE -.4978 RRA .2026 RC3 .0897 FAU .03856
FDE .1031 FRA .7253 FC3-1.1999 BSP 1501
BDE .6060 BRA .8422 BC3 .1434 FSP 170

MID-COURSE EXECUTION ACCURACY

SGT 1033.3 SGR 597.9 SG3 132.0
RRT -.0194 RRF .0223 RTF -.6345
SGB 1193.8 R23 -.0038 R13 .6345
SG1 1033.4 SG2 597.7 THA 179.03

ORBIT DETERMINATION ACCURACY

ST 23.6 SR 27.3 SS 11.6
CRT .7090 CRS .2786 CST .8687
LSA 34.1 MSA 16.5 SSA 1.2
EL1 33.4 EL2 13.6 ALF 50.76

LAUNCH DATE MAY 18 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 286.214 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 34.426 GAL -.32 AZL 91.82 HCA 93.04 SMA 233.23 ECC .35126 INC 1.8235 V1 29.445
RP 206.77 LAP -1.82 LOP 329.47 VP 26.733 GAP 19.55 AZP 89.90 TAL 358.79 TAP 91.83 RCA 151.31 APO 315.16 V2 26.485
RC 59.485 GL -12.37 GP -.62 ZAL 96.15 ZAP 171.97 ETS 184.47 ZAE 170.37 ETE 24.02 ZAC 98.93 ETC 278.44 LVI -18.34

PLANETOCENTRIC CONIC

C3 26.149 VHL 5.114 DLA -22.00 RAL 339.44 RAD 6645.5 VEL 12.088 PTH 7.07 VHP 9.275 DPA -16.69 RAP 324.66 ECC 1.4304

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 41 35	2751.12	-19.68	77.63	200.19	134.24	16 27 26	1751.1	-1.58	61.25
60.00	16 48 14	2573.89	-14.17	66.70	205.22	128.13	17 31 7	1573.9	1.78	48.52
70.00	18 12 47	2325.31	-8.78	50.48	209.16	123.14	18 51 32	1325.3	5.16	30.92
80.00	19 53 44	2009.39	-4.38	29.19	211.86	119.56	20 27 13	1009.4	7.97	8.66
90.00	21 30 53	1695.99	-2.55	7.16	212.88	118.17	21 59 9	696.0	9.15	346.24
100.00	22 36 36	1483.86	-4.38	350.56	211.86	119.56	23 1 19	483.9	7.97	330.02
110.00	23 12 14	1372.12	-8.78	339.40	209.16	123.14	23 35 6	372.1	5.16	319.84

DIFFERENTIAL CORRECTIONS

TDE -.3367 TRA -.8040 TC3 .1350 BAU .0577
RDE -.4840 RRA .1967 RC3 .0950 FAU .04007
FDE .0994 FRA .7521 FC3-1.3268 BSP 1532
BDE .5896 BRA .8277 BC3 .1650 FSP 193

MID-COURSE EXECUTION ACCURACY

SGT 1051.4 SGR 600.0 SG3 141.4
RRT -.0206 RRF .0243 RTF -.6463
SGB 1210.5 R23 -.0046 R13 .6464
SG1 1051.5 SG2 599.8 THA 179.00

ORBIT DETERMINATION ACCURACY

ST 23.8 SR 27.3 SS 11.9
CRT .7049 CRS .2525 CST .8982
LSA 34.3 MSA 16.8 SSA 1.2
EL1 33.6 EL2 13.8 ALF 50.53

LAUNCH DATE MAY 18 1971 FLIGHT TIME 106.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 289.123 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 34.275 GAL -.25 AZL 91.82 HCA 94.31 SMA 229.08 ECC .33948 INC 1.8185 V1 29.445
RP 206.74 LAP -1.81 LOP 330.73 VP 26.544 GAP 19.07 AZP 89.86 TAL 359.01 TAP 93.32 RCA 151.31 APO 306.84 V2 26.489
RC 60.233 GL -12.66 GP -.64 ZAL 95.89 ZAP 170.99 ETS 184.11 ZAE 169.93 ETE 22.16 ZAC 98.87 ETC 278.50 LVI -18.39

PLANETOCENTRIC CONIC

C3 24.626 VHL 4.962 DLA -22.37 RAL 339.31 RAD 6644.8 VEL 12.025 PTH 7.01 VHP 8.973 DPA -16.61 RAP 324.95 ECC 1.4053

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 44	2728.47	-18.60	76.56	199.31	134.62	16 28 12	1728.5	-.44	60.31
60.00	16 49 59	2549.61	-13.15	65.46	204.33	128.45	17 32 28	1549.6	2.85	47.36
70.00	18 15 23	2298.52	-7.78	49.05	208.28	123.36	18 53 42	1298.5	6.17	29.51
80.00	19 57 24	1979.25	-3.37	27.53	211.00	119.68	20 30 24	979.2	8.96	6.96
90.00	21 35 12	1663.80	-1.51	5.36	212.02	118.24	22 2 56	663.8	10.14	344.39
100.00	22 40 16	1453.72	-3.37	348.90	211.00	119.68	23 4 30	453.7	8.96	328.33
110.00	23 14 50	1345.34	-7.78	337.97	208.28	123.36	23 37 15	345.3	6.17	318.42

DIFFERENTIAL CORRECTIONS

TDE -.3307 TRA -.7957 TC3 .1593 BAU .0620
RDE -.4705 RRA .1911 RC3 .1003 FAU .04176
FDE .0982 FRA .7815 FC3-1.4680 BSP 1586
BDE .5751 BRA .8163 BC3 .1882 FSP 200

MID-COURSE EXECUTION ACCURACY

SGT 1076.0 SGR 601.7 SG3 151.8
RRT -.0215 RRF .0248 RTF -.6574
SGB 1232.8 R23 -.0043 R13 .6575
SG1 1076.1 SG2 601.4 THA 179.00

ORBIT DETERMINATION ACCURACY

ST 24.2 SR 27.4 SS 12.3
CRT .7012 CRS .2348 CST .8516
LSA 34.5 MSA 17.2 SSA 1.3
EL1 33.8 EL2 14.0 ALF 50.00

LAUNCH DATE MAY 18 1971 FLIGHT TIME 108.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC DISTANCE 292.154 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	34.134	GAL	-.19	AZL	91.81	HCA	95.58	SMA	225.31	ECC	.32843	INC	1.8134
RP	206.71	LAP	-1.80	LOP	332.00	VP	26.364	GAP	18.60	AZP	89.82	TAL	359.24	TAP	94.82	RCA	151.31	APO	299.31
RC	61.030	GL	-12.95	GP	-.68	ZAL	95.61	ZAP	168.99	ETS	183.83	ZAE	169.54	ETE	20.54	ZAC	98.81	ETC	278.55

V1	29.448																		
V2	26.492																		
LVI	-18.44																		

PLANETOCENTRIC CONIC

C3	23.232	VHL	4.820	DLA	-22.74	RAL	339.15	RAD	6644.2	VEL	11.967	PTH	6.97	VHP	8.681	DPA	-16.54	RAP	325.23
ECC	1.3823																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 43 49	2706.19	-17.53	75.52	198.46	134.97	16 28 55	1706.2	.68	59.36
60.00	16 51 43	2525.64	-12.13	64.26	203.45	128.73	17 33 48	1525.6	3.90	46.21
70.00	18 18 1	2271.93	-6.78	47.64	207.41	123.55	18 55 53	1271.9	7.18	28.10
80.00	20 1 11	1949.05	-2.35	25.87	210.15	119.77	20 33 40	949.1	9.94	5.26
90.00	21 39 40	1631.35	-.46	3.55	211.20	118.28	22 6 52	631.4	11.12	342.51
100.00	22 44 3	1423.53	-2.35	347.24	210.15	119.77	23 7 46	423.5	9.94	326.62
110.00	23 17 27	1318.75	-6.78	336.56	207.41	123.55	23 39 26	318.7	7.18	317.02

INJ	16 29 37																		
INJ	17 35 7																		
INJ	18 58 4																		
INJ	20 37 1																		
INJ	22 10 56																		
INJ	23 11 7																		
INJ	23 41 37																		

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3127	TRA	-.7731	TC3	.2025	BAU	.0709	SGT	1081.3	SGR	602.9	SG3	162.5	ST	23.9	SR	27.4	SS	12.7
RDE	-.4576	RRA	.1857	RC3	.1056	FAU	.04333	RRT	-.0253	RRF	.0261	RTF	-.6849	CRT	.6905	CRS	.2192	CST	.8513
FDE	.0978	FRA	.8144	FC3	-1.6146	BSP	1502	SGB	1238.0	R23	-.0010	R13	.6850	LSA	34.2	MSA	17.6	SSA	1.3
BDE	.5542	BRA	.7951	BC3	.2284	FSP	221	SG1	1081.4	SG2	602.6	THA	178.83	EL1	33.5	EL2	14.1	ALF	50.75

LAUNCH DATE MAY 18 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC DISTANCE 295.293 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	34.001	GAL	-.13	AZL	91.81	HCA	96.85	SMA	221.90	ECC	.31810	INC	1.8083
RP	206.69	LAP	-1.80	LOP	333.27	VP	26.194	GAP	18.14	AZP	89.78	TAL	359.48	TAP	96.32	RCA	151.31	APO	292.49
RC	61.933	GL	-13.24	GP	-.68	ZAL	95.31	ZAP	168.98	ETS	183.59	ZAE	169.21	ETE	19.11	ZAC	98.75	ETC	278.60

V1	29.445																		
V2	26.495																		
LVI	-18.49																		

PLANETOCENTRIC CONIC

C3	21.961	VHL	4.686	DLA	-23.12	RAL	338.98	RAD	6643.7	VEL	11.914	PTH	6.92	VHP	8.400	DPA	-16.48	RAP	325.48
ECC	1.3614																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 53	2684.43	-16.48	74.52	197.63	135.29	16 29 37	1684.4	1.77	58.47
60.00	16 53 25	2502.16	-11.13	63.08	202.61	128.99	17 35 7	1502.2	4.93	45.09
70.00	18 20 39	2245.72	-5.80	46.25	206.58	123.72	18 58 4	1245.7	8.18	26.71
80.00	20 5 2	1919.04	-1.33	24.22	209.34	119.83	20 37 1	919.0	10.90	3.55
90.00	21 44 17	1598.89	.58	1.74	210.41	118.27	22 10 56	598.9	12.09	340.62
100.00	22 47 53	1393.51	-1.33	345.59	209.34	119.83	23 11 7	393.5	10.90	324.92
110.00	23 20 5	1292.54	-5.80	335.17	206.58	123.72	23 41 37	292.5	8.16	315.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3085	TRA	-.7677	TC3	.2169	BAU	.0715	SGT	1106.9	SGR	603.9	SG3	173.4	ST	24.3	SR	27.5	SS	12.9
RDE	-.4452	RRA	.1805	RC3	.1109	FAU	.04492	RRT	-.0276	RRF	.0332	RTF	-.6861	CRT	.6871	CRS	.1679	CST	.8257
FDE	.0857	FRA	.8459	FC3	-1.7708	BSP	1639	SGB	1260.9	R23	-.0062	R13	.6862	LSA	34.4	MSA	18.1	SSA	1.3
BDE	.5416	BRA	.7887	BC3	.2436	FSP	242	SG1	1107.1	SG2	603.6	THA	178.77	EL1	33.7	EL2	14.4	ALF	50.06

LAUNCH DATE MAY 18 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 298.529 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	33.876	GAL	-.07	AZL	91.80	HCA	98.12	SMA	218.80	ECC	.30842	INC	1.8031
RP	206.68	LAP	-1.79	LOP	334.54	VP	26.033	GAP	17.69	AZP	89.75	TAL	359.72	TAP	97.84	RCA	151.32	APO	286.28
RC	62.879	GL	-13.52	GP	-.70	ZAL	95.00	ZAP	167.95	ETS	183.40	ZAE	168.94	ETE	17.84	ZAC	98.70	ETC	278.65

V1	29.445																		
V2	26.496																		
LVI	-18.52																		

PLANETOCENTRIC CONIC

C3	20.797	VHL	4.560	DLA	-23.49	RAL	338.79	RAD	6643.2	VEL	11.866	PTH	6.88	VHP	8.129	DPA	-16.42	RAP	325.73
ECC	1.3423																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 53	2663.16	-15.45	73.55	196.83	135.58	16 30 17	1663.2	2.84	57.58
60.00	16 55 6	2479.10	-10.14	61.94	201.79	129.22	17 36 25	1479.1	5.94	43.97
70.00	18 23 17	2219.84	-4.82	44.89	205.77	123.85	19 0 17	1219.8	9.12	25.32
80.00	20 8 58	1889.09	-.32	22.58	208.56	119.86	20 40 27	889.1	11.85	1.83
90.00	21 49 4	1566.25	1.63	359.92	209.65	118.24	22 15 10	566.3	13.04	338.70
100.00	22 51 50	1363.56	-.32	343.94	208.56	119.86	23 14 34	363.6	11.85	323.20
110.00	23 22 43	1266.66	-4.82	333.61	205.77	123.85	23 43 50	266.7	9.12	314.24

INJ	16 30 17																		
INJ	17 36 25																		
INJ	19 0 17																		
INJ	20 40 27																		
INJ	22 15 10																		
INJ	23 14 34																		
INJ	23 43 50																		

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3021	TRA	-.7632	TC3	.2462	BAU	.0757	SGT	1134.7	SGR	604.4	SG3	188.2	ST	24.6	SR	27.5	SS	13.3
RDE	-.4333	RRA	.1756	RC3	.1158	FAU	.04761	RRT	-.0309	RRF	.0368	RTF	-.6916	CRT	.6804	CRS	.1251	CST	.8060
FDE	.0763	FRA	.8850	FC3	-1.9820	BSP	1690	SGB	1285.6	R23	-.0071	R13	.6918	LSA	34.5	MSA	18.6	SSA	1.3
BDE	.5282	BRA	.7831	BC3	.2721	FSP	252	SG1	1134.9	SG2	604.0	THA	178.69	EL1	33.8	EL2	14.6	ALF	49.56

LAUNCH DATE MAY 18 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 301.842 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	33.758	GAL	-.01	AZL	91.80	HCA	99.39	SMA	215.96	ECC	.29934	INC	1.7980
RP	206.67	LAP	-1.77	LOP	335.81	VP	25.880	GAP	17.25	AZP	89.71	TAL	359.98	TAP	99.36	RCA	151.32	APO	280.61
RC	63.888	GL	-13.79	GP	-.73	ZAL	94.67	ZAP	166.90	ETS	183.23	ZAE	168.73	ETE	16.71	ZAC	98.64	ETC	278.69

V1	29.445																		
V2	26.496																		
LVI	-18.56																		

PLANETOCENTRIC CONIC

C3	19.732	VHL	4.442	DLA	-23.87	RAL	338.58	RAD	6642.7	VEL	11.821	PTH	6.84	VHP	7.868	DPA	-16.37	RAP	325.95
ECC	1.3247																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 46 52	2642.40	-14.44	72.62	196.05	135.84	16 30 54	1642.4	3.88	56.71
60.00	16 56 45	2456.52	-9.16	60.83	201.00	129.42	17 37 42	1456.5	6.93	42.88
70.00	18 25 56	2194.32	-3.85	43.55	204.99	123.96	19 2 31	1194.3	10.07	23.95
80.00	20 13 0	1859.24	.69	20.94	207.81	119.85	20 43 59	859.2	12.79	.11
90.00	21 54 1	1533.45	2.69	358.08	208.92	118.16	22 19 34	533.4	13.99	336.76
100.00	22 55 52	1333.71	.69	342.31	207.81	119.85	23 18 6	333.7	12.79	321.48
110.00	23 25 23	1241.14	-3.85	332.47	204.99	123.96	23 46 4	241.1	10.07	312.87

INJ	16 30 54																		
INJ	17 37 42																		
INJ	19 2 31																		
INJ	20 43 59																		
INJ	22 19 34																		
INJ	23 18 6																		
INJ	23 46 4																		

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3175	TRA	-.7574	TC3	.1481	BAU	.0507	SGT	1151.6	SGR	604.2	SG3	192.5	ST	26.0	SR	27.4	SS	14.4
RDE	-.4212	RRA	.1708	RC3	.1224	FAU	.04618	RRT	-.0295	RRF	.0251	RTF	-.6597	CRT	.6994	CRS	.2420	CST	.8573
FDE	.1203	FRA	.9238	FC3	-2.0262	BSP	2274	SGB	1300.5	R23	.0017	R13	.6597	LSA	35.9	MSA	18.5	SSA	1.3
BDE	.5275	BRA	.7764	BC3	.1921	FSP	281	SG1	1151.8	SG2	603.8	THA	178.78	EL1	34.8	EL2	14.6	ALF	47.15

LAUNCH DATE MAY 18 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 305.252 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 33.648 GAL .05 AZL 91.79 HCA 100.66 SMA 213.37 ECC .29084 INC 1.7928 V1 29.445
RP 206.68 LAP -1.76 LOP 337.08 VP 25.735 GAP 16.82 AZP 89.67 TAL .23 TAP 100.89 RCA 151.32 APO 275.43 V2 26.496
RC 64.956 GL -14.07 GP -.75 ZAL 94.34 ZAP 165.83 ETS 183.09 ZAE 168.59 ETE 15.68 ZAC 98.59 ETC 278.73 LVI -18.58

PLANETOCENTRIC CONIC

C3 18.757 VHL 4.331 DLA -24.28 RAL 338.36 RAD 6642.3 VEL 11.780 PTH 6.81 VHP 7.616 DPA -16.33 RAP 326.16 ECC 1.3087

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 47 47	2622.18	-13.45	71.72	195.29	136.08	16 31 29	1622.2	4.89	55.86
60.00	16 58 23	2434.44	-8.21	59.75	200.24	129.60	17 38 57	1434.4	7.89	41.81
70.00	18 28 36	2169.20	-2.89	42.24	204.23	124.05	19 4 45	1169.2	10.99	22.59
80.00	20 17 8	1829.51	1.70	19.31	207.09	119.81	20 47 38	829.5	13.70	358.38
90.00	21 59 9	1500.46	3.75	356.24	208.23	118.05	22 24 10	500.5	14.92	334.79
100.00	23 0 0	1303.98	1.70	340.67	207.09	119.81	23 21 44	304.0	13.70	319.75
110.00	23 28 2	1216.02	-2.89	331.15	204.23	124.05	23 48 18	216.0	10.99	311.51

DIFFERENTIAL CORRECTIONS
TDE -.2655 TRA -.7282 TC3 .3246 BAU .0872
RDE -.4110 RRA .1657 RC3 .1251 FAU .05257
FDE .0244 FRA .9149 FC3-2.4265 BSP 1584
BDE .4893 BRA .7468 BC3 .3479 FSP 273

MID-COURSE EXECUTION ACCURACY
SGT 1148.4 SGR 604.4 SG3 214.8
RRT -.0470 RRF .0492 RTF -.7022
SGB 1297.7 R23 -.0036 R13 .7024
SG1 1148.9 SG2 603.5 THA 178.04

ORBIT DETERMINATION ACCURACY
ST 23.7 SR 27.4 SS 13.3
CRT .6478 CRS -.0496 CST .7215
LSA 33.3 MSA 19.5 SSA 1.4
EL1 33.0 EL2 15.0 ALF 51.45

LAUNCH DATE MAY 18 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 308.722 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 33.544 GAL .11 AZL 91.79 HCA 101.92 SMA 211.00 ECC .28287 INC 1.7875 V1 29.445
RP 206.70 LAP -1.75 LOP 338.35 VP 25.597 GAP 16.39 AZP 89.63 TAL .50 TAP 102.42 RCA 151.31 APO 270.69 V2 26.494
RC 66.082 GL -14.33 GP -.78 ZAL 93.99 ZAP 164.74 ETS 182.97 ZAE 168.52 ETE 14.75 ZAC 98.54 ETC 278.76 LVI -18.60

PLANETOCENTRIC CONIC

C3 17.863 VHL 4.226 DLA -24.63 RAL 338.13 RAD 6641.9 VEL 11.743 PTH 6.77 VHP 7.372 DPA -16.29 RAP 326.34 ECC 1.2940

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 48 40	2602.53	-12.48	70.85	194.57	136.30	16 32 3	1602.5	5.88	55.03
60.00	16 59 58	2412.90	-7.27	58.70	199.50	129.75	17 40 11	1412.9	8.82	40.76
70.00	18 31 15	2144.53	-1.95	40.95	203.51	124.10	19 7 0	1144.5	11.89	21.25
80.00	20 21 22	1799.92	2.70	17.68	206.40	119.75	20 51 22	799.9	14.61	356.65
90.00	22 4 31	1467.25	4.81	354.37	207.57	117.90	22 28 58	467.2	15.85	332.78
100.00	23 4 14	1274.40	2.70	339.05	206.40	119.75	23 25 28	274.4	14.61	318.02
110.00	23 30 42	1191.35	-1.95	329.86	203.51	124.10	23 50 33	191.3	11.89	310.16

DIFFERENTIAL CORRECTIONS
TDE -.2821 TRA -.7284 TC3 .3357 BAU .0860
RDE -.3999 RRA .1615 RC3 .1300 FAU .05413
FDE .0578 FRA .9729 FC3-2.6234 BSP 1781
BDE .4894 BRA .7461 BC3 .3600 FSP 324

MID-COURSE EXECUTION ACCURACY
SGT 1186.1 SGR 603.4 SG3 229.1
RRT -.0323 RRF .0396 RTF -.7109
SGB 1330.7 R23 -.0086 R13 .7110
SG1 1186.3 SG2 602.9 THA 178.73

ORBIT DETERMINATION ACCURACY
ST 25.1 SR 27.3 SS 14.2
CRT .6688 CRS .0461 CST .7670
LSA 34.5 MSA 19.7 SSA 1.4
EL1 34.0 EL2 15.0 ALF 48.62

LAUNCH DATE MAY 18 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 312.255 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 33.446 GAL .17 AZL 91.78 HCA 103.19 SMA 208.83 ECC .27541 INC 1.7822 V1 29.445
RP 206.72 LAP -1.74 LOP 339.62 VP 25.465 GAP 15.98 AZP 89.59 TAL .76 TAP 103.96 RCA 151.31 APO 266.34 V2 26.491
RC 67.265 GL -14.59 GP -.80 ZAL 93.64 ZAP 163.63 ETS 182.86 ZAE 168.52 ETE 13.90 ZAC 98.48 ETC 278.79 LVI -18.61

PLANETOCENTRIC CONIC

C3 17.043 VHL 4.128 DLA -25.00 RAL 337.88 RAD 6641.5 VEL 11.708 PTH 6.74 VHP 7.138 DPA -16.27 RAP 326.51 ECC 1.2805

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 49 31	2583.47	-11.54	70.01	193.86	136.49	16 32 34	1583.5	6.83	54.22
60.00	17 1 32	2391.93	-6.36	57.68	198.78	129.88	17 41 24	1391.9	9.73	39.72
70.00	18 33 55	2120.33	-1.02	39.68	202.81	124.14	19 9 15	1120.3	12.76	19.92
80.00	20 25 41	1770.51	3.69	16.06	205.74	119.65	20 55 12	770.5	15.49	354.91
90.00	22 10 6	1433.78	5.87	352.49	206.94	117.71	22 33 59	433.8	16.75	330.74
100.00	23 8 33	1244.98	3.69	337.43	205.75	119.65	23 29 18	245.0	15.49	316.28
110.00	23 33 21	1167.15	-1.02	328.60	202.81	124.14	23 52 48	167.2	12.76	308.84

DIFFERENTIAL CORRECTIONS
TDE -.2732 TRA -.7144 TC3 .3647 BAU .0885
RDE -.3897 RRA .1573 RC3 .1341 FAU .05687
FDE .0464 FRA 1.0103 FC3-2.8890 BSP 1840
BDE .4760 BRA .7315 BC3 .3886 FSP 347

MID-COURSE EXECUTION ACCURACY
SGT 1196.4 SGR 602.3 SG3 245.7
RRT -.0348 RRF .0430 RTF -.7158
SGB 1339.4 R23 -.0097 R13 .7159
SG1 1196.6 SG2 601.8 THA 178.66

ORBIT DETERMINATION ACCURACY
ST 25.1 SR 27.3 SS 14.6
CRT .6626 CRS .0059 CST .7481
LSA 34.4 MSA 20.1 SSA 1.4
EL1 33.8 EL2 15.1 ALF 48.62

LAUNCH DATE MAY 18 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 315.846 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 33.354 GAL .22 AZL 91.78 HCA 104.46 SMA 206.83 ECC .26842 INC 1.7768 V1 29.445
RP 206.75 LAP -1.72 LOP 340.89 VP 25.341 GAP 15.57 AZP 89.56 TAL 1.03 TAP 105.49 RCA 151.31 APO 262.34 V2 26.487
RC 68.502 GL -14.85 GP -.83 ZAL 93.28 ZAP 162.50 ETS 182.77 ZAE 168.59 ETE 13.12 ZAC 98.44 ETC 278.82 LVI -18.62

PLANETOCENTRIC CONIC

C3 16.292 VHL 4.036 DLA -25.37 RAL 337.63 RAD 6641.1 VEL 11.676 PTH 6.71 VHP 6.911 DPA -16.25 RAP 326.65 ECC 1.2681

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 50 19	2565.03	-10.63	69.21	193.18	136.65	16 33 4	1565.0	7.75	53.44
60.00	17 3 4	2371.56	-5.47	56.70	198.10	129.99	17 42 35	1371.6	10.60	38.72
70.00	18 36 34	2096.65	-.12	38.45	202.14	124.15	19 11 31	1096.7	13.61	18.61
80.00	20 30 7	1741.26	4.68	14.45	205.12	119.52	20 59 8	741.3	16.35	353.17
90.00	22 15 56	1399.99	6.94	350.58	206.35	117.48	22 39 16	400.0	17.64	328.67
100.00	23 12 59	1215.73	4.68	335.81	205.12	119.52	23 33 15	215.7	16.35	314.53
110.00	23 36 0	1143.47	-.12	327.37	202.14	124.15	23 55 4	143.5	13.61	307.53

DIFFERENTIAL CORRECTIONS
TDE -.2664 TRA -.7053 TC3 .3939 BAU .0909
RDE -.3798 RRA .1533 RC3 .1378 FAU .05964
FDE .0371 FRA 1.0537 FC3-3.1691 BSP 1838
BDE .4639 BRA .7217 BC3 .4174 FSP 368

MID-COURSE EXECUTION ACCURACY
SGT 1213.1 SGR 600.9 SG3 263.3
RRT -.0378 RRF .0467 RTF -.7215
SGB 1353.8 R23 -.0106 R13 .7217
SG1 1213.4 SG2 600.3 THA 178.58

ORBIT DETERMINATION ACCURACY
ST 25.2 SR 27.2 SS 15.1
CRT .6567 CRS -.0262 CST .7301
LSA 34.3 MSA 20.6 SSA 1.5
EL1 33.8 EL2 15.3 ALF 48.36

LAUNCH DATE MAY 16 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC DISTANCE 319.489 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	33.268	GAL	.27	AZL	91.77	HCA	105.73	SMA	204.99	ECC	.26187	INC	1.7714
RP	206.79	LAP	-1.71	LOP	342.16	VP	25.222	GAP	15.17	AZP	89.52	TAL	1.30	TAP	107.03	RCA	151.31	APO	258.67
RC	69.791	GL	-15.09	GP	-.86	ZAL	92.93	ZAP	161.34	ETS	182.69	ZAE	168.74	ETE	12.39	ZAC	98.39	ETC	278.84

V1	29.445	V2	26.483	LVI	-18.62														

PLANETOCENTRIC CONIC

C3	15.602	VHL	3.950	DLA	-25.73	RAL	337.37	RAD	6640.8	VEL	11.647	PTH	6.69	VHP	6.693	DPA	-16.24	RAP	326.77

ECC	1.2568																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 5	2547.23	-9.75	68.44	192.53	136.80	16 33 32	1547.2	8.64	52.68
60.00	17 4 33	2351.82	-4.60	55.75	197.44	130.08	17 43 45	1351.8	11.45	37.74
70.00	18 39 13	2073.53	.76	37.24	201.50	124.15	19 13 46	1073.5	14.44	17.32
80.00	20 34 39	1712.22	5.65	12.84	204.53	119.37	21 3 11	712.2	17.18	351.42
90.00	22 22 4	1365.79	8.01	348.64	205.80	117.21	22 44 50	365.8	18.52	326.54
100.00	23 17 31	1186.69	5.65	334.21	204.53	119.37	23 37 17	186.7	17.18	312.78
110.00	23 38 39	1120.34	.76	326.16	201.50	124.15	23 57 19	120.3	14.44	306.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2606	TRA	-.6955	TC3	.4211	BAU	.0926	SGT	1227.8	SGR	599.0	SG3	281.2	ST	25.3	SR	27.1	SS	15.5
RDE	-.3703	RRA	.1494	RC3	.1412	FAU	.06248	RRT	-.0398	RRF	.0487	RTF	-.7244	CRT	.6524	CRS	-.0534	CST	.7152
FDE	.0286	FRA	1.0912	FC3	-3.4668	BSP	1891	SGB	1366.2	R23	-.0110	R13	.7246	LSA	34.2	MSA	21.0	SSA	1.5
BDE	.4528	BRA	.7113	BC3	.4441	FSP	402	SG1	1228.1	SG2	598.4	THA	178.54	EL1	33.7	EL2	15.4	ALF	48.02

LAUNCH DATE MAY 16 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC DISTANCE 323.180 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	33.186	GAL	.32	AZL	91.77	HCA	107.00	SMA	203.30	ECC	.25575	INC	1.7659
RP	206.84	LAP	-1.69	LOP	343.43	VP	25.109	GAP	14.78	AZP	89.48	TAL	1.57	TAP	108.56	RCA	151.30	APO	255.29
RC	71.130	GL	-15.33	GP	-.89	ZAL	92.57	ZAP	160.16	ETS	182.61	ZAE	168.96	ETE	11.71	ZAC	98.35	ETC	278.85

V1	29.445	V2	26.477	LVI	-18.61														

PLANETOCENTRIC CONIC

C3	14.968	VHL	3.869	DLA	-26.08	RAL	337.11	RAD	6640.5	VEL	11.620	PTH	6.66	VHP	6.482	DPA	-16.24	RAP	326.86

ECC	1.2463																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 49	2530.07	-8.90	67.70	191.91	136.94	16 33 59	1530.1	9.49	51.94
60.00	17 6 1	2332.73	-3.76	54.83	196.81	130.15	17 44 53	1332.7	12.26	36.78
70.00	18 41 50	2050.99	1.63	36.07	200.89	124.12	19 16 1	1051.0	15.23	16.06
80.00	20 39 17	1683.37	6.61	11.24	203.97	119.18	21 7 20	683.4	18.00	349.86
90.00	22 28 32	1331.04	9.08	346.65	205.30	116.90	22 50 43	331.0	19.38	324.36
100.00	23 22 9	1157.84	6.61	332.61	203.97	119.18	23 41 27	157.8	18.00	311.03
110.00	23 41 16	1097.81	1.63	324.98	200.89	124.12	23 59 34	97.8	15.23	304.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2532	TRA	-.6816	TC3	.4509	BAU	.0947	SGT	1235.0	SGR	596.9	SG3	300.4	ST	25.2	SR	27.0	SS	15.9
RDE	-.3612	RRA	.1458	RC3	.1440	FAU	.06555	RRT	-.0416	RRF	.0539	RTF	-.7284	CRT	.6476	CRS	-.0988	CST	.6874
FDE	.0124	FRA	1.1319	FC3	-3.7912	BSP	1912	SGB	1371.7	R23	-.0144	R13	.7286	LSA	34.0	MSA	21.5	SSA	1.5
BDE	.4411	BRA	.6970	BC3	.4733	FSP	433	SG1	1235.4	SG2	596.3	THA	178.50	EL1	33.5	EL2	15.5	ALF	48.00

LAUNCH DATE MAY 16 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC DISTANCE 326.914 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	33.110	GAL	.37	AZL	91.76	HCA	108.26	SMA	201.74	ECC	.25001	INC	1.7604
RP	206.90	LAP	-1.67	LOP	344.70	VP	25.001	GAP	14.41	AZP	89.45	TAL	1.83	TAP	110.09	RCA	151.30	APO	252.17
RC	72.517	GL	-15.56	GP	-.93	ZAL	92.22	ZAP	158.95	ETS	182.55	ZAE	169.25	ETE	11.07	ZAC	98.30	ETC	278.86

V1	29.445	V2	26.470	LVI	-18.59														

PLANETOCENTRIC CONIC

C3	14.386	VHL	3.793	DLA	-26.42	RAL	336.85	RAD	6640.2	VEL	11.595	PTH	6.64	VHP	6.279	DPA	-16.25	RAP	326.93

ECC	1.2368																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 30	2513.60	-8.08	67.00	191.30	137.05	16 34 24	1513.6	10.31	51.23
60.00	17 7 25	2314.32	-2.96	53.95	196.20	130.21	17 46 0	1314.3	13.05	35.85
70.00	18 44 26	2029.08	2.46	34.92	200.30	124.08	19 18 15	1029.1	15.99	14.82
80.00	20 44 2	1654.75	7.56	9.64	203.44	118.97	21 11 36	654.8	18.79	347.91
90.00	22 35 24	1295.55	10.17	344.61	204.83	116.53	22 57 0	295.6	20.23	322.10
100.00	23 26 53	1129.22	7.56	331.01	203.44	118.97	23 45 43	129.2	18.79	309.27
110.00	23 43 52	1075.90	2.46	323.84	200.30	124.08	24 1 48	75.9	15.99	303.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2449	TRA	-.6720	TC3	.4736	BAU	.0953	SGT	1245.3	SGR	594.5	SG3	321.1	ST	25.1	SR	26.9	SS	16.4
RDE	-.3524	RRA	.1423	RC3	.1464	FAU	.06873	RRT	-.0477	RRF	.0599	RTF	-.7309	CRT	.6388	CRS	-.1392	CST	.6659
FDE	-.0031	FRA	1.1804	FC3	-4.1360	BSP	1923	SGB	1379.9	R23	-.0148	R13	.7312	LSA	33.7	MSA	22.0	SSA	1.5
BDE	.4292	BRA	.6869	BC3	.4957	FSP	466	SG1	1245.7	SG2	593.6	THA	178.31	EL1	33.3	EL2	15.6	ALF	47.98

LAUNCH DATE MAY 16 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 330.688 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	33.039	GAL	.41	AZL	91.75	HCA	109.53	SMA	200.30	ECC	.24464	INC	1.7547
RP	206.96	LAP	-1.65	LOP	345.96	VP	24.898	GAP	14.03	AZP	89.41	TAL	2.09	TAP	111.62	RCA	151.30	APO	249.30
RC	73.950	GL	-15.77	GP	-.96	ZAL	91.87	ZAP	157.71	ETS	182.48	ZAE	169.62	ETE	10.48	ZAC	98.27	ETC	278.87

V1	29.448	V2	26.462	LVI	-18.56														

PLANETOCENTRIC CONIC

C3	13.851	VHL	3.722	DLA	-26.76	RAL	336.58	RAD	6640.0	VEL	11.572	PTH	6.62	VHP	6.083	DPA	-16.27	RAP	326.97

ECC	1.2280																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 53 9	2497.81	-7.29	66.33	190.73	137.15	16 34 47	1497.8	11.09	50.55
60.00	17 8 48	2296.62	-2.18	53.10	195.63	130.25	17 47 4	1296.6	13.79	34.96
70.00	18 47 0	2007.85	3.27	33.81	199.75	124.02	19 20 28	1007.8	16.72	13.61
80.00	20 48 53	1626.36	8.49	8.05	202.94	118.73	21 15 59	626.4	19.56	346.15
90.00	22 42 46	1259.05	11.27	342.50	204.41	116.11	23 3 46	259.1	21.07	319.75
100.00	23 31 44	1100.83	8.49	329.42	202.94	118.73	23 50 5	100.8	19.56	307.51
110.00	23 46 26	1054.67	3.27	322.73	199.75	124.02	24 4 1	54.7	16.72	302.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2386	TRA	-.6600	TC3	.5004	BAU	.0966	SGT	1252.3	SGR	591.6	SG3	343.4	ST	25.1	SR	26.7	SS	16.9
RDE	-.3440	RRA	.1391	RC3	.1480	FAU	.07236	RRT	-.0503	RRF	.0633	RTF	-.7332	CRT	.6342	CRS	-.1689	CST	.6477
FDE	-.0156	FRA	1.2260	FC3	-4.5225	BSP	1963	SGB	1385.0	R23	-.0158	R13	.7335	LSA	33.5	MSA	22.5	SSA	1.6
BDE	.4186	BRA	.6745	BC3	.5218	FSP	509	SG1	1252.8	SG2	590.7	THA	178.25	EL1	33.1	EL2	15.6	ALF	47.86

LAUNCH DATE MAY 18 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 27 1971

DISTANCE 334.499

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.972 GAL .45 AZL 91.75 HCA 110.80 SMA 198.97 ECC .23962 INC 1.7490 V1 29.445
RP 207.04 LAP -1.64 LOP 347.23 VP 24.600 GAP 13.67 AZP 89.38 TAL 2.34 TAP 113.14 RCA 151.29 APO 246.65 V2 26.454
RC 75.426 GL -15.98 GP -1.00 ZAL 91.53 ZAP 156.45 ETS 182.43 ZAE 170.06 ETE 9.85 ZAC 98.23 ETC 278.87 LVI -18.53

PLANETOCENTRIC CONIC

C3 13.360 VHL 3.655 DLA -27.08 RAL 336.32 RAD 6639.7 VEL 11.551 PTH 6.60 VHP 5.895 DPA -16.31 RAP 326.99 ECC 1.2199

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 53 46	2482.72	-6.54	65.69	190.18	137.23	16 35 9	1482.7	11.83	49.89
60.00	17 10 7	2279.65	-1.43	52.29	195.08	130.28	17 48 7	1279.6	14.51	34.09
70.00	18 49 32	1987.32	4.05	32.74	199.22	123.94	19 22 39	987.3	17.42	12.43
80.00	20 53 50	1598.20	9.41	6.46	202.48	118.47	21 20 28	598.2	20.30	344.38
90.00	22 50 47	1221.09	12.40	340.28	204.04	115.62	23 11 8	221.1	21.91	317.28
100.00	23 36 42	1072.67	9.41	327.83	202.48	118.47	23 54 35	72.7	20.30	305.75
110.00	23 48 58	1034.13	4.05	321.65	199.22	123.94	24 6 12	34.1	17.42	301.35

DIFFERENTIAL CORRECTIONS

TDE -.2328 TRA -.6478 TC3 .5168 BAU .0961
RDE -.3358 RRA .1360 RC3 .1491 FAU .07580
FDE -.0309 FRA 1.2787 FC3-4.9121 BSP 1963
BDE .4086 BRA .6620 BC3 .5379 FSP 544

MID-COURSE EXECUTION ACCURACY

SGT 1255.7 SGR 588.5 SG3 366.2
RRT -.0540 RRF .0694 RTF -.7340
SGB 1386.7 R23 -.0187 R13 .7344
SG1 1256.2 SG2 587.4 THA 178.15

ORBIT DETERMINATION ACCURACY

ST 25.0 SR 26.6 SS 17.5
CRT .6302 CRS -.2022 CST .6256
LSA 33.2 MSA 23.0 SSA 1.6
EL1 33.0 EL2 15.7 ALF 47.72

LAUNCH DATE MAY 18 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 29 1971

DISTANCE 338.343

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.909 GAL .49 AZL 91.74 HCA 112.06 SMA 197.74 ECC .23493 INC 1.7432 V1 29.445
RP 207.12 LAP -1.62 LOP 348.49 VP 24.706 GAP 13.32 AZP 89.35 TAL 2.59 TAP 114.65 RCA 151.29 APO 244.20 V2 26.444
RC 76.944 GL -16.18 GP -1.04 ZAL 91.20 ZAP 155.15 ETS 182.38 ZAE 170.58 ETE 9.27 ZAC 98.20 ETC 278.86 LVI -18.48

PLANETOCENTRIC CONIC

C3 12.907 VHL 3.593 DLA -27.38 RAL 336.06 RAD 6639.5 VEL 11.532 PTH 6.58 VHP 5.713 DPA -16.35 RAP 326.97 ECC 1.2124

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 54 21	2468.35	-5.82	65.08	189.66	137.30	16 35 29	1468.3	12.54	49.26
60.00	17 11 23	2263.42	-.72	51.52	194.55	130.30	17 49 7	1263.4	15.19	33.26
70.00	18 52 1	1967.53	4.80	31.70	198.72	123.86	19 24 48	967.5	18.09	11.28
80.00	20 58 55	1570.29	10.31	4.88	202.06	118.18	21 25 5	570.3	21.01	342.62
90.00	22 59 40	1180.89	13.57	337.91	203.73	115.05	23 19 20	180.9	22.74	314.63
100.00	23 41 46	1044.76	10.31	326.25	202.06	118.18	23 59 11	44.8	21.01	303.98
110.00	23 51 27	1014.35	4.80	320.61	198.72	123.85	24 8 22	14.3	18.09	300.20

DIFFERENTIAL CORRECTIONS

TDE -.2277 TRA -.6362 TC3 .5375 BAU .0963
RDE -.3279 RRA .1332 RC3 .1494 FAU .07969
FDE -.0442 FRA 1.3322 FC3-5.3450 BSP 1965
BDE .3992 BRA .6500 BC3 .5579 FSP 585

MID-COURSE EXECUTION ACCURACY

SGT 1259.7 SGR 585.0 SG3 391.0
RRT -.0570 RRF .0743 RTF -.7353
SGB 1388.9 R23 -.0210 R13 .7358
SG1 1260.2 SG2 583.8 THA 178.07

ORBIT DETERMINATION ACCURACY

ST 25.0 SR 26.4 SS 18.0
CRT .6270 CRS -.2283 CST .6080
LSA 33.0 MSA 23.5 SSA 1.6
EL1 32.8 EL2 15.7 ALF 47.52

LAUNCH DATE MAY 18 1971 FLIGHT TIME 136.00 ARRIVAL DATE OCT 1 1971

DISTANCE 342.218

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.850 GAL .53 AZL 91.74 HCA 113.32 SMA 196.61 ECC .23054 INC 1.7373 V1 29.445
RP 207.21 LAP -1.60 LOP 349.76 VP 24.615 GAP 12.97 AZP 89.31 TAL 2.83 TAP 116.15 RCA 151.28 APO 241.93 V2 26.433
RC 78.502 GL -16.37 GP -1.08 ZAL 90.88 ZAP 153.83 ETS 182.33 ZAE 171.17 ETE 8.69 ZAC 98.17 ETC 278.85 LVI -18.43

PLANETOCENTRIC CONIC

C3 12.491 VHL 3.534 DLA -27.68 RAL 335.81 RAD 6639.3 VEL 11.514 PTH 6.56 VHP 5.538 DPA -16.41 RAP 326.92 ECC 1.2056

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 54 53	2454.66	-5.13	64.50	189.16	137.36	16 35 48	1454.7	13.22	48.65
60.00	17 12 37	2247.92	-.03	50.78	194.05	130.30	17 50 5	1247.9	15.83	32.45
70.00	18 54 27	1948.47	5.53	30.69	198.25	123.76	19 26 55	948.5	18.72	10.17
80.00	21 4 7	1542.51	11.20	3.30	201.66	117.86	21 29 49	542.5	21.70	340.84
90.00	23 9 55	1136.81	14.82	335.28	203.49	114.36	23 28 52	136.8	23.60	311.69
100.00	23 46 59	1016.98	11.20	324.67	201.66	117.86	24 3 56	17.0	21.70	302.21
110.00	23 53 53	6283.33	5.53	297.52	198.25	123.76	25 38 36	5283.3	18.72	276.99

DIFFERENTIAL CORRECTIONS

TDE -.2124 TRA -.6153 TC3 .5758 BAU .0993
RDE -.3204 RRA .1304 RC3 .1490 FAU .08380
FDE -.0664 FRA 1.3820 FC3-5.6084 BSP 1860
BDE .3844 BRA .6289 BC3 .5948 FSP 626

MID-COURSE EXECUTION ACCURACY

SGT 1246.2 SGR 581.3 SG3 416.8
RRT -.0652 RRF .0812 RTF -. .59
SGB 1375.1 R23 -.0192 R13 .7463
SG1 1246.9 SG2 579.7 THA 177.78

ORBIT DETERMINATION ACCURACY

ST 24.1 SR 26.2 SS 18.6
CRT .6113 CRS -.2700 CST .5895
LSA 32.2 MSA 24.0 SSA 1.6
EL1 32.0 EL2 15.6 ALF 48.87

LAUNCH DATE MAY 18 1971 FLIGHT TIME 138.00 ARRIVAL DATE OCT 3 1971

DISTANCE 346.120

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.795 GAL .56 AZL 91.73 HCA 114.59 SMA 195.56 ECC .22645 INC 1.7312 V1 29.445
RP 207.31 LAP -1.57 LOP 351.02 VP 24.529 GAP 12.63 AZP 89.28 TAL 3.06 TAP 117.64 RCA 151.28 APO 239.84 V2 26.422
RC 80.098 GL -16.54 GP -1.12 ZAL 90.58 ZAP 152.47 ETS 182.28 ZAE 171.84 ETE 8.09 ZAC 98.14 ETC 278.83 LVI -18.37

PLANETOCENTRIC CONIC

C3 12.108 VHL 3.480 DLA -27.96 RAL 335.57 RAD 6639.1 VEL 11.497 PTH 6.55 VHP 5.369 DPA -16.48 RAP 326.85 ECC 1.1993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 24	2441.76	-4.48	63.96	188.69	137.41	16 36 6	1441.8	13.85	48.08
60.00	17 13 47	2233.28	.61	50.08	193.59	130.30	17 51 0	1233.3	16.44	31.69
70.00	18 56 48	1930.33	6.21	29.74	197.81	123.65	19 28 58	930.3	19.32	9.10
80.00	21 9 24	1515.14	12.06	1.73	201.31	117.52	21 34 39	515.1	22.36	339.08
90.00	23 22 33	1085.75	16.23	332.20	203.36	113.48	23 40 39	85.7	24.52	308.23
100.00	23 52 16	6277.65	12.06	301.00	201.31	117.52	25 36 54	5277.7	22.36	278.35
110.00	0 0 10	6265.19	6.21	296.56	197.81	123.65	1 44 35	5265.2	19.32	275.93

DIFFERENTIAL CORRECTIONS

TDE -.2102 TRA -.6075 TC3 .5759 BAU .0962
RDE -.3131 RRA .1280 RC3 .1477 FAU .08812
FDE -.0860 FRA 1.4454 FC3-6.3005 BSP 1914
BDE .3771 BRA .6209 BC3 .5945 FSP 675

MID-COURSE EXECUTION ACCURACY

SGT 1250.2 SGR 577.3 SG3 444.8
RRT -.0701 RRF .0892 RTF -.7395
SGB 1377.0 R23 -.0235 R13 .7401
SG1 1251.0 SG2 575.5 THA 177.65

ORBIT DETERMINATION ACCURACY

ST 24.3 SR 26.0 SS 19.3
CRT .6105 CRS -.3015 CST .5635
LSA 32.1 MSA 24.6 SSA 1.6
EL1 31.9 EL2 15.6 ALF 48.28

LAUNCH DATE MAY 18 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 350.049 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.743	GAL	.60	AZL	91.73	HCA	115.85	SMA	194.59	ECC	.22263	INC	1.7251	V1	29.445
RP	207.42	LAP	-1.55	LOP	352.28	VP	24.447	GAP	12.30	AZP	89.25	TAL	3.28	TAP	119.12	RCA	151.27	APO	237.91	V2	26.409
RC	81.730	GL	-16.71	GP	-1.16	ZAL	90.29	ZAP	151.08	ETS	182.23	ZAE	172.57	ETE	7.45	ZAC	98.11	ETC	278.80	LVI	-18.29

PLANETOCENTRIC CONIC

C3	11.756	VHL	3.429	DLA	-28.22	RAL	335.34	RAD	6638.9	VEL	11.482	PTH	6.53	VHP	5.208	DPA	-16.57	RAP	326.74	ECC	1.1935

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 53	2429.60	-3.87	63.45	188.25	137.46	16 36 22	1429.6	14.44	47.54
60.00	17 14 53	2219.43	1.22	49.41	193.14	130.29	17 51 53	1219.4	17.01	30.97
70.00	18 59 4	1913.05	6.86	28.82	197.39	123.54	19 30 57	913.0	19.88	8.08
80.00	21 14 49	1488.00	12.91	.16	200.98	117.16	21 39 37	488.0	22.99	337.31
90.00	23 42 38	1011.21	18.20	327.61	203.49	112.03	23 59 29	11.2	25.70	303.09
100.00	0 1 37	6250.51	12.91	299.44	200.98	117.16	1 45 47	5250.5	22.99	276.58
110.00	0 2 26	6247.90	6.86	295.65	197.39	123.54	1 46 34	5247.9	19.88	274.90

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2088	TRA	-.5969	TC3	.5777	BAU	.0936	SGT	1249.1	SGR	572.9	SG3	474.3	ST	24.4	SR	25.8	SS	19.9
RDE	-.3059	RRA	.1257	RC3	.1455	FAU	.09275	RRT	-.0725	RRF	.0952	RTF	-.7340	CRT	.6131	CRS	-.3202	CST	.5444
FDE	-.0999	FRA	1.5072	FC3	-6.8303	BSP	1940	SGB	1374.2	R23	-.0279	R13	.7347	LSA	32.0	MSA	25.1	SSA	1.7
BDE	.3704	BRA	.6100	BC3	.5957	FSP	727	SG1	1249.9	SG2	570.9	THA	177.59	EL1	31.9	EL2	15.6	ALF	47.71

LAUNCH DATE MAY 18 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 354.002 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.695	GAL	.63	AZL	91.72	HCA	117.11	SMA	193.70	ECC	.21906	INC	1.7189	V1	29.445
RP	207.54	LAP	-1.53	LOP	353.54	VP	24.368	GAP	11.98	AZP	89.22	TAL	3.48	TAP	120.59	RCA	151.27	APO	236.13	V2	26.395
RC	83.399	GL	-16.86	GP	-1.21	ZAL	90.02	ZAP	149.66	ETS	182.19	ZAE	173.38	ETE	6.75	ZAC	98.09	ETC	278.77	LVI	-18.21

PLANETOCENTRIC CONIC

C3	11.432	VHL	3.381	DLA	-28.46	RAL	335.12	RAD	6638.8	VEL	11.468	PTH	6.52	VHP	5.052	DPA	-16.67	RAP	326.59	ECC	1.1881

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 56 20	2418.17	-3.30	62.97	187.83	137.49	16 36 38	1418.2	15.00	47.03
60.00	17 15 56	2206.40	1.79	48.79	192.73	130.27	17 52 42	1206.4	17.54	30.28
70.00	19 1 15	1896.67	7.48	27.95	197.00	123.42	19 32 52	896.7	20.41	7.10
80.00	21 20 21	1461.09	13.74	358.60	200.69	116.77	21 44 42	461.1	23.59	335.54
86.66	23 30 17	1042.48	19.80	330.56	203.48	110.87	23 47 40	42.5	26.66	305.59
100.00	0 7 9	6223.60	13.74	297.87	200.69	116.77	1 50 52	5223.6	23.59	274.81
110.00	0 4 37	6231.52	7.48	294.78	197.00	123.42	1 48 29	5231.5	20.41	273.92

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2051	TRA	-.5853	TC3	.5680	BAU	.0895	SGT	1241.4	SGR	568.3	SG3	504.7	ST	24.3	SR	25.6	SS	20.7
RDE	-.2991	RRA	.1236	RC3	.1427	FAU	.09733	RRT	-.0789	RRF	.1046	RTF	-.7271	CRT	.6119	CRS	-.3481	CST	.5206
FDE	-.1210	FRA	1.5769	FC3	-7.3706	BSP	1937	SGB	1365.4	R23	-.0323	R13	.7279	LSA	31.7	MSA	25.7	SSA	1.7
BDE	.3627	BRA	.5982	BC3	.5857	FSP	781	SG1	1242.5	SG2	566.1	THA	177.39	EL1	31.7	EL2	15.5	ALF	47.50

LAUNCH DATE MAY 18 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 357.977 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.650	GAL	.65	AZL	91.71	HCA	118.36	SMA	192.87	ECC	.21574	INC	1.7125	V1	29.445
RP	207.66	LAP	-1.51	LOP	354.80	VP	24.291	GAP	11.67	AZP	89.19	TAL	3.68	TAP	122.04	RCA	151.26	APO	234.48	V2	26.381
RC	85.104	GL	-17.00	GP	-1.26	ZAL	89.77	ZAP	148.20	ETS	182.15	ZAE	174.26	ETE	5.92	ZAC	98.07	ETC	278.73	LVI	-18.11

PLANETOCENTRIC CONIC

C3	11.133	VHL	3.337	DLA	-28.69	RAL	334.91	RAD	6638.6	VEL	11.455	PTH	6.51	VHP	4.903	DPA	-16.78	RAP	326.41	ECC	1.1832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 56 44	2407.49	-2.77	62.52	187.45	137.51	16 36 52	1407.5	15.52	46.54
60.00	17 16 55	2194.20	2.33	48.21	192.34	130.24	17 53 29	1194.2	18.04	29.63
70.00	19 3 20	1881.23	8.05	27.13	196.63	123.30	19 34 41	881.2	20.90	6.17
80.00	21 26 0	1434.41	14.55	357.03	200.43	116.36	21 49 54	434.4	24.17	333.76
84.97	23 15 31	1082.13	20.08	333.58	202.97	110.93	23 33 33	82.1	26.93	308.56
100.00	0 12 48	6196.92	14.55	296.31	200.43	116.36	1 56 5	5196.9	24.17	273.04
110.00	0 6 42	6216.09	8.05	293.96	196.63	123.30	1 50 18	5216.1	20.90	272.99

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2014	TRA	-.5722	TC3	.5614	BAU	.0861	SGT	1230.7	SGR	563.5	SG3	537.3	ST	24.1	SR	25.4	SS	21.4
RDE	-.2925	RRA	.1217	RC3	.1387	FAU	.10243	RRT	-.0843	RRF	.1132	RTF	-.7103	CRT	.6119	CRS	-.3721	CST	.4984
FDE	-.1412	FRA	1.6445	FC3	-7.9655	BSP	1918	SGB	1353.6	R23	-.0367	R13	.7213	LSA	31.5	MSA	26.2	SSA	1.7
BDE	.3551	BRA	.5850	BC3	.5783	FSP	837	SG1	1231.8	SG2	561.0	THA	177.21	EL1	31.4	EL2	15.4	ALF	47.35

LAUNCH DATE MAY 18 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 361.972 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.608	GAL	.68	AZL	91.71	HCA	119.62	SMA	192.11	ECC	.21264	INC	1.7060	V1	29.445
RP	207.80	LAP	-1.48	LOP	356.05	VP	24.218	GAP	11.36	AZP	89.16	TAL	3.86	TAP	123.48	RCA	151.26	APO	232.96	V2	26.365
RC	86.843	GL	-17.13	GP	-1.31	ZAL	89.54	ZAP	146.71	ETS	182.10	ZAE	175.21	ETE	4.87	ZAC	98.06	ETC	278.68	LVI	-18.00

PLANETOCENTRIC CONIC

C3	10.858	VHL	3.295	DLA	-28.90	RAL	334.72	RAD	6638.5	VEL	11.443	PTH	6.49	VHP	4.759	DPA	-16.91	RAP	326.20	ECC	1.1787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 7	2397.55	-2.27	62.11	187.09	137.53	16 37 5	1397.6	16.00	46.09
60.00	17 17 50	2182.85	2.83	47.67	191.98	130.22	17 54 13	1182.8	18.50	29.02
70.00	19 5 18	1866.79	8.59	26.36	196.29	123.18	19 36 24	866.8	21.35	5.30
80.00	21 31 47	1407.96	15.35	355.47	200.21	115.93	21 55 14	408.0	24.71	331.99
83.80	23 5 15	1107.64	20.35	335.57	202.48	110.97	23 23 43	107.6	27.19	310.48
100.00	0 18 34	6170.47	15.35	294.74	200.21	115.93	2 1 25	5170.5	24.71	271.26
110.00	0 8 40	6201.65	8.59	293.19	196.29	123.18	1 52 1	5201.7	21.35	272.12

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1986	TRA	-.5580	TC3	.5467	BAU	.0817	SGT	1215.4	SGR	558.4	SG3	571.2	ST	24.0	SR	25.1	SS	22.1
RDE	-.2860	RRA	.1199	RC3	.1337	FAU	.10772	RRT	-.0892	RRF	.1223	RTF	-.7113	CRT	.6143	CRS	-.3933	CST	.4757
FDE	-.1612	FRA	1.7141	FC3	-8.5891	BSP	1896	SGB	1337.5	R23	-.0423	R13	.7125	LSA	31.2	MSA	26.7	SSA	1.7
BDE	.3482	BRA	.5707	BC3	.5628	FSP	898	SG1	1216.6	SG2	555.6	THA	177.03	EL1	31.2	EL2	15.2	ALF	47.18

LAUNCH DATE MAY 16 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC — DISTANCE 365.986 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.569 GAL .70 AZL 91.70 HCA 120.88 SMA 191.40 ECC .20977 INC 1.6993 V1 29.445
RP 207.94 LAP -1.46 LOP 357.31 VP 24.148 GAP 11.06 AZP 89.13 TAL 4.03 TAP 124.90 RCA 151.25 APO 231.55 V2 26.349
RC 88.616 GL -17.25 GP -1.36 ZAL 89.32 ZAP 145.18 ETS 182.06 ZAE 176.23 ETE 3.37 ZAC 98.05 ETC 278.63 LVI -17.88

PLANETOCENTRIC CONIC

C3 10.604 VHL 3.256 DLA -29.09 RAL 334.55 RAD 6638.4 VEL 11.432 PTH 6.48 VHP 4.622 DPA -17.05 RAP 325.95 ECC 1.1745

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 29	2388.37	-1.81	61.72	186.75	137.55	16 37 17	1388.4	16.45	45.67
60.00	17 18 41	2172.35	3.29	47.16	191.65	130.19	17 54 53	1172.3	18.92	28.46
70.00	19 7 7	1853.39	9.09	25.64	195.98	123.06	19 38 1	853.4	21.77	4.48
80.00	21 37 41	1381.71	16.12	353.91	200.01	115.48	22 0 42	381.7	25.23	330.21
82.90	22 57 20	1126.13	20.59	337.03	202.04	111.01	23 16 6	126.1	27.42	311.89
100.00	0 24 29	6144.23	16.12	293.18	200.01	115.48	2 6 53	5144.2	25.23	269.49
110.00	0 10 30	6188.24	9.09	292.47	195.98	123.06	1 53 38	5188.2	21.77	271.30

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.1946 TRA -.5440 TC3 .5225 BAU .0763 — SGT 1196.9 SGR 553.3 SG3 606.8 — ST 23.7 SR 24.9 SS 22.9
RDE -.2798 RRA .1184 RC3 .1278 FAU .11315 — RRT -.0969 RRF .1342 RTF -.7003 — CRT .6146 CRS -.4194 CST .4500
FDE -.1871 FRA 1.7922 FC3-9.2377 BSP 1843 — SGB 1318.6 R23 -.0485 R13 .7018 — LSA 30.9 MSA 27.3 SSA 1.7
BDE .3408 BRA .5567 BC3 .5379 FSP 955 — SG1 1198.4 SG2 550.0 THA 176.75 — EL1 30.9 EL2 15.1 ALF 47.18

LAUNCH DATE MAY 18 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC — DISTANCE 370.017 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.533 GAL .72 AZL 91.69 HCA 122.13 SMA 190.75 ECC .20709 INC 1.6924 V1 29.445
RP 208.08 LAP -1.43 LOP 358.56 VP 24.080 GAP 10.77 AZP 89.10 TAL 4.18 TAP 126.31 RCA 151.25 APO 230.25 V2 26.332
RC 90.421 GL -17.36 GP -1.42 ZAL 89.13 ZAP 143.61 ETS 182.02 ZAE 177.32 ETE .80 ZAC 98.04 ETC 278.57 LVI -17.75

PLANETOCENTRIC CONIC

C3 10.371 VHL 3.220 DLA -29.26 RAL 334.39 RAD 6638.2 VEL 11.422 PTH 6.47 VHP 4.490 DPA -17.20 RAP 325.66 ECC 1.1707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 48	2379.93	-1.38	61.37	186.45	137.56	16 37 28	1379.9	16.86	45.29
60.00	17 19 27	2162.72	3.71	46.70	191.34	130.16	17 55 30	1162.7	19.31	27.94
70.00	19 8 49	1841.05	9.55	24.98	195.69	122.95	19 39 30	841.1	22.15	3.72
80.00	21 43 43	1355.67	16.88	352.34	199.85	115.00	22 6 19	355.7	25.73	328.43
82.18	22 50 56	1140.20	20.82	338.16	201.62	111.03	23 9 56	140.2	27.64	312.97
100.00	0 30 31	6118.18	16.88	291.62	199.85	115.00	2 12 29	5118.2	25.73	267.71
110.00	0 12 11	6175.91	9.55	291.81	195.69	122.95	1 55 7	5175.9	22.15	270.55

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.1938 TRA -.5296 TC3 .4914 BAU .0702 — SGT 1177.1 SGR 547.7 SG3 643.9 — ST 23.7 SR 24.6 SS 23.6
RDE -.2736 RRA .1170 RC3 .1208 FAU .11681 — RRT -.1012 RRF .1448 RTF -.6868 — CRT .6214 CRS -.4303 CST .4314
FDE -.2033 FRA 1.8743 FC3-9.9181 BSP 1807 — SGB 1298.3 R23 -.0567 R13 .6886 — LSA 30.8 MSA 27.8 SSA 1.8
BDE .3353 BRA .5424 BC3 .5060 FSP 1024 — SG1 1178.8 SG2 544.2 THA 176.57 — EL1 30.7 EL2 14.8 ALF 46.79

LAUNCH DATE MAY 18 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC — DISTANCE 374.065 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.499 GAL .73 AZL 91.69 HCA 123.38 SMA 190.15 ECC .20460 INC 1.6854 V1 29.445
RP 208.24 LAP -1.41 LOP 359.81 VP 24.014 GAP 10.48 AZP 89.07 TAL 4.32 TAP 127.70 RCA 151.24 APO 229.05 V2 26.313
RC 92.259 GL -17.45 GP -1.48 ZAL 88.97 ZAP 142.01 ETS 181.97 ZAE 178.46 ETE 354.53 ZAC 98.03 ETC 278.50 LVI -17.60

PLANETOCENTRIC CONIC

C3 10.155 VHL 3.187 DLA -29.41 RAL 334.26 RAD 6638.1 VEL 11.413 PTH 6.46 VHP 4.364 DPA -17.38 RAP 325.33 ECC 1.1671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 6	2372.23	-.99	61.05	186.17	137.57	16 37 38	1372.2	17.23	44.93
60.00	17 20 9	2153.95	4.10	46.28	191.06	130.13	17 56 3	1154.0	19.66	27.47
70.00	19 10 21	1829.83	9.96	24.38	195.42	122.84	19 40 5[illegible]	829.8	22.49	3.03
80.00	21 49 54	1329.78	17.62	350.77	199.73	114.50	22 12 3	329.8	26.19	326.65
81.59	22 45 44	1150.94	21.02	339.04	201.24	111.05	23 4 55	150.9	27.83	313.80
100.00	0 36 41	6092.29	17.62	290.05	199.73	114.50	2 18 14	5092.3	26.19	265.93
110.00	0 13 43	6164.69	9.96	291.20	195.42	122.84	1 56 27	5164.7	22.49	269.85

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.1917 TRA -.5130 TC3 .4555 BAU .0637 — SGT 1150.7 SGR 542.2 SG3 683.5 — ST 23.4 SR 24.3 SS 24.4
RDE -.2677 RRA .1158 RC3 .1125 FAU .12499 — RRT -.1063 RRF .1573 RTF -.[illegible]06 — CRT .6275 CRS -.4498 CST .4044
FDE -.2275 FRA 1.9557 FC-10.6549 BSP 1743 — SGB 1272.0 R23 -.0664 R13 .6729 — LSA 30.6 MSA 28.2 SSA 1.8
BDE .3293 BRA .5259 BC3 .4692 FSP 1090 — SG1 1152.6 SG2 538.2 THA 176.33 — EL1 30.5 EL2 14.6 ALF 46.70

LAUNCH DATE MAY 18 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC — DISTANCE 378.128 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.468 GAL .75 AZL 91.68 HCA 124.63 SMA 189.59 ECC .20230 INC 1.6781 V1 29.445
RP 208.41 LAP -1.38 LOP 1.06 VP 23.951 GAP 10.20 AZP 89.05 TAL 4.44 TAP 129.07 RCA 151.24 APO 227.95 V2 26.294
RC 94.128 GL -17.54 GP -1.54 ZAL 88.83 ZAP 140.37 ETS 181.93 ZAE 179.55 ETE 312.99 ZAC 98.03 ETC 278.42 LVI -17.44

PLANETOCENTRIC CONIC

C3 9.957 VHL 3.155 DLA -29.54 RAL 334.14 RAD 6638.0 VEL 11.404 PTH 6.46 VHP 4.244 DPA -17.56 RAP 324.98 ECC 1.1639

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 22	2365.25	-.64	60.76	185.91	137.57	16 37 47	1365.2	17.56	44.61
60.00	17 20 46	2146.02	4.45	45.90	190.80	130.10	17 56 32	1146.0	19.98	27.03
70.00	19 11 43	1819.70	10.34	23.83	195.18	122.73	19 42 2	819.7	22.80	2.40
80.00	21 56 17	1303.76	18.34	349.18	199.63	113.98	22 18 1	303.8	26.63	324.85
81.10	22 41 29	1159.13	21.21	339.72	200.89	111.05	23 0 48	159.1	28.00	314.44
100.00	0 43 5	6066.27	18.34	288.46	199.63	113.98	2 24 11	5066.3	26.63	264.12
110.00	0 15 5	6154.55	10.34	290.66	195.18	122.73	1 57 39	5154.6	22.80	269.23

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.1829 TRA -.4904 TC3 .4356 BAU .0596 — SGT 1110.6 SGR 536.6 SG3 725.0 — ST 22.6 SR 24.1 SS 25.3
RDE -.2621 RRA .1147 RC3 .1029 FAU .13160 — RRT -.1159 RRF .1721 RTF -.6625 — CRT .6247 CRS -.4801 CST .3761
FDE -.2631 FRA 2.0352 FC-11.4421 BSP 1594 — SGB 1233.4 R23 -.0729 R13 .6654 — LSA 30.5 MSA 28.2 SSA 1.8
BDE .3196 BRA .5036 BC3 .4476 FSP 1154 — SG1 1112.8 SG2 531.9 THA 175.84 — EL1 29.8 EL2 14.3 ALF 47.83

LAUNCH DATE MAY 18 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 382.203 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.430	GAL	.76	AZL	91.67	HCA	125.88	SMA	189.08	ECC	.20016	INC	1.6706
RP	208.58	LAP	-1.35	LOP	2.31	VP	23.889	GAP	9.93	AZP	89.02	TAL	4.54	TAP	130.42	RCA	151.24	APO	226.93
RC	96.027	GL	-17.61	GP	-1.60	ZAL	88.71	ZAP	138.69	ETS	181.88	ZAE	178.89	ETE	207.51	ZAC	98.02	ETC	278.33

V1	29.445																		
V2	26.274																		
LVI	-17.27																		

PLANETOCENTRIC CONIC

C3	9.774	VHL	3.126	DLA	-29.65	RAL	334.05	RAD	6637.8	VEL	11.396	PTH	6.45	VHP	4.130	DPA	-17.76	RAP	324.56

ECC	1.1609																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 37	2359.06	-.33	60.50	185.69	137.58	16 37 56	1359.1	17.86	44.32
60.00	17 21 19	2139.04	4.75	45.56	190.57	130.07	17 56 58	1139.0	20.25	26.65
70.00	19 12 53	1810.85	10.66	23.35	194.96	122.64	19 43 4	810.8	23.06	1.85
80.00	22 2 45	1278.14	19.05	347.61	199.57	113.44	22 24 4	278.1	27.04	323.05
80.72	22 38 8	1165.00	21.37	340.22	200.58	111.05	22 57 33	165.0	28.14	314.91
100.00	0 49 33	6040.65	19.05	286.88	199.57	113.44	2 30 14	5040.7	27.04	262.33
110.00	0 16 16	6145.71	10.66	290.18	194.96	122.64	1 58 41	5145.7	23.06	268.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1882	TRA	-.4794	TC3	.3515	BAU	.0475	SGT	1090.5	SGR	530.7	SG3	765.8	ST	23.0	SR	23.8	SS	26.1
RDE	-.2563	RRA	.1139	RC3	.0931	FAU	.13754	RRT	-.1176	RRF	.1864	RTF	-.6260	CRT	.6421	CRS	-.4835	CST	.3513
FDE	-.2774	FRA	2.1353	FC-12	.1819	BSP	1592	SGB	1212.8	R23	-.0911	R13	.6297	LSA	30.8	MSA	28.6	SSA	1.8
BDE	.3180	BRA	.4928	BC3	.3637	FSP	1239	SG1	1092.9	SG2	525.9	THA	175.74	EL1	29.9	EL2	14.0	ALF	46.51

LAUNCH DATE MAY 18 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 386.291 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.412	GAL	.77	AZL	91.66	HCA	127.12	SMA	188.62	ECC	.19819	INC	1.6630
RP	208.76	LAP	-1.33	LOP	3.56	VP	23.830	GAP	9.67	AZP	89.00	TAL	4.63	TAP	131.75	RCA	151.23	APO	226.00
RC	97.955	GL	-17.67	GP	-1.67	ZAL	88.62	ZAP	136.97	ETS	181.83	ZAE	177.56	ETE	196.47	ZAC	98.03	ETC	278.23

V1	29.445																		
V2	26.254																		
LVI	-17.08																		

PLANETOCENTRIC CONIC

C3	9.606	VHL	3.099	DLA	-29.73	RAL	333.98	RAD	6637.8	VEL	11.389	PTH	6.44	VHP	4.021	DPA	-17.98	RAP	324.11

ECC	1.1581																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 50	2353.58	-.06	60.27	185.49	137.58	16 38 4	1353.6	18.12	44.07
60.00	17 21 47	2132.91	5.02	45.27	190.37	130.04	17 57 20	1132.9	20.50	26.31
70.00	19 13 53	1803.16	10.95	22.94	194.76	122.56	19 43 56	803.2	23.29	1.37
80.00	22 9 31	1252.14	19.74	345.99	199.54	112.87	22 30 24	252.1	27.43	321.22
80.41	22 35 31	1169.08	21.52	340.59	200.30	111.03	22 55 0	169.1	28.26	315.23
100.00	0 56 19	6014.65	19.74	285.26	199.54	112.87	2 36 34	5014.7	27.43	260.49
110.00	0 17 15	6138.02	10.95	289.76	194.76	122.56	1 59 33	5138.0	23.29	266.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1901	TRA	-.4637	TC3	.2794	BAU	.0374	SGT	1062.0	SGR	524.8	SG3	809.6	ST	23.0	SR	23.4	SS	26.9
RDE	-.2506	RRA	.1133	RC3	.0818	FAU	.14411	RRT	-.1195	RRF	.2016	RTF	-.5936	CRT	.6560	CRS	-.4872	CST	.3302
FDE	-.2922	FRA	2.2377	FC-12	.9875	BSP	1513	SGB	1184.6	R23	-.1090	R13	.5982	LSA	31.1	MSA	28.8	SSA	1.8
BDE	.3145	BRA	.4774	BC3	.2911	FSP	1316	SG1	1064.5	SG2	519.8	THA	175.56	EL1	29.9	EL2	13.6	ALF	45.88

LAUNCH DATE MAY 18 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 390.391 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.387	GAL	.77	AZL	91.66	HCA	128.36	SMA	188.18	ECC	.19636	INC	1.6551
RP	208.94	LAP	-1.30	LOP	4.80	VP	23.772	GAP	9.41	AZP	88.97	TAL	4.70	TAP	133.06	RCA	151.23	APO	225.14
RC	99.910	GL	-17.71	GP	-1.74	ZAL	88.56	ZAP	135.22	ETS	181.78	ZAE	176.14	ETE	193.03	ZAC	98.03	ETC	278.13

V1	29.445																		
V2	26.232																		
LVI	-16.88																		

PLANETOCENTRIC CONIC

C3	9.452	VHL	3.074	DLA	-29.80	RAL	333.93	RAD	6637.8	VEL	11.382	PTH	6.43	VHP	3.917	DPA	-18.21	RAP	323.63

ECC	1.1556																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 2	2348.82	.18	60.07	185.32	137.58	16 38 11	1348.8	18.35	43.84
60.00	17 22 10	2127.65	5.25	45.02	190.19	130.02	17 57 38	1127.7	20.70	26.03
70.00	19 14 40	1796.69	11.18	22.58	194.58	122.48	19 44 37	796.7	23.48	.97
80.00	22 16 45	1225.24	20.44	344.30	199.55	112.25	22 37 10	225.2	27.81	319.31
80.19	22 33 36	1171.39	21.64	340.81	200.06	111.00	22 53 8	171.4	28.36	315.42
100.00	1 3 33	5987.75	20.44	283.58	199.55	112.25	2 43 20	4987.8	27.81	258.58
110.00	0 18 2	6131.56	11.18	289.41	194.58	122.48	2 0 14	5131.6	23.48	267.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1909	TRA	-.4453	TC3	.1992	BAU	.0267	SGT	1027.7	SGR	518.8	SG3	854.4	ST	22.9	SR	23.1	SS	27.6
RDE	-.2451	RRA	.1128	RC3	.0692	FAU	.15095	RRT	-.1199	RRF	.2181	RTF	-.5044	CRT	.6702	CRS	-.4950	CST	.3034
FDE	-.3111	FRA	2.3368	FC-13	.8261	BSP	1421	SGB	1151.2	R23	-.1303	R13	.5601	LSA	31.5	MSA	28.7	SSA	1.8
BDE	.3107	BRA	.4593	BC3	.2109	FSP	1401	SG1	1030.2	SG2	513.8	THA	175.38	EL1	29.7	EL2	13.2	ALF	45.51

LAUNCH DATE MAY 18 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 394.502 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.364	GAL	.77	AZL	91.65	HCA	129.61	SMA	187.78	ECC	.19468	INC	1.6469
RP	209.14	LAP	-1.27	LOP	6.04	VP	23.716	GAP	9.15	AZP	88.95	TAL	4.75	TAP	134.36	RCA	151.23	APO	224.35
RC	101.892	GL	-17.75	GP	-1.82	ZAL	88.52	ZAP	133.42	ETS	181.72	ZAE	174.65	ETE	191.28	ZAC	98.03	ETC	278.02

V1	29.445																		
V2	26.209																		
LVI	-16.67																		

PLANETOCENTRIC CONIC

C3	9.309	VHL	3.051	DLA	-29.85	RAL	333.91	RAD	6637.7	VEL	11.376	PTH	6.43	VHP	3.818	DPA	-18.46	RAP	323.10

ECC	1.1532																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 12	2344.77	.39	59.90	185.18	137.57	16 38 17	1344.8	18.54	43.65
60.00	17 22 28	2123.26	5.44	44.80	190.03	129.99	17 57 51	1123.3	20.88	25.78
70.00	19 15 15	1791.47	11.37	22.30	194.42	122.42	19 45 7	791.5	23.63	.64
80.00	22 25 30	1194.01	21.24	342.32	199.63	111.50	22 45 24	194.0	28.20	317.07
80.03	22 32 21	1172.11	21.75	340.91	199.85	110.96	22 51 54	172.1	28.44	315.49
100.00	1 12 18	5956.52	21.24	281.59	199.63	111.50	2 51 34	4956.5	28.20	256.35
110.00	0 18 37	6126.32	11.37	289.12	194.42	122.42	2 0 44	5126.3	23.63	267.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1912	TRA	-.4257	TC3	.1075	BAU	.0151	SGT	991.3	SGR	513.0	SG3	900.1	ST	22.7	SR	22.8	SS	26.5
RDE	-.2397	RRA	.1125	RC3	.0557	FAU	.15781	RRT	-.1193	RRF	.2367	RTF	-.5070	CRT	.6842	CRS	-.5046	CST	.2743
FDE	-.3331	FRA	2.4419	FC-14	.6753	BSP	1292	SGB	1116.2	R23	-.1556	R13	.5141	LSA	32.1	MSA	28.5	SSA	1.8
BDE	.3066	BRA	.4403	BC3	.1211	FSP	1475	SG1	993.9	SG2	508.0	THA	175.21	EL1	29.5	EL2	12.8	ALF	45.27

LAUNCH DATE MAY 18 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC — DISTANCE 398.623 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.343 GAL .77 AZL 91.64 HCA 130.84 SMA 187.43 ECC .19314 INC 1.6384 V1 29.445
RP 209.34 LAP -1.24 LOP 7.28 VP 23.661 GAP 8.91 AZP 88.93 TAL 4.79 TAP 135.63 RCA 151.23 APO 223.63 V2 26.186
RC 103.900 GL -17.77 GP -1.89 ZAL 88.51 ZAP 131.60 ETS 181.67 ZAE 173.10 ETE 190.19 ZAC 98.04 ETC 277.89 LVI -16.44

PLANETOCENTRIC CONIC

C3 9.178 VHL 3.030 DLA -29.87 RAL 333.90 RAD 6637.6 VEL 11.370 PTH 6.42 VHP 3.725 DPA -18.72 RAP 322.54 ECC 1.1511

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 21	2341.42	.55	59.76	185.06	137.57	16 38 22	1341.4	18.71	43.50
60.00	17 22 41	2119.71	5.60	44.63	189.90	129.98	17 58 0	1119.7	21.02	25.59
70.00	19 15 38	1787.45	11.52	22.08	194.27	122.38	19 45 25	787.4	23.75	.38
79.95	22 31 42	1171.46	21.83	340.89	199.66	110.91	22 51 13	171.5	28.49	315.45
79.95	22 31 42	1171.46	21.83	340.89	199.66	110.91	22 51 13	171.5	28.49	315.45
79.95	22 31 42	1171.46	21.83	340.89	199.66	110.91	22 51 13	171.5	28.49	315.45
110.00	0 19 0	6122.30	11.52	288.91	194.27	122.38	2 1 2	5122.3	23.75	267.21

DIFFERENTIAL CORRECTIONS

TDE -.1872 TRA -.4012 TC3 .0274 BAU .0060
RDE -.2346 RRA .1122 RC3 .0403 FAU .16546
FDE -.3682 FRA 2.5402 FC-15.6065 BSP 1114
BDE .3002 BRA .4166 BC3 .0487 FSP 1549

MID-COURSE EXECUTION ACCURACY

SGT 944.0 SGR 507.3 SG3 948.8
RRT -.1183 RRF .2574 RTF -.4590
SGB 1071.7 R23 -.1828 R13 .4681
SG1 946.7 SG2 502.4 THA 174.93

ORBIT DETERMINATION ACCURACY

ST 22.0 SR 22.5 SS 29.4
CRT .6953 CRS -.5251 CST .2362
LSA 32.9 MSA 27.8 SSA 1.8
EL1 29.0 EL2 12.3 ALF 45.84

LAUNCH DATE MAY 18 1971 FLIGHT TIME 166.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC — DISTANCE 402.752 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.324 GAL .77 AZL 91.63 HCA 132.08 SMA 187.10 ECC .19172 INC 1.6297 V1 29.445
RP 209.55 LAP -1.21 LOP 8.51 VP 23.608 GAP 8.66 AZP 88.91 TAL 4.80 TAP 136.88 RCA 151.23 APO 222.97 V2 26.162
RC 105.933 GL -17.78 GP -1.97 ZAL 88.53 ZAP 129.73 ETS 181.61 ZAE 171.49 ETE 189.42 ZAC 98.04 ETC 277.76 LVI -16.19

PLANETOCENTRIC CONIC

C3 9.059 VHL 3.010 DLA -29.88 RAL 333.93 RAD 6637.6 VEL 11.365 PTH 6.42 VHP 3.637 DPA -18.99 RAP 321.94 ECC 1.1491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 28	2336.81	.69	59.65	184.97	137.57	16 38 27	1338.8	18.83	43.37
60.00	17 22 49	2117.08	5.71	44.51	189.79	129.96	17 58 6	1117.1	21.12	25.44
70.00	19 15 46	1784.77	11.62	21.94	194.15	122.35	19 45 31	784.8	23.83	.21
79.94	22 31 44	1169.13	21.90	340.75	199.52	110.85	22 51 13	169.1	28.52	315.29
79.94	22 31 44	1169.13	21.90	340.75	199.52	110.85	22 51 13	169.1	28.52	315.29
79.94	22 31 44	1169.13	21.90	340.75	199.52	110.85	22 51 13	169.1	28.52	315.29
110.00	0 19 9	6119.62	11.62	288.76	194.15	122.35	2 1 8	5119.6	23.83	267.04

DIFFERENTIAL CORRECTIONS

TDE -.1947 TRA -.3854 TC3 -.1137 BAU .0141
RDE -.2291 RRA .1125 RC3 .0254 FAU .17192
FDE -.3703 FRA 2.6668 FC-16.4308 BSP 1039
BDE .3007 BRA .4014 BC3 .1165 FSP 1644

MID-COURSE EXECUTION ACCURACY

SGT 926.2 SGR 501.5 SG3 995.1
RRT -.1039 RRF .2775 RTF -.3768
SGB 1053.2 R23 -.2235 R13 .3866
SG1 928.3 SG2 497.7 THA 175.48

ORBIT DETERMINATION ACCURACY

ST 22.5 SR 22.1 SS 30.1
CRT .7188 CRS -.5158 CST .2141
LSA 33.3 MSA 28.1 SSA 1.8
EL1 29.2 EL2 11.8 ALF 44.40

LAUNCH DATE MAY 18 1971 FLIGHT TIME 168.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC — DISTANCE 406.889 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.306 GAL .77 AZL 91.62 HCA 133.31 SMA 186.80 ECC .19042 INC 1.6206 V1 29.445
RP 209.76 LAP -1.18 LOP 9.75 VP 23.557 GAP 8.43 AZP 88.89 TAL 4.80 TAP 138.11 RCA 151.23 APO 222.37 V2 26.137
RC 107.990 GL -17.78 GP -2.06 ZAL 88.58 ZAP 127.84 ETS 181.54 ZAE 169.82 ETE 188.82 ZAC 98.05 ETC 277.63 LVI -15.93

PLANETOCENTRIC CONIC

C3 8.948 VHL 2.991 DLA -29.86 RAL 333.98 RAD 6637.5 VEL 11.360 PTH 6.41 VHP 3.554 DPA -19.28 RAP 321.30 ECC 1.1473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 34	2336.87	.78	59.57	184.91	137.57	16 38 31	1336.9	18.92	43.28
60.00	17 22 51	2115.28	5.79	44.42	189.71	129.95	17 58 7	1115.3	21.19	25.34
70.00	19 15 43	1783.29	11.67	21.85	194.05	122.33	19 45 26	783.3	23.87	.12
80.00	22 32 22	1165.41	21.94	340.49	199.40	110.78	22 51 47	165.4	28.53	315.01
80.00	22 32 22	1165.41	21.94	340.49	199.40	110.78	22 51 47	165.4	28.53	315.01
80.00	22 32 22	1165.41	21.94	340.49	199.40	110.78	22 51 47	165.4	28.53	315.01
110.00	0 19 5	6118.15	11.67	288.68	194.05	122.33	2 1 3	5118.1	23.87	266.99

DIFFERENTIAL CORRECTIONS

TDE -.1983 TRA -.3633 TC3 -.2426 BAU .0290
RDE -.2238 RRA .1126 RC3 .0087 FAU .17906
FDE -.3768 FRA 2.7843 FC-17.3232 BSP 903
BDE .2990 BRA .3804 BC3 .2428 FSP 1735

MID-COURSE EXECUTION ACCURACY

SGT 899.5 SGR 495.7 SG3 1043.1
RRT -.0842 RRF .2983 RTF -.1206
SGB 1027.1 R23 -.2641 R13 .3003
SG1 900.9 SG2 493.1 THA 176.21

ORBIT DETERMINATION ACCURACY

ST 22.5 SR 21.8 SS 30.8
CRT .7403 CRS -.5123 CST .1869
LSA 33.7 MSA 28.1 SSA 1.8
EL1 29.2 EL2 11.3 ALF 43.72

LAUNCH DATE MAY 18 1971 FLIGHT TIME 170.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC — DISTANCE 411.034 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.290 GAL .78 AZL 91.61 HCA 134.54 SMA 186.53 ECC .18924 INC 1.6111 V1 29.445
RP 209.99 LAP -1.15 LOP 10.98 VP 23.506 GAP 8.20 AZP 88.87 TAL 4.78 TAP 139.32 RCA 151.23 APO 221.83 V2 26.111
RC 110.071 GL -17.77 GP -2.14 ZAL 88.65 ZAP 125.91 ETS 181.47 ZAE 168.10 ETE 188.35 ZAC 98.06 ETC 277.48 LVI -15.65

PLANETOCENTRIC CONIC

C3 8.848 VHL 2.975 DLA -29.82 RAL 334.05 RAD 6637.4 VEL 11.356 PTH 6.41 VHP 3.476 DPA -19.57 RAP 320.63 ECC 1.1456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 38	2335.62	.85	59.52	184.87	137.57	16 38 34	1335.6	18.98	43.22
60.00	17 22 49	2114.32	5.83	44.37	189.65	129.95	17 58 3	1114.3	21.23	25.29
70.00	19 15 26	1783.05	11.68	21.84	193.97	122.32	19 45 9	783.0	23.88	.11
80.00	22 19 55	1203.95	20.99	342.95	198.90	111.74	22 39 59	204.0	28.08	317.79
80.13	22 33 39	1160.05	21.98	340.10	199.31	110.69	22 52 59	160.1	28.52	314.61
100.00	1 6 42	5966.46	20.99	282.23	198.90	111.74	2 46 9	4966.5	28.08	257.06
110.00	0 18 48	6117.90	11.68	288.67	193.97	122.32	2 0 46	5117.9	23.88	266.93

DIFFERENTIAL CORRECTIONS

TDE -.2004 TRA -.3397 TC3 -.3798 BAU .0449
RDE -.2187 RRA .1130 RC3 -.0093 FAU .18644
FDE -.3951 FRA 2.9020 FC-18.2433 BSP 742
BDE .2966 BRA .3580 BC3 .3799 FSP 1817

MID-COURSE EXECUTION ACCURACY

SGT 876.9 SGR 490.3 SG3 1092.5
RRT -.0590 RRF .3221 RTF -.1907
SGB 1004.7 R23 -.3062 R13 .1989
SG1 877.6 SG2 489.1 THA 177.26

ORBIT DETERMINATION ACCURACY

ST 22.4 SR 21.4 SS 31.6
CRT .7602 CRS -.5180 CST .1503
LSA 34.3 MSA 27.8 SSA 1.8
EL1 29.0 EL2 10.7 ALF 43.32

LAUNCH DATE MAY 18 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 415.186 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.276	GAL	.75	AZL	91.60	HCA	135.77	SMA	186.29	ECC	.18616	INC	1.6013	V1	29.445
RP	210.22	LAP	-1.12	LOP	12.21	VP	23.457	GAP	7.97	AZP	88.85	TAL	4.74	TAP	140.51	RCA	151.23	APO	221.34	V2	26.085
RC	112.177	GL	-17.75	GP	-2.23	ZAL	88.76	ZAP	123.96	ETS	181.40	ZAE	166.33	ETE	187.95	ZAC	98.06	ETC	277.32	LVI	-15.36

PLANETOCENTRIC CONIC

C3	8.756	VHL	2.959	DLA	-29.76	RAL	334.15	RAD	6637.4	VEL	11.352	PTH	6.40	VHP	3.403	DPA	-19.68	RAP	319.92	ECC	1.1441

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 41	2335.04	.87	59.49	184.85	137.57	16 38 36	1335.0	19.01	43.20
60.00	17 22 41	2114.20	5.84	44.37	189.61	129.95	17 57 56	1114.2	21.23	25.28
70.00	19 14 56	1784.02	11.64	21.89	193.90	122.34	19 44 40	784.0	23.85	.17
80.00	22 12 36	1226.60	20.41	344.39	198.60	112.28	22 33 2	226.6	27.79	319.41
80.33	22 35 35	1153.13	21.97	339.59	199.26	110.59	22 54 48	153.1	28.48	314.09
100.00	0 59 23	5989.12	20.41	283.66	198.60	112.28	2 39 12	4989.1	27.79	256.68
110.00	0 18 18	6118.88	11.64	288.72	193.90	122.34	2 0 17	5118.9	23.85	286.99

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2033	TRA	-.3154	TC3	-.5333	BAU	.0625	SGT	865.7	SGR	485.1	SG3	1141.2	ST	22.3	SR	21.0	SS	32.3
RDE	-.2135	RRA	.1135	RC3	-.0280	FAU	.19359	RRT	-.0243	RRF	.3466	RTF	-.0753	CRT	.7812	CRS	-.5181	CST	.1170
FDE	-.4055	FRA	3.0248	FC-19.1421		BSP	589	SGB	992.3	R23	-.3440	R13	.0792	LSA	34.9	MSA	27.7	SSA	1.8
BDE	.2948	BRA	.3352	BC3	.5341	FSP	1908	SG1	865.8	SG2	484.9	THA	178.87	EL1	29.0	EL2	10.1	ALF	42.77

LAUNCH DATE MAY 18 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 419.344 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.263	GAL	.74	AZL	91.59	HCA	137.00	SMA	186.06	ECC	.18719	INC	1.5910	V1	29.445
RP	210.45	LAP	-1.09	LOP	13.43	VP	23.409	GAP	7.75	AZP	88.84	TAL	4.69	TAP	141.68	RCA	151.24	APO	220.89	V2	26.058
RC	114.307	GL	-17.71	GP	-2.33	ZAL	88.89	ZAP	121.97	ETS	181.33	ZAE	164.51	ETE	187.60	ZAC	98.07	ETC	277.16	LVI	-15.06

PLANETOCENTRIC CONIC

C3	8.671	VHL	2.945	DLA	-29.68	RAL	334.28	RAD	6637.4	VEL	11.348	PTH	6.40	VHP	3.335	DPA	-20.20	RAP	319.18	ECC	1.1427

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 42	2335.14	.87	59.50	184.86	137.57	16 38 37	1335.1	19.01	43.20
60.00	17 22 29	2114.90	5.81	44.40	189.60	129.95	17 57 44	1114.9	21.21	25.32
70.00	19 14 14	1786.19	11.57	22.01	193.85	122.36	19 44 0	786.2	23.79	.30
80.00	22 5 52	1247.89	19.85	345.72	198.34	112.77	22 26 40	247.9	27.49	320.92
80.61	22 38 16	1144.30	21.96	338.93	199.23	110.48	22 57 20	144.3	28.42	313.42
100.00	0 52 39	6010.40	19.85	285.00	198.34	112.77	2 32 50	5010.4	27.49	260.19
110.00	0 17 36	6121.04	11.57	288.84	193.85	122.36	1 59 37	5121.0	23.79	287.13

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2064	TRA	-.2889	TC3	-.6954	BAU	.0808	SGT	864.7	SGR	480.1	SG3	1189.9	ST	22.3	SR	20.6	SS	33.0
RDE	-.2083	RRA	.1142	RC3	-.0478	FAU	.20078	RRT	.0213	RRF	.3719	RTF	.0501	CRT	.8035	CRS	-.5155	CST	.0832
FDE	-.4108	FRA	3.1468	FC-20.0451		BSP	438	SGB	989.0	R23	.3704	R13	.0536	LSA	35.4	MSA	27.5	SSA	1.8
BDE	.2933	BRA	.3107	BC3	.6970	FSP	1994	SG1	864.8	SG2	479.9	THA	.98	EL1	28.9	EL2	9.5	ALF	42.20

LAUNCH DATE MAY 18 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 423.507 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.251	GAL	.72	AZL	91.58	HCA	138.22	SMA	185.87	ECC	.18631	INC	1.5804	V1	29.445
RP	210.70	LAP	-1.05	LOP	14.65	VP	23.361	GAP	7.53	AZP	88.82	TAL	4.61	TAP	142.63	RCA	151.24	APO	220.50	V2	26.030
RC	116.460	GL	-17.66	GP	-2.42	ZAL	89.04	ZAP	119.96	ETS	181.25	ZAE	162.64	ETE	187.30	ZAC	98.07	ETC	276.99	LVI	-14.74

PLANETOCENTRIC CONIC

C3	8.595	VHL	2.932	DLA	-29.57	RAL	334.42	RAD	6637.3	VEL	11.345	PTH	6.40	VHP	3.272	DPA	-20.53	RAP	318.42	ECC	1.1415

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 41	2335.88	.83	59.53	184.89	137.57	16 38 37	1335.9	18.97	43.23
60.00	17 22 11	2116.41	5.74	44.47	189.60	129.96	17 57 28	1116.4	21.15	25.40
70.00	19 13 19	1789.50	11.44	22.19	193.82	122.40	19 43 9	789.5	23.69	.51
80.00	21 59 25	1268.73	19.30	347.02	198.11	113.23	22 20 34	268.7	27.19	322.39
80.98	22 41 39	1133.61	21.92	338.12	199.23	110.36	23 0 33	133.6	28.34	312.62
100.00	0 46 13	6031.24	19.30	286.30	198.11	113.23	2 26 44	5031.2	27.19	261.66
110.00	0 16 41	6124.36	11.44	289.02	193.82	122.40	1 58 46	5124.4	23.69	287.34

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2084	TRA	-.2596	TC3	-.8616	BAU	.0993	SGT	872.6	SGR	475.4	SG3	1238.7	ST	22.2	SR	20.2	SS	33.6
RDE	-.2032	RRA	.1149	RC3	-.0689	FAU	.20808	RRT	.0757	RRF	.3984	RTF	.1005	CRT	.8257	CRS	-.5145	CST	.0459
FDE	-.4170	FRA	3.2663	FC-20.9585		BSP	332	SGB	993.7	R23	.3799	R13	.1926	LSA	35.9	MSA	27.2	SSA	1.7
BDE	.2910	BRA	.2840	BC3	.8643	FSP	2069	SG1	873.7	SG2	473.5	THA	3.35	EL1	28.7	EL2	8.8	ALF	41.82

LAUNCH DATE MAY 18 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 427.675 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.240	GAL	.71	AZL	91.57	HCA	139.44	SMA	185.69	ECC	.18552	INC	1.5691	V1	29.445
RP	210.95	LAP	-1.02	LOP	15.87	VP	23.315	GAP	7.32	AZP	88.81	TAL	4.52	TAP	143.98	RCA	151.24	APO	220.14	V2	26.001
RC	118.637	GL	-17.60	GP	-2.53	ZAL	89.23	ZAP	117.94	ETS	181.16	ZAE	160.74	ETE	187.02	ZAC	98.07	ETC	276.81	LVI	-14.41

PLANETOCENTRIC CONIC

C3	8.526	VHL	2.920	DLA	-29.44	RAL	334.59	RAD	6637.3	VEL	11.342	PTH	6.39	VHP	3.213	DPA	-20.86	RAP	317.62	ECC	1.1403

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 39	2337.32	.76	59.59	184.95	137.57	16 38 37	1337.3	18.90	43.30
60.00	17 21 48	2118.76	5.64	44.59	189.63	129.97	17 57 7	1118.8	21.05	25.53
70.00	19 12 13	1793.99	11.28	22.44	193.80	122.45	19 42 7	794.0	23.56	.80
80.00	21 53 5	1269.75	18.73	348.32	197.91	113.69	22 14 35	289.7	26.86	323.87
81.44	22 45 58	1120.44	21.87	337.12	199.26	110.22	23 4 39	120.4	28.24	311.62
100.00	0 39 53	6052.26	18.73	287.60	197.91	113.69	2 20 45	5052.3	26.86	263.14
110.00	0 15 35	6128.88	11.28	289.26	193.80	122.45	1 57 44	5128.9	23.56	287.62

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2158	TRA	-.2351	TC3	-1.0668	BAU	.1220	SGT	920.8	SGR	471.0	SG3	1285.3	ST	22.6	SR	19.8	SS	34.3
RDE	-.1978	RRA	.1162	RC3	-.0895	FAU	.21437	RRT	.1340	RRF	.4258	RTF	.3054	CRT	.8473	CRS	-.5003	CST	.0218
FDE	-.4031	FRA	3.4112	FC-21.7673		BSP	357	SGB	1034.3	R23	.3739	R13	.3230	LSA	36.3	MSA	27.5	SSA	1.7
BDE	.2927	BRA	.2622	BC3	1.0706	FSP	2168	SG1	923.7	SG2	465.3	THA	5.26	EL1	28.9	EL2	8.2	ALF	40.50

LAUNCH DATE MAY 10 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC — DISTANCE 431.848 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.231 GAL .69 AZL 91.56 HCA 140.66 SMA 185.54 ECC .18482 INC 1.5573 V1 29.445
RP 211.20 LAP -.99 LOP 17.09 VP 23.269 GAP 7.11 AZP 88.80 TAL 4.41 TAP 145.07 RCA 151.25 APO 219.83 V2 25.972
RC 120.836 GL -17.52 GP -2.63 ZAL 89.44 ZAP 115.89 ETS 181.07 ZAE 158.80 ETE 186.78 ZAC 98.06 ETC 276.63 LVI -14.06

PLANETOCENTRIC CONIC

C3 8.463 VHL 2.909 DLA -29.29 RAL 334.78 RAD 6637.2 VEL 11.339 PTH 6.39 VHP 3.159 DPA -21.20 RAP 316.81 ECC 1.1393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 35	2339.38	.66	59.68	185.03	137.57	16 38 35	1339.4	18.80	43.40
60.00	17 21 20	2121.89	5.50	44.74	189.68	129.99	17 56 42	1121.9	20.93	25.71
70.00	19 10 55	1799.60	11.08	22.74	193.80	122.52	19 40 54	799.6	23.39	1.15
80.00	21 46 56	1310.67	18.15	349.61	197.74	114.12	22 8 47	310.7	26.52	325.33
82.02	22 51 15	1104.56	21.79	335.92	199.31	110.08	23 9 39	104.6	28.11	310.43
100.00	0 33 44	6073.18	18.15	288.88	197.74	114.12	2 14 57	5073.2	26.52	264.60
110.00	0 14 17	6134.46	11.08	289.57	193.80	122.52	1 56 31	5134.5	23.39	267.97

DIFFERENTIAL CORRECTIONS

TDE -.2198 TRA -.2049 TC3-1.2687 BAU .1441
RDE -.1923 RRA .1173 RC3 -.1113 FAU .22071
FDE -.3875 FRA 3.5317 FC-22.5773 BSP 487
BDE .2921 BRA .2361 BC3 1.2736 FSP 2257

MID-COURSE EXECUTION ACCURACY

SGT 972.9 SGR 466.8 SG3 1329.4
RRT .1965 RRF .4528 RTF .4233
SGB 1079.1 R23 .3527 R13 .4437
SG1 978.4 SG2 455.1 THA 6.88

ORBIT DETERMINATION ACCURACY

ST 22.8 SR 19.4 SS 34.7
CRT .8685 CRS -.4878 CST -.0060
LSA 36.6 MSA 27.4 SSA 1.7
EL1 28.9 EL2 7.6 ALF 39.69

LAUNCH DATE MAY 16 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC — DISTANCE 436.024 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.223 GAL .67 AZL 91.55 HCA 141.87 SMA 185.40 ECC .18420 INC 1.5450 V1 29.445
RP 211.46 LAP -.95 LOP 18.30 VP 23.225 GAP 6.91 AZP 88.78 TAL 4.29 TAP 146.16 RCA 151.25 APO 219.55 V2 25.942
RC 123.058 GL -17.44 GP -2.74 ZAL 89.68 ZAP 113.83 ETS 180.98 ZAE 156.84 ETE 186.55 ZAC 98.05 ETC 276.44 LVI -13.70

PLANETOCENTRIC CONIC

C3 8.407 VHL 2.900 DLA -29.12 RAL 335.00 RAD 6637.2 VEL 11.337 PTH 6.39 VHP 3.110 DPA -21.55 RAP 315.97 ECC 1.1384

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 29	2342.09	.52	59.79	185.13	137.57	16 38 31	1342.1	18.67	43.53
60.00	17 20 47	2125.81	5.33	44.93	189.74	130.01	17 56 13	1125.8	20.78	25.92
70.00	19 9 26	1806.25	10.83	23.10	193.82	122.59	19 39 32	806.3	23.20	1.56
80.00	21 40 53	1331.74	17.56	350.89	197.60	114.54	22 3 5	331.7	26.16	326.79
82.74	22 57 47	1085.02	21.70	334.44	199.39	109.91	23 15 52	85.0	27.96	308.96
100.00	0 27 41	6094.25	17.56	290.17	197.60	114.54	2 9 15	5094.3	26.16	266.06
110.00	0 12 48	6141.11	10.83	289.93	193.82	122.59	1 55 9	5141.1	23.20	268.39

DIFFERENTIAL CORRECTIONS

TDE -.2139 TRA -.1739 TC3-1.4788 BAU .1669
RDE -.1870 RRA .1186 RC3 -.1345 FAU .22723
FDE -.3754 FRA 3.6585 FC-23.3993 BSP 681
BDE .2917 BRA .2105 BC3 1.4849 FSP 2342

MID-COURSE EXECUTION ACCURACY

SGT 1042.0 SGR 463.3 SG3 1374.7
RRT .2585 RRF .4820 RTF .5253
SGB 1140.4 R23 .3266 R13 .5456
SG1 1050.4 SG2 444.0 THA 7.99

ORBIT DETERMINATION ACCURACY

ST 22.9 SR 18.9 SS 35.2
CRT .8881 CRS -.4787 CST -.0379
LSA 37.1 MSA 27.3 SSA 1.7
EL1 28.9 EL2 6.9 ALF 38.85

LAUNCH DATE MAY 18 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC — DISTANCE 440.204 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.216 GAL .64 AZL 91.53 HCA 143.08 SMA 185.28 ECC .18366 INC 1.5320 V1 29.445
RP 211.73 LAP -.92 LOP 19.51 VP 23.181 GAP 6.71 AZP 88.78 TAL 4.15 TAP 147.23 RCA 151.25 APO 219.31 V2 25.911
RC 125.302 GL -17.33 GP -2.85 ZAL 89.94 ZAP 111.76 ETS 180.88 ZAE 154.84 ETE 186.34 ZAC 98.04 ETC 276.25 LVI -13.33

PLANETOCENTRIC CONIC

C3 8.357 VHL 2.891 DLA -28.93 RAL 335.23 RAD 6637.2 VEL 11.334 PTH 6.39 VHP 3.064 DPA -21.90 RAP 315.11 ECC 1.1375

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 21	2345.44	.35	59.93	185.25	137.58	16 38 27	1345.4	18.51	43.68
60.00	17 20 9	2130.51	5.13	45.15	189.83	130.03	17 55 39	1130.5	20.59	26.18
70.00	19 7 47	1813.94	10.55	23.52	193.86	122.67	19 38 1	813.9	22.97	2.04
80.00	21 34 56	1352.99	16.96	352.18	197.48	114.95	21 57 29	353.0	25.77	328.25
83.63	23 5 56	1060.66	21.59	332.60	199.50	109.74	23 23 37	60.7	27.79	307.14
100.00	0 21 44	6115.50	16.96	291.45	197.48	114.95	2 3 39	5115.5	25.77	267.53
110.00	0 11 9	6148.80	10.55	290.34	193.86	122.67	1 53 38	5148.8	22.97	268.87

DIFFERENTIAL CORRECTIONS

TDE -.2269 TRA -.1417 TC3-1.7023 BAU .1910
RDE -.1817 RRA .1202 RC3 -.1574 FAU .23279
FDE -.3653 FRA 3.7915 FC-24.1152 BSP 913
BDE .2907 BRA .1858 BC3 1.7096 FSP 2415

MID-COURSE EXECUTION ACCURACY

SGT 1128.7 SGR 480.5 SG3 1416.1
RRT .3160 RRF .5123 RTF .6.05
SGB 1219.0 R23 .3010 R13 .6288
SG1 1139.6 SG2 432.7 THA 8.60

ORBIT DETERMINATION ACCURACY

ST 23.0 SR 18.5 SS 35.9
CRT .9060 CRS -.4722 CST -.0722
LSA 37.6 MSA 27.2 SSA 1.7
EL1 28.9 EL2 6.2 ALF 38.08

LAUNCH DATE MAY 18 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC — DISTANCE 444.387 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.210 GAL .62 AZL 91.52 HCA 144.29 SMA 185.18 ECC .18320 INC 1.5182 V1 29.445
RP 212.01 LAP -.89 LOP 20.72 VP 23.137 GAP 6.51 AZP 88.77 TAL 3.99 TAP 148.28 RCA 151.26 APO 219.11 V2 25.880
RC 127.566 GL -17.22 GP -2.97 ZAL 90.23 ZAP 109.68 ETS 180.78 ZAE 152.82 ETE 186.15 ZAC 98.02 ETC 276.06 LVI -12.95

PLANETOCENTRIC CONIC

C3 8.313 VHL 2.883 DLA -28.71 RAL 335.49 RAD 6637.2 VEL 11.332 PTH 6.39 VHP 3.023 DPA -22.25 RAP 314.25 ECC 1.1368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 59 11	2349.43	.15	60.10	185.39	137.58	16 38 20	1349.4	18.32	43.87
60.00	17 19 25	2135.97	4.89	45.42	189.93	130.05	17 55 1	1136.0	20.38	26.48
70.00	19 5 58	1822.63	10.23	23.99	193.91	122.76	19 36 20	822.6	22.71	2.58
80.00	21 29 4	1374.44	16.33	353.47	197.39	115.35	21 51 58	374.4	25.37	329.72
84.81	23 16 32	1028.77	21.45	330.21	199.62	109.55	23 33 41	28.8	27.59	304.76
100.00	0 15 51	6136.95	16.33	292.75	197.39	115.35	1 58 8	5137.0	25.37	268.99
110.00	0 9 20	6157.49	10.23	290.81	193.91	122.76	1 51 57	5157.5	22.71	269.41

DIFFERENTIAL CORRECTIONS

TDE -.2301 TRA -.1075 TC3-1.9306 BAU .2155
RDE -.1762 RRA .1219 RC3 -.1823 FAU .23879
FDE -.3404 FRA 3.9224 FC-24.8694 BSP 1164
BDE .2898 BRA .1626 BC3 1.9392 FSP 2490

MID-COURSE EXECUTION ACCURACY

SGT 1227.9 SGR 458.3 SG3 1458.9
RRT .3729 RRF .5427 RTF .6805
SGB 1310.6 R23 .2747 R13 .6961
SG1 1241.3 SG2 420.6 THA 8.96

ORBIT DETERMINATION ACCURACY

ST 23.2 SR 18.0 SS 36.4
CRT .9228 CRS -.4583 CST -.0997
LSA 38.0 MSA 27.1 SSA 1.7
EL1 28.8 EL2 5.6 ALF 37.21

LAUNCH DATE MAY 18 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 448.573 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.205	GAL	.59	AZL	91.50	HCA	145.49	SMA	185.10	ECC	.18280	INC	1.5037	V1	29.445
RP	212.28	LAP	-.85	LOP	21.93	VP	23.094	GAP	6.32	AZP	88.76	TAL	3.82	TAP	149.31	RCA	151.26	APO	218.94	V2	25.848
RC	129.850	GL	-17.09	GP	-3.10	ZAL	90.54	ZAP	107.60	ETS	180.67	ZAE	150.78	ETE	185.96	ZAC	97.99	ETC	275.86	LVI	-12.56

PLANETOCENTRIC CONIC

C3	8.274	VHL	2.876	DLA	-28.47	RAL	335.76	RAD	6637.1	VEL	11.331	PTH	6.38	VHP	2.987	DPA	-22.61	RAP	313.37	ECC	1.1362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 58	2354.04	-.08	60.29	185.55	137.58	16 38 12	1354.0	18.10	44.09
60.00	17 18 36	2142.18	4.62	45.72	190.05	130.08	17 54 18	1142.2	20.13	26.82
70.00	19 3 59	1832.27	9.87	24.51	193.97	122.86	19 34 31	832.3	22.42	3.18
80.00	21 23 16	1396.09	15.70	354.76	197.32	115.73	21 46 32	396.1	24.95	331.19
86.54	23 31 53	6269.83	21.30	304.61	199.77	109.35	25 16 23	5269.8	27.37	279.18
100.00	0 10 4	6158.61	15.70	294.04	197.32	115.73	1 52 42	5158.6	24.95	270.46
110.00	0 7 21	6167.13	9.87	291.33	193.97	122.86	1 50 8	5167.1	22.42	270.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2305	TRA	-.0695	TC3-2.1584	BAU	.2398	SGT	1333.2	SGR	456.7	SG3	1497.1	ST	23.2	SR	17.6	SS	36.7
RDE	-.1711	RRA	.1233	RC3 -.2084	FAU	.24469	RRT	.4293	RRF	.5735	RTF	.7431	CRT	.9393	CR8	-.4606	CST	-.1496
FDE	-.3387	FRA	4.0166	FC-25.6042	BSP	1460	SGB	1409.2	R23	.2450	R13	.7560	LSA	38.5	MSA	26.6	SSA	1.6
BDE	.2871	BRA	.1415	BC3 2.1684	FSP	2529	SG1	1349.0	SG2	407.6	THA	9.21	EL1	28.6	EL2	4.9	ALF	36.68

LAUNCH DATE MAY 18 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 452.760 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.201	GAL	.56	AZL	91.49	HCA	146.70	SMA	185.03	ECC	.18247	INC	1.4884	V1	29.445
RP	212.57	LAP	-.82	LOP	23.13	VP	23.052	GAP	6.13	AZP	88.76	TAL	3.63	TAP	150.32	RCA	151.27	APO	218.79	V2	25.815
RC	132.153	GL	-16.94	GP	-3.23	ZAL	90.88	ZAP	105.52	ETS	180.55	ZAE	148.73	ETE	185.79	ZAC	97.95	ETC	275.66	LVI	-12.17

PLANETOCENTRIC CONIC

C3	8.240	VHL	2.870	DLA	-28.21	RAL	336.05	RAD	6637.1	VEL	11.329	PTH	6.38	VHP	2.954	DPA	-22.97	RAP	312.50	ECC	1.1356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 42	2359.33	-.35	60.51	185.72	137.58	16 38 2	1359.3	17.85	44.33
60.00	17 17 42	2149.21	4.31	46.05	190.19	130.11	17 53 31	1149.2	19.85	27.21
70.00	19 1 51	1842.92	9.48	25.08	194.05	122.97	19 32 33	842.9	22.09	3.84
80.00	21 17 30	1418.17	15.04	356.07	197.27	116.10	21 41 8	418.2	24.50	332.68
90.00	23 44 33	6231.90	19.86	301.28	199.45	110.55	25 28 24	5231.9	26.58	276.27
100.00	0 4 17	6180.69	15.04	295.35	197.27	116.10	1 47 18	5180.7	24.50	271.95
110.00	0 5 13	6177.78	9.48	291.91	194.05	122.97	1 48 11	5177.8	22.09	270.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2360	TRA	-.0355	TC3-2.4229	BAU	.2681	SGT	1470.7	SGR	455.0	SG3	1528.7	ST	23.7	SR	17.0	SS	37.2
RDE	-.1648	RRA	.1258	RC3 -.2311	FAU	.24784	RRT	.4731	RRF	.6026	RTF	.7796	CRT	.9510	CR8	-.4232	CST	-.1463
FDE	-.2679	FRA	4.1713	FC-26.0398	BSP	1705	SGB	1539.5	R23	.2324	R13	.7901	LSA	38.8	MSA	27.1	SSA	1.6
BDE	.2878	BRA	.1307	BC3 2.4339	FSP	2615	SG1	1487.6	SG2	396.3	THA	8.97	EL1	28.8	EL2	4.3	ALF	35.24

LAUNCH DATE MAY 18 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 456.949 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.198	GAL	.53	AZL	91.47	HCA	147.89	SMA	184.98	ECC	.18221	INC	1.4719	V1	29.445
RP	212.86	LAP	-.78	LOP	24.32	VP	23.011	GAP	5.94	AZP	88.75	TAL	3.42	TAP	151.32	RCA	151.27	APO	218.68	V2	25.782
RC	134.475	GL	-16.78	GP	-3.36	ZAL	91.24	ZAP	103.45	ETS	180.43	ZAE	146.67	ETE	185.63	ZAC	97.91	ETC	275.46	LVI	-11.78

PLANETOCENTRIC CONIC

C3	8.211	VHL	2.865	DLA	-27.92	RAL	336.36	RAD	6637.1	VEL	11.328	PTH	6.38	VHP	2.925	DPA	-23.33	RAP	311.62	ECC	1.1351

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 24	2365.23	-.64	60.76	185.92	137.57	16 37 49	1365.2	17.56	44.61
60.00	17 16 41	2156.97	3.97	46.43	190.35	130.14	17 52 38	1157.0	19.54	27.63
70.00	18 59 33	1854.46	9.05	25.70	194.15	123.07	19 30 28	854.5	21.74	4.54
80.00	21 11 47	1440.47	14.37	357.39	197.25	116.46	21 35 47	440.5	24.04	334.17
90.00	23 23 47	1014.76	18.11	327.83	199.00	112.10	23 40 42	14.8	25.65	303.34
100.00	23 54 39	6202.99	14.37	296.66	197.25	116.46	25 38 2	5203.0	24.04	273.44
110.00	0 2 56	6189.32	9.05	292.53	194.15	123.07	1 46 5	5189.3	21.74	271.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2375	TRA	.0028	TC3-2.6756	BAU	.2951	SGT	1605.2	SGR	454.5	SG3	1562.0	ST	23.9	SR	16.5	SS	37.6
RDE	-.1590	RRA	.1278	RC3 -.2581	FAU	.25262	RRT	.5203	RRF	.6327	RTF	.7660	CRT	.9625	CR8	-.4050	CST	-.1693
FDE	-.2249	FRA	4.2759	FC-26.6359	BSP	1989	SGB	1668.3	R23	.2134	R13	.8244	LSA	39.0	MSA	26.9	SSA	1.6
BDE	.2858	BRA	.1278	BC3 2.6880	FSP	2675	SG1	1623.6	SG2	383.7	THA	8.88	EL1	28.8	EL2	3.7	ALF	34.27

LAUNCH DATE MAY 18 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 461.140 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.195	GAL	.49	AZL	91.45	HCA	149.09	SMA	184.94	ECC	.18200	INC	1.4545	V1	29.445
RP	213.16	LAP	-.75	LOP	25.52	VP	22.970	GAP	5.76	AZP	88.75	TAL	3.20	TAP	152.29	RCA	151.28	APO	218.60	V2	25.749
RC	136.814	GL	-16.60	GP	-3.50	ZAL	91.63	ZAP	101.39	ETS	180.31	ZAE	144.61	ETE	185.48	ZAC	97.86	ETC	275.26	LVI	-11.35

PLANETOCENTRIC CONIC

C3	8.186	VHL	2.861	DLA	-27.61	RAL	336.69	RAD	6637.1	VEL	11.327	PTH	6.38	VHP	2.900	DPA	-23.68	RAP	310.74	ECC	1.1347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 58 2	2371.79	-.97	61.03	186.13	137.57	16 37 33	1371.8	17.25	44.91
60.00	17 15 35	2165.49	3.59	46.83	190.51	130.17	17 51 41	1165.5	19.20	28.09
70.00	18 57 7	1866.90	8.59	26.37	194.25	123.18	19 28 14	866.9	21.35	5.30
80.00	21 6 6	1463.12	13.68	358.71	197.25	116.80	21 30 29	463.1	23.55	335.67
90.00	23 10 31	1061.89	16.88	330.74	198.78	113.03	23 28 13	61.9	24.92	306.60
100.00	23 48 58	6225.63	13.68	297.99	197.25	116.80	25 32 43	5225.6	23.55	274.94
110.00	0 0 30	6201.76	8.59	293.19	194.25	123.18	1 43 51	5201.8	21.35	272.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2379	TRA	.0429	TC3-2.9363	BAU	.3229	SGT	1749.2	SGR	454.5	SG3	1588.3	ST	24.0	SR	16.0	SS	37.8
RDE	-.1532	RRA	.1298	RC3 -.2844	FAU	.25618	RRT	.5636	RRF	.6621	RTF	.8454	CRT	.9724	CR8	-.3905	CST	-.1974
FDE	-.1851	FRA	4.3685	FC-27.0922	BSP	2288	SGB	1807.3	R23	.1974	R13	.8522	LSA	39.3	MSA	26.7	SSA	1.6
BDE	.2829	BRA	.1367	BC3 2.9500	FSP	2733	SG1	1768.7	SG2	371.3	THA	8.72	EL1	28.6	EL2	3.1	ALF	33.34

LAUNCH DATE MAY 18 1971 FLIGHT TIME 196.00 ARRIVAL DATE NOV 30 1971

DISTANCE 465.331

HELIOCENTRIC CONIC

RL 151.32 LAL -.00 LOL 236.42 VL 32.194 GAL .46 AZL 91.44 HCA 150.28 SMA 184.91 ECC .18185 INC 1.4360 V1 29.445
RP 213.46 LAP -.71 LOP 26.71 VP 22.929 GAP 5.58 AZP 88.75 TAL 2.97 TAP 153.25 RCA 151.28 APO 218.54 V2 25.714
RC 139.171 GL -16.40 GP -3.65 ZAL 92.04 ZAP 99.34 ETS 180.17 ZAE 142.54 ETE 185.34 ZAC 97.79 ETC 275.06 LVI -10.93

PLANETOCENTRIC CONIC

C3 8.166 VHL 2.858 DLA -27.27 RAL 337.03 RAD 6637.1 VEL 11.326 PTH 6.38 VHP 2.878 DPA -24.04 RAP 309.88 ECC 1.1344

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 36	2379.01	-1.34	61.33	186.35	137.56	16 37 15	1379.0	16.90	45.24
60.00	17 14 23	2174.78	3.18	47.28	190.69	130.20	17 50 37	1174.8	18.83	28.59
70.00	18 54 32	1880.24	8.09	27.08	194.37	123.29	19 25 53	880.2	20.93	6.11
80.00	21 0 26	1486.15	12.97	.05	197.26	117.13	21 25 12	486.2	23.03	337.19
90.00	22 59 37	1101.78	15.80	333.17	198.65	113.76	23 17 59	101.8	24.24	309.32
100.00	23 43 18	6248.66	12.97	299.33	197.26	117.13	25 27 26	5248.7	23.03	276.46
110.00	23 53 59	6215.10	8.09	293.90	194.37	123.29	25 37 34	5215.1	20.93	272.93

DIFFERENTIAL CORRECTIONS

TDE -.2376 TRA .0840 TC3-3.2014 BAU .3512
RDE -.1471 RRA .1326 RC3 -.3119 FAU .25944
FDE -.1338 FRA 4.4948 FC-27.5035 BSP 2590
BDE .2795 BRA .1570 BC3 3.2165 FSP 2772

MID-COURSE EXECUTION ACCURACY

SGT 1900.2 SGR 456.4 SG3 1616.3
RRT .6035 RRF .6927 RTF .8667
SGB 1954.2 R23 .1882 R13 .8724
SG1 1920.8 SG2 360.0 THA 8.55

ORBIT DETERMINATION ACCURACY

ST 24.1 SR 15.4 SS 38.4
CRT .9799 CRS -.3722 CST -.2189
LSA 39.9 MSA 26.6 SSA 1.5
EL1 28.5 EL2 2.6 ALF 32.34

LAUNCH DATE MAY 18 1971 FLIGHT TIME 198.00 ARRIVAL DATE DEC 2 1971

DISTANCE 469.523

HELIOCENTRIC CONIC

RL 151.32 LAL -.00 LOL 236.42 VL 32.193 GAL .42 AZL 91.42 HCA 151.47 SMA 184.90 ECC .18176 INC 1.4160 V1 29.445
RP 213.77 LAP -.68 LOP 27.90 VP 22.889 GAP 5.40 AZP 88.76 TAL 2.72 TAP 154.19 RCA 151.29 APO 218.50 V2 25.680
RC 141.545 GL -16.18 GP -3.81 ZAL 92.47 ZAP 97.32 ETS 180.04 ZAE 140.49 ETE 185.21 ZAC 97.71 ETC 274.86 LVI -10.90

PLANETOCENTRIC CONIC

C3 8.151 VHL 2.855 DLA -26.90 RAL 337.38 RAD 6637.1 VEL 11.325 PTH 6.38 VHP 2.860 DPA -24.40 RAP 309.03 ECC 1.1341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 57 6	2386.90	-1.73	61.66	186.59	137.55	16 36 53	1386.9	16.52	45.61
60.00	17 13 3	2184.86	2.74	47.76	190.89	130.22	17 49 28	1184.9	18.42	29.13
70.00	18 51 48	1894.48	7.56	27.84	194.51	123.41	19 23 23	894.5	20.48	6.97
80.00	20 54 46	1509.60	12.24	1.41	197.29	117.45	21 19 55	509.6	22.49	338.72
90.00	22 49 57	1138.12	14.79	335.36	198.57	114.38	23 8 56	138.1	23.58	311.78
100.00	23 37 38	6272.12	12.24	300.68	197.29	117.45	25 22 10	5272.1	22.49	277.99
110.00	23 51 15	6229.34	7.56	294.66	194.51	123.41	25 35 4	5229.3	20.48	273.79

DIFFERENTIAL CORRECTIONS

TDE -.2364 TRA .1263 TC3-3.4707 BAU .3800
RDE -.1408 RRA .1355 RC3 -.3389 FAU .26156
FDE -.0694 FRA 4.6033 FC-27.7819 BSP 2900
BDE .2752 BRA .1852 BC3 3.4872 FSP 2833

MID-COURSE EXECUTION ACCURACY

SGT 2057.5 SGR 458.6 SG3 1637.0
RRT .6404 RRF .7215 RTF .8837
SGB 2108.0 R23 .1807 R13 .8884
SG1 2079.0 SG2 348.6 THA 8.36

ORBIT DETERMINATION ACCURACY

ST 24.3 SR 14.9 SS 38.9
CRT .9856 CRS -.3492 CST -.2351
LSA 40.3 MSA 26.5 SSA 1.5
EL1 28.4 EL2 2.1 ALF 31.28

LAUNCH DATE MAY 18 1971 FLIGHT TIME 200.00 ARRIVAL DATE DEC 4 1971

DISTANCE 473.715

HELIOCENTRIC CONIC

RL 151.32 LAL -.00 LOL 236.42 VL 32.193 GAL .38 AZL 91.39 HCA 152.65 SMA 184.89 ECC .18172 INC 1.3944 V1 29.445
RP 214.08 LAP -.64 LOP 29.08 VP 22.849 GAP 5.23 AZP 88.76 TAL 2.46 TAP 155.12 RCA 151.29 APO 218.49 V2 25.645
RC 143.936 GL -15.94 GP -3.97 ZAL 92.93 ZAP 95.31 ETS 179.89 ZAE 138.44 ETE 185.08 ZAC 97.62 ETC 274.66 LVI -10.08

PLANETOCENTRIC CONIC

C3 8.139 VHL 2.853 DLA -26.51 RAL 337.74 RAD 6637.1 VEL 11.325 PTH 6.38 VHP 2.846 DPA -24.76 RAP 308.19 ECC 1.1340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 56 31	2395.48	-2.16	62.02	186.84	137.54	16 36 26	1395.5	16.10	46.00
60.00	17 11 37	2195.73	2.26	48.28	191.09	130.25	17 48 13	1195.7	17.98	29.71
70.00	18 48 55	1909.61	6.99	28.64	194.65	123.52	19 20 45	909.6	19.99	7.87
80.00	20 49 4	1533.53	11.48	2.78	197.34	117.75	21 14 38	533.5	21.92	340.26
90.00	22 41 2	1172.44	13.81	337.41	198.52	114.92	23 0 35	172.4	22.91	314.07
100.00	23 31 56	1008.00	11.48	324.15	197.34	117.75	23 48 44	8.0	21.92	301.63
110.00	23 48 22	6244.47	6.99	295.46	194.65	123.52	25 32 26	5244.5	19.99	274.70

DIFFERENTIAL CORRECTIONS

TDE -.2335 TRA .1698 TC3-3.7445 BAU .4094
RDE -.1345 RRA .1384 RC3 -.3674 FAU .26350
FDE -.0108 FRA 4.6896 FC-28.0276 BSP 3208
BDE .2695 BRA .2190 BC3 3.7625 FSP 2842

MID-COURSE EXECUTION ACCURACY

SGT 2220.4 SGR 461.8 SG3 1654.1
RRT .6757 RRF .7494 RTF .8984
SGB 2267.9 R23 .1737 R13 .9024
SG1 2242.7 SG2 337.1 THA 8.19

ORBIT DETERMINATION ACCURACY

ST 24.3 SR 14.3 SS 39.3
CRT .9897 CRS -.3320 CST -.2584
LSA 40.6 MSA 26.2 SSA 1.5
EL1 28.2 EL2 1.8 ALF 30.28

LAUNCH DATE MAY 18 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 6 1971

DISTANCE 477.907

HELIOCENTRIC CONIC

RL 151.32 LAL -.00 LOL 236.42 VL 32.193 GAL .34 AZL 91.37 HCA 153.83 SMA 184.90 ECC .18173 INC 1.3711 V1 29.445
RP 214.39 LAP -.60 LOP 30.26 VP 22.810 GAP 5.06 AZP 88.77 TAL 2.19 TAP 156.03 RCA 151.30 APO 218.50 V2 25.609
RC 146.344 GL -15.68 GP -4.15 ZAL 93.40 ZAP 93.33 ETS 179.74 ZAE 136.41 ETE 184.97 ZAC 97.52 ETC 274.47 LVI -9.64

PLANETOCENTRIC CONIC

C3 8.131 VHL 2.852 DLA -26.08 RAL 338.12 RAD 6637.1 VEL 11.325 PTH 6.38 VHP 2.834 DPA -25.12 RAP 307.38 ECC 1.1338

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 50	2404.78	-2.63	62.41	187.10	137.52	16 35 55	1404.8	15.65	46.42
60.00	17 10 2	2207.41	1.75	48.84	191.31	130.27	17 46 50	1207.4	17.50	30.33
70.00	18 45 52	1925.65	6.39	29.49	194.80	123.62	19 17 58	925.6	19.47	8.83
80.00	20 43 20	1557.98	10.70	4.18	197.40	118.04	21 9 18	558.0	21.32	341.83
90.00	22 32 37	1205.59	12.85	339.37	198.51	115.41	22 52 42	205.6	22.23	316.27
100.00	23 26 12	1032.45	10.70	325.55	197.40	118.04	23 43 25	32.4	21.32	303.20
110.00	23 45 19	6260.50	6.39	296.31	194.80	123.62	25 29 39	5260.5	19.47	275.65

DIFFERENTIAL CORRECTIONS

TDE -.2295 TRA .2144 TC3-4.0195 BAU .4391
RDE -.1278 RRA .1415 RC3 -.3964 FAU .26472
FDE .0619 FRA 4.7722 FC-28.1835 BSP 3527
BDE .2627 BRA .2569 BC3 4.0390 FSP 2877

MID-COURSE EXECUTION ACCURACY

SGT 2387.0 SGR 466.1 SG3 1667.2
RRT .7087 RRF .7762 RTF .9099
SGB 2432.1 R23 .1689 R13 .9133
SG1 2410.2 SG2 325.7 THA 8.03

ORBIT DETERMINATION ACCURACY

ST 24.4 SR 13.7 SS 39.7
CRT .9919 CRS -.3104 CST -.2762
LSA 41.1 MSA 25.9 SSA 1.5
EL1 27.9 EL2 1.5 ALF 29.20

LAUNCH DATE MAY 18 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 482.098 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.194	GAL	.29	AZL	91.35	HCA	155.01	SMA	184.92	ECC	.18179	INC	1.3460	V1	29.445
RP	214.72	LAP	-.57	LOP	31.44	VP	22.771	GAP	4.89	AZP	88.78	TAL	1.91	TAP	156.92	RCA	151.30	APO	218.54	V2	25.573
RC	148.770	GL	-15.38	GP	-4.34	ZAL	93.90	ZAP	91.38	ETS	179.58	ZAE	134.39	ETE	184.86	ZAC	97.40	ETC	274.29	LVI	-9.20

PLANETOCENTRIC CONIC

C3	8.127	VHL	2.851	DLA	-25.63	RAL	338.50	RAD	6637.1	VEL	11.324	PTH	6.38	VHP	2.826	DPA	-25.49	RAP	306.60	ECC	1.1338

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 55 4	2414.81	-3.13	62.83	187.36	137.50	16 35 19	1414.8	15.16	46.87
60.00	17 8 20	2219.95	1.20	49.44	191.53	130.29	17 45 20	1220.0	16.99	30.99
70.00	18 42 39	1942.62	5.75	30.39	194.96	123.72	19 15 2	942.6	18.92	9.83
80.00	20 37 33	1583.01	9.90	5.60	197.48	118.31	21 3 56	583.0	20.69	343.42
90.00	22 24 30	1238.11	11.90	341.28	198.52	115.85	22 45 8	238.1	21.54	318.39
100.00	23 20 25	1057.49	9.90	326.97	197.48	118.31	23 38 2	57.5	20.69	304.79
110.00	23 42 6	6277.48	5.75	297.21	194.96	123.72	25 26 43	5277.5	18.92	276.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2232	TRA	.2603	TC3	-4.2913	BAU	.4686	SGT	2554.4	SGR	471.3	SG3	1674.6	ST	24.3	SR	13.1	SS	40.1
RDE	-.1207	RRA	.1448	RC3	-.4259	FAU	.26505	RRT	.7396	RRF	.8015	RTF	.9194	CRT	.9923	CRS	-.2859	CST	-.2919
FDE	.1466	FRA	4.8406	FC-28	.2330	BSP	3849	SGB	2597.5	R23	.1650	R13	.9223	LSA	41.4	MSA	25.5	SSA	1.4
BDE	.2537	BRA	.2979	BC3	4.3124	FSP	2901	SG1	2578.4	SG2	314.2	THA	7.89	EL1	27.6	EL2	1.4	ALF	28.14

LAUNCH DATE MAY 18 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 486.289 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.196	GAL	.25	AZL	91.32	HCA	156.19	SMA	184.95	ECC	.18189	INC	1.3186	V1	29.445
RP	215.04	LAP	-.53	LOP	32.61	VP	22.732	GAP	4.73	AZP	88.79	TAL	1.61	TAP	157.79	RCA	151.31	APO	218.59	V2	25.536
RC	151.211	GL	-15.07	GP	-4.54	ZAL	94.41	ZAP	89.46	ETS	179.40	ZAE	132.39	ETE	184.76	ZAC	97.26	ETC	274.11	LVI	-8.76

PLANETOCENTRIC CONIC

C3	8.127	VHL	2.851	DLA	-25.14	RAL	338.88	RAD	6637.1	VEL	11.324	PTH	6.38	VHP	2.821	DPA	-25.86	RAP	305.84	ECC	1.1337

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 54 10	2425.64	-3.68	63.28	187.64	137.47	16 34 36	1425.6	14.64	47.36
60.00	17 6 27	2233.39	.61	50.08	191.75	130.30	17 43 41	1233.4	16.43	31.70
70.00	18 39 15	1960.57	5.07	31.33	195.13	123.82	19 11 55	960.6	18.32	10.88
80.00	20 31 40	1608.73	9.06	7.06	197.56	118.57	20 58 28	608.7	20.02	345.04
90.00	22 16 34	1270.38	10.93	343.15	198.55	116.24	22 37 45	270.4	20.81	320.48
100.00	23 14 32	1083.20	9.06	328.43	197.56	118.57	23 32 35	83.2	20.02	306.41
110.00	23 38 41	1007.39	5.07	320.25	195.13	123.82	23 55 28	7.4	18.32	299.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2169	TRA	.3082	TC3	-4.5670	BAU	.4987	SGT	2727.3	SGR	479.9	SG3	1681.7	ST	24.4	SR	12.5	SS	40.7
RDE	-.1146	RRA	.1490	RC3	-.4569	FAU	.26502	RRT	.7678	RRF	.8271	RTF	.9275	CRT	.9911	CRS	-.2920	CST	-.3380
FDE	.1835	FRA	4.9262	FC-28	.2320	BSP	4160	SGB	2769.2	R23	.1653	R13	.9301	LSA	42.2	MSA	24.9	SSA	1.4
BDE	.2453	BRA	.3423	BC3	4.5898	FSP	2889	SG1	2752.4	SG2	304.7	THA	7.79	EL1	27.4	EL2	1.5	ALF	27.09

LAUNCH DATE MAY 18 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 490.479 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.198	GAL	.20	AZL	91.29	HCA	157.36	SMA	184.98	ECC	.18204	INC	1.2886	V1	29.445
RP	215.37	LAP	-.50	LOP	33.78	VP	22.693	GAP	4.56	AZP	88.81	TAL	1.30	TAP	158.66	RCA	151.31	APO	218.66	V2	25.499
RC	153.669	GL	-14.71	GP	-4.76	ZAL	94.95	ZAP	87.57	ETS	179.22	ZAE	130.42	ETE	184.66	ZAC	97.09	ETC	273.94	LVI	-8.30

PLANETOCENTRIC CONIC

C3	8.130	VHL	2.851	DLA	-24.61	RAL	339.27	RAD	6637.1	VEL	11.324	PTH	6.38	VHP	2.818	DPA	-26.23	RAP	305.11	ECC	1.1338

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 53 8	2437.30	-4.26	63.77	187.92	137.43	16 33 45	1437.3	14.07	47.88
60.00	17 4 24	2247.76	-.03	50.77	191.99	130.30	17 41 52	1247.8	15.84	32.45
70.00	18 35 38	1979.55	4.35	32.33	195.30	123.91	19 8 37	979.5	17.69	11.98
80.00	20 25 39	1635.20	8.20	8.55	197.66	118.81	20 52 54	635.2	19.32	346.70
90.00	22 8 45	1302.71	9.95	345.02	198.59	116.61	22 30 27	302.7	20.06	322.56
100.00	23 8 31	1109.67	8.20	329.91	197.66	118.81	23 27 1	109.7	19.32	308.06
110.00	23 35 4	1026.36	4.35	321.25	195.30	123.91	23 52 10	26.4	17.69	300.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2071	TRA	.3572	TC3	-4.8415	BAU	.5289	SGT	2901.5	SGR	490.5	SG3	1689.8	ST	24.3	SR	11.9	SS	41.4
RDE	-.1073	RRA	.1538	RC3	-.4913	FAU	.26528	RRT	.7952	RRF	.8511	RTF	.9340	CRT	.9879	CRS	-.2811	CST	-.3665
FDE	.2648	FRA	5.0119	FC-28	.2495	BSP	4499	SGB	2942.7	R23	.1660	R13	.9363	LSA	43.0	MSA	24.4	SSA	1.4
BDE	.2333	BRA	.3889	BC3	4.8663	FSP	2919	SG1	2927.9	SG2	294.7	THA	7.74	EL1	27.0	EL2	1.7	ALF	25.99

LAUNCH DATE MAY 18 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 14 1971

HELIOCENTRIC CONIC DISTANCE 494.668 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.201	GAL	.15	AZL	91.26	HCA	158.52	SMA	185.03	ECC	.18223	INC	1.2556	V1	29.445
RP	215.71	LAP	-.46	LOP	34.95	VP	22.655	GAP	4.40	AZP	88.83	TAL	.98	TAP	159.50	RCA	151.31	APO	218.75	V2	25.461
RC	156.143	GL	-14.33	GP	-5.00	ZAL	95.50	ZAP	85.73	ETS	179.03	ZAE	128.47	ETE	184.58	ZAC	96.91	ETC	273.77	LVI	-7.84

PLANETOCENTRIC CONIC

C3	8.136	VHL	2.852	DLA	-24.04	RAL	339.66	RAD	6637.1	VEL	11.325	PTH	6.38	VHP	2.818	DPA	-26.61	RAP	304.42	ECC	1.1339

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 57	2449.85	-4.89	64.30	188.20	137.38	16 32 47	1449.9	13.45	48.44
60.00	17 2 9	2263.16	-.70	51.50	192.22	130.30	17 39 52	1263.2	15.20	33.24
70.00	18 31 47	1999.63	3.58	33.38	195.47	123.99	19 5 6	999.6	17.00	13.14
80.00	20 19 29	1662.56	7.30	10.08	197.75	119.03	20 47 11	662.6	18.58	348.39
90.00	22 0 56	1335.37	8.95	346.90	198.64	116.94	22 23 11	335.4	19.28	324.63
100.00	23 2 21	1137.03	7.30	331.44	197.75	119.03	23 21 18	137.0	18.58	309.75
110.00	23 31 13	1046.45	3.58	322.30	195.47	123.99	23 48 40	46.5	17.00	302.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1950	TRA	.4044	TC3	-5.1088	BAU	.5586	SGT	3072.1	SGR	499.3	SG3	1680.2	ST	24.1	SR	11.3	SS	41.8
RDE	-.0993	RRA	.1578	RC3	-.5230	FAU	.26312	RRT	.8191	RRF	.8712	RTF	.9390	CRT	.9832	CRS	-.2605	CST	-.3840
FDE	.3709	FRA	5.0324	FC-27	.9991	BSP	4797	SGB	3112.4	R23	.1664	R13	.9412	LSA	43.5	MSA	23.8	SSA	1.3
BDE	.2188	BRA	.4341	BC3	5.1355	FSP	2879	SG1	3099.5	SG2	283.9	THA	7.65	EL1	26.5	EL2	1.9	ALF	24.80

LAUNCH DATE MAY 18 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 498.855 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.204 GAL .10 AZL 91.22 HCA 159.69 SMA 185.08 ECC .18246 INC 1.2190 V1 29.445
RP 216.04 LAP -.42 LOP 36.11 VP 22.617 GAP 4.24 AZP 88.86 TAL .65 TAP 160.34 RCA 151.31 APO 218.86 V2 25.424
RC 158.631 GL -13.89 GP -5.26 ZAL 96.08 ZAP 83.92 ETS 178.82 ZAE 126.55 ETE 184.50 ZAC 96.70 ETC 273.61 LVI -7.37

PLANETOCENTRIC CONIC

C3 8.144 VHL 2.854 DLA -23.43 RAL 340.04 RAD 6637.1 VEL 11.325 PTH 6.38 VHP 2.821 DPA -27.01 RAP 303.77 ECC 1.1340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 50 34	2463.39	-5.57	64.87	188.48	137.33	16 31 37	1463.4	12.79	49.04
60.00	16 59 39	2279.66	-1.43	52.29	192.45	130.28	17 37 39	1279.7	14.51	34.09
70.00	18 27 40	2020.92	2.77	34.50	195.64	124.05	19 1 21	1020.9	16.27	14.36
80.00	20 13 6	1690.93	6.36	11.66	197.85	119.23	20 41 17	690.9	17.79	350.12
90.00	21 53 2	1368.60	7.92	348.80	198.70	117.24	22 15 51	368.6	18.45	326.71
100.00	22 55 58	1165.40	6.36	333.03	197.85	119.23	23 15 23	165.4	17.79	311.49
110.00	23 27 6	1067.74	2.77	323.41	195.64	124.05	23 44 54	67.7	16.27	303.27

DIFFERENTIAL CORRECTIONS

TDE -.1822 TRA .4538 TC3-5.3777 BAU .5887
RDE -.0922 RRA .1629 RC3 -.5603 FAU .26185
FDE .4274 FRA 5.0682 FC-27.8340 BSP 5156
BDE .2042 BRA .4821 BC3 5.4069 FSP 2923

MID-COURSE EXECUTION ACCURACY

SGT 3246.7 SGR 513.4 SG3 1675.6
RRT .8419 RRF .8914 RTF .9443
SGB 3287.0 R23 .1679 R13 .9463
SG1 3275.6 SG2 274.6 THA 7.64

ORBIT DETERMINATION ACCURACY

ST 24.0 SR 10.7 SS 42.3
CRT .9767 CRS -.2716 CST -.4323
LSA 44.2 MSA 23.0 SSA 1.3
EL1 26.2 EL2 2.1 ALF 23.65

LAUNCH DATE MAY 18 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 503.042 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.208 GAL .05 AZL 91.18 HCA 160.85 SMA 185.15 ECC .18273 INC 1.1785 V1 29.445
RP 216.39 LAP -.39 LOP 37.27 VP 22.580 GAP 4.08 AZP 88.89 TAL .31 TAP 161.16 RCA 151.32 APO 218.98 V2 25.385
RC 161.134 GL -13.42 GP -5.55 ZAL 96.67 ZAP 82.15 ETS 178.60 ZAE 124.65 ETE 184.43 ZAC 96.45 ETC 273.46 LVI -6.89

PLANETOCENTRIC CONIC

C3 8.156 VHL 2.856 DLA -22.76 RAL 340.42 RAD 6637.1 VEL 11.326 PTH 6.38 VHP 2.826 DPA -27.42 RAP 303.17 ECC 1.1342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 48 58	2478.02	-6.30	65.49	188.76	137.26	16 30 16	1478.0	12.07	49.68
60.00	16 56 54	2297.39	-2.21	53.14	192.68	130.25	17 35 11	1297.4	13.76	35.00
70.00	18 23 14	2043.54	1.91	35.68	195.81	124.11	18 57 18	1043.5	15.49	15.64
80.00	20 6 28	1720.49	5.37	13.30	197.95	119.41	20 35 8	720.5	16.95	351.92
90.00	21 45 0	1402.67	6.85	350.73	198.76	117.50	22 8 22	402.7	17.57	328.83
100.00	22 49 20	1194.96	5.37	334.67	197.95	119.41	23 9 15	195.0	16.95	313.28
110.00	23 22 41	1090.36	1.91	324.59	195.81	124.11	23 40 51	90.4	15.49	304.56

DIFFERENTIAL CORRECTIONS

TDE -.1683 TRA .4969 TC3-5.6718 BAU .6221
RDE -.0851 RRA .1656 RC3 -.6148 FAU .26530
FDE .4724 FRA 4.9793 FC-28.1608 BSP 5324
BDE .1866 BRA .5237 BC3 5.7050 FSP 2723

MID-COURSE EXECUTION ACCURACY

SGT 3431.9 SGR 531.4 SG3 1677.5
RRT .8691 RRF .9102 RTF .9530
SGB 3472.7 R23 .1560 R13 .9546
SG1 3463.0 SG2 260.5 THA 7.71

ORBIT DETERMINATION ACCURACY

ST 23.9 SR 10.1 SS 41.7
CRT .9687 CRS -.2811 CST -.4775
LSA 44.0 MSA 22.0 SSA 1.3
EL1 25.9 EL2 2.3 ALF 22.49

LAUNCH DATE MAY 18 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 507.220 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.212 GAL -.01 AZL 91.13 HCA 162.00 SMA 185.22 ECC .18304 INC 1.1331 V1 29.445
RP 216.73 LAP -.35 LOP 38.43 VP 22.542 GAP 3.93 AZP 88.92 TAL 359.96 TAP 161.96 RCA 151.32 APO 219.12 V2 25.347
RC 163.649 GL -12.88 GP -5.87 ZAL 97.28 ZAP 80.43 ETS 178.35 ZAE 122.79 ETE 184.37 ZAC 96.18 ETC 273.32 LVI -6.38

PLANETOCENTRIC CONIC

C3 8.170 VHL 2.858 DLA -22.04 RAL 340.79 RAD 6637.1 VEL 11.326 PTH 6.38 VHP 2.834 DPA -27.85 RAP 302.60 ECC 1.1345

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 47 7	2493.86	-7.09	66.16	189.03	137.17	16 28 41	1493.9	11.28	50.38
60.00	16 53 49	2316.49	-3.05	54.05	192.90	130.20	17 32 25	1316.5	12.95	35.96
70.00	18 18 27	2067.67	.99	36.94	195.97	124.14	18 52 55	1067.7	14.64	17.00
80.00	19 59 30	1751.45	4.33	15.01	198.05	119.57	20 28 41	751.5	16.05	353.78
90.00	21 36 43	1437.87	5.74	352.72	198.82	117.74	22 0 40	437.9	16.64	330.99
100.00	22 42 21	1225.92	4.33	336.38	198.05	119.57	23 2 47	225.9	16.05	315.14
110.00	23 17 53	1114.49	.99	325.85	195.97	124.14	23 36 28	114.5	14.64	305.91

DIFFERENTIAL CORRECTIONS

TDE -.1227 TRA .5836 TC3-5.7516 BAU .6313
RDE -.0650 RRA .1865 RC3 -.5674 FAU .23197
FDE .9722 FRA 5.5286 FC-24.5804 BSP 6118
BDE .1389 BRA .6126 BC3 5.7795 FSP 3279

MID-COURSE EXECUTION ACCURACY

SGT 3530.4 SGR 533.8 SG3 1602.9
RRT .8531 RRF .9216 RTF .9584
SGB 3570.6 R23 .2390 R13 .9309
SG1 3559.9 SG2 276.2 THA 7.39

ORBIT DETERMINATION ACCURACY

ST 23.1 SR 8.9 SS 50.2
CRT .9577 CRS -.2520 CST -.4691
LSA 51.8 MSA 21.3 SSA 1.3
EL1 24.6 EL2 2.4 ALF 20.46

LAUNCH DATE MAY 18 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 511.406 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.217 GAL -.06 AZL 91.08 HCA 163.16 SMA 185.29 ECC .18338 INC 1.0820 V1 29.445
RP 217.08 LAP -.31 LOP 39.58 VP 22.505 GAP 3.77 AZP 88.96 TAL 359.60 TAP 162.76 RCA 151.31 APO 219.27 V2 25.308
RC 166.178 GL -12.28 GP -6.23 ZAL 97.90 ZAP 78.75 ETS 178.08 ZAE 120.96 ETE 184.32 ZAC 95.85 ETC 273.18 LVI -5.86

PLANETOCENTRIC CONIC

C3 8.187 VHL 2.861 DLA -21.25 RAL 341.15 RAD 6637.1 VEL 11.327 PTH 6.38 VHP 2.843 DPA -28.31 RAP 302.09 ECC 1.1347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 57	2511.11	-7.95	66.89	189.29	137.07	16 26 48	1511.1	10.43	51.13
60.00	16 50 21	2337.16	-3.96	55.04	193.12	130.14	17 29 19	1337.2	12.08	37.00
70.00	18 13 14	2093.53	-.00	38.29	196.12	124.15	18 48 7	1093.5	13.73	18.44
80.00	19 52 6	1784.09	3.24	16.81	198.13	119.70	20 21 50	784.1	15.08	355.72
90.00	21 28 5	1474.53	4.58	354.78	198.87	117.94	21 52 39	474.5	15.65	333.22
100.00	22 34 58	1258.56	3.24	338.18	198.13	119.70	22 55 57	258.6	15.08	317.08
110.00	23 12 40	1140.35	-.00	327.20	196.12	124.15	23 31 41	140.3	13.73	307.36

DIFFERENTIAL CORRECTIONS

TDE -.1112 TRA .6200 TC3-6.1315 BAU .6751
RDE -.0611 RRA .1883 RC3 -.6761 FAU .25039
FDE .8695 FRA 5.3165 FC-26.4787 BSP 6223
BDE .1269 BRA .6479 BC3 6.1687 FSP 2989

MID-COURSE EXECUTION ACCURACY

SGT 3759.6 SGR 573.0 SG3 1646.4
RRT .8929 RRF .9406 RTF .9491
SGB 3803.1 R23 .1982 R13 .9509
SG1 3794.5 SG2 255.6 THA 7.79

ORBIT DETERMINATION ACCURACY

ST 23.5 SR 8.6 SS 47.5
CRT .9492 CRS -.3112 CST -.5666
LSA 49.8 MSA 20.0 SSA 1.2
EL1 24.9 EL2 2.6 ALF 19.47

LAUNCH DATE MAY 18 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 515.585 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.222	GAL	-.12	AZL	91.02	HCA	164.30	SMA	185.38	ECC	.18376	INC	1.0228	V1	29.445
RP	217.43	LAP	-.28	LOP	40.73	VP	22.468	GAP	3.62	AZP	89.01	TAL	359.23	TAP	163.54	RCA	151.31	APO	219.44	V2	25.269
RC	168.717	GL	-11.60	GP	-6.64	ZAL	98.54	ZAP	77.12	ETS	177.79	ZAE	119.16	ETE	184.29	ZAC	95.48	ETC	273.06	LVI	-5.30

PLANETOCENTRIC CONIC

C3	8.205	VHL	2.864	DLA	-20.38	RAL	341.48	RAD	6637.1	VEL	11.328	PTH	6.38	VHP	2.855	DPA	-28.81	RAP	301.62	ECC	1.1350

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 24	2529.98	-8.89	67.70	189.54	136.94	16 24 34	1530.0	9.50	51.94
60.00	16 46 27	2359.67	-4.95	56.13	193.31	130.05	17 25 46	1359.7	11.11	38.13
70.00	18 7 30	2121.42	-1.07	39.74	196.25	124.14	18 42 51	1121.4	12.73	19.98
80.00	19 44 12	1818.75	2.06	18.71	198.20	119.79	20 14 31	818.8	14.03	357.76
90.00	21 18 58	1513.06	3.34	356.94	198.91	118.10	21 44 11	513.1	14.57	335.54
100.00	22 27 4	1293.22	2.06	340.08	198.20	119.79	22 48 37	293.2	14.03	319.12
110.00	23 6 56	1168.24	-1.07	328.66	196.25	124.14	23 26 24	168.2	12.73	308.90

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0877	TRA	.6648	TC3	-6.4110	BAU	.7079	SGT	3941.1	SGR	602.9	SG3	1634.4	ST	23.7	SR	8.2	SS	47.7
RDE	-.0524	RRA	.1955	RC3	-.7372	FAU	.25014	RRT	.9097	RRF	.9534	RTF	.9540	CRT	.9426	CRS	-.3698	CST	-.6337
FDE	.9211	FRA	5.2571	FC	-26.3931	BSP	6493	SGB	3986.9	R23	.1978	R13	.9557	LSA	50.5	MSA	18.7	SSA	1.2
BDE	.1022	BRA	.6929	BC3	6.4532	FSP	2912	SG1	3979.2	SG2	248.0	THA	7.95	EL1	24.9	EL2	2.6	ALF	18.27

LAUNCH DATE MAY 18 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 519.761 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.227	GAL	-.18	AZL	90.96	HCA	165.45	SMA	185.47	ECC	.18416	INC	.9572	V1	29.445
RP	217.79	LAP	-.24	LOP	41.87	VP	22.431	GAP	3.47	AZP	89.07	TAL	358.85	TAP	164.30	RCA	151.31	APO	219.62	V2	25.229
RC	171.268	GL	-10.81	GP	-7.10	ZAL	99.20	ZAP	75.54	ETS	177.46	ZAE	117.39	ETE	184.26	ZAC	95.05	ETC	272.94	LVI	-4.70

PLANETOCENTRIC CONIC

C3	8.225	VHL	2.868	DLA	-19.41	RAL	341.78	RAD	6637.1	VEL	11.329	PTH	6.38	VHP	2.870	DPA	-29.36	RAP	301.21	ECC	1.1354

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 39 24	2550.79	-9.93	68.59	189.77	136.78	16 21 55	1550.8	8.46	52.83
60.00	16 41 59	2384.37	-6.03	57.32	193.49	129.92	17 21 43	1384.4	10.05	39.35
70.00	18 1 7	2151.73	-2.22	41.32	196.36	124.09	18 36 59	1151.7	11.63	21.64
80.00	19 35 38	1855.90	.81	20.75	198.25	119.85	20 6 34	855.9	12.89	359.92
90.00	21 9 14	1553.96	2.03	359.23	198.93	118.21	21 35 8	554.0	13.40	337.97
100.00	22 18 30	1330.37	.81	342.12	198.25	119.85	22 40 41	330.4	12.89	321.29
110.00	23 0 33	1198.55	-2.22	330.24	196.36	124.09	23 20 32	198.5	11.63	310.56

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0533	TRA	.7187	TC3	-6.6481	BAU	.7363	SGT	4107.3	SGR	636.8	SG3	1614.5	ST	24.1	SR	7.8	SS	48.9
RDE	-.0412	RRA	.2064	RC3	-.7944	FAU	.24620	RRT	.9221	RRF	.9641	RTF	.9565	CRT	.9358	CRS	-.4487	CST	-.7131
FDE	1.0276	FRA	5.2581	FC	-25.9136	BSP	6814	SGB	4156.4	R23	.2041	R13	.9583	LSA	52.4	MSA	17.1	SSA	1.2
BDE	.0673	BRA	.7477	BC3	6.6954	FSP	2853	SG1	4149.2	SG2	243.9	THA	8.16	EL1	25.2	EL2	2.6	ALF	16.96

LAUNCH DATE MAY 18 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 28 1971

HELIOCENTRIC CONIC DISTANCE 523.935 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.233	GAL	-.24	AZL	90.88	HCA	166.59	SMA	185.56	ECC	.18461	INC	.8783	V1	29.445
RP	218.15	LAP	-.20	LOP	43.01	VP	22.395	GAP	3.32	AZP	89.15	TAL	358.47	TAP	165.06	RCA	151.31	APO	219.82	V2	25.189
RC	173.829	GL	-9.91	GP	-7.64	ZAL	99.88	ZAP	74.01	ETS	177.08	ZAE	115.65	ETE	184.25	ZAC	94.53	ETC	272.84	LVI	-4.05

PLANETOCENTRIC CONIC

C3	8.248	VHL	2.872	DLA	-18.33	RAL	342.05	RAD	6637.1	VEL	11.330	PTH	6.38	VHP	2.887	DPA	-29.97	RAP	300.86	ECC	1.1357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 35 49	2573.95	-11.07	69.60	189.97	136.57	16 18 43	1574.0	7.31	53.82
60.00	16 36 50	2411.72	-7.22	58.64	193.63	129.76	17 17 1	1411.7	8.87	40.70
70.00	17 53 57	2185.01	-3.49	43.06	196.44	124.00	18 30 22	1185.0	10.41	23.45
80.00	19 26 14	1896.15	-.56	22.96	198.27	119.85	19 57 51	896.1	11.63	2.24
90.00	20 58 41	1597.92	.61	1.68	198.92	118.27	21 25 19	597.9	12.12	340.56
100.00	22 9 6	1370.62	-.56	344.33	198.27	119.85	22 31 57	370.6	11.63	323.61
110.00	22 53 23	1231.83	-3.49	331.98	196.44	124.00	23 13 55	231.8	10.41	312.36

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0165	TRA	.7703	TC3	-6.6944	BAU	.7661	SGT	4278.2	SGR	678.3	SG3	1593.6	ST	25.1	SR	7.5	SS	50.4
RDE	-.0288	RRA	.2195	RC3	-.8598	FAU	.24201	RRT	.9520	RRF	.9731	RTF	.9580	CRT	.9391	CRS	-.5501	CST	-.7838
FDE	1.1380	FRA	5.2586	FC	-25.4032	BSP	7107	SGB	4331.7	R23	.2135	R13	.9598	LSA	54.6	MSA	15.5	SSA	1.2
BDE	.0332	BRA	.8009	BC3	6.9478	FSP	2805	SG1	4324.8	SG2	243.3	THA	8.43	EL1	26.0	EL2	2.5	ALF	15.91

LAUNCH DATE MAY 18 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 30 1971

HELIOCENTRIC CONIC DISTANCE 528.106 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.239	GAL	-.30	AZL	90.79	HCA	167.73	SMA	185.66	ECC	.18508	INC	.7866	V1	29.445
RP	218.51	LAP	-.17	LOP	44.15	VP	22.359	GAP	3.17	AZP	89.23	TAL	358.08	TAP	165.80	RCA	151.30	APO	220.03	V2	25.149
RC	176.400	GL	-8.86	GP	-8.27	ZAL	100.57	ZAP	72.53	ETS	176.65	ZAE	113.94	ETE	184.25	ZAC	93.93	ETC	272.74	LVI	-3.32

PLANETOCENTRIC CONIC

C3	8.272	VHL	2.876	DLA	-17.10	RAL	342.26	RAD	6637.1	VEL	11.331	PTH	6.38	VHP	2.906	DPA	-30.66	RAP	300.57	ECC	1.1361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 30	2600.06	-12.36	70.74	190.14	136.32	16 14 51	1600.1	6.00	54.93
60.00	16 30 48	2442.38	-8.55	60.14	193.74	129.54	17 11 30	1442.4	7.54	42.19
70.00	17 45 46	2221.99	-4.90	45.00	196.49	123.84	18 22 48	1222.0	9.04	25.44
80.00	19 15 46	1940.32	-2.05	25.39	198.25	119.79	19 48 6	940.3	10.22	4.76
90.00	20 47 3	1645.81	-.93	4.35	198.88	118.27	21 14 29	645.8	10.68	343.35
100.00	21 58 38	1414.80	-2.05	346.76	198.25	119.79	22 22 12	414.8	10.22	326.13
110.00	22 45 13	1268.81	-4.90	333.92	196.49	123.84	23 6 21	268.8	9.04	314.36

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0300	TRA	.8197	TC3	-7.1417	BAU	.7966	SGT	4449.6	SGR	729.6	SG3	1573.2	ST	26.5	SR	7.5	SS	52.2
RDE	-.0142	RRA	.2343	RC3	-.9410	FAU	.23872	RRT	.9415	RRF	.9805	RTF	.9602	CRT	.9471	CRS	-.6642	CST	-.8522
FDE	1.2709	FRA	5.2249	FC	-24.9840	BSP	7440	SGB	4509.0	R23	.2190	R13	.9621	LSA	57.4	MSA	13.6	SSA	1.2
BDE	.0332	BRA	.8526	BC3	7.2034	FSP	2774	SG1	4502.4	SG2	243.1	THA	8.80	EL1	27.5	EL2	2.3	ALF	15.11

LAUNCH DATE MAY 18 1971 FLIGHT TIME 228.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC DISTANCE 532.273 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.245	GAL	-.36	AZL	90.68	HCA	168.86	SMA	185.77	ECC	.18558	INC	.6764	V1	29.445
RP	218.88	LAP	-.13	LOP	45.28	VP	22.322	GAP	3.02	AZP	89.34	TAL	357.68	TAP	166.54	RCA	151.30	APO	220.25	V2	25.109
RC	178.981	GL	-7.60	GP	-9.03	ZAL	101.27	ZAP	71.11	ETS	176.14	ZAE	112.27	ETE	184.27	ZAC	93.20	ETC	272.65	LVI	-2.50

PLANETOCENTRIC CONIC

C3	8.299	VHL	2.881	DLA	-15.69	RAL	342.40	RAD	6637.2	VEL	11.332	PTH	6.38	VHP	2.928	DPA	-31.47	RAP	300.36	ECC	1.1366

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 26 15	2629.93	-13.83	72.06	190.27	135.99	16 10 5	1629.9	4.51	56.19
60.00	16 23 39	2477.29	-10.06	61.85	193.81	129.23	17 4 56	1477.3	6.02	43.89
70.00	17 36 18	2263.73	-6.47	47.20	196.49	123.61	18 14 2	1263.7	7.48	27.66
80.00	19 3 53	1989.61	-3.72	28.10	198.19	119.65	19 37 2	989.6	8.62	7.55
90.00	20 34 0	1698.89	-2.64	7.32	198.79	118.17	21 2 19	698.9	9.06	346.41
100.00	21 46 44	1464.08	-3.72	349.47	198.19	119.65	22 11 8	464.1	8.62	328.91
110.00	22 35 44	1310.55	-6.47	336.12	196.49	123.61	22 57 35	310.5	7.48	316.58

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0846	TRA	.8709	TC3	-7.3771	BAU	.8264	SGT	4618.5	SGR	792.6	SG3	1549.4	ST	29.0	SR	7.9	SS	54.4
RDE	.0028	RRA	.2536	RC3	-1.0321	FAU	.23406	RRT	.9483	RRF	.9864	RTF	.9614	CRT	.9598	CRS	-.7800	CST	-.9107
FDE	1.4100	FRA	5.2089	FC	-24.4176	BSP	7749	SGB	4686.0	R23	.2270	R13	.9634	LSA	61.0	MSA	11.5	SSA	1.2
BDE	.0846	BRA	.9071	BC3	7.4489	FSP	2721	SG1	4679.4	SG2	248.3	THA	9.27	EL1	30.0	EL2	2.1	ALF	14.77

LAUNCH DATE MAY 18 1971 FLIGHT TIME 230.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC DISTANCE 536.437 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.252	GAL	-.43	AZL	90.54	HCA	169.99	SMA	185.88	ECC	.18611	INC	.5380	V1	29.445
RP	219.25	LAP	-.09	LOP	46.41	VP	22.287	GAP	2.87	AZP	89.47	TAL	357.27	TAP	167.26	RCA	151.29	APO	220.48	V2	25.068
RC	181.572	GL	-6.08	GP	-9.94	ZAL	101.99	ZAP	69.76	ETS	175.54	ZAE	110.61	ETE	184.32	ZAC	92.30	ETC	272.58	LVI	-1.54

PLANETOCENTRIC CONIC

C3	8.330	VHL	2.886	DLA	-14.02	RAL	342.45	RAD	6637.2	VEL	11.333	PTH	6.39	VHP	2.954	DPA	-32.42	RAP	300.22	ECC	1.1371

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 19 45	2664.78	-15.53	73.63	190.35	135.56	16 4 10	1664.8	2.76	57.65
60.00	16 15 1	2517.80	-11.80	63.86	193.83	128.82	16 56 59	1517.8	4.25	45.84
70.00	17 25 6	2311.77	-8.28	49.76	196.43	123.25	18 3 38	1311.8	5.67	30.21
80.00	18 50 6	2045.72	-5.60	31.20	198.07	119.38	19 24 12	1045.7	6.77	10.68
90.00	20 19 0	1758.94	-4.56	10.68	198.64	117.94	20 48 19	758.9	7.20	349.83
100.00	21 32 58	1520.19	-5.60	352.57	198.07	119.38	21 58 18	520.2	6.77	332.05
110.00	22 24 33	1358.58	-8.28	338.67	196.43	123.25	22 47 11	358.6	5.67	319.12

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1447	TRA	.9114	TC3	-7.6247	BAU	.8586	SGT	4788.7	SGR	868.2	SG3	1518.2	ST	32.1	SR	8.8	SS	56.3
RDE	.0222	RRA	.2751	RC3	-1.1424	FAU	.22921	RRT	.9537	RRF	.9908	RTF	.9625	CRT	.9723	CRS	-.8711	CST	-.9510
FDE	1.9423	FRA	5.1331	FC	-23.8218	BSP	7986	SGB	4866.7	R23	.2336	R13	.9646	LSA	64.7	MSA	9.4	SSA	1.3
BDE	.1464	BRA	.9520	BC3	7.7098	FSP	2642	SG1	4859.9	SG2	257.3	THA	9.84	EL1	33.2	EL2	2.0	ALF	14.94

LAUNCH DATE MAY 18 1971 FLIGHT TIME 232.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 540.599 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.259	GAL	-.49	AZL	90.38	HCA	171.12	SMA	186.00	ECC	.18667	INC	.3742	V1	29.445
RP	219.62	LAP	-.06	LOP	47.54	VP	22.251	GAP	2.72	AZP	89.63	TAL	356.86	TAP	167.98	RCA	151.28	APO	220.72	V2	25.028
RC	184.172	GL	-4.20	GP	-11.07	ZAL	102.71	ZAP	68.48	ETS	174.81	ZAE	108.98	ETE	184.39	ZAC	91.19	ETC	272.51	LVI	-.39

PLANETOCENTRIC CONIC

C3	8.369	VHL	2.893	DLA	-12.02	RAL	342.37	RAD	6637.2	VEL	11.335	PTH	6.39	VHP	2.985	DPA	-33.58	RAP	300.18	ECC	1.1377

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 33	2706.41	-17.54	75.53	190.38	134.97	15 56 39	1706.4	.67	59.39
60.00	16 4 22	2565.93	-13.84	66.29	193.79	128.24	16 47 8	1565.9	2.13	48.14
70.00	17 11 34	2368.37	-10.38	52.79	196.31	122.72	17 51 3	1368.4	3.53	33.18
80.00	18 33 45	2111.15	-7.77	34.84	197.89	118.92	19 8 56	1111.1	4.59	14.31
90.00	20 1 20	1828.58	-6.77	14.61	198.43	117.52	20 31 48	828.6	5.00	353.76
100.00	21 16 36	1585.62	-7.77	356.21	197.89	118.92	21 43 2	585.6	4.59	335.68
110.00	22 11 1	1415.18	-10.38	341.71	196.31	122.72	22 34 38	415.2	3.53	322.10

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2261	TRA	.9544	TC3	-7.8463	BAU	.8896	SGT	4954.3	SGR	967.4	SG3	1489.0	ST	37.3	SR	10.2	SS	58.3
RDE	.0452	RRA	.3011	RC3	-1.2891	FAU	.22582	RRT	.9606	RRF	.9942	RTF	.9661	CRT	.9774	CRS	-.9325	CST	-.9817
FDE	1.6714	FRA	5.0208	FC	-23.3605	BSP	8271	SGB	5047.8	R23	.2282	R13	.9684	LSA	69.6	MSA	6.6	SSA	1.4
BDE	.2306	BRA	1.0008	BC3	7.9515	FSP	2520	SG1	5040.9	SG2	264.2	THA	10.65	EL1	38.6	EL2	2.1	ALF	15.09

LAUNCH DATE MAY 18 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 544.756 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.266	GAL	-.56	AZL	90.16	HCA	172.24	SMA	186.12	ECC	.18726	INC	.1462	V1	29.445
RP	219.99	LAP	-.02	LOP	48.66	VP	22.215	GAP	2.58	AZP	89.84	TAL	356.44	TAP	168.60	RCA	151.27	APO	220.97	V2	24.987
RC	186.781	GL	-1.80	GP	-12.51	ZAL	103.44	ZAP	67.30	ETS	173.90	ZAE	107.38	ETE	184.51	ZAC	89.77	ETC	272.45	LVI	1.02

PLANETOCENTRIC CONIC

C3	8.424	VHL	2.902	DLA	-9.54	RAL	342.10	RAD	6637.2	VEL	11.337	PTH	6.39	VHP	3.022	DPA	-35.03	RAP	300.27	ECC	1.1386

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 0 57	2757.84	-20.00	77.95	190.36	134.12	15 46 55	1757.8	-1.92	61.53
60.00	15 50 53	2625.06	-16.31	69.34	193.70	127.38	16 34 38	1625.1	-.47	50.97
70.00	16 54 44	2437.33	-12.89	56.56	196.14	121.91	17 35 21	1437.3	.90	36.78
80.00	18 13 43	2190.10	-10.34	39.29	197.65	118.17	18 50 13	1190.1	1.93	18.66
90.00	19 39 50	1912.20	-9.37	19.37	198.16	116.80	20 11 43	912.2	2.32	358.45
100.00	20 56 34	1664.57	-10.34	.66	197.65	118.17	21 24 19	664.6	1.93	340.03
110.00	21 54 10	1484.15	-12.89	345.47	196.14	121.91	22 18 54	484.1	.90	325.70

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3261	TRA	.9884	TC3	-8.0496	BAU	.9211	SGT	5114.9	SGR	1088.8	SG3	1446.0	ST	44.3	SR	12.8	SS	61.9
RDE	.0785	RRA	.3366	RC3	-1.4489	FAU	.21820	RRT	.9630	RRF	.9965	RTF	.9660	CRT	.9837	CRS	-.9710	CST	-.9947
FDE	1.8694	FRA	4.9206	FC	-22.4245	BSP	8576	SGB	5229.5	R23	.2349	R13	.9687	LSA	77.1	MSA	4.2	SSA	1.8
BDE	.3354	BRA	1.0441	BC3	8.1789	FSP	2465	SG1	5221.6	SG2	287.5	THA	11.62	EL1	46.1	EL2	2.2	ALF	15.89

LAUNCH DATE MAY 16 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 548.908 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	238.42	VL	32.274	GAL	-.63	AZL	89.88	HCA	173.36	SMA	186.25	ECC	.18787	INC	.0839	V1	29.445
RP	220.36	LAP	.01	LOP	49.78	VP	22.180	GAP	2.43	AZP	90.12	TAL	356.01	TAP	169.37	RCA	151.26	APO	221.24	V2	24.946
RC	189.399	GL	1.36	GP	-14.39	ZAL	104.15	ZAP	66.25	ETS	172.73	ZAE	105.77	ETE	184.69	ZAC	87.90	ETC	272.41	LVI	2.83

PLANETOCENTRIC CONIC

C3	8.515	VHL	2.918	DLA	-6.34	RAL	341.55	RAD	6637.3	VEL	11.341	PTH	6.39	VHP	3.069	DPA	-36.90	RAP	300.52	ECC	1.1401

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 46 48	2823.95	-23.10	81.19	190.32	132.83	15 33 52	1824.0	-5.23	64.31
60.00	15 33 10	2700.64	-19.38	73.35	193.60	126.05	16 16 11	1700.6	-3.79	54.58
70.00	16 32 59	2524.78	-15.98	61.45	195.95	120.60	17 15 4	1524.8	-2.45	41.35
80.00	17 48 11	2289.32	-13.47	45.00	197.37	116.90	18 26 21	1289.3	-1.44	24.11
90.00	19 12 39	2016.82	-12.52	25.45	197.85	115.57	19 46 16	1016.8	-1.05	4.28
100.00	20 31 3	1763.80	-13.47	6.37	197.37	116.90	21 0 27	763.8	-1.44	345.47
110.00	21 32 25	1571.59	-15.98	350.36	195.95	120.60	21 58 37	571.6	-2.45	330.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4606	TRA	1.0113	TC3	-8.2282	BAU	.9555	SGT	5279.1	SGR	1251.8	SG3	1397.5	ST	54.7	SR	16.8	SS	66.7
RDE	.1258	RRA	.3819	RC3	-1.6583	FAU	.21038	RRT	.9652	RRF	.9980	RTF	.9662	CRT	.9869	CRS	-.9896	CST	-.9983
FDE	2.1131	FRA	4.7640	FC	-21.3899	BSP	8873	SGB	5425.5	R23	.2373	R13	.9695	LSA	87.9	MSA	2.8	SSA	2.1
BDE	.4775	BRA	1.0810	BC3	8.3937	FSP	2381	SG1	5416.1	SG2	319.1	THA	12.94	EL1	57.2	EL2	2.6	ALF	16.90

LAUNCH DATE MAY 18 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 553.056 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.281	GAL	-.70	AZL	89.48	HCA	174.47	SMA	186.38	ECC	.18851	INC	.5060	V1	29.445
RP	220.74	LAP	.05	LOP	50.89	VP	22.145	GAP	2.29	AZP	90.52	TAL	355.58	TAP	170.05	RCA	151.24	APO	221.51	V2	24.904
RC	192.025	GL	5.72	GP	-16.95	ZAL	104.80	ZAP	65.41	ETS	171.18	ZAE	104.17	ETE	184.95	ZAC	85.34	ETC	272.38	LVI	5.26

PLANETOCENTRIC CONIC

C3	8.688	VHL	2.948	DLA	-2.04	RAL	340.58	RAD	6637.4	VEL	11.349	PTH	6.40	VHP	3.135	DPA	-39.44	RAP	301.05	ECC	1.1430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 27 5	2913.62	-27.16	85.84	190.41	130.69	15 15 38	1913.6	-9.71	68.12
60.00	15 8 49	2802.59	-23.36	79.04	193.60	123.82	15 55 32	1802.6	-8.25	59.51
70.00	16 3 28	2641.91	-19.91	68.25	195.84	118.34	16 47 29	1641.9	-6.89	47.50
80.00	17 13 56	2421.26	-17.38	52.84	197.17	114.67	17 54 17	1421.3	-5.88	31.38
90.00	18 36 19	2155.44	-16.43	33.74	197.61	113.34	19 12 14	1155.4	-5.49	12.05
100.00	19 56 48	1895.73	-17.38	14.21	197.17	114.67	20 28 23	895.7	-5.88	352.75
110.00	21 2 54	1688.73	-19.91	357.17	195.84	118.34	21 31 3	688.7	-6.89	336.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6458	TRA	1.0134	TC3	-8.3412	BAU	.9943	SGT	5444.3	SGR	1473.6	SG3	1333.2	ST	69.8	SR	23.2	SS	72.9
RDE	.1975	RRA	.4410	RC3	-1.9253	FAU	.20053	RRT	.9665	RRF	.9990	RTF	.9659	CRT	.9883	CRS	-.9970	CST	-.9965
FDE	2.4072	FRA	4.5250	FC	-19.9819	BSP	9136	SGB	5640.2	R23	.2385	R13	.9701	LSA	103.4	MSA	4.8	SSA	.9
BDE	.6753	BRA	1.1052	BC3	8.5605	FSP	2259	SG1	5628.3	SG2	365.9	THA	14.72	EL1	73.4	EL2	3.4	ALF	18.21

LAUNCH DATE MAY 18 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 557.199 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.289	GAL	-.77	AZL	88.88	HCA	175.58	SMA	186.51	ECC	.18917	INC	1.1058	V1	29.445
RP	221.12	LAP	.09	LOP	52.00	VP	22.109	GAP	2.15	AZP	91.11	TAL	355.15	TAP	170.73	RCA	151.23	APO	221.79	V2	24.863
RC	194.659	GL	12.05	GP	-20.64	ZAL	105.26	ZAP	64.92	ETS	169.02	ZAE	102.52	ETE	185.34	ZAC	81.66	ETC	272.37	LVI	8.71

PLANETOCENTRIC CONIC

C3	9.075	VHL	3.012	DLA	4.11	RAL	338.86	RAD	6637.6	VEL	11.366	PTH	6.42	VHP	3.237	DPA	-43.05	RAP	302.03	ECC	1.1493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 57 47	3044.30	-32.73	93.31	191.08	126.68	14 48 32	2044.3	-16.12	73.90
60.00	14 33 0	2950.60	-28.67	87.96	194.16	119.63	15 22 11	1950.6	-14.57	66.90
70.00	15 20 23	2811.25	-25.01	78.74	196.23	114.05	16 7 14	1811.3	-13.13	56.65
80.00	16 24 15	2611.26	-22.35	64.75	197.42	110.33	17 7 46	1611.3	-12.05	42.10
90.00	17 43 45	2354.71	-21.35	46.28	197.80	108.99	18 22 59	1354.7	-11.65	23.45
100.00	19 7 6	2085.73	-22.35	26.12	197.42	110.33	19 41 52	1085.7	-12.05	3.47
110.00	20 19 49	1858.07	-25.01	7.66	196.23	114.05	20 50 47	858.1	-13.13	345.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9264	TRA	.9833	TC3	-8.2634	BAU	1.0392	SGT	5604.2	SGR	1787.6	SG3	1239.1	ST	92.8	SR	33.9	SS	81.0
RDE	.3191	RRA	.5197	RC3	-2.2546	FAU	.18679	RRT	.9673	RRF	.9995	RTF	.9653	CRT	.9891	CRS	-.9994	CST	-.9933
FDE	2.7747	FRA	4.1480	FC	-17.8199	BSP	9421	SGB	5882.4	R23	.2373	R13	.9710	LSA	127.5	MSA	7.7	SSA	.4
BDE	.9798	BRA	1.1122	BC3	8.5655	FSP	2084	SG1	5866.4	SG2	433.2	THA	17.24	EL1	98.7	EL2	4.7	ALF	19.89

LAUNCH DATE MAY 18 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 561.337 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.297	GAL	-.84	AZL	87.90	HCA	176.68	SMA	186.65	ECC	.18985	INC	2.1003	V1	29.445
RP	221.50	LAP	.12	LOP	53.11	VP	22.075	GAP	2.00	AZP	92.10	TAL	354.71	TAP	171.39	RCA	151.21	APO	222.08	V2	24.821
RC	197.299	GL	21.91	GP	-26.31	ZAL	105.21	ZAP	65.18	ETS	165.92	ZAE	100.79	ETE	185.97	ZAC	75.99	ETC	272.43	LVI	13.93

PLANETOCENTRIC CONIC

C3	10.106	VHL	3.179	DLA	13.50	RAL	335.74	RAD	6638.1	VEL	11.411	PTH	6.46	VHP	3.426	DPA	-48.55	RAP	304.02	ECC	1.1663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 9 48	3254.50	-40.40	107.52	194.13	117.64	14 4 2	2254.5	-25.99	84.16
60.00	13 34 20	3189.18	-35.59	104.35	196.85	110.31	14 27 29	2189.2	-24.09	79.88
70.00	14 9 30	3085.70	-31.26	97.60	198.48	104.53	15 0 56	2085.7	-22.31	72.61
80.00	15 1 50	2921.72	-28.07	85.98	199.29	100.62	15 50 32	1921.7	-20.96	60.83
90.00	16 16 10	2681.82	-26.86	68.59	199.53	99.19	17 0 52	1681.8	-20.44	43.41
100.00	17 44 42	2396.19	-28.07	47.35	199.29	100.62	18 24 38	1396.2	-20.96	22.19
110.00	19 8 56	2132.52	-31.26	26.52	198.48	104.53	19 44 29	1132.5	-22.31	1.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4271	TRA	.9043	TC3	-7.6329	BAU	1.0882	SGT	5742.5	SGR	2253.0	SG3	1084.4	ST	131.2	SR	54.2	SS	92.3
RDE	.5692	RRA	.6271	RC3	-2.5714	FAU	.16373	RRT	.9677	RRF	.9997	RTF	.9640	CRT	.9909	CRS	-1.0000	CST	-.9917
FDE	3.2809	FRA	3.5392	FC	-14.0263	BSP	9975	SGB	6168.6	R23	.2331	R13	.9723	LSA	169.0	MSA	10.8	SSA	.1
BDE	1.5364	BRA	1.1004	BC3	8.0543	FSP	1834	SG1	6145.8	SG2	530.3	THA	20.95	EL1	141.8	EL2	6.7	ALF	22.32

LAUNCH DATE MAY 18 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC — DISTANCE 565.468 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.306 GAL -.92 AZL 85.93 HCA 177.78 SMA 186.79 ECC .19056 INC 4.0586 V1 29.445
RP 221.88 LAP .18 LOP 54.21 VP 22.040 GAP 1.86 AZP 94.07 TAL 354.27 TAP 172.05 RCA 151.19 APO 222.38 V2 24.780
RC 199.945 GL 38.21 GP -35.75 ZAL 103.66 ZAP 67.21 ETS 161.46 ZAE 98.89 ETE 187.10 ZAC 66.55 ETC 272.66 LVI 22.49

PLANETOCENTRIC CONIC

C3 13.733 VHL 3.706 DLA 28.74 RAL 329.44 RAD 6639.9 VEL 11.567 PTH 6.61 VHP 3.882 DPA -57.53 RAP 308.94 ECC 1.2260

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	11 35 15	3644.89	-47.54	141.84	206.38	92.20	12 36 0	2644.9	-41.12	109.00
60.00	11 34 7	3647.92	-40.09	141.90	206.17	85.47	12 34 54	2647.9	-37.53	111.07
70.00	11 31 56	3654.34	-32.61	141.18	204.93	79.25	12 32 50	2654.3	-33.70	112.49
80.00	11 25 0	3676.13	-24.89	140.64	202.75	72.95	12 26 17	2676.1	-29.59	114.21
84.68	10 53 26	3777.84	-19.02	145.89	200.51	68.04	11 56 24	2777.8	-26.41	121.19
100.00	14 7 52	3150.60	-24.89	102.01	202.75	72.95	15 0 23	2150.6	-29.59	75.58
110.00	16 31 22	2701.16	-32.61	70.09	204.93	79.25	17 16 23	1701.2	-33.70	41.41

DIFFERENTIAL CORRECTIONS

TDE 2.3569 TRA .5586 TC3-6.1109 BAU 1.2280
RDE 1.1635 RRA .6896 RC3-2.7196 FAU .13064
FDE 3.6435 FRA 2.2614 FC3-8.2359 BSP 9402
BDE 2.6284 BRA .8875 BC3 6.6887 FSP 1225

MID-COURSE EXECUTION ACCURACY

SGT 5895.9 SGR 2962.7 SG3 796.1
RRT .9665 RRF .9996 RTF .9591
SGB 6598.4 R23 .2335 R13 .9723
SG1 6563.0 SG2 683.4 THA 26.21

ORBIT DETERMINATION ACCURACY

ST 182.9 SR 91.8 SS 96.6
CRT .9929 CRS-1.0000 CST -.9918
LSA 225.9 MSA 13.4 SSA .1
EL1 204.4 EL2 9.8 ALF 26.56

LAUNCH DATE MAY 18 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC — DISTANCE 569.581 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.314 GAL -.99 AZL 80.18 HCA 178.87 SMA 186.93 ECC .19129 INC 9.8008 V1 29.445
RP 222.27 LAP .19 LOP 55.31 VP 22.005 GAP 1.72 AZP 99.82 TAL 353.84 TAP 172.71 RCA 151.18 APO 222.69 V2 24.738
RC 202.595 GL 65.06 GP -52.04 ZAL 98.66 ZAP 73.85 ETS 157.10 ZAE 97.14 ETE 190.21 ZAC 50.16 ETC 273.93 LVI 36.55

PLANETOCENTRIC CONIC

C3 36.967 VHL 6.080 DLA 52.67 RAL 312.73 RAD 6649.6 VEL 12.524 PTH 7.40 VHP 5.640 DPA -71.53 RAP 329.66 ECC 1.6084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.52	6 8 44	4657.22	-20.74	219.03	205.95	40.42	7 26 21	3657.2	-38.45	199.80
43.52	6 8 44	4657.22	-20.74	219.03	205.95	40.42	7 26 21	3657.2	-38.45	199.80
43.52	6 8 44	4657.22	-20.74	219.03	205.95	40.42	7 26 21	3657.2	-38.45	199.80
43.52	6 8 44	4657.22	-20.74	219.03	205.95	40.42	7 26 21	3657.2	-38.45	199.80
43.52	6 8 44	4657.22	-20.74	219.03	205.95	40.42	7 26 21	3657.2	-38.45	199.80
43.52	6 8 44	4657.22	-20.74	219.03	205.95	40.42	7 26 21	3657.2	-38.45	199.80
43.52	6 8 44	4657.22	-20.74	219.03	205.95	40.42	7 26 21	3657.2	-38.45	199.80

DIFFERENTIAL CORRECTIONS

TDE 4.7758 TRA -.8715 TC3-3.0746 BAU 1.8220
RDE 3.3722 RRA .0875 RC3-2.0342 FAU .06752
FDE 2.6908 FRA .2526 FC3-1.5813 BSP 2646
BDE 5.8464 BRA .8759 BC3 3.6867 FSP 174

MID-COURSE EXECUTION ACCURACY

SGT 6005.6 SGR 4029.4 SG3 277.0
RRT .9656 RRF .9960 RTF .9384
SGB 7232.1 R23 .2669 R13 .9632
SG1 7178.8 SG2 876.8 THA 33.50

ORBIT DETERMINATION ACCURACY

ST 226.0 SR 159.0 SS 61.9
CRT .9947 CRS -.9994 CST -.9907
LSA 282.8 MSA 14.7 SSA .0
EL1 276.0 EL2 13.4 ALF 35.07

LAUNCH DATE MAY 18 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC — DISTANCE 582.004 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.340 GAL -1.23 AZL 97.83 HCA 182.18 SMA 187.38 ECC .19363 INC 7.8295 V1 29.445
RP 223.42 LAP .30 LOP 58.58 VP 21.903 GAP 1.30 AZP 82.17 TAL 352.39 TAP 174.58 RCA 151.10 APO 223.67 V2 24.612
RC 210.566 GL -57.62 GP 35.21 ZAL 101.65 ZAP 63.85 ETS 199.39 ZAE 96.33 ETE 176.17 ZAC 137.35 ETC 274.06 LVI -42.90

PLANETOCENTRIC CONIC

C3 27.232 VHL 5.218 DLA -54.79 RAL 24.44 RAD 6645.9 VEL 12.132 PTH 7.10 VHP 3.971 DPA 12.10 RAP 292.32 ECC 1.4482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.90	22 45 8	1953.23	25.40	49.45	274.85	140.34	23 17 41	953.2	43.05	29.04
40.90	22 45 8	1953.23	25.40	49.45	274.85	140.34	23 17 41	953.2	43.05	29.04
40.90	22 45 8	1953.23	25.40	49.45	274.85	140.34	23 17 41	953.2	43.05	29.04
40.90	22 45 8	1953.23	25.40	49.45	274.85	140.34	23 17 41	953.2	43.05	29.04
40.90	22 45 8	1953.23	25.40	49.45	274.85	140.34	23 17 41	953.2	43.05	29.04
40.90	22 45 8	1953.23	25.40	49.45	274.85	140.34	23 17 41	953.2	43.05	29.04
40.90	22 45 8	1953.23	25.40	49.45	274.85	140.34	23 17 41	953.2	43.05	29.04

DIFFERENTIAL CORRECTIONS

TDE -.7647 TRA 2.6602 TC3-3.5258 BAU 1.3918
RDE -.2724 RRA-1.3521 RC3 1.4774 FAU .12847
FDE 1.2196 FRA 3.7736 FC3-4.0842 BSP 10651
BDE .8117 BRA 2.9841 BC3 3.8228 FSP 1230

MID-COURSE EXECUTION ACCURACY

SGT 6317.0 SGR 3015.9 SG3 731.1
RRT -.9692 RRF -.9982 RTF .9534
SGB 7000.0 R23 .2578 R13 -.9660
SG1 6967.5 SG2 673.5 THA 154.92

ORBIT DETERMINATION ACCURACY

ST 87.0 SR 41.5 SS 43.6
CRT -.6429 CRS .9827 CST -.4899
LSA 95.6 MSA 45.2 SSA .1
EL1 91.5 EL2 30.2 ALF 160.78

LAUNCH DATE MAY 18 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC — DISTANCE 586.111 — EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.349 GAL -1.31 AZL 95.84 HCA 183.26 SMA 187.54 ECC .19444 INC 5.8385 V1 29.445
RP 223.81 LAP .33 LOP 59.67 VP 21.869 GAP 1.16 AZP 84.17 TAL 351.94 TAP 175.20 RCA 151.07 APO 224.00 V2 24.571
RC 213.227 GL -48.20 GP 25.45 ZAL 104.40 ZAP 59.44 ETS 195.51 ZAE 95.06 ETE 178.15 ZAC 127.65 ETC 273.26 LVI -34.03

PLANETOCENTRIC CONIC

C3 19.493 VHL 4.415 DLA -47.52 RAL 14.84 RAD 6642.6 VEL 11.811 PTH 6.83 VHP 3.959 DPA 2.39 RAP 293.44 ECC 1.3208

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	22 21 36	1839.99	24.97	37.17	256.20	131.91	22 52 16	840.0	39.68	14.30
50.07	22 35 30	1805.44	26.48	35.31	257.68	131.02	23 5 36	805.4	40.73	11.68
50.07	22 35 30	1805.44	26.48	35.31	257.68	131.02	23 5 36	805.4	40.73	11.68
50.07	22 35 30	1805.44	26.48	35.31	257.68	131.02	23 5 36	805.4	40.73	11.68
50.07	22 35 30	1805.44	26.48	35.31	257.68	131.02	23 5 36	805.4	40.73	11.68
50.07	22 35 30	1805.44	26.48	35.31	257.68	131.02	23 5 36	805.4	40.73	11.68
50.07	22 35 30	1805.44	26.48	35.31	257.68	131.02	23 5 36	805.4	40.73	11.68

DIFFERENTIAL CORRECTIONS

TDE -.8428 TRA 2.5532 TC3-4.7774 BAU 1.2980
RDE -.0536 RRA -.9819 RC3 1.4087 FAU .15478
FDE .7306 FRA 4.8174 FC3-6.8734 BSP 11169
BDE .8445 BRA 2.7355 BC3 4.9808 FSP 1675

MID-COURSE EXECUTION ACCURACY

SGT 6562.6 SGR 2261.1 SG3 960.0
RRT -.9724 RRF -.9985 RTF .9599
SGB 6941.2 R23 .2555 R13 -.9664
SG1 6923.2 SG2 499.7 THA 161.38

ORBIT DETERMINATION ACCURACY

ST 91.9 SR 28.6 SS 45.2
CRT -.7252 CRS .9788 CST -.5688
LSA 98.8 MSA 39.2 SSA .1
EL1 94.3 EL2 19.2 ALF 166.74

LAUNCH DATE MAY 18 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 29 1972

HELIOCENTRIC CONIC DISTANCE 590.218 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.359	GAL	-1.39	AZL	94.84	HCA	184.34	SMA	187.69	ECC	.19528	INC	4.8405
RP	224.20	LAP	.37	LOP	60.75	VP	21.836	GAP	1.01	AZP	85.17	TAL	351.47	TAP	175.81	RCA	151.04	APO	224.35
RC	215.890	GL	-42.16	GP	19.63	ZAL	106.33	ZAP	56.87	ETS	192.67	ZAE	93.78	ETE	179.17	ZAC	121.85	ETC	272.98

V1	29.445	V2	24.529	LVI	-28.70														

PLANETOCENTRIC CONIC

C3	16.553	VHL	4.069	DLA	-42.34	RAL	10.43	RAD	6641.3	VEL	11.687	PTH	6.72	VHP	3.419	DPA	-3.38	RAP	294.26

ECC	1.2724																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 3 40	2122.59	11.48	50.48	236.11	136.50	20 39 2	1122.6	28.74	32.36
57.07	22 44 34	1697.82	25.53	24.60	248.80	125.00	23 12 52	697.8	37.55	359.97
57.07	22 44 34	1697.82	25.53	24.60	248.80	125.00	23 12 52	697.8	37.55	359.97
57.07	22 44 34	1697.82	25.53	24.60	248.80	125.00	23 12 52	697.8	37.55	359.97
57.07	22 44 34	1697.82	25.53	24.60	248.80	125.00	23 12 52	697.8	37.55	359.97
57.07	22 44 34	1697.82	25.53	24.60	248.80	125.00	23 12 52	697.8	37.55	359.97
57.07	22 44 34	1697.82	25.53	24.60	248.80	125.00	23 12 52	697.8	37.55	359.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7434	TRA	2.5218	TC3	-5.6460	BAU	1.2802	SGT	6729.5	SGR	1779.2	SG3	1057.5	ST	89.3	SR	21.9	SS	46.2
RDE	-.0160	RRA	-.7632	RC3	1.2598	FAU	.16586	RRT	-.9749	RRF	-.9981	RTF	.9631	CRT	-.7790	CRS	.9708	CST	-.6060
FDE	.6428	FRA	5.2271	FC3	-8.6745	BSP	11340	SGB	6960.8	R23	.2521	R13	-.9668	LSA	96.2	MSA	36.5	SSA	.1
BDE	.7436	BRA	2.6347	BC3	5.7648	FSP	1834	SG1	6950.2	SG2	383.9	THA	165.50	EL1	91.0	EL2	13.5	ALF	168.95

LAUNCH DATE MAY 18 1971 FLIGHT TIME 258.00 ARRIVAL DATE JAN 31 1972

HELIOCENTRIC CONIC DISTANCE 594.316 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.368	GAL	-1.47	AZL	94.24	HCA	185.42	SMA	187.85	ECC	.19613	INC	4.2404
RP	224.59	LAP	.40	LOP	61.82	VP	21.803	GAP	.87	AZP	85.78	TAL	351.00	TAP	176.41	RCA	151.01	APO	224.70
RC	218.554	GL	-37.98	GP	15.86	ZAL	107.82	ZAP	55.09	ETS	190.66	ZAE	92.54	ETE	179.78	ZAC	118.08	ETC	272.87

V1	29.445	V2	24.487	LVI	-25.27														

PLANETOCENTRIC CONIC

C3	15.131	VHL	3.890	DLA	-38.53	RAL	8.09	RAD	6640.6	VEL	11.627	PTH	6.67	VHP	3.365	DPA	-7.10	RAP	294.90

ECC	1.2490																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 15 43	2223.91	6.45	54.83	228.87	137.24	19 52 47	1223.9	24.21	37.75
60.00	21 27 48	1871.23	16.22	32.24	237.92	127.41	21 59 0	871.2	29.98	10.69
62.66	23 0 24	1606.86	24.21	15.91	243.69	120.94	23 27 11	606.9	34.74	350.99
62.66	23 0 24	1606.86	24.21	15.91	243.69	120.94	23 27 11	606.9	34.74	350.99
62.66	23 0 24	1606.86	24.21	15.91	243.69	120.94	23 27 11	606.9	34.74	350.99
62.66	23 0 24	1606.86	24.21	15.91	243.69	120.94	23 27 11	606.9	34.74	350.99
62.66	23 0 24	1606.86	24.21	15.91	243.69	120.94	23 27 11	606.9	34.74	350.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6245	TRA	2.5417	TC3	-8.2340	BAU	1.2801	SGT	6875.5	SGR	1460.6	SG3	1099.5	ST	85.6	SR	17.9	SS	47.7
RDE	-.0117	RRA	-.6321	RC3	1.0880	FAU	.16675	RRT	-.9744	RRF	-.9972	RTF	.9621	CRT	-.8160	CRS	.9572	CST	-.6141
FDE	.7465	FRA	5.4584	FC3	-9.5410	BSP	11637	SGB	7028.9	R23	.2566	R13	-.9646	LSA	92.8	MSA	36.1	SSA	.2
BDE	.6246	BRA	2.6191	BC3	6.3282	FSP	1958	SG1	7021.6	SG2	321.4	THA	168.28	EL1	86.8	EL2	10.2	ALF	170.17

LAUNCH DATE MAY 18 1971 FLIGHT TIME 260.00 ARRIVAL DATE FEB 2 1972

HELIOCENTRIC CONIC DISTANCE 598.413 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.377	GAL	-1.56	AZL	93.84	HCA	186.49	SMA	188.02	ECC	.19701	INC	3.8403
RP	224.98	LAP	.43	LOP	62.90	VP	21.770	GAP	.73	AZP	86.18	TAL	350.52	TAP	177.01	RCA	150.98	APO	225.06
RC	221.219	GL	-34.92	GP	13.24	ZAL	109.06	ZAP	53.68	ETS	189.20	ZAE	91.33	ETE	180.18	ZAC	115.47	ETC	272.82

V1	29.445	V2	24.445	LVI	-22.91														

PLANETOCENTRIC CONIC

C3	14.355	VHL	3.789	DLA	-35.62	RAL	6.76	RAD	6640.2	VEL	11.594	PTH	6.64	VHP	3.347	DPA	-9.66	RAP	295.42

ECC	1.2362																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 47 14	2292.60	3.01	57.72	224.91	137.50	19 25 27	1292.6	21.02	41.16
60.00	20 33 37	2009.24	10.39	39.24	231.91	129.16	21 7 6	1009.2	25.21	19.26
67.38	23 19 44	1522.66	22.92	8.28	240.57	118.04	23 45 7	522.7	32.41	343.32
67.38	23 19 44	1522.66	22.92	8.28	240.57	118.04	23 45 7	522.7	32.41	343.32
67.38	23 19 44	1522.66	22.92	8.28	240.57	118.04	23 45 7	522.7	32.41	343.32
67.38	23 19 44	1522.66	22.92	8.28	240.57	118.04	23 45 7	522.7	32.41	343.32
67.38	23 19 44	1522.66	22.92	8.28	240.57	118.04	23 45 7	522.7	32.41	343.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5163	TRA	2.5847	TC3	-6.6579	BAU	1.2906	SGT	7012.9	SGR	1236.2	SG3	1113.0	ST	82.4	SR	15.1	SS	48.6
RDE	-.0073	RRA	-.5412	RC3	.9468	FAU	.16615	RRT	-.9748	RRF	-.9957	RTF	.9625	CRT	-.8623	CRS	.9367	CST	-.6308
FDE	.8537	FRA	5.5309	FC-10	.0207	BSP	11925	SGB	7121.0	R23	.2515	R13	-.9641	LSA	90.2	MSA	35.3	SSA	.2
BDE	.5163	BRA	2.6407	BC3	6.7249	FSP	1997	SG1	7115.8	SG2	271.7	THA	170.24	EL1	83.4	EL2	7.6	ALF	170.91

LAUNCH DATE MAY 18 1971 FLIGHT TIME 262.00 ARRIVAL DATE FEB 4 1972

HELIOCENTRIC CONIC DISTANCE 602.506 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.387	GAL	-1.64	AZL	93.56	HCA	187.56	SMA	188.18	ECC	.19790	INC	3.5545
RP	225.37	LAP	.47	LOP	63.97	VP	21.737	GAP	.59	AZP	86.48	TAL	350.05	TAP	177.60	RCA	150.94	APO	225.42
RC	223.884	GL	-32.57	GP	11.34	ZAL	110.16	ZAP	52.49	ETS	188.10	ZAE	90.15	ETE	180.45	ZAC	113.56	ETC	272.81

V1	29.445	V2	24.403	LVI	-21.21														

PLANETOCENTRIC CONIC

C3	13.909	VHL	3.729	DLA	-33.29	RAL	6.00	RAD	6640.0	VEL	11.575	PTH	6.62	VHP	3.347	DPA	-11.52	RAP	295.89

ECC	1.2289																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 28 9	2345.14	.37	59.92	222.54	137.57	19 7 14	1345.1	18.53	43.67
60.00	20 3 1	2092.60	6.78	43.32	228.67	129.82	20 37 54	1092.6	22.07	24.07
70.00	22 33 47	1648.05	16.47	14.31	235.60	120.35	23 1 15	648.1	27.50	351.29
71.66	23 41 59	1438.86	21.74	1.07	238.58	115.85	24 5 58	438.9	30.46	336.14
71.66	23 41 59	1438.86	21.74	1.07	238.58	115.85	24 5 58	438.9	30.46	336.14
71.66	23 41 59	1438.86	21.74	1.07	238.58	115.85	24 5 58	438.9	30.46	336.14
110.00	3 37 9	5982.91	16.47	281.14	235.60	120.35	5 16 52	4982.9	27.50	258.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4230	TRA	2.6411	TC3	-6.9794	BAU	1.3070	SGT	7147.4	SGR	1071.8	SG3	1112.2	ST	80.1	SR	13.2	SS	49.3
RDE	-.0011	RRA	-.4759	RC3	.8303	FAU	.16466	RRT	-.9750	RRF	-.9935	RTF	.9633	CRT	-.9109	CRS	.9075	CST	-.6540
FDE	.9447	FRA	5.5800	FC-10	.2488	BSP	12172	SGB	7227.3	R23	.2397	R13	-.9645	LSA	88.6	MSA	34.2	SSA	.3
BDE	.4230	BRA	2.6837	BC3	7.0286	FSP	1988	SG1	7223.5	SG2	235.6	THA	171.67	EL1	81.0	EL2	5.4	ALF	171.46

LAUNCH DATE MAY 18 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 6 1972

HELIOCENTRIC CONIC — DISTANCE 606.592 — EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.396	GAL	-1.73	AZL	93.34	HCA	188.62	SMA	188.35	ECC	.19881	INC	3.3394	V1	29.445
RP	225.76	LAP	.50	LOP	65.03	VP	21.704	GAP	.45	AZP	86.70	TAL	349.57	TAP	178.19	RCA	150.90	APO	225.79	V2	24.361
RC	226.550	GL	-30.70	GP	9.89	ZAL	111.16	ZAP	51.43	ETS	187.24	ZAE	89.01	ETE	180.65	ZAC	112.10	ETC	272.83	LVI	-19.95

PLANETOCENTRIC CONIC

C3	13.654	VHL	3.695	DLA	-31.37	RAL	5.58	RAD	6639.9	VEL	11.564	PTH	6.61	VHP	3.356	DPA	-12.92	RAP	296.32	ECC	1.2247

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 14 27	2387.99	-1.79	61.71	221.07	137.55	18 54 15	1388.0	16.47	45.65
60.00	19 42 18	2154.22	4.09	46.29	226.71	130.13	20 18 12	1154.2	19.65	27.48
70.00	21 46 25	1788.94	11.47	22.16	232.16	122.39	22 16 14	788.9	23.71	.48
75.83	0 11 52	1348.86	20.68	353.67	237.31	114.13	0 34 21	348.9	28.79	328.81
75.83	0 11 52	1348.86	20.68	353.67	237.31	114.13	0 34 21	348.9	28.79	328.81
75.83	0 11 52	1348.86	20.68	353.67	237.31	114.13	0 34 21	348.9	28.79	328.81
110.00	2 49 47	6123.79	11.47	288.99	232.16	122.39	4 31 51	5123.8	23.71	267.30

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.3412	TRA	2.7060	TC3	-7.2333	BAU	1.3271	SGT	7280.3	SGR	947.2	SG3	1104.1	ST	78.7	SR	11.7	SS	50.1
RDE	.0051	RRA	-.4284	RC3	.7310	FAU	.16194	RRT	-.9738	RRF	-.9903	RTF	.9632	CRT	-.9519	CRS	.8681	CST	-.6754
FDE	1.0407	FRA	5.5922	FC3	-10.2675	BSP	12406	SGB	7341.7	R23	.2267	R13	-.9640	LSA	87.9	MSA	33.4	SSA	.3
BDE	.3412	BRA	2.7397	BC3	7.2701	FSP	1978	SG1	7338.6	SG2	213.8	THA	172.77	EL1	79.5	EL2	3.6	ALF	171.93

LAUNCH DATE MAY 18 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 8 1972

HELIOCENTRIC CONIC — DISTANCE 610.673 — EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.406	GAL	-1.81	AZL	93.17	HCA	189.68	SMA	188.51	ECC	.19974	INC	3.1720	V1	29.445
RP	226.15	LAP	.53	LOP	66.09	VP	21.672	GAP	.31	AZP	86.87	TAL	349.08	TAP	178.77	RCA	150.86	APO	226.17	V2	24.319
RC	229.216	GL	-29.18	GP	8.75	ZAL	112.09	ZAP	50.45	ETS	186.56	ZAE	87.89	ETE	180.79	ZAC	110.95	ETC	272.86	LVI	-18.98

PLANETOCENTRIC CONIC

C3	13.519	VHL	3.677	DLA	-29.74	RAL	5.39	RAD	6639.8	VEL	11.558	PTH	6.60	VHP	3.371	DPA	-14.00	RAP	296.74	ECC	1.2225

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 4 11	2424.39	-3.61	63.23	220.17	137.47	18 44 35	1424.4	14.70	47.30
60.00	19 27 8	2203.70	1.91	48.66	225.48	130.26	20 3 51	1203.7	17.65	30.14
70.00	21 19 14	1873.90	8.33	26.74	230.28	123.24	21 50 28	873.9	21.13	5.73
80.00	0 19 2	1322.17	17.83	350.31	235.64	114.35	0 41 5	322.2	26.32	326.13
80.40	0 44 41	1240.20	19.72	345.09	236.50	112.72	1 5 22	240.2	27.35	320.31
100.00	3 1 54	6084.69	17.83	289.59	235.64	114.35	4 43 19	5084.7	26.32	265.40
110.00	2 22 37	6208.76	8.33	293.57	230.28	123.24	4 6 5	5208.8	21.13	272.55

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.2633	TRA	2.7819	TC3	-7.4269	BAU	1.3474	SGT	7410.8	SGR	850.6	SG3	1092.0	ST	78.1	SR	10.6	SS	51.0
RDE	.0112	RRA	-.3930	RC3	.6461	FAU	.15847	RRT	-.9714	RRF	-.9860	RTF	.9628	CRT	-.9824	CRS	.8180	CST	-.6988
FDE	1.1377	FRA	5.5979	FC3	-10.1479	BSP	12680	SGB	7459.4	R23	.2107	R13	-.9634	LSA	88.0	MSA	32.6	SSA	.4
BDE	.2635	BRA	2.8095	BC3	7.4549	FSP	1969	SG1	7456.7	SG2	200.8	THA	173.63	EL1	78.8	EL2	2.0	ALF	172.37

LAUNCH DATE MAY 18 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 10 1972

HELIOCENTRIC CONIC — DISTANCE 614.749 — EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.416	GAL	-1.90	AZL	93.04	HCA	190.74	SMA	188.68	ECC	.20069	INC	3.0380	V1	29.445
RP	226.55	LAP	.57	LOP	67.15	VP	21.639	GAP	.17	AZP	87.01	TAL	348.60	TAP	179.34	RCA	150.82	APO	226.55	V2	24.278
RC	231.880	GL	-27.90	GP	7.84	ZAL	112.98	ZAP	49.55	ETS	186.01	ZAE	86.80	ETE	180.90	ZAC	110.02	ETC	272.90	LVI	-18.23

PLANETOCENTRIC CONIC

C3	13.466	VHL	3.670	DLA	-28.32	RAL	5.36	RAD	6639.8	VEL	11.556	PTH	6.60	VHP	3.390	DPA	-14.86	RAP	297.15	ECC	1.2216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 56 13	2436.25	-5.21	64.57	219.65	137.36	18 37 9	1436.2	13.14	48.72
60.00	19 15 28	2245.41	.08	50.66	224.72	130.30	19 52 53	1245.4	15.94	32.32
70.00	21 0 7	1937.64	5.93	30.12	229.14	123.70	21 32 25	937.6	19.08	9.53
80.00	23 17 13	1508.34	12.28	1.34	232.93	117.43	23 42 21	508.3	22.52	338.63
88.45	1 49 52	1028.71	18.85	329.16	236.03	111.53	2 7 1	28.7	26.08	304.46
100.00	2 4 1	6270.85	12.28	300.61	232.93	117.43	3 48 32	5270.9	22.52	277.91
110.00	2 3 29	6272.50	5.93	296.95	229.14	123.70	3 48 2	5272.5	19.08	276.36

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.1924	TRA	2.8629	TC3	-7.5803	BAU	1.3685	SGT	7536.1	SGR	773.3	SG3	1076.4	ST	78.1	SR	9.8	SS	51.8
RDE	.0185	RRA	-.3652	RC3	.5742	FAU	.15492	RRT	-.9679	RRF	-.9802	RTF	.9627	CRT	-.9980	CRS	.7555	CST	-.7237
FDE	1.2162	FRA	5.5859	FC3	-9.9601	BSP	12933	SGB	7577.7	R23	.1904	R13	-.9632	LSA	88.7	MSA	31.7	SSA	.4
BDE	.1933	BRA	2.8861	BC3	7.6020	FSP	1941	SG1	7575.2	SG2	193.4	THA	174.33	EL1	78.7	EL2	.6	ALF	172.83

LAUNCH DATE MAY 18 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 12 1972

HELIOCENTRIC CONIC — DISTANCE 618.820 — EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32.425	GAL	-1.99	AZL	92.93	HCA	191.80	SMA	188.85	ECC	.20165	INC	2.9275	V1	29.445
RP	226.94	LAP	.60	LOP	68.20	VP	21.608	GAP	.02	AZP	87.13	TAL	348.11	TAP	179.91	RCA	150.77	APO	226.94	V2	24.236
RC	234.543	GL	-26.81	GP	7.09	ZAL	113.83	ZAP	48.69	ETS	185.55	ZAE	85.74	ETE	180.99	ZAC	109.26	ETC	272.95	LVI	-17.63

PLANETOCENTRIC CONIC

C3	13.470	VHL	3.670	DLA	-27.06	RAL	5.44	RAD	6639.8	VEL	11.556	PTH	6.60	VHP	3.411	DPA	-15.55	RAP	297.55	ECC	1.2217

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 49 53	2484.78	-6.64	65.77	219.36	137.22	18 31 18	1484.8	11.73	49.98
60.00	19 6 12	2281.78	-1.52	52.39	224.29	130.28	19 44 14	1281.8	14.42	34.20
70.00	20 45 34	1989.58	3.97	32.85	228.44	123.95	21 18 44	989.6	17.35	12.56
80.00	22 49 47	1600.77	9.32	6.61	231.71	118.49	23 16 28	600.8	20.23	344.54
90.00	0 50 32	1224.07	12.31	340.45	233.26	115.66	1 10 56	224.1	21.84	317.48
100.00	1 36 35	1075.24	9.32	327.98	231.71	118.49	1 54 30	75.2	20.23	305.91
110.00	1 48 57	1036.40	3.97	321.77	228.44	123.95	2 6 13	36.4	17.35	301.48

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.1320	TRA	2.9417	TC3	-7.7262	BAU	1.3944	SGT	7668.2	SGR	711.1	SG3	1059.3	ST	78.5	SR	9.3	SS	52.3
RDE	.0265	RRA	-.3428	RC3	.5150	FAU	.15194	RRT	-.9630	RRF	-.9729	RTF	.9625	CRT	-.9946	CRS	.6799	CST	-.7450
FDE	1.2784	FRA	5.5585	FC3	-9.7656	BSP	13112	SGB	7701.1	R23	.1685	R13	-.9629	LSA	89.6	MSA	30.8	SSA	.5
BDE	.1347	BRA	2.9616	BC3	7.7434	FSP	1906	SG1	7698.7	SG2	190.9	THA	174.89	EL1	79.0	EL2	1.0	ALF	173.30

LAUNCH DATE MAY 18 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 14 1972

HELIOCENTRIC CONIC DISTANCE 622.884 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.435 GAL -2.08 AZL 92.84 HCA 192.85 SMA 189.03 ECC .20263 INC 2.8357 V1 29.445
RP 227.33 LAP .63 LOP 69.25 VP 21.576 GAP -.12 AZP 87.23 TAL 347.62 TAP 180.47 RCA 150.72 APO 227.33 V2 24.195
RC 237.203 GL -25.86 GP 6.46 ZAL 114.66 ZAP 47.87 ETS 185.17 ZAE 84.70 ETE 181.05 ZAC 108.61 ETC 273.01 LVI -17.16

PLANETOCENTRIC CONIC

C3 13.516 VHL 3.677 DLA -25.93 RAL 5.61 RAD 6639.8 VEL 11.558 PTH 6.60 VHP 3.433 DPA -16.12 RAP 297.96 ECC 1.2225

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 44 45	2510.81	-7.94	66.88	219.31	137.07	18 26 36	1510.8	10.45	51.11
60.00	18 58 39	2314.27	-2.95	53.95	224.08	130.21	19 37 13	1314.3	13.05	35.85
70.00	20 33 59	2033.96	2.28	35.18	228.04	124.09	21 7 53	1034.0	15.82	15.10
80.00	22 30 35	1669.00	7.08	10.44	231.01	119.08	22 58 24	669.0	18.40	348.78
90.00	0 22 59	1319.22	9.45	345.97	232.27	116.78	0 44 58	319.2	19.67	323.61
100.00	1 17 23	1143.47	7.08	331.80	231.01	119.08	1 36 27	143.5	18.40	310.15
110.00	1 37 22	1080.78	2.28	324.09	228.04	124.09	1 55 22	80.8	15.82	304.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0669 TRA 3.0331 TC3-7.8243 BAU 1.4165 SGT 7793.5 SGR 660.5 SG3 1041.6 ST 79.5 SR 8.9 SS 53.0
RDE .0339 RRA -.3258 RC3 .4609 FAU .14801 RRT -.9562 RRF -.9638 RTF .9620 CRT -.9710 CRS .5965 CST -.7675
FDE 1.3506 FRA 5.5448 FC3-9.4791 BSP 13377 SGB 7821.5 R23 .1482 R13 -.9623 LSA 91.2 MSA 30.0 SSA .5
BDE .0750 BRA 3.0506 BC3 7.8378 FSP 1881 SG1 7819.1 SG2 192.7 THA 175.36 EL1 79.9 EL2 2.1 ALF 173.80

LAUNCH DATE MAY 18 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 16 1972

HELIOCENTRIC CONIC DISTANCE 626.943 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.445 GAL -2.17 AZL 92.76 HCA 193.89 SMA 189.20 ECC .20363 INC 2.7576 V1 29.445
RP 227.72 LAP .66 LOP 70.30 VP 21.544 GAP -.26 AZP 87.32 TAL 347.13 TAP 181.02 RCA 150.67 APO 227.72 V2 24.153
RC 239.859 GL -25.03 GP 5.93 ZAL 115.46 ZAP 47.09 ETS 184.84 ZAE 83.67 ETE 181.10 ZAC 108.06 ETC 273.08 LVI -16.78

PLANETOCENTRIC CONIC

C3 13.600 VHL 3.688 DLA -24.90 RAL 5.83 RAD 6639.8 VEL 11.561 PTH 6.61 VHP 3.457 DPA -16.59 RAP 298.38 ECC 1.2238

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 40 33	2534.88	-9.14	67.91	219.39	136.90	18 22 48	1534.9	9.25	52.15
60.00	18 52 23	2343.83	-4.25	55.36	224.05	130.11	19 31 27	1343.8	11.79	37.34
70.00	20 24 29	2073.05	.78	37.22	227.86	124.15	20 59 2	1073.0	14.45	17.30
80.00	22 15 49	1724.58	5.24	13.52	230.63	119.44	22 44 34	724.6	16.83	352.16
90.00	0 3 50	1368.92	7.28	349.95	231.74	117.40	0 26 59	388.9	17.93	327.98
100.00	1 2 37	1199.05	5.24	334.89	230.63	119.44	1 22 36	199.0	16.83	313.53
110.00	1 27 51	1119.87	.78	326.13	227.86	124.15	1 46 31	119.9	14.45	306.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0082 TRA 3.1237 TC3-7.9141 BAU 1.4409 SGT 7918.5 SGR 618.8 SG3 1022.9 ST 80.7 SR 8.7 SS 53.6
RDE .0420 RRA -.3117 RC3 .4147 FAU .14446 RRT -.9476 RRF -.9528 RTF .9616 CRT -.9281 CRS .5046 CST -.7874
FDE 1.4072 FRA 5.5190 FC3-9.1957 BSP 13589 SGB 7942.7 R23 .1282 R13 -.9619 LSA 92.8 MSA 29.2 SSA .6
BDE .0428 BRA 3.1392 BC3 7.9250 FSP 1847 SG1 7940.2 SG2 197.1 THA 175.76 EL1 81.1 EL2 3.2 ALF 174.31

LAUNCH DATE MAY 18 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 18 1972

HELIOCENTRIC CONIC DISTANCE 630.996 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.455 GAL -2.26 AZL 92.69 HCA 194.94 SMA 189.37 ECC .20464 INC 2.6904 V1 29.445
RP 228.10 LAP .69 LOP 71.34 VP 21.513 GAP -.41 AZP 87.40 TAL 346.64 TAP 181.57 RCA 150.62 APO 228.13 V2 24.112
RC 242.511 GL -24.28 GP 5.48 ZAL 116.25 ZAP 46.34 ETS 184.56 ZAE 82.67 ETE 181.14 ZAC 107.59 ETC 273.15 LVI -16.48

PLANETOCENTRIC CONIC

C3 13.710 VHL 3.703 DLA -23.96 RAL 6.10 RAD 6639.9 VEL 11.566 PTH 6.61 VHP 3.482 DPA -16.98 RAP 298.80 ECC 1.2256

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 3	2557.40	-10.25	68.88	219.58	136.72	18 19 40	1557.4	8.13	53.12
60.00	18 47 5	2371.12	-5.45	56.68	224.15	129.99	19 26 36	1371.1	10.62	38.70
70.00	20 16 30	2108.26	-.56	39.05	227.85	124.15	20 51 38	1108.3	13.20	19.25
80.00	22 3 53	1772.20	3.64	16.15	230.46	119.66	22 33 25	772.2	15.44	355.01
90.00	23 45 6	1445.72	5.49	353.16	231.48	117.78	24 9 12	445.7	16.43	331.47
100.00	0 50 41	1246.67	3.64	337.52	230.46	119.66	1 11 27	246.7	15.44	316.38
110.00	1 19 52	1155.08	-.56	327.97	227.85	124.15	1 39 7	155.1	13.20	308.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0491 TRA 3.2170 TC3-7.9875 BAU 1.4656 SGT 8041.5 SGR 584.2 SG3 1003.6 ST 82.3 SR 8.6 SS 54.1
RDE .0501 RRA -.3003 RC3 .3740 FAU .14089 RRT -.9371 RRF -.9396 RTF .9611 CRT -.8686 CRS .4086 CST -.8052
FDE 1.4610 FRA 5.4896 FC3-8.8967 BSP 13805 SGB 8062.7 R23 .1099 R13 -.9613 LSA 94.6 MSA 28.5 SSA .6
BDE .0701 BRA 3.2310 BC3 7.9962 FSP 1814 SG1 8060.1 SG2 203.4 THA 176.10 EL1 82.6 EL2 4.2 ALF 174.82

LAUNCH DATE MAY 18 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 20 1972

HELIOCENTRIC CONIC DISTANCE 635.043 EARTH TO MARS

RL 151.32 LAL -.00 LOL 236.42 VL 32.465 GAL -2.35 AZL 92.63 HCA 195.98 SMA 189.55 ECC .20567 INC 2.6321 V1 29.445
RP 228.49 LAP .72 LOP 72.38 VP 21.482 GAP -.55 AZP 87.47 TAL 346.14 TAP 182.12 RCA 150.56 APO 228.53 V2 24.071
RC 245.157 GL -23.60 GP 5.08 ZAL 117.02 ZAP 45.62 ETS 184.31 ZAE 81.69 ETE 181.18 ZAC 107.17 ETC 273.23 LVI -16.25

PLANETOCENTRIC CONIC

C3 13.843 VHL 3.721 DLA -23.07 RAL 6.41 RAD 6640.0 VEL 11.572 PTH 6.62 VHP 3.507 DPA -17.30 RAP 299.23 ECC 1.2278

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 34 6	2578.69	-11.31	69.80	219.85	136.53	18 17 5	1578.7	7.07	54.02
60.00	18 42 34	2396.62	-6.56	57.91	224.36	129.85	19 22 30	1396.6	9.53	39.96
70.00	20 9 41	2140.52	-1.80	40.74	227.95	124.11	20 45 21	1140.5	12.03	21.03
80.00	21 53 55	1814.30	2.21	18.47	230.45	119.78	22 24 9	814.3	14.17	357.50
90.00	23 33 4	1494.47	3.94	355.90	231.41	118.03	23 57 59	494.5	15.09	334.43
100.00	0 40 42	1288.78	2.21	339.84	230.45	119.78	1 2 11	288.8	14.17	318.86
110.00	1 13 3	1187.34	-1.80	329.65	227.95	124.11	1 32 50	187.3	12.03	309.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1071 TRA 3.3157 TC3-8.0411 BAU 1.4895 SGT 8162.9 SGR 555.6 SG3 984.4 ST 84.1 SR 8.6 SS 54.7
RDE .0581 RRA -.2913 RC3 .3372 FAU .13703 RRT -.9244 RRF -.9244 RTF .9604 CRT -.7966 CRS .3131 CST -.8218
FDE 1.5157 FRA 5.4661 FC3-8.5700 BSP 14040 SGB 8181.8 R23 .0945 R13 -.9605 LSA 96.8 MSA 27.8 SSA .7
BDE .1219 BRA 3.3285 BC3 8.0482 FSP 1785 SG1 8179.0 SG2 211.5 THA 176.40 EL1 84.4 EL2 5.2 ALF 175.34

LAUNCH DATE MAY 16 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 22 1972

HELIOCENTRIC CONIC DISTANCE 639,084 EARTH TO MARS

RL	151.32	LAL	-.00	LOL	236.42	VL	32,478	GAL	-2.44	AZL	92.38	HCA	197.01	SMA	189.73	ECC	.20672	INC	2.5809	V1	29.445
RP	228.88	LAP	.78	LOP	73.42	VP	21,452	GAP	-.69	AZP	87.53	TAL	345.65	TAP	182.66	RCA	150.51	APO	228.95	V2	24.030
RC	247.796	GL	-22.99	GP	4.74	ZAL	117.78	ZAP	44.92	ETS	184.10	ZAE	80.73	ETE	181.20	ZAC	106.60	ETC	273.31	LVI	-16.06

PLANETOCENTRIC CONIC

C3	13.996	VHL	3.741	DLA	-22.24	RAL	6.75	RAD	6640.0	VEL	11.578	PTH	6.62	VHP	3.552	DPA	-17.87	RAP	299.67	ECC	1.2303

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 31 37	2598.94	-12.31	70.69	220.20	136.33	18 14 56	1598.9	6.06	54.88
60.00	18 38 39	2420.66	-7.61	59.08	224.64	129.70	19 19 0	1420.7	8.49	41.13
70.00	20 3 46	2170.45	-2.94	42.30	228.16	124.04	20 39 56	1170.4	10.94	22.66
80.00	21 45 24	1852.36	.93	20.56	230.57	119.84	22 16 16	852.4	13.00	359.71
90.00	23 22 56	1537.64	2.55	358.32	231.47	118.17	23 48 36	537.6	13.87	337.01
100.00	0 32 12	1326.83	.93	341.93	230.57	119.84	0 54 19	326.8	13.00	321.08
110.00	1 7 8	1217.26	-2.94	331.22	228.16	124.04	1 27 25	217.3	10.94	311.58

DIFFERENTIAL CORRECTIONS

TDE	.1633	TRA	3.4165	TC3	-8.0848	BAU	1.5138
RDE	.0665	RRA	-.2839	RC3	.3047	FAU	.13349
FDE	1.5594	FRA	5.4358	FC3	-8.2576	BSP	14270
BDE	.1763	BRA	3.4283	BC3	8.0903	FSP	1753

MID-COURSE EXECUTION ACCURACY

SGT	8283.2	SGR	532.0	SG3	965.1		
RRT	-.9098	RRF	-.9071	RTF	.9599		
SGB	8300.3	R23	.0798	R13	-.9600		
SG1	8297.3	SG2	220.4	THA	176.65		

ORBIT DETERMINATION ACCURACY

BT	86.2	BR	8.7	BS	55.1		
CRT	-.7159	CRB	.2201	CBT	-.8372		
LSA	99.0	MSA	27.2	BSA	.7		
EL1	86.4	EL2	6.1	ALF	175.85		

LAUNCH DATE MAY 19 1971 FLIGHT TIME 92.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 270.877 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	35.476	GAL	-.46	AZL	91.85	HCA	85.12	SMA	267.99	ECC	.43531	INC	1.8537	V1	29.439
RP	207.13	LAP	-1.85	LOP	322.50	VP	28.040	GAP	22.42	AZP	90.16	TAL	358.47	TAP	83.58	RCA	151.33	APO	384.65	V2	26.443
RC	56.701	GL	-10.73	GP	-.60	ZAL	95.96	ZAP	177.29	ETS	192.80	ZAE	173.33	ETE	40.47	ZAC	99.18	ETC	278.12	LVI	-17.94

PLANETOCENTRIC CONIC

C3	37.965	VHL	6.162	DLA	-20.22	RAL	339.49	RAD	6650.0	VEL	12.564	PTH	7.43	VHP	11.216	DPA	-17.19	RAP	323.07	ECC	1.6248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 51	2882.76	-25.78	84.20	205.36	131.48	16 17 53	1882.8	-8.17	66.80
60.00	16 33 38	2713.12	-19.88	74.03	210.47	125.81	17 18 51	1713.1	-4.34	55.18
70.00	17 54 21	2475.84	-14.26	58.69	214.37	121.37	18 35 37	1475.8	-.58	38.79
80.00	19 30 40	2174.38	-9.83	38.40	216.97	118.33	20 6 55	1174.4	2.46	17.80
90.00	21 5 14	1869.35	-8.05	16.92	217.92	117.20	21 36 23	869.4	3.69	356.05
100.00	22 13 32	1648.85	-9.83	359.77	216.97	118.33	22 41 1	648.8	2.46	339.16
110.00	22 53 47	1522.66	-14.26	347.61	214.37	121.37	23 19 10	522.7	-.58	327.71

DIFFERENTIAL CORRECTIONS

TDE	-.3674	TRA	-.8493	TC3	.0397	BAU	.0387
RDE	-.5686	RRA	.2316	RC3	.0651	FAU	.03262
FDE	.1004	FRA	.5909	FC3	-.7438	BSP	1204
BDE	.6770	BRA	.8803	BC3	.0762	FSP	112

MID-COURSE EXECUTION ACCURACY

SGT	909.6	SGR	581.9	SG3	94.3		
RRT	-.0162	RRF	.0182	RTF	-.5736		
SGB	1079.8	R23	-.0025	R13	.5736		
SG1	909.7	SG2	581.8	THA	179.00		

ORBIT DETERMINATION ACCURACY

ST	21.2	SR	26.7	SS	9.7
CRT	.7208	CRS	.3486	CST	.8942
LSA	32.3	MSA	14.5	SSA	1.1
EL1	31.8	EL2	12.4	ALF	53.81

LAUNCH DATE MAY 19 1971 FLIGHT TIME 94.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 272.694 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	35.263	GAL	-.41	AZL	91.85	HCA	86.38	SMA	260.06	ECC	.41808	INC	1.8479	V1	29.439
RP	207.05	LAP	-1.84	LOP	323.76	VP	27.779	GAP	21.89	AZP	90.12	TAL	358.61	TAP	84.99	RCA	151.33	APO	368.79	V2	26.453
RC	57.030	GL	-11.02	GP	-.62	ZAL	95.83	ZAP	176.39	ETS	189.84	ZAE	172.73	ETE	35.94	ZAC	99.12	ETC	278.19	LVI	-18.02

PLANETOCENTRIC CONIC

C3	35.377	VHL	5.948	DLA	-20.53	RAL	339.49	RAD	6649.0	VEL	12.461	PTH	7.36	VHP	10.841	DPA	-17.09	RAP	323.42	ECC	1.5822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 12	2858.27	-24.67	82.93	204.32	132.07	16 18 50	1858.3	-6.95	65.76
60.00	16 35 28	2687.35	-18.85	72.64	209.43	126.30	17 20 16	1687.3	-3.21	53.95
70.00	17 56 50	2448.18	-13.28	57.16	213.34	121.76	18 37 38	1448.2	.48	37.35
80.00	19 33 54	2144.38	-8.86	36.71	215.96	118.63	20 9 39	1144.4	3.47	16.14
90.00	21 8 52	1838.05	-7.07	15.14	216.92	117.45	21 39 30	838.1	4.69	354.29
100.00	22 16 46	1618.85	-8.86	358.08	215.96	118.63	22 43 45	618.9	3.47	337.51
110.00	22 56 16	1495.00	-13.28	346.07	213.34	121.76	23 21 11	495.0	.48	326.27

DIFFERENTIAL CORRECTIONS

TDE	-.3625	TRA	-.8395	TC3	.0545	BAU	.0419
RDE	-.5523	RRA	.2250	RC3	.0698	FAU	.03374
FDE	.0998	FRA	.6135	FC3	-.8256	BSP	1259
BDE	.6607	BRA	.8692	BC3	.0886	FSP	121

MID-COURSE EXECUTION ACCURACY

SGT	933.8	SGR	586.1	SG3	101.2		
RRT	-.0159	RRF	.0194	RTF	-.5872		
SGB	1102.5	R23	-.0040	R13	.5873		
SG1	933.8	SG2	586.0	THA	179.06		

ORBIT DETERMINATION ACCURACY

ST	21.7	SR	26.8	SS	10.0
CRT	.7193	CRS	.3310	CST	.8870
LSA	32.7	MSA	14.9	SSA	1.1
EL1	32.1	EL2	12.6	ALF	53.21

LAUNCH DATE MAY 19 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC DISTANCE 274.776 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	35.062	GAL	-.35	AZL	91.84	HCA	87.65	SMA	253.06	ECC	.40197	INC	1.8422	V1	29.439
RP	206.97	LAP	-1.84	LOP	325.03	VP	27.532	GAP	21.37	AZP	90.08	TAL	358.77	TAP	86.42	RCA	151.34	APO	354.79	V2	26.462
RC	57.440	GL	-11.31	GP	-.63	ZAL	95.67	ZAP	175.47	ETS	188.06	ZAE	172.14	ETE	32.19	ZAC	99.05	ETC	278.26	LVI	-18.09

PLANETOCENTRIC CONIC

C3	33.026	VHL	5.747	DLA	-20.86	RAL	339.45	RAD	6648.2	VEL	12.367	PTH	7.29	VHP	10.479	DPA	-17.00	RAP	323.76	ECC	1.5435

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 32 30	2834.00	-23.56	81.69	203.31	132.61	16 19 44	1834.0	-5.74	64.73
60.00	16 37 17	2661.72	-17.81	71.27	208.41	126.77	17 21 39	1661.7	-2.08	52.72
70.00	17 59 20	2420.55	-12.28	55.63	212.33	122.12	18 39 40	1420.6	1.54	35.91
80.00	19 37 12	2114.25	-7.87	35.02	214.97	118.89	20 12 26	1114.2	4.48	14.48
90.00	21 12 36	1806.49	-6.07	13.36	215.94	117.67	21 42 43	806.5	5.70	352.52
100.00	22 20 4	1588.72	-7.87	356.38	214.97	118.89	22 46 33	588.7	4.48	335.85
110.00	22 58 46	1467.37	-12.28	344.55	212.33	122.12	23 23 13	467.4	1.54	324.82

DIFFERENTIAL CORRECTIONS

TDE	-.3555	TRA	-.8282	TC3	.0688	BAU	.0448
RDE	-.5367	RRA	.2186	RC3	.0747	FAU	.03496
FDE	.0990	FRA	.6350	FC3	-.9165	BSP	1320
BDE	.6437	BRA	.8566	BC3	.1016	FSP	134

MID-COURSE EXECUTION ACCURACY

SGT	955.3	SGR	590.0	SG3	108.5		
RRT	-.0171	RRF	.0198	RTF	-.5973		
SGB	1122.8	R23	-.0033	R13	.5974		
SG1	955.4	SG2	589.8	THA	179.02		

ORBIT DETERMINATION ACCURACY

ST	22.1	SR	27.0	SS	10.3
CRT	.7164	CRS	.3142	CST	.8808
LSA	33.0	MSA	15.2	SSA	1.1
EL1	32.4	EL2	12.8	ALF	52.78

LAUNCH DATE MAY 19 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 25 1971

HELIOCENTRIC CONIC DISTANCE 277.084 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	34.873	GAL	-.29	AZL	91.84	HCA	88.91	SMA	246.85	ECC	.38691	INC	1.8365	V1	29.439
RP	206.90	LAP	-1.84	LOP	326.30	VP	27.299	GAP	20.86	AZP	90.03	TAL	358.95	TAP	87.86	RCA	151.34	APO	342.36	V2	26.469
RC	57.930	GL	-11.60	GP	-.65	ZAL	95.48	ZAP	174.53	ETS	186.88	ZAE	171.55	ETE	29.07	ZAC	98.99	ETC	278.32	LVI	-18.15

PLANETOCENTRIC CONIC

C3	30.888	VHL	5.558	DLA	-21.19	RAL	339.39	RAD	6647.3	VEL	12.281	PTH	7.22	VHP	10.132	DPA	-16.91	RAP	324.09	ECC	1.5083

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 33 46	2809.99	-22.45	80.49	202.33	133.12	16 20 36	1810.0	-4.54	63.72
60.00	16 39 5	2636.28	-16.77	69.92	207.41	127.20	17 23 1	1636.3	-.96	51.50
70.00	18 1 50	2393.00	-11.28	54.13	211.34	122.45	18 41 43	1393.0	2.59	34.47
80.00	19 40 34	2084.00	-6.87	33.33	214.00	119.13	20 15 18	1084.0	5.50	12.81
90.00	21 16 28	1774.71	-5.07	11.57	214.98	117.86	21 46 2	774.7	6.70	350.72
100.00	22 23 26	1558.48	-6.87	354.70	214.00	119.13	22 49 25	558.5	5.50	334.18
110.00	23 1 17	1439.82	-11.28	343.05	211.34	122.45	23 25 17	439.8	2.59	323.39

DIFFERENTIAL CORRECTIONS

TDE	-.3488	TRA	-.8188	TC3	.0874	BAU	.0489
RDE	-.5216	RRA	.2123	RC3	.0797	FAU	.03628
FDE	.0977	FRA	.6590	FC3	-1.0170	BSP	1368
BDE	.6274	BRA	.8458	BC3	.1183	FSP	148

MID-COURSE EXECUTION ACCURACY

SGT	978.9	SGR	593.4	SG3	116.5		
RRT	-.0182	RRF	.0209	RTF	-.6103		
SGB	1144.7	R23	-.0033	R13	.6103		
SG1	979.0	SG2	593.2	THA	179.00		

ORBIT DETERMINATION ACCURACY

ST	22.5	SR	27.1	SS	10.6
CRT	.7129	CRS	.2949	CST	.8737
LSA	33.3	MSA	15.6	SSA	1.2
EL1	32.7	EL2	13.1	ALF	52.32

LAUNCH DATE MAY 19 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 27 1971

DISTANCE 279.568

EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.35 LAL -.00 LOL 237.39 VL 34.696 GAL -.23 AZL 91.83 HCA 90.18 SMA 241.31 ECC .37282 INC 1.8308 V1 29.439
RP 206.85 LAP -1.83 LOP 327.56 VP 27.078 GAP 20.36 AZP 89.99 TAL 359.14 TAP 89.32 RCA 151.34 APO 331.27 V2 26.476
RC 58.496 GL -11.89 GP -.67 ZAL 95.27 ZAP 173.59 ETS 186.04 ZAE 171.00 ETE 26.43 ZAC 90.92 ETC 278.38 LVI -18.22

PLANETOCENTRIC CONIC

C3 28.942 VHL 5.380 DLA -21.54 RAL 339.30 RAD 6646.6 VEL 12.202 PTH 7.16 VHP 9.797 DPA -16.83 RAP 324.41 ECC 1.4763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 34 59	2786.28	-21.34	79.33	201.36	133.59	16 21 25	1786.3	-3.35	62.72
60.00	16 40 51	2611.08	-15.73	68.61	206.43	127.60	17 24 22	1611.1	.14	50.30
70.00	18 4 22	2365.57	-10.27	52.64	210.37	122.75	18 43 48	1365.6	3.63	33.03
80.00	19 44 1	2053.69	-5.87	31.64	213.05	119.33	20 18 15	1053.7	6.51	11.13
90.00	21 20 26	1742.71	-4.04	9.77	214.05	118.01	21 49 29	742.7	7.70	348.91
100.00	22 26 53	1528.17	-5.87	353.01	213.05	119.33	22 52 21	528.2	6.51	332.50
110.00	23 3 49	1412.39	-10.27	341.56	210.37	122.75	23 27 21	412.4	3.63	321.95

DIFFERENTIAL CORRECTIONS

TDE -.3416 TRA -.8089 TC3 .1079 BAU .0531
RDE -.5070 RRA .2063 RC3 .0848 FAU .03786
FDE .0922 FRA .6868 FC3-1.1267 BSP 1386
BDE .6113 BRA .8348 BC3 .1373 FSP 160

MID-COURSE EXECUTION ACCURACY

SGT 1001.8 SGR 596.4 SG3 125.1
RRT -.0196 RRF .0256 RTF -.6236
SGB 1165.9 R23 -.0066 R13 .6237
SG1 1001.9 SG2 596.2 THA 178.96

ORBIT DETERMINATION ACCURACY

ST 22.9 SR 27.2 SS 10.9
CRT .7090 CRS .2590 CST .8581
LSA 33.5 MSA 16.1 SSA 1.2
EL1 33.0 EL2 13.3 ALF 51.91

LAUNCH DATE MAY 19 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 29 1971

DISTANCE 282.264

EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.35 LAL -.00 LOL 237.39 VL 34.529 GAL -.17 AZL 91.83 HCA 91.45 SMA 236.34 ECC .35963 INC 1.8250 V1 29.439
RP 206.80 LAP -1.82 LOP 328.83 VP 26.870 GAP 19.87 AZP 89.95 TAL 359.34 TAP 90.79 RCA 151.34 APO 321.33 V2 26.482
RC 59.137 GL -12.18 GP -.69 ZAL 95.03 ZAP 172.63 ETS 185.41 ZAE 170.48 ETE 24.18 ZAC 98.86 ETC 278.44 LVI -18.28

PLANETOCENTRIC CONIC

C3 27.168 VHL 5.212 DLA -21.90 RAL 339.19 RAD 6645.9 VEL 12.129 PTH 7.10 VHP 9.475 DPA -16.75 RAP 324.72 ECC 1.4471

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 8	2762.91	-20.24	78.20	200.43	134.03	16 22 11	1762.9	-2.17	61.75
60.00	16 42 36	2586.16	-14.69	67.33	205.48	127.96	17 25 42	1586.2	1.24	49.11
70.00	18 6 55	2338.30	-9.26	51.17	209.43	123.02	18 45 53	1338.3	4.67	31.60
80.00	19 47 33	2023.35	-4.85	29.96	212.13	119.50	20 21 16	1023.3	7.51	9.44
90.00	21 24 32	1710.53	-3.01	7.97	213.14	118.13	21 53 2	710.5	8.70	347.07
100.00	22 30 25	1497.82	-4.85	351.33	212.13	119.50	22 55 23	497.8	7.51	330.80
110.00	23 6 21	1365.12	-9.26	340.09	209.43	123.02	23 29 26	385.1	4.67	320.52

DIFFERENTIAL CORRECTIONS

TDE -.3355 TRA -.7960 TC3 .1251 BAU .0560
RDE -.4928 RRA .2004 RC3 .0900 FAU .03916
FDE .0947 FRA .7128 FC3-1.2480 BSP 1441
BDE .5962 BRA .8209 BC3 .1541 FSP 170

MID-COURSE EXECUTION ACCURACY

SGT 1020.9 SGR 598.9 SG3 134.3
RRT -.0195 RRF .0238 RTF -.6329
SGB 1183.6 R23 -.0050 R13 .6329
SG1 1021.0 SG2 598.7 THA 179.00

ORBIT DETERMINATION ACCURACY

ST 23.2 SR 27.3 SS 11.3
CRT .7073 CRS .2543 CST .8570
LSA 33.8 MSA 16.4 SSA 1.2
EL1 33.2 EL2 13.5 ALF 51.47

LAUNCH DATE MAY 19 1971 FLIGHT TIME 104.00 ARRIVAL DATE AUG 31 1971

DISTANCE 285.090

EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.35 LAL +.00 LOL 237.39 VL 34.372 GAL -.11 AZL 91.82 HCA 92.71 SMA 231.87 ECC .34728 INC 1.8193 V1 29.439
RP 206.75 LAP -1.82 LOP 330.10 VP 26.673 GAP 19.38 AZP 89.91 TAL 359.56 TAP 92.27 RCA 151.35 APO 312.39 V2 26.487
RC 59.850 GL -12.47 GP -.71 ZAL 94.77 ZAP 171.65 ETS 184.93 ZAE 170.01 ETE 22.24 ZAC 98.80 ETC 276.50 LVI -18.33

PLANETOCENTRIC CONIC

C3 25.551 VHL 5.055 DLA -22.26 RAL 339.05 RAD 6645.2 VEL 12.063 PTH 7.05 VHP 9.165 DPA -16.67 RAP 325.01 ECC 1.4205

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 15	2739.93	-19.15	77.10	199.52	134.43	16 22 55	1739.9	-1.02	60.79
60.00	16 44 19	2561.57	-13.65	66.07	204.55	128.29	17 27 1	1561.6	2.32	47.93
70.00	18 9 28	2311.24	-8.26	49.73	208.51	123.26	18 47 59	1311.2	5.69	30.18
80.00	19 51 9	1993.00	-3.83	28.29	211.23	119.63	20 24 22	993.0	8.51	7.74
90.00	21 28 45	1678.19	-1.97	6.16	212.26	118.22	21 56 44	678.2	9.70	345.22
100.00	22 34 1	1467.47	-3.83	349.65	211.23	119.63	22 58 29	467.5	8.51	329.10
110.00	23 8 55	1358.06	-8.26	338.65	208.51	123.26	23 31 33	358.1	5.69	319.10

DIFFERENTIAL CORRECTIONS

TDE -.3273 TRA -.7899 TC3 .1477 BAU .0600
RDE -.4793 RRA .1948 RC3 .0951 FAU .04085
FDE .0899 FRA .7438 FC3-1.3841 BSP 1551
BDE .5804 BRA .8136 BC3 .1757 FSP 196

MID-COURSE EXECUTION ACCURACY

SGT 1046.9 SGR 601.1 SG3 144.5
RRT -.0238 RRF .0273 RTF -.6442
SGB 1207.2 R23 -.0045 R13 .6443
SG1 1047.0 SG2 600.8 THA 178.83

ORBIT DETERMINATION ACCURACY

ST 23.6 SR 27.4 SS 11.7
CRT .7003 CRS .2226 CST .8452
LSA 34.0 MSA 16.9 SSA 1.3
EL1 33.4 EL2 13.8 ALF 51.12

LAUNCH DATE MAY 19 1971 FLIGHT TIME 106.00 ARRIVAL DATE SEP 2 1971

DISTANCE 288.047

EARTH TO MARS

HELIOCENTRIC CONIC

RL 151.35 LAL -.00 LOL 237.39 VL 34.224 GAL -.05 AZL 91.81 HCA 93.98 SMA 227.84 ECC .33572 INC 1.8135 V1 29.439
RP 206.72 LAP -1.81 LOP 331.37 VP 26.486 GAP 18.91 AZP 89.87 TAL 359.79 TAP 93.77 RCA 151.35 APO 304.33 V2 26.491
RC 60.633 GL -12.75 GP -.73 ZAL 94.49 ZAP 170.66 ETS 184.55 ZAE 169.59 ETE 20.56 ZAC 98.73 ETC 278.56 LVI -18.38

PLANETOCENTRIC CONIC

C3 24.075 VHL 4.907 DLA -22.63 RAL 338.89 RAD 6644.6 VEL 12.002 PTH 7.00 VHP 8.866 DPA -16.60 RAP 325.29 ECC 1.3982

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 19	2717.36	-18.07	76.04	198.63	134.80	16 23 37	1717.4	.12	59.84
60.00	16 46 1	2537.33	-12.63	64.84	203.65	128.60	17 28 18	1537.3	3.39	46.77
70.00	18 12 2	2284.44	-7.25	48.30	207.62	123.47	18 50 7	1284.4	6.71	28.76
80.00	19 54 51	1962.69	-2.81	26.62	210.36	119.74	20 27 33	962.7	9.49	6.03
90.00	21 33 7	1645.70	-.93	4.35	211.40	118.27	22 0 33	645.7	10.69	343.34
100.00	22 37 43	1437.16	-2.81	347.99	210.36	119.74	23 1 40	437.2	9.49	327.40
110.00	23 11 29	1331.25	-7.25	337.22	207.62	123.47	23 33 40	331.3	6.71	317.68

DIFFERENTIAL CORRECTIONS

TDE -.3193 TRA -.7811 TC3 .1478 BAU .0576
RDE -.4661 RRA .1892 RC3 .1007 FAU .04137
FDE .0957 FRA .7595 FC3-1.4876 BSP 1565
BDE .5650 BRA .8037 BC3 .1788 FSP 197

MID-COURSE EXECUTION ACCURACY

SGT 1066.1 SGR 602.8 SG3 151.3
RRT -.0300 RRF .0236 RTF -.6443
SGB 1224.7 R23 .0048 R13 .6443
SG1 1066.3 SG2 602.4 THA 178.57

ORBIT DETERMINATION ACCURACY

ST 23.8 SR 27.5 SS 12.0
CRT .6947 CRS .2348 CST .8559
LSA 34.2 MSA 17.1 SSA 1.3
EL1 33.5 EL2 14.0 ALF 50.79

LAUNCH DATE MAY 19 1971 FLIGHT TIME 108.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 291.126 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	34.085	GAL	.01	AZL	91.81	HCA	95.25	SMA	224.18	ECC	.32488	INC	1.6078	V1	29.439
RP	206.70	LAP	-1.80	LOP	332.64	VP	26.309	GAP	18.44	AZP	89.83	TAL	.03	TAP	95.28	RCA	151.35	APO	297.01	V2	26.494
RC	61.483	GL	-13.04	GP	-.76	ZAL	94.19	ZAP	169.65	ETS	184.24	ZAE	169.23	ETE	19.07	ZAC	98.67	ETC	278.61	LVI	-18.42

PLANETOCENTRIC CONIC

C3	22.726	VHL	4.767	DLA	-23.00	RAL	338.71	RAD	6644.0	VEL	11.946	PTH	6.95	VHP	8.577	DPA	-16.54	RAP	325.56	ECC	1.3740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 39 20	2695.20	-17.00	75.01	197.77	135.13	16 24 16	1695.2	1.23	58.92
60.00	16 47 41	2513.45	-11.61	63.65	202.77	128.87	17 29 34	1513.4	4.44	45.63
70.00	18 14 37	2257.85	-6.25	46.89	206.74	123.64	18 52 15	1257.9	7.70	27.35
80.00	19 58 38	1932.35	-1.78	24.95	209.51	119.81	20 30 50	932.3	10.47	4.31
90.00	21 37 39	1612.97	.13	2.52	210.57	118.28	22 4 32	613.0	11.67	341.44
100.00	22 41 30	1406.82	-1.78	346.32	209.51	119.81	23 4 56	406.8	10.47	325.68
110.00	23 14 4	1304.67	-6.25	335.81	206.74	123.64	23 35 48	304.7	7.70	316.27

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.3654	TRA	-.7886	TC3	.3163	BAU	.1012	SGT	1159.4	SGR	602.4	SG3	169.0	ST	26.9	SR	27.4	SS	15.9
RDE	-.4519	RRA	.1843	RC3	.1049	FAU	.04438	RRT	.0299	RRF	-.0462	RTF	-.7555	CRT	.7349	CRS	.5467	CST	.9660
FDE	.2321	FRA	.8219	FC3	-1.6906	BSP	873	SGB	1306.5	R23	-.0154	R13	-.7557	LSA	38.1	MSA	16.4	SSA	1.2
BDE	.5811	BRA	.8099	BC3	.3333	FSP	165	SG1	1159.6	SG2	602.0	THA	1.22	EL1	35.7	EL2	14.0	ALF	45.78

LAUNCH DATE MAY 19 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 294.300 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	33.954	GAL	.07	AZL	91.80	HCA	96.52	SMA	220.86	ECC	.31475	INC	1.8020	V1	29.439
RP	206.68	LAP	-1.79	LOP	333.91	VP	26.141	GAP	17.98	AZP	89.80	TAL	.28	TAP	96.80	RCA	151.35	APO	290.38	V2	26.496
RC	62.398	GL	-13.31	GP	-.78	ZAL	93.87	ZAP	168.63	ETS	183.99	ZAE	168.93	ETE	17.76	ZAC	98.61	ETC	278.65	LVI	-18.46

PLANETOCENTRIC CONIC

C3	21.495	VHL	4.636	DLA	-23.38	RAL	338.51	RAD	6643.5	VEL	11.895	PTH	6.90	VHP	8.299	DPA	-16.48	RAP	325.81	ECC	1.3537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 40 19	2673.58	-15.96	74.03	196.93	135.44	16 24 53	1673.6	2.32	58.02
60.00	16 49 19	2490.07	-10.61	62.48	201.92	129.11	17 30 49	1490.1	5.46	44.50
70.00	18 17 13	2231.68	-5.26	45.51	205.90	123.79	18 54 24	1231.7	8.68	25.96
80.00	20 2 29	1902.20	-.76	23.29	208.70	119.85	20 34 12	902.2	11.44	2.59
90.00	21 42 19	1580.21	1.18	.70	209.78	118.26	22 8 39	580.2	12.64	339.52
100.00	22 45 21	1376.67	-.76	344.66	208.70	119.85	23 8 18	376.7	11.44	323.95
110.00	23 16 39	1278.50	-5.26	334.43	205.90	123.79	23 37 58	278.5	8.68	314.87

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2946	TRA	-.7415	TC3	.2541	BAU	.0796	SGT	1088.5	SGR	605.0	SG3	175.5	ST	23.6	SR	27.5	SS	11.9
RDE	-.4416	RRA	.1785	RC3	.1101	FAU	.04637	RRT	-.0259	RRF	.0290	RTF	-.6756	CRT	.6825	CRS	.1063	CST	.7919
FDE	.0625	FRA	.7872	FC3	-1.8677	BSP	1575	SGB	1245.3	R23	-.0037	R13	.6757	LSA	33.8	MSA	17.7	SSA	1.3
BDE	.5309	BRA	.7627	BC3	.2769	FSP	242	SG1	1088.6	SG2	604.7	THA	178.80	EL1	33.3	EL2	14.2	ALF	51.42

LAUNCH DATE MAY 19 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 8 1971

HELIOCENTRIC CONIC DISTANCE 297.572 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	33.831	GAL	.12	AZL	91.80	HCA	97.79	SMA	217.84	ECC	.30525	INC	1.7962	V1	29.439
RP	206.67	LAP	-1.78	LOP	335.18	VP	25.982	GAP	17.54	AZP	89.76	TAL	.53	TAP	98.32	RCA	151.35	APO	284.34	V2	26.496
RC	63.376	GL	-13.59	GP	-.81	ZAL	93.55	ZAP	167.59	ETS	183.78	ZAE	168.69	ETE	16.58	ZAC	98.55	ETC	278.70	LVI	-18.49

PLANETOCENTRIC CONIC

C3	20.369	VHL	4.513	DLA	-23.76	RAL	338.30	RAD	6643.0	VEL	11.848	PTH	6.86	VHP	8.031	DPA	-16.43	RAP	326.04	ECC	1.3352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 41 15	2652.48	-14.93	73.07	196.12	135.72	16 25 28	1652.5	3.37	57.13
60.00	16 50 56	2467.16	-9.62	61.35	201.10	129.33	17 32 3	1467.2	6.46	43.40
70.00	18 19 49	2205.87	-4.28	44.16	205.09	123.92	18 56 34	1205.9	9.64	24.57
80.00	20 6 27	1872.14	.26	21.65	207.92	119.86	20 37 39	872.1	12.38	.86
90.00	21 47 10	1547.29	2.24	358.86	209.02	118.20	22 12 57	547.3	13.59	337.58
100.00	22 49 18	1346.61	.26	343.01	207.92	119.86	23 11 45	346.6	12.38	322.23
110.00	23 19 15	1252.69	-4.28	333.07	205.09	123.92	23 40 8	252.7	9.64	313.49

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2861	TRA	-.7427	TC3	.2701	BAU	.0799	SGT	1119.3	SGR	605.7	SG3	190.6	ST	23.8	SR	27.5	SS	12.8
RDE	-.4299	RRA	.1740	RC3	.1149	FAU	.04841	RRT	-.0371	RRF	.0379	RTF	-.6706	CRT	.6697	CRS	.0868	CST	.7911
FDE	.0624	FRA	.8561	FC3	-2.0577	BSP	1628	SGB	1272.6	R23	-.0017	R13	.6907	LSA	33.8	MSA	18.5	SSA	1.3
BDE	.5164	BRA	.7629	BC3	.2935	FSP	255	SG1	1119.6	SG2	605.1	THA	178.38	EL1	33.4	EL2	14.6	ALF	51.07

LAUNCH DATE MAY 19 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 10 1971

HELIOCENTRIC CONIC DISTANCE 300.926 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	33.716	GAL	.18	AZL	91.79	HCA	99.06	SMA	215.09	ECC	.29636	INC	1.7903	V1	29.439
RP	206.68	LAP	-1.77	LOP	336.45	VP	25.831	GAP	17.10	AZP	89.72	TAL	.79	TAP	99.85	RCA	151.34	APO	278.83	V2	26.496
RC	64.414	GL	-13.86	GP	-.83	ZAL	93.20	ZAP	166.53	ETS	183.60	ZAE	168.52	ETE	15.51	ZAC	98.50	ETC	278.74	LVI	-18.52

PLANETOCENTRIC CONIC

C3	19.338	VHL	4.398	DLA	-24.13	RAL	338.07	RAD	6642.5	VEL	11.805	PTH	6.83	VHP	7.772	DPA	-16.38	RAP	326.26	ECC	1.3183

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 8	2631.91	-13.92	72.15	195.34	135.97	16 26 0	1631.9	4.41	56.27
60.00	16 52 31	2444.75	-8.65	60.25	200.30	129.52	17 33 16	1444.7	7.44	42.31
70.00	18 22 25	2180.45	-3.32	42.82	204.30	124.01	18 58 45	1180.5	10.58	23.20
80.00	20 10 29	1842.20	1.27	20.00	207.16	119.83	20 41 11	842.2	13.31	359.12
90.00	21 52 11	1514.19	3.31	357.01	208.29	118.10	22 17 25	514.2	14.54	335.61
100.00	22 53 21	1316.68	1.27	341.37	207.16	119.83	23 15 18	316.7	13.31	320.49
110.00	23 21 51	1227.27	-3.32	331.74	204.30	124.01	23 42 18	227.3	10.58	312.12

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2830	TRA	-.7301	TC3	.2944	BAU	.0822	SGT	1135.5	SGR	605.9	SG3	203.4	ST	24.2	SR	27.5	SS	13.0
RDE	-.4187	RRA	.1692	RC3	.1196	FAU	.05054	RRT	-.0340	RRF	.0407	RTF	-.6914	CRT	.6709	CRS	.0416	CST	.7618
FDE	.0506	FRA	.8792	FC3	-2.2626	BSP	1660	SGB	1287.0	R23	-.0078	R13	.6916	LSA	34.0	MSA	18.8	SSA	1.4
BDE	.5054	BRA	.7494	BC3	.3178	FSP	274	SG1	1135.8	SG2	605.4	THA	178.55	EL1	33.5	EL2	14.7	ALF	50.48

LAUNCH DATE MAY 19 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 12 1971

HELIOCENTRIC CONIC DISTANCE 304.355 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 33.607 GAL .24 AZL 91.78 HCA 100.33 SMA 212.57 ECC .28803 INC 1.7844 V1 29.439
RP 206.69 LAP -1.76 LOP 337.72 VP 25.688 GAP 16.67 AZP 89.68 TAL 1.06 TAP 101.39 RCA 151.34 APO 273.79 V2 26.495
RC 65.512 GL -14.12 GP -.86 ZAL 92.85 ZAP 165.45 ETS 183.44 ZAE 168.41 ETE 14.54 ZAC 98.44 ETC 278.77 LVI -18.54

PLANETOCENTRIC CONIC

C3 16.394 VHL 4.289 DLA -24.51 RAL 337.83 RAD 6642.1 VEL 11.765 PTH 6.79 VHP 7.523 DPA -16.35 RAP 326.45 ECC 1.3027

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 59	2611.91	-12.94	71.26	194.58	136.20	16 26 31	1611.9	5.41	55.43
60.00	16 54 4	2422.87	-7.70	59.18	199.53	129.68	17 34 27	1422.9	8.39	41.24
70.00	18 25 1	2155.47	-2.37	41.52	203.55	124.08	19 0 56	1155.5	11.49	21.84
80.00	20 14 38	1812.41	2.28	18.37	206.44	119.78	20 44 50	812.4	14.23	357.38
90.00	21 57 25	1480.89	4.37	355.14	207.60	117.97	22 22 6	480.9	15.47	333.61
100.00	22 57 29	1286.89	2.28	339.73	206.44	119.78	23 18 56	286.9	14.23	318.75
110.00	23 24 27	1202.29	-2.37	330.44	203.55	124.08	23 44 29	202.3	11.49	310.76

DIFFERENTIAL CORRECTIONS

TDE -.2777 TRA -.7195 TC3 .3224 BAU .0850
RDE -.4079 RRA .1647 RC3 .1240 FAU .05272
FDE .0497 FRA .9132 FC3-2.4813 BSP 1710
BDE .4934 BRA .7382 BC3 .3455 FSP 299

MID-COURSE EXECUTION ACCURACY

SGT 1153.3 SGR 605.6 SG3 217.4
RRT -.0343 RRF .0406 RTF -.6994
SGB 1302.6 R23 -.0074 R13 .6995
SG1 1153.6 SG2 605.1 THA 178.58

ORBIT DETERMINATION ACCURACY

ST 24.4 SR 27.5 SS 13.4
CRT .6679 CRS .0316 CST .7579
LSA 34.1 MSA 19.2 SSA 1.4
EL1 33.6 EL2 14.8 ALF 50.07

LAUNCH DATE MAY 19 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 14 1971

HELIOCENTRIC CONIC DISTANCE 307.852 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 33.505 GAL .29 AZL 91.78 HCA 101.60 SMA 210.26 ECC .28022 INC 1.7784 V1 29.439
RP 206.71 LAP -1.74 LOP 338.99 VP 25.552 GAP 16.25 AZP 89.64 TAL 1.33 TAP 102.93 RCA 151.34 APO 269.17 V2 26.493
RC 66.667 GL -14.38 GP -.89 ZAL 92.49 ZAP 164.35 ETS 183.31 ZAE 168.37 ETE 13.66 ZAC 98.38 ETC 278.81 LVI -18.55

PLANETOCENTRIC CONIC

C3 17.530 VHL 4.187 DLA -24.88 RAL 337.57 RAD 6641.7 VEL 11.729 PTH 6.76 VHP 7.282 DPA -16.32 RAP 326.63 ECC 1.2885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 43 47	2592.50	-11.99	70.41	193.84	136.40	16 26 59	1592.5	6.38	54.61
60.00	16 55 35	2401.56	-6.78	58.15	198.78	129.82	17 35 36	1401.6	9.31	40.20
70.00	18 27 37	2130.96	-1.43	40.24	202.82	124.13	19 3 8	1131.0	12.38	20.50
80.00	20 18 52	1782.79	3.28	16.74	205.75	119.69	20 48 34	782.8	15.12	355.64
90.00	22 2 52	1447.37	5.44	353.26	206.94	117.79	22 26 59	447.4	16.39	331.57
100.00	23 1 43	1257.26	3.28	338.11	205.75	119.69	23 22 41	257.3	15.12	317.01
110.00	23 27 3	1177.78	-1.43	329.16	202.82	124.13	23 46 41	177.8	12.38	309.42

DIFFERENTIAL CORRECTIONS

TDE -.2705 TRA -.7110 TC3 .3508 BAU .0875
RDE -.3976 RRA .1605 RC3 .1280 FAU .05522
FDE .0350 FRA .9520 FC3-2.7269 BSP 1736
BDE .4809 BRA .7289 BC3 .3734 FSP 321

MID-COURSE EXECUTION ACCURACY

SGT 1172.1 SGR 605.1 SG3 233.1
RRT -.0378 RRF .0471 RTF -.7048
SGB 1319.0 R23 -.0109 R13 .7051
SG1 1172.4 SG2 604.5 THA 178.48

ORBIT DETERMINATION ACCURACY

ST 24.5 SR 27.4 SS 13.8
CRT .6613 CRS -.0210 CST .7289
LSA 34.0 MSA 19.7 SSA 1.4
EL1 33.6 EL2 15.0 ALF 49.83

LAUNCH DATE MAY 19 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 311.410 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 33.409 GAL .34 AZL 91.77 HCA 102.87 SMA 208.14 ECC .27291 INC 1.7725 V1 29.439
RP 206.73 LAP -1.73 LOP 340.26 VP 25.422 GAP 15.83 AZP 89.61 TAL 1.60 TAP 104.47 RCA 151.33 APO 264.94 V2 26.489
RC 67.877 GL -14.63 GP -.92 ZAL 92.13 ZAP 163.23 ETS 183.19 ZAE 168.41 ETE 12.83 ZAC 98.33 ETC 278.83 LVI -18.56

PLANETOCENTRIC CONIC

C3 16.737 VHL 4.091 DLA -25.25 RAL 337.31 RAD 6641.3 VEL 11.695 PTH 6.73 VHP 7.050 DPA -16.30 RAP 326.78 ECC 1.2755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 32	2573.72	-11.06	69.59	193.13	136.58	16 27 26	1573.7	7.32	53.81
60.00	16 57 3	2380.85	-5.87	57.15	198.07	129.94	17 36 44	1380.8	10.21	39.18
70.00	18 30 12	2106.97	-.51	38.99	202.11	124.15	19 5 19	1107.0	13.24	19.18
80.00	20 23 12	1753.35	4.27	15.11	205.09	119.58	20 52 25	753.3	15.99	353.89
90.00	22 8 33	1413.55	6.51	351.35	206.31	117.58	22 32 7	413.5	17.29	329.50
100.00	23 6 3	1227.82	4.27	336.48	205.09	119.58	23 26 31	227.8	15.99	315.26
110.00	23 29 39	1153.79	-.51	327.90	202.11	124.15	23 48 52	153.8	13.24	306.10

DIFFERENTIAL CORRECTIONS

TDE -.2630 TRA -.7003 TC3 .3820 BAU .0904
RDE -.3876 RRA .1564 RC3 .1316 FAU .05789
FDE .0261 FRA .9899 FC3-2.9943 BSP 1799
BDE .4684 BRA .7176 BC3 .4040 FSP 353

MID-COURSE EXECUTION ACCURACY

SGT 1187.1 SGR 604.1 SG3 249.7
RRT -.0405 RRF .0502 RTF -.7115
SGB 1332.0 R23 -.0113 R13 .7118
SG1 1187.5 SG2 603.4 THA 178.41

ORBIT DETERMINATION ACCURACY

ST 24.6 SR 27.4 SS 14.2
CRT .6551 CRS -.0322 CST .7131
LSA 33.9 MSA 20.2 SSA 1.5
EL1 33.5 EL2 15.2 ALF 49.69

LAUNCH DATE MAY 19 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 315.023 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 33.319 GAL .39 AZL 91.77 HCA 104.13 SMA 206.19 ECC .26607 INC 1.7664 V1 29.439
RP 206.77 LAP -1.71 LOP 341.53 VP 25.299 GAP 15.43 AZP 89.57 TAL 1.88 TAP 106.01 RCA 151.33 APO 261.05 V2 26.485
RC 69.140 GL -14.87 GP -.95 ZAL 91.76 ZAP 162.08 ETS 183.09 ZAE 168.52 ETE 12.06 ZAC 98.28 ETC 278.86 LVI -18.56

PLANETOCENTRIC CONIC

C3 16.011 VHL 4.001 DLA -25.61 RAL 337.04 RAD 6641.0 VEL 11.664 PTH 6.70 VHP 6.826 DPA -16.29 RAP 326.91 ECC 1.2635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 15	2555.57	-10.16	68.80	192.45	136.74	16 27 51	1555.6	8.22	53.04
60.00	16 58 30	2360.76	-4.99	56.18	197.37	130.04	17 37 50	1360.8	11.07	38.18
70.00	18 32 47	2083.53	.38	37.76	201.44	124.15	19 7 31	1083.5	14.08	17.88
80.00	20 27 37	1724.11	5.25	13.50	204.46	119.43	20 56 21	724.1	16.84	352.13
90.00	22 14 31	1379.36	7.58	349.41	205.73	117.33	22 37 31	379.4	18.17	327.39
100.00	23 10 29	1198.58	5.25	334.87	204.46	119.43	23 30 28	198.6	16.84	313.50
110.00	23 32 14	1130.35	.38	326.68	201.44	124.15	23 51 4	130.4	14.08	306.80

DIFFERENTIAL CORRECTIONS

TDE -.2558 TRA -.6888 TC3 .4082 BAU .0920
RDE -.3780 RRA .1525 RC3 .1349 FAU .06057
FDE .0133 FRA 1.0222 FC3-3.2753 BSP 1825
BDE .4564 BRA .7054 BC3 .4299 FSP 381

MID-COURSE EXECUTION ACCURACY

SGT 1198.8 SGR 602.7 SG3 266.4
RRT -.0433 RRF .0537 RTF -.7139
SGB 1341.8 R23 -.0124 R13 .7142
SG1 1199.2 SG2 602.0 THA 178.33

ORBIT DETERMINATION ACCURACY

ST 24.6 SR 27.3 SS 14.6
CRT .6495 CRS -.0919 CST .6901
LSA 33.7 MSA 20.6 SSA 1.5
EL1 33.4 EL2 15.3 ALF 49.59

LAUNCH DATE MAY 19 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 318.687 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	33.234	GAL	.44	AZL	91.76	HCA	108.40	SMA	204.40	ECC	.25966	INC	1.7603	V1	29.439
RP	206.81	LAP	-1.70	LOP	342.79	VP	28.182	GAP	15.04	AZP	89.53	TAL	2.15	TAP	107.55	RCA	151.33	APO	257.48	V2	26.480
RC	70.455	GL	-15.11	GP	-.99	ZAL	91.40	ZAP	160.91	ETS	183.00	ZAE	168.70	ETE	11.34	ZAC	98.23	ETC	278.88	LVI	-18.58

PLANETOCENTRIC CONIC

C3	15.344	VHL	3.917	DLA	-25.97	RAL	336.76	RAD	6640.7	VEL	11.636	PTH	6.68	VHP	6.611	DPA	-16.29	RAP	327.02	ECC	1.2525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 56	2530.07	-9.29	68.05	191.79	136.88	18 28 14	1538.1	9.09	52.29
60.00	16 59 54	2341.34	-4.14	55.24	196.71	130.12	17 38 55	1341.3	11.90	37.21
70.00	18 35 21	2060.68	1.26	36.57	200.79	124.13	19 9 42	1060.7	14.89	16.60
80.00	20 32 9	1695.09	6.22	11.89	203.86	119.26	21 0 24	695.1	17.67	350.38
90.00	22 20 48	1344.70	8.66	347.43	205.18	117.03	22 43 13	344.7	19.05	325.22
100.00	23 15 1	1169.56	8.22	333.26	203.86	119.26	23 34 31	169.6	17.67	311.75
110.00	23 34 47	1107.50	1.26	325.49	200.79	124.13	23 53 15	107.5	14.89	305.52

DIFFERENTIAL CORRECTIONS							MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2501	TRA	-.6777	TC3	.4394	BAU	.0945	SGT	1211.7	SGR	600.9	SG3	285.4	ST	24.7	SR	27.2	SS	15.0
RDE	-.3688	RRA	.1488	RC3	.1375	FAU	.06389	RRT	-.0446	RRF	.0558	RTF	-.7190	CRT	.6457	CRS	-.1152	CST	.6767
FDE	.0056	FRA	1.0825	FC3	-3.5936	BSP	1862	SGB	1352.5	R23	-.0133	R13	.7193	LSA	33.6	MSA	21.0	SSA	1.5
BDE	.4456	BRA	.6938	BC3	.4604	FSP	411	SG1	1212.0	SG2	600.1	THA	178.32	EL1	33.4	EL2	15.4	ALF	49.33

LAUNCH DATE MAY 19 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 322.396 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	33.154	GAL	.49	AZL	91.75	HCA	106.67	SMA	202.75	ECC	.25367	INC	1.7540	V1	29.439
RP	206.87	LAP	-1.68	LOP	344.06	VP	25.070	GAP	14.65	AZP	89.50	TAL	2.42	TAP	109.09	RCA	151.32	APO	254.18	V2	26.474
RC	71.818	GL	-15.33	GP	-1.02	ZAL	91.03	ZAP	159.72	ETS	182.91	ZAE	168.95	ETE	10.65	ZAC	98.19	ETC	278.89	LVI	-18.53

PLANETOCENTRIC CONIC

C3	14.731	VHL	3.838	DLA	-26.32	RAL	336.48	RAD	6640.4	VEL	11.610	PTH	6.65	VHP	6.402	DPA	-16.30	RAP	327.10	ECC	1.2424

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 46 34	2521.26	-8.46	67.33	191.16	137.00	18 28 35	1521.3	9.93	51.56
60.00	17 1 15	2322.59	-3.32	54.34	196.07	130.19	17 39 58	1322.6	12.70	36.27
70.00	18 37 53	2038.46	2.10	35.41	200.18	124.10	19 11 52	1038.5	15.67	15.35
80.00	20 36 47	1666.30	7.17	10.29	203.30	119.06	21 4 34	666.3	18.47	348.62
90.00	22 27 28	1309.38	9.75	345.41	204.68	116.68	22 49 17	309.4	19.90	322.98
100.00	23 19 39	1140.77	7.17	331.65	203.30	119.06	23 38 40	140.8	18.47	309.98
110.00	23 37 20	1085.28	2.10	324.33	200.18	124.10	23 55 25	85.3	15.67	304.27

DIFFERENTIAL CORRECTIONS							MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2422	TRA	-.6673	TC3	.4649	BAU	.0956	SGT	1222.0	SGR	599.0	SG3	304.9	ST	24.6	SR	27.1	SS	15.5
RDE	-.3599	RRA	.1453	RC3	.1398	FAU	.06869	RRT	-.0496	RRF	.0627	RTF	-.7228	CRT	.6378	CRS	-.1612	CST	.6497
FDE	-.0114	FRA	1.1071	FC3	-3.9189	BSP	1885	SGB	1360.9	R23	-.0155	R13	.7231	LSA	33.4	MSA	21.5	SSA	1.5
BDE	.4339	BRA	.6830	BC3	.4654	FSP	444	SG1	1222.4	SG2	598.0	THA	178.17	EL1	33.2	EL2	15.5	ALF	49.34

LAUNCH DATE MAY 19 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC DISTANCE 326.148 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	33.080	GAL	.53	AZL	91.75	HCA	107.94	SMA	201.23	ECC	.24806	INC	1.7478	V1	29.439
RP	206.93	LAP	-1.66	LOP	345.33	VP	24.964	GAP	14.27	AZP	89.46	TAL	2.69	TAP	110.62	RCA	151.31	APO	251.15	V2	26.466
RC	73.228	GL	-15.55	GP	-1.06	ZAL	90.67	ZAP	158.49	ETS	182.84	ZAE	169.28	ETE	9.99	ZAC	98.14	ETC	278.90	LVI	-18.50

PLANETOCENTRIC CONIC

C3	14.169	VHL	3.764	DLA	-26.63	RAL	336.20	RAD	6640.1	VEL	11.586	PTH	6.63	VHP	6.202	DPA	-16.32	RAP	327.16	ECC	1.2332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 47 9	2505.14	-7.65	66.64	190.55	137.10	16 28 54	1505.1	10.73	50.87
60.00	17 2 34	2304.56	-2.53	53.48	195.46	130.24	17 40 58	1304.6	13.46	35.36
70.00	18 40 24	2016.91	2.93	34.29	199.59	124.04	19 14 0	1016.9	16.41	14.13
80.00	20 41 32	1637.75	8.12	8.69	202.77	118.83	21 8 49	637.7	19.25	346.85
90.00	22 34 34	1273.18	10.85	343.32	204.22	116.28	22 55 48	273.2	20.75	320.66
100.00	23 24 23	1112.22	8.12	330.06	202.77	118.83	23 42 56	112.2	19.25	308.22
110.00	23 39 50	1063.73	2.93	323.20	199.59	124.04	23 57 34	63.7	16.41	303.05

DIFFERENTIAL CORRECTIONS							MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2352	TRA	-.6567	TC3	.4683	BAU	.0963	SGT	1230.5	SGR	598.6	SG3	325.8	ST	24.5	SR	27.0	SS	16.0
RDE	-.3914	RRA	.1420	RC3	.1414	FAU	.07001	RRT	-.0543	RRF	.0679	RTF	-. .49	CRT	.6311	CRS	-.1967	CST	.6286
FDE	-.0259	FRA	1.1518	FC3	-4.2774	BSP	1906	SGB	1367.5	R23	-.0165	R13	.7253	LSA	33.2	MSA	22.0	SSA	1.6
BDE	.4229	BRA	.6719	BC3	.5084	FSP	479	SG1	1231.1	SG2	595.5	THA	178.03	EL1	33.0	EL2	15.6	ALF	49.29

LAUNCH DATE MAY 19 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC DISTANCE 329.938 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	33.010	GAL	.58	AZL	91.74	HCA	109.20	SMA	199.83	ECC	.24281	INC	1.7414	V1	29.439
RP	207.00	LAP	-1.64	LOP	346.59	VP	24.862	GAP	13.90	AZP	89.43	TAL	2.95	TAP	112.15	RCA	151.31	APO	248.35	V2	26.458
RC	74.683	GL	-15.75	GP	-1.10	ZAL	90.32	ZAP	157.24	ETS	182.77	ZAE	169.69	ETE	9.34	ZAC	98.10	ETC	278.90	LVI	-18.47

PLANETOCENTRIC CONIC

C3	13.852	VHL	3.695	DLA	-26.97	RAL	335.92	RAD	6639.9	VEL	11.564	PTH	6.61	VHP	6.009	DPA	-16.35	RAP	327.19	ECC	1.2247

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 47 43	2489.73	-6.89	65.98	189.97	137.19	16 29 12	1489.7	11.49	50.20
60.00	17 3 50	2287.25	-1.77	52.65	194.88	130.27	17 41 57	1287.3	14.19	34.48
70.00	18 42 52	1996.07	3.72	33.19	199.03	123.98	19 16 8	996.1	17.13	12.93
80.00	20 46 22	1609.45	9.04	7.10	202.28	118.58	21 13 11	609.5	20.00	345.09
90.00	22 42 16	1233.71	11.97	341.14	203.81	115.81	23 2 51	235.7	21.59	318.24
100.00	23 29 14	1083.92	9.04	328.47	202.28	118.58	23 47 18	83.9	20.00	306.46
110.00	23 42 18	1042.88	3.72	322.11	199.03	123.98	23 59 41	42.9	17.13	301.85

DIFFERENTIAL CORRECTIONS							MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2292	TRA	-.6441	TC3	.5135	BAU	.0973	SGT	1235.5	SGR	593.9	SG3	348.1	ST	24.5	SR	26.9	SS	16.5
RDE	-.3432	RRA	.1389	RC3	.1422	FAU	.07382	RRT	-.0570	RRF	.0725	RTF	-.7270	CRT	.6269	CRS	-.2288	CST	.6071
FDE	-.0403	FRA	1.1961	FC3	-4.6684	BSP	1921	SGB	1370.8	R23	-.0187	R13	.7275	LSA	33.0	MSA	22.4	SSA	1.6
BDE	.4127	BRA	.6589	BC3	.5328	FSP	514	SG1	1236.1	SG2	592.6	THA	177.96	EL1	32.8	EL2	15.6	ALF	49.23

LAUNCH DATE MAY 19 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 28 1971

DISTANCE 333.763

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.044 GAL .62 AZL 91.73 HCA 110.47 SNA 198.84 ECC .23791 INC 1.7350 V1 29.439
RP 207.08 LAP -1.63 LOP 347.86 VP 24.765 GAP 13.54 AZP 89.39 TAL 3.21 TAP 113.67 RCA 151.30 APO 248.77 V2 26.449
RC 78.180 GL -15.95 GP -1.14 ZAL 89.97 ZAP 155.97 ETS 182.71 ZAE 170.17 ETE 8.89 ZAC 98.06 ETC 278.89 LVI -18.43

PLANETOCENTRIC CONIC

C3 13.177 VHL 3.630 DLA -27.29 RAL 336.64 RAD 6630.6 VEL 11.543 PTH 6.59 VHP 5.822 DPA -16.39 RAP 327.19 ECC 1.2169

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 48 14	2475.03	-6.15	68.36	189.42	137.27	16 29 29	1475.0	12.21	49.55
60.00	17 5 3	2270.70	-1.04	51.86	194.33	130.29	17 42 33	1270.7	14.88	33.63
70.00	18 45 17	1975.97	4.48	32.14	198.50	123.89	19 18 13	976.0	17.81	11.77
80.00	20 51 19	1581.42	9.95	5.51	201.82	118.30	21 17 40	581.4	20.73	345.32
90.00	22 50 43	1196.35	13.12	338.82	203.48	115.28	23 10 40	196.3	22.43	315.66
100.00	23 34 11	1055.09	9.95	326.88	201.82	116.30	23 51 47	55.9	20.73	304.69
110.00	23 44 43	1022.78	4.48	321.06	198.50	123.89	24 1 46	22.8	17.81	300.69

DIFFERENTIAL CORRECTIONS

TDE -.2234 TRA -.6338 TC3 .5312 BAU .0969
RDE -.3353 RRA .1360 RC3 .1425 FAU .07726
FDE -.0556 FRA 1.2475 FC3-5.0756 BSP 1926
BDE .4029 BRA .6482 BC3 .5500 FSP 554

MID-COURSE EXECUTION ACCURACY

SGT 1241.0 SGR 590.9 SG3 371.6
RRT -.0618 RRF .0789 RTF -.7277
SGB 1374.5 R23 -.0208 R13 .7282
SG1 1241.7 SG2 589.4 THA 177.82

ORBIT DETERMINATION ACCURACY

ST 24.4 SR 26.7 SS 17.1
CRT .6217 CRS -.2597 CST .5869
LSA 32.7 MSA 23.0 SSA 1.6
EL1 32.6 EL2 15.7 ALF 49.11

LAUNCH DATE MAY 19 1971 FLIGHT TIME 134.00 ARRIVAL DATE SEP 30 1971

DISTANCE 337.621

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.883 GAL .65 AZL 91.73 HCA 111.73 SNA 197.34 ECC .23333 INC 1.7284 V1 29.439
RP 207.17 LAP -1.61 LOP 349.12 VP 24.672 GAP 13.19 AZP 89.36 TAL 3.46 TAP 115.19 RCA 151.30 APO 243.38 V2 26.439
RC 77.718 GL -16.13 GP -1.19 ZAL 89.64 ZAP 154.66 ETS 182.65 ZAE 170.72 ETE 8.04 ZAC 98.03 ETC 278.89 LVI -18.37

PLANETOCENTRIC CONIC

C3 12.740 VHL 3.569 DLA -27.58 RAL 335.37 RAD 6639.4 VEL 11.524 PTH 6.57 VHP 5.643 DPA -16.45 RAP 327.16 ECC 1.2097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 48 42	2461.07	-5.45	64.77	188.89	137.34	16 29 44	1461.1	12.90	48.94
60.00	17 6 12	2254.92	-.34	51.11	193.80	130.30	17 43 47	1254.9	15.54	32.82
70.00	18 47 38	1956.65	5.22	31.12	197.99	123.80	19 20 15	956.7	18.45	10.65
80.00	20 56 22	1553.66	10.84	3.94	201.39	117.99	21 22 16	553.7	21.42	341.56
90.00	23 0 19	1153.96	14.34	336.31	203.16	114.64	23 19 33	154.0	23.28	312.84
100.00	23 39 14	1028.13	10.84	325.30	201.39	117.99	23 56 22	28.1	21.42	302.92
110.00	23 47 5	1003.47	5.22	320.04	197.99	123.80	24 3 48	3.5	18.45	299.57

DIFFERENTIAL CORRECTIONS

TDE -.2177 TRA -.6210 TC3 .5497 BAU .0967
RDE -.3277 RRA .1333 RC3 .1418 FAU .08130
FDE -.0741 FRA 1.2969 FC3-5.5242 BSP 1940
BDE .3934 BRA .6351 BC3 .5677 FSP 598

MID-COURSE EXECUTION ACCURACY

SGT 1241.3 SGR 587.5 SG3 396.7
RRT -.0657 RRF .0853 RTF -.7277
SGB 1373.3 R23 -.0238 R13 .7283
SG1 1242.0 SG2 585.9 THA 177.71

ORBIT DETERMINATION ACCURACY

ST 24.3 SR 26.5 SS 17.7
CRT .6179 CRS -.2943 CST .5815
LSA 32.5 MSA 23.4 SSA 1.6
EL1 32.4 EL2 15.6 ALF 49.10

LAUNCH DATE MAY 19 1971 FLIGHT TIME 136.00 ARRIVAL DATE OCT 2 1971

DISTANCE 341.508

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.825 GAL .69 AZL 91.72 HCA 112.99 SNA 196.23 ECC .22904 INC 1.7217 V1 29.439
RP 207.26 LAP -1.58 LOP 350.39 VP 24.583 GAP 12.85 AZP 89.33 TAL 3.70 TAP 116.69 RCA 151.29 APO 241.16 V2 26.428
RC 79.295 GL -16.31 GP -1.23 ZAL 89.31 ZAP 153.32 ETS 182.59 ZAE 171.35 ETE 7.36 ZAC 97.99 ETC 278.87 LVI -18.31

PLANETOCENTRIC CONIC

C3 12.338 VHL 3.513 DLA -27.86 RAL 335.11 RAD 6639.2 VEL 11.507 PTH 6.56 VHP 5.470 DPA -16.52 RAP 327.10 ECC 1.2031

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 49 9	2447.81	-4.79	64.21	188.39	137.39	16 29 57	1447.8	13.55	48.35
60.00	17 7 19	2239.90	.32	50.39	193.29	130.30	17 44 39	1239.9	16.16	32.04
70.00	18 49 56	1938.11	5.92	30.15	197.51	123.70	19 22 14	938.1	19.07	9.56
80.00	21 1 33	1526.07	11.72	2.36	200.99	117.66	21 26 59	526.1	22.10	339.78
90.00	23 11 51	1105.84	15.69	333.42	202.96	113.84	23 30 17	105.8	24.17	309.60
100.00	23 44 24	1000.54	11.72	323.73	200.99	117.66	24 1 5	.5	22.10	301.15
110.00	23 49 22	6272.97	5.92	296.97	197.51	123.70	25 33 55	5273.0	19.07	276.39

DIFFERENTIAL CORRECTIONS

TDE -.2035 TRA -.6007 TC3 .5892 BAU .0999
RDE -.3204 RRA .1307 RC3 .1402 FAU .08565
FDE -.0977 FRA 1.3475 FC3-6.0100 BSP 1831
BDE .3796 BRA .6147 BC3 .6087 FSP 637

MID-COURSE EXECUTION ACCURACY

SGT 1228.7 SGR 584.0 SG3 423.6
RRT -.0738 RRF .0932 RTF -.[illegible]88
SGB 1360.5 R23 -.0230 R13 .7394
SG1 1229.7 SG2 581.9 THA 177.41

ORBIT DETERMINATION ACCURACY

ST 23.5 SR 26.4 SS 18.3
CRT .6028 CRS -.3356 CST .5412
LSA 31.7 MSA 24.0 SSA 1.7
EL1 31.7 EL2 15.6 ALF 50.45

LAUNCH DATE MAY 19 1971 FLIGHT TIME 138.00 ARRIVAL DATE OCT 4 1971

DISTANCE 345.423

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.771 GAL .72 AZL 91.71 HCA 114.28 SNA 195.22 ECC .22505 INC 1.7149 V1 29.439
RP 207.37 LAP -1.56 LOP 351.65 VP 24.498 GAP 12.51 AZP 89.30 TAL 3.93 TAP 118.18 RCA 151.28 APO 239.15 V2 26.415
RC 80.909 GL -16.47 GP -1.28 ZAL 89.01 ZAP 151.94 ETS 182.54 ZAE 172.05 ETE 6.63 ZAC 97.96 ETC 278.85 LVI -18.24

PLANETOCENTRIC CONIC

C3 11.968 VHL 3.460 DLA -28.13 RAL 334.86 RAD 6639.0 VEL 11.491 PTH 6.54 VHP 5.304 DPA -16.60 RAP 327.01 ECC 1.1970

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 49 34	2435.35	-4.16	63.69	187.92	137.44	16 30 9	1435.3	14.16	47.80
60.00	17 8 21	2225.75	.94	49.72	192.82	130.29	17 45 27	1225.7	16.75	31.30
70.00	18 52 9	1920.53	6.58	29.22	197.07	123.59	19 24 9	920.5	19.64	8.52
80.00	21 6 48	1498.91	12.57	.79	200.63	117.31	21 31 47	498.9	22.74	338.02
90.00	23 27 47	1044.23	17.34	329.65	202.94	112.69	23 45 11	44.2	25.20	305.38
100.00	23 49 40	6261.42	12.57	300.07	200.63	117.31	25 34 1	5261.4	22.74	277.29
110.00	23 51 35	6255.38	6.58	296.04	197.07	123.59	25 35 50	5255.4	19.64	275.35

DIFFERENTIAL CORRECTIONS

TDE -.2028 TRA -.5920 TC3 .5866 BAU .0964
RDE -.3133 RRA .1284 RC3 .1379 FAU .09004
FDE -.1144 FRA 1.4053 FC3-6.5133 BSP 1878
BDE .3732 BRA .6058 BC3 .6026 FSP 687

MID-COURSE EXECUTION ACCURACY

SGT 1230.2 SGR 580.1 SG3 451.5
RRT -.0771 RRF .1004 RTF -.7310
SGB 1360.1 R23 -.0282 R13 .7318
SG1 1231.3 SG2 577.8 THA 177.33

ORBIT DETERMINATION ACCURACY

ST 23.7 SR 26.2 SS 18.9
CRT .6054 CRS -.3590 CST .5172
LSA 31.7 MSA 24.4 SSA 1.7
EL1 31.7 EL2 15.6 ALF 49.76

LAUNCH DATE MAY 19 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 349.362 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.721 GAL .75 AZL 91.71 HCA 115.51 SMA 194.27 ECC .22132 INC 1.7080 V1 29.439
RP 207.48 LAP -1.54 LOP 352.91 VP 24.417 GAP 12.19 AZP 89.26 TAL 4.14 TAP 119.66 RCA 151.28 APO 237.27 V2 26.402
RC 82.560 GL -16.62 GP -1.33 ZAL 88.72 ZAP 150.54 ETS 182.49 ZAE 172.82 ETE 5.81 ZAC 97.93 ETC 278.82 LVI -18.15

PLANETOCENTRIC CONIC

C3 11.628 VHL 3.410 DLA -28.38 RAL 334.62 RAD 6638.9 VEL 11.476 PTH 6.53 VHP 5.145 DPA -16.70 RAP 326.89 ECC 1.1914

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 49 57	2423.63	-3.58	63.20	187.47	137.47	16 30 20	1423.6	14.73	47.27
60.00	17 9 21	2212.41	1.53	49.08	192.38	130.28	17 46 13	1212.4	17.30	30.60
70.00	18 54 16	1903.84	7.21	28.33	196.64	123.48	19 26 0	903.8	20.18	7.53
80.00	21 12 10	1472.02	13.41	359.23	200.31	116.93	21 36 42	472.0	23.35	336.26
87.55	23 31 49	1021.87	19.66	328.99	203.20	110.89	23 48 51	21.9	26.54	304.06
100.00	23 55 2	6234.53	13.41	298.51	200.31	116.93	25 38 56	5234.5	23.35	275.53
110.00	23 53 42	6238.70	7.21	295.16	196.64	123.48	25 37 41	5238.7	20.18	274.35

DIFFERENTIAL CORRECTIONS

TDE -.1994 TRA -.5815 TC3 .5807 BAU .0927
RDE -.3065 RRA .1262 RC3 .1348 FAU .09460
FDE -.1368 FRA 1.4654 FC3-7.0433 BSP 1904
BDE .3656 BRA .5951 BC3 .5961 FSP 742

MID-COURSE EXECUTION ACCURACY

SGT 1225.7 SGR 576.0 SG3 480.7
RRT -.0833 RRF .1096 RTF -.7234
SGB 1354.3 R23 -.0326 R13 .7243
SG1 1226.9 SG2 573.4 THA 177.13

ORBIT DETERMINATION ACCURACY

ST 23.6 SR 26.0 SS 19.6
CRT .6040 CRS -.3894 CST .4903
LSA 31.5 MSA 25.0 SSA 1.7
EL1 31.5 EL2 15.5 ALF 49.50

LAUNCH DATE MAY 19 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 353.325 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.674 GAL .78 AZL 91.70 HCA 116.77 SMA 193.40 ECC .21785 INC 1.7009 V1 29.439
RP 207.60 LAP -1.52 LOP 354.17 VP 24.338 GAP 11.87 AZP 89.23 TAL 4.35 TAP 121.12 RCA 151.27 APO 235.53 V2 26.388
RC 84.247 GL -16.76 GP -1.38 ZAL 88.45 ZAP 149.10 ETS 182.44 ZAE 173.66 ETE 4.85 ZAC 97.91 ETC 278.78 LVI -18.06

PLANETOCENTRIC CONIC

C3 11.314 VHL 3.364 DLA -28.61 RAL 334.39 RAD 6638.7 VEL 11.463 PTH 6.51 VHP 4.992 DPA -16.81 RAP 326.73 ECC 1.1862

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 50 17	2412.66	-3.03	62.74	187.05	137.50	16 30 30	1412.7	15.27	46.78
60.00	17 10 16	2199.91	2.08	48.48	191.96	130.26	17 46 56	1199.9	17.81	29.93
70.00	18 56 17	1886.09	7.80	27.50	196.25	123.36	19 27 45	888.1	20.68	6.58
80.00	21 17 38	1445.42	14.22	357.68	200.01	116.53	21 41 44	445.4	23.93	334.50
85.49	23 13 48	1071.55	19.95	332.75	202.65	110.94	23 31 40	71.5	26.82	307.76
100.00	0 4 26	6207.93	14.22	296.95	200.01	116.53	1 47 54	5207.9	23.93	273.77
110.00	23 55 44	6222.95	7.80	294.32	196.25	123.36	25 39 26	5223.0	20.68	273.41

DIFFERENTIAL CORRECTIONS

TDE -.1971 TRA -.5706 TC3 .5732 BAU .0889
RDE -.2998 RRA .1243 RC3 .1306 FAU .09942
FDE -.1550 FRA 1.5320 FC3-7.6074 BSP 1894
BDE .3588 BRA .5839 BC3 .5879 FSP 795

MID-COURSE EXECUTION ACCURACY

SGT 1219.4 SGR 571.6 SG3 511.9
RRT -.0885 RRF .1187 RTF -.7164
SGB 1346.7 R23 -.0378 R13 .7176
SG1 1220.7 SG2 568.7 THA 176.96

ORBIT DETERMINATION ACCURACY

ST 23.6 SR 25.8 SS 20.3
CRT .6051 CRS -.4092 CST .4701
LSA 31.4 MSA 25.5 SSA 1.7
EL1 31.4 EL2 15.5 ALF 49.14

LAUNCH DATE MAY 19 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 10 1971

HELIOCENTRIC CONIC DISTANCE 357.310 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.630 GAL .80 AZL 91.69 HCA 118.03 SMA 192.60 ECC .21461 INC 1.6937 V1 29.439
RP 207.73 LAP -1.50 LOP 355.43 VP 24.263 GAP 11.56 AZP 89.20 TAL 4.54 TAP 122.57 RCA 151.26 APO 233.93 V2 26.373
RC 85.969 GL -16.88 GP -1.44 ZAL 88.20 ZAP 147.63 ETS 182.39 ZAE 174.57 ETE 3.64 ZAC 97.89 ETC 278.74 LVI -17.95

PLANETOCENTRIC CONIC

C3 11.025 VHL 3.320 DLA -28.82 RAL 334.18 RAD 6638.6 VEL 11.450 PTH 6.50 VHP 4.844 DPA -16.93 RAP 326.54 ECC 1.1815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 50 36	2402.44	-2.51	62.31	186.66	137.53	16 30 39	1402.4	15.76	46.31
60.00	17 11 7	2188.26	2.59	47.92	191.56	130.23	17 47 35	1188.3	18.28	29.31
70.00	18 58 11	1873.34	8.35	26.71	195.88	123.24	19 29 25	873.3	21.15	5.69
80.00	21 23 13	1419.10	15.01	356.13	199.75	116.11	21 46 52	419.1	24.49	332.74
84.20	23 2 24	1100.32	20.22	334.98	202.13	110.98	23 20 44	100.3	27.08	309.92
100.00	0 10 1	6181.61	15.01	295.40	199.75	116.11	1 53 2	5181.6	24.49	272.01
110.00	0 1 34	6208.20	8.35	293.54	195.88	123.24	1 45 2	5208.2	21.15	272.52

DIFFERENTIAL CORRECTIONS

TDE -.1933 TRA -.5573 TC3 .5600 BAU .0846
RDE -.2934 RRA .1225 RC3 .1255 FAU .10444
FDE -.1784 FRA 1.5977 FC3-8.2008 BSP 1870
BDE .3514 BRA .5706 BC3 .5739 FSP 850

MID-COURSE EXECUTION ACCURACY

SGT 1205.9 SGR 567.0 SG3 544.1
RRT -.0951 RRF .1292 RTF -.[illegible]80
SGB 1332.6 R23 -.0433 R13 .7094
SG1 1207.5 SG2 563.7 THA 176.73

ORBIT DETERMINATION ACCURACY

ST 23.4 SR 25.6 SS 21.1
CRT .6050 CRS -.4349 CST .4450
LSA 31.2 MSA 25.9 SSA 1.8
EL1 31.1 EL2 15.3 ALF 49.09

LAUNCH DATE MAY 19 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 12 1971

HELIOCENTRIC CONIC DISTANCE 361.314 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.589 GAL .82 AZL 91.69 HCA 119.29 SMA 191.85 ECC .21160 INC 1.6864 V1 29.439
RP 207.86 LAP -1.47 LOP 356.68 VP 24.191 GAP 11.25 AZP 89.17 TAL 4.72 TAP 124.01 RCA 151.26 APO 232.45 V2 26.357
RC 87.725 GL -17.00 GP -1.50 ZAL 87.97 ZAP 146.12 ETS 182.34 ZAE 175.55 ETE 1.98 ZAC 97.87 ETC 278.69 LVI -17.83

PLANETOCENTRIC CONIC

C3 10.759 VHL 3.280 DLA -29.01 RAL 333.98 RAD 6638.4 VEL 11.439 PTH 6.49 VHP 4.703 DPA -17.07 RAP 326.31 ECC 1.1771

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 50 53	2392.98	-2.04	61.91	186.30	137.54	16 30 46	1393.0	16.22	45.88
60.00	17 11 54	2177.47	3.07	47.41	191.20	130.20	17 48 11	1177.5	18.72	28.74
70.00	18 59 58	1859.62	8.86	25.98	195.53	123.12	19 30 58	859.6	21.58	4.86
80.00	21 28 54	1393.08	15.79	354.58	199.52	115.68	21 52 7	393.1	25.01	330.98
83.23	22 53 47	1120.55	20.47	336.57	201.65	111.02	23 12 28	120.6	27.32	311.46
100.00	0 15 41	6155.59	15.79	293.86	199.52	115.68	1 58 17	5155.6	25.01	270.26
110.00	0 3 20	6194.48	8.86	292.80	195.53	123.12	1 46 35	5194.5	21.58	271.68

DIFFERENTIAL CORRECTIONS

TDE -.1904 TRA -.5446 TC3 .5441 BAU .0801
RDE -.2872 RRA .1210 RC3 .1191 FAU .10993
FDE -.2006 FRA 1.6706 FC3-8.8456 BSP 1840
BDE .3446 BRA .5578 BC3 .5570 FSP 912

MID-COURSE EXECUTION ACCURACY

SGT 1192.1 SGR 562.2 SG3 579.1
RRT -.1016 RRF .1403 RTF -.6988
SGB 1318.1 R23 -.0496 R13 .7005
SG1 1193.9 SG2 558.5 THA 176.49

ORBIT DETERMINATION ACCURACY

ST 23.3 SR 25.3 SS 21.8
CRT .6063 CRS -.4551 CST .4231
LSA 31.0 MSA 26.4 SSA 1.8
EL1 30.9 EL2 15.2 ALF 48.93

LAUNCH DATE MAY 19 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 14 1971

HELIOCENTRIC CONIC DISTANCE 365.336 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	237.39	VL	32.581	GAL	.84	AZL	91.68	HCA	120.54	SMA	191.17	ECC	.20880	INC	1.6788	V1	29.439
RP	208.01	LAP	-1.45	LOP	357.94	VP	24.121	GAP	10.96	AZP	89.15	TAL	4.89	TAP	125.43	RCA	151.25	APO	231.08	V2	26.340
RC	89.514	GL	-17.10	GP	-1.56	ZAL	87.76	ZAP	144.57	ETS	182.29	ZAE	176.60	ETE	359.37	ZAC	97.85	ETC	278.63	LVI	-17.70

PLANETOCENTRIC CONIC

C3	10.514	VHL	3.242	DLA	-29.19	RAL	333.80	RAD	6638.3	VEL	11.428	PTH	6.48	VHP	4.568	DPA	-17.22	RAP	326.04	ECC	1.1730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 9	2384.27	-1.60	61.55	185.96	137.56	16 30 53	1384.3	16.65	45.48
60.00	17 12 37	2167.54	3.50	46.93	190.66	130.17	17 48 44	1167.5	19.12	28.20
70.00	19 1 36	1846.97	9.33	25.30	195.21	123.00	19 32 23	847.0	21.97	4.09
80.00	21 34 40	1367.38	16.54	353.05	199.33	115.22	21 57 27	367.4	25.51	329.24
82.46	22 46 54	1135.7	20.70	337.78	201.20	111.04	23 5 50	135.7	27.54	312.62
100.00	0 21 28	6129.89	16.54	292.32	199.33	115.22	2 3 38	5129.9	25.51	268.51
110.00	0 4 58	6181.83	9.33	292.12	195.21	123.00	1 48 0	5181.8	21.97	270.91

DIFFERENTIAL CORRECTIONS							MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.1887	TRA	-.5297	TC3	.5191	BAU	.0746	SGT	1172.2	SGR	557.2	SG3	614.9		ST	23.2	SR	25.1	SS	22.5
RDE	-.2811	RRA	.1196	RC3	.1117	FAU	.11554	RRT	-.1065	RRF	.1513	RTF	-.6865		CRT	.6116	CRS	-.4712	CST	.4005
FDE	-.2208	FRA	1.7416	FC3	-9.5139	BSP	1801	SGB	1297.9	R23	-.0576	R13	.6886		LSA	30.9	MSA	26.8	SSA	1.8
BDE	.3385	BRA	.5430	BC3	.5310	FSP	975	SG1	1174.1	SG2	553.1	THA	176.28		EL1	30.7	EL2	15.0	ALF	48.73

LAUNCH DATE MAY 19 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 16 1971

HELIOCENTRIC CONIC DISTANCE 369.375 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.515	GAL	.86	AZL	91.67	HCA	121.79	SMA	190.53	ECC	.20620	INC	1.6711	V1	29.439
RP	208.16	LAP	-1.42	LOP	359.19	VP	24.054	GAP	10.67	AZP	89.12	TAL	5.04	TAP	126.83	RCA	151.25	APO	229.82	V2	26.323
RC	91.337	GL	-17.19	GP	-1.62	ZAL	87.58	ZAP	142.99	ETS	182.24	ZAE	177.70	ETE	354.32	ZAC	97.83	ETC	278.56	LVI	-17.55

PLANETOCENTRIC CONIC

C3	10.288	VHL	3.207	DLA	-29.34	RAL	333.64	RAD	6638.2	VEL	11.418	PTH	6.47	VHP	4.439	DPA	-17.39	RAP	325.73	ECC	1.1693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 22	2376.32	-1.20	61.22	185.65	137.56	16 30 59	1376.3	17.03	45.12
60.00	17 13 15	2158.49	3.90	46.50	190.55	130.14	17 49 13	1158.5	19.48	27.71
70.00	19 3 5	1835.43	9.76	24.68	194.91	122.89	19 33 40	835.4	22.32	3.38
80.00	21 40 32	1342.01	17.27	351.52	199.16	114.74	22 2 54	342.0	25.97	327.50
81.83	22 41 19	1147.25	20.92	338.72	200.79	111.06	23 0 26	147.2	27.74	313.51
100.00	0 27 19	6104.52	17.27	290.79	199.16	114.74	2 9 4	5104.5	25.97	266.77
110.00	0 6 27	6170.29	9.76	291.50	194.91	122.89	1 49 17	5170.3	22.32	270.20

DIFFERENTIAL CORRECTIONS							MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.1868	TRA	-.5156	TC3	.4843	BAU	.0681	SGT	1150.7	SGR	552.1	SG3	652.3		ST	23.0	SR	24.8	SS	23.3
RDE	-.2752	RRA	.1184	RC3	.1032	FAU	.12134	RRT	-.1128	RRF	.1646	RTF	-.6709		CRT	.6164	CRS	-.4899	CST	.3750
FDE	-.2453	FRA	1.8198	FC	-10.2113	BSP	1747	SGB	1276.3	R23	-.0672	R13	.6735		LSA	30.9	MSA	27.1	SSA	1.8
BDE	.3326	BRA	.5290	BC3	.4952	FSP	1041	SG1	1152.9	SG2	547.5	THA	176.00		EL1	30.5	EL2	14.8	ALF	48.53

LAUNCH DATE MAY 19 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 373.429 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.482	GAL	.87	AZL	91.66	HCA	123.04	SMA	189.98	ECC	.20378	INC	1.6631	V1	29.439
RP	208.32	LAP	-1.39	LOP	.44	VP	23.989	GAP	10.38	AZP	89.09	TAL	5.17	TAP	128.21	RCA	151.24	APO	228.66	V2	26.304
RC	93.190	GL	-17.27	GP	-1.69	ZAL	87.42	ZAP	141.37	ETS	182.19	ZAE	178.82	ETE	339.32	ZAC	97.82	ETC	278.49	LVI	-17.40

PLANETOCENTRIC CONIC

C3	10.079	VHL	3.175	DLA	-29.48	RAL	333.51	RAD	6638.1	VEL	11.409	PTH	6.46	VHP	4.315	DPA	-17.58	RAP	325.39	ECC	1.1659

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 34	2369.11	-.84	60.92	185.37	137.57	16 31 3	1369.1	17.38	44.79
60.00	17 13 49	2150.32	4.26	46.11	190.26	130.11	17 49 39	1150.3	19.81	27.27
70.00	19 4 24	1825.04	10.14	24.12	194.64	122.79	19 34 49	825.0	22.64	2.73
80.00	21 46 28	1317.00	17.98	350.00	199.02	114.25	22 8 25	317.0	26.41	325.77
81.32	22 36 47	1155.95	21.11	339.44	200.41	111.06	22 56 3	156.0	27.91	314.19
100.00	0 33 16	6079.51	17.98	289.27	199.02	114.25	2 14 35	5079.5	26.41	265.04
110.00	0 7 46	6159.90	10.14	290.94	194.64	122.79	1 50 26	5159.9	22.64	269.56

DIFFERENTIAL CORRECTIONS							MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.1848	TRA	-.5003	TC3	.4458	BAU	.0614	SGT	1125.7	SGR	546.9	SG3	692.4		ST	22.8	SR	24.6	SS	24.2
RDE	-.2694	RRA	.1173	RC3	.0933	FAU	.12762	RRT	-.1191	RRF	.1789	RTF	-.6735		CRT	.6219	CRS	-.5079	CST	.3491
FDE	-.2711	FRA	1.9012	FC	-10.9621	BSP	1689	SGB	1251.5	R23	-.0781	R13	.6567		LSA	31.0	MSA	27.3	SSA	1.8
BDE	.3267	BRA	.5139	BC3	.4555	FSP	1110	SG1	1128.1	SG2	541.8	THA	175.69		EL1	30.2	EL2	14.5	ALF	48.43

LAUNCH DATE MAY 19 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 377.498 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.452	GAL	.89	AZL	91.66	HCA	124.29	SMA	189.41	ECC	.20154	INC	1.6550	V1	29.439
RP	208.49	LAP	-1.37	LOP	1.69	VP	23.926	GAP	10.11	AZP	89.07	TAL	5.29	TAP	129.58	RCA	151.24	APO	227.59	V2	26.284
RC	95.074	GL	-17.34	GP	-1.76	ZAL	87.28	ZAP	139.71	ETS	182.14	ZAE	179.38	ETE	256.42	ZAC	97.81	ETC	278.41	LVI	-17.23

PLANETOCENTRIC CONIC

C3	9.887	VHL	3.144	DLA	-29.59	RAL	333.39	RAD	6638.0	VEL	11.401	PTH	6.45	VHP	4.197	DPA	-17.78	RAP	325.01	ECC	1.1627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 45	2362.61	-.51	60.65	185.12	137.57	16 31 7	1362.6	17.69	44.49
60.00	17 14 17	2143.00	4.58	45.75	190.00	130.08	17 50 0	1143.0	20.10	26.87
70.00	19 5 32	1815.78	10.48	23.62	194.39	122.69	19 35 48	815.8	22.91	2.16
80.00	21 52 31	1292.23	18.66	348.48	198.91	113.74	22 14 3	292.2	26.82	324.04
80.91	22 33 5	1162.42	21.28	339.99	200.06	111.06	22 52 28	162.4	28.06	314.70
100.00	0 39 18	6054.74	18.66	287.75	198.91	113.74	2 20 13	5054.7	26.82	263.31
110.00	0 8 54	6150.64	10.48	290.44	194.39	122.69	1 51 25	5150.6	22.91	268.98

DIFFERENTIAL CORRECTIONS							MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.1789	TRA	-.4788	TC3	.4155	BAU	.0560	SGT	1086.8	SGR	541.6	SG3	733.8		ST	22.2	SR	24.3	SS	25.0
RDE	-.2639	RRA	.1164	RC3	.0821	FAU	.13423	RRT	-.1265	RRF	.1940	RTF	-.6406		CRT	.6242	CRS	-.5283	CST	.3237
FDE	-.3003	FRA	1.9785	FC	-11.7544	BSP	1535	SGB	1214.3	R23	-.0876	R13	.6447		LSA	31.1	MSA	27.1	SSA	1.8
BDE	.3188	BRA	.4927	BC3	.4236	FSP	1171	SG1	1089.7	SG2	535.9	THA	175.24		EL1	29.7	EL2	14.2	ALF	49.19

LAUNCH DATE MAY 19 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 381.580 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.424 GAL .89 AZL 91.65 HCA 125.54 SMA 186.92 ECC .19947 INC 1.6466 V1 29.439
RP 208.67 LAP -1.34 LOP 2.93 VP 23.865 GAP 9.84 AZP 89.04 TAL 5.38 TAP 130.92 RCA 151.24 APO 226.60 V2 26.264
RC 96.988 GL -17.40 GP -1.83 ZAL 87.17 ZAP 138.01 ETS 182.09 ZAE 178.33 ETE 208.48 ZAC 97.81 ETC 278.32 LVI -17.04

PLANETOCENTRIC CONIC

C3 9.710 VHL 3.116 DLA -29.68 RAL 333.30 RAD 6637.9 VEL 11.393 PTH 6.45 VHP 4.085 DPA -18.00 RAP 324.59 ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 54	2356.91	-.22	60.41	184.89	137.58	16 31 11	1356.9	17.96	44.22
60.00	17 14 42	2136.63	4.86	45.45	189.77	130.06	17 50 18	1136.6	20.35	26.52
70.00	19 6 29	1807.81	10.78	23.19	194.16	122.61	19 36 36	807.8	23.15	1.66
80.00	21 58 28	1268.37	19.31	347.00	198.83	113.23	22 19 37	268.4	27.19	322.37
80.59	22 30 15	1166.78	21.43	340.38	199.75	111.04	22 49 41	166.8	28.19	315.05
100.00	0 45 16	5030.88	19.31	286.27	198.83	113.23	2 25 47	5030.9	27.19	261.64
110.00	0 9 51	6142.67	10.78	290.01	194.16	122.61	1 52 13	5142.7	23.15	268.49

DIFFERENTIAL CORRECTIONS

TDE -.1839 TRA -.4674 TC3 .3328 BAU .0442
RDE -.2582 RRA .1158 RC3 .0705 FAU .14041
FDE -.3149 FRA 2.0746 FC-12.5198 BSP 1522
BDE .3170 BRA .4815 BC3 .3402 FSP 1255

MID-COURSE EXECUTION ACCURACY

SGT 1065.7 SGR 536.2 SG3 775.1
RRT -.1274 RRF .2096 RTF -.6030
SGB 1193.0 R23 -.1083 R13 .6081
SG1 1068.7 SG2 530.4 THA 175.13

ORBIT DETERMINATION ACCURACY

ST 22.5 SR 24.0 SS 25.7
CRT .6418 CRS -.5304 CST .2996
LSA 31.4 MSA 27.5 SSA 1.8
EL1 29.8 EL2 13.9 ALF 47.92

LAUNCH DATE MAY 19 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 385.674 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.398 GAL .90 AZL 91.64 HCA 126.78 SMA 188.47 ECC .19755 INC 1.6380 V1 29.439
RP 208.85 LAP -1.31 LOP 4.18 VP 23.806 GAP 9.57 AZP 89.02 TAL 5.47 TAP 132.25 RCA 151.23 APO 225.70 V2 26.243
RC 98.929 GL -17.44 GP -1.91 ZAL 87.09 ZAP 136.28 ETS 182.03 ZAE 176.98 ETE 199.00 ZAC 97.80 ETC 278.22 LVI -16.84

PLANETOCENTRIC CONIC

C3 9.546 VHL 3.090 DLA -29.75 RAL 333.23 RAD 6637.8 VEL 11.386 PTH 6.44 VHP 3.978 DPA -18.23 RAP 324.13 ECC 1.1571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 1	2351.91	.03	60.20	184.69	137.58	16 31 13	1351.9	18.20	43.99
60.00	17 15 1	2131.11	5.10	45.18	189.56	130.03	17 50 32	1131.1	20.57	26.22
70.00	19 7 13	1801.03	11.02	22.82	193.95	122.53	19 37 14	801.0	23.35	1.24
80.00	22 4 23	1245.21	19.92	345.56	198.77	112.71	22 25 8	245.2	27.53	320.73
80.35	22 28 7	1169.39	21.56	340.63	199.47	111.01	22 47 36	169.4	28.29	315.26
100.00	0 51 11	6007.72	19.92	284.83	198.77	112.71	2 31 18	5007.7	27.53	260.00
110.00	0 10 36	6135.89	11.02	289.64	193.95	122.53	1 52 52	5135.9	23.35	268.06

DIFFERENTIAL CORRECTIONS

TDE -.1847 TRA -.4510 TC3 .2563 BAU .0335
RDE -.2528 RRA .1153 RC3 .0574 FAU .14709
FDE -.3388 FRA 2.1689 FC-13.3389 BSP 1436
BDE .3131 BRA .4655 BC3 .2627 FSP 1331

MID-COURSE EXECUTION ACCURACY

SGT 1034.7 SGR 530.8 SG3 818.7
RRT -.1295 RRF .2274 RTF -.5664
SGB 1162.9 R23 -.1295 R13 .5729
SG1 1037.7 SG2 524.8 THA 174.89

ORBIT DETERMINATION ACCURACY

ST 22.4 SR 23.7 SS 26.6
CRT .6545 CRS -.5413 CST .2710
LSA 31.8 MSA 27.5 SSA 1.8
EL1 29.7 EL2 13.5 ALF 47.50

LAUNCH DATE MAY 19 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 26 1971

HELIOCENTRIC CONIC DISTANCE 389.779 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.373 GAL .90 AZL 91.63 HCA 128.02 SMA 188.05 ECC .19579 INC 1.6291 V1 29.439
RP 209.04 LAP -1.28 LOP 5.42 VP 23.749 GAP 9.31 AZP 89.00 TAL 5.53 TAP 133.55 RCA 151.23 APO 224.87 V2 26.221
RC 100.898 GL -17.47 GP -1.99 ZAL 87.04 ZAP 134.91 ETS 181.97 ZAE 175.54 ETE 195.18 ZAC 97.80 ETC 278.11 LVI -16.63

PLANETOCENTRIC CONIC

C3 9.396 VHL 3.065 DLA -29.80 RAL 333.18 RAD 6637.7 VEL 11.380 PTH 6.43 VHP 3.876 DPA -18.47 RAP 323.63 ECC 1.1546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 7	2347.64	.24	60.02	184.52	137.58	16 31 15	1347.6	18.41	43.79
60.00	17 15 15	2126.46	5.30	44.96	189.38	130.01	17 50 42	1126.5	20.75	25.96
70.00	19 7 46	1795.48	11.23	22.52	193.76	122.47	19 37 42	795.5	23.51	.89
80.00	22 9 59	1223.63	20.49	344.20	198.73	112.21	22 30 22	223.6	27.83	319.19
80.18	22 26 40	1170.32	21.67	340.74	199.23	110.97	22 46 10	170.3	28.38	315.35
100.00	0 56 46	5986.14	20.49	283.47	198.73	112.21	2 36 32	4986.1	27.83	258.47
110.00	0 11 8	6130.35	11.23	289.34	193.76	122.47	1 53 19	5130.3	23.51	267.71

DIFFERENTIAL CORRECTIONS

TDE -.1860 TRA -.4332 TC3 .1688 BAU .0219
RDE -.2475 RRA .1151 RC3 .0432 FAU .15379
FDE -.3590 FRA 2.2664 FC-14.1702 BSP 1336
BDE .3096 BRA .4482 BC3 .1743 FSP 1413

MID-COURSE EXECUTION ACCURACY

SGT 1001.2 SGR 525.4 SG3 862.9
RRT -.1287 RRF .2458 RTF -.[illegible]22
SGB 1130.7 R23 -.1550 R13 .5302
SG1 1004.4 SG2 519.5 THA 174.72

ORBIT DETERMINATION ACCURACY

ST 22.3 SR 23.4 SS 27.3
CRT .6695 CRS -.5481 CST .2438
LSA 32.2 MSA 27.5 SSA 1.9
EL1 29.6 EL2 13.1 ALF 47.07

LAUNCH DATE MAY 19 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 28 1971

HELIOCENTRIC CONIC DISTANCE 393.894 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.351 GAL .91 AZL 91.62 HCA 129.26 SMA 187.67 ECC .19416 INC 1.6199 V1 29.439
RP 209.24 LAP -1.25 LOP 6.66 VP 23.693 GAP 9.06 AZP 88.97 TAL 5.57 TAP 134.84 RCA 151.23 APO 224.11 V2 26.198
RC 102.893 GL -17.49 GP -2.07 ZAL 87.01 ZAP 132.70 ETS 181.91 ZAE 174.03 ETE 193.07 ZAC 97.79 ETC 277.99 LVI -16.40

PLANETOCENTRIC CONIC

C3 9.257 VHL 3.043 DLA -29.83 RAL 333.16 RAD 6637.7 VEL 11.374 PTH 6.43 VHP 3.780 DPA -18.73 RAP 323.09 ECC 1.1524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 12	2344.07	.42	59.87	184.38	137.57	16 31 16	1344.1	18.58	43.62
60.00	17 15 25	2122.68	5.47	44.78	189.22	129.99	17 50 48	1122.7	20.90	25.75
70.00	19 8 6	1791.20	11.38	22.29	193.59	122.42	19 37 57	791.2	23.64	.62
80.00	22 14 32	1205.90	20.94	343.08	198.67	111.79	22 34 38	205.9	28.06	317.93
80.09	22 25 51	1169.77	21.76	340.74	199.02	110.92	22 45 20	169.8	28.44	315.32
100.00	1 1 20	5968.41	20.94	282.35	198.67	111.79	2 40 48	4968.4	28.06	257.20
110.00	0 11 28	6126.05	11.38	289.11	193.59	122.42	1 53 34	5126.1	23.64	267.44

DIFFERENTIAL CORRECTIONS

TDE -.1864 TRA -.4147 TC3 .0727 BAU .0096
RDE -.2423 RRA .1149 RC3 .0279 FAU .16065
FDE -.3830 FRA 2.3688 FC-15.0238 BSP 1219
BDE .3057 BRA .4303 BC3 .0779 FSP 1496

MID-COURSE EXECUTION ACCURACY

SGT 967.2 SGR 520.3 SG3 908.4
RRT -.1266 RRF .2664 RTF -.4701
SGB 1098.2 R23 -.1846 R13 .4800
SG1 970.3 SG2 514.4 THA 174.57

ORBIT DETERMINATION ACCURACY

ST 22.1 SR 23.1 SS 28.2
CRT .6834 CRS -.5573 CST .2144
LSA 32.7 MSA 27.3 SSA 1.9
EL1 29.4 EL2 12.7 ALF 46.80

LAUNCH DATE MAY 19 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 30 1971

HELIOCENTRIC CONIC DISTANCE 398.019 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.331	GAL	.90	AZL	91.61	HCA	130.50	SMA	187.32	ECC	.19266	INC	1.6104	V1	29.439
RP	209.44	LAP	-1.22	LOP	7.90	VP	23.639	GAP	8.82	AZP	88.95	TAL	5.60	TAP	136.10	RCA	151.23	APO	223.41	V2	26.174
RC	104.913	GL	-17.30	GP	-2.16	ZAL	87.01	ZAP	130.86	ETS	181.85	ZAE	172.45	ETE	191.71	ZAC	97.79	ETC	277.87	LVI	-16.15

PLANETOCENTRIC CONIC

C3	9.130	VHL	3.022	DLA	-29.84	RAL	333.16	RAD	6637.6	VEL	11.368	PTH	6.42	VHP	3.689	DPA	-19.01	RAP	322.51	ECC	1.1503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 15	2341.19	.57	59.75	184.26	137.57	16 31 16	1341.2	18.72	43.48
60.00	17 15 29	2119.74	5.60	44.63	189.08	129.98	17 50 49	1119.7	21.02	25.59
70.00	19 8 13	1788.11	11.50	22.12	193.44	122.38	19 38 2	788.1	23.73	.43
80.00	22 16 16	1197.70	21.14	342.56	198.55	111.59	22 36 13	197.7	28.16	317.34
80.06	22 25 40	1167.64	21.83	340.61	198.84	110.86	22 45 8	167.6	28.47	315.17
100.00	1 3 3	5960.21	21.14	281.83	198.55	111.59	2 42 24	4960.2	28.16	256.61
110.00	0 11 36	6122.97	11.50	288.94	193.44	122.38	1 53 39	5123.0	23.73	267.25

DIFFERENTIAL CORRECTIONS

TDE	-.1835	TRA	-.3695	TC3	-.0080	BAU	.0016												
RDE	-.2372	RRA	.1148	RC3	.0100	FAU	.16868												
FDE	-.4140	FRA	2.4583	FC	-15.9949	BSP	1026												
BDE	.2999	BRA	.4061	BC3	.0128	FSP	1563												

MID-COURSE EXECUTION ACCURACY

SGT	919.9	SGR	515.1	SG3	957.9														
RRT	-.1205	RRF	.2877	RTF	-.4173														
SGB	1054.3	R23	-.2164	R13	.4295														
SG1	922.9	SG2	509.7	THA	174.44														

ORBIT DETERMINATION ACCURACY

ST	21.6	SR	22.8	SS	28.9														
CRT	.6975	CRS	-.5727	CST	.1767														
LSA	33.3	MSA	26.7	SSA	1.8														
EL1	28.9	EL2	12.2	ALF	47.26														

LAUNCH DATE MAY 19 1971 FLIGHT TIME 166.00 ARRIVAL DATE NOV 1 1971

HELIOCENTRIC CONIC DISTANCE 402.152 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.312	GAL	.90	AZL	91.60	HCA	131.73	SMA	187.00	ECC	.19129	INC	1.6006	V1	29.439
RP	209.66	LAP	-1.19	LOP	9.13	VP	23.587	GAP	8.58	AZP	88.93	TAL	5.61	TAP	137.35	RCA	151.23	APO	222.77	V2	26.150
RC	106.958	GL	-17.49	GP	-2.25	ZAL	87.04	ZAP	128.98	ETS	181.78	ZAE	170.82	ETE	190.73	ZAC	97.79	ETC	277.73	LVI	-15.89

PLANETOCENTRIC CONIC

C3	9.013	VHL	3.002	DLA	-29.82	RAL	333.19	RAD	6637.5	VEL	11.363	PTH	6.42	VHP	3.603	DPA	-19.29	RAP	321.90	ECC	1.1483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 17	2339.06	.67	59.66	184.17	137.57	16 31 16	1339.1	18.82	43.38
60.00	17 15 29	2117.73	5.69	44.54	188.98	129.97	17 50 47	1117.7	21.09	25.48
70.00	19 8 7	1786.38	11.56	22.02	193.31	122.36	19 37 54	786.4	23.78	.32
80.00	22 13 17	1205.12	20.96	343.03	198.31	111.77	22 33 22	205.1	28.07	317.87
80.11	22 26 9	1163.99	21.88	340.36	198.69	110.79	22 45 33	164.0	28.49	314.90
100.00	1 0 5	5967.63	20.96	282.30	198.31	111.77	2 39 32	4967.6	28.07	257.15
110.00	0 11 29	6121.23	11.56	288.85	193.31	122.36	1 53 31	5121.2	23.78	267.14

DIFFERENTIAL CORRECTIONS

TDE	-.1928	TRA	-.3747	TC3	-.1541	BAU	.0186												
RDE	-.2318	RRA	.1152	RC3	-.0069	FAU	.17523												
FDE	-.4099	FRA	2.5813	FC	-16.8321	BSP	964												
BDE	.3015	BRA	.3920	BC3	.1543	FSP	1666												

MID-COURSE EXECUTION ACCURACY

SGT	907.5	SGR	509.8	SG3	1003.9														
RRT	-.0990	RRF	.3085	RTF	-.3279														
SGB	1040.9	R23	-.2624	R13	.3401														
SG1	909.5	SG2	506.2	THA	175.39														

ORBIT DETERMINATION ACCURACY

ST	22.2	SR	22.4	SS	29.6														
CRT	.7235	CRS	-.5581	CST	.1573														
LSA	33.5	MSA	27.2	SSA	1.9														
EL1	29.3	EL2	11.7	ALF	45.48														

LAUNCH DATE MAY 19 1971 FLIGHT TIME 168.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 406.293 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.295	GAL	.89	AZL	91.59	HCA	132.97	SMA	186.71	ECC	.19004	INC	1.5904	V1	29.439
RP	209.87	LAP	-1.16	LOP	10.36	VP	23.535	GAP	8.34	AZP	88.92	TAL	5.60	TAP	138.57	RCA	151.23	APO	222.20	V2	26.124
RC	109.028	GL	-17.48	GP	-2.34	ZAL	87.09	ZAP	127.07	ETS	181.71	ZAE	169.13	ETE	189.99	ZAC	97.79	ETC	277.59	LVI	-15.62

PLANETOCENTRIC CONIC

C3	8.905	VHL	2.984	DLA	-29.79	RAL	333.25	RAD	6637.5	VEL	11.358	PTH	6.41	VHP	3.522	DPA	-19.59	RAP	321.25	ECC	1.1466

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 18	2337.60	.75	59.60	184.11	137.57	16 31 15	1337.6	18.89	43.32
60.00	17 15 23	2116.53	5.74	44.48	188.89	129.96	17 50 40	1116.5	21.14	25.41
70.00	19 7 48	1785.84	11.58	21.99	193.20	122.36	19 37 34	785.8	23.80	.28
80.00	22 8 18	1219.42	20.59	343.93	198.02	112.11	22 28 37	219.4	27.88	318.89
80.23	22 27 17	1158.76	21.91	339.98	198.58	110.70	22 46 36	158.8	28.48	314.51
100.00	0 55 6	5981.93	20.59	283.21	198.02	112.11	2 34 48	4981.9	27.88	258.17
110.00	0 11 11	6120.69	11.58	288.82	193.20	122.36	1 53 11	5120.7	23.80	267.11

DIFFERENTIAL CORRECTIONS

TDE	-.1933	TRA	-.3545	TC3	-.2889	BAU	.0345												
RDE	-.2267	RRA	.1158	RC3	-.0257	FAU	.18236												
FDE	-.4290	FRA	2.7044	FC	-17.7287	BSP	815												
BDE	.2992	BRA	.3730	BC3	.2900	FSP	1746												

MID-COURSE EXECUTION ACCURACY

SGT	886.3	SGR	505.3	SG3	1052.6														
RRT	-.0783	RRF	.3336	RTF	-.[illegible]70														
SGB	1020.2	R23	-.3069	R13	.2486														
SG1	887.6	SG2	503.0	THA	176.23														

ORBIT DETERMINATION ACCURACY

ST	22.1	SR	22.1	SS	30.4														
CRT	.7417	CRS	-.5618	CST	.1261														
LSA	34.1	MSA	27.1	SSA	1.8														
EL1	29.2	EL2	11.2	ALF	44.93														

LAUNCH DATE MAY 19 1971 FLIGHT TIME 170.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 410.441 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.280	GAL	.89	AZL	91.58	HCA	134.20	SMA	186.45	ECC	.18890	INC	1.5798	V1	29.439
RP	210.10	LAP	-1.13	LOP	11.59	VP	23.485	GAP	8.11	AZP	88.90	TAL	5.58	TAP	139.77	RCA	151.23	APO	221.67	V2	26.098
RC	111.121	GL	-17.45	GP	-2.44	ZAL	87.18	ZAP	125.13	ETS	181.63	ZAE	167.38	ETE	189.39	ZAC	97.79	ETC	277.44	LVI	-15.33

PLANETOCENTRIC CONIC

C3	8.806	VHL	2.968	DLA	-29.73	RAL	333.32	RAD	6637.4	VEL	11.354	PTH	6.41	VHP	3.446	DPA	-19.90	RAP	320.57	ECC	1.1449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 17	2336.81	.79	59.57	184.07	137.57	16 31 14	1336.8	18.93	43.28
60.00	17 15 13	2116.18	5.75	44.46	188.83	129.96	17 50 29	1116.2	21.16	25.39
70.00	19 7 17	1786.52	11.55	22.03	193.11	122.37	19 37 3	786.5	23.78	.32
80.00	22 2 36	1236.55	20.15	345.01	197.74	112.51	22 23 12	236.6	27.65	320.11
80.43	22 29 6	1151.82	21.92	339.47	198.50	110.60	22 48 18	151.8	28.44	313.99
100.00	0 49 23	5999.06	20.15	284.29	197.74	112.51	2 29 22	4999.1	27.65	259.39
110.00	0 10 39	6121.37	11.55	288.85	193.11	122.37	1 52 40	5121.4	23.78	267.15

DIFFERENTIAL CORRECTIONS

TDE	-.1995	TRA	-.3314	TC3	-.4369	BAU	.0517												
RDE	-.2215	RRA	.1163	RC3	-.0454	FAU	.18945												
FDE	-.4355	FRA	2.8108	FC	-18.6246	BSP	675												
BDE	.2981	BRA	.3512	BC3	.4393	FSP	1838												

MID-COURSE EXECUTION ACCURACY

SGT	870.9	SGR	500.5	SG3	1099.5														
RRT	-.0430	RRF	.3569	RTF	-.1276														
SGB	1004.4	R23	-.3490	R13	.1350														
SG1	871.3	SG2	499.8	THA	177.89														

ORBIT DETERMINATION ACCURACY

ST	22.2	SR	21.7	SS	31.0														
CRT	.7645	CRS	-.5586	CST	.0951														
LSA	34.5	MSA	27.1	SSA	1.8														
EL1	29.2	EL2	10.7	ALF	44.19														

LAUNCH DATE MAY 19 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 414.596 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.266 GAL .87 AZL 91.57 HCA 135.42 SMA 186.22 ECC .18786 INC 1.5688 V1 29.439
RP 210.33 LAP -1.10 LOP 12.82 VP 23.436 GAP 7.89 AZP 88.88 TAL 5.53 TAP 140.95 RCA 151.24 APO 221.20 V2 26.071
RC 113.239 GL -17.41 GP -2.54 ZAL 87.29 ZAP 123.17 ETS 181.55 ZAE 165.59 ETE 188.89 ZAC 97.78 ETC 277.28 LVI -15.02

PLANETOCENTRIC CONIC

C3 8.716 VHL 2.952 DLA -29.65 RAL 333.43 RAD 6637.4 VEL 11.350 PTH 6.40 VHP 3.375 DPA -20.22 RAP 319.85 ECC 1.1434

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 14	2336.70	.79	59.56	184.05	137.57	16 31 11	1336.7	18.93	43.27
60.00	17 14 57	2116.65	5.73	44.49	188.79	129.96	17 50 14	1116.7	21.14	25.42
70.00	19 6 33	1788.39	11.49	22.13	193.04	122.39	19 36 21	788.4	23.72	.44
80.00	21 56 39	1254.92	19.67	346.16	197.48	112.93	22 17 34	254.9	27.39	321.42
80.70	22 31 37	1143.15	21.91	338.82	198.44	110.49	22 50 40	143.1	28.39	313.33
100.00	0 43 27	6017.43	19.67	285.44	197.48	112.93	2 23 45	5017.4	27.39	260.69
110.00	0 9 55	6123.25	11.49	288.96	193.04	122.39	1 51 58	5123.2	23.72	267.27

DIFFERENTIAL CORRECTIONS

TDE -.2027 TRA -.3075 TC3 -.5910 BAU .0693
RDE -.2164 RRA .1171 RC3 -.0666 FAU .19673
FDE -.4440 FRA 2.9313 FC-19.5418 BSP 530
BDE .2965 BRA .3290 BC3 .5948 FSP 1928

MID-COURSE EXECUTION ACCURACY

SGT 864.9 SGR 496.3 SG3 1148.6
RRT -.0014 RRF .3830 RTF -.0112
SGB 997.1 R23 -.3830 R13 .0115
SG1 864.9 SG2 496.3 THA 179.93

ORBIT DETERMINATION ACCURACY

ST 22.2 SR 21.4 SS 31.7
CRT .7855 CRS -.5563 CST .0642
LSA 35.0 MSA 27.0 SSA 1.8
EL1 29.1 EL2 10.1 ALF 43.58

LAUNCH DATE MAY 19 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 418.757 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.254 GAL .86 AZL 91.56 HCA 136.65 SMA 186.01 ECC .18692 INC 1.5573 V1 29.439
RP 210.57 LAP -1.07 LOP 14.04 VP 23.388 GAP 7.67 AZP 88.87 TAL 5.47 TAP 142.11 RCA 151.24 APO 220.78 V2 26.044
RC 115.380 GL -17.36 GP -2.64 ZAL 87.43 ZAP 121.17 ETS 181.47 ZAE 163.75 ETE 188.47 ZAC 97.77 ETC 277.12 LVI -14.70

PLANETOCENTRIC CONIC

C3 8.633 VHL 2.938 DLA -29.55 RAL 333.55 RAD 6637.3 VEL 11.346 PTH 6.40 VHP 3.309 DPA -20.55 RAP 319.10 ECC 1.1421

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 10	2337.25	.76	59.59	184.06	137.57	16 31 8	1337.3	18.90	43.30
60.00	17 14 36	2117.95	5.68	44.55	188.77	129.97	17 49 54	1117.9	21.09	25.49
70.00	19 5 36	1791.45	11.37	22.30	192.98	122.42	19 35 28	791.4	23.63	.64
80.00	21 50 39	1273.99	19.16	347.35	197.25	113.35	22 11 53	274.0	27.11	322.76
81.06	22 34 54	1132.41	21.88	338.02	198.41	110.36	22 53 47	132.4	28.31	312.52
100.00	0 37 27	6036.50	19.16	286.62	197.25	113.35	2 18 4	5036.5	27.11	262.04
110.00	0 8 59	6126.30	11.37	289.12	192.98	122.42	1 51 5	5126.3	23.63	267.46

DIFFERENTIAL CORRECTIONS

TDE -.2062 TRA -.2811 TC3 -.7586 BAU .0881
RDE -.2112 RRA .1178 RC3 -.0887 FAU .20397
FDE -.4474 FRA 3.0369 FC-20.4547 BSP 403
BDE .2952 BRA .3048 BC3 .7638 FSP 2006

MID-COURSE EXECUTION ACCURACY

SGT 870.3 SGR 492.1 SG3 1195.9
RRT .0525 RRF .4087 RTF .1179
SGB 999.8 R23 .4001 R13 .1277
SG1 870.9 SG2 491.1 THA 2.49

ORBIT DETERMINATION ACCURACY

ST 22.2 SR 21.0 SS 32.2
CRT .8081 CRS -.5528 CST .0304
LSA 35.3 MSA 26.8 SSA 1.8
EL1 29.1 EL2 9.4 ALF 42.95

LAUNCH DATE MAY 19 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 11 1971

HELIOCENTRIC CONIC DISTANCE 422.923 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.242 GAL .84 AZL 91.55 HCA 137.87 SMA 185.82 ECC .18608 INC 1.5453 V1 29.439
RP 210.82 LAP -1.04 LOP 15.26 VP 23.341 GAP 7.45 AZP 88.85 TAL 5.39 TAP 143.26 RCA 151.24 APO 220.40 V2 26.015
RC 117.545 GL -17.29 GP -2.75 ZAL 87.60 ZAP 119.16 ETS 181.38 ZAE 161.87 ETE 188.09 ZAC 97.77 ETC 276.94 LVI -14.37

PLANETOCENTRIC CONIC

C3 8.557 VHL 2.925 DLA -29.42 RAL 333.70 RAD 6637.3 VEL 11.343 PTH 6.40 VHP 3.247 DPA -20.89 RAP 318.33 ECC 1.1408

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 52 5	2338.46	.70	59.64	184.09	137.57	16 31 3	1338.5	18.85	43.36
60.00	17 14 11	2120.04	5.58	44.65	188.77	129.98	17 49 31	1120.0	21.00	25.60
70.00	19 4 28	1795.61	11.22	22.53	192.94	122.47	19 34 24	795.6	23.51	.90
80.00	21 44 40	1293.51	18.63	348.56	197.03	113.77	22 6 14	293.5	26.80	324.13
81.52	22 39 4	1119.33	21.84	337.03	198.41	110.23	22 57 43	119.3	28.21	311.54
100.00	0 31 28	6056.02	18.63	287.83	197.03	113.77	2 12 24	5056.0	26.80	263.40
110.00	0 7 51	6130.47	11.22	289.35	192.94	122.47	1 50 1	5130.5	23.51	267.72

DIFFERENTIAL CORRECTIONS

TDE -.2072 TRA -.2531 TC3 -.9292 BAU .1071
RDE -.2065 RRA .1188 RC3 -.1126 FAU .21153
FDE -.4706 FRA 3.1541 FC-21.4002 BSP 366
BDE .2925 BRA .2796 BC3 .9360 FSP 2084

MID-COURSE EXECUTION ACCURACY

SGT 885.4 SGR 489.2 SG3 1245.8
RRT .1104 RRF .4385 RTF .1162
SGB 1011.6 R23 .4017 R13 .2656
SG1 887.8 SG2 484.9 THA 4.98

ORBIT DETERMINATION ACCURACY

ST 22.0 SR 20.6 SS 33.0
CRT .8283 CRS -.5618 CST -.0163
LSA 36.1 MSA 26.3 SSA 1.8
EL1 28.8 EL2 8.8 ALF 42.71

LAUNCH DATE MAY 19 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 13 1971

HELIOCENTRIC CONIC DISTANCE 427.093 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.232 GAL .83 AZL 91.53 HCA 139.09 SMA 185.65 ECC .18533 INC 1.5328 V1 29.439
RP 211.07 LAP -1.00 LOP 16.48 VP 23.295 GAP 7.24 AZP 88.84 TAL 5.29 TAP 144.37 RCA 151.25 APO 220.06 V2 25.986
RC 119.734 GL -17.21 GP -2.86 ZAL 87.79 ZAP 117.12 ETS 181.28 ZAE 159.96 ETE 187.77 ZAC 97.75 ETC 276.77 LVI -14.02

PLANETOCENTRIC CONIC

C3 8.489 VHL 2.914 DLA -29.28 RAL 333.88 RAD 6637.3 VEL 11.340 PTH 6.39 VHP 3.191 DPA -21.24 RAP 317.53 ECC 1.1397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 58	2340.35	.61	59.72	184.15	137.57	16 30 58	1340.3	18.76	43.45
60.00	17 13 40	2122.98	5.46	44.79	188.80	129.99	17 49 3	1123.0	20.89	25.77
70.00	19 3 9	1800.97	11.03	22.82	192.92	122.53	19 33 10	801.0	23.35	1.23
80.00	21 38 40	1313.63	18.07	349.79	196.85	114.18	22 0 34	313.6	26.47	325.53
82.09	22 44 16	1103.37	21.77	335.82	198.44	110.08	23 2 39	103.4	28.09	310.34
100.00	0 25 28	6076.14	18.07	289.06	196.85	114.18	2 6 44	5076.1	26.47	264.81
110.00	0 6 31	6135.83	11.03	289.64	192.92	122.53	1 48 47	5135.8	23.35	268.06

DIFFERENTIAL CORRECTIONS

TDE -.2156 TRA -.2291 TC3-1.1425 BAU .1306
RDE -.2009 RRA .1204 RC3 -.1345 FAU .21715
FDE -.4426 FRA 3.2916 FC-22.1465 BSP 439
BDE .2947 BRA .2588 BC3 1.1504 FSP 2188

MID-COURSE EXECUTION ACCURACY

SGT 943.3 SGR 485.6 SG3 1288.4
RRT .1735 RRF .4653 RTF .3644
SGB 1061.0 R23 .3856 R13 .3883
SG1 948.4 SG2 475.7 THA 6.83

ORBIT DETERMINATION ACCURACY

ST 22.6 SR 20.2 SS 33.4
CRT .8500 CRS -.5385 CST -.0290
LSA 36.2 MSA 26.8 SSA 1.8
EL1 29.1 EL2 8.2 ALF 41.18

LAUNCH DATE MAY 19 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 15 1971

HELIOCENTRIC CONIC DISTANCE 431.268 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.224	GAL	.81	AZL	91.52	HCA	140.30	SMA	185.51	ECC	.18466	INC	1.5197
RP	211.33	LAP	-.97	LOP	17.70	VP	23.250	GAP	7.04	AZP	88.83	TAL	5.17	TAP	145.47	RCA	151.25	APO	219.76
RC	121.945	GL	-17.12	GP	-2.98	ZAL	88.02	ZAP	115.07	ETS	181.18	ZAE	158.00	ETE	187.47	ZAC	97.74	ETC	276.58

V1	29.439																		
V2	25.957																		
LVI	-13.67																		

PLANETOCENTRIC CONIC

C3	8.427	VHL	2.903	DLA	-29.11	RAL	334.08	RAD	6637.2	VEL	11.337	PTH	6.39	VHP	3.136	DPA	-21.60	RAP	316.71
ECC	1.1387																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 49	2342.86	.48	59.82	184.23	137.57	16 30 52	1342.9	18.64	43.56
60.00	17 13 4	2126.69	5.29	44.97	188.84	130.01	17 48 31	1126.7	20.74	25.97
70.00	19 1 38	1807.36	10.79	23.16	192.92	122.60	19 31 46	807.4	23.16	1.63
80.00	21 32 45	1333.97	17.50	351.03	196.68	114.59	21 54 58	334.0	26.12	326.94
82.80	22 50 43	1083.79	21.68	334.34	198.50	109.91	23 8 47	83.8	27.94	308.87
100.00	0 19 32	6096.48	17.50	290.30	196.68	114.59	2 1 9	5096.5	26.12	266.22
110.00	0 5 1	6142.22	10.79	289.99	192.92	122.60	1 47 23	5142.2	23.16	268.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2200	TRA	-.2008	TC3	-1.3502	BAU	.1532	SGT	1004.4	SGR	483.0	SG3	1332.7	ST	22.8	SR	19.7	SS	33.9
RDE	-.1956	RRA	.1219	RC3	-.1586	FAU	.22339	RRT	.2368	RRF	.4943	RTF	.4719	CRT	.8697	CRS	-.5280	CST	-.0561
FDE	-.4315	FRA	3.4188	FC	-22.9508	BSP	599	SGB	1114.5	R23	.3615	R13	.4970	LSA	36.6	MSA	26.8	SSA	1.8
BDE	.2944	BRA	.2349	BC3	1.3595	FSP	2270	SG1	1012.7	SG2	465.4	THA	8.25	EL1	29.2	EL2	7.6	ALF	40.30

LAUNCH DATE MAY 19 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 17 1971

HELIOCENTRIC CONIC DISTANCE 435.447 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.216	GAL	.78	AZL	91.51	HCA	141.51	SMA	185.38	ECC	.18407	INC	1.5059
RP	211.60	LAP	-.94	LOP	18.91	VP	23.206	GAP	6.83	AZP	88.82	TAL	5.04	TAP	146.55	RCA	151.26	APO	219.50
RC	124.177	GL	-17.01	GP	-3.10	ZAL	88.26	ZAP	113.01	ETS	181.08	ZAE	156.02	ETE	187.20	ZAC	97.72	ETC	276.39

V1	29.439																		
V2	25.926																		
LVI	-13.29																		

PLANETOCENTRIC CONIC

C3	8.370	VHL	2.893	DLA	-28.92	RAL	334.30	RAD	6637.2	VEL	11.335	PTH	6.39	VHP	3.091	DPA	-21.95	RAP	315.87
ECC	1.1378																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 38	2346.02	.32	59.95	184.33	137.58	16 30 44	1346.0	18.49	43.71
60.00	17 12 24	2131.17	5.10	45.19	188.91	130.03	17 47 55	1131.2	20.57	26.22
70.00	18 59 58	1814.80	10.52	23.57	192.93	122.68	19 30 12	814.8	22.94	2.10
80.00	21 26 52	1354.63	16.91	352.28	196.55	114.98	21 49 27	354.6	25.74	328.36
83.70	22 58 47	1059.39	21.57	332.50	198.58	109.74	23 16 26	59.4	27.77	307.04
100.00	0 13 40	6117.14	16.91	291.55	196.55	114.98	1 55 37	5117.1	25.74	267.64
110.00	0 3 20	6149.66	10.52	290.39	192.93	122.68	1 45 50	5149.7	22.94	268.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2242	TRA	-.1706	TC3	-1.5662	BAU	.1765	SGT	1080.5	SGR	480.9	SG3	1376.0	ST	23.0	SR	19.3	SS	34.4
RDE	-.1902	RRA	.1235	RC3	-.1839	FAU	.22959	RRT	.3000	RRF	.5237	RTF	.5653	CRT	.8887	CRS	-.5171	CST	-.0842
FDE	-.4169	FRA	3.5401	FC	-23.7456	BSP	812	SGB	1182.7	R23	.3323	R13	.5890	LSA	36.9	MSA	26.8	SSA	1.8
BDE	.2940	BRA	.2106	BC3	1.5770	FSP	2337	SG1	1092.1	SG2	453.9	THA	9.21	EL1	29.2	EL2	7.0	ALF	39.41

LAUNCH DATE MAY 19 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 439.628 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.209	GAL	.76	AZL	91.49	HCA	142.72	SMA	185.27	ECC	.18356	INC	1.4913
RP	211.87	LAP	-.90	LOP	20.12	VP	23.182	GAP	6.64	AZP	88.81	TAL	4.89	TAP	147.61	RCA	151.26	APO	219.28
RC	126.431	GL	-16.89	GP	-3.23	ZAL	88.54	ZAP	110.94	ETS	180.97	ZAE	154.02	ETE	186.96	ZAC	97.69	ETC	276.20

V1	29.439																		
V2	25.896																		
LVI	-12.91																		

PLANETOCENTRIC CONIC

C3	8.320	VHL	2.884	DLA	-28.70	RAL	334.54	RAD	6637.2	VEL	11.333	PTH	6.39	VHP	3.047	DPA	-22.32	RAP	315.01
ECC	1.1369																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 25	2349.83	.13	60.11	184.45	137.58	16 30 35	1349.8	18.30	43.89
60.00	17 11 38	2136.44	4.87	45.44	188.99	130.06	17 47 14	1136.4	20.36	26.51
70.00	18 58 7	1823.25	10.21	24.02	192.96	122.77	19 28 30	823.2	22.69	2.62
80.00	21 21 3	1375.61	16.30	353.54	196.44	115.37	21 43 58	375.6	25.35	329.80
84.87	23 9 20	1027.31	21.44	330.10	198.68	109.55	23 26 27	27.3	27.58	304.65
100.00	0 7 50	6138.12	16.30	292.82	196.44	115.37	1 50 9	5138.1	25.35	269.07
110.00	0 1 29	6158.11	10.21	290.85	192.96	122.77	1 44 7	5158.1	22.69	269.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2283	TRA	-.1395	TC3	-1.7914	BAU	.2006	SGT	1171.9	SGR	479.4	SG3	1418.0	ST	23.2	SR	18.8	SS	34.8
RDE	-.1847	RRA	.1253	RC3	-.2101	FAU	.23555	RRT	.3596	RRF	.5532	RTF	.6.18	CRT	.9059	CRS	-.5011	CST	-.1059
FDE	-.3915	FRA	3.6631	FC	-24.5102	BSP	1042	SGB	1266.2	R23	.3039	R13	.6625	LSA	37.1	MSA	26.8	SSA	1.8
BDE	.2937	BRA	.1875	BC3	1.8037	FSP	2415	SG1	1186.6	SG2	441.8	THA	9.73	EL1	29.2	EL2	6.3	ALF	38.46

LAUNCH DATE MAY 19 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 443.813 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.204	GAL	.73	AZL	91.48	HCA	143.93	SMA	185.18	ECC	.18312	INC	1.4760
RP	212.14	LAP	-.87	LOP	21.32	VP	23.119	GAP	6.44	AZP	88.81	TAL	4.73	TAP	148.66	RCA	151.27	APO	219.09
RC	128.706	GL	-16.76	GP	-3.36	ZAL	88.84	ZAP	108.86	ETS	180.85	ZAE	151.99	ETE	186.73	ZAC	97.66	ETC	276.00

V1	29.439																		
V2	25.864																		
LVI	-12.52																		

PLANETOCENTRIC CONIC

C3	8.275	VHL	2.877	DLA	-28.47	RAL	334.80	RAD	6637.1	VEL	11.331	PTH	6.38	VHP	3.008	DPA	-22.68	RAP	314.15
ECC	1.1362																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 51 9	2354.27	-.09	60.30	184.59	137.58	16 30 24	1354.3	18.09	44.10
60.00	17 10 46	2142.47	4.60	45.73	189.09	130.08	17 46 29	1142.5	20.12	26.84
70.00	18 56 7	1832.67	9.86	24.53	193.01	122.87	19 26 39	832.7	22.41	3.21
80.00	21 15 16	1396.89	15.68	354.81	196.35	115.74	21 38 33	396.9	24.94	331.24
86.62	23 24 46	6267.80	21.30	304.46	198.81	109.35	25 9 13	5267.8	27.36	279.03
100.00	0 2 4	6159.40	15.68	294.09	196.35	115.74	1 44 43	5159.4	24.94	270.52
110.00	23 55 33	6167.53	9.86	291.36	193.01	122.87	25 38 21	5167.5	22.41	270.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2311	TRA	-.1061	TC3	-2.0261	BAU	.2257	SGT	1276.1	SGR	478.8	SG3	1457.2	ST	23.4	SR	18.4	SS	35.2
RDE	-.1794	RRA	.1271	RC3	-.2370	FAU	.24110	RRT	.4159	RRF	.5836	RTF	.7064	CRT	.9221	CRS	-.4931	CST	-.1380
FDE	-.3761	FRA	3.7791	FC	-25.2232	BSP	1300	SGB	1363.0	R23	.2769	R13	.7237	LSA	37.6	MSA	26.7	SSA	1.7
BDE	.2925	BRA	.1656	BC3	2.0399	FSP	2482	SG1	1293.5	SG2	429.6	THA	9.98	EL1	29.2	EL2	5.7	ALF	37.65

LAUNCH DATE MAY 19 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 448.000 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.199	GAL	.70	AZL	91.46	HCA	145.13	SMA	185.10	ECC	.18274	INC	1.4599	V1	29.439
RP	212.43	LAP	-.83	LOP	22.53	VP	23.076	GAP	8.25	AZP	88.80	TAL	4.55	TAP	149.68	RCA	151.27	APO	218.93	V2	25.832
RC	130.999	GL	-16.61	GP	-3.50	ZAL	89.16	ZAP	106.78	ETS	180.73	ZAE	149.94	ETE	186.52	ZAC	97.61	ETC	275.80	LVI	-12.12

PLANETOCENTRIC CONIC

C3	8.235	VHL	2.870	DLA	-28.20	RAL	335.08	RAD	6637.1	VEL	11.329	PTH	6.38	VHP	2.973	DPA	-23.05	RAP	313.27	ECC	1.1355

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 50 51	2359.33	-.35	60.51	184.74	137.58	16 30 10	1359.3	17.85	44.33
60.00	17 9 50	2149.25	4.31	46.05	189.21	130.11	17 45 39	1149.2	19.85	27.21
70.00	18 53 57	1843.02	9.48	25.09	193.07	122.97	19 24 40	843.0	22.09	3.84
80.00	21 9 33	1418.46	15.03	356.09	196.29	116.10	21 33 11	418.5	24.50	332.70
90.00	23 36 8	6233.68	19.82	301.39	198.45	110.59	25 20 2	5233.7	26.56	276.39
100.00	23 52 25	6180.98	15.03	295.37	196.29	116.10	25 35 26	5181.0	24.50	271.97
110.00	23 53 24	6177.88	9.48	291.91	193.07	122.97	25 36 22	5177.9	22.09	270.67

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2317	TRA	-.0694	TC3	-2.2580	BAU	.2503	SGT	1385.0	SGR	478.9	SG3	1496.1	ST	23.3	SR	17.9	SS	35.5
RDE	-.1741	RRA	.1289	RC3	-.2661	FAU	.24706	RRT	.4716	RRF	.6138	RTF	.7618	CRT	.9376	CRS	-.4863	CST	-.1745
FDE	-.3597	FRA	3.8767	FC	-25.9718	BSP	1591	SGB	1465.5	R23	.2479	R13	.7760	LSA	37.9	MSA	26.3	SSA	1.7
BDE	.2898	BRA	.1464	BC3	2.2737	FSP	2533	SG1	1405.1	SG2	416.3	THA	10.16	EL1	29.0	EL2	5.0	ALF	37.06

LAUNCH DATE MAY 19 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 452.188 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.196	GAL	.67	AZL	91.44	HCA	146.33	SMA	185.04	ECC	.18244	INC	1.4427	V1	29.439
RP	212.72	LAP	-.80	LOP	23.73	VP	23.034	GAP	6.06	AZP	88.80	TAL	4.35	TAP	150.68	RCA	151.28	APO	218.80	V2	25.799
RC	133.312	GL	-16.44	GP	-3.64	ZAL	89.52	ZAP	104.71	ETS	180.61	ZAE	147.89	ETE	186.32	ZAC	97.56	ETC	275.60	LVI	-11.71

PLANETOCENTRIC CONIC

C3	8.201	VHL	2.864	DLA	-27.92	RAL	335.38	RAD	6637.1	VEL	11.328	PTH	6.38	VHP	2.941	DPA	-23.42	RAP	312.40	ECC	1.1350

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 50 30	2365.08	-.64	60.75	184.92	137.57	16 29 56	1365.1	17.57	44.60
60.00	17 8 48	2156.84	3.97	46.42	189.35	130.14	17 44 45	1156.8	19.55	27.62
70.00	18 51 39	1854.38	9.06	25.70	193.14	123.07	19 22 33	854.4	21.74	4.54
80.00	21 3 50	1440.52	14.37	357.39	196.24	116.46	21 27 51	440.5	24.04	334.17
90.00	23 15 44	1015.17	18.10	327.86	198.00	112.11	23 32 39	15.2	25.64	303.37
100.00	23 46 42	6203.03	14.37	296.67	196.24	116.46	25 30 5	5203.0	24.04	273.44
110.00	23 51 5	6189.24	9.06	292.52	193.14	123.07	25 34 14	5189.2	21.74	271.36

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2373	TRA	-.0369	TC3	-2.5278	BAU	.2790	SGT	1525.9	SGR	478.9	SG3	1524.6	ST	23.9	SR	17.4	SS	35.9
RDE	-.1679	RRA	.1316	RC3	-.2909	FAU	.24999	RRT	.5142	RRF	.6420	RTF	.7950	CRT	.9487	CRS	-.4533	CST	-.1728
FDE	-.2967	FRA	4.0127	FC	-26.3917	BSP	1833	SGB	1599.3	R23	.2355	R13	.8065	LSA	38.0	MSA	26.8	SSA	1.7
BDE	.2906	BRA	.1367	BC3	2.5445	FSP	2618	SG1	1547.1	SG2	405.1	THA	9.85	EL1	29.2	EL2	4.5	ALF	35.61

LAUNCH DATE MAY 19 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC DISTANCE 456.378 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.193	GAL	.64	AZL	91.42	HCA	147.53	SMA	184.99	ECC	.18219	INC	1.4246	V1	29.439
RP	213.01	LAP	-.76	LOP	24.92	VP	22.993	GAP	5.88	AZP	88.80	TAL	4.14	TAP	151.67	RCA	151.29	APO	218.69	V2	25.766
RC	135.643	GL	-16.26	GP	-3.79	ZAL	89.89	ZAP	102.65	ETS	180.47	ZAE	145.83	ETE	186.14	ZAC	97.51	ETC	275.40	LVI	-11.29

PLANETOCENTRIC CONIC

C3	8.170	VHL	2.858	DLA	-27.61	RAL	335.69	RAD	6637.1	VEL	11.326	PTH	6.38	VHP	2.914	DPA	-23.79	RAP	311.53	ECC	1.1345

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 50 7	2371.46	-.96	61.02	185.11	137.57	16 29 38	1371.5	17.26	44.90
60.00	17 7 40	2165.17	3.61	46.82	189.50	130.17	17 43 45	1165.2	19.21	28.07
70.00	18 49 12	1866.60	8.60	26.35	193.23	123.18	19 20 18	866.6	21.36	5.28
80.00	20 58 9	1462.86	13.69	358.70	196.22	116.80	21 22 32	462.9	23.55	335.65
90.00	23 2 33	1061.73	16.88	330.73	197.76	113.03	23 20 15	61.7	24.92	306.59
100.00	23 41 1	6225.38	13.69	297.97	196.22	116.80	25 24 47	5225.4	23.55	274.93
110.00	23 48 36	6201.46	8.60	293.18	193.23	123.18	25 32 0	5201.5	21.36	272.11

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2387	TRA	.0001	TC3	-2.7853	BAU	.3062	SGT	1662.6	SGR	480.6	SG3	1557.0	ST	24.0	SR	16.9	SS	36.3
RDE	-.1620	RRA	.1342	RC3	-.3199	FAU	.25426	RRT	.5590	RRF	.6716	RTF	.8267	CRT	.9596	CRS	-.4345	CST	-.1914
FDE	-.2537	FRA	4.1296	FC	-26.9420	BSP	2123	SGB	1730.7	R23	.2195	R13	.8361	LSA	38.3	MSA	26.7	SSA	1.7
BDE	.2885	BRA	.1342	BC3	2.8036	FSP	2669	SG1	1685.5	SG2	393.1	THA	9.71	EL1	29.1	EL2	3.9	ALF	34.66

LAUNCH DATE MAY 19 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC DISTANCE 460.569 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.191	GAL	.60	AZL	91.41	HCA	148.72	SMA	184.96	ECC	.18201	INC	1.4053	V1	29.439
RP	213.31	LAP	-.73	LOP	26.12	VP	22.952	GAP	5.70	AZP	88.80	TAL	3.91	TAP	152.63	RCA	151.29	APO	218.62	V2	25.732
RC	137.991	GL	-16.06	GP	-3.94	ZAL	90.29	ZAP	100.59	ETS	180.33	ZAE	143.77	ETE	185.96	ZAC	97.44	ETC	275.20	LVI	-10.87

PLANETOCENTRIC CONIC

C3	8.145	VHL	2.854	DLA	-27.27	RAL	336.02	RAD	6637.1	VEL	11.325	PTH	6.38	VHP	2.891	DPA	-24.16	RAP	310.66	ECC	1.1340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 49 39	2378.50	-1.31	61.31	185.32	137.56	16 29 17	1378.5	16.92	45.22
60.00	17 6 26	2174.26	3.21	47.25	189.66	130.19	17 42 40	1174.3	18.85	28.56
70.00	18 46 36	1879.72	8.11	27.05	193.34	123.29	19 17 56	879.7	20.95	6.08
80.00	20 52 30	1485.61	12.99	.02	196.22	117.12	21 17 15	485.6	23.04	337.15
90.00	22 51 42	1101.21	15.81	333.14	197.61	113.75	23 10 3	101.2	24.25	309.29
100.00	23 35 22	6248.12	12.99	299.30	196.22	117.12	25 19 30	5248.1	23.04	276.42
110.00	23 46 2	6214.58	8.11	293.88	193.34	123.29	25 29 37	5214.6	20.95	272.90

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2389	TRA	.0385	TC3	-3.0499	BAU	.3342	SGT	1807.8	SGR	482.7	SG3	1581.6	ST	24.2	SR	16.3	SS	36.7
RDE	-.1561	RRA	.1367	RC3	-.3480	FAU	.25726	RRT	.5993	RRF	.6998	RTF	.8524	CRT	.9691	CRS	-.4185	CST	-.2138
FDE	-.2117	FRA	4.2301	FC	-27.3461	BSP	2421	SGB	1871.1	R23	.2062	R13	.8601	LSA	38.6	MSA	26.5	SSA	1.6
BDE	.2854	BRA	.1420	BC3	3.0697	FSP	2725	SG1	1831.8	SG2	381.4	THA	9.51	EL1	29.0	EL2	3.4	ALF	33.77

LAUNCH DATE MAY 19 1971 FLIGHT TIME 196.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC DISTANCE 464.761 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.189	GAL	.56	AZL	91.36	HCA	149.91	SHA	184.94	ECC	.18188	INC	1.3646	V1	29.439
RP	213.61	LAP	-.69	LOP	27.30	VP	22.912	GAP	5.52	AZP	88.80	TAL	3.67	TAP	153.58	RCA	151.30	APO	218.57	V2	25.697
RC	140.356	GL	-15.84	GP	-4.11	ZAL	90.71	ZAP	98.56	ETS	180.19	ZAE	141.71	ETE	185.80	ZAC	97.36	ETC	275.01	LVI	-10.44

PLANETOCENTRIC CONIC

C3	8.123	VHL	2.850	DLA	-26.90	RAL	336.36	RAD	6637.1	VEL	11.324	PTH	6.38	VHP	2.870	DPA	-24.53	RAP	309.80	ECC	1.1337

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 49 8	2386.20	-1.70	61.63	185.54	137.55	16 28 54	1386.2	16.55	45.57
60.00	17 5 6	2184.14	2.77	47.73	189.84	130.22	17 41 30	1184.1	18.45	29.09
70.00	18 43 51	1893.73	7.59	27.80	193.46	123.40	19 15 25	893.7	20.50	6.92
80.00	20 46 50	1508.79	12.26	1.36	196.24	117.44	21 11 59	508.8	22.51	338.66
90.00	22 42 3	1137.21	14.81	335.31	197.51	114.37	23 1 1	137.2	23.60	311.72
100.00	23 29 42	6271.30	12.26	300.64	196.24	117.44	25 14 13	5271.3	22.51	277.94
110.00	23 43 18	6228.59	7.59	294.62	193.46	123.40	25 27 6	5228.6	20.50	273.75

DIFFERENTIAL CORRECTIONS

TDE	-.2385	TRA	.0781	TC3	-3.3189	BAU	.3628												
RDE	-.1498	RRA	.1397	RC3	-.3781	FAU	.26038												
FDE	-.1527	FRA	4.3372	FC	-27.7503	BSP	2722												
BDE	.2817	BRA	.1601	BC3	3.3403	FSP	2768												

MID-COURSE EXECUTION ACCURACY

SGT	1959.6	SGR	486.2	SG3	1606.9						
RRT	.6378	RRF	.7278	RTF	.8724						
SGB	2019.0	R23	.1958	R13	.8788						
SG1	1984.8	SG2	369.7	THA	9.32						

ORBIT DETERMINATION ACCURACY

ST	24.3	SR	15.8	SS	37.0						
CRT	.9767	CRS	-.3951	CST	-.2269						
LSA	38.8	MSA	26.5	SSA	1.6						
EL1	28.8	EL2	2.9	ALF	32.78						

LAUNCH DATE MAY 19 1971 FLIGHT TIME 198.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC DISTANCE 468.953 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.189	GAL	.53	AZL	91.36	HCA	151.10	SHA	184.93	ECC	.18180	INC	1.3624	V1	29.439
RP	213.92	LAP	-.66	LOP	28.49	VP	22.872	GAP	5.35	AZP	88.81	TAL	3.42	TAP	154.52	RCA	151.31	APO	218.55	V2	25.662
RC	142.739	GL	-15.60	GP	-4.28	ZAL	91.15	ZAP	96.54	ETS	180.03	ZAE	139.66	ETE	185.65	ZAC	97.26	ETC	274.81	LVI	-10.00

PLANETOCENTRIC CONIC

C3	8.106	VHL	2.847	DLA	-26.51	RAL	336.72	RAD	6637.1	VEL	11.323	PTH	6.38	VHP	2.854	DPA	-24.90	RAP	308.96	ECC	1.1334

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 48 32	2394.60	-2.12	61.98	185.78	137.54	16 28 26	1394.6	18.15	45.96
60.00	17 3 38	2194.81	2.30	48.24	190.03	130.25	17 40 13	1194.8	18.01	29.66
70.00	18 40 58	1908.64	7.03	28.59	193.58	123.51	19 12 47	908.6	20.03	7.81
80.00	20 41 9	1532.45	11.52	2.72	196.27	117.74	21 6 42	532.4	21.94	340.19
90.00	22 33 10	1171.23	13.85	337.34	197.46	114.91	22 52 41	171.2	22.94	313.99
100.00	23 24 1	1006.92	11.52	324.09	196.27	117.74	23 40 48	6.9	21.94	301.56
110.00	23 40 24	6243.50	7.03	295.41	193.58	123.51	25 24 28	5243.5	20.03	274.64

DIFFERENTIAL CORRECTIONS

TDE	-.2371	TRA	.1186	TC3	-3.5936	BAU	.3919												
RDE	-.1435	RRA	.1425	RC3	-.4070	FAU	.26202												
FDE	-.0943	FRA	4.4191	FC	-27.9850	BSP	3026												
BDE	.2772	BRA	.1854	BC3	3.6166	FSP	2801												

MID-COURSE EXECUTION ACCURACY

SGT	2118.0	SGR	489.8	SG3	1622.7						
RRT	.6724	RRF	.7538	RTF	.8886						
SGB	2173.9	R23	.1873	R13	.8939						
SG1	2144.2	SG2	358.1	THA	9.09						

ORBIT DETERMINATION ACCURACY

ST	24.4	SR	15.2	SS	37.3						
CRT	.9827	CRS	-.3743	CST	-.2429						
LSA	39.0	MSA	26.3	SSA	1.6						
EL1	28.6	EL2	2.4	ALF	31.78						

LAUNCH DATE MAY 19 1971 FLIGHT TIME 200.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 473.146 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.189	GAL	.48	AZL	91.34	HCA	152.28	SHA	184.93	ECC	.18178	INC	1.3386	V1	29.439
RP	214.24	LAP	-.62	LOP	29.67	VP	22.832	GAP	5.17	AZP	88.81	TAL	3.15	TAP	155.43	RCA	151.31	APO	218.54	V2	25.627
RC	145.138	GL	-15.33	GP	-4.46	ZAL	91.62	ZAP	94.55	ETS	179.87	ZAE	137.62	ETE	185.51	ZAC	97.15	ETC	274.62	LVI	-9.56

PLANETOCENTRIC CONIC

C3	8.092	VHL	2.845	DLA	-26.09	RAL	337.09	RAD	6637.0	VEL	11.323	PTH	6.38	VHP	2.841	DPA	-25.28	RAP	308.14	ECC	1.1332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 47 51	2403.70	-2.58	62.36	186.03	137.52	16 27 54	1403.7	15.70	46.37
60.00	17 2 4	2206.29	1.80	48.79	190.23	130.27	17 38 50	1206.3	17.55	30.27
70.00	18 37 55	1924.44	6.43	29.43	193.72	123.61	19 10 0	924.4	19.51	8.75
80.00	20 35 26	1556.62	10.75	4.10	196.32	118.02	21 1 23	556.6	21.35	341.75
90.00	22 24 45	1204.08	12.90	339.28	197.43	115.39	22 44 49	204.1	22.27	316.17
100.00	23 18 18	1031.09	10.75	325.47	196.32	118.02	23 35 29	31.1	21.35	303.11
110.00	23 37 22	6259.30	6.43	296.25	193.72	123.61	25 21 41	5259.3	19.51	275.58

DIFFERENTIAL CORRECTIONS

TDE	-.2338	TRA	.1609	TC3	-3.8689	BAU	.4212												
RDE	-.1368	RRA	.1460	RC3	-.4387	FAU	.26401												
FDE	-.0187	FRA	4.5144	FC	-28.2453	BSP	3339												
BDE	.2708	BRA	.2173	BC3	3.8937	FSP	2826												

MID-COURSE EXECUTION ACCURACY

SGT	2279.7	SGR	495.4	SG3	1641.0						
RRT	.7060	RRF	.7798	RTF	.9017						
SGB	2332.9	R23	.1808	R13	.9063						
SG1	2307.0	SG2	346.7	THA	8.93						

ORBIT DETERMINATION ACCURACY

ST	24.4	SR	14.6	SS	37.7						
CRT	.9872	CRS	-.3472	CST	-.2524						
LSA	39.3	MSA	26.2	SSA	1.6						
EL1	28.4	EL2	2.0	ALF	30.81						

LAUNCH DATE MAY 19 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 477.338 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.190	GAL	.44	AZL	91.31	HCA	153.46	SHA	184.94	ECC	.18181	INC	1.3128	V1	29.439
RP	214.55	LAP	-.59	LOP	30.85	VP	22.793	GAP	5.00	AZP	88.83	TAL	2.87	TAP	156.33	RCA	151.32	APO	218.56	V2	25.591
RC	147.555	GL	-15.04	GP	-4.65	ZAL	92.11	ZAP	92.59	ETS	179.70	ZAE	135.59	ETE	185.38	ZAC	97.03	ETC	274.43	LVI	-9.11

PLANETOCENTRIC CONIC

C3	8.082	VHL	2.843	DLA	-25.64	RAL	337.46	RAD	6637.0	VEL	11.322	PTH	6.38	VHP	2.830	DPA	-25.65	RAP	307.35	ECC	1.1330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 47 4	2413.53	-3.07	62.77	186.28	137.50	16 27 17	1413.5	15.23	46.82
60.00	17 0 21	2218.61	1.26	49.38	190.44	130.28	17 37 20	1218.6	17.04	30.92
70.00	18 34 43	1941.17	5.80	30.31	193.87	123.72	19 7 4	941.2	18.97	9.74
80.00	20 29 40	1581.37	9.95	5.51	196.39	118.30	20 56 1	581.4	20.73	343.32
90.00	22 16 40	1236.30	11.95	341.17	197.43	115.82	22 37 16	236.3	21.58	318.28
100.00	23 12 32	1055.84	9.95	326.88	196.39	118.30	23 30 8	55.8	20.73	304.69
110.00	23 34 9	6276.03	5.80	297.13	193.87	123.72	25 18 45	5276.0	18.97	276.57

DIFFERENTIAL CORRECTIONS

TDE	-.2293	TRA	.2038	TC3	-4.1485	BAU	.4511												
RDE	-.1300	RRA	.1495	RC3	-.4713	FAU	.26540												
FDE	.0495	FRA	4.5907	FC	-28.4280	BSP	3651												
BDE	.2636	BRA	.2528	BC3	4.1752	FSP	2850												

MID-COURSE EXECUTION ACCURACY

SGT	2446.5	SGR	502.2	SG3	1654.3						
RRT	.7370	RRF	.8045	RTF	.9128						
SGB	2497.5	R23	.1758	R13	.9167						
SG1	2474.8	SG2	335.5	THA	8.77						

ORBIT DETERMINATION ACCURACY

ST	24.4	SR	14.0	SS	38.1						
CRT	.9902	CRS	-.3273	CST	-.2694						
LSA	39.6	MSA	25.9	SSA	1.5						
EL1	28.1	EL2	1.7	ALF	29.83						

LAUNCH DATE MAY 19 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 481.530 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.191	GAL	.40	AZL	91.29	HCA	154.64	SMA	184.96	ECC	.18188	INC	1.2654	V1	29.439
RP	214.88	LAP	-.55	LOP	32.03	VP	22.754	GAP	4.84	AZP	88.84	TAL	2.58	TAP	157.22	RCA	151.32	APO	218.61	V2	25.554
RC	149.988	GL	-14.72	GP	-4.86	ZAL	92.61	ZAP	90.65	ETS	179.52	ZAE	133.58	ETE	185.25	ZAC	96.89	ETC	274.25	LVI	-8.66

PLANETOCENTRIC CONIC

C3	8.076	VHL	2.842	DLA	-25.15	RAL	337.84	RAD	6637.0	VEL	11.322	PTH	6.38	VHP	2.823	DPA	-26.03	RAP	306.57	ECC	1.1329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 46 10	2424.13	-3.60	63.22	186.55	137.47	16 26 34	1424.1	14.71	47.29
60.00	16 58 29	2231.80	.68	50.01	190.66	130.30	17 35 41	1231.8	16.50	31.61
70.00	18 31 20	1958.85	5.13	31.24	194.03	123.81	19 3 58	958.8	18.38	10.78
80.00	20 23 49	1606.77	9.13	6.95	196.46	118.55	20 50 36	606.8	20.07	344.92
90.00	22 8 47	1268.24	11.00	343.03	197.45	116.22	22 29 55	268.2	20.86	320.35
100.00	23 6 41	1081.24	9.13	328.32	196.46	118.55	23 24 42	81.2	20.07	306.29
110.00	23 30 46	1005.66	5.13	320.16	194.03	123.81	23 47 32	5.7	18.38	299.69

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2225	TRA	.2489	TC3	-4.4255	BAU	.4809	SGT	2614.4	SGR	511.1	SG3	1665.0			ST	24.2	SR	13.4	SS	38.7
RDE	-.1232	RRA	.1538	RC3	-.5045	FAU	.26600	RRT	.7653	RRF	.8283	RTF	.9216			CRT	.9916	CRS	-.3113	CST	-.2918
FDE	.1196	FRA	4.6800	FC-28.5141		BSP	3975	SGB	2663.9	R23	.1738	R13	.9251			LSA	40.2	MSA	25.4	SSA	1.5
BDE	.2543	BRA	.2926	BC3	4.4542	FSP	2868	SG1	2644.0	SG2	325.3	THA	8.64			EL1	27.7	EL2	1.5	ALF	28.93

LAUNCH DATE MAY 19 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 485.721 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.193	GAL	.35	AZL	91.26	HCA	155.81	SMA	185.00	ECC	.18199	INC	1.2550	V1	29.439
RP	215.21	LAP	-.51	LOP	33.20	VP	22.715	GAP	4.67	AZP	88.85	TAL	2.28	TAP	158.08	RCA	151.33	APO	218.67	V2	25.518
RC	152.438	GL	-14.37	GP	-5.08	ZAL	93.14	ZAP	88.75	ETS	179.33	ZAE	131.60	ETE	185.14	ZAC	96.73	ETC	274.07	LVI	-8.21

PLANETOCENTRIC CONIC

C3	8.073	VHL	2.841	DLA	-24.63	RAL	338.23	RAD	6637.0	VEL	11.322	PTH	6.38	VHP	2.819	DPA	-26.41	RAP	305.83	ECC	1.1329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 9	2435.55	-4.17	63.70	186.82	137.44	16 25 45	1435.6	14.15	47.80
60.00	16 56 28	2245.92	.05	50.68	190.89	130.30	17 33 53	1245.9	15.91	32.35
70.00	18 27 45	1977.52	4.42	32.22	194.19	123.90	19 0 42	977.5	17.75	11.86
80.00	20 17 52	1632.90	8.27	8.42	196.55	118.79	20 45 5	632.9	19.38	346.55
90.00	22 1 1	1300.20	10.03	344.88	197.48	116.58	22 22 41	300.2	20.12	322.40
100.00	23 0 44	1107.37	8.27	329.78	196.55	118.79	23 19 11	107.4	19.38	307.92
110.00	23 27 11	1024.34	4.42	321.14	194.19	123.90	23 44 16	24.3	17.75	300.78

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2143	TRA	.2942	TC3	-4.7007	BAU	.5107	SGT	2783.6	SGR	520.0	SG3	1666.3			ST	24.1	SR	12.8	SS	39.2
RDE	-.1159	RRA	.1579	RC3	-.5370	FAU	.26522	RRT	.7908	RRF	.8496	RTF	.9288			CRT	.9913	CRS	-.2927	CST	-.3111
FDE	.2007	FRA	4.7405	FC-28.4406		BSP	4292	SGB	2831.8	R23	.1726	R13	.9318			LSA	40.7	MSA	25.0	SSA	1.5
BDE	.2436	BRA	.3339	BC3	4.7313	FSP	2880	SG1	2814.2	SG2	314.8	THA	8.51			EL1	27.2	EL2	1.5	ALF	27.93

LAUNCH DATE MAY 19 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 13 1971

HELIOCENTRIC CONIC DISTANCE 489.911 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.196	GAL	.30	AZL	91.22	HCA	156.98	SMA	185.04	ECC	.18215	INC	1.2219	V1	29.439
RP	215.54	LAP	-.48	LOP	34.37	VP	22.677	GAP	4.51	AZP	88.88	TAL	1.96	TAP	158.94	RCA	151.33	APO	218.75	V2	25.480
RC	154.904	GL	-13.99	GP	-5.32	ZAL	93.69	ZAP	86.88	ETS	179.13	ZAE	129.63	ETE	185.03	ZAC	96.55	ETC	273.90	LVI	-7.74

PLANETOCENTRIC CONIC

C3	8.074	VHL	2.841	DLA	-24.07	RAL	338.62	RAD	6637.0	VEL	11.322	PTH	6.38	VHP	2.818	DPA	-26.80	RAP	305.13	ECC	1.1329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 0	2447.84	-4.79	64.21	187.10	137.39	16 24 48	1447.8	13.55	48.35
60.00	16 54 15	2261.01	-.61	51.40	191.11	130.30	17 31 56	1261.0	15.29	33.13
70.00	18 23 57	1997.27	3.67	33.26	194.36	123.98	18 57 15	997.3	17.08	13.00
80.00	20 11 46	1659.86	7.39	9.93	196.64	119.01	20 39 26	659.9	18.65	348.22
90.00	21 53 17	1332.44	9.04	346.73	197.53	116.91	22 15 29	332.4	19.35	324.44
100.00	22 54 38	1134.33	7.39	331.29	196.64	119.01	23 13 32	134.3	18.65	309.59
110.00	23 23 24	1044.09	3.67	322.17	194.36	123.98	23 40 48	44.1	17.08	301.92

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2042	TRA	.3396	TC3	-4.9834	BAU	.5415	SGT	2958.4	SGR	532.3	SG3	1671.6			ST	23.8	SR	12.2	SS	39.7
RDE	-.1082	RRA	.1625	RC3	-.5754	FAU	.26563	RRT	.8161	RRF	.8704	RTF	.9453			CRT	.9895	CRS	-.2765	CST	-.3319
FDE	.2878	FRA	4.7921	FC-28.4827		BSP	4616	SGB	3005.9	R23	.1712	R13	.9380			LSA	41.2	MSA	24.4	SSA	1.4
BDE	.2311	BRA	.3765	BC3	5.0165	FSP	2894	SG1	2990.5	SG2	304.3	THA	8.44			EL1	26.7	EL2	1.6	ALF	26.91

LAUNCH DATE MAY 19 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE 494.099 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.199	GAL	.25	AZL	91.19	HCA	158.14	SMA	185.09	ECC	.18236	INC	1.1858	V1	29.439
RP	215.87	LAP	-.44	LOP	35.53	VP	22.639	GAP	4.35	AZP	88.90	TAL	1.63	TAP	159.78	RCA	151.34	APO	218.84	V2	25.443
RC	157.385	GL	-13.56	GP	-5.58	ZAL	94.26	ZAP	85.06	ETS	178.92	ZAE	127.70	ETE	184.93	ZAC	96.34	ETC	273.74	LVI	-7.27

PLANETOCENTRIC CONIC

C3	8.077	VHL	2.842	DLA	-23.46	RAL	339.01	RAD	6637.0	VEL	11.322	PTH	6.38	VHP	2.819	DPA	-27.20	RAP	304.46	ECC	1.1329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 40	2461.07	-5.45	64.77	187.38	137.34	16 23 41	1461.1	12.90	48.94
60.00	16 51 49	2277.17	-1.32	52.17	191.34	130.28	17 29 46	1277.2	14.61	33.96
70.00	18 19 55	2018.15	2.88	34.35	194.53	124.05	18 53 33	1018.1	16.37	14.20
80.00	20 5 29	1687.76	6.46	11.48	196.74	119.21	20 33 37	687.8	17.88	349.93
90.00	21 45 30	1365.17	8.03	348.60	197.59	117.21	22 8 16	365.2	18.53	326.50
100.00	22 48 21	1162.23	6.46	332.85	196.74	119.21	23 7 43	162.2	17.88	311.30
110.00	23 19 22	1064.97	2.88	323.27	194.53	124.05	23 37 7	65.0	16.37	303.12

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.1919	TRA	.3872	TC3	-5.2523	BAU	.5710	SGT	3128.4	SGR	545.4	SG3	1664.7			ST	23.6	SR	11.6	SS	40.3
RDE	-.1009	RRA	.1678	RC3	-.6097	FAU	.26325	RRT	.8365	RRF	.8889	RTF	.9402			CRT	.9858	CRS	-.2773	CST	-.3721
FDE	.3556	FRA	4.8471	FC-28.2161		BSP	4947	SGB	3175.6	R23	.1740	R13	.9427			LSA	41.9	MSA	23.6	SSA	1.4
BDE	.2168	BRA	.4220	BC3	5.2876	FSP	2899	SG1	3161.8	SG2	295.7	THA	8.37			EL1	26.2	EL2	1.7	ALF	25.95

LAUNCH DATE MAY 19 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 498.286 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.202	GAL	.20	AZL	91.15	HCA	159.31	SMA	185.15	ECC	.18260	INC	1.1459	V1	29.439
RP	216.21	LAP	-.41	LOP	36.69	VP	22.601	GAP	4.19	AZP	88.93	TAL	1.30	TAP	160.60	RCA	151.34	APO	218.96	V2	25.405
RC	159.881	GL	-13.09	GP	-5.86	ZAL	94.84	ZAP	83.27	ETS	178.69	ZAE	125.79	ETE	184.84	ZAC	96.11	ETC	273.59	LVI	-6.78

PLANETOCENTRIC CONIC

C3	8.084	VHL	2.843	DLA	-22.81	RAL	339.39	RAD	6637.0	VEL	11.322	PTH	6.38	VHP	2.822	DPA	-27.61	RAP	303.83	ECC	1.1330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 41 9	2475.32	-6.17	65.37	187.66	137.27	16 22 24	1475.3	12.20	49.57
60.00	16 49 9	2294.47	-2.08	53.00	191.57	130.26	17 27 23	1294.5	13.89	34.85
70.00	18 15 37	2040.28	2.03	35.51	194.70	124.10	18 49 37	1040.3	15.60	15.45
80.00	19 58 59	1716.75	5.50	13.09	196.84	119.39	20 27 36	716.7	17.05	351.69
90.00	21 37 37	1398.63	6.98	350.50	197.65	117.47	22 0 56	398.6	17.68	328.58
100.00	22 41 51	1191.22	5.50	334.46	196.84	119.39	23 1 42	191.2	17.05	313.06
110.00	23 15 3	1087.10	2.03	324.42	194.70	124.10	23 33 10	87.1	15.60	304.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1750	TRA	.4355	TC3	-5.5305	BAU	.6018	SGT	3304.7	SGR	562.6	SG3	1665.4	ST	23.2	SR	10.9	SS	41.3
RDE	-.0918	RRA	.1739	RC3	-.6526	FAU	.26263	RRT	.8576	RRF	.9067	RTF	.9445	CRT	.9801	CRS	-.2638	CST	-.3981
FDE	.4757	FRA	4.9015	FC	-28.1268	BSP	5264	SGB	3352.2	R23	.1761	R13	.9468	LSA	42.9	MSA	22.8	SSA	1.4
BDE	.1976	BRA	.4690	BC3	5.5689	FSP	2886	SG1	3340.0	SG2	286.3	THA	8.37	EL1	25.5	EL2	2.0	ALF	24.87

LAUNCH DATE MAY 19 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 502.471 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.206	GAL	.15	AZL	91.10	HCA	160.46	SMA	185.21	ECC	.18287	INC	1.1014	V1	29.439
RP	216.56	LAP	-.37	LOP	37.85	VP	22.564	GAP	4.03	AZP	88.96	TAL	.95	TAP	161.41	RCA	151.34	APO	219.09	V2	25.366
RC	162.390	GL	-12.58	GP	-6.17	ZAL	95.44	ZAP	81.53	ETS	178.44	ZAE	123.91	ETE	184.76	ZAC	95.84	ETC	273.44	LVI	-6.28

PLANETOCENTRIC CONIC

C3	8.093	VHL	2.845	DLA	-22.10	RAL	339.77	RAD	6637.0	VEL	11.323	PTH	6.38	VHP	2.828	DPA	-28.04	RAP	303.25	ECC	1.1332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 39 23	2490.72	-6.93	66.03	187.93	137.19	16 20 54	1490.7	11.44	50.24
60.00	16 46 12	2313.06	-2.90	53.89	191.80	130.21	17 24 45	1313.1	13.10	35.79
70.00	18 10 59	2063.81	1.14	36.73	194.86	124.14	18 45 22	1063.8	14.78	16.78
80.00	19 52 12	1747.01	4.48	14.76	196.94	119.55	20 21 19	747.0	16.18	353.51
90.00	21 29 32	1433.07	5.89	352.45	197.72	117.71	21 53 25	433.1	16.77	330.70
100.00	22 35 4	1221.48	4.48	336.13	196.94	119.55	22 55 26	221.5	16.18	314.88
110.00	23 10 25	1110.63	1.14	325.65	194.86	124.14	23 28 56	110.6	14.78	305.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1578	TRA	.4818	TC3	-5.8040	BAU	.6325	SGT	3478.9	SGR	581.7	SG3	1656.8	ST	22.9	SR	10.3	SS	41.8
RDE	-.0836	RRA	.1797	RC3	-.6974	FAU	.26109	RRT	.8760	RRF	.9223	RTF	.9489	CRT	.9729	CRS	-.2752	CST	-.4467
FDE	.5523	FRA	4.9111	FC	-27.9299	BSP	5570	SGB	3527.2	R23	.1776	R13	.9510	LSA	43.6	MSA	21.8	SSA	1.4
BDE	.1786	BRA	.5143	BC3	5.8457	FSP	2852	SG1	3516.3	SG2	277.6	THA	8.39	EL1	25.0	EL2	2.2	ALF	23.79

LAUNCH DATE MAY 19 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC DISTANCE 506.655 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.211	GAL	.09	AZL	91.05	HCA	161.62	SMA	185.29	ECC	.18319	INC	1.0523	V1	29.439
RP	216.91	LAP	-.33	LOP	39.01	VP	22.527	GAP	3.88	AZP	89.00	TAL	.60	TAP	162.21	RCA	151.35	APO	219.23	V2	25.327
RC	164.912	GL	-12.00	GP	-6.52	ZAL	96.06	ZAP	79.83	ETS	178.17	ZAE	122.06	ETE	184.69	ZAC	95.53	ETC	273.30	LVI	-5.76

PLANETOCENTRIC CONIC

C3	8.105	VHL	2.847	DLA	-21.33	RAL	340.13	RAD	6637.1	VEL	11.323	PTH	6.38	VHP	2.837	DPA	-28.49	RAP	302.71	ECC	1.1334

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 22	2507.40	-7.77	66.73	188.20	137.09	16 19 9	1507.4	10.61	50.96
60.00	16 42 54	2333.09	-3.78	54.85	192.02	130.15	17 21 47	1333.1	12.25	36.80
70.00	18 5 58	2088.91	.18	38.04	195.02	124.15	18 40 47	1088.9	13.89	18.18
80.00	19 45 4	1778.76	3.42	16.52	197.04	119.68	20 14 43	778.8	15.24	355.40
90.00	21 21 10	1468.79	4.76	354.46	197.78	117.91	21 45 39	468.8	15.80	332.88
100.00	22 27 56	1253.23	3.42	337.88	197.04	119.68	22 48 49	253.2	15.24	316.77
110.00	23 5 24	1135.73	.18	326.96	195.02	124.15	23 24 20	135.7	13.89	307.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1377	TRA	.5289	TC3	-6.0762	BAU	.6633	SGT	3654.0	SGR	605.2	SG3	1648.0	ST	22.6	SR	9.7	SS	42.3
RDE	-.0752	RRA	.1862	RC3	-.7483	FAU	.25983	RRT	.8934	RRF	.9364	RTF	.9534	CRT	.9633	CRS	-.2983	CST	-.5065
FDE	.6242	FRA	4.9091	FC	-27.7555	BSP	5857	SGB	3703.8	R23	.1782	R13	.9554	LSA	44.4	MSA	20.6	SSA	1.3
BDE	.1569	BRA	.5608	BC3	6.1221	FSP	2794	SG1	3694.0	SG2	269.0	THA	8.46	EL1	24.5	EL2	2.4	ALF	22.66

LAUNCH DATE MAY 19 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 23 1971

HELIOCENTRIC CONIC DISTANCE 510.835 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.215	GAL	.04	AZL	91.00	HCA	162.77	SMA	185.37	ECC	.18354	INC	.9963	V1	29.439
RP	217.26	LAP	-.30	LOP	40.16	VP	22.490	GAP	3.72	AZP	89.05	TAL	.23	TAP	163.00	RCA	151.35	APO	219.39	V2	25.288
RC	167.446	GL	-11.34	GP	-6.90	ZAL	96.70	ZAP	78.17	ETS	177.87	ZAE	120.24	ETE	184.63	ZAC	95.18	ETC	273.17	LVI	-5.22

PLANETOCENTRIC CONIC

C3	8.119	VHL	2.849	DLA	-20.49	RAL	340.48	RAD	6637.1	VEL	11.324	PTH	6.38	VHP	2.848	DPA	-28.98	RAP	302.21	ECC	1.1336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 35 0	2525.55	-8.67	67.51	188.47	136.97	16 17 6	1525.6	9.72	51.75
60.00	16 39 14	2354.77	-4.73	55.89	192.23	130.07	17 18 28	1354.8	11.32	37.88
70.00	18 0 31	2115.82	-.85	39.45	195.17	124.14	18 35 46	1115.8	12.93	19.67
80.00	19 37 30	1812.28	2.28	18.36	197.12	119.78	20 7 42	812.3	14.23	357.38
90.00	21 12 25	1506.10	3.57	356.55	197.83	118.07	21 37 31	506.1	14.77	335.12
100.00	22 20 22	1286.75	2.28	339.73	197.12	119.78	22 41 48	286.8	14.23	318.74
110.00	22 59 57	1162.64	-.85	328.37	195.17	124.14	23 19 20	162.6	12.93	308.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1323	TRA	.5768	TC3	-6.3661	BAU	.6966	SGT	3842.6	SGR	639.7	SG3	1644.3	ST	23.5	SR	9.7	SS	41.1
RDE	-.0737	RRA	.1939	RC3	-.8116	FAU	.26030	RRT	.9084	RRF	.9497	RTF	.9597	CRT	.9569	CRS	-.3997	CST	-.6191
FDE	.4772	FRA	4.9090	FC	-27.7566	BSP	6187	SGB	3895.4	R23	.1764	R13	.9615	LSA	44.4	MSA	18.9	SSA	1.4
BDE	.1515	BRA	.6086	BC3	6.4176	FSP	2794	SG1	3886.5	SG2	264.4	THA	8.64	EL1	25.3	EL2	2.6	ALF	21.84

LAUNCH DATE MAY 19 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 25 1971

HELIOCENTRIC CONIC DISTANCE 515.012 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.221	GAL	-.02	AZL	90.93	HCA	163.91	SMA	185.46	ECC	.18392	INC	.9330
RP	217.61	LAP	-.26	LOP	41.30	VP	22.453	GAP	3.57	AZP	89.10	TAL	359.86	TAP	163.77	RCA	151.35	APO	219.57
RC	169.992	GL	-10.61	GP	-7.34	ZAL	97.35	ZAP	76.57	ETS	177.55	ZAE	118.45	ETE	184.57	ZAC	94.78	ETC	273.05

V1	29.439	V2	25.249	LVI	-4.64														

PLANETOCENTRIC CONIC

C3	8.135	VHL	2.852	DLA	-19.57	RAL	340.80	RAD	6637.1	VEL	11.325	PTH	6.38	VHP	2.861	DPA	-29.50	RAP	301.78

ECC	1.1339																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 32 16	2545.42	-9.66	68.36	188.71	136.82	16 14 41	1545.4	8.73	52.60
60.00	16 35 4	2378.38	-5.76	57.03	192.43	129.96	17 14 43	1378.4	10.31	39.06
70.00	17 54 31	2144.85	-1.96	40.96	195.30	124.10	18 30 16	1144.8	11.88	21.26
80.00	19 29 23	1847.94	1.08	20.32	197.20	119.84	20 0 11	847.9	13.14	359.46
90.00	21 3 10	1545.42	2.30	358.75	197.88	118.19	21 28 55	545.4	13.65	337.47
100.00	22 12 15	1322.41	1.08	341.69	197.20	119.84	22 34 17	322.4	13.14	320.83
110.00	22 53 57	1191.67	-1.96	329.88	195.30	124.10	23 13 49	191.7	11.88	310.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0794	TRA	.6451	TC3	-6.4290	BAU	.7044	SGT	3920.1	SGR	642.3	SG3	1555.5	ST	22.8	SR	8.6	SS	46.8
RDE	-.0523	RRA	.2118	RC3	-.7793	FAU	.23292	RRT	.9008	RRF	.9566	RTF	.9450	CRT	.9456	CRS	-.4038	CST	-.6492
FDE	.8989	FRA	5.1583	FC	-24.7865	BSP	6951	SGB	3972.3	R23	.2328	R13	.9474	LSA	49.6	MSA	18.0	SSA	1.4
BDE	.0951	BRA	.6790	BC3	6.4760	FSP	3184	SG1	3962.7	SG2	276.0	THA	8.44	EL1	24.2	EL2	2.6	ALF	19.88

LAUNCH DATE MAY 19 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 27 1971

HELIOCENTRIC CONIC DISTANCE 519.189 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.226	GAL	-.08	AZL	90.86	HCA	165.06	SMA	185.55	ECC	.18434	INC	.8613
RP	217.97	LAP	-.22	LOP	42.44	VP	22.416	GAP	3.42	AZP	89.17	TAL	359.48	TAP	164.53	RCA	151.35	APO	219.75
RC	172.547	GL	-9.77	GP	-7.84	ZAL	98.02	ZAP	75.01	ETS	177.18	ZAE	116.70	ETE	184.53	ZAC	94.31	ETC	272.94

V1	29.439	V2	25.209	LVI	-4.02														

PLANETOCENTRIC CONIC

C3	8.155	VHL	2.856	DLA	-18.55	RAL	341.10	RAD	6637.1	VEL	11.326	PTH	6.38	VHP	2.876	DPA	-30.08	RAP	301.39

ECC	1.1342																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 2	2567.33	-10.74	69.31	188.94	136.63	16 11 49	1567.3	7.64	53.54
60.00	16 30 21	2404.27	-6.89	58.28	192.60	129.81	17 10 25	1404.3	9.20	40.33
70.00	17 47 52	2176.41	-3.16	42.61	195.41	124.02	18 24 8	1176.4	10.72	22.98
80.00	19 20 35	1886.20	-.22	22.42	197.25	119.86	19 52 1	886.2	11.94	1.67
90.00	20 53 15	1587.27	.96	1.09	197.90	118.27	21 19 42	587.3	12.43	339.94
100.00	22 3 27	1360.67	-.22	343.79	197.25	119.86	22 26 8	360.7	11.94	323.04
110.00	22 47 18	1223.22	-3.16	331.53	195.41	124.02	23 7 41	223.2	10.72	311.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0438	TRA	.6918	TC3	-6.7979	BAU	.7475	SGT	4150.2	SGR	698.3	SG3	1590.6	ST	23.1	SR	8.2	SS	47.7
RDE	-.0407	RRA	.2211	RC3	-.8961	FAU	.24383	RRT	.9245	RRF	.9684	RTF	.9556	CRT	.9355	CRS	-.4738	CST	-.7294
FDE	1.0045	FRA	5.0952	FC	-25.8861	BSP	6949	SGB	4208.6	R23	.2135	R13	.9577	LSA	51.1	MSA	16.2	SSA	1.3
BDE	.0598	BRA	.7262	BC3	6.8568	FSP	2843	SG1	4200.3	SG2	263.0	THA	8.88	EL1	24.4	EL2	2.7	ALF	18.49

LAUNCH DATE MAY 19 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 523.362 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.232	GAL	-.14	AZL	90.78	HCA	166.20	SMA	185.65	ECC	.18478	INC	.7764
RP	218.33	LAP	-.19	LOP	43.58	VP	22.380	GAP	3.27	AZP	89.24	TAL	359.09	TAP	165.28	RCA	151.34	APO	219.95
RC	175.114	GL	-8.80	GP	-8.41	ZAL	98.70	ZAP	73.51	ETS	176.77	ZAE	114.97	ETE	184.51	ZAC	93.77	ETC	272.84

V1	29.439	V2	25.169	LVI	-3.34														

PLANETOCENTRIC CONIC

C3	8.176	VHL	2.859	DLA	-17.40	RAL	341.35	RAD	6637.1	VEL	11.327	PTH	6.38	VHP	2.894	DPA	-30.72	RAP	301.07

ECC	1.1346																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 25 13	2591.70	-11.95	70.37	189.15	136.41	16 8 24	1591.7	6.42	54.57
60.00	16 24 55	2432.93	-8.14	59.67	192.75	129.61	17 5 28	1432.9	7.95	41.73
70.00	17 40 24	2211.05	-4.48	44.43	195.50	123.89	18 17 15	1211.0	9.45	24.85
80.00	19 10 56	1927.69	-1.63	24.69	197.28	119.82	19 43 3	927.7	10.62	4.04
90.00	20 42 29	1632.32	-.50	3.60	197.91	118.28	21 9 42	632.3	11.09	342.57
100.00	21 53 47	1402.17	-1.63	346.06	197.28	119.82	22 17 10	402.2	10.62	325.41
110.00	22 39 50	1257.87	-4.48	333.35	195.50	123.89	23 0 48	257.9	9.45	313.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0013	TRA	.7351	TC3	-7.0677	BAU	.7799	SGT	4326.6	SGR	743.1	SG3	1573.6	ST	23.9	SR	7.8	SS	49.9
RDE	-.0248	RRA	.2330	RC3	-.9742	FAU	.24155	RRT	.9352	RRF	.9762	RTF	.9578	CRT	.9363	CRS	-.5718	CST	-.8019
FDE	1.1842	FRA	5.0435	FC	-25.5759	BSP	7212	SGB	4390.0	R23	.2181	R13	.9599	LSA	53.9	MSA	14.5	SSA	1.3
BDE	.0249	BRA	.7712	BC3	7.1345	FSP	2776	SG1	4382.3	SG2	259.7	THA	9.16	EL1	25.0	EL2	2.6	ALF	17.15

LAUNCH DATE MAY 19 1971 FLIGHT TIME 226.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 527.531 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.238	GAL	-.20	AZL	90.68	HCA	167.33	SMA	185.75	ECC	.18526	INC	.6800
RP	218.69	LAP	-.15	LOP	44.72	VP	22.344	GAP	3.12	AZP	89.34	TAL	358.69	TAP	166.02	RCA	151.34	APO	220.17
RC	177.690	GL	-7.67	GP	-9.08	ZAL	99.40	ZAP	72.06	ETS	176.31	ZAE	113.28	ETE	184.50	ZAC	93.12	ETC	272.75

V1	29.439	V2	25.129	LVI	-2.59														

PLANETOCENTRIC CONIC

C3	8.201	VHL	2.864	DLA	-16.10	RAL	341.56	RAD	6637.1	VEL	11.328	PTH	6.38	VHP	2.914	DPA	-31.44	RAP	300.81

ECC	1.1350																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 20 39	2619.13	-13.30	71.58	189.33	136.12	16 4 18	1619.1	5.05	55.73
60.00	16 18 35	2465.04	-9.53	61.25	192.88	129.35	16 59 41	1465.0	6.56	43.29
70.00	17 31 54	2249.52	-5.94	46.45	195.56	123.70	18 9 24	1249.5	8.02	26.91
80.00	19 0 10	1973.25	-3.17	27.20	197.28	119.70	19 33 3	973.3	9.15	6.62
90.00	20 30 37	1681.47	-2.08	6.34	197.88	118.21	20 58 38	681.5	9.60	345.41
100.00	21 43 2	1447.73	-3.17	348.57	197.28	119.70	22 7 10	447.7	9.15	327.99
110.00	22 31 21	1296.34	-5.94	335.37	195.56	123.70	22 52 57	296.3	8.02	315.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0511	TRA	.7885	TC3	-7.3008	BAU	.8088	SGT	4493.5	SGR	798.5	SG3	1553.1	ST	25.9	SR	7.9	SS	51.9
RDE	-.0095	RRA	.2500	RC3	-1.0564	FAU	.23719	RRT	.9429	RRF	.9826	RTF	.9595	CRT	.9409	CRS	-.6902	CST	-.8775
FDE	1.3095	FRA	5.0503	FC	-25.0389	BSP	7547	SGB	4563.9	R23	.2245	R13	.9617	LSA	57.2	MSA	12.4	SSA	1.3
BDE	.0520	BRA	.8272	BC3	7.3768	FSP	2728	SG1	4556.3	SG2	262.3	THA	9.54	EL1	27.0	EL2	2.6	ALF	16.19

LAUNCH DATE MAY 19 1971 FLIGHT TIME 228.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 531.698 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.245	GAL	-.27	AZL	90.56	HCA	168.46	SMA	185.86	ECC	.18577	INC	.5605	V1	29.439
RP	219.06	LAP	-.11	LOP	45.85	VP	22.308	GAP	2.98	AZP	89.45	TAL	358.28	TAP	166.75	RCA	151.34	APO	220.39	V2	25.089
RC	180.275	GL	-6.34	GP	-9.87	ZAL	100.11	ZAP	70.67	ETS	175.76	ZAE	111.62	ETE	184.50	ZAC	92.35	ETC	272.67	LVI	-1.74

PLANETOCENTRIC CONIC

C3	8.230	VHL	2.869	DLA	-14.61	RAL	341.68	RAD	6637.1	VEL	11.329	PTH	6.38	VHP	2.938	DPA	-32.28	RAP	300.62	ECC	1.1354

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 7	2650.47	-14.83	72.98	189.47	135.74	15 59 18	1650.5	3.48	57.05
60.00	16 11 8	2501.51	-11.10	63.05	192.96	129.00	16 52 49	1501.5	4.96	45.05
70.00	17 22 6	2292.88	-7.57	48.75	195.58	123.40	18 0 19	1292.9	6.39	29.21
80.00	18 47 59	2024.06	-4.87	30.00	197.24	119.49	19 21 43	1024.1	7.49	9.48
90.00	20 17 18	1735.94	-3.83	9.39	197.81	118.04	20 46 13	735.9	7.92	348.52
100.00	21 30 51	1498.53	-4.87	351.37	197.24	119.49	21 55 49	498.5	7.49	330.84
110.00	22 21 32	1339.70	-7.57	337.67	195.58	123.40	22 43 52	339.7	6.39	318.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1042	TRA	.8258	TC3	-7.5345	BAU	.8386	SGT	4651.5	SGR	857.4	SG3	1515.8	ST	28.4	SR	8.3	SS	53.4
RDE	.0075	RRA	.2662	RC3	-1.1470	FAU	.23145	RRT	.9489	RRF	.9874	RTF	.9608	CRT	.9516	CRS	-.7936	CST	-.9288
FDE	1.4254	FRA	4.9540	FC	-24.3470	BSP	7779	SGB	4729.8	R23	.2303	R13	.9631	LSA	60.1	MSA	10.3	SSA	1.4
BDE	.1044	BRA	.8676	BC3	7.6213	FSP	2641	SG1	4722.3	SG2	286.5	THA	9.95	EL1	29.4	EL2	2.5	ALF	15.74

LAUNCH DATE MAY 19 1971 FLIGHT TIME 230.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 535.860 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.252	GAL	-.33	AZL	90.42	HCA	169.59	SMA	185.98	ECC	.18630	INC	.4209	V1	29.439
RP	219.43	LAP	-.08	LOP	46.98	VP	22.272	GAP	2.83	AZP	89.58	TAL	357.87	TAP	167.46	RCA	151.33	APO	220.63	V2	25.048
RC	182.871	GL	-4.74	GP	-10.81	ZAL	100.84	ZAP	69.35	ETS	175.12	ZAE	109.98	ETE	184.53	ZAC	91.42	ETC	272.59	LVI	-.75

PLANETOCENTRIC CONIC

C3	8.266	VHL	2.875	DLA	-12.87	RAL	341.72	RAD	6637.1	VEL	11.330	PTH	6.38	VHP	2.965	DPA	-33.26	RAP	300.52	ECC	1.1360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 8 20	2686.91	-16.60	74.63	189.58	135.25	15 53 7	1686.9	1.65	58.57
60.00	16 2 11	2543.72	-12.90	65.17	193.01	128.52	16 44 35	1543.7	3.11	47.08
70.00	17 10 35	2342.65	-9.43	51.41	195.56	122.98	17 49 37	1342.7	4.50	31.83
80.00	18 33 55	2081.81	-6.80	33.20	197.15	119.14	19 8 36	1081.8	5.57	12.69
90.00	20 2 2	1797.51	-5.79	12.85	197.71	117.73	20 31 59	797.5	5.98	352.01
100.00	21 16 46	1556.28	-6.80	354.57	197.15	119.14	21 42 43	556.3	5.57	334.06
110.00	22 10 1	1389.47	-9.43	340.33	195.56	122.98	22 33 10	389.5	4.50	320.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1785	TRA	.8740	TC3	-7.7525	BAU	.8679	SGT	4815.6	SGR	938.2	SG3	1489.5	ST	32.9	SR	9.5	SS	56.6
RDE	.0307	RRA	.2901	RC3	-1.2599	FAU	.22622	RRT	.9541	RRF	.9914	RTF	.9619	CRT	.9647	CRS	-.8866	CST	-.9683
FDE	1.6063	FRA	4.9244	FC	-23.6939	BSP	8163	SGB	4906.2	R23	.2358	R13	.9645	LSA	65.6	MSA	8.0	SSA	1.5
BDE	.1811	BRA	.9209	BC3	7.8542	FSP	2621	SG1	4898.4	SG2	276.3	THA	10.56	EL1	34.1	EL2	2.4	ALF	15.62

LAUNCH DATE MAY 19 1971 FLIGHT TIME 232.00 ARRIVAL DATE JAN 6 1972

HELIOCENTRIC CONIC DISTANCE 540.022 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.259	GAL	-.40	AZL	90.25	HCA	170.71	SMA	186.10	ECC	.18686	INC	.2459	V1	29.439
RP	219.80	LAP	-.04	LOP	48.10	VP	22.236	GAP	2.68	AZP	89.76	TAL	357.46	TAP	168.17	RCA	151.32	APO	220.87	V2	25.007
RC	185.475	GL	-2.77	GP	-11.98	ZAL	101.56	ZAP	68.10	ETS	174.34	ZAE	108.36	ETE	184.58	ZAC	90.28	ETC	272.53	LVI	.42

PLANETOCENTRIC CONIC

C3	8.312	VHL	2.883	DLA	-10.78	RAL	341.62	RAD	6637.2	VEL	11.332	PTH	6.39	VHP	2.997	DPA	-34.45	RAP	300.51	ECC	1.1368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 59 52	2730.23	-18.68	76.64	189.64	134.59	15 45 22	1730.2	-.53	60.38
60.00	15 51 13	2593.64	-15.00	67.71	193.01	127.86	16 34 27	1593.6	.91	49.47
70.00	16 56 44	2401.06	-11.57	54.57	195.49	122.36	17 36 45	1401.1	2.28	34.89
80.00	18 17 16	2148.93	-9.01	36.96	197.02	118.59	18 53 5	1148.9	3.32	16.40
90.00	19 44 7	1868.76	-8.03	16.89	197.55	117.21	20 15 15	868.8	3.71	356.02
100.00	21 0 8	1623.41	-9.01	358.33	197.02	118.59	21 27 11	623.4	3.32	337.76
110.00	21 56 10	1447.87	-11.57	343.49	195.49	122.36	22 20 18	447.9	2.28	323.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2581	TRA	.9082	TC3	-7.9864	BAU	.9013	SGT	4984.6	SGR	1039.0	SG3	1458.1	ST	38.3	SR	11.0	SS	58.2
RDE	.0541	RRA	.3145	RC3	-1.4122	FAU	.22299	RRT	.9605	RRF	.9944	RTF	.9655	CRT	.9703	CRS	-.9394	CST	-.9893
FDE	1.7127	FRA	4.7893	FC	-23.2244	BSP	8371	SGB	5091.7	R23	.2300	R13	.9681	LSA	70.3	MSA	5.5	SSA	1.8
BDE	.2637	BRA	.9612	BC3	8.1103	FSP	2473	SG1	5083.8	SG2	283.6	THA	11.36	EL1	39.7	EL2	2.6	ALF	15.68

LAUNCH DATE MAY 19 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 8 1972

HELIOCENTRIC CONIC DISTANCE 544.177 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.266	GAL	-.47	AZL	90.03	HCA	171.83	SMA	186.22	ECC	.18745	INC	.0000	V1	29.439
RP	220.18	LAP	-.00	LOP	49.22	VP	22.201	GAP	2.54	AZP	89.97	TAL	357.03	TAP	168.87	RCA	151.32	APO	221.13	V2	24.966
RC	188.089	GL	-.30	GP	-13.44	ZAL	102.29	ZAP	66.96	ETS	173.39	ZAE	106.77	ETE	184.67	ZAC	88.83	ETC	272.48	LVI	1.65

PLANETOCENTRIC CONIC

C3	8.381	VHL	2.895	DLA	-8.22	RAL	341.34	RAD	6637.2	VEL	11.335	PTH	6.39	VHP	3.036	DPA	-35.92	RAP	300.63	ECC	1.1379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 49 3	2783.32	-21.20	79.18	189.69	133.65	15 35 26	1783.3	-3.20	62.60
60.00	15 37 29	2654.48	-17.52	70.88	193.00	126.89	16 21 44	1654.5	-1.77	52.37
70.00	16 39 39	2471.72	-14.12	58.46	195.40	121.43	17 20 51	1471.7	-.42	38.58
80.00	17 57 2	2229.46	-11.59	41.54	196.86	117.71	18 34 12	1229.5	.59	20.82
90.00	19 22 28	1953.84	-10.64	21.77	197.36	116.36	19 55 1	953.8	.98	.77
100.00	20 39 54	1703.93	-11.59	2.91	196.86	117.71	21 8 18	703.9	.59	342.19
110.00	21 39 5	1518.54	-14.12	347.38	195.40	121.43	22 4 24	518.5	-.42	327.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3643	TRA	.9406	TC3	-8.1866	BAU	.9341	SGT	5150.2	SGR	1164.5	SG3	1418.9	ST	46.3	SR	13.8	SS	62.2
RDE	.0899	RRA	.3497	RC3	-1.5786	FAU	.21619	RRT	.9631	RRF	.9965	RTF	.9657	CRT	.9783	CRS	-.9741	CST	-.9971
FDE	1.9164	FRA	4.6939	FC	-22.3332	BSP	8688	SGB	5280.2	R23	.2345	R13	.9688	LSA	78.7	MSA	3.3	SSA	2.4
BDE	.3752	BRA	1.0035	BC3	8.3374	FSP	2418	SG1	5271.4	SG2	306.3	THA	12.33	EL1	48.3	EL2	2.7	ALF	16.33

LAUNCH DATE MAY 19 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 10 1972

HELIOCENTRIC CONIC DISTANCE 548.328 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.274	GAL	-.54	AZL	89.74	HCA	172.95	SMA	186.35	ECC	.18807	INC	.2477	V1	29.439
RP	220.55	LAP	.03	LOP	50.34	VP	22.166	GAP	2.40	AZP	90.26	TAL	356.60	TAP	169.55	RCA	151.31	APO	221.40	V2	24.925
RC	190.711	GL	2.91	GP	-15.32	ZAL	102.99	ZAP	65.96	ETS	172.19	ZAE	105.19	ETE	184.80	ZAC	86.96	ETC	272.44	LVI	3.65

PLANETOCENTRIC CONIC

C3	8.491	VHL	2.914	DLA	-4.98	RAL	340.80	RAD	6637.3	VEL	11.340	PTH	6.39	VHP	3.086	DPA	-37.79	RAP	300.92	ECC	1.1397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 34 49	2850.71	-24.33	82.54	189.77	132.24	15 22 20	1850.7	-6.57	65.44
60.00	15 19 42	2731.33	-20.60	75.03	193.01	125.43	16 5 14	1731.3	-5.14	56.06
70.00	16 17 51	2560.36	-17.20	63.48	195.32	119.97	17 0 32	1560.4	-3.80	43.21
80.00	17 31 32	2329.69	-14.70	47.37	196.71	116.29	18 10 21	1329.7	-2.80	26.32
90.00	18 55 19	2059.36	-13.75	27.96	197.18	114.96	19 29 38	1059.4	-2.42	6.66
100.00	20 14 24	1804.16	-14.70	8.73	196.71	116.29	20 44 28	804.2	-2.80	347.69
110.00	21 17 18	1607.17	-17.20	352.40	195.32	119.97	21 44 5	607.2	-3.80	332.13

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.5042	TRA	.9590	TC3	-8.3432	BAU	.9684	SGT	5311.1	SGR	1323.9	SG3	1367.5	ST	57.6	SR	18.1	SS	67.2
RDE	.1404	RRA	.3925	RC3	-1.7803	FAU	.20777	RRT	.9649	RRF	.9980	RTF	.9657	CRT	.9833	CRS	-.9906	CST	-.9977
FDE	2.1638	FRA	4.5315	FC	-21.1838	BSP	8970	SGB	5473.7	R23	.2376	R13	.9693	LSA	90.3	MSA	3.7	SSA	1.6
BDE	.5234	BRA	1.0362	BC3	8.5310	FSP	2328	SG1	5463.2	SG2	337.9	THA	13.58	EL1	60.3	EL2	3.1	ALF	17.23

LAUNCH DATE MAY 19 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC DISTANCE 552.474 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.282	GAL	-.61	AZL	89.34	HCA	174.06	SMA	186.48	ECC	.18870	INC	.6543	V1	29.439
RP	220.93	LAP	.07	LOP	51.45	VP	22.130	GAP	2.25	AZP	90.65	TAL	356.17	TAP	170.23	RCA	151.29	APO	221.67	V2	24.884
RC	193.341	GL	7.23	GP	-17.83	ZAL	103.63	ZAP	65.16	ETS	170.63	ZAE	103.61	ETE	185.01	ZAC	84.45	ETC	272.42	LVI	6.03

PLANETOCENTRIC CONIC

C3	8.693	VHL	2.948	DLA	-.70	RAL	339.85	RAD	6637.4	VEL	11.349	PTH	6.40	VHP	3.154	DPA	-40.27	RAP	301.47	ECC	1.1431

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 15 23	2940.37	-28.34	87.30	190.03	129.96	15 4 23	1940.4	-11.03	69.28
60.00	14 55 42	2833.12	-24.51	80.81	193.19	123.05	15 42 55	1833.1	-9.57	61.01
70.00	15 48 46	2677.08	-21.03	70.36	195.40	117.55	16 33 23	1677.1	-8.21	49.37
80.00	16 57 48	2460.91	-18.49	55.26	196.70	113.87	17 38 49	1460.9	-7.19	33.59
90.00	18 19 33	2197.10	-17.54	36.29	197.13	112.55	18 56 10	1197.1	-6.81	14.40
100.00	19 40 40	1935.38	-18.49	16.63	196.70	113.87	20 12 55	935.4	-7.19	354.95
110.00	20 48 12	1723.90	-21.03	359.28	195.40	117.55	21 16 56	723.9	-8.21	338.29

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.7051	TRA	.9713	TC3	-8.3690	BAU	1.0004	SGT	5458.4	SGR	1535.4	SG3	1300.7	ST	74.5	SR	25.0	SS	74.2
RDE	.2176	RRA	.4504	RC3	-2.0154	FAU	.19615	RRT	.9661	RRF	.9989	RTF	.9653	CRT	.9863	CRS	-.9973	CST	-.9953
FDE	2.4782	FRA	4.3280	FC	-19.5350	BSP	9395	SGB	5670.3	R23	.2390	R13	.9699	LSA	107.9	MSA	5.8	SSA	.7
BDE	.7380	BRA	1.0707	BC3	8.6082	FSP	2240	SG1	5657.4	SG2	382.5	THA	15.27	EL1	78.5	EL2	3.9	ALF	18.33

LAUNCH DATE MAY 19 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 556.616 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.290	GAL	-.68	AZL	88.77	HCA	175.17	SMA	186.62	ECC	.18937	INC	1.2301	V1	29.439
RP	221.31	LAP	.10	LOP	52.56	VP	22.096	GAP	2.11	AZP	91.23	TAL	355.73	TAP	170.90	RCA	151.28	APO	221.96	V2	24.842
RC	195.978	GL	13.32	GP	-21.34	ZAL	104.10	ZAP	64.70	ETS	168.54	ZAE	102.00	ETE	185.31	ZAC	80.96	ETC	272.42	LVI	9.29

PLANETOCENTRIC CONIC

C3	9.109	VHL	3.018	DLA	5.22	RAL	338.24	RAD	6637.6	VEL	11.367	PTH	6.42	VHP	3.257	DPA	-43.70	RAP	302.46	ECC	1.1499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 47 17	3067.20	-33.66	94.72	190.93	125.86	14 38 25	2067.2	-17.23	74.95
60.00	14 21 19	2976.69	-29.54	89.62	193.99	118.76	15 10 55	1976.7	-15.66	68.25
70.00	15 7 21	2841.27	-25.83	80.69	196.03	113.16	15 54 42	1841.3	-14.20	58.31
80.00	16 9 59	2645.12	-23.13	66.96	197.18	109.42	16 54 4	1645.1	-13.11	44.05
90.00	17 28 57	2390.30	-22.12	48.60	197.55	108.08	18 8 47	1390.3	-12.70	25.53
100.00	18 52 51	2119.59	-23.13	28.33	197.18	109.42	19 28 10	1119.6	-13.11	5.42
110.00	20 6 47	1888.09	-25.83	9.60	196.03	113.16	20 38 15	888.1	-14.20	347.23

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.9877	TRA	.9449	TC3	-8.2430	BAU	1.0424	SGT	5614.0	SGR	1828.5	SG3	1208.7	ST	97.9	SR	35.6	SS	82.1
RDE	.3398	RRA	.5214	RC3	-2.3071	FAU	.18257	RRT	.9672	RRF	.9994	RTF	.9651	CRT	.9883	CRS	-.9995	CST	-.9926
FDE	2.8252	FRA	3.9691	FC	-17.3522	BSP	9703	SGB	5904.3	R23	.2367	R13	.9710	LSA	132.3	MSA	8.4	SSA	.3
BDE	1.0445	BRA	1.0792	BC3	8.5597	FSP	2039	SG1	5887.7	SG2	442.6	THA	17.59	EL1	104.0	EL2	5.1	ALF	19.82

LAUNCH DATE MAY 19 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 560.752 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.298	GAL	-.75	AZL	87.85	HCA	176.27	SMA	186.76	ECC	.19005	INC	2.1432	V1	29.439
RP	221.69	LAP	.14	LOP	53.66	VP	22.061	GAP	1.97	AZP	92.14	TAL	355.29	TAP	171.56	RCA	151.27	APO	222.25	V2	24.801
RC	198.621	GL	22.35	GP	-26.50	ZAL	104.13	ZAP	64.90	ETS	165.64	ZAE	100.34	ETE	185.79	ZAC	75.80	ETC	272.47	LVI	14.05

PLANETOCENTRIC CONIC

C3	10.108	VHL	3.179	DLA	13.86	RAL	335.43	RAD	6638.1	VEL	11.411	PTH	6.46	VHP	3.435	DPA	-48.69	RAP	304.32	ECC	1.1663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 3 13	3261.82	-40.63	108.07	194.05	117.26	13 57 35	2261.8	-26.31	84.55
60.00	13 27 19	3197.67	-35.79	104.99	196.74	109.92	14 20 36	2197.7	-24.41	80.37
70.00	14 1 57	3095.74	-31.42	98.33	198.34	104.12	14 53 33	2095.7	-22.61	73.23
80.00	14 53 46	2933.37	-28.21	86.82	199.14	100.20	15 42 39	1933.4	-21.25	61.57
90.00	16 7 51	2694.25	-26.99	69.48	199.37	98.77	16 52 45	1694.3	-20.73	44.20
100.00	17 36 38	2407.84	-28.21	48.19	199.14	100.20	18 16 46	1407.8	-21.25	22.94
110.00	19 1 23	2142.56	-31.42	27.25	198.34	104.12	19 37 6	1142.6	-22.61	2.15

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.4541	TRA	.8559	TC3	-7.6598	BAU	1.0919	SGT	5759.6	SGR	2245.1	SG3	1065.6	ST	133.4	SR	54.5	SS	92.2
RDE	.5740	RRA	.6128	RC3	-2.5728	FAU	.16127	RRT	.9672	RRF	.9997	RTF	.9634	CRT	.9907	CRS	-1.0000	CST	-.9916
FDE	3.2778	FRA	3.4109	FC	-13.8132	BSP	10180	SGB	6181.7	R23	.2355	R13	.9716	LSA	170.7	MSA	11.0	SSA	.2
BDE	1.5633	BRA	1.0608	BC3	8.0804	FSP	1829	SG1	6158.6	SG2	533.0	THA	20.82	EL1	144.0	EL2	6.9	ALF	22.09

LAUNCH DATE MAY 19 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 564.882 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.306	GAL	-.82	AZL	86.19	HCA	177.37	SMA	186.90	ECC	.19076	INC	3.8099	V1	29.439
RP	222.07	LAP	.17	LOP	54.76	VP	22.026	GAP	1.82	AZP	93.81	TAL	354.85	TAP	172.22	RCA	151.25	APO	222.56	V2	24.759
RC	201.270	GL	36.42	GP	-34.59	ZAL	103.06	ZAP	66.51	ETS	161.65	ZAE	98.59	ETE	186.62	ZAC	67.69	ETC	272.67	LVI	21.40

PLANETOCENTRIC CONIC

C3	13.098	VHL	3.619	DLA	27.05	RAL	330.13	RAD	6639.6	VEL	11.540	PTH	6.59	VHP	3.819	DPA	-56.40	RAP	308.47	ECC	1.2156

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C8T TIM	INJ 2 LAT	INJ 2 LONG
50.00	11 43 4	3596.38	-47.31	137.17	204.46	95.79	12 43 0	2596.4	-39.59	105.36
60.00	11 45 55	3588.75	-40.29	136.88	204.65	88.67	12 45 44	2588.8	-36.33	106.50
70.00	11 51 4	3573.60	-33.47	135.04	204.23	82.78	12 50 37	2573.6	-32.97	106.31
80.00	12 3 30	3534.54	-27.35	130.85	203.00	77.53	13 2 24	2534.5	-29.83	103.70
90.00	12 49 39	3385.41	-24.12	119.02	202.12	74.77	13 46 4	2385.4	-28.14	92.73
100.00	14 46 22	3009.04	-27.35	92.22	203.00	77.53	15 36 31	2009.0	-29.83	65.07
110.00	16 50 30	2620.42	-33.47	63.95	204.23	82.78	17 34 10	1620.4	-32.97	35.22

DIFFERENTIAL CORRECTIONS

TDE	2.3041	TRA	.6240	TC3	-6.2355	BAU	1.1865												
RDE	1.0917	RRA	.6901	RC3	-2.6511	FAU	.12973												
FDE	3.6736	FRA	2.4081	FC3	-8.5744	BSP	10384												
BDE	2.5497	BRA	.9304	BC3	6.7757	FSP	1378												

MID-COURSE EXECUTION ACCURACY

SGT	5908.3	SGR	2859.1	SG3	822.7														
RRT	.9685	RRF	.9996	RTF	.9594														
SGB	6563.7	R23	.2352	R13	.9719														
SG1	6530.0	SG2	664.0	THA	25.35														

ORBIT DETERMINATION ACCURACY

ST	183.3	SR	88.4	S8	98.3														
CRT	.9929	CR8	-1.0000	C8T	-.9920														
L8A	225.6	M8A	13.2	S8A	.1														
EL1	203.3	EL2	9.4	ALF	25.65														

LAUNCH DATE MAY 19 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 568.999 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.315	GAL	-.90	AZL	82.17	HCA	178.46	SMA	187.08	ECC	.19149	INC	7.8260	V1	29.439
RP	222.46	LAP	.21	LOP	55.86	VP	21.992	GAP	1.68	AZP	97.83	TAL	354.41	TAP	172.87	RCA	151.23	APO	222.87	V2	24.717
RC	203.922	GL	58.37	GP	-47.83	ZAL	99.56	ZAP	71.44	ETS	157.20	ZAE	96.94	ETE	188.57	ZAC	54.40	ETC	273.48	LVI	32.98

PLANETOCENTRIC CONIC

C3	26.761	VHL	5.173	DLA	46.90	RAL	318.09	RAD	6645.7	VEL	12.113	PTH	7.09	VHP	4.982	DPA	-68.21	RAP	321.95	ECC	1.4404

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C8T TIM	INJ 2 LAT	INJ 2 LONG
50.00	7 36 37	4402.56	-28.60	201.77	210.64	50.21	8 49 59	3402.6	-42.17	177.04
50.89	6 50 11	4518.94	-22.75	207.28	205.00	47.81	8 5 30	3518.9	-37.75	185.21
50.89	6 50 11	4518.94	-22.75	207.28	205.00	47.81	8 5 30	3518.9	-37.75	185.21
50.89	6 50 11	4518.94	-22.75	207.28	205.00	47.81	8 5 30	3518.9	-37.75	185.21
50.89	6 50 11	4518.94	-22.75	207.28	205.00	47.81	8 5 30	3518.9	-37.75	185.21
50.89	6 50 11	4518.94	-22.75	207.28	205.00	47.81	8 5 30	3518.9	-37.75	185.21
50.89	6 50 11	4518.94	-22.75	207.28	205.00	47.81	8 5 30	3518.9	-37.75	185.21

DIFFERENTIAL CORRECTIONS

TDE	4.2915	TRA	-.1555	TC3	-3.5127	BAU	1.4539												
RDE	2.6701	RRA	.5083	RC3	-2.0437	FAU	.07567												
FDE	3.3009	FRA	.6097	FC3	-2.4479	BSP	9038												
BDE	5.0544	BRA	.5315	BC3	4.0639	FSP	586												

MID-COURSE EXECUTION ACCURACY

SGT	5988.7	SGR	3727.6	SG3	400.6														
RRT	.9646	RRF	.9978	RTF	.9453														
SGB	7054.0	R23	.2560	R13	.9667														
SG1	7003.8	SG2	840.5	THA	31.49														

ORBIT DETERMINATION ACCURACY

ST	237.8	SR	148.4	S8	79.2														
CRT	.9951	CR8	-.9997	C8T	-.9924														
L8A	290.9	M8A	14.4	S8A	.0														
EL1	280.0	EL2	12.5	ALF	31.92														

LAUNCH DATE MAY 19 1971 FLIGHT TIME 252.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 581.425 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.342	GAL	-1.14	AZL	100.24	HCA	181.77	SMA	187.50	ECC	.19383	INC	10.2419	V1	29.439
RP	223.62	LAP	.31	LOP	59.13	VP	21.890	GAP	1.27	AZP	79.76	TAL	352.94	TAP	174.71	RCA	151.16	APO	223.85	V2	24.591
RC	211.896	GL	-65.80	GP	45.78	ZAL	99.11	ZAP	67.80	ETS	202.33	ZAE	96.30	ETE	174.73	ZAC	145.77	ETC	275.52	LVI	-50.73

PLANETOCENTRIC CONIC

C3	39.750	VHL	6.305	DLA	-59.87	RAL	36.46	RAD	6650.6	VEL	12.634	PTH	7.48	VHP	4.630	DPA	20.71	RAP	291.81	ECC	1.6542

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C8T TIM	INJ 2 LAT	INJ 2 LONG
34.75	23 12 43	2081.04	21.60	59.32	293.16	147.32	23 47 24	1081.0	41.63	42.80
34.75	23 12 43	2081.04	21.60	59.32	293.16	147.32	23 47 24	1081.0	41.63	42.80
34.75	23 12 43	2081.04	21.60	59.32	293.16	147.32	23 47 24	1081.0	41.63	42.80
34.75	23 12 43	2081.04	21.60	59.32	293.16	147.32	23 47 24	1081.0	41.63	42.80
34.75	23 12 43	2081.04	21.60	59.32	293.16	147.32	23 47 24	1081.0	41.63	42.80
34.75	23 12 43	2081.04	21.60	59.32	293.16	147.32	23 47 24	1081.0	41.63	42.80
34.75	23 12 43	2081.04	21.60	59.32	293.16	147.32	23 47 24	1081.0	41.63	42.80

DIFFERENTIAL CORRECTIONS

TDE	-.1785	TRA	2.9569	TC3	-2.5239	BAU	1.5121												
RDE	-.9030	RRA	-1.7343	RC3	1.3138	FAU	.09162												
FDE	1.9087	FRA	2.6355	FC3	-1.9955	BSP	11378												
BDE	.9205	BRA	3.4279	BC3	2.8454	FSP	852												

MID-COURSE EXECUTION ACCURACY

SGT	6229.4	SGR	3643.4	SG3	489.5														
RRT	-.9868	RRF	-.9965	RTF	.9424														
SGB	7216.6	R23	.2723	R13	-.9621														
SG1	7171.2	SG2	808.2	THA	150.09														

ORBIT DETERMINATION ACCURACY

ST	80.8	SR	62.5	S8	45.0														
CRT	-.6847	CR8	.9866	C8T	-.5564														
L8A	101.1	M8A	47.3	S8A	.1														
EL1	94.5	EL2	39.0	ALF	145.40														

LAUNCH DATE MAY 19 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 28 1972

HELIOCENTRIC CONIC DISTANCE 585.527 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.351	GAL	-1.22	AZL	97.05	HCA	182.84	SMA	187.66	ECC	.19464	INC	7.0494	V1	29.439
RP	224.01	LAP	.35	LOP	60.21	VP	21.857	GAP	1.13	AZP	82.96	TAL	352.49	TAP	175.33	RCA	151.14	APO	224.19	V2	24.550
RC	214.558	GL	-54.24	GP	31.52	ZAL	102.30	ZAP	61.37	ETS	198.71	ZAE	94.88	ETE	177.62	ZAC	133.66	ETC	273.81	LVI	-39.68

PLANETOCENTRIC CONIC

C3	23.934	VHL	4.892	DLA	-52.16	RAL	20.86	RAD	6644.5	VEL	11.996	PTH	6.99	VHP	3.807	DPA	8.46	RAP	293.00	ECC	1.3939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C8T TIM	INJ 2 LAT	INJ 2 LONG
44.15	22 36 25	1900.48	26.09	44.51	268.49	136.92	23 8 5	900.5	42.51	22.71
44.15	22 36 25	1900.48	26.09	44.51	268.49	136.92	23 8 5	900.5	42.51	22.71
44.15	22 36 25	1900.48	26.09	44.51	268.49	136.92	23 8 5	900.5	42.51	22.71
44.15	22 36 25	1900.48	26.09	44.51	268.49	136.92	23 8 5	900.5	42.51	22.71
44.15	22 36 25	1900.48	26.09	44.51	268.49	136.92	23 8 5	900.5	42.51	22.71
44.15	22 36 25	1900.48	26.09	44.51	268.49	136.92	23 8 5	900.5	42.51	22.71
44.15	22 36 25	1900.48	26.09	44.51	268.49	136.92	23 8 5	900.5	42.51	22.71

DIFFERENTIAL CORRECTIONS

TDE	-.8398	TRA	2.7239	TC3	-3.9467	BAU	1.3427												
RDE	-.1557	RRA	-1.2224	RC3	1.4252	FAU	.13376												
FDE	1.0049	FRA	4.1751	FC3	-4.8382	BSP	11819												
BDE	.8541	BRA	2.9857	BC3	4.1961	FSP	1445												

MID-COURSE EXECUTION ACCURACY

SGT	6551.8	SGR	2724.8	SG3	807.4														
RRT	-.9715	RRF	-.9982	RTF	.9567														
SGB	7095.8	R23	.2570	R13	-.9662														
SG1	7070.5	SG2	598.8	THA	157.83														

ORBIT DETERMINATION ACCURACY

ST	92.4	SR	36.2	S8	43.9														
CRT	-.6854	CR8	.9796	C8T	-.5251														
L8A	99.9	M8A	42.4	S8A	.1														
EL1	95.9	EL2	25.4	ALF	163.79														

LAUNCH DATE MAY 19 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 30 1972

HELIOCENTRIC CONIC DISTANCE 589.630 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.360 GAL -1.30 AZL 95.61 HCA 183.92 SMA 187.82 ECC .19547 INC 5.6117 V1 29.439
RP 224.40 LAP .38 LOP 61.29 VP 21.823 GAP .98 AZP 84.40 TAL 352.02 TAP 175.94 RCA 151.11 APO 224.53 V2 24.508
RC 217.222 GL -46.85 GP 24.03 ZAL 104.53 ZAP 57.91 ETS 195.44 ZAE 93.56 ETE 178.98 ZAC 126.21 ETC 273.29 LVI -32.87

PLANETOCENTRIC CONIC

C3 18.815 VHL 4.338 DLA -46.20 RAL 14.17 RAD 6642.3 VEL 11.783 PTH 6.81 VHP 3.542 DPA 1.03 RAP 293.96 ECC 1.3096

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 18 16	1975.59	18.64	43.84	248.55	134.61	21 51 11	975.6	34.81	23.60
51.81	22 35 7	1781.41	26.24	32.79	255.95	129.49	23 4 48	781.4	39.92	8.87
51.81	22 35 7	1781.41	26.24	32.79	255.95	129.49	23 4 48	781.4	39.92	8.87
51.81	22 35 7	1781.41	26.24	32.79	255.95	129.49	23 4 48	781.4	39.92	8.87
51.81	22 35 7	1781.41	26.24	32.79	255.95	129.49	23 4 48	781.4	39.92	8.87
51.81	22 35 7	1781.41	26.24	32.79	255.95	129.49	23 4 48	781.4	39.92	8.87
51.81	22 35 7	1781.41	26.24	32.79	255.95	129.49	23 4 48	781.4	39.92	8.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8652 TRA 2.6046 TC3-5.0541 BAU 1.3168 SGT 6725.7 SGR 2119.0 SG3 958.5 ST 94.2 SR 26.5 SS 44.2
RDE -.0284 RRA -.9207 RC3 1.3649 FAU .15497 RRT -.9740 RRF -.9982 RTF .9612 CRT -.7496 CRS .9735 CST -.5785
FDE .6492 FRA 4.8044 FC3-7.1308 BSP 11511 SGB 7051.6 R23 .2545 R13 -.9665 LSA 100.5 MSA 37.6 SSA .1
BDE .8657 BRA 2.7626 BC3 5.2352 FSP 1663 SG1 7036.6 SG2 458.8 THA 162.87 EL1 96.3 EL2 17.1 ALF 167.70

LAUNCH DATE MAY 19 1971 FLIGHT TIME 258.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 593.726 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.370 GAL -1.38 AZL 94.80 HCA 184.99 SMA 187.98 ECC .19632 INC 4.7958 V1 29.439
RP 224.79 LAP .42 LOP 62.36 VP 21.790 GAP .84 AZP 85.22 TAL 351.55 TAP 176.54 RCA 151.08 APO 224.89 V2 24.466
RC 219.886 GL -41.76 GP 19.22 ZAL 106.22 ZAP 55.66 ETS 193.00 ZAE 92.29 ETE 179.72 ZAC 121.41 ETC 273.08 LVI -28.49

PLANETOCENTRIC CONIC

C3 16.506 VHL 4.063 DLA -41.74 RAL 10.72 RAD 6641.2 VEL 11.685 PTH 6.72 VHP 3.437 DPA -3.72 RAP 294.70 ECC 1.2716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 53 54	2142.89	10.48	51.36	235.62	136.68	20 29 37	1142.9	27.85	33.47
57.91	22 45 20	1687.40	25.25	23.47	248.80	124.42	23 13 28	687.4	37.06	358.82
57.91	22 45 20	1687.40	25.25	23.47	248.80	124.42	23 13 28	687.4	37.06	358.82
57.91	22 45 20	1687.40	25.25	23.47	248.80	124.42	23 13 28	687.4	37.06	358.82
57.91	22 45 20	1687.40	25.25	23.47	248.80	124.42	23 13 28	687.4	37.06	358.82
57.91	22 45 20	1687.40	25.25	23.47	248.80	124.42	23 13 28	687.4	37.06	358.82
57.91	22 45 20	1687.40	25.25	23.47	248.80	124.42	23 13 28	687.4	37.06	358.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.7462 TRA 2.6078 TC3-5.7620 BAU 1.2988 SGT 6879.2 SGR 1726.6 SG3 1033.5 ST 91.0 SR 21.4 SS 46.1
RDE -.0160 RRA -.7534 RC3 1.2012 FAU .15901 RRT -.9737 RRF -.9976 RTF .9606 CRT -.7841 CRS .9645 CST -.5924
FDE .6932 FRA 5.1889 FC3-8.3402 BSP 11937 SGB 7092.6 R23 .2607 R13 -.9641 LSA 97.5 MSA 36.9 SSA .2
BDE .7464 BRA 2.7145 BC3 5.8859 FSP 1865 SG1 7082.3 SG2 382.0 THA 166.23 EL1 92.6 EL2 13.1 ALF 169.32

LAUNCH DATE MAY 19 1971 FLIGHT TIME 260.00 ARRIVAL DATE FEB 3 1972

HELIOCENTRIC CONIC DISTANCE 597.820 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.379 GAL -1.47 AZL 94.27 HCA 186.06 SMA 188.15 ECC .19719 INC 4.2691 V1 29.439
RP 225.18 LAP .45 LOP 63.43 VP 21.757 GAP .70 AZP 85.75 TAL 351.07 TAP 177.13 RCA 151.05 APO 225.25 V2 24.424
RC 222.551 GL -38.06 GP 15.92 ZAL 107.60 ZAP 54.01 ETS 191.19 ZAE 91.06 ETE 180.20 ZAC 118.12 ETC 272.99 LVI -25.50

PLANETOCENTRIC CONIC

C3 15.281 VHL 3.909 DLA -38.33 RAL 8.75 RAD 6640.7 VEL 11.633 PTH 6.67 VHP 3.394 DPA -6.97 RAP 295.31 ECC 1.2515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 12 42	2231.95	6.05	55.17	229.47	137.28	19 49 54	1231.9	23.84	38.16
60.00	21 22 9	1886.40	15.59	33.03	238.34	127.65	21 53 35	886.4	29.49	11.68
62.97	23 0 38	1604.67	24.03	15.60	244.42	120.82	23 27 23	604.7	34.52	350.72
62.97	23 0 38	1604.67	24.03	15.60	244.42	120.82	23 27 23	604.7	34.52	350.72
62.97	23 0 38	1604.67	24.03	15.60	244.42	120.82	23 27 23	604.7	34.52	350.72
62.97	23 0 38	1604.67	24.03	15.60	244.42	120.82	23 27 23	604.7	34.52	350.72
62.97	23 0 38	1604.67	24.03	15.60	244.42	120.82	23 27 23	604.7	34.52	350.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.6431 TRA 2.6236 TC3-6.3156 BAU 1.3084 SGT 7021.4 SGR 1448.7 SG3 1064.8 ST 87.7 SR 17.8 SS 46.9
RDE -.0077 RRA -.6346 RC3 1.0645 FAU .16147 RRT -.9744 RRF -.9966 RTF .9612 CRT -.8253 CRS .9490 CST -.6054
FDE .7530 FRA 5.3388 FC3-9.1482 BSP 12082 SGB 7169.3 R23 .2582 R13 -.9636 LSA 94.3 MSA 36.0 SSA .2
BDE .6431 BRA 2.6992 BC3 6.4047 FSP 1919 SG1 7162.2 SG2 319.4 THA 168.61 EL1 88.9 EL2 9.9 ALF 170.34

LAUNCH DATE MAY 19 1971 FLIGHT TIME 262.00 ARRIVAL DATE FEB 5 1972

HELIOCENTRIC CONIC DISTANCE 601.910 EARTH TO MARS

RL 151.35 LAL -.00 LOL 237.39 VL 32.389 GAL -1.55 AZL 93.90 HCA 187.13 SMA 188.31 ECC .19808 INC 3.9018 V1 29.439
RP 225.57 LAP .48 LOP 64.50 VP 21.725 GAP .56 AZP 86.13 TAL 350.59 TAP 177.72 RCA 151.01 APO 225.61 V2 24.382
RC 225.217 GL -35.25 GP 13.54 ZAL 108.79 ZAP 52.67 ETS 189.83 ZAE 89.88 ETE 180.52 ZAC 115.73 ETC 272.96 LVI -23.37

PLANETOCENTRIC CONIC

C3 14.574 VHL 3.818 DLA -35.63 RAL 7.59 RAD 6640.3 VEL 11.603 PTH 6.64 VHP 3.379 DPA -9.30 RAP 295.85 ECC 1.2399

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 46 42	2295.71	2.85	57.85	225.90	137.51	19 24 57	1295.7	20.87	41.32
60.00	20 33 7	2012.21	10.27	39.39	232.93	129.19	21 6 39	1012.2	25.11	19.44
67.37	23 19 3	1526.25	22.82	8.51	241.62	118.13	23 44 29	526.3	32.36	343.58
67.37	23 19 3	1526.25	22.82	8.51	241.62	118.13	23 44 29	526.3	32.36	343.58
67.37	23 19 3	1526.25	22.82	8.51	241.62	118.13	23 44 29	526.3	32.36	343.58
67.37	23 19 3	1526.25	22.82	8.51	241.62	118.13	23 44 29	526.3	32.36	343.58
67.37	23 19 3	1526.25	22.82	8.51	241.62	118.13	23 44 29	526.3	32.36	343.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.5389 TRA 2.6699 TC3-6.7089 BAU 1.3199 SGT 7155.0 SGR 1246.3 SG3 1075.0 ST 84.6 SR 15.3 SS 47.7
RDE -.0033 RRA -.5525 RC3 .9377 FAU .16075 RRT -.9748 RRF -.9950 RTF .9618 CRT -.8701 CRS .9272 CST -.6225
FDE .8477 FRA 5.4167 FC3-9.5491 BSP 12355 SGB 7262.8 R23 .2513 R13 -.9634 LSA 91.8 MSA 35.2 SSA .2
BDE .5389 BRA 2.7264 BC3 6.7741 FSP 1941 SG1 7257.6 SG2 274.3 THA 170.35 EL1 85.7 EL2 7.5 ALF 170.97

LAUNCH DATE MAY 19 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 7 1972

HELIOCENTRIC CONIC DISTANCE 605.995 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.398	GAL	-1.64	AZL	93.63	HCA	188.19	SMA	188.48	ECC	.19899	INC	3.6296	V1	29.439
RP	225.96	LAP	.52	LOP	65.56	VP	21.692	GAP	.42	AZP	86.41	TAL	350.11	TAP	178.30	RCA	150.97	APO	225.98	V2	24.340
RC	227.883	GL	-33.03	GP	11.74	ZAL	109.86	ZAP	51.51	ETS	188.77	ZAE	88.73	ETE	180.75	ZAC	113.93	ETC	272.96	LVI	-21.78

PLANETOCENTRIC CONIC

C3	14.152	VHL	3.762	DLA	-33.41	RAL	6.91	RAD	6640.1	VEL	11.585	PTH	6.63	VHP	3.380	DPA	-11.03	RAP	296.33	ECC	1.2329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 28 38	2345.99	.32	59.95	223.68	137.58	19 7 44	1346.0	18.49	43.71
60.00	20 3 59	2092.14	6.80	43.30	229.87	129.82	20 38 51	1092.1	22.09	24.05
70.00	22 37 36	1639.07	16.78	13.80	236.99	120.19	23 4 55	639.1	27.72	350.69
71.43	23 40 14	1447.17	21.70	1.69	239.78	116.05	24 4 21	447.2	30.50	336.80
71.43	23 40 14	1447.17	21.70	1.69	239.78	116.05	24 4 21	447.2	30.50	336.80
71.43	23 40 14	1447.17	21.70	1.69	239.78	116.05	24 4 21	447.2	30.50	336.80
110.00	3 40 58	5973.93	16.78	280.63	236.99	120.19	5 20 32	4973.9	27.72	257.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4558	TRA	2.7193	TC3	-7.0419	BAU	1.3416	SGT	7291.7	SGR	1094.2	SG3	1074.6	ST	82.5	SR	13.5	SS	48.3
RDE	.0026	RRA	-.4917	RC3	.8326	FAU	.15953	RRT	-.9742	RRF	-.9927	RTF	.9617	CRT	-.9127	CRS	.8965	CST	-.6380
FDE	.9339	FRA	5.4464	FC3	-9.7589	BSP	12498	SGB	7373.3	R23	.2423	R13	-.9629	LSA	90.2	MSA	34.6	SSA	.3
BDE	.4558	BRA	2.7634	BC3	7.0910	FSP	1934	SG1	7369.3	SG2	244.3	THA	171.67	EL1	83.4	EL2	5.5	ALF	171.47

LAUNCH DATE MAY 19 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 9 1972

HELIOCENTRIC CONIC DISTANCE 610.075 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.408	GAL	-1.72	AZL	93.42	HCA	189.25	SMA	188.65	ECC	.19991	INC	3.4213	V1	29.439
RP	226.35	LAP	.55	LOP	66.62	VP	21.660	GAP	.28	AZP	86.62	TAL	349.62	TAP	178.88	RCA	150.93	APO	226.36	V2	24.299
RC	230.548	GL	-31.23	GP	10.35	ZAL	110.85	ZAP	50.48	ETS	187.93	ZAE	87.61	ETE	180.91	ZAC	112.52	ETC	272.98	LVI	-20.58

PLANETOCENTRIC CONIC

C3	13.902	VHL	3.728	DLA	-31.54	RAL	6.53	RAD	6640.0	VEL	11.574	PTH	6.62	VHP	3.389	DPA	-12.37	RAP	296.79	ECC	1.2288

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 15 21	2387.76	-1.77	61.70	222.27	137.55	18 55 8	1387.8	16.48	45.64
60.00	19 43 46	2152.47	4.16	46.21	227.97	130.12	20 19 38	1152.5	19.72	27.39
70.00	21 49 29	1782.39	11.70	21.81	233.53	122.32	22 19 12	782.4	23.90	.06
75.42	0 8 51	1361.81	20.68	354.64	238.56	114.37	0 31 33	361.8	28.89	329.81
75.42	0 8 51	1361.81	20.68	354.64	238.56	114.37	0 31 33	361.8	28.89	329.81
75.42	0 8 51	1361.81	20.68	354.64	238.56	114.37	0 31 33	361.8	28.89	329.81
110.00	2 52 52	6117.24	11.70	288.63	233.53	122.32	4 34 49	5117.2	23.90	266.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3694	TRA	2.7893	TC3	-7.2706	BAU	1.3582	SGT	7417.0	SGR	975.1	SG3	1065.7	ST	81.0	SR	12.1	SS	49.1
RDE	.0082	RRA	-.4465	RC3	.7374	FAU	.15658	RRT	-.9731	RRF	-.9894	RTF	.9620	CRT	-.9528	CRS	.8573	CST	-.6618
FDE	1.0248	FRA	5.4563	FC3	-9.7512	BSP	12796	SGB	7480.8	R23	.2276	R13	-.9629	LSA	89.3	MSA	33.7	SSA	.3
BDE	.3695	BRA	2.8248	BC3	7.3079	FSP	1924	SG1	7477.5	SG2	222.7	THA	172.70	EL1	81.8	EL2	3.6	ALF	171.87

LAUNCH DATE MAY 19 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 11 1972

HELIOCENTRIC CONIC DISTANCE 614.149 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.418	GAL	-1.81	AZL	93.26	HCA	190.31	SMA	188.82	ECC	.20085	INC	3.2551	V1	29.439
RP	226.74	LAP	.58	LOP	67.68	VP	21.628	GAP	.14	AZP	86.80	TAL	349.14	TAP	179.45	RCA	150.89	APO	226.74	V2	24.257
RC	233.212	GL	-29.73	GP	9.23	ZAL	111.79	ZAP	49.53	ETS	187.25	ZAE	86.51	ETE	181.03	ZAC	111.40	ETC	273.01	LVI	-19.64

PLANETOCENTRIC CONIC

C3	13.765	VHL	3.710	DLA	-29.93	RAL	6.35	RAD	6639.9	VEL	11.568	PTH	6.61	VHP	3.403	DPA	-13.43	RAP	297.23	ECC	1.2265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 5 11	2423.75	-3.58	63.20	221.38	137.47	18 45 35	1423.7	14.73	47.28
60.00	19 28 41	2201.60	2.00	48.56	226.74	130.26	20 5 23	1201.6	17.74	30.02
70.00	21 22 0	1868.26	8.54	26.44	231.63	123.20	21 53 8	868.3	21.31	5.38
79.76	0 39 43	1259.70	19.74	346.55	237.78	112.97	1 0 42	259.7	27.47	321.79
79.76	0 39 43	1259.70	19.74	346.55	237.78	112.97	1 0 42	259.7	27.47	321.79
79.76	0 39 43	1259.70	19.74	346.55	237.78	112.97	1 0 42	259.7	27.47	321.79
110.00	2 25 22	6203.12	8.54	293.26	231.63	123.20	4 8 45	5203.1	21.31	272.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2970	TRA	2.8599	TC3	-7.4787	BAU	1.3815	SGT	7548.4	SGR	881.6	SG3	1054.5	ST	80.2	SR	11.1	SS	49.8
RDE	.0145	RRA	-.4117	RC3	.6582	FAU	.15372	RRT	-.9706	RRF	-.9850	RTF	.9615	CRT	-.9815	CRS	.8072	CST	-.6819
FDE	1.1097	FRA	5.4570	FC3	-9.6682	BSP	12985	SGB	7599.7	R23	.2122	R13	-.9622	LSA	89.2	MSA	33.1	SSA	.4
BDE	.2974	BRA	2.8894	BC3	7.5076	FSP	1903	SG1	7596.8	SG2	210.7	THA	173.53	EL1	81.0	EL2	2.1	ALF	172.27

LAUNCH DATE MAY 19 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 13 1972

HELIOCENTRIC CONIC DISTANCE 618.181 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.428	GAL	-1.90	AZL	93.12	HCA	191.36	SMA	188.99	ECC	.20181	INC	3.1204	V1	29.439
RP	227.13	LAP	.61	LOP	68.73	VP	21.596	GAP	-.00	AZP	86.94	TAL	348.65	TAP	180.01	RCA	150.85	APO	227.13	V2	24.215
RC	235.874	GL	-28.46	GP	8.33	ZAL	112.68	ZAP	48.64	ETS	186.69	ZAE	85.45	ETE	181.13	ZAC	110.47	ETC	273.06	LVI	-18.90

PLANETOCENTRIC CONIC

C3	13.706	VHL	3.702	DLA	-28.52	RAL	6.33	RAD	6639.9	VEL	11.566	PTH	6.61	VHP	3.421	DPA	-14.28	RAP	297.66	ECC	1.2256

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 57 12	2455.56	-5.18	64.54	220.85	137.36	18 38 8	1455.6	13.17	48.69
60.00	19 16 57	2243.41	.16	50.56	225.97	130.30	19 54 20	1243.4	16.02	32.22
70.00	21 2 32	1932.88	6.11	29.87	230.46	123.67	21 34 45	932.9	19.24	9.25
80.00	23 22 28	1494.65	12.70	.55	234.38	117.25	23 47 23	494.7	22.83	337.74
86.17	1 30 44	1094.31	16.88	333.98	237.31	111.78	1 48 58	94.3	26.21	309.29
100.00	2 9 16	6257.16	12.70	299.82	234.38	117.25	3 53 33	5257.2	22.83	277.02
110.00	2 5 54	6267.74	6.11	296.70	230.46	123.67	3 50 22	5267.7	19.24	276.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2249	TRA	2.9407	TC3	-7.6352	BAU	1.4031	SGT	7675.2	SGR	806.0	SG3	1040.4	ST	80.1	SR	10.3	SS	50.6
RDE	.0212	RRA	-.3844	RC3	.5889	FAU	.15044	RRT	-.9672	RRF	-.9794	RTF	.9613	CRT	-.9973	CRS	.7468	CST	-.7058
FDE	1.1891	FRA	5.4491	FC3	-9.5030	BSP	13239	SGB	7717.5	R23	.1927	R13	-.9618	LSA	89.7	MSA	32.3	SSA	.4
BDE	.2259	BRA	2.9658	BC3	7.6578	FSP	1882	SG1	7714.8	SG2	203.6	THA	174.20	EL1	80.7	EL2	.8	ALF	172.68

LAUNCH DATE MAY 19 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 15 1972

HELIOCENTRIC CONIC DISTANCE 622.280 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.438	GAL	-1.99	AZL	93.01	HCA	192.41	SMA	189.16	ECC	.20279	INC	3.0086	V1	29.439
RP	227.52	LAP	.65	LOP	69.78	VP	21.565	GAP	-.14	AZP	87.06	TAL	348.16	TAP	180.57	RCA	150.80	APO	227.52	V2	24.174
RC	238.532	GL	-27.36	GP	7.57	ZAL	113.54	ZAP	47.81	ETS	186.22	ZAE	84.41	ETE	181.20	ZAC	109.70	ETC	273.12	LVI	-18.32

PLANETOCENTRIC CONIC

C3	13.704	VHL	3.702	DLA	-27.25	RAL	6.40	RAD	6639.9	VEL	11.566	PTH	6.61	VHP	3.441	DPA	-14.97	RAP	298.10	ECC	1.2255

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 50 47	2484.24	-6.61	65.75	220.57	137.22	18 32 11	1484.2	11.76	49.96
60.00	19 7 32	2280.10	-1.45	52.31	225.52	130.28	19 45 32	1280.1	14.49	34.11
70.00	20 47 38	1985.72	4.11	32.65	229.72	123.94	21 20 44	985.7	17.48	12.34
80.00	22 53 25	1592.00	9.61	6.11	233.07	118.41	23 19 57	592.0	20.46	343.99
90.00	0 56 22	1208.19	12.78	339.52	234.71	115.44	1 16 30	208.2	22.18	316.44
100.00	1 40 12	1066.47	9.61	327.48	233.07	118.41	1 57 59	66.5	20.46	305.36
110.00	1 51 1	1032.54	4.11	321.57	229.72	123.94	2 8 13	32.5	17.48	301.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1572	TRA	3.0256	TC3	-7.7626	BAU	1.4254	SGT	7799.8	SGR	744.0	SG3	1024.4	ST	80.4	SR	9.7	SS	51.3
RDE	.0284	RRA	-.3626	RC3	.5284	FAU	.14694	RRT	-.9623	RRF	-.9723	RTF	.9610	CRT	-.9961	CRS	.6760	CST	-.7291
FDE	1.2611	FRA	5.4343	FC3	-9.2830	BSP	13476	SGB	7835.3	R23	.1725	R13	-.9614	LSA	90.6	MSA	31.4	SSA	.5
BDE	.1597	BRA	3.0472	BC3	7.7806	FSP	1854	SG1	7832.7	SG2	201.4	THA	174.75	EL1	81.0	EL2	.9	ALF	173.12

LAUNCH DATE MAY 19 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 17 1972

HELIOCENTRIC CONIC DISTANCE 626.337 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.448	GAL	-2.08	AZL	92.91	HCA	193.45	SMA	189.34	ECC	.20378	INC	2.9138	V1	29.439
RP	227.91	LAP	.68	LOP	70.82	VP	21.533	GAP	-.29	AZP	87.17	TAL	347.66	TAP	181.12	RCA	150.76	APO	227.92	V2	24.133
RC	241.186	GL	-26.40	GP	6.94	ZAL	114.37	ZAP	47.01	ETS	185.82	ZAE	83.39	ETE	181.25	ZAC	109.04	ETC	273.19	LVI	-17.84

PLANETOCENTRIC CONIC

C3	13.746	VHL	3.707	DLA	-26.11	RAL	6.56	RAD	6639.9	VEL	11.568	PTH	6.61	VHP	3.463	DPA	-15.54	RAP	298.53	ECC	1.2262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 45 32	2510.54	-7.92	66.87	220.48	137.07	18 27 22	1510.5	10.46	51.10
60.00	18 59 47	2313.02	-2.90	53.89	225.29	130.21	19 38 20	1313.0	13.10	35.79
70.00	20 35 43	2030.97	2.39	35.02	229.29	124.08	21 9 34	1031.0	15.93	14.93
80.00	22 33 21	1662.77	7.29	10.09	232.31	119.03	23 1 4	662.8	18.57	348.40
90.00	0 26 43	1309.86	9.73	345.44	233.62	116.68	0 48 33	309.9	19.89	323.01
100.00	1 20 9	1137.24	7.29	331.46	232.31	119.03	1 39 6	137.2	18.57	309.77
110.00	1 39 5	1077.78	2.39	323.94	229.29	124.08	1 57 3	77.8	15.93	303.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0974	TRA	3.1095	TC3	-7.8793	BAU	1.4506	SGT	7924.5	SGR	692.7	SG3	1007.0	ST	81.1	SR	9.3	SS	51.6
RDE	.0362	RRA	-.3447	RC3	.4763	FAU	.14361	RRT	-.9558	RRF	-.9635	RTF	.9604	CRT	-.9767	CRS	.5949	CST	-.7495
FDE	1.3203	FRA	5.4100	FC3	-9.0450	BSP	13669	SGB	7954.7	R23	.1526	R13	-.9608	LSA	91.7	MSA	30.7	SSA	.5
BDE	.1039	BRA	3.1286	BC3	7.8937	FSP	1825	SG1	7952.1	SG2	202.9	THA	175.22	EL1	81.6	EL2	2.0	ALF	173.58

LAUNCH DATE MAY 19 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 19 1972

HELIOCENTRIC CONIC DISTANCE 630.389 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.458	GAL	-2.17	AZL	92.83	HCA	194.50	SMA	189.51	ECC	.20478	INC	2.8329	V1	29.439
RP	228.30	LAP	.71	LOP	71.87	VP	21.502	GAP	-.43	AZP	87.26	TAL	347.17	TAP	181.67	RCA	150.70	APO	228.32	V2	24.092
RC	243.834	GL	-25.54	GP	6.39	ZAL	115.18	ZAP	46.25	ETS	185.47	ZAE	82.39	ETE	181.30	ZAC	108.48	ETC	273.26	LVI	-17.46

PLANETOCENTRIC CONIC

C3	13.822	VHL	3.718	DLA	-25.06	RAL	6.78	RAD	6640.0	VEL	11.571	PTH	6.61	VHP	3.486	DPA	-16.01	RAP	298.98	ECC	1.2275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 41 10	2534.94	-9.14	67.91	220.53	136.90	18 23 25	1534.9	9.25	52.15
60.00	18 53 19	2343.06	-4.22	55.33	225.23	130.12	19 32 22	1343.1	11.82	37.30
70.00	20 25 53	2070.89	.87	37.10	229.08	124.14	21 0 24	1070.9	14.53	17.18
80.00	22 17 58	1720.13	5.38	13.28	231.88	119.41	22 46 38	720.1	16.96	351.89
90.00	0 6 32	1382.65	7.48	349.60	233.02	117.35	0 29 35	382.7	18.09	327.59
100.00	1 4 46	1194.60	5.38	334.65	231.88	119.41	1 24 40	194.6	16.96	313.26
110.00	1 29 16	1117.71	.87	326.02	229.08	124.14	1 47 53	117.7	14.53	306.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0373	TRA	3.2005	TC3	-7.9694	BAU	1.4748	SGT	8047.7	SGR	650.2	SG3	989.4	ST	82.2	SR	9.1	SS	52.4
RDE	.0440	RRA	-.3304	RC3	.4299	FAU	.14011	RRT	-.9677	RRF	-.9529	RTF	.5899	CRT	-.9392	CRS	.5077	CST	-.7699
FDE	1.3778	FRA	5.3885	FC3	-8.7757	BSP	13882	SGB	8073.9	R23	.1335	R13	-.9602	LSA	93.2	MSA	29.9	SSA	.6
BDE	.0577	BRA	3.2175	BC3	7.9810	FSP	1794	SG1	8071.3	SG2	207.0	THA	175.62	EL1	82.7	EL2	3.1	ALF	174.06

LAUNCH DATE MAY 19 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 21 1972

HELIOCENTRIC CONIC DISTANCE 634.435 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.468	GAL	-2.26	AZL	92.76	HCA	195.54	SMA	189.69	ECC	.20581	INC	2.7629	V1	29.439
RP	228.69	LAP	.74	LOP	72.90	VP	21.472	GAP	-.57	AZP	87.34	TAL	346.67	TAP	182.21	RCA	150.65	APO	228.73	V2	24.051
RC	246.477	GL	-24.78	GP	5.92	ZAL	115.98	ZAP	45.53	ETS	185.18	ZAE	81.40	ETE	181.33	ZAC	107.99	ETC	273.34	LVI	-17.15

PLANETOCENTRIC CONIC

C3	13.926	VHL	3.732	DLA	-24.09	RAL	7.05	RAD	6640.0	VEL	11.575	PTH	6.62	VHP	3.510	DPA	-16.41	RAP	299.42	ECC	1.2292

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 37 32	2557.83	-10.27	68.90	220.70	136.72	18 20 9	1557.8	8.11	53.13
60.00	18 47 49	2370.86	-5.44	56.66	225.31	129.99	19 27 20	1370.9	10.63	38.68
70.00	20 17 37	2106.90	-.51	38.98	229.03	124.15	20 52 43	1106.9	13.25	19.18
80.00	22 5 31	1769.16	3.74	15.99	231.68	119.64	22 35 1	769.2	15.53	354.83
90.00	23 47 7	1441.51	5.63	352.93	232.72	117.76	24 11 8	441.5	16.54	331.22
100.00	0 52 19	1243.63	3.74	337.35	231.68	119.64	1 13 3	243.6	15.53	316.20
110.00	1 20 59	1153.72	-.51	327.90	229.03	124.15	1 40 13	153.7	13.25	308.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0212	TRA	3.2935	TC3	-8.0462	BAU	1.4998	SGT	8170.0	SGR	614.7	SG3	971.4	ST	83.6	SR	9.0	SS	52.9
RDE	.0520	RRA	-.3186	RC3	.3891	FAU	.13677	RRT	-.9378	RRF	-.9404	RTF	.9594	CRT	-.8857	CRS	.4163	CST	-.7886
FDE	1.4309	FRA	5.3615	FC3	-8.5021	BSP	14086	SGB	8193.1	R23	.1154	R13	-.9596	LSA	94.9	MSA	29.2	SSA	.6
BDE	.0562	BRA	3.3089	BC3	8.0556	FSP	1761	SG1	8190.3	SG2	212.9	THA	175.96	EL1	84.0	EL2	4.2	ALF	174.55

LAUNCH DATE MAY 19 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 23 1972

HELIOCENTRIC CONIC DISTANCE 638.474 EARTH TO MARS

RL	151.35	LAL	-.00	LOL	237.39	VL	32.478	GAL	-2.36	AZL	92.70	HCA	196.57	SMA	189.87	ECC	.20684	INC	2.7017	VI	29.438
RP	228.07	LAP	.77	LOP	73.94	VP	21.441	GAP	-.72	AZP	87.41	TAL	346.18	TAP	102.75	RCA	150.60	APO	229.14	V2	24.010
RC	249.113	GL	-24.08	GP	5.51	ZAL	116.76	ZAP	44.83	ETS	184.91	ZAE	80.44	ETE	181.36	ZAC	107.55	ETC	273.42	LVI	-16.91

PLANETOCENTRIC CONIC

C3	14.055	VHL	3.749	DLA	-23.19	RAL	7.35	RAD	6640.1	VEL	11.581	PTN	6.62	VHP	3.534	DPA	-16.74	RAP	299.88	ECC	1.2313

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 34 26	2579.48	-11.35	69.84	220.96	136.52	18 17 26	1579.5	7.03	54.06
60.00	18 43 6	2396.87	-6.57	57.92	225.49	129.85	19 23 3	1396.9	9.52	39.97
70.00	20 10 31	2139.90	-1.77	40.70	229.11	124.11	20 46 11	1139.9	12.06	20.99
80.00	21 55 8	1812.45	2.28	18.37	231.64	119.78	22 25 21	812.5	14.23	357.39
90.00	23 34 33	1491.81	4.02	355.75	232.60	118.02	23 59 25	491.8	15.17	334.27
100.00	0 41 56	1286.93	2.28	339.74	231.64	119.78	1 3 23	286.9	14.23	318.75
110.00	1 13 53	1186.72	-1.77	329.62	229.11	124.11	1 33 40	186.7	12.06	309.91

DIFFERENTIAL CORRECTIONS

TDE	.0791	TRA	3.3914	TC3	-8.1039	BAU	1.5241												
RDE	.0601	RRA	-.3091	RC3	.3521	FAU	.13324												
FDE	1.4800	FRA	5.3371	FC3	-8.2072	BSP	14298												
BDE	.0994	BRA	3.4055	BC3	8.1116	FSP	1728												

MID-COURSE EXECUTION ACCURACY

SGT	8290.3	SGR	585.1	SG3	953.2														
RRT	-.9259	RRF	-.9260	RTF	.9588														
SGB	8311.0	R23	.0995	R13	-.9590														
SG1	8308.0	SG2	220.5	THA	176.26														

ORBIT DETERMINATION ACCURACY

ST	85.3	SR	9.0	SS	53.4														
CRT	-.8195	CRS	.3247	CST	-.8062														
LSA	96.9	MSA	28.6	SSA	.7														
EL1	85.6	EL2	5.1	ALF	175.05														

LAUNCH DATE MAY 20 1971 FLIGHT TIME 90.00 ARRIVAL DATE AUG 18 1971

HELIOCENTRIC CONIC DISTANCE 267.705 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	35.629	GAL	-.29	AZL	91.86	HCA	83.52	SMA	274.19	ECC	.44792	INC	1.8598	V1	29.433
RP	207.18	LAP	-1.85	LOP	321.87	VP	28.234	GAP	22.77	AZP	90.21	TAL	359.05	TAP	82.57	RCA	151.37	APO	397.00	V2	26.438
RC	56.568	GL	-10.56	GP	-.66	ZAL	94.82	ZAP	177.90	ETS	198.32	ZAE	173.53	ETE	41.51	ZAC	99.12	ETC	278.12	LVI	-17.88

PLANETOCENTRIC CONIC

C3	39.793	VHL	6.308	DLA	-20.13	RAL	339.22	RAD	6650.6	VEL	12.636	PTH	7.49	VHP	11.472	DPA	-17.24	RAP	323.11	ECC	1.6549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 28	2898.34	-26.39	84.92	205.77	131.14	16 12 45	1896.3	-8.85	67.38
60.00	16 28 8	2727.03	-20.43	74.79	210.90	125.52	17 13 35	1727.0	-4.95	55.85
70.00	17 48 41	2490.23	-14.77	59.50	214.80	121.15	18 30 12	1490.2	-1.13	39.54
80.00	19 24 50	2189.35	-10.32	39.25	217.40	118.17	20 1 19	1189.4	1.95	18.62
90.00	20 59 17	1884.65	-8.52	17.80	218.35	117.07	21 30 42	884.7	3.20	356.91
100.00	22 7 42	1663.82	-10.32	.62	217.40	118.17	22 35 25	663.8	1.95	339.99
110.00	22 48 8	1537.05	-14.77	348.41	214.80	121.15	23 13 45	537.0	-1.13	328.46

DIFFERENTIAL CORRECTIONS

TDE	-.3640	TRA	-.8431	TC3	.0352	BAU	.0375	RDE	-.5786	RRA	.2355	RC3	.0611	FAU	.03185	FDE	.0933	FRA	.5585
FC3	-.6930	BSP	1154	BDE	.6836	BRA	.8754	BC3	.0705	FSP	107								

MID-COURSE EXECUTION ACCURACY

SGT	881.2	SGR	577.9	SG3	89.1	RRT	-.0169	RRF	.0187	RTF	-.5585	SGB	1053.8	R23	-.0021	R13	.5585	SG1	881.3
SG2	577.8	THA	178.88																

ORBIT DETERMINATION ACCURACY

ST	20.6	SR	26.5	SS	9.2	CRT	.7204	CRS	.3425	CST	.8910	LSA	31.8	MSA	14.1	SSA	1.1	EL1	31.3
EL2	12.1	ALF	54.79																

LAUNCH DATE MAY 20 1971 FLIGHT TIME 92.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 269.326 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	35.405	GAL	-.24	AZL	91.85	HCA	84.79	SMA	265.47	ECC	.42980	INC	1.8534	V1	29.433
RP	207.09	LAP	-1.85	LOP	323.13	VP	27.961	GAP	22.24	AZP	90.17	TAL	359.19	TAP	83.97	RCA	151.37	APO	379.57	V2	26.448
RC	56.856	GL	-10.85	GP	-.68	ZAL	94.69	ZAP	177.01	ETS	193.13	ZAE	172.93	ETE	36.73	ZAC	99.05	ETC	278.19	LVI	-17.96

PLANETOCENTRIC CONIC

C3	37.025	VHL	6.085	DLA	-20.44	RAL	339.22	RAD	6649.6	VEL	12.526	PTH	7.41	VHP	11.085	DPA	-17.15	RAP	323.46	ECC	1.6093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 25 49	2871.60	-25.28	83.62	204.70	131.75	16 13 41	1871.6	-7.62	66.32
60.00	16 29 58	2701.02	-19.40	73.38	209.83	126.04	17 14 59	1701.0	-3.81	54.60
70.00	17 51 8	2462.38	-13.78	57.94	213.75	121.56	18 32 11	1462.4	-.06	38.09
80.00	19 28 0	2159.22	-9.34	37.54	216.36	118.49	20 3 59	1159.2	2.97	16.96
90.00	21 2 51	1853.25	-7.54	16.01	217.33	117.34	21 33 45	853.3	4.21	355.15
100.00	22 10 52	1633.69	-9.34	358.91	216.36	118.49	22 38 6	633.7	2.97	338.33
110.00	22 50 35	1509.19	-13.78	346.86	213.75	121.56	23 15 44	509.2	-.06	327.01

DIFFERENTIAL CORRECTIONS

TDE	-.3590	TRA	-.8333	TC3	.0499	BAU	.0408	RDE	-.5622	RRA	.2288	RC3	.0657	FAU	.03293	FDE	.0917	FRA	.5793
FC3	-.7699	BSP	1205	BDE	.6670	BRA	.8641	BC3	.0825	FSP	116								

MID-COURSE EXECUTION ACCURACY

SGT	905.0	SGR	582.7	SG3	95.6	RRT	-.0166	RRF	.0206	RTF	-.5728	SGB	1076.4	R23	-.0044	R13	.5729	SG1	905.1
SG2	582.5	THA	178.95																

ORBIT DETERMINATION ACCURACY

ST	21.1	SR	26.7	SS	9.4	CRT	.7188	CRS	.3208	CST	.8818	LSA	32.2	MSA	14.5	SSA	1.1	EL1	31.7
EL2	12.3	ALF	54.21																

LAUNCH DATE MAY 20 1971 FLIGHT TIME 94.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 271.242 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	35.195	GAL	-.19	AZL	91.85	HCA	86.05	SMA	257.82	ECC	.41287	INC	1.8469	V1	29.433
RP	207.01	LAP	-1.84	LOP	324.40	VP	27.703	GAP	21.72	AZP	90.13	TAL	359.34	TAP	85.39	RCA	151.38	APO	364.27	V2	26.457
RC	57.225	GL	-11.13	GP	-.70	ZAL	94.54	ZAP	176.10	ETS	190.31	ZAE	172.32	ETE	32.78	ZAC	98.99	ETC	278.26	LVI	-18.03

PLANETOCENTRIC CONIC

C3	34.514	VHL	5.875	DLA	-20.77	RAL	339.19	RAD	6648.7	VEL	12.427	PTH	7.33	VHP	10.714	DPA	-17.05	RAP	323.80	ECC	1.5680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 27 7	2847.04	-24.16	82.35	203.66	132.32	16 14 34	1847.0	-6.39	65.28
60.00	16 31 45	2675.14	-18.36	71.98	208.77	126.53	17 16 20	1675.1	-2.67	53.36
70.00	17 53 36	2434.53	-12.79	56.40	212.71	121.94	18 34 10	1434.5	1.00	36.64
80.00	19 31 14	2128.93	-8.35	35.84	215.35	118.77	20 6 43	1128.9	3.99	15.30
90.00	21 6 32	1821.58	-6.55	14.21	216.32	117.57	21 36 53	821.6	5.22	353.37
100.00	22 14 7	1603.40	-8.35	357.21	215.35	118.77	22 40 50	603.4	3.99	336.66
110.00	22 53 2	1481.35	-12.79	345.32	212.71	121.94	23 17 44	481.3	1.00	325.55

DIFFERENTIAL CORRECTIONS

TDE	-.3525	TRA	-.8222	TC3	.0647	BAU	.0441	RDE	-.5463	RRA	.2224	RC3	.0704	FAU	.03415	FDE	.0923	FRA	.6025
FC3	-.8566	BSP	1261	BDE	.6501	BRA	.8518	BC3	.0956	FSP	122								

MID-COURSE EXECUTION ACCURACY

SGT	927.1	SGR	587.0	SG3	102.8	RRT	-.0174	RRF	.0208	RTF	-.5860	SGB	1097.2	R23	-.0038	R13	.5860	SG1	927.1
SG2	586.8	THA	178.95																

ORBIT DETERMINATION ACCURACY

ST	21.5	SR	26.9	SS	9.8	CRT	.7163	CRS	.3080	CST	.8774	LSA	32.5	MSA	14.8	SSA	1.1	EL1	32.0
EL2	12.6	ALF	53.76																

LAUNCH DATE MAY 20 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 273.410 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	34.997	GAL	-.14	AZL	91.84	HCA	87.32	SMA	251.06	ECC	.39704	INC	1.8406	V1	29.433
RP	206.94	LAP	-1.84	LOP	325.66	VP	27.460	GAP	21.20	AZP	90.09	TAL	359.51	TAP	86.83	RCA	151.38	APO	350.74	V2	26.466
RC	57.675	GL	-11.42	GP	-.72	ZAL	94.35	ZAP	175.17	ETS	188.56	ZAE	171.72	ETE	29.50	ZAC	98.92	ETC	278.32	LVI	-18.10

PLANETOCENTRIC CONIC

C3	32.233	VHL	5.677	DLA	-21.10	RAL	339.12	RAD	6647.9	VEL	12.335	PTH	7.26	VHP	10.356	DPA	-16.97	RAP	324.13	ECC	1.5305

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 28 21	2822.73	-23.04	81.13	202.64	132.85	16 15 24	1822.7	-5.17	64.26
60.00	16 33 31	2649.43	-17.31	70.62	207.74	126.98	17 17 41	1649.4	-1.54	52.13
70.00	17 56 4	2406.74	-11.78	54.88	211.69	122.29	18 36 11	1406.7	2.06	35.19
80.00	19 34 34	2098.52	-7.35	34.14	214.35	119.02	20 9 32	1098.5	5.01	13.61
90.00	21 10 19	1789.66	-5.54	12.41	215.33	117.78	21 40 8	789.7	6.23	351.57
100.00	22 17 25	1572.99	-7.35	355.51	214.35	119.02	22 43 38	573.0	5.01	334.98
110.00	22 55 31	1453.56	-11.78	343.80	211.69	122.29	23 19 44	453.6	2.06	324.10

DIFFERENTIAL CORRECTIONS

TDE	-.3468	TRA	-.8132	TC3	.0768	BAU	.0463	RDE	-.5310	RRA	.2161	RC3	.0753	FAU	.03522	FDE	.0888	FRA	.6242
FC3	-.9460	BSP	1327	BDE	.6342	BRA	.8415	BC3	.1075	FSP	137								

MID-COURSE EXECUTION ACCURACY

SGT	950.8	SGR	590.9	SG3	109.9	RRT	-.0189	RRF	.0238	RTF	-.5945	SGB	1119.4	R23	-.0056	R13	.5946	SG1	950.9
SG2	590.7	THA	178.91																

ORBIT DETERMINATION ACCURACY

ST	21.9	SR	27.0	SS	10.0	CRT	.7136	CRS	.2803	CST	.8654	LSA	32.8	MSA	15.2	SSA	1.2	EL1	32.3
EL2	12.8	ALF	53.24																

LAUNCH DATE MAY 20 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 275.793 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	34.811	GAL	-.08	AZL	91.83	HCA	88.58	SMA	245.05	ECC	.38225	INC	1.8341	V1	29.433
RP	206.87	LAP	-1.83	LOP	326.93	VP	27.230	GAP	20.69	AZP	90.05	TAL	359.70	TAP	88.28	RCA	151.38	APO	338.72	V2	26.473
RC	58.203	GL	-11.71	GP	-.74	ZAL	94.14	ZAP	174.23	ETS	187.37	ZAE	171.15	ETE	26.74	ZAC	98.85	ETC	278.39	LVI	-18.16

PLANETOCENTRIC CONIC

C3	30.159	VHL	5.492	DLA	-21.44	RAL	339.04	RAD	6647.1	VEL	12.251	PTH	7.20	VHP	10.012	DPA	-16.88	RAP	324.46	ECC	1.4963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 33	2798.71	-21.92	79.93	201.65	133.35	16 16 11	1798.7	-3.97	63.25
60.00	16 35 16	2623.94	-16.26	69.28	206.74	127.40	17 19 0	1623.9	-.42	50.91
70.00	17 58 34	2379.06	-10.77	53.37	210.69	122.61	18 38 13	1379.1	3.12	33.74
80.00	19 37 57	2068.02	-6.34	32.44	213.37	119.24	20 12 25	1068.0	6.03	11.92
90.00	21 14 12	1757.53	-4.52	10.60	214.37	117.95	21 43 30	757.5	7.24	349.75
100.00	22 20 49	1542.49	-6.34	353.81	213.37	119.24	22 46 31	542.5	6.03	333.29
110.00	22 58 0	1425.88	-10.77	342.29	210.69	122.61	23 21 46	425.9	3.12	322.66

DIFFERENTIAL CORRECTIONS

TDE	-.3399	TRA	-.8026	TC3	.0967	BAU	.0507
RDE	-.5162	RRA	.2099	RC3	.0803	FAU	.03631
FDE	.0908	FRA	.6460	FC3	-1.0423	BSP	1374
BDE	.6180	BRA	.8296	BC3	.1257	FSP	153

MID-COURSE EXECUTION ACCURACY

SGT	972.8	SGR	594.3	SG3	117.3		
RRT	-.0196	RRF	.0228	RTF	-.6106		
SGB	1140.0	R23	-.0037	R13	.6107		
SG1	972.9	SG2	594.1	THA	178.91		

ORBIT DETERMINATION ACCURACY

ST	22.3	SR	27.2	SS	10.4
CRT	.7103	CRS	.2750	CST	.8652
LSA	33.1	MSA	15.6	SSA	1.2
EL1	32.6	EL2	13.1	ALF	52.83

LAUNCH DATE MAY 20 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 278.364 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	34.637	GAL	-.03	AZL	91.83	HCA	89.85	SMA	239.68	ECC	.36841	INC	1.8277	V1	29.433
RP	206.82	LAP	-1.83	LOP	328.20	VP	27.012	GAP	20.19	AZP	90.00	TAL	359.90	TAP	89.75	RCA	151.38	APO	327.98	V2	26.479
RC	58.807	GL	-11.99	GP	-.76	ZAL	93.91	ZAP	173.28	ETS	186.51	ZAE	170.61	ETE	24.39	ZAC	98.79	ETC	278.45	LVI	-18.22

PLANETOCENTRIC CONIC

C3	28.272	VHL	5.317	DLA	-21.79	RAL	338.92	RAD	6646.3	VEL	12.175	PTH	7.14	VHP	9.681	DPA	-16.80	RAP	324.77	ECC	1.4653

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 41	2775.02	-20.81	78.78	200.68	133.81	16 16 56	1775.0	-2.78	62.25
60.00	16 36 59	2598.72	-15.21	67.97	205.75	127.78	17 20 17	1598.7	.69	49.71
70.00	18 1 4	2351.54	-9.75	51.89	209.71	122.89	18 40 15	1351.5	4.17	32.30
80.00	19 41 25	2037.48	-5.32	30.74	212.41	119.42	20 15 22	1037.5	7.04	10.23
90.00	21 18 13	1725.20	-3.48	8.79	213.43	118.08	21 46 59	725.2	8.25	347.91
100.00	22 24 16	1511.95	-5.32	352.11	212.41	119.42	22 49 28	512.0	7.04	331.59
110.00	23 0 30	1398.35	-9.75	340.80	209.71	122.89	23 23 48	398.4	4.17	321.21

DIFFERENTIAL CORRECTIONS

TDE	-.3399	TRA	-.7953	TC3	.1157	BAU	.0544
RDE	-.5018	RRA	.2041	RC3	.0856	FAU	.03694
FDE	.0980	FRA	.6747	FC3	-1.1312	BSP	1552
BDE	.6060	BRA	.8210	BC3	.1439	FSP	167

MID-COURSE EXECUTION ACCURACY

SGT	1000.5	SGR	597.3	SG3	124.3		
RRT	-.0157	RRF	.0220	RTF	-.6315		
SGB	1165.2	R23	-.0066	R13	.6316		
SG1	1000.6	SG2	597.1	THA	179.17		

ORBIT DETERMINATION ACCURACY

ST	23.0	SR	27.3	SS	10.9
CRT	.7123	CRS	.2855	CST	.8697
LSA	33.7	MSA	15.9	SSA	1.2
EL1	33.1	EL2	13.3	ALF	51.82

LAUNCH DATE MAY 20 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 281.100 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	34.473	GAL	.03	AZL	91.82	HCA	91.12	SMA	234.86	ECC	.35547	INC	1.8213	V1	29.433
RP	206.77	LAP	-1.82	LOP	329.47	VP	26.807	GAP	19.70	AZP	89.96	TAL	.12	TAP	91.24	RCA	151.38	APO	318.35	V2	26.485
RC	59.485	GL	-12.28	GP	-.78	ZAL	93.65	ZAP	172.31	ETS	185.87	ZAE	170.11	ETE	22.37	ZAC	98.72	ETC	278.51	LVI	-18.27

PLANETOCENTRIC CONIC

C3	26.553	VHL	5.153	DLA	-22.15	RAL	338.78	RAD	6645.6	VEL	12.104	PTH	7.08	VHP	9.362	DPA	-16.73	RAP	325.07	ECC	1.4370

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 47	2751.70	-19.71	77.66	199.74	134.23	16 17 38	1751.7	-1.61	61.28
60.00	16 38 40	2573.81	-14.17	66.69	204.79	128.13	17 21 34	1573.8	1.79	48.52
70.00	18 3 34	2324.20	-8.74	50.42	208.76	123.15	18 42 19	1324.2	5.20	30.66
80.00	19 44 57	2006.93	-4.30	29.05	211.49	119.57	20 18 24	1006.9	8.05	8.52
90.00	21 22 22	1692.71	-2.44	6.97	212.51	118.18	21 50 35	692.7	9.25	346.05
100.00	22 27 49	1481.40	-4.30	350.42	211.49	119.57	22 52 30	481.4	8.05	329.89
110.00	23 3 1	1371.02	-8.74	339.34	208.76	123.15	23 25 52	371.0	5.20	319.78

DIFFERENTIAL CORRECTIONS

TDE	-.3105	TRA	-.7907	TC3	.1652	BAU	.0667
RDE	-.4892	RRA	.1977	RC3	.0895	FAU	.04106
FDE	.0024	FRA	.6407	FC3	-1.3387	BSP	1126
BDE	.5794	BRA	.8151	BC3	.1879	FSP	133

MID-COURSE EXECUTION ACCURACY

SGT	1024.4	SGR	600.6	SG3	136.5		
RRT	-.0354	RRF	.0367	RTF	-.5970		
SGB	1187.5	R23	-.0246	R13	.5976		
SG1	1024.7	SG2	600.0	THA	178.19		

ORBIT DETERMINATION ACCURACY

ST	22.4	SR	27.4	SS	9.5
CRT	.6823	CRS	-.1156	CST	.6370
LSA	32.7	MSA	16.6	SSA	1.3
EL1	32.6	EL2	13.8	ALF	53.35

LAUNCH DATE MAY 20 1971 FLIGHT TIME 104.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 283.978 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	34.318	GAL	.09	AZL	91.81	HCA	92.39	SMA	230.53	ECC	.34335	INC	1.8149	V1	29.433
RP	206.74	LAP	-1.81	LOP	330.73	VP	26.612	GAP	19.22	AZP	89.92	TAL	.35	TAP	92.73	RCA	151.38	APO	309.68	V2	26.489
RC	60.233	GL	-12.56	GP	-.80	ZAL	93.37	ZAP	171.32	ETS	185.37	ZAE	169.66	ETE	20.62	ZAC	98.66	ETC	278.56	LVI	-18.32

PLANETOCENTRIC CONIC

C3	24.986	VHL	4.999	DLA	-22.52	RAL	338.62	RAD	6645.0	VEL	12.040	PTH	7.03	VHP	9.055	DPA	-16.66	RAP	325.35	ECC	1.4112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 32 49	2728.79	-18.61	76.58	198.82	134.61	16 18 18	1728.8	-.46	60.32
60.00	16 40 20	2549.25	-13.13	65.45	203.86	128.45	17 22 49	1549.3	2.87	47.35
70.00	18 6 6	2297.11	-7.73	48.97	207.84	123.37	18 44 23	1297.1	6.23	29.43
80.00	19 48 34	1976.40	-3.27	27.37	210.58	119.69	20 21 31	976.4	9.05	6.80
90.00	21 26 39	1660.06	-1.39	5.15	211.63	118.25	21 54 19	660.1	10.25	344.17
100.00	22 31 26	1450.87	-3.27	348.74	210.58	119.69	22 55 37	450.9	9.05	328.17
110.00	23 5 32	1343.93	-7.73	337.89	207.84	123.37	23 27 56	343.9	6.23	316.35

DIFFERENTIAL CORRECTIONS

TDE	-.3109	TRA	-.7660	TC3	.1675	BAU	.0643
RDE	-.4751	RRA	.1926	RC3	.0950	FAU	.04154
FDE	.0643	FRA	.7138	FC3	-1.4395	BSP	1424
BDE	.5678	BRA	.7899	BC3	.1926	FSP	180

MID-COURSE EXECUTION ACCURACY

SGT	1028.8	SGR	602.3	SG3	146.1		
RRT	-.0278	RRF	.0342	RTF	-.6374		
SGB	1192.2	R23	-.0073	R13	.6376		
SG1	1029.0	SG2	601.9	THA	178.58		

ORBIT DETERMINATION ACCURACY

ST	22.8	SR	27.5	SS	10.9
CRT	.6925	CRS	.1384	CST	.8027
LSA	33.3	MSA	16.8	SSA	1.3
EL1	33.0	EL2	13.7	ALF	52.53

LAUNCH DATE MAY 20 1971 FLIGHT TIME 106.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC DISTANCE 286.983 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	34.173	GAL	.15	AZL	91.81	HCA	93.65	SMA	226.61	ECC	.33201	INC	1.8085
RP	206.71	LAP	-1.80	LOP	332.00	VP	26.428	GAP	18.75	AZP	89.88	TAL	.59	TAP	94.24	RCA	151.38	APO	301.85
RC	61.050	GL	-12.84	GP	-.83	ZAL	93.07	ZAP	170.32	ETS	184.96	ZAE	169.27	ETE	19.08	ZAC	98.59	ETC	278.61

V1	29.433																		
V2	26.492																		
LVI	-18.36																		

PLANETOCENTRIC CONIC

C3	23.556	VHL	4.853	DLA	-22.89	RAL	338.44	RAD	6644.4	VEL	11.981	PTH	6.98	VHP	8.759	DPA	-16.59	RAP	325.62
ECC	1.3877																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 33 49	2706.33	-17.54	75.53	197.93	134.97	16 18 55	1706.3	.67	59.38
60.00	16 41 57	2525.09	-12.11	64.23	202.95	128.74	17 24 3	1525.1	3.93	46.19
70.00	18 8 38	2270.30	-6.72	47.55	206.94	123.56	18 46 28	1270.3	7.24	28.01
80.00	19 52 16	1945.92	-2.24	25.70	209.71	119.78	20 24 42	945.9	10.04	5.08
90.00	21 31 4	1627.27	-.33	3.32	210.77	118.28	21 58 11	627.3	11.24	342.27
100.00	22 35 8	1420.39	-2.24	347.06	209.71	119.78	22 58 49	420.4	10.04	326.45
110.00	23 8 4	1317.12	-6.72	336.47	206.94	123.56	23 30 1	317.1	7.24	316.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3040	TRA	-.7557	TC3	.1935	BAU	.0686	SGT	1049.7	SGR	604.1	SG3	157.5	ST	23.1	SR	27.5	SS	11.4
RDE	-.4623	RRA	.1874	RC3	.0999	FAU	.04340	RRT	-.0291	RRF	.0342	RTF	-.6517	CRT	.6882	CRS	.1314	CST	.8023
FDE	.0658	FRA	.7479	FC3	-1.5952	BSP	1496	SGB	1211.1	R23	-.0058	R13	.6518	LSA	33.5	MSA	17.2	SSA	1.3
BDE	.5533	BRA	.7786	BC3	.2178	FSP	204	SG1	1049.9	SG2	603.7	THA	178.57	EL1	33.1	EL2	13.9	ALF	52.20

LAUNCH DATE MAY 20 1971 FLIGHT TIME 108.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC DISTANCE 290.099 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	34.036	GAL	.20	AZL	91.80	HCA	94.92	SMA	223.06	ECC	.32138	INC	1.8020
RP	206.69	LAP	-1.80	LOP	333.27	VP	26.253	GAP	18.28	AZP	89.85	TAL	.84	TAP	95.76	RCA	151.37	APO	294.75
RC	61.933	GL	-13.12	GP	-.85	ZAL	92.74	ZAP	169.31	ETS	184.64	ZAE	168.94	ETE	17.71	ZAC	98.53	ETC	278.66

V1	29.433																		
V2	26.495																		
LVI	-18.40																		

PLANETOCENTRIC CONIC

C3	22.249	VHL	4.717	DLA	-23.27	RAL	338.23	RAD	6643.8	VEL	11.927	PTH	6.93	VHP	8.473	DPA	-16.53	RAP	325.88
ECC	1.3662																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 34 45	2684.31	-16.47	74.51	197.06	135.29	16 19 29	1684.3	1.78	58.46
60.00	16 43 33	2501.32	-11.09	63.04	202.07	129.00	17 25 15	1501.3	4.97	45.05
70.00	18 11 10	2243.75	-5.72	46.15	206.06	123.73	18 48 34	1243.8	8.23	26.60
80.00	19 56 4	1915.46	-1.21	24.02	208.86	119.84	20 27 59	915.5	11.01	3.35
90.00	21 35 39	1594.26	.73	1.48	209.94	118.27	22 2 13	594.3	12.22	340.35
100.00	22 38 56	1389.93	-1.21	345.39	208.86	119.84	23 2 6	389.9	11.01	324.71
110.00	23 10 36	1290.57	-5.72	335.07	206.06	123.73	23 32 7	290.6	8.23	315.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2892	TRA	-.7369	TC3	.2385	BAU	.0775	SGT	1060.0	SGR	605.4	SG3	168.1	ST	22.9	SR	27.6	SS	11.7
RDE	-.4500	RRA	.1821	RC3	.1047	FAU	.04512	RRT	-.0317	RRF	.0337	RTF	-.6747	CRT	.6783	CRS	.1138	CST	.7999
FDE	.0631	FRA	.7699	FC3	-1.7557	BSP	1428	SGB	1220.7	R23	-.0019	R13	.6748	LSA	33.3	MSA	17.5	SSA	1.3
BDE	.5349	BRA	.7591	BC3	.2604	FSP	219	SG1	1060.2	SG2	605.0	THA	178.46	EL1	32.9	EL2	14.1	ALF	52.77

LAUNCH DATE MAY 20 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 293.315 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	33.908	GAL	.26	AZL	91.80	HCA	96.19	SMA	219.84	ECC	.31144	INC	1.7955
RP	206.68	LAP	-1.79	LOP	334.54	VP	26.088	GAP	17.83	AZP	89.81	TAL	1.09	TAP	97.29	RCA	151.37	APO	288.30
RC	62.879	GL	-13.39	GP	-.88	ZAL	92.41	ZAP	168.27	ETS	184.37	ZAE	168.67	ETE	16.49	ZAC	98.47	ETC	278.71

V1	29.433																		
V2	26.496																		
LVI	-18.43																		

PLANETOCENTRIC CONIC

C3	21.058	VHL	4.589	DLA	-23.65	RAL	338.01	RAD	6643.3	VEL	11.877	PTH	6.89	VHP	8.198	DPA	-16.48	RAP	326.12
ECC	1.3466																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 35 39	2662.86	-15.43	73.54	196.21	135.59	16 20 2	1662.9	2.85	57.57
60.00	16 45 8	2478.07	-10.09	61.89	201.21	129.23	17 26 26	1478.1	5.99	43.92
70.00	18 13 43	2217.64	-4.73	44.78	205.22	123.86	18 50 40	1217.6	9.20	25.20
80.00	19 59 56	1885.19	-.19	22.36	208.04	119.86	20 31 22	885.2	11.97	1.61
90.00	21 40 23	1561.21	1.80	359.63	209.14	118.23	22 6 24	561.2	13.19	338.40
100.00	22 42 48	1359.66	-.19	343.73	208.04	119.86	23 5 28	359.7	11.97	322.98
110.00	23 13 9	1264.46	-4.73	333.69	205.22	123.86	23 34 14	264.5	9.20	314.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2852	TRA	-.7337	TC3	.2606	BAU	.0796	SGT	1088.1	SGR	606.5	SG3	179.8	ST	23.3	SR	27.6	SS	12.0
RDE	-.4382	RRA	.1772	RC3	.1094	FAU	.04694	RRT	-.0344	RRF	.0381	RTF	-.6795	CRT	.6735	CRS	.0746	CST	.7800
FDE	.0549	FRA	.8002	FC3	-1.9298	BSP	1523	SGB	1245.7	R23	-.0042	R13	.6797	LSA	33.5	MSA	18.0	SSA	1.3
BDE	.5228	BRA	.7548	BC3	.2827	FSP	241	SG1	1088.4	SG2	605.9	THA	178.41	EL1	33.1	EL2	14.3	ALF	52.12

LAUNCH DATE MAY 20 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 296.621 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	33.787	GAL	.31	AZL	91.79	HCA	97.46	SMA	216.90	ECC	.30213	INC	1.7890
RP	206.67	LAP	-1.77	LOP	335.81	VP	25.931	GAP	17.38	AZP	89.77	TAL	1.36	TAP	98.82	RCA	151.37	APO	282.43
RC	63.888	GL	-13.65	GP	-.91	ZAL	92.06	ZAP	167.22	ETS	184.14	ZAE	168.46	ETE	15.38	ZAC	98.41	ETC	278.75

V1	29.433																		
V2	26.496																		
LVI	-18.46																		

PLANETOCENTRIC CONIC

C3	19.968	VHL	4.469	DLA	-24.02	RAL	337.78	RAD	6642.8	VEL	11.831	PTH	6.85	VHP	7.933	DPA	-16.43	RAP	326.35
ECC	1.3286																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 30	2641.94	-14.41	72.60	195.40	135.85	16 20 32	1641.9	3.90	56.69
60.00	16 46 40	2455.32	-9.11	60.77	200.38	129.43	17 27 35	1455.3	6.98	42.82
70.00	18 16 16	2191.92	-3.75	43.43	204.40	123.97	18 52 48	1191.9	10.15	23.82
80.00	20 3 54	1855.04	.84	20.71	207.25	119.85	20 34 49	855.0	12.92	359.87
90.00	21 45 18	1527.99	2.86	357.78	208.38	118.15	22 10 46	528.0	14.15	336.43
100.00	22 46 46	1329.51	.84	342.08	207.25	119.85	23 8 55	329.5	12.92	321.24
110.00	23 15 42	1238.74	-3.75	332.34	204.40	123.97	23 36 21	238.7	10.15	312.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2817	TRA	-.7241	TC3	.2827	BAU	.0814	SGT	1107.9	SGR	607.1	SG3	192.9	ST	23.6	SR	27.6	SS	12.3
RDE	-.4269	RRA	.1725	RC3	.1139	FAU	.04910	RRT	-.0337	RRF	.0406	RTF	-.6825	CRT	.6726	CRS	.0420	CST	.7601
FDE	.0478	FRA	.8306	FC3	-2.1290	BSP	1584	SGB	1263.3	R23	-.0077	R13	.6827	LSA	33.7	MSA	18.3	SSA	1.4
BDE	.5114	BRA	.7443	BC3	.3048	FSP	260	SG1	1108.2	SG2	606.6	THA	178.49	EL1	33.3	EL2	14.5	ALF	51.52

LAUNCH DATE MAY 20 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 300.007 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	33.673	GAL	.37	AZL	91.78	HCA	98.73	SMA	214.22	ECC	.29341	INC	1.7825	V1	29.433
RP	206.68	LAP	-1.76	LOP	337.08	VP	25.782	GAP	16.95	AZP	89.73	TAL	1.63	TAP	100.36	RCA	151.36	APO	277.07	V2	26.496
RC	64.956	GL	-13.92	GP	-.94	ZAL	91.71	ZAP	166.15	ETS	183.95	ZAE	168.32	ETE	14.38	ZAC	98.35	ETC	278.79	LVI	-18.48

PLANETOCENTRIC CONIC

C3	18.970	VHL	4.356	DLA	-24.40	RAL	337.52	RAD	6642.4	VEL	11.789	PTH	6.81	VHP	7.677	DPA	-16.40	RAP	326.55	ECC	1.3122

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 18	2621.59	-13.42	71.69	194.61	136.09	16 21 0	1621.6	4.92	55.83
60.00	16 48 10	2433.10	-8.15	59.68	199.58	129.61	17 28 43	1433.1	7.95	41.74
70.00	18 18 48	2166.63	-2.79	42.10	203.61	124.05	18 54 55	1166.6	11.08	22.45
80.00	20 7 57	1825.03	1.85	19.06	206.50	119.81	20 38 22	825.0	13.84	358.12
90.00	21 50 25	1494.59	3.94	355.91	207.65	118.03	22 15 19	494.6	15.09	334.43
100.00	22 50 49	1299.50	1.85	340.43	206.50	119.81	23 12 29	299.5	13.84	319.49
110.00	23 18 15	1213.45	-2.79	331.02	203.61	124.05	23 38 28	213.5	11.08	311.37

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	-.2736	TRA	-.7156	TC3	.3103	BAU	.0842	SGT	1127.5	SGR	607.3	SG3	206.6	ST	23.8	SR	27.6	SS	12.6
RDE	-.4160	RRA	.1679	RC3	.1181	FAU	.05136	RRT	-.0379	RRF	.0447	RTF	-.6881	CRT	.6649	CRS	-.0018	CST	.7380
FDE	.0369	FRA	.8610	FC3	-2.3439	BSP	1657	SGB	1280.7	R23	-.0081	R13	.6883	LSA	33.6	MSA	18.8	SSA	1.4
BDE	.4979	BRA	.7351	BC3	.3320	FSP	283	SG1	1127.8	SG2	606.7	THA	178.35	EL1	33.3	EL2	14.7	ALF	51.38

LAUNCH DATE MAY 20 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 303.464 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	33.567	GAL	.42	AZL	91.78	HCA	100.00	SMA	211.77	ECC	.28525	INC	1.7759	V1	29.433
RP	206.70	LAP	-1.75	LOP	338.35	VP	25.641	GAP	16.52	AZP	89.69	TAL	1.90	TAP	101.90	RCA	151.36	APO	272.17	V2	26.494
RC	66.082	GL	-14.17	GP	-.97	ZAL	91.34	ZAP	165.06	ETS	183.78	ZAE	168.25	ETE	13.45	ZAC	98.29	ETC	278.62	LVI	-18.49

PLANETOCENTRIC CONIC

C3	18.058	VHL	4.249	DLA	-24.77	RAL	337.26	RAD	6642.0	VEL	11.751	PTH	6.78	VHP	7.431	DPA	-16.37	RAP	326.74	ECC	1.2972

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 3	2601.83	-12.45	70.82	193.84	136.30	16 21 25	1601.8	5.91	55.00
60.00	16 49 38	2411.45	-7.21	58.63	198.80	129.76	17 29 50	1411.5	8.88	40.68
70.00	18 21 21	2141.81	-1.84	40.80	202.84	124.11	18 57 3	1141.8	11.99	21.10
80.00	20 12 6	1795.18	2.86	17.42	205.77	119.73	20 42 1	795.2	14.75	356.37
90.00	21 55 44	1460.98	5.01	354.02	206.96	117.87	22 20 5	461.0	16.02	332.40
100.00	22 54 58	1269.67	2.86	338.79	205.77	119.73	23 16 7	269.7	14.75	317.74
110.00	23 20 47	1188.63	-1.84	329.72	202.84	124.11	23 40 36	188.6	11.99	310.02

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	-.2670	TRA	-.7056	TC3	.3393	BAU	.0871	SGT	1144.8	SGR	607.2	SG3	221.0	ST	23.9	SR	27.6	SS	13.0
RDE	-.4055	RRA	.1635	RC3	.1221	FAU	.05368	RRT	-.0398	RRF	.0479	RTF	-.6941	CRT	.6598	CRS	-.0375	CST	.7183
FDE	.0276	FRA	.8920	FC3	-2.5736	BSP	1705	SGB	1295.9	R23	-.0095	R13	.6943	LSA	33.6	MSA	19.2	SSA	1.4
BDE	.4855	BRA	.7243	BC3	.3606	FSP	305	SG1	1145.2	SG2	606.5	THA	178.32	EL1	33.3	EL2	14.9	ALF	51.14

LAUNCH DATE MAY 20 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 306.987 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	33.466	GAL	.47	AZL	91.77	HCA	101.27	SMA	209.52	ECC	.27761	INC	1.7692	V1	29.433
RP	206.72	LAP	-1.74	LOP	339.62	VP	25.507	GAP	16.10	AZP	89.65	TAL	2.18	TAP	103.45	RCA	151.35	APO	267.68	V2	26.491
RC	67.265	GL	-14.42	GP	-1.01	ZAL	90.97	ZAP	163.95	ETS	183.64	ZAE	168.25	ETE	12.60	ZAC	98.23	ETC	278.85	LVI	-18.50

PLANETOCENTRIC CONIC

C3	17.221	VHL	4.150	DLA	-25.14	RAL	336.98	RAD	6641.6	VEL	11.716	PTH	6.75	VHP	7.193	DPA	-16.35	RAP	326.90	ECC	1.2834

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 46	2582.69	-11.50	69.98	193.10	136.49	16 21 49	1582.7	6.87	54.19
60.00	16 51 4	2390.40	-6.29	57.61	198.05	129.89	17 30 54	1390.4	9.79	39.65
70.00	18 23 53	2117.51	-.92	39.54	202.11	124.14	18 59 10	1117.5	12.87	19.76
80.00	20 16 20	1765.55	3.86	15.79	205.08	119.63	20 45 46	765.5	15.63	354.62
90.00	22 1 17	1427.10	6.08	352.11	206.30	117.67	22 25 4	427.1	16.93	330.34
100.00	22 59 12	1240.02	3.86	337.16	205.08	119.63	23 19 52	240.0	15.63	315.98
110.00	23 23 19	1164.33	-.92	328.45	202.11	124.14	23 42 44	164.3	12.87	308.68

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	-.2618	TRA	-.6952	TC3	.3658	BAU	.0890	SGT	1160.6	SGR	606.6	SG3	236.5	ST	24.1	SR	27.5	SS	13.4
RDE	-.3954	RRA	.1594	RC3	.1256	FAU	.05620	RRT	-.0409	RRF	.0505	RTF	-.6886	CRT	.6566	CRS	-.0658	CST	.7016
FDE	.0200	FRA	.9264	FC3	-2.8252	BSP	1737	SGB	1309.6	R23	-.0113	R13	.6989	LSA	33.6	MSA	19.6	SSA	1.5
BDE	.4742	BRA	.7132	BC3	.3868	FSP	330	SG1	1161.0	SG2	605.9	THA	178.32	EL1	33.4	EL2	15.0	ALF	50.80

LAUNCH DATE MAY 20 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 310.569 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	33.372	GAL	.52	AZL	91.76	HCA	102.54	SMA	207.46	ECC	.27045	INC	1.7625	V1	29.433
RP	206.75	LAP	-1.72	LOP	340.89	VP	25.379	GAP	15.69	AZP	89.62	TAL	2.46	TAP	105.00	RCA	151.35	APO	263.56	V2	26.487
RC	68.302	GL	-14.66	GP	-1.04	ZAL	90.59	ZAP	162.81	ETS	183.51	ZAE	168.32	ETE	11.79	ZAC	98.18	ETC	278.88	LVI	-18.50

PLANETOCENTRIC CONIC

C3	16.455	VHL	4.056	DLA	-25.51	RAL	336.70	RAD	6641.2	VEL	11.683	PTH	6.72	VHP	6.964	DPA	-16.33	RAP	327.04	ECC	1.2708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 39 26	2564.19	-10.59	69.17	192.39	136.66	16 22 10	1564.2	7.79	53.40
60.00	16 52 27	2369.97	-5.40	56.62	197.33	130.00	17 31 57	1370.0	10.67	38.64
70.00	18 26 24	2093.75	-.01	38.30	201.40	124.15	19 1 18	1093.8	13.72	18.45
80.00	20 20 40	1736.10	4.85	14.16	204.42	119.50	20 49 37	736.1	16.50	352.86
90.00	22 7 5	1392.90	7.16	350.18	205.68	117.43	22 30 18	392.9	17.83	328.23
100.00	23 3 32	1210.58	4.85	335.53	204.42	119.50	23 23 43	210.6	16.50	314.22
110.00	23 25 51	1140.57	-.01	327.21	201.40	124.15	23 44 51	140.6	13.72	307.37

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY			
TDE	-.2540	TRA	-.6847	TC3	.3984	BAU	.0921	SGT	1175.3	SGR	605.8	SG3	253.3	ST	24.1	SR	27.5	SS	13.8
RDE	-.3858	RRA	.1554	RC3	.1287	FAU	.05894	RRT	-.0441	RRF	.0554	RTF	-.7052	CRT	.6496	CRS	-.1094	CST	.6766
FDE	.0067	FRA	.9623	FC3	-3.1010	BSP	1768	SGB	1322.3	R23	-.0131	R13	.7055	LSA	33.5	MSA	20.1	SSA	1.5
BDE	.4619	BRA	.7021	BC3	.4187	FSP	357	SG1	1175.7	SG2	605.0	THA	178.23	EL1	33.3	EL2	15.1	ALF	50.75

LAUNCH DATE MAY 20 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC DISTANCE 314.204 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 33.284 GAL .57 AZL 91.76 HCA 103.81 SMA 205.56 ECC .26376 INC 1.7558 V1 29.433
RP 206.79 LAP -1.71 LOP 342.16 VP 25.258 GAP 15.29 AZP 89.58 TAL 2.74 TAP 106.54 RCA 151.34 APO 259.78 V2 26.483
RC 69.791 GL -14.89 GP -1.08 ZAL 90.21 ZAP 161.66 ETS 183.40 ZAE 168.46 ETE 11.03 ZAC 98.13 ETC 278.90 LVI -18.49

PLANETOCENTRIC CONIC

C3 15.753 VHL 3.969 DLA -25.86 RAL 336.41 RAD 6640.9 VEL 11.653 PTH 6.69 VHP 6.742 DPA -16.33 RAP 327.16 ECC 1.2592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 40 3	2546.36	-9.71	68.40	191.70	136.81	16 22 30	1546.4	8.68	52.64
60.00	16 53 48	2350.20	-4.53	55.67	196.63	130.09	17 32 58	1350.2	11.52	37.66
70.00	18 28 54	2070.59	.88	37.09	200.72	124.14	19 3 25	1070.6	14.54	17.16
80.00	20 25 6	1706.89	5.83	12.54	203.79	119.34	20 53 33	706.9	17.34	351.09
90.00	22 13 12	1358.28	8.24	348.21	205.09	117.15	22 35 50	358.3	18.71	326.07
100.00	23 7 58	1181.36	5.83	333.91	203.79	119.34	23 27 40	181.4	17.34	312.46
110.00	23 28 21	1117.41	.88	326.01	200.72	124.14	23 46 58	117.4	14.54	306.08

DIFFERENTIAL CORRECTIONS

TDE -.2467 TRA -.6732 TC3 .4251 BAU .0937
RDE -.3765 RRA .1517 RC3 .1314 FAU .06171
FDE -.0059 FRA .9973 FC3-3.3915 BSP 1800
BDE .4501 BRA .6901 BC3 .4450 FSP 387

MID-COURSE EXECUTION ACCURACY

SGT 1186.2 SGR 604.5 SG3 270.6
RRT -.0474 RRF .0597 RTF -.7089
SGB 1331.4 R23 -.0144 R13 .7092
SG1 1186.7 SG2 603.6 THA 178.13

ORBIT DETERMINATION ACCURACY

ST 24.1 SR 27.4 SS 14.2
CRT .6436 CRS -.1476 CST .6539
LSA 33.3 MSA 20.5 SSA 1.5
EL1 33.2 EL2 15.2 ALF 50.72

LAUNCH DATE MAY 20 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC DISTANCE 317.887 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 33.201 GAL .62 AZL 91.75 HCA 105.07 SMA 203.82 ECC .25749 INC 1.7490 V1 29.433
RP 206.84 LAP -1.69 LOP 343.43 VP 25.142 GAP 14.90 AZP 89.54 TAL 3.02 TAP 108.09 RCA 151.34 APO 256.30 V2 26.477
RC 71.130 GL -15.11 GP -1.12 ZAL 89.83 ZAP 160.47 ETS 183.30 ZAE 168.68 ETE 10.31 ZAC 98.08 ETC 278.91 LVI -18.47

PLANETOCENTRIC CONIC

C3 15.108 VHL 3.887 DLA -26.21 RAL 336.11 RAD 6640.6 VEL 11.626 PTH 6.67 VHP 6.529 DPA -16.34 RAP 327.26 ECC 1.2486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 40 38	2529.21	-8.85	67.67	191.03	136.94	16 22 47	1529.2	9.53	51.91
60.00	16 55 6	2331.12	-3.69	54.75	195.96	130.16	17 33 58	1331.1	12.33	36.70
70.00	18 31 23	2048.05	1.74	35.91	200.07	124.11	19 5 31	1048.0	15.33	15.89
80.00	20 29 38	1677.91	6.79	10.93	203.19	119.15	20 57 36	677.9	18.15	349.33
90.00	22 19 40	1323.07	9.33	346.19	204.55	116.82	22 41 43	323.1	19.58	323.85
100.00	23 12 30	1152.38	6.79	332.30	203.19	119.15	23 31 42	152.4	18.15	310.70
110.00	23 30 49	1094.87	1.74	324.83	200.07	124.11	23 49 4	94.9	15.33	304.81

DIFFERENTIAL CORRECTIONS

TDE -.2390 TRA -.6625 TC3 .4551 BAU .0958
RDE -.3676 RRA .1481 RC3 .1334 FAU .06481
FDE -.0203 FRA 1.0378 FC3-3.7136 BSP 1839
BDE .4385 BRA .6788 BC3 .4743 FSP 419

MID-COURSE EXECUTION ACCURACY

SGT 1197.5 SGR 603.0 SG3 289.7
RRT -.0517 RRF .0652 RTF -.7140
SGB 1340.8 R23 -.0158 R13 .7143
SG1 1198.1 SG2 601.9 THA 178.01

ORBIT DETERMINATION ACCURACY

ST 24.0 SR 27.3 SS 14.7
CRT .6361 CRS -.1876 CST .6304
LSA 33.1 MSA 21.0 SSA 1.5
EL1 33.0 EL2 15.4 ALF 50.75

LAUNCH DATE MAY 20 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC DISTANCE 321.615 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 33.123 GAL .66 AZL 91.74 HCA 106.34 SMA 202.21 ECC .25163 INC 1.7421 V1 29.433
RP 206.90 LAP -1.67 LOP 344.70 VP 25.032 GAP 14.51 AZP 89.51 TAL 3.29 TAP 109.63 RCA 151.33 APO 253.09 V2 26.470
RC 72.517 GL -15.32 GP -1.16 ZAL 89.46 ZAP 159.26 ETS 183.21 ZAE 168.97 ETE 9.60 ZAC 98.03 ETC 278.92 LVI -18.45

PLANETOCENTRIC CONIC

C3 14.516 VHL 3.810 DLA -26.55 RAL 335.81 RAD 6640.3 VEL 11.601 PTH 6.64 VHP 6.324 DPA -16.36 RAP 327.33 ECC 1.2389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 41 10	2512.75	-8.03	66.96	190.40	137.05	16 23 3	1512.7	10.35	51.20
60.00	16 56 22	2312.75	-2.89	53.87	195.32	130.21	17 34 55	1312.7	13.11	35.77
70.00	18 33 50	2026.18	2.57	34.77	199.45	124.07	19 7 36	1026.2	16.09	14.66
80.00	20 34 16	1649.19	7.74	9.33	202.63	118.93	21 1 45	649.2	18.94	347.56
90.00	22 26 33	1287.09	10.43	344.12	204.06	116.44	22 48 0	287.1	20.43	321.56
100.00	23 17 8	1123.66	7.74	330.70	202.63	118.93	23 35 51	123.7	18.94	308.93
110.00	23 33 16	1072.99	2.57	323.69	199.45	124.07	23 51 9	73.0	16.09	303.57

DIFFERENTIAL CORRECTIONS

TDE -.2331 TRA -.6516 TC3 .4821 BAU .0972
RDE -.3590 RRA .1447 RC3 .1349 FAU .06803
FDE -.0340 FRA 1.0764 FC3-4.0573 BSP 1851
BDE .4280 BRA .6675 BC3 .5006 FSP 451

MID-COURSE EXECUTION ACCURACY

SGT 1207.5 SGR 601.0 SG3 309.5
RRT -.0345 RRF .0697 RTF -.7167
SGB 1348.8 R23 -.0178 R13 .7171
SG1 1208.0 SG2 599.8 THA 177.94

ORBIT DETERMINATION ACCURACY

ST 24.0 SR 27.2 SS 15.1
CRT .6312 CRS -.2221 CST .6076
LSA 33.0 MSA 21.4 SSA 1.6
EL1 32.9 EL2 15.4 ALF 50.63

LAUNCH DATE MAY 20 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 325.384 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 33.049 GAL .70 AZL 91.74 HCA 107.61 SMA 200.73 ECC .24615 INC 1.7350 V1 29.433
RP 206.96 LAP -1.65 LOP 345.96 VP 24.927 GAP 14.14 AZP 89.47 TAL 3.56 TAP 111.17 RCA 151.32 APO 250.14 V2 26.462
RC 73.950 GL -15.53 GP -1.20 ZAL 89.09 ZAP 158.03 ETS 183.12 ZAE 169.34 ETE 8.91 ZAC 97.98 ETC 278.93 LVI -18.41

PLANETOCENTRIC CONIC

C3 13.973 VHL 3.738 DLA -26.88 RAL 335.52 RAD 6640.0 VEL 11.577 PTH 6.62 VHP 6.126 DPA -16.39 RAP 327.38 ECC 1.2300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 41 40	2497.01	-7.25	66.29	189.78	137.15	16 23 17	1497.0	11.13	50.51
60.00	16 57 34	2295.11	-2.11	53.03	194.71	130.25	17 35 49	1295.1	13.86	34.88
70.00	18 36 14	2005.01	3.38	33.66	198.86	124.01	19 9 39	1005.0	16.82	13.45
80.00	20 39 0	1620.73	8.67	7.73	202.10	118.68	21 6 0	620.7	19.70	345.79
90.00	22 33 57	1250.00	11.54	341.97	203.61	116.00	22 54 47	250.0	21.27	319.17
100.00	23 21 52	1095.20	8.67	329.10	202.10	118.68	23 40 7	95.2	19.70	307.16
110.00	23 35 40	1051.83	3.38	322.58	198.86	124.01	23 53 12	51.8	16.82	302.36

DIFFERENTIAL CORRECTIONS

TDE -.2261 TRA -.6409 TC3 .5040 BAU .0975
RDE -.3507 RRA .1416 RC3 .1357 FAU .07145
FDE -.0500 FRA 1.1222 FC3-4.4268 BSP 1873
BDE .4173 BRA .6563 BC3 .5219 FSP 487

MID-COURSE EXECUTION ACCURACY

SGT 1214.5 SGR 598.8 SG3 331.0
RRT -.0597 RRF .0761 RTF -.7187
SGB 1354.1 R23 -.0195 R13 .7192
SG1 1215.2 SG2 597.4 THA 177.78

ORBIT DETERMINATION ACCURACY

ST 23.9 SR 27.1 SS 15.7
CRT .6244 CRS -.2588 CST .5845
LSA 32.7 MSA 21.9 SSA 1.6
EL1 32.7 EL2 15.5 ALF 50.66

LAUNCH DATE MAY 20 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC DISTANCE 329.190 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.981	GAL	.74	AZL	91.73	HCA	108.87	SMA	199.36	ECC	.24102	INC	1.7279	V1	29.433
RP	207.04	LAP	-1.64	LOP	347.23	VP	24.826	GAP	13.77	AZP	89.44	TAL	3.83	TAP	112.70	RCA	151.31	APO	247.42	V2	26.454
RC	75.426	GL	-15.72	GP	-1.24	ZAL	88.73	ZAP	156.76	ETS	183.05	ZAE	169.78	ETE	8.22	ZAC	97.94	ETC	278.93	LVI	-18.37

PLANETOCENTRIC CONIC

C3	13.473	VHL	3.671	DLA	-27.19	RAL	335.22	RAD	6639.8	VEL	11.556	PTH	6.60	VHP	5.935	DPA	-16.43	RAP	327.39	ECC	1.2217

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 8	2481.99	-6.50	65.66	189.20	137.24	16 23 30	1482.0	11.87	49.86
60.00	16 58 44	2278.23	-1.37	52.22	194.12	130.28	17 36 42	1278.2	14.57	34.02
70.00	18 38 35	1984.59	4.16	32.59	198.29	123.93	19 11 40	984.6	17.52	12.27
80.00	20 43 49	1592.56	9.59	6.14	201.60	118.41	21 10 22	592.6	20.44	344.03
90.00	22 42 3	1211.28	12.69	339.70	203.21	115.49	23 2 15	211.3	22.11	316.64
100.00	23 26 41	1067.05	9.59	327.51	201.60	118.41	23 44 28	67.0	20.44	305.39
110.00	23 38 2	1031.41	4.16	321.51	198.29	123.93	23 55 13	31.4	17.52	301.19

DIFFERENTIAL CORRECTIONS

TDE	-.2203	TRA	-.6288	TC3	.5285	BAU	.0983														
RDE	-.3428	RRA	.1386	RC3	.1358	FAU	.07507														
FDE	-.0656	FRA	1.1635	FC3	-4.8237	BSP	1882														
BDE	.4075	BRA	.6439	BC3	.5457	FSP	523														

MID-COURSE EXECUTION ACCURACY

SGT	1219.1	SGR	596.2	SG3	353.3						
RRT	-.0629	RRF	.0814	RTF	-.7205						
SGB	1357.1	R23	-.0220	R13	.7211						
SG1	1219.9	SG2	594.6	THA	177.69						

ORBIT DETERMINATION ACCURACY

ST	23.9	SR	27.0	SS	16.2						
CRT	.6200	CRS	-.2916	CST	.5610						
LSA	32.5	MSA	22.3	SSA	1.6						
EL1	32.5	EL2	15.6	ALF	50.64						

LAUNCH DATE MAY 20 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC DISTANCE 333.029 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.917	GAL	.78	AZL	91.72	HCA	110.14	SMA	198.10	ECC	.23624	INC	1.7208	V1	29.433
RP	207.12	LAP	-1.62	LOP	348.49	VP	24.730	GAP	13.42	AZP	89.41	TAL	4.08	TAP	114.22	RCA	151.30	APO	244.90	V2	26.444
RC	76.944	GL	-15.90	GP	-1.29	ZAL	88.39	ZAP	155.47	ETS	182.98	ZAE	170.29	ETE	7.51	ZAC	97.89	ETC	278.92	LVI	-18.32

PLANETOCENTRIC CONIC

C3	13.014	VHL	3.608	DLA	-27.49	RAL	334.93	RAD	6639.6	VEL	11.536	PTH	6.58	VHP	5.751	DPA	-16.48	RAP	327.38	ECC	1.2142

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 33	2467.71	-5.78	65.05	188.64	137.31	16 23 40	1467.7	12.57	49.23
60.00	16 59 50	2262.12	-.66	51.45	193.56	130.30	17 37 32	1262.1	15.24	33.19
70.00	18 40 53	1964.96	4.90	31.56	197.76	123.84	19 13 38	965.0	18.18	11.13
80.00	20 48 45	1564.67	10.49	4.56	201.14	118.12	21 14 50	564.7	21.15	342.26
90.00	22 51 8	1170.03	13.88	337.26	202.87	114.89	23 10 38	170.0	22.96	313.91
100.00	23 31 37	1039.14	10.49	325.93	201.14	118.12	23 48 56	39.1	21.15	303.63
110.00	23 40 20	1011.78	4.90	320.48	197.76	123.84	23 57 11	11.8	18.18	300.05

DIFFERENTIAL CORRECTIONS

TDE	-.2134	TRA	-.6176	TC3	.5468	BAU	.0980														
RDE	-.3352	RRA	.1358	RC3	.1351	FAU	.07893														
FDE	-.0851	FRA	1.2110	FC3	-5.2509	BSP	1897														
BDE	.3973	BRA	.6324	BC3	.5633	FSP	566														

MID-COURSE EXECUTION ACCURACY

SGT	1222.0	SGR	593.3	SG3	377.3						
RRT	-.0691	RRF	.0888	RTF	-.7208						
SGB	1358.4	R23	-.0238	R13	.7214						
SG1	1222.9	SG2	591.5	THA	177.49						

ORBIT DETERMINATION ACCURACY

ST	23.7	SR	26.9	SS	16.7						
CRT	.6129	CRS	-.3288	CST	.5359						
LSA	32.3	MSA	22.8	SSA	1.7						
EL1	32.3	EL2	15.6	ALF	50.76						

LAUNCH DATE MAY 20 1971 FLIGHT TIME 134.00 ARRIVAL DATE OCT 1 1971

HELIOCENTRIC CONIC DISTANCE 336.901 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.856	GAL	.82	AZL	91.71	HCA	111.40	SMA	196.94	ECC	.23176	INC	1.7134	V1	29.433
RP	207.21	LAP	-1.60	LOP	349.76	VP	24.639	GAP	13.07	AZP	89.37	TAL	4.34	TAP	115.74	RCA	151.30	APO	242.58	V2	26.433
RC	78.502	GL	-16.07	GP	-1.34	ZAL	88.04	ZAP	154.14	ETS	182.91	ZAE	170.88	ETE	6.78	ZAC	97.86	ETC	278.91	LVI	-18.25

PLANETOCENTRIC CONIC

C3	12.591	VHL	3.548	DLA	-27.78	RAL	334.65	RAD	6639.4	VEL	11.518	PTH	6.57	VHP	5.574	DPA	-16.55	RAP	327.34	ECC	1.2072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 55	2454.11	-5.10	64.48	188.10	137.37	16 23 49	1454.1	13.24	48.63
60.00	17 0 53	2246.75	.02	50.72	193.02	130.30	17 38 19	1246.7	15.88	32.39
70.00	18 43 8	1946.06	5.62	30.57	197.25	123.74	19 15 34	946.1	18.80	10.03
80.00	20 53 49	1536.92	11.37	2.98	200.71	117.79	21 19 26	536.9	21.83	340.48
90.00	23 1 50	1124.05	15.18	334.51	202.61	114.15	23 20 34	124.0	23.84	310.83
100.00	23 36 40	1011.39	11.37	324.35	200.71	117.79	23 53 32	11.4	21.83	301.85
110.00	23 42 34	6280.92	5.62	297.39	197.25	123.74	25 27 15	5280.9	18.80	276.85

DIFFERENTIAL CORRECTIONS

TDE	-.1940	TRA	-.5925	TC3	.6052	BAU	.1043														
RDE	-.3279	RRA	.1332	RC3	.1332	FAU	.08326														
FDE	-.1113	FRA	1.2543	FC3	-5.7245	BSP	1732														
BDE	.3810	BRA	.6072	BC3	.6197	FSP	601														

MID-COURSE EXECUTION ACCURACY

SGT	1204.8	SGR	590.2	SG3	403.2						
RRT	-.0792	RRF	.0971	RTF	-.7405						
SGB	1341.6	R23	-.0202	R13	.7413						
SG1	1206.0	SG2	587.8	THA	177.09						

ORBIT DETERMINATION ACCURACY

ST	22.6	SR	26.7	SS	17.3						
CRT	.5899	CRS	-.3763	CST	.5172						
LSA	31.3	MSA	23.2	SSA	1.7						
EL1	31.3	EL2	15.5	ALF	53.06						

LAUNCH DATE MAY 20 1971 FLIGHT TIME 136.00 ARRIVAL DATE OCT 3 1971

HELIOCENTRIC CONIC DISTANCE 340.800 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.800	GAL	.85	AZL	91.71	HCA	112.66	SMA	195.86	ECC	.22758	INC	1.7060	V1	29.433
RP	207.31	LAP	-1.57	LOP	351.02	VP	24.551	GAP	12.73	AZP	89.34	TAL	4.58	TAP	117.24	RCA	151.29	APO	240.44	V2	26.422
RC	80.098	GL	-16.23	GP	-1.39	ZAL	87.72	ZAP	152.79	ETS	182.85	ZAE	171.54	ETE	5.98	ZAC	97.82	ETC	278.89	LVI	-18.18

PLANETOCENTRIC CONIC

C3	12.203	VHL	3.493	DLA	-28.05	RAL	334.38	RAD	6639.2	VEL	11.501	PTH	6.55	VHP	5.404	DPA	-16.63	RAP	327.27	ECC	1.2008

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 43 16	2441.35	-4.46	63.94	187.60	137.42	16 23 58	1441.4	13.87	48.06
60.00	17 1 52	2232.29	.65	50.03	192.52	130.30	17 39 4	1232.3	16.48	31.64
70.00	18 45 17	1928.17	6.29	29.62	196.77	123.64	19 17 25	928.2	19.39	8.97
80.00	20 58 56	1509.71	12.23	1.42	200.32	117.45	21 24 5	509.7	22.48	338.72
90.00	23 15 36	1068.95	16.69	331.17	202.49	113.17	23 33 25	68.9	24.80	307.08
100.00	23 41 47	6272.22	12.23	300.69	200.32	117.45	25 26 20	5272.2	22.48	276.00
110.00	23 44 43	6263.03	6.29	296.45	196.77	123.64	25 29 6	5263.0	19.39	275.60

DIFFERENTIAL CORRECTIONS

TDE	-.1949	TRA	-.5864	TC3	.6006	BAU	.1003														
RDE	-.3208	RRA	.1308	RC3	.1307	FAU	.08758														
FDE	-.1291	FRA	1.3086	FC3	-6.2133	BSP	1809														
BDE	.3754	BRA	.6008	BC3	.6147	FSP	649														

MID-COURSE EXECUTION ACCURACY

SGT	1210.8	SGR	586.8	SG3	430.3						
RRT	-.0822	RRF	.1048	RTF	-.7304						
SGB	1345.4	R23	-.0266	R13	.7313						
SG1	1212.0	SG2	584.2	THA	177.03						

ORBIT DETERMINATION ACCURACY

ST	22.9	SR	26.6	SS	18.0						
CRT	.5942	CRS	-.4012	CST	.4893						
LSA	31.4	MSA	23.7	SSA	1.7						
EL1	31.4	EL2	15.6	ALF	52.09						

LAUNCH DATE MAY 20 1971 FLIGHT TIME 138.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 344.726 EARTH TO MARS

RL 131.38 LAL -.00 LOL 238.35 VL 32.747 GAL .88 AZL 91.70 HCA 113.92 SMA 194.87 ECC .22369 INC 1.6985 V1 29.433
RP 207.42 LAP -1.55 LOP 352.28 VP 24.467 GAP 12.40 AZP 89.31 TAL 4.80 TAP 118.73 RCA 151.28 APO 238.46 V2 26.409
RC 81.730 GL -16.38 GP -1.44 ZAL 87.42 ZAP 151.40 ETS 182.79 ZAE 172.28 ETE 5.09 ZAC 97.78 ETC 278.86 LVI -18.10

PLANETOCENTRIC CONIC

C3 11.846 VHL 3.442 DLA -28.30 RAL 334.12 RAD 6638.0 VEL 11.486 PTH 6.53 VHP 5.240 DPA -16.72 RAP 327.16 ECC 1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 43 35	2429.34	-3.86	63.44	187.13	137.46	16 24 4	1429.3	14.46	47.53
60.00	17 2 47	2218.65	1.25	49.38	192.04	130.28	17 39 46	1218.6	17.04	30.92
70.00	18 47 20	1911.17	6.93	28.72	196.31	123.53	19 19 12	911.2	19.94	7.97
80.00	21 4 9	1482.80	13.07	359.86	199.95	117.08	21 28 51	482.8	23.11	336.97
88.97	23 37 48	6275.20	19.51	304.30	202.94	110.91	25 22 23	5275.2	26.41	279.40
100.00	23 47 0	6245.31	13.07	299.13	199.95	117.08	25 31 6	5245.3	23.11	276.24
110.00	23 46 47	6246.03	6.93	295.55	196.31	123.53	25 30 53	5246.0	19.94	274.79

DIFFERENTIAL CORRECTIONS

TDE -.1936 TRA -.5778 TC3 .5905 BAU .0957
RDE -.3139 RRA .1286 RC3 .1275 FAU .09186
FDE -.1486 FRA 1.3650 FC3-6.7136 BSP 1843
BDE .3688 BRA .5920 BC3 .6042 FSP 699

MID-COURSE EXECUTION ACCURACY

SGT 1209.4 SGR 583.1 SG3 457.8
RRT -.0873 RRF .1137 RTF -.7206
SGB 1342.7 R23 -.0320 R13 .7217
SG1 1210.8 SG2 580.2 THA 176.87

ORBIT DETERMINATION ACCURACY

ST 23.0 SR 26.4 SS 18.7
CRT .5958 CRS -.4261 CST .4635
LSA 31.4 MSA 24.2 SSA 1.7
EL1 31.4 EL2 15.5 ALF 51.52

LAUNCH DATE MAY 20 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 348.676 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.698 GAL .91 AZL 91.69 HCA 115.18 SMA 193.96 ECC .22006 INC 1.6908 V1 29.433
RP 207.54 LAP -1.53 LOP 353.54 VP 24.386 GAP 12.07 AZP 89.28 TAL 5.02 TAP 120.20 RCA 151.27 APO 236.64 V2 26.395
RC 83.399 GL -16.52 GP -1.50 ZAL 87.13 ZAP 149.98 ETS 182.74 ZAE 173.08 ETE 4.05 ZAC 97.75 ETC 278.83 LVI -18.01

PLANETOCENTRIC CONIC

C3 11.516 VHL 3.394 DLA -28.53 RAL 333.87 RAD 6638.8 VEL 11.472 PTH 6.52 VHP 5.083 DPA -16.83 RAP 327.02 ECC 1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 43 52	2418.08	-3.30	62.96	186.68	137.49	16 24 10	1418.1	15.00	47.02
60.00	17 3 39	2205.84	1.82	48.77	191.59	130.27	17 40 25	1205.8	17.56	30.25
70.00	18 49 18	1895.11	7.54	27.87	195.89	123.41	19 20 53	895.1	20.46	7.C1
80.00	21 9 27	1456.20	13.89	358.31	199.62	116.70	21 33 44	456.2	23.70	335.21
86.05	23 12 25	1060.26	19.81	331.87	202.35	110.96	23 30 6	60.3	26.70	306.90
100.00	23 52 19	6218.71	13.89	297.58	199.62	116.70	25 35 58	5218.7	23.70	274.49
110.00	23 48 44	6229.97	7.54	294.69	195.89	123.41	25 32 34	5230.0	20.46	273.83

DIFFERENTIAL CORRECTIONS

TDE -.1916 TRA -.5678 TC3 .5891 BAU .0927
RDE -.3073 RRA .1267 RC3 .1230 FAU .09671
FDE -.1679 FRA 1.4245 FC3-7.2704 BSP 1846
BDE .3621 BRA .5818 BC3 .6018 FSP 750

MID-COURSE EXECUTION ACCURACY

SGT 1206.3 SGR 579.1 SG3 488.2
RRT -.0923 RRF .1227 RTF -.7143
SGB 1338.1 R23 -.0375 R13 .7156
SG1 1207.8 SG2 575.9 THA 176.72

ORBIT DETERMINATION ACCURACY

ST 23.0 SR 26.2 SS 19.4
CRT .5967 CRS -.4477 CST .4409
LSA 31.3 MSA 24.6 SSA 1.8
EL1 31.2 EL2 15.5 ALF 51.13

LAUNCH DATE MAY 20 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 352.649 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.652 GAL .93 AZL 91.68 HCA 116.44 SMA 193.11 ECC .21667 INC 1.6829 V1 29.433
RP 207.66 LAP -1.51 LOP 354.80 VP 24.309 GAP 11.75 AZP 89.25 TAL 5.23 TAP 121.67 RCA 151.27 APO 234.95 V2 26.381
RC 85.104 GL -16.64 GP -1.56 ZAL 86.86 ZAP 148.53 ETS 182.68 ZAE 173.95 ETE 2.77 ZAC 97.72 ETC 278.79 LVI -17.90

PLANETOCENTRIC CONIC

C3 11.213 VHL 3.349 DLA -28.75 RAL 333.63 RAD 6638.7 VEL 11.459 PTH 6.51 VHP 4.932 DPA -16.95 RAP 326.85 ECC 1.1845

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 7	2407.58	-2.77	62.53	186.26	137.51	16 24 14	1407.6	15.52	46.55
60.00	17 4 26	2193.89	2.34	48.19	191.17	130.24	17 41 0	1193.9	18.05	29.61
70.00	18 51 9	1880.04	8.10	27.07	195.48	123.29	19 22 29	880.0	20.94	6.10
80.00	21 14 52	1429.94	14.69	356.77	199.33	116.29	21 38 42	429.9	24.26	333.46
84.61	22 59 36	1093.13	20.09	334.39	201.80	111.01	23 17 49	93.1	26.97	309.37
100.00	0 1 39	6192.45	14.69	296.04	199.33	116.29	1 44 52	5192.4	24.26	272.74
110.00	23 50 35	6214.90	8.10	293.89	195.48	123.29	25 34 10	5214.9	20.94	272.92

DIFFERENTIAL CORRECTIONS

TDE -.1885 TRA -.5556 TC3 .5781 BAU .0884
RDE -.3009 RRA .1249 RC3 .1176 FAU .10164
FDE -.1918 FRA 1.4850 FC3-7.8478 BSP 1842
BDE .3551 BRA .5695 BC3 .5900 FSP 807

MID-COURSE EXECUTION ACCURACY

SGT 1195.7 SGR 575.0 SG3 519.3
RRT -.0984 RRF .1334 RTF -.[illegible]56
SGB 1326.8 R23 -.0436 R13 .7072
SG1 1197.5 SG2 571.4 THA 176.49

ORBIT DETERMINATION ACCURACY

ST 22.9 SR 26.0 SS 20.1
CRT .5972 CRS -.4736 CST .4139
LSA 31.2 MSA 25.0 SSA 1.8
EL1 31.1 EL2 15.4 ALF 50.99

LAUNCH DATE MAY 20 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 356.642 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.609 GAL .95 AZL 91.67 HCA 117.70 SMA 192.33 ECC .21352 INC 1.6749 V1 29.433
RP 207.80 LAP -1.48 LOP 356.05 VP 24.235 GAP 11.45 AZP 89.22 TAL 5.42 TAP 123.11 RCA 151.26 APO 233.39 V2 26.365
RC 86.843 GL -16.75 GP -1.62 ZAL 86.61 ZAP 147.04 ETS 182.63 ZAE 174.89 ETE 1.08 ZAC 97.70 ETC 278.74 LVI -17.78

PLANETOCENTRIC CONIC

C3 10.934 VHL 3.307 DLA -28.95 RAL 333.41 RAD 6638.5 VEL 11.446 PTH 6.50 VHP 4.787 DPA -17.09 RAP 326.64 ECC 1.1799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 20	2397.84	-2.28	62.12	185.86	137.53	16 24 17	1397.8	15.99	46.10
60.00	17 5 10	2182.80	2.83	47.66	190.77	130.22	17 41 32	1182.8	18.50	29.02
70.00	18 52 52	1866.00	8.62	26.32	195.11	123.18	19 23 58	866.0	21.38	5.25
80.00	21 20 21	1404.03	15.46	355.24	199.06	115.86	21 43 45	404.0	24.79	331.72
83.56	22 50 13	1115.41	20.35	336.14	201.29	111.04	23 8 48	115.4	27.22	311.06
100.00	0 7 9	6166.55	15.46	294.51	199.06	115.86	1 49 55	5166.5	24.79	271.00
110.00	23 52 19	6200.86	8.62	293.14	195.11	123.18	25 35 40	5200.9	21.38	272.07

DIFFERENTIAL CORRECTIONS

TDE -.1860 TRA -.5440 TC3 .5627 BAU .0838
RDE -.2946 RRA .1233 RC3 .1111 FAU .10684
FDE -.2143 FRA 1.5530 FC3-8.4596 BSP 1813
BDE .3485 BRA .5578 BC3 .5736 FSP 862

MID-COURSE EXECUTION ACCURACY

SGT 1184.4 SGR 570.7 SG3 552.5
RRT -.1051 RRF .1450 RTF -.6965
SGB 1314.7 R23 -.0503 R13 .6984
SG1 1186.3 SG2 566.6 THA 176.24

ORBIT DETERMINATION ACCURACY

ST 22.8 SR 25.8 SS 20.9
CRT .5984 CRS -.4937 CST .3915
LSA 31.2 MSA 25.4 SSA 1.8
EL1 30.9 EL2 15.3 ALF 50.77

LAUNCH DATE MAY 20 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 360.655 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.569	GAL	.97	AZL	91.67	HCA	118.95	SMA	191.60	ECC	.21059	INC	1.6667	V1	29.433
RP	207.94	LAP	-1.46	LOP	357.31	VP	24.163	GAP	11.14	AZP	89.19	TAL	5.59	TAP	124.54	RCA	151.25	APO	231.95	V2	26.349
RC	88.616	GL	-16.85	GP	-1.69	ZAL	86.38	ZAP	145.51	ETS	182.57	ZAE	175.90	ETE	358.59	ZAC	97.67	ETC	278.69	LVI	-17.65

PLANETOCENTRIC CONIC

C3	10.676	VHL	3.267	DLA	-29.12	RAL	333.21	RAD	6638.4	VEL	11.435	PTH	6.49	VHP	4.648	DPA	-17.24	RAP	326.40	ECC	1.1757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 31	2388.86	-1.83	61.74	185.50	137.55	16 24 20	1388.9	16.42	45.70
60.00	17 5 49	2172.58	3.28	47.17	190.40	130.19	17 42 1	1172.6	18.91	28.47
70.00	18 54 27	1853.03	9.11	25.63	194.76	123.06	19 25 20	853.0	21.78	4.46
80.00	21 25 55	1378.53	16.22	353.72	198.83	115.42	21 48 53	378.5	25.29	330.00
82.74	22 42 49	1131.78	20.59	337.44	200.81	111.07	23 1 41	131.8	27.44	312.31
100.00	0 12 42	6141.04	16.22	292.99	198.83	115.42	1 55 3	5141.0	25.29	269.27
110.00	23 53 54	6187.89	9.11	292.45	194.76	123.06	25 37 2	5187.9	21.78	271.28

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1836	TRA	-.5309	TC3	.5421	BAU	.0788	SGT	1168.2	SGR	566.1	SG3	587.0	ST	22.7	SR	25.6	SS	21.6
RDE	-.2886	RRA	.1218	RC3	.1035	FAU	.11231	RRT	-.1115	RRF	.1570	RTF	-.6852	CRT	.6010	CRS	-.5132	CST	.3676
FDE	-.2379	FRA	1.6196	FC3	-9.1073	BSP	1783	SGB	1298.2	R23	-.0579	R13	.6876	LSA	31.1	MSA	25.7	SSA	1.8
BDE	.3420	BRA	.5447	BC3	.5519	FSP	924	SG1	1170.4	SG2	561.5	THA	175.98	EL1	30.7	EL2	15.1	ALF	50.63

LAUNCH DATE MAY 20 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 364.685 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.532	GAL	.99	AZL	91.66	HCA	120.20	SMA	190.94	ECC	.20787	INC	1.6583	V1	29.433
RP	208.08	LAP	-1.43	LOP	358.56	VP	24.094	GAP	10.85	AZP	89.17	TAL	5.75	TAP	125.96	RCA	151.25	APO	230.63	V2	26.332
RC	90.421	GL	-16.94	GP	-1.76	ZAL	86.18	ZAP	143.95	ETS	182.52	ZAE	176.96	ETE	354.37	ZAC	97.65	ETC	278.63	LVI	-17.51

PLANETOCENTRIC CONIC

C3	10.438	VHL	3.231	DLA	-29.28	RAL	333.03	RAD	6638.3	VEL	11.425	PTH	6.48	VHP	4.515	DPA	-17.41	RAP	326.12	ECC	1.1718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 40	2380.64	-1.42	61.40	185.16	137.56	16 24 21	1380.6	16.82	45.32
60.00	17 6 23	2163.25	3.69	46.73	190.06	130.16	17 42 27	1163.2	19.29	27.97
70.00	18 55 53	1841.17	9.55	24.99	194.43	122.95	19 26 34	841.2	22.15	3.73
80.00	21 31 32	1353.46	16.94	352.21	198.63	114.96	21 54 5	353.5	25.77	328.28
82.07	22 36 50	1144.13	20.80	338.44	200.36	111.08	22 55 54	144.1	27.65	313.26
100.00	0 18 19	6115.97	16.94	291.48	198.63	114.96	2 0 15	5116.0	25.77	267.56
110.00	23 55 20	6176.03	9.55	291.81	194.43	122.95	25 38 16	5176.0	22.15	270.55

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1816	TRA	-.5168	TC3	.5161	BAU	.0732	SGT	1148.4	SGR	561.5	SG3	623.7	ST	22.5	SR	25.3	SS	22.4
RDE	-.2827	RRA	.1206	RC3	.0945	FAU	.11813	RRT	-.1175	RRF	.1702	RTF	-.6722	CRT	.6055	CRS	-.5317	CST	.3419
FDE	-.2628	FRA	1.6907	FC3	-9.7980	BSP	1736	SGB	1278.3	R23	-.0674	R13	.6751	LSA	31.2	MSA	26.0	SSA	1.8
BDE	.3360	BRA	.5306	BC3	.5247	FSP	987	SG1	1150.9	SG2	556.4	THA	175.71	EL1	30.5	EL2	14.9	ALF	50.49

LAUNCH DATE MAY 20 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 368.731 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.498	GAL	1.00	AZL	91.65	HCA	121.45	SMA	190.32	ECC	.20534	INC	1.6498	V1	29.433
RP	208.24	LAP	-1.41	LOP	359.81	VP	24.027	GAP	10.56	AZP	89.14	TAL	5.90	TAP	127.35	RCA	151.24	APO	229.40	V2	26.313
RC	92.259	GL	-17.02	GP	-1.83	ZAL	86.00	ZAP	142.34	ETS	182.46	ZAE	178.06	ETE	345.25	ZAC	97.63	ETC	278.56	LVI	-17.35

PLANETOCENTRIC CONIC

C3	10.219	VHL	3.197	DLA	-29.42	RAL	332.87	RAD	6638.2	VEL	11.415	PTH	6.47	VHP	4.388	DPA	-17.59	RAP	325.80	ECC	1.1682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 48	2373.17	-1.04	61.09	184.85	137.57	16 24 21	1373.2	17.18	44.97
60.00	17 6 53	2154.79	4.06	46.32	189.75	130.13	17 42 48	1154.8	19.63	27.51
70.00	18 57 9	1830.45	9.94	24.41	194.12	122.84	19 27 40	830.4	22.47	3.07
80.00	21 37 10	1328.91	17.64	350.72	198.45	114.49	21 59 19	328.9	26.20	326.59
81.54	22 31 57	1153.48	21.00	339.22	199.95	111.09	22 51 11	153.5	27.82	313.99
100.00	0 23 58	6091.43	17.64	290.00	198.45	114.49	2 5 30	5091.4	26.20	265.87
110.00	0 0 32	6165.31	9.94	291.24	194.12	122.84	1 43 17	5165.3	22.47	269.89

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1800	TRA	-.5024	TC3	.4784	BAU	.0664	SGT	1125.3	SGR	556.7	SG3	661.5	ST	22.4	SR	25.1	SS	23.1
RDE	-.2770	RRA	.1195	RC3	.0845	FAU	.12409	RRT	-.1239	RRF	.1842	RTF	-.6[illegible]49	CRT	.6110	CRS	-.5470	CST	.3180
FDE	-.2868	FRA	1.7642	FC3	-10.5127	BSP	1681	SGB	1255.5	R23	-.0780	R13	.6585	LSA	31.3	MSA	26.2	SSA	1.9
BDE	.3303	BRA	.5164	BC3	.4858	FSP	1054	SG1	1128.1	SG2	551.1	THA	175.39	EL1	30.2	EL2	14.7	ALF	50.33

LAUNCH DATE MAY 20 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 372.792 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.466	GAL	1.02	AZL	91.64	HCA	122.70	SMA	189.76	ECC	.20299	INC	1.6410	V1	29.433
RP	208.41	LAP	-1.38	LOP	1.06	VP	23.963	GAP	10.28	AZP	89.11	TAL	6.03	TAP	128.73	RCA	151.24	APO	228.27	V2	26.294
RC	94.128	GL	-17.08	GP	-1.90	ZAL	85.85	ZAP	140.71	ETS	182.40	ZAE	179.04	ETE	313.80	ZAC	97.62	ETC	278.48	LVI	-17.18

PLANETOCENTRIC CONIC

C3	10.017	VHL	3.165	DLA	-29.54	RAL	332.74	RAD	6638.1	VEL	11.407	PTH	6.46	VHP	4.267	DPA	-17.79	RAP	325.44	ECC	1.1648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 55	2366.45	-.70	60.81	184.56	137.57	16 24 21	1366.4	17.50	44.66
60.00	17 7 19	2147.22	4.39	45.96	189.46	130.10	17 43 6	1147.2	19.93	27.10
70.00	18 58 15	1820.91	10.29	23.90	193.84	122.75	19 28 36	820.9	22.76	2.48
80.00	21 42 48	1305.01	18.31	349.26	198.31	114.01	22 4 33	305.0	26.61	324.93
81.10	22 28 2	1160.29	21.18	339.80	199.57	111.08	22 47 22	160.3	27.98	314.53
100.00	0 29 36	6067.53	18.31	288.54	198.31	114.01	2 10 44	5067.5	26.61	264.21
110.00	0 1 37	6155.76	10.29	290.72	193.84	122.75	1 44 13	5155.8	22.76	269.30

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1791	TRA	-.4876	TC3	.4301	BAU	.0584	SGT	1099.5	SGR	551.9	SG3	700.7	ST	22.2	SR	24.8	SS	24.0
RDE	-.2714	RRA	.1187	RC3	.0733	FAU	.13020	RRT	-.1294	RRF	.1997	RTF	-.6333	CRT	.6189	CRS	-.5617	CST	.2916
FDE	-.3123	FRA	1.8429	FC3	-11.2535	BSP	1616	SGB	1230.2	R23	-.0917	R13	.6378	LSA	31.5	MSA	26.3	SSA	1.9
BDE	.3252	BRA	.5019	BC3	.4363	FSP	1123	SG1	1102.5	SG2	545.7	THA	175.07	EL1	30.1	EL2	14.4	ALF	50.08

LAUNCH DATE MAY 20 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 376.868 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.436 GAL 1.03 AZL 91.63 HCA 123.95 SMA 189.23 ECC .20081 INC 1.6319 V1 29.433
RP 208.58 LAP -1.35 LOP 2.31 VP 23.901 GAP 10.01 AZP 89.09 TAL 6.14 TAP 130.09 RCA 151.23 APO 227.23 V2 26.274
RC 96.027 GL -17.13 GP -1.98 ZAL 85.72 ZAP 139.03 ETS 182.35 ZAE 178.92 ETE 234.90 ZAC 97.60 ETC 278.39 LVI -17.00

PLANETOCENTRIC CONIC

C3 9.830 VHL 3.135 DLA -29.63 RAL 332.62 RAD 6638.0 VEL 11.399 PTH 6.45 VHP 4.151 DPA -18.00 RAP 325.04 ECC 1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 59	2360.45	-.40	60.56	184.31	137.57	16 24 20	1360.4	17.79	44.38
60.00	17 7 39	2140.51	4.69	45.63	189.19	130.07	17 43 20	1140.5	20.20	26.73
70.00	18 59 9	1812.52	10.60	23.44	193.58	122.66	19 29 22	812.5	23.01	1.96
80.00	21 48 24	1281.81	18.95	347.83	198.18	113.52	22 9 46	281.8	26.98	323.31
80.76	22 24 53	1165.13	21.34	340.22	199.23	111.06	22 44 18	165.1	28.12	314.91
100.00	0 35 12	6044.32	18.95	287.11	198.18	113.52	2 15 56	5044.3	26.98	262.58
110.00	0 2 32	6147.38	10.60	290.27	193.58	122.66	1 44 59	5147.4	23.01	268.78

DIFFERENTIAL CORRECTIONS
TDE -.1735 TRA -.4677 TC3 .3962 BAU .0527
RDE -.2661 RRA .1179 RC3 .0603 FAU .13702
FDE -.3453 FRA 1.9195 FC-12.0673 BSP 1480
BDE .3177 BRA .4823 BC3 .4007 FSP 1188

MID-COURSE EXECUTION ACCURACY
SGT 1062.7 SGR 547.1 SG3 742.9
RRT -.1378 RRF .2170 RTF -.6181
SGB 1195.2 R23 -.1031 R13 .6238
SG1 1066.3 SG2 540.1 THA 174.54

ORBIT DETERMINATION ACCURACY
ST 21.7 SR 24.6 SS 24.8
CRT .6208 CRS -.5825 CST .2648
LSA 31.8 MSA 26.0 SSA 1.9
EL1 29.6 EL2 14.1 ALF 50.81

LAUNCH DATE MAY 20 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 380.955 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.409 GAL 1.03 AZL 91.62 HCA 125.20 SMA 188.76 ECC .19880 INC 1.6227 V1 29.433
RP 208.76 LAP -1.33 LOP 3.56 VP 23.841 GAP 9.74 AZP 89.06 TAL 6.23 TAP 131.43 RCA 151.23 APO 226.28 V2 26.254
RC 97.955 GL -17.17 GP -2.06 ZAL 85.62 ZAP 137.32 ETS 182.29 ZAE 177.75 ETE 208.71 ZAC 97.59 ETC 278.30 LVI -16.80

PLANETOCENTRIC CONIC

C3 9.658 VHL 3.108 DLA -29.71 RAL 332.53 RAD 6637.9 VEL 11.391 PTH 6.44 VHP 4.041 DPA -18.23 RAP 324.61 ECC 1.1589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 3	2355.22	-.14	60.34	184.08	137.58	16 24 18	1355.2	18.04	44.14
60.00	17 7 55	2134.74	4.94	45.36	188.96	130.05	17 43 30	1134.7	20.42	26.42
70.00	18 59 52	1805.44	10.86	23.06	193.35	122.58	19 29 57	805.4	23.22	1.51
80.00	21 53 39	1260.31	19.52	346.50	198.08	113.05	22 14 40	260.3	27.31	321.80
80.50	22 22 32	1168.03	21.47	340.49	198.92	111.04	22 42 0	168.0	28.23	315.15
100.00	0 40 27	6022.82	19.52	285.77	198.08	113.05	2 20 50	5022.8	27.31	261.07
110.00	0 3 14	6140.30	10.86	289.88	193.35	122.58	1 45 35	5140.3	23.22	268.34

DIFFERENTIAL CORRECTIONS
TDE -.1786 TRA -.4562 TC3 .3096 BAU .0404
RDE -.2606 RRA .1175 RC3 .0471 FAU .14324
FDE -.3622 FRA 2.0122 FC-12.8395 BSP 1455
BDE .3159 BRA .4711 BC3 .3132 FSP 1272

MID-COURSE EXECUTION ACCURACY
SGT 1040.7 SGR 542.2 SG3 784.2
RRT -.1376 RRF .2342 RTF -.5772
SGB 1173.4 R23 -.1273 R13 .5843
SG1 1044.3 SG2 535.1 THA 174.43

ORBIT DETERMINATION ACCURACY
ST 22.0 SR 24.3 SS 25.6
CRT .6391 CRS -.5848 CST .2390
LSA 32.1 MSA 26.3 SSA 1.9
EL1 29.7 EL2 13.8 ALF 49.55

LAUNCH DATE MAY 20 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 385.054 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.383 GAL 1.04 AZL 91.61 HCA 126.44 SMA 188.32 ECC .19695 INC 1.6131 V1 29.433
RP 208.94 LAP -1.30 LOP 4.80 VP 23.782 GAP 9.48 AZP 89.04 TAL 6.31 TAP 132.75 RCA 151.23 APO 225.40 V2 26.232
RC 99.910 GL -17.20 GP -2.15 ZAL 85.55 ZAP 135.57 ETS 182.22 ZAE 176.38 ETE 200.60 ZAC 97.58 ETC 278.20 LVI -16.59

PLANETOCENTRIC CONIC

C3 9.499 VHL 3.082 DLA -29.76 RAL 332.46 RAD 6637.8 VEL 11.384 PTH 6.44 VHP 3.936 DPA -18.48 RAP 324.13 ECC 1.1563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 5	2350.71	.09	60.15	183.89	137.58	16 24 16	1350.7	18.26	43.93
60.00	17 8 6	2129.83	5.16	45.12	188.75	130.03	17 43 36	1129.8	20.62	26.15
70.00	19 0 22	1799.57	11.08	22.74	193.13	122.52	19 30 22	799.6	23.39	1.15
80.00	21 58 24	1240.99	20.03	345.29	197.98	112.61	22 19 5	241.0	27.59	320.43
80.32	22 20 52	1169.20	21.59	340.63	198.64	111.00	22 40 21	169.2	28.31	315.25
100.00	0 45 12	6003.50	20.03	284.57	197.98	112.61	2 25 16	5003.5	27.59	259.70
110.00	0 3 45	6134.44	11.08	289.57	193.13	122.52	1 45 59	5134.4	23.39	267.97

DIFFERENTIAL CORRECTIONS
TDE -.1808 TRA -.4398 TC3 .2285 BAU .0293
RDE -.2553 RRA .1171 RC3 .0322 FAU .14994
FDE -.3805 FRA 2.0992 FC-13.6651 BSP 1366
BDE .3128 BRA .4551 BC3 .2307 FSP 1350

MID-COURSE EXECUTION ACCURACY
SGT 1009.8 SGR 537.2 SG3 827.2
RRT -.1363 RRF .2520 RTF -.[illegible]60
SGB 1143.8 R23 -.1523 R13 .5447
SG1 1013.5 SG2 530.2 THA 174.28

ORBIT DETERMINATION ACCURACY
ST 22.0 SR 24.0 SS 26.2
CRT .6552 CRS -.5892 CST .2130
LSA 32.4 MSA 26.3 SSA 1.9
EL1 29.6 EL2 13.4 ALF 48.92

LAUNCH DATE MAY 20 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 389.165 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.360 GAL 1.04 AZL 91.60 HCA 127.68 SMA 187.91 ECC .19524 INC 1.6032 V1 29.433
RP 209.14 LAP -1.27 LOP 6.04 VP 23.726 GAP 9.22 AZP 89.02 TAL 6.37 TAP 134.05 RCA 151.23 APO 224.60 V2 26.209
RC 101.892 GL -17.22 GP -2.23 ZAL 85.50 ZAP 133.78 ETS 182.16 ZAE 174.91 ETE 196.75 ZAC 97.57 ETC 278.08 LVI -16.36

PLANETOCENTRIC CONIC

C3 9.353 VHL 3.058 DLA -29.79 RAL 332.42 RAD 6637.7 VEL 11.378 PTH 6.43 VHP 3.836 DPA -18.74 RAP 323.62 ECC 1.1539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 6	2346.91	.28	59.99	183.71	137.58	16 24 13	1346.9	18.44	43.75
60.00	17 8 13	2125.79	5.33	44.93	188.56	130.01	17 43 38	1125.8	20.78	25.92
70.00	19 0 41	1794.95	11.25	22.49	192.94	122.46	19 30 35	794.9	23.53	.86
80.00	22 2 0	1225.91	20.43	344.34	197.87	112.26	22 22 26	225.9	27.80	319.36
80.21	22 19 51	1168.86	21.69	340.64	198.40	110.95	22 39 20	168.9	28.38	315.24
100.00	0 48 48	5988.42	20.43	283.62	197.87	112.26	2 28 36	4988.4	27.80	258.63
110.00	0 4 3	6129.81	11.25	289.31	192.94	122.46	1 46 13	5129.8	23.53	267.68

DIFFERENTIAL CORRECTIONS
TDE -.1823 TRA -.4231 TC3 .1382 BAU .0174
RDE -.2501 RRA .1171 RC3 .0161 FAU .15683
FDE -.4031 FRA 2.1979 FC-14.5168 BSP 1259
BDE .3095 BRA .4390 BC3 .1392 FSP 1430

MID-COURSE EXECUTION ACCURACY
SGT 978.8 SGR 532.5 SG3 872.3
RRT -.1344 RRF .2727 RTF -.4884
SGB 1114.2 R23 -.1818 R13 .4992
SG1 982.4 SG2 525.7 THA 174.13

ORBIT DETERMINATION ACCURACY
ST 21.9 SR 23.7 SS 27.1
CRT .6700 CRS -.5956 CST .1857
LSA 32.8 MSA 26.3 SSA 1.9
EL1 29.5 EL2 13.1 ALF 48.44

LAUNCH DATE MAY 20 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 393.285 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.339	GAL	1.04	AZL	91.59	HCA	128.92	SMA	187.55	ECC	.19366	INC	1.5931	VI	29.433
RP	209.34	LAP	-1.24	LOP	7.28	VP	23.671	GAP	8.97	AZP	89.00	TAL	6.41	TAP	135.32	RCA	151.23	APO	223.87	V2	26.186
RC	103.900	GL	-17.22	GP	-2.33	ZAL	85.48	ZAP	131.96	ETS	182.09	ZAE	173.36	ETE	194.47	ZAC	97.56	ETC	277.96	LVI	-16.12

PLANETOCENTRIC CONIC

C3	9.218	VHL	3.036	DLA	-29.81	RAL	332.40	RAD	6637.6	VEL	11.372	PTH	6.42	VHP	3.742	DPA	-19.01	RAP	323.07	ECC	1.1517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 5	2343.82	.43	59.86	183.57	137.57	16 24 9	1343.8	18.59	43.61
60.00	17 8 14	2122.62	5.47	44.77	188.40	129.99	17 43 37	1122.6	20.90	25.75
70.00	19 0 46	1791.59	11.37	22.31	192.76	122.42	19 30 37	791.6	23.63	.64
80.00	22 3 26	1218.26	20.62	343.86	197.71	112.08	22 23 44	218.3	27.90	318.81
80.17	22 19 31	1166.89	21.76	340.53	198.19	110.88	22 38 58	166.9	28.42	315.10
100.00	0 50 14	5980.77	20.62	283.13	197.71	112.08	2 29 54	4980.8	27.90	258.09
110.00	0 4 8	6126.44	11.37	289.13	192.76	122.42	1 46 15	5126.4	23.63	267.47

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1832	TRA	-.4038	TC3	.0426	BAU	.0053	SGT	944.1	SGR	527.8	SG3	918.5	ST	21.7	SR	23.4	SS	27.8
RDE	-.2450	RRA	.1171	RC3	-.0015	FAU	.16404	RRT	-.1280	RRF	.2939	RTF	-.4325	CRT	.6860	CRS	-.6025	CST	.1555
FDE	-.4237	FRA	2.2913	FC	-15.4071	BSP	1132	SGB	1081.6	R23	-.2157	R13	.4454	LSA	33.3	MSA	26.2	SSA	1.9
BDE	.3059	BRA	.4204	BC3	.0426	FSP	1509	SG1	947.6	SG2	521.6	THA	174.12	EL1	29.4	EL2	12.6	ALF	48.13

LAUNCH DATE MAY 20 1971 FLIGHT TIME 164.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 397.414 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.319	GAL	1.04	AZL	91.58	HCA	130.15	SMA	187.21	ECC	.19221	INC	1.5826	VI	29.433
RP	209.55	LAP	-1.21	LOP	8.51	VP	23.617	GAP	8.73	AZP	88.98	TAL	6.43	TAP	136.58	RCA	151.23	APO	223.19	V2	26.162
RC	105.933	GL	-17.22	GP	-2.42	ZAL	85.49	ZAP	130.10	ETS	182.02	ZAE	171.78	ETE	192.95	ZAC	97.55	ETC	277.84	LVI	-15.86

PLANETOCENTRIC CONIC

C3	9.093	VHL	3.015	DLA	-29.80	RAL	332.40	RAD	6637.6	VEL	11.367	PTH	6.42	VHP	3.653	DPA	-19.30	RAP	322.47	ECC	1.1496

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 3	2341.41	.55	59.76	183.45	137.57	16 24 5	1341.4	18.71	43.50
60.00	17 8 10	2120.28	5.57	44.66	188.26	129.98	17 43 30	1120.3	20.99	25.62
70.00	19 0 39	1789.43	11.45	22.19	192.60	122.40	19 30 28	789.4	23.69	.51
80.00	22 2 8	1219.83	20.58	343.96	197.49	112.12	22 22 28	219.8	27.88	318.92
80.20	22 19 47	1163.47	21.82	340.30	198.02	110.81	22 39 10	163.5	28.44	314.85
100.00	0 48 56	5982.35	20.58	283.23	197.49	112.12	2 28 38	4982.3	27.88	258.20
110.00	0 4 1	6124.28	11.45	289.01	192.60	122.40	1 46 5	5124.3	23.69	267.33

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1804	TRA	-.3792	TC3	-.0450	BAU	.0061	SGT	898.6	SGR	523.5	SG3	967.3	ST	21.2	SR	23.1	SS	28.6
RDE	-.2402	RRA	.1170	RC3	-.0214	FAU	.17199	RRT	-.1191	RRF	.3171	RTF	-.3728	CRT	.7000	CRS	-.6184	CST	.1159
FDE	-.4597	FRA	2.3750	FC	-16.3749	BSP	937	SGB	1040.0	R23	-.2520	R13	.3885	LSA	33.8	MSA	25.6	SSA	1.9
BDE	.3004	BRA	.3968	BC3	.0498	FSP	1575	SG1	901.8	SG2	517.9	THA	174.07	EL1	28.9	EL2	12.1	ALF	48.60

LAUNCH DATE MAY 20 1971 FLIGHT TIME 166.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 401.551 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.301	GAL	1.03	AZL	91.57	HCA	131.39	SMA	186.90	ECC	.19089	INC	1.5717	VI	29.433
RP	209.76	LAP	-1.18	LOP	9.75	VP	23.565	GAP	8.49	AZP	88.96	TAL	6.43	TAP	137.82	RCA	151.23	APO	222.58	V2	26.137
RC	107.990	GL	-17.20	GP	-2.52	ZAL	85.53	ZAP	128.21	ETS	181.94	ZAE	170.12	ETE	191.84	ZAC	97.54	ETC	277.70	LVI	-15.59

PLANETOCENTRIC CONIC

C3	8.979	VHL	2.996	DLA	-29.76	RAL	332.44	RAD	6637.5	VEL	11.362	PTH	6.41	VHP	3.569	DPA	-19.60	RAP	321.85	ECC	1.1478

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 45 0	2339.75	.64	59.69	183.36	137.57	16 24 0	1339.8	18.78	43.42
60.00	17 8 2	2118.87	5.64	44.59	188.15	129.97	17 43 21	1118.9	21.05	25.54
70.00	19 0 18	1788.61	11.48	22.14	192.47	122.39	19 30 7	788.6	23.72	.46
80.00	21 58 23	1229.86	20.32	344.59	197.23	112.36	22 18 53	229.9	27.74	319.64
80.31	22 20 47	1158.30	21.86	339.93	197.87	110.72	22 40 5	158.3	28.44	314.47
100.00	0 45 11	5992.37	20.32	283.87	197.23	112.36	2 25 3	4992.4	27.74	258.91
110.00	0 3 40	6123.46	11.48	288.97	192.47	122.39	1 45 44	5123.5	23.72	267.28

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1898	TRA	-.3663	TC3	-.1999	BAU	.0245	SGT	892.9	SGR	519.2	SG3	1013.0	ST	21.8	SR	22.8	SS	29.3
RDE	-.2349	RRA	.1178	RC3	-.0400	FAU	.17845	RRT	-.0939	RRF	.3406	RTF	-.1.60	CRT	.7249	CRS	-.6070	CST	.0947
FDE	-.4618	FRA	2.5011	FC	-17.2063	BSP	885	SGB	1032.9	R23	-.3027	R13	.2907	LSA	34.2	MSA	26.1	SSA	1.9
BDE	.3020	BRA	.3848	BC3	.2039	FSP	1681	SG1	894.9	SG2	515.8	THA	175.31	EL1	29.3	EL2	11.7	ALF	46.72

LAUNCH DATE MAY 20 1971 FLIGHT TIME 168.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 405.695 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.285	GAL	1.02	AZL	91.56	HCA	132.62	SMA	186.63	ECC	.18968	INC	1.5604	VI	29.433
RP	209.99	LAP	-1.15	LOP	10.98	VP	23.514	GAP	8.26	AZP	88.94	TAL	6.41	TAP	139.03	RCA	151.23	APO	222.03	V2	26.111
RC	110.071	GL	-17.16	GP	-2.62	ZAL	85.59	ZAP	126.29	ETS	181.86	ZAE	168.41	ETE	190.98	ZAC	97.53	ETC	277.55	LVI	-15.30

PLANETOCENTRIC CONIC

C3	8.873	VHL	2.979	DLA	-29.71	RAL	332.50	RAD	6637.5	VEL	11.357	PTH	6.41	VHP	3.490	DPA	-19.91	RAP	321.19	ECC	1.1460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 56	2338.75	.69	59.65	183.30	137.57	16 23 55	1338.7	18.83	43.37
60.00	17 7 48	2118.27	5.66	44.56	188.07	129.97	17 43 7	1118.3	21.07	25.51
70.00	18 59 45	1788.97	11.46	22.16	192.35	122.39	19 29 34	789.0	23.71	.48
80.00	21 53 33	1243.79	19.96	345.47	196.95	112.68	22 14 17	243.8	27.55	320.63
80.50	22 22 25	1151.53	21.87	339.43	197.76	110.62	22 41 36	151.5	28.41	313.96
100.00	0 40 21	6006.30	19.96	284.74	196.95	112.68	2 20 27	5006.3	27.55	259.90
110.00	0 3 7	6123.82	11.46	288.99	192.35	122.39	1 45 11	5123.8	23.71	267.30

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1938	TRA	-.3453	TC3	-.3393	BAU	.0409	SGT	874.4	SGR	515.1	SG3	1060.1	ST	21.9	SR	22.4	SS	29.9
RDE	-.2298	RRA	.1184	RC3	-.0608	FAU	.18560	RRT	-.0633	RRF	.3648	RTF	-.1767	CRT	.7465	CRS	-.6045	CST	.0657
FDE	-.4720	FRA	2.6067	FC	-18.1093	BSP	743	SGB	1014.9	R23	-.3482	R13	.1884	LSA	34.5	MSA	26.1	SSA	1.9
BDE	.3006	BRA	.3651	BC3	.3447	FSP	1765	SG1	875.4	SG2	513.6	THA	176.74	EL1	29.3	EL2	11.2	ALF	45.97

LAUNCH DATE MAY 20 1971 FLIGHT TIME 170.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 409.847 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.270	GAL	1.01	AZL	91.55	HCA	133.85	SMA	186.38	ECC	.18858	INC	1.5487	V1	29.433
RP	210.22	LAP	-1.12	LOP	12.21	VP	23.464	GAP	8.03	AZP	88.93	TAL	6.36	TAP	140.23	RCA	151.23	APO	221.52	V2	26.085
RC	112.177	GL	-17.12	GP	-2.73	ZAL	85.69	ZAP	124.34	ETS	181.78	ZAE	166.64	ETE	190.29	ZAC	97.52	ETC	277.40	LVI	-15.00

PLANETOCENTRIC CONIC

C3	8.776	VHL	2.962	DLA	-29.63	RAL	332.58	RAD	6637.4	VEL	11.353	PTH	6.41	VHP	3.417	DPA	-20.23	RAP	320.49	ECC	1.1444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 50	2338.42	.70	59.64	183.26	137.57	16 23 49	1338.4	18.85	43.35
60.00	17 7 30	2118.50	5.65	44.57	188.00	129.97	17 42 48	1118.5	21.06	25.52
70.00	18 59 0	1790.54	11.41	22.25	192.26	122.41	19 28 50	790.5	23.66	.58
80.00	21 48 9	1260.07	19.53	346.48	196.68	113.04	22 9 9	260.1	27.32	321.78
80.76	22 24 46	1142.98	21.87	338.79	197.68	110.51	22 43 49	143.0	28.36	313.32
100.00	0 34 57	6022.58	19.53	285.76	196.68	113.04	2 15 20	5022.6	27.32	261.05
110.00	0 2 22	6125.39	11.41	289.07	192.26	122.41	1 44 27	5125.4	23.66	267.40

DIFFERENTIAL CORRECTIONS

TDE	-.1975	TRA	-.3237	TC3	-.4915	BAU	.0585												
RDE	-.2248	RRA	.1192	RC3	-.0826	FAU	.19268												
FDE	-.4847	FRA	2.7186	FC-19.0073		BSP	609												
BDE	.2992	BRA	.3449	BC3	.4984	FSP	1857												

MID-COURSE EXECUTION ACCURACY

SGT	865.6	SGR	511.6	SG3	1107.4				
RRT	-.0243	RRF	.3909	RTF	-.0648				
SGB	1005.5	R23	-.3886	R13	.0699				
SG1	865.8	SG2	511.4	THA	178.73				

ORBIT DETERMINATION ACCURACY

ST	21.9	SR	22.1	SS	30.6
CRT	.7674	CRS	-.6038	CST	.0343
LSA	35.0	MSA	26.0	SSA	1.9
EL1	29.3	EL2	10.6	ALF	45.26

LAUNCH DATE MAY 20 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 414.005 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.257	GAL	1.00	AZL	91.54	HCA	135.07	SMA	186.15	ECC	.18758	INC	1.5366	V1	29.433
RP	210.45	LAP	-1.09	LOP	13.43	VP	23.416	GAP	7.81	AZP	88.91	TAL	6.33	TAP	141.40	RCA	151.23	APO	221.07	V2	26.058
RC	114.307	GL	-17.06	GP	-2.84	ZAL	85.81	ZAP	122.37	ETS	181.69	ZAE	164.83	ETE	189.72	ZAC	97.50	ETC	277.24	LVI	-14.68

PLANETOCENTRIC CONIC

C3	8.687	VHL	2.947	DLA	-29.53	RAL	332.69	RAD	6637.4	VEL	11.349	PTH	6.40	VHP	3.348	DPA	-20.57	RAP	319.77	ECC	1.1430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 43	2338.76	.69	59.65	183.24	137.57	16 23 42	1338.8	18.83	43.37
60.00	17 7 7	2119.55	5.61	44.63	187.96	129.98	17 42 26	1119.5	21.02	25.58
70.00	18 58 2	1793.21	11.31	22.40	192.18	122.44	19 27 55	793.2	23.58	.75
80.00	21 42 30	1277.69	19.06	347.58	196.43	113.43	22 3 47	277.7	27.05	323.02
81.11	22 27 55	1132.34	21.85	338.00	197.63	110.38	22 46 47	132.3	28.29	312.51
100.00	0 29 17	6040.20	19.06	286.85	196.43	113.43	2 9 58	5040.2	27.05	262.30
110.00	0 1 24	6128.13	11.31	289.22	192.18	122.44	1 43 32	5128.1	23.58	267.57

DIFFERENTIAL CORRECTIONS

TDE	-.2012	TRA	-.3007	TC3	-.6530	BAU	.0768												
RDE	-.2198	RRA	.1202	RC3	-.1058	FAU	.19987												
FDE	-.4950	FRA	2.8333	FC-19.9194		BSP	477												
BDE	.2980	BRA	.3238	BC3	.6615	FSP	1937												

MID-COURSE EXECUTION ACCURACY

SGT	867.4	SGR	508.5	SG3	1155.5				
RRT	.0242	RRF	.4182	RTF	.0555				
SGB	1005.5	R23	-.4162	R13	.0608				
SG1	867.6	SG2	508.2	THA	1.24				

ORBIT DETERMINATION ACCURACY

ST	22.0	SR	21.7	SS	31.2
CRT	.7885	CRS	-.6020	CST	.0023
LSA	35.4	MSA	26.0	SSA	1.9
EL1	29.3	EL2	10.1	ALF	44.55

LAUNCH DATE MAY 20 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 418.168 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.245	GAL	.98	AZL	91.52	HCA	136.30	SMA	185.95	ECC	.18668	INC	1.5239	V1	29.433
RP	210.70	LAP	-1.05	LOP	13.65	VP	23.368	GAP	7.59	AZP	88.90	TAL	6.26	TAP	142.55	RCA	151.24	APO	220.66	V2	26.030
RC	116.460	GL	-17.00	GP	-2.96	ZAL	85.96	ZAP	120.36	ETS	181.60	ZAE	162.98	ETE	189.23	ZAC	97.49	ETC	277.07	LVI	-14.35

PLANETOCENTRIC CONIC

C3	8.605	VHL	2.933	DLA	-29.41	RAL	332.82	RAD	6637.3	VEL	11.345	PTH	6.40	VHP	3.283	DPA	-20.91	RAP	319.01	ECC	1.1416

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 34	2339.75	.64	59.69	183.25	137.57	16 23 34	1339.8	18.78	43.42
60.00	17 6 39	2121.41	5.52	44.72	187.94	129.98	17 42 0	1121.4	20.95	25.68
70.00	18 56 53	1797.15	11.17	22.61	192.11	122.49	19 26 50	797.2	23.47	.99
80.00	21 36 43	1296.20	18.55	348.72	196.20	113.82	21 58 19	296.2	26.76	324.32
81.55	22 31 54	1119.44	21.80	337.02	197.60	110.25	22 50 34	119.4	28.19	311.54
100.00	0 23 31	6058.71	18.55	287.99	196.20	113.82	2 4 29	5058.7	26.76	263.59
110.00	0 0 15	6132.01	11.17	289.43	192.11	122.49	1 42 27	5132.0	23.47	267.82

DIFFERENTIAL CORRECTIONS

TDE	-.2052	TRA	-.2758	TC3	-.6266	BAU	.0983												
RDE	-.2147	RRA	.1213	RC3	-.1299	FAU	.20689												
FDE	-.4988	FRA	2.9449	FC-20.8144		BSP	398												
BDE	.2970	BRA	.3013	BC3	.8367	FSP	2019												

MID-COURSE EXECUTION ACCURACY

SGT	882.3	SGR	505.6	SG3	1202.4				
RRT	.0825	RRF	.4456	RTF	.[illegible]15				
SGB	1016.9	R23	.4245	R13	.1986				
SG1	883.7	SG2	503.0	THA	4.01				

ORBIT DETERMINATION ACCURACY

ST	22.1	SR	21.4	SS	31.7
CRT	.8102	CRS	-.5973	CST	-.0286
LSA	35.8	MSA	25.9	SSA	1.9
EL1	29.2	EL2	9.5	ALF	43.80

LAUNCH DATE MAY 20 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 422.337 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.234	GAL	.97	AZL	91.51	HCA	137.51	SMA	185.77	ECC	.18587	INC	1.5107	V1	29.433
RP	210.95	LAP	-1.02	LOP	15.87	VP	23.321	GAP	7.38	AZP	88.89	TAL	6.17	TAP	143.68	RCA	151.24	APO	220.30	V2	26.001
RC	118.637	GL	-16.91	GP	-3.08	ZAL	86.14	ZAP	118.34	ETS	181.50	ZAE	161.08	ETE	188.81	ZAC	97.47	ETC	276.90	LVI	-14.00

PLANETOCENTRIC CONIC

C3	8.530	VHL	2.921	DLA	-29.27	RAL	332.98	RAD	6637.3	VEL	11.342	PTH	6.39	VHP	3.224	DPA	-21.27	RAP	318.23	ECC	1.1404

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 24	2341.39	.56	59.76	183.29	137.57	16 23 25	1341.4	18.71	43.49
60.00	17 6 5	2124.07	5.41	44.84	187.94	130.00	17 41 30	1124.1	20.85	25.83
70.00	18 55 32	1802.14	10.98	22.88	192.07	122.54	19 25 34	802.1	23.32	1.31
80.00	21 30 54	1315.29	18.02	349.89	195.99	114.21	21 52 50	315.3	26.44	325.65
82.11	22 36 54	1103.74	21.74	335.84	197.60	110.10	22 55 18	103.7	28.07	310.36
100.00	0 17 42	6077.80	18.02	289.17	195.99	114.21	1 59 0	5077.8	26.44	264.92
110.00	23 54 59	6137.00	10.98	289.70	192.07	122.54	25 37 16	5137.0	23.32	268.13

DIFFERENTIAL CORRECTIONS

TDE	-.2069	TRA	-.2474	TC3	-1.0003	BAU	.1155												
RDE	-.2099	RRA	.1223	RC3	-.1564	FAU	.21454												
FDE	-.5158	FRA	3.0398	FC-21.7728		BSP	430												
BDE	.2947	BRA	.2759	BC3	1.0124	FSP	2092												

MID-COURSE EXECUTION ACCURACY

SGT	903.1	SGR	503.5	SG3	1250.6				
RRT	.1486	RRF	.4745	RTF	.3090				
SGB	1034.0	R23	.4125	R13	.3363				
SG1	907.5	SG2	495.5	THA	6.76				

ORBIT DETERMINATION ACCURACY

ST	22.0	SR	21.0	SS	32.3
CRT	.8318	CRS	-.6027	CST	-.0738
LSA	36.3	MSA	25.4	SSA	1.9
EL1	29.1	EL2	8.8	ALF	43.46

LAUNCH DATE MAY 20 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 426.510 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.224 GAL .95 AZL 91.50 HCA 138.73 SMA 185.61 ECC .18515 INC 1.4969 V1 29.433
RP 211.20 LAP -.99 LOP 17.09 VP 23.276 GAP 7.17 AZP 88.87 TAL 6.06 TAP 144.79 RCA 151.25 APO 219.98 V2 25.972
RC 120.836 GL -16.82 GP -3.20 ZAL 86.35 ZAP 116.30 ETS 181.39 ZAE 159.15 ETE 188.43 ZAC 97.44 ETC 276.72 LVI -13.64

PLANETOCENTRIC CONIC

C3 8.462 VHL 2.909 DLA -29.11 RAL 333.16 RAD 6637.2 VEL 11.339 PTH 6.39 VHP 3.169 DPA -21.62 RAP 317.42 ECC 1.1393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 44 12	2343.72	.44	59.86	183.34	137.57	16 23 16	1343.7	18.60	43.60
60.00	17 5 28	2127.56	5.26	45.01	167.97	130.01	17 40 55	1127.6	20.71	26.02
70.00	18 54 1	1808.28	10.76	23.21	192.05	122.61	19 24 9	808.3	23.14	1.69
80.00	21 25 3	1335.08	17.47	351.10	195.82	114.61	21 47 18	335.1	26.10	327.02
82.81	22 43 12	1084.34	21.66	334.37	197.64	109.93	23 1 16	84.3	27.93	308.91
100.00	0 11 51	6097.56	17.47	290.37	195.82	114.61	1 53 29	5097.6	26.10	266.29
110.00	23 53 27	6143.14	10.76	290.04	192.05	122.61	25 35 50	5143.1	23.14	268.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2162 TRA -.2254 TC3-1.2196 BAU .1395 SGT 971.0 SGR 501.2 SG3 1293.4 ST 22.6 SR 20.5 SS 32.6
RDE -.2042 RRA .1242 RC3 -.1805 FAU .22018 RRT .2126 RRF .5020 RTF .4167 CRT .8521 CRS -.5749 CST -.0777
FDE -.4813 FRA 3.1828 FC-22.5230 BSP 536 SGB 1092.7 R23 .3917 R13 .4462 LSA 36.3 MSA 26.1 SSA 1.9
BDE .2974 BRA .2573 BC3 1.2328 FSP 2195 SG1 978.8 SG2 485.9 THA 8.33 EL1 29.4 EL2 8.3 ALF 41.75

LAUNCH DATE MAY 20 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 430.686 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.216 GAL .92 AZL 91.48 HCA 139.95 SMA 185.48 ECC .18452 INC 1.4824 V1 29.433
RP 211.46 LAP -.95 LOP 18.30 VP 23.231 GAP 6.96 AZP 88.87 TAL 5.94 TAP 145.88 RCA 151.25 APO 219.70 V2 25.942
RC 123.058 GL -16.71 GP -3.33 ZAL 86.58 ZAP 114.25 ETS 181.28 ZAE 157.19 ETE 188.10 ZAC 97.42 ETC 276.53 LVI -13.27

PLANETOCENTRIC CONIC

C3 8.400 VHL 2.898 DLA -28.92 RAL 333.37 RAD 6637.2 VEL 11.336 PTH 6.39 VHP 3.118 DPA -21.99 RAP 316.60 ECC 1.1382

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 43 59	2346.67	.29	59.98	183.42	137.58	16 23 6	1346.7	18.45	43.74
60.00	17 4 45	2131.82	5.07	45.22	168.01	130.03	17 40 17	1131.8	20.54	26.25
70.00	18 52 19	1815.43	10.50	23.60	192.04	122.69	19 22 35	815.4	22.92	2.14
80.00	21 19 15	1355.19	16.89	352.31	195.66	114.99	21 41 50	355.2	25.73	328.40
83.69	22 51 5	1060.18	21.56	332.56	197.69	109.76	23 8 45	60.2	27.77	307.10
100.00	0 6 2	6117.71	16.89	291.59	195.66	114.99	1 48 0	5117.7	25.73	267.68
110.00	23 51 46	6150.28	10.50	290.42	192.04	122.69	25 34 16	5150.3	22.92	268.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2206 TRA -.1974 TC3-1.4311 BAU .1624 SGT 1037.9 SGR 500.0 SG3 1336.1 ST 22.8 SR 20.1 SS 33.1
RDE -.1991 RRA .1258 RC3 -.2069 FAU .22634 RRT .2783 RRF .5312 RTF .5176 CRT .8715 CRS -.5679 CST -.1082
FDE -.4756 FRA 3.2963 FC-23.3270 BSP 717 SGB 1152.0 R23 .3622 R13 .5470 LSA 36.6 MSA 26.1 SSA 1.8
BDE .2972 BRA .2341 BC3 1.4460 FSP 2271 SG1 1049.6 SG2 474.8 THA 9.62 EL1 29.5 EL2 7.7 ALF 40.86

LAUNCH DATE MAY 20 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC DISTANCE 434.867 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.209 GAL .90 AZL 91.47 HCA 141.16 SMA 185.36 ECC .18396 INC 1.4672 V1 29.433
RP 211.73 LAP -.92 LOP 19.51 VP 23.187 GAP 6.76 AZP 88.86 TAL 5.80 TAP 146.95 RCA 151.26 APO 219.45 V2 25.911
RC 125.302 GL -16.59 GP -3.46 ZAL 86.84 ZAP 112.18 ETS 181.17 ZAE 155.19 ETE 187.79 ZAC 97.38 ETC 276.34 LVI -12.89

PLANETOCENTRIC CONIC

C3 8.344 VHL 2.889 DLA -28.71 RAL 333.59 RAD 6637.2 VEL 11.334 PTH 6.39 VHP 3.072 DPA -22.36 RAP 315.75 ECC 1.1373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 43 43	2350.27	.11	60.13	183.52	137.58	16 22 54	1350.3	18.28	43.91
60.00	17 3 57	2136.85	4.85	45.46	168.07	130.06	17 39 34	1136.8	20.34	26.53
70.00	18 50 28	1823.59	10.19	24.04	192.05	122.77	19 20 51	823.6	22.68	2.64
80.00	21 13 28	1375.71	16.30	353.55	195.53	115.37	21 36 24	375.7	25.35	329.80
84.85	23 1 24	1028.53	21.43	330.18	197.77	109.57	23 18 33	28.5	27.58	304.74
100.00	0 0 16	6138.22	16.30	292.82	195.53	115.37	1 42 34	5138.2	25.35	269.08
110.00	23 49 54	6158.45	10.19	290.87	192.05	122.77	25 32 32	5158.5	22.68	269.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2250 TRA -.1686 TC3-1.6510 BAU .1860 SGT 1120.0 SGR 499.4 SG3 1379.5 ST 23.1 SR 19.7 SS 33.5
RDE -.1937 RRA .1277 RC3 -.2349 FAU .23263 RRT .3411 RRF .5607 RTF .5917 CRT .8892 CRS -.5537 CST -.1295
FDE -.4562 FRA 3.4135 FC-24.1366 BSP 930 SGB 1226.3 R23 .3322 R13 .6282 LSA 36.8 MSA 26.1 SSA 1.8
BDE .2969 BRA .2115 BC3 1.6676 FSP 2353 SG1 1135.5 SG2 463.0 THA 10.39 EL1 29.5 EL2 7.0 ALF 39.92

LAUNCH DATE MAY 20 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC DISTANCE 439.050 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.203 GAL .87 AZL 91.45 HCA 142.36 SMA 185.25 ECC .18347 INC 1.4512 V1 29.433
RP 212.01 LAP -.89 LOP 20.72 VP 23.143 GAP 6.57 AZP 88.85 TAL 5.64 TAP 148.00 RCA 151.26 APO 219.24 V2 25.880
RC 127.566 GL -16.45 GP -3.60 ZAL 87.13 ZAP 110.11 ETS 181.05 ZAE 153.18 ETE 187.51 ZAC 97.34 ETC 276.15 LVI -12.49

PLANETOCENTRIC CONIC

C3 8.293 VHL 2.880 DLA -28.47 RAL 333.84 RAD 6637.2 VEL 11.332 PTH 6.38 VHP 3.031 DPA -22.73 RAP 314.90 ECC 1.1365

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 43 26	2354.50	-.10	60.31	183.64	137.58	16 22 40	1354.5	18.08	44.11
60.00	17 3 4	2142.65	4.59	45.74	168.15	130.08	17 38 47	1142.6	20.11	26.85
70.00	18 48 27	1832.74	9.86	24.54	192.07	122.87	19 18 59	832.7	22.40	3.21
80.00	21 7 43	1396.60	15.68	354.79	195.42	115.74	21 31 0	396.6	24.94	331.22
86.54	23 16 24	6270.14	21.29	304.63	197.88	109.36	25 0 54	5270.1	27.36	279.21
100.00	23 50 35	6159.11	15.68	294.07	195.42	115.74	25 33 14	5159.1	24.94	270.50
110.00	23 47 53	6167.60	9.86	291.36	192.07	122.87	25 30 41	5167.6	22.40	270.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2291 TRA -.1382 TC3-1.6837 BAU .2109 SGT 1217.7 SGR 499.3 SG3 1418.0 ST 23.3 SR 19.2 SS 33.8
RDE -.1882 RRA .1297 RC3 -.2626 FAU .23802 RRT .3997 RRF .5897 RTF .6715 CRT .9059 CRS -.5393 CST -.1512
FDE -.4335 FRA 3.5295 FC-24.8470 BSP 1167 SGB 1316.1 R23 .3033 R13 .6941 LSA 37.0 MSA 26.2 SSA 1.8
BDE .2965 BRA .1895 BC3 1.9019 FSP 2427 SG1 1236.5 SG2 450.7 THA 10.75 EL1 29.5 EL2 6.4 ALF 38.95

LAUNCH DATE MAY 20 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 443.236 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.198 GAL .85 AZL 91.43 HCA 143.57 SMA 185.17 ECC .18306 INC 1.4344 V1 29.433
RP 212.29 LAP -.85 LOP 21.93 VP 23.100 GAP 6.37 AZP 88.85 TAL 5.47 TAP 149.04 RCA 151.27 APO 219.06 V2 25.848
RC 129.850 GL -16.30 GP -3.74 ZAL 87.44 ZAP 108.03 ETS 180.92 ZAE 151.15 ETE 187.26 ZAC 97.30 ETC 275.95 LVI -12.09

PLANETOCENTRIC CONIC

C3 8.248 VHL 2.872 DLA -28.22 RAL 334.10 RAD 6637.1 VEL 11.330 PTH 6.38 VHP 2.993 DPA -23.11 RAP 314.03 ECC 1.1357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 43 6	2359.37	-.35	60.51	183.79	137.58	16 22 25	1359.4	17.85	44.34
60.00	17 2 6	2149.21	4.31	46.05	188.26	130.11	17 37 55	1149.2	19.85	27.21
70.00	18 46 17	1842.85	9.48	25.08	192.12	122.97	19 16 59	842.8	22.09	3.83
80.00	21 2 0	1417.85	15.05	356.05	195.34	116.09	21 25 38	417.8	24.51	332.65
90.00	23 29 41	6229.56	19.92	301.13	197.54	110.50	25 13 30	5229.6	26.61	276.10
100.00	23 44 52	6180.36	15.05	295.33	195.34	116.09	25 27 53	5180.4	24.51	271.93
110.00	23 45 43	6177.70	9.48	291.90	192.12	122.97	25 28 41	5177.7	22.09	270.66

DIFFERENTIAL CORRECTIONS

TDE -.2328 TRA -.1064 TC3-2.1243 BAU .2364
RDE -.1826 RRA .1319 RC3 -.2909 FAU .24297
FDE -.3986 FRA 3.6435 FC-25.5029 BSP 1426
BDE .2959 BRA .1694 BC3 2.1441 FSP 2487

MID-COURSE EXECUTION ACCURACY

SGT 1327.6 SGR 499.7 SG3 1454.1
RRT .4539 RRF .6183 RTF .7276
SGB 1418.5 R23 .2774 R13 .7462
SG1 1349.2 SG2 438.1 THA 10.85

ORBIT DETERMINATION ACCURACY

ST 23.6 SR 18.8 SS 34.1
CRT .9210 CRS -.5193 CST -.1663
LSA 37.1 MSA 26.3 SSA 1.8
EL1 29.6 EL2 5.8 ALF 37.97

LAUNCH DATE MAY 20 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 447.424 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.194 GAL .81 AZL 91.42 HCA 144.77 SMA 185.10 ECC .18271 INC 1.4168 V1 29.433
RP 212.57 LAP -.82 LOP 23.13 VP 23.058 GAP 6.19 AZP 88.84 TAL 5.28 TAP 150.05 RCA 151.28 APO 218.92 V2 25.815
RC 132.153 GL -16.13 GP -3.89 ZAL 87.77 ZAP 105.96 ETS 180.78 ZAE 149.10 ETE 187.02 ZAC 97.24 ETC 275.75 LVI -11.68

PLANETOCENTRIC CONIC

C3 8.207 VHL 2.865 DLA -27.93 RAL 334.39 RAD 6637.1 VEL 11.328 PTH 6.38 VHP 2.960 DPA -23.49 RAP 313.16 ECC 1.1351

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 43	2364.87	-.62	60.74	183.94	137.57	16 22 8	1364.9	17.58	44.59
60.00	17 1 2	2156.52	3.99	46.40	188.37	130.14	17 36 59	1156.5	19.56	27.61
70.00	18 43 58	1853.85	9.08	25.67	192.17	123.07	19 14 52	853.9	21.76	4.51
80.00	20 56 20	1439.43	14.40	357.33	195.28	116.44	21 20 19	439.4	24.06	334.10
90.00	23 8 45	1012.40	18.17	327.68	197.05	112.05	23 25 37	12.4	25.68	303.17
100.00	23 39 12	6201.94	14.40	296.60	195.28	116.44	25 22 34	5201.9	24.06	273.37
110.00	23 43 24	6188.71	9.08	292.49	192.17	123.07	25 26 33	5188.7	21.76	271.33

DIFFERENTIAL CORRECTIONS

TDE -.2331 TRA -.0708 TC3-2.3584 BAU .2612
RDE -.1775 RRA .1336 RC3 -.3232 FAU .24907
FDE -.3950 FRA 3.7259 FC-26.2731 BSP 1721
BDE .2930 BRA .1512 BC3 2.3805 FSP 2526

MID-COURSE EXECUTION ACCURACY

SGT 1438.4 SGR 501.8 SG3 1492.4
RRT .5088 RRF .6483 RTF .7791
SGB 1523.4 R23 .2481 R13 .7944
SG1 1463.0 SG2 424.8 THA 11.00

ORBIT DETERMINATION ACCURACY

ST 23.5 SR 18.3 SS 34.4
CRT .9360 CRS -.5202 CST -.2095
LSA 37.5 MSA 25.7 SSA 1.8
EL1 29.4 EL2 5.2 ALF 37.46

LAUNCH DATE MAY 20 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 451.613 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.190 GAL .78 AZL 91.40 HCA 145.97 SMA 185.04 ECC .18242 INC 1.3981 V1 29.433
RP 212.86 LAP -.78 LOP 24.32 VP 23.016 GAP 6.00 AZP 88.84 TAL 5.07 TAP 151.04 RCA 151.29 APO 218.80 V2 25.782
RC 134.475 GL -15.95 GP -4.05 ZAL 88.14 ZAP 103.90 ETS 180.64 ZAE 147.04 ETE 186.80 ZAC 97.18 ETC 275.55 LVI -11.26

PLANETOCENTRIC CONIC

C3 8.171 VHL 2.859 DLA -27.62 RAL 334.69 RAD 6637.1 VEL 11.326 PTH 6.38 VHP 2.930 DPA -23.87 RAP 312.29 ECC 1.1345

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 42 18	2371.06	-.94	61.00	184.12	137.57	16 21 49	1371.1	17.28	44.88
60.00	16 59 54	2164.64	3.63	46.79	188.51	130.16	17 35 58	1164.6	19.23	28.05
70.00	18 41 30	1865.84	8.63	26.31	192.25	123.17	19 12 36	865.8	21.38	5.24
80.00	20 50 39	1461.53	13.73	358.62	195.24	116.78	21 15 1	461.5	23.58	335.56
90.00	22 55 24	1059.23	16.95	330.58	196.79	112.98	23 13 4	59.2	24.96	306.42
100.00	23 33 31	6224.04	13.73	297.90	195.24	116.78	25 17 15	5224.0	23.58	274.84
110.00	23 40 57	6200.70	8.63	293.14	192.25	123.17	25 24 17	5200.7	21.38	272.06

DIFFERENTIAL CORRECTIONS

TDE -.2384 TRA -.0396 TC3-2.6313 BAU .2900
RDE -.1711 RRA .1369 RC3 -.3503 FAU .25198
FDE -.3272 FRA 3.8700 FC-26.6965 BSP 1968
BDE .2935 BRA .1425 BC3 2.6545 FSP 2613

MID-COURSE EXECUTION ACCURACY

SGT 1580.9 SGR 503.6 SG3 1521.3
RRT .5494 RRF .6758 RTF .[illegible]79
SGB 1659.2 R23 .2382 R13 .8204
SG1 1606.7 SG2 414.1 THA 10.64

ORBIT DETERMINATION ACCURACY

ST 24.0 SR 17.8 SS 34.8
CRT .9463 CRS -.4834 CST -.1996
LSA 37.5 MSA 26.4 SSA 1.8
EL1 29.5 EL2 4.7 ALF 36.02

LAUNCH DATE MAY 20 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 455.804 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.188 GAL .75 AZL 91.38 HCA 147.16 SMA 185.00 ECC .18220 INC 1.3781 V1 29.433
RP 213.16 LAP -.75 LOP 25.52 VP 22.975 GAP 5.82 AZP 88.84 TAL 4.86 TAP 152.02 RCA 151.29 APO 218.71 V2 25.749
RC 136.814 GL -15.74 GP -4.21 ZAL 88.52 ZAP 101.84 ETS 180.50 ZAE 144.98 ETE 186.59 ZAC 97.11 ETC 275.35 LVI -10.83

PLANETOCENTRIC CONIC

C3 8.140 VHL 2.853 DLA -27.29 RAL 335.01 RAD 6637.1 VEL 11.325 PTH 6.38 VHP 2.904 DPA -24.25 RAP 311.43 ECC 1.1340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 41 49	2377.88	-1.28	61.28	184.31	137.56	16 21 27	1377.9	16.95	45.19
60.00	16 58 39	2173.50	3.24	47.22	188.66	130.19	17 34 53	1173.5	18.88	28.52
70.00	18 38 55	1878.69	8.15	27.00	192.34	123.28	19 10 13	878.7	20.98	6.02
80.00	20 45 0	1483.96	13.04	359.93	195.23	117.10	21 9 44	484.0	23.08	337.04
90.00	22 44 30	1098.62	15.88	332.98	196.62	113.71	23 2 48	98.6	24.30	309.11
100.00	23 27 52	6246.48	13.04	299.20	195.23	117.10	25 11 58	5246.5	23.08	276.32
110.00	23 38 21	6213.55	8.15	293.82	192.34	123.28	25 21 54	5213.5	20.98	272.84

DIFFERENTIAL CORRECTIONS

TDE -.2398 TRA -.0038 TC3-2.8940 BAU .3176
RDE -.1652 RRA .1396 RC3 -.3806 FAU .25557
FDE -.2851 FRA 3.9757 FC-27.1818 BSP 2257
BDE .2912 BRA .1397 BC3 2.9189 FSP 2670

MID-COURSE EXECUTION ACCURACY

SGT 1720.1 SGR 506.8 SG3 1549.5
RRT .5916 RRF .7034 RTF .8367
SGB 1793.3 R23 .2228 R13 .8470
SG1 1747.6 SG2 402.2 THA 10.45

ORBIT DETERMINATION ACCURACY

ST 24.2 SR 17.3 SS 35.1
CRT .9569 CRS -.4647 CST -.2157
LSA 37.6 MSA 26.3 SSA 1.7
EL1 29.4 EL2 4.1 ALF 35.09

LAUNCH DATE MAY 20 1971 FLIGHT TIME 194.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 459.996 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.186 GAL .71 AZL 91.36 HCA 148.36 SMA 184.97 ECC .18203 INC 1.3569 V1 29.433
RP 213.46 LAP -.71 LOP 26.71 VP 22.934 GAP 5.64 AZP 88.84 TAL 4.62 TAP 152.98 RCA 151.30 APO 218.65 V2 25.714
RC 139.171 GL -15.52 GP -4.38 ZAL 88.93 ZAP 99.80 ETS 180.34 ZAE 142.92 ETE 186.40 ZAC 97.03 ETC 275.15 LVI -10.39

PLANETOCENTRIC CONIC

C3 8.113 VHL 2.848 DLA -26.93 RAL 335.35 RAD 6637.1 VEL 11.324 PTH 6.38 VHP 2.882 DPA -24.63 RAP 310.57 ECC 1.1335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 41 17	2385.36	-1.65	61.60	184.52	137.55	16 21 2	1385.4	16.59	45.53
60.00	16 57 18	2183.14	2.82	47.68	188.82	130.22	17 33 41	1183.1	18.49	29.04
70.00	18 36 10	1892.43	7.64	27.73	192.44	123.39	19 7 43	892.4	20.55	6.84
80.00	20 39 21	1506.84	12.32	1.25	195.23	117.41	21 4 28	506.8	22.55	338.54
90.00	22 34 50	1134.43	14.89	335.14	196.51	114.32	22 53 44	134.4	23.65	311.53
100.00	23 22 13	6269.3[illegible]	12.32	300.52	195.23	117.41	25 6 42	5269.4	22.55	277.81
110.00	23 35 37	6227.28	7.64	294.55	192.44	123.39	25 19 24	5227.3	20.55	273.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2402 TRA .0331 TC3-3.1619 BAU .3458 SGT 1866.4 SGR 510.1 SG3 1572.9 ST 24.3 SR 16.7 SS 35.2
RDE -.1589 RRA .1424 RC3 -.4115 FAU .25858 RRT .6308 RRF .7293 RTF .8598 CRT .9659 CRS -.4352 CST -.2198
FDE -.2214 FRA 4.0657 FC-27.5934 BSP 2553 SGB 1934.9 R23 .2089 R13 .8681 LSA 37.5 MSA 26.4 SSA 1.7
BDE .2880 BRA .1462 BC3 3.1886 FSP 2708 SG1 1895.2 SG2 389.8 THA 10.22 EL1 29.3 EL2 3.6 ALF 34.11

LAUNCH DATE MAY 20 1971 FLIGHT TIME 196.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 464.189 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.185 GAL .67 AZL 91.33 HCA 149.54 SMA 184.96 ECC .18192 INC 1.3343 V1 29.433
RP 213.77 LAP -.68 LOP 27.90 VP 22.894 GAP 5.46 AZP 88.85 TAL 4.38 TAP 153.92 RCA 151.31 APO 218.61 V2 25.680
RC 141.545 GL -15.28 GP -4.55 ZAL 89.37 ZAP 97.77 ETS 180.18 ZAE 140.87 ETE 186.22 ZAC 96.93 ETC 274.96 LVI -9.95

PLANETOCENTRIC CONIC

C3 8.090 VHL 2.844 DLA -26.54 RAL 335.70 RAD 6637.0 VEL 11.323 PTH 6.38 VHP 2.863 DPA -25.01 RAP 309.72 ECC 1.1331

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 40 40	2393.52	-2.06	61.94	184.75	137.54	16 20 34	1393.5	16.20	45.91
60.00	16 55 51	2193.56	2.36	48.18	189.00	130.24	17 32 24	1193.6	18.07	29.60
70.00	18 33 17	1907.05	7.09	28.50	192.55	123.50	19 5 4	907.0	20.08	7.72
80.00	20 33 41	1530.19	11.59	2.59	195.25	117.71	20 59 12	530.2	22.00	340.05
90.00	22 25 56	1168.23	13.93	337.16	196.44	114.86	22 45 24	168.2	23.00	313.79
100.00	23 16 33	1004.66	11.59	323.96	195.25	117.71	23 33 18	4.7	22.00	301.42
110.00	23 32 44	6241.91	7.09	295.33	192.55	123.50	25 16 46	5241.9	20.08	274.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2395 TRA .0712 TC3-3.4353 BAU .3746 SGT 2019.3 SGR 515.8 SG3 1597.2 ST 24.4 SR 16.2 SS 35.6
RDE -.1528 RRA .1456 RC3 -.4443 FAU .26159 RRT .6672 RRF .7559 RTF .8785 CRT .9735 CRS -.4175 CST -.2363
FDE -.1735 FRA 4.1664 FC-27.9940 BSP 2853 SGB 2084.1 R23 .1992 R13 .8854 LSA 37.8 MSA 26.3 SSA 1.7
BDE .2841 BRA .1621 BC3 3.4639 FSP 2750 SG1 2049.4 SG2 378.6 THA 10.02 EL1 29.1 EL2 3.1 ALF 33.21

LAUNCH DATE MAY 20 1971 FLIGHT TIME 198.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 468.381 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.185 GAL .63 AZL 91.31 HCA 150.73 SMA 184.96 ECC .18187 INC 1.3102 V1 29.433
RP 214.08 LAP -.64 LOP 29.08 VP 22.854 GAP 5.29 AZP 88.86 TAL 4.11 TAP 154.84 RCA 151.32 APO 218.59 V2 25.645
RC 143.936 GL -15.01 GP -4.74 ZAL 89.82 ZAP 95.77 ETS 180.01 ZAE 138.82 ETE 186.05 ZAC 96.82 ETC 274.76 LVI -9.51

PLANETOCENTRIC CONIC

C3 8.071 VHL 2.841 DLA -26.13 RAL 336.06 RAD 6637.0 VEL 11.322 PTH 6.38 VHP 2.848 DPA -25.39 RAP 308.89 ECC 1.1328

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 39 59	2402.39	-2.51	62.31	184.98	137.53	16 20 1	1402.4	15.77	46.31
60.00	16 54 17	2204.78	1.87	48.71	189.19	130.26	17 31 1	1204.8	17.61	30.19
70.00	18 30 16	1922.56	6.50	29.33	192.68	123.60	19 2 18	922.6	19.57	8.64
80.00	20 28 0	1554.05	10.83	3.96	195.29	118.00	20 53 54	554.1	21.41	341.58
90.00	22 17 31	1200.84	12.99	339.09	196.40	115.34	22 37 32	200.8	22.33	315.95
100.00	23 10 52	1028.52	10.83	325.33	195.29	118.00	23 28 0	28.5	21.41	302.95
110.00	23 29 42	6257.42	6.50	296.15	192.68	123.60	25 13 59	5257.4	19.57	275.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2374 TRA .1103 TC3-3.7125 BAU .4039 SGT 2177.2 SGR 521.6 SG3 1614.5 ST 24.4 SR 15.6 SS 35.9
RDE -.1461 RRA .1490 RC3 -.4764 FAU .26344 RRT .7001 RRF .7803 RTF .8[illegible]31 CRT .9796 CRS -.3883 CST -.2403
FDE -.1021 FRA 4.2542 FC-28.2591 BSP 3160 SGB 2238.8 R23 .1914 R13 .8990 LSA 37.9 MSA 26.3 SSA 1.7
BDE .2787 BRA .1854 BC3 3.7429 FSP 2784 SG1 2208.5 SG2 367.1 THA 9.79 EL1 28.8 EL2 2.6 ALF 32.28

LAUNCH DATE MAY 20 1971 FLIGHT TIME 200.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 472.574 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.185 GAL .59 AZL 91.28 HCA 151.91 SMA 184.96 ECC .18186 INC 1.2841 V1 29.433
RP 214.39 LAP -.60 LOP 30.26 VP 22.815 GAP 5.12 AZP 88.87 TAL 3.84 TAP 155.75 RCA 151.33 APO 218.60 V2 25.609
RC 146.344 GL -14.72 GP -4.93 ZAL 90.30 ZAP 93.79 ETS 179.84 ZAE 136.79 ETE 185.89 ZAC 96.70 ETC 274.57 LVI -9.06

PLANETOCENTRIC CONIC

C3 8.055 VHL 2.838 DLA -25.68 RAL 336.43 RAD 6637.0 VEL 11.321 PTH 6.37 VHP 2.836 DPA -25.78 RAP 308.09 ECC 1.1326

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 39 12	2411.98	-2.99	62.71	185.23	137.50	16 19 24	1412.0	15.30	46.75
60.00	16 52 35	2216.83	1.34	49.29	189.39	130.28	17 29 32	1216.8	17.11	30.83
70.00	18 27 5	1938.98	5.88	30.19	192.82	123.70	18 59 24	939.0	19.04	9.61
80.00	20 22 16	1578.48	10.04	5.35	195.34	118.27	20 48 34	578.5	20.80	343.14
90.00	22 9 27	1232.77	12.05	340.96	196.39	115.78	22 30 0	232.8	21.65	318.05
100.00	23 5 8	1052.95	10.04	326.72	195.34	118.27	23 22 41	52.9	20.80	304.50
110.00	23 26 31	6273.84	5.88	297.02	192.82	123.70	25 11 5	5273.8	19.04	276.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2343 TRA .1506 TC3-3.9925 BAU .4334 SGT 2339.6 SGR 529.0 SG3 1628.4 ST 24.4 SR 15.0 SS 36.3
RDE -.1395 RRA .1528 RC3 -.5088 FAU .26451 RRT .7298 RRF .8040 RTF .9048 CRT .9843 CRS -.3681 CST -.2536
FDE -.0400 FRA 4.3470 FC-28.4281 BSP 3466 SGB 2398.6 R23 .1872 R13 .9098 LSA 38.2 MSA 26.1 SSA 1.6
BDE .2726 BRA .2146 BC3 4.0248 FSP 2814 SG1 2372.0 SG2 356.8 THA 9.59 EL1 28.6 EL2 2.3 ALF 31.37

LAUNCH DATE MAY 20 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 476.767 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.187 GAL .55 AZL 91.26 HCA 153.09 SMA 184.98 ECC .18190 INC 1.2561 V1 29.433
RP 214.72 LAP -.57 LOP 31.44 VP 22.776 GAP 4.95 AZP 88.68 TAL 3.55 TAP 156.64 RCA 151.33 APO 218.63 V2 25.573
RC 148.770 GL -14.41 GP -5.14 ZAL 90.80 ZAP 91.84 ETS 179.65 ZAE 134.77 ETE 185.74 ZAC 96.56 ETC 274.39 LVI -8.60

PLANETOCENTRIC CONIC

C3 8.044 VHL 2.836 DLA -25.20 RAL 336.80 RAD 6637.0 VEL 11.321 PTH 6.37 VHP 2.827 DPA -26.16 RAP 307.30 ECC 1.1324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 20	2422.32	-3.51	63.14	185.49	137.48	16 18 42	1422.3	14.80	47.21
60.00	16 50 45	2229.73	.77	49.91	189.60	130.29	17 27 54	1229.7	16.58	31.51
70.00	18 23 44	1956.33	5.23	31.11	192.97	123.80	18 56 20	956.3	18.46	10.63
80.00	20 16 27	1603.52	9.23	6.76	195.41	118.52	20 43 11	603.5	20.16	344.72
90.00	22 1 37	1264.39	11.11	342.81	196.39	116.17	22 22 41	264.4	20.95	320.10
100.00	22 59 19	1078.00	9.23	328.13	195.41	118.52	23 17 17	78.0	20.16	306.08
110.00	23 23 10	1003.15	5.23	320.03	192.97	123.80	23 39 53	3.2	18.46	299.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2291 TRA .1919 TC3-4.2743 BAU .4633 SGT 2505.2 SGR 537.6 SG3 1640.2 ST 24.3 SR 14.4 SS 36.6
RDE -.1325 RRA .1565 RC3 -.5440 FAU .26574 RRT .7587 RRF .8263 RTF .9152 CRT .9879 CRS -.3435 CST -.2635
FDE .0340 FRA 4.4155 FC-28.6012 BSP 3782 SGB 2562.2 R23 .1818 R13 .9195 LSA 38.3 MSA 25.8 SSA 1.6
BDE .2647 BRA .2477 BC3 4.3088 FSP 2838 SG1 2538.8 SG2 345.6 THA 9.42 EL1 28.2 EL2 1.9 ALF 30.48

LAUNCH DATE MAY 20 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 480.958 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.188 GAL .50 AZL 91.23 HCA 154.26 SMA 185.01 ECC .18198 INC 1.2259 V1 29.433
RP 215.04 LAP -.53 LOP 32.61 VP 22.737 GAP 4.78 AZP 88.90 TAL 3.26 TAP 157.52 RCA 151.34 APO 218.68 V2 25.536
RC 151.211 GL -14.06 GP -5.36 ZAL 91.31 ZAP 89.92 ETS 179.45 ZAE 132.77 ETE 185.60 ZAC 96.40 ETC 274.21 LVI -8.14

PLANETOCENTRIC CONIC

C3 8.035 VHL 2.835 DLA -24.68 RAL 337.19 RAD 6637.0 VEL 11.320 PTH 6.37 VHP 2.821 DPA -26.55 RAP 306.55 ECC 1.1322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 21	2433.45	-4.07	63.61	185.75	137.44	16 17 54	1433.4	14.25	47.71
60.00	16 48 45	2243.52	.16	50.57	189.82	130.30	17 26 9	1243.5	16.01	32.23
70.00	18 20 12	1974.65	4.53	32.07	193.12	123.89	18 53 7	974.7	17.85	11.70
80.00	20 10 34	1629.26	8.39	8.21	195.49	118.76	20 37 43	629.3	19.48	346.33
90.00	21 53 54	1295.98	10.16	344.64	196.42	116.54	22 15 30	296.0	20.22	322.13
100.00	22 53 26	1103.73	8.39	329.58	195.49	118.76	23 11 49	103.7	19.48	307.69
110.00	23 19 39	1021.47	4.53	320.99	193.12	123.89	23 36 40	21.5	17.85	300.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2219 TRA .2345 TC3-4.5537 BAU .4931 SGT 2671.8 SGR 547.1 SG3 1645.2 ST 24.1 SR 13.8 SS 37.1
RDE -.1252 RRA .1608 RC3 -.5780 FAU .26551 RRT .7841 RRF .8470 RTF .9232 CRT .9900 CRS -.3197 CST -.2751
FDE .1141 FRA 4.4846 FC-28.6062 BSP 4096 SGB 2727.2 R23 .1796 R13 .9270 LSA 38.6 MSA 25.4 SSA 1.6
BDE .2548 BRA .2843 BC3 4.5903 FSP 2844 SG1 2706.5 SG2 335.2 THA 9.26 EL1 27.7 EL2 1.7 ALF 29.63

LAUNCH DATE MAY 20 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 485.149 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.190 GAL .45 AZL 91.19 HCA 155.43 SMA 185.05 ECC .18211 INC 1.1930 V1 29.433
RP 215.37 LAP -.50 LOP 33.78 VP 22.699 GAP 4.62 AZP 88.91 TAL 2.95 TAP 158.38 RCA 151.35 APO 218.75 V2 25.499
RC 153.669 GL -13.69 GP -5.60 ZAL 91.85 ZAP 88.04 ETS 179.25 ZAE 130.80 ETE 185.47 ZAC 96.22 ETC 274.04 LVI -7.67

PLANETOCENTRIC CONIC

C3 8.030 VHL 2.834 DLA -24.13 RAL 337.58 RAD 6637.0 VEL 11.320 PTH 6.37 VHP 2.818 DPA -26.95 RAP 305.83 ECC 1.1322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 13	2445.42	-4.67	64.11	186.02	137.40	16 16 59	1445.4	13.67	48.24
60.00	16 46 36	2258.27	-.49	51.27	190.04	130.30	17 24 14	1258.3	15.40	32.99
70.00	18 16 29	1993.99	3.80	33.09	193.29	123.97	18 49 43	994.0	17.20	12.81
80.00	20 4 33	1655.78	7.52	9.70	195.58	118.98	20 32 9	655.8	18.76	347.97
90.00	21 46 15	1327.79	9.18	346.47	196.47	116.86	22 8 22	327.8	19.46	324.15
100.00	22 47 25	1130.25	7.52	331.07	195.58	118.98	23 6 15	130.3	18.76	309.34
110.00	23 15 55	1040.81	3.80	322.00	193.29	123.97	23 33 16	40.8	17.20	301.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2132 TRA .2777 TC3-4.8365 BAU .5234 SGT 2842.2 SGR 559.3 SG3 1650.9 ST 23.8 SR 13.1 SS 37.5
RDE -.1179 RRA .1653 RC3 -.6161 FAU .26570 RRT .8084 RRF .8668 RTF .9304 CRT .9907 CRS -.3026 CST -.2939
FDE .1907 FRA 4.5448 FC-28.6450 BSP 4415 SGB 2896.7 R23 .1778 R13 .9338 LSA 39.1 MSA 24.9 SSA 1.6
BDE .2436 BRA .3232 BC3 4.8756 FSP 2858 SG1 2878.4 SG2 325.1 THA 9.16 EL1 27.1 EL2 1.6 ALF 28.77

LAUNCH DATE MAY 20 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 14 1971

HELIOCENTRIC CONIC DISTANCE 489.339 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.193 GAL .40 AZL 91.16 HCA 156.60 SMA 185.09 ECC .18228 INC 1.1576 V1 29.433
RP 215.71 LAP -.46 LOP 34.95 VP 22.661 GAP 4.46 AZP 88.94 TAL 2.62 TAP 159.22 RCA 151.35 APO 218.83 V2 25.461
RC 156.143 GL -13.27 GP -5.86 ZAL 92.41 ZAP 86.19 ETS 179.03 ZAE 128.85 ETE 185.35 ZAC 96.02 ETC 273.87 LVI -7.20

PLANETOCENTRIC CONIC

C3 8.029 VHL 2.833 DLA -23.54 RAL 337.97 RAD 6637.0 VEL 11.320 PTH 6.37 VHP 2.818 DPA -27.35 RAP 305.14 ECC 1.1321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 34 57	2458.29	-5.31	64.65	186.30	137.35	16 15 55	1458.3	13.04	48.82
60.00	16 44 14	2274.02	-1.18	52.02	190.27	130.29	17 22 8	1274.0	14.74	33.80
70.00	18 12 32	2014.42	3.02	34.15	193.45	124.04	18 46 7	1014.4	16.50	13.99
80.00	19 58 23	1683.17	6.62	11.23	195.67	119.18	20 26 26	683.2	18.00	349.65
90.00	21 38 34	1360.01	8.19	348.31	196.52	117.16	22 1 14	360.0	18.66	326.18
100.00	22 41 15	1157.65	6.62	332.59	195.67	119.18	23 0 32	157.6	18.00	311.02
110.00	23 11 59	1061.23	3.02	323.07	193.45	124.04	23 29 40	61.2	16.50	302.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2002 TRA .3237 TC3-5.1099 BAU .5529 SGT 3009.9 SGR 572.2 SG3 1649.5 ST 23.3 SR 12.4 SS 38.4
RDE -.1093 RRA .1710 RC3 -.6517 FAU .26395 RRT .8292 RRF .8848 RTF .9352 CRT .9897 CRS -.2752 CST -.3052
FDE .3029 FRA 4.6229 FC-28.4619 BSP 4749 SGB 3063.8 R23 .1801 R13 .9383 LSA 39.8 MSA 24.3 SSA 1.5
BDE .2281 BRA .3661 BC3 5.1513 FSP 2871 SG1 3047.4 SG2 315.9 THA 9.06 EL1 26.4 EL2 1.6 ALF 27.93

LAUNCH DATE MAY 20 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 493.527 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.197	GAL	.35	AZL	91.12	HCA	157.76	SMA	185.15	ECC	.18249	INC	1.1180	VI	29.433
RP	216.04	LAP	-.42	LOP	36.11	VP	22.623	GAP	4.30	AZP	88.96	TAL	2.29	TAP	160.08	RCA	151.36	APO	218.94	V2	25.424
RC	158.631	GL	-12.82	GP	-6.13	ZAL	92.99	ZAP	84.39	ETS	178.79	ZAE	126.92	ETE	185.24	ZAC	95.79	ETC	273.71	LVI	-6.71

PLANETOCENTRIC CONIC

C3	8.030	VHL	2.834	DLA	-22.90	RAL	338.35	RAD	6637.0	VEL	11.320	PTH	6.37	VHP	2.820	DPA	-27.76	RAP	304.49	ECC	1.1322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 33 30	2472.13	-6.01	65.24	186.58	137.29	16 14 42	1472.1	12.36	49.43
60.00	16 41 40	2290.86	-1.92	52.83	190.50	130.26	17 19 51	1290.9	14.04	34.66
70.00	18 8 21	2036.02	2.20	35.28	193.62	124.09	18 42 17	1036.0	15.75	15.21
80.00	19 52 1	1711.57	5.67	12.80	195.77	119.36	20 20 33	711.6	17.20	351.38
90.00	21 30 50	1392.86	7.16	350.18	196.58	117.43	21 54 2	392.9	17.83	328.22
100.00	22 34 53	1186.04	5.67	334.17	195.77	119.36	22 54 39	186.0	17.20	312.75
110.00	23 7 47	1082.83	2.20	324.20	193.62	124.09	23 25 50	82.8	15.75	304.13

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1889	TRA	.3673	TC3	-5.3940	BAU	.5838	SGT	3184.5	SGR	588.8	SG3	1647.6	ST	23.1	SR	11.9	SS	38.8
RDE	-.1021	RRA	.1761	RC3	-.6938	FAU	.26323	RRT	.8493	RRF	.9017	RTF	.9408	CRT	.9874	CRS	-.2796	CST	-.3456
FDE	.3592	FRA	4.6555	FC	-28.3798	BSP	5042	SGB	3238.5	R23	.1803	R13	.9436	LSA	40.3	MSA	23.5	SSA	1.5
BDE	.2148	BRA	.4073	BC3	5.4385	FSP	2844	SG1	3223.9	SG2	307.0	THA	9.01	EL1	25.9	EL2	1.7	ALF	27.03

LAUNCH DATE MAY 20 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 497.714 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.200	GAL	.30	AZL	91.08	HCA	158.92	SMA	185.21	ECC	.18274	INC	1.0753	VI	29.433
RP	216.39	LAP	-.39	LOP	37.27	VP	22.585	GAP	4.14	AZP	89.00	TAL	1.95	TAP	160.87	RCA	151.36	APO	219.06	V2	25.385
RC	161.134	GL	-12.31	GP	-6.44	ZAL	93.58	ZAP	82.62	ETS	178.54	ZAE	125.03	ETE	185.14	ZAC	95.54	ETC	273.56	LVI	-6.22

PLANETOCENTRIC CONIC

C3	8.034	VHL	2.834	DLA	-22.21	RAL	338.74	RAD	6637.0	VEL	11.320	PTH	6.37	VHP	2.824	DPA	-28.19	RAP	303.88	ECC	1.1322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 51	2487.05	-6.75	65.87	186.86	137.21	16 13 18	1487.0	11.62	50.08
60.00	16 38 50	2308.90	-2.72	53.69	190.73	130.22	17 17 19	1308.9	13.28	35.58
70.00	18 3 52	2058.91	1.32	36.48	193.79	124.13	18 38 11	1058.9	14.95	16.50
80.00	19 45 25	1741.12	4.68	14.44	195.88	119.52	20 14 26	741.1	16.35	353.16
90.00	21 22 56	1426.58	6.10	352.08	196.65	117.67	21 46 42	426.6	16.94	330.30
100.00	22 28 17	1215.59	4.68	335.81	195.88	119.52	22 48 32	215.6	16.35	314.53
110.00	23 3 19	1105.73	1.32	325.40	193.79	124.13	23 21 44	105.7	14.95	305.42

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1711	TRA	.4146	TC3	-5.6699	BAU	.6141	SGT	3357.1	SGR	608.2	SG3	1645.9	ST	22.5	SR	11.2	SS	39.8
RDE	-.0931	RRA	.1828	RC3	-.7385	FAU	.26200	RRT	.8678	RRF	.9173	RTF	.9449	CRT	.9825	CRS	-.2712	CST	-.3794
FDE	.4680	FRA	4.7122	FC	-28.2323	BSP	5378	SGB	3411.8	R23	.1827	R13	.9475	LSA	41.3	MSA	22.6	SSA	1.5
BDE	.1948	BRA	.4531	BC3	5.7178	FSP	2848	SG1	3398.7	SG2	298.5	THA	9.00	EL1	25.1	EL2	1.9	ALF	26.14

LAUNCH DATE MAY 20 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 501.899 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.205	GAL	.25	AZL	91.03	HCA	160.08	SMA	185.28	ECC	.18303	INC	1.0271	VI	29.433
RP	216.73	LAP	-.35	LOP	38.43	VP	22.548	GAP	3.98	AZP	89.03	TAL	1.60	TAP	161.68	RCA	151.37	APO	219.19	V2	25.347
RC	163.649	GL	-11.75	GP	-6.77	ZAL	94.20	ZAP	80.90	ETS	178.27	ZAE	123.16	ETE	185.04	ZAC	95.25	ETC	273.42	LVI	-5.70

PLANETOCENTRIC CONIC

C3	8.041	VHL	2.836	DLA	-21.47	RAL	339.11	RAD	6637.0	VEL	11.321	PTH	6.37	VHP	2.831	DPA	-28.64	RAP	303.32	ECC	1.1323

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 57	2503.15	-7.56	66.55	187.13	137.12	16 11 41	1503.1	10.83	50.78
60.00	16 35 43	2328.27	-3.57	54.62	190.95	130.17	17 14 31	1328.3	12.45	36.56
70.00	17 59 4	2083.25	.39	37.75	193.96	124.15	18 33 47	1083.2	14.09	17.87
80.00	19 38 31	1772.01	3.64	16.14	195.98	119.66	20 8 3	772.0	15.44	355.00
90.00	21 14 48	1461.39	4.99	354.05	196.72	117.87	21 39 10	461.4	16.01	332.43
100.00	22 21 23	1246.48	3.64	337.51	195.98	119.66	22 42 9	246.5	15.44	316.37
110.00	22 58 30	1130.06	.39	326.67	193.96	124.15	23 17 20	130.1	14.09	306.78

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1502	TRA	.4593	TC3	-5.9433	BAU	.6444	SGT	3528.1	SGR	628.0	SG3	1634.6	ST	21.9	SR	10.4	SS	40.8
RDE	-.0831	RRA	.1891	RC3	-.7839	FAU	.25960	RRT	.8841	RRF	.9307	RTF	.9483	CRT	.9755	CRS	-.2654	CST	-.4148
FDE	.5917	FRA	4.7246	FC	-27.9499	BSP	5683	SGB	3583.6	R23	.1854	R13	.9507	LSA	42.3	MSA	21.5	SSA	1.5
BDE	.1716	BRA	.4967	BC3	5.9948	FSP	2827	SG1	3571.8	SG2	289.8	THA	9.00	EL1	24.2	EL2	2.1	ALF	25.12

LAUNCH DATE MAY 20 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 506.081 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.209	GAL	.19	AZL	90.97	HCA	161.23	SMA	185.36	ECC	.18335	INC	.9741	VI	29.433
RP	217.08	LAP	-.31	LOP	39.58	VP	22.511	GAP	3.83	AZP	89.08	TAL	1.24	TAP	162.47	RCA	151.37	APO	219.35	V2	25.308
RC	166.178	GL	-11.13	GP	-7.14	ZAL	94.83	ZAP	79.22	ETS	177.98	ZAE	121.32	ETE	184.96	ZAC	94.92	ETC	273.29	LVI	-5.17

PLANETOCENTRIC CONIC

C3	8.051	VHL	2.837	DLA	-20.66	RAL	339.48	RAD	6637.0	VEL	11.321	PTH	6.37	VHP	2.841	DPA	-29.11	RAP	302.80	ECC	1.1325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 27 47	2520.59	-8.42	67.30	187.41	137.00	16 9 47	1520.6	9.96	51.54
60.00	16 32 15	2349.14	-4.48	55.62	191.17	130.09	17 11 24	1349.1	11.57	37.60
70.00	17 53 52	2109.21	-.60	39.10	194.12	124.15	18 29 1	1109.2	13.16	19.31
80.00	19 31 14	1804.45	2.55	17.93	196.08	119.76	20 1 19	804.5	14.47	356.92
90.00	21 6 23	1497.58	3.84	356.08	196.79	118.04	21 31 20	497.6	15.01	334.61
100.00	22 14 6	1278.92	2.55	339.30	196.08	119.76	22 35 25	278.9	14.47	318.28
110.00	22 53 18	1156.03	-.60	328.02	194.12	124.15	23 12 34	156.0	13.16	308.22

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1297	TRA	.5063	TC3	-6.2051	BAU	.6738	SGT	3696.2	SGR	652.1	SG3	1618.8	ST	21.6	SR	9.9	SS	41.5
RDE	-.0746	RRA	.1968	RC3	-.8305	FAU	.25611	RRT	.8975	RRF	.9429	RTF	.9514	CRT	.9665	CRS	-.2976	CST	-.4860
FDE	.6556	FRA	4.7491	FC	-27.5404	BSP	5987	SGB	3753.3	R23	.1904	R13	.9537	LSA	43.3	MSA	20.2	SSA	1.5
BDE	.1496	BRA	.5432	BC3	6.2604	FSP	2788	SG1	3742.5	SG2	284.1	THA	9.05	EL1	23.7	EL2	2.3	ALF	24.09

LAUNCH DATE MAY 20 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 510.261 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.214 GAL .13 AZL 90.92 HCA 162.38 SMA 185.44 ECC .18371 INC .9144 V1 29.433
RP 217.43 LAP -.28 LOP 40.73 VP 22.474 GAP 3.68 AZP 89.13 TAL .87 TAP 163.25 RCA 151.38 APO 219.51 V2 25.269
RC 168.717 GL -10.44 GP -7.54 ZAL 95.48 ZAP 77.59 ETS 177.66 ZAE 119.52 ETE 184.89 ZAC 94.55 ETC 273.16 LVI -4.61

PLANETOCENTRIC CONIC

C3 8.063 VHL 2.840 DLA -19.77 RAL 339.82 RAD 6637.0 VEL 11.322 PTH 6.37 VHP 2.852 DPA -29.61 RAP 302.34 ECC 1.1327

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 25 16	2539.57	-9.37	68.11	187.67	136.86	16 7 36	1539.6	9.02	52.35
60.00	16 28 23	2371.73	-5.47	56.71	191.38	129.99	17 7 55	1371.7	10.60	38.73
70.00	17 48 13	2137.05	-1.66	40.56	194.27	124.12	18 23 50	1137.0	12.16	20.84
80.00	19 23 31	1838.76	1.39	19.81	196.17	119.83	19 54 10	838.8	13.42	358.92
90.00	20 57 32	1535.49	2.62	358.20	196.86	118.17	21 23 8	535.5	13.93	336.88
100.00	22 6 23	1313.23	1.39	341.18	196.17	119.83	22 28 16	313.2	13.42	320.29
110.00	22 47 39	1183.87	-1.66	329.47	194.27	124.12	23 7 23	183.9	12.16	309.76

DIFFERENTIAL CORRECTIONS

TDE -.1014 TRA .5522 TC3-6.4790 BAU .7050
RDE -.0636 RRA .2052 RC3 -.8894 FAU .25430
FDE .7768 FRA 4.7537 FC-27.3030 BSP 6296
BDE .1197 BRA .5891 BC3 6.5398 FSP 2763

MID-COURSE EXECUTION ACCURACY

SGT 3870.8 SGR 682.0 SG3 1608.9
RRT .9113 RRF .9539 RTF .9545
SGB 3930.4 R23 .1933 R13 .9568
SG1 3920.6 SG2 277.3 THA 9.17

ORBIT DETERMINATION ACCURACY

ST 21.2 SR 9.2 SS 42.7
CRT .9541 CRS -.3272 CST -.5549
LSA 44.8 MSA 18.8 SSA 1.5
EL1 23.0 EL2 2.6 ALF 22.84

LAUNCH DATE MAY 20 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 514.439 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.220 GAL .08 AZL 90.85 HCA 163.52 SMA 185.53 ECC .18410 INC .8474 V1 29.433
RP 217.79 LAP -.24 LOP 41.87 VP 22.437 GAP 3.53 AZP 89.19 TAL .49 TAP 164.01 RCA 151.38 APO 219.69 V2 25.229
RC 171.268 GL -9.65 GP -8.00 ZAL 96.14 ZAP 76.01 ETS 177.30 ZAE 117.75 ETE 184.82 ZAC 94.12 ETC 273.05 LVI -4.02

PLANETOCENTRIC CONIC

C3 8.079 VHL 2.842 DLA -18.80 RAL 340.14 RAD 6637.0 VEL 11.322 PTH 6.38 VHP 2.866 DPA -30.15 RAP 301.92 ECC 1.1330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 21	2560.33	-10.40	69.01	187.92	136.70	16 5 1	1560.3	7.99	53.24
60.00	16 24 2	2396.31	-6.55	57.89	191.58	129.86	17 3 58	1396.3	9.54	39.94
70.00	17 42 0	2167.08	-2.81	42.13	194.41	124.05	18 18 7	1167.1	11.07	22.48
80.00	19 15 14	1875.29	.15	21.82	196.25	119.86	19 46 30	875.3	12.28	1.04
90.00	20 48 10	1575.51	1.34	.43	196.91	118.25	21 14 25	575.5	12.77	339.25
100.00	21 58 6	1349.76	.15	343.19	196.25	119.86	22 20 36	349.8	12.28	322.41
110.00	22 41 27	1213.90	-2.81	331.04	194.41	124.05	23 1 41	213.9	11.07	311.39

DIFFERENTIAL CORRECTIONS

TDE -.0699 TRA .5924 TC3-6.7361 BAU .7347
RDE -.0523 RRA .2124 RC3 -.9490 FAU .25077
FDE .8831 FRA 4.6896 FC-26.8732 BSP 6574
BDE .0873 BRA .6293 BC3 6.8026 FSP 2702

MID-COURSE EXECUTION ACCURACY

SGT 4034.1 SGR 711.9 SG3 1584.3
RRT .9232 RRF .9630 RTF .9577
SGB 4096.4 R23 .1948 R13 .9598
SG1 4087.5 SG2 270.1 THA 9.29

ORBIT DETERMINATION ACCURACY

ST 21.0 SR 8.6 SS 43.5
CRT .9392 CRS -.3727 CST -.6341
LSA 46.0 MSA 17.1 SSA 1.4
EL1 22.5 EL2 2.8 ALF 21.46

LAUNCH DATE MAY 20 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 28 1971

HELIOCENTRIC CONIC DISTANCE 518.616 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.226 GAL .02 AZL 90.77 HCA 164.66 SMA 185.63 ECC .18452 INC .7700 V1 29.433
RP 218.15 LAP -.20 LOP 43.01 VP 22.401 GAP 3.38 AZP 89.26 TAL .10 TAP 164.77 RCA 151.38 APO 219.88 V2 25.189
RC 173.829 GL -8.76 GP -8.53 ZAL 96.82 ZAP 74.48 ETS 176.91 ZAE 116.01 ETE 184.77 ZAC 93.62 ETC 272.94 LVI -3.38

PLANETOCENTRIC CONIC

C3 8.097 VHL 2.846 DLA -17.72 RAL 340.43 RAD 6637.0 VEL 11.323 PTH 6.38 VHP 2.883 DPA -30.75 RAP 301.56 ECC 1.1333

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 56	2583.20	-11.53	70.00	188.16	136.49	16 2 0	1583.2	6.84	54.21
60.00	16 19 5	2423.25	-7.72	59.20	191.77	129.68	16 59 29	1423.3	8.37	41.26
70.00	17 35 8	2199.72	-4.05	43.83	194.53	123.94	18 11 47	1199.7	9.87	24.24
80.00	19 6 15	1914.51	-1.18	23.97	196.31	119.84	19 38 10	914.5	11.04	3.29
90.00	20 38 7	1618.18	-.04	2.81	196.95	118.28	21 5 5	618.2	11.51	341.74
100.00	21 49 7	1388.98	-1.18	345.34	196.31	119.84	22 12 16	389.0	11.04	324.66
110.00	22 34 34	1246.54	-4.05	332.75	194.53	123.94	22 55 20	246.5	9.87	313.16

DIFFERENTIAL CORRECTIONS

TDE -.0423 TRA .4573 TC3-7.2959 BAU .7997
RDE -.0454 RRA .1497 RC3-1.1598 FAU .27947
FDE .8656 FRA 2.8850 FC-29.8809 BSP 6303
BDE .0621 BRA .4812 BC3 7.3875 FSP 2192

MID-COURSE EXECUTION ACCURACY

SGT 4264.1 SGR 737.7 SG3 1568.1
RRT .9710 RRF .9706 RTF .9566
SGB 4327.4 R23 .0459 R13 .9870
SG1 4323.9 SG2 173.9 THA 9.55

ORBIT DETERMINATION ACCURACY

ST 16.3 SR 6.7 SS 32.1
CRT .8674 CRS -.0713 CST -.5286
LSA 33.5 MSA 14.8 SSA 1.2
EL1 17.4 EL2 3.1 ALF 20.15

LAUNCH DATE MAY 20 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 30 1971

HELIOCENTRIC CONIC DISTANCE 522.765 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.232 GAL -.05 AZL 90.68 HCA 165.80 SMA 185.73 ECC .18497 INC .6811 V1 29.433
RP 218.51 LAP -.17 LOP 44.15 VP 22.365 GAP 3.23 AZP 89.34 TAL 359.71 TAP 165.51 RCA 151.38 APO 220.09 V2 25.149
RC 176.400 GL -7.74 GP -9.13 ZAL 97.51 ZAP 73.01 ETS 176.47 ZAE 114.30 ETE 184.72 ZAC 93.05 ETC 272.84 LVI -2.68

PLANETOCENTRIC CONIC

C3 8.119 VHL 2.849 DLA -16.52 RAL 340.68 RAD 6637.1 VEL 11.324 PTH 6.38 VHP 2.902 DPA -31.41 RAP 301.27 ECC 1.1336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 14 56	2608.64	-12.78	71.12	188.37	136.23	15 58 24	1608.6	5.57	55.29
60.00	16 13 26	2453.06	-9.01	60.66	191.93	129.45	16 54 19	1453.1	7.08	42.71
70.00	17 27 25	2235.53	-5.41	45.72	194.63	123.77	18 4 41	1235.5	8.54	26.16
80.00	18 56 24	1957.06	-2.62	26.31	196.36	119.75	19 29 1	957.1	9.68	5.71
90.00	20 27 11	1664.16	-1.52	5.38	196.97	118.24	20 54 56	664.2	10.13	344.41
100.00	21 39 16	1431.53	-2.62	347.68	196.36	119.75	22 3 7	431.5	9.68	327.08
110.00	22 26 52	1282.35	-5.41	334.63	194.63	123.77	22 48 14	282.4	8.54	315.08

DIFFERENTIAL CORRECTIONS

TDE .0108 TRA .7023 TC3-7.1819 BAU .7880
RDE -.0247 RRA .2442 RC3-1.0616 FAU .23654
FDE 1.1432 FRA 4.8417 FC-25.2237 BSP 7302
BDE .0270 BRA .7435 BC3 7.2599 FSP 2721

MID-COURSE EXECUTION ACCURACY

SGT 4349.8 SGR 794.3 SG3 1533.5
RRT .9347 RRF .9777 RTF .9564
SGB 4421.7 R23 .2254 R13 .9589
SG1 4412.9 SG2 278.2 THA 9.73

ORBIT DETERMINATION ACCURACY

ST 23.0 SR 8.1 SS 48.1
CRT .9254 CRS -.5798 CST -.8218
LSA 52.2 MSA 13.5 SSA 1.5
EL1 24.2 EL2 2.9 ALF 18.42

LAUNCH DATE MAY 20 1971 FLIGHT TIME 226.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC DISTANCE 526.954 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.238	GAL	-.11	AZL	90.58	HCA	166.93	SMA	185.84	ECC	.18546	INC	.5782	V1	29.433
RP	218.88	LAP	-.13	LOP	45.28	VP	22.329	GAP	3.08	AZP	89.44	TAL	359.30	TAP	166.24	RCA	151.38	APO	220.31	V2	25.109
RC	178.981	GL	-6.55	GP	-9.82	ZAL	98.22	ZAP	71.59	ETS	175.97	ZAE	112.62	ETE	184.70	ZAC	92.38	ETC	272.76	LVI	-1.91

PLANETOCENTRIC CONIC

C3	8.145	VHL	2.854	DLA	-15.16	RAL	340.87	RAD	6637.1	VEL	11.325	PTH	6.38	VHP	2.923	DPA	-32.16	RAP	301.03	ECC	1.1340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 9	2637.22	-14.18	72.39	188.56	135.91	15 54 6	1637.2	4.14	58.49
60.00	16 6 52	2486.39	-10.45	62.30	192.07	129.15	16 48 19	1486.4	5.62	44.33
70.00	17 18 41	2275.27	-6.91	47.81	194.70	123.53	17 56 37	1275.3	7.05	28.28
80.00	18 45 26	2003.77	-4.19	28.88	196.38	119.59	19 18 49	1003.8	8.15	8.34
90.00	20 15 9	1714.35	-3.14	8.18	196.96	118.12	20 43 43	714.3	8.59	347.29
100.00	21 28 17	1478.25	-4.19	350.25	196.38	119.59	21 52 56	478.2	8.15	329.71
110.00	22 18 8	1322.08	-6.91	336.73	194.70	123.53	22 40 10	322.1	7.05	317.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0711	TRA	.7540	TC3	-7.4438	BAU	.8203	SGT	4531.2	SGR	858.0	SG3	1527.4	ST	25.4	SR	8.3	SS	51.7
RDE	-.0047	RRA	.2626	RC3	-1.1591	FAU	.23466	RRT	.9430	RRF	.9838	RTF	.9581	CRT	.9324	CRS	-.7100	CST	-.8993
FDE	1.3518	FRA	4.8667	FC	-24.9428	BSP	7645	SGB	4611.8	R23	.2308	R13	.9607	LSA	57.1	MSA	11.3	SSA	1.5
BDE	.0712	BRA	.7985	BC3	7.5335	FSP	2688	SG1	4603.2	SG2	281.1	THA	10.16	EL1	26.6	EL2	2.9	ALF	17.09

LAUNCH DATE MAY 20 1971 FLIGHT TIME 228.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC DISTANCE 531.119 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.245	GAL	-.17	AZL	90.46	HCA	168.06	SMA	185.96	ECC	.18597	INC	.4536	V1	29.433
RP	219.25	LAP	-.09	LOP	46.41	VP	22.293	GAP	2.93	AZP	89.55	TAL	358.89	TAP	166.96	RCA	151.37	APO	220.54	V2	25.068
RC	181.572	GL	-5.16	GP	-10.64	ZAL	98.94	ZAP	70.23	ETS	175.39	ZAE	110.97	ETE	184.68	ZAC	91.58	ETC	272.68	LVI	-1.04

PLANETOCENTRIC CONIC

C3	8.176	VHL	2.859	DLA	-13.61	RAL	340.99	RAD	6637.1	VEL	11.327	PTH	6.38	VHP	2.948	DPA	-33.02	RAP	300.88	ECC	1.1346

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 4 25	2669.80	-15.77	73.85	188.73	135.49	15 48 55	1669.8	2.51	57.86
60.00	15 59 10	2524.19	-12.07	64.18	192.18	128.75	16 41 14	1524.2	3.97	46.14
70.00	17 8 38	2319.97	-8.58	50.19	194.75	123.19	17 47 18	1320.0	5.36	30.64
80.00	18 33 2	2055.83	-5.94	31.76	196.37	119.32	19 7 17	1055.8	6.43	11.25
90.00	20 1 38	1769.97	-4.91	11.30	196.93	117.88	20 31 8	770.0	6.85	350.45
100.00	21 15 53	1530.30	-5.94	353.13	196.37	119.32	21 41 24	530.3	6.43	332.62
110.00	22 8 5	1366.79	-8.58	339.11	194.75	123.19	22 30 51	366.8	5.36	319.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1279	TRA	.7886	TC3	-7.6774	BAU	.8503	SGT	4689.0	SGR	919.0	SG3	1490.7	ST	28.3	SR	8.8	SS	53.4
RDE	.0136	RRA	.2784	RC3	-1.2541	FAU	.22916	RRT	.9489	RRF	.9882	RTF	.9598	CRT	.9426	CRS	-.8105	CST	-.9470
FDE	1.4724	FRA	4.7630	FC	-24.2641	BSP	7947	SGB	4778.2	R23	.2347	R13	.9625	LSA	60.3	MSA	9.2	SSA	1.7
BDE	.1286	BRA	.8363	BC3	7.7792	FSP	2644	SG1	4769.7	SG2	285.0	THA	10.57	EL1	29.5	EL2	2.8	ALF	16.44

LAUNCH DATE MAY 20 1971 FLIGHT TIME 230.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 535.281 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.252	GAL	-.24	AZL	90.31	HCA	169.19	SMA	186.07	ECC	.18650	INC	.3082	V1	29.433
RP	219.62	LAP	-.06	LOP	47.54	VP	22.257	GAP	2.79	AZP	89.70	TAL	358.48	TAP	167.67	RCA	151.37	APO	220.78	V2	25.028
RC	184.172	GL	-3.49	GP	-11.61	ZAL	99.66	ZAP	68.94	ETS	174.71	ZAE	109.35	ETE	184.69	ZAC	90.62	ETC	272.61	LVI	-.04

PLANETOCENTRIC CONIC

C3	8.217	VHL	2.867	DLA	-11.80	RAL	341.02	RAD	6637.1	VEL	11.328	PTH	6.38	VHP	2.976	DPA	-34.03	RAP	300.80	ECC	1.1352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 57 26	2707.54	-17.60	75.58	188.87	134.95	15 42 34	1707.5	.61	59.43
60.00	15 49 59	2567.78	-13.92	66.39	192.26	128.21	16 32 47	1567.8	2.05	48.23
70.00	16 56 53	2371.13	-10.48	52.94	194.76	122.69	17 36 24	1371.1	3.42	33.32
80.00	18 18 45	2114.86	-7.89	35.05	196.32	118.89	18 54 0	1114.9	4.46	14.52
90.00	19 46 12	1832.74	-6.90	14.84	196.86	117.49	20 16 44	832.7	4.86	354.00
100.00	21 1 37	1589.33	-7.89	356.42	196.32	118.89	21 28 6	589.3	4.46	335.89
110.00	21 56 19	1417.95	-10.48	341.86	194.76	122.69	22 19 57	418.0	3.42	322.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2041	TRA	.8326	TC3	-7.8949	BAU	.8802	SGT	4852.1	SGR	1001.5	SG3	1463.3	ST	33.4	SR	10.0	SS	56.4
RDE	.0375	RRA	.3017	RC3	-1.3709	FAU	.22408	RRT	.9539	RRF	.9918	RTF	.9612	CRT	.9559	CRS	-.8959	CST	-.9791
FDE	1.6398	FRA	4.7202	FC	-23.6090	BSP	8255	SGB	4954.4	R23	.2383	R13	.9640	LSA	65.9	MSA	6.9	SSA	1.9
BDE	.2075	BRA	.8856	BC3	8.0130	FSP	2571	SG1	4945.6	SG2	294.8	THA	11.18	EL1	34.7	EL2	2.8	ALF	16.17

LAUNCH DATE MAY 20 1971 FLIGHT TIME 232.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 539.441 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.259	GAL	-.31	AZL	90.13	HCA	170.31	SMA	186.20	ECC	.18707	INC	.1079	V1	29.433
RP	219.99	LAP	-.02	LOP	48.66	VP	22.222	GAP	2.64	AZP	89.87	TAL	358.06	TAP	168.37	RCA	151.36	APO	221.03	V2	24.987
RC	186.781	GL	-1.46	GP	-12.80	ZAL	100.39	ZAP	67.73	ETS	173.90	ZAE	107.75	ETE	184.72	ZAC	89.45	ETC	272.55	LVI	1.15

PLANETOCENTRIC CONIC

C3	8.272	VHL	2.876	DLA	-9.65	RAL	340.91	RAD	6637.1	VEL	11.331	PTH	6.38	VHP	3.010	DPA	-35.23	RAP	300.82	ECC	1.1361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 48 47	2752.18	-19.73	77.68	188.98	134.22	15 34 39	1752.2	-1.63	61.30
60.00	15 38 50	2619.07	-16.06	69.03	192.32	127.47	16 22 29	1619.1	-.21	50.68
70.00	16 42 50	2430.91	-12.65	56.20	194.75	121.99	17 23 21	1430.9	1.14	36.45
80.00	18 1 57	2183.25	-10.12	38.91	196.25	118.24	18 38 20	1183.2	2.16	18.28
90.00	19 28 8	1905.15	-9.15	18.97	196.76	116.87	19 59 54	905.1	2.55	358.05
100.00	20 44 48	1657.72	-10.12	.27	196.25	118.24	21 12 26	657.7	2.16	339.65
110.00	21 42 16	1477.73	-12.65	345.12	194.75	121.99	22 6 54	477.7	1.14	325.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2813	TRA	.8547	TC3	-8.1515	BAU	.9173	SGT	5028.2	SGR	1103.5	SG3	1431.4	ST	38.8	SR	11.6	SS	57.6
RDE	.0609	RRA	.3226	RC3	-1.5334	FAU	.22183	RRT	.9605	RRF	.9945	RTF	.9652	CRT	.9625	CRS	-.9429	CST	-.9933
FDE	1.7276	FRA	4.5424	FC	-23.2173	BSP	8390	SGB	5147.8	R23	.2304	R13	.9681	LSA	70.2	MSA	4.6	SSA	2.3
BDE	.2878	BRA	.9136	BC3	8.2945	FSP	2407	SG1	5139.1	SG2	300.3	THA	11.95	EL1	40.4	EL2	3.0	ALF	16.12

LAUNCH DATE MAY 20 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 543.595 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.267	GAL	-.37	AZL	89.90	HCA	171.43	SMA	186.32	ECC	.18766	INC	.0252	V1	29.433
RP	220.36	LAP	.01	LOP	49.78	VP	22.186	GAP	2.50	AZP	90.09	TAL	357.63	TAP	169.06	RCA	151.36	APO	221.29	V2	24.946
RC	189.399	GL	1.06	GP	-14.27	ZAL	101.12	ZAP	66.63	ETS	172.92	ZAE	106.18	ETE	184.78	ZAC	87.99	ETC	272.51	LVI	2.58

PLANETOCENTRIC CONIC

C3	8.352	VHL	2.890	DLA	-7.04	RAL	340.63	RAD	6637.2	VEL	11.334	PTH	6.39	VHP	3.051	DPA	-36.71	RAP	300.98	ECC	1.1375

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 37 51	2806.45	-22.28	80.32	189.10	133.19	15 24 37	1806.4	-4.36	63.57
60.00	15 24 59	2681.11	-18.60	72.30	192.38	126.42	16 9 40	1681.1	-2.94	53.65
70.00	16 25 39	2502.72	-15.21	60.20	194.74	120.96	17 7 22	1502.7	-1.60	40.19
80.00	17 41 39	2264.79	-12.70	43.58	196.18	117.25	18 19 24	1264.8	-.61	22.76
90.00	19 6 27	1991.16	-11.76	23.94	196.66	115.91	19 39 39	991.2	-.23	2.85
100.00	20 24 31	1739.26	-12.70	4.94	196.18	117.25	20 53 30	739.3	-.61	344.13
110.00	21 25 5	1549.54	-15.21	349.12	194.74	120.96	21 50 55	549.5	-1.60	329.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3934	TRA	.8833	TC3	-8.3325	BAU	.9495	SGT	5188.3	SGR	1226.1	SG3	1388.7	ST	47.7	SR	14.6	SS	62.0
RDE	.0998	RRA	.3563	RC3	-1.6929	FAU	.21412	RRT	.9626	RRF	.9965	RTF	.9649	CRT	.9734	CRS	-.9761	CST	-.9975
FDE	1.9480	FRA	4.4460	FC	-22.1938	BSP	8681	SGB	5331.2	R23	.2364	R13	.9683	LSA	79.5	MSA	3.2	SSA	2.6
BDE	.4059	BRA	.9525	BC3	8.5027	FSP	2343	SG1	5321.3	SG2	324.0	THA	12.86	EL1	49.8	EL2	3.2	ALF	16.70

LAUNCH DATE MAY 20 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 547.744 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.274	GAL	-.44	AZL	89.61	HCA	172.54	SMA	186.45	ECC	.18827	INC	.3781	V1	29.433
RP	220.74	LAP	.05	LOP	50.89	VP	22.151	GAP	2.36	AZP	90.38	TAL	357.20	TAP	169.74	RCA	151.35	APO	221.56	V2	24.904
RC	192.025	GL	4.29	GP	-16.13	ZAL	101.82	ZAP	65.66	ETS	171.70	ZAE	104.62	ETE	184.87	ZAC	86.14	ETC	272.47	LVI	4.36

PLANETOCENTRIC CONIC

C3	8.481	VHL	2.912	DLA	-3.77	RAL	340.10	RAD	6637.3	VEL	11.340	PTH	6.39	VHP	3.103	DPA	-38.56	RAP	301.30	ECC	1.1396

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 23 40	2874.53	-25.41	83.77	189.29	131.68	15 11 35	1874.5	-7.76	66.45
60.00	15 7 15	2758.59	-21.67	76.54	192.50	124.85	15 53 14	1758.6	-6.33	57.37
70.00	16 3 57	2591.88	-18.26	65.31	194.78	119.38	16 47 9	1591.9	-5.00	44.86
80.00	17 16 18	2365.36	-15.76	49.48	196.14	115.69	17 55 44	1365.4	-4.00	28.29
90.00	18 39 30	2096.89	-14.82	30.20	196.60	114.36	19 14 27	1096.9	-3.63	8.76
100.00	19 59 10	1839.83	-15.76	10.85	196.14	115.69	20 29 50	839.8	-4.00	349.66
110.00	21 3 24	1638.70	-18.26	354.22	194.78	119.38	21 30 42	638.7	-5.00	333.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5432	TRA	.9081	TC3	-8.4374	BAU	.9801	SGT	5338.3	SGR	1381.8	SG3	1336.8	ST	60.3	SR	19.2	SS	67.6
RDE	.1532	RRA	.3989	RC3	-1.8806	FAU	.20479	RRT	.9643	RRF	.9979	RTF	.9649	CRT	.9799	CRS	-.9913	CST	-.9965
FDE	2.2014	FRA	4.3146	FC	-20.9053	BSP	9069	SGB	5514.3	R23	.2390	R13	.9689	LSA	92.4	MSA	4.6	SSA	1.4
BDE	.5644	BRA	.9918	BC3	8.6444	FSP	2279	SG1	5502.8	SG2	354.9	THA	14.07	EL1	63.1	EL2	3.7	ALF	17.41

LAUNCH DATE MAY 20 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 551.889 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.282	GAL	-.51	AZL	89.22	HCA	173.65	SMA	186.59	ECC	.18891	INC	.7736	V1	29.433
RP	221.12	LAP	.09	LOP	52.00	VP	22.116	GAP	2.21	AZP	90.77	TAL	356.76	TAP	170.41	RCA	151.34	APO	221.84	V2	24.863
RC	194.659	GL	8.54	GP	-18.58	ZAL	102.46	ZAP	64.90	ETS	170.14	ZAE	103.06	ETE	185.02	ZAC	83.70	ETC	272.45	LVI	6.67

PLANETOCENTRIC CONIC

C3	8.706	VHL	2.951	DLA	.45	RAL	339.19	RAD	6637.4	VEL	11.350	PTH	6.40	VHP	3.172	DPA	-40.97	RAP	301.87	ECC	1.1433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 4 37	2963.55	-29.35	88.59	189.70	129.29	14 54 1	1963.5	-12.18	70.29
60.00	14 43 43	2859.52	-25.48	82.37	192.85	122.35	15 31 23	1859.5	-10.70	62.31
70.00	15 35 26	2707.46	-21.97	72.21	195.02	116.83	16 20 33	1707.5	-9.34	51.00
80.00	16 43 14	2495.14	-19.42	57.37	196.29	113.14	17 24 49	1495.1	-8.32	35.50
90.00	18 4 27	2233.05	-18.46	38.53	196.71	111.81	18 41 40	1233.0	-7.94	16.44
100.00	19 26 6	1969.61	-19.42	18.74	196.29	113.14	19 58 56	969.6	-8.32	356.87
110.00	20 34 52	1754.27	-21.97	1.13	195.02	116.83	21 4 6	754.3	-9.34	339.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7425	TRA	.9153	TC3	-8.4544	BAU	1.0140	SGT	5488.9	SGR	1585.5	SG3	1271.2	ST	77.2	SR	26.1	SS	74.2
RDE	.2309	RRA	.4521	RC3	-2.1042	FAU	.19371	RRT	.9655	RRF	.9988	RTF	.9645	CRT	.9842	CRS	-.9974	CST	-.9940
FDE	2.4953	FRA	4.1120	FC	-19.2641	BSP	9446	SGB	5713.3	R23	.2405	R13	.9694	LSA	110.0	MSA	6.7	SSA	.7
BDE	.7776	BRA	1.0209	BC3	8.7123	FSP	2181	SG1	5699.4	SG2	397.9	THA	15.66	EL1	81.4	EL2	4.4	ALF	18.43

LAUNCH DATE MAY 20 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 556.030 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.291	GAL	-.59	AZL	88.67	HCA	174.76	SMA	186.73	ECC	.18958	INC	1.3319	V1	29.433
RP	221.50	LAP	.12	LOP	53.11	VP	22.081	GAP	2.07	AZP	91.33	TAL	356.32	TAP	171.08	RCA	151.33	APO	222.13	V2	24.821
RC	197.299	GL	14.37	GP	-21.90	ZAL	102.94	ZAP	64.46	ETS	168.10	ZAE	101.49	ETE	185.25	ZAC	80.38	ETC	272.46	LVI	9.76

PLANETOCENTRIC CONIC

C3	9.142	VHL	3.024	DLA	6.13	RAL	337.68	RAD	6637.6	VEL	11.369	PTH	6.42	VHP	3.274	DPA	-44.21	RAP	302.85	ECC	1.1504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 37 45	3086.22	-34.41	95.91	190.80	125.15	14 29 11	2086.2	-18.15	75.84
60.00	14 10 46	2998.36	-30.24	91.03	193.83	118.02	15 0 45	1998.4	-16.56	69.37
70.00	14 55 41	2866.22	-26.49	82.33	195.83	112.39	15 43 28	1866.2	-15.08	59.71
80.00	15 57 18	2673.29	-23.76	68.82	196.96	108.63	16 41 51	1673.3	-13.98	45.70
90.00	17 15 48	2419.93	-22.74	50.55	197.32	107.28	17 56 8	1419.9	-13.56	27.28
100.00	18 40 9	2147.76	-23.76	30.19	196.96	108.63	19 15 57	1147.8	-13.98	7.06
110.00	19 55 8	1913.04	-26.49	11.24	195.83	112.39	20 27 1	913.0	-15.08	348.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0347	TRA	.9001	TC3	-8.2508	BAU	1.0484	SGT	5628.6	SGR	1856.3	SG3	1180.4	ST	101.6	SR	36.9	SS	82.6
RDE	.3560	RRA	.5181	RC3	-2.3478	FAU	.17899	RRT	.9667	RRF	.9993	RTF	.9644	CRT	.9876	CRS	-.9995	CST	-.9921
FDE	2.8568	FRA	3.7937	FC	-16.9510	BSP	9923	SGB	5926.8	R23	.2383	R13	.9705	LSA	135.8	MSA	8.9	SSA	.3
BDE	1.0942	BRA	1.0385	BC3	8.5784	FSP	2041	SG1	5909.5	SG2	452.5	THA	17.79	EL1	108.0	EL2	5.5	ALF	19.78

LAUNCH DATE MAY 20 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 17 1972

DISTANCE 560.165

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.299 GAL -.66 AZL 87.82 HCA 175.86 SMA 186.87 ECC .19026 INC 2.1715 V1 29.433
RP 221.88 LAP .16 LOP 54.21 VP 22.047 GAP 1.93 AZP 92.17 TAL 355.87 TAP 171.73 RCA 151.32 APO 222.42 V2 24.780
RC 199.945 GL 22.71 GP -26.63 ZAL 103.06 ZAP 64.60 ETS 165.38 ZAE 99.90 ETE 185.60 ZAC 75.66 ETC 272.52 LVI 14.11

PLANETOCENTRIC CONIC

C3 10.105 VHL 3.179 DLA 14.12 RAL 335.14 RAD 6638.1 VEL 11.411 PTH 6.46 VHP 3.442 DPA -48.79 RAP 304.60 ECC 1.1663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 57 4	3267.22	-40.80	108.48	193.93	116.98	13 51 31	2267.2	-26.56	84.83
60.00	13 20 50	3203.96	-35.93	105.46	196.60	109.62	14 14 14	2204.0	-24.64	80.74
70.00	13 55 4	3103.19	-31.55	98.88	198.18	103.82	14 46 47	2103.2	-22.84	73.69
80.00	14 46 30	2942.06	-28.32	87.44	198.96	99.89	15 35 32	1942.1	-21.47	62.12
90.00	16 0 24	2703.54	-27.09	70.14	199.19	98.45	16 45 27	1703.5	-20.94	44.80
100.00	17 29 21	2416.53	-28.32	48.81	198.96	99.89	18 9 38	1416.5	-21.47	23.49
110.00	18 54 30	2150.01	-31.55	27.80	198.18	103.82	19 30 20	1150.0	-22.84	2.61

DIFFERENTIAL CORRECTIONS

TDE 1.4402 TRA .7938 TC3-7.8300 BAU 1.1157
RDE .5637 RRA .5870 RC3-2.6270 FAU .16262
FDE 3.2029 FRA 3.2332 FC-13.9326 BSP .9912
BDE 1.5466 BRA .9873 BC3 8.2590 FSP .1754

MID-COURSE EXECUTION ACCURACY

SGT 5804.8 SGR 2238.7 SG3 1050.7
RRT .9666 RRF .9996 RTF .9625
SGB 6221.6 R23 .2387 R13 .9708
SG1 6198.3 SG2 537.5 THA 20.61

ORBIT DETERMINATION ACCURACY

ST 131.9 SR 53.4 SS 90.0
CRT .9898 CRS-1.0000 CST -.9910
LSA 168.0 MSA 11.2 SSA .2
EL1 142.1 EL2 7.1 ALF 21.91

LAUNCH DATE MAY 20 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 19 1972

DISTANCE 564.294

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.308 GAL -.73 AZL 86.37 HCA 176.96 SMA 187.02 ECC .19097 INC 3.6219 V1 29.433
RP 222.27 LAP .19 LOP 55.31 VP 22.013 GAP 1.79 AZP 93.62 TAL 355.43 TAP 172.38 RCA 151.30 APO 222.73 V2 24.738
RC 202.595 GL 35.08 GP -33.71 ZAL 102.34 ZAP 65.92 ETS 161.75 ZAE 98.27 ETE 186.19 ZAC 68.57 ETC 272.69 LVI 20.54

PLANETOCENTRIC CONIC

C3 12.649 VHL 3.557 DLA 25.76 RAL 330.60 RAD 6639.4 VEL 11.520 PTH 6.57 VHP 3.774 DPA -55.53 RAP 308.19 ECC 1.2082

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	11 47 35	3560.05	-47.00	133.71	202.97	98.43	12 46 55	2560.1	-38.36	102.75
60.00	11 53 12	3545.08	-40.28	133.17	203.76	91.39	12 52 17	2545.1	-35.32	103.24
70.00	12 2 54	3516.49	-33.87	130.63	203.54	85.36	13 1 31	2516.5	-32.25	102.01
80.00	12 23 50	3450.79	-28.44	124.87	202.75	80.50	13 21 21	2450.8	-29.53	97.50
90.00	13 19 6	3272.28	-25.92	111.23	202.22	78.27	14 13 38	2272.3	-28.26	84.46
100.00	15 6 42	2925.27	-28.44	86.23	202.75	80.50	15 55 27	1925.3	-29.53	58.86
110.00	17 2 20	2563.31	-33.87	59.54	203.54	85.36	17 45 4	1563.3	-32.25	30.93

DIFFERENTIAL CORRECTIONS

TDE 2.1970 TRA .5951 TC3-6.5414 BAU 1.1962
RDE 1.0079 RRA .6544 RC3-2.6926 FAU .13375
FDE 3.5862 FRA 2.3984 FC3-9.1542 BSP .10210
BDE 2.4171 BRA .8845 BC3 7.0739 FSP .1382

MID-COURSE EXECUTION ACCURACY

SGT 5942.2 SGR 2770.4 SG3 838.5
RRT .9661 RRF .9996 RTF .9591
SGB 6556.3 R23 .2386 R13 .9710
SG1 6523.9 SG2 651.1 THA 24.51

ORBIT DETERMINATION ACCURACY

ST 177.8 SR 83.1 SS 96.5
CRT .9924 CRS-1.0000 CST -.9917
LSA 218.4 MSA 13.1 SSA .1
EL1 196.1 EL2 9.2 ALF 24.94

LAUNCH DATE MAY 20 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 21 1972

DISTANCE 568.412

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.316 GAL -.81 AZL 83.32 HCA 178.04 SMA 187.16 ECC .19170 INC 6.6745 V1 29.433
RP 222.65 LAP .23 LOP 56.41 VP 21.978 GAP 1.65 AZP 96.68 TAL 354.98 TAP 173.03 RCA 151.29 APO 223.04 V2 24.696
RC 205.250 GL 53.51 GP -44.72 ZAL 99.87 ZAP 69.71 ETS 157.52 ZAE 96.74 ETE 187.50 ZAC 57.52 ETC 273.27 LVI 30.26

PLANETOCENTRIC CONIC

C3 21.879 VHL 4.678 DLA 42.59 RAL 321.31 RAD 6643.7 VEL 11.911 PTH 6.92 VHP 4.623 DPA -65.53 RAP 317.90 ECC 1.3601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	9 6 55	4131.92	-39.18	184.64	216.00	60.49	10 15 46	3131.9	-47.22	153.11
56.71	7 21 22	4411.22	-23.05	197.69	203.76	53.13	8 34 54	3411.2	-36.02	174.23
56.71	7 21 22	4411.22	-23.05	197.69	203.76	53.13	8 34 54	3411.2	-36.02	174.23
56.71	7 21 22	4411.22	-23.05	197.69	203.76	53.13	8 34 54	3411.2	-36.02	174.23
56.71	7 21 22	4411.22	-23.05	197.69	203.76	53.13	8 34 54	3411.2	-36.02	174.23
56.71	7 21 22	4411.22	-23.05	197.69	203.76	53.13	8 34 54	3411.2	-36.02	174.23
56.71	7 21 22	4411.22	-23.05	197.69	203.76	53.13	8 34 54	3411.2	-36.02	174.23

DIFFERENTIAL CORRECTIONS

TDE 3.7324 TRA .0027 TC3-4.2233 BAU 1.4017
RDE 2.1465 RRA .5514 RC3-2.2645 FAU .08916
FDE 3.4642 FRA 1.0618 FC3-3.5281 BSP .9232
BDE 4.3056 BRA .5514 BC3 4.7921 FSP .722

MID-COURSE EXECUTION ACCURACY

SGT 6042.5 SGR 3198.9 SG3 488.9
RRT .9646 RRF .9985 RTF .9490
SGB 6982.4 R23 .2522 R13 .9676
SG1 6936.1 SG2 803.5 THA 29.62

ORBIT DETERMINATION ACCURACY

ST 228.7 SR 132.2 SS 85.4
CRT .9946 CRS -.9998 CST -.9923
LSA 277.2 MSA 14.3 SSA .0
EL1 263.9 EL2 11.9 ALF 29.97

LAUNCH DATE MAY 20 1971 FLIGHT TIME 254.00 ARRIVAL DATE JAN 29 1972

DISTANCE 584.941

HELIOCENTRIC CONIC — EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.352 GAL -1.13 AZL 98.68 HCA 182.43 SMA 187.78 ECC .19484 INC 8.6721 V1 29.433
RP 224.20 LAP .37 LOP 60.75 VP 21.844 GAP 1.09 AZP 81.33 TAL 353.04 TAP 175.47 RCA 151.20 APO 224.37 V2 24.529
RC 215.890 GL -60.77 GP 38.31 ZAL 100.16 ZAP 64.09 ETS 201.69 ZAE 94.85 ETE 176.87 ZAC 140.35 ETC 274.69 LVI -45.96

PLANETOCENTRIC CONIC

C3 31.262 VHL 5.591 DLA -56.71 RAL 28.97 RAD 6647.5 VEL 12.296 PTH 7.23 VHP 4.205 DPA 15.27 RAP 292.56 ECC 1.5145

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.55	22 48 48	2001.24	24.16	53.33	281.82	143.02	23 22 9	1001.2	42.76	34.32
38.55	22 48 48	2001.24	24.16	53.33	281.82	143.02	23 22 9	1001.2	42.76	34.32
38.55	22 48 48	2001.24	24.16	53.33	281.82	143.02	23 22 9	1001.2	42.76	34.32
38.55	22 48 48	2001.24	24.16	53.33	281.82	143.02	23 22 9	1001.2	42.76	34.32
38.55	22 48 48	2001.24	24.16	53.33	281.82	143.02	23 22 9	1001.2	42.76	34.32
38.55	22 48 48	2001.24	24.16	53.33	281.82	143.02	23 22 9	1001.2	42.76	34.32
38.55	22 48 48	2001.24	24.16	53.33	281.82	143.02	23 22 9	1001.2	42.76	34.32

DIFFERENTIAL CORRECTIONS

TDE -.7477 TRA 2.8267 TC3-3.2431 BAU 1.4803
RDE -.3744 RRA-1.4596 RC3 1.4242 FAU .11343
FDE 1.3408 FRA 3.2321 FC3-3.1413 BSP .10914
BDE .8362 BRA 3.1813 BC3 3.5420 FSP .1023

MID-COURSE EXECUTION ACCURACY

SGT 6449.5 SGR 3179.8 SG3 614.9
RRT -.9687 RRF -.9973 RTF .9486
SGB 7190.8 R23 .2700 R13 -.9627
SG1 7155.5 SG2 711.5 THA 154.20

ORBIT DETERMINATION ACCURACY

ST 88.1 SR 45.2 SS 41.3
CRT -.6310 CRS .9780 CST -.4553
LSA 96.7 MSA 46.5 SSA .1
EL1 93.3 EL2 33.1 ALF 159.34

LAUNCH DATE MAY 20 1971 FLIGHT TIME 256.00 ARRIVAL DATE JAN 31 1972

HELIOCENTRIC CONIC DISTANCE 589.036 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.362	GAL	-1.21	AZL	96.57	HCA	183.50	SMA	187.95	ECC	.19567	INC	6.5664	V1	29.433
RP	224.59	LAP	.40	LOP	61.82	VP	21.810	GAP	.95	AZP	83.44	TAL	352.57	TAP	176.07	RCA	151.17	APO	224.72	V2	24.487
RC	218.554	GL	-51.91	GP	29.01	ZAL	102.68	ZAP	59.42	ETS	198.31	ZAE	93.42	ETE	178.70	ZAC	131.14	ETC	273.72	LVI	-37.55

PLANETOCENTRIC CONIC

C3	22.121	VHL	4.703	DLA	-50.19	RAL	18.85	RAD	6643.8	VEL	11.921	PTH	6.93	VHP	3.725	DPA	6.02	RAP	293.62	ECC	1.3640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.64	22 32 14	1863.42	26.24	40.81	264.58	134.45	23 3 17	863.4	41.77	18.21
46.64	22 32 14	1863.42	26.24	40.81	264.58	134.45	23 3 17	863.4	41.77	18.21
46.64	22 32 14	1863.42	26.24	40.81	264.58	134.45	23 3 17	863.4	41.77	18.21
46.64	22 32 14	1863.42	26.24	40.81	264.58	134.45	23 3 17	863.4	41.77	18.21
46.64	22 32 14	1863.42	26.24	40.81	264.58	134.45	23 3 17	863.4	41.77	18.21
46.64	22 32 14	1863.42	26.24	40.81	264.58	134.45	23 3 17	863.4	41.77	18.21
46.64	22 32 14	1863.42	26.24	40.81	264.58	134.45	23 3 17	863.4	41.77	18.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9662	TRA	2.6884	TC3	-4.4418	BAU	1.3792	SGT	6708.6	SGR	2490.8	SG3	838.2	ST	96.9	SR	31.9	SS	42.3
RDE	-.0725	RRA	-1.1035	RC3	1.4217	FAU	.14030	RRT	-.9708	RRF	-.9980	RTF	.9553	CRT	-.7024	CRS	.9731	CST	-.5195
FDE	.7845	FRA	4.2869	FC3	-5.4911	BSP	11387	SGB	7156.1	R23	.2668	R13	-.9633	LSA	102.8	MSA	40.4	SSA	.1
BDE	.9689	BRA	2.9060	BC3	4.6638	FSP	1459	SG1	7134.0	SG2	561.6	THA	160.05	EL1	99.6	EL2	22.1	ALF	166.31

LAUNCH DATE MAY 20 1971 FLIGHT TIME 258.00 ARRIVAL DATE FEB 2 1972

HELIOCENTRIC CONIC DISTANCE 593.133 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.371	GAL	-1.30	AZL	95.45	HCA	184.57	SMA	188.11	ECC	.19652	INC	5.4522	V1	29.433
RP	224.98	LAP	.43	LOP	62.90	VP	21.778	GAP	.81	AZP	84.56	TAL	352.10	TAP	176.67	RCA	151.14	APO	225.08	V2	24.445
RC	221.219	GL	-45.84	GP	22.98	ZAL	104.57	ZAP	56.53	ETS	195.50	ZAE	92.09	ETE	179.66	ZAC	125.14	ETC	273.35	LVI	-32.07

PLANETOCENTRIC CONIC

C3	18.385	VHL	4.288	DLA	-45.12	RAL	13.86	RAD	6642.1	VEL	11.765	PTH	6.79	VHP	3.539	DPA	.06	RAP	294.48	ECC	1.3026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 50 15	2031.04	15.97	46.41	245.31	135.44	21 24 6	1031.0	32.60	27.05
53.25	22 35 14	1762.40	25.95	30.76	254.85	128.31	23 4 36	762.4	39.21	6.67
53.25	22 35 14	1762.40	25.95	30.76	254.85	128.31	23 4 36	762.4	39.21	6.67
53.25	22 35 14	1762.40	25.95	30.76	254.85	128.31	23 4 36	762.4	39.21	6.67
53.25	22 35 14	1762.40	25.95	30.76	254.85	128.31	23 4 36	762.4	39.21	6.67
53.25	22 35 14	1762.40	25.95	30.76	254.85	128.31	23 4 36	762.4	39.21	6.67
53.25	22 35 14	1762.40	25.95	30.76	254.85	128.31	23 4 36	762.4	39.21	6.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8868	TRA	2.6619	TC3	-5.2898	BAU	1.3393	SGT	6884.4	SGR	2015.3	SG3	951.7	ST	96.3	SR	25.2	SS	43.9
RDE	-.0187	RRA	-.8842	RC3	1.3073	FAU	.15156	RRT	-.9728	RRF	-.9978	RTF	.9587	CRT	-.7567	CRS	.9673	CST	-.5662
FDE	.6482	FRA	4.8144	FC3	-7.1367	BSP	11883	SGB	7173.3	R23	.2643	R13	-.9636	LSA	102.1	MSA	37.6	SSA	.1
BDE	.8870	BRA	2.8049	BC3	5.4489	FSP	1695	SG1	7159.3	SG2	448.6	THA	164.04	EL1	98.2	EL2	16.2	ALF	168.48

LAUNCH DATE MAY 20 1971 FLIGHT TIME 260.00 ARRIVAL DATE FEB 4 1972

HELIOCENTRIC CONIC DISTANCE 597.224 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.381	GAL	-1.38	AZL	94.76	HCA	185.64	SMA	188.27	ECC	.19738	INC	4.7615	V1	29.433
RP	225.37	LAP	.47	LOP	63.97	VP	21.745	GAP	.67	AZP	85.26	TAL	351.62	TAP	177.26	RCA	151.11	APO	225.44	V2	24.403
RC	223.884	GL	-41.44	GP	18.89	ZAL	106.09	ZAP	54.52	ETS	193.35	ZAE	90.83	ETE	180.23	ZAC	121.05	ETC	273.19	LVI	-28.36

PLANETOCENTRIC CONIC

C3	16.495	VHL	4.061	DLA	-41.20	RAL	11.06	RAD	6641.2	VEL	11.685	PTH	6.72	VHP	3.457	DPA	-3.98	RAP	295.18	ECC	1.2715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 45 24	2160.97	9.58	52.14	235.33	136.83	20 21 25	1161.0	27.05	34.45
58.69	22 46 7	1678.08	24.97	22.45	248.92	123.91	23 14 5	678.1	36.60	357.80
58.69	22 46 7	1678.08	24.97	22.45	248.92	123.91	23 14 5	678.1	36.60	357.80
58.69	22 46 7	1678.08	24.97	22.45	248.92	123.91	23 14 5	678.1	36.60	357.80
58.69	22 46 7	1678.08	24.97	22.45	248.92	123.91	23 14 5	678.1	36.60	357.80
58.69	22 46 7	1678.08	24.97	22.45	248.92	123.91	23 14 5	678.1	36.60	357.80
58.69	22 46 7	1678.08	24.97	22.45	248.92	123.91	23 14 5	678.1	36.60	357.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7829	TRA	2.6604	TC3	-5.9456	BAU	1.3365	SGT	7030.5	SGR	1678.7	SG3	1006.6	ST	93.3	SR	20.8	SS	45.0
RDE	-.0059	RRA	-.7366	RC3	1.1749	FAU	.15619	RRT	-.9734	RRF	-.9971	RTF	.[illegible]93	CRT	-.7936	CRS	.9559	CST	-.5801
FDE	.6676	FRA	5.0736	FC3	-8.1973	BSP	12103	SGB	7228.1	R23	.2648	R13	-.9626	LSA	99.1	MSA	36.6	SSA	.2
BDE	.7829	BRA	2.7604	BC3	6.0606	FSP	1811	SG1	7218.4	SG2	374.3	THA	166.88	EL1	94.7	EL2	12.4	ALF	169.80

LAUNCH DATE MAY 20 1971 FLIGHT TIME 262.00 ARRIVAL DATE FEB 6 1972

HELIOCENTRIC CONIC DISTANCE 601.310 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.391	GAL	-1.46	AZL	94.29	HCA	186.70	SMA	188.44	ECC	.19827	INC	4.2928	V1	29.433
RP	225.76	LAP	.50	LOP	65.03	VP	21.712	GAP	.53	AZP	85.74	TAL	351.14	TAP	177.84	RCA	151.08	APO	225.80	V2	24.361
RC	226.550	GL	-38.11	GP	15.95	ZAL	107.39	ZAP	52.97	ETS	191.70	ZAE	89.63	ETE	180.61	ZAC	118.12	ETC	273.12	LVI	-25.72

PLANETOCENTRIC CONIC

C3	15.423	VHL	3.927	DLA	-38.10	RAL	9.40	RAD	6640.7	VEL	11.639	PTH	6.68	VHP	3.422	DPA	-6.86	RAP	295.78	ECC	1.2538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 9 19	2240.78	5.60	55.54	230.02	137.32	19 46 40	1240.8	23.44	38.60
60.00	21 15 57	1902.88	14.91	33.88	238.69	127.89	21 47 39	902.9	28.94	12.73
63.33	23 1 3	1601.57	23.82	15.21	245.11	120.66	23 27 45	601.6	34.27	350.37
63.33	23 1 3	1601.57	23.82	15.21	245.11	120.66	23 27 45	601.6	34.27	350.37
63.33	23 1 3	1601.57	23.82	15.21	245.11	120.66	23 27 45	601.6	34.27	350.37
63.33	23 1 3	1601.57	23.82	15.21	245.11	120.66	23 27 45	601.6	34.27	350.37
63.33	23 1 3	1601.57	23.82	15.21	245.11	120.66	23 27 45	601.6	34.27	350.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6533	TRA	2.7123	TC3	-6.3774	BAU	1.3320	SGT	7161.2	SGR	1436.0	SG3	1032.8	ST	89.5	SR	17.9	SS	46.7
RDE	-.0078	RRA	-.6401	RC3	1.0294	FAU	.15450	RRT	-.9730	RRF	-.9959	RTF	.9585	CRT	-.8289	CRS	.9404	CST	-.5896
FDE	.7997	FRA	5.2608	FC3	-8.6725	BSP	12629	SGB	7303.8	R23	.2658	R13	-.9609	LSA	95.8	MSA	36.6	SSA	.2
BDE	.6533	BRA	2.7868	BC3	6.4599	FSP	1919	SG1	7296.5	SG2	325.0	THA	168.94	EL1	90.8	EL2	9.9	ALF	170.50

LAUNCH DATE MAY 20 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 8 1972

HELIOCENTRIC CONIC DISTANCE 605,395 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.400	GAL	-1.55	AZL	93.95	HCA	187.76	SMA	188.61	ECC	.19917	INC	3.9514	V1	29.433
RP	226.15	LAP	.53	LOP	66.09	VP	21.680	GAP	.39	AZP	86.08	TAL	350.66	TAP	178.42	RCA	151.04	APO	226.18	V2	24.319
RC	229.216	GL	-33.50	GP	13.76	ZAL	108.53	ZAP	51.69	ETS	190.42	ZAE	88.46	ETE	180.87	ZAC	115.92	ETC	273.10	LVI	-23.77

PLANETOCENTRIC CONIC

C3	14.776	VHL	3.844	DLA	-35.57	RAL	8.38	RAD	6640.4	VEL	11.612	PTH	6.65	VHP	3.410	DPA	-8.99	RAP	296.32	ECC	1.2432

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 45 27	2300.37	2.62	58.05	226.79	137.52	19 23 47	1300.4	20.65	41.54
60.00	20 31 30	2017.65	10.02	39.67	233.82	129.24	21 5 8	1017.8	24.90	19.77
67.47	23 18 49	1527.59	22.69	8.54	242.58	118.16	23 44 17	527.6	32.25	343.65
67.47	23 18 49	1527.59	22.69	8.54	242.58	118.16	23 44 17	527.6	32.25	343.65
67.47	23 18 49	1527.59	22.69	8.54	242.58	118.16	23 44 17	527.6	32.25	343.65
67.47	23 18 49	1527.59	22.69	8.54	242.58	118.16	23 44 17	527.6	32.25	343.65
67.47	23 18 49	1527.59	22.69	8.54	242.58	118.16	23 44 17	527.6	32.25	343.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5824	TRA	2.7308	TC3	-6.8218	BAU	1.3601	SGT	7300.5	SGR	1250.2	SG3	1038.7	ST	87.1	SR	15.4	SS	46.4
RDE	.0035	RRA	-.5587	RC3	.9333	FAU	.15676	RRT	-.9741	RRF	-.9942	RTF	.9602	CRT	-.8747	CRS	.9149	CST	-.6051
FDE	.8200	FRA	5.2674	FC3	-9.1860	BSP	12509	SGB	7406.8	R23	.2542	R13	-.9618	LSA	93.4	MSA	35.3	SSA	.3
BDE	.5824	BRA	2.7874	BC3	6.8853	FSP	1865	SG1	7401.5	SG2	279.0	THA	170.52	EL1	88.1	EL2	7.4	ALF	171.14

LAUNCH DATE MAY 20 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 10 1972

HELIOCENTRIC CONIC DISTANCE 609,473 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.410	GAL	-1.63	AZL	93.69	HCA	188.82	SMA	188.78	ECC	.20009	INC	3.6931	V1	29.433
RP	226.55	LAP	.57	LOP	67.15	VP	21.648	GAP	.25	AZP	86.35	TAL	350.17	TAP	178.99	RCA	151.01	APO	226.55	V2	24.278
RC	231.880	GL	-33.40	GP	12.08	ZAL	109.59	ZAP	50.57	ETS	189.41	ZAE	87.33	ETE	181.05	ZAC	114.23	ETC	273.11	LVI	-22.30

PLANETOCENTRIC CONIC

C3	14.376	VHL	3.792	DLA	-33.45	RAL	7.76	RAD	6640.2	VEL	11.595	PTH	6.64	VHP	3.411	DPA	-10.61	RAP	296.82	ECC	1.2366

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 28 21	2348.53	.20	60.06	224.72	137.58	19 7 30	1348.5	18.36	43.83
60.00	20 3 53	2094.26	6.71	43.40	230.94	129.83	20 38 47	1094.3	22.01	24.17
70.00	22 38 27	1638.33	16.80	13.76	238.14	120.18	23 5 45	638.3	27.73	350.63
71.35	23 39 15	1452.04	21.62	2.02	240.87	116.16	24 3 27	452.0	30.47	337.17
71.35	23 39 15	1452.04	21.62	2.02	240.87	116.16	24 3 27	452.0	30.47	337.17
71.35	23 39 15	1452.04	21.62	2.02	240.87	116.16	24 3 27	452.0	30.47	337.17
110.00	3 41 49	5973.18	16.80	280.58	238.14	120.18	5 21 22	4973.2	27.73	257.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4960	TRA	2.7856	TC3	-7.1305	BAU	1.3798	SGT	7433.0	SGR	1108.7	SG3	1037.4	ST	84.8	SR	13.7	SS	47.0
RDE	.0084	RRA	-.5025	RC3	.8348	FAU	.15545	RRT	-.9737	RRF	-.9917	RTF	.9605	CRT	-.9159	CRS	.8830	CST	-.6211
FDE	.9042	FRA	5.2938	FC3	-9.3613	BSP	12710	SGB	7515.2	R23	.2431	R13	-.9617	LSA	91.6	MSA	34.7	SSA	.3
BDE	.4961	BRA	2.8306	BC3	7.1792	FSP	1858	SG1	7511.1	SG2	250.2	THA	171.73	EL1	85.8	EL2	5.4	ALF	171.55

LAUNCH DATE MAY 20 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 12 1972

HELIOCENTRIC CONIC DISTANCE 613,545 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.420	GAL	-1.72	AZL	93.49	HCA	189.87	SMA	188.95	ECC	.20103	INC	3.4908	V1	29.433
RP	226.94	LAP	.60	LOP	68.20	VP	21.616	GAP	.11	AZP	86.56	TAL	349.68	TAP	179.55	RCA	150.97	APO	226.94	V2	24.236
RC	234.543	GL	-31.66	GP	10.74	ZAL	110.57	ZAP	49.56	ETS	188.58	ZAE	86.24	ETE	181.19	ZAC	112.87	ETC	273.14	LVI	-21.16

PLANETOCENTRIC CONIC

C3	14.133	VHL	3.759	DLA	-31.63	RAL	7.42	RAD	6640.1	VEL	11.584	PTH	6.63	VHP	3.420	DPA	-11.89	RAP	297.29	ECC	1.2326

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 15 32	2389.24	-1.85	61.76	223.37	137.55	18 55 21	1389.2	16.41	45.71
60.00	19 44 15	2153.15	4.13	46.24	229.11	130.12	20 20 8	1153.2	19.69	27.42
70.00	21 50 51	1780.48	11.77	21.70	234.75	122.29	22 20 31	780.5	23.95	359.94
75.21	0 7 2	1369.97	20.63	355.24	239.73	114.53	0 29 52	370.0	28.91	330.44
75.21	0 7 2	1369.97	20.63	355.24	239.73	114.53	0 29 52	370.0	28.91	330.44
75.21	0 7 2	1369.97	20.63	355.24	239.73	114.53	0 29 52	370.0	28.91	330.44
110.00	2 54 13	6115.33	11.77	288.52	234.75	122.29	4 36 8	5115.3	23.95	266.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4097	TRA	2.8573	TC3	-7.3565	BAU	1.3971	SGT	7559.2	SGR	996.7	SG3	1030.3	ST	83.2	SR	12.4	SS	48.0
RDE	.0126	RRA	-.4608	RC3	.7438	FAU	.15234	RRT	-.9720	RRF	-.9883	RTF	.9601	CRT	-.9524	CRS	.8434	CST	-.6407
FDE	1.0029	FRA	5.3186	FC3	-9.3320	BSP	13001	SGB	7624.6	R23	.2308	R13	-.9610	LSA	90.6	MSA	34.2	SSA	.3
BDE	.4099	BRA	2.8942	BC3	7.3940	FSP	1859	SG1	7621.1	SG2	232.1	THA	172.69	EL1	84.1	EL2	3.8	ALF	171.88

LAUNCH DATE MAY 20 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 14 1972

HELIOCENTRIC CONIC DISTANCE 617,612 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.430	GAL	-1.81	AZL	93.33	HCA	190.92	SMA	189.13	ECC	.20198	INC	3.3271	V1	29.433
RP	227.33	LAP	.63	LOP	69.25	VP	21.585	GAP	-.03	AZP	86.73	TAL	349.19	TAP	180.11	RCA	150.93	APO	227.33	V2	24.195
RC	237.203	GL	-30.19	GP	9.65	ZAL	111.50	ZAP	48.64	ETS	187.91	ZAE	85.17	ETE	181.29	ZAC	111.77	ETC	273.18	LVI	-20.26

PLANETOCENTRIC CONIC

C3	13.996	VHL	3.741	DLA	-30.05	RAL	7.27	RAD	6640.0	VEL	11.578	PTH	6.62	VHP	3.434	DPA	-12.92	RAP	297.76	ECC	1.2303

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 5 33	2424.71	-3.63	63.24	222.50	137.47	18 45 58	1424.7	14.68	47.32
60.00	19 29 23	2201.70	2.00	48.57	227.91	130.26	20 6 4	1201.7	17.73	30.03
70.00	21 23 25	1866.20	8.62	26.33	232.86	123.18	21 54 32	866.2	21.37	5.26
79.40	0 36 42	1272.07	19.71	347.46	238.97	113.15	0 57 54	272.1	27.52	322.72
79.40	0 36 42	1272.07	19.71	347.46	238.97	113.15	0 57 54	272.1	27.52	322.72
79.40	0 36 42	1272.07	19.71	347.46	238.97	113.15	0 57 54	272.1	27.52	322.72
110.00	2 26 48	6201.05	8.62	293.15	232.86	123.18	4 10 9	5201.1	21.37	272.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3373	TRA	2.9278	TC3	-7.5597	BAU	1.4200	SGT	7687.2	SGR	906.3	SG3	1019.1	ST	82.3	SR	11.4	SS	48.6
RDE	.0189	RRA	-.4270	RC3	.6680	FAU	.14964	RRT	-.9697	RRF	-.9839	RTF	.9599	CRT	-.9807	CRS	.7931	CST	-.6614
FDE	1.0779	FRA	5.3151	FC3	-9.2561	BSP	13190	SGB	7740.5	R23	.2144	R13	-.9606	LSA	90.3	MSA	33.5	SSA	.4
BDE	.3378	BRA	2.9588	BC3	7.5891	FSP	1836	SG1	7737.4	SG2	220.1	THA	173.47	EL1	83.1	EL2	2.2	ALF	172.23

LAUNCH DATE MAY 20 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 16 1972

HELIOCENTRIC CONIC DISTANCE 621.673 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.440 GAL -1.90 AZL 93.19 HCA 191.97 SMA 189.30 ECC .20295 INC 3.1925 V1 29.433
RP 227.72 LAP .66 LOP 70.30 VP 21.553 GAP -.17 AZP 86.88 TAL 348.70 TAP 180.67 RCA 150.88 APO 227.72 V2 24.153
RC 239.859 GL -28.93 GP 8.75 ZAL 112.40 ZAP 47.78 ETS 187.34 ZAE 84.12 ETE 181.36 ZAC 110.86 ETC 273.23 LVI -19.54

PLANETOCENTRIC CONIC

C3 13.934 VHL 3.733 DLA -28.64 RAL 7.25 RAD 6640.0 VEL 11.576 PTH 6.62 VHP 3.451 DPA -13.75 RAP 298.22 ECC 1.2293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 57 37	2456.34	-5.22	64.57	221.97	137.36	18 38 33	1456.3	13.13	48.73
60.00	19 17 40	2243.37	.17	50.56	227.14	130.30	19 55 4	1243.4	16.02	32.22
70.00	21 3 51	1931.08	6.18	29.78	231.67	123.66	21 36 2	931.1	19.30	9.15
80.00	23 25 45	1486.70	12.95	.09	235.69	117.14	23 50 32	486.7	23.02	337.22
85.27	1 23 2	121.94	18.86	336.00	238.50	111.96	1 41 44	121.9	26.27	311.33
100.00	2 12 33	6249.21	12.95	299.36	235.69	117.14	3 56 42	5249.2	23.02	276.50
110.00	2 7 14	6265.93	6.18	296.60	231.67	123.66	3 51 40	5265.9	19.30	275.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2686 TRA 3.0037 TC3-7.7257 BAU 1.4435 SGT 7812.3 SGR 832.0 SG3 1005.2 ST 81.9 SR 10.7 SS 49.2
RDE .0256 RRA -.3998 RC3 .6019 FAU .14676 RRT -.9663 RRF -.9783 RTF .9597 CRT -.9966 CRS .7326 CST -.6830
FDE 1.1482 FRA 5.2995 FC3-9.1184 BSP 13387 SGB 7856.5 R23 .1952 R13 -.9602 LSA 90.4 MSA 32.8 SSA .4
BDE .2699 BRA 3.0302 BC3 7.7491 FSP 1808 SG1 7853.6 SG2 213.2 THA 174.12 EL1 82.6 EL2 .9 ALF 172.59

LAUNCH DATE MAY 20 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 18 1972

HELIOCENTRIC CONIC DISTANCE 625.729 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.450 GAL -1.99 AZL 93.08 HCA 193.01 SMA 189.48 ECC .20393 INC 3.0797 V1 29.433
RP 228.10 LAP .69 LOP 71.34 VP 21.522 GAP -.31 AZP 87.00 TAL 348.20 TAP 181.22 RCA 150.84 APO 228.12 V2 24.112
RC 242.511 GL -27.83 GP 8.00 ZAL 113.26 ZAP 46.96 ETS 186.86 ZAE 83.10 ETE 181.42 ZAC 110.08 ETC 273.30 LVI -18.96

PLANETOCENTRIC CONIC

C3 13.928 VHL 3.732 DLA -27.38 RAL 7.33 RAD 6640.0 VEL 11.575 PTH 6.62 VHP 3.471 DPA -14.43 RAP 298.68 ECC 1.2292

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 51 10	2485.05	-6.65	65.78	221.69	137.22	18 32 35	1485.0	11.72	49.99
60.00	19 8 11	2280.17	-1.45	52.32	226.67	130.28	19 46 11	1280.2	14.49	34.12
70.00	20 48 47	1984.36	4.16	32.58	230.92	123.93	21 21 51	984.4	17.52	12.26
80.00	22 55 37	1587.32	9.76	5.85	234.32	118.36	23 22 4	587.3	20.58	343.70
90.00	1 0 11	1198.27	13.07	338.94	236.03	115.30	1 20 10	198.3	22.39	315.78
100.00	1 42 24	1061.80	9.76	327.22	234.32	118.36	2 0 6	61.8	20.58	305.06
110.00	1 52 9	1031.18	4.16	321.50	230.92	123.93	2 9 20	31.2	17.52	301.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1989 TRA 3.0904 TC3-7.8496 BAU 1.4651 SGT 7935.2 SGR 771.1 SG3 990.4 ST 82.1 SR 10.1 SS 49.9
RDE .0322 RRA -.3786 RC3 .5419 FAU .14326 RRT -.9614 RRF -.9713 RTF .9592 CRT -.9972 CRS .6642 CST -.7067
FDE 1.2213 FRA 5.2919 FC3-8.9048 BSP 13633 SGB 7972.6 R23 .1759 R13 -.9597 LSA 91.1 MSA 32.1 SSA .5
BDE .2015 BRA 3.1135 BC3 7.8683 FSP 1785 SG1 7969.8 SG2 211.2 THA 174.66 EL1 82.7 EL2 .8 ALF 172.97

LAUNCH DATE MAY 20 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 20 1972

HELIOCENTRIC CONIC DISTANCE 629.779 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.460 GAL -2.08 AZL 92.98 HCA 194.05 SMA 189.65 ECC .20493 INC 2.9836 V1 29.433
RP 228.49 LAP .72 LOP 72.38 VP 21.491 GAP -.45 AZP 87.11 TAL 347.71 TAP 181.76 RCA 150.79 APO 228.52 V2 24.071
RC 245.157 GL -26.86 GP 7.36 ZAL 114.10 ZAP 46.19 ETS 186.44 ZAE 82.10 ETE 181.47 ZAC 109.42 ETC 273.37 LVI -18.49

PLANETOCENTRIC CONIC

C3 13.965 VHL 3.737 DLA -26.22 RAL 7.48 RAD 6640.0 VEL 11.577 PTH 6.62 VHP 3.492 DPA -15.00 RAP 299.14 ECC 1.2298

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 45 50	2511.49	-7.97	66.91	221.59	137.06	18 27 42	1511.5	10.41	51.14
60.00	19 0 20	2313.34	-2.91	53.90	226.43	130.21	19 38 54	1313.3	13.09	35.80
70.00	20 36 39	2030.14	2.42	34.98	230.47	124.08	21 10 29	1030.1	15.95	14.88
80.00	22 34 59	1659.78	7.39	9.92	233.53	119.01	23 2 38	659.8	18.65	348.22
90.00	0 29 0	1304.72	9.89	345.14	234.86	116.63	0 50 45	304.7	20.02	322.68
100.00	1 21 46	1134.25	7.39	331.29	233.53	119.01	1 40 41	134.3	18.65	309.56
110.00	1 40 1	1076.96	2.42	323.89	230.47	124.08	1 57 58	77.0	15.95	303.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1335 TRA 3.1790 TC3-7.9554 BAU 1.4880 SGT 8057.0 SGR 720.1 SG3 974.4 ST 82.6 SR 9.8 SS 50.6
RDE .0393 RRA -.3612 RC3 .4892 FAU .13973 RRT -.9551 RRF -.9627 RTF .9586 CRT -.9809 CRS .5873 CST -.7269
FDE 1.2877 FRA 5.2778 FC3-8.6627 BSP 13870 SGB 8089.1 R23 .1569 R13 -.9590 LSA 92.2 MSA 31.4 SSA .5
BDE .1392 BRA 3.1995 BC3 7.9704 FSP 1762 SG1 8086.3 SG2 212.7 THA 175.12 EL1 83.2 EL2 1.9 ALF 173.39

LAUNCH DATE MAY 20 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 22 1972

HELIOCENTRIC CONIC DISTANCE 633.823 EARTH TO MARS

RL 151.38 LAL -.00 LOL 238.35 VL 32.470 GAL -2.17 AZL 92.90 HCA 195.09 SMA 189.83 ECC .20595 INC 2.9008 V1 29.433
RP 228.88 LAP .76 LOP 73.42 VP 21.461 GAP -.60 AZP 87.20 TAL 347.21 TAP 182.30 RCA 150.74 APO 228.93 V2 24.030
RC 247.796 GL -26.00 GP 6.81 ZAL 114.92 ZAP 45.46 ETS 186.09 ZAE 81.13 ETE 181.50 ZAC 108.84 ETC 273.44 LVI -18.10

PLANETOCENTRIC CONIC

C3 14.036 VHL 3.747 DLA -25.16 RAL 7.70 RAD 6640.1 VEL 11.580 PTH 6.62 VHP 3.514 DPA -15.48 RAP 299.61 ECC 1.2310

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 41 23	2536.10	-9.20	67.96	221.63	136.89	18 23 40	1536.1	9.19	52.20
60.00	18 53 44	2343.71	-4.25	55.36	226.36	130.11	19 32 48	1343.7	11.80	37.33
70.00	20 26 36	2070.64	.87	37.09	230.23	124.14	21 1 7	1070.6	14.54	17.16
80.00	22 19 10	1718.37	5.44	13.18	233.06	119.40	22 47 48	718.4	17.01	351.79
90.00	0 8 6	1379.68	7.57	349.43	234.22	117.33	0 31 6	379.7	18.17	327.41
100.00	1 5 57	1192.84	5.44	334.55	233.06	119.40	1 25 50	192.8	17.01	313.16
110.00	1 29 59	1117.45	.87	326.01	230.23	124.14	1 48 36	117.5	14.54	306.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0719 TRA 3.2689 TC3-8.0473 BAU 1.5124 SGT 8178.0 SGR 677.1 SG3 957.4 ST 83.5 SR 9.5 SS 51.1
RDE .0469 RRA -.3466 RC3 .4433 FAU .13648 RRT -.9473 RRF -.9524 RTF .9582 CRT -.9476 CRS .5034 CST -.7500
FDE 1.3436 FRA 5.2533 FC3-8.4178 BSP 14081 SGB 8206.0 R23 .1375 R13 -.9585 LSA 93.5 MSA 30.7 SSA .6
BDE .0859 BRA 3.2873 BC3 8.0595 FSP 1732 SG1 8203.1 SG2 216.2 THA 175.51 EL1 84.0 EL2 3.0 ALF 173.84

LAUNCH DATE MAY 20 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 24 1972

HELIOCENTRIC CONIC DISTANCE 637.861 EARTH TO MARS

RL	151.38	LAL	-.00	LOL	238.35	VL	32.480	GAL	-2.27	AZL	92.83	HCA	196.12	SNA	190.01	ECC	.20698	INC	2.8286	V1	29.433
RP	229.27	LAP	.79	LOP	74.45	VP	21.431	GAP	-.74	AZP	87.28	TAL	346.71	TAP	182.84	RCA	150.68	APO	229.34	V2	23.990
RC	250.428	GL	-25.21	GP	6.33	ZAL	115.72	ZAP	44.75	ETS	185.77	ZAE	80.17	ETE	181.53	ZAC	108.34	ETC	273.52	LVI	-17.80

PLANETOCENTRIC CONIC

C3	14.136	VHL	3.760	DLA	-24.18	RAL	7.96	RAD	6640.1	VEL	11.584	PTH	6.63	VHP	3.537	DPA	-15.88	RAP	300.08	ECC	1.2326

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ Z LAT	INJ Z LONG
50.00	17 37 38	2559.25	-10.34	68.96	221.78	136.70	18 20 17	1559.3	8.04	53.19
60.00	18 48 6	2371.87	-5.48	56.71	226.42	129.99	19 27 38	1371.9	10.59	38.73
70.00	20 18 7	2107.21	-.52	39.00	230.16	124.15	20 53 14	1107.2	13.24	19.20
80.00	22 6 22	1768.42	3.76	15.95	232.83	119.64	22 35 50	768.4	15.55	354.79
90.00	23 48 11	1440.00	5.67	352.84	233.88	117.75	24 12 11	440.0	16.58	331.12
100.00	0 53 10	1242.89	3.76	337.31	232.83	119.64	1 13 53	242.9	15.55	316.15
110.00	1 21 29	1154.03	-.52	327.92	230.16	124.15	1 40 43	154.0	13.24	308.11

DIFFERENTIAL CORRECTIONS

TDE	-.0106	TRA	3.3649	TC3	-8.1182	BAU	1.5361
RDE	.0546	RRA	-.3349	RC3	.4016	FAU	.13299
FDE	1.3987	FRA	5.2343	FC3	-8.1446	BSP	14308
BDE	.0556	BRA	3.3815	BC3	8.1281	FSP	1704

MID-COURSE EXECUTION ACCURACY

SGT	8298.2	SGR	641.1	SG3	940.5		
RRT	-.9378	RRF	-.9404	RTF	.9576		
SGB	8323.0	R23	.1203	R13	-.9578		
SG1	8320.0	SG2	222.1	THA	175.85		

ORBIT DETERMINATION ACCURACY

BT	84.8	BR	9.4	BS	91.7		
CRT	-.6990	CRB	.4166	CBT	-.7703		
LSA	95.2	MSA	30.0	BSA	.6		
EL1	85.2	EL2	4.1	ALF	174.31		

LAUNCH DATE MAY 21 1971 FLIGHT TIME 90.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 266.072 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	35.554	GAL	-.07	AZL	91.86	HCA	83.19	SMA	271.41	ECC	.44214	INC	1.8601	V1	29.427
RP	207.13	LAP	-1.85	LOP	322.50	VP	28.151	GAP	22.60	AZP	90.22	TAL	359.77	TAP	82.96	RCA	151.41	APO	391.41	V2	26.443
RC	56.701	GL	-10.67	GP	-.74	ZAL	93.54	ZAP	177.61	ETS	198.05	ZAE	173.13	ETE	37.60	ZAC	98.99	ETC	278.19	LVI	-17.90

PLANETOCENTRIC CONIC

C3	38.818	VHL	6.230	DLA	-20.36	RAL	338.94	RAD	6650.3	VEL	12.597	PTH	7.46	VHP	11.339	DPA	-17.20	RAP	323.49	ECC	1.6388

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 20 25	2885.22	-25.89	84.33	205.11	131.42	16 8 31	1885.2	-8.30	66.91
60.00	16 24 27	2714.97	-19.96	74.13	210.24	125.77	17 9 41	1715.0	-4.42	55.27
70.00	17 45 28	2476.81	-14.30	58.75	214.17	121.35	18 26 44	1476.8	-.61	38.84
80.00	19 22 8	2174.24	-9.83	38.39	216.79	118.34	19 58 22	1174.2	2.46	17.79
90.00	20 56 53	1868.60	-8.02	16.88	217.75	117.21	21 28 2	868.6	3.72	356.01
100.00	22 5 0	1648.71	-9.83	359.76	216.79	118.34	22 32 29	648.7	2.46	339.16
110.00	22 44 54	1523.62	-14.30	347.66	214.17	121.35	23 10 18	523.6	-.61	327.76

DIFFERENTIAL CORRECTIONS

TDE	-.3553	TRA	-.8301	TC3	.0354	BAU	.0370
RDE	-.5722	RRA	.2326	RC3	.0618	FAU	.03183
FDE	.0881	FRA	.5490	FC3	-.7098	BSP	1096
BDE	.6735	BRA	.8621	BC3	.0712	FSP	126

MID-COURSE EXECUTION ACCURACY

SGT	878.5	SGR	578.7	SG3	89.7		
RRT	-.0207	RRF	.0202	RTF	-.5523		
SGB	1052.0	R23	-.0000	R13	.5524		
SG1	878.6	SG2	578.5	THA	178.62		

ORBIT DETERMINATION ACCURACY

ST	20.4	SR	26.5	SS	8.9
CRT	.7169	CRS	.3262	CST	.8852
LSA	31.6	MSA	14.1	SSA	1.1
EL1	31.2	EL2	12.1	ALF	55.18

LAUNCH DATE MAY 21 1971 FLIGHT TIME 92.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 267.800 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	35.334	GAL	-.02	AZL	91.85	HCA	84.46	SMA	263.01	ECC	.42433	INC	1.8529	V1	29.427
RP	207.05	LAP	-1.84	LOP	323.76	VP	27.882	GAP	22.07	AZP	90.18	TAL	359.92	TAP	84.38	RCA	151.41	APO	374.62	V2	26.453
RC	57.030	GL	-10.96	GP	-.76	ZAL	93.39	ZAP	176.72	ETS	193.39	ZAE	172.51	ETE	33.44	ZAC	98.92	ETC	278.26	LVI	-17.97

PLANETOCENTRIC CONIC

C3	36.131	VHL	6.011	DLA	-20.68	RAL	338.91	RAD	6649.3	VEL	12.491	PTH	7.38	VHP	10.956	DPA	-17.11	RAP	323.83	ECC	1.5946

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 21 42	2860.39	-24.77	83.04	204.03	132.02	16 9 23	1860.4	-7.06	65.85
60.00	16 26 13	2688.84	-18.91	72.72	209.16	126.28	17 11 2	1688.8	-3.28	54.02
70.00	17 47 53	2448.75	-13.30	57.19	213.10	121.75	18 28 42	1448.8	.46	37.38
80.00	19 25 20	2143.80	-8.84	36.68	215.74	118.64	20 1 3	1143.8	3.49	16.11
90.00	21 0 29	1836.82	-7.03	15.07	216.72	117.46	21 31 6	836.8	4.73	354.23
100.00	22 8 11	1618.27	-8.84	358.04	215.74	118.64	22 35 9	618.3	3.49	337.48
110.00	22 47 19	1495.57	-13.30	346.10	213.10	121.75	23 12 15	495.6	.46	326.30

DIFFERENTIAL CORRECTIONS

TDE	-.3557	TRA	-.8229	TC3	.0532	BAU	.0412
RDE	-.5560	RRA	.2261	RC3	.0667	FAU	.03200
FDE	.0920	FRA	.5681	FC3	-.7667	BSP	1191
BDE	.6601	BRA	.8534	BC3	.0853	FSP	101

MID-COURSE EXECUTION ACCURACY

SGT	906.6	SGR	583.4	SG3	94.3		
RRT	-.0157	RRF	.0204	RTF	-.5798		
SGB	1078.1	R23	-.0049	R13	.5799		
SG1	906.7	SG2	583.3	THA	179.01		

ORBIT DETERMINATION ACCURACY

ST	21.1	SR	26.7	SS	9.3
CRT	.7194	CRS	.3288	CST	.8855
LSA	32.2	MSA	14.4	SSA	1.1
EL1	31.7	EL2	12.3	ALF	54.15

LAUNCH DATE MAY 21 1971 FLIGHT TIME 94.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC DISTANCE 269.816 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	35.127	GAL	.03	AZL	91.85	HCA	85.72	SMA	255.63	ECC	.40770	INC	1.8458	V1	29.427
RP	206.97	LAP	-1.84	LOP	325.03	VP	27.628	GAP	21.55	AZP	90.14	TAL	.09	TAP	85.81	RCA	151.41	APO	359.85	V2	26.462
RC	57.440	GL	-11.24	GP	-.78	ZAL	93.21	ZAP	175.80	ETS	190.72	ZAE	171.90	ETE	29.99	ZAC	98.86	ETC	278.33	LVI	-18.04

PLANETOCENTRIC CONIC

C3	33.693	VHL	5.805	DLA	-21.01	RAL	338.85	RAD	6648.4	VEL	12.394	PTH	7.31	VHP	10.588	DPA	-17.02	RAP	324.17	ECC	1.5545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 56	2835.79	-23.64	81.78	202.98	132.57	16 10 12	1835.8	-5.83	64.81
60.00	16 27 58	2662.86	-17.86	71.33	208.10	126.75	17 12 20	1662.9	-2.13	52.77
70.00	17 50 19	2420.73	-12.29	55.64	212.05	122.12	18 30 40	1420.7	1.53	35.92
80.00	19 28 35	2113.22	-7.84	34.96	214.72	118.90	20 3 48	1113.2	4.52	14.43
90.00	21 4 12	1804.77	-6.02	13.26	215.70	117.68	21 34 17	804.8	5.75	352.42
100.00	22 11 27	1587.69	-7.84	356.33	214.72	118.90	22 37 54	587.7	4.52	335.80
110.00	22 49 46	1467.55	-12.29	344.56	212.05	122.12	23 14 13	467.6	1.53	324.83

DIFFERENTIAL CORRECTIONS

TDE	-.3341	TRA	-.8699	TC3	.0910	BAU	.0519
RDE	-.5412	RRA	.2211	RC3	.0706	FAU	.03525
FDE	.0388	FRA	.6734	FC3	-.9056	BSP	1141
BDE	.6360	BRA	.8975	BC3	.1152	FSP	112

MID-COURSE EXECUTION ACCURACY

SGT	982.8	SGR	588.8	SG3	109.8		
RRT	-.0522	RRF	.0800	RTF	-.6236		
SGB	1145.7	R23	-.0294	R13	.6247		
SG1	983.6	SG2	587.6	THA	177.22		

ORBIT DETERMINATION ACCURACY

ST	21.5	SR	26.9	SS	10.0
CRT	.6769	CRS	.0469	CST	.7599
LSA	31.9	MSA	16.3	SSA	1.1
EL1	31.7	EL2	13.4	ALF	54.28

LAUNCH DATE MAY 21 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 25 1971

HELIOCENTRIC CONIC DISTANCE 272.065 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	34.932	GAL	.08	AZL	91.84	HCA	86.99	SMA	249.09	ECC	.39216	INC	1.8387	V1	29.427
RP	206.90	LAP	-1.84	LOP	326.30	VP	27.387	GAP	21.03	AZP	90.10	TAL	.27	TAP	87.26	RCA	151.41	APO	346.78	V2	26.469
RC	57.930	GL	-11.52	GP	-.80	ZAL	93.00	ZAP	174.87	ETS	189.01	ZAE	171.31	ETE	27.10	ZAC	98.79	ETC	278.39	LVI	-18.10

PLANETOCENTRIC CONIC

C3	31.480	VHL	5.611	DLA	-21.35	RAL	338.76	RAD	6647.6	VEL	12.305	PTH	7.24	VHP	10.234	DPA	-16.94	RAP	324.50	ECC	1.5181

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 6	2811.46	-22.52	80.56	201.95	133.09	16 10 58	1811.5	-4.61	63.78
60.00	16 29 41	2637.08	-16.80	69.97	207.06	127.19	17 13 38	1637.1	-1.00	51.54
70.00	17 52 46	2392.81	-11.27	54.12	211.03	122.46	18 32 39	1392.8	2.59	34.46
80.00	19 31 54	2082.54	-6.82	33.25	213.71	119.14	20 6 37	1082.5	5.54	12.73
90.00	21 8 2	1772.50	-5.00	11.44	214.71	117.87	21 37 34	772.5	6.77	350.60
100.00	22 14 46	1557.01	-6.82	354.61	213.71	119.14	22 40 43	557.0	5.54	334.10
110.00	22 52 12	1439.63	-11.27	343.04	211.03	122.46	23 16 12	439.6	2.59	323.38

DIFFERENTIAL CORRECTIONS

TDE	-.3288	TRA	-.7875	TC3	.1024	BAU	.0535
RDE	-.5258	RRA	.2134	RC3	.0754	FAU	.03645
FDE	.0683	FRA	.6038	FC3	-1.0023	BSP	1239
BDE	.6201	BRA	.8159	BC3	.1272	FSP	130

MID-COURSE EXECUTION ACCURACY

SGT	933.5	SGR	591.8	SG3	112.9		
RRT	-.0218	RRF	.0288	RTF	-.5936		
SGB	1105.3	R23	-.0072	R13	.5938		
SG1	933.7	SG2	591.6	THA	178.68		

ORBIT DETERMINATION ACCURACY

ST	21.2	SR	27.1	SS	9.4
CRT	.7059	CRS	.2045	CST	.8294
LSA	32.3	MSA	15.1	SSA	1.2
EL1	31.9	EL2	12.7	ALF	54.64

LAUNCH DATE MAY 21 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 27 1971

HELIOCENTRIC CONIC DISTANCE 274.521 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	34.750	GAL	.13	AZL	91.83	HCA	88.25	SMA	243.28	ECC	.37764	INC	1.8316	V1	29.427
RP	206.85	LAP	-1.83	LOP	327.56	VP	27.161	GAP	20.53	AZP	90.06	TAL	.47	TAP	88.72	RCA	151.41	APO	335.15	V2	26.476
RC	58.496	GL	-11.81	GP	-.82	ZAL	92.77	ZAP	173.92	ETS	187.82	ZAE	170.75	ETE	24.64	ZAC	98.72	ETC	278.45	LVI	-18.16

PLANETOCENTRIC CONIC

C3	29.468	VHL	5.428	DLA	-21.70	RAL	338.65	RAD	6646.8	VEL	12.223	PTH	7.18	VHP	9.893	DPA	-16.86	RAP	324.81	ECC	1.4850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 25 14	2787.44	-21.39	79.38	200.95	133.57	16 11 41	1787.4	-3.40	62.77
60.00	16 31 22	2611.56	-15.75	68.64	206.05	127.59	17 14 53	1611.6	.12	50.32
70.00	17 55 14	2365.02	-10.25	52.61	210.02	122.76	18 34 39	1365.0	3.65	33.00
80.00	19 35 18	2051.81	-5.80	31.54	212.72	119.34	20 9 30	1051.8	6.57	11.02
90.00	21 11 58	1740.03	-3.96	9.62	213.74	118.02	21 40 58	740.0	7.79	348.76
100.00	22 18 10	1526.28	-5.80	352.91	212.72	119.34	22 43 37	526.3	6.57	332.39
110.00	22 54 40	1411.84	-10.25	341.53	210.02	122.76	23 18 12	411.8	3.65	321.92

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3232	TRA	-.7831	TC3	.1149	BAU	.0552	SGT	960.8	SGR	595.3	SG3	119.9	ST	21.7	SR	27.2	SS	9.7
RDE	-.5113	RRA	.2074	RC3	.0804	FAU	.03733	RRT	-.0256	RRF	.0286	RTF	-.6036	CRT	.7009	CRS	.1991	CST	.8305
FDE	.0697	FRA	.6250	FC3	-1.0967	BSP	1323	SGB	1130.3	R23	-.0036	R13	.6037	LSA	32.6	MSA	15.5	SSA	1.2
BDE	.6049	BRA	.8101	BC3	.1402	FSP	147	SG1	961.0	SG2	595.0	THA	178.53	EL1	32.2	EL2	13.0	ALF	54.10

LAUNCH DATE MAY 21 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 29 1971

HELIOCENTRIC CONIC DISTANCE 277.158 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	34.578	GAL	.18	AZL	91.82	HCA	89.52	SMA	238.08	ECC	.36405	INC	1.8245	V1	29.427
RP	206.80	LAP	-1.82	LOP	328.83	VP	26.946	GAP	20.03	AZP	90.02	TAL	.68	TAP	90.21	RCA	151.41	APO	324.75	V2	26.482
RC	59.137	GL	-12.09	GP	-.85	ZAL	92.51	ZAP	172.96	ETS	186.95	ZAE	170.23	ETE	22.54	ZAC	98.65	ETC	278.51	LVI	-18.21

PLANETOCENTRIC CONIC

C3	27.638	VHL	5.257	DLA	-22.05	RAL	338.51	RAD	6646.1	VEL	12.149	PTH	7.12	VHP	9.565	DPA	-16.78	RAP	325.11	ECC	1.4549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 26 18	2763.79	-20.28	78.24	199.98	134.01	16 12 22	1763.8	-2.22	61.78
60.00	16 33 1	2586.35	-14.70	67.33	205.06	127.96	17 16 8	1586.3	1.23	49.12
70.00	17 57 42	2337.42	-9.23	51.13	209.04	123.03	18 36 39	1337.4	4.70	31.56
80.00	19 38 47	2021.05	-4.77	29.83	211.76	119.51	20 12 28	1021.1	7.59	9.31
90.00	21 16 2	1707.38	-2.91	7.79	212.79	118.14	21 44 29	707.4	8.80	346.89
100.00	22 21 39	1495.52	-4.77	351.20	211.76	119.51	22 46 34	495.5	7.59	330.68
110.00	22 57 8	1384.24	-9.23	340.05	209.04	123.03	23 20 12	384.2	4.70	320.47

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3194	TRA	-.7765	TC3	.1345	BAU	.0588	SGT	987.4	SGR	598.3	SG3	129.0	ST	22.1	SR	27.3	SS	10.1
RDE	-.4973	RRA	.2017	RC3	.0852	FAU	.03892	RRT	-.0257	RRF	.0288	RTF	-.6127	CRT	.6987	CRS	.1810	CST	.8219
FDE	.0682	FRA	.6486	FC3	-1.2192	BSP	1448	SGB	1154.5	R23	-.0040	R13	.6128	LSA	32.9	MSA	15.9	SSA	1.2
BDE	.5911	BRA	.8023	BC3	.1592	FSP	157	SG1	987.6	SG2	598.0	THA	178.59	EL1	32.6	EL2	13.3	ALF	53.43

LAUNCH DATE MAY 21 1971 FLIGHT TIME 102.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 279.948 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	34.416	GAL	.24	AZL	91.82	HCA	90.79	SMA	233.41	ECC	.35135	INC	1.8175	V1	29.427
RP	206.75	LAP	-1.82	LOP	330.10	VP	26.743	GAP	19.54	AZP	89.97	TAL	.91	TAP	91.70	RCA	151.40	APO	315.42	V2	26.487
RC	59.850	GL	-12.37	GP	-.87	ZAL	92.23	ZAP	171.98	ETS	186.29	ZAE	169.75	ETE	20.72	ZAC	98.59	ETC	278.57	LVI	-18.26

PLANETOCENTRIC CONIC

C3	25.972	VHL	5.096	DLA	-22.42	RAL	338.35	RAD	6645.4	VEL	12.080	PTH	7.06	VHP	9.250	DPA	-16.71	RAP	325.41	ECC	1.4274

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 27 19	2740.55	-19.18	77.13	199.03	134.42	16 12 59	1740.5	-1.05	60.81
60.00	16 34 39	2561.47	-13.65	66.06	204.09	128.30	17 17 20	1561.5	2.33	47.93
70.00	18 0 10	2310.04	-8.21	49.66	208.08	123.27	18 38 40	1310.0	5.74	30.12
80.00	19 42 20	1990.31	-3.74	28.14	210.83	119.64	20 15 30	990.3	8.60	7.58
90.00	21 20 13	1674.57	-1.86	5.96	211.87	118.22	21 48 8	674.6	9.81	345.01
100.00	22 25 12	1464.78	-3.74	349.51	210.83	119.64	22 49 37	464.8	8.60	328.95
110.00	22 59 37	1356.86	-8.21	338.58	208.08	123.27	23 22 14	356.9	5.74	319.03

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3121	TRA	-.7643	TC3	.1598	BAU	.0637	SGT	1006.9	SGR	601.1	SG3	138.5	ST	22.4	SR	27.4	SS	10.4
RDE	-.4839	RRA	.1961	RC3	.0900	FAU	.04042	RRT	-.0261	RRF	.0324	RTF	-.6185	CRT	.6951	CRS	.1910	CST	.8077
FDE	.0640	FRA	.6770	FC3	-1.3475	BSP	1400	SGB	1172.6	R23	-.0068	R13	.6286	LSA	33.1	MSA	16.3	SSA	1.3
BDE	.5758	BRA	.7891	BC3	.1834	FSP	173	SG1	1007.0	SG2	600.7	THA	178.61	EL1	32.8	EL2	13.5	ALF	53.16

LAUNCH DATE MAY 21 1971 FLIGHT TIME 104.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 282.877 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	34.265	GAL	.29	AZL	91.81	HCA	92.06	SMA	229.21	ECC	.33946	INC	1.8103	V1	29.427
RP	206.72	LAP	-1.81	LOP	331.37	VP	26.552	GAP	19.06	AZP	89.93	TAL	1.15	TAP	93.21	RCA	151.40	APO	307.02	V2	26.491
RC	60.633	GL	-12.64	GP	-.90	ZAL	91.93	ZAP	170.98	ETS	185.77	ZAE	169.33	ETE	19.12	ZAC	98.52	ETC	278.62	LVI	-18.31

PLANETOCENTRIC CONIC

C3	24.454	VHL	4.945	DLA	-22.79	RAL	338.16	RAD	6644.8	VEL	12.018	PTH	7.01	VHP	8.946	DPA	-16.64	RAP	325.68	ECC	1.4024

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 28 17	2717.74	-18.09	76.06	198.10	134.79	16 13 34	1717.7	.10	59.86
60.00	16 36 15	2536.98	-12.61	64.83	203.15	128.60	17 18 32	1537.0	3.41	46.76
70.00	18 2 39	2282.94	-7.20	48.22	207.15	123.48	18 40 42	1282.9	6.76	28.68
80.00	19 45 58	1959.61	-2.71	26.45	209.92	119.75	20 18 38	959.6	9.59	5.85
90.00	21 24 33	1641.62	-.80	4.12	210.98	118.27	21 51 55	641.6	10.81	343.11
100.00	22 28 50	1434.08	-2.71	347.82	209.92	119.75	22 52 44	434.1	9.59	327.22
110.00	23 2 6	1329.76	-7.20	337.14	207.15	123.48	23 24 16	329.8	6.76	317.60

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3048	TRA	-.7540	TC3	.1824	BAU	.0672	SGT	1027.2	SGR	603.4	SG3	148.4	ST	22.7	SR	27.5	SS	10.7
RDE	-.4710	RRA	.1907	RC3	.0948	FAU	.04207	RRT	-.0281	RRF	.0354	RTF	-.6373	CRT	.6905	CRS	.1152	CST	.7901
FDE	.0576	FRA	.7016	FC3	-1.4895	BSP	1442	SGB	1191.3	R23	-.0081	R13	.6375	LSA	33.2	MSA	16.7	SSA	1.3
BDE	.5611	BRA	.7777	BC3	.2056	FSP	187	SG1	1027.4	SG2	603.0	THA	178.56	EL1	32.9	EL2	13.7	ALF	52.89

LAUNCH DATE MAY 21 1971 FLIGHT TIME 106.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 285.927 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	34.122	GAL	.35	AZL	91.80	HCA	93.33	SMA	225.41	ECC	.32834	INC	1.8032
RP	206.70	LAP	-1.80	LOP	332.64	VP	26.370	GAP	18.59	AZP	89.90	TAL	1.40	TAP	94.72	RCA	151.40	APO	299.42
RC	61.483	GL	-12.92	GP	-.93	ZAL	91.61	ZAP	169.98	ETS	185.35	ZAE	168.97	ETE	17.70	ZAC	98.45	ETC	278.67

V1	29.427	V2	26.494	LVI	-18.34														

PLANETOCENTRIC CONIC

C3	23.069	VHL	4.803	DLA	-23.16	RAL	337.95	RAD	6644.2	VEL	11.961	PTH	6.96	VHP	8.653	DPA	-16.59	RAP	325.95

ECC	1.3797																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 11	2695.41	-17.01	75.02	197.20	135.13	16 14 7	1695.4	1.22	58.93
60.00	16 37 48	2512.92	-11.59	63.62	202.24	128.87	17 19 41	1512.9	4.46	45.60
70.00	18 5 9	2256.15	-6.19	46.80	206.24	123.66	18 42 45	1256.1	7.77	27.26
80.00	19 49 41	1928.99	-1.67	24.77	209.04	119.82	20 21 50	929.0	10.58	4.12
90.00	21 29 2	1608.53	.27	2.28	210.12	118.28	21 55 51	608.5	11.80	341.18
100.00	22 32 33	1403.46	-1.67	346.13	209.04	119.82	22 55 56	403.5	10.58	325.48
110.00	23 4 35	1302.97	-6.19	335.72	206.24	123.66	23 26 18	303.0	7.77	316.18

DIFFERENTIAL CORRECTIONS

TDE	-.2974	TRA	-.7430	TC3	.2083	BAU	.0712												

RDE	-.4586	RRA	.1855	RC3	.0995	FAU	.04379												
FDE	.0519	FRA	.7286	FC3	-1.6434	BSP	1486												
BDE	.5466	BRA	.7658	BC3	.2309	FSP	203												

MID-COURSE EXECUTION ACCURACY

SGT	1046.5	SGR	605.3	SG3	159.1														
RRT	-.0296	RRF	.0383	RTF	-.6483														
SGB	1209.0	R23	-.0095	R13	.6485														
SG1	1046.8	SG2	604.9	THA	178.53														

ORBIT DETERMINATION ACCURACY

ST	22.9	SR	27.6	SS	11.0														
CRT	.6858	CRS	.0835	CST	.7745														
LSA	33.3	MSA	17.1	SSA	1.3														
EL1	33.0	EL2	13.9	ALF	52.66														

LAUNCH DATE MAY 21 1971 FLIGHT TIME 108.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 289.084 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	33.987	GAL	.40	AZL	91.80	HCA	94.60	SMA	221.96	ECC	.31792	INC	1.7961
RP	206.68	LAP	-1.79	LOP	333.91	VP	26.198	GAP	18.13	AZP	89.86	TAL	1.66	TAP	96.25	RCA	151.39	APO	292.52
RC	62.398	GL	-13.19	GP	-.96	ZAL	91.27	ZAP	168.95	ETS	185.01	ZAE	168.66	ETE	16.44	ZAC	98.39	ETC	278.72

V1	29.427	V2	26.496	LVI	-18.38														

PLANETOCENTRIC CONIC

C3	21.804	VHL	4.669	DLA	-23.54	RAL	337.72	RAD	6643.6	VEL	11.908	PTH	6.92	VHP	8.370	DPA	-16.53	RAP	326.19

ECC	1.3588																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 3	2673.55	-15.95	74.02	196.33	135.44	16 14 36	1673.5	2.32	58.01
60.00	16 39 20	2489.27	-10.57	62.44	201.35	129.12	17 20 49	1489.3	5.50	44.46
70.00	18 7 39	2229.66	-5.19	45.41	205.36	123.80	18 44 48	1229.7	8.76	25.85
80.00	19 53 29	1898.41	-.63	23.09	208.19	119.85	20 25 8	898.4	11.56	2.37
90.00	21 33 41	1575.23	1.34	.42	209.29	118.25	21 59 56	575.2	12.78	339.23
100.00	22 36 21	1372.88	-.63	344.45	208.19	119.85	22 59 14	372.9	11.56	323.74
110.00	23 7 5	1276.48	-5.19	334.32	205.36	123.80	23 28 21	276.5	8.76	314.77

DIFFERENTIAL CORRECTIONS

TDE	-.2810	TRA	-.7243	TC3	.2495	BAU	.0788												

RDE	-.4467	RRA	.1804	RC3	.1041	FAU	.04564												
FDE	.0467	FRA	.7539	FC3	-1.8123	BSP	1439												
BDE	.5277	BRA	.7464	BC3	.2704	FSP	227												

MID-COURSE EXECUTION ACCURACY

SGT	1054.9	SGR	606.7	SG3	170.3														
RRT	-.0350	RRF	.0399	RTF	-.6695														
SGB	1217.0	R23	-.0049	R13	.6697														
SG1	1055.3	SG2	606.2	THA	178.28														

ORBIT DETERMINATION ACCURACY

ST	22.6	SR	27.6	SS	11.3														
CRT	.6733	CRS	.0558	CST	.7678														
LSA	33.1	MSA	17.5	SSA	1.3														
EL1	32.8	EL2	14.1	ALF	53.46														

LAUNCH DATE MAY 21 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 8 1971

HELIOCENTRIC CONIC DISTANCE 292.338 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	33.861	GAL	.45	AZL	91.79	HCA	95.86	SMA	218.83	ECC	.30817	INC	1.7890
RP	206.67	LAP	-1.78	LOP	335.18	VP	26.035	GAP	17.67	AZP	89.82	TAL	1.92	TAP	97.79	RCA	151.39	APO	286.26
RC	63.376	GL	-13.45	GP	-.99	ZAL	90.92	ZAP	167.91	ETS	184.73	ZAE	168.42	ETE	15.29	ZAC	98.33	ETC	278.76

V1	29.427	V2	26.496	LVI	-18.40														

PLANETOCENTRIC CONIC

C3	20.650	VHL	4.544	DLA	-23.92	RAL	337.48	RAD	6643.1	VEL	11.860	PTH	6.87	VHP	8.098	DPA	-16.49	RAP	326.43

ECC	1.3398																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 52	2652.28	-14.92	73.06	195.48	135.72	16 15 4	1652.3	3.38	57.12
60.00	16 40 50	2466.19	-9.58	61.30	200.48	129.34	17 21 56	1466.2	6.51	43.35
70.00	18 10 8	2203.64	-4.20	44.04	204.51	123.93	18 46 52	1203.6	9.72	24.45
80.00	19 57 22	1868.04	.40	21.42	207.37	119.86	20 28 30	868.0	12.51	.62
90.00	21 38 29	1541.89	2.42	358.56	208.49	118.18	22 4 11	541.9	13.75	337.26
100.00	22 40 14	1342.51	.40	342.79	207.37	119.86	23 2 37	342.5	12.51	321.99
110.00	23 9 35	1250.46	-4.20	332.96	204.51	123.93	23 30 25	250.5	9.72	313.37

DIFFERENTIAL CORRECTIONS

TDE	-.2766	TRA	-.7174	TC3	.2727	BAU	.0810												

RDE	-.4352	RRA	.1756	RC3	.1084	FAU	.04767												
FDE	.0386	FRA	.7808	FC3	-1.9986	BSP	1523												
BDE	.5156	BRA	.7386	BC3	.2934	FSP	245												

MID-COURSE EXECUTION ACCURACY

SGT	1078.0	SGR	607.8	SG3	182.5														
RRT	-.0364	RRF	.0429	RTF	-.6731														
SGB	1237.6	R23	-.0071	R13	.6733														
SG1	1078.4	SG2	607.2	THA	178.28														

ORBIT DETERMINATION ACCURACY

ST	22.9	SR	27.7	SS	11.6														
CRT	.6698	CRS	.0184	CST	.7466														
LSA	33.2	MSA	17.9	SSA	1.4														
EL1	33.0	EL2	14.3	ALF	52.94														

LAUNCH DATE MAY 21 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 10 1971

HELIOCENTRIC CONIC DISTANCE 295.677 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	33.743	GAL	.51	AZL	91.78	HCA	97.13	SMA	215.97	ECC	.29905	INC	1.7818
RP	206.68	LAP	-1.77	LOP	336.45	VP	25.880	GAP	17.23	AZP	89.78	TAL	2.20	TAP	99.33	RCA	151.38	APO	280.56
RC	64.414	GL	-13.71	GP	-1.02	ZAL	90.55	ZAP	166.84	ETS	184.49	ZAE	168.25	ETE	14.25	ZAC	98.26	ETC	278.80

V1	29.427	V2	26.496	LVI	-18.42														

PLANETOCENTRIC CONIC

C3	19.595	VHL	4.427	DLA	-24.29	RAL	337.21	RAD	6642.7	VEL	11.816	PTH	6.84	VHP	7.836	DPA	-16.45	RAP	326.64

ECC	1.3225																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 37	2631.58	-13.91	72.13	194.66	135.97	16 15 29	1631.6	4.42	56.25
60.00	16 42 18	2443.63	-8.61	60.20	199.65	129.53	17 23 1	1443.6	7.49	42.25
70.00	18 12 38	2178.04	-3.23	42.70	203.69	124.02	18 48 56	1178.0	10.66	23.07
80.00	20 1 20	1837.81	1.42	19.76	206.58	119.83	20 31 58	837.8	13.45	358.87
90.00	21 43 29	1508.37	3.49	356.68	207.73	118.08	22 8 37	508.4	14.70	335.26
100.00	22 44 12	1312.28	1.42	341.13	206.58	119.83	23 6 4	312.3	13.45	320.24
110.00	23 12 4	1224.86	-3.23	331.62	203.69	124.02	23 32 29	224.9	10.66	311.99

DIFFERENTIAL CORRECTIONS

TDE	-.2723	TRA	-.7091	TC3	.2987	BAU	.0836												

RDE	-.4241	RRA	.1709	RC3	.1126	FAU	.04985												
FDE	.0317	FRA	.8096	FC3	-2.2023	BSP	1590												
BDE	.5040	BRA	.7295	BC3	.3192	FSP	266												

MID-COURSE EXECUTION ACCURACY

SGT	1099.2	SGR	608.5	SG3	195.6														
RRT	-.0368	RRF	.0452	RTF	-.6783														
SGB	1256.4	R23	-.0093	R13	.6785														
SG1	1099.5	SG2	607.9	THA	178.32														

ORBIT DETERMINATION ACCURACY

ST	23.2	SR	27.7	SS	11.9														
CRT	.6670	CRS	-.0125	CST	.7284														
LSA	33.3	MSA	18.3	SSA	1.4														
EL1	33.1	EL2	14.5	ALF	52.44														

LAUNCH DATE MAY 21 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 12 1971

HELIOCENTRIC CONIC DISTANCE 299.093 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 33.631 GAL .56 AZL 91.77 HCA 98.40 SMA 213.36 ECC .29051 INC 1.7745 V1 29.427
RP 206.69 LAP -1.76 LOP 337.72 VP 25.733 GAP 16.80 AZP 89.74 TAL 2.48 TAP 100.88 RCA 151.38 APO 275.35 V2 26.495
RC 65.512 GL -13.96 GP -1.05 ZAL 90.18 ZAP 165.76 ETS 184.28 ZAE 168.14 ETE 13.30 ZAC 98.20 ETC 278.83 LVI -18.43

PLANETOCENTRIC CONIC

C3 18.630 VHL 4.316 DLA -24.67 RAL 336.94 RAD 6642.2 VEL 11.775 PTH 6.80 VHP 7.583 DPA -16.42 RAP 326.84 ECC 1.3066

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 32 20	2611.47	-12.92	71.24	193.86	136.20	16 15 52	1611.5	5.43	55.41
60.00	16 43 43	2421.63	-7.65	59.12	198.84	129.69	17 24 5	1421.6	8.44	41.18
70.00	18 15 7	2152.91	-2.27	41.38	202.89	124.09	18 51 0	1152.9	11.58	21.70
80.00	20 5 24	1807.75	2.44	18.11	205.82	119.77	20 35 32	807.8	14.37	357.11
90.00	21 48 41	1474.66	4.57	354.79	207.00	117.94	22 13 15	474.7	15.64	333.23
100.00	22 48 16	1282.23	2.44	339.48	205.82	119.77	23 9 38	282.2	14.37	318.48
110.00	23 14 33	1199.73	-2.27	330.30	202.89	124.09	23 34 33	199.7	11.58	310.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2644 TRA -.6997 TC3 .3260 BAU .0862 SGT 1116.6 SGR 608.8 SG3 209.8 ST 23.3 SR 27.7 SS 12.3
RDE -.4136 RRA .1665 RC3 .1163 FAU .05225 RRT -.0407 RRF .0496 RTF -.6830 CRT .6598 CRS -.0587 CST .7030
FDE .0199 FRA .8394 FC3-2.4283 BSP 1628 SGB 1271.8 R23 -.0100 R13 .6833 LSA 33.3 MSA 18.7 SSA 1.4
BDE .4909 BRA .7192 BC3 .3461 FSP 286 SG1 1117.0 SG2 608.1 THA 178.19 EL1 33.1 EL2 14.7 ALF 52.36

LAUNCH DATE MAY 21 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 14 1971

HELIOCENTRIC CONIC DISTANCE 302.578 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 33.526 GAL .61 AZL 91.77 HCA 99.67 SMA 210.98 ECC .28252 INC 1.7673 V1 29.427
RP 206.71 LAP -1.74 LOP 338.99 VP 25.594 GAP 16.37 AZP 89.70 TAL 2.76 TAP 102.43 RCA 151.37 APO 270.58 V2 26.493
RC 66.667 GL -14.21 GP -1.09 ZAL 89.80 ZAP 164.66 ETS 184.10 ZAE 168.10 ETE 12.41 ZAC 98.14 ETC 278.86 LVI -18.44

PLANETOCENTRIC CONIC

C3 17.747 VHL 4.213 DLA -25.04 RAL 336.65 RAD 6641.8 VEL 11.738 PTH 6.77 VHP 7.339 DPA -16.39 RAP 327.01 ECC 1.2921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 33 0	2591.98	-11.96	70.38	193.09	136.40	16 16 12	1592.0	6.41	54.58
60.00	16 45 6	2400.23	-6.72	58.08	198.06	129.83	17 25 6	1400.2	9.37	40.13
70.00	18 17 36	2128.29	-1.33	40.10	202.12	124.13	18 53 4	1128.3	12.48	20.36
80.00	20 9 33	1777.89	3.44	16.47	205.09	119.68	20 39 11	777.9	15.27	355.35
90.00	21 54 6	1440.71	5.65	352.88	206.31	117.76	22 18 6	440.7	16.57	331.17
100.00	22 52 25	1252.36	3.44	337.84	205.09	119.68	23 13 17	252.4	15.27	316.72
110.00	23 17 2	1175.10	-1.33	329.02	202.12	124.13	23 36 37	175.1	12.48	309.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2580 TRA -.6908 TC3 .3534 BAU .0885 SGT 1134.4 SGR 608.8 SG3 224.4 ST 23.4 SR 27.7 SS 12.6
RDE -.4034 RRA .1623 RC3 .1198 FAU .05460 RRT -.0435 RRF .0538 RTF -.6883 CRT .6541 CRS -.0980 CST .6802
FDE .0092 FRA .8708 FC3-2.6635 BSP 1687 SGB 1287.5 R23 -.0118 R13 .6886 LSA 33.3 MSA 19.2 SSA 1.5
BDE .4788 BRA .7096 BC3 .3731 FSP 312 SG1 1134.9 SG2 608.0 THA 178.12 EL1 33.1 EL2 14.8 ALF 52.14

LAUNCH DATE MAY 21 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 306.126 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 33.428 GAL .66 AZL 91.76 HCA 100.94 SMA 208.79 ECC .27504 INC 1.7599 V1 29.427
RP 206.73 LAP -1.73 LOP 340.26 VP 25.461 GAP 15.95 AZP 89.67 TAL 3.04 TAP 103.98 RCA 151.36 APO 266.21 V2 26.489
RC 67.877 GL -14.44 GP -1.12 ZAL 89.41 ZAP 163.54 ETS 183.95 ZAE 168.14 ETE 11.57 ZAC 98.08 ETC 278.89 LVI -18.44

PLANETOCENTRIC CONIC

C3 16.938 VHL 4.116 DLA -25.40 RAL 336.36 RAD 6641.4 VEL 11.704 PTH 6.74 VHP 7.104 DPA -16.38 RAP 327.17 ECC 1.2788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 33 37	2573.13	-11.03	69.56	192.34	136.58	16 16 30	1573.1	7.35	53.79
60.00	16 46 26	2379.46	-5.81	57.08	197.30	129.95	17 26 6	1379.5	10.26	39.11
70.00	18 20 3	2104.21	-.41	38.84	201.38	124.15	18 55 8	1104.2	13.34	19.03
80.00	20 13 48	1748.24	4.44	14.83	204.40	119.56	20 42 56	748.2	16.14	353.58
90.00	21 59 46	1406.47	6.73	350.95	205.65	117.53	22 23 12	406.5	17.47	329.07
100.00	22 56 39	1222.71	4.44	336.20	204.40	119.56	23 17 2	222.7	16.14	314.95
110.00	23 19 30	1151.03	-.41	327.76	201.38	124.15	23 38 41	151.0	13.34	307.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2510 TRA -.6793 TC3 .3852 BAU .0916 SGT 1148.4 SGR 608.3 SG3 240.4 ST 23.5 SR 27.6 SS 13.0
RDE -.3937 RRA .1583 RC3 .1228 FAU .05729 RRT -.0455 RRF .0568 RTF -.6844 CRT .6487 CRS -.1333 CST .6591
FDE -.0012 FRA .9015 FC3-2.9280 BSP 1709 SGB 1299.5 R23 -.0130 R13 .6947 LSA 33.2 MSA 19.5 SSA 1.5
BDE .4669 BRA .6975 BC3 .4043 FSP 336 SG1 1148.8 SG2 607.4 THA 178.08 EL1 33.1 EL2 15.0 ALF 52.06

LAUNCH DATE MAY 21 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 309.731 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 33.335 GAL .70 AZL 91.75 HCA 102.21 SMA 206.78 ECC .26804 INC 1.7525 V1 29.427
RP 206.77 LAP -1.71 LOP 341.53 VP 25.335 GAP 15.55 AZP 89.63 TAL 3.33 TAP 105.54 RCA 151.36 APO 262.21 V2 26.488
RC 69.140 GL -14.67 GP -1.16 ZAL 89.02 ZAP 162.39 ETS 183.81 ZAE 168.24 ETE 10.78 ZAC 98.03 ETC 278.91 LVI -18.43

PLANETOCENTRIC CONIC

C3 16.197 VHL 4.025 DLA -25.76 RAL 336.05 RAD 6641.1 VEL 11.672 PTH 6.71 VHP 6.878 DPA -16.38 RAP 327.30 ECC 1.2666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 34 12	2554.95	-10.13	68.77	191.62	136.74	16 16 47	1554.9	8.25	53.01
60.00	16 47 44	2359.35	-4.93	56.11	196.57	130.05	17 27 3	1359.4	11.13	38.11
70.00	18 22 30	2080.72	.49	37.62	200.67	124.15	18 57 11	1080.7	14.18	17.73
80.00	20 18 8	1718.81	5.43	13.20	203.74	119.41	20 46 47	718.8	17.00	351.82
90.00	22 5 43	1371.84	7.82	348.98	205.03	117.26	22 28 35	371.8	18.37	326.92
100.00	23 1 0	1193.29	5.43	334.57	203.74	119.41	23 20 53	193.3	17.00	313.18
110.00	23 21 56	1127.54	.49	326.54	200.67	124.15	23 40 44	127.5	14.18	306.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2434 TRA -.6695 TC3 .4156 BAU .0940 SGT 1162.8 SGR 607.5 SG3 257.3 ST 23.5 SR 27.6 SS 13.4
RDE -.3843 RRA .1544 RC3 .1253 FAU .06006 RRT -.0496 RRF .0618 RTF -.7000 CRT .6411 CRS -.1737 CST .6356
FDE -.0141 FRA .9365 FC3-3.2103 BSP 1749 SGB 1312.0 R23 -.0141 R13 .7004 LSA 33.0 MSA 20.0 SSA 1.5
BDE .4549 BRA .6871 BC3 .4341 FSP 364 SG1 1163.4 SG2 606.5 THA 177.96 EL1 33.0 EL2 15.1 ALF 52.06

LAUNCH DATE MAY 21 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 313.387 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 33.249 GAL .75 AZL 91.75 HCA 103.48 SMA 204.94 ECC .26149 INC 1.7451 V1 29.427
RP 206.81 LAP -1.70 LOP 342.79 VP 25.216 GAP 15.15 AZP 89.59 TAL 3.61 TAP 107.09 RCA 151.35 APO 258.52 V2 26.480
RC 70.455 GL -14.89 GP -1.20 ZAL 88.64 ZAP 161.22 ETS 183.69 ZAE 168.42 ETE 10.02 ZAC 97.97 ETC 278.93 LVI -18.41

PLANETOCENTRIC CONIC

C3 15.517 VHL 3.939 DLA -26.11 RAL 335.74 RAD 6640.8 VEL 11.643 PTH 6.68 VHP 6.659 DPA -16.38 RAP 327.41 ECC 1.2554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 34 43	2537.45	-9.26	68.02	190.93	136.88	16 17 1	1537.5	9.12	52.26
60.00	16 48 59	2339.93	-4.08	55.18	195.87	130.13	17 27 59	1339.9	11.96	37.14
70.00	18 24 55	2057.86	1.36	36.42	199.99	124.13	18 59 13	1057.9	14.99	16.45
80.00	20 22 34	1689.64	6.40	11.59	203.11	119.23	20 50 43	689.6	17.82	350.05
90.00	22 12 0	1336.71	8.91	346.98	204.46	116.95	22 34 17	336.7	19.24	324.71
100.00	23 5 26	1164.11	6.40	332.95	203.11	119.23	23 24 50	164.1	17.82	311.41
110.00	23 24 21	1104.68	1.36	325.34	199.99	124.13	23 42 46	104.7	14.99	305.36

DIFFERENTIAL CORRECTIONS

TDE -.2370 TRA -.6586 TC3 .4457 BAU .0962
RDE -.3753 RRA .1508 RC3 .1273 FAU .06304
FDE -.0267 FRA .9711 FC3-3.5173 BSP 1775
BDE .4438 BRA .6756 BC3 .4635 FSP 393

MID-COURSE EXECUTION ACCURACY

SGT 1174.8 SGR 606.4 SG3 275.3
RRT -.0523 RRF .0660 RTF -.7046
SGB 1322.1 R23 -.0159 R13 .7050
SG1 1175.4 SG2 605.2 THA 177.90

ORBIT DETERMINATION ACCURACY

ST 23.5 SR 27.5 SS 13.8
CRT .6357 CRS -.2098 CST .6124
LSA 32.9 MSA 20.4 SSA 1.5
EL1 32.9 EL2 15.2 ALF 51.99

LAUNCH DATE MAY 21 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 317.091 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 33.167 GAL .79 AZL 91.74 HCA 104.74 SMA 203.24 ECC .25536 INC 1.7375 V1 29.427
RP 206.87 LAP -1.68 LOP 344.06 VP 25.102 GAP 14.76 AZP 89.56 TAL 3.89 TAP 108.64 RCA 151.34 APO 255.14 V2 26.474
RC 71.818 GL -15.10 GP -1.25 ZAL 88.25 ZAP 160.02 ETS 183.58 ZAE 168.68 ETE 9.29 ZAC 97.92 ETC 278.94 LVI -18.39

PLANETOCENTRIC CONIC

C3 14.894 VHL 3.859 DLA -26.45 RAL 335.43 RAD 6640.5 VEL 11.617 PTH 6.66 VHP 6.448 DPA -16.40 RAP 327.49 ECC 1.2451

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 35 12	2520.66	-8.43	67.30	190.26	137.00	16 17 13	1520.7	9.96	51.54
60.00	16 50 11	2321.21	-3.26	54.28	195.20	130.19	17 28 53	1321.2	12.75	36.20
70.00	18 27 18	2035.67	2.21	35.27	199.34	124.09	19 1 14	1035.7	15.76	15.19
80.00	20 27 5	1660.73	7.36	9.97	202.51	119.02	20 54 46	660.7	18.63	348.27
90.00	22 18 40	1300.88	10.01	344.92	203.92	116.59	22 40 21	300.9	20.11	322.44
100.00	23 9 57	1135.20	7.36	331.34	202.51	119.02	23 28 52	135.2	18.63	309.64
110.00	23 26 44	1082.49	2.21	324.18	199.34	124.09	23 44 47	82.5	15.76	304.11

DIFFERENTIAL CORRECTIONS

TDE -.2301 TRA -.6472 TC3 .4730 BAU .0976
RDE -.3667 RRA .1474 RC3 .1287 FAU .06612
FDE -.0418 FRA 1.0071 FC3-3.8433 BSP 1806
BDE .4329 BRA .6638 BC3 .4902 FSP 427

MID-COURSE EXECUTION ACCURACY

SGT 1184.0 SGR 604.9 SG3 294.2
RRT -.0559 RRF .0714 RTF -.7080
SGB 1329.5 R23 -.0179 R13 .7085
SG1 1184.6 SG2 603.6 THA 177.79

ORBIT DETERMINATION ACCURACY

ST 23.5 SR 27.5 SS 14.3
CRT .6295 CRS -.2493 CST .5863
LSA 32.8 MSA 20.8 SSA 1.6
EL1 32.7 EL2 15.3 ALF 52.03

LAUNCH DATE MAY 21 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC DISTANCE 320.837 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 33.091 GAL .83 AZL 91.73 HCA 106.01 SMA 201.67 ECC .24964 INC 1.7300 V1 29.427
RP 206.93 LAP -1.66 LOP 345.33 VP 24.993 GAP 14.38 AZP 89.52 TAL 4.17 TAP 110.18 RCA 151.33 APO 252.02 V2 26.466
RC 73.228 GL -15.30 GP -1.29 ZAL 87.87 ZAP 158.80 ETS 183.49 ZAE 169.01 ETE 8.56 ZAC 97.87 ETC 278.95 LVI -18.36

PLANETOCENTRIC CONIC

C3 14.322 VHL 3.784 DLA -26.78 RAL 335.12 RAD 6640.2 VEL 11.592 PTH 6.63 VHP 6.245 DPA -16.43 RAP 327.55 ECC 1.2357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 35 39	2504.58	-7.63	66.61	189.61	137.11	16 17 23	1504.6	10.75	50.84
60.00	16 51 20	2303.24	-2.47	53.42	194.55	130.24	17 29 44	1303.2	13.52	35.29
70.00	18 29 39	2014.18	3.03	34.14	198.71	124.04	19 3 13	1014.2	16.51	13.97
80.00	20 31 43	1632.10	8.30	8.37	201.94	118.78	20 58 55	632.1	19.40	346.50
90.00	22 25 50	1264.08	11.12	342.79	203.43	116.17	22 46 54	264.1	20.96	320.08
100.00	23 14 34	1106.57	8.30	329.74	201.94	118.78	23 33 1	106.6	19.40	307.67
110.00	23 29 5	1061.00	3.03	323.06	198.71	124.04	23 46 46	61.0	16.51	302.89

DIFFERENTIAL CORRECTIONS

TDE -.2226 TRA -.6368 TC3 .4974 BAU .0984
RDE -.3584 RRA .1442 RC3 .1295 FAU .06941
FDE -.0586 FRA 1.0474 FC3-4.1957 BSP 1823
BDE .4219 BRA .6529 BC3 .5140 FSP 459

MID-COURSE EXECUTION ACCURACY

SGT 1192.3 SGR 603.1 SG3 314.5
RRT -.0615 RRF .0780 RTF -.[illegible]06
SGB 1336.2 R23 -.0194 R13 .7112
SG1 1193.1 SG2 601.6 THA 177.61

ORBIT DETERMINATION ACCURACY

ST 23.4 SR 27.4 SS 14.8
CRT .6216 CRS -.2896 CST .5605
LSA 32.6 MSA 21.3 SSA 1.6
EL1 32.5 EL2 15.4 ALF 52.14

LAUNCH DATE MAY 21 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC DISTANCE 324.622 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 33.019 GAL .87 AZL 91.72 HCA 107.28 SMA 200.23 ECC .24428 INC 1.7222 V1 29.427
RP 207.00 LAP -1.64 LOP 346.59 VP 24.889 GAP 14.01 AZP 89.49 TAL 4.45 TAP 111.72 RCA 151.32 APO 249.15 V2 26.458
RC 74.683 GL -15.49 GP -1.34 ZAL 87.49 ZAP 157.55 ETS 183.40 ZAE 169.41 ETE 7.83 ZAC 97.82 ETC 278.95 LVI -18.31

PLANETOCENTRIC CONIC

C3 13.797 VHL 3.714 DLA -27.10 RAL 334.80 RAD 6639.9 VEL 11.570 PTH 6.61 VHP 6.050 DPA -16.46 RAP 327.58 ECC 1.2271

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 3	2489.24	-6.86	65.96	189.00	137.20	16 17 32	1489.2	11.51	50.17
60.00	16 52 26	2286.03	-1.71	52.60	193.93	130.27	17 30 33	1286.0	14.24	34.42
70.00	18 31 57	1993.44	3.82	33.06	198.12	123.97	19 5 10	993.4	17.21	12.78
80.00	20 36 26	1603.76	9.23	6.78	201.41	118.52	21 3 9	603.8	20.15	344.73
90.00	22 33 37	1225.87	12.26	340.56	202.99	115.69	22 54 3	225.9	21.80	317.60
100.00	23 19 18	1078.24	9.23	328.15	201.41	118.52	23 37 16	78.2	20.15	306.10
110.00	23 31 23	1040.26	3.82	321.97	198.12	123.97	23 48 43	40.3	17.21	301.70

DIFFERENTIAL CORRECTIONS

TDE -.2161 TRA -.6252 TC3 .5184 BAU .0986
RDE -.3504 RRA .1411 RC3 .1295 FAU .07283
FDE -.0762 FRA 1.0876 FC3-4.5702 BSP 1837
BDE .4117 BRA .6410 BC3 .5343 FSP 494

MID-COURSE EXECUTION ACCURACY

SGT 1197.1 SGR 601.0 SG3 335.7
RRT -.0663 RRF .0846 RTF -.7117
SGB 1339.5 R23 -.0218 R13 .7124
SG1 1198.0 SG2 599.3 THA 177.46

ORBIT DETERMINATION ACCURACY

ST 23.3 SR 27.3 SS 15.3
CRT .6155 CRS -.3274 CST .5337
LSA 32.4 MSA 21.7 SSA 1.6
EL1 32.4 EL2 15.5 ALF 52.24

LAUNCH DATE MAY 21 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 28 1971

HELIOCENTRIC CONIC DISTANCE 328.443 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.952	GAL	.91	AZL	91.71	HCA	108.54	SMA	198.90	ECC	.23928	INC	1.7144	V1	29.427
RP	207.08	LAP	-1.63	LOP	347.86	VP	24.790	GAP	13.65	AZP	89.45	TAL	4.71	TAP	113.26	RCA	151.31	APO	246.50	V2	26.449
RC	76.180	GL	-15.67	GP	-1.39	ZAL	87.13	ZAP	156.27	ETS	183.31	ZAE	169.89	ETE	7.09	ZAC	97.77	ETC	278.95	LVI	-18.26

PLANETOCENTRIC CONIC

C3	13.314	VHL	3.649	DLA	-27.40	RAL	334.50	RAD	6639.7	VEL	11.549	PTH	6.59	VHP	5.862	DPA	-16.52	RAP	327.59	ECC	1.2191

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 24	2474.63	-6.13	65.34	188.41	137.27	16 17 39	1474.6	12.23	49.54
60.00	16 53 29	2269.59	-.99	51.81	193.34	130.29	17 31 19	1269.6	14.93	33.57
70.00	18 34 11	1973.49	4.58	32.01	197.55	123.88	19 7 4	973.5	17.89	11.63
80.00	20 41 15	1575.73	10.13	5.19	200.92	118.24	21 7 30	575.7	20.87	342.96
90.00	22 42 15	1185.48	13.44	338.18	202.61	115.12	23 2 1	185.5	22.65	314.94
100.00	23 24 6	1050.20	10.13	326.56	200.92	118.24	23 41 37	50.2	20.87	304.33
110.00	23 33 37	1020.31	4.58	320.93	197.55	123.88	23 50 38	20.3	17.89	300.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2108	TRA	-.6145	TC3	.5420	BAU	.0992	SGT	1203.1	SGR	598.5	SG3	358.8	ST	23.2	SR	27.2	SS	15.9
RDE	-.3427	RRA	.1383	RC3	.1287	FAU	.07662	RRT	-.0702	RRF	.0908	RTF	-.7135	CRT	.6109	CRS	-.3571	CST	.5117
FDE	-.0922	FRA	1.1310	FC3	-4.9824	BSP	1850	SGB	1343.8	R23	-.0244	R13	.7143	LSA	32.2	MSA	22.1	SSA	1.7
BDE	.4023	BRA	.6299	BC3	.5571	FSP	534	SG1	1204.1	SG2	596.6	THA	177.35	EL1	32.2	EL2	15.5	ALF	52.18

LAUNCH DATE MAY 21 1971 FLIGHT TIME 132.00 ARRIVAL DATE SEP 30 1971

HELIOCENTRIC CONIC DISTANCE 332.297 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.889	GAL	.94	AZL	91.71	HCA	109.81	SMA	197.68	ECC	.23460	INC	1.7065	V1	29.427
RP	207.17	LAP	-1.61	LOP	349.12	VP	24.695	GAP	13.29	AZP	89.42	TAL	4.97	TAP	114.78	RCA	151.30	APO	244.05	V2	26.439
RC	77.718	GL	-15.84	GP	-1.44	ZAL	86.78	ZAP	154.96	ETS	183.24	ZAE	170.44	ETE	6.31	ZAC	97.73	ETC	278.94	LVI	-18.20

PLANETOCENTRIC CONIC

C3	12.870	VHL	3.587	DLA	-27.69	RAL	334.20	RAD	6639.5	VEL	11.530	PTH	6.58	VHP	5.680	DPA	-16.58	RAP	327.56	ECC	1.2118

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 43	2460.78	-5.44	64.76	187.85	137.34	16 17 44	1460.8	12.91	48.93
60.00	16 54 28	2253.96	-.30	51.06	192.78	130.30	17 32 2	1254.0	15.58	32.77
70.00	18 36 21	1954.36	5.30	31.00	197.01	123.79	19 8 56	954.4	18.53	10.51
80.00	20 46 9	1548.02	11.02	3.61	200.46	117.93	21 11 57	548.0	21.56	341.19
90.00	22 52 13	1141.49	14.69	335.56	202.31	114.44	23 11 14	141.5	23.52	312.01
100.00	23 29 1	1022.49	11.02	324.98	200.46	117.93	23 46 3	22.5	21.56	302.56
110.00	23 35 48	1001.18	5.30	319.92	197.01	123.79	23 52 29	1.2	18.53	299.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2048	TRA	-.6027	TC3	.5605	BAU	.0989	SGT	1204.3	SGR	595.8	SG3	383.3	ST	23.1	SR	27.0	SS	16.5
RDE	-.3354	RRA	.1356	RC3	.1270	FAU	.08065	RRT	-.0754	RRF	.0985	RTF	-.7134	CRT	.6056	CRS	-.3928	CST	.4841
FDE	-.1124	FRA	1.1754	FC3	-5.4251	BSP	1849	SGB	1343.7	R23	-.0275	R13	.7143	LSA	32.0	MSA	22.6	SSA	1.7
BDE	.3929	BRA	.6178	BC3	.5747	FSP	574	SG1	1205.4	SG2	593.6	THA	177.18	EL1	32.0	EL2	15.5	ALF	52.30

LAUNCH DATE MAY 21 1971 FLIGHT TIME 134.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 336.181 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.830	GAL	.98	AZL	91.70	HCA	111.07	SMA	196.54	ECC	.23023	INC	1.6985	V1	29.427
RP	207.26	LAP	-1.58	LOP	350.39	VP	24.605	GAP	12.94	AZP	89.39	TAL	5.23	TAP	116.30	RCA	151.29	APO	241.79	V2	26.428
RC	79.295	GL	-16.00	GP	-1.49	ZAL	86.43	ZAP	153.62	ETS	183.17	ZAE	171.06	ETE	5.47	ZAC	97.68	ETC	278.92	LVI	-18.13

PLANETOCENTRIC CONIC

C3	12.461	VHL	3.530	DLA	-27.96	RAL	333.90	RAD	6639.3	VEL	11.512	PTH	6.56	VHP	5.506	DPA	-16.66	RAP	327.51	ECC	1.2051

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 0	2447.64	-4.78	64.21	187.31	137.39	16 17 48	1447.6	13.56	48.34
60.00	16 55 24	2239.09	.36	50.35	192.24	130.30	17 32 43	1239.1	16.20	32.00
70.00	18 38 27	1936.02	6.00	30.04	196.49	123.69	19 10 43	936.0	19.13	9.44
80.00	20 51 11	1520.48	11.89	2.04	200.02	117.59	21 16 31	520.5	22.23	339.42
90.00	23 4 40	1090.00	16.12	332.46	202.11	113.55	23 22 50	90.0	24.45	308.52
100.00	23 34 2	6282.99	11.89	301.31	200.02	117.59	25 18 45	5283.0	22.23	278.70
110.00	23 37 54	6270.87	6.00	296.86	196.49	123.69	25 22 25	5270.9	19.13	276.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1861	TRA	-.5792	TC3	.6138	BAU	.1043	SGT	1188.3	SGR	592.9	SG3	409.6	ST	22.0	SR	26.9	SS	17.1
RDE	-.3284	RRA	.1331	RC3	.1240	FAU	.08507	RRT	-.0871	RRF	.1081	RTF	-.7116	CRT	.5816	CRS	-.4409	CST	.4639
FDE	-.1410	FRA	1.2177	FC3	-5.9101	BSP	1705	SGB	1328.0	R23	-.0236	R13	.7326	LSA	31.2	MSA	22.9	SSA	1.7
BDE	.3774	BRA	.5943	BC3	.6262	FSP	611	SG1	1189.8	SG2	589.9	THA	176.70	EL1	31.1	EL2	15.5	ALF	54.63

LAUNCH DATE MAY 21 1971 FLIGHT TIME 136.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 340.093 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.775	GAL	1.01	AZL	91.69	HCA	112.33	SMA	195.50	ECC	.22616	INC	1.6903	V1	29.427
RP	207.37	LAP	-1.56	LOP	351.65	VP	24.518	GAP	12.61	AZP	89.36	TAL	5.47	TAP	117.80	RCA	151.28	APO	239.71	V2	26.415
RC	80.909	GL	-16.14	GP	-1.55	ZAL	86.11	ZAP	152.25	ETS	183.10	ZAE	171.76	ETE	4.54	ZAC	97.64	ETC	278.90	LVI	-18.05

PLANETOCENTRIC CONIC

C3	12.086	VHL	3.476	DLA	-28.22	RAL	333.62	RAD	6639.1	VEL	11.496	PTH	6.54	VHP	5.338	DPA	-16.75	RAP	327.42	ECC	1.1989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 15	2435.33	-4.16	63.69	186.80	137.44	16 17 50	1435.3	14.16	47.79
60.00	16 56 16	2225.14	.97	49.69	191.73	130.29	17 33 21	1225.1	16.77	31.27
70.00	18 40 28	1918.71	6.65	29.12	196.00	123.58	19 12 26	918.7	19.70	8.41
80.00	20 56 15	1493.51	12.74	.48	199.63	117.23	21 21 9	493.5	22.86	337.67
90.00	23 24 28	1015.47	18.09	327.87	202.18	112.11	23 41 23	15.5	25.64	303.39
100.00	23 39 7	6256.02	12.74	299.75	199.63	117.23	25 23 23	5256.0	22.86	276.94
110.00	23 39 54	6253.57	6.65	295.95	196.00	123.58	25 24 8	5253.6	19.70	275.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1870	TRA	-.5728	TC3	.6064	BAU	.0999	SGT	1191.9	SGR	589.7	SG3	436.6	ST	22.3	SR	26.7	SS	17.8
RDE	-.3215	RRA	.1309	RC3	.1206	FAU	.08939	RRT	-.0905	RRF	.1168	RTF	-.7206	CRT	.5863	CRS	-.4658	CST	.4337
FDE	-.1606	FRA	1.2696	FC3	-6.4036	BSP	1767	SGB	1329.8	R23	-.0309	R13	.7218	LSA	31.3	MSA	23.3	SSA	1.7
BDE	.3719	BRA	.5876	BC3	.6183	FSP	661	SG1	1193.5	SG2	586.5	THA	176.62	EL1	31.2	EL2	15.5	ALF	53.72

LAUNCH DATE MAY 21 1971 FLIGHT TIME 138.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 344.030 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.724	GAL	1.04	AZL	91.68	HCA	113.59	SMA	194.53	ECC	.22237	INC	1.6820	V1	29.427
RP	207.48	LAP	-1.54	LOP	352.91	VP	24.435	GAP	12.28	AZP	89.33	TAL	5.69	TAP	119.28	RCA	151.27	APO	237.79	V2	26.402
RC	82.560	GL	-16.28	GP	-1.61	ZAL	85.81	ZAP	150.85	ETS	183.03	ZAE	172.52	ETE	3.46	ZAC	97.61	ETC	278.87	LVI	-17.96

PLANETOCENTRIC CONIC

C3	11.740	VHL	3.426	DLA	-28.46	RAL	333.35	RAD	6638.9	VEL	11.481	PTH	6.53	VHP	5.177	DPA	-16.85	RAP	327.30	ECC	1.1932

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 28	2423.78	-3.58	63.20	186.32	137.47	16 17 52	1423.8	14.73	47.28
60.00	16 57 4	2212.03	1.55	49.06	191.25	130.28	17 33 56	1212.0	17.31	30.58
70.00	18 42 22	1902.33	7.26	28.25	195.55	123.46	19 14 4	902.3	20.23	7.44
80.00	21 1 25	1466.88	13.56	358.93	199.26	116.86	21 25 52	466.9	23.46	335.92
86.68	23 11 39	1047.36	19.66	330.86	202.09	111.00	23 29 6	47.4	26.59	305.94
100.00	23 44 17	6229.39	13.56	298.21	199.26	116.86	25 28 7	5229.4	23.46	275.19
110.00	23 41 48	6237.19	7.26	295.08	195.55	123.46	25 25 46	5237.2	20.23	274.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1866	TRA	-.5646	TC3	.5982	BAU	.0956	SGT	1191.1	SGR	586.1	SG3	464.8	ST	22.4	SR	26.6	SS	18.4
RDE	-.3148	RRA	.1288	RC3	.1162	FAU	.09388	RRT	-.0949	RRF	.1256	RTF	-.7113	CRT	.5896	CRS	-.4831	CST	.4122
FDE	-.1778	FRA	1.3247	FC3	-6.9226	BSP	1799	SGB	1327.5	R23	-.0371	R13	.7127	LSA	31.4	MSA	23.7	SSA	1.8
BDE	.3660	BRA	.5791	BC3	.6094	FSP	711	SG1	1192.8	SG2	582.6	THA	176.49	EL1	31.2	EL2	15.5	ALF	53.05

LAUNCH DATE MAY 21 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 347.991 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.676	GAL	1.06	AZL	91.67	HCA	114.85	SMA	193.64	ECC	.21883	INC	1.6735	V1	29.427
RP	207.60	LAP	-1.52	LOP	354.17	VP	24.356	GAP	11.96	AZP	89.30	TAL	5.91	TAP	120.76	RCA	151.26	APO	236.01	V2	26.388
RC	84.247	GL	-16.40	GP	-1.67	ZAL	85.52	ZAP	149.41	ETS	182.97	ZAE	173.36	ETE	2.15	ZAC	97.57	ETC	278.84	LVI	-17.85

PLANETOCENTRIC CONIC

C3	11.422	VHL	3.380	DLA	-28.68	RAL	333.09	RAD	6638.8	VEL	11.468	PTH	6.52	VHP	5.022	DPA	-16.97	RAP	327.15	ECC	1.1880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 39	2413.00	-3.04	62.75	185.87	137.50	16 17 52	1413.0	15.25	46.79
60.00	16 57 48	2199.77	2.09	48.48	190.80	130.26	17 34 28	1199.8	17.81	29.93
70.00	18 44 10	1886.94	7.84	27.44	195.11	123.35	19 15 37	886.9	20.72	6.51
80.00	21 6 40	1440.61	14.37	357.40	198.93	116.46	21 30 41	440.6	24.03	334.18
85.03	22 56 57	1085.88	19.95	333.80	201.50	111.04	23 15 2	85.9	26.86	308.82
100.00	23 49 32	6203.12	14.37	296.67	198.93	116.46	25 32 55	5203.1	24.03	273.45
110.00	23 43 36	6221.80	7.84	294.26	195.11	123.35	25 27 18	5221.8	20.72	273.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1840	TRA	-.5536	TC3	.5916	BAU	.0919	SGT	1183.9	SGR	582.4	SG3	494.9	ST	22.4	SR	26.4	SS	19.2
RDE	-.3084	RRA	.1270	RC3	.1106	FAU	.09873	RRT	-.1008	RRF	.1364	RTF	-.7030	CRT	.5900	CRS	-.5099	CST	.3832
FDE	-.2023	FRA	1.3794	FC3	-7.4836	BSP	1802	SGB	1319.4	R23	-.0435	R13	.7047	LSA	31.4	MSA	24.0	SSA	1.8
BDE	.3591	BRA	.5680	BC3	.6018	FSP	764	SG1	1185.9	SG2	578.5	THA	176.27	EL1	31.0	EL2	15.4	ALF	52.85

LAUNCH DATE MAY 21 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 10 1971

HELIOCENTRIC CONIC DISTANCE 351.973 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.631	GAL	1.08	AZL	91.66	HCA	116.11	SMA	192.81	ECC	.21553	INC	1.6649	V1	29.427
RP	207.73	LAP	-1.50	LOP	355.43	VP	24.279	GAP	11.64	AZP	89.27	TAL	6.11	TAP	122.22	RCA	151.26	APO	234.37	V2	26.373
RC	85.969	GL	-16.51	GP	-1.74	ZAL	85.25	ZAP	147.94	ETS	182.91	ZAE	174.26	ETE	.47	ZAC	97.54	ETC	278.80	LVI	-17.74

PLANETOCENTRIC CONIC

C3	11.128	VHL	3.336	DLA	-28.88	RAL	332.85	RAD	6638.6	VEL	11.455	PTH	6.51	VHP	4.873	DPA	-17.10	RAP	326.96	ECC	1.1831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 48	2402.98	-2.54	62.33	185.45	137.52	16 17 50	1403.0	15.74	46.34
60.00	16 58 27	2188.38	2.59	47.93	190.37	130.23	17 34 56	1188.4	18.28	29.32
70.00	18 45 50	1872.58	8.38	26.67	194.71	123.23	19 17 3	872.6	21.17	5.65
80.00	21 12 0	1414.75	15.14	355.87	198.64	116.04	21 35 35	414.7	24.57	332.45
83.89	22 46 42	1110.47	20.21	335.72	200.95	111.08	23 5 13	110.5	27.11	310.68
100.00	23 54 52	6177.26	15.14	295.15	198.64	116.04	25 37 49	5177.3	24.57	271.72
110.00	23 45 16	6207.43	8.38	293.49	194.71	123.23	25 28 44	5207.4	21.17	272.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1814	TRA	-.5424	TC3	.5799	BAU	.0876	SGT	1174.2	SGR	578.5	SG3	526.7	ST	22.3	SR	26.2	SS	19.9
RDE	-.3022	RRA	.1253	RC3	.1039	FAU	.10383	RRT	-.1074	RRF	.1479	RTF	-.7039	CRT	.5907	CRS	-.5319	CST	.3584
FDE	-.2261	FRA	1.4389	FC3	-8.0775	BSP	1790	SGB	1309.0	R23	-.0502	R13	.6960	LSA	31.4	MSA	24.4	SSA	1.8
BDE	.3525	BRA	.5567	BC3	.5891	FSP	820	SG1	1176.4	SG2	574.1	THA	176.02	EL1	30.8	EL2	15.3	ALF	52.67

LAUNCH DATE MAY 21 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 12 1971

HELIOCENTRIC CONIC DISTANCE 355.975 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.589	GAL	1.10	AZL	91.66	HCA	117.36	SMA	192.05	ECC	.21247	INC	1.6561	V1	29.427
RP	207.86	LAP	-1.47	LOP	356.68	VP	24.206	GAP	11.33	AZP	89.24	TAL	6.30	TAP	123.66	RCA	151.25	APO	232.86	V2	26.357
RC	87.725	GL	-16.61	GP	-1.81	ZAL	85.01	ZAP	146.43	ETS	182.85	ZAE	175.22	ETE	358.14	ZAC	97.51	ETC	278.75	LVI	-17.61

PLANETOCENTRIC CONIC

C3	10.857	VHL	3.295	DLA	-29.06	RAL	332.63	RAD	6638.5	VEL	11.443	PTH	6.49	VHP	4.731	DPA	-17.25	RAP	326.74	ECC	1.1787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 55	2393.72	-2.07	61.95	185.05	137.54	16 17 48	1393.7	16.19	45.92
60.00	16 59 3	2177.87	3.05	47.43	189.97	130.20	17 35 21	1177.9	18.70	28.76
70.00	18 47 22	1859.28	8.87	25.96	194.33	123.12	19 18 21	859.3	21.59	4.84
80.00	21 17 23	1389.33	15.90	354.36	198.37	115.61	21 40 32	389.3	25.08	330.73
83.01	22 38 45	1128.19	20.46	337.13	200.44	111.10	22 57 33	128.2	27.34	312.03
100.00	0 4 10	6151.85	15.90	293.64	198.37	115.61	1 46 42	5151.8	25.08	270.00
110.00	23 46 48	6194.14	8.87	292.78	194.33	123.12	25 30 3	5194.1	21.59	271.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1788	TRA	-.5300	TC3	.5626	BAU	.0829	SGT	1160.1	SGR	574.4	SG3	560.1	ST	22.2	SR	26.0	SS	20.7
RDE	-.2962	RRA	.1238	RC3	.0960	FAU	.10919	RRT	-.1141	RRF	.1602	RTF	-.6835	CRT	.5926	CRS	-.5516	CST	.3342
FDE	-.2504	FRA	1.5011	FC3	-8.7064	BSP	1761	SGB	1294.6	R23	-.0578	R13	.6861	LSA	31.4	MSA	24.6	SSA	1.9
BDE	.3460	BRA	.5443	BC3	.5708	FSP	877	SG1	1162.6	SG2	569.5	THA	175.74	EL1	30.6	EL2	15.2	ALF	52.55

LAUNCH DATE MAY 21 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 14 1971

HELIOCENTRIC CONIC DISTANCE 359.996 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.550 GAL 1.12 AZL 91.65 HCA 118.62 SMA 191.35 ECC .20962 INC 1.6471 V1 29.427
RP 208.01 LAP -1.45 LOP 357.94 VP 24.135 GAP 11.04 AZP 89.21 TAL 6.47 TAP 125.09 RCA 151.24 APO 231.46 V2 26.340
RC 89.514 GL -16.69 GP -1.88 ZAL 84.78 ZAP 144.89 ETS 182.79 ZAE 176.25 ETE 354.53 ZAC 97.48 ETC 278.69 LVI -17.47

PLANETOCENTRIC CONIC

C3 10.608 VHL 3.257 DLA -29.22 RAL 332.43 RAD 6638.4 VEL 11.432 PTH 6.48 VHP 4.594 DPA -17.42 RAP 326.48 ECC 1.1746

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 0	2385.23	-1.65	61.59	184.68	137.55	16 17 45	1385.2	16.60	45.53
60.00	16 59 34	2168.24	3.47	46.97	189.60	130.18	17 35 42	1168.2	19.09	28.24
70.00	18 48 45	1847.08	9.33	25.31	193.97	123.01	19 19 32	847.1	21.96	4.09
80.00	21 22 47	1364.43	16.63	352.87	198.13	115.16	21 45 32	364.4	25.56	329.03
82.31	22 32 20	1141.45	20.68	338.20	199.96	111.12	22 51 22	141.5	27.55	313.05
100.00	0 9 35	6126.94	16.63	292.14	198.13	115.16	1 51 42	5126.9	25.56	268.31
110.00	23 48 12	6181.94	9.33	292.13	193.97	123.01	25 31 14	5181.9	21.96	270.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1773 TRA -.5175 TC3 .5389 BAU .0774 SGT 1143.9 SGR 570.2 SG3 595.1 ST 22.1 SR 25.8 SS 21.4
RDE -.2904 RRA .1225 RC3 .0870 FAU .11479 RRT -.1203 RRF .1733 RTF -.6709 CRT .5968 CRS -.5678 CST .3106
FDE -.2741 FRA 1.9668 FC3-9.3681 BSP 1721 SGB 1278.1 R23 -.0670 R13 .6740 LSA 31.5 MSA 24.9 SSA 1.9
BDE .3402 BRA .5318 BC3 .5458 FSP 937 SG1 1146.6 SG2 564.7 THA 175.47 EL1 30.5 EL2 15.0 ALF 52.32

LAUNCH DATE MAY 21 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 16 1971

HELIOCENTRIC CONIC DISTANCE 364.034 EARTH TO MARS

RL 151.41 LAL -.00 LOL 23[illegible] VL 32.514 GAL 1.14 AZL 91.64 HCA 119.87 SMA 190.70 ECC .20697 INC 1.6379 V1 29.427
RP 208.16 LAP -1.42 LOP 35[illegible] 24.067 GAP 10.74 AZP 89.18 TAL 6.63 TAP 126.50 RCA 151.24 APO 230.17 V2 26.323
RC 91.337 GL -16.77 GP -1.9[illegible] ZAL 84.59 ZAP 143.30 ETS 182.73 ZAE 177.32 ETE 347.94 ZAC 97.46 ETC 278.62 LVI -17.31

PLANETOCENTRIC CONIC

C3 10.377 VHL 3.221 DLA -2[illegible] RAL 332.24 RAD 6638.2 VEL 11.422 PTH 6.47 VHP 4.463 DPA -17.60 RAP 326.18 ECC 1.1708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 4	2377.49	-1.26	61.27	184.34	137.56	16 17 41	1377.5	16.97	45.17
60.00	17 0 1	2159.50	3.86	46.55	189.25	130.15	17 36 0	1159.5	19.44	27.77
70.00	18 49 59	1836.03	9.74	24.71	193.63	122.90	19 20 35	836.0	22.30	3.41
80.00	21 28 13	1340.13	17.32	351.40	197.92	114.71	21 50 33	340.1	26.01	327.37
81.74	22 27 8	1151.38	20.89	339.02	199.52	111.12	22 46 19	151.[illegible]	27.74	313.82
100.00	0 15 0	6102.64	17.32	290.68	197.92	114.71	1 56 43	5102.[illegible]	26.01	266.64
110.00	23 49 25	6170.89	9.74	291.54	193.63	122.90	25 32 16	5170.[illegible]	22.30	270.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1749 TRA -.5042 TC3 .5071 BAU .0712 SGT 1123.5 SGR 566.0 SG3 631.8 ST 21.9 SR 25.6 SS 22.2
RDE -.2847 RRA .1214 RC3 .0767 FAU .12062 RRT -.1279 RRF .1684 RTF -.6557 CRT .5999 CRS -.5870 CST .2844
FDE -.3024 FRA 1.6363 FC-10.0628 BSP 1677 SGB 1258.0 R23 -.0774 R13 .6596 LSA 31.6 MSA 25.0 SSA 1.9
BDE .3342 BRA .5186 BC3 .5129 FSP 1004 SG1 1126.6 SG2 559.8 THA 175.10 EL1 30.3 EL2 14.8 ALF 52.27

LAUNCH DATE MAY 21 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 368.087 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.480 GAL 1.15 AZL 91.63 HCA 121.12 SMA 190.11 ECC .20451 INC 1.6285 V1 29.427
RP 208.32 LAP -1.39 LOP .44 VP 24.001 GAP 10.46 AZP 89.16 TAL 6.77 TAP 127.89 RCA 151.23 APO 228.99 V2 26.304
RC 93.190 GL -16.83 GP -2.03 ZAL 84.41 ZAP 141.69 ETS 182.67 ZAE 178.37 ETE 332.14 ZAC 97.43 ETC 278.55 LVI -17.15

PLANETOCENTRIC CONIC

[illegible] 10.165 VHL 3.188 DLA -29.49 RAL 332.08 RAD 6638.1 VEL 11.413 PTH 6.46 VHP 4.339 DPA -17.79 RAP 325.84 ECC 1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 6	2370.52	-.91	60.98	184.03	137.57	16 17 37	1370.5	17.31	44.85
60.00	17 0 23	2151.64	4.20	46.17	188.94	130.12	17 36 14	1151.6	19.75	27.34
70.00	18 51 2	1826.15	10.10	24.18	193.32	122.80	19 21 28	826.2	22.60	2.80
80.00	21 33 35	1316.60	17.99	349.97	197.74	114.24	21 55 32	316.6	26.42	325.74
81.28	22 22 53	1158.78	21.07	339.64	199.11	111.12	22 42 12	158.8	27.90	314.40
100.00	0 20 23	6079.12	17.99	289.25	197.74	114.24	2 1 42	5079.1	26.42	265.01
110.00	23 50 28	6161.01	10.10	291.00	193.32	122.80	25 33 9	5161.0	22.60	269.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1740 TRA -.4899 TC3 .4663 BAU .0640 SGT 1099.6 SGR 561.5 SG3 669.9 ST 21.8 SR 25.4 SS 23.0
RDE -.2792 RRA .1205 RC3 .0651 FAU .12672 RRT -.1334 RRF .2034 RTF -.[illegible]63 CRT .6074 CRS -.6005 CST .2592
FDE -.3271 FRA 1.7061 FC-10.7926 BSP 1618 SGB 1234.7 R23 -.0903 R13 .6411 LSA 31.8 MSA 25.1 SSA 1.9
BDE .3290 BRA .5045 BC3 .4708 FSP 1069 SG1 1103.1 SG2 554.8 THA 174.78 EL1 30.1 EL2 14.6 ALF 52.03

LAUNCH DATE MAY 21 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 372.155 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.449 GAL 1.16 AZL 91.62 HCA 122.37 SMA 189.58 ECC .20223 INC 1.6189 V1 29.427
RP 208.49 LAP -1.37 LOP 1.69 VP 23.937 GAP 10.18 AZP 89.13 TAL 6.90 TAP 129.26 RCA 151.22 APO 227.89 V2 26.284
RC 95.074 GL -16.88 GP -2.12 ZAL 84.27 ZAP 140.03 ETS 182.61 ZAE 179.02 ETE 281.44 ZAC 97.41 ETC 278.47 LVI -16.96

PLANETOCENTRIC CONIC

C3 9.968 VHL 3.157 DLA -29.59 RAL 331.95 RAD 6638.0 VEL 11.405 PTH 6.46 VHP 4.219 DPA -18.01 RAP 325.47 ECC 1.1641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 7	2364.28	-.60	60.72	183.75	137.57	16 17 31	1364.3	17.61	44.56
60.00	17 0 40	2144.68	4.51	45.84	188.64	130.09	17 36 25	1144.7	20.03	26.96
70.00	18 51 54	1817.48	10.42	23.71	193.04	122.71	19 22 11	817.5	22.86	2.26
80.00	21 38 49	1294.12	18.61	348.59	197.58	113.78	22 0 23	294.1	26.79	324.17
80.92	22 19 30	1163.95	21.24	340.09	198.73	111.10	22 38 54	163.9	28.04	314.81
100.00	0 25 37	6056.63	18.61	287.87	197.58	113.78	2 6 33	5056.6	26.79	263.45
110.00	23 51 20	6152.34	10.42	290.54	193.04	122.71	25 33 53	5152.3	22.86	269.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1739 TRA -.4758 TC3 .4141 BAU .0556 SGT 1074.2 SGR 557.1 SG3 709.1 ST 21.7 SR 25.1 SS 23.8
RDE -.2738 RRA .1198 RC3 .0524 FAU .13289 RRT -.1384 RRF .2201 RTF -.6122 CRT .6164 CRS -.6122 CST .2337
FDE -.3525 FRA 1.7822 FC-11.5411 BSP 1549 SGB 1210.1 R23 -.1062 R13 .6182 LSA 32.1 MSA 25.2 SSA 1.9
BDE .3243 BRA .4907 BC3 .4174 FSP 1139 SG1 1077.9 SG2 549.8 THA 174.44 EL1 29.9 EL2 14.3 ALF 51.71

LAUNCH DATE MAY 21 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 376.237 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.420 GAL 1.17 AZL 91.61 HCA 123.61 SMA 189.05 ECC .20012 INC 1.6089 V1 29.427
RP 208.67 LAP -1.34 LOP 2.93 VP 23.876 GAP 9.91 AZP 89.11 TAL 7.00 TAP 130.61 RCA 151.22 APO 226.89 V2 26.264
RC 96.988 GL -16.91 GP -2.20 ZAL 84.14 ZAP 138.34 ETS 182.54 ZAE 178.38 ETE 226.13 ZAC 97.39 ETC 278.38 LVI -16.77

PLANETOCENTRIC CONIC

C3 9.787 VHL 3.128 DLA -29.67 RAL 331.83 RAD 6637.9 VEL 11.397 PTH 6.45 VHP 4.106 DPA -18.23 RAP 325.06 ECC 1.1611

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 6	2358.77	-.32	60.49	183.49	137.58	16 17 25	1358.8	17.87	44.31
60.00	17 0 52	2138.58	4.77	45.54	188.38	130.07	17 36 31	1138.6	20.27	26.83
70.00	18 52 35	1809.98	10.70	23.31	192.77	122.63	19 22 45	810.0	23.09	1.80
80.00	21 43 48	1272.98	19.18	347.29	197.43	113.33	22 5 1	273.0	27.12	322.69
80.63	22 16 53	1167.21	21.38	340.39	198.39	111.07	22 36 20	167.2	28.16	315.07
100.00	0 30 36	6035.49	19.18	286.56	197.43	113.33	2 11 12	5035.5	27.12	261.96
110.00	23 52 1	6144.84	10.70	290.13	192.77	122.63	25 34 26	5144.8	23.09	268.62

DIFFERENTIAL CORRECTIONS

TDE -.1699 TRA -.4563 TC3 .3718 BAU .0489
RDE -.2686 RRA .1191 RC3 .0378 FAU .13969
FDE -.3843 FRA 1.8526 FC-12.3569 BSP 1421
BDE .3178 BRA .4716 BC3 .3737 FSP 1205

MID-COURSE EXECUTION ACCURACY

SGT 1037.3 SGR 552.7 SG3 750.8
RRT -.1446 RRF .2381 RTF -.5919
SGB 1175.4 R23 -.1210 R13 .5995
SG1 1041.6 SG2 544.7 THA 173.93

ORBIT DETERMINATION ACCURACY

ST 21.2 SR 24.9 SS 24.6
CRT .6218 CRS -.6295 CST .2051
LSA 32.4 MSA 24.9 SSA 1.9
EL1 29.6 EL2 14.0 ALF 52.21

LAUNCH DATE MAY 21 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 380.330 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.394 GAL 1.17 AZL 91.60 HCA 124.86 SMA 188.59 ECC .19817 INC 1.5988 V1 29.427
RP 208.85 LAP -1.31 LOP 4.18 VP 23.816 GAP 9.64 AZP 89.09 TAL 7.09 TAP 131.95 RCA 151.22 APO 225.96 V2 26.243
RC 98.929 GL -16.94 GP -2.29 ZAL 84.05 ZAP 136.61 ETS 182.47 ZAE 177.15 ETE 208.65 ZAC 97.37 ETC 278.28 LVI -16.56

PLANETOCENTRIC CONIC

C3 9.620 VHL 3.102 DLA -29.73 RAL 331.74 RAD 6637.8 VEL 11.389 PTH 6.44 VHP 3.998 DPA -18.48 RAP 324.61 ECC 1.1583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 5	2354.03	-.08	60.29	183.27	137.58	16 17 19	1354.0	18.10	44.09
60.00	17 1 0	2133.41	5.00	45.29	188.14	130.04	17 36 34	1133.4	20.48	26.34
70.00	18 53 3	1803.80	10.92	22.97	192.53	122.56	19 23 7	803.8	23.27	1.41
80.00	21 48 8	1254.58	19.68	346.14	197.30	112.92	22 9 3	254.6	27.40	321.39
80.44	22 15 0	1168.70	21.51	340.55	198.08	111.03	22 34 29	168.7	28.25	315.20
100.00	0 34 56	6017.09	19.68	285.42	197.30	112.92	2 15 13	5017.1	27.40	260.67
110.00	23 52 30	6138.66	10.92	289.79	192.53	122.56	25 34 48	5138.7	23.27	268.24

DIFFERENTIAL CORRECTIONS

TDE -.1744 TRA -.4449 TC3 .2872 BAU .0371
RDE -.2633 RRA .1189 RC3 .0225 FAU .14629
FDE -.4036 FRA 1.9431 FC-13.1655 BSP 1382
BDE .3158 BRA .4605 BC3 .2881 FSP 1287

MID-COURSE EXECUTION ACCURACY

SGT 1015.4 SGR 548.3 SG3 793.5
RRT -.1440 RRF .2569 RTF -.5497
SGB 1154.0 R23 -.1478 R13 .5591
SG1 1019.7 SG2 540.3 THA 173.81

ORBIT DETERMINATION ACCURACY

ST 21.5 SR 24.6 SS 25.3
CRT .6393 CRS -.6321 CST .1796
LSA 32.7 MSA 25.2 SSA 1.9
EL1 29.6 EL2 13.7 ALF 51.04

LAUNCH DATE MAY 21 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 26 1971

HELIOCENTRIC CONIC DISTANCE 384.434 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.369 GAL 1.17 AZL 91.59 HCA 126.10 SMA 188.17 ECC .19637 INC 1.5883 V1 29.427
RP 209.04 LAP -1.28 LOP 5.42 VP 23.758 GAP 9.38 AZP 89.06 TAL 7.16 TAP 133.26 RCA 151.22 APO 225.12 V2 26.221
RC 100.898 GL -16.95 GP -2.39 ZAL 83.99 ZAP 134.85 ETS 182.41 ZAE 175.75 ETE 201.64 ZAC 97.35 ETC 278.17 LVI -16.33

PLANETOCENTRIC CONIC

C3 9.465 VHL 3.077 DLA -29.76 RAL 331.68 RAD 6637.8 VEL 11.383 PTH 6.44 VHP 3.895 DPA -18.73 RAP 324.12 ECC 1.1558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 38 2	2349.99	.12	60.12	183.07	137.58	16 17 12	1350.0	18.30	43.90
60.00	17 1 3	2129.11	5.19	45.09	187.93	130.02	17 36 32	1129.1	20.65	26.11
70.00	18 53 20	1798.84	11.10	22.70	192.31	122.51	19 23 18	798.8	23.42	1.10
80.00	21 51 25	1240.06	20.06	345.23	197.15	112.59	22 12 5	240.1	27.60	320.36
80.31	22 13 49	1168.51	21.61	340.58	197.81	110.98	22 33 17	168.5	28.32	315.20
100.00	0 38 13	6002.57	20.06	284.51	197.15	112.59	2 18 15	5002.6	27.60	259.64
110.00	23 52 46	6133.70	11.10	289.53	192.31	122.51	25 35 0	5133.7	23.42	267.92

DIFFERENTIAL CORRECTIONS

TDE -.1767 TRA -.4295 TC3 .1981 BAU .0251
RDE -.2581 RRA .1187 RC3 .0062 FAU .15289
FDE -.4263 FRA 2.0302 FC-13.9841 BSP 1296
BDE .3128 BRA .4456 BC3 .1982 FSP 1368

MID-COURSE EXECUTION ACCURACY

SGT 986.0 SGR 544.0 SG3 836.1
RRT -.1418 RRF .2770 RTF -.5032
SGB 1126.1 R23 -.1771 R13 .5147
SG1 990.2 SG2 536.2 THA 173.66

ORBIT DETERMINATION ACCURACY

ST 21.5 SR 24.3 SS 26.1
CRT .6551 CRS -.6379 CST .1514
LSA 33.1 MSA 25.2 SSA 2.0
EL1 29.6 EL2 13.4 ALF 50.40

LAUNCH DATE MAY 21 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 28 1971

HELIOCENTRIC CONIC DISTANCE 388.549 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.347 GAL 1.17 AZL 91.58 HCA 127.34 SMA 187.78 ECC .19471 INC 1.5775 V1 29.427
RP 209.24 LAP -1.25 LOP 6.66 VP 23.702 GAP 9.13 AZP 89.04 TAL 7.21 TAP 134.55 RCA 151.21 APO 224.34 V2 26.198
RC 102.893 GL -16.95 GP -2.48 ZAL 83.95 ZAP 133.04 ETS 182.33 ZAE 174.26 ETE 197.91 ZAC 97.34 ETC 278.06 LVI -16.09

PLANETOCENTRIC CONIC

C3 9.322 VHL 3.053 DLA -29.78 RAL 331.64 RAD 6637.7 VEL 11.377 PTH 6.43 VHP 3.798 DPA -19.01 RAP 323.59 ECC 1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 58	2346.67	.29	59.98	182.90	137.58	16 17 4	1346.7	18.45	43.74
60.00	17 1 2	2125.67	5.34	44.92	187.74	130.01	17 36 27	1125.7	20.78	25.92
70.00	18 53 23	1795.13	11.24	22.50	192.11	122.47	19 23 19	795.1	23.53	.87
80.00	21 52 56	1231.72	20.28	344.71	196.97	112.40	22 13 28	231.7	27.72	319.77
80.26	22 13 14	1166.87	21.69	340.49	197.57	110.92	22 32 41	166.9	28.37	315.09
100.00	0 39 44	5994.24	20.28	283.98	196.97	112.40	2 19 38	4994.2	27.72	259.04
110.00	23 52 50	6129.99	11.24	289.32	192.11	122.47	25 35 0	5130.0	23.53	267.69

DIFFERENTIAL CORRECTIONS

TDE -.1784 TRA -.4123 TC3 .1067 BAU .0134
RDE -.2531 RRA .1187 RC3 -.0120 FAU .16001
FDE -.4493 FRA 2.1184 FC-14.8596 BSP 1187
BDE .3096 BRA .4291 BC3 .1073 FSP 1448

MID-COURSE EXECUTION ACCURACY

SGT 954.5 SGR 539.9 SG3 881.2
RRT -.1365 RRF .2983 RTF -.4511
SGB 1096.6 R23 -.2104 R13 .4651
SG1 958.6 SG2 532.5 THA 173.60

ORBIT DETERMINATION ACCURACY

ST 21.4 SR 24.1 SS 26.8
CRT .6713 CRS -.6437 CST .1224
LSA 33.5 MSA 25.1 SSA 2.0
EL1 29.5 EL2 13.0 ALF 49.90

LAUNCH DATE MAY 21 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 30 1971

HELIOCENTRIC CONIC DISTANCE 392.674 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.326 GAL 1.17 AZL 91.57 HCA 128.57 SMA 187.42 ECC .19319 INC 1.5864 V1 29.427
RP 209.44 LAP -1.22 LOP 7.90 VP 23.648 GAP 8.88 AZP 89.02 TAL 7.24 TAP 135.82 RCA 151.21 APO 223.63 V2 26.174
RC 104.913 GL -16.94 GP -2.58 ZAL 83.94 ZAP 131.21 ETS 182.26 ZAE 172.71 ETE 195.58 ZAC 97.32 ETC 277.93 LVI -15.84

PLANETOCENTRIC CONIC

C3 9.191 VHL 3.032 DLA -29.77 RAL 331.62 RAD 6637.6 VEL 11.371 PTH 6.42 VHP 3.705 DPA -19.29 RAP 323.02 ECC 1.1513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 52	2344.04	.42	59.87	182.76	137.57	16 16 56	1344.0	18.58	43.62
60.00	17 0 55	2123.09	5.45	44.80	187.58	129.99	17 36 18	1123.1	20.88	25.77
70.00	18 53 15	1792.69	11.33	22.37	191.93	122.44	19 23 7	792.7	23.60	.71
80.00	21 52 11	1231.21	20.29	344.68	196.75	112.39	22 12 42	231.2	27.73	319.73
80.28	22 13 21	1163.55	21.75	340.27	197.37	110.84	22 32 45	163.6	28.40	314.85
100.00	0 38 58	5993.72	20.29	283.95	196.75	112.39	2 18 52	4993.7	27.73	259.01
110.00	23 52 41	6127.52	11.33	289.19	191.93	122.44	25 34 48	5127.5	23.60	267.54

DIFFERENTIAL CORRECTIONS

TDE -.1805 TRA -.3942 TC3 .0035 BAU .0039
RDE -.2461 RRA .1189 RC3 -.0313 FAU .16716
FDE -.4702 FRA 2.2106 FC-15.7462 BSP 1054
BDE .3068 BRA .4118 BC3 .0315 FSP 1525

MID-COURSE EXECUTION ACCURACY

SGT 923.6 SGR 535.9 SG3 927.0
RRT -.1260 RRF .3208 RTF -.3883
SGB 1067.9 R23 -.2494 R13 .4046
SG1 927.3 SG2 529.5 THA 173.79

ORBIT DETERMINATION ACCURACY

ST 21.4 SR 23.8 SS 27.5
CRT .6889 CRS -.6473 CST .0935
LSA 33.9 MSA 25.1 SSA 2.0
EL1 29.4 EL2 12.5 ALF 49.38

LAUNCH DATE MAY 21 1971 FLIGHT TIME 164.00 ARRIVAL DATE NOV 1 1971

HELIOCENTRIC CONIC DISTANCE 396.807 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.307 GAL 1.17 AZL 91.55 HCA 129.81 SMA 187.10 ECC .19179 INC 1.5549 V1 29.427
RP 209.66 LAP -1.19 LOP 9.13 VP 23.594 GAP 8.64 AZP 89.00 TAL 7.26 TAP 137.07 RCA 151.21 APO 222.98 V2 26.150
RC 106.958 GL -16.92 GP -2.69 ZAL 83.96 ZAP 129.33 ETS 182.18 ZAE 171.08 ETE 193.96 ZAC 97.30 ETC 277.80 LVI -15.57

PLANETOCENTRIC CONIC

C3 9.069 VHL 3.011 DLA -29.74 RAL 331.63 RAD 6637.6 VEL 11.365 PTH 6.42 VHP 3.618 DPA -19.60 RAP 322.42 ECC 1.1492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 45	2342.09	.52	59.79	182.64	137.57	16 16 47	1342.1	18.67	43.53
60.00	17 0 44	2121.34	5.53	44.71	187.44	129.98	17 36 5	1121.3	20.95	25.68
70.00	18 52 53	1791.41	11.38	22.30	191.76	122.42	19 22 45	791.4	23.63	.63
80.00	21 49 26	1237.55	20.12	345.08	196.48	112.53	22 10 3	237.5	27.64	320.18
80.38	22 14 5	1158.75	21.80	339.93	197.19	110.75	22 33 24	158.7	28.40	314.49
100.00	0 36 13	6000.06	20.12	284.35	196.48	112.53	2 16 13	5000.1	27.64	259.46
110.00	23 52 20	6126.26	11.38	289.12	191.76	122.42	25 34 26	5126.3	23.63	267.46

DIFFERENTIAL CORRECTIONS

TDE -.1774 TRA -.3699 TC3 -.0860 BAU .0123
RDE -.2434 RRA .1190 RC3 -.0534 FAU .17523
FDE -.5073 FRA 2.2906 FC-16.7279 BSP 853
BDE .3012 BRA .3885 BC3 .1013 FSP 1588

MID-COURSE EXECUTION ACCURACY

SGT 879.5 SGR 532.5 SG3 976.1
RRT -.1141 RRF .3458 RTF -.3241
SGB 1028.1 R23 -.2894 R13 .3434
SG1 882.7 SG2 527.1 THA 173.85

ORBIT DETERMINATION ACCURACY

ST 20.8 SR 23.5 SS 28.4
CRT .7026 CRS -.6633 CST .0530
LSA 34.5 MSA 24.4 SSA 2.0
EL1 29.0 EL2 12.0 ALF 49.92

LAUNCH DATE MAY 21 1971 FLIGHT TIME 166.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 400.948 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.290 GAL 1.16 AZL 91.54 HCA 131.04 SMA 186.80 ECC .19052 INC 1.5430 V1 29.427
RP 209.87 LAP -1.16 LOP 10.36 VP 23.543 GAP 8.41 AZP 88.99 TAL 7.25 TAP 138.29 RCA 151.22 APO 222.39 V2 26.124
RC 109.028 GL -16.89 GP -2.80 ZAL 84.01 ZAP 127.43 ETS 182.09 ZAE 169.40 ETE 192.77 ZAC 97.28 ETC 277.66 LVI -15.28

PLANETOCENTRIC CONIC

C3 8.956 VHL 2.993 DLA -29.69 RAL 331.67 RAD 6637.5 VEL 11.361 PTH 6.41 VHP 3.537 DPA -19.91 RAP 321.78 ECC 1.1474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 38	2340.89	.58	59.74	182.55	137.57	16 16 39	1340.9	18.73	43.47
60.00	17 0 28	2120.52	5.56	44.67	187.33	129.98	17 35 48	1120.5	20.99	25.63
70.00	18 52 19	1791.48	11.37	22.30	191.62	122.42	19 22 10	791.5	23.63	.64
80.00	21 45 7	1249.49	19.81	345.82	196.20	112.81	22 5 56	249.5	27.47	321.03
80.55	22 15 34	1152.11	21.82	339.45	197.06	110.66	22 34 47	152.1	28.38	314.00
100.00	0 31 55	6012.00	19.81	285.10	196.20	112.81	2 12 7	5012.0	27.47	260.31
110.00	23 51 45	6126.34	11.37	289.12	191.62	122.42	25 33 52	5126.3	23.63	267.46

DIFFERENTIAL CORRECTIONS

TDE -.1881 TRA -.3560 TC3 -.2499 BAU .0312
RDE -.2381 RRA .1200 RC3 -.0734 FAU .18144
FDE -.5038 FRA 2.4126 FC-17.5381 BSP 810
BDE .3034 BRA .3776 BC3 .2605 FSP 1698

MID-COURSE EXECUTION ACCURACY

SGT 880.2 SGR 528.8 SG3 1020.1
RRT -.0815 RRF .3695 RTF -.1.92
SGB 1026.8 R23 -.3425 R13 .2350
SG1 881.8 SG2 526.1 THA 175.64

ORBIT DETERMINATION ACCURACY

ST 21.6 SR 23.1 SS 28.9
CRT .7291 CRS -.6478 CST .0555
LSA 34.7 MSA 25.1 SSA 2.0
EL1 29.4 EL2 11.6 ALF 47.78

LAUNCH DATE MAY 21 1971 FLIGHT TIME 168.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 405.096 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.274 GAL 1.15 AZL 91.53 HCA 132.27 SMA 186.54 ECC .18935 INC 1.5307 V1 29.427
RP 210.10 LAP -1.13 LOP 11.59 VP 23.492 GAP 8.18 AZP 88.97 TAL 7.23 TAP 139.50 RCA 151.22 APO 221.86 V2 26.098
RC 111.121 GL -16.84 GP -2.91 ZAL 84.08 ZAP 125.50 ETS 182.01 ZAE 167.67 ETE 191.84 ZAC 97.27 ETC 277.51 LVI -14.98

PLANETOCENTRIC CONIC

C3 8.853 VHL 2.975 DLA -29.62 RAL 331.74 RAD 6637.4 VEL 11.356 PTH 6.41 VHP 3.460 DPA -20.23 RAP 321.11 ECC 1.1457

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 29	2340.33	.61	59.72	182.49	137.57	16 16 29	1340.3	18.76	43.44
60.00	17 0 7	2120.49	5.57	44.67	187.24	129.98	17 35 27	1120.5	20.99	25.63
70.00	18 51 33	1792.75	11.33	22.37	191.50	122.44	19 21 25	792.7	23.60	.71
80.00	21 40 8	1264.03	19.42	346.73	195.92	113.13	22 1 12	264.0	27.26	322.06
80.80	22 17 46	1143.69	21.82	338.83	196.95	110.54	22 36 50	143.7	28.33	313.36
100.00	0 26 56	6026.54	19.42	286.00	195.92	113.13	2 7 23	5026.5	27.26	261.33
110.00	23 50 59	6127.56	11.33	289.19	191.50	122.44	25 33 6	5127.6	23.60	267.54

DIFFERENTIAL CORRECTIONS

TDE -.1925 TRA -.3381 TC3 -.3925 BAU .0478
RDE -.2331 RRA .1208 RC3 -.0965 FAU .18877
FDE -.5152 FRA 2.5177 FC-18.4604 BSP 675
BDE .3023 BRA .3591 BC3 .4041 FSP 1782

MID-COURSE EXECUTION ACCURACY

SGT 867.7 SGR 525.8 SG3 1067.9
RRT -.0453 RRF .3953 RTF -.1160
SGB 1014.5 R23 -.3872 R13 .1262
SG1 868.2 SG2 524.9 THA 177.52

ORBIT DETERMINATION ACCURACY

ST 21.7 SR 22.8 SS 29.5
CRT .7504 CRS -.6450 CST .0069
LSA 35.0 MSA 25.1 SSA 2.0
EL1 29.4 EL2 11.1 ALF 46.93

LAUNCH DATE MAY 21 1971 FLIGHT TIME 170.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC — DISTANCE 409.251 — EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.260	GAL	1.14	AZL	91.52	HCA	133.50	SMA	186.30	ECC	.18829	INC	1.5180
RP	210.33	LAP	-1.10	LOP	12.82	VP	23.443	GAP	7.95	AZP	88.95	TAL	7.19	TAP	140.68	RCA	151.22	APO	221.38
RC	113.239	GL	-16.78	GP	-3.03	ZAL	84.19	ZAP	123.54	ETS	181.91	ZAE	165.89	ETE	191.08	ZAC	97.25	ETC	277.36

V1	29.427	V2	26.071	LVI	-14.66														

PLANETOCENTRIC CONIC

C3	8.757	VHL	2.959	DLA	-29.53	RAL	331.83	RAD	6637.4	VEL	11.352	PTH	6.40	VHP	3.388	DPA	-20.57	RAP	320.40

ECC	1.1441																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 18	2340.44	.60	59.72	182.45	137.57	16 16 19	1340.4	18.75	43.45
60.00	16 59 41	2121.28	5.53	44.71	187.17	129.98	17 35 2	1121.3	20.96	25.67
70.00	18 50 34	1795.11	11.24	22.50	191.40	122.47	19 20 29	795.1	23.53	.87
80.00	21 34 45	1280.39	18.98	347.75	195.65	113.49	21 56 6	280.4	27.01	323.21
81.13	22 20 43	1133.30	21.81	338.05	196.87	110.42	22 39 36	133.3	28.26	312.58
100.00	0 21 33	6042.90	18.98	287.02	195.65	113.49	2 2 16	5042.9	27.01	262.49
110.00	23 50 1	6129.97	11.24	289.32	191.40	122.47	25 32 11	5130.0	23.53	267.69

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.1964	TRA	-.3171	TC3	-.5468	BAU	.0658	SGT	864.8	SGR	523.2	SG3	1114.7	ST	21.8	SR	22.5	SS	30.1
RDE	-.2282	RRA	.1218	RC3	-.1204	FAU	.19587	RRT	.0000	RRF	.4223	RTF	-.0006	CRT	.7713	CRS	-.6440	CST	-.0244
FDE	-.5285	FRA	2.6233	FC-19.3636		BSP	549	SGB	1010.7	R23	.4223	R13	-.0006	LSA	35.4	MSA	25.0	SSA	2.0
BDE	.3011	BRA	.3396	BC3	.5618	FSP	1870	SG1	864.8	SG2	523.2	THA	.00	EL1	29.4	EL2	10.6	ALF	46.17

LAUNCH DATE MAY 21 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC — DISTANCE 413.412 — EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.247	GAL	1.12	AZL	91.50	HCA	134.72	SMA	186.08	ECC	.18733	INC	1.5047
RP	210.57	LAP	-1.07	LOP	14.04	VP	23.395	GAP	7.73	AZP	88.94	TAL	7.13	TAP	141.85	RCA	151.22	APO	220.94
RC	115.380	GL	-16.71	GP	-3.15	ZAL	84.32	ZAP	121.55	ETS	181.81	ZAE	164.06	ETE	190.45	ZAC	97.22	ETC	277.19

V1	29.427	V2	26.044	LVI	-14.33														

PLANETOCENTRIC CONIC

C3	8.669	VHL	2.944	DLA	-29.41	RAL	331.94	RAD	6637.3	VEL	11.348	PTH	6.40	VHP	3.321	DPA	-20.92	RAP	319.67

ECC	1.1427																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 37 7	2341.22	.56	59.75	182.44	137.57	16 16 8	1341.2	18.71	43.49
60.00	16 59 11	2122.89	5.46	44.79	187.13	129.99	17 34 34	1122.9	20.89	25.76
70.00	18 49 24	1798.66	11.11	22.69	191.31	122.51	19 19 23	798.7	23.42	1.09
80.00	21 29 10	1297.95	18.50	348.83	195.41	113.86	21 50 48	297.9	26.73	324.44
81.56	22 24 32	1120.65	21.77	337.10	196.82	110.28	22 43 12	120.6	28.17	311.63
100.00	0 15 58	6060.46	18.50	288.10	195.41	113.86	1 56 58	5060.5	26.73	263.71
110.00	23 48 51	6133.53	11.11	289.52	191.31	122.51	25 31 4	5133.5	23.42	267.91

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.2014	TRA	-.2945	TC3	-.7170	BAU	.0848	SGT	874.5	SGR	520.8	SG3	1161.4	ST	21.9	SR	22.1	SS	30.6
RDE	-.2232	RRA	.1228	RC3	-.1456	FAU	.20300	RRT	.0567	RRF	.4492	RTF	.1223	CRT	.7935	CRS	-.6382	CST	-.0531
FDE	-.5323	FRA	2.7274	FC-20.2715		BSP	452	SGB	1017.8	R23	.4390	R13	.1359	LSA	35.7	MSA	25.1	SSA	2.0
BDE	.3006	BRA	.3191	BC3	.7316	FSP	1953	SG1	875.3	SG2	519.5	THA	2.99	EL1	29.5	EL2	10.0	ALF	45.25

LAUNCH DATE MAY 21 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 11 1971

HELIOCENTRIC CONIC — DISTANCE 417.578 — EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.236	GAL	1.11	AZL	91.49	HCA	135.94	SMA	185.89	ECC	.18647	INC	1.4909
RP	210.82	LAP	-1.04	LOP	15.26	VP	23.347	GAP	7.51	AZP	88.93	TAL	7.05	TAP	142.99	RCA	151.23	APO	220.55
RC	117.545	GL	-16.63	GP	-3.27	ZAL	84.48	ZAP	119.54	ETS	181.71	ZAE	162.18	ETE	189.91	ZAC	97.20	ETC	277.02

V1	29.427	V2	26.015	LVI	-13.99														

PLANETOCENTRIC CONIC

C3	8.589	VHL	2.931	DLA	-29.27	RAL	332.08	RAD	6637.3	VEL	11.345	PTH	6.40	VHP	3.259	DPA	-21.27	RAP	318.90

ECC	1.1413																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 54	2342.64	.49	59.81	182.45	137.57	16 15 57	1342.6	18.65	43.55
60.00	16 58 36	2125.30	5.35	44.90	187.11	130.00	17 34 1	1125.3	20.80	25.90
70.00	18 48 3	1803.34	10.94	22.95	191.25	122.56	19 18 6	803.3	23.28	1.38
80.00	21 23 28	1316.33	17.99	349.95	195.18	114.24	21 45 25	316.3	26.42	325.72
82.10	22 29 21	1105.17	21.71	335.93	196.80	110.13	22 47 46	105.2	28.06	310.47
100.00	0 10 16	6078.84	17.99	289.23	195.18	114.24	1 51 35	5078.8	26.42	264.99
110.00	23 47 29	6138.20	10.94	289.77	191.25	122.56	25 29 48	5138.2	23.28	268.21

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.2057	TRA	-.2706	TC3	-.8938	BAU	.1045	SGT	896.7	SGR	519.2	SG3	1208.5	ST	22.1	SR	21.7	SS	31.1
RDE	-.2182	RRA	.1242	RC3	-.1721	FAU	.21012	RRT	.1193	RRF	.4777	RTF	.1246	CRT	.8146	CRS	-.6330	CST	-.0825
FDE	-.5362	FRA	2.8371	FC-21.1799		BSP	425	SGB	1036.2	R23	.4366	R13	.2706	LSA	36.0	MSA	25.0	SSA	2.0
BDE	.2998	BRA	.2978	BC3	.9102	FSP	2031	SG1	899.9	SG2	513.7	THA	5.87	EL1	29.5	EL2	9.4	ALF	44.44

LAUNCH DATE MAY 21 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 13 1971

HELIOCENTRIC CONIC — DISTANCE 421.749 — EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.225	GAL	1.09	AZL	91.48	HCA	137.16	SMA	185.72	ECC	.18569	INC	1.4764
RP	211.07	LAP	-1.00	LOP	16.48	VP	23.301	GAP	7.30	AZP	88.92	TAL	6.95	TAP	144.11	RCA	151.23	APO	220.21
RC	119.734	GL	-16.53	GP	-3.40	ZAL	84.67	ZAP	117.51	ETS	181.60	ZAE	160.27	ETE	189.44	ZAC	97.17	ETC	276.84

V1	29.427	V2	25.986	LVI	-13.63														

PLANETOCENTRIC CONIC

C3	8.515	VHL	2.918	DLA	-29.11	RAL	332.24	RAD	6637.3	VEL	11.341	PTH	6.39	VHP	3.201	DPA	-21.64	RAP	318.11

ECC	1.1401																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 39	2344.71	.39	59.90	182.48	137.57	16 15 44	1344.7	18.55	43.65
60.00	16 57 56	2128.49	5.21	45.06	187.11	130.02	17 33 24	1128.5	20.67	26.07
70.00	18 46 31	1809.09	10.73	23.26	191.20	122.62	19 16 40	809.1	23.11	1.74
80.00	21 17 45	1335.32	17.46	351.11	194.98	114.61	21 40 0	335.3	26.09	327.04
82.78	22 35 21	1086.31	21.64	334.51	196.80	109.97	22 53 28	86.3	27.93	309.05
100.00	0 4 32	6097.83	17.46	290.39	194.98	114.61	1 46 10	5097.8	26.09	266.31
110.00	23 45 58	6143.95	10.73	290.08	191.20	122.62	25 28 22	5144.0	23.11	268.57

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE	-.2079	TRA	-.2438	TC3	-1.0729	BAU	.1243	SGT	926.8	SGR	518.4	SG3	1255.9	ST	22.0	SR	21.4	SS	31.6
RDE	-.2134	RRA	.1254	RC3	-.2006	FAU	.21756	RRT	.1873	RRF	.5070	RTF	.3646	CRT	.8350	CRS	-.6347	CST	-.1213
FDE	-.5488	FRA	2.9330	FC-22.1210		BSP	514	SGB	1061.9	R23	.4159	R13	.3993	LSA	36.4	MSA	24.7	SSA	1.9
BDE	.2979	BRA	.2741	BC3	1.0915	FSP	2096	SG1	934.0	SG2	505.3	THA	8.48	EL1	29.4	EL2	8.8	ALF	43.97

LAUNCH DATE MAY 21 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 15 1971

HELIOCENTRIC CONIC DISTANCE 425.923 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.217 GAL 1.07 AZL 91.46 HCA 138.38 SMA 185.57 ECC .18501 INC 1.4614 V1 29.427
RP 211.33 LAP -.97 LOP 17.70 VP 23.256 GAP 7.09 AZP 88.91 TAL 6.84 TAP 145.21 RCA 151.24 APO 219.90 V2 25.957
RC 121.945 GL -16.42 GP -3.54 ZAL 84.89 ZAP 115.47 ETS 181.49 ZAE 158.33 ETE 189.03 ZAC 97.14 ETC 276.66 LVI -13.26

PLANETOCENTRIC CONIC

C3 8.447 VHL 2.906 DLA -28.93 RAL 332.43 RAD 6637.2 VEL 11.338 PTH 6.39 VHP 3.148 DPA -22.01 RAP 317.30 ECC 1.1390

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 24	2347.45	.25	60.01	182.54	137.58	16 15 31	1347.5	18.42	43.78
60.00	16 57 11	2132.52	5.04	45.25	187.14	130.04	17 32 44	1132.5	20.51	26.29
70.00	18 44 49	1815.96	10.48	23.63	191.17	122.69	19 15 5	816.0	22.91	2.17
80.00	21 11 58	1355.01	16.90	352.30	194.81	114.99	21 34 33	355.0	25.74	328.39
83.64	22 42 59	1062.66	21.54	332.73	196.84	109.79	23 0 42	62.7	27.77	307.28
100.00	23 54 50	6117.52	16.90	291.58	194.81	114.99	25 36 48	5117.5	25.74	267.66
110.00	23 44 15	6150.82	10.48	290.45	191.17	122.69	25 26 46	5150.8	22.91	268.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2168 TRA -.2220 TC3-1.2967 BAU .1487 SGT 1000.5 SGR 517.4 SG3 1297.5 ST 22.7 SR 20.9 SS 31.9
RDE -.2079 RRA .1274 RC3 -.2269 FAU .22321 RRT .2530 RRF .5349 RTF .4667 CRT .8546 CRS -.6125 CST -.1301
FDE -.5222 FRA 3.0635 FC-22.8777 BSP 642 SGB 1126.3 R23 .3899 R13 .5014 LSA 36.5 MSA 25.2 SSA 1.9
BDE .3004 BRA .2560 BC3 1.3164 FSP 2200 SG1 1011.8 SG2 495.0 THA 9.83 EL1 29.7 EL2 8.3 ALF 42.33

LAUNCH DATE MAY 21 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 17 1971

HELIOCENTRIC CONIC DISTANCE 430.102 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.209 GAL 1.04 AZL 91.45 HCA 139.59 SMA 185.44 ECC .18440 INC 1.4456 V1 29.427
RP 211.60 LAP -.94 LOP 18.91 VP 23.211 GAP 6.89 AZP 88.90 TAL 6.71 TAP 146.30 RCA 151.25 APO 219.64 V2 25.926
RC 124.177 GL -16.30 GP -3.67 ZAL 85.13 ZAP 113.41 ETS 181.37 ZAE 156.35 ETE 188.66 ZAC 97.10 ETC 276.48 LVI -12.87

PLANETOCENTRIC CONIC

C3 8.385 VHL 2.896 DLA -28.72 RAL 332.64 RAD 6637.2 VEL 11.336 PTH 6.39 VHP 3.100 DPA -22.38 RAP 316.47 ECC 1.1380

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 36 6	2350.82	.08	60.15	182.62	137.58	16 15 17	1350.8	18.26	43.94
60.00	16 56 22	2137.29	4.83	45.48	187.18	130.06	17 31 59	1137.3	20.32	26.56
70.00	18 42 57	1823.81	10.19	24.05	191.16	122.78	19 13 21	823.8	22.67	2.66
80.00	21 6 14	1375.07	16.32	353.51	194.66	115.36	21 29 9	375.1	25.36	329.76
84.75	22 52 55	1031.94	21.43	330.43	196.89	109.60	23 10 7	31.9	27.58	304.99
100.00	23 49 6	6137.58	16.32	292.78	194.66	115.36	25 31 23	5137.6	25.36	269.04
110.00	23 42 24	6158.66	10.19	290.88	191.16	122.78	25 25 2	5158.7	22.67	269.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2218 TRA -.1957 TC3-1.5139 BAU .1721 SGT 1075.3 SGR 517.4 SG3 1339.2 ST 23.0 SR 20.5 SS 32.3
RDE -.2026 RRA .1294 RC3 -.2551 FAU .22911 RRT .3172 RRF .5638 RTF .5568 CRT .8727 CRS -.5985 CST -.1491
FDE -.5062 FRA 3.1827 FC-23.6562 BSP 835 SGB 1193.3 R23 .3598 R13 .5894 LSA 36.6 MSA 25.4 SSA 1.9
BDE .3004 BRA .2346 BC3 1.5352 FSP 2280 SG1 1090.9 SG2 483.7 THA 10.83 EL1 29.8 EL2 7.7 ALF 41.32

LAUNCH DATE MAY 21 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 434.284 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.202 GAL 1.02 AZL 91.43 HCA 140.80 SMA 185.33 ECC .18387 INC 1.4292 V1 29.427
RP 211.87 LAP -.90 LOP 20.12 VP 23.167 GAP 6.69 AZP 88.89 TAL 6.56 TAP 147.36 RCA 151.26 APO 219.41 V2 25.896
RC 126.431 GL -16.16 GP -3.82 ZAL 85.41 ZAP 111.34 ETS 181.24 ZAE 154.35 ETE 188.32 ZAC 97.06 ETC 276.28 LVI -12.48

PLANETOCENTRIC CONIC

C3 8.328 VHL 2.886 DLA -28.49 RAL 332.88 RAD 6637.2 VEL 11.333 PTH 6.39 VHP 3.055 DPA -22.76 RAP 315.63 ECC 1.1371

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 35 46	2354.82	-.12	60.32	182.73	137.58	16 15 1	1354.8	18.06	44.12
60.00	16 55 28	2142.83	4.59	45.75	187.24	130.08	17 31 11	1142.8	20.10	26.86
70.00	18 40 56	1832.64	9.86	24.53	191.17	122.87	19 11 29	832.6	22.41	3.20
80.00	21 0 31	1395.54	15.72	354.73	194.54	115.72	21 23 46	395.5	24.96	331.15
86.37	23 7 8	6275.76	21.29	305.04	196.98	109.40	24 51 44	5275.8	27.38	279.62
100.00	23 43 23	6158.06	15.72	294.01	194.54	115.72	25 26 1	5158.1	24.96	270.43
110.00	23 40 22	6167.50	9.86	291.35	191.17	122.87	25 23 10	5167.5	22.41	270.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2264 TRA -.1675 TC3-1.7394 BAU .1982 SGT 1163.2 SGR 518.1 SG3 1379.3 ST 23.2 SR 20.1 SS 32.6
RDE -.1972 RRA .1314 RC3 -.2846 FAU .23494 RRT .3793 RRF .5925 RTF .6042 CRT .8900 CRS -.5860 CST -.1711
FDE -.4890 FRA 3.2887 FC-24.4226 BSP 1058 SGB 1273.4 R23 .3282 R13 .6627 LSA 36.8 MSA 25.4 SSA 1.9
BDE .3002 BRA .2129 BC3 1.7625 FSP 2353 SG1 1182.9 SG2 471.4 THA 11.43 EL1 29.9 EL2 7.1 ALF 40.34

LAUNCH DATE MAY 21 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 438.469 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.196 GAL .99 AZL 91.41 HCA 142.00 SMA 185.24 ECC .18341 INC 1.4118 V1 29.427
RP 212.14 LAP -.87 LOP 21.32 VP 23.124 GAP 6.50 AZP 88.89 TAL 6.39 TAP 148.40 RCA 151.26 APO 219.21 V2 25.864
RC 128.706 GL -16.00 GP -3.97 ZAL 85.70 ZAP 109.27 ETS 181.11 ZAE 152.33 ETE 188.01 ZAC 97.01 ETC 276.09 LVI -12.07

PLANETOCENTRIC CONIC

C3 8.277 VHL 2.877 DLA -28.24 RAL 333.13 RAD 6637.1 VEL 11.331 PTH 6.38 VHP 3.015 DPA -23.15 RAP 314.77 ECC 1.1362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 35 25	2359.46	-.35	60.51	182.85	137.58	16 14 44	1359.5	17.84	44.34
60.00	16 54 29	2149.14	4.31	46.05	187.33	130.11	17 30 18	1149.1	19.85	27.20
70.00	18 38 46	1842.44	9.50	25.06	191.20	122.96	19 9 28	842.4	22.11	3.81
80.00	20 54 49	1416.43	15.09	355.97	194.44	116.07	21 18 26	416.4	24.54	332.56
90.00	23 25 30	6218.40	20.18	300.42	196.72	110.24	25 9 9	5218.4	26.74	275.31
100.00	23 37 41	6178.94	15.09	295.25	194.44	116.07	25 20 40	5178.9	24.54	271.83
110.00	23 38 12	6177.30	9.50	291.88	191.20	122.96	25 21 10	5177.3	22.11	270.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2305 TRA -.1383 TC3-1.9753 BAU .2213 SGT 1265.1 SGR 519.6 SG3 1418.1 ST 23.5 SR 19.6 SS 32.9
RDE -.1918 RRA .1336 RC3 -.3150 FAU .24048 RRT .4365 RRF .6214 RTF .6970 CRT .9056 CRS -.5717 CST -.1901
FDE -.4669 FRA 3.4000 FC-25.1522 BSP 1298 SGB 1367.6 R23 .3004 R13 .7210 LSA 36.9 MSA 25.5 SSA 1.9
BDE .2999 BRA .1923 BC3 2.0003 FSP 2425 SG1 1288.3 SG2 459.1 THA 11.67 EL1 29.9 EL2 6.5 ALF 39.37

LAUNCH DATE MAY 21 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 442.656 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.192 GAL .96 AZL 91.39 HCA 143.21 SMA 185.16 ECC .18302 INC 1.3935 V1 29.427
RP 212.43 LAP -.83 LOP 22.53 VP 23.081 GAP 6.31 AZP 88.88 TAL 6.21 TAP 149.42 RCA 151.27 APO 219.05 V2 25.832
RC 130.999 GL -15.83 GP -4.12 ZAL 86.02 ZAP 107.20 ETS 180.97 ZAE 150.29 ETE 187.73 ZAC 96.95 ETC 275.89 LVI -11.66

PLANETOCENTRIC CONIC

C3 8.231 VHL 2.869 DLA -27.96 RAL 333.40 RAD 6637.1 VEL 11.329 PTH 6.38 VHP 2.879 DPA -23.54 RAP 313.91 ECC 1.1355

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 35 1	2364.74	-.62	60.73	182.99	137.57	16 14 25	1364.7	17.59	44.58
60.00	16 53 24	2156.21	4.00	46.39	187.43	130.14	17 29 21	1156.2	19.57	27.59
70.00	18 36 27	1853.16	9.10	25.63	191.24	123.06	19 7 20	853.2	21.78	4.46
80.00	20 49 9	1437.70	14.45	357.23	194.36	116.41	21 13 7	437.7	24.10	333.98
90.00	23 2 34	1007.46	18.29	327.38	196.15	111.95	23 19 21	7.5	25.75	302.83
100.00	23 32 1	6200.21	14.45	296.50	194.36	116.41	25 15 21	5200.2	24.10	273.26
110.00	23 35 54	6188.02	9.10	292.46	191.24	123.06	25 19 2	5188.0	21.78	271.29

DIFFERENTIAL CORRECTIONS
TDE -.2341 TRA -.1075 TC3-2.2182 BAU .2470
RDE -.1862 RRA .1359 RC3 -.3401 FAU .24559
FDE -.4345 FRA 3.5033 FC-25.8313 BSP 1560
BDE .2992 BRA .1733 BC3 2.2450 FSP 2487

MID-COURSE EXECUTION ACCURACY
SGT 1377.6 SGR 521.6 SG3 1453.9
RRT .4898 RRF .6494 RTF .7482
SGB 1473.0 R23 .2746 R13 .7679
SG1 1403.8 SG2 446.3 THA 11.71

ORBIT DETERMINATION ACCURACY
ST 23.7 SR 19.2 SS 33.1
CRT .9201 CRS -.5531 CST -.2045
LSA 37.0 MSA 25.6 SSA 1.9
EL1 29.9 EL2 6.0 ALF 38.39

LAUNCH DATE MAY 21 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 446.846 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.188 GAL .93 AZL 91.37 HCA 144.41 SMA 185.10 ECC .18269 INC 1.3744 V1 29.427
RP 212.72 LAP -.80 LOP 23.73 VP 23.039 GAP 6.12 AZP 88.88 TAL 6.02 TAP 150.43 RCA 151.28 APO 218.91 V2 25.799
RC 133.312 GL -15.65 GP -4.28 ZAL 86.37 ZAP 105.13 ETS 180.82 ZAE 148.24 ETE 187.47 ZAC 96.88 ETC 275.69 LVI -11.24

PLANETOCENTRIC CONIC

C3 8.189 VHL 2.862 DLA -27.66 RAL 333.69 RAD 6637.1 VEL 11.327 PTH 6.38 VHP 2.947 DPA -23.92 RAP 313.04 ECC 1.1348

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 34 34	2370.65	-.92	60.98	183.15	137.57	16 14 4	1370.6	17.30	44.86
60.00	16 52 15	2164.01	3.66	46.76	187.54	130.16	17 28 19	1164.0	19.26	28.01
70.00	18 34 0	1864.77	8.67	26.25	191.29	123.17	19 5 5	864.8	21.42	5.17
80.00	20 43 31	1459.34	13.80	358.49	194.30	116.74	21 7 50	459.3	23.63	335.42
90.00	22 48 58	1054.75	17.07	330.30	195.87	112.90	23 6 33	54.8	25.03	306.11
100.00	23 26 22	6221.85	13.80	297.77	194.30	116.74	25 10 4	5221.9	23.63	274.69
110.00	23 33 27	6199.63	8.67	293.08	191.29	123.17	25 16 46	5199.6	21.42	272.00

DIFFERENTIAL CORRECTIONS
TDE -.2349 TRA -.0734 TC3-2.4596 BAU .2725
RDE -.1810 RRA .1378 RC3 -.3802 FAU .25122
FDE -.4226 FRA 3.5811 FC-26.5570 BSP 1854
BDE .2966 BRA .1562 BC3 2.4889 FSP 2522

MID-COURSE EXECUTION ACCURACY
SGT 1493.5 SGR 525.1 SG3 1489.7
RRT .5420 RRF .6777 RTF .7942
SGB 1583.1 R23 .2468 R13 .8102
SG1 1522.8 SG2 432.8 THA 11.75

ORBIT DETERMINATION ACCURACY
ST 23.7 SR 18.7 SS 33.3
CRT .9343 CRS -.5488 CST -.2389
LSA 37.2 MSA 25.2 SSA 1.8
EL1 29.8 EL2 5.3 ALF 37.80

LAUNCH DATE MAY 21 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC DISTANCE 451.036 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.185 GAL .89 AZL 91.35 HCA 145.60 SMA 185.05 ECC .18243 INC 1.3540 V1 29.427
RP 213.01 LAP -.76 LOP 24.92 VP 22.998 GAP 5.93 AZP 88.88 TAL 5.81 TAP 151.41 RCA 151.29 APO 218.81 V2 25.766
RC 135.643 GL -15.45 GP -4.45 ZAL 86.75 ZAP 103.07 ETS 180.67 ZAE 146.18 ETE 187.23 ZAC 96.81 ETC 275.49 LVI -10.81

PLANETOCENTRIC CONIC

C3 8.153 VHL 2.855 DLA -27.33 RAL 334.00 RAD 6637.1 VEL 11.325 PTH 6.38 VHP 2.919 DPA -24.31 RAP 312.18 ECC 1.1342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 34 4	2377.25	-1.25	61.26	183.33	137.56	16 13 42	1377.2	16.98	45.16
60.00	16 51 0	2172.63	3.28	47.18	187.68	130.19	17 27 13	1172.6	18.91	28.48
70.00	18 31 25	1877.34	8.20	26.93	191.37	123.27	19 2 42	877.3	21.02	5.94
80.00	20 37 52	1481.52	13.11	359.78	194.27	117.07	21 2 33	481.5	23.13	336.88
90.00	22 37 54	1094.43	16.00	332.72	195.68	113.63	22 56 8	94.4	24.37	308.82
100.00	23 20 44	6244.03	13.11	299.06	194.27	117.07	25 4 48	5244.0	23.13	276.16
110.00	23 30 51	6212.20	8.20	293.75	191.37	123.27	25 14 24	5212.2	21.02	272.76

DIFFERENTIAL CORRECTIONS
TDE -.2400 TRA -.0434 TC3-2.7349 BAU .3014
RDE -.1746 RRA .1413 RC3 -.4084 FAU .25356
FDE -.3573 FRA 3.7177 FC-26.9258 BSP 2101
BDE .2968 BRA .1478 BC3 2.7653 FSP 2613

MID-COURSE EXECUTION ACCURACY
SGT 1637.3 SGR 528.3 SG3 1515.0
RRT .5801 RRF .7037 RTF .8198
SGB 1720.4 R23 .2381 R13 .8330
SG1 1667.7 SG2 422.5 THA 11.34

ORBIT DETERMINATION ACCURACY
ST 24.2 SR 18.2 SS 33.5
CRT .9440 CRS -.5130 CST -.2271
LSA 37.1 MSA 25.8 SSA 1.8
EL1 29.9 EL2 4.9 ALF 36.40

LAUNCH DATE MAY 21 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC DISTANCE 455.228 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.183 GAL .86 AZL 91.33 HCA 146.80 SMA 185.01 ECC .18223 INC 1.3324 V1 29.427
RP 213.31 LAP -.73 LOP 26.12 VP 22.957 GAP 5.75 AZP 88.88 TAL 5.58 TAP 152.38 RCA 151.30 APO 218.73 V2 25.732
RC 137.991 GL -15.23 GP -4.62 ZAL 87.14 ZAP 101.02 ETS 180.51 ZAE 144.12 ETE 187.00 ZAC 96.72 ETC 275.30 LVI -10.37

PLANETOCENTRIC CONIC

C3 8.120 VHL 2.850 DLA -26.98 RAL 334.33 RAD 6637.1 VEL 11.324 PTH 6.38 VHP 2.895 DPA -24.70 RAP 311.32 ECC 1.1336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 33 31	2384.48	-1.61	61.56	183.52	137.56	16 13 16	1384.5	16.64	45.49
60.00	16 49 39	2181.99	2.87	47.62	187.83	130.22	17 26 1	1182.0	18.53	28.98
70.00	18 28 42	1890.76	7.70	27.64	191.46	123.38	19 0 12	890.8	20.60	6.74
80.00	20 32 14	1504.06	12.41	1.09	194.26	117.38	20 57 18	504.1	22.62	338.36
90.00	22 28 10	1130.20	15.01	334.88	195.55	114.25	22 47 0	130.2	23.73	311.25
100.00	23 15 6	6266.57	12.41	300.36	194.26	117.38	24 59 32	5266.6	22.62	277.63
110.00	23 28 8	6225.62	7.70	294.46	191.46	123.38	25 11 54	5225.6	20.60	273.57

DIFFERENTIAL CORRECTIONS
TDE -.2413 TRA -.0093 TC3-3.0016 BAU .3293
RDE -.1684 RRA .1443 RC3 -.4412 FAU .25711
FDE -.3032 FRA 3.8167 FC-27.4130 BSP 2389
BDE .2943 BRA .1446 BC3 3.0339 FSP 2651

MID-COURSE EXECUTION ACCURACY
SGT 1778.3 SGR 532.8 SG3 1542.2
RRT .6203 RRF .7295 RTF .8456
SGB 1856.4 R23 .2235 R13 .8564
SG1 1810.4 SG2 410.5 THA 11.11

ORBIT DETERMINATION ACCURACY
ST 24.4 SR 17.6 SS 33.7
CRT .9539 CRS -.4865 CST -.2309
LSA 37.0 MSA 26.0 SSA 1.8
EL1 29.8 EL2 4.3 ALF 35.43

LAUNCH DATE MAY 21 1971 FLIGHT TIME 194.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC DISTANCE 459.420 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.182	GAL	.82	AZL	91.31	HCA	147.99	SMA	184.99	ECC	.18208	INC	1.3095	V1	29.427
RP	213.61	LAP	-.69	LOP	27.30	VP	22.916	GAP	5.58	AZP	88.89	TAL	5.34	TAP	155.33	RCA	151.31	APO	218.67	V2	25.697
RC	140.358	GL	-14.98	GP	-4.80	ZAL	87.56	ZAP	98.99	ETS	180.34	ZAE	142.07	ETE	186.79	ZAC	96.62	ETC	275.10	LVI	-9.93

PLANETOCENTRIC CONIC

C3	8.091	VHL	2.845	DLA	-26.60	RAL	334.67	RAD	6637.0	VEL	11.323	PTH	6.38	VHP	2.874	DPA	-25.09	RAP	310.47	ECC	1.1332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 32 55	2392.39	-2.01	61.89	183.73	137.54	16 12 47	1392.4	16.25	45.86
60.00	16 48 12	2192.12	2.42	48.11	187.99	130.24	17 24 44	1192.1	18.12	29.52
70.00	18 25 50	1905.06	7.16	28.40	191.56	123.48	18 57 35	905.1	20.14	7.60
80.00	20 26 35	1527.08	11.69	2.41	194.27	117.67	20 52 2	527.1	22.07	339.85
90.00	22 19 13	1163.86	14.06	336.90	195.46	114.79	22 38 37	163.9	23.08	313.50
100.00	23 9 27	1001.55	11.69	323.78	194.27	117.67	23 26 9	1.5	22.07	301.22
110.00	23 25 16	6239.91	7.16	295.22	191.56	123.48	25 9 16	5239.9	20.14	274.42

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2416	TRA	.0262	TC3	-3.2734	BAU	.3578	SGT	1925.7	SGR	538.8	SG3	1567.5	ST	24.5	SR	17.1	SS	34.0
RDE	-.1623	RRA	.1474	RC3	-.4754	FAU	.26041	RRT	.6577	RRF	.7550	RTF	.8670	CRT	.9627	CRS	-.4650	CST	-.2408
FDE	-.2543	FRA	3.9114	FC	-27.8626	BSP	2685	SGB	1999.6	R23	.2113	R13	.8759	LSA	37.0	MSA	26.0	SSA	1.8
BDE	.2911	BRA	.1497	BC3	3.3077	FSP	2703	SG1	1959.5	SG2	398.9	THA	10.88	EL1	29.6	EL2	3.8	ALF	34.53

LAUNCH DATE MAY 21 1971 FLIGHT TIME 196.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC DISTANCE 463.613 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.181	GAL	.78	AZL	91.29	HCA	149.17	SMA	184.98	ECC	.18199	INC	1.2850	V1	29.427
RP	213.92	LAP	-.66	LOP	28.49	VP	22.876	GAP	5.40	AZP	88.90	TAL	5.08	TAP	154.26	RCA	151.32	APO	218.64	V2	25.662
RC	142.739	GL	-14.72	GP	-4.99	ZAL	88.01	ZAP	96.98	ETS	180.17	ZAE	140.02	ETE	186.60	ZAC	96.51	ETC	274.91	LVI	-9.48

PLANETOCENTRIC CONIC

C3	8.067	VHL	2.840	DLA	-26.19	RAL	335.02	RAD	6637.0	VEL	11.322	PTH	6.37	VHP	2.857	DPA	-25.48	RAP	309.63	ECC	1.1328

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 32 14	2400.98	-2.44	62.25	183.96	137.53	16 12 15	1401.0	15.84	46.25
60.00	16 46 39	2203.04	1.94	48.63	188.17	130.26	17 23 22	1203.0	17.68	30.10
70.00	18 22 50	1920.23	6.59	29.20	191.67	123.59	18 54 50	920.2	19.65	8.50
80.00	20 20 56	1550.60	10.94	3.76	194.29	117.96	20 46 46	550.6	21.50	341.36
90.00	22 10 48	1196.26	13.13	338.82	195.41	115.28	22 30 44	196.3	22.43	315.65
100.00	23 3 48	1025.07	10.94	325.13	194.29	117.96	23 20 53	25.1	21.50	302.73
110.00	23 22 16	6255.09	6.59	296.03	191.67	123.59	25 6 32	5255.1	19.65	275.33

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2408	TRA	.0626	TC3	-3.5508	BAU	.3868	SGT	2079.4	SGR	545.2	SG3	1586.7	ST	24.6	SR	16.5	SS	34.2
RDE	-.1558	RRA	.1508	RC3	-.5088	FAU	.26253	RRT	.6909	RRF	.7788	RTF	.8834	CRT	.9700	CRS	-.4380	CST	-.2439
FDE	-.1926	FRA	4.0020	FC	-28.1751	BSP	2979	SGB	2149.7	R23	.2024	R13	.8909	LSA	36.9	MSA	26.0	SSA	1.8
BDE	.2868	BRA	.1633	BC3	3.5870	FSP	2727	SG1	2114.5	SG2	387.6	THA	10.63	EL1	29.4	EL2	3.4	ALF	33.62

LAUNCH DATE MAY 21 1971 FLIGHT TIME 198.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 467.807 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.181	GAL	.74	AZL	91.26	HCA	150.36	SMA	184.98	ECC	.18194	INC	1.2590	V1	29.427
RP	214.24	LAP	-.62	LOP	29.67	VP	22.837	GAP	5.23	AZP	88.91	TAL	4.82	TAP	155.17	RCA	151.33	APO	218.64	V2	25.627
RC	145.138	GL	-14.43	GP	-5.19	ZAL	88.47	ZAP	94.99	ETS	179.98	ZAE	137.98	ETE	186.41	ZAC	96.39	ETC	274.71	LVI	-9.02

PLANETOCENTRIC CONIC

C3	8.046	VHL	2.837	DLA	-25.75	RAL	335.39	RAD	6637.0	VEL	11.321	PTH	6.37	VHP	2.843	DPA	-25.87	RAP	308.82	ECC	1.1324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 28	2410.29	-2.91	62.64	184.20	137.51	16 11 38	1410.3	15.38	46.67
60.00	16 44 58	2214.78	1.43	49.19	188.36	130.28	17 21 53	1214.8	17.20	30.72
70.00	18 19 41	1936.30	5.99	30.05	191.80	123.69	18 51 58	936.3	19.13	9.45
80.00	20 15 14	1574.66	10.17	5.13	194.33	118.22	20 41 29	574.7	20.90	342.89
90.00	22 2 45	1227.93	12.20	340.68	195.39	115.71	22 23 13	227.9	21.76	317.73
100.00	22 58 6	1049.13	10.17	326.50	194.33	118.22	23 15 35	49.1	20.90	304.26
110.00	23 19 8	6271.16	5.99	296.88	191.80	123.69	25 3 39	5271.2	19.13	276.28

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2384	TRA	.1003	TC3	-3.8315	BAU	.4163	SGT	2237.8	SGR	552.9	SG3	1604.0	ST	24.5	SR	15.9	SS	34.4
RDE	-.1491	RRA	.1543	RC3	-.5440	FAU	.26454	RRT	.7224	RRF	.8016	RTF	.8975	CRT	.9762	CRS	-.4094	CST	-.2461
FDE	-.1245	FRA	4.0823	FC	-28.4646	BSP	3290	SGB	2304.9	R23	.1943	R13	.9038	LSA	36.9	MSA	26.0	SSA	1.7
BDE	.2811	BRA	.1840	BC3	3.8699	FSP	2774	SG1	2274.0	SG2	376.2	THA	10.41	EL1	29.1	EL2	2.9	ALF	32.75

LAUNCH DATE MAY 21 1971 FLIGHT TIME 200.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 472.000 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.182	GAL	.70	AZL	91.23	HCA	151.54	SMA	185.00	ECC	.18195	INC	1.2308	V1	29.427
RP	214.55	LAP	-.59	LOP	30.85	VP	22.798	GAP	5.06	AZP	88.92	TAL	4.54	TAP	156.07	RCA	151.34	APO	218.66	V2	25.591
RC	147.555	GL	-14.12	GP	-5.39	ZAL	88.96	ZAP	93.03	ETS	179.79	ZAE	135.95	ETE	186.24	ZAC	96.25	ETC	274.53	LVI	-8.57

PLANETOCENTRIC CONIC

C3	8.029	VHL	2.834	DLA	-25.27	RAL	335.76	RAD	6637.0	VEL	11.320	PTH	6.37	VHP	2.832	DPA	-26.26	RAP	308.02	ECC	1.1321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 37	2420.33	-3.41	63.06	184.44	137.48	16 10 57	1420.3	14.89	47.12
60.00	16 43 10	2227.34	.87	49.79	188.56	130.29	17 20 18	1227.3	16.68	31.38
70.00	18 16 23	1953.27	5.34	30.95	191.94	123.78	18 48 57	953.3	18.56	10.45
80.00	20 9 29	1599.32	9.37	6.53	194.39	118.48	20 36 8	599.3	20.27	344.45
90.00	21 54 56	1259.24	11.27	342.51	195.38	116.11	22 15 55	259.2	21.07	319.77
100.00	22 52 21	1073.79	9.37	327.89	194.39	118.48	23 10 14	73.8	20.27	305.82
110.00	23 15 50	1000.09	5.34	319.86	191.94	123.78	23 32 30	.1	18.56	299.37

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2346	TRA	.1388	TC3	-4.1131	BAU	.4458	SGT	2398.9	SGR	561.2	SG3	1613.9	ST	24.4	SR	15.3	SS	34.7
RDE	-.1421	RRA	.1583	RC3	-.5773	FAU	.26494	RRT	.7493	RRF	.8227	RTF	.9077	CRT	.9811	CRS	-.3801	CST	-.2468
FDE	-.0500	FRA	4.1673	FC	-28.5677	BSP	3591	SGB	2463.6	R23	.1906	R13	.9132	LSA	36.9	MSA	26.0	SSA	1.7
BDE	.2743	BRA	.2106	BC3	4.1534	FSP	2787	SG1	2436.3	SG2	365.9	THA	10.17	EL1	28.7	EL2	2.5	ALF	31.89

LAUNCH DATE MAY 21 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 476.192 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.183	GAL	.65	AZL	91.20	HCA	152.71	SMA	185.02	ECC	.18200	INC	1.2009	V1	29.427
RP	214.88	LAP	-.55	LOP	32.03	VP	22.759	GAP	4.89	AZP	88.93	TAL	4.24	TAP	156.95	RCA	151.35	APO	218.69	V2	25.554
RC	149.988	GL	-13.78	GP	-5.62	ZAL	89.47	ZAP	91.10	ETS	179.59	ZAE	133.95	ETE	186.07	ZAC	96.10	ETC	274.35	LVI	-8.10

PLANETOCENTRIC CONIC

C3	8.015	VHL	2.831	DLA	-24.77	RAL	336.14	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.825	DPA	-26.66	RAP	307.25	ECC	1.1319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 39	2431.13	-3.95	63.51	184.70	137.45	16 10 10	1431.1	14.37	47.61
60.00	16 41 14	2240.78	.28	50.43	188.77	130.30	17 18 34	1240.8	16.13	32.08
70.00	18 12 55	1971.19	4.66	31.89	192.09	123.87	18 45 47	971.2	17.97	11.50
80.00	20 3 39	1624.64	8.54	7.95	194.46	118.72	20 30 44	624.6	19.60	346.04
90.00	21 47 16	1290.47	10.32	344.32	195.40	116.47	22 8 46	290.5	20.35	321.77
100.00	22 46 31	1099.11	8.54	329.32	194.46	118.72	23 4 50	99.1	19.60	307.41
110.00	23 12 22	1018.01	4.66	320.81	192.09	123.87	23 29 20	18.0	17.97	300.41

DIFFERENTIAL CORRECTIONS

TDE	-.2287	TRA	.1792	TC3	-4.3960	BAU	.4756
RDE	-.1349	RRA	.1627	RC3	-.6143	FAU	.26577
FDE	.0282	FRA	4.2498	FC	-28.7064	BSP	3909
BDE	.2655	BRA	.2421	BC3	4.4387	FSP	2814

MID-COURSE EXECUTION ACCURACY

SGT	2563.1	SGR	571.9	SG3	1625.4
RRT	.7756	RRF	.8434	RTF	.9170
SGB	2626.1	R23	.1872	R13	.9217
SG1	2601.9	SG2	355.6	THA	10.01

ORBIT DETERMINATION ACCURACY

ST	24.2	SR	14.7	SS	35.2
CRT	.9850	CRS	-.3523	CST	-.2511
LSA	37.1	MSA	25.8	SSA	1.7
EL1	28.2	EL2	2.2	ALF	31.11

LAUNCH DATE MAY 21 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 480.384 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.185	GAL	.61	AZL	91.17	HCA	153.88	SMA	185.05	ECC	.18210	INC	1.1685	V1	29.427
RP	215.21	LAP	-.51	LOP	33.20	VP	22.720	GAP	4.73	AZP	88.95	TAL	3.94	TAP	157.82	RCA	151.35	APO	218.75	V2	25.518
RC	152.438	GL	-13.41	GP	-5.85	ZAL	90.00	ZAP	89.20	ETS	179.37	ZAE	131.96	ETE	185.92	ZAC	95.92	ETC	274.17	LVI	-7.63

PLANETOCENTRIC CONIC

C3	8.005	VHL	2.829	DLA	-24.23	RAL	336.53	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.820	DPA	-27.06	RAP	306.52	ECC	1.1317

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 28 35	2442.75	-4.53	64.00	184.97	137.41	16 9 17	1442.8	13.80	48.13
60.00	16 39 7	2255.13	-.35	51.12	188.99	130.30	17 16 43	1255.1	15.53	32.83
70.00	18 9 17	1990.08	3.95	32.88	192.24	123.95	18 42 27	990.1	17.33	12.59
80.00	19 57 43	1650.69	7.69	9.41	194.54	118.94	20 25 14	650.7	18.90	347.65
90.00	21 39 41	1321.85	9.37	346.12	195.44	116.81	22 1 43	321.8	19.61	323.77
100.00	22 40 35	1125.16	7.69	330.78	194.54	118.94	22 59 20	125.2	18.90	309.02
110.00	23 8 43	1036.90	3.95	321.80	192.24	123.95	23 26 0	36.9	17.33	301.51

DIFFERENTIAL CORRECTIONS

TDE	-.2213	TRA	.2202	TC3	-4.6787	BAU	.5055
RDE	-.1276	RRA	.1672	RC3	-.6513	FAU	.26566
FDE	.1010	FRA	4.3155	FC	-28.7310	BSP	4229
BDE	.2555	BRA	.2765	BC3	4.7238	FSP	2831

MID-COURSE EXECUTION ACCURACY

SGT	2729.3	SGR	583.6	SG3	1630.6
RRT	.7993	RRF	.8623	RTF	.9248
SGB	2791.0	R23	.1848	R13	.9290
SG1	2769.5	SG2	345.6	THA	9.85

ORBIT DETERMINATION ACCURACY

ST	23.9	SR	14.1	SS	35.6
CRT	.9878	CRS	-.3314	CST	-.2640
LSA	37.3	MSA	25.4	SSA	1.7
EL1	27.7	EL2	1.9	ALF	30.36

LAUNCH DATE MAY 21 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 13 1971

HELIOCENTRIC CONIC DISTANCE 484.575 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.188	GAL	.56	AZL	91.13	HCA	155.05	SMA	185.09	ECC	.18224	INC	1.1331	V1	29.427
RP	215.54	LAP	-.48	LOP	34.37	VP	22.682	GAP	4.56	AZP	88.97	TAL	3.62	TAP	158.67	RCA	151.36	APO	218.83	V2	25.480
RC	154.904	GL	-13.01	GP	-6.10	ZAL	90.55	ZAP	87.33	ETS	179.15	ZAE	129.99	ETE	185.77	ZAC	95.73	ETC	274.00	LVI	-7.16

PLANETOCENTRIC CONIC

C3	7.998	VHL	2.828	DLA	-23.65	RAL	336.92	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.818	DPA	-27.46	RAP	305.81	ECC	1.1316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 27 22	2455.23	-5.16	64.53	185.24	137.36	16 8 17	1455.2	13.19	48.68
60.00	16 36 51	2270.45	-1.03	51.85	189.21	130.29	17 14 41	1270.4	14.89	33.62
70.00	18 5 26	2010.01	3.19	33.92	192.41	124.02	18 38 56	1010.0	16.65	13.73
80.00	19 51 40	1677.55	6.80	10.91	194.64	119.14	20 19 37	677.6	18.16	349.31
90.00	21 32 7	1353.57	8.39	347.94	195.49	117.11	21 54 40	353.6	18.83	325.77
100.00	22 34 31	1152.02	6.80	332.28	194.64	119.14	22 53 43	152.0	18.16	310.67
110.00	23 4 52	1056.83	3.19	322.84	192.41	124.02	23 22 29	56.8	16.65	302.65

DIFFERENTIAL CORRECTIONS

TDE	-.2114	TRA	.2617	TC3	-4.9641	BAU	.5359
RDE	-.1198	RRA	.1721	RC3	-.6914	FAU	.26556
FDE	.1903	FRA	4.3724	FC	-28.7459	BSP	4537
BDE	.2430	BRA	.3132	BC3	5.0120	FSP	2829

MID-COURSE EXECUTION ACCURACY

SGT	2898.6	SGR	597.2	SG3	1634.8
RRT	.8216	RRF	.8801	RTF	.9314
SGB	2959.5	R23	.1833	R13	.9352
SG1	2940.4	SG2	335.6	THA	9.74

ORBIT DETERMINATION ACCURACY

ST	23.5	SR	13.4	SS	36.1
CRT	.9892	CRS	-.3056	CST	-.2723
LSA	37.6	MSA	24.9	SSA	1.7
EL1	27.0	EL2	1.7	ALF	29.60

LAUNCH DATE MAY 21 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE 488.764 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.191	GAL	.51	AZL	91.10	HCA	156.22	SMA	185.15	ECC	.18243	INC	1.0950	V1	29.427
RP	215.87	LAP	-.44	LOP	35.53	VP	22.644	GAP	4.40	AZP	89.00	TAL	3.29	TAP	159.51	RCA	151.37	APO	218.92	V2	25.443
RC	157.385	GL	-12.57	GP	-6.37	ZAL	91.12	ZAP	85.51	ETS	178.91	ZAE	128.06	ETE	185.64	ZAC	95.51	ETC	273.84	LVI	-6.67

PLANETOCENTRIC CONIC

C3	7.994	VHL	2.827	DLA	-23.02	RAL	337.31	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.818	DPA	-27.88	RAP	305.14	ECC	1.1316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 26 0	2468.64	-5.83	65.09	185.52	137.30	16 7 8	1468.6	12.53	49.27
60.00	16 34 22	2286.80	-1.75	52.63	189.44	130.27	17 12 29	1286.8	14.21	34.46
70.00	18 1 22	2031.06	2.39	35.02	192.57	124.08	18 35 13	1031.1	15.92	14.93
80.00	19 45 26	1705.34	5.88	12.46	194.74	119.33	20 13 51	705.3	17.38	351.00
90.00	21 24 30	1385.83	7.38	349.78	195.55	117.38	21 47 36	385.8	18.01	327.79
100.00	22 28 18	1179.82	5.88	333.83	194.74	119.33	22 47 58	179.8	17.38	312.37
110.00	23 0 48	1077.87	2.39	323.94	192.57	124.08	23 18 46	77.9	15.92	303.85

DIFFERENTIAL CORRECTIONS

TDE	-.1984	TRA	.3050	TC3	-5.2442	BAU	.5659
RDE	-.1113	RRA	.1776	RC3	-.7318	FAU	.26444
FDE	.2915	FRA	4.4334	FC	-28.6389	BSP	4859
BDE	.2275	BRA	.3529	BC3	5.2950	FSP	2831

MID-COURSE EXECUTION ACCURACY

SGT	3067.0	SGR	612.4	SG3	1634.5
RRT	.8414	RRF	.8964	RTF	.9366
SGB	3127.5	R23	.1839	R13	.9400
SG1	3110.5	SG2	326.4	THA	9.64

ORBIT DETERMINATION ACCURACY

ST	22.9	SR	12.7	SS	36.9
CRT	.9892	CRS	-.2810	CST	-.2852
LSA	38.2	MSA	24.2	SSA	1.6
EL1	26.2	EL2	1.6	ALF	28.90

LAUNCH DATE MAY 21 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 492,952 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32,194	GAL	.46	AZL	91.05	HCA	157.38	SMA	185.21	ECC	.18265	INC	1.0532	V1	29.427
RP	216.21	LAP	-.41	LOP	36.69	VP	22,606	GAP	4.25	AZP	89.03	TAL	2.95	TAP	160.33	RCA	151.38	APO	219.03	V2	25.405
RC	159.881	GL	-12.08	GP	-6.67	ZAL	91.71	ZAP	83.72	ETS	178.66	ZAE	126.15	ETE	185.52	ZAC	95.27	ETC	273.68	LVI	-6.18

PLANETOCENTRIC CONIC

C3	7.993	VHL	2.827	DLA	-22.35	RAL	337.70	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.821	DPA	-28.30	RAP	304.52	ECC	1.1315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 27	2483.05	-6.55	65.70	185.80	137.23	16 5 50	1483.1	11.82	49.90
60.00	16 31 40	2304.27	-2.51	53.47	189.67	130.24	17 10 4	1304.3	13.47	35.35
70.00	17 57 2	2053.30	1.54	36.19	192.75	124.12	18 31 16	1053.3	15.15	16.19
80.00	19 39 0	1734.19	4.91	14.06	194.84	119.49	20 7 54	734.2	16.55	352.74
90.00	21 16 46	1418.83	6.34	351.65	195.62	117.62	21 40 25	418.8	17.15	329.83
100.00	22 21 52	1208.66	4.91	335.42	194.84	119.49	22 42 1	208.7	16.55	314.11
110.00	22 56 29	1100.12	1.54	325.10	192.75	124.12	23 14 49	100.1	15.15	305.11

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1832	TRA	.3485	TC3	-5.5237	BAU	.5960	SGT	3236.7	SGR	629.8	SG3	1630.5	ST	22.3	SR	12.0	SS	37.6
RDE	-.1025	RRA	.1836	RC3	-.7740	FAU	.26280	RRT	.8592	RRF	.9114	RTF	.9410	CRT	.9874	CRS	-.2656	CST	-.3092
FDE	.3907	FRA	4.4821	FC	-28.4637	BSP	5181	SGB	3297.4	R23	.1857	R13	.9441	LSA	38.9	MSA	23.4	SSA	1.6
BDE	.2100	BRA	.3939	BC3	5.5777	FSP	2828	SG1	3282.1	SG2	317.8	THA	9.58	EL1	25.3	EL2	1.7	ALF	28.17

LAUNCH DATE MAY 21 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 497,139 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32,199	GAL	.40	AZL	91.01	HCA	158.54	SMA	185.27	ECC	.18291	INC	1.0067	V1	29.427
RP	216.56	LAP	-.37	LOP	37.85	VP	22,569	GAP	4.09	AZP	89.06	TAL	2.61	TAP	161.14	RCA	151.38	APO	219.16	V2	25.366
RC	162.390	GL	-11.55	GP	-6.99	ZAL	92.31	ZAP	81.98	ETS	178.38	ZAE	124.26	ETE	185.40	ZAC	94.99	ETC	273.54	LVI	-5.67

PLANETOCENTRIC CONIC

C3	7.995	VHL	2.828	DLA	-21.63	RAL	338.09	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.827	DPA	-28.74	RAP	303.93	ECC	1.1316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 41	2498.57	-7.33	66.36	186.08	137.14	16 4 19	1498.6	11.05	50.58
60.00	16 28 42	2322.98	-3.34	54.36	189.91	130.19	17 7 25	1323.0	12.68	36.29
70.00	17 52 25	2076.88	.64	37.42	192.92	124.15	18 27 2	1076.9	14.32	17.51
80.00	19 32 19	1764.24	3.90	15.71	194.95	119.62	20 1 43	764.2	15.67	354.54
90.00	21 8 52	1452.80	5.27	353.56	195.70	117.82	21 33 5	452.8	16.24	331.90
100.00	22 15 11	1238.71	3.90	337.08	194.95	119.62	22 35 50	238.7	15.67	315.91
110.00	22 51 52	1123.70	.64	326.33	192.92	124.15	23 10 35	123.7	14.32	306.43

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1664	TRA	.3911	TC3	-5.8025	BAU	.6264	SGT	3407.1	SGR	649.2	SG3	1621.8	ST	21.7	SR	11.4	SS	38.4
RDE	-.0937	RRA	.1897	RC3	-.8187	FAU	.26066	RRT	.8752	RRF	.9248	RTF	.9449	CRT	.9836	CRS	-.2622	CST	-.3459
FDE	.4815	FRA	4.5093	FC	-28.2240	BSP	5480	SGB	3468.4	R23	.1880	R13	.9478	LSA	39.6	MSA	22.4	SSA	1.6
BDE	.1910	BRA	.4347	BC3	5.8599	FSP	2805	SG1	3454.6	SG2	309.8	THA	9.55	EL1	24.5	EL2	1.8	ALF	27.39

LAUNCH DATE MAY 21 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC DISTANCE 501,323 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32,203	GAL	.35	AZL	90.96	HCA	159.69	SMA	185.35	ECC	.18320	INC	.9560	V1	29.427
RP	216.91	LAP	-.33	LOP	39.01	VP	22,532	GAP	3.93	AZP	89.10	TAL	2.25	TAP	161.94	RCA	151.39	APO	219.30	V2	25.327
RC	164.912	GL	-10.96	GP	-7.34	ZAL	92.94	ZAP	80.28	ETS	178.09	ZAE	122.41	ETE	185.29	ZAC	94.69	ETC	273.40	LVI	-5.15

PLANETOCENTRIC CONIC

C3	8.001	VHL	2.829	DLA	-20.85	RAL	338.46	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.835	DPA	-29.20	RAP	303.39	ECC	1.1317

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 20 40	2515.32	-8.16	67.07	186.36	137.04	16 2 36	1515.3	10.22	51.31
60.00	16 25 27	2343.06	-4.22	55.33	190.13	130.12	17 4 30	1343.1	11.82	37.30
70.00	17 47 28	2101.93	-.32	38.72	193.09	124.15	18 22 30	1101.9	13.43	18.90
80.00	19 25 20	1795.66	2.84	17.45	195.06	119.73	19 55 15	795.7	14.73	356.40
90.00	21 0 43	1487.95	4.15	355.54	195.78	118.00	21 25 31	488.0	15.27	334.03
100.00	22 8 11	1270.15	2.84	338.81	195.06	119.73	22 29 21	270.1	14.73	317.77
110.00	22 46 54	1148.75	-.32	327.64	193.09	124.15	23 6 3	148.8	13.43	307.82

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1448	TRA	.4362	TC3	-6.0759	BAU	.6565	SGT	3576.9	SGR	672.3	SG3	1612.9	ST	21.0	SR	10.7	SS	39.5
RDE	-.0838	RRA	.1971	RC3	-.8671	FAU	.25827	RRT	.8898	RRF	.9372	RTF	.9481	CRT	.9770	CRS	-.2650	CST	-.3943
FDE	.5926	FRA	4.5462	FC	-27.9469	BSP	5808	SGB	3639.6	R23	.1917	R13	.9509	LSA	40.8	MSA	21.1	SSA	1.6
BDE	.1673	BRA	.4787	BC3	6.1375	FSP	2801	SG1	3627.0	SG2	302.6	THA	9.56	EL1	23.5	EL2	2.0	ALF	26.54

LAUNCH DATE MAY 21 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 23 1971

HELIOCENTRIC CONIC DISTANCE 505,505 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32,208	GAL	.29	AZL	90.90	HCA	160.84	SMA	185.43	ECC	.18353	INC	.8992	V1	29.427
RP	217.26	LAP	-.30	LOP	40.16	VP	22,495	GAP	3.78	AZP	89.15	TAL	1.88	TAP	162.72	RCA	151.40	APO	219.46	V2	25.288
RC	167.446	GL	-10.30	GP	-7.72	ZAL	93.58	ZAP	78.63	ETS	177.78	ZAE	120.59	ETE	185.20	ZAC	94.34	ETC	273.27	LVI	-4.61

PLANETOCENTRIC CONIC

C3	8.009	VHL	2.830	DLA	-20.00	RAL	338.82	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.845	DPA	-29.69	RAP	302.89	ECC	1.1318

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 22	2533.45	-9.06	67.85	186.64	136.91	16 0 36	1533.4	9.32	52.09
60.00	16 21 50	2364.68	-5.17	56.37	190.36	130.02	17 1 15	1364.7	10.90	38.38
70.00	17 42 7	2128.66	-1.34	40.12	193.25	124.13	18 17 36	1128.7	12.46	20.58
80.00	19 17 57	1828.74	1.73	19.26	195.17	119.81	19 48 26	828.7	13.73	358.34
90.00	20 52 15	1524.57	2.97	357.59	195.86	118.14	21 17 39	524.6	14.24	336.23
100.00	22 0 49	1303.21	1.73	340.63	195.17	119.81	22 22 32	303.2	13.73	319.71
110.00	22 41 33	1175.48	-1.34	329.04	193.25	124.13	23 1 9	175.5	12.46	309.30

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1213	TRA	.4809	TC3	-6.3411	BAU	.6860	SGT	3743.7	SGR	697.7	SG3	1597.0	ST	20.5	SR	10.0	SS	40.5
RDE	-.0739	RRA	.2052	RC3	-.9160	FAU	.25465	RRT	.9019	RRF	.9479	RTF	.9506	CRT	.9674	CRS	-.2888	CST	-.4631
FDE	.6868	FRA	4.5705	FC	-27.5270	BSP	6104	SGB	3808.1	R23	.1971	R13	.9533	LSA	42.1	MSA	19.8	SSA	1.6
BDE	.1420	BRA	.5228	BC3	6.4070	FSP	2766	SG1	3796.5	SG2	297.1	THA	9.60	EL1	22.7	EL2	2.3	ALF	25.58

LAUNCH DATE MAY 21 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 25 1971

HELIOCENTRIC CONIC DISTANCE 509.684 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.213 GAL .23 AZL 90.64 HCA 161.99 SMA 185.52 ECC .18390 INC .8362 V1 29.427
RP 217.61 LAP -.26 LOP 41.30 VP 22.458 GAP 3.63 AZP 89.20 TAL 1.51 TAP 163.49 RCA 151.40 APO 219.63 V2 25.249
RC 169.992 GL -9.96 GP -8.15 ZAL 94.23 ZAP 77.02 ETS 177.43 ZAE 118.80 ETE 185.11 ZAC 93.94 ETC 273.15 LVI -4.03

PLANETOCENTRIC CONIC

C3 8.020 VHL 2.832 DLA -19.08 RAL 339.17 RAD 6637.0 VEL 11.320 PTH 6.37 VHP 2.858 DPA -30.21 RAP 302.45 ECC 1.1320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 43	2553.17	-10.04	68.70	186.91	136.76	15 58 17	1553.2	8.34	52.93
60.00	16 17 48	2388.07	-6.19	57.49	190.58	129.90	16 57 36	1388.1	9.89	39.53
70.00	17 36 18	2157.32	-2.44	41.61	193.41	124.08	18 12 15	1157.3	11.42	21.94
80.00	19 10 6	1863.73	.54	21.18	195.27	119.85	19 41 10	863.7	12.65	.37
90.00	20 43 20	1563.00	1.74	359.74	195.93	118.23	21 9 23	563.0	13.14	338.51
100.00	21 52 58	1338.20	.54	342.55	195.27	119.85	22 15 16	338.2	12.65	321.74
110.00	22 35 44	1204.14	-2.44	330.53	193.41	124.08	22 55 48	204.1	11.42	310.86

DIFFERENTIAL CORRECTIONS

TDE -.0915 TRA .5280 TC3-6.6105 BAU .7164
RDE -.0624 RRA .2151 RC3 -.9754 FAU .25211
FDE .8066 FRA 4.6050 FC-27.2146 BSP .6444
BDE .1108 BRA .5701 BC3 6.6821 FSP .2759

MID-COURSE EXECUTION ACCURACY

SGT 3915.4 SGR 730.2 SG3 1587.1
RRT .9137 RRF .9579 RTF .9531
SGB 3982.9 R23 .2021 R13 .9557
SG1 3972.1 SG2 292.5 THA 9.72

ORBIT DETERMINATION ACCURACY

ST 20.1 SR 9.4 SS 42.1
CRT .9535 CRS -.3277 CST -.5486
LSA 44.0 MSA 18.2 SSA 1.6
EL1 22.1 EL2 2.6 ALF 24.36

LAUNCH DATE MAY 21 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 27 1971

HELIOCENTRIC CONIC DISTANCE 513.861 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.219 GAL .17 AZL 90.77 HCA 163.13 SMA 185.61 ECC .18429 INC .7644 V1 29.427
RP 217.97 LAP -.22 LOP 42.44 VP 22.422 GAP 3.48 AZP 89.27 TAL 1.12 TAP 164.25 RCA 151.40 APO 219.82 V2 25.209
RC 172.547 GL -8.74 GP -8.63 ZAL 94.91 ZAP 75.47 ETS 177.05 ZAE 117.04 ETE 185.03 ZAC 93.49 ETC 273.04 LVI -3.43

PLANETOCENTRIC CONIC

C3 8.034 VHL 2.834 DLA -18.06 RAL 339.49 RAD 6637.0 VEL 11.320 PTH 6.37 VHP 2.873 DPA -30.77 RAP 302.06 ECC 1.1322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 40	2574.72	-11.11	69.63	187.16	136.57	15 55 35	1574.7	7.27	53.85
60.00	16 13 17	2413.51	-7.30	58.73	190.78	129.75	16 53 31	1413.5	8.80	40.78
70.00	17 29 55	2188.23	-3.61	43.23	193.56	123.99	18 6 23	1188.2	10.29	23.62
80.00	19 1 41	1901.01	-.72	23.23	195.36	119.85	19 33 22	901.0	11.47	2.52
90.00	20 33 52	1603.64	.43	2.00	196.00	118.28	21 0 36	603.6	11.95	340.90
100.00	21 44 33	1375.48	-.72	344.60	195.36	119.85	22 7 29	375.5	11.47	323.89
110.00	22 29 22	1235.05	-3.61	332.15	193.56	123.99	22 49 57	235.0	10.29	312.54

DIFFERENTIAL CORRECTIONS

TDE -.0598 TRA .5695 TC3-6.8769 BAU .7470
RDE -.0509 RRA .2241 RC3-1.0389 FAU .24877
FDE .9069 FRA 4.5798 FC-26.8063 BSP .6731
BDE .0785 BRA .6120 BC3 6.9549 FSP .2714

MID-COURSE EXECUTION ACCURACY

SGT 4084.0 SGR 764.5 SG3 1567.4
RRT .9241 RRF .9662 RTF .9558
SGB 4154.9 R23 .2056 R13 .9583
SG1 4145.0 SG2 287.9 THA 9.86

ORBIT DETERMINATION ACCURACY

ST 20.0 SR 8.9 SS 43.2
CRT .9374 CRS -.3846 CST -.6413
LSA 45.5 MSA 16.5 SSA 1.6
EL1 21.7 EL2 2.8 ALF 22.94

LAUNCH DATE MAY 21 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 518.035 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.225 GAL .11 AZL 90.68 HCA 164.27 SMA 185.71 ECC .18472 INC .6845 V1 29.427
RP 218.33 LAP -.19 LOP 43.58 VP 22.385 GAP 3.33 AZP 89.34 TAL .73 TAP 165.00 RCA 151.41 APO 220.02 V2 25.169
RC 175.114 GL -7.80 GP -9.17 ZAL 95.59 ZAP 73.96 ETS 176.63 ZAE 115.32 ETE 184.96 ZAC 92.98 ETC 272.94 LVI -2.78

PLANETOCENTRIC CONIC

C3 8.052 VHL 2.838 DLA -16.94 RAL 339.77 RAD 6637.0 VEL 11.321 PTH 6.37 VHP 2.890 DPA -31.38 RAP 301.73 ECC 1.1325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 9 6	2598.46	-12.28	70.67	187.41	136.34	15 52 25	1598.5	6.08	54.86
60.00	16 8 10	2441.38	-8.51	60.09	190.98	129.54	16 48 52	1441.4	7.59	42.15
70.00	17 22 52	2221.81	-4.89	44.99	193.69	123.84	17 59 54	1221.8	9.05	25.43
80.00	18 52 34	1941.05	-2.08	25.43	195.44	119.79	19 24 55	941.1	10.19	4.80
90.00	20 23 43	1647.01	-.97	4.42	196.05	118.26	20 51 10	647.0	10.65	343.42
100.00	21 35 26	1415.52	-2.08	346.80	195.44	119.79	21 59 1	415.5	10.19	326.17
110.00	22 22 18	1268.62	-4.89	333.91	193.69	123.84	22 43 27	268.6	9.05	314.35

DIFFERENTIAL CORRECTIONS

TDE -.0221 TRA .6161 TC3-7.1413 BAU .7781
RDE -.0386 RRA .2363 RC3-1.1154 FAU .24632
FDE 1.0050 FRA 4.5866 FC-26.4829 BSP .7043
BDE .0445 BRA .6598 BC3 7.2279 FSP .2668

MID-COURSE EXECUTION ACCURACY

SGT 4256.6 SGR 809.7 SG3 1554.8
RRT .9336 RRF .9737 RTF .9585
SGB 4333.0 R23 .2086 R13 .9611
SG1 4323.5 SG2 285.6 THA 10.11

ORBIT DETERMINATION ACCURACY

ST 20.6 SR 8.5 SS 44.6
CRT .9194 CRS -.4701 CST -.7474
LSA 47.6 MSA 14.6 SSA 1.6
EL1 22.0 EL2 3.1 ALF 21.24

LAUNCH DATE MAY 21 1971 FLIGHT TIME 224.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 522.206 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.231 GAL .05 AZL 90.59 HCA 165.41 SMA 185.82 ECC .18518 INC .5907 V1 29.427
RP 218.69 LAP -.15 LOP 44.72 VP 22.349 GAP 3.18 AZP 89.43 TAL .33 TAP 165.74 RCA 151.41 APO 220.23 V2 25.129
RC 177.690 GL -6.73 GP -9.79 ZAL 96.30 ZAP 72.51 ETS 176.16 ZAE 113.63 ETE 184.90 ZAC 92.38 ETC 272.85 LVI -2.07

PLANETOCENTRIC CONIC

C3 8.074 VHL 2.842 DLA -15.69 RAL 340.01 RAD 6637.0 VEL 11.322 PTH 6.38 VHP 2.910 DPA -32.06 RAP 301.46 ECC 1.1329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 4 56	2624.81	-13.58	71.83	187.64	136.05	15 48 41	1624.8	4.76	55.97
60.00	16 2 20	2472.17	-9.84	61.60	191.15	129.28	16 43 32	1472.2	6.24	43.64
70.00	17 14 59	2258.62	-6.28	46.93	193.81	123.64	17 52 37	1258.6	7.67	27.39
80.00	18 42 33	1984.50	-3.54	27.82	195.50	119.67	19 15 38	984.5	8.79	7.26
90.00	20 12 40	1693.77	-2.48	7.03	196.09	118.18	20 40 54	693.8	9.22	346.11
100.00	21 25 25	1458.97	-3.54	349.19	195.50	119.67	21 49 44	459.0	8.79	328.63
110.00	22 14 25	1305.44	-6.28	335.85	193.81	123.64	22 36 10	305.4	7.67	316.31

DIFFERENTIAL CORRECTIONS

TDE .0275 TRA .6418 TC3-7.3407 BAU .8024
RDE -.0214 RRA .2426 RC3-1.1680 FAU .23703
FDE 1.1788 FRA 4.4211 FC-25.4148 BSP .7305
BDE .0348 BRA .6861 BC3 7.4330 FSP .2603

MID-COURSE EXECUTION ACCURACY

SGT 4383.3 SGR 837.0 SG3 1496.5
RRT .9403 RRF .9787 RTF .9593
SGB 4462.5 R23 .2145 R13 .9618
SG1 4453.7 SG2 280.5 THA 10.22

ORBIT DETERMINATION ACCURACY

ST 21.3 SR 8.0 SS 46.3
CRT .9056 CRS -.5610 CST -.8332
LSA 50.0 MSA 12.5 SSA 1.7
EL1 22.5 EL2 3.2 ALF 19.15

LAUNCH DATE MAY 21 1971 FLIGHT TIME 226.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 526.371 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.238	GAL	-.01	AZL	90.48	HCA	166.54	SMA	185.93	ECC	.18566	INC	.4818	V1	29.427
RP	219.06	LAP	-.11	LOP	45.85	VP	22.313	GAP	3.04	AZP	89.53	TAL	359.92	TAP	166.46	RCA	151.41	APO	220.45	V2	25.089
RC	180.275	GL	-5.49	GP	-10.51	ZAL	97.01	ZAP	71.12	ETS	175.63	ZAE	111.97	ETE	184.86	ZAC	91.68	ETC	272.76	LVI	-1.28

PLANETOCENTRIC CONIC

C3	8.102	VHL	2.846	DLA	-14.28	RAL	340.20	RAD	6637.0	VEL	11.323	PTH	6.38	VHP	2.932	DPA	-32.83	RAP	301.25	ECC	1.1333

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 0 0	2654.39	-15.02	73.16	187.85	135.69	15 44 15	1654.4	3.28	57.21
60.00	15 55 35	2506.56	-11.32	63.30	191.31	128.94	16 37 22	1506.6	4.74	45.30
70.00	17 6 3	2299.41	-7.81	49.10	193.90	123.35	17 44 23	1299.4	6.14	29.55
80.00	18 31 26	2032.17	-5.15	30.45	195.54	119.45	19 5 18	1032.2	7.22	9.93
90.00	20 0 30	1744.82	-4.11	9.89	196.11	118.00	20 29 35	744.8	7.64	349.03
100.00	21 14 18	1506.64	-5.15	351.82	195.54	119.45	21 39 24	506.6	7.22	331.30
110.00	22 5 30	1346.22	-7.81	338.01	193.90	123.35	22 27 56	346.2	6.14	318.47

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	.0900	TRA	.7294	TC3	-7.4595	BAU	.8181	SGT	4512.3	SGR	889.7	SG3	1463.2	ST	25.3	SR	8.7	SS	52.3
RDE	.0007	RRA	.2781	RC3	-1.1886	FAU	.22054	RRT	.9338	RRF	.9839	RTF	.9493	CRT	.9251	CRS	-.7345	CST	-.9193
FDE	1.4035	FRA	4.7869	FC	-23.5662	BSP	8435	SGB	4599.2	R23	.2604	R13	.9527	LSA	57.8	MSA	10.4	SSA	1.8
BDE	.0900	BRA	.7806	BC3	7.5536	FSP	3125	SG1	4588.5	SG2	313.0	THA	10.48	EL1	26.6	EL2	3.2	ALF	17.97

LAUNCH DATE MAY 21 1971 FLIGHT TIME 228.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 530.537 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.245	GAL	-.08	AZL	90.36	HCA	167.67	SMA	186.05	ECC	.18618	INC	.3553	V1	29.427
RP	219.43	LAP	-.08	LOP	46.98	VP	22.278	GAP	2.89	AZP	89.65	TAL	359.51	TAP	167.17	RCA	151.41	APO	220.68	V2	25.048
RC	182.871	GL	-4.04	GP	-11.35	ZAL	97.74	ZAP	69.79	ETS	175.02	ZAE	110.34	ETE	184.83	ZAC	90.86	ETC	272.69	LVI	-.40

PLANETOCENTRIC CONIC

C3	8.136	VHL	2.852	DLA	-12.67	RAL	340.32	RAD	6637.1	VEL	11.325	PTH	6.38	VHP	2.958	DPA	-33.71	RAP	301.12	ECC	1.1339

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 54 7	2688.00	-16.65	74.66	188.04	135.24	15 38 55	1688.0	1.59	58.62
60.00	15 47 43	2545.45	-12.97	65.25	191.45	128.50	16 30 8	1545.5	3.03	47.16
70.00	16 55 50	2345.21	-9.52	51.55	193.98	122.96	17 34 55	1345.2	4.41	31.96
80.00	18 18 53	2085.22	-6.91	33.40	195.56	119.12	18 53 38	1085.2	5.46	12.88
90.00	19 46 52	1801.35	-5.91	13.07	196.11	117.71	20 16 54	801.3	5.86	352.23
100.00	21 1 45	1559.70	-6.91	354.76	195.56	119.12	21 27 45	559.7	5.46	334.25
110.00	21 55 16	1392.03	-9.52	340.46	193.98	122.96	22 18 28	392.0	4.41	320.88

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	.1471	TRA	.7544	TC3	-7.8108	BAU	.8623	SGT	4728.1	SGR	976.3	SG3	1468.4	ST	28.4	SR	9.2	SS	52.8
RDE	.0175	RRA	.2893	RC3	-1.3547	FAU	.22730	RRT	.9487	RRF	.9887	RTF	.9590	CRT	.9284	CRS	-.8192	CST	-.9620
FDE	1.4820	FRA	4.5981	FC	-24.1847	BSP	8071	SGB	4827.9	R23	.2377	R13	.9620	LSA	60.1	MSA	8.2	SSA	2.0
BDE	.1481	BRA	.8079	BC3	7.9274	FSP	2610	SG1	4818.4	SG2	303.0	THA	11.13	EL1	29.7	EL2	3.3	ALF	16.92

LAUNCH DATE MAY 21 1971 FLIGHT TIME 230.00 ARRIVAL DATE JAN 6 1972

HELIOCENTRIC CONIC DISTANCE 534.698 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.252	GAL	-.14	AZL	90.21	HCA	168.79	SMA	186.17	ECC	.18672	INC	.2047	V1	29.427
RP	219.80	LAP	-.04	LOP	48.10	VP	22.242	GAP	2.75	AZP	89.80	TAL	359.09	TAP	167.88	RCA	151.41	APO	220.93	V2	25.007
RC	185.475	GL	-2.32	GP	-12.34	ZAL	98.47	ZAP	68.54	ETS	174.31	ZAE	108.73	ETE	184.81	ZAC	89.89	ETC	272.63	LVI	.61

PLANETOCENTRIC CONIC

C3	8.182	VHL	2.860	DLA	-10.80	RAL	340.34	RAD	6637.1	VEL	11.327	PTH	6.38	VHP	2.988	DPA	-34.73	RAP	301.08	ECC	1.1347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 46 59	2726.80	-18.52	76.48	188.21	134.65	15 32 26	1726.8	-.36	60.24
60.00	15 38 22	2590.14	-14.85	67.53	191.57	127.91	16 21 33	1590.1	1.07	49.30
70.00	16 43 54	2397.46	-11.44	54.37	194.04	122.40	17 23 52	1397.5	2.42	34.70
80.00	18 4 29	2145.25	-8.89	36.76	195.57	118.62	18 40 14	1145.2	3.44	16.19
90.00	19 31 20	1865.03	-7.91	16.68	196.09	117.24	20 2 25	865.0	3.83	355.81
100.00	20 47 21	1619.72	-8.89	358.13	195.57	118.62	21 14 20	619.7	3.44	337.56
110.00	21 43 21	1444.28	-11.44	343.29	194.04	122.40	22 7 25	444.3	2.42	323.62

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	.2275	TRA	.7896	TC3	-8.0063	BAU	.8903	SGT	4876.4	SGR	1052.0	SG3	1430.1	ST	33.9	SR	10.5	SS	56.1
RDE	.0434	RRA	.3098	RC3	-1.4625	FAU	.22058	RRT	.9531	RRF	.9919	RTF	.9500	CRT	.9453	CRS	-.9020	CST	-.9869
FDE	1.6619	FRA	4.5110	FC	-23.3388	BSP	8373	SGB	4988.6	R23	.2419	R13	.9632	LSA	66.0	MSA	5.9	SSA	2.2
BDE	.2316	BRA	.8482	BC3	8.1388	FSP	2537	SG1	4978.9	SG2	312.0	THA	11.66	EL1	35.3	EL2	3.3	ALF	16.46

LAUNCH DATE MAY 21 1971 FLIGHT TIME 232.00 ARRIVAL DATE JAN 8 1972

HELIOCENTRIC CONIC DISTANCE 538.857 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.259	GAL	-.21	AZL	90.02	HCA	169.91	SMA	186.29	ECC	.18728	INC	.0171	V1	29.427
RP	220.18	LAP	-.00	LOP	49.22	VP	22.207	GAP	2.60	AZP	89.98	TAL	358.67	TAP	168.57	RCA	151.40	APO	221.18	V2	24.966
RC	188.089	GL	-.25	GP	-13.54	ZAL	99.20	ZAP	67.36	ETS	173.47	ZAE	107.15	ETE	184.82	ZAC	88.71	ETC	272.57	LVI	1.80

PLANETOCENTRIC CONIC

C3	8.245	VHL	2.871	DLA	-8.61	RAL	340.23	RAD	6637.1	VEL	11.330	PTH	6.38	VHP	3.023	DPA	-35.94	RAP	301.13	ECC	1.1357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 38 13	2772.44	-20.69	78.65	188.38	133.85	15 24 26	1772.4	-2.65	62.15
60.00	15 27 6	2642.45	-17.02	70.25	191.68	127.10	16 11 8	1642.4	-1.24	51.80
70.00	16 29 45	2458.23	-13.64	57.71	194.08	121.62	17 10 43	1458.2	.10	37.87
80.00	17 47 36	2214.52	-11.12	40.69	195.55	117.89	18 24 31	1214.5	1.10	20.00
90.00	19 13 14	1938.24	-10.17	20.87	196.05	116.53	19 45 32	938.2	1.48	359.90
100.00	20 30 28	1688.99	-11.12	2.05	195.55	117.89	20 58 37	689.0	1.10	341.37
110.00	21 29 12	1505.05	-13.64	346.63	194.08	121.62	21 54 17	505.0	.10	326.79

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	.3158	TRA	.8161	TC3	-8.2421	BAU	.9260	SGT	5051.0	SGR	1157.3	SG3	1402.6	ST	40.7	SR	12.3	SS	58.1
RDE	.0702	RRA	.3313	RC3	-1.6268	FAU	.21843	RRT	.9599	RRF	.9945	RTF	.9643	CRT	.9555	CRS	-.9485	CST	-.9959
FDE	1.7823	FRA	4.3596	FC	-22.9360	BSP	8571	SGB	5181.9	R23	.2326	R13	.9676	LSA	71.8	MSA	4.0	SSA	2.7
BDE	.3235	BRA	.8808	BC3	8.4011	FSP	2387	SG1	5172.2	SG2	316.8	THA	12.45	EL1	42.3	EL2	3.5	ALF	16.25

LAUNCH DATE MAY 21 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 10 1972

HELIOCENTRIC CONIC DISTANCE 543.009 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.267	GAL	-.28	AZL	89.79	HCA	171.02	SMA	186.42	ECC	.18788	INC	.1874	V1	29.427
RP	220.55	LAP	.03	LOP	50.34	VP	22.172	GAP	2.46	AZP	90.20	TAL	358.23	TAP	169.26	RCA	151.40	APO	221.45	V2	24.925
RC	190.711	GL	2.30	GP	-15.00	ZAL	99.93	ZAP	66.29	ETS	172.47	ZAE	105.59	ETE	184.84	ZAC	87.25	ETC	272.53	LVI	3.22

PLANETOCENTRIC CONIC

C3	8.337	VHL	2.887	DLA	-5.97	RAL	339.96	RAD	6637.2	VEL	11.334	PTH	6.39	VHP	3.065	DPA	-37.41	RAP	301.31	ECC	1.1372

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 27 16	2827.50	-23.26	81.37	188.57	132.75	15 14 23	1827.5	-5.41	64.46
60.00	15 13 13	2705.27	-19.57	73.61	191.82	125.96	15 58 18	1705.3	-4.00	54.80
70.00	16 12 34	2530.76	-16.18	61.79	194.15	120.49	16 54 45	1530.8	-2.67	41.66
80.00	17 27 21	2296.64	-13.69	45.43	195.56	116.80	18 5 38	1296.6	-1.68	24.51
90.00	18 51 37	2024.74	-12.75	25.91	196.03	115.46	19 25 22	1024.7	-1.31	4.73
100.00	20 10 13	1771.11	-13.69	6.80	195.56	116.80	20 39 44	771.1	-1.68	345.88
110.00	21 12 1	1577.58	-16.18	350.70	194.15	120.49	21 38 18	577.6	-2.67	330.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4265	TRA	.8350	TC3	-8.4375	BAU	.9613	SGT	5218.5	SGR	1279.0	SG3	1360.7	ST	49.7	SR	15.5	SS	62.3
RDE	.1101	RRA	.3616	RC3	-1.7894	FAU	.21158	RRT	.9621	RRF	.9964	RTF	.9642	CRT	.9689	CRS	-.9780	CST	-.9971
FDE	1.9899	FRA	4.2366	FC	-21.9706	BSP	8774	SGB	5373.0	R23	.2376	R13	.9679	LSA	81.1	MSA	3.9	SSA	2.2
BDE	.4405	BRA	.9100	BC3	8.6252	FSP	2295	SG1	5362.2	SG2	339.5	THA	13.32	EL1	51.9	EL2	3.7	ALF	16.85

LAUNCH DATE MAY 21 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC DISTANCE 547.157 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.275	GAL	-.35	AZL	89.50	HCA	172.14	SMA	186.56	ECC	.18849	INC	.4927	V1	29.427
RP	220.93	LAP	.07	LOP	51.45	VP	22.137	GAP	2.32	AZP	90.49	TAL	357.80	TAP	169.93	RCA	151.39	APO	221.72	V2	24.884
RC	193.341	GL	5.52	GP	-16.85	ZAL	100.64	ZAP	65.36	ETS	171.23	ZAE	104.05	ETE	184.90	ZAC	85.42	ETC	272.51	LVI	4.98

PLANETOCENTRIC CONIC

C3	8.481	VHL	2.912	DLA	-2.70	RAL	339.45	RAD	6637.2	VEL	11.340	PTH	6.39	VHP	3.118	DPA	-39.23	RAP	301.65	ECC	1.1396

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 13 13	2895.81	-26.37	84.89	188.86	131.15	15 1 29	1895.8	-8.82	67.36
60.00	14 55 40	2782.91	-22.61	77.91	192.05	124.29	15 42 3	1782.9	-7.39	58.55
70.00	15 51 5	2619.92	-19.19	66.95	194.30	118.81	16 34 45	1619.9	-6.06	46.34
80.00	17 2 17	2397.03	-16.68	51.37	195.64	115.13	17 42 14	1397.0	-5.07	30.04
90.00	18 24 58	2130.20	-15.74	32.20	196.09	113.80	19 0 29	1130.2	-4.69	10.63
100.00	19 45 8	1871.50	-16.68	12.74	195.64	115.13	20 16 20	871.5	-5.07	351.41
110.00	20 50 32	1666.74	-19.19	355.87	194.30	118.81	21 18 18	666.7	-6.06	335.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5790	TRA	.8591	TC3	-8.5255	BAU	.9921	SGT	5368.3	SGR	1432.0	SG3	1309.9	ST	62.8	SR	20.2	SS	67.9
RDE	.1648	RRA	.4027	RC3	-1.9699	FAU	.20237	RRT	.9638	RRF	.9978	RTF	.9642	CRT	.9769	CRS	-.9918	CST	-.9952
FDE	2.2343	FRA	4.1175	FC	-20.6583	BSP	9165	SGB	5556.0	R23	.2401	R13	.9685	LSA	94.5	MSA	5.4	SSA	1.2
BDE	.6020	BRA	.9488	BC3	8.7501	FSP	2231	SG1	5543.6	SG2	369.9	THA	14.48	EL1	65.8	EL2	4.1	ALF	17.50

LAUNCH DATE MAY 21 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 551.301 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.283	GAL	-.42	AZL	89.12	HCA	173.24	SMA	186.69	ECC	.18913	INC	.8807	V1	29.427
RP	221.31	LAP	.10	LOP	52.56	VP	22.102	GAP	2.18	AZP	90.88	TAL	357.35	TAP	170.60	RCA	151.38	APO	222.00	V2	24.842
RC	195.978	GL	9.69	GP	-19.22	ZAL	101.28	ZAP	64.63	ETS	169.69	ZAE	102.53	ETE	185.00	ZAC	83.06	ETC	272.49	LVI	7.21

PLANETOCENTRIC CONIC

C3	8.724	VHL	2.954	DLA	1.44	RAL	338.58	RAD	6637.4	VEL	11.350	PTH	6.40	VHP	3.189	DPA	-41.56	RAP	302.24	ECC	1.1436

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 54 38	2983.73	-30.21	89.74	189.41	128.68	14 44 21	1983.7	-13.17	71.18
60.00	14 32 41	2882.50	-26.31	83.74	192.54	121.70	15 20 43	1882.5	-11.69	63.46
70.00	15 23 13	2733.87	-22.78	73.84	194.68	116.17	16 8 47	1733.9	-10.31	52.42
80.00	16 29 57	2524.87	-20.20	59.23	195.93	112.46	17 12 2	1524.9	-9.29	37.18
90.00	17 50 43	2264.27	-19.24	40.49	196.34	111.13	18 28 27	1264.3	-8.90	18.22
100.00	19 12 49	1999.34	-20.20	20.60	195.93	112.46	19 46 9	999.3	-9.29	358.54
110.00	20 22 39	1780.69	-22.78	2.76	194.68	116.17	20 52 20	780.7	-10.31	341.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7821	TRA	.8647	TC3	-8.5123	BAU	1.0247	SGT	5513.9	SGR	1625.0	SG3	1243.8	ST	80.3	SR	27.2	SS	74.6
RDE	.2445	RRA	.4513	RC3	-2.1737	FAU	.19105	RRT	.9649	RRF	.9987	RTF	.9639	CRT	.9827	CRS	-.9975	CST	-.9929
FDE	2.5271	FRA	3.9174	FC	-18.9584	BSP	9534	SGB	5748.4	R23	.2416	R13	.9690	LSA	112.7	MSA	7.3	SSA	.7
BDE	.8194	BRA	.9754	BC3	8.7855	FSP	2127	SG1	5733.8	SG2	410.2	THA	15.96	EL1	84.6	EL2	4.8	ALF	18.46

LAUNCH DATE MAY 21 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 555.440 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.291	GAL	-.49	AZL	88.58	HCA	174.35	SMA	186.83	ECC	.18980	INC	1.4126	V1	29.427
RP	221.69	LAP	.14	LOP	53.66	VP	22.067	GAP	2.03	AZP	91.41	TAL	356.91	TAP	171.26	RCA	151.37	APO	222.29	V2	24.801
RC	198.621	GL	15.27	GP	-22.37	ZAL	101.78	ZAP	64.20	ETS	167.71	ZAE	101.00	ETE	185.15	ZAC	79.91	ETC	272.51	LVI	10.14

PLANETOCENTRIC CONIC

C3	9.174	VHL	3.029	DLA	6.90	RAL	337.17	RAD	6637.6	VEL	11.370	PTH	6.42	VHP	3.289	DPA	-44.63	RAP	303.21	ECC	1.1510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 28 57	3102.16	-35.03	96.93	190.66	124.53	14 20 39	2102.2	-18.91	76.58
60.00	14 1 9	3016.51	-30.82	92.22	193.67	117.37	14 51 25	2016.5	-17.30	70.33
70.00	14 45 7	2887.15	-27.02	83.72	195.65	111.73	15 33 14	1887.1	-15.81	60.69
80.00	15 45 51	2696.93	-24.26	70.39	196.75	107.95	16 30 48	1696.9	-14.70	47.08
90.00	17 3 59	2444.81	-23.23	52.21	197.10	106.60	17 44 43	1444.8	-14.27	28.76
100.00	18 28 43	2171.40	-24.26	31.76	196.75	107.95	19 4 54	1171.4	-14.70	8.45
110.00	19 44 33	1933.97	-27.02	12.63	195.65	111.73	20 16 47	934.0	-15.81	349.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0545	TRA	.8366	TC3	-8.3561	BAU	1.0665	SGT	5669.5	SGR	1881.5	SG3	1158.2	ST	102.8	SR	37.4	SS	82.0
RDE	.3640	RRA	.5084	RC3	-2.4078	FAU	.17803	RRT	.9657	RRF	.9992	RTF	.9631	CRT	.9865	CRS	-.9994	CST	-.9913
FDE	2.8439	FRA	3.6044	FC	-16.8012	BSP	9879	SGB	5973.5	R23	.2419	R13	.9695	LSA	136.4	MSA	9.4	SSA	.4
BDE	1.1156	BRA	.9790	BC3	8.6961	FSP	1992	SG1	5955.4	SG2	465.2	THA	17.88	EL1	109.3	EL2	5.8	ALF	19.81

LAUNCH DATE MAY 21 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 559.574 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.300 GAL -.57 AZL 87.80 HCA 175.45 SMA 186.98 ECC .19048 INC 2.1988 V1 29.427
RP 222.07 LAP .17 LOP 54.76 VP 22.033 GAP 1.89 AZP 92.20 TAL 356.46 TAP 171.91 RCA 151.36 APO 222.59 V2 24.759
RC 201.270 GL 23.00 GP -26.72 ZAL 101.98 ZAP 64.30 ETS 165.14 ZAE 99.46 ETE 185.40 ZAC 75.55 ETC 272.56 LVI 14.14

PLANETOCENTRIC CONIC

C3 10.098 VHL 3.178 DLA 14.32 RAL 334.87 RAD 6638.1 VEL 11.410 PTH 6.46 VHP 3.448 DPA -48.84 RAP 304.87 ECC 1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 51 14	3271.20	-40.92	108.78	193.77	116.77	13 45 45	2271.2	-26.73	85.04
60.00	13 14 45	3208.61	-36.04	105.81	196.43	109.41	14 8 14	2208.6	-24.81	81.01
70.00	13 48 41	3108.73	-31.64	99.29	198.00	103.60	14 40 30	2108.7	-23.00	74.04
80.00	14 39 49	2948.53	-28.39	87.91	198.77	99.65	15 28 57	1948.5	-21.63	62.54
90.00	15 53 34	2710.47	-27.16	70.63	198.99	98.21	16 38 45	1710.5	-21.10	45.25
100.00	17 22 41	2423.01	-28.39	49.28	198.77	99.65	18 3 4	1423.0	-21.63	23.91
110.00	18 48 8	2155.55	-31.64	28.21	198.00	103.60	19 24 3	1155.5	-23.00	2.95

DIFFERENTIAL CORRECTIONS

TDE 1.4590 TRA .7560 TC3-7.8625 BAU 1.1188
RDE .5645 RRA .5721 RC3-2.6184 FAU .16028
FDE 3.1953 FRA 3.1238 FC-13.7405 BSP 10111
BDE 1.5644 BRA .9480 BC3 8.2871 FSP 1754

MID-COURSE EXECUTION ACCURACY

SGT 5819.8 SGR 2222.3 SG3 1034.1
RRT .9658 RRF .9995 RTF .9615
SGB 6229.7 R23 .2422 R13 .9698
SG1 6206.2 SG2 540.4 THA 20.40

ORBIT DETERMINATION ACCURACY

ST 133.4 SR 53.4 SS 89.7
CRT .9895 CRS -.9999 CST -.9909
LSA 169.1 MSA 11.3 SSA .2
EL1 143.5 EL2 7.2 ALF 21.66

LAUNCH DATE MAY 21 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 563.700 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.309 GAL -.64 AZL 86.52 HCA 176.54 SMA 187.13 ECC .19119 INC 3.4794 V1 29.427
RP 222.46 LAP .21 LOP 55.86 VP 21.999 GAP 1.75 AZP 93.48 TAL 356.01 TAP 172.55 RCA 151.35 APO 222.90 V2 24.717
RC 203.922 GL 34.02 GP -33.00 ZAL 101.54 ZAP 65.38 ETS 161.80 ZAE 97.93 ETE 185.82 ZAC 69.27 ETC 272.72 LVI 19.84

PLANETOCENTRIC CONIC

C3 12.312 VHL 3.509 DLA 24.74 RAL 330.92 RAD 6639.2 VEL 11.506 PTH 6.55 VHP 3.740 DPA -54.81 RAP 308.03 ECC 1.2026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	11 50 0	3531.63	-46.68	131.04	201.77	100.47	12 48 52	2531.6	-37.35	100.78
60.00	11 57 39	3511.24	-40.19	130.29	202.85	93.34	12 56 11	2511.2	-34.47	100.76
70.00	12 10 31	3473.31	-34.06	127.27	202.90	87.34	13 8 25	2473.3	-31.59	98.81
80.00	12 36 31	3391.76	-29.03	120.58	202.38	82.68	13 33 3	2391.8	-29.13	93.15
90.00	13 35 52	3200.05	-26.82	106.13	202.01	80.67	14 29 12	2200.1	-28.04	79.19
100.00	15 19 23	2866.23	-29.03	81.95	202.38	82.68	16 7 9	1866.2	-29.13	54.52
110.00	17 9 58	2520.13	-34.06	56.19	202.90	87.34	17 51 58	1520.1	-31.59	27.73

DIFFERENTIAL CORRECTIONS

TDE 2.1383 TRA .5836 TC3-6.7169 BAU 1.1896
RDE .9551 RRA .6327 RC3-2.6670 FAU .13384
FDE 3.5531 FRA 2.4089 FC3-9.4109 BSP 10452
BDE 2.3420 BRA .8608 BC3 7.2270 FSP 1440

MID-COURSE EXECUTION ACCURACY

SGT 5959.2 SGR 2688.8 SG3 846.7
RRT .9650 RRF .9995 RTF .9578
SGB 6537.7 R23 .2447 R13 .9694
SG1 6505.7 SG2 646.1 THA 23.78

ORBIT DETERMINATION ACCURACY

ST 175.4 SR 79.9 SS 96.1
CRT .9921 CRS-1.0000 CST -.9915
LSA 215.0 MSA 13.1 SSA .1
EL1 192.5 EL2 9.1 ALF 24.37

LAUNCH DATE MAY 21 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 567.818 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.317 GAL -.71 AZL 84.07 HCA 177.63 SMA 187.28 ECC .19191 INC 5.9287 V1 29.427
RP 222.84 LAP .25 LOP 56.95 VP 21.965 GAP 1.61 AZP 95.93 TAL 355.56 TAP 173.19 RCA 151.34 APO 223.22 V2 24.675
RC 206.578 GL 49.85 GP -42.37 ZAL 99.80 ZAP 68.40 ETS 157.85 ZAE 96.50 ETE 186.70 ZAC 59.87 ETC 273.17 LVI 28.15

PLANETOCENTRIC CONIC

C3 19.093 VHL 4.370 DLA 39.29 RAL 323.44 RAD 6642.4 VEL 11.794 PTH 6.82 VHP 4.400 DPA -63.40 RAP 315.52 ECC 1.3142

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	9 46 26	3990.76	-43.37	173.70	215.37	68.12	10 52 56	2990.8	-47.46	139.50
60.00	8 40 53	4167.14	-29.36	181.16	207.14	61.05	9 50 20	3167.1	-38.51	154.21
61.50	7 47 3	4319.86	-22.71	189.58	202.70	57.03	8 59 3	3319.9	-34.19	165.45
61.50	7 47 3	4319.86	-22.71	189.58	202.70	57.03	8 59 3	3319.9	-34.19	165.45
61.50	7 47 3	4319.86	-22.71	189.58	202.70	57.03	8 59 3	3319.9	-34.19	165.45
61.50	7 47 3	4319.86	-22.71	189.58	202.70	57.03	8 59 3	3319.9	-34.19	165.45
61.50	7 47 3	4319.86	-22.71	189.58	202.70	57.03	8 59 3	3319.9	-34.19	165.45

DIFFERENTIAL CORRECTIONS

TDE 3.4609 TRA .1890 TC3-4.6021 BAU 1.3119
RDE 1.8676 RRA .6156 RC3-2.2881 FAU .09348
FDE 3.6084 FRA 1.3522 FC3-4.2387 BSP 10755
BDE 3.9327 BRA .6440 BC3 5.1395 FSP 937

MID-COURSE EXECUTION ACCURACY

SGT 6072.3 SGR 3329.2 SG3 555.6
RRT .9641 RRF .9988 RTF .9501
SGB 6925.0 R23 .2532 R13 .9673
SG1 6880.9 SG2 780.4 THA 28.26

ORBIT DETERMINATION ACCURACY

ST 227.0 SR 123.5 SS 90.9
CRT .9944 CRS -.9999 CST -.9924
LSA 273.6 MSA 14.3 SSA .1
EL1 258.2 EL2 11.5 ALF 28.47

LAUNCH DATE MAY 21 1971 FLIGHT TIME 256.00 ARRIVAL DATE FEB 1 1972

HELIOCENTRIC CONIC DISTANCE 588.445 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.364 GAL -1.12 AZL 97.79 HCA 183.08 SMA 188.07 ECC .19588 INC 7.7867 V1 29.427
RP 224.79 LAP .42 LOP 62.36 VP 21.798 GAP .92 AZP 82.22 TAL 353.13 TAP 176.20 RCA 151.23 APO 224.91 V2 24.466
RC 219.886 GL -57.35 GP 34.55 ZAL 100.80 ZAP 61.50 ETS 201.12 ZAE 93.39 ETE 178.32 ZAC 136.62 ETC 274.35 LVI -42.73

PLANETOCENTRIC CONIC

C3 27.115 VHL 5.207 DLA -54.21 RAL 24.86 RAD 6645.9 VEL 12.127 PTH 7.10 VHP 3.999 DPA 11.59 RAP 293.27 ECC 1.4462

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.62	22 37 3	1947.78	25.26	48.65	274.96	139.71	23 9 31	947.8	42.71	28.07
41.62	22 37 3	1947.78	25.26	48.65	274.96	139.71	23 9 31	947.8	42.71	28.07
41.62	22 37 3	1947.78	25.26	48.65	274.96	139.71	23 9 31	947.8	42.71	28.07
41.62	22 37 3	1947.78	25.26	48.65	274.96	139.71	23 9 31	947.8	42.71	28.07
41.62	22 37 3	1947.78	25.26	48.65	274.96	139.71	23 9 31	947.8	42.71	28.07
41.62	22 37 3	1947.78	25.26	48.65	274.96	139.71	23 9 31	947.8	42.71	28.07
41.62	22 37 3	1947.78	25.26	48.65	274.96	139.71	23 9 31	947.8	42.71	28.07

DIFFERENTIAL CORRECTIONS

TDE -.8952 TRA 2.8780 TC3-3.6646 BAU 1.4203
RDE -.2117 RRA-1.3322 RC3 1.3865 FAU .11920
FDE 1.1053 FRA 3.6763 FC3-3.8059 BSP 12168
BDE .9199 BRA 3.1714 BC3 3.9181 FSP 1257

MID-COURSE EXECUTION ACCURACY

SGT 6697.3 SGR 2901.9 SG3 696.7
RRT -.9700 RRF -.9975 RTF .9513
SGB 7298.9 R23 .2709 R13 -.9623
SG1 7269.9 SG2 649.7 THA 157.01

ORBIT DETERMINATION ACCURACY

ST 95.2 SR 39.4 SS 41.6
CRT -.6644 CRS .9738 CST -.4770
LSA 102.0 MSA 44.0 SSA .1
EL1 99.0 EL2 28.3 ALF 163.20

LAUNCH DATE MAY 21 1971 FLIGHT TIME 258.00 ARRIVAL DATE FEB 3 1972

HELIOCENTRIC CONIC DISTANCE 592.535 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.373	GAL	-1.21	AZL	96.25	HCA	184.15	SMA	188.23	ECC	.19672	INC	6.2434	V1	29.427
RP	225.18	LAP	.45	LOP	63.43	VP	21.765	GAP	.78	AZP	83.77	TAL	352.65	TAP	176.80	RCA	151.20	APO	225.26	V2	24.424
RC	222.551	GL	-50.20	GP	27.19	ZAL	102.89	ZAP	57.77	ETS	198.11	ZAE	91.97	ETE	179.57	ZAC	129.31	ETC	273.71	LVI	-36.06

PLANETOCENTRIC CONIC

C3	20.999	VHL	4.582	DLA	-48.63	RAL	17.68	RAD	6643.3	VEL	11.874	PTH	6.89	VHP	3.682	DPA	4.28	RAP	294.22	ECC	1.3456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.64	22 30 9	1835.19	26.17	37.90	262.02	132.57	23 0 44	835.2	41.02	14.80
48.64	22 30 9	1835.19	26.17	37.90	262.02	132.57	23 0 44	835.2	41.02	14.80
48.64	22 30 9	1835.19	26.17	37.90	262.02	132.57	23 0 44	835.2	41.02	14.80
48.64	22 30 9	1835.19	26.17	37.90	262.02	132.57	23 0 44	835.2	41.02	14.80
48.64	22 30 9	1835.19	26.17	37.90	262.02	132.57	23 0 44	835.2	41.02	14.80
48.64	22 30 9	1835.19	26.17	37.90	262.02	132.57	23 0 44	835.2	41.02	14.80
48.64	22 30 9	1835.19	26.17	37.90	262.02	132.57	23 0 44	835.2	41.02	14.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9872	TRA	2.7502	TC3	-4.7212	BAU	1.3793	SGT	6878.4	SGR	2329.3	SG3	854.1	ST	99.7	SR	29.7	SS	42.3
RDE	-.0454	RRA	-1.0396	RC3	1.3604	FAU	.13914	RRT	-.9710	RRF	-.9977	RTF	.9548	CRT	-.7225	CRS	.9681	CST	-.5262
FDE	.7281	FRA	4.3989	FC3	-5.7364	BSP	12044	SGB	7262.1	R23	.2722	R13	-.9616	LSA	105.2	MSA	39.4	SSA	.1
BDE	.9883	BRA	2.9401	BC3	4.9133	FSP	1542	SG1	7242.8	SG2	529.2	THA	161.70	EL1	102.1	EL2	20.1	ALF	167.36

LAUNCH DATE MAY 21 1971 FLIGHT TIME 260.00 ARRIVAL DATE FEB 5 1972

HELIOCENTRIC CONIC DISTANCE 596.626 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.383	GAL	-1.29	AZL	95.34	HCA	185.21	SMA	188.40	ECC	.19758	INC	5.3359	V1	29.427
RP	225.57	LAP	.48	LOP	64.50	VP	21.732	GAP	.64	AZP	84.69	TAL	352.17	TAP	177.38	RCA	151.18	APO	225.63	V2	24.382
RC	225.217	GL	-45.05	GP	22.18	ZAL	104.55	ZAP	55.27	ETS	195.64	ZAE	90.65	ETE	180.27	ZAC	124.31	ETC	273.44	LVI	-31.51

PLANETOCENTRIC CONIC

C3	18.101	VHL	4.255	DLA	-44.22	RAL	13.77	RAD	6642.0	VEL	11.753	PTH	6.78	VHP	3.544	DPA	-.68	RAP	295.01	ECC	1.2979

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 30 42	2069.50	14.09	48.14	243.28	135.93	21 5 11	1069.5	31.01	29.33
54.47	22 35 37	1746.52	25.66	29.05	254.16	127.33	23 4 43	746.5	38.57	4.85
54.47	22 35 37	1746.52	25.66	29.05	254.16	127.33	23 4 43	746.5	38.57	4.85
54.47	22 35 37	1746.52	25.66	29.05	254.16	127.33	23 4 43	746.5	38.57	4.85
54.47	22 35 37	1746.52	25.66	29.05	254.16	127.33	23 4 43	746.5	38.57	4.85
54.47	22 35 37	1746.52	25.66	29.05	254.16	127.33	23 4 43	746.5	38.57	4.85
54.47	22 35 37	1746.52	25.66	29.05	254.16	127.33	23 4 43	746.5	38.57	4.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8960	TRA	2.7333	TC3	-5.4655	BAU	1.3571	SGT	7033.0	SGR	1928.5	SG3	937.4	ST	98.1	SR	24.1	SS	43.4
RDE	-.0106	RRA	-.8544	RC3	1.2557	FAU	.14799	RRT	-.9730	RRF	-.9973	RTF	.9579	CRT	-.7698	CRS	.9605	CST	-.5619
FDE	.6456	FRA	4.7804	FC3	-7.0779	BSP	12401	SGB	7292.6	R23	.2677	R13	-.9623	LSA	103.5	MSA	37.2	SSA	.1
BDE	.8960	BRA	2.8637	BC3	5.6079	FSP	1701	SG1	7279.9	SG2	429.9	THA	165.01	EL1	99.9	EL2	15.1	ALF	169.02

LAUNCH DATE MAY 21 1971 FLIGHT TIME 262.00 ARRIVAL DATE FEB 7 1972

HELIOCENTRIC CONIC DISTANCE 600.710 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.392	GAL	-1.37	AZL	94.74	HCA	186.27	SMA	188.57	ECC	.19846	INC	4.7356	V1	29.427
RP	225.96	LAP	.52	LOP	65.56	VP	21.700	GAP	.50	AZP	85.29	TAL	351.69	TAP	177.96	RCA	151.15	APO	225.99	V2	24.340
RC	227.883	GL	-41.16	GP	18.61	ZAL	105.95	ZAP	53.44	ETS	193.71	ZAE	89.41	ETE	180.71	ZAC	120.75	ETC	273.32	LVI	-28.29

PLANETOCENTRIC CONIC

C3	16.509	VHL	4.063	DLA	-40.70	RAL	11.45	RAD	6641.2	VEL	11.685	PTH	6.72	VHP	3.479	DPA	-4.18	RAP	295.68	ECC	1.2717

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 37 44	2177.62	8.76	52.86	235.18	136.96	20 14 2	1177.6	26.31	35.34
59.42	22 46 55	1669.39	24.69	21.50	249.13	123.45	23 14 45	669.4	36.17	356.85
59.42	22 46 55	1669.39	24.69	21.50	249.13	123.45	23 14 45	669.4	36.17	356.85
59.42	22 46 55	1669.39	24.69	21.50	249.13	123.45	23 14 45	669.4	36.17	356.85
59.42	22 46 55	1669.39	24.69	21.50	249.13	123.45	23 14 45	669.4	36.17	356.85
59.42	22 46 55	1669.39	24.69	21.50	249.13	123.45	23 14 45	669.4	36.17	356.85
59.42	22 46 55	1669.39	24.69	21.50	249.13	123.45	23 14 45	669.4	36.17	356.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8069	TRA	2.7263	TC3	-6.0869	BAU	1.3667	SGT	7174.7	SGR	1637.4	SG3	980.2	ST	95.3	SR	20.3	SS	44.3
RDE	-.0010	RRA	-.7264	RC3	1.1380	FAU	.15150	RRT	-.9725	RRF	-.9965	RTF	.9570	CRT	-.7997	CRS	.9469	CST	-.5643
FDE	.6799	FRA	4.9892	FC3	-7.9445	BSP	12429	SGB	7359.2	R23	.2716	R13	-.9601	LSA	100.6	MSA	36.7	SSA	.2
BDE	.8069	BRA	2.8214	BC3	6.1924	FSP	1787	SG1	7349.7	SG2	372.2	THA	167.45	EL1	96.7	EL2	12.0	ALF	170.17

LAUNCH DATE MAY 21 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 9 1972

HELIOCENTRIC CONIC DISTANCE 604.792 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.402	GAL	-1.46	AZL	94.31	HCA	187.33	SMA	188.74	ECC	.19936	INC	4.3112	V1	29.427
RP	226.35	LAP	.55	LOP	66.62	VP	21.668	GAP	.36	AZP	85.72	TAL	351.21	TAP	178.54	RCA	151.11	APO	226.37	V2	24.299
RC	230.548	GL	-38.13	GP	15.97	ZAL	107.18	ZAP	51.98	ETS	192.20	ZAE	88.23	ETE	181.01	ZAC	118.10	ETC	273.26	LVI	-25.93

PLANETOCENTRIC CONIC

C3	15.557	VHL	3.944	DLA	-37.84	RAL	10.02	RAD	6640.8	VEL	11.645	PTH	6.68	VHP	3.450	DPA	-6.76	RAP	296.28	ECC	1.2560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 5 42	2250.09	5.14	55.94	230.53	137.36	19 43 12	1250.1	23.01	39.07
60.00	21 9 29	1919.87	14.20	34.75	239.00	128.12	21 41 28	919.9	28.37	13.81
63.74	23 1 38	1597.61	23.61	14.75	245.76	120.47	23 28 16	597.6	34.01	349.94
63.74	23 1 38	1597.61	23.61	14.75	245.76	120.47	23 28 16	597.6	34.01	349.94
63.74	23 1 38	1597.61	23.61	14.75	245.76	120.47	23 28 16	597.6	34.01	349.94
63.74	23 1 38	1597.61	23.61	14.75	245.76	120.47	23 28 16	597.6	34.01	349.94
63.74	23 1 38	1597.61	23.61	14.75	245.76	120.47	23 28 16	597.6	34.01	349.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7080	TRA	2.7552	TC3	-6.5474	BAU	1.3785	SGT	7308.7	SGR	1418.2	SG3	998.5	ST	92.1	SR	17.5	SS	44.7
RDE	.0057	RRA	-.6324	RC3	1.0286	FAU	.15327	RRT	-.9738	RRF	-.9952	RTF	.9588	CRT	-.8422	CRS	.9279	CST	-.5807
FDE	.7242	FRA	5.0763	FC3	-8.5294	BSP	12606	SGB	7445.0	R23	.2626	R13	-.9610	LSA	97.6	MSA	35.6	SSA	.2
BDE	.7080	BRA	2.8268	BC3	6.6277	FSP	1798	SG1	7438.3	SG2	316.8	THA	169.28	EL1	93.3	EL2	9.3	ALF	170.82

LAUNCH DATE MAY 21 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 11 1972

HELIOCENTRIC CONIC DISTANCE 608.868 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.412	GAL	-1.55	AZL	93.99	HCA	188.39	SMA	188.91	ECC	.20028	INC	3.9940	V1	29.427
RP	226.74	LAP	.58	LOP	67.68	VP	21.636	GAP	.22	AZP	86.05	TAL	350.72	TAP	179.10	RCA	151.08	APO	226.75	V2	24.257
RC	233.212	GL	-35.70	GP	13.95	ZAL	108.30	ZAP	50.75	ETS	190.99	ZAE	87.08	ETE	181.21	ZAC	116.07	ETC	273.25	LVI	-24.15

PLANETOCENTRIC CONIC

C3	14.962	VHL	3.868	DLA	-35.45	RAL	9.12	RAD	6640.5	VEL	11.620	PTH	6.66	VHP	3.440	DPA	-8.72	RAP	296.83	ECC	1.2462

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 43 40	2306.17	2.32	58.29	227.59	137.53	19 22 6	1306.2	20.38	41.82
60.00	20 29 3	2025.45	9.70	40.04	234.59	129.31	21 2 49	1025.5	24.62	20.22
67.67	23 18 58	1527.11	22.53	8.41	243.47	118.13	23 44 25	527.1	32.09	343.56
67.67	23 18 58	1527.11	22.53	8.41	243.47	118.13	23 44 25	527.1	32.09	343.56
67.67	23 18 58	1527.11	22.53	8.41	243.47	118.13	23 44 25	527.1	32.09	343.56
67.67	23 18 58	1527.11	22.53	8.41	243.47	118.13	23 44 25	527.1	32.09	343.56
67.67	23 18 58	1527.11	22.53	8.41	243.47	118.13	23 44 25	527.1	32.09	343.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6150	TRA	2.8017	TC3	-6.9123	BAU	1.3949	SGT	7441.7	SGR	1251.3	SG3	1005.3	ST	89.3	SR	15.5	SS	45.4
RDE	.0091	RRA	-.5649	RC3	.9237	FAU	.15253	RRT	-.9736	RRF	-.9933	RTF	.9589	CRT	-.8811	CRS	.9024	CST	-.5918
FDE	.8068	FRA	5.1395	FC3	-8.8255	BSP	12799	SGB	7546.1	R23	.2555	R13	-.9605	LSA	95.1	MSA	35.2	SSA	.3
BDE	.6150	BRA	2.8581	BC3	6.9738	FSP	1807	SG1	7540.9	SG2	281.8	THA	170.69	EL1	90.4	EL2	7.2	ALF	171.27

LAUNCH DATE MAY 21 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 13 1972

HELIOCENTRIC CONIC DISTANCE 612.939 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.422	GAL	-1.63	AZL	93.75	HCA	189.44	SMA	189.09	ECC	.20121	INC	3.7484	V1	29.427
RP	227.13	LAP	.61	LOP	68.73	VP	21.604	GAP	.08	AZP	86.30	TAL	350.23	TAP	179.67	RCA	151.04	APO	227.13	V2	24.215
RC	235.874	GL	-33.70	GP	12.35	ZAL	109.33	ZAP	49.66	ETS	190.01	ZAE	85.98	ETE	181.36	ZAC	114.46	ETC	273.27	LVI	-22.78

PLANETOCENTRIC CONIC

C3	14.585	VHL	3.819	DLA	-33.42	RAL	8.58	RAD	6640.3	VEL	11.603	PTH	6.65	VHP	3.442	DPA	-10.24	RAP	297.34	ECC	1.2400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 27 30	2352.42	.00	60.22	225.66	137.58	19 6 42	1352.4	18.18	44.01
60.00	20 2 54	2098.46	6.53	43.61	231.91	129.86	20 37 53	1098.5	21.85	24.40
70.00	22 36 46	1644.66	16.58	14.12	239.09	120.29	23 4 10	644.7	27.58	351.06
71.41	23 38 55	1454.20	21.51	2.13	241.89	116.22	24 3 9	454.2	30.39	337.31
71.41	23 38 55	1454.20	21.51	2.13	241.89	116.22	24 3 9	454.2	30.39	337.31
71.41	23 38 55	1454.20	21.51	2.13	241.89	116.22	24 3 9	454.2	30.39	337.31
110.00	3 40 8	5979.51	16.58	280.94	239.09	120.29	5 19 47	4979.5	27.58	257.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5229	TRA	2.8640	TC3	-7.1884	BAU	1.4109	SGT	7567.1	SGR	1118.8	SG3	1003.0	ST	87.0	SR	13.9	SS	46.2
RDE	.0121	RRA	-.5135	RC3	.8273	FAU	.15027	RRT	-.9728	RRF	-.9907	RTF	.9588	CRT	-.9196	CRS	.8699	CST	-.6069
FDE	.9016	FRA	5.1745	FC3	-8.9201	BSP	13076	SGB	7649.4	R23	.2453	R13	-.9600	LSA	93.2	MSA	34.8	SSA	.3
BDE	.5231	BRA	2.9097	BC3	7.2359	FSP	1812	SG1	7645.1	SG2	256.6	THA	171.81	EL1	87.9	EL2	5.4	ALF	171.61

LAUNCH DATE MAY 21 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 15 1972

HELIOCENTRIC CONIC DISTANCE 617.003 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.432	GAL	-1.72	AZL	93.55	HCA	190.49	SMA	189.26	ECC	.20215	INC	3.5520	V1	29.427
RP	227.52	LAP	.65	LOP	69.78	VP	21.573	GAP	-.06	AZP	86.51	TAL	349.73	TAP	180.22	RCA	151.00	APO	227.52	V2	24.174
RC	238.532	GL	-32.02	GP	11.07	ZAL	110.31	ZAP	48.69	ETS	189.20	ZAE	84.90	ETE	181.47	ZAC	113.16	ETC	273.30	LVI	-21.69

PLANETOCENTRIC CONIC

C3	14.350	VHL	3.788	DLA	-31.65	RAL	8.27	RAD	6640.2	VEL	11.593	PTH	6.64	VHP	3.451	DPA	-11.46	RAP	297.84	ECC	1.2362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 15 8	2392.05	-1.99	61.88	224.39	137.54	18 55 0	1392.1	16.27	45.84
60.00	19 43 56	2155.76	4.02	46.37	230.15	130.13	20 19 52	1155.8	19.59	27.56
70.00	21 50 46	1782.41	11.70	21.81	235.82	122.32	22 20 28	782.4	23.90	.07
75.15	0 6 9	1374.45	20.55	355.54	240.81	114.62	0 29 4	374.5	28.88	330.77
75.15	0 6 9	1374.45	20.55	355.54	240.81	114.62	0 29 4	374.5	28.88	330.77
75.15	0 6 9	1374.45	20.55	355.54	240.81	114.62	0 29 4	374.5	28.88	330.77
110.00	2 54 8	6117.26	11.70	288.63	235.82	122.32	4 36 5	5117.3	23.90	266.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4433	TRA	2.9286	TC3	-7.4271	BAU	1.4320	SGT	7693.5	SGR	1012.2	SG3	995.5	ST	85.4	SR	12.7	SS	46.8
RDE	.0173	RRA	-.4724	RC3	.7457	FAU	.14818	RRT	-.9714	RRF	-.9872	RTF	.9589	CRT	-.9545	CRS	.8283	CST	-.6249
FDE	.9801	FRA	5.1790	FC3	-8.9394	BSP	13276	SGB	7759.8	R23	.2306	R13	-.9598	LSA	92.0	MSA	34.3	SSA	.4
BDE	.4436	BRA	2.9665	BC3	7.4644	FSP	1793	SG1	7756.2	SG2	238.3	THA	172.71	EL1	86.2	EL2	3.7	ALF	171.91

LAUNCH DATE MAY 21 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 17 1972

HELIOCENTRIC CONIC DISTANCE 621.063 EARTH TO MARS

RL	151.41	LAL	-.00	LOL	239.31	VL	32.442	GAL	-1.81	AZL	93.39	HCA	191.53	SMA	189.44	ECC	.20312	INC	3.3912	V1	29.427
RP	227.91	LAP	.68	LOP	70.82	VP	21.542	GAP	-.20	AZP	86.68	TAL	349.24	TAP	180.77	RCA	150.96	APO	227.92	V2	24.133
RC	241.186	GL	-30.58	GP	10.01	ZAL	111.24	ZAP	47.79	ETS	188.53	ZAE	83.85	ETE	181.55	ZAC	112.09	ETC	273.35	LVI	-20.83

PLANETOCENTRIC CONIC

C3	14.215	VHL	3.770	DLA	-30.10	RAL	8.14	RAD	6640.1	VEL	11.588	PTH	6.63	VHP	3.464	DPA	-12.45	RAP	298.33	ECC	1.2339

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 5 24	2426.96	-3.74	63.34	223.55	137.46	18 45 51	1427.0	14.57	47.42
60.00	19 29 22	2203.57	1.92	48.66	228.99	130.26	20 6 5	1203.6	17.66	30.13
70.00	21 23 43	1867.12	8.58	26.38	233.97	123.19	21 54 50	867.1	21.34	5.32
79.25	0 35 6	1279.16	19.65	347.96	240.08	113.26	0 56 25	279.2	27.52	323.25
79.25	0 35 6	1279.16	19.65	347.96	240.08	113.26	0 56 25	279.2	27.52	323.25
79.25	0 35 6	1279.16	19.65	347.96	240.08	113.26	0 56 25	279.2	27.52	323.25
110.00	2 27 6	6201.97	8.58	293.20	233.97	123.19	4 10 28	5202.0	21.34	272.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3717	TRA	2.9991	TC3	-7.6274	BAU	1.4551	SGT	7819.8	SGR	925.4	SG3	984.9	ST	84.4	SR	11.8	SS	47.4
RDE	.0232	RRA	-.4402	RC3	.6728	FAU	.14546	RRT	-.9688	RRF	-.9827	RTF	.9585	CRT	-.9810	CRS	.7778	CST	-.6440
FDE	1.0529	FRA	5.1797	FC3	-8.8588	BSP	13448	SGB	7874.4	R23	.2150	R13	-.9592	LSA	91.5	MSA	33.8	SSA	.4
BDE	.3724	BRA	3.0313	BC3	7.6571	FSP	1771	SG1	7871.1	SG2	227.9	THA	173.45	EL1	85.1	EL2	2.3	ALF	172.21

LAUNCH DATE MAY 21 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 19 1972

HELIOCENTRIC CONIC DISTANCE 625.117 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.452 GAL -1.90 AZL 93.26 HCA 192.57 SMA 189.61 ECC .20410 INC 3.2576 V1 29.427
RP 228.30 LAP .71 LOP 71.87 VP 21.511 GAP -.34 AZP 86.82 TAL 348.74 TAP 181.32 RCA 150.92 APO 228.31 V2 24.092
RC 243.634 GL -29.34 GP 9.13 ZAL 112.13 ZAP 46.95 ETS 187.96 ZAE 82.83 ETE 181.61 ZAC 111.18 ETC 273.41 LVI -20.13

PLANETOCENTRIC CONIC

C3 14.151 VHL 3.762 DLA -28.70 RAL 8.13 RAD 6640.1 VEL 11.585 PTH 6.63 VHP 3.481 DPA -13.26 RAP 298.81 ECC 1.2329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 57 33	2458.34	-5.32	64.66	223.03	137.35	18 38 31	1458.3	13.03	48.82
60.00	19 17 45	2244.96	.10	50.63	228.23	130.30	19 55 10	1245.0	15.95	32.30
70.00	21 4 14	1931.78	6.16	29.81	232.79	123.66	21 36 26	931.8	19.27	9.19
80.00	23 27 10	1484.17	13.03	359.94	236.88	117.10	23 51 54	484.2	23.07	337.06
84.88	1 19 26	1135.69	18.81	336.99	239.63	112.08	1 38 22	135.7	26.27	312.34
100.00	2 13 57	6246.68	13.03	299.21	236.88	117.10	3 58 4	5246.7	23.07	276.33
110.00	2 7 37	6266.64	6.16	296.64	232.79	123.66	3 52 3	5266.6	19.27	276.01

DIFFERENTIAL CORRECTIONS
TDE -.2958 TRA 3.0819 TC3-7.7759 BAU 1.4756
RDE .0286 RRA -.4148 RC3 .6062 FAU .14203
FDE 1.1364 FRA 5.1811 FC3-8.6890 BSP 13719
BDE .2972 BRA 3.1097 BC3 7.7995 FSP 1760

MID-COURSE EXECUTION ACCURACY
SGT 7941.6 SGR 853.6 SG3 972.4
RRT -.9651 RRF -.9770 RTF .9578
SGB 7987.4 R23 .1980 R13 -.9584
SG1 7984.3 SG2 222.4 THA 174.07

ORBIT DETERMINATION ACCURACY
ST 83.8 SR 11.0 SS 48.3
CRT -.9963 CRS .7196 CST -.6661
LSA 91.5 MSA 33.3 SSA .5
EL1 84.6 EL2 .9 ALF 172.52

LAUNCH DATE MAY 21 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 21 1972

HELIOCENTRIC CONIC DISTANCE 629.166 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.462 GAL -1.99 AZL 93.14 HCA 193.61 SMA 189.79 ECC .20509 INC 3.1442 V1 29.427
RP 228.69 LAP .74 LOP 72.90 VP 21.480 GAP -.48 AZP 86.94 TAL 348.25 TAP 181.86 RCA 150.87 APO 228.72 V2 24.051
RC 246.477 GL -28.24 GP 8.38 ZAL 113.00 ZAP 46.16 ETS 187.47 ZAE 81.83 ETE 181.66 ZAC 110.41 ETC 273.48 LVI -19.56

PLANETOCENTRIC CONIC

C3 14.142 VHL 3.761 DLA -27.44 RAL 8.21 RAD 6640.1 VEL 11.585 PTH 6.63 VHP 3.500 DPA -13.93 RAP 299.30 ECC 1.2327

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 51 6	2486.98	-6.75	65.87	222.75	137.21	18 32 33	1487.0	11.62	50.08
60.00	19 8 17	2281.71	-1.52	52.39	227.76	130.28	19 46 18	1281.7	14.42	34.20
70.00	20 49 8	1985.16	4.13	32.62	232.04	123.93	21 22 13	985.2	17.50	12.30
80.00	22 56 31	1586.33	9.79	5.79	235.48	118.35	23 22 58	586.3	20.60	343.63
90.00	1 2 2	1194.26	13.18	338.70	237.22	115.25	1 21 56	194.3	22.47	315.52
100.00	1 43 19	1060.80	9.79	327.16	235.48	118.35	2 1 0	60.8	20.60	305.00
110.00	1 52 30	1031.97	4.13	321.54	232.04	123.93	2 9 42	32.0	17.50	301.22

DIFFERENTIAL CORRECTIONS
TDE -.2318 TRA 3.1620 TC3-7.9152 BAU 1.5001
RDE .0357 RRA -.3932 RC3 .5496 FAU .13910
FDE 1.1951 FRA 5.1631 FC3-8.5151 BSP 13899
BDE .2346 BRA 3.1863 BC3 7.9342 FSP 1730

MID-COURSE EXECUTION ACCURACY
SGT 8064.1 SGR 793.4 SG3 957.8
RRT -.9603 RRF -.9700 RTF .9575
SGB 8103.1 R23 .1785 R13 -.9579
SG1 8100.1 SG2 220.3 THA 174.60

ORBIT DETERMINATION ACCURACY
ST 83.8 SR 10.5 SS 48.6
CRT -.9977 CRS .6512 CST -.6878
LSA 91.9 MSA 32.6 SSA .5
EL1 84.4 EL2 .7 ALF 172.87

LAUNCH DATE MAY 21 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 23 1972

HELIOCENTRIC CONIC DISTANCE 633.208 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.473 GAL -2.09 AZL 93.05 HCA 194.65 SMA 189.97 ECC .20610 INC 3.0470 V1 29.427
RP 229.07 LAP .77 LOP 73.94 VP 21.450 GAP -.62 AZP 87.05 TAL 347.75 TAP 182.39 RCA 150.82 APO 229.13 V2 24.010
RC 249.113 GL -27.27 GP 7.74 ZAL 113.84 ZAP 45.41 ETS 187.05 ZAE 80.85 ETE 181.69 ZAC 109.75 ETC 273.55 LVI -19.10

PLANETOCENTRIC CONIC

C3 14.176 VHL 3.765 DLA -26.28 RAL 8.37 RAD 6640.1 VEL 11.586 PTH 6.63 VHP 3.520 DPA -14.50 RAP 299.78 ECC 1.2333

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 45 45	2513.47	-8.07	66.99	222.65	137.05	18 27 39	1513.5	10.31	51.23
60.00	19 0 23	2314.99	-2.99	53.98	227.51	130.21	19 38 57	1315.0	13.02	35.89
70.00	20 36 54	2031.19	2.38	35.03	231.57	124.08	21 10 45	1031.2	15.92	14.94
80.00	22 35 35	1659.67	7.39	9.92	234.66	119.01	23 3 15	659.7	18.66	348.21
90.00	0 29 59	1303.43	9.93	345.07	236.01	116.62	0 51 43	303.4	20.05	322.60
100.00	1 22 23	1134.15	7.39	331.28	234.66	119.01	1 41 17	134.1	18.66	309.58
110.00	1 40 16	1078.01	2.38	323.95	231.57	124.08	1 58 14	78.0	15.92	303.86

DIFFERENTIAL CORRECTIONS
TDE -.1661 TRA 3.2496 TC3-8.0255 BAU 1.5239
RDE .0426 RRA -.3759 RC3 .4984 FAU .13587
FDE 1.2601 FRA 5.1499 FC3-8.2976 BSP 14116
BDE .1715 BRA 3.2713 BC3 8.0409 FSP 1706

MID-COURSE EXECUTION ACCURACY
SGT 8185.6 SGR 743.0 SG3 943.0
RRT -.9541 RRF -.9615 RTF .9568
SGB 8219.3 R23 .1599 R13 -.9572
SG1 8216.3 SG2 221.6 THA 175.05

ORBIT DETERMINATION ACCURACY
ST 84.2 SR 10.1 SS 49.5
CRT -.9835 CRS .5765 CST -.7097
LSA 92.8 MSA 32.0 SSA .6
EL1 84.8 EL2 1.8 ALF 173.25

LAUNCH DATE MAY 21 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 25 1972

HELIOCENTRIC CONIC DISTANCE 637.245 EARTH TO MARS

RL 151.41 LAL -.00 LOL 239.31 VL 32.483 GAL -2.18 AZL 92.96 HCA 195.68 SMA 190.15 ECC .20712 INC 2.9625 V1 29.427
RP 229.46 LAP .80 LOP 74.97 VP 21.420 GAP -.76 AZP 87.15 TAL 347.25 TAP 182.93 RCA 150.77 APO 229.54 V2 23.969
RC 251.742 GL -26.40 GP 7.18 ZAL 114.67 ZAP 44.69 ETS 186.68 ZAE 79.89 ETE 181.72 ZAC 109.17 ETC 273.63 LVI -18.72

PLANETOCENTRIC CONIC

C3 14.244 VHL 3.774 DLA -25.21 RAL 8.58 RAD 6640.2 VEL 11.589 PTH 6.63 VHP 3.542 DPA -14.97 RAP 300.27 ECC 1.2344

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 41 15	2538.22	-9.30	68.05	222.68	136.87	18 23 33	1538.2	9.09	52.29
60.00	18 53 41	2345.55	-4.33	55.45	227.43	130.11	19 32 47	1345.6	11.72	37.42
70.00	20 26 43	2072.03	.82	37.16	231.32	124.15	21 1 15	1072.0	14.49	17.24
80.00	22 19 31	1718.99	5.42	13.21	234.18	119.41	22 48 10	719.0	16.99	351.83
90.00	0 8 40	1379.68	7.57	349.43	235.35	117.33	0 31 39	379.7	18.17	327.41
100.00	1 6 19	1193.46	5.42	334.58	234.18	119.41	1 26 12	193.5	16.99	313.19
110.00	1 30 6	1118.85	.82	326.08	231.32	124.15	1 48 44	118.8	14.49	306.16

DIFFERENTIAL CORRECTIONS
TDE -.1041 TRA 3.3392 TC3-8.1199 BAU 1.5486
RDE .0500 RRA -.3614 RC3 .4529 FAU .13271
FDE 1.3166 FRA 5.1297 FC3-8.0658 BSP 14307
BDE .1155 BRA 3.3587 BC3 8.1325 FSP 1677

MID-COURSE EXECUTION ACCURACY
SGT 8305.7 SGR 700.3 SG3 927.2
RRT -.9465 RRF -.9514 RTF .9563
SGB 8335.2 R23 .1415 R13 -.9566
SG1 8332.2 SG2 225.2 THA 175.43

ORBIT DETERMINATION ACCURACY
ST 84.9 SR 9.9 SS 50.0
CRT -.9536 CRS .4956 CST -.7307
LSA 94.0 MSA 31.3 SSA .6
EL1 85.4 EL2 3.0 ALF 173.67

LAUNCH DATE MAY 22 1971 FLIGHT TIME 90.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 264.469 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	35.480	GAL	.15	AZL	91.86	HCA	82.86	SMA	268.70	ECC	.43641	INC	1.8602	V1	29.421
RP	207.09	LAP	-1.85	LOP	323.13	VP	28.068	GAP	22.43	AZP	90.23	TAL	.51	TAP	83.37	RCA	151.44	APO	385.96	V2	26.448
RC	56.856	GL	-10.78	GP	-.82	ZAL	92.23	ZAP	177.32	ETS	197.82	ZAE	172.71	ETE	34.16	ZAC	98.86	ETC	278.26	LVI	-17.92

PLANETOCENTRIC CONIC

C3	37.888	VHL	6.155	DLA	-20.60	RAL	338.62	RAD	6649.9	VEL	12.561	PTH	7.43	VHP	11.206	DPA	-17.16	RAP	323.87	ECC	1.6235

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 16 17	2874.06	-25.39	83.75	204.42	131.69	16 4 11	1874.1	-7.74	66.43
60.00	16 20 41	2702.83	-19.47	73.47	209.57	126.01	17 5 43	1702.8	-3.89	54.69
70.00	17 42 11	2463.22	-13.81	57.99	213.52	121.55	18 23 14	1463.2	-.09	38.13
80.00	19 19 26	2158.87	-9.33	37.53	216.17	118.49	19 55 25	1158.9	2.98	16.94
90.00	20 54 30	1852.23	-7.51	15.95	217.14	117.34	21 25 22	852.2	4.24	355.09
100.00	22 2 18	1633.34	-9.33	358.89	216.17	118.49	22 29 31	633.3	2.98	338.31
110.00	22 41 37	1510.04	-13.81	346.91	213.52	121.55	23 6 47	510.0	-.09	327.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3410	TRA	-.8095	TC3	.0564	BAU	.0425	SGT	868.1	SGR	579.4	SG3	91.7	ST	19.9	SR	26.6	SS	8.4
RDE	-.5661	RRA	.2296	RC3	.0621	FAU	.03268	RRT	-.0223	RRF	.0215	RTF	-.5520	CRT	.7111	CRS	.2771	CST	.8638
FDE	.0742	FRA	.5279	FC3	-.7468	BSP	1136	SGB	1043.7	R23	.0008	R13	.5521	LSA	31.3	MSA	14.0	SSA	1.1
BDE	.6609	BRA	.8414	BC3	.0839	FSP	104	SG1	868.3	SG2	579.1	THA	178.46	EL1	31.0	EL2	12.0	ALF	56.13

LAUNCH DATE MAY 22 1971 FLIGHT TIME 92.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 266.305 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	35.263	GAL	.20	AZL	91.85	HCA	84.13	SMA	260.61	ECC	.41892	INC	1.8523	V1	29.421
RP	207.01	LAP	-1.84	LOP	324.40	VP	27.802	GAP	21.90	AZP	90.19	TAL	.67	TAP	84.80	RCA	151.44	APO	369.78	V2	26.457
RC	57.225	GL	-11.06	GP	-.84	ZAL	92.05	ZAP	176.42	ETS	193.60	ZAE	172.09	ETE	30.54	ZAC	98.79	ETC	278.33	LVI	-17.99

PLANETOCENTRIC CONIC

C3	35.280	VHL	5.940	DLA	-20.93	RAL	338.57	RAD	6649.0	VEL	12.457	PTH	7.35	VHP	10.827	DPA	-17.07	RAP	324.20	ECC	1.5806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 30	2849.17	-24.26	82.46	203.34	132.27	16 4 59	1849.2	-6.50	65.37
60.00	16 22 24	2676.59	-18.41	72.06	208.48	126.50	17 7 0	1676.6	-2.74	53.43
70.00	17 44 35	2434.99	-12.80	56.43	212.44	121.94	18 25 10	1435.0	.98	36.66
80.00	19 22 39	2129.13	-8.33	35.79	215.11	118.78	19 56 7	1128.1	4.02	15.25
90.00	20 58 8	1820.06	-6.50	14.13	216.09	117.58	21 28 28	820.1	5.27	353.28
100.00	22 5 30	1602.60	-8.33	357.16	215.11	118.78	22 32 12	602.6	4.02	336.62
110.00	22 44 1	1481.80	-12.80	345.34	212.44	121.94	23 8 43	481.8	.98	325.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3400	TRA	-.8033	TC3	.0682	BAU	.0450	SGT	895.7	SGR	584.2	SG3	98.7	ST	20.6	SR	26.8	SS	8.7
RDE	-.5504	RRA	.2233	RC3	.0666	FAU	.03389	RRT	-.0205	RRF	.0263	RTF	-.5616	CRT	.7118	CRS	.2397	CST	.8438
FDE	.0696	FRA	.5518	FC3	-.8316	BSP	1180	SGB	1069.4	R23	-.0063	R13	.5618	LSA	31.7	MSA	14.4	SSA	1.1
BDE	.6470	BRA	.8337	BC3	.0953	FSP	113	SG1	895.9	SG2	584.0	THA	178.67	EL1	31.4	EL2	12.3	ALF	55.24

LAUNCH DATE MAY 22 1971 FLIGHT TIME 94.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 268.408 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	35.059	GAL	.24	AZL	91.84	HCA	85.39	SMA	253.48	ECC	.40259	INC	1.8445	V1	29.421
RP	206.94	LAP	-1.84	LOP	325.66	VP	27.552	GAP	21.37	AZP	90.15	TAL	.85	TAP	86.24	RCA	151.43	APO	355.53	V2	26.466
RC	57.675	GL	-11.34	GP	-.86	ZAL	91.85	ZAP	175.49	ETS	191.08	ZAE	171.48	ETE	27.51	ZAC	98.72	ETC	278.39	LVI	-18.05

PLANETOCENTRIC CONIC

C3	32.914	VHL	5.737	DLA	-21.26	RAL	338.48	RAD	6648.1	VEL	12.362	PTH	7.28	VHP	10.462	DPA	-16.99	RAP	324.53	ECC	1.5417

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 40	2824.53	-23.12	81.22	202.28	132.82	16 5 44	1824.5	-5.26	64.33
60.00	16 24 5	2650.53	-17.35	70.67	207.41	126.96	17 8 16	1650.5	-1.59	52.18
70.00	17 47 0	2406.82	-11.78	54.88	211.39	122.29	18 27 6	1406.8	2.06	35.19
80.00	19 25 54	2097.27	-7.31	34.07	214.07	119.03	20 0 51	1097.3	5.05	13.55
90.00	21 1 53	1787.65	-5.48	12.30	215.07	117.79	21 31 41	787.6	6.29	351.45
100.00	22 8 46	1571.74	-7.31	355.44	214.07	119.03	22 34 58	571.7	5.05	334.91
110.00	22 46 26	1453.64	-11.78	343.80	211.39	122.29	23 10 40	453.6	2.06	324.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3304	TRA	-.7918	TC3	.0839	BAU	.0484	SGT	915.5	SGR	588.7	SG3	105.9	ST	20.8	SR	27.0	SS	9.0
RDE	-.5353	RRA	.2170	RC3	.0712	FAU	.03509	RRT	-.0242	RRF	.0276	RTF	-.5641	CRT	.7061	CRS	.2179	CST	.8363
FDE	.0675	FRA	.5717	FC3	-.9229	BSP	1213	SGB	1088.4	R23	-.0039	R13	.5742	LSA	32.0	MSA	14.8	SSA	1.2
BDE	.6290	BRA	.8210	BC3	.1100	FSP	127	SG1	915.7	SG2	588.4	THA	178.48	EL1	31.7	EL2	12.6	ALF	55.12

LAUNCH DATE MAY 22 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 270.738 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	34.868	GAL	.29	AZL	91.84	HCA	86.66	SMA	247.17	ECC	.38733	INC	1.8367	V1	29.421
RP	206.87	LAP	-1.83	LOP	326.93	VP	27.315	GAP	20.88	AZP	90.11	TAL	1.04	TAP	87.70	RCA	151.43	APO	342.90	V2	26.473
RC	58.203	GL	-11.62	GP	-.89	ZAL	91.62	ZAP	174.55	ETS	189.41	ZAE	170.90	ETE	24.94	ZAC	98.66	ETC	278.45	LVI	-18.10

PLANETOCENTRIC CONIC

C3	30.767	VHL	5.547	DLA	-21.61	RAL	338.37	RAD	6647.3	VEL	12.276	PTH	7.22	VHP	10.112	DPA	-16.91	RAP	324.85	ECC	1.5063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 19 46	2800.20	-21.99	80.01	201.25	133.32	16 6 26	1800.2	-4.04	63.31
60.00	16 25 45	2624.72	-16.29	69.32	206.37	127.39	17 9 30	1624.7	-.46	50.95
70.00	17 49 25	2378.77	-10.76	53.36	210.35	122.61	18 29 3	1378.8	3.13	33.72
80.00	19 29 14	2066.34	-6.29	32.34	213.06	119.25	20 3 41	1066.3	6.09	11.83
90.00	21 5 45	1755.03	-4.44	10.46	214.07	117.96	21 35 0	755.0	7.32	349.61
100.00	22 12 6	1540.81	-6.29	353.71	213.06	119.25	22 37 47	540.8	6.09	333.20
110.00	22 48 51	1425.59	-10.76	342.27	210.35	122.61	23 12 37	425.6	3.13	322.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3244	TRA	-.7795	TC3	.1052	BAU	.0533	SGT	935.9	SGR	592.6	SG3	113.7	ST	21.2	SR	27.1	SS	9.2
RDE	-.5206	RRA	.2109	RC3	.0758	FAU	.03646	RRT	-.0233	RRF	.0293	RTF	-.5876	CRT	.7042	CRS	.1886	CST	.8215
FDE	.0636	FRA	.5910	FC3	-1.0258	BSP	1251	SGB	1107.8	R23	-.0064	R13	.5877	LSA	32.2	MSA	15.1	SSA	1.2
BDE	.6134	BRA	.8075	BC3	.1296	FSP	137	SG1	936.1	SG2	592.4	THA	178.59	EL1	32.0	EL2	12.8	ALF	54.72

LAUNCH DATE MAY 22 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 273.264 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	34.688	GAL	.34	AZL	91.83	HCA	87.93	SMA	241.54	ECC	.37307	INC	1.8289
RP	206.82	LAP	-1.83	LOP	328.20	VP	27.091	GAP	20.36	AZP	90.07	TAL	1.25	TAP	89.18	RCA	151.43	APO	331.66
RC	58.807	GL	-11.90	GP	-.91	ZAL	91.37	ZAP	173.60	ETS	188.23	ZAE	170.36	ETE	22.75	ZAC	98.59	ETC	278.51

VI	29.421																		
V2	26.479																		
LVI	-16.16																		

PLANETOCENTRIC CONIC

C3	28.816	VHL	5.368	DLA	-21.96	RAL	338.23	RAD	6646.5	VEL	12.197	PTH	7.15	VHP	9.775	DPA	-16.83	RAP	325.16

ECC	1.4742																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 20 49	2776.22	-20.87	78.84	200.24	133.78	16 7 5	1776.2	-2.84	62.30
60.00	16 27 23	2599.19	-15.23	68.00	205.34	127.77	17 10 42	1599.2	.67	49.73
70.00	17 51 50	2350.90	-9.73	51.85	209.34	122.90	18 31 1	1350.9	4.19	32.26
80.00	19 32 39	2035.38	-5.25	30.63	212.07	119.43	20 6 35	1035.4	7.11	10.11
90.00	21 9 45	1722.22	-3.39	8.62	213.09	118.09	21 38 27	722.2	8.34	347.74
100.00	22 15 31	1509.85	-5.25	352.00	212.07	119.43	22 40 41	509.9	7.11	331.48
110.00	22 51 17	1397.72	-9.73	340.77	209.34	122.90	23 14 34	397.7	4.19	321.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3177	TRA	-.7704	TC3	.1261	BAU	.0576	SGT	958.9	SGR	596.2	SG3	122.0	ST	21.5	SR	27.3	SS	9.5
RDE	-.5065	RRA	.2051	RC3	.0805	FAU	.03785	RRT	-.0249	RRF	.0298	RTF	-.6011	CRT	.7000	CRS	.1718	CST	.0152
FDE	.0624	FRA	.6136	FC3	-1.1372	BSP	1301	SGB	1129.1	R23	-.0055	R13	.6013	LSA	32.5	MSA	15.5	SSA	1.2
BDE	.5979	BRA	.7972	BC3	.1496	FSP	149	SG1	959.0	SG2	595.9	THA	178.56	EL1	32.2	EL2	13.0	ALF	54.36

LAUNCH DATE MAY 22 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 275.962 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	34.519	GAL	.39	AZL	91.82	HCA	89.19	SMA	236.51	ECC	.35975	INC	1.8212
RP	206.77	LAP	-1.82	LOP	329.47	VP	26.880	GAP	19.86	AZP	90.03	TAL	1.48	TAP	90.67	RCA	151.43	APO	321.59
RC	59.485	GL	-12.18	GP	-.94	ZAL	91.09	ZAP	172.63	ETS	187.36	ZAE	169.85	ETE	20.85	ZAC	98.52	ETC	278.57

VI	29.421																		
V2	26.485																		
LVI	-18.21																		

PLANETOCENTRIC CONIC

C3	27.041	VHL	5.200	DLA	-22.32	RAL	338.06	RAD	6645.8	VEL	12.124	PTH	7.10	VHP	9.450	DPA	-16.76	RAP	325.45

ECC	1.4450																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 21 48	2732.64	-19.75	77.70	199.26	134.21	16 7 41	1752.6	-1.66	61.32
60.00	16 28 59	2574.00	-14.18	66.70	204.35	128.13	17 11 53	1574.0	1.78	48.53
70.00	17 54 16	2323.25	-8.70	50.37	208.35	123.16	18 33 0	1323.2	5.24	30.81
80.00	19 36 9	2004.42	-4.22	28.92	211.10	119.59	20 9 33	1004.4	8.13	8.38
90.00	21 13 51	1689.26	-2.33	6.78	212.14	118.19	21 42 1	689.3	9.36	348.85
100.00	22 19 0	1478.90	-4.22	350.28	211.10	119.59	22 43 39	478.9	8.13	329.75
110.00	22 53 43	1370.06	-8.70	339.29	208.35	123.16	23 16 33	370.1	5.24	319.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3096	TRA	-.7599	TC3	.1459	BAU	.0611	SGT	979.1	SGR	599.4	SG3	130.9	ST	21.8	SR	27.4	SS	9.8
RDE	-.4929	RRA	.1994	RC3	.0852	FAU	.03933	RRT	-.0277	RRF	.0334	RTF	-.6117	CRT	.6948	CRS	.1358	CST	.7983
FDE	.0567	FRA	.6377	FC3	-1.2592	BSP	1371	SGB	1148.0	R23	-.0064	R13	.6119	LSA	32.7	MSA	15.9	SSA	1.2
BDE	.5821	BRA	.7857	BC3	.1689	FSP	164	SG1	979.4	SG2	599.0	THA	178.45	EL1	32.4	EL2	13.3	ALF	54.16

LAUNCH DATE MAY 22 1971 FLIGHT TIME 102.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 278.808 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	34.360	GAL	.44	AZL	91.81	HCA	90.46	SMA	231.99	ECC	.34728	INC	1.8134
RP	206.74	LAP	-1.81	LOP	330.73	VP	26.680	GAP	19.38	AZP	89.99	TAL	1.72	TAP	92.18	RCA	151.42	APO	312.55
RC	60.233	GL	-12.45	GP	-.97	ZAL	90.78	ZAP	171.64	ETS	186.69	ZAE	169.41	ETE	19.20	ZAC	98.45	ETC	278.62

VI	29.421																		
V2	26.489																		
LVI	-18.25																		

PLANETOCENTRIC CONIC

C3	25.426	VHL	5.042	DLA	-22.69	RAL	337.87	RAD	6645.2	VEL	12.058	PTH	7.04	VHP	9.138	DPA	-16.70	RAP	325.74

ECC	1.4184																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 45	2729.48	-18.65	76.61	198.30	134.60	16 8 14	1729.5	-.49	60.35
60.00	16 30 32	2549.18	-13.13	65.44	203.37	128.45	17 13 1	1549.2	2.87	47.34
70.00	17 56 43	2295.85	-7.68	48.91	207.38	123.38	18 34 58	1295.8	6.27	29.37
80.00	19 39 42	1973.51	-3.17	27.21	210.16	119.70	20 12 36	973.5	9.14	6.64
90.00	21 18 6	1656.14	-1.26	4.93	211.22	118.25	21 45 42	656.1	10.37	343.95
100.00	22 22 34	1447.98	-3.17	348.58	210.16	119.70	22 46 42	448.0	9.14	326.01
110.00	22 56 9	1342.67	-7.68	337.83	207.38	123.38	23 18 32	342.7	6.27	318.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3031	TRA	-.7490	TC3	.1704	BAU	.0655	SGT	999.5	SGR	602.1	SG3	140.5	ST	22.1	SR	27.5	SS	10.1
RDE	-.4798	RRA	.1939	RC3	.0898	FAU	.04099	RRT	-.0282	RRF	.0344	RTF	-.6127	CRT	.6913	CRS	.1111	CST	.7863
FDE	.0531	FRA	.6599	FC3	-1.3958	BSP	1395	SGB	1166.8	R23	-.0068	R13	.6229	LSA	32.9	MSA	16.2	SSA	1.3
BDE	.5675	BRA	.7737	BC3	.1926	FSP	177	SG1	999.7	SG2	601.7	THA	178.47	EL1	32.6	EL2	13.5	ALF	53.85

LAUNCH DATE MAY 22 1971 FLIGHT TIME 104.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC DISTANCE 281.786 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	34.211	GAL	.49	AZL	91.81	HCA	91.73	SMA	227.91	ECC	.33562	INC	1.8056
RP	206.71	LAP	-1.80	LOP	332.00	VP	26.491	GAP	18.90	AZP	89.95	TAL	1.97	TAP	93.70	RCA	151.42	APO	304.40
RC	61.050	GL	-12.72	GP	-.99	ZAL	90.46	ZAP	170.64	ETS	186.15	ZAE	169.01	ETE	17.73	ZAC	98.38	ETC	278.67

VI	29.421																		
V2	26.492																		
LVI	-18.29																		

PLANETOCENTRIC CONIC

C3	23.955	VHL	4.894	DLA	-23.06	RAL	337.66	RAD	6644.6	VEL	11.997	PTH	6.99	VHP	8.837	DPA	-16.64	RAP	326.01

ECC	1.3942																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 23 38	2706.80	-17.56	75.55	197.37	134.96	16 8 44	1706.8	.65	59.40
60.00	16 32 4	2524.78	-12.09	64.21	202.43	128.74	17 14 9	1524.8	3.94	46.17
70.00	17 59 9	2268.76	-6.66	47.47	206.45	123.57	18 36 58	1268.8	7.29	27.93
80.00	19 43 21	1942.66	-2.13	25.52	209.25	119.79	20 15 44	942.7	10.14	4.89
90.00	21 22 29	1622.89	-.19	3.08	210.33	118.28	21 49 32	622.9	11.37	342.02
100.00	22 26 13	1417.13	-2.13	346.88	209.25	119.79	22 49 50	417.1	10.14	326.26
110.00	22 58 36	1315.58	-6.66	336.39	206.45	123.57	23 20 31	315.6	7.29	316.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2941	TRA	-.7394	TC3	.1966	BAU	.0698	SGT	1020.1	SGR	604.5	SG3	150.8	ST	22.3	SR	27.6	SS	10.3
RDE	-.4673	RRA	.1886	RC3	.0944	FAU	.04273	RRT	-.0319	RRF	.0380	RTF	-.6338	CRT	.6840	CRS	.0705	CST	.7671
FDE	.0456	FRA	.6843	FC3	-1.5443	BSP	1433	SGB	1185.8	R23	-.0069	R13	.6340	LSA	32.9	MSA	16.7	SSA	1.3
BDE	.5522	BRA	.7631	BC3	.2181	FSP	193	SG1	1020.4	SG2	604.0	THA	178.33	EL1	32.7	EL2	13.7	ALF	53.77

LAUNCH DATE MAY 22 1971 FLIGHT TIME 106.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC DISTANCE 284.881 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	34.071	GAL	.55	AZL	91.80	HCA	93.00	SMA	224.22	ECC	.32472	INC	1.7978	V1	29.421
RP	206.69	LAP	-1.80	LOP	333.27	VP	26.312	GAP	18.43	AZP	89.91	TAL	2.23	TAP	95.22	RCA	151.41	APO	297.03	V2	26.495
RC	61.933	GL	-12.99	GP	-1.03	ZAL	90.12	ZAP	169.62	ETS	185.72	ZAE	168.68	ETE	16.42	ZAC	98.31	ETC	278.72	LVI	-18.32

PLANETOCENTRIC CONIC

C3	22.613	VHL	4.755	DLA	-23.44	RAL	337.43	RAD	6644.0	VEL	11.942	PTH	6.94	VHP	8.548	DPA	-16.58	RAP	326.26	ECC	1.3722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 27	2684.62	-16.49	74.53	196.46	135.29	16 9 12	1684.6	1.76	58.48
60.00	16 33 34	2500.84	-11.07	63.02	201.51	129.00	17 15 14	1500.8	4.99	45.02
70.00	18 1 36	2242.02	-5.66	46.06	205.53	123.74	18 38 58	1242.0	8.30	26.51
80.00	19 47 4	1911.91	-1.09	23.83	208.37	119.84	20 18 56	911.9	11.13	3.14
90.00	21 27 2	1589.50	.88	1.21	209.46	118.27	21 53 32	589.5	12.36	340.07
100.00	22 29 56	1386.38	-1.09	345.20	208.37	119.84	22 53 3	386.4	11.13	324.51
110.00	23 1 2	1288.83	-5.65	334.98	205.53	123.74	23 22 31	288.8	8.30	315.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2874	TRA	-.7282	TC3	.2228	BAU	.0737	SGT	1038.8	SGR	606.4	SG3	161.6	ST	22.5	SR	27.7	SS	10.6
RDE	-.4552	RRA	.1835	RC3	.0988	FAU	.04452	RRT	-.0327	RRF	.0403	RTF	-.6438	CRT	.6801	CRS	.0400	CST	.7509
FDE	.0400	FRA	.7093	FC3	-1.7044	BSP	1489	SGB	1202.9	R23	-.0084	R13	.6440	LSA	33.0	MSA	17.0	SSA	1.3
BDE	.5384	BRA	.7509	BC3	.2437	FSP	212	SG1	1039.1	SG2	605.9	THA	178.34	EL1	32.8	EL2	13.9	ALF	53.52

LAUNCH DATE MAY 22 1971 FLIGHT TIME 108.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 288.078 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	33.939	GAL	.60	AZL	91.79	HCA	94.27	SMA	220.87	ECC	.31450	INC	1.7901	V1	29.421
RP	206.68	LAP	-1.79	LOP	334.54	VP	26.142	GAP	17.97	AZP	89.87	TAL	2.50	TAP	96.76	RCA	151.40	APO	290.33	V2	26.496
RC	62.879	GL	-13.25	GP	-1.06	ZAL	89.76	ZAP	168.58	ETS	185.37	ZAE	168.40	ETE	15.24	ZAC	98.25	ETC	278.77	LVI	-18.34

PLANETOCENTRIC CONIC

C3	21.388	VHL	4.625	DLA	-23.81	RAL	337.17	RAD	6643.5	VEL	11.891	PTH	6.90	VHP	8.268	DPA	-16.54	RAP	326.50	ECC	1.3520

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 25 14	2662.95	-15.44	73.54	195.58	135.58	16 9 37	1663.0	2.85	57.57
60.00	16 35 1	2477.36	-10.06	61.85	200.61	129.23	17 16 18	1477.4	6.02	43.89
70.00	18 4 3	2215.62	-4.66	44.67	204.65	123.87	18 40 58	1215.6	9.28	25.10
80.00	19 50 53	1881.23	-.05	22.14	207.51	119.86	20 22 14	881.2	12.10	1.38
90.00	21 31 45	1555.92	1.97	359.34	208.63	118.22	21 57 41	555.9	13.34	338.09
100.00	22 33 45	1355.70	-.05	343.51	207.51	119.86	22 56 21	355.7	12.10	322.75
110.00	23 3 29	1262.44	-4.66	333.59	204.65	123.87	23 24 31	262.4	9.28	314.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2715	TRA	-.7106	TC3	.2651	BAU	.0813	SGT	1048.5	SGR	608.0	SG3	173.0	ST	22.2	SR	27.7	SS	10.9
RDE	-.4436	RRA	.1786	RC3	.1031	FAU	.04638	RRT	-.0385	RRF	.0440	RTF	-.6654	CRT	.6670	CRS	.0002	CST	.7364
FDE	.0316	FRA	.7349	FC3	-1.8774	BSP	1430	SGB	1212.0	R23	-.0055	R13	.6657	LSA	32.8	MSA	17.4	SSA	1.3
BDE	.5201	BRA	.7327	BC3	.2844	FSP	230	SG1	1048.9	SG2	607.3	THA	178.08	EL1	32.6	EL2	14.0	ALF	54.34

LAUNCH DATE MAY 22 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 291.367 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	33.815	GAL	.65	AZL	91.78	HCA	95.54	SMA	217.82	ECC	.30496	INC	1.7822	V1	29.421
RP	206.67	LAP	-1.77	LOP	335.81	VP	25.981	GAP	17.52	AZP	89.83	TAL	2.77	TAP	98.31	RCA	151.40	APO	284.25	V2	26.496
RC	63.888	GL	-13.51	GP	-1.09	ZAL	89.39	ZAP	167.53	ETS	185.07	ZAE	168.20	ETE	14.16	ZAC	98.18	ETC	278.81	LVI	-18.36

PLANETOCENTRIC CONIC

C3	20.271	VHL	4.502	DLA	-24.19	RAL	336.90	RAD	6643.0	VEL	11.844	PTH	6.86	VHP	7.999	DPA	-16.50	RAP	326.72	ECC	1.3336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 25 57	2641.89	-14.41	72.59	194.72	135.85	16 9 59	1641.9	3.91	56.69
60.00	16 36 26	2454.46	-9.07	60.73	199.74	129.44	17 17 20	1454.5	7.02	42.78
70.00	18 6 29	2189.71	-3.67	43.31	203.79	123.98	18 42 59	1189.7	10.24	23.70
80.00	19 54 47	1850.78	.98	20.47	206.69	119.84	20 25 37	850.8	13.05	359.62
90.00	21 36 38	1522.27	3.05	357.46	207.83	118.13	22 2 0	522.3	14.31	336.09
100.00	22 37 38	1325.25	.98	341.84	206.69	119.84	22 59 44	325.3	13.05	320.99
110.00	23 5 55	1236.53	-3.67	332.23	203.79	123.98	23 26 32	236.5	10.24	312.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2668	TRA	-.7034	TC3	.2693	BAU	.0836	SGT	1070.5	SGR	609.1	SG3	185.5	ST	22.5	SR	27.8	SS	11.2
RDE	-.4325	RRA	.1739	RC3	.1070	FAU	.04854	RRT	-.0400	RRF	.0465	RTF	-.6588	CRT	.6632	CRS	-.0360	CST	.7151
FDE	.0236	FRA	.7603	FC3	-2.0729	BSP	1510	SGB	1231.7	R23	-.0071	R13	.6690	LSA	32.9	MSA	17.8	SSA	1.4
BDE	.5082	BRA	.7245	BC3	.3084	FSP	249	SG1	1070.9	SG2	608.4	THA	178.08	EL1	32.7	EL2	14.3	ALF	53.89

LAUNCH DATE MAY 22 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 294.739 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	33.698	GAL	.70	AZL	91.77	HCA	96.81	SMA	215.05	ECC	.29602	INC	1.7743	V1	29.421
RP	206.68	LAP	-1.76	LOP	337.08	VP	25.829	GAP	17.08	AZP	89.79	TAL	3.05	TAP	99.86	RCA	151.39	APO	278.71	V2	26.496
RC	64.956	GL	-13.76	GP	-1.13	ZAL	89.01	ZAP	166.45	ETS	184.82	ZAE	168.05	ETE	13.17	ZAC	98.12	ETC	278.84	LVI	-18.38

PLANETOCENTRIC CONIC

C3	19.249	VHL	4.387	DLA	-24.56	RAL	336.62	RAD	6642.5	VEL	11.801	PTH	6.82	VHP	7.740	DPA	-16.47	RAP	326.93	ECC	1.3168

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 26 38	2621.43	-13.41	71.68	193.90	136.09	16 10 19	1621.4	4.93	55.83
60.00	16 37 49	2432.12	-8.11	59.63	198.90	129.61	17 18 21	1432.1	7.99	41.69
70.00	18 8 55	2164.27	-2.70	41.98	202.96	124.06	18 44 59	1164.3	11.17	22.32
80.00	19 58 45	1820.50	2.01	18.81	205.89	119.80	20 29 6	820.5	13.98	357.86
90.00	21 41 42	1488.45	4.13	355.56	207.07	118.00	22 6 31	488.4	15.26	334.06
100.00	22 41 37	1294.97	2.01	340.18	205.89	119.80	23 3 12	295.0	13.98	319.23
110.00	23 8 21	1211.08	-2.70	330.90	202.96	124.06	23 28 32	211.1	11.17	311.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2617	TRA	-.6946	TC3	.3153	BAU	.0860	SGT	1090.0	SGR	609.9	SG3	198.6	ST	22.7	SR	27.8	SS	11.5
RDE	-.4218	RRA	.1694	RC3	.1108	FAU	.05072	RRT	-.0412	RRF	.0502	RTF	-.6734	CRT	.6594	CRS	-.0759	CST	.6904
FDE	.0139	FRA	.7874	FC3	-2.2811	BSP	1569	SGB	1249.0	R23	-.0098	R13	.6737	LSA	33.0	MSA	18.2	SSA	1.4
BDE	.4964	BRA	.7150	BC3	.3342	FSP	271	SG1	1090.4	SG2	609.2	THA	178.08	EL1	32.9	EL2	14.4	ALF	53.54

LAUNCH DATE MAY 22 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 298.185 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	33.889	GAL	.75	AZL	91.77	HCA	98.08	SMA	212.51	ECC	.28766	INC	1.7664	V1	29.421
RP	206.70	LAP	-1.75	LOP	338.35	VP	25.684	GAP	16.65	AZP	89.75	TAL	3.34	TAP	101.41	RCA	151.38	APO	273.64	V2	26.494
RC	66.082	GL	-14.00	GP	-1.16	ZAL	88.62	ZAP	165.36	ETS	184.60	ZAE	167.98	ETE	12.26	ZAC	98.05	ETC	278.88	LVI	-18.38

PLANETOCENTRIC CONIC

C3	18.316	VHL	4.280	DLA	-24.94	RAL	336.32	RAD	6642.1	VEL	11.762	PTH	6.79	VHP	7.490	DPA	-16.44	RAP	327.11	ECC	1.3014

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 27 15	2601.58	-12.44	70.81	193.09	136.31	16 10 37	1601.6	5.93	54.99
60.00	16 39 9	2410.37	-7.16	58.58	198.09	129.77	17 19 19	1410.4	8.93	40.63
70.00	18 11 20	2139.32	-1.75	40.67	202.16	124.11	18 47 0	1139.3	12.08	20.96
80.00	20 2 49	1790.42	3.02	17.16	205.13	119.72	20 32 40	790.4	14.89	356.09
90.00	21 47 0	1454.41	5.22	353.65	206.34	117.83	22 11 14	454.4	16.20	332.00
100.00	22 45 41	1264.88	3.02	338.52	205.13	119.72	23 6 46	264.9	14.89	317.46
110.00	23 10 47	1186.14	-1.75	329.59	202.16	124.11	23 30 33	186.1	12.08	309.88

DIFFERENTIAL CORRECTIONS

TDE	-.2548	TRA	-.6846	TC3	.3422	BAU	.0883				
RDE	-.4115	RRA	.1651	RC3	.1142	FAU	.05310				
FDE	.0029	FRA	.8157	FC3	-2.5098	BSP	1618				
BDE	.4840	BRA	.7042	BC3	.3607	FSP	293				

MID-COURSE EXECUTION ACCURACY

SGT	1106.3	SGR	610.3	SG3	212.8		
RRT	-.0441	RRF	.0542	RTF	-.6782		
SGB	1263.4	R23	-.0112	R13	.6785		
SG1	1106.7	SG2	609.5	THA	178.00		

ORBIT DETERMINATION ACCURACY

ST	22.8	SR	27.8	SS	11.9		
CRT	.6535	CRS	-.1182	CST	.6651		
LSA	33.0	MSA	18.6	SSA	1.4		
EL1	32.9	EL2	14.6	ALF	53.43		

LAUNCH DATE MAY 22 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 301.697 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	33.486	GAL	.79	AZL	91.76	HCA	99.34	SMA	210.19	ECC	.27984	INC	1.7585	V1	29.421
RP	206.72	LAP	-1.74	LOP	339.62	VP	25.546	GAP	16.22	AZP	89.71	TAL	3.63	TAP	102.97	RCA	151.37	APO	269.01	V2	26.491
RC	67.265	GL	-14.23	GP	-1.20	ZAL	88.23	ZAP	164.25	ETS	184.42	ZAE	167.98	ETE	11.39	ZAC	97.99	ETC	278.91	LVI	-18.38

PLANETOCENTRIC CONIC

C3	17.461	VHL	4.179	DLA	-25.30	RAL	336.01	RAD	6641.7	VEL	11.726	PTH	6.76	VHP	7.249	DPA	-16.43	RAP	327.28	ECC	1.2874

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 27 49	2582.38	-11.49	69.97	192.31	136.50	16 10 52	1582.4	6.88	54.18
60.00	16 40 26	2389.25	-6.24	57.55	197.30	129.90	17 20 16	1389.3	9.84	39.59
70.00	18 13 45	2114.93	-.82	39.40	201.39	124.15	18 48 59	1114.9	12.96	19.62
80.00	20 6 58	1760.54	4.03	15.51	204.40	119.61	20 36 19	760.5	15.78	354.32
90.00	21 52 32	1420.10	6.30	351.72	205.65	117.63	22 16 12	420.1	17.11	329.91
100.00	22 49 50	1235.01	4.03	336.88	204.40	119.61	23 10 25	235.0	15.78	315.69
110.00	23 13 11	1161.75	-.82	328.32	201.39	124.15	23 32 33	161.7	12.96	308.54

DIFFERENTIAL CORRECTIONS

TDE	-.2480	TRA	-.6753	TC3	.3732	BAU	.0913				
RDE	-.4017	RRA	.1610	RC3	.1171	FAU	.05563				
FDE	-.0080	FRA	.8461	FC3	-2.7581	BSP	1652				
BDE	.4721	BRA	.6942	BC3	.3911	FSP	316				

MID-COURSE EXECUTION ACCURACY

SGT	1123.3	SGR	610.3	SG3	227.9		
RRT	-.0471	RRF	.0583	RTF	-.6848		
SGB	1278.4	R23	-.0126	R13	.6852		
SG1	1123.8	SG2	609.4	THA	177.92		

ORBIT DETERMINATION ACCURACY

ST	22.9	SR	27.8	SS	12.3		
CRT	.6471	CRS	-.1567	CST	.6421		
LSA	32.9	MSA	19.0	SSA	1.5		
EL1	32.8	EL2	14.8	ALF	53.32		

LAUNCH DATE MAY 22 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 305.270 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	33.390	GAL	.84	AZL	91.75	HCA	100.61	SMA	208.06	ECC	.27252	INC	1.7505	V1	29.421
RP	206.75	LAP	-1.72	LOP	340.89	VP	25.416	GAP	15.81	AZP	89.68	TAL	3.92	TAP	104.53	RCA	151.36	APO	264.77	V2	26.487
RC	68.502	GL	-14.46	GP	-1.24	ZAL	87.83	ZAP	163.11	ETS	184.25	ZAE	168.05	ETE	10.57	ZAC	97.93	ETC	278.93	LVI	-18.38

PLANETOCENTRIC CONIC

C3	16.679	VHL	4.084	DLA	-25.66	RAL	335.70	RAD	6641.3	VEL	11.693	PTH	6.73	VHP	7.016	DPA	-16.42	RAP	327.42	ECC	1.2745

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 28 21	2563.85	-10.57	69.16	191.56	136.67	16 11 5	1563.9	7.81	53.39
60.00	16 41 41	2368.80	-5.35	56.56	196.54	130.00	17 21 10	1368.8	10.72	38.58
70.00	18 16 8	2091.12	.09	38.16	200.65	124.15	18 50 59	1091.1	13.81	18.30
80.00	20 11 13	1730.90	5.02	13.87	203.71	119.47	20 40 4	730.9	16.65	352.54
90.00	21 58 20	1385.45	7.39	349.76	205.00	117.37	22 21 25	385.5	18.02	327.76
100.00	22 54 5	1205.37	5.02	335.24	203.71	119.47	23 14 10	205.4	16.65	313.91
110.00	23 15 34	1137.94	.09	327.08	200.65	124.15	23 34 32	137.9	13.81	307.22

DIFFERENTIAL CORRECTIONS

TDE	-.2402	TRA	-.6651	TC3	.4017	BAU	.0934				
RDE	-.3922	RRA	.1571	RC3	.1196	FAU	.05831				
FDE	-.0222	FRA	.8775	FC3	-3.0267	BSP	1693				
BDE	.4599	BRA	.6834	BC3	.4191	FSP	342				

MID-COURSE EXECUTION ACCURACY

SGT	1137.0	SGR	610.0	SG3	244.0		
RRT	-.0514	RRF	.0636	RTF	-.6995		
SGB	1290.3	R23	-.0139	R13	.6900		
SG1	1137.6	SG2	608.9	THA	177.78		

ORBIT DETERMINATION ACCURACY

ST	22.9	SR	27.8	SS	12.7		
CRT	.6393	CRS	-.2027	CST	.6139		
LSA	32.8	MSA	19.4	SSA	1.5		
EL1	32.8	EL2	14.9	ALF	53.39		

LAUNCH DATE MAY 22 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC DISTANCE 308.898 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	33.299	GAL	.88	AZL	91.74	HCA	101.88	SMA	206.11	ECC	.26567	INC	1.7424	V1	29.421
RP	206.79	LAP	-1.71	LOP	342.16	VP	25.292	GAP	15.41	AZP	89.64	TAL	4.21	TAP	106.09	RCA	151.35	APO	260.87	V2	26.483
RC	69.791	GL	-14.88	GP	-1.29	ZAL	87.43	ZAP	161.95	ETS	184.11	ZAE	168.19	ETE	9.79	ZAC	97.87	ETC	278.95	LVI	-18.36

PLANETOCENTRIC CONIC

C3	15.962	VHL	3.995	DLA	-26.01	RAL	335.37	RAD	6641.0	VEL	11.662	PTH	6.70	VHP	6.792	DPA	-16.42	RAP	327.54	ECC	1.2627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 28 49	2546.01	-9.69	68.39	190.84	136.81	16 11 15	1546.0	8.70	52.63
60.00	16 42 53	2349.03	-4.48	55.61	195.80	130.09	17 22 2	1349.0	11.57	37.60
70.00	18 18 29	2067.93	.98	36.95	199.93	124.14	18 52 57	1067.9	14.63	17.01
80.00	20 15 33	1701.52	6.01	12.25	203.04	119.30	20 43 55	701.5	17.49	350.77
90.00	22 4 27	1350.35	8.49	347.76	204.38	117.08	22 26 57	350.3	18.91	325.57
100.00	22 58 25	1175.99	6.01	333.61	203.04	119.30	23 18 1	176.0	17.49	312.14
110.00	23 17 56	1114.75	.98	325.87	199.93	124.14	23 36 30	114.8	14.63	305.93

DIFFERENTIAL CORRECTIONS

TDE	-.2335	TRA	-.6532	TC3	.4317	BAU	.0957				
RDE	-.3832	RRA	.1534	RC3	.1215	FAU	.06118				
FDE	-.0351	FRA	.9075	FC3	-3.3181	BSP	1715				
BDE	.4487	BRA	.6710	BC3	.4484	FSP	370				

MID-COURSE EXECUTION ACCURACY

SGT	1147.9	SGR	609.3	SG3	261.1		
RRT	-.0538	RRF	.0677	RTF	-.6941		
SGB	1299.6	R23	-.0158	R13	.6946		
SG1	1148.5	SG2	608.1	THA	177.73		

ORBIT DETERMINATION ACCURACY

ST	22.9	SR	27.7	SS	13.0		
CRT	.6339	CRS	-.2406	CST	.5883		
LSA	32.7	MSA	19.8	SSA	1.5		
EL1	32.7	EL2	15.0	ALF	53.41		

LAUNCH DATE MAY 22 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC DISTANCE 312.575 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	33.214	GAL	.93	AZL	91.73	HCA	103.15	SMA	204.31	ECC	.25927	INC	1.7343	V1	29.421
RP	206.84	LAP	-1.69	LOP	343.43	VP	25.173	GAP	15.01	AZP	89.61	TAL	4.50	TAP	107.65	RCA	151.34	APO	257.29	V2	26.477
RC	71.130	GL	-14.89	GP	-1.33	ZAL	87.03	ZAP	160.77	ETS	183.98	ZAE	168.41	ETE	9.02	ZAC	97.82	ETC	278.97	LVI	-18.34

PLANETOCENTRIC CONIC

C3	15.305	VHL	3.912	DLA	-26.36	RAL	335.04	RAD	6640.7	VEL	11.634	PTH	6.67	VHP	6.577	DPA	-16.44	RAP	327.64	ECC	1.2519

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 15	2528.88	-8.84	67.65	190.14	136.94	16 11 24	1528.9	9.55	51.89
60.00	16 44 2	2329.97	-3.64	54.70	195.10	130.16	17 22 52	1330.0	12.38	36.64
70.00	18 20 49	2045.42	1.84	35.77	199.25	124.11	18 54 54	1045.4	15.42	15.74
80.00	20 19 59	1672.41	6.97	10.63	202.41	119.11	20 47 51	672.4	18.30	348.99
90.00	22 10 56	1314.63	9.59	345.71	203.81	116.73	22 32 50	314.6	19.78	323.32
100.00	23 2 51	1146.89	6.97	331.99	202.41	119.11	23 21 58	146.9	18.30	310.36
110.00	23 20 15	1092.23	1.84	324.69	199.25	124.11	23 38 27	92.2	15.42	304.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2266	TRA	-.6434	TC3	.4590	BAU	.0972	SGT	1159.7	SGR	608.3	SG3	279.1	ST	22.9	SR	27.7	SS	13.5
RDE	-.3745	RRA	.1499	RC3	.1229	FAU	.06413	RRT	-.0583	RRF	.0737	RTF	-.6981	CRT	.6267	CRS	-.2813	CST	.5615
FDE	-.0502	FRA	.9427	FC3	-3.6278	BSP	1746	SGB	1309.6	R23	-.0177	R13	.6986	LSA	32.6	MSA	20.2	SSA	1.6
BDE	.4377	BRA	.6606	BC3	.4751	FSP	401	SG1	1160.4	SG2	606.9	THA	177.59	EL1	32.6	EL2	15.2	ALF	53.45

LAUNCH DATE MAY 22 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC DISTANCE 316.297 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	33.134	GAL	.97	AZL	91.73	HCA	104.42	SMA	202.66	ECC	.25328	INC	1.7260	V1	29.421
RP	206.90	LAP	-1.67	LOP	344.70	VP	25.061	GAP	14.62	AZP	89.57	TAL	4.79	TAP	109.20	RCA	151.33	APO	253.99	V2	26.470
RC	72.517	GL	-15.09	GP	-1.38	ZAL	86.64	ZAP	159.56	ETS	183.86	ZAE	168.70	ETE	8.27	ZAC	97.76	ETC	278.97	LVI	-18.30

PLANETOCENTRIC CONIC

C3	14.702	VHL	3.834	DLA	-26.69	RAL	334.71	RAD	6640.4	VEL	11.608	PTH	6.65	VHP	6.369	DPA	-16.46	RAP	327.71	ECC	1.2420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 38	2512.47	-8.02	66.95	189.46	137.06	16 11 31	1512.5	10.36	51.18
60.00	16 45 8	2311.66	-2.84	53.82	194.42	130.22	17 23 40	1311.7	13.16	35.72
70.00	18 23 6	2023.60	2.67	34.64	198.59	124.06	18 56 50	1023.6	16.18	14.51
80.00	20 24 30	1643.60	7.92	9.02	201.82	118.88	20 51 54	643.6	19.09	347.22
90.00	22 17 51	1278.05	10.70	343.60	203.29	116.33	22 39 9	278.0	20.64	320.98
100.00	23 7 22	1118.07	7.92	330.38	201.82	118.88	23 26 0	118.1	19.09	308.58
110.00	23 22 32	1070.42	2.67	323.55	198.59	124.06	23 40 23	70.4	16.18	303.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2197	TRA	-.6330	TC3	.4880	BAU	.0989	SGT	1169.8	SGR	607.0	SG3	298.8	ST	22.8	SR	27.6	SS	14.0
RDE	-.3661	RRA	.1466	RC3	.1235	FAU	.06742	RRT	-.0627	RRF	.0801	RTF	-.7020	CRT	.6196	CRS	-.3226	CST	.5330
FDE	-.0672	FRA	.9793	FC3	-3.9699	BSP	1765	SGB	1317.9	R23	-.0200	R13	.7027	LSA	32.4	MSA	20.7	SSA	1.6
BDE	.4270	BRA	.6497	BC3	.5034	FSP	432	SG1	1170.7	SG2	605.3	THA	177.46	EL1	32.4	EL2	15.3	ALF	53.54

LAUNCH DATE MAY 22 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 320.060 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	33.059	GAL	1.01	AZL	91.72	HCA	105.68	SMA	201.14	ECC	.24768	INC	1.7177	V1	29.421
RP	206.96	LAP	-1.65	LOP	345.96	VP	24.954	GAP	14.25	AZP	89.54	TAL	5.07	TAP	110.75	RCA	151.32	APO	260.96	V2	26.462
RC	73.950	GL	-15.27	GP	-1.43	ZAL	86.25	ZAP	158.32	ETS	183.76	ZAE	169.07	ETE	7.51	ZAC	97.71	ETC	278.98	LVI	-18.26

PLANETOCENTRIC CONIC

C3	14.149	VHL	3.762	DLA	-27.01	RAL	334.39	RAD	6640.1	VEL	11.585	PTH	6.63	VHP	6.168	DPA	-16.50	RAP	327.76	ECC	1.2329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 59	2496.79	-7.24	66.28	188.82	137.15	16 11 36	1496.8	11.14	50.50
60.00	16 46 11	2294.11	-2.07	52.98	193.77	130.26	17 24 25	1294.1	13.90	34.83
70.00	18 25 20	2002.54	3.47	33.53	197.96	124.00	18 58 43	1002.5	16.90	13.31
80.00	20 29 7	1615.08	8.86	7.42	201.25	118.63	20 56 2	615.1	19.85	345.44
90.00	22 25 21	1240.22	11.83	341.40	202.81	115.87	22 46 2	240.2	21.49	318.53
100.00	23 11 59	1089.55	8.86	328.78	201.25	118.63	23 30 8	89.6	19.85	306.81
110.00	23 24 47	1049.36	3.47	322.45	197.96	124.00	23 42 16	49.4	16.90	302.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2131	TRA	-.6218	TC3	.5129	BAU	.0998	SGT	1176.6	SGR	605.3	SG3	319.3	ST	22.8	SR	27.5	SS	14.3
RDE	-.3581	RRA	.1435	RC3	.1235	FAU	.07082	RRT	-.0672	RRF	.0864	RTF	-.7043	CRT	.6131	CRS	-.3600	CST	.5060
FDE	-.0843	FRA	1.0159	FC3	-4.3332	BSP	1791	SGB	1323.2	R23	-.0222	R13	.7050	LSA	32.3	MSA	21.1	SSA	1.6
BDE	.4167	BRA	.6382	BC3	.5275	FSP	468	SG1	1177.6	SG2	603.4	THA	177.31	EL1	32.2	EL2	15.3	ALF	53.66

LAUNCH DATE MAY 22 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC DISTANCE 323.862 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.989	GAL	1.04	AZL	91.71	HCA	106.95	SMA	199.74	ECC	.24245	INC	1.7093	V1	29.421
RP	207.04	LAP	-1.64	LOP	347.23	VP	24.851	GAP	13.88	AZP	89.50	TAL	5.35	TAP	112.29	RCA	151.31	APO	268.16	V2	26.454
RC	75.426	GL	-15.45	GP	-1.48	ZAL	85.87	ZAP	157.05	ETS	183.66	ZAE	169.51	ETE	6.74	ZAC	97.66	ETC	278.98	LVI	-18.21

PLANETOCENTRIC CONIC

C3	13.641	VHL	3.693	DLA	-27.32	RAL	334.06	RAD	6639.9	VEL	11.563	PTH	6.61	VHP	5.975	DPA	-16.55	RAP	327.78	ECC	1.2245

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 17	2481.86	-6.49	65.65	188.19	137.24	16 11 39	1481.9	11.88	49.85
60.00	16 47 10	2277.35	-1.33	52.18	193.15	130.28	17 25 7	1277.3	14.60	33.97
70.00	18 27 31	1982.26	4.24	32.47	197.36	123.92	19 0 33	982.3	17.59	12.14
80.00	20 33 49	1586.89	9.77	5.82	200.72	118.35	21 0 16	586.9	20.59	343.67
90.00	22 33 38	1200.53	13.00	339.07	202.39	115.34	22 53 38	200.5	22.34	315.93
100.00	23 16 41	1061.36	9.77	327.19	200.72	118.35	23 34 22	61.4	20.59	305.04
110.00	23 26 57	1029.08	4.24	321.39	197.36	123.92	23 44 7	29.1	17.59	301.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2070	TRA	-.6109	TC3	.5342	BAU	.1000	SGT	1181.8	SGR	603.3	SG3	341.1	ST	22.7	SR	27.4	SS	15.1
RDE	-.3504	RRA	.1406	RC3	.1226	FAU	.07440	RRT	-.0722	RRF	.0933	RTF	-.7054	CRT	.6071	CRS	-.3941	CST	.4807
FDE	-.1019	FRA	1.0551	FC3	-4.7216	BSP	1802	SGB	1326.8	R23	-.0246	R13	.7062	LSA	32.1	MSA	21.5	SSA	1.7
BDE	.4070	BRA	.6269	BC3	.5401	FSP	504	SG1	1182.8	SG2	601.2	THA	177.15	EL1	32.1	EL2	15.4	ALF	53.76

LAUNCH DATE MAY 22 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC DISTANCE 327.698 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.923 GAL 1.08 AZL 91.70 HCA 108.21 SMA 198.44 ECC .23757 INC 1.7008 V1 29.421
RP 207.12 LAP -1.62 LOP 348.49 VP 24.754 GAP 13.52 AZP 89.47 TAL 5.62 TAP 113.83 RCA 151.30 APO 245.59 V2 26.444
RC 76.944 GL -15.62 GP -1.53 ZAL 85.50 ZAP 155.76 ETS 183.57 ZAE 170.02 ETE 5.93 ZAC 97.61 ETC 278.97 LVI -18.15

PLANETOCENTRIC CONIC

C3 13.174 VHL 3.630 DLA -27.61 RAL 333.74 RAD 6639.6 VEL 11.543 PTH 6.59 VHP 5.789 DPA -16.61 RAP 327.77 ECC 1.2168

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 32	2467.70	-5.78	65.05	187.60	137.31	16 11 40	1467.7	12.57	49.23
60.00	16 48 6	2261.39	-.63	51.42	192.55	130.30	17 25 47	1261.4	15.27	33.15
70.00	18 29 38	1962.81	4.98	31.45	196.79	123.83	19 2 21	962.8	18.25	11.01
80.00	20 38 37	1559.03	10.67	4.24	200.22	118.05	21 4 36	559.0	21.29	341.90
90.00	22 43 2	1157.81	14.23	336.54	202.03	114.70	23 2 19	157.8	23.20	313.10
100.00	23 21 28	1033.50	10.67	325.61	200.22	118.05	23 38 42	33.5	21.29	303.27
110.00	23 29 4	1009.63	4.98	320.37	196.79	123.83	23 45 54	9.6	18.25	299.93

DIFFERENTIAL CORRECTIONS

TDE -.2013 TRA -.5993 TC3 .5555 BAU .1001
RDE -.3430 RRA .1378 RC3 .1209 FAU .07824
FDE -.1203 FRA 1.0938 FC3-5.1416 BSP 1806
BDE .3977 BRA .6149 BC3 .5685 FSP 542

MID-COURSE EXECUTION ACCURACY

SGT 1184.6 SGR 601.0 SG3 364.1
RRT -.0768 RRF .1001 RTF -.7060
SGB 1328.3 R23 -.0274 R13 .7070
SG1 1185.8 SG2 598.6 THA 177.01

ORBIT DETERMINATION ACCURACY

ST 22.6 SR 27.3 SS 15.6
CRT .6021 CRS -.4265 CST .4547
LSA 32.0 MSA 21.8 SSA 1.7
EL1 31.9 EL2 15.4 ALF 53.86

LAUNCH DATE MAY 22 1971 FLIGHT TIME 132.00 ARRIVAL DATE OCT 1 1971

HELIOCENTRIC CONIC DISTANCE 331.565 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.862 GAL 1.11 AZL 91.69 HCA 109.47 SMA 197.25 ECC .23301 INC 1.6922 V1 29.421
RP 207.21 LAP -1.60 LOP 349.76 VP 24.660 GAP 13.17 AZP 89.44 TAL 5.88 TAP 115.35 RCA 151.29 APO 243.21 V2 26.433
RC 78.502 GL -15.77 GP -1.59 ZAL 85.15 ZAP 154.44 ETS 183.49 ZAE 170.60 ETE 5.06 ZAC 97.56 ETC 278.96 LVI -18.08

PLANETOCENTRIC CONIC

C3 12.745 VHL 3.570 DLA -27.88 RAL 333.43 RAD 6639.4 VEL 11.525 PTH 6.57 VHP 5.610 DPA -16.68 RAP 327.73 ECC 1.2098

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 45	2454.29	-5.11	64.49	187.04	137.37	16 11 40	1454.3	13.23	48.64
60.00	16 48 58	2246.26	.04	50.70	191.98	130.30	17 26 24	1246.3	15.90	32.37
70.00	18 31 40	1944.22	5.69	30.47	196.24	123.73	19 4 5	944.2	18.86	9.92
80.00	20 43 29	1531.52	11.55	2.67	199.76	117.73	21 9 1	531.5	21.96	340.13
90.00	22 54 22	1109.48	15.59	333.64	201.77	113.90	23 12 51	109.5	24.11	309.85
100.00	23 26 21	1005.99	11.55	324.04	199.76	117.73	23 43 7	6.0	21.96	301.50
110.00	23 31 7	6279.08	5.69	297.29	196.24	123.73	25 15 46	5279.1	18.86	276.74

DIFFERENTIAL CORRECTIONS

TDE -.1953 TRA -.5889 TC3 .5722 BAU .0996
RDE -.3359 RRA .1353 RC3 .1183 FAU .08232
FDE -.1429 FRA 1.1389 FC3-5.5916 BSP 1817
BDE .3886 BRA .6042 BC3 .5843 FSP 584

MID-COURSE EXECUTION ACCURACY

SGT 1186.8 SGR 598.5 SG3 389.0
RRT -.0835 RRF .1094 RTF -.7057
SGB 1329.2 R23 -.0307 R13 .7068
SG1 1188.2 SG2 595.7 THA 176.78

ORBIT DETERMINATION ACCURACY

ST 22.4 SR 27.2 SS 16.3
CRT .5954 CRS -.4622 CST .4264
LSA 31.8 MSA 22.2 SSA 1.7
EL1 31.7 EL2 15.5 ALF 54.03

LAUNCH DATE MAY 22 1971 FLIGHT TIME 134.00 ARRIVAL DATE OCT 3 1971

HELIOCENTRIC CONIC DISTANCE 335.463 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.804 GAL 1.14 AZL 91.68 HCA 110.74 SMA 196.15 ECC .22875 INC 1.6834 V1 29.421
RP 207.31 LAP -1.57 LOP 351.02 VP 24.571 GAP 12.82 AZP 89.40 TAL 6.13 TAP 116.87 RCA 151.28 APO 241.01 V2 26.422
RC 80.098 GL -15.91 GP -1.65 ZAL 84.80 ZAP 153.08 ETS 183.41 ZAE 171.26 ETE 4.10 ZAC 97.51 ETC 278.94 LVI -18.00

PLANETOCENTRIC CONIC

C3 12.350 VHL 3.514 DLA -28.15 RAL 333.12 RAD 6639.2 VEL 11.508 PTH 6.56 VHP 5.438 DPA -16.77 RAP 327.66 ECC 1.2032

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 56	2441.61	-4.48	63.95	186.49	137.42	16 11 38	1441.6	13.85	48.08
60.00	16 49 46	2231.91	.67	50.01	191.44	130.30	17 26 58	1231.9	16.49	31.62
70.00	18 33 38	1926.47	6.36	29.53	195.72	123.63	19 5 44	926.5	19.45	8.87
80.00	20 48 29	1504.24	12.40	1.10	199.33	117.38	21 13 33	504.2	22.61	338.37
90.00	23 10 28	1046.28	17.29	329.78	201.69	112.73	23 27 55	46.3	25.17	305.52
100.00	23 31 21	6266.75	12.40	300.37	199.33	117.38	25 15 47	5266.7	22.61	277.64
110.00	23 33 4	6261.33	6.36	296.36	195.72	123.63	25 17 25	5261.3	19.45	275.70

DIFFERENTIAL CORRECTIONS

TDE -.1790 TRA -.5661 TC3 .6204 BAU .1042
RDE -.3292 RRA .1329 RC3 .1143 FAU .08684
FDE -.1702 FRA 1.1785 FC3-6.0879 BSP 1680
BDE .3747 BRA .5815 BC3 .6309 FSP 623

MID-COURSE EXECUTION ACCURACY

SGT 1170.9 SGR 595.7 SG3 415.6
RRT -.0940 RRF .1189 RTF -.7120
SGB 1313.7 R23 -.0278 R13 .7232
SG1 1172.7 SG2 592.2 THA 176.32

ORBIT DETERMINATION ACCURACY

ST 21.4 SR 27.1 SS 17.0
CRT .5746 CRS -.5033 CST .4071
LSA 31.3 MSA 22.4 SSA 1.7
EL1 30.9 EL2 15.4 ALF 56.16

LAUNCH DATE MAY 22 1971 FLIGHT TIME 136.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 339.386 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.750 GAL 1.17 AZL 91.67 HCA 112.00 SMA 195.13 ECC .22478 INC 1.6745 V1 29.421
RP 207.42 LAP -1.55 LOP 352.28 VP 24.485 GAP 12.49 AZP 89.37 TAL 6.37 TAP 118.37 RCA 151.27 APO 238.99 V2 26.409
RC 81.730 GL -16.04 GP -1.71 ZAL 84.48 ZAP 151.69 ETS 183.34 ZAE 171.99 ETE 3.01 ZAC 97.47 ETC 278.92 LVI -17.91

PLANETOCENTRIC CONIC

C3 11.987 VHL 3.462 DLA -28.39 RAL 332.83 RAD 6639.1 VEL 11.492 PTH 6.54 VHP 5.273 DPA -16.87 RAP 327.56 ECC 1.1973

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 5	2429.77	-3.88	63.45	185.98	137.46	16 11 35	1429.8	14.43	47.55
60.00	16 50 31	2218.49	1.26	49.37	190.93	130.28	17 27 29	1218.5	17.05	30.92
70.00	18 35 29	1909.78	6.98	28.65	195.23	123.52	19 7 19	909.8	19.99	7.88
80.00	20 53 31	1477.54	13.23	359.55	198.93	117.01	21 18 8	477.5	23.22	336.62
87.43	23 11 54	1031.50	19.51	329.64	201.85	111.04	23 29 5	31.5	26.47	304.75
100.00	23 36 23	6240.05	13.23	298.83	198.93	117.01	25 20 23	5240.1	23.22	275.89
110.00	23 34 55	6244.64	6.98	295.47	195.23	123.52	25 19 0	5244.6	19.99	274.71

DIFFERENTIAL CORRECTIONS

TDE -.1797 TRA -.5597 TC3 .6109 BAU .0995
RDE -.3225 RRA .1308 RC3 .1098 FAU .09125
FDE -.1905 FRA 1.2285 FC3-6.5906 BSP 1731
BDE .3692 BRA .5748 BC3 .6207 FSP 671

MID-COURSE EXECUTION ACCURACY

SGT 1173.0 SGR 592.6 SG3 442.8
RRT -.0980 RRF .1283 RTF -.7102
SGB 1314.2 R23 -.0354 R13 .7118
SG1 1175.0 SG2 588.8 THA 176.21

ORBIT DETERMINATION ACCURACY

ST 21.7 SR 26.9 SS 17.6
CRT .5792 CRS -.5255 CST .3780
LSA 31.4 MSA 22.8 SSA 1.8
EL1 31.0 EL2 15.4 ALF 55.31

LAUNCH DATE MAY 22 1971 FLIGHT TIME 138.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 343.334 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.700 GAL 1.19 AZL 91.67 HCA 113.26 SMA 194.19 ECC .22108 INC 1.6855 V1 29.421
RP 207.54 LAP -1.53 LOP 353.54 VP 24.403 GAP 12.16 AZP 89.34 TAL 6.60 TAP 119.85 RCA 151.26 APO 237.12 V2 26.395
RC 83.399 GL -16.16 GP -1.78 ZAL 84.18 ZAP 150.27 ETS 183.27 ZAE 172.78 ETE 1.70 ZAC 97.43 ETC 278.88 LVI -17.81

PLANETOCENTRIC CONIC

C3 11.652 VHL 3.414 DLA -28.61 RAL 332.56 RAD 6638.9 VEL 11.478 PTH 6.53 VHP 5.114 DPA -16.99 RAP 327.42 ECC 1.1918

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 12	2418.70	-3.33	62.99	185.50	137.49	16 11 31	1418.7	14.97	47.05
60.00	16 51 11	2205.93	1.81	48.77	190.44	130.27	17 27 57	1205.9	17.56	30.25
70.00	18 37 13	1894.07	7.57	27.82	194.77	123.40	19 8 47	894.1	20.49	6.94
80.00	20 58 37	1451.23	14.04	358.02	198.57	116.62	21 22 49	451.2	23.81	334.88
85.47	22 54 32	1078.20	19.80	333.18	201.23	111.08	23 12 30	78.2	26.75	308.23
100.00	23 41 29	6213.74	14.04	297.29	198.57	116.62	25 25 3	5213.7	23.81	274.16
110.00	23 36 40	6228.93	7.57	294.64	194.77	123.40	25 20 29	5228.9	20.49	273.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1785 TRA -.5510 TC3 .6013 BAU .0951 SGT 1169.6 SGR 589.3 SG3 471.3 ST 21.8 SR 26.8 SS 18.3
RDE -.3161 RRA .1289 RC3 .1043 FAU .09583 RRT -.1035 RRF .1387 RTF -.7004 CRT .5812 CRS -.5465 CST .3526
FDE -.2119 FRA 1.2807 FC3-7.1202 BSP 1752 SGB 1309.7 R23 -.0422 R13 .7023 LSA 31.5 MSA 23.1 SSA 1.8
BDE .3630 BRA .5658 BC3 .6103 FSP 722 SG1 1171.7 SG2 585.1 THA 176.02 EL1 30.9 EL2 15.4 ALF 54.85

LAUNCH DATE MAY 22 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 347.305 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.653 GAL 1.22 AZL 91.66 HCA 114.52 SMA 193.32 ECC .21764 INC 1.6562 V1 29.421
RP 207.66 LAP -1.51 LOP 354.80 VP 24.325 GAP 11.84 AZP 89.31 TAL 6.81 TAP 121.33 RCA 151.25 APO 235.40 V2 26.381
RC 85.104 GL -16.27 GP -1.85 ZAL 83.89 ZAP 148.82 ETS 183.20 ZAE 173.65 ETE .07 ZAC 97.39 ETC 278.84 LVI -17.69

PLANETOCENTRIC CONIC

C3 11.344 VHL 3.368 DLA -28.82 RAL 332.29 RAD 6638.7 VEL 11.464 PTH 6.51 VHP 4.962 DPA -17.12 RAP 327.26 ECC 1.1867

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 17	2408.40	-2.81	62.56	185.05	137.51	16 11 25	1408.4	15.48	46.58
60.00	16 51 47	2194.24	2.33	48.21	189.99	130.24	17 28 21	1194.2	18.04	29.63
70.00	18 38 51	1879.38	8.12	27.03	194.33	123.29	19 10 10	879.4	20.96	6.06
80.00	21 3 48	1425.36	14.83	356.50	198.24	116.22	21 27 33	425.4	24.36	333.16
84.22	22 43 16	1105.66	20.07	335.31	200.65	111.12	23 1 41	105.7	27.01	310.30
100.00	23 46 40	6187.87	14.83	295.77	198.24	116.22	25 29 48	5187.9	24.36	272.43
110.00	23 38 17	6214.24	8.12	293.86	194.33	123.29	25 21 51	5214.2	20.96	272.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1765 TRA -.5406 TC3 .5931 BAU .0912 SGT 1162.5 SGR 585.8 SG3 501.9 ST 21.8 SR 26.6 SS 19.0
RDE -.3099 RRA .1271 RC3 .0974 FAU .10088 RRT -.1094 RRF .1499 RTF -.6911 CRT .5827 CRS -.5690 CST .3252
FDE -.2361 FRA 1.3328 FC3-7.6987 BSP 1749 SGB 1301.8 R23 -.0494 R13 .6934 LSA 31.5 MSA 23.4 SSA 1.8
BDE .3567 BRA .5553 BC3 .6011 FSP 775 SG1 1164.8 SG2 581.1 THA 175.80 EL1 30.8 EL2 15.3 ALF 54.59

LAUNCH DATE MAY 22 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 351.297 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.609 GAL 1.24 AZL 91.65 HCA 115.77 SMA 192.52 ECC .21443 INC 1.6468 V1 29.421
RP 207.80 LAP -1.48 LOP 356.05 VP 24.249 GAP 11.53 AZP 89.28 TAL 7.01 TAP 122.78 RCA 151.24 APO 233.80 V2 26.365
RC 86.843 GL -16.36 GP -1.92 ZAL 83.63 ZAP 147.33 ETS 183.13 ZAE 174.58 ETE 357.69 ZAC 97.35 ETC 278.80 LVI -17.57

PLANETOCENTRIC CONIC

C3 11.059 VHL 3.326 DLA -29.00 RAL 332.05 RAD 6638.6 VEL 11.452 PTH 6.50 VHP 4.815 DPA -17.27 RAP 327.05 ECC 1.1820

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 20	2398.87	-2.33	62.16	184.62	137.53	16 11 19	1398.9	15.94	46.15
60.00	16 52 19	2183.43	2.80	47.69	189.56	130.22	17 28 43	1183.4	18.48	29.06
70.00	18 40 20	1865.75	8.63	26.31	193.92	123.17	19 11 25	865.8	21.39	5.23
80.00	21 9 1	1399.96	15.58	354.99	197.94	115.79	21 32 21	400.0	24.87	331.45
83.28	22 34 42	1124.86	20.33	336.83	200.10	111.14	22 53 27	124.9	27.24	311.76
100.00	23 51 53	6162.47	15.58	294.27	197.94	115.79	25 34 35	5162.5	24.87	270.72
110.00	23 39 46	6200.61	8.63	293.13	193.92	123.17	25 23 7	5200.6	21.39	272.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1742 TRA -.5292 TC3 .5807 BAU .0869 SGT 1151.4 SGR 582.2 SG3 534.3 ST 21.7 SR 26.4 SS 19.8
RDE -.3039 RRA .1256 RC3 .0893 FAU .10615 RRT -.1161 RRF .1624 RTF -.6916 CRT .5841 CRS -.5891 CST .3000
FDE -.2612 FRA 1.3699 FC3-8.3098 BSP 1737 SGB 1290.2 R23 -.0571 R13 .6844 LSA 31.6 MSA 23.6 SSA 1.9
BDE .3503 BRA .5439 BC3 .5873 FSP 832 SG1 1154.1 SG2 576.9 THA 175.52 EL1 30.6 EL2 15.2 ALF 54.45

LAUNCH DATE MAY 22 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 355.308 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.569 GAL 1.25 AZL 91.64 HCA 117.03 SMA 191.78 ECC .21145 INC 1.6373 V1 29.421
RP 207.94 LAP -1.46 LOP 357.31 VP 24.176 GAP 11.22 AZP 89.26 TAL 7.20 TAP 124.22 RCA 151.23 APO 232.33 V2 26.349
RC 88.616 GL -16.45 GP -2.00 ZAL 83.39 ZAP 145.81 ETS 183.07 ZAE 175.57 ETE 354.72 ZAC 97.32 ETC 278.74 LVI -17.43

PLANETOCENTRIC CONIC

C3 10.797 VHL 3.286 DLA -29.17 RAL 331.82 RAD 6638.5 VEL 11.441 PTH 6.49 VHP 4.675 DPA -17.43 RAP 326.82 ECC 1.1777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 22	2390.10	-1.89	61.79	184.23	137.55	16 11 12	1390.1	16.36	45.75
60.00	16 52 47	2173.50	3.24	47.22	189.16	130.19	17 29 0	1173.5	18.88	28.52
70.00	18 41 40	1853.22	9.10	25.64	193.53	123.06	19 12 33	853.2	21.78	4.47
80.00	21 14 16	1375.12	16.31	353.51	197.66	115.36	21 37 11	375.1	25.36	329.76
82.54	22 27 49	1139.20	20.56	337.98	199.59	111.16	22 46 49	139.2	27.46	312.86
100.00	0 1 4	6137.63	16.31	292.79	197.66	115.36	1 43 21	5137.6	25.36	289.04
110.00	23 41 7	6188.08	9.10	292.46	193.53	123.06	25 24 15	5188.1	21.78	271.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1721 TRA -.5168 TC3 .5601 BAU .0817 SGT 1136.0 SGR 578.4 SG3 567.8 ST 21.6 SR 26.3 SS 20.5
RDE -.2981 RRA .1242 RC3 .0802 FAU .11157 RRT -.1227 RRF .1755 RTF -.6698 CRT .5870 CRS -.6061 CST .2763
FDE -.2859 FRA 1.4489 FC3-8.9461 BSP 1709 SGB 1274.8 R23 -.0658 R13 .6732 LSA 31.7 MSA 23.8 SSA 1.9
BDE .3442 BRA .5315 BC3 .5658 FSP 891 SG1 1139.0 SG2 572.5 THA 175.21 EL1 30.5 EL2 15.0 ALF 54.33

LAUNCH DATE MAY 22 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 359.337 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.531 GAL 1.27 AZL 91.63 HCA 118.28 SMA 191.10 ECC .20868 INC 1.6275 V1 29.421
RP 208.08 LAP -1.43 LOP 358.56 VP 24.106 GAP 10.93 AZP 89.23 TAL 7.37 TAP 125.64 RCA 151.22 APO 230.98 V2 26.332
RC 90.421 GL -16.52 GP -2.08 ZAL 83.17 ZAP 144.25 ETS 183.00 ZAE 176.60 ETE 349.55 ZAC 97.29 ETC 278.68 LVI -17.28

PLANETOCENTRIC CONIC

C3 10.555 VHL 3.249 DLA -29.32 RAL 331.62 RAD 6638.3 VEL 11.430 PTH 6.48 VHP 4.541 DPA -17.60 RAP 326.54 ECC 1.1737

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 21	2382.11	-1.49	61.46	183.86	137.56	16 11 4	1382.1	16.75	45.39
60.00	16 53 10	2164.47	3.64	46.79	188.78	130.16	17 29 14	1164.5	19.24	28.04
70.00	18 42 51	1841.84	9.52	25.02	193.17	122.96	19 13 33	841.8	22.13	3.77
80.00	21 19 30	1350.95	17.01	352.06	197.42	114.91	21 42 1	350.9	25.81	328.11
81.94	22 22 15	1149.87	20.77	338.86	199.11	111.17	22 41 25	149.9	27.65	313.69
100.00	0 6 18	6113.46	17.01	291.33	197.42	114.91	1 48 11	5113.5	25.81	267.39
110.00	23 42 17	6176.70	9.52	291.85	193.17	122.96	25 25 14	5176.7	22.13	270.59

DIFFERENTIAL CORRECTIONS

TDE -.1709 TRA -.5044 TC3 .5318 BAU .0757
RDE -.2925 RRA .1230 RC3 .0698 FAU .11724
FDE -.3126 FRA 1.5105 FC3-9.6157 BSP 1671
BDE .3386 BRA .5192 BC3 .5364 FSP 956

MID-COURSE EXECUTION ACCURACY

SGT 1118.4 SGR 574.5 SG3 602.8
RRT -.1294 RRF .1900 RTF -.6550
SGB 1257.3 R23 -.0764 R13 .6591
SG1 1121.7 SG2 568.0 THA 174.88

ORBIT DETERMINATION ACCURACY

ST 21.5 SR 26.1 SS 21.3
CRT .5913 CRS -.6229 CST .2504
LSA 31.9 MSA 23.9 SSA 1.9
EL1 30.3 EL2 14.9 ALF 54.14

LAUNCH DATE MAY 22 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 363.382 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.496 GAL 1.28 AZL 91.62 HCA 119.53 SMA 190.47 ECC .20810 INC 1.6175 V1 29.421
RP 208.24 LAP -1.41 LOP 359.81 VP 24.039 GAP 10.64 AZP 89.20 TAL 7.52 TAP 127.05 RCA 151.22 APO 229.73 V2 26.313
RC 92.259 GL -16.58 GP -2.16 ZAL 82.98 ZAP 142.65 ETS 182.93 ZAE 177.65 ETE 339.44 ZAC 97.26 ETC 278.61 LVI -17.11

PLANETOCENTRIC CONIC

C3 10.332 VHL 3.214 DLA -29.44 RAL 331.44 RAD 6638.2 VEL 11.420 PTH 6.47 VHP 4.412 DPA -17.80 RAP 326.23 ECC 1.1700

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 20	2374.86	-1.13	61.16	183.52	137.57	16 10 55	1374.9	17.10	45.05
60.00	16 53 28	2156.33	3.99	46.39	188.44	130.14	17 29 25	1156.3	19.57	27.59
70.00	18 43 52	1831.62	9.90	24.47	192.83	122.86	19 14 24	831.6	22.44	3.14
80.00	21 24 40	1327.60	17.68	350.64	197.20	114.46	21 46 48	327.6	26.23	326.50
81.45	22 17 43	1157.73	20.96	339.52	198.67	111.16	22 37 1	157.7	27.82	314.31
100.00	0 11 28	6090.12	17.68	289.92	197.20	114.46	1 52 58	5090.1	26.23	265.78
110.00	23 43 18	6166.48	9.90	291.30	192.83	122.86	25 26 5	5166.5	22.44	269.96

DIFFERENTIAL CORRECTIONS

TDE -.1694 TRA -.4915 TC3 .4961 BAU .0690
RDE -.2870 RRA .1221 RC3 .0580 FAU .12315
FDE -.3389 FRA 1.5767 FC-10.3192 BSP 1612
BDE .3332 BRA .5065 BC3 .4995 FSP 1017

MID-COURSE EXECUTION ACCURACY

SGT 1097.8 SGR 570.6 SG3 639.5
RRT -.1358 RRF .2055 RTF -.6375
SGB 1237.2 R23 -.0887 R13 .6426
SG1 1101.5 SG2 563.4 THA 174.53

ORBIT DETERMINATION ACCURACY

ST 21.4 SR 25.9 SS 22.1
CRT .5971 CRS -.6368 CST .2258
LSA 32.1 MSA 24.0 SSA 1.9
EL1 30.1 EL2 14.7 ALF 53.93

LAUNCH DATE MAY 22 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 367.442 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.463 GAL 1.29 AZL 91.61 HCA 120.78 SMA 189.89 ECC .20371 INC 1.6073 V1 29.421
RP 208.41 LAP -1.38 LOP 1.06 VP 23.974 GAP 10.35 AZP 89.18 TAL 7.65 TAP 128.43 RCA 151.21 APO 228.58 V2 26.294
RC 94.128 GL -16.62 GP -2.24 ZAL 82.81 ZAP 141.01 ETS 182.87 ZAE 178.57 ETE 313.66 ZAC 97.23 ETC 278.54 LVI -16.93

PLANETOCENTRIC CONIC

C3 10.125 VHL 3.182 DLA -29.55 RAL 331.28 RAD 6638.1 VEL 11.411 PTH 6.46 VHP 4.290 DPA -18.01 RAP 325.88 ECC 1.1666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 17	2368.38	-.80	60.89	183.21	137.57	16 10 45	1368.4	17.41	44.75
60.00	16 53 42	2149.08	4.31	46.05	188.12	130.11	17 29 32	1149.1	19.86	27.20
70.00	18 44 42	1822.60	10.23	23.99	192.52	122.76	19 15 5	822.6	22.71	2.58
80.00	21 29 41	1305.37	18.30	349.28	197.01	114.01	21 51 26	305.4	26.61	324.96
81.07	22 14 4	1163.32	21.13	340.00	198.26	111.14	22 33 28	163.3	27.97	314.75
100.00	0 16 28	6067.88	18.30	288.56	197.01	114.01	1 57 36	5067.9	26.61	264.23
110.00	23 44 8	6157.46	10.23	290.81	192.52	122.76	25 26 46	5157.5	22.71	269.41

DIFFERENTIAL CORRECTIONS

TDE -.1690 TRA -.4782 TC3 .4493 BAU .0611
RDE -.2816 RRA .1213 RC3 .0450 FAU .12927
FDE -.3656 FRA 1.6462 FC-11.0526 BSP 1555
BDE .3284 BRA .4934 BC3 .4515 FSP 1085

MID-COURSE EXECUTION ACCURACY

SGT 1074.3 SGR 566.6 SG3 677.7
RRT -.1412 RRF .2222 RTF -.6.52
SGB 1214.5 R23 -.1040 R13 .6215
SG1 1078.4 SG2 558.8 THA 174.17

ORBIT DETERMINATION ACCURACY

ST 21.3 SR 25.6 SS 22.9
CRT .6053 CRS -.6491 CST .2000
LSA 32.4 MSA 24.1 SSA 2.0
EL1 30.0 EL2 14.5 ALF 53.63

LAUNCH DATE MAY 22 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 21 1971

HELIOCENTRIC CONIC DISTANCE 371.517 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.433 GAL 1.30 AZL 91.60 HCA 122.03 SMA 189.36 ECC .20150 INC 1.5968 V1 29.421
RP 208.58 LAP -1.35 LOP 2.31 VP 23.911 GAP 10.08 AZP 89.15 TAL 7.77 TAP 129.80 RCA 151.21 APO 227.52 V2 26.274
RC 96.027 GL -16.66 GP -2.33 ZAL 82.67 ZAP 139.34 ETS 182.80 ZAE 178.72 ETE 256.64 ZAC 97.20 ETC 278.45 LVI -16.74

PLANETOCENTRIC CONIC

C3 9.934 VHL 3.152 DLA -29.63 RAL 331.14 RAD 6638.0 VEL 11.403 PTH 6.46 VHP 4.173 DPA -18.23 RAP 325.49 ECC 1.1635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 12	2362.63	-.51	60.65	182.93	137.57	16 10 35	1362.6	17.69	44.49
60.00	16 53 52	2142.72	4.59	45.74	187.82	130.08	17 29 35	1142.7	20.11	26.85
70.00	18 45 21	1814.79	10.52	23.57	192.22	122.68	19 15 35	814.8	22.94	2.10
80.00	21 34 23	1284.71	18.87	348.01	196.83	113.58	21 55 48	284.7	26.94	323.51
80.77	22 11 13	1166.92	21.28	340.33	197.89	111.11	22 30 40	166.9	28.09	315.04
100.00	0 21 11	6047.22	18.87	287.29	196.83	113.58	2 1 58	5047.2	26.94	262.79
110.00	23 44 47	6149.65	10.52	290.39	192.22	122.68	25 27 17	5149.7	22.94	268.92

DIFFERENTIAL CORRECTIONS

TDE -.1685 TRA -.4643 TC3 .3970 BAU .0529
RDE -.2764 RRA .1207 RC3 .0305 FAU .13573
FDE -.3952 FRA 1.7180 FC-11.8279 BSP 1483
BDE .3238 BRA .4797 BC3 .3982 FSP 1154

MID-COURSE EXECUTION ACCURACY

SGT 1048.5 SGR 562.7 SG3 717.8
RRT -.1463 RRF .2405 RTF -.5895
SGB 1189.9 R23 -.1220 R13 .5975
SG1 1053.0 SG2 554.3 THA 173.78

ORBIT DETERMINATION ACCURACY

ST 21.1 SR 25.4 SS 23.7
CRT .6139 CRS -.6624 CST .1720
LSA 32.7 MSA 24.1 SSA 2.0
EL1 29.8 EL2 14.2 ALF 53.38

LAUNCH DATE MAY 22 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 375.604 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.405	GAL	1.31	AZL	91.59	HCA	123.27	SMA	188.87	ECC	.19946	INC	1.5860	V1	29.421
RP	208.76	LAP	-1.33	LOP	3.56	VP	23.850	GAP	9.81	AZP	89.13	TAL	7.87	TAP	131.15	RCA	151.20	APO	226.55	V2	26.254
RC	97.955	GL	-16.68	GP	-2.43	ZAL	82.56	ZAP	137.63	ETS	182.73	ZAE	177.81	ETE	221.39	ZAC	97.18	ETC	278.36	LVI	-16.53

PLANETOCENTRIC CONIC

C3	9.758	VHL	3.124	DLA	-29.69	RAL	331.03	RAD	6637.9	VEL	11.395	PTH	6.45	VHP	4.061	DPA	-18.47	RAP	325.06	ECC	1.1606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 7	2357.61	-.26	60.44	182.67	137.58	16 10 24	1357.6	17.93	44.25
60.00	16 53 56	2137.24	4.83	45.48	187.56	130.06	17 29 34	1137.2	20.33	26.55
70.00	18 45 48	1808.20	10.76	23.21	191.95	122.61	19 15 56	808.2	23.14	1.69
80.00	21 38 35	1266.26	19.36	346.87	196.66	113.18	21 59 41	266.3	27.22	322.22
80.55	22 9 5	1168.77	21.41	340.52	197.55	111.08	22 28 33	168.8	28.19	315.20
100.00	0 25 22	6028.77	19.37	286.14	196.66	113.18	2 5 51	5028.8	27.22	261.49
110.00	23 45 14	6143.06	10.76	290.03	191.95	122.61	25 27 37	5143.1	23.14	268.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1661	TRA	-.4465	TC3	.3471	BAU	.0453	SGT	1014.1	SGR	558.8	SG3	760.0	ST	20.8	SR	25.2	SS	24.5
RDE	-.2714	RRA	.1202	RC3	.0142	FAU	.14263	RRT	-.1511	RRF	.2596	RTF	-.5646	CRT	.6215	CRS	-.6751	CST	.1453
FDE	-.4253	FRA	1.7883	FC-12.6543		BSP	1358	SGB	1157.9	R23	-.1401	R13	.5747	LSA	33.0	MSA	23.9	SSA	2.0
BDE	.3182	BRA	.4624	BC3	.3474	FSP	1220	SG1	1019.1	SG2	549.7	THA	173.28	EL1	29.6	EL2	13.9	ALF	53.62

LAUNCH DATE MAY 22 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 379.703 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.379	GAL	1.31	AZL	91.58	HCA	124.52	SMA	188.43	ECC	.19757	INC	1.5750	V1	29.421
RP	208.94	LAP	-1.30	LOP	4.80	VP	23.791	GAP	9.55	AZP	89.11	TAL	7.95	TAP	132.47	RCA	151.20	APO	225.65	V2	26.232
RC	99.910	GL	-16.69	GP	-2.53	ZAL	82.47	ZAP	135.89	ETS	182.65	ZAE	176.53	ETE	208.44	ZAC	97.15	ETC	278.26	LVI	-16.31

PLANETOCENTRIC CONIC

C3	9.595	VHL	3.098	DLA	-29.73	RAL	330.94	RAD	6637.8	VEL	11.388	PTH	6.44	VHP	3.955	DPA	-18.73	RAP	324.60	ECC	1.1579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 31 0	2353.34	-.05	60.26	182.45	137.58	16 10 13	1353.3	18.13	44.05
60.00	16 53 57	2132.67	5.03	45.26	187.32	130.04	17 29 29	1132.7	20.51	26.30
70.00	18 46 2	1802.91	10.95	22.92	191.71	122.55	19 16 5	802.9	23.30	1.36
80.00	21 41 43	1251.77	19.75	345.97	196.49	112.86	22 2 35	251.8	27.44	321.19
80.41	22 7 40	1168.85	21.52	340.57	197.25	111.02	22 27 9	168.9	28.27	315.22
100.00	0 28 31	6014.28	19.75	285.24	196.49	112.86	2 8 45	5014.3	27.44	260.47
110.00	23 45 29	6137.77	10.95	289.75	191.71	122.55	25 27 47	5137.8	23.30	268.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1708	TRA	-.4350	TC3	.2581	BAU	.0331	SGT	991.9	SGR	554.9	SG3	802.0	ST	21.0	SR	24.9	SS	25.2
RDE	-.2662	RRA	.1201	RC3	-.0025	FAU	.14918	RRT	-.1485	RRF	.2796	RTF	-.5184	CRT	.6400	CRS	-.6768	CST	.1192
FDE	-.4453	FRA	1.8745	FC-13.4601		BSP	1312	SGB	1136.5	R23	-.1706	R13	.5307	LSA	33.4	MSA	24.1	SSA	2.0
BDE	.3163	BRA	.4512	BC3	.2581	FSP	1304	SG1	996.8	SG2	546.1	THA	173.20	EL1	29.6	EL2	13.6	ALF	52.44

LAUNCH DATE MAY 22 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 383.813 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.355	GAL	1.31	AZL	91.56	HCA	125.76	SMA	188.01	ECC	.19583	INC	1.5636	V1	29.421
RP	209.14	LAP	-1.27	LOP	6.04	VP	23.734	GAP	9.29	AZP	89.09	TAL	8.02	TAP	133.77	RCA	151.20	APO	224.83	V2	26.209
RC	101.892	GL	-16.69	GP	-2.63	ZAL	82.42	ZAP	134.11	ETS	182.58	ZAE	175.10	ETE	202.31	ZAC	97.13	ETC	278.15	LVI	-16.07

PLANETOCENTRIC CONIC

C3	9.444	VHL	3.073	DLA	-29.75	RAL	330.88	RAD	6637.8	VEL	11.382	PTH	6.43	VHP	3.855	DPA	-19.00	RAP	324.09	ECC	1.1554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 52	2349.77	.13	60.11	182.25	137.58	16 10 2	1349.8	18.31	43.89
60.00	16 53 52	2128.96	5.19	45.08	187.10	130.02	17 29 21	1129.0	20.65	26.10
70.00	18 46 5	1798.85	11.10	22.70	191.48	122.51	19 16 4	798.9	23.42	1.10
80.00	21 43 22	1242.62	19.99	345.39	196.29	112.65	22 4 5	242.6	27.57	320.54
80.34	22 6 54	1167.41	21.61	340.50	196.98	110.96	22 26 22	167.4	28.32	315.12
100.00	0 30 10	6003.13	19.99	284.67	196.29	112.65	2 10 15	5005.1	27.57	259.82
110.00	23 45 31	6133.71	11.10	289.53	191.48	122.51	25 27 45	5133.7	23.42	267.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1737	TRA	-.4200	TC3	.1674	BAU	.0213	SGT	963.8	SGR	551.1	SG3	844.9	ST	21.1	SR	24.7	SS	25.9
RDE	-.2612	RRA	.1201	RC3	-.0207	FAU	.15594	RRT	-.1435	RRF	.3004	RTF	-.-.85	CRT	.6572	CRS	-.6795	CST	.0928
FDE	-.4659	FRA	1.9579	FC-14.2944		BSP	1220	SGB	1110.2	R23	-.2036	R13	.4832	LSA	33.7	MSA	24.1	SSA	2.0
BDE	.3136	BRA	.4368	BC3	.1687	FSP	1384	SG1	968.5	SG2	542.7	THA	173.15	EL1	29.6	EL2	13.2	ALF	51.69

LAUNCH DATE MAY 22 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 387.932 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.333	GAL	1.31	AZL	91.55	HCA	126.99	SMA	187.64	ECC	.19422	INC	1.5520	V1	29.421
RP	209.34	LAP	-1.24	LOP	7.28	VP	23.678	GAP	9.04	AZP	89.07	TAL	8.06	TAP	135.06	RCA	151.20	APO	224.08	V2	26.186
RC	103.900	GL	-16.68	GP	-2.73	ZAL	82.39	ZAP	132.29	ETS	182.50	ZAE	173.59	ETE	198.77	ZAC	97.11	ETC	278.03	LVI	-15.82

PLANETOCENTRIC CONIC

C3	9.305	VHL	3.050	DLA	-29.75	RAL	330.84	RAD	6637.7	VEL	11.376	PTH	6.43	VHP	3.760	DPA	-19.28	RAP	323.55	ECC	1.1531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 43	2346.91	.28	59.99	182.08	137.58	16 9 50	1346.9	18.44	43.75
60.00	16 53 43	2126.11	5.32	44.94	186.92	130.01	17 29 9	1126.1	20.77	25.94
70.00	18 45 55	1796.04	11.21	22.55	191.27	122.48	19 15 51	796.0	23.50	.92
80.00	21 43 3	1240.31	20.05	345.25	196.05	112.60	22 3 43	240.3	27.60	320.38
80.35	22 6 49	1164.32	21.68	340.30	196.75	110.89	22 26 14	164.3	28.35	314.90
100.00	0 29 51	6002.82	20.05	284.52	196.05	112.60	2 9 53	5002.8	27.60	259.66
110.00	23 45 21	6130.90	11.21	289.37	191.27	122.48	25 27 32	5130.9	23.50	267.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1758	TRA	-.4032	TC3	.0683	BAU	.0099	SGT	933.7	SGR	547.6	SG3	889.2	ST	21.1	SR	24.4	SS	26.6
RDE	-.2563	RRA	.1202	RC3	-.0404	FAU	.16298	RRT	-.1347	RRF	.3228	RTF	-.4091	CRT	.6743	CRS	-.6854	CST	.0616
FDE	-.4907	FRA	2.0401	FC-15.1641		BSP	1109	SGB	1082.4	R23	-.2416	R13	.4266	LSA	34.1	MSA	24.0	SSA	2.0
BDE	.3108	BRA	.4207	BC3	.0794	FSP	1463	SG1	938.1	SG2	540.1	THA	173.23	EL1	29.6	EL2	12.8	ALF	51.13

LAUNCH DATE MAY 22 1971 FLIGHT TIME 162.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 392.061 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.313	GAL	1.30	AZL	91.54	HCA	128.23	SMA	187.30	ECC	.19275	INC	1.5399	V1	29.421
RP	209.55	LAP	-1.21	LOP	8.51	VP	23.624	GAP	8.79	AZP	89.05	TAL	8.09	TAP	136.32	RCA	151.20	APO	223.40	V2	26.162
RC	105.933	GL	-16.65	GP	-2.84	ZAL	82.39	ZAP	130.44	ETS	182.41	ZAE	172.01	ETE	196.45	ZAC	97.08	ETC	277.90	LVI	-15.55

PLANETOCENTRIC CONIC

C3	9.176	VHL	3.029	DLA	-29.73	RAL	330.83	RAD	6637.6	VEL	11.370	PTH	6.42	VHP	3.670	DPA	-19.58	RAP	322.97	ECC	1.1510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 33	2344.75	.39	59.90	181.94	137.57	16 9 38	1344.7	18.55	43.65
60.00	16 53 29	2124.12	5.41	44.85	186.75	130.00	17 28 53	1124.1	20.84	25.83
70.00	18 45 32	1794.45	11.26	22.46	191.09	122.46	19 15 27	794.4	23.54	.83
80.00	21 40 48	1244.67	19.94	345.52	195.78	112.70	22 1 33	244.7	27.54	320.69
80.43	22 7 23	1159.71	21.73	339.98	196.55	110.80	22 26 43	159.7	28.36	314.56
100.00	0 27 36	6007.18	19.94	284.80	195.78	112.70	2 7 43	5007.2	27.54	259.96
110.00	23 44 59	6129.32	11.26	289.29	191.09	122.46	25 27 8	5129.3	23.54	267.65

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1778	TRA	-.3853	TC3	-.0352	BAU	.0088	SGT	904.4	SGR	544.5	SG3	935.9	ST	21.0	SR	24.1	SS	27.3
RDE	-.2514	RRA	.1205	RC3	-.0621	FAU	.17045	RRT	-.1207	RRF	.3468	RTF	-.3424	CRT	.6920	CRS	-.6898	CST	.0311
FDE	-.5145	FRA	2.1277	FC-16.0813		BSP	976	SGB	1055.6	R23	-.2842	R13	.3621	LSA	34.5	MSA	23.9	SSA	2.0
BDE	.3080	BRA	.4037	BC3	.0714	FSP	1541	SG1	908.1	SG2	538.3	THA	173.58	EL1	29.5	EL2	12.4	ALF	50.63

LAUNCH DATE MAY 22 1971 FLIGHT TIME 164.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 396.199 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.295	GAL	1.30	AZL	91.53	HCA	129.46	SMA	186.99	ECC	.19140	INC	1.5274	V1	29.421
RP	209.76	LAP	-1.18	LOP	9.75	VP	23.571	GAP	8.55	AZP	89.03	TAL	8.10	TAP	137.56	RCA	151.20	APO	222.77	V2	26.137
RC	107.990	GL	-16.62	GP	-2.95	ZAL	82.41	ZAP	128.55	ETS	182.33	ZAE	170.36	ETE	194.80	ZAC	97.06	ETC	277.76	LVI	-15.27

PLANETOCENTRIC CONIC

C3	9.057	VHL	3.009	DLA	-29.68	RAL	330.85	RAD	6637.6	VEL	11.365	PTH	6.42	VHP	3.585	DPA	-19.90	RAP	322.35	ECC	1.1490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 21	2343.24	.46	59.84	181.82	137.57	16 9 25	1343.2	18.62	43.58
60.00	16 53 10	2122.94	5.46	44.79	186.61	129.99	17 28 33	1122.9	20.89	25.76
70.00	18 44 58	1794.03	11.28	22.44	190.92	122.45	19 14 52	794.0	23.56	.80
80.00	21 37 10	1253.96	19.69	346.10	195.49	112.91	21 58 4	254.0	27.41	321.35
80.58	22 8 37	1153.43	21.76	339.53	196.38	110.70	22 27 50	153.4	28.34	314.09
100.00	0 23 58	6016.47	19.69	285.38	195.49	112.91	2 4 14	5016.5	27.41	260.62
110.00	23 44 24	6128.92	11.28	289.27	190.92	122.45	25 26 33	5128.9	23.56	267.62

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1746	TRA	-.3609	TC3	-.1291	BAU	.0188	SGT	861.5	SGR	541.9	SG3	984.6	ST	20.4	SR	23.8	SS	28.1
RDE	-.2470	RRA	.1206	RC3	-.0861	FAU	.17852	RRT	-.1044	RRF	.3730	RTF	-.2715	CRT	.7059	CRS	-.7059	CST	-.0114
FDE	-.5547	FRA	2.2002	FC-17.0650		BSP	769	SGB	1017.7	R23	-.3277	R13	.2939	LSA	35.1	MSA	23.3	SSA	2.0
BDE	.3025	BRA	.3805	BC3	.1551	FSP	1600	SG1	864.5	SG2	537.1	THA	173.87	EL1	29.1	EL2	11.9	ALF	51.22

LAUNCH DATE MAY 22 1971 FLIGHT TIME 166.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 400.343 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.278	GAL	1.29	AZL	91.51	HCA	130.69	SMA	186.70	ECC	.19017	INC	1.5146	V1	29.421
RP	209.99	LAP	-1.15	LOP	10.98	VP	23.520	GAP	8.32	AZP	89.01	TAL	8.08	TAP	138.78	RCA	151.20	APO	222.21	V2	26.111
RC	110.071	GL	-16.57	GP	-3.07	ZAL	82.48	ZAP	126.64	ETS	182.23	ZAE	168.66	ETE	193.55	ZAC	97.03	ETC	277.62	LVI	-14.97

PLANETOCENTRIC CONIC

C3	8.946	VHL	2.991	DLA	-29.62	RAL	330.90	RAD	6637.5	VEL	11.360	PTH	6.41	VHP	3.505	DPA	-20.22	RAP	321.70	ECC	1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 30 10	2342.48	.50	59.81	181.74	137.57	16 9 12	1342.5	18.65	43.55
60.00	16 52 47	2122.68	5.47	44.78	186.50	129.99	17 28 9	1122.7	20.90	25.75
70.00	18 44 11	1794.99	11.24	22.49	190.77	122.46	19 14 5	795.0	23.53	.86
80.00	21 32 28	1267.29	19.34	346.93	195.20	113.20	21 53 35	267.3	27.21	322.29
80.82	22 10 38	1145.20	21.77	338.92	196.24	110.59	22 29 44	145.2	28.30	313.47
100.00	0 19 16	6029.80	19.34	286.21	195.20	113.20	1 59 46	5029.8	27.21	261.56
110.00	23 43 37	6129.86	11.24	289.32	190.77	122.46	25 25 47	5129.9	23.53	267.68

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1870	TRA	-.3508	TC3	-.2998	BAU	.0381	SGT	870.7	SGR	538.9	SG3	1028.2	ST	21.3	SR	23.5	SS	28.5
RDE	-.2416	RRA	.1219	RC3	-.1078	FAU	.18471	RRT	-.0644	RRF	.3971	RTF	-.3509	CRT	.7339	CRS	-.6857	CST	-.0237
FDE	-.5442	FRA	2.3232	FC-17.8744		BSP	737	SGB	1024.0	R23	-.3808	R13	.1761	LSA	35.2	MSA	24.1	SSA	2.0
BDE	.3055	BRA	.3714	BC3	.3184	FSP	1711	SG1	871.8	SG2	537.1	THA	176.32	EL1	29.6	EL2	11.5	ALF	48.73

LAUNCH DATE MAY 22 1971 FLIGHT TIME 168.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 404.495 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.263	GAL	1.28	AZL	91.50	HCA	131.92	SMA	186.45	ECC	.18905	INC	1.5012	V1	29.421
RP	210.22	LAP	-1.12	LOP	12.21	VP	23.470	GAP	8.09	AZP	89.00	TAL	8.05	TAP	139.97	RCA	151.20	APO	221.70	V2	26.085
RC	112.177	GL	-16.51	GP	-3.19	ZAL	82.56	ZAP	124.69	ETS	182.14	ZAE	166.91	ETE	192.57	ZAC	97.01	ETC	277.47	LVI	-14.65

PLANETOCENTRIC CONIC

C3	8.845	VHL	2.974	DLA	-29.53	RAL	330.97	RAD	6637.4	VEL	11.356	PTH	6.41	VHP	3.430	DPA	-20.56	RAP	321.02	ECC	1.1456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 56	2342.36	.51	59.80	181.68	137.57	16 8 59	1342.4	18.66	43.54
60.00	16 52 19	2123.21	5.45	44.80	186.41	129.99	17 27 42	1123.2	20.88	25.78
70.00	18 43 12	1797.05	11.17	22.60	190.65	122.49	19 13 9	797.0	23.47	.99
80.00	21 27 20	1282.49	18.93	347.88	194.92	113.53	21 48 42	282.5	26.97	323.36
81.14	22 13 23	1135.09	21.76	338.17	196.14	110.46	22 32 19	135.1	28.24	312.71
100.00	0 14 8	6045.00	18.93	287.15	194.92	113.53	1 54 53	5045.0	26.97	262.63
110.00	23 42 38	6131.91	11.17	289.43	190.65	122.49	25 24 50	5131.9	23.47	267.81

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1915	TRA	-.3318	TC3	-.4479	BAU	.0552	SGT	864.1	SGR	536.9	SG3	1075.2	ST	21.5	SR	23.2	SS	29.1
RDE	-.2367	RRA	.1228	RC3	-.1327	FAU	.19197	RRT	-.0226	RRF	.4239	RTF	-.0529	CRT	.7548	CRS	-.6838	CST	-.0527
FDE	-.5580	FRA	2.4239	FC-18.7907		BSP	612	SGB	1017.3	R23	-.4220	R13	.0589	LSA	35.5	MSA	24.1	SSA	2.0
BDE	.3045	BRA	.3538	BC3	.4671	FSP	1795	SG1	864.3	SG2	536.7	THA	178.69	EL1	29.6	EL2	11.0	ALF	47.84

LAUNCH DATE MAY 22 1971 FLIGHT TIME 170.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 408.653 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.250 GAL 1.26 AZL 91.49 HCA 133.15 SMA 186.22 ECC .18803 INC 1.4874 V1 29.421
RP 210.45 LAP -1.09 LOP 13.43 VP 23.421 GAP 7.87 AZP 88.98 TAL 8.00 TAP 141.15 RCA 151.21 APO 221.23 V2 26.058
RC 114.307 GL -16.43 GP -3.32 ZAL 82.68 ZAP 122.72 ETS 182.03 ZAE 165.11 ETE 191.76 ZAC 96.98 ETC 277.31 LVI -14.32

PLANETOCENTRIC CONIC

C3 8.750 VHL 2.958 DLA -29.42 RAL 331.06 RAD 6637.4 VEL 11.352 PTH 6.40 VHP 3.361 DPA -20.91 RAP 320.30 ECC 1.1440

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 42	2342.90	.48	59.82	181.64	137.57	16 8 45	1342.9	18.63	43.57
60.00	16 51 47	2124.55	5.39	44.87	186.35	130.00	17 27 11	1124.5	20.83	25.85
70.00	18 42 1	1800.26	11.05	22.78	190.54	122.52	19 12 1	800.3	23.37	1.19
80.00	21 21 55	1299.14	18.47	348.90	194.65	113.88	21 43 34	299.1	26.71	324.52
81.55	22 16 59	1122.77	21.73	337.24	196.06	110.33	22 35 42	122.8	28.16	311.78
100.00	0 8 42	6061.65	18.47	288.18	194.65	113.88	1 49 44	5061.6	26.71	263.80
110.00	23 41 28	6135.12	11.05	289.60	190.54	122.52	25 23 43	5135.1	23.37	268.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1965 TRA -.3112 TC3 -.6087 BAU .0736 SGT 867.9 SGR 535.2 SG3 1121.8 ST 21.7 SR 22.8 SS 29.6
RDE -.2319 RRA .1239 RC3 -.1588 FAU .19918 RRT .0304 RRF .4510 RTF .0653 CRT .7766 CRS -.6802 CST -.0823
FDE -.5674 FRA 2.5222 FC-19.7064 BSP 508 SGB 1019.6 R23 .4480 R13 .0737 LSA 35.8 MSA 24.1 SSA 2.0
BDE .3039 BRA .3349 BC3 .6291 FSP 1880 SG1 868.2 SG2 534.8 THA 1.73 EL1 29.7 EL2 10.5 ALF 46.91

LAUNCH DATE MAY 22 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 412.816 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.238 GAL 1.25 AZL 91.47 HCA 134.37 SMA 186.01 ECC .18710 INC 1.4730 V1 29.421
RP 210.70 LAP -1.05 LOP 14.65 VP 23.373 GAP 7.65 AZP 88.97 TAL 7.93 TAP 142.30 RCA 151.21 APO 220.82 V2 26.030
RC 116.460 GL -16.35 GP -3.45 ZAL 82.82 ZAP 120.72 ETS 181.93 ZAE 163.26 ETE 191.09 ZAC 96.95 ETC 277.14 LVI -13.98

PLANETOCENTRIC CONIC

C3 8.664 VHL 2.943 DLA -29.28 RAL 331.19 RAD 6637.3 VEL 11.348 PTH 6.40 VHP 3.296 DPA -21.27 RAP 319.55 ECC 1.1426

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 26	2344.09	.42	59.87	181.63	137.57	16 8 31	1344.1	18.58	43.62
60.00	16 51 10	2126.69	5.29	44.97	186.31	130.01	17 26 36	1126.7	20.74	25.97
70.00	18 40 40	1804.60	10.89	23.01	190.46	122.57	19 10 44	804.6	23.25	1.46
80.00	21 16 20	1316.81	17.98	349.98	194.41	114.25	21 38 16	316.8	26.41	325.75
82.07	22 21 34	1107.69	21.68	336.11	196.02	110.18	22 40 2	107.7	28.05	310.65
100.00	0 3 7	6079.32	17.98	289.26	194.41	114.25	1 44 27	5079.3	26.41	265.03
110.00	23 40 6	6139.46	10.89	289.84	190.46	122.57	25 22 26	5139.5	23.25	268.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2013 TRA -.2898 TC3 -.7807 BAU .0929 SGT 884.9 SGR 534.0 SG3 1167.8 ST 21.9 SR 22.5 SS 30.1
RDE -.2269 RRA .1252 RC3 -.1859 FAU .20620 RRT .0904 RRF .4789 RTF .1859 CRT .7976 CRS -.6750 CST -.1096
FDE -.5733 FRA 2.6248 FC-20.6056 BSP 450 SGB 1033.5 R23 .4540 R13 .2093 LSA 36.1 MSA 24.1 SSA 2.0
BDE .3033 BRA .3156 BC3 .8025 FSP 1963 SG1 886.9 SG2 530.6 THA 4.87 EL1 29.7 EL2 10.0 ALF 45.98

LAUNCH DATE MAY 22 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 416.985 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.227 GAL 1.23 AZL 91.46 HCA 135.59 SMA 185.83 ECC .18628 INC 1.4581 V1 29.421
RP 210.95 LAP -1.02 LOP 15.87 VP 23.326 GAP 7.43 AZP 88.96 TAL 7.85 TAP 143.44 RCA 151.22 APO 220.45 V2 26.001
RC 118.637 GL -16.25 GP -3.59 ZAL 82.99 ZAP 118.71 ETS 181.81 ZAE 161.37 ETE 190.51 ZAC 96.92 ETC 276.97 LVI -13.62

PLANETOCENTRIC CONIC

C3 8.583 VHL 2.930 DLA -29.13 RAL 331.33 RAD 6637.3 VEL 11.344 PTH 6.40 VHP 3.235 DPA -21.64 RAP 318.78 ECC 1.1413

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 29 10	2345.93	.33	59.95	181.65	137.58	16 8 15	1345.9	18.49	43.71
60.00	16 50 28	2129.62	5.17	45.11	186.29	130.02	17 25 58	1129.6	20.63	26.13
70.00	18 39 8	1810.01	10.69	23.31	190.39	122.63	19 9 18	810.0	23.09	1.80
80.00	21 10 40	1335.24	17.46	351.11	194.19	114.61	21 32 55	335.2	26.09	327.03
82.72	22 27 19	1089.32	21.61	334.72	196.00	110.02	22 45 29	89.3	27.92	309.27
100.00	23 53 32	6097.75	17.46	290.38	194.19	114.61	25 35 10	5097.7	26.09	266.30
110.00	23 38 34	6144.87	10.69	290.13	190.39	122.63	25 20 59	5144.9	23.09	268.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2061 TRA -.2665 TC3 -.9634 BAU .1133 SGT 915.0 SGR 533.3 SG3 1213.3 ST 22.1 SR 22.1 SS 30.5
RDE -.2219 RRA .1265 RC3 -.2143 FAU .21319 RRT .1574 RRF .5070 RTF .[illegible] CRT .8186 CRS -.6682 CST -.1366
FDE -.5740 FRA 2.7244 FC-21.5022 BSP 478 SGB 1059.1 R23 .4397 R13 .3405 LSA 36.3 MSA 24.1 SSA 2.0
BDE .3029 BRA .2950 BC3 .9869 FSP 2042 SG1 920.7 SG2 523.4 THA 7.77 EL1 29.8 EL2 9.4 ALF 45.07

LAUNCH DATE MAY 22 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 421.159 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.217 GAL 1.21 AZL 91.44 HCA 136.81 SMA 185.67 ECC .18553 INC 1.4426 V1 29.421
RP 211.20 LAP -.99 LOP 17.09 VP 23.280 GAP 7.22 AZP 88.95 TAL 7.74 TAP 144.55 RCA 151.22 APO 220.12 V2 25.972
RC 120.836 GL -16.14 GP -3.72 ZAL 83.19 ZAP 116.67 ETS 181.69 ZAE 159.44 ETE 190.00 ZAC 96.88 ETC 276.79 LVI -13.25

PLANETOCENTRIC CONIC

C3 8.510 VHL 2.917 DLA -28.95 RAL 331.50 RAD 6637.3 VEL 11.341 PTH 6.39 VHP 3.179 DPA -22.01 RAP 317.98 ECC 1.1400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 28 51	2348.39	.20	60.05	181.68	137.58	16 8 0	1348.4	18.37	43.82
60.00	16 49 42	2133.33	5.00	45.29	186.29	130.04	17 25 15	1133.3	20.48	26.34
70.00	18 37 26	1816.46	10.46	23.66	190.34	122.70	19 7 42	816.5	22.89	2.20
80.00	21 4 59	1354.24	16.92	352.26	194.00	114.97	21 27 34	354.2	25.75	328.34
83.54	22 34 34	1066.55	21.52	333.01	196.01	109.84	22 52 21	66.6	27.77	307.57
100.00	23 47 51	6116.75	16.92	291.53	194.00	114.97	25 29 48	5116.8	25.75	267.61
110.00	23 36 52	6151.32	10.46	290.48	190.34	122.70	25 19 24	5151.3	22.89	269.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2085 TRA -.2404 TC3-1.1479 BAU .1335 SGT 952.6 SGR 533.7 SG3 1259.6 ST 22.0 SR 21.8 SS 30.9
RDE -.2172 RRA .1279 RC3 -.2448 FAU .22050 RRT .2272 RRF .5365 RTF .4196 CRT .8384 CRS -.6693 CST -.1739
FDE -.5863 FRA 2.8147 FC-22.4323 BSP 611 SGB 1091.9 R23 .4109 R13 .4609 LSA 36.7 MSA 23.8 SSA 2.0
BDE .3011 BRA .2723 BC3 1.1737 FSP 2104 SG1 963.4 SG2 513.9 THA 10.18 EL1 29.7 EL2 8.8 ALF 44.57

LAUNCH DATE MAY 22 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 425.335 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.209 GAL 1.19 AZL 91.43 HCA 138.02 SMA 185.53 ECC .18488 INC 1.4263 V1 29.421
RP 211.46 LAP -.95 LOP 18.30 VP 23.235 GAP 7.02 AZP 88.94 TAL 7.62 TAP 145.64 RCA 151.23 APO 219.83 V2 25.942
RC 123.058 GL -16.01 GP -3.87 ZAL 83.42 ZAP 114.62 ETS 181.57 ZAE 157.49 ETE 189.56 ZAC 96.83 ETC 276.61 LVI -12.87

PLANETOCENTRIC CONIC

C3 8.442 VHL 2.906 DLA -28.75 RAL 331.70 RAD 6637.2 VEL 11.338 PTH 6.39 VHP 3.128 DPA -22.39 RAP 317.17 ECC 1.1389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 28 32	2351.54	.05	60.18	181.75	137.58	16 7 43	1351.5	18.22	43.97
60.00	16 48 51	2137.85	4.80	45.51	186.31	130.06	17 24 29	1137.8	20.30	26.59
70.00	18 35 34	1824.01	10.18	24.06	190.31	122.78	19 5 58	824.0	22.67	2.67
80.00	20 59 16	1373.93	16.35	353.44	193.83	115.34	21 22 10	373.9	25.38	329.68
84.61	22 44 3	1036.99	21.41	330.80	196.04	109.65	23 1 20	37.0	27.59	305.36
100.00	23 42 8	6136.44	16.35	292.71	193.83	115.34	25 24 24	5136.4	25.38	268.96
110.00	23 35 0	6158.87	10.18	290.89	190.31	122.78	25 17 39	5158.9	22.67	269.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2182 TRA -.2201 TC3-1.3769 BAU .1584 SGT 1034.6 SGR 533.7 SG3 1299.5 ST 22.8 SR 21.3 SS 31.1
RDE -.2115 RRA .1302 RC3 -.2727 FAU .22592 RRT .2923 RRF .5636 RTF .5118 CRT .8572 CRS -.6426 CST -.1744
FDE -.5514 FRA 2.9422 FC-23.1683 BSP 751 SGB 1164.1 R23 .3828 R13 .5503 LSA 36.6 MSA 24.4 SSA 2.0
BDE .3039 BRA .2557 BC3 1.4037 FSP 2206 SG1 1049.9 SG2 502.9 THA 11.17 EL1 30.1 EL2 8.3 ALF 42.76

LAUNCH DATE MAY 22 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC DISTANCE 429.516 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.201 GAL 1.16 AZL 91.41 HCA 139.23 SMA 185.41 ECC .18430 INC 1.4093 V1 29.421
RP 211.73 LAP -.92 LOP 19.51 VP 23.191 GAP 6.82 AZP 88.93 TAL 7.48 TAP 146.71 RCA 151.24 APO 219.58 V2 25.911
RC 125.302 GL -15.88 GP -4.02 ZAL 83.68 ZAP 112.56 ETS 181.44 ZAE 155.50 ETE 189.16 ZAC 96.79 ETC 276.42 LVI -12.48

PLANETOCENTRIC CONIC

C3 8.380 VHL 2.895 DLA -28.52 RAL 331.92 RAD 6637.2 VEL 11.335 PTH 6.39 VHP 3.082 DPA -22.78 RAP 316.34 ECC 1.1379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 28 10	2355.30	-.14	60.34	181.83	137.58	16 7 26	1355.3	18.04	44.15
60.00	16 47 56	2143.11	4.57	45.76	186.36	130.08	17 23 39	1143.1	20.09	26.87
70.00	18 33 33	1832.50	9.87	24.52	190.30	122.86	19 4 6	832.5	22.41	3.20
80.00	20 53 35	1393.99	15.76	354.64	193.68	115.69	21 16 49	394.0	24.99	331.05
86.12	22 57 20	6283.52	21.28	305.61	196.10	109.45	24 42 4	5283.5	27.39	280.19
100.00	23 36 27	6156.50	15.76	293.91	193.68	115.69	25 19 3	5156.5	24.99	270.32
110.00	23 32 59	6167.36	9.87	291.35	190.30	122.86	25 15 47	5167.4	22.41	270.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2231 TRA -.1944 TC3-1.5967 BAU .1821 SGT 1114.2 SGR 535.2 SG3 1340.7 ST 23.1 SR 20.9 SS 31.4
RDE -.2064 RRA .1322 RC3 -.3033 FAU .23190 RRT .3560 RRF .5926 RTF .5950 CRT .8745 CRS -.6328 CST -.1970
FDE -.5424 FRA 3.0508 FC-23.9577 BSP 956 SGB 1236.1 R23 .3513 R13 .6298 LSA 36.8 MSA 24.5 SSA 2.0
BDE .3039 BRA .2351 BC3 1.6252 FSP 2282 SG1 1134.2 SG2 491.3 THA 11.98 EL1 30.2 EL2 7.8 ALF 41.78

LAUNCH DATE MAY 22 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC DISTANCE 433.700 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.195 GAL 1.14 AZL 91.39 HCA 140.44 SMA 185.31 ECC .18380 INC 1.3915 V1 29.421
RP 212.01 LAP -.89 LOP 20.72 VP 23.147 GAP 6.62 AZP 88.93 TAL 7.32 TAP 147.77 RCA 151.25 APO 219.36 V2 25.880
RC 127.566 GL -15.72 GP -4.17 ZAL 83.96 ZAP 110.50 ETS 181.30 ZAE 153.49 ETE 188.79 ZAC 96.73 ETC 276.23 LVI -12.07

PLANETOCENTRIC CONIC

C3 8.323 VHL 2.885 DLA -28.28 RAL 332.16 RAD 6637.2 VEL 11.333 PTH 6.39 VHP 3.039 DPA -23.17 RAP 315.49 ECC 1.1370

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 27 47	2359.69	-.36	60.52	181.93	137.57	16 7 7	1359.7	17.83	44.35
60.00	16 46 56	2149.14	4.31	46.05	186.42	130.11	17 22 45	1149.1	19.85	27.20
70.00	18 31 23	1841.96	9.52	25.03	190.30	122.96	19 2 5	842.0	22.12	3.78
80.00	20 47 54	1414.49	15.15	355.86	193.57	116.04	21 11 29	414.5	24.58	332.43
90.00	23 26 28	6190.93	20.82	298.65	196.07	109.58	25 9 39	5190.9	27.03	273.35
100.00	23 30 46	6177.00	15.15	295.13	193.57	116.04	25 13 43	5177.0	24.58	271.70
110.00	23 30 50	6176.81	9.52	291.85	190.30	122.96	25 13 47	5176.8	22.12	270.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2279 TRA -.1675 TC3-1.8276 BAU .2067 SGT 1208.1 SGR 537.3 SG3 1379.7 ST 23.4 SR 20.5 SS 31.7
RDE -.2011 RRA .1344 RC3 -.3348 FAU .23756 RRT .4158 RRF .6209 RTF .6044 CRT .8907 CRS -.6198 CST -.2155
FDE -.5249 FRA 3.1560 FC-24.7097 BSP 1184 SGB 1322.2 R23 .3211 R13 .6942 LSA 36.9 MSA 24.6 SSA 2.0
BDE .3039 BRA .2148 BC3 1.8580 FSP 2351 SG1 1232.4 SG2 479.0 THA 12.38 EL1 30.2 EL2 7.2 ALF 40.76

LAUNCH DATE MAY 22 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC DISTANCE 437.886 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.190 GAL 1.11 AZL 91.37 HCA 141.64 SMA 185.22 ECC .18336 INC 1.3729 V1 29.421
RP 212.29 LAP -.85 LOP 21.93 VP 23.104 GAP 6.43 AZP 88.92 TAL 7.15 TAP 148.80 RCA 151.26 APO 219.18 V2 25.848
RC 129.850 GL -15.55 GP -4.33 ZAL 84.27 ZAP 108.43 ETS 181.16 ZAE 151.47 ETE 188.46 ZAC 96.67 ETC 276.03 LVI -11.66

PLANETOCENTRIC CONIC

C3 8.271 VHL 2.876 DLA -28.00 RAL 332.42 RAD 6637.1 VEL 11.331 PTH 6.38 VHP 3.001 DPA -23.56 RAP 314.63 ECC 1.1361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 27 22	2364.72	-.62	60.73	182.06	137.57	16 6 47	1364.7	17.59	44.58
60.00	16 45 52	2155.92	4.01	46.38	186.50	130.13	17 21 47	1155.9	19.58	27.57
70.00	18 29 5	1852.34	9.13	25.59	190.33	123.05	18 59 58	852.3	21.80	4.41
80.00	20 42 15	1435.40	14.52	357.09	193.47	116.38	21 6 11	435.4	24.14	333.83
90.00	22 57 12	1000.22	18.48	326.92	195.31	111.80	23 13 52	.2	25.85	302.32
100.00	23 25 7	6197.92	14.52	296.36	193.47	116.38	25 8 25	5197.9	24.14	273.10
110.00	23 28 32	6187.20	9.13	292.41	190.33	123.05	25 11 39	5187.2	21.80	271.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2322 TRA -.1396 TC3-2.0684 BAU .2323 SGT 1314.8 SGR 539.9 SG3 1415.5 ST 23.7 SR 20.0 SS 31.9
RDE -.1956 RRA .1367 RC3 -.3665 FAU .24261 RRT .4704 RRF .6483 RTF .7205 CRT .9055 CRS -.6026 CST -.2284
FDE -.4978 FRA 3.2593 FC-25.3931 BSP 1427 SGB 1421.3 R23 .2945 R13 .7452 LSA 36.9 MSA 24.7 SSA 2.0
BDE .3036 BRA .1954 BC3 2.1006 FSP 2426 SG1 1342.6 SG2 466.6 THA 12.46 EL1 30.3 EL2 6.6 ALF 39.74

LAUNCH DATE MAY 22 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC DISTANCE 442.074 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.186 GAL 1.08 AZL 91.35 HCA 142.85 SMA 185.15 ECC .18300 INC 1.3533 V1 29.421
RP 212.57 LAP -.82 LOP 23.13 VP 23.062 GAP 6.24 AZP 88.92 TAL 6.96 TAP 149.81 RCA 151.27 APO 219.03 V2 25.815
RC 132.153 GL -15.37 GP -4.49 ZAL 84.60 ZAP 106.36 ETS 181.00 ZAE 149.42 ETE 188.16 ZAC 96.60 ETC 275.83 LVI -11.23

PLANETOCENTRIC CONIC

C3 8.224 VHL 2.868 DLA -27.71 RAL 332.70 RAD 6637.1 VEL 11.329 PTH 6.38 VHP 2.967 DPA -23.96 RAP 313.77 ECC 1.1354

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 26 54	2370.38	-.90	60.97	182.20	137.57	16 6 25	1370.4	17.32	44.85
60.00	16 44 42	2163.46	3.68	48.74	186.61	130.16	17 20 45	1163.5	19.28	27.98
70.00	18 26 39	1863.63	8.71	26.19	190.37	123.16	18 57 43	863.6	21.45	5.10
80.00	20 36 37	1456.73	13.87	358.34	193.40	116.71	21 0 54	456.7	23.69	335.25
90.00	22 43 4	1048.98	17.22	329.95	195.00	112.79	23 0 33	49.0	25.13	305.71
100.00	23 19 29	6219.24	13.87	297.62	193.40	116.71	25 3 9	5219.2	23.69	274.52
110.00	23 26 6	6198.49	8.71	293.02	190.37	123.16	25 9 24	5198.5	21.45	271.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2359 TRA -.1102 TC3-2.3150 BAU .2563 SGT 1430.7 SGR 543.6 SG3 1451.0 ST 23.9 SR 19.6 SS 32.0
RDE -.1900 RRA .1393 RC3 -.3999 FAU .24766 RRT .5211 RRF .6758 RTF .7660 CRT .9190 CRS -.5844 CST -.2400
FDE -.4666 FRA 3.3629 FC-26.0696 BSP 1689 SGB 1530.5 R23 .2710 R13 .7864 LSA 36.9 MSA 24.8 SSA 1.9
BDE .3029 BRA .1776 BC3 2.3493 FSP 2483 SG1 1461.6 SG2 454.2 THA 12.42 EL1 30.3 EL2 6.1 ALF 38.75

LAUNCH DATE MAY 22 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 446.265 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.182 GAL 1.04 AZL 91.33 HCA 144.04 SMA 185.09 ECC .18269 INC 1.3326 V1 29.421
RP 212.86 LAP -.78 LOP 24.32 VP 23.020 GAP 6.05 AZP 88.92 TAL 6.76 TAP 150.81 RCA 151.28 APO 218.91 V2 25.782
RC 134.475 GL -15.17 GP -4.66 ZAL 84.96 ZAP 104.30 ETS 180.85 ZAE 147.37 ETE 187.88 ZAC 96.53 ETC 275.64 LVI -10.80

PLANETOCENTRIC CONIC

C3 8.182 VHL 2.860 DLA -27.39 RAL 332.99 RAD 6637.1 VEL 11.327 PTH 6.38 VHP 2.936 DPA -24.35 RAP 312.91 ECC 1.1347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 26 24	2376.68	-1.22	61.23	182.36	137.56	16 6 0	1376.7	17.01	45.14
60.00	16 43 27	2171.72	3.32	47.13	186.72	130.19	17 19 38	1171.7	18.95	28.43
70.00	18 24 5	1875.79	8.26	26.84	190.43	123.26	18 55 21	875.8	21.07	5.84
80.00	20 31 1	1478.44	13.21	359.61	193.35	117.02	20 55 39	478.4	23.20	336.68
90.00	22 31 49	1088.87	16.15	332.39	194.78	113.53	22 49 58	88.9	24.47	308.44
100.00	23 13 53	6240.95	13.21	298.88	193.35	117.02	24 57 54	5240.9	23.20	275.95
110.00	23 23 31	6210.65	8.26	293.67	190.43	123.26	25 7 2	5210.6	21.07	272.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2366 TRA -.0774 TC3-2.5592 BAU .2840 SGT 1548.7 SGR 548.4 SG3 1485.3 ST 23.9 SR 19.1 SS 32.1
RDE -.1847 RRA .1413 RC3 -.4362 FAU .25311 RRT .5711 RRF .7027 RTF .8078 CRT .9325 CRS -.5760 CST -.2670
FDE -.4479 FRA 3.4328 FC-26.7820 BSP 1985 SGB 1642.9 R23 .2441 R13 .8242 LSA 36.9 MSA 24.5 SSA 1.9
BDE .3001 BRA .1611 BC3 2.5961 FSP 2517 SG1 1582.8 SG2 440.5 THA 12.41 EL1 30.1 EL2 5.5 ALF 38.15

LAUNCH DATE MAY 22 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 450.456 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.180 GAL 1.01 AZL 91.31 HCA 145.24 SMA 185.05 ECC .18245 INC 1.3107 V1 29.421
RP 213.16 LAP -.75 LOP 25.52 VP 22.979 GAP 5.87 AZP 88.92 TAL 6.54 TAP 151.78 RCA 151.29 APO 218.81 V2 25.749
RC 136.814 GL -14.95 GP -4.84 ZAL 85.34 ZAP 102.25 ETS 180.68 ZAE 145.31 ETE 187.62 ZAC 96.44 ETC 275.44 LVI -10.36

PLANETOCENTRIC CONIC

C3 8.144 VHL 2.854 DLA -27.04 RAL 333.31 RAD 6637.1 VEL 11.325 PTH 6.38 VHP 2.910 DPA -24.75 RAP 312.05 ECC 1.1340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 25 51	2383.66	-1.57	61.52	182.55	137.56	16 5 34	1383.7	16.67	45.46
60.00	16 42 7	2180.80	2.92	47.57	186.86	130.21	17 18 27	1180.8	18.58	28.92
70.00	18 21 23	1888.89	7.77	27.54	190.50	123.36	18 52 52	888.9	20.66	6.63
80.00	20 25 24	1500.70	12.51	.90	193.32	117.33	20 50 24	500.7	22.69	338.14
90.00	22 21 57	1124.84	15.16	334.56	194.64	114.16	22 40 42	124.8	23.83	310.89
100.00	23 8 16	6263.21	12.51	300.17	193.32	117.33	24 52 39	5263.2	22.69	277.41
110.00	23 20 49	6223.75	7.77	294.36	190.50	123.36	25 4 33	5223.7	20.66	273.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2419 TRA -.0487 TC3-2.6388 BAU .3132 SGT 1695.0 SGR 552.8 SG3 1510.1 ST 24.5 SR 18.5 SS 32.3
RDE -.1779 RRA .1451 RC3 -.4666 FAU .25547 RRT .6073 RRF .7272 RTF .8001 CRT .9414 CRS -.5536 CST -.2440
FDE -.3728 FRA 3.5676 FC-27.1571 BSP 2232 SGB 1782.9 R23 .2367 R13 .8438 LSA 36.6 MSA 25.3 SSA 1.9
BDE .3003 BRA .1531 BC3 2.6769 FSP 2601 SG1 1730.2 SG2 430.2 THA 11.95 EL1 30.3 EL2 5.1 ALF 36.68

LAUNCH DATE MAY 22 1971 FLIGHT TIME 192.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 454.649 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.178 GAL .97 AZL 91.29 HCA 146.43 SMA 185.02 ECC .18227 INC 1.2876 V1 29.421
RP 213.46 LAP -.71 LOP 26.71 VP 22.938 GAP 5.69 AZP 88.93 TAL 6.31 TAP 152.74 RCA 151.30 APO 218.75 V2 25.714
RC 139.171 GL -14.71 GP -5.02 ZAL 85.75 ZAP 100.21 ETS 180.51 ZAE 143.26 ETE 187.37 ZAC 96.34 ETC 275.24 LVI -9.92

PLANETOCENTRIC CONIC

C3 8.110 VHL 2.848 DLA -26.66 RAL 333.64 RAD 6637.1 VEL 11.324 PTH 6.38 VHP 2.887 DPA -25.15 RAP 311.20 ECC 1.1335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 25 14	2391.28	-1.95	61.84	182.74	137.55	16 5 5	1391.3	16.31	45.81
60.00	16 40 41	2190.62	2.49	48.04	187.01	130.24	17 17 11	1190.6	18.18	29.44
70.00	18 18 33	1902.82	7.25	28.28	190.59	123.47	18 50 16	902.8	20.21	7.47
80.00	20 19 47	1523.35	11.80	2.20	193.32	117.63	20 45 10	523.4	22.16	339.61
90.00	22 12 57	1158.43	14.21	336.57	194.53	114.71	22 32 15	158.4	23.19	313.14
100.00	23 2 39	6285.86	11.80	301.48	193.32	117.63	24 47 25	5285.9	22.16	278.88
110.00	23 18 0	6237.68	7.25	295.10	190.59	123.47	25 1 57	5237.7	20.21	274.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2429 TRA -.0157 TC3-3.1075 BAU .3413 SGT 1836.5 SGR 559.0 SG3 1535.7 ST 24.6 SR 18.0 SS 32.4
RDE -.1720 RRA .1481 RC3 -.5016 FAU .25887 RRT .6457 RRF .7518 RTF .8544 CRT .9511 CRS -.5131 CST -.2527
FDE -.3298 FRA 3.6563 FC-27.6342 BSP 2522 SGB 1919.7 R23 .2223 R13 .8656 LSA 36.5 MSA 25.4 SSA 1.9
BDE .2976 BRA .1489 BC3 3.1477 FSP 2648 SG1 1873.5 SG2 418.4 THA 11.71 EL1 30.1 EL2 4.5 ALF 35.81

LAUNCH DATE MAY 22 1971 FLIGHT TIME 194.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 458.842 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.177 GAL .93 AZL 91.26 HCA 147.62 SMA 185.01 ECC .18214 INC 1.2629 V1 29.421
RP 213.77 LAP -.68 LOP 27.90 VP 22.898 GAP 5.51 AZP 88.93 TAL 6.06 TAP 153.68 RCA 151.31 APO 218.70 V2 25.680
RC 141.545 GL -14.45 GP -5.21 ZAL 86.18 ZAP 98.19 ETS 180.33 ZAE 141.20 ETE 187.14 ZAC 96.23 ETC 275.05 LVI -9.47

PLANETOCENTRIC CONIC

C3 8.080 VHL 2.843 DLA -26.26 RAL 333.99 RAD 6637.0 VEL 11.322 PTH 6.38 VHP 2.868 DPA -25.54 RAP 310.36 ECC 1.1330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 34	2399.58	-2.37	62.19	182.96	137.53	16 4 33	1399.6	15.90	46.18
60.00	16 39 8	2201.21	2.02	48.54	187.18	130.26	17 15 50	1201.2	17.75	30.00
70.00	18 15 35	1917.62	6.69	29.06	190.69	123.57	18 47 33	917.6	19.74	8.35
80.00	20 14 9	1546.50	11.07	3.53	193.33	117.91	20 39 56	546.5	21.60	341.10
90.00	22 4 30	1190.66	13.29	338.49	194.46	115.19	22 24 20	190.7	22.54	315.28
100.00	22 57 1	1020.97	11.07	324.90	193.33	117.91	23 14 2	21.0	21.60	302.47
110.00	23 15 2	6252.48	6.69	295.89	190.69	123.57	24 59 14	5252.5	19.74	275.17

DIFFERENTIAL CORRECTIONS

TDE -.2429 TRA .0180 TC3-3.3827 BAU .3700
RDE -.1654 RRA .1516 RC3 -.5360 FAU .26130
FDE -.2665 FRA 3.7535 FC-27.9971 BSP 2815
BDE .2939 BRA .1527 BC3 3.4249 FSP 2686

MID-COURSE EXECUTION ACCURACY

SGT 1984.8 SGR 565.9 SG3 1557.1
RRT .6795 RRF .7751 RTF .8726
SGB 2063.9 R23 .2126 R13 .8820
SG1 2023.3 SG2 407.3 THA 11.43

ORBIT DETERMINATION ACCURACY

ST 24.7 SR 17.4 SS 32.6
CRT .9592 CRS -.4818 CST -.2477
LSA 36.3 MSA 25.6 SSA 1.9
EL1 29.9 EL2 4.1 ALF 34.90

LAUNCH DATE MAY 22 1971 FLIGHT TIME 196.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 463.036 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.177 GAL .89 AZL 91.24 HCA 148.80 SMA 185.00 ECC .18207 INC 1.2367 V1 29.421
RP 214.08 LAP -.64 LOP 29.08 VP 22.858 GAP 5.34 AZP 88.94 TAL 5.80 TAP 154.60 RCA 151.32 APO 218.68 V2 25.645
RC 143.936 GL -14.17 GP -5.41 ZAL 86.64 ZAP 96.19 ETS 180.14 ZAE 139.16 ETE 186.93 ZAC 96.11 ETC 274.85 LVI -9.01

PLANETOCENTRIC CONIC

C3 8.054 VHL 2.838 DLA -25.83 RAL 334.35 RAD 6637.0 VEL 11.321 PTH 6.37 VHP 2.852 DPA -25.94 RAP 309.53 ECC 1.1325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 23 49	2408.58	-2.82	62.57	183.18	137.51	16 3 57	1408.6	15.47	46.59
60.00	16 37 30	2212.60	1.52	49.09	187.36	130.28	17 14 22	1212.6	17.29	30.61
70.00	18 12 29	1933.30	6.10	29.89	190.81	123.67	18 44 43	933.3	19.22	9.28
80.00	20 8 30	1570.18	10.31	4.88	193.36	118.18	20 34 40	570.2	21.01	342.61
90.00	21 56 26	1222.10	12.37	340.34	194.42	115.63	22 16 48	222.1	21.88	317.35
100.00	22 51 22	1044.65	10.31	326.24	193.36	118.18	23 8 47	44.7	21.01	303.98
110.00	23 11 56	6268.16	6.10	296.72	190.81	123.67	24 56 24	5268.2	19.22	276.10

DIFFERENTIAL CORRECTIONS

TDE -.2420 TRA .0528 TC3-3.6630 BAU .3992
RDE -.1589 RRA .1549 RC3 -.5719 FAU .26343
FDE -.2075 FRA 3.8273 FC-28.3167 BSP 3113
BDE .2895 BRA .1636 BC3 3.7074 FSP 2723

MID-COURSE EXECUTION ACCURACY

SGT 2139.0 SGR 573.6 SG3 1574.7
RRT .7113 RRF .7971 RTF .8884
SGB 2214.6 R23 .2030 R13 .8963
SG1 2178.9 SG2 395.8 THA 11.17

ORBIT DETERMINATION ACCURACY

ST 24.7 SR 16.9 SS 32.7
CRT .9665 CRS -.4550 CST -.2489
LSA 36.1 MSA 25.7 SSA 1.9
EL1 29.7 EL2 3.6 ALF 34.02

LAUNCH DATE MAY 22 1971 FLIGHT TIME 198.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 467.229 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.177 GAL .85 AZL 91.21 HCA 149.99 SMA 185.01 ECC .18204 INC 1.2088 V1 29.421
RP 214.39 LAP -.60 LOP 30.26 VP 22.819 GAP 5.17 AZP 88.95 TAL 5.52 TAP 155.51 RCA 151.33 APO 218.69 V2 25.609
RC 146.344 GL -13.86 GP -5.62 ZAL 87.11 ZAP 94.21 ETS 179.94 ZAE 137.13 ETE 186.73 ZAC 95.97 ETC 274.67 LVI -8.55

PLANETOCENTRIC CONIC

C3 8.031 VHL 2.834 DLA -25.37 RAL 334.72 RAD 6637.0 VEL 11.320 PTH 6.37 VHP 2.839 DPA -26.34 RAP 308.73 ECC 1.1322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 59	2418.29	-3.31	62.97	183.42	137.49	16 3 17	1418.3	14.99	47.03
60.00	16 35 44	2224.80	.98	49.67	187.55	130.29	17 12 49	1224.8	16.79	31.25
70.00	18 9 15	1949.87	5.47	30.77	190.94	123.77	18 41 44	949.9	18.68	10.25
80.00	20 2 48	1594.43	9.53	6.25	193.41	118.43	20 29 23	594.4	20.39	344.14
90.00	21 48 38	1253.12	11.45	342.15	194.41	116.04	22 9 31	253.1	21.20	319.37
100.00	22 45 40	1068.90	9.53	327.62	193.41	118.43	23 3 29	68.9	20.39	305.51
110.00	23 8 41	6284.72	5.47	297.59	190.94	123.77	24 53 26	5284.7	18.68	277.08

DIFFERENTIAL CORRECTIONS

TDE -.2390 TRA .0889 TC3-3.9453 BAU .4286
RDE -.1518 RRA .1588 RC3 -.6081 FAU .26488
FDE -.1271 FRA 3.9136 FC-28.5524 BSP 3415
BDE .2831 BRA .1820 BC3 3.9919 FSP 2746

MID-COURSE EXECUTION ACCURACY

SGT 2296.4 SGR 582.4 SG3 1590.0
RRT .7400 RRF .8181 RTF .9005
SGB 2369.1 R23 .1969 R13 .9072
SG1 2337.7 SG2 384.9 THA 10.93

ORBIT DETERMINATION ACCURACY

ST 24.6 SR 16.3 SS 32.9
CRT .9724 CRS -.4172 CST -.2577
LSA 35.8 MSA 25.9 SSA 1.8
EL1 29.3 EL2 3.2 ALF 33.18

LAUNCH DATE MAY 22 1971 FLIGHT TIME 200.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 471.422 EARTH TO MARS

RL 151.44 LAL -.00 LOL 240.27 VL 32.178 GAL .81 AZL 91.18 HCA 151.16 SMA 185.03 ECC .18206 INC 1.1791 V1 29.421
RP 214.72 LAP -.57 LOP 31.44 VP 22.780 GAP 5.00 AZP 88.97 TAL 5.23 TAP 156.40 RCA 151.34 APO 218.71 V2 25.573
RC 148.770 GL -13.53 GP -5.84 ZAL 87.61 ZAP 92.27 ETS 179.73 ZAE 135.11 ETE 186.54 ZAC 95.82 ETC 274.48 LVI -8.08

PLANETOCENTRIC CONIC

C3 8.012 VHL 2.831 DLA -24.87 RAL 335.10 RAD 6637.0 VEL 11.319 PTH 6.37 VHP 2.829 DPA -26.74 RAP 307.95 ECC 1.1319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 4	2428.75	-3.83	63.41	183.67	137.46	16 2 32	1428.7	14.48	47.50
60.00	16 33 50	2237.85	.41	50.29	187.75	130.30	17 11 8	1237.9	16.25	31.93
70.00	18 5 51	1967.34	4.81	31.69	191.08	123.85	18 38 38	967.3	18.10	11.27
80.00	19 57 3	1619.30	8.72	7.65	193.47	118.67	20 24 2	619.3	19.74	345.70
90.00	21 41 1	1283.99	10.52	343.94	194.42	116.40	22 2 25	284.0	20.50	321.36
100.00	22 39 55	1093.77	8.72	329.02	193.47	118.67	22 58 8	93.8	19.74	307.07
110.00	23 5 17	1014.16	4.81	320.60	191.08	123.85	23 22 11	14.2	18.10	300.19

DIFFERENTIAL CORRECTIONS

TDE -.2347 TRA .1264 TC3-4.2284 BAU .4582
RDE -.1449 RRA .1630 RC3 -.6449 FAU .26565
FDE -.0630 FRA 3.9943 FC-28.7036 BSP 3726
BDE .2758 BRA .2063 BC3 4.2773 FSP 2769

MID-COURSE EXECUTION ACCURACY

SGT 2456.7 SGR 593.0 SG3 1601.3
RRT .7660 RRF .8381 RTF .9109
SGB 2527.3 R23 .1925 R13 .9167
SG1 2499.3 SG2 374.7 THA 10.72

ORBIT DETERMINATION ACCURACY

ST 24.4 SR 15.7 SS 33.3
CRT .9777 CRS -.3926 CST -.2425
LSA 35.8 MSA 25.8 SSA 1.8
EL1 28.9 EL2 2.8 ALF 32.46

LAUNCH DATE MAY 22 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 475.615 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.180	GAL	.76	AZL	91.15	HCA	152.34	SMA	185.06	ECC	.18213	INC	1.1469	V1	29.421
RP	215.04	LAP	-.53	LOP	32.61	VP	22.741	GAP	4.83	AZP	88.98	TAL	4.93	TAP	157.27	RCA	151.35	APO	218.76	V2	25.536
RC	151.211	GL	-13.17	GP	-6.08	ZAL	88.13	ZAP	90.35	ETS	179.51	ZAE	133.12	ETE	186.36	ZAC	95.65	ETC	274.30	LVI	-7.61

PLANETOCENTRIC CONIC

C3	7.997	VHL	2.828	DLA	-24.34	RAL	335.48	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.823	DPA	-27.14	RAP	307.20	ECC	1.1316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 21 2	2439.99	-4.40	63.88	183.93	137.42	16 1 42	1440.0	13.93	48.00
60.00	16 31 48	2251.78	-.20	50.96	187.96	130.30	17 9 20	1251.8	15.67	32.65
70.00	18 2 17	1985.76	4.11	32.65	191.23	123.94	18 35 23	985.8	17.48	12.34
80.00	19 51 12	1644.86	7.88	9.09	193.54	118.89	20 18 37	644.9	19.06	347.29
90.00	21 33 30	1314.94	9.58	345.73	194.45	116.74	21 55 25	314.9	19.77	323.34
100.00	22 34 4	1119.34	7.88	330.46	193.54	118.89	22 52 43	119.3	19.06	308.66
110.00	23 1 43	1032.58	4.11	321.57	191.23	123.94	23 18 56	32.6	17.48	301.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2282	TRA	.1643	TC3	-4.5147	BAU	.4882	SGT	2620.5	SGR	604.3	SG3	1609.3	ST	24.1	SR	15.0	SS	33.6
RDE	-.1373	RRA	.1673	RC3	-.6834	FAU	.26610	RRT	.7903	RRF	.8566	RTF	.9195	CRT	.9818	CRS	-.3564	CST	-.2353
FDE	.0242	FRA	4.0582	FC-28.8083		BSP	4034	SGB	2689.3	R23	.1886	R13	.9246	LSA	35.6	MSA	25.7	SSA	1.8
BDE	.2663	BRA	.2345	BC3	4.5661	FSP	2781	SG1	2664.5	SG2	364.1	THA	10.53	EL1	28.3	EL2	2.4	ALF	31.72

LAUNCH DATE MAY 22 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 479.807 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.182	GAL	.71	AZL	91.11	HCA	153.51	SMA	185.09	ECC	.18224	INC	1.1125	V1	29.421
RP	215.37	LAP	-.50	LOP	33.78	VP	22.703	GAP	4.67	AZP	89.00	TAL	4.62	TAP	158.13	RCA	151.36	APO	218.83	V2	25.499
RC	153.669	GL	-12.77	GP	-6.32	ZAL	88.67	ZAP	88.47	ETS	179.28	ZAE	131.14	ETE	186.20	ZAC	95.47	ETC	274.13	LVI	-7.14

PLANETOCENTRIC CONIC

C3	7.985	VHL	2.826	DLA	-23.78	RAL	335.87	RAD	6637.0	VEL	11.318	PTH	6.37	VHP	2.819	DPA	-27.55	RAP	306.48	ECC	1.1314

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 19 53	2452.06	-5.00	64.39	184.20	137.38	16 0 45	1452.1	13.34	48.54
60.00	16 29 36	2266.63	-.86	51.67	188.18	130.29	17 7 22	1266.6	15.05	33.42
70.00	17 58 32	2005.17	3.37	33.67	191.39	124.01	18 31 57	1005.2	16.81	13.46
80.00	19 45 15	1671.19	7.01	10.56	193.63	119.10	20 13 6	671.2	18.34	348.92
90.00	21 26 1	1346.17	8.62	347.52	194.50	117.04	21 48 27	346.2	19.01	325.31
100.00	22 28 7	1145.66	7.01	331.93	193.63	119.10	22 47 12	145.7	18.34	310.29
110.00	22 57 58	1051.99	3.37	322.59	191.39	124.01	23 15 30	52.0	16.81	302.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2198	TRA	.2040	TC3	-4.8002	BAU	.5182	SGT	2786.1	SGR	617.8	SG3	1615.1	ST	23.6	SR	14.3	SS	34.1
RDE	-.1296	RRA	.1722	RC3	-.7231	FAU	.26600	RRT	.8123	RRF	.8741	RTF	.9265	CRT	.9850	CRS	-.3279	CST	-.2383
FDE	.1071	FRA	4.1295	FC-28.8410		BSP	4345	SGB	2853.7	R23	.1870	R13	.9311	LSA	35.8	MSA	25.4	SSA	1.8
BDE	.2552	BRA	.2669	BC3	4.8544	FSP	2788	SG1	2831.6	SG2	354.5	THA	10.38	EL1	27.6	EL2	2.1	ALF	31.07

LAUNCH DATE MAY 22 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 14 1971

HELIOCENTRIC CONIC DISTANCE 483.998 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.185	GAL	.66	AZL	91.07	HCA	154.67	SMA	185.14	ECC	.18239	INC	1.0748	V1	29.421
RP	215.71	LAP	-.46	LOP	34.95	VP	22.665	GAP	4.51	AZP	89.03	TAL	4.30	TAP	158.97	RCA	151.37	APO	218.91	V2	25.461
RC	156.143	GL	-12.35	GP	-6.59	ZAL	89.23	ZAP	86.63	ETS	179.04	ZAE	129.19	ETE	186.04	ZAC	95.26	ETC	273.97	LVI	-6.66

PLANETOCENTRIC CONIC

C3	7.976	VHL	2.824	DLA	-23.17	RAL	336.27	RAD	6637.0	VEL	11.318	PTH	6.37	VHP	2.818	DPA	-27.97	RAP	305.79	ECC	1.1313

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 35	2465.01	-5.65	64.94	184.48	137.32	15 59 40	1465.0	12.71	49.11
60.00	16 27 13	2282.47	-1.56	52.43	188.41	130.28	17 5 16	1282.5	14.39	34.24
70.00	17 54 35	2025.64	2.59	34.74	191.56	124.07	18 28 21	1025.6	16.11	14.62
80.00	19 39 9	1698.38	6.11	12.07	193.73	119.28	20 7 27	698.4	17.58	350.58
90.00	21 18 31	1377.85	7.63	349.32	194.56	117.31	21 41 29	377.9	18.21	327.29
100.00	22 22 1	1172.85	6.11	333.44	193.73	119.28	22 41 34	172.8	17.58	311.95
110.00	22 54 1	1072.45	2.59	323.66	191.56	124.07	23 11 54	72.5	16.11	303.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2096	TRA	.2439	TC3	-5.0883	BAU	.5484	SGT	2953.7	SGR	632.6	SG3	1616.1	ST	23.2	SR	13.7	SS	34.6
RDE	-.1217	RRA	.1774	RC3	-.7634	FAU	.26512	RRT	.8320	RRF	.8902	RTF	.9323	CRT	.9870	CRS	-.3033	CST	-.2463
FDE	.1920	FRA	4.1907	FC-28.7776		BSP	4657	SGB	3020.6	R23	.1871	R13	.9364	LSA	36.1	MSA	24.9	SSA	1.8
BDE	.2424	BRA	.3016	BC3	5.1433	FSP	2793	SG1	3000.8	SG2	345.5	THA	10.24	EL1	26.8	EL2	1.9	ALF	30.43

LAUNCH DATE MAY 22 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 488.187 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.189	GAL	.61	AZL	91.03	HCA	155.84	SMA	185.20	ECC	.18259	INC	1.0341	V1	29.421
RP	216.04	LAP	-.42	LOP	36.11	VP	22.627	GAP	4.35	AZP	89.06	TAL	3.96	TAP	159.80	RCA	151.38	APO	219.01	V2	25.424
RC	158.631	GL	-11.88	GP	-6.87	ZAL	89.81	ZAP	84.82	ETS	178.78	ZAE	127.27	ETE	185.89	ZAC	95.02	ETC	273.81	LVI	-6.17

PLANETOCENTRIC CONIC

C3	7.970	VHL	2.823	DLA	-22.52	RAL	336.66	RAD	6637.0	VEL	11.317	PTH	6.37	VHP	2.820	DPA	-28.39	RAP	305.14	ECC	1.1312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 8	2478.91	-6.34	65.52	184.76	137.25	15 58 27	1478.9	12.02	49.72
60.00	16 24 38	2299.37	-2.30	53.23	188.64	130.25	17 2 58	1299.4	13.68	35.10
70.00	17 50 24	2047.23	1.77	35.87	191.73	124.11	18 24 32	1047.2	15.36	15.85
80.00	19 32 53	1726.52	5.17	13.63	193.84	119.45	20 1 39	726.5	16.77	352.28
90.00	21 10 57	1410.18	6.62	351.16	194.63	117.56	21 34 28	410.2	17.38	329.29
100.00	22 15 45	1200.99	5.17	335.00	193.84	119.45	22 35 46	201.0	16.77	313.65
110.00	22 49 51	1094.05	1.77	324.79	191.73	124.11	23 8 5	94.0	15.36	304.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1963	TRA	.2843	TC3	-5.3719	BAU	.5788	SGT	3122.3	SGR	649.2	SG3	1615.0	ST	22.5	SR	13.0	SS	35.3
RDE	-.1130	RRA	.1829	RC3	-.8067	FAU	.26411	RRT	.8505	RRF	.9050	RTF	.9374	CRT	.9877	CRS	-.2763	CST	-.2549
FDE	.2916	FRA	4.2370	FC-28.6887		BSP	4970	SGB	3189.1	R23	.1870	R13	.9412	LSA	36.5	MSA	24.2	SSA	1.7
BDE	.2265	BRA	.3381	BC3	5.4322	FSP	2793	SG1	3171.3	SG2	336.2	THA	10.14	EL1	25.9	EL2	1.8	ALF	29.83

LAUNCH DATE MAY 22 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 492.374 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.192	GAL	.56	AZL	90.99	HCA	157.00	SMA	185.26	ECC	.18282	INC	.9899
RP	216.39	LAP	-.39	LOP	37.27	VP	22.589	GAP	4.19	AZP	89.09	TAL	3.62	TAP	160.62	RCA	151.39	APO	219.13
RC	161.134	GL	-11.36	GP	-7.18	ZAL	90.41	ZAP	83.06	ETS	178.51	ZAE	125.37	ETE	185.75	ZAC	94.76	ETC	273.66

V1	29.421	V2	25.385	LVI	-5.67														

PLANETOCENTRIC CONIC

C3	7.967	VHL	2.823	DLA	-21.82	RAL	337.05	RAD	6637.0	VEL	11.317	PTH	6.37	VHP	2.824	DPA	-28.82	RAP	304.54

ECC	1.1311																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 29	2493.84	-7.09	66.16	185.05	137.17	15 57 3	1493.8	11.29	50.38
60.00	16 21 50	2317.42	-3.09	54.10	188.88	130.20	17 0 27	1317.4	12.92	36.01
70.00	17 45 58	2070.05	.90	37.06	191.90	124.14	18 20 28	1070.1	14.56	17.13
80.00	19 26 24	1755.76	4.19	15.25	193.95	119.59	19 55 40	755.8	15.92	354.03
90.00	21 3 15	1443.34	5.57	353.03	194.71	117.77	21 27 19	443.3	16.49	331.33
100.00	22 9 16	1230.23	4.19	336.62	193.95	119.59	22 29 46	230.2	15.92	315.40
110.00	22 45 25	1116.87	.90	325.98	191.90	124.14	23 4 2	116.9	14.56	306.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1800	TRA	.3264	TC3	-5.6504	BAU	.6086	SGT	3289.0	SGR	667.8	SG3	1609.4	ST	21.7	SR	12.3	SS	36.1
RDE	-.1040	RRA	.1892	RC3	-.8503	FAU	.26209	RRT	.8665	RRF	.9185	RTF	.9415	CRT	.9867	CRS	-.2589	CST	-.2782
FDE	.3918	FRA	4.2876	FC	-28.4791	BSP	5284	SGB	3356.1	R23	.1893	R13	.9449	LSA	37.2	MSA	23.2	SSA	1.7
BDE	.2078	BRA	.3772	BC3	5.7140	FSP	2781	SG1	3340.0	SG2	328.2	THA	10.08	EL1	24.9	EL2	1.7	ALF	29.29

LAUNCH DATE MAY 22 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 496.560 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.197	GAL	.51	AZL	90.94	HCA	158.15	SMA	185.33	ECC	.18308	INC	.9412
RP	216.73	LAP	-.35	LOP	38.43	VP	22.552	GAP	4.04	AZP	89.13	TAL	3.27	TAP	161.42	RCA	151.40	APO	219.26
RC	163.649	GL	-10.80	GP	-7.51	ZAL	91.02	ZAP	81.34	ETS	178.22	ZAE	123.50	ETE	185.63	ZAC	94.47	ETC	273.52

V1	29.421	V2	25.347	LVI	-5.15														

PLANETOCENTRIC CONIC

C3	7.968	VHL	2.823	DLA	-21.07	RAL	337.44	RAD	6637.0	VEL	11.317	PTH	6.37	VHP	2.830	DPA	-29.27	RAP	303.97

ECC	1.1311																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 13 38	2509.91	-7.89	66.84	185.33	137.07	15 55 28	1509.9	10.49	51.07
60.00	16 18 45	2336.73	-3.94	55.02	189.11	130.14	16 57 42	1336.7	12.09	36.98
70.00	17 41 14	2094.23	-.03	38.32	192.08	124.15	18 16 9	1094.2	13.70	18.48
80.00	19 19 39	1786.25	3.16	16.93	194.07	119.71	19 49 25	786.2	15.02	355.84
90.00	20 55 21	1477.53	4.48	354.95	194.79	117.95	21 19 59	477.5	15.56	333.40
100.00	22 2 31	1260.72	3.16	338.30	194.07	119.71	22 23 32	260.7	15.02	317.21
110.00	22 40 41	1141.05	-.03	327.24	192.08	124.15	22 59 42	141.1	13.70	307.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1621	TRA	.3689	TC3	-5.9300	BAU	.6389	SGT	3458.3	SGR	690.0	SG3	1603.0	ST	21.0	SR	11.6	SS	37.0
RDE	-.0950	RRA	.1960	RC3	-.8983	FAU	.26013	RRT	.8814	RRF	.9310	RTF	.9453	CRT	.9836	CRS	-.2577	CST	-.3209
FDE	.4798	FRA	4.3288	FC	-28.2646	BSP	5615	SGB	3526.4	R23	.1917	R13	.9486	LSA	38.1	MSA	22.1	SSA	1.7
BDE	.1879	BRA	.4177	BC3	5.9977	FSP	2787	SG1	3511.8	SG2	320.9	THA	10.06	EL1	23.9	EL2	1.8	ALF	28.69

LAUNCH DATE MAY 22 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 500.744 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.201	GAL	.45	AZL	90.89	HCA	159.31	SMA	185.41	ECC	.18339	INC	.8875
RP	217.08	LAP	-.31	LOP	39.58	VP	22.515	GAP	3.88	AZP	89.17	TAL	2.90	TAP	162.21	RCA	151.41	APO	219.41
RC	166.178	GL	-10.18	GP	-7.88	ZAL	91.66	ZAP	79.66	ETS	177.91	ZAE	121.66	ETE	185.51	ZAC	94.15	ETC	273.38

V1	29.421	V2	25.308	LVI	-4.62														

PLANETOCENTRIC CONIC

C3	7.971	VHL	2.823	DLA	-20.25	RAL	337.82	RAD	6637.0	VEL	11.318	PTH	6.37	VHP	2.839	DPA	-29.75	RAP	303.45

ECC	1.1312																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 31	2527.23	-8.76	67.58	185.61	136.96	15 53 39	1527.2	9.63	51.82
60.00	16 15 22	2357.44	-4.85	56.02	189.35	130.06	16 54 40	1357.4	11.21	38.02
70.00	17 36 10	2119.92	-1.01	39.66	192.25	124.14	18 11 30	1119.9	12.78	19.90
80.00	19 12 35	1818.17	2.08	18.68	194.18	119.79	19 42 53	818.2	14.05	357.72
90.00	20 47 12	1512.99	3.35	356.94	194.88	118.10	21 12 25	513.0	14.57	335.54
100.00	21 55 27	1292.64	2.08	340.05	194.18	119.79	22 16 59	292.6	14.05	319.09
110.00	22 35 36	1166.74	-1.01	328.58	192.25	124.14	22 55 3	166.7	12.78	308.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1399	TRA	.4112	TC3	-6.2073	BAU	.6692	SGT	3627.3	SGR	714.5	SG3	1593.0	ST	20.2	SR	10.9	SS	38.0
RDE	-.0850	RRA	.2033	RC3	-.9494	FAU	.25770	RRT	.8948	RRF	.9421	RTF	.9485	CRT	.9772	CRS	-.2607	CST	-.3733
FDE	.5846	FRA	4.3561	FC	-27.9881	BSP	5916	SGB	3697.0	R23	.1947	R13	.9516	LSA	39.2	MSA	20.8	SSA	1.7
BDE	.1637	BRA	.4587	BC3	6.2795	FSP	2758	SG1	3683.6	SG2	314.1	THA	10.07	EL1	22.8	EL2	2.0	ALF	28.04

LAUNCH DATE MAY 22 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 504.925 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.207	GAL	.39	AZL	90.83	HCA	160.45	SMA	185.50	ECC	.18373	INC	.8279
RP	217.43	LAP	-.28	LOP	40.73	VP	22.478	GAP	3.73	AZP	89.22	TAL	2.53	TAP	162.98	RCA	151.42	APO	219.58
RC	168.717	GL	-9.49	GP	-8.28	ZAL	92.31	ZAP	78.03	ETS	177.57	ZAE	119.86	ETE	185.40	ZAC	93.78	ETC	273.26

V1	29.421	V2	25.269	LVI	-4.07														

PLANETOCENTRIC CONIC

C3	7.978	VHL	2.825	DLA	-19.37	RAL	338.18	RAD	6637.0	VEL	11.318	PTH	6.37	VHP	2.850	DPA	-30.24	RAP	302.98

ECC	1.1313																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 9 7	2545.99	-9.69	68.39	185.90	136.81	15 51 33	1546.0	8.70	52.63
60.00	16 11 38	2379.73	-5.82	57.09	189.58	129.95	16 51 18	1379.7	10.25	39.12
70.00	17 30 42	2147.33	-2.06	41.09	192.43	124.10	18 6 29	1147.3	11.79	21.40
80.00	19 5 8	1851.78	.95	20.53	194.30	119.84	19 35 59	851.8	13.02	359.68
90.00	20 38 41	1550.00	2.16	359.01	194.97	118.20	21 4 31	550.0	13.52	337.74
100.00	21 47 59	1326.25	.95	341.90	194.30	119.84	22 10 6	326.3	13.02	321.05
110.00	22 30 8	1194.15	-2.06	330.01	192.43	124.10	22 50 2	194.2	11.79	310.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1128	TRA	.4528	TC3	-6.4770	BAU	.6990	SGT	3793.1	SGR	740.8	SG3	1577.4	ST	19.3	SR	10.1	SS	39.3
RDE	-.0737	RRA	.2111	RC3	-1.0021	FAU	.25433	RRT	.9065	RRF	.9518	RTF	.9511	CRT	.9660	CRS	-.2736	CST	-.4417
FDE	.7068	FRA	4.3667	FC	-27.5997	BSP	6230	SGB	3864.8	R23	.1989	R13	.9540	LSA	40.7	MSA	19.2	SSA	1.7
BDE	.1347	BRA	.4996	BC3	6.5540	FSP	2738	SG1	3852.5	SG2	308.0	THA	10.11	EL1	21.7	EL2	2.3	ALF	27.20

LAUNCH DATE MAY 22 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 509.104 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.212	GAL	.33	AZL	90.76	HCA	161.60	SMA	185.89	ECC	.18410	INC	.7619	V1	29.421
RP	217.79	LAP	-.24	LOP	41.87	VP	22.442	GAP	3.58	AZP	89.28	TAL	2.15	TAP	163.75	RCA	151.42	APO	219.75	V2	25.229
RC	171.268	GL	-8.72	GP	-8.72	ZAL	92.97	ZAP	76.45	ETS	177.20	ZAE	118.09	ETE	185.29	ZAC	93.37	ETC	273.14	LVI	-3.49

PLANETOCENTRIC CONIC

C3	7.988	VHL	2.826	DLA	-18.41	RAL	338.52	RAD	6637.0	VEL	11.318	PTH	6.37	VHP	2.864	DPA	-30.78	RAP	302.56	ECC	1.1315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 6 22	2566.37	-10.70	69.27	186.17	136.64	15 49 8	1566.4	7.68	53.50
60.00	16 7 29	2403.83	-6.88	58.26	189.80	129.81	16 47 33	1403.8	9.21	40.31
70.00	17 24 45	2176.70	-3.18	42.63	192.59	124.02	18 1 1	1176.7	10.71	23.00
80.00	18 57 12	1887.36	-.26	22.48	194.41	119.86	19 28 39	887.4	11.90	1.73
90.00	20 29 43	1588.67	.91	1.18	195.06	118.27	20 56 12	588.9	12.38	340.03
100.00	21 40 3	1361.83	-.26	343.85	194.41	119.86	22 2 45	361.8	11.90	323.10
110.00	22 24 11	1223.52	-3.18	331.55	192.59	124.02	22 44 34	223.5	10.71	311.92

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0817	TRA	.4992	TC3	-6.7419	BAU	.7288	SGT	3960.8	SGR	774.3	SG3	1564.9	ST	18.9	SR	9.5	SS	41.1
RDE	-.0617	RRA	.2216	RC3	-1.0611	FAU	.25100	RRT	.9167	RRF	.9608	RTF	.9531	CRT	.9493	CRS	-.3174	CST	-.5421
FDE	.8263	FRA	4.4110	FC	-27.2034	BSP	6560	SGB	4035.8	R23	.2050	R13	.9559	LSA	42.7	MSA	17.5	SSA	1.7
BDE	.1024	BRA	.5462	BC3	6.8249	FSP	2722	SG1	4024.3	SG2	304.6	THA	10.22	EL1	21.0	EL2	2.7	ALF	25.99

LAUNCH DATE MAY 22 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 28 1971

HELIOCENTRIC CONIC DISTANCE 513.280 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.218	GAL	.27	AZL	90.69	HCA	162.74	SMA	185.89	ECC	.18450	INC	.6866	V1	29.421
RP	218.15	LAP	-.20	LOP	43.01	VP	22.406	GAP	3.43	AZP	89.34	TAL	1.76	TAP	164.50	RCA	151.43	APO	219.95	V2	25.189
RC	173.829	GL	-7.85	GP	-9.22	ZAL	93.66	ZAP	74.92	ETS	176.80	ZAE	116.35	ETE	185.20	ZAC	92.90	ETC	273.04	LVI	-2.87

PLANETOCENTRIC CONIC

C3	8.002	VHL	2.829	DLA	-17.36	RAL	338.84	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.879	DPA	-31.35	RAP	302.20	ECC	1.1317

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 3 11	2588.63	-11.80	70.24	186.44	136.44	15 46 20	1588.6	6.57	54.44
60.00	16 2 50	2430.03	-8.02	59.53	190.02	129.63	16 43 20	1430.0	8.08	41.59
70.00	17 18 14	2208.38	-4.38	44.29	192.75	123.91	17 55 2	1208.4	9.55	24.71
80.00	18 48 41	1925.28	-1.54	24.56	194.52	119.82	19 20 46	925.3	10.70	3.91
90.00	20 20 12	1630.04	-.42	3.48	195.14	118.28	20 47 22	630.0	11.16	342.43
100.00	21 31 32	1399.75	-1.54	345.93	194.52	119.82	21 54 52	399.8	10.70	325.27
110.00	22 17 40	1255.19	-4.38	333.21	192.75	123.91	22 38 35	255.2	9.55	313.62

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0477	TRA	.5386	TC3	-7.0073	BAU	.7592	SGT	4126.9	SGR	810.0	SG3	1545.1	ST	18.8	SR	8.9	SS	42.4
RDE	-.0493	RRA	.2308	RC3	-1.1266	FAU	.24748	RRT	.9262	RRF	.9684	RTF	.9555	CRT	.9284	CRS	-.3775	CST	-.6476
FDE	.9364	FRA	4.3883	FC	-26.7767	BSP	6809	SGB	4205.7	R23	.2087	R13	.9583	LSA	44.5	MSA	15.7	SSA	1.8
BDE	.0686	BRA	.5860	BC3	7.0973	FSP	2648	SG1	4194.9	SG2	300.5	THA	10.36	EL1	20.6	EL2	3.0	ALF	24.40

LAUNCH DATE MAY 22 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 30 1971

HELIOCENTRIC CONIC DISTANCE 517.453 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.224	GAL	.21	AZL	90.60	HCA	163.88	SMA	185.79	ECC	.18493	INC	.6022	V1	29.421
RP	218.51	LAP	-.17	LOP	44.15	VP	22.369	GAP	3.28	AZP	89.42	TAL	1.36	TAP	165.24	RCA	151.43	APO	220.15	V2	25.149
RC	176.400	GL	-8.87	GP	-9.78	ZAL	94.35	ZAP	73.45	ETS	176.36	ZAE	114.64	ETE	185.12	ZAC	92.37	ETC	272.94	LVI	-2.21

PLANETOCENTRIC CONIC

C3	8.019	VHL	2.832	DLA	-16.19	RAL	339.12	RAD	6637.0	VEL	11.320	PTH	6.37	VHP	2.898	DPA	-31.98	RAP	301.89	ECC	1.1320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 59 30	2613.12	-13.00	71.32	186.69	136.18	15 43 4	1613.1	5.35	55.48
60.00	15 57 34	2458.71	-9.26	60.94	190.23	129.40	16 38 33	1458.7	6.83	42.99
70.00	17 11 2	2242.76	-5.68	46.10	192.90	123.73	17 48 25	1242.8	8.27	26.55
80.00	18 39 27	1966.02	-2.92	26.80	194.61	119.73	19 12 13	966.0	9.39	6.22
90.00	20 9 58	1674.00	-1.84	5.93	195.21	118.23	20 37 52	674.0	9.83	344.98
100.00	21 22 19	1440.50	-2.92	348.17	194.61	119.73	21 46 19	440.5	9.39	327.38
110.00	22 10 28	1289.58	-5.68	335.01	192.90	123.73	22 31 58	289.6	8.27	315.47

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0049	TRA	.5840	TC3	-7.2502	BAU	.7077	SGT	4286.7	SGR	851.2	SG3	1522.3	ST	19.5	SR	8.5	SS	44.6
RDE	-.0345	RRA	.2438	RC3	-1.1921	FAU	.24227	RRT	.9332	RRF	.9749	RTF	.9564	CRT	.9059	CRS	-.4727	CST	-.7697
FDE	1.0743	FRA	4.4092	FC	-26.1547	BSP	7119	SGB	4370.4	R23	.2170	R13	.9593	LSA	47.4	MSA	13.7	SSA	1.8
BDE	.0348	BRA	.6328	BC3	7.3476	FSP	2612	SG1	4360.0	SG2	300.8	THA	10.55	EL1	21.0	EL2	3.3	ALF	22.22

LAUNCH DATE MAY 22 1971 FLIGHT TIME 224.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC DISTANCE 521.623 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.231	GAL	.15	AZL	90.51	HCA	165.01	SMA	185.90	ECC	.18539	INC	.5054	V1	29.421
RP	218.88	LAP	-.13	LOP	45.28	VP	22.333	GAP	3.14	AZP	89.51	TAL	.96	TAP	165.97	RCA	151.44	APO	220.36	V2	25.109
RC	178.981	GL	-5.76	GP	-10.42	ZAL	95.06	ZAP	72.02	ETS	175.86	ZAE	112.96	ETE	185.05	ZAC	91.75	ETC	272.85	LVI	-1.90

PLANETOCENTRIC CONIC

C3	8.042	VHL	2.836	DLA	-14.90	RAL	339.36	RAD	6637.0	VEL	11.321	PTH	6.37	VHP	2.918	DPA	-32.67	RAP	301.64	ECC	1.1324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 55 13	2640.27	-14.33	72.52	186.94	135.87	15 39 13	1640.3	3.99	56.62
60.00	15 51 36	2490.35	-10.62	62.50	190.42	129.11	16 33 6	1490.3	5.45	44.52
70.00	17 3 0	2280.41	-7.10	48.09	193.04	123.50	17 41 1	1280.4	6.86	28.55
80.00	18 29 20	2010.21	-4.41	29.24	194.70	119.56	19 2 50	1010.2	7.94	8.70
90.00	19 58 51	1721.42	-3.36	8.58	195.27	118.10	20 27 32	721.4	8.37	347.69
100.00	21 12 12	1484.68	-4.41	350.60	194.70	119.56	21 36 56	484.7	7.94	330.07
110.00	22 2 26	1327.23	-7.10	337.01	193.04	123.50	22 24 34	327.2	6.86	317.47

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0408	TRA	.6267	TC3	-7.4969	BAU	.8175	SGT	4450.1	SGR	900.9	SG3	1499.3	ST	21.1	SR	8.4	SS	46.4
RDE	-.0195	RRA	.2579	RC3	-1.2706	FAU	.23770	RRT	.9398	RRF	.9805	RTF	.9579	CRT	.8918	CRS	-.5852	CST	-.8628
FDE	1.1859	FRA	4.4034	FC	-25.5883	BSP	7391	SGB	4540.4	R23	.2227	R13	.9608	LSA	50.3	MSA	11.6	SSA	1.9
BDE	.0452	BRA	.6777	BC3	7.6038	FSP	2550	SG1	4530.3	SG2	302.5	THA	10.82	EL1	22.4	EL2	3.6	ALF	20.09

LAUNCH DATE MAY 22 1971 FLIGHT TIME 226.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC DISTANCE 525.790 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.238	GAL	.09	AZL	90.39	HCA	166.14	SMA	186.01	ECC	.18588	INC	.3936	V1	29.421
RP	219.25	LAP	-.09	LOP	46.41	VP	22.298	GAP	2.99	AZP	89.62	TAL	.54	TAP	166.68	RCA	151.44	APO	220.59	V2	25.068
RC	181.572	GL	-4.48	GP	-11.15	ZAL	95.79	ZAP	70.66	ETS	175.30	ZAE	111.32	ETE	184.99	ZAC	91.04	ETC	272.77	LVI	-.70

PLANETOCENTRIC CONIC

C3 8.071 VHL 2.841 DLA -13.44 RAL 339.55 RAD 6637.0 VEL 11.322 PTH 6.38 VHP 2.942 DPA -33.45 RAP 301.46 ECC 1.1328

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 50 10	2670.68	-15.81	73.89	187.17	135.48	15 34 40	1670.7	2.46	57.89
60.00	15 44 43	2525.61	-12.13	64.25	190.60	128.73	16 26 48	1525.6	3.90	46.21
70.00	16 53 57	2322.08	-8.66	50.31	193.16	123.17	17 32 39	1322.1	5.28	30.75
80.00	18 18 6	2058.67	-6.03	31.92	194.76	119.30	18 52 25	1058.7	6.34	11.40
90.00	19 46 36	1773.16	-5.02	11.48	195.32	117.87	20 16 9	773.2	6.75	350.64
100.00	21 0 58	1533.14	-6.03	353.29	194.76	119.30	21 26 31	533.1	6.34	332.77
110.00	21 53 23	1368.90	-8.66	339.22	193.16	123.17	22 16 12	368.9	5.28	319.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0981	TRA	.6627	TC3	-7.7481	BAU	.8489	SGT	4616.2	SGR	959.0	SG3	1475.2	ST	23.8	SR	8.5	SS	48.7
RDE	-.0008	RRA	.2716	RC3	-1.3661	FAU	.23391	RRT	.9467	RRF	.9852	RTF	.9600	CRT	.8923	CRS	-.7065	CST	-.9323
FDE	1.3338	FRA	4.3415	FC	-25.0894	BSP	7583	SGB	4714.7	R23	.2249	R13	.9630	LSA	54.1	MSA	9.4	SSA	2.0
BDE	.0981	BRA	.7162	BC3	7.8676	FSP	2434	SG1	4705.0	SG2	303.1	THA	11.17	EL1	25.0	EL2	3.7	ALF	18.13

LAUNCH DATE MAY 22 1971 FLIGHT TIME 228.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 529.953 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.245	GAL	.02	AZL	90.26	HCA	167.27	SMA	186.13	ECC	.18640	INC	.2625	V1	29.421
RP	219.62	LAP	-.06	LOP	47.54	VP	22.262	GAP	2.85	AZP	89.74	TAL	.13	TAP	167.39	RCA	151.44	APO	220.83	V2	25.028
RC	184.172	GL	-2.99	GP	-12.01	ZAL	96.52	ZAP	69.36	ETS	174.66	ZAE	109.70	ETE	184.94	ZAC	90.21	ETC	272.71	LVI	.19

PLANETOCENTRIC CONIC

C3 8.109 VHL 2.848 DLA -11.79 RAL 339.66 RAD 6637.1 VEL 11.324 PTH 6.38 VHP 2.969 DPA -34.34 RAP 301.36 ECC 1.1335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 44 9	2705.15	-17.48	75.47	187.39	134.99	15 29 15	1705.2	.73	59.33
60.00	15 36 43	2565.39	-13.82	66.26	190.77	128.24	16 19 28	1565.4	2.16	48.12
70.00	16 43 36	2368.76	-10.39	52.82	193.27	122.72	17 23 4	1368.8	3.51	33.20
80.00	18 5 28	2112.50	-7.81	34.92	194.82	118.91	18 40 40	1112.5	4.54	14.39
90.00	19 32 54	1830.39	-6.83	14.71	195.36	117.51	20 3 24	830.4	4.94	353.86
100.00	20 48 19	1586.97	-7.81	356.29	194.82	118.91	21 14 46	587.0	4.54	335.76
110.00	21 43 2	1415.58	-10.39	341.73	193.27	122.72	22 6 37	415.6	3.51	322.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1709	TRA	.6149	TC3	-8.1189	BAU	.8960	SGT	4805.9	SGR	1018.9	SG3	1443.3	ST	26.5	SR	8.2	SS	49.5
RDE	.0246	RRA	.2491	RC3	-1.5445	FAU	.24035	RRT	.9662	RRF	.9889	RTF	.9727	CRT	.9099	CRS	-.8076	CST	-.9676
FDE	1.5461	FRA	3.6339	FC	-25.6601	BSP	7838	SGB	4912.7	R23	.1801	R13	.9747	LSA	56.3	MSA	7.2	SSA	2.0
BDE	.1727	BRA	.6634	BC3	8.2645	FSP	2362	SG1	4906.0	SG2	257.3	THA	11.61	EL1	27.6	EL2	3.3	ALF	15.89

LAUNCH DATE MAY 22 1971 FLIGHT TIME 230.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 534.112 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.252	GAL	-.05	AZL	90.11	HCA	168.39	SMA	186.26	ECC	.18694	INC	.1081	V1	29.421
RP	219.99	LAP	-.02	LOP	48.66	VP	22.227	GAP	2.70	AZP	89.89	TAL	359.70	TAP	168.09	RCA	151.44	APO	221.08	V2	24.987
RC	186.781	GL	-1.23	GP	-13.01	ZAL	97.26	ZAP	68.14	ETS	173.93	ZAE	108.12	ETE	184.90	ZAC	89.22	ETC	272.65	LVI	1.20

PLANETOCENTRIC CONIC

C3 8.160 VHL 2.857 DLA -9.89 RAL 339.69 RAD 6637.1 VEL 11.326 PTH 6.38 VHP 3.000 DPA -35.36 RAP 301.34 ECC 1.1343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 36 56	2744.79	-19.38	77.33	187.60	134.35	15 22 41	1744.8	-1.26	60.99
60.00	15 27 16	2610.94	-15.72	68.60	190.93	127.60	16 10 47	1610.9	.15	50.29
70.00	16 31 35	2421.86	-12.33	55.71	193.37	122.11	17 11 57	1421.9	1.49	35.98
80.00	17 51 0	2173.26	-9.80	38.34	194.87	118.35	18 27 13	1173.3	2.49	17.74
90.00	19 17 20	1894.73	-8.83	18.37	195.38	116.97	19 48 54	894.7	2.88	357.47
100.00	20 33 52	1647.73	-9.80	359.71	194.87	118.35	21 1 19	647.7	2.49	339.10
110.00	21 31 1	1468.67	-12.33	344.62	193.37	122.11	21 55 30	468.7	1.49	324.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2591	TRA	.7463	TC3	-8.0738	BAU	.8963	SGT	4884.2	SGR	1087.7	SG3	1389.2	ST	35.3	SR	11.1	SS	57.2
RDE	.0538	RRA	.3156	RC3	-1.5245	FAU	.21448	RRT	.9506	RRF	.9918	RTF	.9668	CRT	.9410	CRS	-.9146	CST	-.9911
FDE	1.7544	FRA	4.3136	FC	-22.7559	BSP	8457	SGB	5003.9	R23	.2516	R13	.9605	LSA	67.9	MSA	5.2	SSA	2.6
BDE	.2647	BRA	.8103	BC3	8.2165	FSP	2490	SG1	4993.0	SG2	330.4	THA	12.01	EL1	36.8	EL2	3.6	ALF	16.70

LAUNCH DATE MAY 22 1971 FLIGHT TIME 232.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 538.270 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.260	GAL	-.11	AZL	89.92	HCA	169.51	SMA	186.39	ECC	.18751	INC	.0660	V1	29.421
RP	220.36	LAP	.01	LOP	49.78	VP	22.192	GAP	2.56	AZP	90.08	TAL	359.27	TAP	168.78	RCA	151.44	APO	221.34	V2	24.946
RC	189.399	GL	.87	GP	-14.21	ZAL	97.99	ZAP	66.99	ETS	173.07	ZAE	106.55	ETE	184.88	ZAC	88.03	ETC	272.60	LVI	2.39

PLANETOCENTRIC CONIC

C3 8.230 VHL 2.869 DLA -7.66 RAL 339.58 RAD 6637.1 VEL 11.329 PTH 6.38 VHP 3.036 DPA -36.58 RAP 301.42 ECC 1.1354

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 28 8	2791.17	-21.57	79.56	187.82	133.50	15 14 39	1791.2	-3.59	62.93
60.00	15 15 57	2663.99	-17.90	71.39	191.10	126.73	16 0 21	1664.0	-2.18	52.83
70.00	16 17 24	2483.32	-14.53	59.11	193.47	121.26	16 58 47	1483.3	-.86	39.18
80.00	17 34 7	2243.12	-12.03	42.33	194.92	117.54	18 11 30	1243.1	.13	21.57
90.00	18 59 15	1968.45	-11.08	22.62	195.41	116.19	19 32 4	968.5	.51	1.59
100.00	20 16 59	1717.59	-12.03	3.69	194.92	117.54	20 45 37	717.6	.13	342.94
110.00	21 16 50	1530.14	-14.53	348.03	193.47	121.26	21 42 20	530.1	-.86	328.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3382	TRA	.7728	TC3	-8.3774	BAU	.9411	SGT	5097.6	SGR	1212.1	SG3	1383.9	ST	41.7	SR	12.8	SS	57.9
RDE	.0763	RRA	.3378	RC3	-1.7276	FAU	.21753	RRT	.9593	RRF	.9946	RTF	.9637	CRT	.9473	CRS	-.9509	CST	-.9964
FDE	1.7977	FRA	4.1898	FC	-22.8832	BSP	8649	SGB	5239.7	R23	.2342	R13	.9672	LSA	72.3	MSA	4.0	SSA	2.8
BDE	.3467	BRA	.8434	BC3	8.5537	FSP	2346	SG1	5229.1	SG2	333.5	THA	12.90	EL1	43.4	EL2	3.9	ALF	16.39

LAUNCH DATE MAY 22 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 542.421 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.287	GAL	-.18	AZL	89.69	HCA	170.62	SMA	186.52	ECC	.18810	INC	.3041	V1	29.421
RP	220.74	LAP	.05	LOP	50.89	VP	22.157	GAP	2.42	AZP	90.30	TAL	358.84	TAP	169.46	RCA	151.43	APO	221.60	V2	24.904
RC	192.025	GL	3.44	GP	-15.67	ZAL	98.73	ZAP	65.96	ETS	172.04	ZAE	105.02	ETE	184.87	ZAC	86.58	ETC	272.56	LVI	3.80

PLANETOCENTRIC CONIC

C3	8.332	VHL	2.887	DLA	-5.00	RAL	339.32	RAD	6637.2	VEL	11.333	PTH	6.39	VHP	3.079	DPA	-38.03	RAP	301.62	ECC	1.1371

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 17 12	2846.70	-24.14	82.34	188.09	132.33	15 4 39	1846.7	-6.37	65.27
60.00	15 2 7	2727.26	-20.44	74.81	191.32	125.52	15 47 34	1727.3	-4.96	55.86
70.00	16 0 17	2556.20	-17.06	63.24	193.62	120.05	16 42 53	1556.2	-3.64	42.99
80.00	17 13 59	2325.46	-14.57	47.12	195.01	116.35	17 52 45	1325.5	-2.66	26.09
90.00	18 37 47	2055.08	-13.63	27.70	195.47	115.02	19 12 2	1055.1	-2.29	6.42
100.00	19 56 51	1799.93	-14.57	8.48	195.01	116.35	20 26 51	799.9	-2.66	347.46
110.00	20 59 44	1603.02	-17.06	352.16	193.62	120.05	21 26 27	603.0	-3.64	331.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4593	TRA	.7928	TC3	-8.4986	BAU	.9692	SGT	5234.4	SGR	1320.0	SG3	1329.4	ST	51.9	SR	16.2	SS	62.5
RDE	.1187	RRA	.3657	RC3	-1.8623	FAU	.20782	RRT	.9611	RRF	.9963	RTF	.9632	CRT	.9638	CRS	-.9793	CST	-.9960
FDE	2.0179	FRA	4.0558	FC	-21.5923	BSP	8916	SGB	5398.3	R23	.2398	R13	.9672	LSA	82.7	MSA	4.7	SSA	1.9
BDE	.4744	BRA	.8731	BC3	8.7003	FSP	2255	SG1	5386.7	SG2	354.1	THA	13.68	EL1	54.2	EL2	4.1	ALF	16.80

LAUNCH DATE MAY 22 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 546.568 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.275	GAL	-.25	AZL	89.40	HCA	171.73	SMA	186.66	ECC	.18872	INC	.5933	V1	29.421
RP	221.12	LAP	.09	LOP	52.00	VP	22.122	GAP	2.28	AZP	90.59	TAL	358.40	TAP	170.12	RCA	151.43	APO	221.88	V2	24.863
RC	194.659	GL	6.63	GP	-17.47	ZAL	99.44	ZAP	65.06	ETS	170.80	ZAE	103.50	ETE	184.89	ZAC	84.79	ETC	272.54	LVI	5.51

PLANETOCENTRIC CONIC

C3	8.490	VHL	2.914	DLA	-1.76	RAL	338.83	RAD	6637.3	VEL	11.340	PTH	6.39	VHP	3.133	DPA	-39.82	RAP	301.99	ECC	1.1397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 3 21	2914.89	-27.22	85.91	188.47	130.66	14 51 56	1914.9	-9.77	68.18
60.00	14 44 48	2804.66	-23.44	79.16	191.65	123.77	15 31 32	1804.7	-8.34	59.61
70.00	15 39 6	2644.97	-20.00	68.44	193.87	118.28	16 23 11	1645.0	-7.00	47.67
80.00	16 49 16	2425.27	-17.49	53.08	195.19	114.59	17 29 41	1425.3	-6.01	31.60
90.00	18 11 31	2159.87	-16.55	34.01	195.63	113.26	18 47 31	1159.9	-5.64	12.30
100.00	19 32 8	1899.74	-17.49	14.45	195.19	114.59	20 3 47	899.7	-6.01	352.97
110.00	20 38 32	1691.79	-20.00	357.35	193.87	118.28	21 6 44	691.8	-7.00	336.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6095	TRA	.8071	TC3	-8.6063	BAU	1.0040	SGT	5395.5	SGR	1470.4	SG3	1281.4	ST	64.9	SR	21.0	SS	67.9
RDE	.1747	RRA	.4025	RC3	-2.0426	FAU	.19969	RRT	.9629	RRF	.9976	RTF	.9632	CRT	.9742	CRS	-.9922	CST	-.9938
FDE	2.2571	FRA	3.9196	FC	-20.3627	BSP	9244	SGB	5592.2	R23	.2425	R13	.9678	LSA	96.1	MSA	6.2	SSA	1.1
BDE	.6341	BRA	.9019	BC3	8.8454	FSP	2186	SG1	5579.0	SG2	383.8	THA	14.77	EL1	68.1	EL2	4.5	ALF	17.54

LAUNCH DATE MAY 22 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 550.710 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.284	GAL	-.33	AZL	89.02	HCA	172.83	SMA	186.80	ECC	.18936	INC	.9742	V1	29.421
RP	221.50	LAP	.12	LOP	53.11	VP	22.087	GAP	2.14	AZP	90.97	TAL	357.95	TAP	170.78	RCA	151.42	APO	222.17	V2	24.821
RC	197.299	GL	10.71	GP	-19.76	ZAL	100.09	ZAP	64.35	ETS	169.27	ZAE	102.00	ETE	184.94	ZAC	82.50	ETC	272.53	LVI	7.66

PLANETOCENTRIC CONIC

C3	8.748	VHL	2.958	DLA	2.31	RAL	338.01	RAD	6637.4	VEL	11.351	PTH	6.40	VHP	3.204	DPA	-42.06	RAP	302.59	ECC	1.1440

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 45 16	3001.40	-30.96	90.76	189.15	128.12	14 35 17	2001.4	-14.03	71.97
60.00	14 22 24	2902.60	-27.02	84.97	192.26	121.12	15 10 47	1902.6	-12.54	64.46
70.00	15 11 56	2756.95	-23.46	75.28	194.38	115.56	15 57 52	1757.0	-11.16	53.67
80.00	16 17 44	2550.85	-20.87	60.87	195.61	111.85	17 0 15	1550.8	-10.13	38.65
90.00	17 38 6	2291.55	-19.90	42.22	196.01	110.52	18 16 17	1291.6	-9.74	19.79
100.00	19 0 36	2025.32	-20.87	22.24	195.61	111.85	19 34 22	1025.3	-10.13	.01
110.00	20 11 22	1803.77	-23.46	4.20	194.38	115.56	20 41 26	803.8	-11.16	342.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8142	TRA	.8115	TC3	-8.5688	BAU	1.0355	SGT	5536.8	SGR	1653.2	SG3	1215.9	ST	82.7	SR	28.0	SS	74.6
RDE	.2547	RRA	.4465	RC3	-2.2300	FAU	.18648	RRT	.9643	RRF	.9985	RTF	.9631	CRT	.9812	CRS	-.9975	CST	-.9919
FDE	2.5402	FRA	3.7225	FC	-18.6526	BSP	9653	SGB	5778.3	R23	.2432	R13	.9685	LSA	114.5	MSA	7.9	SSA	.6
BDE	.8532	BRA	.9263	BC3	8.8542	FSP	2096	SG1	5763.0	SG2	420.4	THA	16.15	EL1	87.1	EL2	5.1	ALF	18.42

LAUNCH DATE MAY 22 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 554.847 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.292	GAL	-.40	AZL	88.51	HCA	173.94	SMA	186.94	ECC	.19003	INC	1.4875	V1	29.421
RP	221.88	LAP	.16	LOP	54.21	VP	22.053	GAP	2.00	AZP	91.48	TAL	357.50	TAP	171.44	RCA	151.42	APO	222.46	V2	24.780
RC	199.945	GL	16.04	GP	-22.75	ZAL	100.62	ZAP	63.94	ETS	167.35	ZAE	100.51	ETE	185.03	ZAC	79.51	ETC	272.55	LVI	10.44

PLANETOCENTRIC CONIC

C3	9.205	VHL	3.034	DLA	7.54	RAL	336.70	RAD	6637.6	VEL	11.371	PTH	6.42	VHP	3.303	DPA	-44.97	RAP	303.55	ECC	1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 20 45	3115.61	-35.54	97.80	190.52	123.99	14 12 41	2115.6	-19.55	77.22
60.00	13 52 14	3031.84	-31.29	93.24	193.51	116.81	14 42 46	2031.8	-17.93	71.14
70.00	14 35 25	2904.81	-27.46	84.90	195.46	111.15	15 23 50	1904.8	-16.42	61.89
80.00	15 35 24	2716.90	-24.68	71.73	196.54	107.36	16 20 41	1716.9	-15.29	48.27
90.00	16 53 12	2465.83	-23.63	53.62	196.89	106.00	17 34 18	1465.8	-14.87	30.02
100.00	18 18 16	2191.37	-24.68	33.10	196.54	107.36	18 54 48	1191.4	-15.29	9.63
110.00	19 34 51	1951.63	-27.46	13.82	195.46	111.15	20 7 23	951.6	-16.42	350.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0937	TRA	.7924	TC3	-8.3660	BAU	1.0720	SGT	5684.5	SGR	1893.6	SG3	1134.4	ST	106.0	SR	38.4	SS	82.5
RDE	.3764	RRA	.4998	RC3	-2.4299	FAU	.17508	RRT	.9652	RRF	.9991	RTF	.9625	CRT	.9862	CRS	-.9994	CST	-.9911
FDE	2.8731	FRA	3.4472	FC	-16.4671	BSP	10091	SGB	5991.6	R23	.2434	R13	.9691	LSA	139.3	MSA	9.7	SSA	.4
BDE	1.1566	BRA	.9368	BC3	8.7117	FSP	1978	SG1	5973.0	SG2	471.0	THA	17.94	EL1	112.6	EL2	6.0	ALF	19.70

LAUNCH DATE MAY 22 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC DISTANCE 558.979 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.301	GAL	-.47	AZL	87.78	HCA	175.03	SMA	187.09	ECC	.19071	INC	2.2216	V1	29.421
RP	222.27	LAP	.19	LOP	55.31	VP	22.019	GAP	1.86	AZP	92.22	TAL	357.05	TAP	172.08	RCA	151.41	APO	222.77	V2	24.738
RC	202.595	GL	23.24	GP	-26.79	ZAL	100.90	ZAP	63.99	ETS	164.91	ZAE	99.03	ETE	185.19	ZAC	75.48	ETC	272.61	LVI	14.14

PLANETOCENTRIC CONIC

C3	10.092	VHL	3.177	DLA	14.47	RAL	334.60	RAD	6638.1	VEL	11.410	PTH	6.46	VHP	3.453	DPA	-48.86	RAP	305.12	ECC	1.1661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 45 39	3274.08	-41.01	109.00	193.59	116.62	13 40 13	2274.1	-26.86	85.20
60.00	13 8 59	3211.98	-36.12	106.06	196.24	109.25	14 2 31	2212.0	-24.94	81.21
70.00	13 42 42	3112.76	-31.70	99.58	197.80	103.43	14 34 35	2112.8	-23.12	74.29
80.00	14 33 36	2953.26	-28.44	88.25	198.56	99.48	15 22 49	1953.3	-21.74	62.84
90.00	15 47 15	2715.53	-27.21	71.00	198.77	98.03	16 32 31	1715.5	-21.21	45.58
100.00	17 16 28	2427.73	-28.44	49.62	198.56	99.48	17 56 56	1427.7	-21.74	24.21
110.00	18 42 8	2159.58	-31.70	28.50	197.80	103.43	19 18 8	1159.6	-23.12	3.21

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.4778	TRA	.7201	TC3	-7.8907	BAU	1.1212	SGT	5834.1	SGR	2204.7	SG3	1018.9	ST	135.0	SR	53.3	SS	89.5
RDE	.5645	RRA	.5572	RC3	-2.6086	FAU	.15816	RRT	.9652	RRF	.9994	RTF	.9607	CRT	.9892	CRS	-.9999	CST	-.9908
FDE	3.1888	FRA	3.0212	FC3	-13.5683	BSP	10342	SGB	6236.8	R23	.2450	R13	.9691	LSA	170.1	MSA	11.5	SSA	.2
BDE	1.5819	BRA	.9105	BC3	8.3107	FSP	1760	SG1	6213.2	SG2	541.4	THA	20.20	EL1	144.9	EL2	7.3	ALF	21.39

LAUNCH DATE MAY 22 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 563.105 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.310	GAL	-.55	AZL	86.63	HCA	176.13	SMA	187.24	ECC	.19142	INC	3.3663	V1	29.421
RP	222.65	LAP	.23	LOP	56.41	VP	21.985	GAP	1.72	AZP	93.36	TAL	356.59	TAP	172.72	RCA	151.40	APO	223.08	V2	24.696
RC	205.250	GL	33.17	GP	-32.42	ZAL	100.67	ZAP	64.89	ETS	161.81	ZAE	97.57	ETE	185.47	ZAC	69.84	ETC	272.75	LVI	19.25

PLANETOCENTRIC CONIC

C3	12.050	VHL	3.471	DLA	23.89	RAL	331.13	RAD	6639.1	VEL	11.495	PTH	6.54	VHP	3.714	DPA	-54.22	RAP	307.96	ECC	1.1983

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	11 50 59	3508.56	-46.38	128.90	200.76	102.09	12 49 28	2508.6	-36.51	99.21
60.00	12 0 14	3483.94	-40.05	127.98	202.06	94.90	12 58 18	2483.9	-33.75	98.81
70.00	12 15 28	3439.03	-34.14	124.60	202.30	88.92	13 12 47	2439.0	-31.01	96.31
80.00	12 44 55	3346.65	-29.37	117.27	201.98	84.38	13 40 42	2346.7	-28.72	89.87
90.00	13 46 44	3147.05	-27.35	102.35	201.71	82.50	14 39 11	2147.1	-27.73	75.35
100.00	15 27 47	2821.13	-29.37	78.64	201.98	84.38	16 14 48	1821.1	-28.72	51.23
110.00	17 14 55	2485.85	-34.14	53.51	202.30	88.92	17 56 20	1485.8	-31.01	25.23

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	2.0814	TRA	.5582	TC3	-6.9105	BAU	1.1942	SGT	5986.3	SGR	2625.1	SG3	853.2	ST	172.6	SR	76.4	SS	94.7
RDE	.9040	RRA	.6059	RC3	-2.6826	FAU	.13587	RRT	.9649	RRF	.9995	RTF	.9578	CRT	.9917	CRS	-1.0000	CST	-.9912
FDE	3.4884	FRA	2.3786	FC3	-9.7620	BSP	10483	SGB	6536.6	R23	.2464	R13	.9689	LSA	210.8	MSA	13.0	SSA	.1
BDE	2.2692	BRA	.8238	BC3	7.4129	FSP	1443	SG1	6505.7	SG2	634.2	THA	23.17	EL1	188.5	EL2	9.0	ALF	23.77

LAUNCH DATE MAY 22 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 567.222 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.319	GAL	-.62	AZL	84.60	HCA	177.21	SMA	187.39	ECC	.19214	INC	5.4042	V1	29.421
RP	223.04	LAP	.26	LOP	57.50	VP	21.951	GAP	1.57	AZP	95.40	TAL	356.14	TAP	173.35	RCA	151.38	APO	223.39	V2	24.654
RC	207.907	GL	47.00	GP	-40.52	ZAL	99.48	ZAP	67.33	ETS	158.14	ZAE	96.22	ETE	186.07	ZAC	61.71	ETC	273.12	LVI	26.47

PLANETOCENTRIC CONIC

C3	17.317	VHL	4.161	DLA	36.68	RAL	324.93	RAD	6641.6	VEL	11.720	PTH	6.75	VHP	4.249	DPA	-61.70	RAP	314.00	ECC	1.2850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	10 10 23	3893.55	-45.50	165.33	213.58	74.27	11 15 17	2893.5	-46.62	130.27
60.00	9 36 4	3985.44	-34.70	168.74	208.77	68.07	10 42 29	2985.4	-40.22	139.10
65.61	8 9 34	4237.48	-22.14	182.44	201.84	59.98	9 20 12	3237.5	-32.50	157.98
65.61	8 9 34	4237.48	-22.14	182.44	201.84	59.98	9 20 12	3237.5	-32.50	157.98
65.61	8 9 34	4237.48	-22.14	182.44	201.84	59.98	9 20 12	3237.5	-32.50	157.98
65.61	8 9 34	4237.48	-22.14	182.44	201.84	59.98	9 20 12	3237.5	-32.50	157.98
65.61	8 9 34	4237.48	-22.14	182.44	201.84	59.98	9 20 12	3237.5	-32.50	157.98

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	3.2588	TRA	.2975	TC3	-4.9218	BAU	1.2593	SGT	6097.0	SGR	3185.1	SG3	604.3	ST	224.6	SR	115.8	SS	93.8
RDE	1.6643	RRA	.6318	RC3	-2.3166	FAU	.09741	RRT	.9647	RRF	.9989	RTF	.9922	CRT	.9943	CRS	-.9999	CST	-.9926
FDE	3.6659	FRA	1.5420	FC3	-4.8700	BSP	11689	SGB	6878.8	R23	.2514	R13	.9678	LSA	269.1	MSA	14.0	SSA	.1
BDE	3.6592	BRA	.6984	BC3	5.4398	FSP	1086	SG1	6838.0	SG2	748.1	THA	27.10	EL1	252.4	EL2	11.0	ALF	27.19

LAUNCH DATE MAY 22 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC DISTANCE 571.322 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.328	GAL	-.70	AZL	80.02	HCA	178.29	SMA	187.54	ECC	.19289	INC	9.9833	V1	29.421
RP	223.42	LAP	.30	LOP	58.58	VP	21.917	GAP	1.43	AZP	99.98	TAL	355.70	TAP	173.98	RCA	151.37	APO	223.72	V2	24.612
RC	210.566	GL	65.75	GP	-52.00	ZAL	96.79	ZAP	72.63	ETS	155.34	ZAE	95.46	ETE	188.02	ZAC	50.13	ETC	274.30	LVI	36.20

PLANETOCENTRIC CONIC

C3	37.771	VHL	6.146	DLA	53.11	RAL	311.81	RAD	6649.9	VEL	12.556	PTH	7.43	VHP	5.688	DPA	-71.10	RAP	331.40	ECC	1.6216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.97	5 47 43	4666.26	-20.59	219.82	205.45	39.88	7 5 29	3666.3	-38.48	200.81
42.97	5 47 43	4666.26	-20.59	219.82	205.45	39.88	7 5 29	3666.3	-38.48	200.81
42.97	5 47 43	4666.26	-20.59	219.82	205.45	39.88	7 5 29	3666.3	-38.48	200.81
42.97	5 47 43	4666.26	-20.59	219.82	205.45	39.88	7 5 29	3666.3	-38.48	200.81
42.97	5 47 43	4666.26	-20.59	219.82	205.45	39.88	7 5 29	3666.3	-38.48	200.81
42.97	5 47 43	4666.26	-20.59	219.82	205.45	39.88	7 5 29	3666.3	-38.48	200.81
42.97	5 47 43	4666.26	-20.59	219.82	205.45	39.88	7 5 29	3666.3	-38.48	200.81

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	5.6521	TRA	-.4869	TC3	-2.4810	BAU	1.4673	SGT	6134.9	SGR	3950.8	SG3	257.0	ST	263.7	SR	172.5	SS	63.5
RDE	3.6961	RRA	.3404	RC3	-1.5125	FAU	.04661	RRT	.9665	RRF	.9941	RTF	.9331	CRT	.9960	CRS	-.9993	CST	-.9921
FDE	2.7604	FRA	.4563	FC3	-1.0684	BSP	12525	SGB	7297.0	R23	.2885	R13	.9574	LSA	321.2	MSA	14.2	SSA	.0
BDE	6.7533	BRA	.5941	BC3	2.9056	FSP	491	SG1	7246.3	SG2	858.4	THA	32.41	EL1	314.9	EL2	12.8	ALF	33.14

LAUNCH DATE MAY 22 1971 FLIGHT TIME 256.00 ARRIVAL DATE FEB 2 1972

HELIOCENTRIC CONIC DISTANCE 587.853 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.365	GAL	-1.03	AZL	99.39	HCA	182.66	SMA	188.19	ECC	.19609	INC	9.3905	V1	29.421
RP	224.98	LAP	.43	LOP	62.90	VP	21.785	GAP	.89	AZP	80.62	TAL	353.68	TAP	176.34	RCA	151.29	APO	225.09	V2	24.445
RC	221.219	GL	-63.17	GP	40.60	ZAL	98.93	ZAP	64.21	ETS	203.60	ZAE	93.53	ETE	177.72	ZAC	142.55	ETC	275.34	LVI	-48.34

PLANETOCENTRIC CONIC

C3	35.013	VHL	5.917	DLA	-58.06	RAL	32.73	RAD	6648.9	VEL	12.446	PTH	7.35	VHP	4.417	DPA	17.67	RAP	292.95	ECC	1.5762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.92	22 51 35	2038.40	22.96	56.08	287.40	144.94	23 25 34	1038.4	42.23	38.19
36.92	22 51 35	2038.40	22.96	56.08	287.40	144.94	23 25 34	1038.4	42.23	38.19
36.92	22 51 35	2038.40	22.96	56.08	287.40	144.94	23 25 34	1038.4	42.23	38.19
36.92	22 51 35	2038.40	22.96	56.08	287.40	144.94	23 25 34	1038.4	42.23	38.19
36.92	22 51 35	2038.40	22.96	56.08	287.40	144.94	23 25 34	1038.4	42.23	38.19
36.92	22 51 35	2038.40	22.96	56.08	287.40	144.94	23 25 34	1038.4	42.23	38.19
36.92	22 51 35	2038.40	22.96	56.08	287.40	144.94	23 25 34	1038.4	42.23	38.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6377	TRA	3.0838	TC3	-2.9364	BAU	1.5040	SGT	6657.7	SGR	3334.6	SG3	534.2	ST	90.3	SR	50.4	SS	41.3
RDE	-.5180	RRA	-1.5913	RC3	1.3042	FAU	.09603	RRT	-.9684	RRF	-.9961	RTF	.9433	CRT	-.6452	CRS	.9753	CST	-.4604
FDE	1.5137	FRA	2.8999	FC3	-2.3745	BSP	12548	SGB	7446.1	R23	.2841	R13	-.9585	LSA	100.5	MSA	48.0	SSA	.1
BDE	.8216	BRA	3.4702	BC3	3.2130	FSP	976	SG1	7408.4	SG2	747.9	THA	153.84	EL1	97.0	EL2	35.9	ALF	156.83

LAUNCH DATE MAY 22 1971 FLIGHT TIME 258.00 ARRIVAL DATE FEB 4 1972

HELIOCENTRIC CONIC DISTANCE 591.788 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.375	GAL	-1.13	AZL	97.22	HCA	183.72	SMA	188.36	ECC	.19696	INC	7.2161	V1	29.421
RP	225.37	LAP	.47	LOP	63.97	VP	21.752	GAP	.78	AZP	82.80	TAL	353.10	TAP	176.82	RCA	151.26	APO	225.46	V2	24.403
RC	223.884	GL	-54.84	GP	31.90	ZAL	101.31	ZAP	59.57	ETS	200.65	ZAE	92.06	ETE	179.34	ZAC	133.94	ETC	274.26	LVI	-40.55

PLANETOCENTRIC CONIC

C3	24.740	VHL	4.974	DLA	-52.10	RAL	22.51	RAD	6644.9	VEL	12.030	PTH	7.02	VHP	3.882	DPA	9.03	RAP	294.06	ECC	1.4072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.23	22 31 26	1908.10	25.66	44.81	270.54	137.04	23 3 14	908.1	42.16	23.20
44.23	22 31 26	1908.10	25.66	44.81	270.54	137.04	23 3 14	908.1	42.16	23.20
44.23	22 31 26	1908.10	25.66	44.81	270.54	137.04	23 3 14	908.1	42.16	23.20
44.23	22 31 26	1908.10	25.66	44.81	270.54	137.04	23 3 14	908.1	42.16	23.20
44.23	22 31 26	1908.10	25.66	44.81	270.54	137.04	23 3 14	908.1	42.16	23.20
44.23	22 31 26	1908.10	25.66	44.81	270.54	137.04	23 3 14	908.1	42.16	23.20
44.23	22 31 26	1908.10	25.66	44.81	270.54	137.04	23 3 14	908.1	42.16	23.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2941	TRA	3.6351	TC3	-2.9606	BAU	.9851	SGT	7433.6	SGR	3552.1	SG3	1041.9	ST	103.7	SR	67.1	SS	85.3
RDE	-.7484	RRA	-1.8294	RC3	.3258	FAU	.01420	RRT	-.9108	RRF	-.9963	RTF	.8728	CRT	-.6510	CRS	.9913	CST	-.5456
FDE	3.2547	FRA	6.1061	FC3	-.4969	BSP	24044	SGB	8238.7	R23	.4216	R13	-.9065	LSA	133.7	MSA	68.3	SSA	.1
BDE	.8041	BRA	4.0694	BC3	2.9785	FSP	3803	SG1	8128.8	SG2	1341.4	THA	155.78	EL1	114.6	EL2	46.1	ALF	152.30

LAUNCH DATE MAY 22 1971 FLIGHT TIME 260.00 ARRIVAL DATE FEB 6 1972

HELIOCENTRIC CONIC DISTANCE 596.025 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.385	GAL	-1.20	AZL	96.01	HCA	184.78	SMA	188.53	ECC	.19779	INC	6.0116	V1	29.421
RP	225.76	LAP	.50	LOP	65.03	VP	21.720	GAP	.61	AZP	84.01	TAL	352.73	TAP	177.51	RCA	151.24	APO	225.82	V2	24.361
RC	226.550	GL	-48.89	GP	25.81	ZAL	102.99	ZAP	56.32	ETS	198.04	ZAE	90.54	ETE	180.31	ZAC	127.90	ETC	273.76	LVI	-34.98

PLANETOCENTRIC CONIC

C3	20.254	VHL	4.500	DLA	-47.35	RAL	16.98	RAD	6643.0	VEL	11.843	PTH	6.86	VHP	3.661	DPA	2.98	RAP	294.81	ECC	1.3333

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 59 12	1887.04	22.81	39.56	257.12	132.96	22 30 39	887.0	38.09	17.67
50.30	22 29 7	1812.52	26.00	35.52	260.27	131.08	22 59 19	812.5	40.30	12.08
50.30	22 29 7	1812.52	26.00	35.52	260.27	131.08	22 59 19	812.5	40.30	12.08
50.30	22 29 7	1812.52	26.00	35.52	260.27	131.08	22 59 19	812.5	40.30	12.08
50.30	22 29 7	1812.52	26.00	35.52	260.27	131.08	22 59 19	812.5	40.30	12.08
50.30	22 29 7	1812.52	26.00	35.52	260.27	131.08	22 59 19	812.5	40.30	12.08
50.30	22 29 7	1812.52	26.00	35.52	260.27	131.08	22 59 19	812.5	40.30	12.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0004	TRA	2.8156	TC3	-4.9530	BAU	1.3872	SGT	7034.6	SGR	2198.7	SG3	856.3	ST	102.0	SR	28.0	SS	42.0
RDE	-.0267	RRA	-.9879	RC3	1.3087	FAU	.13762	RRT	-.9716	RRF	-.9973	RTF	.9548	CRT	-.7414	CRS	.9821	CST	-.5504
FDE	.6891	FRA	4.4340	FC3	-5.8825	BSP	12628	SGB	7370.2	R23	.2746	R13	-.9607	LSA	107.1	MSA	38.4	SSA	.1
BDE	1.0008	BRA	2.9839	BC3	5.1230	FSP	1573	SG1	7353.4	SG2	497.4	THA	163.03	EL1	104.1	EL2	18.4	ALF	168.14

LAUNCH DATE MAY 22 1971 FLIGHT TIME 262.00 ARRIVAL DATE FEB 8 1972

HELIOCENTRIC CONIC DISTANCE 600.107 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.394	GAL	-1.28	AZL	95.25	HCA	185.84	SMA	188.70	ECC	.19867	INC	5.2456	V1	29.421
RP	226.15	LAP	.53	LOP	66.09	VP	21.687	GAP	.47	AZP	84.78	TAL	352.24	TAP	178.09	RCA	151.21	APO	226.19	V2	24.319
RC	229.218	GL	-44.40	GP	21.53	ZAL	104.50	ZAP	54.10	ETS	195.84	ZAE	89.25	ETE	180.83	ZAC	123.63	ETC	273.55	LVI	-31.11

PLANETOCENTRIC CONIC

C3	17.910	VHL	4.232	DLA	-43.43	RAL	13.82	RAD	6641.9	VEL	11.745	PTH	6.77	VHP	3.554	DPA	-1.24	RAP	295.56	ECC	1.2948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 15 24	2099.91	12.60	49.49	241.91	136.27	20 50 24	1099.9	29.72	31.08
55.56	22 36 11	1732.66	25.37	27.56	253.74	126.51	23 5 3	732.7	37.99	3.28
55.56	22 36 11	1732.66	25.37	27.56	253.74	126.51	23 5 3	732.7	37.99	3.28
55.56	22 36 11	1732.66	25.37	27.56	253.74	126.51	23 5 3	732.7	37.99	3.28
55.56	22 36 11	1732.66	25.37	27.56	253.74	126.51	23 5 3	732.7	37.99	3.28
55.56	22 36 11	1732.66	25.37	27.56	253.74	126.51	23 5 3	732.7	37.99	3.28
55.56	22 36 11	1732.66	25.37	27.56	253.74	126.51	23 5 3	732.7	37.99	3.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9214	TRA	2.7913	TC3	-5.6544	BAU	1.3847	SGT	7178.9	SGR	1856.8	SG3	920.8	ST	100.2	SR	23.3	SS	42.9
RDE	-.0028	RRA	-.8303	RC3	1.2118	FAU	.14438	RRT	-.9721	RRF	-.9968	RTF	.9556	CRT	-.7772	CRS	.9522	CST	-.5479
FDE	.6462	FRA	4.7350	FC3	-6.9790	BSP	12730	SGB	7415.1	R23	.2754	R13	-.9597	LSA	105.1	MSA	37.1	SSA	.2
BDE	.9214	BRA	2.9122	BC3	5.7828	FSP	1698	SG1	7403.1	SG2	422.4	THA	165.84	EL1	101.8	EL2	14.4	ALF	169.55

LAUNCH DATE MAY 22 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 10 1972

HELIOCENTRIC CONIC DISTANCE 604.187 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.404	GAL	-1.37	AZL	94.72	HCA	186.90	SMA	188.87	ECC	.19956	INC	4.7162
RP	226.55	LAP	.57	LOP	67.15	VP	21.656	GAP	.33	AZP	85.32	TAL	351.76	TAP	178.66	RCA	151.18	APO	226.56
RC	231.880	GL	-40.91	GP	18.37	ZAL	105.81	ZAP	52.41	ETS	194.09	ZAE	88.02	ETE	181.17	ZAC	120.47	ETC	273.45

V1	29.421																		
V2	24.278																		
LVI	-28.28																		

PLANETOCENTRIC CONIC

C3	16.540	VHL	4.067	DLA	-40.22	RAL	11.87	RAD	6641.3	VEL	11.687	PTH	6.72	VHP	3.501	DPA	-4.33	RAP	296.22
ECC	1.2722																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 30 40	2193.21	7.98	53.53	235.12	137.06	20 7 13	1193.2	25.61	36.16
60.00	22 30 23	1709.92	22.67	23.48	248.11	124.26	22 58 53	709.9	34.67	359.60
60.11	22 47 47	1661.02	24.42	20.59	249.38	123.01	23 15 28	661.0	35.76	355.95
60.11	22 47 47	1661.02	24.42	20.59	249.38	123.01	23 15 28	661.0	35.76	355.95
60.11	22 47 47	1661.02	24.42	20.59	249.38	123.01	23 15 28	661.0	35.76	355.95
60.11	22 47 47	1661.02	24.42	20.59	249.38	123.01	23 15 28	661.0	35.76	355.95
60.11	22 47 47	1661.02	24.42	20.59	249.38	123.01	23 15 28	661.0	35.76	355.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8249	TRA	2.7999	TC3	-6.2025	BAU	1.3933	SGT	7313.8	SGR	1599.3	SG3	953.1	ST	97.2	SR	19.9	SS	43.4
RDE	.0063	RRA	-.7157	RC3	1.1091	FAU	.14794	RRT	-.9732	RRF	-.9958	RTF	.9571	CRT	-.8142	CRS	.9372	CST	-.5607
FDE	.6674	FRA	4.8813	FC3	-7.7437	BSP	12840	SGB	7486.6	R23	.2702	R13	-.9599	LSA	102.1	MSA	36.0	SSA	.2
BDE	.8249	BRA	2.8899	BC3	6.3009	FSP	1736	SG1	7478.0	SG2	359.6	THA	167.96	EL1	98.5	EL2	11.4	ALF	170.42

LAUNCH DATE MAY 22 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 12 1972

HELIOCENTRIC CONIC DISTANCE 608.260 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.414	GAL	-1.46	AZL	94.33	HCA	187.95	SMA	189.04	ECC	.20047	INC	4.3277
RP	226.94	LAP	.60	LOP	68.20	VP	21.624	GAP	.20	AZP	85.71	TAL	351.27	TAP	179.22	RCA	151.15	APO	226.94
RC	234.543	GL	-38.13	GP	15.97	ZAL	106.99	ZAP	51.02	ETS	192.68	ZAE	86.86	ETE	181.40	ZAC	118.07	ETC	273.42

V1	29.421																		
V2	24.236																		
LVI	-26.15																		

PLANETOCENTRIC CONIC

C3	15.686	VHL	3.961	DLA	-37.56	RAL	10.63	RAD	6640.9	VEL	11.650	PTH	6.69	VHP	3.477	DPA	-6.66	RAP	296.82
ECC	1.2582																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 1 53	2259.85	4.65	56.35	231.01	137.40	19 39 33	1259.9	22.55	39.56
60.00	21 2 51	1937.24	13.46	35.64	239.28	128.35	21 35 8	937.2	27.78	14.89
64.18	23 2 23	1592.93	23.38	14.23	246.39	120.27	23 28 56	592.9	33.73	349.45
64.18	23 2 23	1592.93	23.38	14.23	246.39	120.27	23 28 56	592.9	33.73	349.45
64.18	23 2 23	1592.93	23.38	14.23	246.39	120.27	23 28 56	592.9	33.73	349.45
64.18	23 2 23	1592.93	23.38	14.23	246.39	120.27	23 28 56	592.9	33.73	349.45
64.18	23 2 23	1592.93	23.38	14.23	246.39	120.27	23 28 56	592.9	33.73	349.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7321	TRA	2.8286	TC3	-6.6407	BAU	1.4085	SGT	7445.5	SGR	1402.5	SG3	968.0	ST	94.1	SR	17.4	SS	43.9
RDE	.0106	RRA	-.6324	RC3	1.0058	FAU	.14866	RRT	-.9734	RRF	-.9943	RTF	.9574	CRT	-.8504	CRS	.9162	CST	-.5687
FDE	.7267	FRA	4.9675	FC3	-8.2050	BSP	12979	SGB	7576.5	R23	.2649	R13	-.9595	LSA	99.1	MSA	35.5	SSA	.2
BDE	.7321	BRA	2.8985	BC3	6.7164	FSP	1756	SG1	7569.9	SG2	316.1	THA	169.59	EL1	95.3	EL2	9.0	ALF	171.00

LAUNCH DATE MAY 22 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 14 1972

HELIOCENTRIC CONIC DISTANCE 612.330 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.424	GAL	-1.54	AZL	94.03	HCA	189.00	SMA	189.22	ECC	.20140	INC	4.0302
RP	227.33	LAP	.63	LOP	69.25	VP	21.592	GAP	.06	AZP	86.02	TAL	350.78	TAP	179.78	RCA	151.11	APO	227.33
RC	237.203	GL	-35.84	GP	14.09	ZAL	108.08	ZAP	49.84	ETS	191.53	ZAE	85.74	ETE	181.56	ZAC	116.17	ETC	273.42

V1	29.421																		
V2	24.195																		
LVI	-24.51																		

PLANETOCENTRIC CONIC

C3	15.137	VHL	3.891	DLA	-35.29	RAL	9.84	RAD	6640.6	VEL	11.627	PTH	6.67	VHP	3.469	DPA	-8.47	RAP	297.37
ECC	1.2491																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 41 28	2312.87	1.99	58.57	228.33	137.54	19 20 1	1312.9	20.06	42.14
60.00	20 25 58	2034.55	9.30	40.49	235.29	129.39	20 59 52	1034.6	24.28	20.75
67.94	23 19 26	1525.09	22.35	8.15	244.31	118.05	23 44 51	525.1	31.90	343.34
67.94	23 19 26	1525.09	22.35	8.15	244.31	118.05	23 44 51	525.1	31.90	343.34
67.94	23 19 26	1525.09	22.35	8.15	244.31	118.05	23 44 51	525.1	31.90	343.34
67.94	23 19 26	1525.09	22.35	8.15	244.31	118.05	23 44 51	525.1	31.90	343.34
67.94	23 19 26	1525.09	22.35	8.15	244.31	118.05	23 44 51	525.1	31.90	343.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6478	TRA	2.8684	TC3	-7.0062	BAU	1.4298	SGT	7577.4	SGR	1248.4	SG3	972.5	ST	91.5	SR	15.5	SS	44.4
RDE	.0147	RRA	-.5689	RC3	.9127	FAU	.14841	RRT	-.9731	RRF	-.9923	RTF	.9576	CRT	-.8872	CRS	.8884	CST	-.5769
FDE	.7955	FRA	5.0094	FC3	-8.4880	BSP	13080	SGB	7679.5	R23	.2568	R13	-.9591	LSA	96.7	MSA	35.1	SSA	.3
BDE	.6480	BRA	2.9243	BC3	7.0654	FSP	1751	SG1	7674.3	SG2	284.0	THA	170.88	EL1	92.5	EL2	7.1	ALF	171.42

LAUNCH DATE MAY 22 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 16 1972

HELIOCENTRIC CONIC DISTANCE 616.392 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.434	GAL	-1.63	AZL	93.80	HCA	190.05	SMA	189.39	ECC	.20234	INC	3.7955
RP	227.72	LAP	.66	LOP	70.30	VP	21.561	GAP	-.08	AZP	86.26	TAL	350.28	TAP	180.33	RCA	151.07	APO	227.72
RC	239.859	GL	-33.94	GP	12.58	ZAL	109.09	ZAP	48.80	ETS	190.58	ZAE	84.65	ETE	181.67	ZAC	114.65	ETC	273.44

V1	29.421																		
V2	24.153																		
LVI	-23.22																		

PLANETOCENTRIC CONIC

C3	14.781	VHL	3.845	DLA	-33.34	RAL	9.36	RAD	6640.4	VEL	11.612	PTH	6.65	VHP	3.471	DPA	-9.91	RAP	297.91
ECC	1.2433																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 26 10	2357.36	-.25	60.43	226.54	137.58	19 5 27	1357.4	17.94	44.24
60.00	20 1 14	2104.28	6.27	43.89	232.78	129.89	20 36 18	1104.3	21.62	24.73
70.00	22 33 9	1656.31	16.18	14.79	239.89	120.49	23 0 45	656.3	27.29	351.85
71.56	23 39 4	1454.18	21.37	2.06	242.84	116.22	24 3 18	454.2	30.27	337.27
71.56	23 39 4	1454.18	21.37	2.06	242.84	116.22	24 3 18	454.2	30.27	337.27
71.56	23 39 4	1454.18	21.37	2.06	242.84	116.22	24 3 18	454.2	30.27	337.27
110.00	3 36 31	5991.16	16.18	281.61	239.89	120.49	5 16 22	4991.2	27.29	258.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5614	TRA	2.9281	TC3	-7.2827	BAU	1.4483	SGT	7703.2	SGR	1124.6	SG3	969.9	ST	89.2	SR	14.0	SS	45.1
RDE	.0180	RRA	-.5208	RC3	.8235	FAU	.14639	RRT	-.9720	RRF	-.9895	RTF	.9573	CRT	-.9234	CRS	.8539	CST	-.5898
FDE	.8797	FRA	5.0399	FC3	-8.5740	BSP	13297	SGB	7784.9	R23	.2465	R13	-.9585	LSA	94.7	MSA	34.8	SSA	.3
BDE	.5617	BRA	2.9740	BC3	7.3291	FSP	1749	SG1	7780.5	SG2	261.5	THA	171.91	EL1	90.2	EL2	5.3	ALF	171.71

LAUNCH DATE MAY 22 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 18 1972

HELIOCENTRIC CONIC DISTANCE 620.450 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.445	GAL	-1.72	AZL	93.61	HCA	191.09	SMA	189.57	ECC	.20330	INC	3.6053	V1	29.421
RP	228.10	LAP	.69	LOP	71.34	VP	21.530	GAP	-.22	AZP	86.46	TAL	349.79	TAP	180.88	RCA	151.03	APO	228.11	V2	24.112
RC	242.511	GL	-32.31	GP	11.35	ZAL	110.06	ZAP	47.85	ETS	189.79	ZAE	83.60	ETE	181.76	ZAC	113.40	ETC	273.48	LVI	-22.20

PLANETOCENTRIC CONIC

C3	14.556	VHL	3.815	DLA	-31.62	RAL	9.09	RAD	6640.3	VEL	11.602	PTH	6.64	VHP	3.480	DPA	-11.07	RAP	298.42	ECC	1.2395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 14 16	2395.98	-2.19	62.04	225.34	137.54	18 54 12	1396.0	16.08	46.02
60.00	19 42 57	2159.98	3.83	46.57	231.11	130.15	20 18 57	1160.0	19.42	27.79
70.00	21 49 28	1787.57	11.52	22.09	236.79	122.38	22 19 15	787.6	23.75	.39
75.23	0 5 59	1376.02	20.44	355.61	241.82	114.67	0 28 55	376.0	28.60	330.87
75.23	0 5 59	1376.02	20.44	355.61	241.82	114.67	0 28 55	376.0	28.60	330.87
75.23	0 5 59	1376.02	20.44	355.61	241.82	114.67	0 28 55	376.0	28.60	330.87
110.00	2 52 50	6122.43	11.52	288.91	236.79	122.38	4 34 53	5122.4	23.75	267.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4794	TRA	2.9965	TC3	-7.5060	BAU	1.4678	SGT	7826.2	SGR	1023.7	SG3	962.7	ST	87.5	SR	12.9	SS	45.8
RDE	.0221	RRA	-.4828	RC3	.7436	FAU	.14379	RRT	-.9702	RRF	-.9859	RTF	.9569	CRT	-.9560	CRS	.8119	CST	-.6064
FDE	.9631	FRA	5.0547	FC3	-8.5524	BSP	13518	SGB	7892.9	R23	.2332	R13	-.9579	LSA	93.4	MSA	34.5	SSA	.4
BDE	.4799	BRA	3.0352	BC3	7.5427	FSP	1737	SG1	7889.0	SG2	246.0	THA	172.76	EL1	88.4	EL2	3.8	ALF	171.96

LAUNCH DATE MAY 22 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 20 1972

HELIOCENTRIC CONIC DISTANCE 624.503 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.455	GAL	-1.81	AZL	93.45	HCA	192.13	SMA	189.75	ECC	.20427	INC	3.4480	V1	29.421
RP	228.49	LAP	.72	LOP	72.38	VP	21.500	GAP	-.36	AZP	86.63	TAL	349.29	TAP	181.42	RCA	150.99	APO	228.51	V2	24.071
RC	245.157	GL	-30.91	GP	10.33	ZAL	110.99	ZAP	46.97	ETS	189.13	ZAE	82.57	ETE	181.82	ZAC	112.35	ETC	273.53	LVI	-21.37

PLANETOCENTRIC CONIC

C3	14.423	VHL	3.798	DLA	-30.09	RAL	8.98	RAD	6640.2	VEL	11.597	PTH	6.64	VHP	3.493	DPA	-12.02	RAP	298.93	ECC	1.2374

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 4 47	2430.30	-3.91	63.48	224.54	137.45	18 45 17	1430.3	14.41	47.57
60.00	19 28 44	2206.94	1.77	48.82	229.99	130.27	20 5 31	1206.9	17.52	30.31
70.00	21 23 4	1870.58	8.45	26.56	234.99	123.22	21 54 14	870.6	21.24	5.53
79.26	0 34 37	1282.05	19.56	348.13	241.14	113.33	0 55 59	282.0	27.46	323.45
79.26	0 34 37	1282.05	19.56	348.13	241.14	113.33	0 55 59	282.0	27.46	323.45
79.26	0 34 37	1282.05	19.56	348.13	241.14	113.33	0 55 59	282.0	27.46	323.45
110.00	2 26 26	6205.44	8.45	293.39	234.99	123.22	4 9 52	5205.4	21.24	272.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4035	TRA	3.0699	TC3	-7.6971	BAU	1.4699	SGT	7950.0	SGR	940.5	SG3	952.8	ST	86.3	SR	12.0	SS	46.5
RDE	.0272	RRA	-.4518	RC3	.6741	FAU	.14127	RRT	-.9677	RRF	-.9812	RTF	.9567	CRT	-.9814	CRS	.7612	CST	-.6256
FDE	1.0385	FRA	5.0544	FC3	-8.4795	BSP	13734	SGB	8005.5	R23	.2165	R13	-.9575	LSA	92.7	MSA	34.0	SSA	.4
BDE	.4044	BRA	3.1029	BC3	7.7265	FSP	1719	SG1	8002.0	SG2	235.5	THA	173.46	EL1	87.1	EL2	2.3	ALF	172.21

LAUNCH DATE MAY 22 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 22 1972

HELIOCENTRIC CONIC DISTANCE 628.549 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.465	GAL	-1.90	AZL	93.32	HCA	193.17	SMA	189.93	ECC	.20526	INC	3.3154	V1	29.421
RP	228.88	LAP	.76	LOP	73.42	VP	21.469	GAP	-.51	AZP	86.77	TAL	348.79	TAP	181.96	RCA	150.95	APO	228.92	V2	24.030
RC	247.796	GL	-29.68	GP	9.46	ZAL	111.88	ZAP	46.16	ETS	188.55	ZAE	81.57	ETE	181.86	ZAC	111.47	ETC	273.59	LVI	-20.69

PLANETOCENTRIC CONIC

C3	14.359	VHL	3.789	DLA	-28.71	RAL	8.98	RAD	6640.2	VEL	11.594	PTH	6.64	VHP	3.510	DPA	-12.81	RAP	299.44	ECC	1.2363

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 57 3	2461.36	-5.47	64.78	224.04	137.34	18 38 5	1461.4	12.89	48.95
60.00	19 17 18	2247.91	-.03	50.78	229.25	130.30	19 54 45	1247.9	15.83	32.45
70.00	21 3 49	1934.60	6.05	29.96	233.83	123.68	21 36 4	934.6	19.18	9.35
80.00	23 26 54	1486.51	12.96	.07	237.94	117.14	23 51 40	486.5	23.02	337.21
84.82	1 18 27	1140.36	18.74	337.30	240.70	112.16	1 37 27	140.4	26.24	312.68
100.00	2 13 41	6249.02	12.96	299.35	237.94	117.14	3 57 50	5249.0	23.02	276.48
110.00	2 7 12	6269.46	6.05	296.79	233.83	123.68	3 51 41	5269.5	19.18	276.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3311	TRA	3.1494	TC3	-7.8514	BAU	1.5118	SGT	8070.7	SGR	870.8	SG3	940.6	ST	85.7	SR	11.3	SS	47.2
RDE	.0329	RRA	-.4269	RC3	.6105	FAU	.13812	RRT	-.9639	RRF	-.9754	RTF	.9561	CRT	-.9961	CRS	.7028	CST	-.6466
FDE	1.1117	FRA	5.0523	FC3	-8.3275	BSP	13955	SGB	8117.5	R23	.1996	R13	-.9567	LSA	92.6	MSA	33.6	SSA	.5
BDE	.3328	BRA	3.1782	BC3	7.8751	FSP	1702	SG1	8114.3	SG2	230.6	THA	174.06	EL1	86.4	EL2	1.0	ALF	172.49

LAUNCH DATE MAY 22 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 24 1972

HELIOCENTRIC CONIC DISTANCE 632.590 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.475	GAL	-1.99	AZL	93.20	HCA	194.20	SMA	190.11	ECC	.20626	INC	3.2024	V1	29.421
RP	229.27	LAP	.79	LOP	74.45	VP	21.439	GAP	-.65	AZP	86.90	TAL	348.29	TAP	182.49	RCA	150.90	APO	229.32	V2	23.990
RC	250.428	GL	-28.60	GP	8.72	ZAL	112.75	ZAP	45.39	ETS	188.06	ZAE	80.59	ETE	181.90	ZAC	110.70	ETC	273.67	LVI	-20.14

PLANETOCENTRIC CONIC

C3	14.348	VHL	3.788	DLA	-27.45	RAL	9.07	RAD	6640.2	VEL	11.593	PTH	6.64	VHP	3.528	DPA	-13.47	RAP	299.94	ECC	1.2361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 50 40	2489.86	-6.89	65.99	223.76	137.19	18 32 10	1489.9	11.48	50.20
60.00	19 7 52	2284.51	-1.64	52.52	228.79	130.27	19 45 57	1284.5	14.30	34.34
70.00	20 48 47	1987.79	4.03	32.76	233.08	123.94	21 21 54	987.8	17.41	12.46
80.00	22 56 18	1588.57	9.72	5.92	236.54	118.37	23 22 47	588.6	20.54	343.77
90.00	1 2 2	1195.81	13.14	338.79	238.31	115.27	1 21 57	195.8	22.44	315.62
100.00	1 43 6	1063.04	9.72	327.29	236.54	118.37	2 0 49	63.0	20.54	305.14
110.00	1 52 9	1034.61	4.03	321.68	233.08	123.94	2 9 23	34.6	17.41	301.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2614	TRA	3.2341	TC3	-7.9797	BAU	1.5344	SGT	8190.9	SGR	812.2	SG3	927.2	ST	85.5	SR	10.8	SS	47.9
RDE	.0392	RRA	-.4063	RC3	.5544	FAU	.13505	RRT	-.9591	RRF	-.9684	RTF	.9556	CRT	-.9979	CRS	.6366	CST	-.6693
FDE	1.1782	FRA	5.0428	FC3	-8.1484	BSP	14177	SGB	8231.1	R23	.1808	R13	-.9561	LSA	92.9	MSA	33.0	SSA	.5
BDE	.2643	BRA	3.2595	BC3	7.9989	FSP	1678	SG1	8227.9	SG2	228.8	THA	174.56	EL1	86.2	EL2	.7	ALF	172.80

LAUNCH DATE MAY 22 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 26 1972

HELIOCENTRIC CONIC DISTANCE 636.625 EARTH TO MARS

RL	151.44	LAL	-.00	LOL	240.27	VL	32.485	GAL	-2.09	AZL	93.10	HCA	195.23	SMA	190.29	ECC	.20727	INC	3.1044	V1	29.421
RP	229.65	LAP	.02	LOP	75.48	VP	21.409	GAP	-.79	AZP	87.00	TAL	347.79	TAP	183.02	RCA	150.85	APO	229.74	V2	23.949
RC	253.053	GL	-27.62	GP	8.08	ZAL	113.60	ZAP	44.66	ETS	187.63	ZAE	79.63	ETE	181.92	ZAC	110.04	ETC	273.74	LVI	-19.68

PLANETOCENTRIC CONIC

C3	14.379	VHL	3.792	DLA	-26.30	RAL	9.23	RAD	6640.2	VEL	11.595	PTH	6.64	VHP	3.548	DPA	-14.02	RAP	300.48	ECC	1.2366

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 45 19	2516.34	-8.21	67.12	223.66	137.03	18 27 15	1516.3	10.17	91.35
60.00	18 59 58	2317.78	-3.11	54.11	228.54	130.20	19 38 36	1317.8	12.90	36.03
70.00	20 36 32	2033.85	2.28	35.17	232.62	124.09	21 10 26	1033.9	15.83	15.09
80.00	22 35 19	1662.08	7.31	10.05	235.72	119.03	23 3 1	662.1	18.59	348.36
90.00	0 29 47	1305.58	9.86	345.19	237.08	116.64	0 51 33	305.6	20.00	322.74
100.00	1 22 6	1136.55	7.31	331.42	235.72	119.03	1 41 3	136.6	18.59	309.73
110.00	1 39 54	1080.67	2.28	324.09	232.62	124.09	1 57 55	80.7	15.83	304.01

DIFFERENTIAL CORRECTIONS

TDE	-.1975	TRA	3.3201	TC3	-8.0940	BAU	1.5590												
RDE	.0461	RRA	-.3891	RC3	.5046	FAU	.13203												
FDE	1.2361	FRA	5.0285	FC3	-7.9490	BSP	14366												
BDE	.2028	BRA	3.3429	BC3	8.1097	FSP	1653												

MID-COURSE EXECUTION ACCURACY

SGT	8311.5	SGR	762.5	SG3	913.0														
RRT	-.9530	RRF	-.9600	RTF	.9550														
SGB	8346.4	R23	.1624	R13	-.9554														
SG1	8343.2	SG2	230.1	THA	175.00														

ORBIT DETERMINATION ACCURACY

ST	85.7	SR	10.5	SS	48.4														
CRT	-.9852	CRS	.5633	CST	-.6909														
LSA	93.6	MSA	32.4	SSA	.6														
EL1	86.4	EL2	1.8	ALF	173.15														

LAUNCH DATE MAY 23 1971 FLIGHT TIME 88.00 ARRIVAL DATE AUG 19 1971

HELIOCENTRIC CONIC DISTANCE 261.252 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	35.633	GAL	.34	AZL	91.87	HCA	81.27	SMA	274.95	ECC	.44913	INC	1.8686	V1	29.415
RP	207.13	LAP	-1.85	LOP	322.50	VP	28.263	GAP	22.79	AZP	90.28	TAL	1.10	TAP	82.37	RCA	151.46	APO	398.44	V2	26.443
RC	56.701	GL	-10.61	GP	-.88	ZAL	91.05	ZAP	177.90	ETS	204.68	ZAE	172.92	ETE	34.96	ZAC	98.80	ETC	278.26	LVI	-17.87

PLANETOCENTRIC CONIC

C3	39.803	VHL	6.309	DLA	-20.53	RAL	338.33	RAD	6650.6	VEL	12.636	PTH	7.49	VHP	11.465	DPA	-17.21	RAP	323.89	ECC	1.6551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 52	2888.05	-26.02	84.48	204.84	131.35	15 59 0	1888.1	-8.44	67.03
60.00	16 15 8	2717.13	-20.04	74.25	210.01	125.73	17 0 25	1717.1	-4.52	55.37
70.00	17 36 29	2477.96	-14.34	58.81	213.96	121.34	18 17 47	1478.0	-.66	38.90
80.00	19 13 34	2174.16	-9.83	38.39	216.61	118.34	19 49 48	1174.2	2.46	17.78
90.00	20 48 32	1867.83	-8.00	16.84	217.58	117.22	21 19 40	867.8	3.74	355.96
100.00	21 56 26	1648.63	-9.83	359.76	216.61	118.34	22 23 54	648.6	2.46	339.15
110.00	22 35 56	1524.78	-14.34	347.73	213.96	121.34	23 1 21	524.8	-.66	327.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3422	TRA	-.8065	TC3	.0501	BAU	.0409	SGT	844.0	SGR	574.8	SG3	86.5	ST	19.5	SR	26.4	SS	7.9
RDE	-.5763	RRA	.2332	RC3	.0582	FAU	.03184	RRT	-.0198	RRF	.0254	RTF	-.5366	CRT	.7140	CRS	.2519	CST	.8480
FDE	.0653	FRA	.5010	FC3	-.6926	BSP	1076	SG8	1021.1	R23	-.0056	R13	.5368	LSA	30.9	MSA	13.6	SSA	1.1
BDE	.6702	BRA	.8395	BC3	.0768	FSP	98	SG1	844.1	SG2	574.6	THA	178.56	EL1	30.6	EL2	11.7	ALF	56.69

LAUNCH DATE MAY 23 1971 FLIGHT TIME 90.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 262.894 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	35.406	GAL	.38	AZL	91.86	HCA	82.53	SMA	266.05	ECC	.43073	INC	1.8600	V1	29.415
RP	207.05	LAP	-1.84	LOP	323.76	VP	27.985	GAP	22.25	AZP	90.24	TAL	1.26	TAP	83.79	RCA	151.46	APO	380.65	V2	26.453
RC	57.030	GL	-10.89	GP	-.90	ZAL	90.89	ZAP	177.02	ETS	197.61	ZAE	172.29	ETE	31.15	ZAC	98.73	ETC	278.33	LVI	-17.93

PLANETOCENTRIC CONIC

C3	37.006	VHL	6.083	DLA	-20.85	RAL	338.28	RAD	6649.6	VEL	12.526	PTH	7.41	VHP	11.074	DPA	-17.13	RAP	324.23	ECC	1.6090

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 4	2862.88	-24.88	83.17	203.72	131.96	15 59 47	1862.9	-7.18	65.95
60.00	16 16 50	2690.63	-18.98	72.81	208.89	126.24	17 1 41	1690.6	-3.36	54.10
70.00	17 38 51	2449.51	-13.32	57.23	212.86	121.74	18 19 41	1449.5	.43	37.42
80.00	19 16 43	2143.26	-8.82	36.65	215.52	118.64	19 52 26	1143.3	3.51	16.08
90.00	20 52 7	1835.54	-6.99	15.00	216.51	117.47	21 22 42	835.5	4.77	354.15
100.00	21 59 34	1617.73	-8.82	358.01	215.52	118.64	22 26 32	617.7	3.51	337.45
110.00	22 38 18	1496.33	-13.32	346.15	212.86	121.74	23 3 14	496.3	.43	326.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3364	TRA	-.7971	TC3	.0636	BAU	.0441	SGT	867.1	SGR	580.1	SG3	93.3	ST	19.9	SR	26.6	SS	8.2
RDE	-.5603	RRA	.2268	RC3	.0625	FAU	.03308	RRT	-.0209	RRF	.0266	RTF	-.5486	CRT	.7113	CRS	.2303	CST	.8364
FDE	.0637	FRA	.5208	FC3	-.7738	BSP	1102	SG8	1043.3	R23	-.0059	R13	.5488	LSA	31.2	MSA	14.0	SSA	1.1
BDE	.6536	BRA	.8288	BC3	.0892	FSP	108	SG1	867.2	SG2	579.9	THA	178.55	EL1	31.0	EL2	12.0	ALF	56.24

LAUNCH DATE MAY 23 1971 FLIGHT TIME 92.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC DISTANCE 264.832 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	35.192	GAL	.42	AZL	91.85	HCA	83.80	SMA	258.26	ECC	.41355	INC	1.8515	V1	29.415
RP	206.97	LAP	-1.84	LOP	325.03	VP	27.723	GAP	21.72	AZP	90.20	TAL	1.43	TAP	85.23	RCA	151.45	APO	365.06	V2	26.462
RC	57.440	GL	-11.17	GP	-.92	ZAL	90.69	ZAP	176.11	ETS	193.77	ZAE	171.66	ETE	27.97	ZAC	98.66	ETC	278.39	LVI	-17.99

PLANETOCENTRIC CONIC

C3	34.473	VHL	5.871	DLA	-21.18	RAL	338.19	RAD	6648.7	VEL	12.425	PTH	7.33	VHP	10.698	DPA	-17.04	RAP	324.56	ECC	1.5673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 13 13	2837.95	-23.74	81.89	202.63	132.53	16 0 30	1838.0	-5.94	64.90
60.00	16 18 30	2664.30	-17.92	71.40	207.79	126.72	17 2 55	1664.3	-2.20	52.84
70.00	17 41 14	2421.11	-12.30	55.66	211.77	122.12	18 21 35	1421.1	1.51	35.94
80.00	19 19 55	2112.23	-7.81	34.90	214.46	118.91	19 55 7	1112.2	4.55	14.37
90.00	20 55 48	1802.99	-5.96	13.16	215.46	117.70	21 25 51	803.0	5.81	352.32
100.00	22 2 47	1586.70	-7.81	356.27	214.46	118.91	22 29 14	586.7	4.55	335.74
110.00	22 40 40	1467.93	-12.30	344.58	211.77	122.12	23 5 8	467.9	1.51	324.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3302	TRA	-.7869	TC3	.0789	BAU	.0477	SGT	889.2	SGR	585.0	SG3	100.1	ST	20.3	SR	26.8	SS	8.4
RDE	-.5449	RRA	.2205	RC3	.0670	FAU	.03425	RRT	-.0219	RRF	.0280	RTF	-.5516	CRT	.7084	CRS	.2088	CST	.8289
FDE	.0619	FRA	.5405	FC3	-.8601	BSP	1164	SG8	1064.4	R23	-.0063	R13	.5618	LSA	31.6	MSA	14.3	SSA	1.1
BDE	.6372	BRA	.8172	BC3	.1035	FSP	116	SG1	889.3	SG2	584.8	THA	178.55	EL1	31.3	EL2	12.3	ALF	55.84

LAUNCH DATE MAY 23 1971 FLIGHT TIME 94.00 ARRIVAL DATE AUG 25 1971

HELIOCENTRIC CONIC DISTANCE 267.022 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	34.992	GAL	.46	AZL	91.84	HCA	85.06	SMA	251.38	ECC	.39752	INC	1.8430	V1	29.415
RP	206.90	LAP	-1.84	LOP	326.30	VP	27.476	GAP	21.20	AZP	90.16	TAL	1.62	TAP	86.69	RCA	151.45	APO	351.31	V2	26.469
RC	57.930	GL	-11.44	GP	-.95	ZAL	90.46	ZAP	175.18	ETS	191.38	ZAE	171.06	ETE	25.29	ZAC	98.59	ETC	278.45	LVI	-18.05

PLANETOCENTRIC CONIC

C3	32.177	VHL	5.672	DLA	-21.52	RAL	338.08	RAD	6647.8	VEL	12.333	PTH	7.26	VHP	10.338	DPA	-16.96	RAP	324.89	ECC	1.5296

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 14 18	2813.31	-22.60	80.66	201.57	133.05	16 1 11	1813.3	-4.70	63.86
60.00	16 20 6	2638.20	-16.85	70.03	206.71	127.17	17 4 7	1638.2	-1.05	51.60
70.00	17 43 37	2392.81	-11.27	54.12	210.70	122.46	18 23 29	1392.8	2.59	34.46
80.00	19 23 12	2081.11	-6.78	33.17	213.41	119.15	19 57 54	1081.1	5.59	12.65
90.00	20 59 35	1770.23	-4.92	11.32	214.43	117.88	21 29 6	770.2	6.84	350.47
100.00	22 6 4	1555.58	-6.78	354.53	213.41	119.15	22 32 0	555.6	5.59	334.02
110.00	22 43 3	1439.63	-11.27	343.04	210.70	122.46	23 7 3	439.6	2.59	323.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3222	TRA	-.7764	TC3	.0961	BAU	.0515	SGT	910.2	SGR	589.4	SG3	107.4	ST	20.6	SR	27.0	SS	8.7
RDE	-.5301	RRA	.2143	RC3	.0715	FAU	.03551	RRT	-.0244	RRF	.0284	RTF	-.5725	CRT	.7036	CRS	.1864	CST	.8199
FDE	.0593	FRA	.5570	FC3	-.9554	BSP	1205	SG8	1084.4	R23	-.0043	R13	.5727	LSA	31.8	MSA	14.7	SSA	1.2
BDE	.6203	BRA	.8055	BC3	.1198	FSP	128	SG1	910.4	SG2	589.1	THA	178.44	EL1	31.6	EL2	12.5	ALF	55.62

LAUNCH DATE MAY 23 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 27 1971

HELIOCENTRIC CONIC DISTANCE 269.429 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 34.804 GAL .51 AZL 91.83 HCA 86.33 SMA 245.28 ECC .38255 INC 1.8345 V1 29.415
RP 206.85 LAP -1.83 LOP 327.56 VP 27.242 GAP 20.69 AZP 90.12 TAL 1.83 TAP 88.16 RCA 151.45 APO 339.11 V2 26.476
RC 58.496 GL -11.72 GP -.97 ZAL 90.21 ZAP 174.23 ETS 189.77 ZAE 170.50 ETE 23.00 ZAC 98.52 ETC 278.51 LVI -18.10

PLANETOCENTRIC CONIC

C3 30.093 VHL 5.486 DLA -21.87 RAL 337.94 RAD 6647.0 VEL 12.249 PTH 7.20 VHP 9.991 DPA -16.89 RAP 325.20 ECC 1.4953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 19	2789.00	-21.47	79.46	200.52	133.54	16 1 48	1789.0	-3.48	62.84
60.00	16 21 45	2612.36	-15.78	68.68	205.65	127.58	17 5 17	1612.4	.09	50.36
70.00	17 46 0	2364.67	-10.24	52.59	209.66	122.76	18 25 25	1364.7	3.67	32.99
80.00	19 26 34	2049.95	-5.74	31.43	212.39	119.35	20 0 44	1049.9	6.63	10.92
90.00	21 3 30	1737.27	-3.87	9.47	213.42	118.04	21 32 27	737.3	7.87	348.60
100.00	22 9 25	1524.42	-5.74	352.80	212.39	119.35	22 34 50	524.4	6.63	332.29
110.00	22 45 26	1411.49	-10.24	341.51	209.66	122.76	23 8 58	411.5	3.67	321.90

DIFFERENTIAL CORRECTIONS

TDE -.3152 TRA -.7652 TC3 .1161 BAU .0558
RDE -.5158 RRA .2084 RC3 .0760 FAU .03690
FDE .0547 FRA .5795 FC3-1.0616 BSP 1253
BDE .6045 BRA .7931 BC3 .1387 FSP 140

MID-COURSE EXECUTION ACCURACY

SGT 930.7 SGR 593.5 SG3 115.4
RRT -.0254 RRF .0317 RTF -.5861
SGB 1103.9 R23 -.0066 R13 .5863
SG1 931.0 SG2 593.2 THA 178.44

ORBIT DETERMINATION ACCURACY

ST 20.9 SR 27.2 SS 8.9
CRT .7001 CRS .1522 CST .8030
LSA 32.1 MSA 15.1 SSA 1.2
EL1 31.8 EL2 12.8 ALF 55.34

LAUNCH DATE MAY 23 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 29 1971

HELIOCENTRIC CONIC DISTANCE 272.024 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 34.627 GAL .55 AZL 91.83 HCA 87.60 SMA 239.84 ECC .36856 INC 1.8261 V1 29.415
RP 206.80 LAP -1.82 LOP 328.83 VP 27.022 GAP 20.19 AZP 90.08 TAL 2.05 TAP 89.65 RCA 151.44 APO 328.23 V2 26.482
RC 59.137 GL -11.99 GP -1.00 ZAL 89.93 ZAP 173.27 ETS 188.61 ZAE 169.97 ETE 21.03 ZAC 98.45 ETC 278.57 LVI -18.15

PLANETOCENTRIC CONIC

C3 28.201 VHL 5.310 DLA -22.23 RAL 337.77 RAD 6646.3 VEL 12.172 PTH 7.13 VHP 9.657 DPA -16.82 RAP 325.50 ECC 1.4641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 16 18	2765.08	-20.34	78.30	199.51	133.99	16 2 23	1765.1	-2.28	61.84
60.00	16 23 19	2586.85	-14.72	67.36	204.62	127.95	17 6 25	1586.9	1.21	49.14
70.00	17 48 23	2336.74	-9.21	51.09	208.64	123.04	18 27 20	1336.7	4.73	31.52
80.00	19 29 59	2018.78	-4.70	29.71	211.40	119.52	20 3 38	1018.8	7.66	9.18
90.00	21 7 32	1704.14	-2.81	7.61	212.44	118.15	21 35 56	704.1	8.90	346.71
100.00	22 12 51	1493.25	-4.70	351.08	211.40	119.52	22 37 44	493.2	7.66	330.55
110.00	22 47 50	1383.56	-9.21	340.01	208.64	123.04	23 10 53	383.6	4.73	320.44

DIFFERENTIAL CORRECTIONS

TDE -.3077 TRA -.7538 TC3 .1312 BAU .0581
RDE -.5021 RRA .2027 RC3 .0806 FAU .03830
FDE .0509 FRA .6001 FC3-1.1759 BSP 1309
BDE .5889 BRA .7805 BC3 .1540 FSP 154

MID-COURSE EXECUTION ACCURACY

SGT 949.4 SGR 597.1 SG3 123.8
RRT -.0278 RRF .0334 RTF -.5932
SGB 1121.6 R23 -.0061 R13 .5934
SG1 949.7 SG2 596.8 THA 178.34

ORBIT DETERMINATION ACCURACY

ST 21.2 SR 27.3 SS 9.2
CRT .6959 CRS .1246 CST .7899
LSA 32.3 MSA 15.4 SSA 1.2
EL1 32.0 EL2 13.0 ALF 55.12

LAUNCH DATE MAY 23 1971 FLIGHT TIME 100.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 274.781 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 34.461 GAL .60 AZL 91.82 HCA 88.87 SMA 234.96 ECC .35549 INC 1.8176 V1 29.415
RP 206.75 LAP -1.82 LOP 330.10 VP 26.813 GAP 19.70 AZP 90.04 TAL 2.29 TAP 91.16 RCA 151.44 APO 318.49 V2 26.487
RC 59.850 GL -12.26 GP -1.03 ZAL 89.63 ZAP 172.28 ETS 187.73 ZAE 169.50 ETE 19.31 ZAC 98.38 ETC 278.63 LVI -18.19

PLANETOCENTRIC CONIC

C3 26.481 VHL 5.146 DLA -22.59 RAL 337.58 RAD 6645.6 VEL 12.101 PTH 7.08 VHP 9.336 DPA -16.75 RAP 325.78 ECC 1.4358

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 12	2741.58	-19.22	77.18	198.52	134.40	16 2 54	1741.6	-1.10	60.86
60.00	16 24 50	2561.71	-13.66	66.08	203.62	128.29	17 7 32	1561.7	2.32	47.94
70.00	17 50 47	2309.05	-8.18	49.61	207.64	123.28	18 29 16	1309.1	5.78	30.06
80.00	19 33 29	1987.64	-3.65	27.99	210.42	119.65	20 6 37	987.6	8.68	7.43
90.00	21 11 42	1670.85	-1.74	5.75	211.48	118.23	21 39 33	670.9	9.92	344.80
100.00	22 16 21	1462.11	-3.65	349.36	210.42	119.65	22 40 43	462.1	8.68	328.80
110.00	22 50 13	1355.87	-8.18	338.53	207.64	123.28	23 12 49	355.9	5.78	318.98

DIFFERENTIAL CORRECTIONS

TDE -.2998 TRA -.7456 TC3 .1602 BAU .0642
RDE -.4889 RRA .1971 RC3 .0850 FAU .03989
FDE .0454 FRA .6216 FC3-1.3043 BSP 1333
BDE .5735 BRA .7712 BC3 .1814 FSP 166

MID-COURSE EXECUTION ACCURACY

SGT 973.2 SGR 600.4 SG3 132.9
RRT -.0302 RRF .0360 RTF -.5993
SGB 1143.5 R23 -.0063 R13 .6096
SG1 973.5 SG2 599.9 THA 178.28

ORBIT DETERMINATION ACCURACY

ST 21.5 SR 27.4 SS 9.4
CRT .6895 CRS .0901 CST .7740
LSA 32.4 MSA 15.8 SSA 1.3
EL1 32.2 EL2 13.2 ALF 54.91

LAUNCH DATE MAY 23 1971 FLIGHT TIME 102.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 277.681 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 34.305 GAL .65 AZL 91.81 HCA 90.13 SMA 230.58 ECC .34326 INC 1.8092 V1 29.415
RP 206.72 LAP -1.81 LOP 331.37 VP 26.616 GAP 19.21 AZP 90.00 TAL 2.54 TAP 92.67 RCA 151.43 APO 309.73 V2 26.491
RC 60.633 GL -12.53 GP -1.06 ZAL 89.31 ZAP 171.29 ETS 187.05 ZAE 169.07 ETE 17.79 ZAC 98.31 ETC 278.68 LVI -18.23

PLANETOCENTRIC CONIC

C3 24.915 VHL 4.991 DLA -22.96 RAL 337.37 RAD 6645.0 VEL 12.037 PTH 7.02 VHP 9.027 DPA -16.69 RAP 326.06 ECC 1.4100

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 4	2718.54	-18.12	76.10	197.55	134.78	16 3 22	1718.5	.06	59.89
60.00	16 26 20	2536.98	-12.61	64.83	202.64	128.60	17 8 37	1537.0	3.41	46.76
70.00	17 53 11	2281.66	-7.15	48.15	206.67	123.49	18 31 12	1281.7	6.81	28.62
80.00	19 37 3	1956.56	-2.60	26.28	209.48	119.75	20 9 40	956.6	9.69	5.68
90.00	21 16 0	1637.44	-.66	3.89	210.56	118.27	21 43 17	637.4	10.94	342.86
100.00	22 19 55	1431.03	-2.60	347.65	209.48	119.75	22 43 46	431.0	9.69	327.05
110.00	22 52 37	1328.48	-7.15	337.07	206.67	123.49	23 14 46	328.5	6.81	317.53

DIFFERENTIAL CORRECTIONS

TDE -.2925 TRA -.7343 TC3 .1855 BAU .0686
RDE -.4761 RRA .1917 RC3 .0894 FAU .04157
FDE .0395 FRA .6429 FC3-1.4443 BSP 1376
BDE .5588 BRA .7589 BC3 .2059 FSP 183

MID-COURSE EXECUTION ACCURACY

SGT 992.5 SGR 603.2 SG3 142.6
RRT -.0313 RRF .0382 RTF -.6203
SGB 1161.4 R23 -.0075 R13 .6205
SG1 992.8 SG2 602.7 THA 178.27

ORBIT DETERMINATION ACCURACY

ST 21.7 SR 27.6 SS 9.7
CRT .6851 CRS .0560 CST .7561
LSA 32.6 MSA 16.2 SSA 1.3
EL1 32.4 EL2 13.4 ALF 54.72

LAUNCH DATE MAY 23 1971 FLIGHT TIME 104.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 280,707 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 34.158 GAL .70 AZL 91.80 HCA 91.40 SMA 226.63 ECC .33183 INC 1.8007 V1 29.418
RP 206.70 LAP -1.80 LOP 332.64 VP 26.430 GAP 18.74 AZP 89.96 TAL 2.80 TAP 94.20 RCA 151.42 APO 301.83 V2 26.494
RC 61.483 GL -12.79 GP -1.09 ZAL 88.96 ZAP 170.28 ETS 186.51 ZAE 168.71 ETE 16.44 ZAC 98.24 ETC 278.73 LVI -18.26

PLANETOCENTRIC CONIC

C3 23.489 VHL 4.847 DLA -23.34 RAL 337.13 RAD 6644.4 VEL 11.978 PTH 6.98 VHP 8.730 DPA -16.64 RAP 326.32 ECC 1.3866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 52	2696.01	-17.04	75.05	196.61	135.12	16 3 48	1696.0	1.19	58.95
60.00	16 27 47	2512.69	-11.58	63.61	201.68	128.88	17 9 40	1512.7	4.47	45.59
70.00	17 55 35	2254.61	-6.13	46.72	205.73	123.66	18 33 9	1254.6	7.82	27.18
80.00	19 40 43	1925.58	-1.55	24.58	208.56	119.82	20 12 48	925.6	10.69	3.92
90.00	21 20 27	1603.80	.42	2.02	209.66	118.28	21 47 11	603.9	11.94	340.91
100.00	22 23 34	1400.05	-1.55	345.95	208.56	119.82	22 46 55	400.0	10.69	325.29
110.00	22 55 1	1301.43	-6.13	335.64	205.73	123.66	23 16 42	301.4	7.82	316.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2847 TRA -.7244 TC3 .2124 BAU .0729 SGT 1012.7 SGR 605.6 SG3 152.9 ST 21.9 SR 27.7 SS 10.0
RDE -.4639 RRA .1866 RC3 .0937 FAU .04331 RRT -.0339 RRF .0412 RTF -.6317 CRT .6791 CRS .0203 CST .7381
FDE .0330 FRA .6666 FC3-1.5963 BSP 1422 SGB 1179.9 R23 -.0079 R13 .6320 LSA 32.7 MSA 16.6 SSA 1.3
BDE .5443 BRA .7480 BC3 .2322 FSP 198 SG1 1013.0 SG2 605.1 THA 178.20 EL1 32.5 EL2 13.7 ALF 54.59

LAUNCH DATE MAY 23 1971 FLIGHT TIME 106.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 283,844 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 34.020 GAL .75 AZL 91.79 HCA 92.67 SMA 223.04 ECC .32113 INC 1.7922 V1 29.415
RP 206.68 LAP -1.79 LOP 333.91 VP 26.253 GAP 18.27 AZP 89.92 TAL 3.07 TAP 95.74 RCA 151.42 APO 294.67 V2 26.496
RC 62.398 GL -13.05 GP -1.13 ZAL 88.60 ZAP 169.25 ETS 186.07 ZAE 168.40 ETE 15.22 ZAC 98.17 ETC 278.77 LVI -18.29

PLANETOCENTRIC CONIC

C3 22.188 VHL 4.710 DLA -23.71 RAL 336.86 RAD 6643.8 VEL 11.924 PTH 6.93 VHP 8.443 DPA -16.59 RAP 326.57 ECC 1.3652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 19 36	2673.97	-15.97	74.04	195.70	135.44	16 4 10	1674.0	2.30	58.03
60.00	16 29 12	2488.85	-10.56	62.42	200.75	129.12	17 10 41	1488.8	5.52	44.44
70.00	17 57 58	2227.88	-5.12	45.31	204.81	123.81	18 35 6	1227.9	8.82	25.75
80.00	19 44 27	1894.64	-.51	22.88	207.67	119.85	20 16 2	894.6	11.67	2.15
90.00	21 25 4	1570.12	1.51	.13	208.79	118.24	21 51 14	570.1	12.93	338.93
100.00	22 27 19	1369.11	-.51	344.25	207.67	119.85	22 50 8	369.1	11.67	323.52
110.00	22 57 25	1274.70	-5.12	334.23	204.81	123.81	23 18 39	274.7	8.82	314.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2661 TRA -.7027 TC3 .2581 BAU .0819 SGT 1017.6 SGR 607.6 SG3 163.8 ST 21.4 SR 27.7 SS 10.3
RDE -.4522 RRA .1816 RC3 .0979 FAU .04508 RRT -.0401 RRF .0446 RTF -.6597 CRT .6643 CRS -.0122 CST .7299
FDE .0268 FRA .6928 FC3-1.7589 BSP 1323 SGB 1185.2 R23 -.0035 R13 .6600 LSA 32.3 MSA 16.9 SSA 1.3
BDE .5247 BRA .7258 BC3 .2760 FSP 216 SG1 1018.0 SG2 606.9 THA 177.87 EL1 32.2 EL2 13.8 ALF 55.77

LAUNCH DATE MAY 23 1971 FLIGHT TIME 108.00 ARRIVAL DATE SEP 8 1971

HELIOCENTRIC CONIC DISTANCE 287,080 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 33.891 GAL .79 AZL 91.78 HCA 93.94 SMA 219.79 ECC .31114 INC 1.7838 V1 29.415
RP 206.67 LAP -1.78 LOP 335.18 VP 26.086 GAP 17.81 AZP 89.88 TAL 3.35 TAP 97.29 RCA 151.41 APO 288.18 V2 26.496
RC 63.376 GL -13.31 GP -1.16 ZAL 88.23 ZAP 168.20 ETS 185.70 ZAE 168.16 ETE 14.11 ZAC 98.10 ETC 278.82 LVI -18.31

PLANETOCENTRIC CONIC

C3 21.003 VHL 4.583 DLA -24.09 RAL 336.59 RAD 6643.3 VEL 11.875 PTH 6.89 VHP 8.167 DPA -16.55 RAP 326.80 ECC 1.3457

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 20 17	2692.56	-14.93	73.07	194.81	135.72	16 4 30	1652.6	3.37	57.13
60.00	16 30 35	2465.61	-9.56	61.28	199.85	129.34	17 11 41	1465.6	6.53	43.32
70.00	18 0 22	2201.67	-4.13	43.94	203.92	123.93	18 37 3	1201.7	9.79	24.35
80.00	19 48 16	1863.97	.53	21.20	206.82	119.85	20 19 20	864.0	12.64	.39
90.00	21 29 51	1536.34	2.60	358.25	207.96	118.17	21 55 27	536.3	13.91	336.93
100.00	22 31 8	1338.44	.53	342.56	206.82	119.85	22 53 26	338.4	12.64	321.75
110.00	22 59 48	1248.49	-4.13	332.85	203.92	123.93	23 20 36	248.5	9.79	313.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2628 TRA -.6966 TC3 .2801 BAU .0837 SGT 1041.1 SGR 609.3 SG3 175.8 ST 21.8 SR 27.8 SS 10.6
RDE -.4409 RRA .1768 RC3 .1017 FAU .04719 RRT -.0409 RRF .0481 RTF -.6504 CRT .6617 CRS -.0602 CST .6988
FDE .0162 FRA .7151 FC3-1.9452 BSP 1424 SGB 1206.3 R23 -.0072 R13 .6607 LSA 32.5 MSA 17.3 SSA 1.4
BDE .5133 BRA .7187 BC3 .2980 FSP 235 SG1 1041.6 SG2 608.5 THA 177.92 EL1 32.4 EL2 14.0 ALF 55.20

LAUNCH DATE MAY 23 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 10 1971

HELIOCENTRIC CONIC DISTANCE 290,404 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 33.769 GAL .84 AZL 91.78 HCA 95.21 SMA 216.84 ECC .30179 INC 1.7753 V1 29.415
RP 206.68 LAP -1.77 LOP 336.45 VP 25.927 GAP 17.36 AZP 89.84 TAL 3.63 TAP 98.84 RCA 151.40 APO 282.27 V2 26.496
RC 64.414 GL -13.55 GP -1.20 ZAL 87.84 ZAP 167.14 ETS 185.40 ZAE 167.99 ETE 13.09 ZAC 98.04 ETC 278.85 LVI -18.32

PLANETOCENTRIC CONIC

C3 19.921 VHL 4.463 DLA -24.46 RAL 336.30 RAD 6642.8 VEL 11.829 PTH 6.85 VHP 7.901 DPA -16.51 RAP 327.01 ECC 1.3278

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 20 56	2631.74	-13.92	72.14	193.95	135.97	16 4 47	1631.7	4.42	56.26
60.00	16 31 55	2442.92	-8.57	60.16	198.98	129.53	17 12 38	1442.9	7.52	42.22
70.00	18 2 44	2175.91	-3.15	42.59	203.06	124.03	18 39 0	1175.9	10.74	22.95
80.00	19 52 10	1833.46	1.57	19.52	205.99	119.82	20 22 43	833.5	13.58	358.61
90.00	21 34 49	1502.39	3.69	356.35	207.17	118.06	21 59 51	502.4	14.87	334.90
100.00	22 35 1	1307.93	1.57	340.89	205.99	119.82	22 56 49	307.9	13.58	319.98
110.00	23 2 11	1222.73	-3.15	331.50	203.06	124.03	23 22 33	222.7	10.74	311.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2582 TRA -.6892 TC3 .3039 BAU .0857 SGT 1062.2 SGR 610.5 SG3 188.4 ST 22.1 SR 27.8 SS 10.9
RDE -.4301 RRA .1722 RC3 .1054 FAU .04937 RRT -.0425 RRF .0512 RTF -.6631 CRT .6579 CRS -.1000 CST .6736
FDE .0069 FRA .7392 FC3-2.1454 BSP 1492 SGB 1225.1 R23 -.0092 R13 .6634 LSA 32.6 MSA 17.7 SSA 1.4
BDE .5017 BRA .7104 BC3 .3217 FSP 253 SG1 1062.6 SG2 609.7 THA 177.92 EL1 32.6 EL2 14.2 ALF 54.80

LAUNCH DATE MAY 23 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 12 1971

HELIOCENTRIC CONIC DISTANCE 293.808 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	33.654	GAL	.89	AZL	91.77	HCA	96.48	SMA	214.14	ECC	.29304	INC	1.7668	V1	29.415
RP	206.69	LAP	-1.76	LOP	337.72	VP	25.777	GAP	16.93	AZP	89.80	TAL	3.92	TAP	100.40	RCA	151.39	APO	276.89	V2	26.495
RC	65.512	GL	-13.79	GP	-1.24	ZAL	87.45	ZAP	166.05	ETS	185.13	ZAE	167.88	ETE	12.14	ZAC	97.97	ETC	278.89	LVI	-18.33

PLANETOCENTRIC CONIC

C3	18.932	VHL	4.351	DLA	-24.84	RAL	335.99	RAD	6642.4	VEL	11.788	PTH	6.81	VHP	7.644	DPA	-16.49	RAP	327.20	ECC	1.3116

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 21 30	2611.53	-12.93	71.24	193.12	136.20	16 5 2	1611.5	5.43	55.41
60.00	16 33 13	2420.83	-7.62	59.08	198.14	129.70	17 13 33	1420.8	8.48	41.14
70.00	18 5 6	2150.65	-2.18	41.27	202.23	124.09	18 40 57	1150.6	11.67	21.58
80.00	19 56 8	1803.14	2.59	17.86	205.20	119.76	20 26 12	803.1	14.51	356.84
90.00	21 39 59	1468.24	4.78	354.43	206.40	117.91	22 4 27	468.2	15.82	332.84
100.00	22 39 0	1277.62	2.59	339.23	205.20	119.76	23 0 18	277.6	14.51	318.21
110.00	23 4 33	1197.47	-2.18	330.18	202.23	124.09	23 24 30	197.5	11.67	310.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2516	TRA	-.6798	TC3	.3322	BAU	.0885	SGT	1080.0	SGR	611.4	SG3	201.8	ST	22.2	SR	27.9	SS	11.2
RDE	-.4198	RRA	.1678	RC3	.1087	FAU	.05166	RRT	-.0450	RRF	.0552	RTF	-.6688	CRT	.6520	CRS	-.1440	CST	.6462
FDE	-.0042	FRA	.7648	FC3	-2.3621	BSP	1552	SGB	1241.0	R23	-.0110	R13	.6691	LSA	32.7	MSA	18.1	SSA	1.4
BDE	.4894	BRA	.7002	BC3	.3496	FSP	276	SG1	1080.5	SG2	610.4	THA	177.85	EL1	32.6	EL2	14.4	ALF	54.68

LAUNCH DATE MAY 23 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 14 1971

HELIOCENTRIC CONIC DISTANCE 297.282 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	33.547	GAL	.93	AZL	91.76	HCA	97.75	SMA	211.67	ECC	.28485	INC	1.7582	V1	29.415
RP	206.71	LAP	-1.74	LOP	338.99	VP	25.634	GAP	16.50	AZP	89.76	TAL	4.22	TAP	101.97	RCA	151.38	APO	271.97	V2	26.493
RC	66.667	GL	-14.03	GP	-1.28	ZAL	87.04	ZAP	164.95	ETS	184.91	ZAE	167.84	ETE	11.25	ZAC	97.91	ETC	278.92	LVI	-18.33

PLANETOCENTRIC CONIC

C3	18.029	VHL	4.246	DLA	-25.20	RAL	335.67	RAD	6641.9	VEL	11.750	PTH	6.78	VHP	7.397	DPA	-16.47	RAP	327.38	ECC	1.2967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 2	2591.98	-11.96	70.38	192.31	136.40	16 5 14	1592.0	6.41	54.58
60.00	16 34 27	2399.37	-6.68	58.04	197.32	129.84	17 14 27	1399.4	9.41	40.09
70.00	18 7 28	2125.93	-1.24	39.98	201.42	124.13	18 42 53	1125.9	12.56	20.23
80.00	20 0 12	1773.05	3.61	16.20	204.44	119.66	20 29 46	773.0	15.41	355.06
90.00	21 45 23	1433.86	5.87	352.49	205.68	117.71	22 9 17	433.9	16.75	330.75
100.00	22 43 4	1247.52	3.61	337.57	204.44	119.66	23 3 52	247.5	15.41	316.43
110.00	23 6 54	1172.75	-1.24	328.89	201.42	124.13	23 26 27	172.7	12.56	309.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2447	TRA	-.6701	TC3	.3596	BAU	.0908	SGT	1096.0	SGR	611.9	SG3	216.2	ST	22.3	SR	27.9	SS	11.6
RDE	-.4098	RRA	.1637	RC3	.1116	FAU	.05406	RRT	-.0483	RRF	.0597	RTF	-.6741	CRT	.6457	CRS	-.1855	CST	.6203
FDE	-.0156	FRA	.7931	FC3	-2.5961	BSP	1589	SGB	1255.2	R23	-.0125	R13	.6745	LSA	32.6	MSA	18.5	SSA	1.5
BDE	.4773	BRA	.6898	BC3	.3765	FSP	297	SG1	1096.5	SG2	610.8	THA	177.76	EL1	32.6	EL2	14.6	ALF	54.62

LAUNCH DATE MAY 23 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 300.821 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	33.446	GAL	.98	AZL	91.75	HCA	99.02	SMA	209.42	ECC	.27720	INC	1.7496	V1	29.415
RP	206.73	LAP	-1.73	LOP	340.26	VP	25.499	GAP	16.08	AZP	89.73	TAL	4.51	TAP	103.53	RCA	151.37	APO	267.47	V2	26.489
RC	67.877	GL	-14.25	GP	-1.32	ZAL	86.63	ZAP	163.82	ETS	184.71	ZAE	167.88	ETE	10.41	ZAC	97.84	ETC	278.95	LVI	-18.32

PLANETOCENTRIC CONIC

C3	17.202	VHL	4.147	DLA	-25.57	RAL	335.34	RAD	6641.6	VEL	11.715	PTH	6.75	VHP	7.159	DPA	-16.46	RAP	327.53	ECC	1.2831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 31	2573.10	-11.03	69.56	191.53	136.58	16 5 24	1573.1	7.35	53.78
60.00	16 35 39	2378.56	-5.77	57.04	196.52	129.96	17 15 18	1378.6	10.30	39.06
70.00	18 9 47	2101.80	-.32	38.72	200.65	124.15	18 44 49	1101.8	13.43	18.90
80.00	20 4 22	1743.19	4.61	14.55	203.71	119.53	20 33 25	743.2	16.29	353.28
90.00	21 51 2	1399.16	6.96	350.53	204.99	117.48	22 14 21	399.2	17.66	328.61
100.00	22 47 14	1217.66	4.61	335.92	203.71	119.53	23 7 31	217.7	16.29	314.65
110.00	23 9 14	1148.61	-.32	327.63	200.65	124.15	23 28 22	148.6	13.43	307.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2376	TRA	-.6603	TC3	.3897	BAU	.0934	SGT	1111.2	SGR	612.0	SG3	231.5	ST	22.4	SR	27.9	SS	11.9
RDE	-.4003	RRA	.1597	RC3	.1140	FAU	.05668	RRT	-.0517	RRF	.0647	RTF	-.6792	CRT	.6387	CRS	-.2326	CST	.5893
FDE	-.0296	FRA	.8207	FC3	-2.8525	BSP	1632	SGB	1268.6	R23	-.0144	R13	.6797	LSA	32.6	MSA	18.9	SSA	1.5
BDE	.4655	BRA	.6794	BC3	.4060	FSP	323	SG1	1111.9	SG2	610.8	THA	177.66	EL1	32.6	EL2	14.7	ALF	54.63

LAUNCH DATE MAY 23 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 304.418 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	33.351	GAL	1.02	AZL	91.74	HCA	100.29	SMA	207.35	ECC	.27004	INC	1.7409	V1	29.415
RP	206.77	LAP	-1.71	LOP	341.53	VP	25.370	GAP	15.67	AZP	89.69	TAL	4.81	TAP	105.10	RCA	151.35	APO	263.34	V2	26.485
RC	69.140	GL	-14.47	GP	-1.37	ZAL	86.22	ZAP	162.67	ETS	184.54	ZAE	167.99	ETE	9.60	ZAC	97.78	ETC	278.97	LVI	-18.31

PLANETOCENTRIC CONIC

C3	16.445	VHL	4.053	DLA	-25.92	RAL	335.00	RAD	6641.2	VEL	11.683	PTH	6.72	VHP	6.929	DPA	-16.47	RAP	327.66	ECC	1.2706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 56	2554.91	-10.13	68.77	190.77	136.74	16 5 31	1554.9	8.26	53.01
60.00	16 36 48	2358.45	-4.89	56.07	195.76	130.05	17 16 7	1358.4	11.17	38.07
70.00	18 12 5	2078.29	.58	37.49	199.90	124.15	18 46 44	1078.3	14.27	17.59
80.00	20 8 36	1713.60	5.60	12.92	203.01	119.38	20 37 10	713.6	17.14	351.50
90.00	21 56 59	1364.06	8.06	348.54	204.34	117.20	22 19 43	364.1	18.56	326.43
100.00	22 51 28	1188.07	5.60	334.28	203.01	119.38	23 11 16	188.1	17.14	312.87
110.00	23 11 32	1125.11	.58	326.41	199.90	124.15	23 30 17	125.1	14.27	306.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2306	TRA	-.6498	TC3	.4197	BAU	.0957	SGT	1124.2	SGR	611.8	SG3	247.9	ST	22.4	SR	27.9	SS	12.3
RDE	-.3912	RRA	.1559	RC3	.1159	FAU	.05945	RRT	-.0551	RRF	.0695	RTF	-.6844	CRT	.6320	CRS	-.2728	CST	.5624
FDE	-.0429	FRA	.8501	FC3	-3.1296	BSP	1662	SGB	1279.9	R23	-.0161	R13	.6850	LSA	32.5	MSA	19.3	SSA	1.5
BDE	.4541	BRA	.6682	BC3	.4354	FSP	349	SG1	1125.0	SG2	610.4	THA	177.57	EL1	32.5	EL2	14.9	ALF	54.69

LAUNCH DATE MAY 23 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 308.067 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	33.263	GAL	1.06	AZL	91.73	HCA	101.55	SMA	205.45	ECC	.26335	INC	1.7321	V1	29.415
RP	206.81	LAP	-1.70	LOP	342.79	VP	25.248	GAP	15.26	AZP	89.65	TAL	5.11	TAP	106.66	RCA	151.34	APO	259.55	V2	26.480
RC	70.455	GL	-14.67	GP	-1.41	ZAL	85.81	ZAP	161.50	ETS	184.39	ZAE	168.17	ETE	8.81	ZAC	97.72	ETC	278.98	LVI	-18.28

PLANETOCENTRIC CONIC

C3	15.751	VHL	3.969	DLA	-26.26	RAL	334.66	RAD	6640.9	VEL	11.653	PTH	6.69	VHP	6.708	DPA	-16.48	RAP	327.77	ECC	1.2592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 23 19	2537.43	-9.26	68.02	190.04	136.88	16 5 36	1537.4	9.13	52.26
60.00	16 37 54	2339.05	-4.04	55.13	195.02	130.13	17 16 53	1339.1	12.00	37.10
70.00	18 14 22	2055.44	1.46	36.30	199.18	124.13	18 48 37	1055.4	15.07	16.31
80.00	20 12 56	1684.29	6.58	11.29	202.34	119.19	20 41 1	684.3	17.97	349.72
90.00	22 3 17	1326.41	9.16	346.50	203.73	116.87	22 25 26	326.4	19.45	324.19
100.00	22 55 48	1158.76	6.58	332.66	202.34	119.19	23 15 7	158.8	17.97	311.09
110.00	23 13 48	1102.26	1.46	325.22	199.18	124.13	23 32 10	102.3	15.07	305.23

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2237	TRA	-.6393	TC3	.4476	BAU	.0974	SGT	1135.6	SGR	611.2	SG3	265.1	ST	22.3	SR	27.8	SS	12.8
RDE	-.3824	RRA	.1523	RC3	.1172	FAU	.06234	RRT	-.0590	RRF	.0752	RTF	-.6882	CRT	.6251	CRS	-.3154	CST	.5327
FDE	-.0583	FRA	.8805	FC3	-3.4264	BSP	1692	SGB	1289.6	R23	-.0181	R13	.6889	LSA	32.4	MSA	19.8	SSA	1.6
BDE	.4430	BRA	.6571	BC3	.4627	FSP	378	SG1	1136.4	SG2	609.7	THA	177.44	EL1	32.4	EL2	15.0	ALF	54.78

LAUNCH DATE MAY 23 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 311.765 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	33.179	GAL	1.10	AZL	91.72	HCA	102.82	SMA	203.70	ECC	.25709	INC	1.7233	V1	29.418
RP	206.87	LAP	-1.68	LOP	344.06	VP	25.131	GAP	14.87	AZP	89.62	TAL	5.40	TAP	108.22	RCA	151.33	APO	256.07	V2	26.474
RC	71.818	GL	-14.67	GP	-1.46	ZAL	85.41	ZAP	160.30	ETS	184.25	ZAE	168.42	ETE	8.03	ZAC	97.66	ETC	279.00	LVI	-18.28

PLANETOCENTRIC CONIC

C3	15.116	VHL	3.888	DLA	-26.60	RAL	334.31	RAD	6640.6	VEL	11.626	PTH	6.67	VHP	6.495	DPA	-16.50	RAP	327.86	ECC	1.2488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 23 39	2520.68	-8.43	67.30	189.33	137.00	16 5 40	1520.7	9.96	51.54
60.00	16 38 57	2320.40	-3.22	54.24	194.31	130.19	17 17 37	1320.4	12.79	36.16
70.00	18 16 35	2033.31	2.30	35.14	198.49	124.09	18 50 29	1033.3	15.84	15.06
80.00	20 17 22	1655.27	7.54	9.67	201.71	118.98	20 44 57	655.3	18.78	347.94
90.00	22 10 1	1291.99	10.28	344.41	203.17	116.49	22 31 33	292.0	20.32	321.87
100.00	23 0 13	1129.74	7.54	331.04	201.71	118.98	23 19 3	129.7	18.78	309.31
110.00	23 16 2	1080.13	2.30	324.06	198.49	124.09	23 34 2	80.1	15.84	303.98

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2165	TRA	-.6289	TC3	.4759	BAU	.0991	SGT	1145.9	SGR	610.3	SG3	283.7	ST	22.3	SR	27.8	SS	13.3
RDE	-.3740	RRA	.1489	RC3	.1178	FAU	.06549	RRT	-.0637	RRF	.0811	RTF	-.6921	CRT	.6174	CRS	-.3552	CST	.5050
FDE	-.0743	FRA	.9131	FC3	-3.7509	BSP	1719	SGB	1298.2	R23	-.0197	R13	.6928	LSA	32.3	MSA	20.0	SSA	1.6
BDE	.4322	BRA	.6463	BC3	.4902	FSP	408	SG1	1146.8	SG2	608.5	THA	177.29	EL1	32.3	EL2	15.1	ALF	54.94

LAUNCH DATE MAY 23 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC DISTANCE 315.506 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	33.101	GAL	1.14	AZL	91.71	HCA	104.09	SMA	202.09	ECC	.25124	INC	1.7144	V1	29.415
RP	206.93	LAP	-1.66	LOP	345.33	VP	25.020	GAP	14.49	AZP	89.58	TAL	5.69	TAP	109.78	RCA	151.32	APO	252.86	V2	26.466
RC	73.228	GL	-15.05	GP	-1.51	ZAL	85.01	ZAP	159.08	ETS	184.13	ZAE	168.75	ETE	7.25	ZAC	97.60	ETC	279.00	LVI	-18.21

PLANETOCENTRIC CONIC

C3	14.533	VHL	3.812	DLA	-26.92	RAL	333.97	RAD	6640.3	VEL	11.601	PTH	6.64	VHP	6.289	DPA	-16.53	RAP	327.92	ECC	1.2392

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 23 56	2504.67	-7.63	66.62	188.65	137.11	16 5 41	1504.7	10.75	50.85
60.00	16 39 56	2302.51	-2.44	53.38	193.63	130.24	17 18 19	1302.5	13.55	35.26
70.00	18 18 46	2011.91	3.12	34.02	197.83	124.03	18 52 18	1011.9	16.58	13.84
80.00	20 21 52	1626.57	8.48	8.06	201.12	118.73	20 48 59	626.6	19.55	346.16
90.00	22 17 15	1254.48	11.41	342.23	202.66	116.05	22 38 10	254.5	21.17	319.46
100.00	23 4 44	1101.04	8.48	329.43	201.12	118.73	23 23 5	101.0	19.55	307.53
110.00	23 18 12	1058.73	3.12	322.94	197.83	124.03	23 35 51	58.7	16.58	302.76

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2101	TRA	-.6180	TC3	.5023	BAU	.1002	SGT	1154.0	SGR	609.0	SG3	303.3	ST	22.2	SR	27.7	SS	13.8
RDE	-.3660	RRA	.1457	RC3	.1177	FAU	.06878	RRT	-.0681	RRF	.0874	RTF	-.6950	CRT	.6109	CRS	-.3924	CST	.4773
FDE	-.0911	FRA	.9466	FC3	-4.0974	BSP	1743	SGB	1304.8	R23	-.0220	R13	.6958	LSA	32.2	MSA	20.4	SSA	1.6
BDE	.4220	BRA	.6350	BC3	.5159	FSP	442	SG1	1155.0	SG2	607.1	THA	177.16	EL1	32.1	EL2	15.2	ALF	55.07

LAUNCH DATE MAY 23 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC DISTANCE 319.286 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	33.028	GAL	1.18	AZL	91.71	HCA	105.35	SMA	200.61	ECC	.24577	INC	1.7054	V1	29.415
RP	207.00	LAP	-1.64	LOP	346.59	VP	24.914	GAP	14.11	AZP	89.55	TAL	5.98	TAP	111.33	RCA	151.31	APO	249.91	V2	26.458
RC	74.683	GL	-15.23	GP	-1.57	ZAL	84.61	ZAP	157.83	ETS	184.02	ZAE	169.15	ETE	6.46	ZAC	97.55	ETC	279.00	LVI	-18.16

PLANETOCENTRIC CONIC

C3	13.998	VHL	3.741	DLA	-27.23	RAL	333.63	RAD	6640.0	VEL	11.578	PTH	6.62	VHP	6.092	DPA	-16.58	RAP	327.95	ECC	1.2304

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 11	2489.42	-6.87	65.97	186.00	137.20	16 5 40	1489.4	11.50	50.18
60.00	16 40 52	2285.42	-1.68	52.57	192.97	130.27	17 18 58	1285.4	14.27	34.39
70.00	18 20 53	1991.31	3.90	32.94	197.20	123.96	18 54 5	991.3	17.29	12.66
80.00	20 26 28	1598.20	9.41	6.46	200.55	118.47	20 53 6	598.2	20.30	344.38
90.00	22 25 12	1215.34	12.57	339.94	202.19	115.54	22 45 27	215.3	22.03	316.91
100.00	23 9 20	1072.68	9.41	327.83	200.55	118.47	23 27 13	72.7	20.30	305.75
110.00	23 20 20	1038.13	3.90	321.86	197.20	123.96	23 37 38	38.1	17.29	301.58

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.2036	TRA	-.6075	TC3	.5278	BAU	.1012	SGT	1161.0	SGR	607.5	SG3	324.3	ST	22.1	SR	27.7	SS	14.3
RDE	-.3582	RRA	.1427	RC3	.1168	FAU	.07229	RRT	-.0731	RRF	.0945	RTF	-.6977	CRT	.6039	CRS	-.4285	CST	.4500
FDE	-.1093	FRA	.9827	FC3	-4.4712	BSP	1755	SGB	1310.3	R23	-.0245	R13	.6986	LSA	32.1	MSA	20.8	SSA	1.7
BDE	.4121	BRA	.6240	BC3	.5406	FSP	475	SG1	1162.2	SG2	605.2	THA	176.99	EL1	32.0	EL2	15.3	ALF	55.24

LAUNCH DATE MAY 23 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 28 1971

HELIOCENTRIC CONIC DISTANCE 323.104 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.859 GAL 1.21 AZL 91.70 HCA 106.62 SMA 199.25 ECC .24067 INC 1.6963 V1 29.415
RP 207.08 LAP -1.63 LOP 347.86 VP 24.813 GAP 13.75 AZP 89.51 TAL 6.26 TAP 112.88 RCA 151.29 APO 247.20 V2 26.449
RC 76.180 GL -15.39 GP -1.62 ZAL 84.23 ZAP 156.55 ETS 183.91 ZAE 169.62 ETE 5.63 ZAC 97.49 ETC 279.00 LVI -18.10

PLANETOCENTRIC CONIC

C3 13.506 VHL 3.675 DLA -27.53 RAL 333.29 RAD 6639.8 VEL 11.557 PTH 6.60 VHP 5.901 DPA -16.64 RAP 327.96 ECC 1.2223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 22	2474.93	-6.15	65.36	187.38	137.27	16 5 37	1474.9	12.22	49.55
60.00	16 41 45	2269.13	-.97	51.79	192.35	130.29	17 19 34	1269.1	14.95	33.55
70.00	18 22 57	1971.53	4.65	31.91	196.59	123.87	18 55 48	971.5	17.96	11.52
80.00	20 31 9	1570.19	10.31	4.88	200.02	118.18	20 57 19	570.2	21.01	342.61
90.00	22 34 7	1173.62	13.78	337.48	201.79	114.94	22 53 41	173.6	22.89	314.15
100.00	23 14 1	1044.66	10.31	326.24	200.02	118.18	23 31 26	44.7	21.01	303.98
110.00	23 22 23	1018.35	4.65	320.82	196.59	123.87	23 39 22	18.4	17.96	300.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1975 TRA -.5972 TC3 .5485 BAU .1012 SGT 1166.0 SGR 605.7 SG3 346.4 ST 22.0 SR 27.6 SS 14.9
RDE -.3508 RRA .1399 RC3 .1152 FAU .07597 RRT -.0790 RRF .1026 RTF -.6983 CRT .5970 CRS -.4651 CST .4210
FDE -.1298 FRA 1.0205 FC3-4.8695 BSP 1764 SGB 1313.9 R23 -.0274 R13 .6994 LSA 31.9 MSA 21.1 SSA 1.7
BDE .4026 BRA .6134 BC3 .5604 FSP 512 SG1 1167.3 SG2 603.1 THA 176.79 EL1 31.8 EL2 15.3 ALF 55.41

LAUNCH DATE MAY 23 1971 FLIGHT TIME 130.00 ARRIVAL DATE SEP 30 1971

HELIOCENTRIC CONIC DISTANCE 326.954 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.895 GAL 1.25 AZL 91.69 HCA 107.88 SMA 197.99 ECC .23590 INC 1.6871 V1 29.415
RP 207.17 LAP -1.61 LOP 349.12 VP 24.717 GAP 13.39 AZP 89.48 TAL 6.53 TAP 114.41 RCA 151.28 APO 244.69 V2 26.439
RC 77.718 GL -15.54 GP -1.68 ZAL 83.86 ZAP 155.24 ETS 183.82 ZAE 170.17 ETE 4.74 ZAC 97.44 ETC 278.99 LVI -18.03

PLANETOCENTRIC CONIC

C3 13.055 VHL 3.613 DLA -27.81 RAL 332.96 RAD 6639.6 VEL 11.538 PTH 6.58 VHP 5.718 DPA -16.71 RAP 327.94 ECC 1.2148

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 32	2461.22	-5.46	64.78	186.78	137.34	16 5 33	1461.2	12.89	48.94
60.00	16 42 33	2253.67	-.29	51.05	191.75	130.30	17 20 7	1253.7	15.59	32.75
70.00	18 24 56	1952.62	5.37	30.91	196.01	123.78	18 57 28	952.6	18.59	10.41
80.00	20 35 55	1542.54	11.20	3.30	199.52	117.86	21 1 38	542.5	21.70	340.84
90.00	22 44 40	1127.35	15.09	334.71	201.48	114.20	23 3 27	127.4	23.78	311.05
100.00	23 18 47	1017.01	11.20	324.67	199.52	117.86	23 35 44	17.0	21.70	302.21
110.00	23 24 22	6287.48	5.37	297.74	196.01	123.78	25 9 10	5287.5	18.59	277.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1925 TRA -.5858 TC3 .5661 BAU .1007 SGT 1167.8 SGR 603.5 SG3 369.8 ST 21.9 SR 27.5 SS 15.5
RDE -.3437 RRA .1373 RC3 .1125 FAU .07989 RRT -.0836 RRF .1103 RTF -.6979 CRT .5930 CRS -.4943 CST .3951
FDE -.1490 FRA 1.0591 FC3-5.2983 BSP 1778 SGB 1314.5 R23 -.0310 R13 .6992 LSA 31.9 MSA 21.4 SSA 1.7
BDE .3939 BRA .6017 BC3 .5772 FSP 552 SG1 1169.3 SG2 600.6 THA 176.64 EL1 31.7 EL2 15.3 ALF 55.49

LAUNCH DATE MAY 23 1971 FLIGHT TIME 132.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 330.835 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.835 GAL 1.28 AZL 91.68 HCA 109.14 SMA 196.82 ECC .23146 INC 1.6777 V1 29.415
RP 207.26 LAP -1.58 LOP 350.39 VP 24.625 GAP 13.04 AZP 89.45 TAL 6.79 TAP 115.94 RCA 151.27 APO 242.38 V2 26.428
RC 79.295 GL -15.68 GP -1.75 ZAL 83.50 ZAP 153.90 ETS 183.73 ZAE 170.79 ETE 3.77 ZAC 97.39 ETC 278.98 LVI -17.96

PLANETOCENTRIC CONIC

C3 12.639 VHL 3.555 DLA -28.07 RAL 332.63 RAD 6639.4 VEL 11.520 PTH 6.57 VHP 5.541 DPA -16.79 RAP 327.88 ECC 1.2080

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 39	2448.28	-4.81	64.23	186.21	137.39	16 5 27	1448.3	13.53	48.37
60.00	16 43 18	2239.06	.36	50.35	191.17	130.30	17 20 37	1239.1	16.20	31.99
70.00	18 26 50	1934.62	6.05	29.96	195.47	123.68	18 59 4	934.6	19.18	9.36
80.00	20 40 46	1515.27	12.06	1.74	199.06	117.52	21 6 1	515.3	22.35	339.08
90.00	22 58 33	1070.90	16.63	331.29	201.30	113.20	23 16 24	70.9	24.77	307.22
100.00	23 23 38	6277.78	12.06	301.01	199.06	117.52	25 8 15	5277.8	22.35	278.36
110.00	23 26 16	6269.48	6.05	296.79	195.47	123.68	25 10 45	5269.5	19.18	276.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1866 TRA -.5751 TC3 .5816 BAU .1000 SGT 1168.2 SGR 601.2 SG3 395.0 ST 21.8 SR 27.4 SS 16.2
RDE -.3368 RRA .1349 RC3 .1089 FAU .08409 RRT -.0906 RRF .1198 RTF -.[illegible]72 CRT .5864 CRS -.5262 CST .3683
FDE -.1719 FRA 1.1014 FC3-5.7598 BSP 1774 SGB 1313.8 R23 -.0344 R13 .6987 LSA 31.8 MSA 21.8 SSA 1.8
BDE .3851 BRA .5907 BC3 .5917 FSP 594 SG1 1169.9 SG2 597.8 THA 176.39 EL1 31.4 EL2 15.4 ALF 55.74

LAUNCH DATE MAY 23 1971 FLIGHT TIME 134.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 334.745 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.778 GAL 1.30 AZL 91.67 HCA 110.41 SMA 195.75 ECC .22730 INC 1.6682 V1 29.415
RP 207.37 LAP -1.56 LOP 351.65 VP 24.536 GAP 12.70 AZP 89.42 TAL 7.04 TAP 117.45 RCA 151.26 APO 240.25 V2 26.415
RC 80.909 GL -15.81 GP -1.81 ZAL 83.15 ZAP 152.53 ETS 183.65 ZAE 171.48 ETE 2.67 ZAC 97.34 ETC 278.95 LVI -17.87

PLANETOCENTRIC CONIC

C3 12.257 VHL 3.501 DLA -28.32 RAL 332.32 RAD 6639.2 VEL 11.504 PTH 6.55 VHP 5.372 DPA -16.89 RAP 327.80 ECC 1.2017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 44	2436.08	-4.20	63.72	185.67	137.43	16 5 20	1436.1	14.13	47.83
60.00	16 43 59	2225.26	.96	49.69	190.63	130.29	17 21 4	1225.3	16.77	31.27
70.00	18 28 38	1917.50	6.69	29.06	194.94	123.57	19 0 35	917.5	19.74	8.34
80.00	20 45 42	1488.27	12.90	.18	198.63	117.16	21 10 31	488.3	22.98	337.32
88.48	23 14 43	1007.71	19.35	327.83	201.63	111.09	23 31 31	7.7	26.34	302.98
100.00	23 28 34	6250.78	12.90	299.45	198.63	117.16	25 12 45	5250.8	22.98	276.60
110.00	23 28 4	6252.36	6.69	295.88	194.94	123.57	25 12 17	5252.4	19.74	275.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1720 TRA -.5536 TC3 .6236 BAU .1036 SGT 1152.9 SGR 598.6 SG3 421.6 ST 20.9 SR 27.3 SS 16.8
RDE -.3303 RRA .1326 RC3 .1039 FAU .08868 RRT -.1010 RRF .1298 RTF -.7108 CRT .5672 CRS -.5649 CST .3471
FDE -.2002 FRA 1.1370 FC3-6.2633 BSP 1649 SGB 1299.0 R23 -.0322 R13 .7124 LSA 31.4 MSA 21.8 SSA 1.8
BDE .3724 BRA .5693 BC3 .6322 FSP 634 SG1 1155.0 SG2 594.4 THA 175.91 EL1 30.8 EL2 15.2 ALF 57.71

LAUNCH DATE MAY 23 1971 FLIGHT TIME 136.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 338.680 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.726	GAL	1.33	AZL	91.66	HCA	111.67	SMA	194.76	ECC	.22344	INC	1.6586	V1	29.415
RP	207.48	LAP	-1.54	LOP	352.91	VP	24.452	GAP	12.37	AZP	89.39	TAL	7.28	TAP	118.95	RCA	151.24	APO	238.28	V2	26.402
RC	82.560	GL	-15.93	GP	-1.88	ZAL	82.83	ZAP	151.12	ETS	183.57	ZAE	172.24	ETE	1.38	ZAC	97.30	ETC	278.92	LVI	-17.77

PLANETOCENTRIC CONIC

C3	11.905	VHL	3.450	DLA	-28.55	RAL	332.02	RAD	6639.0	VEL	11.488	PTH	6.54	VHP	5.209	DPA	-17.01	RAP	327.68	ECC	1.1959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 47	2424.72	-3.63	63.24	185.16	137.47	16 5 12	1424.7	14.68	47.32
60.00	16 44 36	2212.39	1.53	49.08	190.11	130.28	17 21 28	1212.4	17.30	30.60
70.00	18 30 19	1901.47	7.30	28.21	194.45	123.46	19 2 1	901.5	20.26	7.39
80.00	20 50 41	1461.90	13.72	358.64	198.23	116.78	21 15 3	461.9	23.57	335.59
85.95	22 52 25	1069.99	19.65	332.52	200.98	111.13	23 10 15	70.0	26.63	307.60
100.00	23 33 33	6224.41	13.72	297.92	198.23	116.78	25 17 17	5224.4	23.57	274.86
110.00	23 29 46	6236.33	7.30	295.03	194.45	123.46	25 13 42	5236.3	20.26	274.21

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1722	TRA	-.5469	TC3	.6146	BAU	.0991	SGT	1153.5	SGR	595.7	SG3	449.3	ST	21.1	SR	27.1	SS	17.5
RDE	-.3239	RRA	.1306	RC3	.0982	FAU	.09323	RRT	-.1058	RRF	.1402	RTF	-.6993	CRT	.5710	CRS	-.5861	CST	.3182
FDE	-.2223	FRA	1.1850	FC3	-6.7794	BSP	1700	SGB	1298.2	R23	-.0401	R13	.7013	LSA	31.6	MSA	22.1	SSA	1.8
BDE	.3668	BRA	.5623	BC3	.6224	FSP	684	SG1	1155.8	SG2	591.2	THA	175.76	EL1	30.8	EL2	15.3	ALF	57.02

LAUNCH DATE MAY 23 1971 FLIGHT TIME 138.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 342.639 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.677	GAL	1.35	AZL	91.65	HCA	112.92	SMA	193.85	ECC	.21984	INC	1.6489	V1	29.415
RP	207.60	LAP	-1.52	LOP	354.17	VP	24.371	GAP	12.04	AZP	89.36	TAL	7.51	TAP	120.43	RCA	151.23	APO	236.47	V2	26.388
RC	84.247	GL	-16.03	GP	-1.95	ZAL	82.53	ZAP	149.69	ETS	183.49	ZAE	173.07	ETE	359.80	ZAC	97.25	ETC	278.89	LVI	-17.65

PLANETOCENTRIC CONIC

C3	11.581	VHL	3.403	DLA	-28.75	RAL	331.74	RAD	6638.8	VEL	11.474	PTH	6.52	VHP	5.052	DPA	-17.13	RAP	327.54	ECC	1.1906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 48	2414.14	-3.10	62.80	184.67	137.50	16 5 2	1414.1	15.20	46.84
60.00	16 45 9	2200.40	2.06	48.51	189.63	130.26	17 21 49	1200.4	17.79	29.96
70.00	18 31 53	1886.46	7.86	27.41	193.98	123.34	19 3 20	886.5	20.74	6.49
80.00	20 55 43	1435.98	14.51	357.12	197.87	116.39	21 19 39	436.0	24.13	333.87
84.57	22 39 58	1100.80	19.93	334.89	200.37	111.17	22 58 18	100.8	26.90	309.92
100.00	23 38 35	6198.49	14.51	296.40	197.87	116.39	25 21 54	5198.5	24.13	273.14
110.00	23 31 20	6221.31	7.86	294.23	193.98	123.34	25 15 1	5221.3	20.74	273.31

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1710	TRA	-.5381	TC3	.6053	BAU	.0948	SGT	1149.1	SGR	592.6	SG3	478.5	ST	21.2	SR	27.0	SS	18.2
RDE	-.3177	RRA	.1288	RC3	.0914	FAU	.09803	RRT	-.1115	RRF	.1514	RTF	-.6891	CRT	.5733	CRS	-.6058	CST	.2921
FDE	-.2454	FRA	1.2344	FC3	-7.3282	BSP	1713	SGB	1292.9	R23	-.0476	R13	.6916	LSA	31.7	MSA	22.4	SSA	1.9
BDE	.3608	BRA	.5533	BC3	.6121	FSP	736	SG1	1151.7	SG2	587.6	THA	175.55	EL1	30.7	EL2	15.2	ALF	56.61

LAUNCH DATE MAY 23 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 10 1971

HELIOCENTRIC CONIC DISTANCE 346.620 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.631	GAL	1.37	AZL	91.64	HCA	114.18	SMA	193.01	ECC	.21649	INC	1.6389	V1	29.415
RP	207.73	LAP	-1.50	LOP	355.43	VP	24.293	GAP	11.72	AZP	89.33	TAL	7.72	TAP	121.90	RCA	151.22	APO	234.79	V2	26.373
RC	85.969	GL	-16.13	GP	-2.03	ZAL	82.25	ZAP	148.22	ETS	183.42	ZAE	173.96	ETE	357.76	ZAC	97.21	ETC	278.85	LVI	-17.53

PLANETOCENTRIC CONIC

C3	11.283	VHL	3.359	DLA	-28.94	RAL	331.47	RAD	6638.7	VEL	11.462	PTH	6.51	VHP	4.902	DPA	-17.28	RAP	327.35	ECC	1.1857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 47	2404.33	-2.61	62.39	184.22	137.52	16 4 52	1404.3	15.67	46.40
60.00	16 45 37	2189.29	2.55	47.97	189.17	130.23	17 22 7	1189.3	18.24	29.37
70.00	18 33 20	1872.50	8.38	26.67	193.54	123.23	19 4 32	872.5	21.18	5.64
80.00	21 0 48	1410.56	15.27	355.62	197.53	115.97	21 24 18	410.6	24.66	332.16
83.56	22 30 41	1121.86	20.19	336.55	199.79	111.20	22 49 23	121.9	27.14	311.52
100.00	23 43 40	6173.08	15.27	294.90	197.53	115.97	25 26 33	5173.1	24.66	271.44
110.00	23 32 46	6207.36	8.38	293.49	193.54	123.23	25 16 14	5207.4	21.18	272.47

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1691	TRA	-.5281	TC3	.5931	BAU	.0903	SGT	1140.9	SGR	589.4	SG3	509.2	ST	21.1	SR	26.9	SS	19.0
RDE	-.3118	RRA	.1272	RC3	.0835	FAU	.10308	RRT	-.1102	RRF	.1642	RTF	-.6[illegible]88	CRT	.5746	CRS	-.6272	CST	.2644
FDE	-.2720	FRA	1.2862	FC3	-7.9093	BSP	1711	SGB	1284.2	R23	-.0559	R13	.6818	LSA	31.8	MSA	22.6	SSA	1.9
BDE	.3547	BRA	.5432	BC3	.5989	FSP	790	SG1	1143.8	SG2	583.8	THA	175.27	EL1	30.6	EL2	15.2	ALF	56.40

LAUNCH DATE MAY 23 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 12 1971

HELIOCENTRIC CONIC DISTANCE 350.621 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.588	GAL	1.39	AZL	91.63	HCA	115.44	SMA	192.23	ECC	.21337	INC	1.6288	V1	29.415
RP	207.86	LAP	-1.47	LOP	356.68	VP	24.219	GAP	11.41	AZP	89.30	TAL	7.92	TAP	123.36	RCA	151.21	APO	233.24	V2	26.357
RC	87.725	GL	-16.21	GP	-2.11	ZAL	81.99	ZAP	146.71	ETS	183.34	ZAE	174.91	ETE	354.94	ZAC	97.17	ETC	278.80	LVI	-17.39

PLANETOCENTRIC CONIC

C3	11.007	VHL	3.318	DLA	-29.12	RAL	331.23	RAD	6638.6	VEL	11.450	PTH	6.50	VHP	4.758	DPA	-17.43	RAP	327.14	ECC	1.1812

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 45	2395.29	-2.15	62.01	183.79	137.54	16 4 40	1395.3	16.11	45.99
60.00	16 46 1	2179.07	3.00	47.48	188.74	130.21	17 22 21	1179.1	18.65	28.82
70.00	18 34 38	1859.64	8.86	25.98	193.12	123.12	19 5 37	859.6	21.58	4.86
80.00	21 5 53	1385.74	16.00	354.15	197.23	115.55	21 28 59	385.7	25.15	330.49
82.77	22 23 22	1137.14	20.43	337.77	199.24	111.21	22 42 20	137.1	27.36	312.69
100.00	23 40 45	6148.25	16.00	293.42	197.23	115.55	25 31 13	5148.2	25.15	269.76
110.00	23 34 4	6194.50	8.86	292.80	193.12	123.12	25 17 18	5194.5	21.58	271.68

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1678	TRA	-.5169	TC3	.5764	BAU	.0855	SGT	1128.8	SGR	586.0	SG3	541.6	ST	21.1	SR	26.7	SS	19.7
RDE	-.3060	RRA	.1257	RC3	.0741	FAU	.10844	RRT	-.1240	RRF	.1767	RTF	-.6673	CRT	.5787	CRS	-.6414	CST	.2416
FDE	-.2950	FRA	1.3395	FC3	-8.5287	BSP	1687	SGB	1271.9	R23	-.0647	R13	.6709	LSA	32.0	MSA	22.8	SSA	1.9
BDE	.3490	BRA	.5320	BC3	.5812	FSP	845	SG1	1132.0	SG2	579.8	THA	175.00	EL1	30.5	EL2	15.1	ALF	56.13

LAUNCH DATE MAY 23 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 14 1971

HELIOCENTRIC CONIC DISTANCE 354.640 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.548 GAL 1.41 AZL 91.62 HCA 116.69 SMA 191.51 ECC .21047 INC 1.6184 V1 29.415
RP 208.01 LAP -1.45 LOP 357.94 VP 24.147 GAP 11.11 AZP 89.27 TAL 8.10 TAP 124.79 RCA 151.21 APO 231.82 V2 26.340
RC 89.514 GL -16.28 GP -2.19 ZAL 81.75 ZAP 145.17 ETS 183.27 ZAE 175.91 ETE 350.67 ZAC 97.13 ETC 278.74 LVI -17.24

PLANETOCENTRIC CONIC

C3 10.753 VHL 3.279 DLA -29.27 RAL 331.00 RAD 6638.4 VEL 11.439 PTH 6.49 VHP 4.620 DPA -17.61 RAP 326.88 ECC 1.1770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 41	2387.03	-1.74	61.67	183.40	137.55	16 4 28	1387.0	16.51	45.61
60.00	16 46 21	2169.74	3.41	47.04	188.34	130.18	17 22 31	1169.7	19.03	28.32
70.00	18 35 46	1847.91	9.30	25.35	192.73	123.01	19 6 34	847.9	21.94	4.14
80.00	21 10 58	1361.60	16.71	352.70	196.95	115.11	21 33 39	361.6	25.62	328.84
82.14	22 17 25	1148.62	20.64	338.71	198.73	111.22	22 36 33	148.6	27.56	313.58
100.00	23 53 50	6124.11	16.71	291.97	196.95	115.11	25 35 54	5124.1	25.62	268.12
110.00	23 35 12	6182.77	9.30	292.17	192.73	123.01	25 18 15	5182.8	21.94	270.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1661 TRA -.5052 TC3 .5526 BAU .0800 SGT 1113.3 SGR 582.5 SG3 575.4 ST 21.0 SR 26.5 SS 20.5
RDE -.3004 RRA .1245 RC3 .0636 FAU .11398 RRT -.1309 RRF .1912 RTF -.6537 CRT .5820 CRS -.6584 CST .2157
FDE -.3226 FRA 1.3961 FC3-9.1769 BSP 1654 SGB 1256.5 R23 -.0750 R13 .6580 LSA 32.2 MSA 22.9 SSA 2.0
BDE .3432 BRA .5203 BC3 .5562 FSP 906 SG1 1116.9 SG2 575.7 THA 174.66 EL1 30.4 EL2 14.9 ALF 55.98

LAUNCH DATE MAY 23 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 16 1971

HELIOCENTRIC CONIC DISTANCE 358.677 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.512 GAL 1.42 AZL 91.61 HCA 117.94 SMA 190.85 ECC .20777 INC 1.6078 V1 29.415
RP 208.16 LAP -1.42 LOP 359.19 VP 24.078 GAP 10.82 AZP 89.25 TAL 8.27 TAP 126.21 RCA 151.20 APO 230.50 V2 26.323
RC 91.337 GL -16.33 GP -2.27 ZAL 81.54 ZAP 143.59 ETS 183.20 ZAE 176.94 ETE 343.33 ZAC 97.10 ETC 278.68 LVI -17.08

PLANETOCENTRIC CONIC

C3 10.518 VHL 3.243 DLA -29.40 RAL 330.79 RAD 6638.3 VEL 11.428 PTH 6.48 VHP 4.488 DPA -17.80 RAP 326.59 ECC 1.1731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 35	2379.52	-1.36	61.35	183.03	137.56	16 4 15	1379.5	16.87	45.27
60.00	16 46 36	2161.31	3.78	46.63	187.96	130.15	17 22 38	1161.3	19.37	27.86
70.00	18 36 45	1837.35	9.69	24.78	192.36	122.91	19 7 22	837.4	22.26	3.49
80.00	21 15 58	1338.33	17.37	351.29	196.70	114.67	21 38 16	338.3	26.04	327.24
81.62	22 12 34	1157.04	20.84	339.42	198.26	111.21	22 31 51	157.0	27.73	314.24
100.00	0 2 46	6100.84	17.37	290.57	196.70	114.67	1 44 26	5100.8	26.04	266.52
110.00	23 36 11	6172.21	9.69	291.61	192.36	122.91	25 19 3	5172.2	22.26	270.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1648 TRA -.4930 TC3 .5230 BAU .0739 SGT 1095.1 SGR 579.0 SG3 611.1 ST 20.9 SR 26.3 SS 21.3
RDE -.2949 RRA .1234 RC3 .0517 FAU .11983 RRT -.1374 RRF .2067 RTF -.6380 CRT .5870 CRS -.6724 CST .1911
FDE -.3497 FRA 1.4561 FC3-9.8632 BSP 1611 SGB 1238.7 R23 -.0869 R13 .6434 LSA 32.4 MSA 23.0 SSA 2.0
BDE .3379 BRA .5082 BC3 .5255 FSP 968 SG1 1099.0 SG2 571.4 THA 174.30 EL1 30.2 EL2 14.7 ALF 55.79

LAUNCH DATE MAY 23 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 362.730 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.477 GAL 1.43 AZL 91.60 HCA 119.19 SMA 190.24 ECC .20527 INC 1.5971 V1 29.415
RP 208.32 LAP -1.39 LOP .44 VP 24.011 GAP 10.53 AZP 89.22 TAL 8.41 TAP 127.61 RCA 151.19 APO 229.29 V2 26.304
RC 93.190 GL -16.38 GP -2.36 ZAL 81.35 ZAP 141.98 ETS 183.13 ZAE 177.94 ETE 328.07 ZAC 97.06 ETC 278.60 LVI -16.90

PLANETOCENTRIC CONIC

C3 10.301 VHL 3.210 DLA -29.51 RAL 330.61 RAD 6638.2 VEL 11.419 PTH 6.47 VHP 4.362 DPA -18.00 RAP 326.26 ECC 1.1695

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 28	2372.78	-1.02	61.07	182.69	137.57	16 4 1	1372.8	17.20	44.96
60.00	16 46 47	2153.78	4.11	46.27	187.61	130.13	17 22 41	1153.8	19.67	27.46
70.00	18 37 33	1827.99	10.03	24.28	192.02	122.82	19 8 1	828.0	22.55	2.92
80.00	21 20 48	1316.19	18.00	349.95	196.48	114.23	21 42 44	316.2	26.42	325.71
81.21	22 8 38	1163.09	21.02	339.94	197.82	111.19	22 28 2	163.1	27.89	314.72
100.00	0 7 36	6078.71	18.00	289.22	196.48	114.23	1 48 55	5078.7	26.42	264.99
110.00	23 36 59	6162.84	10.03	291.10	192.02	122.82	25 19 42	5162.8	22.55	269.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1641 TRA -.4803 TC3 .4827 BAU .0667 SGT 1073.5 SGR 575.5 SG3 647.9 ST 20.8 SR 26.1 SS 22.1
RDE -.2898 RRA .1226 RC3 .0385 FAU .12583 RRT -.1433 RRF .2234 RTF -.6478 CRT .5940 CRS -.6896 CST .1647
FDE -.3781 FRA 1.5180 FC-10.5748 BSP 1554 SGB 1218.0 R23 -.1014 R13 .6245 LSA 32.7 MSA 23.0 SSA 2.0
BDE .3329 BRA .4957 BC3 .4843 FSP 1032 SG1 1077.9 SG2 567.2 THA 173.92 EL1 30.1 EL2 14.5 ALF 55.55

LAUNCH DATE MAY 23 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 366.797 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.446 GAL 1.44 AZL 91.59 HCA 120.44 SMA 189.68 ECC .20296 INC 1.5860 V1 29.415
RP 208.49 LAP -1.37 LOP 1.69 VP 23.946 GAP 10.25 AZP 89.20 TAL 8.55 TAP 128.99 RCA 151.18 APO 228.18 V2 26.284
RC 95.074 GL -16.41 GP -2.46 ZAL 81.19 ZAP 140.32 ETS 183.05 ZAE 178.60 ETE 291.14 ZAC 97.03 ETC 278.52 LVI -16.71

PLANETOCENTRIC CONIC

C3 10.100 VHL 3.178 DLA -29.59 RAL 330.45 RAD 6638.1 VEL 11.410 PTH 6.46 VHP 4.242 DPA -18.22 RAP 325.90 ECC 1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 20	2366.78	-.72	60.82	182.38	137.57	16 3 47	1366.8	17.49	44.68
60.00	16 46 53	2147.14	4.40	45.95	187.29	130.10	17 22 41	1147.1	19.93	27.09
70.00	18 38 9	1819.83	10.33	23.84	191.70	122.74	19 8 29	819.8	22.79	2.41
80.00	21 25 21	1295.62	18.57	348.69	196.27	113.81	21 46 56	295.6	26.76	324.28
80.90	22 5 32	1167.06	21.18	340.30	197.42	111.17	22 24 59	167.1	28.02	315.04
100.00	0 12 8	6058.13	18.57	287.96	196.27	113.81	1 53 7	5058.1	26.76	263.55
110.00	23 37 36	6154.69	10.33	290.66	191.70	122.74	25 20 10	5154.7	22.79	269.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1640 TRA -.4673 TC3 .4342 BAU .0587 SGT 1050.0 SGR 571.9 SG3 686.4 ST 20.7 SR 25.9 SS 22.8
RDE -.2845 RRA .1219 RC3 .0239 FAU .13211 RRT -.1483 RRF .2411 RTF -.5935 CRT .6028 CRS -.6966 CST .1387
FDE -.4060 FRA 1.5835 FC-11.3231 BSP 1489 SGB 1195.6 R23 -.1187 R13 .6018 LSA 33.0 MSA 23.0 SSA 2.0
BDE .3283 BRA .4830 BC3 .4349 FSP 1100 SG1 1054.8 SG2 563.0 THA 173.53 EL1 29.9 EL2 14.3 ALF 55.24

LAUNCH DATE MAY 23 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 370.878 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.416 GAL 1.44 AZL 91.57 HCA 121.69 SMA 189.17 ECC .20081 INC 1.5748 V1 29.415
RP 208.67 LAP -1.34 LOP 2.93 VP 23.884 GAP 9.98 AZP 89.17 TAL 8.66 TAP 130.35 RCA 151.18 APO 227.15 V2 26.264
RC 96.988 GL -16.43 GP -2.55 ZAL 81.06 ZAP 138.64 ETS 182.98 ZAE 178.28 ETE 241.97 ZAC 97.00 ETC 278.43 LVI -16.51

PLANETOCENTRIC CONIC

C3 9.915 VHL 3.149 DLA -29.66 RAL 330.32 RAD 6638.0 VEL 11.402 PTH 6.45 VHP 4.127 DPA -18.46 RAP 325.49 ECC 1.1632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 10	2361.52	-.46	60.60	182.10	137.57	16 3 32	1361.5	17.74	44.43
60.00	16 46 55	2141.38	4.65	45.68	187.00	130.08	17 22 36	1141.4	20.16	26.78
70.00	18 38 35	1812.92	10.59	23.46	191.40	122.66	19 8 48	812.9	23.00	1.98
80.00	21 29 22	1277.32	19.07	347.56	196.07	113.42	21 50 39	277.3	27.05	323.00
80.66	22 3 11	1189.19	21.31	340.51	197.05	111.13	22 22 40	189.2	28.12	315.21
100.00	0 16 9	6039.83	19.07	286.83	196.07	113.42	1 56 49	5039.8	27.05	262.27
110.00	23 38 1	6147.77	10.59	290.29	191.40	122.66	25 20 29	5147.8	23.00	268.80

DIFFERENTIAL CORRECTIONS

TDE -.1647 TRA -.4539 TC3 .3761 BAU .0499
RDE -.2794 RRA .1214 RC3 .0079 FAU .13863
FDE -.4323 FRA 1.6530 FC-12.1051 BSP 1416
BDE .3243 BRA .4699 BC3 .3761 FSP 1171

MID-COURSE EXECUTION ACCURACY

SGT 1024.4 SGR 568.4 SG3 726.6
RRT -.1514 RRF .2599 RTF -.5641
SGB 1171.5 R23 -.1396 R13 .5744
SG1 1029.5 SG2 559.0 THA 173.18

ORBIT DETERMINATION ACCURACY

ST 20.7 SR 25.7 SS 23.6
CRT .6141 CRS -.7046 CST .1133
LSA 33.3 MSA 23.0 SSA 2.0
EL1 29.8 EL2 14.1 ALF 54.80

LAUNCH DATE MAY 23 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 374.971 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.389 GAL 1.45 AZL 91.56 HCA 122.93 SMA 188.69 ECC .19883 INC 1.5631 V1 29.415
RP 208.85 LAP -1.31 LOP 4.18 VP 23.824 GAP 9.71 AZP 89.15 TAL 8.75 TAP 131.69 RCA 151.18 APO 226.21 V2 26.243
RC 98.929 GL -16.44 GP -2.65 ZAL 80.96 ZAP 136.91 ETS 182.90 ZAE 177.21 ETE 218.35 ZAC 96.97 ETC 278.34 LVI -16.29

PLANETOCENTRIC CONIC

C3 9.743 VHL 3.121 DLA -29.71 RAL 330.21 RAD 6637.9 VEL 11.395 PTH 6.45 VHP 4.018 DPA -18.72 RAP 325.05 ECC 1.1603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 24 0	2356.97	-.23	60.41	181.84	137.58	16 3 17	1357.0	17.96	44.22
60.00	16 46 52	2136.50	4.86	45.44	186.73	130.06	17 22 29	1136.5	20.36	26.51
70.00	18 38 48	1807.22	10.80	23.16	191.13	122.60	19 8 56	807.2	23.17	1.62
80.00	21 32 32	1262.27	19.47	346.62	195.87	113.09	21 53 34	262.3	27.28	321.94
80.50	22 1 31	1169.65	21.43	340.59	196.72	111.08	22 21 0	169.6	28.21	315.26
100.00	0 19 20	6024.78	19.47	285.90	195.87	113.09	1 59 45	5024.8	27.28	261.21
110.00	23 38 15	6142.08	10.80	289.98	191.13	122.60	25 20 37	5142.1	23.17	268.45

DIFFERENTIAL CORRECTIONS

TDE -.1627 TRA -.4364 TC3 .3205 BAU .0418
RDE -.2745 RRA .1209 RC3 -.0100 FAU .14560
FDE -.4655 FRA 1.7165 FC-12.9373 BSP 1294
BDE .3191 BRA .4529 BC3 .3207 FSP 1238

MID-COURSE EXECUTION ACCURACY

SGT 989.9 SGR 565.0 SG3 768.5
RRT -.1546 RRF .2802 RTF -.5345
SGB 1139.8 R23 -.1612 R13 .5475
SG1 995.5 SG2 555.1 THA 172.67

ORBIT DETERMINATION ACCURACY

ST 20.4 SR 25.5 SS 24.4
CRT .6230 CRS -.7180 CST .0827
LSA 33.7 MSA 22.8 SSA 2.1
EL1 29.6 EL2 13.7 ALF 54.98

LAUNCH DATE MAY 23 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 26 1971

HELIOCENTRIC CONIC DISTANCE 379.075 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.364 GAL 1.45 AZL 91.55 HCA 124.17 SMA 188.26 ECC .19700 INC 1.5513 V1 29.415
RP 209.04 LAP -1.28 LOP 5.42 VP 23.766 GAP 9.45 AZP 89.13 TAL 8.83 TAP 133.00 RCA 151.17 APO 225.35 V2 26.221
RC 100.898 GL -16.43 GP -2.76 ZAL 80.88 ZAP 135.15 ETS 182.82 ZAE 175.88 ETE 208.15 ZAC 96.94 ETC 278.23 LVI -16.05

PLANETOCENTRIC CONIC

C3 9.584 VHL 3.096 DLA -29.73 RAL 330.13 RAD 6637.8 VEL 11.388 PTH 6.44 VHP 3.914 DPA -18.98 RAP 324.57 ECC 1.1577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 23 48	2353.17	-.04	60.25	181.62	137.58	16 3 1	1353.2	18.14	44.05
60.00	16 46 45	2132.52	5.04	45.25	186.49	130.04	17 22 17	1132.5	20.51	26.29
70.00	18 38 49	1802.81	10.96	22.92	190.88	122.55	19 8 52	802.8	23.30	1.35
80.00	21 34 18	1252.33	19.74	346.00	195.65	112.87	21 55 10	252.3	27.43	321.23
80.42	22 0 33	1168.45	21.53	340.54	196.42	111.02	22 20 1	168.4	28.26	315.19
100.00	0 21 6	6014.84	19.74	285.28	195.65	112.87	2 1 21	5014.8	27.43	260.51
110.00	23 38 16	6137.67	10.96	289.74	190.88	122.55	25 20 33	5137.7	23.30	268.17

DIFFERENTIAL CORRECTIONS

TDE -.1673 TRA -.4252 TC3 .2284 BAU .0295
RDE -.2695 RRA .1210 RC3 -.0283 FAU .15220
FDE -.4883 FRA 1.7993 FC-13.7477 BSP 1239
BDE .3172 BRA .4421 BC3 .2301 FSP 1319

MID-COURSE EXECUTION ACCURACY

SGT 968.1 SGR 561.8 SG3 810.4
RRT -.1503 RRF .3015 RTF -.5045
SGB 1119.2 R23 -.1953 R13 .5001
SG1 973.5 SG2 552.3 THA 172.63

ORBIT DETERMINATION ACCURACY

ST 20.6 SR 25.2 SS 25.1
CRT .6413 CRS -.7202 CST .0558
LSA 34.1 MSA 23.0 SSA 2.1
EL1 29.7 EL2 13.4 ALF 53.84

LAUNCH DATE MAY 23 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 28 1971

HELIOCENTRIC CONIC DISTANCE 383.191 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.341 GAL 1.45 AZL 91.54 HCA 125.41 SMA 187.86 ECC .19531 INC 1.5390 V1 29.415
RP 209.24 LAP -1.25 LOP 6.66 VP 23.709 GAP 9.19 AZP 89.11 TAL 8.89 TAP 134.30 RCA 151.17 APO 224.55 V2 26.198
RC 102.893 GL -16.42 GP -2.87 ZAL 80.83 ZAP 133.35 ETS 182.74 ZAE 174.43 ETE 202.73 ZAC 96.91 ETC 278.12 LVI -15.80

PLANETOCENTRIC CONIC

C3 9.437 VHL 3.072 DLA -29.74 RAL 330.06 RAD 6637.8 VEL 11.382 PTH 6.43 VHP 3.816 DPA -19.27 RAP 324.04 ECC 1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 23 35	2350.03	.12	60.12	181.42	137.58	16 2 45	1350.0	18.29	43.90
60.00	16 46 32	2129.34	5.18	45.10	186.27	130.02	17 22 2	1129.3	20.64	26.12
70.00	18 38 39	1799.55	11.08	22.74	190.64	122.52	19 8 38	799.5	23.40	1.14
80.00	21 34 29	1247.92	19.85	345.73	195.40	112.77	21 55 17	247.9	27.49	320.92
80.40	22 0 12	1165.75	21.60	340.38	196.15	110.94	22 19 37	165.8	28.30	314.99
100.00	0 21 17	6010.43	19.85	285.00	195.40	112.77	2 1 27	5010.4	27.49	260.19
110.00	23 38 5	6134.41	11.08	289.56	190.64	122.52	25 20 20	5134.4	23.40	267.97

DIFFERENTIAL CORRECTIONS

TDE -.1586 TRA -.3987 TC3 .1870 BAU .0245
RDE -.2652 RRA .1205 RC3 -.0509 FAU .16047
FDE -.5373 FRA 1.8498 FC-14.7215 BSP 995
BDE .3090 BRA .4165 BC3 .1938 FSP 1367

MID-COURSE EXECUTION ACCURACY

SGT 913.3 SGR 559.1 SG3 857.9
RRT -.1545 RRF .3254 RTF -.4571
SGB 1070.8 R23 -.2167 R13 .4780
SG1 919.7 SG2 548.5 THA 171.58

ORBIT DETERMINATION ACCURACY

ST 19.6 SR 25.0 SS 26.1
CRT .6441 CRS -.7436 CST .0174
LSA 34.6 MSA 22.1 SSA 2.1
EL1 29.0 EL2 12.9 ALF 55.51

LAUNCH DATE MAY 23 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 30 1971

HELIOCENTRIC CONIC DISTANCE 387.314 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.320	GAL	1.44	AZL	91.53	HCA	126.65	SMA	187.90	ECC	.19376	INC	1.5264	V1	29.415
RP	209.44	LAP	-1.22	LOP	7.90	VP	23.654	GAP	8.95	AZP	89.09	TAL	8.92	TAP	135.57	RCA	151.17	APO	223.83	V2	26.174
RC	104.913	GL	-16.39	GP	-2.98	ZAL	80.82	ZAP	131.52	ETS	182.65	ZAE	172.90	ETE	199.41	ZAC	96.88	ETC	277.99	LVI	-15.54

PLANETOCENTRIC CONIC

C3	9.301	VHL	3.050	DLA	-29.72	RAL	330.04	RAD	6637.7	VEL	11.376	PTH	6.43	VHP	3.723	DPA	-19.57	RAP	323.49	ECC	1.1531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 23 22	2347.67	.24	60.02	181.26	137.58	16 2 30	1347.7	18.41	43.79
60.00	16 46 16	2127.14	5.27	44.99	186.09	130.01	17 21 43	1127.1	20.73	26.00
70.00	18 38 15	1797.71	11.14	22.64	190.43	122.49	19 8 13	797.7	23.45	1.03
80.00	21 32 33	1250.96	19.77	345.92	195.12	112.84	21 53 24	251.0	27.45	321.14
80.47	22 0 37	1161.24	21.66	340.06	195.93	110.86	22 19 58	161.2	28.32	314.66
100.00	0 19 21	6013.47	19.77	285.19	195.12	112.84	1 59 34	5013.5	27.45	260.41
110.00	23 37 42	6132.57	11.14	289.46	190.43	122.49	25 19 54	5132.6	23.45	267.85

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1736	TRA	-.3952	TC3	.0316	BAU	.0086	SGT	915.2	SGR	555.8	SG3	898.7	ST	20.7	SR	24.7	SS	26.4
RDE	-.2598	RRA	.1214	RC3	-.0700	FAU	.16632	RRT	-.1299	RRF	.3469	RTF	-.3661	CRT	.6776	CRS	-.7243	CST	.0012
FDE	-.5320	FRA	1.9625	FC-	15.4817	BSP	1032	SGB	1070.8	R23	-.2743	R13	.3873	LSA	34.7	MSA	23.0	SSA	2.1
BDE	.3124	BRA	.4134	BC3	.0768	FSP	1478	SG1	919.7	SG2	548.5	THA	172.98	EL1	29.7	EL2	12.7	ALF	52.28

LAUNCH DATE MAY 23 1971 FLIGHT TIME 162.00 ARRIVAL DATE NOV 1 1971

HELIOCENTRIC CONIC DISTANCE 391.447 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.301	GAL	1.44	AZL	91.51	HCA	127.89	SMA	187.17	ECC	.19234	INC	1.5134	V1	29.415
RP	209.66	LAP	-1.19	LOP	9.13	VP	23.600	GAP	8.70	AZP	89.07	TAL	8.94	TAP	136.83	RCA	151.17	APO	223.17	V2	26.150
RC	106.958	GL	-16.35	GP	-3.10	ZAL	80.83	ZAP	129.65	ETS	182.56	ZAE	171.29	ETE	197.14	ZAC	96.85	ETC	277.86	LVI	-15.26

PLANETOCENTRIC CONIC

C3	9.174	VHL	3.029	DLA	-29.68	RAL	330.04	RAD	6637.6	VEL	11.370	PTH	6.42	VHP	3.635	DPA	-19.88	RAP	322.90	ECC	1.1510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 23 8	2345.95	.33	59.95	181.12	137.58	16 2 14	1345.9	18.49	43.71
60.00	16 45 55	2125.71	5.34	44.92	185.93	130.01	17 21 21	1125.7	20.78	25.92
70.00	18 37 40	1796.99	11.17	22.60	190.24	122.49	19 7 37	797.0	23.47	.98
80.00	21 29 18	1258.68	19.57	346.40	194.82	113.01	21 50 17	258.7	27.34	321.68
80.61	22 1 42	1155.12	21.70	339.62	195.73	110.76	22 20 57	155.1	28.31	314.21
100.00	0 16 6	6021.20	19.57	285.67	194.82	113.01	1 56 27	5021.2	27.34	260.96
110.00	23 37 6	6131.85	11.17	289.42	190.24	122.49	25 19 18	5131.9	23.47	267.81

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1760	TRA	-.3774	TC3	-.0777	BAU	.0149	SGT	887.9	SGR	553.3	SG3	944.2	ST	20.7	SR	24.4	SS	27.1
RDE	-.2550	RRA	.1217	RC3	-.0932	FAU	.17365	RRT	-.1109	RRF	.3714	RTF	-.2924	CRT	.6963	CRS	-.7277	CST	-.0299
FDE	-.5553	FRA	2.0425	FC-	16.3863	BSP	899	SGB	1046.2	R23	-.3203	R13	.3150	LSA	35.1	MSA	22.9	SSA	2.1
BDE	.3099	BRA	.3966	BC3	.1214	FSP	1555	SG1	891.3	SG2	547.8	THA	173.63	EL1	29.6	EL2	12.3	ALF	51.72

LAUNCH DATE MAY 23 1971 FLIGHT TIME 164.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 395.589 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.283	GAL	1.43	AZL	91.50	HCA	129.12	SMA	186.87	ECC	.19103	INC	1.5000	V1	29.415
RP	209.87	LAP	-1.16	LOP	10.36	VP	23.548	GAP	8.47	AZP	89.05	TAL	8.94	TAP	138.06	RCA	151.17	APO	222.57	V2	26.124
RC	109.028	GL	-16.30	GP	-3.22	ZAL	80.86	ZAP	127.75	ETS	182.46	ZAE	169.62	ETE	195.48	ZAC	96.82	ETC	277.72	LVI	-14.96

PLANETOCENTRIC CONIC

C3	9.057	VHL	3.009	DLA	-29.61	RAL	330.06	RAD	6637.6	VEL	11.365	PTH	6.42	VHP	3.552	DPA	-20.21	RAP	322.26	ECC	1.1491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 52	2344.88	.38	59.91	181.01	137.57	16 1 57	1344.9	18.54	43.66
60.00	16 45 29	2125.09	5.36	44.89	185.79	130.00	17 20 54	1125.1	20.81	25.88
70.00	18 36 52	1797.43	11.16	22.62	190.07	122.49	19 6 50	797.4	23.46	1.01
80.00	21 25 6	1269.96	19.27	347.10	194.51	113.26	21 46 15	270.0	27.17	322.48
80.82	22 3 23	1147.48	21.71	339.06	195.57	110.65	22 22 31	147.5	28.28	313.63
100.00	0 11 53	6032.47	19.27	286.37	194.51	113.26	1 52 26	5032.5	27.17	261.75
110.00	23 36 19	6132.29	11.16	289.45	190.07	122.49	25 18 31	5132.3	23.46	267.84

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1727	TRA	-.3529	TC3	-.1725	BAU	.0254	SGT	846.3	SGR	551.7	SG3	993.4	ST	20.1	SR	24.2	SS	27.9
RDE	-.2508	RRA	.1218	RC3	-.1197	FAU	.18200	RRT	-.0893	RRF	.3986	RTF	-.2.58	CRT	.7107	CRS	-.7445	CST	-.0756
FDE	-.5991	FRA	2.1049	FC-	17.3966	BSP	696	SGB	1010.2	R23	-.3661	R13	.2400	LSA	35.7	MSA	22.2	SSA	2.1
BDE	.3045	BRA	.3734	BC3	.2099	FSP	1613	SG1	848.7	SG2	547.9	THA	174.27	EL1	29.2	EL2	11.7	ALF	52.34

LAUNCH DATE MAY 23 1971 FLIGHT TIME 166.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 399.737 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.267	GAL	1.42	AZL	91.49	HCA	130.35	SMA	186.60	ECC	.18985	INC	1.4862	V1	29.415
RP	210.10	LAP	-1.13	LOP	11.59	VP	23.497	GAP	8.23	AZP	89.04	TAL	8.92	TAP	139.27	RCA	151.18	APO	222.03	V2	26.098
RC	111.121	GL	-16.24	GP	-3.35	ZAL	80.94	ZAP	125.83	ETS	182.36	ZAE	167.90	ETE	194.21	ZAC	96.79	ETC	277.58	LVI	-14.65

PLANETOCENTRIC CONIC

C3	8.949	VHL	2.991	DLA	-29.53	RAL	330.11	RAD	6637.5	VEL	11.360	PTH	6.41	VHP	3.475	DPA	-20.54	RAP	321.60	ECC	1.1473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 37	2344.55	.40	59.89	180.93	137.57	16 1 41	1344.6	18.56	43.64
60.00	16 45 0	2125.38	5.35	44.91	185.68	130.00	17 20 25	1125.4	20.79	25.90
70.00	18 35 53	1799.19	11.09	22.72	189.93	122.51	19 5 52	799.2	23.41	1.12
80.00	21 20 7	1284.32	18.88	347.99	194.22	113.57	21 41 31	284.3	26.95	323.49
81.13	22 5 59	1137.54	21.71	338.33	195.44	110.52	22 24 57	137.5	28.22	312.89
100.00	0 6 55	6046.83	18.88	287.26	194.22	113.57	1 47 42	5046.8	26.95	262.76
110.00	23 35 19	6134.05	11.09	289.54	189.93	122.51	25 17 33	5134.1	23.41	267.95

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1862	TRA	-.3443	TC3	-.3537	BAU	.0456	SGT	863.9	SGR	549.5	SG3	1035.3	ST	21.1	SR	23.9	SS	28.2
RDE	-.2455	RRA	.1233	RC3	-.1425	FAU	.18793	RRT	-.0421	RRF	.4232	RTF	-.0974	CRT	.7391	CRS	-.7246	CST	-.0875
FDE	-.5880	FRA	2.2253	FC-	18.1816	BSP	675	SGB	1023.8	R23	-.4165	R13	.1093	LSA	35.8	MSA	23.0	SSA	2.1
BDE	.3081	BRA	.3657	BC3	.3814	FSP	1726	SG1	864.4	SG2	548.7	THA	177.43	EL1	29.8	EL2	11.4	ALF	49.64

LAUNCH DATE MAY 23 1971 FLIGHT TIME 168.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 403.892 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.293	GAL	1.41	AZL	91.47	HCA	131.57	SMA	186.36	ECC	.18877	INC	1.4719	V1	29.415
RP	210.33	LAP	-1.10	LOP	12.82	VP	23.448	GAP	8.01	AZP	89.02	TAL	8.88	TAP	140.45	RCA	151.18	APO	221.54	V2	26.071
RC	113.239	GL	-16.17	GP	-3.46	ZAL	81.03	ZAP	123.87	ETS	182.25	ZAE	166.13	ETE	193.19	ZAC	98.75	ETC	277.42	LVI	-14.32

PLANETOCENTRIC CONIC

C3	8.848	VHL	2.975	DLA	-29.42	RAL	330.19	RAD	6637.4	VEL	11.356	PTH	6.41	VHP	3.402	DPA	-20.89	RAP	320.91	ECC	1.1456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 20	2344.85	.38	59.90	180.87	137.57	16 1 24	1344.8	18.54	43.66
60.00	16 44 25	2126.44	5.30	44.96	185.59	130.01	17 19 52	1126.4	20.75	25.96
70.00	18 34 43	1802.04	10.99	22.87	189.80	122.54	19 4 45	802.0	23.32	1.30
80.00	21 14 52	1300.08	18.45	348.96	193.93	113.90	21 36 32	300.1	26.69	324.59
81.52	22 9 21	1125.56	21.69	337.43	195.34	110.39	22 28 7	125.6	28.14	311.99
100.00	0 1 39	6062.59	18.45	288.23	193.93	113.90	1 42 42	5062.6	26.69	263.86
110.00	23 34 9	6136.90	10.99	289.70	189.80	122.54	25 16 26	5136.9	23.32	268.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1917	TRA	-.3263	TC3	-.5065	BAU	.0632	SGT	864.7	SGR	548.2	SG3	1081.9	ST	21.4	SR	23.5	SS	28.7
RDE	-.2405	RRA	.1244	RC3	-.1693	FAU	.19518	RRT	.0060	RRF	.4500	RTF	.0127	CRT	.7606	CRS	-.7178	CST	-.1104
FDE	-.5947	FRA	2.3245	FC	-19.0971	BSP	566	SGB	1023.8	R23	.4499	R13	.0145	LSA	36.0	MSA	23.1	SSA	2.1
BDE	.3076	BRA	.3492	BC3	.5340	FSP	1811	SG1	864.7	SG2	548.2	THA	.37	EL1	29.9	EL2	11.0	ALF	48.55

LAUNCH DATE MAY 23 1971 FLIGHT TIME 170.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 408.053 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.240	GAL	1.39	AZL	91.46	HCA	132.80	SMA	186.14	ECC	.18779	INC	1.4570	V1	29.415
RP	210.57	LAP	-1.07	LOP	14.04	VP	23.399	GAP	7.79	AZP	89.01	TAL	8.82	TAP	141.62	RCA	151.18	APO	221.09	V2	26.044
RC	115.380	GL	-16.08	GP	-3.61	ZAL	81.16	ZAP	121.89	ETS	182.14	ZAE	164.31	ETE	192.35	ZAC	96.72	ETC	277.26	LVI	-13.98

PLANETOCENTRIC CONIC

C3	8.755	VHL	2.959	DLA	-29.30	RAL	330.29	RAD	6637.4	VEL	11.352	PTH	6.40	VHP	3.334	DPA	-21.26	RAP	320.18	ECC	1.1441

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 22 1	2345.80	.33	59.94	180.84	137.58	16 1 7	1345.8	18.50	43.70
60.00	16 43 47	2128.30	5.22	45.05	185.53	130.02	17 19 15	1128.3	20.68	26.06
70.00	18 33 21	1806.00	10.84	23.09	189.69	122.59	19 3 27	806.0	23.20	1.55
80.00	21 9 24	1317.03	17.97	350.00	193.67	114.25	21 31 21	317.0	26.41	325.77
82.02	22 13 40	1111.04	21.64	336.34	195.27	110.24	22 32 11	111.0	28.04	310.90
100.00	23 52 15	6079.54	17.97	289.27	193.67	114.25	25 33 35	5079.5	26.41	265.04
110.00	23 32 47	6140.86	10.84	289.91	189.69	122.59	25 15 8	5140.9	23.20	268.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1966	TRA	-.3064	TC3	-.6730	BAU	.0821	SGT	875.4	SGR	547.5	SG3	1127.1	ST	21.6	SR	23.2	SS	29.2
RDE	-.2358	RRA	.1256	RC3	-.1969	FAU	.20219	RRT	.0637	RRF	.4777	RTF	.1320	CRT	.7817	CRS	-.7152	CST	-.1401
FDE	-.6063	FRA	2.4173	FC	-19.9929	BSP	490	SGB	1032.5	R23	.4645	R13	.1510	LSA	36.3	MSA	23.1	SSA	2.1
BDE	.3070	BRA	.3311	BC3	.7012	FSP	1895	SG1	876.5	SG2	545.7	THA	3.73	EL1	29.9	EL2	10.4	ALF	47.62

LAUNCH DATE MAY 23 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 11 1971

HELIOCENTRIC CONIC DISTANCE 412.219 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.228	GAL	1.37	AZL	91.44	HCA	134.02	SMA	185.94	ECC	.18690	INC	1.4417	V1	29.415
RP	210.82	LAP	-1.04	LOP	15.26	VP	23.352	GAP	7.57	AZP	89.00	TAL	8.75	TAP	142.76	RCA	151.19	APO	220.70	V2	26.015
RC	117.545	GL	-15.98	GP	-3.75	ZAL	81.31	ZAP	119.88	ETS	182.03	ZAE	162.45	ETE	191.64	ZAC	96.68	ETC	277.09	LVI	-13.63

PLANETOCENTRIC CONIC

C3	8.669	VHL	2.944	DLA	-29.15	RAL	330.42	RAD	6637.3	VEL	11.348	PTH	6.40	VHP	3.271	DPA	-21.62	RAP	319.43	ECC	1.1427

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 21 42	2347.39	.25	60.01	180.83	137.58	16 0 50	1347.4	18.42	43.78
60.00	16 43 4	2130.96	5.11	45.18	185.48	130.03	17 18 35	1131.0	20.57	26.21
70.00	18 31 49	1811.06	10.66	23.36	189.60	122.64	19 2 0	811.1	23.05	1.86
80.00	21 3 49	1334.86	17.47	351.08	193.43	114.60	21 26 4	334.9	26.10	327.00
82.64	22 19 8	1093.24	21.58	335.00	195.22	110.08	22 37 21	93.2	27.92	309.56
100.00	23 46 41	6097.37	17.47	290.36	193.43	114.60	25 28 18	5097.4	26.10	266.28
110.00	23 31 16	6145.92	10.66	290.19	189.60	122.64	25 13 42	5145.9	23.05	268.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2022	TRA	-.2861	TC3	-.6504	BAU	.1020	SGT	901.1	SGR	547.4	SG3	1172.3	ST	21.9	SR	22.9	SS	29.5
RDE	-.2308	RRA	.1271	RC3	-.2257	FAU	.20908	RRT	.1271	RRF	.5057	RTF	.1388	CRT	.8022	CRS	-.7070	CST	-.1624
FDE	-.6078	FRA	2.5203	FC	-20.8799	BSP	475	SGB	1054.3	R23	.4588	R13	.2825	LSA	36.5	MSA	23.2	SSA	2.1
BDE	.3066	BRA	.3131	BC3	.8798	FSP	1973	SG1	905.3	SG2	540.4	THA	6.88	EL1	30.0	EL2	9.9	ALF	46.55

LAUNCH DATE MAY 23 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 13 1971

HELIOCENTRIC CONIC DISTANCE 416.390 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.228	GAL	1.35	AZL	91.43	HCA	135.24	SMA	185.77	ECC	.18611	INC	1.4256	V1	29.415
RP	211.07	LAP	-1.00	LOP	16.48	VP	23.305	GAP	7.36	AZP	88.99	TAL	8.65	TAP	143.89	RCA	151.20	APO	220.35	V2	25.986
RC	119.734	GL	-15.87	GP	-3.90	ZAL	81.50	ZAP	117.86	ETS	181.90	ZAE	160.54	ETE	191.03	ZAC	96.63	ETC	276.92	LVI	-13.26

PLANETOCENTRIC CONIC

C3	8.590	VHL	2.931	DLA	-28.97	RAL	330.58	RAD	6637.3	VEL	11.345	PTH	6.40	VHP	3.213	DPA	-22.00	RAP	318.65	ECC	1.1414

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 21 22	2349.62	.14	60.10	180.85	137.58	16 0 32	1349.6	18.31	43.88
60.00	16 42 16	2134.38	4.96	45.34	185.47	130.05	17 17 51	1134.4	20.44	26.40
70.00	18 30 8	1817.16	10.43	23.69	189.53	122.71	19 0 25	817.2	22.87	2.24
80.00	20 58 11	1353.38	16.94	352.20	193.22	114.96	21 20 44	353.4	25.77	328.28
83.42	22 26 2	1071.25	21.50	333.35	195.21	109.90	22 43 54	71.3	27.78	307.91
100.00	23 41 3	6115.89	16.94	291.48	193.22	114.96	25 22 58	5115.9	25.77	267.55
110.00	23 29 34	6152.02	10.43	290.52	189.53	122.71	25 12 6	5152.0	22.87	269.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2067	TRA	-.2636	TC3	-1.0350	BAU	.1224	SGT	937.2	SGR	548.0	SG3	1217.4	ST	22.1	SR	22.5	SS	29.9
RDE	-.2260	RRA	.1285	RC3	-.2564	FAU	.21614	RRT	.1958	RRF	.5342	RTF	.3631	CRT	.8223	CRS	-.7032	CST	-.1917
FDE	-.6137	FRA	2.6112	FC	-21.7845	BSP	551	SGB	1085.6	R23	.4358	R13	.4061	LSA	36.8	MSA	23.1	SSA	2.1
BDE	.3063	BRA	.2933	BC3	1.0662	FSP	2049	SG1	946.2	SG2	532.2	THA	9.59	EL1	30.1	EL2	9.4	ALF	45.68

LAUNCH DATE MAY 23 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 15 1971

HELIOCENTRIC CONIC DISTANCE 420.566 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.209	GAL	1.33	AZL	91.41	HCA	136.45	SMA	185.62	ECC	.18540	INC	1.4090	V1	29.415
RP	211.33	LAP	-.97	LOP	17.70	VP	23.260	GAP	7.15	AZP	88.98	TAL	8.54	TAP	144.99	RCA	151.21	APO	220.03	V2	25.957
RC	121.945	GL	-15.74	GP	-4.05	ZAL	81.71	ZAP	115.82	ETS	181.77	ZAE	158.60	ETE	190.50	ZAC	96.59	ETC	276.74	LVI	-12.88

PLANETOCENTRIC CONIC

C3	8.516	VHL	2.918	DLA	-28.78	RAL	330.75	RAD	6637.3	VEL	11.341	PTH	6.39	VHP	3.159	DPA	-22.39	RAP	317.84	ECC	1.1402

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 21 0	2352.47	-.00	60.22	180.89	137.58	16 0 13	1352.5	18.18	44.01
60.00	16 41 25	2138.57	4.77	45.54	185.47	130.07	17 17 3	1138.6	20.27	26.63
70.00	18 28 16	1824.27	10.17	24.08	189.48	122.78	18 58 41	824.3	22.66	2.69
80.00	20 52 32	1372.45	16.39	353.35	193.03	115.31	21 15 24	372.4	25.41	329.58
84.43	22 34 54	1043.32	21.40	331.25	195.22	109.72	22 52 17	43.3	27.61	305.83
100.00	23 35 24	6134.96	16.39	292.63	193.03	115.31	25 17 39	5135.0	25.41	268.86
110.00	23 27 43	6159.13	10.17	290.90	189.48	122.78	25 10 22	5159.1	22.66	269.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2097	TRA	-.2384	TC3	-1.2237	BAU	.1432	SGT	982.2	SGR	549.5	SG3	1262.7	ST	22.1	SR	22.2	SS	30.3
RDE	-.2213	RRA	.1299	RC3	-.2889	FAU	.22338	RRT	.2668	RRF	.5633	RTF	.4699	CRT	.8418	CRS	-.7024	CST	-.2259
FDE	-.6229	FRA	2.6950	FC	-22.7082	BSP	712	SGB	1125.5	R23	.4009	R13	.5163	LSA	37.0	MSA	22.9	SSA	2.1
BDE	.3049	BRA	.2715	BC3	1.2574	FSP	2116	SG1	997.3	SG2	521.5	THA	11.74	EL1	30.0	EL2	8.8	ALF	45.07

LAUNCH DATE MAY 23 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 17 1971

HELIOCENTRIC CONIC DISTANCE 424.745 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.201	GAL	1.31	AZL	91.39	HCA	137.67	SMA	185.49	ECC	.18478	INC	1.3915	V1	29.415
RP	211.60	LAP	-.94	LOP	18.91	VP	23.215	GAP	6.94	AZP	88.97	TAL	8.41	TAP	146.07	RCA	151.21	APO	219.76	V2	25.926
RC	124.177	GL	-15.60	GP	-4.20	ZAL	81.95	ZAP	113.77	ETS	181.64	ZAE	156.64	ETE	190.03	ZAC	96.54	ETC	276.55	LVI	-12.49

PLANETOCENTRIC CONIC

C3	8.448	VHL	2.907	DLA	-28.56	RAL	330.96	RAD	6637.2	VEL	11.338	PTH	6.39	VHP	3.109	DPA	-22.78	RAP	317.02	ECC	1.1390

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 20 37	2355.99	-.18	60.37	180.95	137.58	15 59 53	1356.0	18.01	44.18
60.00	16 40 29	2143.57	4.55	45.78	185.50	130.09	17 16 12	1143.6	20.07	26.90
70.00	18 26 16	1832.44	9.87	24.52	189.45	122.86	18 56 48	832.4	22.41	3.19
80.00	20 46 51	1392.16	15.82	354.53	192.87	115.66	21 10 3	392.2	25.03	330.92
85.84	22 47 16	1004.51	21.28	328.36	195.26	109.51	23 4 0	4.5	27.41	302.95
100.00	23 29 43	6154.68	15.82	293.80	192.87	115.66	25 12 18	5154.7	25.03	270.20
110.00	23 25 42	6167.30	9.87	291.34	189.45	122.86	25 8 30	5167.3	22.41	270.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2194	TRA	-.2194	TC3	-1.4570	BAU	.1684	SGT	1070.9	SGR	550.9	SG3	1301.9	ST	22.9	SR	21.7	SS	30.5
RDE	-.2157	RRA	.1325	RC3	-.3185	FAU	.22865	RRT	.3293	RRF	.5906	RTF	.5528	CRT	.8591	CRS	-.6782	CST	-.2260
FDE	-.5925	FRA	2.8242	FC	-23.4302	BSP	865	SGB	1204.3	R23	.3740	R13	.5941	LSA	37.0	MSA	23.5	SSA	2.1
BDE	.3077	BRA	.2563	BC3	1.4914	FSP	2215	SG1	1090.6	SG2	510.8	THA	12.37	EL1	30.4	EL2	8.4	ALF	43.26

LAUNCH DATE MAY 23 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 428.927 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.194	GAL	1.28	AZL	91.37	HCA	138.88	SMA	185.37	ECC	.18423	INC	1.3734	V1	29.415
RP	211.87	LAP	-.90	LOP	20.12	VP	23.171	GAP	6.75	AZP	88.97	TAL	8.26	TAP	147.14	RCA	151.22	APO	219.53	V2	25.896
RC	126.431	GL	-15.45	GP	-4.36	ZAL	82.21	ZAP	111.71	ETS	181.50	ZAE	154.64	ETE	189.60	ZAC	96.48	ETC	276.36	LVI	-12.08

PLANETOCENTRIC CONIC

C3	8.386	VHL	2.896	DLA	-28.32	RAL	331.18	RAD	6637.2	VEL	11.336	PTH	6.39	VHP	3.064	DPA	-23.17	RAP	316.19	ECC	1.1380

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 20 13	2360.12	-.39	60.54	181.04	137.57	15 59 33	1360.1	17.81	44.37
60.00	16 39 28	2149.29	4.30	46.06	185.54	130.11	17 15 17	1149.3	19.85	27.21
70.00	18 24 7	1841.53	9.53	25.01	189.44	122.95	18 54 49	841.5	22.14	3.75
80.00	20 41 12	1412.26	15.22	355.72	192.73	116.00	21 4 45	412.3	24.63	332.28
88.46	23 10 3	6220.30	21.13	300.92	195.33	109.30	24 53 43	5220.3	27.20	275.53
100.00	23 24 4	6174.77	15.22	295.00	192.73	116.00	25 6 59	5174.8	24.63	271.55
110.00	23 23 33	6176.39	9.53	291.83	189.44	122.95	25 6 30	5176.4	22.14	270.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2250	TRA	-.1949	TC3	-1.6621	BAU	.1926	SGT	1157.2	SGR	553.2	SG3	1341.3	ST	23.3	SR	21.3	SS	30.6
RDE	-.2104	RRA	.1346	RC3	-.3509	FAU	.23449	RRT	.3918	RRF	.6181	RTF	.5483	CRT	.8759	CRS	-.6632	CST	-.2400
FDE	-.5729	FRA	2.9224	FC	-24.2077	BSP	1075	SGB	1282.6	R23	.3417	R13	.6644	LSA	37.0	MSA	23.6	SSA	2.1
BDE	.3080	BRA	.2368	BC3	1.7183	FSP	2290	SG1	1181.9	SG2	498.3	THA	12.95	EL1	30.5	EL2	7.8	ALF	42.14

LAUNCH DATE MAY 23 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 433.113 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.188	GAL	1.25	AZL	91.35	HCA	140.08	SMA	185.28	ECC	.18375	INC	1.3544	V1	29.415
RP	212.14	LAP	-.87	LOP	21.32	VP	23.127	GAP	6.55	AZP	88.96	TAL	8.10	TAP	148.18	RCA	151.23	APO	219.32	V2	25.864
RC	128.706	GL	-15.28	GP	-4.52	ZAL	82.50	ZAP	109.64	ETS	181.35	ZAE	152.62	ETE	189.22	ZAC	96.41	ETC	276.17	LVI	-11.67

PLANETOCENTRIC CONIC

C3	8.329	VHL	2.886	DLA	-28.05	RAL	331.43	RAD	6637.2	VEL	11.333	PTH	6.39	VHP	3.024	DPA	-23.57	RAP	315.34	ECC	1.1371

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 19 46	2364.88	-.63	60.74	181.15	137.57	15 59 11	1364.9	17.58	44.59
60.00	16 38 23	2155.77	4.02	46.37	185.61	130.13	17 14 19	1155.8	19.59	27.56
70.00	18 21 50	1851.54	9.16	25.55	189.45	123.05	18 52 42	851.5	21.83	4.37
80.00	20 35 35	1432.79	14.60	356.94	192.62	116.34	20 59 27	432.8	24.20	333.65
90.00	22 52 36	6278.91	18.71	304.24	194.52	111.60	24 37 15	5278.9	25.98	279.58
100.00	23 18 27	6195.30	14.60	296.21	192.62	116.34	25 1 42	5195.3	24.20	272.93
110.00	23 21 16	6186.40	9.16	292.37	189.45	123.05	25 4 23	5186.4	21.83	271.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2299	TRA	-.1691	TC3	-1.9164	BAU	.2176	SGT	1255.6	SGR	556.5	SG3	1378.8	ST	23.6	SR	20.9	SS	30.8
RDE	-.2050	RRA	.1369	RC3	-.3841	FAU	.23995	RRT	.4492	RRF	.6455	RTF	.6907	CRT	.8912	CRS	-.6492	CST	-.2548
FDE	-.5537	FRA	3.0221	FC	-24.9415	BSP	1308	SGB	1373.4	R23	.3129	R13	.7211	LSA	37.0	MSA	23.7	SSA	2.1
BDE	.3081	BRA	.2176	BC3	1.9545	FSP	2356	SG1	1284.6	SG2	486.0	THA	13.18	EL1	30.6	EL2	7.3	ALF	41.09

LAUNCH DATE MAY 23 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 437,300 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.184	GAL	1.22	AZL	91.33	HCA	141.28	SMA	185.20	ECC	.18334	INC	1.3345	V1	29.415
RP	212.43	LAP	-.83	LOP	22.53	VP	23.085	GAP	6.36	AZP	88.96	TAL	7.92	TAP	149.20	RCA	151.24	APO	219.15	V2	25.832
RC	130.999	GL	-15.10	GP	-4.69	ZAL	82.82	ZAP	107.58	ETS	181.19	ZAE	150.59	ETE	188.86	ZAC	96.34	ETC	275.97	LVI	-11.24

PLANETOCENTRIC CONIC

C3	8.276	VHL	2.877	DLA	-27.76	RAL	331.70	RAD	6637.1	VEL	11.331	PTH	6.38	VHP	2.987	DPA	-23.97	RAP	314.48	ECC	1.1362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 19 18	2370.28	-.90	60.97	181.28	137.57	15 58 48	1370.3	17.32	44.84
60.00	16 37 13	2162.99	3.70	46.71	185.69	130.16	17 13 16	1163.0	19.30	27.96
70.00	18 19 25	1862.47	8.75	26.13	189.47	123.15	18 50 28	862.5	21.49	5.03
80.00	20 29 58	1453.75	13.97	358.17	192.53	116.66	20 54 12	453.7	23.75	335.05
90.00	22 37 41	1041.87	17.40	329.51	194.17	112.65	22 55 3	41.9	25.24	305.22
100.00	23 12 50	6216.26	13.97	297.44	192.53	116.66	24 56 26	5216.3	23.75	274.32
110.00	23 18 51	6197.33	8.75	292.95	189.47	123.15	25 2 9	5197.3	21.49	271.86

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2344	TRA	-.1423	TC3	-2.1603	BAU	.2435	SGT	1365.8	SGR	560.4	SG3	1414.0	ST	23.9	SR	20.4	SS	30.9
RDE	-.1994	RRA	.1394	RC3	-.4179	FAU	.24494	RRT	.5014	RRF	.6721	RTF	.7407	CRT	.9050	CRS	-.6291	CST	-.2612
FDE	-.5216	FRA	3.1240	FC	-25.6219	BSP	1555	SGB	1476.3	R23	.2880	R13	.7658	LSA	36.9	MSA	24.0	SSA	2.0
BDE	.3078	BRA	.1992	BC3	2.2003	FSP	2422	SG1	1398.3	SG2	473.6	THA	13.16	EL1	30.7	EL2	6.8	ALF	40.03

LAUNCH DATE MAY 23 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 441,490 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.180	GAL	1.19	AZL	91.31	HCA	142.48	SMA	185.14	ECC	.18300	INC	1.3135	V1	29.415
RP	212.72	LAP	-.80	LOP	23.73	VP	23.043	GAP	6.17	AZP	88.96	TAL	7.72	TAP	150.20	RCA	151.26	APO	219.01	V2	25.799
RC	133.312	GL	-14.90	GP	-4.86	ZAL	83.17	ZAP	105.51	ETS	181.03	ZAE	148.54	ETE	188.54	ZAC	96.26	ETC	275.78	LVI	-10.81

PLANETOCENTRIC CONIC

C3	8.228	VHL	2.869	DLA	-27.45	RAL	331.99	RAD	6637.1	VEL	11.329	PTH	6.38	VHP	2.955	DPA	-24.37	RAP	313.63	ECC	1.1354

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 47	2376.30	-1.20	61.22	181.42	137.56	15 58 23	1376.3	17.03	45.12
60.00	16 35 59	2170.96	3.35	47.10	185.80	130.18	17 12 10	1171.0	18.98	28.39
70.00	18 16 52	1874.27	8.31	26.76	189.52	123.25	18 48 7	874.3	21.12	5.75
80.00	20 24 22	1475.13	13.31	359.41	192.46	116.98	20 48 58	475.1	23.28	336.46
90.00	22 26 7	1082.51	16.32	332.00	193.93	113.42	22 44 10	82.5	24.58	308.01
100.00	23 7 14	6237.64	13.31	298.69	192.46	116.98	24 51 12	5237.6	23.28	275.74
110.00	23 16 19	6209.13	8.31	293.59	189.52	123.25	24 59 48	5209.1	21.12	272.57

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2381	TRA	-.1141	TC3	-2.4106	BAU	.2698	SGT	1484.8	SGR	565.2	SG3	1447.3	ST	24.2	SR	19.9	SS	30.9
RDE	-.1937	RRA	.1420	RC3	-.4530	FAU	.24973	RRT	.5497	RRF	.6981	RTF	.7820	CRT	.9178	CRS	-.6099	CST	-.2691
FDE	-.4886	FRA	3.2170	FC	-26.2742	BSP	1819	SGB	1588.7	R23	.2655	R13	.8026	LSA	36.8	MSA	24.1	SSA	2.0
BDE	.3069	BRA	.1822	BC3	2.4528	FSP	2474	SG1	1520.4	SG2	461.1	THA	13.04	EL1	30.7	EL2	6.2	ALF	39.04

LAUNCH DATE MAY 23 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC DISTANCE 445,682 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.177	GAL	1.16	AZL	91.29	HCA	143.68	SMA	185.09	ECC	.18272	INC	1.2914	V1	29.415
RP	213.01	LAP	-.76	LOP	24.92	VP	23.001	GAP	5.99	AZP	88.96	TAL	7.51	TAP	151.19	RCA	151.27	APO	218.90	V2	25.766
RC	135.643	GL	-14.68	GP	-5.04	ZAL	83.54	ZAP	103.46	ETS	180.86	ZAE	146.49	ETE	188.24	ZAC	96.18	ETC	275.58	LVI	-10.37

PLANETOCENTRIC CONIC

C3	8.185	VHL	2.861	DLA	-27.11	RAL	332.29	RAD	6637.1	VEL	11.327	PTH	6.38	VHP	2.926	DPA	-24.78	RAP	312.77	ECC	1.1347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 13	2382.95	-1.53	61.50	181.59	137.56	15 57 56	1383.0	16.71	45.42
60.00	16 34 39	2179.66	2.97	47.51	185.92	130.21	17 10 59	1179.7	18.63	28.85
70.00	18 14 12	1886.93	7.84	27.44	189.57	123.35	18 45 39	886.9	20.72	6.51
80.00	20 18 48	1496.91	12.63	.68	192.42	117.28	20 43 45	496.9	22.78	337.89
90.00	22 16 8	1118.53	15.33	334.18	193.76	114.06	22 34 46	118.5	23.94	310.46
100.00	23 1 40	6259.42	12.63	299.95	192.42	117.28	24 45 59	5259.4	22.78	277.16
110.00	23 13 39	6221.78	7.84	294.26	189.57	123.35	24 57 20	5221.8	20.72	273.34

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2388	TRA	-.0828	TC3	-2.6596	BAU	.2959	SGT	1606.1	SGR	571.3	SG3	1479.2	ST	24.2	SR	19.5	SS	31.0
RDE	-.1885	RRA	.1441	RC3	-.4908	FAU	.25475	RRT	.5967	RRF	.7237	RTF	.7.97	CRT	.9305	CRS	-.6020	CST	-.2939
FDE	-.4711	FRA	3.2819	FC	-26.9449	BSP	2113	SGB	1704.6	R23	.2406	R13	.8364	LSA	36.8	MSA	23.8	SSA	2.0
BDE	.3042	BRA	.1662	BC3	2.7045	FSP	2502	SG1	1644.8	SG2	447.7	THA	12.96	EL1	30.5	EL2	5.7	ALF	38.43

LAUNCH DATE MAY 23 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC DISTANCE 449,874 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.175	GAL	1.12	AZL	91.27	HCA	144.87	SMA	185.05	ECC	.18250	INC	1.2681	V1	29.415
RP	213.31	LAP	-.73	LOP	26.12	VP	22.960	GAP	5.80	AZP	88.96	TAL	7.26	TAP	152.15	RCA	151.28	APO	218.82	V2	25.732
RC	137.991	GL	-14.45	GP	-5.22	ZAL	83.93	ZAP	101.41	ETS	180.68	ZAE	144.44	ETE	187.96	ZAC	96.08	ETC	275.38	LVI	-9.92

PLANETOCENTRIC CONIC

C3	8.146	VHL	2.854	DLA	-26.75	RAL	332.61	RAD	6637.1	VEL	11.325	PTH	6.38	VHP	2.901	DPA	-25.18	RAP	311.92	ECC	1.1341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 37	2390.30	-1.90	61.80	181.78	137.55	15 57 27	1390.3	16.35	45.76
60.00	16 33 14	2189.17	2.55	47.97	186.06	130.23	17 9 43	1189.2	18.24	29.36
70.00	18 11 24	1900.50	7.33	28.16	189.65	123.45	18 43 5	900.5	20.29	7.33
80.00	20 13 12	1519.24	11.93	1.96	192.40	117.57	20 38 32	519.2	22.26	339.34
90.00	22 7 1	1152.21	14.39	336.20	193.64	114.61	22 26 13	152.2	23.31	312.72
100.00	22 56 4	6281.76	11.93	301.24	192.40	117.57	24 40 46	5281.8	22.26	278.62
110.00	23 10 51	6235.36	7.33	294.98	189.65	123.45	24 54 46	5235.4	20.29	274.15

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2439	TRA	-.0553	TC3	-2.9404	BAU	.3252	SGT	1752.8	SGR	576.9	SG3	1503.6	ST	24.7	SR	18.9	SS	31.0
RDE	-.1815	RRA	.1480	RC3	-.5235	FAU	.25723	RRT	.6316	RRF	.7470	RTF	.8401	CRT	.9389	CRS	-.5565	CST	-.2646
FDE	-.3920	FRA	3.4087	FC	-27.3389	BSP	2363	SGB	1845.3	R23	.2334	R13	.8539	LSA	36.3	MSA	24.7	SSA	2.0
BDE	.3041	BRA	.1580	BC3	2.9866	FSP	2585	SG1	1792.7	SG2	437.3	THA	12.50	EL1	30.6	EL2	5.2	ALF	36.97

LAUNCH DATE MAY 23 1971 FLIGHT TIME 192.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC DISTANCE 454.067 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.173 GAL 1.08 AZL 91.24 HCA 146.06 SMA 185.03 ECC .18233 INC 1.2435 V1 29.415
RP 213.61 LAP -.69 LOP 27.31 VP 22.920 GAP 5.63 AZP 88.97 TAL 7.04 TAP 153.10 RCA 151.29 APO 218.77 V2 25.697
RC 140.356 GL -14.19 GP -5.42 ZAL 84.35 ZAP 99.39 ETS 180.49 ZAE 142.38 ETE 187.70 ZAC 95.97 ETC 275.19 LVI -9.47

PLANETOCENTRIC CONIC

C3 8.110 VHL 2.848 DLA -26.35 RAL 332.95 RAD 6637.1 VEL 11.324 PTH 6.38 VHP 2.880 DPA -25.59 RAP 311.07 ECC 1.1335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 16 57	2398.28	-2.30	62.14	181.98	137.53	15 56 55	1398.3	15.97	46.12
60.00	16 31 43	2199.41	2.10	48.46	186.21	130.26	17 8 23	1199.4	17.83	29.91
70.00	18 8 29	1914.90	6.79	28.92	189.74	123.55	18 40 24	914.9	19.82	8.19
80.00	20 7 37	1542.00	11.21	3.27	192.40	117.85	20 33 19	542.0	21.71	340.81
90.00	21 58 32	1184.33	13.47	338.11	193.55	115.10	22 18 16	184.3	22.67	314.86
100.00	22 50 29	1016.47	11.21	324.64	192.40	117.85	23 7 26	16.5	21.71	302.18
110.00	23 7 55	6249.76	6.79	295.74	189.74	123.55	24 52 5	5249.8	19.82	275.01

DIFFERENTIAL CORRECTIONS

TDE -.2449 TRA -.0240 TC3-3.2128 BAU .3536
RDE -.1754 RRA .1513 RC3 -.5598 FAU .26022
FDE -.3431 FRA 3.4981 FC-27.7775 BSP 2651
BDE .3012 BRA .1532 BC3 3.2612 FSP 2631

MID-COURSE EXECUTION ACCURACY

SGT 1895.8 SGR 584.4 SG3 1527.3
RRT .6670 RRF .7701 RTF .8614
SGB 1983.9 R23 .2212 R13 .8729
SG1 1937.6 SG2 426.0 THA 12.22

ORBIT DETERMINATION ACCURACY

ST 24.8 SR 18.4 SS 31.1
CRT .9478 CRS -.5314 CST -.2645
LSA 36.0 MSA 24.8 SSA 2.0
EL1 30.5 EL2 4.8 ALF 36.09

LAUNCH DATE MAY 23 1971 FLIGHT TIME 194.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC DISTANCE 458.261 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.173 GAL 1.04 AZL 91.22 HCA 147.25 SMA 185.02 ECC .18222 INC 1.2173 V1 29.415
RP 213.92 LAP -.66 LOP 28.49 VP 22.880 GAP 5.45 AZP 88.98 TAL 6.78 TAP 154.03 RCA 151.30 APO 218.73 V2 25.662
RC 142.739 GL -13.91 GP -5.62 ZAL 84.79 ZAP 97.38 ETS 180.30 ZAE 140.34 ETE 187.46 ZAC 95.85 ETC 274.99 LVI -9.01

PLANETOCENTRIC CONIC

C3 8.079 VHL 2.842 DLA -25.93 RAL 333.30 RAD 6637.0 VEL 11.322 PTH 6.38 VHP 2.862 DPA -25.99 RAP 310.24 ECC 1.1330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 16 13	2406.95	-2.74	62.50	182.19	137.52	15 56 20	1406.9	15.55	46.52
60.00	16 30 7	2210.42	1.62	48.98	186.38	130.27	17 6 57	1210.4	17.38	30.49
70.00	18 5 26	1930.16	6.22	29.73	189.85	123.65	18 37 36	930.2	19.33	9.09
80.00	20 2 1	1565.27	10.47	4.60	192.42	118.12	20 28 6	565.3	21.13	342.30
90.00	21 50 27	1215.55	12.56	339.95	193.50	115.55	22 10 43	215.5	22.02	316.92
100.00	22 44 53	1039.74	10.47	325.96	192.42	118.12	23 2 12	39.7	21.13	303.66
110.00	23 4 52	6265.01	6.22	296.55	189.85	123.65	24 49 17	5265.0	19.33	275.92

DIFFERENTIAL CORRECTIONS

TDE -.2447 TRA .0085 TC3-3.4903 BAU .3824
RDE -.1690 RRA .1548 RC3 -.5966 FAU .26265
FDE -.2868 FRA 3.5843 FC-28.1461 BSP 2944
BDE .2974 BRA .1550 BC3 3.5409 FSP 2666

MID-COURSE EXECUTION ACCURACY

SGT 2044.6 SGR 592.7 SG3 1547.7
RRT .6993 RRF .7921 RTF .8787
SGB 2128.8 R23 .2113 R13 .8884
SG1 2088.0 SG2 414.9 THA 11.94

ORBIT DETERMINATION ACCURACY

ST 24.8 SR 17.8 SS 31.2
CRT .9558 CRS -.5032 CST -.2611
LSA 35.8 MSA 25.0 SSA 2.0
EL1 30.3 EL2 4.3 ALF 35.24

LAUNCH DATE MAY 23 1971 FLIGHT TIME 196.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 462.455 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.173 GAL 1.00 AZL 91.19 HCA 148.43 SMA 185.02 ECC .18216 INC 1.1895 V1 29.415
RP 214.24 LAP -.62 LOP 29.67 VP 22.840 GAP 5.28 AZP 88.99 TAL 6.51 TAP 154.95 RCA 151.32 APO 218.73 V2 25.627
RC 145.138 GL -13.61 GP -5.83 ZAL 85.26 ZAP 95.39 ETS 180.09 ZAE 138.30 ETE 187.23 ZAC 95.72 ETC 274.80 LVI -8.55

PLANETOCENTRIC CONIC

C3 8.051 VHL 2.837 DLA -25.48 RAL 333.67 RAD 6637.0 VEL 11.321 PTH 6.37 VHP 2.847 DPA -26.39 RAP 309.43 ECC 1.1325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 25	2416.31	-3.21	62.89	182.42	137.49	15 55 42	1416.3	15.09	46.94
60.00	16 28 23	2222.24	1.10	49.55	186.56	130.29	17 5 26	1222.2	16.89	31.11
70.00	18 2 15	1946.28	5.61	30.58	189.97	123.75	18 34 41	946.3	18.80	10.04
80.00	19 56 22	1589.09	9.70	5.95	192.45	118.38	20 22 51	589.1	20.53	343.81
90.00	21 42 40	1246.28	11.65	341.75	193.47	115.95	22 3 26	246.3	21.36	318.93
100.00	22 39 14	1063.56	9.70	327.32	192.45	118.38	22 56 58	63.6	20.53	305.18
110.00	23 1 41	6281.14	5.61	297.40	189.97	123.75	24 46 22	5281.1	18.80	276.87

DIFFERENTIAL CORRECTIONS

TDE -.2434 TRA .0418 TC3-3.7730 BAU .4118
RDE -.1621 RRA .1584 RC3 -.6341 FAU .26452
FDE -.2193 FRA 3.6647 FC-28.4441 BSP 3242
BDE .2925 BRA .1639 BC3 3.8259 FSP 2703

MID-COURSE EXECUTION ACCURACY

SGT 2198.8 SGR 601.9 SG3 1564.6
RRT .7288 RRF .8127 RTF .8927
SGB 2279.7 R23 .2034 R13 .9009
SG1 2243.7 SG2 403.9 THA 11.67

ORBIT DETERMINATION ACCURACY

ST 24.8 SR 17.2 SS 31.3
CRT .9626 CRS -.4696 CST -.2515
LSA 35.4 MSA 25.3 SSA 1.9
EL1 30.0 EL2 3.9 ALF 34.38

LAUNCH DATE MAY 23 1971 FLIGHT TIME 198.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 466.649 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.174 GAL .96 AZL 91.16 HCA 149.61 SMA 185.03 ECC .18215 INC 1.1597 V1 29.415
RP 214.55 LAP -.59 LOP 30.85 VP 22.801 GAP 5.11 AZP 89.00 TAL 6.23 TAP 155.84 RCA 151.33 APO 218.74 V2 25.591
RC 147.555 GL -13.29 GP -6.05 ZAL 85.74 ZAP 93.43 ETS 179.88 ZAE 136.28 ETE 187.01 ZAC 95.57 ETC 274.62 LVI -8.09

PLANETOCENTRIC CONIC

C3 8.027 VHL 2.833 DLA -25.00 RAL 334.04 RAD 6637.0 VEL 11.320 PTH 6.37 VHP 2.836 DPA -26.80 RAP 308.64 ECC 1.1321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 14 32	2426.40	-3.71	63.31	182.67	137.47	15 54 58	1426.4	14.60	47.40
60.00	16 26 33	2234.87	.54	50.15	186.76	130.30	17 3 48	1234.9	16.37	31.78
70.00	17 58 55	1963.29	4.96	31.47	190.10	123.83	18 31 38	963.3	18.23	11.04
80.00	19 50 41	1613.50	8.91	7.33	192.51	118.62	20 17 34	613.5	19.90	345.34
90.00	21 35 5	1276.80	10.74	343.53	193.47	116.32	21 56 21	276.8	20.67	320.90
100.00	22 33 33	1087.97	8.91	328.69	192.51	118.62	22 51 41	88.0	19.90	306.71
110.00	22 58 21	1010.11	4.96	320.39	190.10	123.83	23 15 12	10.1	18.23	299.95

DIFFERENTIAL CORRECTIONS

TDE -.2404 TRA .0762 TC3-4.0577 BAU .4414
RDE -.1551 RRA .1624 RC3 -.6713 FAU .26550
FDE -.1493 FRA 3.7410 FC-28.6348 BSP 3543
BDE .2861 BRA .1794 BC3 4.1128 FSP 2725

MID-COURSE EXECUTION ACCURACY

SGT 2356.2 SGR 611.9 SG3 1576.7
RRT .7552 RRF .8320 RTF .9040
SGB 2434.3 R23 .1979 R13 .9111
SG1 2402.3 SG2 393.4 THA 11.40

ORBIT DETERMINATION ACCURACY

ST 24.7 SR 16.6 SS 31.5
CRT .9686 CRS -.4364 CST -.2430
LSA 35.0 MSA 25.4 SSA 1.9
EL1 29.5 EL2 3.5 ALF 33.62

LAUNCH DATE MAY 23 1971 FLIGHT TIME 200.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 470.842 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.175	GAL	.91	AZL	91.13	HCA	150.79	SMA	185.06	ECC	.18219	INC	1.1281	V1	29.415
RP	214.88	LAP	-.55	LOP	32.03	VP	22.762	GAP	4.94	AZP	89.02	TAL	5.94	TAP	156.72	RCA	151.34	APO	218.77	V2	25.554
RC	149.988	GL	-12.94	GP	-6.28	ZAL	86.25	ZAP	91.50	ETS	179.66	ZAE	134.27	ETE	186.81	ZAC	95.40	ETC	274.44	LVI	-7.62

PLANETOCENTRIC CONIC

C3	8.006	VHL	2.830	DLA	-24.48	RAL	334.43	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.827	DPA	-27.21	RAP	307.88	ECC	1.1318

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 13 33	2437.25	-4.26	63.77	182.92	137.43	15 54 10	1437.2	14.07	47.88
60.00	16 24 34	2248.36	-.05	50.80	186.96	130.30	17 2 3	1248.4	15.81	32.48
70.00	17 55 26	1981.21	4.28	32.42	190.24	123.92	18 28 27	981.2	17.63	12.08
80.00	19 44 55	1638.56	8.09	8.73	192.58	118.84	20 12 14	638.6	19.23	346.90
90.00	21 27 37	1307.34	9.81	345.29	193.49	116.66	21 49 24	307.3	19.95	322.85
100.00	22 27 47	1113.03	8.09	330.10	192.58	118.84	22 46 20	113.0	19.23	308.27
110.00	22 54 53	1028.03	4.28	321.33	190.24	123.92	23 12 1	28.0	17.63	300.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2355	TRA	.1119	TC3	-4.3442	BAU	.4712	SGT	2516.6	SGR	623.5	SG3	1587.5	ST	24.4	SR	16.0	SS	31.7
RDE	-.1478	RRA	.1667	RC3	-.7103	FAU	.26624	RRT	.7796	RRF	.8505	RTF	.9134	CRT	.9737	CRS	-.4002	CST	-.2320
FDE	-.0706	FRA	3.8175	FC	-28.7891	BSP	3849	SGB	2592.7	R23	.1939	R13	.9195	LSA	34.7	MSA	25.6	SSA	1.9
BDE	.2780	BRA	.2008	BC3	4.4019	FSP	2743	SG1	2564.2	SG2	383.2	THA	11.18	EL1	29.0	EL2	3.1	ALF	32.91

LAUNCH DATE MAY 23 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 11 1971

HELIOCENTRIC CONIC DISTANCE 475.035 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.177	GAL	.87	AZL	91.09	HCA	151.96	SMA	185.09	ECC	.18227	INC	1.0941	V1	29.415
RP	215.21	LAP	-.51	LOP	33.20	VP	22.723	GAP	4.78	AZP	89.03	TAL	5.63	TAP	157.59	RCA	151.36	APO	218.83	V2	25.518
RC	152.438	GL	-12.56	GP	-6.52	ZAL	86.78	ZAP	89.61	ETS	179.42	ZAE	132.29	ETE	186.62	ZAC	95.22	ETC	274.26	LVI	-7.14

PLANETOCENTRIC CONIC

C3	7.989	VHL	2.826	DLA	-23.93	RAL	334.82	RAD	6637.0	VEL	11.318	PTH	6.37	VHP	2.822	DPA	-27.62	RAP	307.14	ECC	1.1315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 28	2448.89	-4.84	64.26	183.18	137.39	15 53 16	1448.9	13.50	48.40
60.00	16 22 27	2262.73	-.69	51.48	187.18	130.30	17 0 10	1262.7	15.22	33.22
70.00	17 51 47	2000.09	3.57	33.40	190.40	123.99	18 25 8	1000.1	16.99	13.16
80.00	19 39 4	1664.34	7.24	10.18	192.66	119.05	20 6 48	664.3	18.53	348.50
90.00	21 20 13	1338.09	8.87	347.06	193.53	116.96	21 42 31	338.1	19.21	324.80
100.00	22 21 56	1138.82	7.24	331.54	192.66	119.05	22 40 55	138.8	18.53	309.86
110.00	22 51 14	1046.91	3.57	322.32	190.40	123.99	23 8 41	46.9	16.99	302.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2286	TRA	.1481	TC3	-4.6317	BAU	.5011	SGT	2679.1	SGR	635.7	SG3	1592.9	ST	24.0	SR	15.3	SS	32.0
RDE	-.1400	RRA	.1712	RC3	-.7494	FAU	.26613	RRT	.8016	RRF	.8674	RTF	.9211	CRT	.9779	CRS	-.3617	CST	-.2199
FDE	.0163	FRA	3.8820	FC	-28.8404	BSP	4154	SGB	2753.5	R23	.1912	R13	.9265	LSA	34.4	MSA	25.6	SSA	1.9
BDE	.2680	BRA	.2263	BC3	4.6919	FSP	2756	SG1	2728.1	SG2	373.2	THA	10.98	EL1	28.3	EL2	2.7	ALF	32.26

LAUNCH DATE MAY 23 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 13 1971

HELIOCENTRIC CONIC DISTANCE 479.227 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.180	GAL	.82	AZL	91.06	HCA	153.13	SMA	185.14	ECC	.18239	INC	1.0576	V1	29.415
RP	215.54	LAP	-.48	LOP	34.37	VP	22.685	GAP	4.61	AZP	89.06	TAL	5.31	TAP	158.44	RCA	151.37	APO	218.90	V2	25.480
RC	154.904	GL	-12.14	GP	-6.78	ZAL	87.33	ZAP	87.74	ETS	179.18	ZAE	130.32	ETE	186.44	ZAC	95.02	ETC	274.09	LVI	-6.66

PLANETOCENTRIC CONIC

C3	7.975	VHL	2.824	DLA	-23.34	RAL	335.22	RAD	6637.0	VEL	11.318	PTH	6.37	VHP	2.819	DPA	-28.03	RAP	306.44	ECC	1.1312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 14	2461.37	-5.47	64.78	183.46	137.34	15 52 16	1461.4	12.89	48.95
60.00	16 20 10	2278.05	-1.36	52.21	187.40	130.28	16 58 8	1278.0	14.58	34.01
70.00	17 47 58	2019.96	2.81	34.44	190.56	124.05	18 21 38	1020.0	16.31	14.30
80.00	19 33 6	1690.92	6.36	11.66	192.75	119.23	20 1 17	690.9	17.79	350.12
90.00	21 12 50	1369.22	7.90	348.83	193.59	117.24	21 35 39	369.2	18.43	326.75
100.00	22 15 58	1165.39	6.36	333.02	192.75	119.23	22 35 23	165.4	17.79	311.49
110.00	22 47 24	1066.78	2.81	323.36	190.56	124.05	23 5 11	66.8	16.31	303.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2192	TRA	.1859	TC3	-4.9183	BAU	.5311	SGT	2843.0	SGR	649.9	SG3	1596.4	ST	23.4	SR	14.6	SS	32.5
RDE	-.1318	RRA	.1762	RC3	-.7902	FAU	.26563	RRT	.8219	RRF	.8833	RTF	.9276	CRT	.9814	CRS	-.3248	CST	-.2120
FDE	.1082	FRA	3.9477	FC	-28.8372	BSP	4473	SGB	2916.4	R23	.1899	R13	.9324	LSA	34.3	MSA	25.4	SSA	1.9
BDE	.2558	BRA	.2562	BC3	4.9814	FSP	2775	SG1	2893.6	SG2	363.7	THA	10.81	EL1	27.5	EL2	2.4	ALF	31.71

LAUNCH DATE MAY 23 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 15 1971

HELIOCENTRIC CONIC DISTANCE 483.417 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.183	GAL	.77	AZL	91.02	HCA	154.29	SMA	185.19	ECC	.18256	INC	1.0179	V1	29.415
RP	215.87	LAP	-.44	LOP	35.53	VP	22.647	GAP	4.45	AZP	89.08	TAL	4.98	TAP	159.28	RCA	151.38	APO	218.99	V2	25.443
RC	157.385	GL	-11.69	GP	-7.06	ZAL	87.90	ZAP	85.92	ETS	178.92	ZAE	128.39	ETE	186.27	ZAC	94.80	ETC	273.93	LVI	-6.17

PLANETOCENTRIC CONIC

C3	7.964	VHL	2.822	DLA	-22.71	RAL	335.61	RAD	6637.0	VEL	11.317	PTH	6.37	VHP	2.819	DPA	-28.45	RAP	305.77	ECC	1.1311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 9 53	2474.75	-6.14	65.35	183.74	137.27	15 51 8	1474.8	12.23	49.54
60.00	16 17 43	2294.36	-2.08	52.99	187.63	130.26	16 55 57	1294.4	13.89	34.84
70.00	17 43 56	2040.90	2.01	35.54	190.73	124.10	18 17 56	1040.9	15.58	15.49
80.00	19 26 59	1718.38	5.44	13.18	192.86	119.40	19 55 37	718.4	17.01	351.79
90.00	21 5 25	1400.90	6.91	350.63	193.66	117.49	21 28 46	400.9	17.62	328.72
100.00	22 9 51	1192.85	5.44	334.55	192.86	119.40	22 29 44	192.8	17.01	313.16
110.00	22 43 22	1087.72	2.01	324.46	190.73	124.10	23 1 30	87.7	15.58	304.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2083	TRA	.2235	TC3	-5.2049	BAU	.5612	SGT	3008.5	SGR	665.4	SG3	1595.6	ST	22.8	SR	13.9	SS	33.0
RDE	-.1236	RRA	.1812	RC3	-.8322	FAU	.26460	RRT	.8404	RRF	.8979	RTF	.9333	CRT	.9839	CRS	-.2955	CST	-.2139
FDE	.1951	FRA	3.9952	FC	-28.7638	BSP	4782	SGB	3081.2	R23	.1892	R13	.9376	LSA	34.4	MSA	24.9	SSA	1.9
BDE	.2422	BRA	.2878	BC3	5.2710	FSP	2772	SG1	3060.7	SG2	354.5	THA	10.67	EL1	26.6	EL2	2.1	ALF	31.19

LAUNCH DATE MAY 23 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 17 1971

HELIOCENTRIC CONIC DISTANCE 487.606 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.186 GAL .72 AZL 90.98 HCA 155.46 SMA 185.25 ECC .18276 INC .9752 V1 29.415
RP 216.21 LAP -.41 LOP 36.69 VP 22.610 GAP 4.30 AZP 89.11 TAL 4.64 TAP 160.10 RCA 151.39 APO 219.10 V2 25.405
RC 159.881 GL -11.20 GP -7.35 ZAL 88.49 ZAP 84.14 ETS 178.64 ZAE 126.47 ETE 186.11 ZAC 94.55 ETC 273.78 LVI -5.68

PLANETOCENTRIC CONIC

C3 7.956 VHL 2.821 DLA -22.03 RAL 336.01 RAD 6637.0 VEL 11.317 PTH 6.37 VHP 2.822 DPA -28.88 RAP 305.14 ECC 1.1309

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 8 21	2489.10	-6.85	65.96	184.02	137.20	15 49 50	1489.1	11.52	50.17
60.00	16 15 3	2311.75	-2.84	53.83	187.87	130.22	16 53 34	1311.8	13.16	35.72
70.00	17 39 40	2062.99	1.17	36.69	190.91	124.14	18 14 3	1063.0	14.81	16.73
80.00	19 20 41	1746.83	4.49	14.75	192.97	119.55	19 49 48	746.8	16.18	353.50
90.00	20 57 53	1433.29	5.89	352.46	193.74	117.71	21 21 47	433.3	16.76	330.71
100.00	22 3 33	1221.30	4.49	336.12	192.97	119.55	22 23 54	221.3	16.18	314.87
110.00	22 39 6	1109.80	1.17	325.61	190.91	124.14	22 57 36	109.8	14.81	305.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1940 TRA .2633 TC3-5.4903 BAU .5914 SGT 3175.1 SGR 683.8 SG3 1594.3 ST 22.0 SR 13.2 SS 33.8
RDE -.1148 RRA .1873 RC3 -.8769 FAU .26330 RRT .8572 RRF .9117 RTF .9379 CRT .9853 CRS -.2691 CST -.2233
FDE .2920 FRA 4.0545 FC-28.6502 BSP 5091 SGB 3247.9 R23 .1904 R13 .9419 LSA 34.9 MSA 24.1 SSA 1.9
BDE .2255 BRA .3232 BC3 5.5599 FSP 2764 SG1 3229.4 SG2 346.3 THA 10.58 EL1 25.6 EL2 1.9 ALF 30.77

LAUNCH DATE MAY 23 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 19 1971

HELIOCENTRIC CONIC DISTANCE 491.794 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.190 GAL .66 AZL 90.93 HCA 156.61 SMA 185.32 ECC .18300 INC .9284 V1 29.415
RP 216.56 LAP -.37 LOP 37.85 VP 22.572 GAP 4.14 AZP 89.15 TAL 4.29 TAP 160.90 RCA 151.40 APO 219.23 V2 25.366
RC 162.390 GL -10.66 GP -7.67 ZAL 89.10 ZAP 82.40 ETS 178.35 ZAE 124.59 ETE 185.96 ZAC 94.28 ETC 273.63 LVI -5.17

PLANETOCENTRIC CONIC

C3 7.952 VHL 2.820 DLA -21.30 RAL 336.41 RAD 6637.0 VEL 11.317 PTH 6.37 VHP 2.827 DPA -29.32 RAP 304.55 ECC 1.1309

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 6 38	2504.50	-7.62	66.61	184.31	137.11	15 48 23	1504.5	10.76	50.84
60.00	16 12 8	2330.31	-3.66	54.71	188.11	130.16	16 50 59	1330.3	12.37	36.66
70.00	17 35 8	2086.32	.28	37.91	191.09	124.15	18 9 55	1086.3	13.98	18.04
80.00	19 14 10	1776.41	3.49	16.39	193.09	119.67	19 43 46	776.4	15.31	355.26
90.00	20 50 13	1466.58	4.83	354.34	193.83	117.90	21 14 40	466.6	15.86	332.74
100.00	21 57 2	1250.88	3.49	337.75	193.09	119.67	22 17 52	250.9	15.31	316.63
110.00	22 34 35	1133.14	.28	326.83	191.09	124.15	22 53 28	133.1	13.98	306.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1771 TRA .3025 TC3-5.7733 BAU .6215 SGT 3341.6 SGR 703.4 SG3 1588.1 ST 21.1 SR 12.5 SS 34.6
RDE -.1055 RRA .1933 RC3 -.9233 FAU .26141 RRT .8725 RRF .9241 RTF .9420 CRT .9850 CRS -.2474 CST -.2418
FDE .3932 FRA 4.0901 FC-28.4610 BSP 5397 SGB 3414.8 R23 .1917 R13 .9457 LSA 35.5 MSA 23.1 SSA 1.9
BDE .2061 BRA .3590 BC3 5.8466 FSP 2749 SG1 3398.0 SG2 338.0 THA 10.51 EL1 24.4 EL2 1.9 ALF 30.38

LAUNCH DATE MAY 23 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 21 1971

HELIOCENTRIC CONIC DISTANCE 495.979 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.195 GAL .61 AZL 90.88 HCA 157.77 SMA 185.39 ECC .18328 INC .8772 V1 29.415
RP 216.91 LAP -.33 LOP 39.01 VP 22.535 GAP 3.99 AZP 89.19 TAL 3.93 TAP 161.70 RCA 151.41 APO 219.37 V2 25.327
RC 164.912 GL -10.07 GP -8.02 ZAL 89.72 ZAP 80.70 ETS 178.04 ZAE 122.74 ETE 185.82 ZAC 93.98 ETC 273.49 LVI -4.65

PLANETOCENTRIC CONIC

C3 7.950 VHL 2.820 DLA -20.52 RAL 336.79 RAD 6637.0 VEL 11.317 PTH 6.37 VHP 2.834 DPA -29.78 RAP 304.01 ECC 1.1308

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 4 42	2521.06	-8.45	67.32	184.60	137.00	15 46 43	1521.1	9.94	51.56
60.00	16 8 58	2350.16	-4.53	55.67	188.35	130.09	16 48 8	1350.2	11.52	37.65
70.00	17 30 19	2111.03	-.67	39.20	191.27	124.15	18 5 30	1111.0	13.10	19.41
80.00	19 7 22	1807.28	2.45	18.08	193.22	119.77	19 37 29	807.3	14.38	357.08
90.00	20 42 20	1500.97	3.73	356.27	193.92	118.05	21 7 21	501.0	14.91	334.82
100.00	21 50 14	1281.75	2.45	339.45	193.22	119.77	22 11 36	281.8	14.38	318.45
110.00	22 29 45	1157.85	-.67	328.12	191.27	124.15	22 49 3	157.9	13.10	308.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1567 TRA .3433 TC3-6.0534 BAU .6517 SGT 3508.5 SGR 726.2 SG3 1580.3 ST 20.1 SR 11.7 SS 35.7
RDE -.0954 RRA .2005 RC3 -.9721 FAU .25902 RRT .8859 RRF .9354 RTF .9452 CRT .9824 CRS -.2360 CST -.2774
FDE .5018 FRA 4.1349 FC-28.2051 BSP 5713 SGB 3582.9 R23 .1951 R13 .9487 LSA 36.6 MSA 21.8 SSA 1.9
BDE .1835 BRA .3976 BC3 6.1309 FSP 2740 SG1 3567.5 SG2 331.2 THA 10.48 EL1 23.2 EL2 1.9 ALF 30.00

LAUNCH DATE MAY 23 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 23 1971

HELIOCENTRIC CONIC DISTANCE 500.162 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.200 GAL .55 AZL 90.82 HCA 158.92 SMA 185.47 ECC .18359 INC .8206 V1 29.415
RP 217.26 LAP -.30 LOP 40.16 VP 22.499 GAP 3.83 AZP 89.23 TAL 3.56 TAP 162.48 RCA 151.42 APO 219.52 V2 25.288
RC 167.446 GL -9.42 GP -8.40 ZAL 90.37 ZAP 79.05 ETS 177.71 ZAE 120.92 ETE 185.69 ZAC 93.64 ETC 273.36 LVI -4.12

PLANETOCENTRIC CONIC

C3 7.952 VHL 2.820 DLA -19.68 RAL 337.17 RAD 6637.0 VEL 11.317 PTH 6.37 VHP 2.844 DPA -30.26 RAP 303.51 ECC 1.1309

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 2 31	2538.92	-9.34	68.08	184.89	136.87	15 44 50	1538.9	9.05	52.32
60.00	16 5 29	2371.44	-5.46	56.69	188.59	129.99	16 45 1	1371.4	10.61	38.71
70.00	17 25 9	2137.29	-1.67	40.57	191.45	124.12	18 0 46	1137.3	12.15	20.85
80.00	19 0 15	1839.63	1.36	19.86	193.34	119.83	19 30 55	839.6	13.39	358.97
90.00	20 34 10	1536.70	2.58	358.27	194.03	118.17	20 59 46	536.7	13.90	336.95
100.00	21 43 7	1314.10	1.36	341.23	193.34	119.83	22 5 1	314.1	13.39	320.34
110.00	22 24 35	1184.11	-1.67	329.49	191.45	124.12	22 44 19	184.1	12.15	309.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1337 TRA .3829 TC3-6.3339 BAU .6822 SGT 3676.7 SGR 751.8 SG3 1569.8 ST 19.2 SR 11.0 SS 36.8
RDE -.0850 RRA .2076 RC3-1.0257 FAU .25661 RRT .8985 RRF .9457 RTF .9484 CRT .9762 CRS -.2376 CST -.3325
FDE .6079 FRA 4.1540 FC-27.9358 BSP 6011 SGB 3752.8 R23 .1977 R13 .9517 LSA 37.7 MSA 20.4 SSA 1.9
BDE .1584 BRA .4356 BC3 6.4164 FSP 2714 SG1 3738.7 SG2 324.5 THA 10.49 EL1 22.0 EL2 2.1 ALF 29.51

LAUNCH DATE MAY 23 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 25 1971

HELIOCENTRIC CONIC DISTANCE 504.342 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.205	GAL	.49	AZL	90.76	HCA	160.07	SMA	185.56	ECC	.18393	INC	.7586	V1	29.415
RP	217.61	LAP	-.26	LOP	41.30	VP	22.462	GAP	3.68	AZP	89.29	TAL	3.18	TAP	163.25	RCA	151.43	APO	219.69	V2	25.249
RC	169.992	GL	-8.70	GP	-8.81	ZAL	91.03	ZAP	77.44	ETS	177.36	ZAE	119.13	ETE	185.56	ZAC	93.26	ETC	273.24	LVI	-3.56

PLANETOCENTRIC CONIC

C3	7.958	VHL	2.821	DLA	-18.77	RAL	337.54	RAD	6637.0	VEL	11.317	PTH	6.37	VHP	2.856	DPA	-30.77	RAP	303.06	ECC	1.1310

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 0 1	2556.23	-10.29	68.92	185.18	136.71	15 42 40	1558.2	8.09	53.15
60.00	16 1 39	2394.33	-6.46	57.80	188.83	129.87	16 41 33	1394.3	9.62	39.84
70.00	17 19 34	2165.29	-2.74	42.03	191.64	124.06	17 55 39	1165.3	11.13	22.38
80.00	18 52 44	1873.70	.20	21.73	193.47	119.86	19 23 58	873.7	12.33	.95
90.00	20 25 38	1574.04	1.38	.35	194.13	118.25	20 51 52	574.0	12.82	339.16
100.00	21 35 36	1348.17	.20	343.10	193.47	119.86	21 58 4	348.2	12.33	322.32
110.00	22 19 0	1212.10	-2.74	330.95	191.64	124.06	22 39 12	212.1	11.13	311.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1058	TRA	.4251	TC3	-6.5992	BAU	.7114	SGT	3839.3	SGR	779.9	SG3	1554.2	ST	18.3	SR	10.3	SS	38.3
RDE	-.0736	RRA	.2165	RC3	-1.0786	FAU	.25279	RRT	.9088	RRF	.9547	RTF	.9505	CRT	.9642	CRS	-.2587	CST	-.4183
FDE	.7218	FRA	4.1880	FC	-27.5014	BSP	6330	SGB	3917.7	R23	.2033	R13	.9537	LSA	39.4	MSA	18.7	SSA	1.9
BDE	.1289	BRA	.4770	BC3	6.6867	FSP	2695	SG1	3904.6	SG2	320.0	THA	10.53	EL1	20.8	EL2	2.4	ALF	28.85

LAUNCH DATE MAY 23 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 27 1971

HELIOCENTRIC CONIC DISTANCE 508.521 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.211	GAL	.43	AZL	90.69	HCA	161.21	SMA	185.66	ECC	.18431	INC	.6886	V1	29.415
RP	217.97	LAP	-.22	LOP	42.44	VP	22.426	GAP	3.53	AZP	89.35	TAL	2.79	TAP	164.00	RCA	151.44	APO	219.88	V2	25.209
RC	172.547	GL	-7.90	GP	-9.27	ZAL	91.70	ZAP	75.89	ETS	176.97	ZAE	117.37	ETE	185.45	ZAC	92.83	ETC	273.13	LVI	-2.97

PLANETOCENTRIC CONIC

C3	7.967	VHL	2.823	DLA	-17.77	RAL	337.88	RAD	6637.0	VEL	11.317	PTH	6.37	VHP	2.870	DPA	-31.31	RAP	302.67	ECC	1.1311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 57 11	2579.19	-11.33	69.83	185.46	136.53	15 40 10	1579.2	7.04	54.04
60.00	15 57 23	2419.06	-7.54	59.00	189.06	129.71	16 37 43	1419.1	8.56	41.06
70.00	17 13 31	2195.28	-3.88	43.60	191.81	123.96	17 50 6	1195.3	10.03	24.00
80.00	18 44 44	1909.78	-1.02	23.71	193.60	119.84	19 16 34	909.8	11.19	3.02
90.00	20 16 38	1613.31	.12	2.54	194.23	118.28	20 43 32	613.3	11.66	341.46
100.00	21 27 36	1384.26	-1.02	345.08	193.60	119.84	21 50 40	384.3	11.19	324.39
110.00	22 12 57	1242.10	-3.88	332.52	191.81	123.96	22 33 39	242.1	10.03	312.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0742	TRA	.4642	TC3	-6.8718	BAU	.7419	SGT	4006.3	SGR	812.7	SG3	1538.5	ST	17.6	SR	9.6	SS	39.8
RDE	-.0612	RRA	.2253	RC3	-1.1405	FAU	.24959	RRT	.9187	RRF	.9628	RTF	.9528	CRT	.9450	CRS	-.2973	CST	-.5226
FDE	.8413	FRA	4.1897	FC	-27.1221	BSP	6626	SGB	4087.9	R23	.2074	R13	.9559	LSA	41.2	MSA	16.9	SSA	1.9
BDE	.0962	BRA	.5160	BC3	6.9658	FSP	2664	SG1	4075.7	SG2	315.5	THA	10.62	EL1	19.9	EL2	2.8	ALF	27.72

LAUNCH DATE MAY 23 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 29 1971

HELIOCENTRIC CONIC DISTANCE 512.696 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.217	GAL	.37	AZL	90.61	HCA	162.35	SMA	185.76	ECC	.18472	INC	.6113	V1	29.415
RP	218.33	LAP	-.19	LOP	43.58	VP	22.389	GAP	3.38	AZP	89.42	TAL	2.40	TAP	164.75	RCA	151.45	APO	220.07	V2	25.169
RC	175.114	GL	-7.00	GP	-9.78	ZAL	92.39	ZAP	74.39	ETS	176.54	ZAE	115.65	ETE	185.34	ZAC	92.35	ETC	273.03	LVI	-2.35

PLANETOCENTRIC CONIC

C3	7.980	VHL	2.825	DLA	-16.68	RAL	338.20	RAD	6637.0	VEL	11.318	PTH	6.37	VHP	2.887	DPA	-31.90	RAP	302.33	ECC	1.1313

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 53 54	2602.08	-12.46	70.83	185.74	136.30	15 37 16	1602.1	5.90	55.01
60.00	15 52 38	2445.92	-8.70	60.31	189.29	129.51	16 33 24	1445.9	7.39	42.37
70.00	17 6 54	2227.61	-5.11	45.30	191.99	123.82	17 44 1	1227.6	8.83	25.74
80.00	18 36 9	1948.25	-2.32	25.82	193.72	119.78	19 8 37	948.3	9.96	5.21
90.00	20 7 5	1654.91	-1.22	4.86	194.33	118.26	20 34 39	654.9	10.41	343.88
100.00	21 19 1	1422.72	-2.32	347.19	193.72	119.78	21 42 43	422.7	9.96	326.58
110.00	22 6 20	1274.42	-5.11	334.22	191.99	123.82	22 27 34	274.4	8.83	314.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0366	TRA	.5053	TC3	-7.1263	BAU	.7710	SGT	4166.6	SGR	848.9	SG3	1517.5	ST	17.5	SR	9.0	SS	41.6
RDE	-.0477	RRA	.2357	RC3	-1.2035	FAU	.24514	RRT	.9269	RRF	.9697	RTF	.9545	CRT	.9166	CRS	-.3652	CST	-.6527
FDE	.9656	FRA	4.1941	FC	-26.5948	BSP	6923	SGB	4252.2	R23	.2130	R13	.9576	LSA	43.5	MSA	14.9	SSA	2.0
BDE	.0601	BRA	.5576	BC3	7.2272	FSP	2623	SG1	4240.7	SG2	313.0	THA	10.75	EL1	19.4	EL2	3.2	ALF	25.87

LAUNCH DATE MAY 23 1971 FLIGHT TIME 222.00 ARRIVAL DATE DEC 31 1971

HELIOCENTRIC CONIC DISTANCE 516.868 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.224	GAL	.31	AZL	90.52	HCA	163.48	SMA	185.87	ECC	.18515	INC	.5236	V1	29.415
RP	218.69	LAP	-.15	LOP	44.72	VP	22.353	GAP	3.24	AZP	89.50	TAL	2.00	TAP	165.48	RCA	151.45	APO	220.28	V2	25.129
RC	177.690	GL	-5.99	GP	-10.35	ZAL	93.10	ZAP	72.93	ETS	176.08	ZAE	113.96	ETE	185.25	ZAC	91.80	ETC	272.94	LVI	-1.68

PLANETOCENTRIC CONIC

C3	7.998	VHL	2.828	DLA	-15.48	RAL	338.48	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.906	DPA	-32.53	RAP	302.04	ECC	1.1316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 50 8	2627.22	-13.69	71.94	186.01	136.02	15 33 55	1627.2	4.64	56.07
60.00	15 47 16	2475.29	-9.97	61.75	189.51	129.25	16 28 31	1475.3	6.11	43.79
70.00	16 59 35	2262.67	-6.43	47.15	192.15	123.61	17 37 18	1262.7	7.52	27.61
80.00	18 26 50	1989.58	-3.72	28.10	193.83	119.65	19 0 0	989.6	8.62	7.54
90.00	19 56 48	1699.36	-2.66	7.34	194.42	118.17	20 25 7	699.4	9.05	346.43
100.00	21 9 42	1464.05	-3.72	349.47	193.83	119.65	21 34 6	464.1	8.62	328.91
110.00	21 59 2	1309.49	-6.43	336.07	192.15	123.61	22 20 51	309.5	7.52	316.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0047	TRA	.5469	TC3	-7.3906	BAU	.8020	SGT	4335.4	SGR	895.3	SG3	1501.6	ST	18.4	SR	8.6	SS	43.4
RDE	-.0337	RRA	.2480	RC3	-1.2813	FAU	.24188	RRT	.9347	RRF	.9760	RTF	.9566	CRT	.8870	CRS	-.4631	CST	-.7802
FDE	1.0749	FRA	4.2013	FC	-26.1826	BSP	7230	SGB	4426.9	R23	.2172	R13	.9597	LSA	46.1	MSA	12.9	SSA	2.0
BDE	.0340	BRA	.6005	BC3	7.5008	FSP	2586	SG1	4415.9	SG2	312.5	THA	10.98	EL1	19.9	EL2	3.7	ALF	23.40

LAUNCH DATE MAY 23 1971 FLIGHT TIME 224.00 ARRIVAL DATE JAN 2 1972

HELIOCENTRIC CONIC DISTANCE 521.037 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.230	GAL	.25	AZL	90.42	HCA	164.61	SMA	185.98	ECC	.18562	INC	.4234	V1	29.415
RP	219.08	LAP	-.11	LOP	45.85	VP	22.318	GAP	3.09	AZP	89.59	TAL	1.59	TAP	166.20	RCA	151.46	APO	220.50	V2	25.089
RC	180.275	GL	-4.84	GP	-11.01	ZAL	93.82	ZAP	71.54	ETS	175.56	ZAE	112.30	ETE	185.16	ZAC	91.17	ETC	272.86	LVI	-.96

PLANETOCENTRIC CONIC

C3	8.021	VHL	2.832	DLA	-14.15	RAL	338.72	RAD	6637.0	VEL	11.320	PTH	6.37	VHP	2.927	DPA	-33.24	RAP	301.82	ECC	1.1320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 45 45	2655.06	-15.05	73.19	186.28	135.69	15 30 0	1655.1	3.25	57.24
60.00	15 41 11	2507.64	-11.36	63.36	189.73	128.93	16 22 58	1507.6	4.69	45.35
70.00	16 51 28	2301.04	-7.68	49.18	192.31	123.34	17 29 49	1301.0	6.08	29.64
80.00	18 16 39	2034.38	-5.22	30.57	193.94	119.44	18 50 33	1034.4	7.15	10.05
90.00	19 45 38	1747.31	-4.19	10.03	194.50	117.99	20 14 45	747.3	7.56	349.17
100.00	20 59 31	1508.85	-5.22	351.94	193.94	119.44	21 24 40	508.8	7.15	331.42
110.00	21 50 54	1347.86	-7.88	338.10	192.31	123.34	22 13 22	347.9	6.08	318.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0544	TRA	.5866	TC3	-7.6497	BAU	.8334	SGT	4504.0	SGR	948.5	SG3	1483.2	ST	20.2	SR	8.4	SS	45.6
RDE	-.0171	RRA	.2615	RC3	-1.3685	FAU	.23839	RRT	.9416	RRF	.9814	RTF	.9585	CRT	.8678	CRS	-.5825	CST	-.8819
FDE	1.2067	FRA	4.1879	FC	-25.7290	BSP	7543	SGB	4602.8	R23	.2210	R13	.9616	LSA	49.4	MSA	10.8	SSA	2.1
BDE	.0570	BRA	.6422	BC3	7.7712	FSP	2553	SG1	4592.1	SG2	313.2	THA	11.27	EL1	21.6	EL2	3.9	ALF	20.62

LAUNCH DATE MAY 23 1971 FLIGHT TIME 226.00 ARRIVAL DATE JAN 4 1972

HELIOCENTRIC CONIC DISTANCE 525.203 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.237	GAL	.18	AZL	90.31	HCA	165.74	SMA	186.10	ECC	.18611	INC	.3053	V1	29.415
RP	219.43	LAP	-.08	LOP	46.98	VP	22.282	GAP	2.95	AZP	89.70	TAL	1.17	TAP	166.91	RCA	151.46	APO	220.73	V2	25.048
RC	182.871	GL	-3.52	GP	-11.75	ZAL	94.55	ZAP	70.20	ETS	174.98	ZAE	110.68	ETE	185.08	ZAC	90.44	ETC	272.78	LVI	-.16

PLANETOCENTRIC CONIC

C3	8.053	VHL	2.838	DLA	-12.66	RAL	338.91	RAD	6637.0	VEL	11.321	PTH	6.37	VHP	2.952	DPA	-34.02	RAP	301.67	ECC	1.1325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 40 36	2686.17	-16.56	74.60	186.53	135.27	15 25 22	1686.2	1.68	58.54
60.00	15 34 12	2543.64	-12.90	65.16	189.93	128.52	16 16 36	1543.6	3.11	47.08
70.00	16 42 18	2343.42	-9.45	51.45	192.46	122.97	17 21 22	1343.4	4.47	31.87
80.00	18 5 21	2083.45	-6.85	33.30	194.04	119.13	18 40 5	1083.5	5.51	12.78
90.00	19 33 21	1799.58	-5.86	12.97	194.58	117.72	20 3 20	799.6	5.92	352.13
100.00	20 48 13	1557.92	-6.85	354.66	194.04	119.13	21 14 11	557.9	5.51	334.15
110.00	21 41 45	1390.23	-9.45	340.37	192.46	122.97	22 4 55	390.2	4.47	320.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1112	TRA	.6203	TC3	-7.8701	BAU	.8615	SGT	4652.8	SGR	999.9	SG3	1446.7	ST	23.3	SR	8.6	SS	47.9
RDE	.0018	RRA	.2754	RC3	-1.4477	FAU	.23160	RRT	.9462	RRF	.9855	RTF	.9591	CRT	.8699	CRS	-.7074	CST	-.9457
FDE	1.3434	FRA	4.1372	FC	-24.8999	BSP	7847	SGB	4759.0	R23	.2280	R13	.9623	LSA	53.2	MSA	8.6	SSA	2.3
BDE	.1112	BRA	.6787	BC3	8.0021	FSP	2516	SG1	4748.5	SG2	317.0	THA	11.55	EL1	24.5	EL2	4.0	ALF	18.42

LAUNCH DATE MAY 23 1971 FLIGHT TIME 228.00 ARRIVAL DATE JAN 6 1972

HELIOCENTRIC CONIC DISTANCE 529.365 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.245	GAL	.12	AZL	90.18	HCA	166.86	SMA	186.22	ECC	.18663	INC	.1742	V1	29.415
RP	219.80	LAP	-.04	LOP	48.10	VP	22.247	GAP	2.80	AZP	89.83	TAL	.75	TAP	167.61	RCA	151.47	APO	220.98	V2	25.007
RC	185.475	GL	-2.00	GP	-12.61	ZAL	95.29	ZAP	68.93	ETS	174.31	ZAE	109.08	ETE	185.01	ZAC	89.60	ETC	272.72	LVI	.73

PLANETOCENTRIC CONIC

C3	8.094	VHL	2.845	DLA	-10.98	RAL	339.03	RAD	6637.0	VEL	11.323	PTH	6.38	VHP	2.980	DPA	-34.92	RAP	301.59	ECC	1.1332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 34 32	2721.33	-18.26	76.23	186.78	134.73	15 19 53	1721.3	-.08	60.01
60.00	15 26 7	2584.14	-14.60	67.22	190.14	127.99	16 9 11	1584.1	1.33	49.01
70.00	16 31 53	2390.79	-11.20	54.01	192.60	122.48	17 11 44	1390.8	2.67	34.35
80.00	17 52 40	2137.89	-8.65	36.34	194.13	118.69	18 28 18	1137.9	3.69	15.79
90.00	19 19 37	1857.35	-7.67	16.24	194.66	117.30	19 50 35	857.3	4.08	355.38
100.00	20 35 32	1612.36	-8.65	357.71	194.13	118.69	21 2 25	612.4	3.69	337.16
110.00	21 31 19	1437.61	-11.20	342.93	192.60	122.48	21 55 17	437.6	2.67	323.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1822	TRA	.6529	TC3	-8.0971	BAU	.8922	SGT	4811.8	SGR	1068.4	SG3	1418.8	ST	28.1	SR	9.4	SS	50.7
RDE	.0245	RRA	.2907	RC3	-1.5556	FAU	.22714	RRT	.9521	RRF	.9891	RTF	.9613	CRT	.8899	CRS	-.8216	CST	-.9804
FDE	1.4998	FRA	4.0616	FC	-24.2966	BSP	8125	SGB	4929.0	R23	.2284	R13	.9645	LSA	58.3	MSA	6.5	SSA	2.6
BDE	.1838	BRA	.7146	BC3	8.2452	FSP	2438	SG1	4918.6	SG2	319.6	THA	11.99	EL1	29.3	EL2	4.1	ALF	16.89

LAUNCH DATE MAY 23 1971 FLIGHT TIME 230.00 ARRIVAL DATE JAN 8 1972

HELIOCENTRIC CONIC DISTANCE 533.523 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.252	GAL	.05	AZL	90.02	HCA	167.98	SMA	186.35	ECC	.18718	INC	.0099	V1	29.415
RP	220.18	LAP	-.00	LOP	49.22	VP	22.212	GAP	2.66	AZP	89.98	TAL	.32	TAP	168.30	RCA	151.47	APO	221.23	V2	24.966
RC	188.089	GL	-.21	GP	-13.62	ZAL	96.03	ZAP	67.74	ETS	173.56	ZAE	107.51	ETE	184.95	ZAC	88.60	ETC	272.67	LVI	1.74

PLANETOCENTRIC CONIC

C3	8.149	VHL	2.855	DLA	-9.04	RAL	339.05	RAD	6637.1	VEL	11.325	PTH	6.38	VHP	3.011	DPA	-35.95	RAP	301.60	ECC	1.1341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 27 16	2761.62	-20.18	78.13	187.04	134.05	15 13 17	1761.6	-2.11	61.69
60.00	15 16 37	2630.33	-16.52	69.61	190.34	127.30	16 0 28	1630.3	-.70	51.22
70.00	16 19 50	2444.50	-13.14	56.95	192.75	121.81	17 0 34	1444.5	.62	37.16
80.00	17 38 12	2199.16	-10.63	39.81	194.23	118.07	18 14 51	1199.2	1.62	19.16
90.00	19 4 4	1922.14	-9.68	19.94	194.73	116.70	19 36 6	922.1	2.00	359.00
100.00	20 21 4	1673.63	-10.63	1.18	194.23	118.07	20 48 58	673.6	1.62	340.53
110.00	21 19 16	1491.31	-13.14	345.87	192.75	121.81	21 44 8	491.3	.62	326.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2422	TRA	.6992	TC3	-8.3435	BAU	.9276	SGT	4994.7	SGR	1165.9	SG3	1403.2	ST	33.1	SR	10.6	SS	51.2
RDE	.0397	RRA	.3172	RC3	-1.6959	FAU	.22451	RRT	.9560	RRF	.9923	RTF	.9635	CRT	.8964	CRS	-.8844	CST	-.9932
FDE	1.5018	FRA	4.0944	FC	-23.8511	BSP	8300	SGB	5128.9	R23	.2285	R13	.9669	LSA	61.6	MSA	4.9	SSA	3.0
BDE	.2454	BRA	.7678	BC3	8.5141	FSP	2307	SG1	5118.1	SG2	333.9	THA	12.63	EL1	34.5	EL2	4.5	ALF	16.24

LAUNCH DATE MAY 23 1971 FLIGHT TIME 232.00 ARRIVAL DATE JAN 10 1972

HELIOCENTRIC CONIC DISTANCE 537.678 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.260	GAL	-.02	AZL	89.83	HCA	169.10	SMA	186.46	ECC	.18775	INC	.1599	V1	29.415
RP	220.55	LAP	.03	LOP	50.34	VP	22.177	GAP	2.52	AZP	90.17	TAL	359.89	TAP	168.99	RCA	151.47	APO	221.49	V2	24.925
RC	190.711	GL	1.91	GP	-14.82	ZAL	96.77	ZAP	66.62	ETS	172.67	ZAE	105.97	ETE	184.91	ZAC	87.42	ETC	272.62	LVI	2.92

PLANETOCENTRIC CONIC

C3	8.226	VHL	2.868	DLA	-6.79	RAL	338.96	RAD	6637.1	VEL	11.329	PTH	6.38	VHP	3.049	DPA	-37.15	RAP	301.70	ECC	1.1354

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 18 27	2808.50	-22.38	80.42	187.31	133.15	15 5 15	1808.5	-4.46	63.66
60.00	15 5 18	2683.88	-18.71	72.45	190.56	126.37	15 50 2	1683.9	-3.06	53.78
70.00	16 5 40	2506.39	-15.34	60.41	192.91	120.90	16 47 26	1506.4	-1.74	40.39
80.00	17 21 23	2269.34	-12.85	43.84	194.34	117.19	17 59 13	1269.3	-.76	23.01
90.00	18 46 4	1996.10	-11.91	24.23	194.82	115.84	19 19 20	996.1	-.39	3.13
100.00	20 4 15	1743.81	-12.85	5.21	194.34	117.19	20 33 19	743.8	-.76	344.38
110.00	21 5 6	1553.21	-15.34	349.32	192.91	120.90	21 31 0	553.2	-1.74	329.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3362	TRA	.7435	TC3-8.5002	BAU	.9560	SGT	5144.2	SGR	1265.9	SG3	1367.9	ST	41.0	SR	12.7	SS	54.8
RDE	.0696	RRA	.3498	RC3-1.8183	FAU	.21657	RRT	.9570	RRF	.9946	RTF	.9623	CRT	.9215	CRS	-.9417	CST	-.9949
FDE	1.6564	FRA	4.1224	FC-22.7925	BSP	8870	SGB	5297.6	R23	.2384	R13	.9663	LSA	69.4	MSA	4.9	SSA	2.5
BDE	.3433	BRA	.8218	BC3 8.6925	FSP	2377	SG1	5285.6	SG2	357.6	THA	13.31	EL1	42.7	EL2	4.8	ALF	16.16

LAUNCH DATE MAY 23 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 12 1972

HELIOCENTRIC CONIC DISTANCE 541.829 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.268	GAL	-.09	AZL	89.60	HCA	170.21	SMA	186.61	ECC	.18834	INC	.3936	V1	29.415
RP	220.93	LAP	.07	LOP	51.45	VP	22.142	GAP	2.38	AZP	90.39	TAL	359.44	TAP	169.66	RCA	151.47	APO	221.76	V2	24.884
RC	193.341	GL	4.48	GP	-16.26	ZAL	97.52	ZAP	65.62	ETS	171.64	ZAE	104.45	ETE	184.88	ZAC	85.99	ETC	272.59	LVI	4.31

PLANETOCENTRIC CONIC

C3	8.338	VHL	2.888	DLA	-4.13	RAL	338.71	RAD	6637.2	VEL	11.334	PTH	6.39	VHP	3.093	DPA	-38.58	RAP	301.93	ECC	1.1372

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 7 37	2864.24	-24.94	83.24	187.64	131.93	14 55 21	1864.2	-7.25	66.01
60.00	14 51 35	2747.30	-21.23	75.91	190.85	125.10	15 37 22	1747.3	-5.84	56.83
70.00	15 48 42	2579.33	-17.84	64.58	193.13	119.62	16 31 41	1579.3	-4.52	44.20
80.00	17 1 26	2351.60	-15.35	48.66	194.50	115.93	17 40 38	1351.6	-3.54	27.53
90.00	18 24 49	2082.59	-14.42	29.34	194.96	114.59	18 59 31	1082.6	-3.17	7.96
100.00	19 44 18	1826.07	-15.35	10.03	194.50	115.93	20 14 44	826.1	-3.54	348.90
110.00	20 48 8	1626.15	-17.84	353.49	193.13	119.62	21 15 15	626.1	-4.52	333.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4877	TRA	.7443	TC3-8.5995	BAU	.9825	SGT	5271.9	SGR	1360.1	SG3	1305.8	ST	53.8	SR	16.9	SS	63.2
RDE	.1290	RRA	.3679	RC3-1.9349	FAU	.20542	RRT	.9596	RRF	.9961	RTF	.9614	CRT	.9612	CRS	-.9810	CST	-.9947
FDE	2.0697	FRA	3.8873	FC-21.3299	BSP	8947	SGB	5444.5	R23	.2451	R13	.9657	LSA	84.5	MSA	5.4	SSA	1.7
BDE	.5045	BRA	.8303	BC3 8.8145	FSP	2205	SG1	5431.8	SG2	371.3	THA	13.97	EL1	56.2	EL2	4.5	ALF	16.97

LAUNCH DATE MAY 23 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 14 1972

HELIOCENTRIC CONIC DISTANCE 545.974 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.278	GAL	-.16	AZL	89.31	HCA	171.32	SMA	186.75	ECC	.18896	INC	.6842	V1	29.415
RP	221.31	LAP	.10	LOP	52.56	VP	22.107	GAP	2.24	AZP	90.68	TAL	359.00	TAP	170.32	RCA	151.46	APO	222.04	V2	24.842
RC	195.978	GL	7.63	GP	-18.02	ZAL	98.23	ZAP	64.75	ETS	170.39	ZAE	102.96	ETE	184.86	ZAC	84.23	ETC	272.57	LVI	5.98

PLANETOCENTRIC CONIC

C3	8.506	VHL	2.917	DLA	-.91	RAL	338.24	RAD	6637.3	VEL	11.341	PTH	6.39	VHP	3.148	DPA	-40.33	RAP	302.32	ECC	1.1400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 54 0	2932.04	-27.98	86.84	188.12	130.19	14 42 52	1932.0	-10.62	68.92
60.00	14 34 33	2824.18	-24.18	80.29	191.27	123.28	15 21 37	1824.2	-9.18	60.57
70.00	15 27 51	2667.41	-20.72	69.78	193.48	117.78	16 12 19	1667.4	-7.84	48.86
80.00	16 37 7	2450.53	-18.20	54.62	194.78	114.08	17 17 58	1450.5	-6.85	33.01
90.00	17 58 58	2186.40	-17.26	35.63	195.21	112.76	18 35 25	1186.4	-6.47	13.80
100.00	19 19 59	1925.01	-18.20	15.99	194.78	114.08	19 52 4	925.0	-6.85	354.38
110.00	20 27 18	1714.23	-20.72	358.70	193.48	117.78	20 55 52	714.2	-7.84	337.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6365	TRA	.7565	TC3-8.6854	BAU	1.0164	SGT	5425.9	SGR	1503.9	SG3	1256.3	ST	66.8	SR	21.6	SS	67.8
RDE	.1829	RRA	.4009	RC3-2.1082	FAU	.19755	RRT	.9620	RRF	.9975	RTF	.9622	CRT	.9714	CRS	-.9924	CST	-.9924
FDE	2.2709	FRA	3.7395	FC-20.1052	BSP	9258	SGB	5630.4	R23	.2447	R13	.9670	LSA	97.4	MSA	6.9	SSA	1.0
BDE	.6622	BRA	.8561	BC3 8.9376	FSP	2118	SG1	5616.5	SG2	396.5	THA	15.01	EL1	70.0	EL2	4.9	ALF	17.51

LAUNCH DATE MAY 23 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 16 1972

HELIOCENTRIC CONIC DISTANCE 550.115 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.284	GAL	-.23	AZL	88.94	HCA	172.42	SMA	186.90	ECC	.18960	INC	1.0533	V1	29.415
RP	221.69	LAP	.14	LOP	53.66	VP	22.073	GAP	2.10	AZP	91.05	TAL	358.55	TAP	170.97	RCA	151.46	APO	222.33	V2	24.801
RC	198.621	GL	11.60	GP	-20.24	ZAL	98.90	ZAP	64.07	ETS	168.88	ZAE	101.49	ETE	184.87	ZAC	82.02	ETC	272.57	LVI	8.05

PLANETOCENTRIC CONIC

C3	8.776	VHL	2.962	DLA	3.05	RAL	337.47	RAD	6637.4	VEL	11.353	PTH	6.41	VHP	3.218	DPA	-42.49	RAP	302.93	ECC	1.1444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 36 27	3016.93	-31.61	91.67	188.90	127.62	14 26 44	2016.9	-14.79	72.66
60.00	14 12 47	2920.25	-27.64	86.05	191.99	120.58	15 1 27	1920.2	-13.29	65.35
70.00	15 1 25	2777.21	-24.05	76.56	194.09	115.01	15 47 42	1777.2	-11.90	54.77
80.00	16 6 25	2573.64	-21.44	62.33	195.30	111.29	16 49 19	1573.6	-10.86	39.94
90.00	17 26 26	2315.48	-20.46	43.74	195.69	109.96	18 5 1	1315.5	-10.47	21.17
100.00	18 49 17	2048.11	-21.44	23.69	195.30	111.29	19 23 25	1048.1	-10.86	1.31
110.00	20 0 51	1824.03	-24.05	5.48	194.09	115.01	20 31 15	824.0	-11.90	343.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8344	TRA	.7498	TC3-8.6768	BAU	1.0530	SGT	5580.6	SGR	1681.5	SG3	1194.6	ST	83.9	SR	28.5	SS	74.2
RDE	.2625	RRA	.4386	RC3-2.2944	FAU	.18762	RRT	.9636	RRF	.9984	RTF	.9621	CRT	.9797	CRS	-.9975	CST	-.9909
FDE	2.5420	FRA	3.5304	FC-18.5079	BSP	9626	SGB	5828.4	R23	.2456	R13	.9677	LSA	115.3	MSA	8.4	SSA	.6
BDE	.8747	BRA	.8687	BC3 8.9750	FSP	2043	SG1	5812.4	SG2	431.8	THA	16.28	EL1	88.5	EL2	5.4	ALF	18.46

LAUNCH DATE MAY 23 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 18 1972

HELIOCENTRIC CONIC DISTANCE 554.251 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.293	GAL	-.30	AZL	88.45	HCA	173.52	SMA	187.04	ECC	.19027	INC	1.5480	V1	29.415
RP	222.07	LAP	.17	LOP	54.76	VP	22.038	GAP	1.96	AZP	91.54	TAL	358.10	TAP	171.62	RCA	151.45	APO	222.63	V2	24.759
RC	201.270	GL	16.71	GP	-23.08	ZAL	99.46	ZAP	63.66	ETS	167.01	ZAE	100.03	ETE	184.90	ZAC	79.18	ETC	272.60	LVI	10.68

PLANETOCENTRIC CONIC

C3	9.236	VHL	3.039	DLA	8.07	RAL	336.25	RAD	6637.6	VEL	11.373	PTH	6.43	VHP	3.315	DPA	-45.25	RAP	303.87	ECC	1.1520

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 13 2	3127.02	-35.98	98.54	190.36	123.53	14 5 9	2127.0	-20.09	77.77
60.00	13 43 55	3044.83	-31.69	94.12	193.33	116.33	14 34 40	2044.8	-18.46	71.83
70.00	14 26 25	2919.78	-27.83	85.91	195.27	110.65	15 15 5	1919.8	-16.93	62.75
80.00	15 25 47	2733.84	-25.02	72.88	196.33	106.85	16 11 21	1733.8	-15.80	49.27
90.00	16 43 18	2483.67	-23.96	54.82	196.67	105.48	17 24 42	1483.7	-15.37	31.09
100.00	18 8 39	2208.31	-25.02	34.24	196.33	106.85	18 45 27	1208.3	-15.80	10.64
110.00	19 25 52	1966.60	-27.83	14.83	195.27	110.65	19 58 38	966.6	-16.93	351.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1023	TRA	.7323	TC3	-8.4619	BAU	1.0685	SGT	5719.8	SGR	1903.3	SG3	1113.7	ST	106.3	SR	38.2	SS	81.1
RDE	.3768	RRA	.4870	RC3	-2.4721	FAU	.17432	RRT	.9643	RRF	.9990	RTF	.9614	CRT	.9848	CRS	-.9994	CST	-.9902
FDE	2.8296	FRA	3.2815	FC	-16.3404	BSP	9994	SGB	6028.1	R23	.2466	R13	.9681	LSA	138.7	MSA	10.1	SSA	.4
BDE	1.1649	BRA	.8795	BC3	8.8156	FSP	1908	SG1	6009.0	SG2	479.8	THA	17.91	EL1	112.8	EL2	6.3	ALF	19.56

LAUNCH DATE MAY 23 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 20 1972

HELIOCENTRIC CONIC DISTANCE 558.382 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.302	GAL	-.38	AZL	87.76	HCA	174.62	SMA	187.19	ECC	.19095	INC	2.2387	V1	29.415
RP	222.46	LAP	.21	LOP	55.86	VP	22.004	GAP	1.82	AZP	92.23	TAL	357.64	TAP	172.26	RCA	151.45	APO	222.94	V2	24.717
RC	203.922	GL	23.43	GP	-26.82	ZAL	99.82	ZAP	63.68	ETS	164.69	ZAE	98.60	ETE	184.98	ZAC	75.44	ETC	272.65	LVI	14.12

PLANETOCENTRIC CONIC

C3	10.086	VHL	3.176	DLA	14.58	RAL	334.34	RAD	6638.1	VEL	11.410	PTH	6.46	VHP	3.458	DPA	-48.86	RAP	305.37	ECC	1.1680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 40 16	3276.09	-41.07	109.16	193.38	116.51	13 34 52	2276.1	-26.95	85.31
60.00	13 3 28	3214.34	-36.17	106.24	196.03	109.14	13 57 2	2214.3	-25.02	81.35
70.00	13 37 1	3115.58	-31.74	99.79	197.58	103.32	14 28 57	2115.6	-23.21	74.46
80.00	14 27 46	2956.57	-28.48	88.49	198.33	99.36	15 17 2	1956.6	-21.83	63.05
90.00	15 41 21	2719.08	-27.24	71.25	198.55	97.91	16 26 40	1719.1	-21.29	45.81
100.00	17 10 38	2431.04	-28.48	49.86	198.33	99.36	17 51 9	1431.0	-21.83	24.42
110.00	18 36 27	2162.39	-31.74	28.71	197.58	103.32	19 12 30	1162.4	-23.21	3.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4805	TRA	.6734	TC3	-7.9765	BAU	1.1323	SGT	5863.3	SGR	2191.8	SG3	1007.1	ST	135.1	SR	52.6	SS	88.5
RDE	.5582	RRA	.5395	RC3	-2.6243	FAU	.15790	RRT	.9647	RRF	.9993	RTF	.9601	CRT	.9886	CRS	-.9999	CST	-.9904
FDE	3.1532	FRA	2.9090	FC	-13.5536	BSP	10383	SGB	6259.6	R23	.2473	R13	.9684	LSA	169.4	MSA	11.6	SSA	.2
BDE	1.5822	BRA	.8629	BC3	8.3971	FSP	1734	SG1	6236.0	SG2	542.9	THA	19.99	EL1	144.8	EL2	7.4	ALF	21.12

LAUNCH DATE MAY 23 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 22 1972

HELIOCENTRIC CONIC DISTANCE 562.507 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.311	GAL	-.45	AZL	86.72	HCA	175.71	SMA	187.34	ECC	.19166	INC	3.2755	V1	29.415
RP	222.84	LAP	.25	LOP	56.95	VP	21.970	GAP	1.68	AZP	93.27	TAL	357.18	TAP	172.89	RCA	151.44	APO	223.25	V2	24.675
RC	206.578	GL	32.47	GP	-31.92	ZAL	99.77	ZAP	64.43	ETS	161.79	ZAE	97.20	ETE	185.14	ZAC	70.33	ETC	272.79	LVI	18.74

PLANETOCENTRIC CONIC

C3	11.840	VHL	3.441	DLA	23.17	RAL	331.26	RAD	6639.0	VEL	11.486	PTH	6.53	VHP	3.694	DPA	-53.70	RAP	307.94	ECC	1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	11 50 58	3489.31	-46.09	127.13	199.90	103.43	12 49 7	2489.3	-35.79	97.94
60.00	12 1 30	3461.27	-39.90	126.07	201.36	96.19	12 59 11	2461.3	-33.12	97.21
70.00	12 18 36	3410.87	-34.15	122.40	201.76	90.22	13 15 27	2410.9	-30.50	94.28
80.00	12 50 36	3310.48	-29.58	114.60	201.57	85.77	13 45 47	2310.5	-28.33	87.25
90.00	13 54 6	3105.48	-27.68	99.35	201.38	83.96	14 45 51	2105.5	-27.41	72.35
100.00	15 33 28	2784.95	-29.58	75.97	201.57	85.77	16 19 53	1785.0	-28.33	48.62
110.00	17 18 2	2457.69	-34.15	51.31	201.76	90.22	17 59 0	1457.7	-30.50	23.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0487	TRA	.5412	TC3	-7.0384	BAU	1.1916	SGT	6004.9	SGR	2566.7	SG3	856.5	ST	171.4	SR	74.0	SS	94.0
RDE	.8673	RRA	.5855	RC3	-2.8705	FAU	.13622	RRT	.9646	RRF	.9994	RTF	.9576	CRT	.9915	CRS	-1.0000	CST	-.9911
FDE	3.4525	FRA	2.3568	FC	-9.9607	BSP	10709	SGB	6530.5	R23	.2486	R13	.9683	LSA	208.6	MSA	13.0	SSA	.1
BDE	2.2247	BRA	.7974	BC3	7.5280	FSP	1468	SG1	6500.5	SG2	624.9	THA	22.63	EL1	186.4	EL2	8.9	ALF	23.23

LAUNCH DATE MAY 23 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 24 1972

HELIOCENTRIC CONIC DISTANCE 566.622 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.320	GAL	-.53	AZL	84.99	HCA	176.79	SMA	187.50	ECC	.19238	INC	5.0056	V1	29.415
RP	223.23	LAP	.28	LOP	58.04	VP	21.937	GAP	1.54	AZP	95.00	TAL	356.72	TAP	173.52	RCA	151.43	APO	223.57	V2	24.633
RC	209.236	GL	44.71	GP	-39.04	ZAL	98.98	ZAP	66.44	ETS	158.37	ZAE	95.92	ETE	185.53	ZAC	63.18	ETC	273.09	LVI	25.10

PLANETOCENTRIC CONIC

C3	16.100	VHL	4.012	DLA	34.55	RAL	326.01	RAD	6641.0	VEL	11.668	PTH	6.70	VHP	4.141	DPA	-60.30	RAP	312.99	ECC	1.2650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	10 26 18	3920.83	-46.64	158.68	211.61	79.28	11 29 59	2820.8	-45.47	123.63
60.00	10 4 54	3878.03	-37.14	160.67	208.47	73.08	11 9 32	2878.0	-40.18	129.97
69.27	8 30 23	4159.54	-21.50	175.86	201.14	62.28	9 39 43	3159.5	-31.00	151.23
69.27	8 30 23	4159.54	-21.50	175.86	201.14	62.28	9 39 43	3159.5	-31.00	151.23
69.27	8 30 23	4159.54	-21.50	175.86	201.14	62.28	9 39 43	3159.5	-31.00	151.23
69.27	8 30 23	4159.54	-21.50	175.86	201.14	62.28	9 39 43	3159.5	-31.00	151.23
69.27	8 30 23	4159.54	-21.50	175.86	201.14	62.28	9 39 43	3159.5	-31.00	151.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9684	TRA	.2310	TC3	-5.5110	BAU	1.3009	SGT	6138.9	SGR	3052.3	SG3	637.6	ST	212.1	SR	105.4	SS	92.3
RDE	1.4611	RRA	.5761	RC3	-2.4815	FAU	.10697	RRT	.9634	RRF	.9990	RTF	.9511	CRT	.9935	CRS	-.9999	CST	-.9918
FDE	3.5688	FRA	1.5460	FC	-5.7522	BSP	10544	SGB	6855.8	R23	.2580	R13	.9660	LSA	253.8	MSA	14.1	SSA	.1
BDE	3.3085	BRA	.6207	BC3	6.0439	FSP	1059	SG1	6816.1	SG2	737.4	THA	25.92	EL1	236.6	EL2	10.8	ALF	26.34

LAUNCH DATE MAY 23 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 26 1972

HELIOCENTRIC CONIC DISTANCE 570.725 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.329	GAL	-.60	AZL	81.51	HCA	177.87	SMA	187.66	ECC	.19312	INC	8.4791	V1	29.415
RP	223.62	LAP	.31	LOP	59.13	VP	21.903	GAP	1.40	AZP	98.48	TAL	356.27	TAP	174.14	RCA	151.42	APO	223.90	V2	24.592
RC	211.896	GL	60.98	GP	-48.98	ZAL	97.04	ZAP	70.71	ETS	155.26	ZAE	95.07	ETE	186.75	ZAC	53.18	ETC	273.95	LVI	33.65

PLANETOCENTRIC CONIC

C3	29.761	VHL	5.455	DLA	49.04	RAL	315.85	RAD	6646.9	VEL	12.235	PTH	7.18	VHP	5.191	DPA	-68.78	RAP	325.60	ECC	1.4898

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.11	6 16 0	4568.95	-22.31	211.70	205.01	45.12	7 32 9	3568.9	-38.31	190.52
48.11	6 16 0	4568.95	-22.31	211.70	205.01	45.12	7 32 9	3568.9	-38.31	190.52
48.11	6 16 0	4568.95	-22.31	211.70	205.01	45.12	7 32 9	3568.9	-38.31	190.52
48.11	6 16 0	4568.95	-22.31	211.70	205.01	45.12	7 32 9	3568.9	-38.31	190.52
48.11	6 16 0	4568.95	-22.31	211.70	205.01	45.12	7 32 9	3568.9	-38.31	190.52
48.11	6 16 0	4568.95	-22.31	211.70	205.01	45.12	7 32 9	3568.9	-38.31	190.52
48.11	6 16 0	4568.95	-22.31	211.70	205.01	45.12	7 32 9	3568.9	-38.31	190.52

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	4.7496	TRA	-.4600	TC3	-3.3188	BAU	1.5149	SGT	6207.9	SGR	3683.0	SG3	335.2	ST	249.7	SR	151.3	SS	71.7
RDE	2.8766	RRA	.3363	RC3	-1.8663	FAU	.06402	RRT	.9643	RRF	.9961	RTF	.9374	CRT	.9952	CRS	-.9995	CST	-.9918
FDE	3.0309	FRA	.5561	FC3	-1.8622	BSP	9823	SGB	7218.2	R23	.2829	R13	.9591	LSA	300.3	MSA	14.5	SSA	.0
BDE	5.5528	BRA	.5698	BC3	3.8075	FSP	526	SG1	7168.6	SG2	844.7	THA	30.24	EL1	291.7	EL2	12.6	ALF	31.16

LAUNCH DATE MAY 23 1971 FLIGHT TIME 258.00 ARRIVAL DATE FEB 5 1972

HELIOCENTRIC CONIC DISTANCE 591.343 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.377	GAL	-1.03	AZL	98.44	HCA	183.30	SMA	188.48	ECC	.19716	INC	8.4370	V1	29.415
RP	225.57	LAP	.48	LOP	64.50	VP	21.739	GAP	.72	AZP	81.58	TAL	353.77	TAP	177.07	RCA	151.32	APO	225.64	V2	24.382
RC	225.217	GL	-59.83	GP	36.94	ZAL	99.51	ZAP	61.59	ETS	203.18	ZAE	92.04	ETE	179.15	ZAC	138.92	ETC	274.92	LVI	-45.21

PLANETOCENTRIC CONIC

C3	30.190	VHL	5.495	DLA	-55.73	RAL	28.34	RAD	6647.1	VEL	12.252	PTH	7.20	VHP	4.181	DPA	14.08	RAP	293.66	ECC	1.4968

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.74	22 37 46	1985.77	24.34	51.75	280.38	141.83	23 10 51	985.8	42.55	32.25
39.74	22 37 46	1985.77	24.34	51.75	280.38	141.83	23 10 51	985.8	42.55	32.25
39.74	22 37 46	1985.77	24.34	51.75	280.38	141.83	23 10 51	985.8	42.55	32.25
39.74	22 37 46	1985.77	24.34	51.75	280.38	141.83	23 10 51	985.8	42.55	32.25
39.74	22 37 46	1985.77	24.34	51.75	280.38	141.83	23 10 51	985.8	42.55	32.25
39.74	22 37 46	1985.77	24.34	51.75	280.38	141.83	23 10 51	985.8	42.55	32.25
39.74	22 37 46	1985.77	24.34	51.75	280.38	141.83	23 10 51	985.8	42.55	32.25

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.9575	TRA	3.0135	TC3	-3.4651	BAU	1.5018	SGT	6829.8	SGR	3012.7	SG3	603.3	ST	97.6	SR	41.3	SS	38.9
RDE	-.2521	RRA	-1.4066	RC3	1.3560	FAU	.10839	RRT	-.9696	RRF	-.9964	RTF	.9467	CRT	-.6519	CRS	.9657	CST	-.4326
FDE	1.1439	FRA	3.2247	FC3	-3.1081	BSP	12309	SGB	7464.8	R23	.2836	R13	-.9586	LSA	103.8	MSA	44.4	SSA	.1
BDE	.9901	BRA	3.3256	BC3	3.7210	FSP	1068	SG1	7434.0	SG2	676.8	THA	156.64	EL1	101.7	EL2	30.1	ALF	163.06

LAUNCH DATE MAY 23 1971 FLIGHT TIME 260.00 ARRIVAL DATE FEB 7 1972

HELIOCENTRIC CONIC DISTANCE 595.423 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.387	GAL	-1.11	AZL	96.82	HCA	184.36	SMA	188.65	ECC	.19801	INC	8.8191	V1	29.415
RP	225.96	LAP	.52	LOP	65.56	VP	21.707	GAP	.58	AZP	83.20	TAL	353.29	TAP	177.64	RCA	151.30	APO	226.01	V2	24.340
RC	227.883	GL	-52.98	GP	29.82	ZAL	101.43	ZAP	57.70	ETS	200.47	ZAE	90.51	ETE	180.31	ZAC	131.85	ETC	274.17	LVI	-38.78

PLANETOCENTRIC CONIC

C3	23.192	VHL	4.816	DLA	-50.55	RAL	20.84	RAD	6644.2	VEL	11.966	PTH	6.96	VHP	3.822	DPA	7.01	RAP	294.60	ECC	1.3817

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.18	22 26 52	1878.39	25.83	41.90	267.34	135.10	22 58 10	878.4	41.63	19.63
46.18	22 26 52	1878.39	25.83	41.90	267.34	135.10	22 58 10	878.4	41.63	19.63
46.18	22 26 52	1878.39	25.83	41.90	267.34	135.10	22 58 10	878.4	41.63	19.63
46.18	22 26 52	1878.39	25.83	41.90	267.34	135.10	22 58 10	878.4	41.63	19.63
46.18	22 26 52	1878.39	25.83	41.90	267.34	135.10	22 58 10	878.4	41.63	19.63
46.18	22 26 52	1878.39	25.83	41.90	267.34	135.10	22 58 10	878.4	41.63	19.63
46.18	22 26 52	1878.39	25.83	41.90	267.34	135.10	22 58 10	878.4	41.63	19.63

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-1.0836	TRA	2.9071	TC3	-4.4205	BAU	1.4324	SGT	7030.1	SGR	2485.7	SG3	760.4	ST	104.2	SR	32.1	SS	40.1
RDE	-.0588	RRA	-1.1331	RC3	1.3426	FAU	.12657	RRT	-.9708	RRF	-.9971	RTF	.9518	CRT	-.7136	CRS	.9612	CST	-.4927
FDE	.7736	FRA	3.9929	FC3	-4.7248	BSP	12735	SGB	7456.6	R23	.2796	R13	-.9594	LSA	109.2	MSA	39.8	SSA	.1
BDE	1.0852	BRA	3.1201	BC3	4.6199	FSP	1395	SG1	7435.3	SG2	563.4	THA	160.94	EL1	106.8	EL2	21.9	ALF	167.06

LAUNCH DATE MAY 23 1971 FLIGHT TIME 262.00 ARRIVAL DATE FEB 9 1972

HELIOCENTRIC CONIC DISTANCE 599.501 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.397	GAL	-1.19	AZL	95.84	HCA	185.41	SMA	188.82	ECC	.19888	INC	8.8345	V1	29.415
RP	226.35	LAP	.55	LOP	66.62	VP	21.675	GAP	.44	AZP	84.19	TAL	352.80	TAP	178.21	RCA	151.27	APO	226.38	V2	24.299
RC	230.548	GL	-47.84	GP	24.73	ZAL	103.04	ZAP	55.00	ETS	198.07	ZAE	89.14	ETE	180.95	ZAC	126.79	ETC	273.84	LVI	-34.19

PLANETOCENTRIC CONIC

C3	19.737	VHL	4.443	DLA	-46.25	RAL	16.58	RAD	6642.7	VEL	11.822	PTH	6.84	VHP	3.653	DPA	1.99	RAP	295.42	ECC	1.3248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	21 13 37	1983.09	18.28	44.19	251.71	134.73	21 46 40	983.1	34.52	24.08
51.74	22 28 42	1793.53	25.77	33.49	259.04	129.84	22 58 36	793.5	39.63	9.83
51.74	22 28 42	1793.53	25.77	33.49	259.04	129.84	22 58 36	793.5	39.63	9.83
51.74	22 28 42	1793.53	25.77	33.49	259.04	129.84	22 58 36	793.5	39.63	9.83
51.74	22 28 42	1793.53	25.77	33.49	259.04	129.84	22 58 36	793.5	39.63	9.83
51.74	22 28 42	1793.53	25.77	33.49	259.04	129.84	22 58 36	793.5	39.63	9.83
51.74	22 28 42	1793.53	25.77	33.49	259.04	129.84	22 58 36	793.5	39.63	9.83

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-1.0540	TRA	2.8418	TC3	-5.2347	BAU	1.4218	SGT	7181.6	SGR	2089.2	SG3	850.2	ST	104.8	SR	26.4	SS	41.0
RDE	-.0044	RRA	-.9401	RC3	1.2785	FAU	.13718	RRT	-.9710	RRF	-.9968	RTF	.9529	CRT	-.7541	CRS	.9536	CST	-.5214
FDE	.6281	FRA	4.4081	FC3	-6.0173	BSP	12682	SGB	7479.3	R23	.2818	R13	-.9582	LSA	109.3	MSA	37.6	SSA	.1
BDE	1.0540	BRA	2.9933	BC3	5.3886	FSP	1558	SG1	7463.9	SG2	480.2	THA	164.16	EL1	106.7	EL2	17.0	ALF	168.98

LAUNCH DATE MAY 23 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 11 1972

HELIOCENTRIC CONIC DISTANCE 603.578 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.406 GAL -1.28 AZL 95.17 HCA 186.47 SMA 189.00 ECC .19977 INC 5.1744 V1 29.415
RP 226.74 LAP .58 LOP 67.68 VP 21.643 GAP .30 AZP 84.86 TAL 352.31 TAP 178.78 RCA 151.24 APO 226.75 V2 24.257
RC 233.212 GL -43.86 GP 21.00 ZAL 104.43 ZAP 53.00 ETS 196.08 ZAE 87.86 ETE 181.35 ZAC 123.06 ETC 273.67 LVI -30.83

PLANETOCENTRIC CONIC

C3 17.782 VHL 4.217 DLA -42.71 RAL 13.97 RAD 6641.8 VEL 11.739 PTH 6.77 VHP 3.567 DPA -1.68 RAP 296.13 ECC 1.2926

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 2 42	2125.51	11.34	50.61	240.94	136.52	20 38 7	1125.5	28.61	32.52
56.55	22 36 51	1720.21	25.08	26.22	253.50	125.79	23 5 31	720.2	37.44	1.89
56.55	22 36 51	1720.21	25.08	26.22	253.50	125.79	23 5 31	720.2	37.44	1.89
56.55	22 36 51	1720.21	25.08	26.22	253.50	125.79	23 5 31	720.2	37.44	1.89
56.55	22 36 51	1720.21	25.08	26.22	253.50	125.79	23 5 31	720.2	37.44	1.89
56.55	22 36 51	1720.21	25.08	26.22	253.50	125.79	23 5 31	720.2	37.44	1.89
56.55	22 36 51	1720.21	25.08	26.22	253.50	125.79	23 5 31	720.2	37.44	1.89

DIFFERENTIAL CORRECTIONS

TDE -.9536 TRA 2.8425 TC3-5.8396 BAU 1.4165
RDE .0094 RRA -.8045 RC3 1.1832 FAU .14235
FDE .6129 FRA 4.6377 FC3-6.9306 BSP 12958
BDE .9536 BRA 2.9542 BC3 5.9583 FSP 1645

MID-COURSE EXECUTION ACCURACY

SGT 7318.8 SGR 1791.4 SG3 899.6
RRT -.9726 RRF -.9962 RTF .9552
SGB 7534.8 R23 .2765 R13 -.9588
SG1 7523.9 SG2 405.4 THA 166.57

ORBIT DETERMINATION ACCURACY

ST 102.3 SR 22.4 SS 41.8
CRT -.7916 CRS .9424 CST -.5417
LSA 106.8 MSA 36.2 SSA .2
EL1 103.9 EL2 13.5 ALF 170.01

LAUNCH DATE MAY 23 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 13 1972

HELIOCENTRIC CONIC DISTANCE 607.650 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.417 GAL -1.36 AZL 94.70 HCA 187.52 SMA 189.17 ECC .20067 INC 4.6981 V1 29.415
RP 227.13 LAP .61 LOP 68.73 VP 21.612 GAP .17 AZP 85.34 TAL 351.82 TAP 179.34 RCA 151.21 APO 227.13 V2 24.215
RC 235.874 GL -40.69 GP 18.17 ZAL 105.67 ZAP 51.42 ETS 194.46 ZAE 86.67 ETE 181.60 ZAC 120.23 ETC 273.60 LVI -28.31

PLANETOCENTRIC CONIC

C3 16.583 VHL 4.072 DLA -39.76 RAL 12.30 RAD 6641.3 VEL 11.689 PTH 6.72 VHP 3.524 DPA -4.44 RAP 296.78 ECC 1.2729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 24 0	2208.14	7.24	54.16	235.14	137.15	20 0 48	1208.1	24.93	36.94
60.00	22 0 35	1788.71	19.58	27.85	246.33	125.96	22 30 24	788.7	32.52	5.17
60.80	22 48 45	1652.76	24.15	19.70	249.68	122.60	23 16 17	652.8	35.35	355.07
60.80	22 48 45	1652.76	24.15	19.70	249.68	122.60	23 16 17	652.8	35.35	355.07
60.80	22 48 45	1652.76	24.15	19.70	249.68	122.60	23 16 17	652.8	35.35	355.07
60.80	22 48 45	1652.76	24.15	19.70	249.68	122.60	23 16 17	652.8	35.35	355.07
60.80	22 48 45	1652.76	24.15	19.70	249.68	122.60	23 16 17	652.8	35.35	355.07

DIFFERENTIAL CORRECTIONS

TDE -.8794 TRA 2.8357 TC3-6.3959 BAU 1.4386
RDE .0190 RRA -.7008 RC3 1.0955 FAU .14612
FDE .6203 FRA 4.7424 FC3-7.6281 BSP 12807
BDE .8796 BRA 2.9210 BC3 6.4891 FSP 1651

MID-COURSE EXECUTION ACCURACY

SGT 7456.8 SGR 1562.7 SG3 925.3
RRT -.9730 RRF -.9950 RTF .9558
SGB 7618.8 R23 .2727 R13 -.9585
SG1 7610.6 SG2 353.4 THA 168.45

ORBIT DETERMINATION ACCURACY

ST 99.7 SR 19.3 SS 41.9
CRT -.8251 CRS .9242 CST -.5470
LSA 104.1 MSA 35.3 SSA .2
EL1 101.0 EL2 10.8 ALF 170.81

LAUNCH DATE MAY 23 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 15 1972

HELIOCENTRIC CONIC DISTANCE 611.717 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.427 GAL -1.45 AZL 94.34 HCA 188.57 SMA 189.35 ECC .20159 INC 4.3412 V1 29.415
RP 227.52 LAP .65 LOP 69.78 VP 21.581 GAP .03 AZP 85.71 TAL 351.33 TAP 179.89 RCA 151.18 APO 227.52 V2 24.174
RC 238.532 GL -38.10 GP 15.97 ZAL 106.81 ZAP 50.11 ETS 193.14 ZAE 85.52 ETE 181.78 ZAC 118.02 ETC 273.58 LVI -26.37

PLANETOCENTRIC CONIC

C3 15.811 VHL 3.976 DLA -37.26 RAL 11.23 RAD 6640.9 VEL 11.656 PTH 6.69 VHP 3.504 DPA -6.57 RAP 297.39 ECC 1.2602

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 57 56	2269.94	4.14	56.77	231.47	137.44	19 35 46	1269.9	22.08	40.06
60.00	20 56 10	1954.70	12.72	36.52	239.54	128.57	21 28 45	954.7	27.17	15.97
64.66	23 3 17	1587.59	23.15	13.65	247.00	120.05	23 29 45	587.6	33.43	348.90
64.66	23 3 17	1587.59	23.15	13.65	247.00	120.05	23 29 45	587.6	33.43	348.90
64.66	23 3 17	1587.59	23.15	13.65	247.00	120.05	23 29 45	587.6	33.43	348.90
64.66	23 3 17	1587.59	23.15	13.65	247.00	120.05	23 29 45	587.6	33.43	348.90
64.66	23 3 17	1587.59	23.15	13.65	247.00	120.05	23 29 45	587.6	33.43	348.90

DIFFERENTIAL CORRECTIONS

TDE -.7653 TRA 2.8919 TC3-6.7558 BAU 1.4432
RDE .0170 RRA -.6308 RC3 .9874 FAU .14481
FDE .7184 FRA 4.8526 FC3-7.9291 BSP 13236
BDE .7655 BRA 2.9599 BC3 6.8276 FSP 1704

MID-COURSE EXECUTION ACCURACY

SGT 7582.3 SGR 1386.2 SG3 938.6
RRT -.9728 RRF -.9934 RTF .9558
SGB 7708.0 R23 .2675 R13 -.9578
SG1 7701.5 SG2 315.9 THA 169.90

ORBIT DETERMINATION ACCURACY

ST 96.3 SR 17.2 SS 43.0
CRT -.8580 CRS .9028 CST -.5541
LSA 100.8 MSA 35.3 SSA .3
EL1 97.4 EL2 8.7 ALF 171.21

LAUNCH DATE MAY 23 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 17 1972

HELIOCENTRIC CONIC DISTANCE 615.778 EARTH TO MARS

RL 151.47 LAL -.00 LOL 241.23 VL 32.437 GAL -1.54 AZL 94.06 HCA 189.61 SMA 189.53 ECC .20253 INC 4.0611 V1 29.415
RP 227.91 LAP .68 LOP 70.82 VP 21.550 GAP -.11 AZP 86.00 TAL 350.83 TAP 180.44 RCA 151.14 APO 227.91 V2 24.133
RC 241.186 GL -35.95 GP 14.21 ZAL 107.87 ZAP 48.97 ETS 192.05 ZAE 84.42 ETE 181.90 ZAC 116.25 ETC 273.58 LVI -24.86

PLANETOCENTRIC CONIC

C3 15.302 VHL 3.912 DLA -35.10 RAL 10.54 RAD 6640.7 VEL 11.634 PTH 6.67 VHP 3.498 DPA -8.25 RAP 297.96 ECC 1.2518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 38 56	2320.28	1.62	58.88	229.03	137.56	19 17 37	1320.3	19.71	42.49
60.00	20 22 22	2044.80	8.86	40.99	235.92	129.48	20 56 27	1044.8	23.90	21.34
68.28	23 20 11	1521.75	22.17	7.78	245.09	117.94	23 45 33	521.8	31.69	343.00
68.28	23 20 11	1521.75	22.17	7.78	245.09	117.94	23 45 33	521.8	31.69	343.00
68.28	23 20 11	1521.75	22.17	7.78	245.09	117.94	23 45 33	521.8	31.69	343.00
68.28	23 20 11	1521.75	22.17	7.78	245.09	117.94	23 45 33	521.8	31.69	343.00
68.28	23 20 11	1521.75	22.17	7.78	245.09	117.94	23 45 33	521.8	31.69	343.00

DIFFERENTIAL CORRECTIONS

TDE -.6825 TRA 2.9322 TC3-7.1028 BAU 1.4646
RDE .0205 RRA -.5719 RC3 .8993 FAU .14415
FDE .7861 FRA 4.8862 FC3-8.1559 BSP 13329
BDE .6828 BRA 2.9875 BC3 7.1595 FSP 1697

MID-COURSE EXECUTION ACCURACY

SGT 7709.6 SGR 1242.7 SG3 940.8
RRT -.9723 RRF -.9912 RTF .9557
SGB 7809.1 R23 .2594 R13 -.9572
SG1 7803.8 SG2 287.2 THA 171.08

ORBIT DETERMINATION ACCURACY

ST 93.6 SR 15.5 SS 43.4
CRT -.8928 CRS .8729 CST -.5603
LSA 98.3 MSA 35.0 SSA .3
EL1 94.7 EL2 6.9 ALF 171.57

LAUNCH DATE MAY 23 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 19 1972

HELIOCENTRIC CONIC DISTANCE 619.834 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.447	GAL	-1.63	AZL	93.84	HCA	190.65	SMA	189.71	ECC	.20348	INC	3.8367	V1	29.415
RP	228.30	LAP	.71	LOP	71.87	VP	21.519	GAP	-.25	AZP	86.23	TAL	350.33	TAP	180.99	RCA	151.10	APO	228.31	V2	24.092
RC	243.834	GL	-34.13	GP	12.78	ZAL	108.87	ZAP	47.96	ETS	191.13	ZAE	83.36	ETE	181.98	ZAC	114.80	ETC	273.61	LVI	-23.65

PLANETOCENTRIC CONIC

C3	14.966	VHL	3.869	DLA	-33.22	RAL	10.11	RAD	6640.5	VEL	11.620	PTH	6.66	VHP	3.500	DPA	-9.60	RAP	298.51	ECC	1.2463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 24 26	2363.17	-.54	60.67	227.36	137.57	19 3 49	1363.2	17.66	44.51
60.00	19 59 0	2111.43	5.96	44.23	233.58	129.93	20 34 12	1111.4	21.34	25.13
70.00	22 26 10	1671.69	15.65	15.66	240.56	120.75	22 56 1	671.7	26.91	352.88
71.80	23 39 40	1452.25	21.22	1.83	243.74	116.18	24 3 52	452.3	30.12	337.08
71.80	23 39 40	1452.25	21.22	1.83	243.74	116.18	24 3 52	452.3	30.12	337.08
71.80	23 39 40	1452.25	21.22	1.83	243.74	116.18	24 3 52	452.3	30.12	337.08
110.00	3 31 32	6006.54	15.65	282.48	240.56	120.75	5 11 38	5006.5	26.91	259.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5951	TRA	2.9950	TC3	-7.3675	BAU	1.4831	SGT	7834.7	SGR	1127.5	SG3	938.5	ST	91.3	SR	14.1	SS	44.2
RDE	.0230	RRA	-.5275	RC3	.8154	FAU	.14214	RRT	-.9710	RRF	-.9882	RTF	.9554	CRT	-.9270	CRS	.8373	CST	-.5722
FDE	.8709	FRA	4.9196	FC3	-8.2224	BSP	13551	SGB	7915.4	R23	.2487	R13	-.9566	LSA	96.3	MSA	34.9	SSA	.4
BDE	.5955	BRA	3.0411	BC3	7.4124	FSP	1693	SG1	7910.9	SG2	266.9	THA	172.04	EL1	92.3	EL2	5.3	ALF	171.80

LAUNCH DATE MAY 23 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 21 1972

HELIOCENTRIC CONIC DISTANCE 623.884 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.457	GAL	-1.72	AZL	93.65	HCA	191.69	SMA	189.89	ECC	.20445	INC	3.6524	V1	29.415
RP	228.69	LAP	.74	LOP	72.90	VP	21.488	GAP	-.39	AZP	86.42	TAL	349.83	TAP	181.53	RCA	151.06	APO	228.71	V2	24.051
RC	246.477	GL	-32.56	GP	11.60	ZAL	109.83	ZAP	47.04	ETS	190.36	ZAE	82.33	ETE	182.05	ZAC	113.60	ETC	273.66	LVI	-22.67

PLANETOCENTRIC CONIC

C3	14.750	VHL	3.841	DLA	-31.54	RAL	9.88	RAD	6640.4	VEL	11.611	PTH	6.65	VHP	3.509	DPA	-10.71	RAP	299.04	ECC	1.2428

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 13 0	2400.80	-2.43	62.24	226.23	137.53	18 53 1	1400.8	15.84	46.24
60.00	19 41 26	2165.50	3.59	46.83	232.00	130.17	20 17 31	1165.5	19.20	28.09
70.00	21 47 11	1795.33	11.23	22.51	237.66	122.47	22 17 6	795.3	23.52	.88
75.41	0 6 29	1374.95	20.31	355.46	242.78	114.67	0 29 24	374.9	28.68	330.75
75.41	0 6 29	1374.95	20.31	355.46	242.78	114.67	0 29 24	374.9	28.68	330.75
75.41	0 6 29	1374.95	20.31	355.46	242.78	114.67	0 29 24	374.9	28.68	330.75
110.00	2 50 33	6130.20	11.23	289.33	237.66	122.47	4 32 44	5130.2	23.52	267.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5135	TRA	3.0635	TC3	-7.5856	BAU	1.5029	SGT	7955.8	SGR	1031.6	SG3	931.3	ST	89.5	SR	13.1	SS	44.8
RDE	.0269	RRA	-.4913	RC3	.7397	FAU	.13966	RRT	-.9691	RRF	-.9844	RTF	.9550	CRT	-.9579	CRS	.7940	CST	-.5878
FDE	.9501	FRA	4.9315	FC3	-8.1973	BSP	13773	SGB	8022.4	R23	.2349	R13	-.9560	LSA	94.9	MSA	34.6	SSA	.4
BDE	.5142	BRA	3.1026	BC3	7.6216	FSP	1683	SG1	8018.4	SG2	252.4	THA	172.83	EL1	90.4	EL2	3.7	ALF	172.02

LAUNCH DATE MAY 23 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 23 1972

HELIOCENTRIC CONIC DISTANCE 627.929 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.467	GAL	-1.81	AZL	93.50	HCA	192.73	SMA	190.07	ECC	.20543	INC	3.4981	V1	29.415
RP	229.07	LAP	.77	LOP	73.94	VP	21.458	GAP	-.53	AZP	86.59	TAL	349.33	TAP	182.06	RCA	151.02	APO	229.11	V2	24.010
RC	249.113	GL	-31.19	GP	10.60	ZAL	110.75	ZAP	46.19	ETS	189.70	ZAE	81.32	ETE	182.09	ZAC	118.58	ETC	273.72	LVI	-21.88

PLANETOCENTRIC CONIC

C3	14.622	VHL	3.824	DLA	-30.04	RAL	9.79	RAD	6640.3	VEL	11.605	PTH	6.65	VHP	3.522	DPA	-11.62	RAP	299.57	ECC	1.2406

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 3 47	2434.83	-4.12	63.65	225.47	137.44	18 44 22	1434.5	14.20	47.76
60.00	19 27 35	2211.56	1.57	49.04	230.93	130.28	20 4 27	1211.6	17.33	30.35
70.00	21 21 36	1876.18	8.24	26.86	235.93	123.26	21 52 52	876.2	21.06	5.86
79.42	0 35 5	1281.32	19.45	348.03	242.13	113.36	0 56 27	281.3	27.37	323.37
79.42	0 35 5	1281.32	19.45	348.03	242.13	113.36	0 56 27	281.3	27.37	323.37
79.42	0 35 5	1281.32	19.45	348.03	242.13	113.36	0 56 27	281.3	27.37	323.37
110.00	2 24 58	6211.04	8.24	293.69	235.93	123.26	4 8 29	5211.0	21.06	272.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4380	TRA	3.1375	TC3	-7.7715	BAU	1.5248	SGT	8077.5	SGR	951.9	SG3	921.8	ST	88.3	SR	12.3	SS	45.5
RDE	.0317	RRA	-.4620	RC3	.6724	FAU	.13701	RRT	-.9663	RRF	-.9796	RTF	.9545	CRT	-.9819	CRS	.7430	CST	-.6062
FDE	1.0234	FRA	4.9358	FC3	-8.1121	BSP	13986	SGB	8133.4	R23	.2192	R13	-.9553	LSA	94.0	MSA	34.3	SSA	.4
BDE	.4392	BRA	3.1713	BC3	7.8006	FSP	1668	SG1	8129.8	SG2	243.4	THA	173.50	EL1	89.1	EL2	2.3	ALF	172.23

LAUNCH DATE MAY 23 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 25 1972

HELIOCENTRIC CONIC DISTANCE 631.969 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.478	GAL	-1.90	AZL	93.37	HCA	193.76	SMA	190.25	ECC	.20642	INC	3.3671	V1	29.415
RP	229.46	LAP	.80	LOP	74.97	VP	21.428	GAP	-.67	AZP	86.73	TAL	348.83	TAP	182.59	RCA	150.98	APO	229.52	V2	23.969
RC	251.742	GL	-29.98	GP	9.75	ZAL	111.64	ZAP	45.40	ETS	189.13	ZAE	80.34	ETE	182.12	ZAC	111.71	ETC	273.78	LVI	-21.23

PLANETOCENTRIC CONIC

C3	14.559	VHL	3.816	DLA	-28.68	RAL	9.80	RAD	6640.3	VEL	11.602	PTH	6.64	VHP	3.538	DPA	-12.39	RAP	300.09	ECC	1.2396

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 56 13	2465.24	-5.66	64.95	224.99	137.32	18 37 18	1465.2	12.70	49.12
60.00	19 16 21	2252.03	-.22	50.97	230.22	130.30	19 53 53	1252.0	15.66	32.67
70.00	21 2 43	1939.24	5.87	30.21	234.81	123.71	21 35 2	939.2	19.03	9.63
80.00	23 25 10	1493.07	12.75	.45	238.90	117.23	23 50 3	493.1	22.87	337.64
85.05	1 19 37	1137.53	18.64	337.05	241.71	112.19	1 38 35	137.5	26.16	312.45
100.00	2 11 58	6255.58	12.75	299.73	238.90	117.23	3 56 14	5255.6	22.87	276.91
110.00	2 6 5	6274.10	5.87	297.03	234.81	123.71	3 50 39	5274.1	19.03	276.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3660	TRA	3.2151	TC3	-7.9298	BAU	1.5480	SGT	8197.7	SGR	884.5	SG3	910.2	ST	87.5	SR	11.6	SS	46.2
RDE	.0372	RRA	-.4375	RC3	.6124	FAU	.13429	RRT	-.9626	RRF	-.9737	RTF	.9541	CRT	-.9961	CRS	.6841	CST	-.6261
FDE	1.0925	FRA	4.9286	FC3	-7.9859	BSP	14165	SGB	8245.3	R23	.2014	R13	-.9547	LSA	93.6	MSA	33.9	SSA	.5
BDE	.3679	BRA	3.2448	BC3	7.9534	FSP	1642	SG1	8241.8	SG2	238.3	THA	174.07	EL1	88.2	EL2	1.0	ALF	172.48

LAUNCH DATE MAY 23 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 27 1972

HELIOCENTRIC CONIC DISTANCE 636.002 EARTH TO MARS

RL	151.47	LAL	-.00	LOL	241.23	VL	32.488	GAL	-2.00	AZL	93.29	HCA	194.78	SNA	190.43	ECC	.20743	INC	3.2543	VI	29.419
RP	229.85	LAP	.83	LOP	76.00	VP	21.398	GAP	-.81	AZP	86.85	TAL	348.33	TAP	183.11	RCA	150.93	APO	229.93	V2	23.929
RC	254.363	GL	-28.90	GP	9.03	ZAL	112.52	ZAP	44.65	ETS	188.63	ZAE	79.37	ETE	182.14	ZAC	110.95	ETC	273.86	LVI	-20.69

PLANETOCENTRIC CONIC

C3	14.547	VHL	3.814	DLA	-27.42	RAL	9.90	RAD	6640.3	VEL	11.602	PTH	6.64	VHP	3.556	DPA	-13.03	RAP	300.62	ECC	1.2394

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 49 54	2493.56	-7.08	66.15	224.73	137.17	18 31 28	1493.6	11.30	90.36
60.00	19 7 2	2288.38	-1.82	52.71	229.77	130.27	19 45 11	1288.4	14.14	34.54
70.00	20 47 50	1992.01	3.87	32.98	234.07	123.96	21 21 2	992.0	17.26	12.70
80.00	22 55 5	1593.61	9.56	6.20	237.53	118.42	23 21 39	593.6	20.41	344.09
90.00	1 0 22	1202.27	12.95	339.17	239.29	115.36	1 20 25	202.3	22.30	316.09
100.00	1 41 53	1068.08	9.56	327.57	237.53	118.42	1 59 41	68.1	20.41	305.46
110.00	1 51 12	1038.82	3.87	321.90	234.07	123.96	2 8 31	38.8	17.26	301.62

DIFFERENTIAL CORRECTIONS

TDE	-.2966	TRA	3.2989	TC3	-8.0591	BAU	1.5711												
RDE	.0433	RRA	-.4175	RC3	.5576	FAU	.13124												
FDE	1.1574	FRA	4.9206	FC3	-7.8106	BSP	14390												
BDE	.2998	BRA	3.3253	BC3	8.0784	FSP	1625												

MID-COURSE EXECUTION ACCURACY

SGT	8316.4	SGR	827.2	SG3	897.4														
RRT	-.9577	RRF	-.9666	RTF	.9534														
SGB	8357.5	R23	.1836	R13	-.9539														
SG1	8354.1	SG2	237.1	THA	174.55														

ORBIT DETERMINATION ACCURACY

ST	87.2	SR	11.1	SS	46.8														
CRT	-.9981	CRS	.6186	CST	-.6478														
LSA	93.8	MSA	33.4	BSA	.5														
EL1	87.9	EL2	.7	ALF	172.75														

LAUNCH DATE MAY 24 1971 FLIGHT TIME 88.00 ARRIVAL DATE AUG 20 1971

HELIOCENTRIC CONIC DISTANCE 259.592 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	35.555	GAL	.57	AZL	91.87	HCA	80.94	SMA	272.03	ECC	.44318	INC	1.8691	V1	29.409
RP	207.09	LAP	-1.85	LOP	323.13	VP	28.176	GAP	22.61	AZP	90.29	TAL	1.85	TAP	82.79	RCA	151.47	APO	392.59	V2	26.448
RC	56.856	GL	-10.72	GP	-.96	ZAL	89.71	ZAP	177.60	ETS	203.55	ZAE	172.49	ETE	31.82	ZAC	98.68	ETC	278.33	LVI	-17.88

PLANETOCENTRIC CONIC

C3	38.886	VHL	6.236	DLA	-20.78	RAL	337.98	RAD	6650.3	VEL	12.600	PTH	7.46	VHP	11.330	DPA	-17.18	RAP	324.26	ECC	1.6400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 6 37	2876.95	-25.52	83.90	204.13	131.62	15 54 34	1876.9	-7.88	68.55
60.00	16 11 16	2704.99	-19.56	73.59	209.32	125.97	16 56 21	1705.0	-3.99	54.79
70.00	17 33 9	2464.32	-13.85	58.05	213.29	121.53	18 14 13	1464.3	-.14	38.19
80.00	19 10 49	2158.63	-9.32	37.51	215.96	118.49	19 46 48	1158.6	2.99	16.93
90.00	20 46 7	1851.23	-7.48	15.89	216.95	117.35	21 16 58	851.2	4.27	355.03
100.00	21 53 41	1633.11	-9.32	358.88	215.96	118.49	22 20 54	633.1	2.99	338.30
110.00	22 32 35	1511.14	-13.85	346.97	213.29	121.53	22 57 46	511.1	-.14	327.11

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3326	TRA	-.7923	TC3	.0575	BAU	.0427	SGT	839.5	SGR	575.5	SG3	87.8	ST	19.2	SR	26.4	SS	7.7
RDE	-.5704	RRA	.2303	RC3	.0586	FAU	.03216	RRT	-.0224	RRF	.0253	RTF	-.5345	CRT	.7099	CRS	.2312	CST	.8393
FDE	.0601	FRA	.4903	FC3	-.7160	BSP	1035	SGB	1017.8	R23	-.0027	R13	.5347	LSA	30.7	MSA	13.5	SSA	1.1
BDE	.6603	BRA	.8251	BC3	.0821	FSP	101	SG1	839.7	SG2	575.2	THA	178.35	EL1	30.5	EL2	11.7	ALF	57.23

LAUNCH DATE MAY 24 1971 FLIGHT TIME 90.00 ARRIVAL DATE AUG 22 1971

HELIOCENTRIC CONIC DISTANCE 261.347 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	35.332	GAL	.60	AZL	91.86	HCA	82.20	SMA	263.47	ECC	.42511	INC	1.8598	V1	29.409
RP	207.01	LAP	-1.84	LOP	324.40	VP	27.902	GAP	22.08	AZP	90.25	TAL	2.02	TAP	84.23	RCA	151.47	APO	375.48	V2	26.457
RC	57.225	GL	-10.99	GP	-.98	ZAL	89.52	ZAP	176.71	ETS	197.42	ZAE	171.86	ETE	28.48	ZAC	98.60	ETC	278.39	LVI	-17.94

PLANETOCENTRIC CONIC

C3	36.169	VHL	6.014	DLA	-21.10	RAL	337.90	RAD	6649.3	VEL	12.492	PTH	7.38	VHP	10.943	DPA	-17.09	RAP	324.59	ECC	1.5953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 7 45	2851.72	-24.37	82.59	203.01	132.22	15 55 17	1851.7	-6.62	65.48
60.00	16 12 55	2678.40	-18.49	72.16	208.18	126.47	16 57 34	1678.4	-2.82	53.52
70.00	17 35 29	2435.69	-12.83	56.47	212.18	121.93	18 16 5	1435.7	.96	36.70
80.00	19 13 59	2127.44	-8.30	35.76	214.87	118.78	19 49 26	1127.4	4.04	15.21
90.00	20 49 44	1818.56	-6.45	14.04	215.87	117.59	21 20 3	818.6	5.31	353.20
100.00	21 56 50	1601.91	-8.30	357.12	214.87	118.78	22 23 32	601.9	4.04	336.58
110.00	22 34 55	1482.51	-12.83	345.38	212.18	121.93	22 59 38	482.5	.96	325.62

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3265	TRA	-.7834	TC3	.0722	BAU	.0463	SGT	862.7	SGR	580.8	SG3	94.5	ST	19.6	SR	26.6	SS	7.9
RDE	-.5548	RRA	.2239	RC3	.0629	FAU	.03341	RRT	-.0238	RRF	.0264	RTF	-.5456	CRT	.7065	CRS	.2051	CST	.8274
FDE	.0573	FRA	.5071	FC3	-.7998	BSP	1101	SGB	1040.0	R23	-.0027	R13	.5457	LSA	31.1	MSA	13.9	SSA	1.1
BDE	.6437	BRA	.8148	BC3	.0957	FSP	110	SG1	862.9	SG2	580.5	THA	178.32	EL1	30.9	EL2	12.0	ALF	56.84

LAUNCH DATE MAY 24 1971 FLIGHT TIME 92.00 ARRIVAL DATE AUG 24 1971

HELIOCENTRIC CONIC DISTANCE 263.382 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	35.122	GAL	.64	AZL	91.85	HCA	83.47	SMA	255.96	ECC	.40825	INC	1.8505	V1	29.409
RP	206.94	LAP	-1.84	LOP	325.66	VP	27.643	GAP	21.55	AZP	90.21	TAL	2.21	TAP	85.68	RCA	151.46	APO	360.45	V2	26.466
RC	57.675	GL	-11.26	GP	-1.01	ZAL	89.30	ZAP	175.79	ETS	193.91	ZAE	171.24	ETE	25.67	ZAC	98.53	ETC	278.46	LVI	-17.99

PLANETOCENTRIC CONIC

C3	33.710	VHL	5.806	DLA	-21.44	RAL	337.79	RAD	6648.4	VEL	12.394	PTH	7.31	VHP	10.571	DPA	-17.02	RAP	324.92	ECC	1.5548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 8 49	2826.77	-23.23	81.33	201.91	132.77	15 55 56	1826.8	-5.38	64.43
60.00	16 14 32	2652.01	-17.41	70.75	207.07	126.94	16 58 44	1652.0	-1.66	52.25
70.00	17 37 49	2407.15	-11.79	54.90	211.08	122.29	18 17 57	1407.2	2.05	35.21
80.00	19 17 12	2096.13	-7.27	34.00	213.80	119.04	19 52 8	1096.1	5.09	13.48
90.00	20 53 28	1785.65	-5.41	12.18	214.81	117.80	21 23 13	785.7	6.36	351.34
100.00	22 0 4	1570.60	-7.27	355.37	213.80	119.04	22 26 15	570.6	5.09	334.85
110.00	22 37 16	1453.97	-11.79	343.82	211.08	122.29	23 1 30	454.0	2.05	324.13

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3207	TRA	-.7721	TC3	.0888	BAU	.0502	SGT	883.6	SGR	585.8	SG3	101.5	ST	20.0	SR	26.9	SS	8.1
RDE	-.5398	RRA	.2177	RC3	.0672	FAU	.03465	RRT	-.0237	RRF	.0295	RTF	-.5480	CRT	.7045	CRS	.1705	CST	.8093
FDE	.0529	FRA	.5260	FC3	-.8898	BSP	1150	SGB	1060.1	R23	-.0059	R13	.5582	LSA	31.4	MSA	14.2	SSA	1.2
BDE	.6279	BRA	.8022	BC3	.1113	FSP	120	SG1	883.8	SG2	585.5	THA	178.39	EL1	31.2	EL2	12.2	ALF	56.45

LAUNCH DATE MAY 24 1971 FLIGHT TIME 94.00 ARRIVAL DATE AUG 26 1971

HELIOCENTRIC CONIC DISTANCE 265.658 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	34.925	GAL	.68	AZL	91.84	HCA	84.74	SMA	249.32	ECC	.39252	INC	1.8413	V1	29.409
RP	206.87	LAP	-1.83	LOP	326.93	VP	27.400	GAP	21.03	AZP	90.17	TAL	2.42	TAP	87.15	RCA	151.46	APO	347.18	V2	26.473
RC	58.203	GL	-11.54	GP	-1.03	ZAL	89.05	ZAP	174.85	ETS	191.65	ZAE	170.65	ETE	23.29	ZAC	98.46	ETC	278.52	LVI	-18.05

PLANETOCENTRIC CONIC

C3	31.482	VHL	5.611	DLA	-21.79	RAL	337.65	RAD	6647.6	VEL	12.305	PTH	7.24	VHP	10.214	DPA	-16.94	RAP	325.23	ECC	1.5181

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 9 50	2802.14	-22.08	80.10	200.83	133.28	15 56 32	1802.1	-4.14	63.39
60.00	16 16 7	2625.88	-16.34	69.38	205.99	127.37	16 59 52	1625.9	-.51	51.01
70.00	17 40 10	2378.75	-10.76	53.36	210.00	122.61	18 19 49	1378.8	3.13	33.72
80.00	19 20 30	2064.77	-6.23	32.26	212.74	119.26	19 54 55	1064.8	6.14	11.74
90.00	20 57 18	1752.54	-4.36	10.32	213.77	117.97	21 26 30	752.5	7.40	349.47
100.00	22 3 22	1539.24	-6.23	353.63	212.74	119.26	22 29 1	539.2	6.14	333.11
110.00	22 39 37	1425.57	-10.76	342.27	210.00	122.61	23 3 22	425.6	3.13	322.64

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY					
TDE	-.3127	TRA	-.7617	TC3	.1079	BAU	.0545	SGT	904.6	SGR	590.3	SG3	108.9	ST	20.3	SR	27.0	SS	8.3
RDE	-.5253	RRA	.2117	RC3	.0716	FAU	.03594	RRT	-.0261	RRF	.0314	RTF	-.5709	CRT	.6995	CRS	.1400	CST	.7954
FDE	.0489	FRA	.5438	FC3	-.9882	BSP	1200	SGB	1080.1	R23	-.0055	R13	.5711	LSA	31.6	MSA	14.6	SSA	1.2
BDE	.6114	BRA	.7905	BC3	.1295	FSP	131	SG1	904.8	SG2	589.9	THA	178.30	EL1	31.4	EL2	12.5	ALF	56.26

LAUNCH DATE MAY 24 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 28 1971

HELIOCENTRIC CONIC DISTANCE 268.139 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	34.740	GAL	.72	AZL	91.83	HCA	86.00	SMA	243.42	ECC	.37783	INC	1.8322	V1	29.409
RP	206.82	LAP	-1.83	LOP	326.20	VP	27.170	GAP	20.52	AZP	90.13	TAL	2.64	TAP	88.64	RCA	151.45	APO	335.40	V2	26.479
RC	58.807	GL	-11.81	GP	-1.06	ZAL	88.77	ZAP	173.90	ETS	190.09	ZAE	170.11	ETE	21.24	ZAC	98.39	ETC	278.57	LVI	-18.09

PLANETOCENTRIC CONIC

C3	29.460	VHL	5.428	DLA	-22.14	RAL	337.48	RAD	6646.8	VEL	12.223	PTH	7.17	VHP	9.871	DPA	-16.87	RAP	325.53	ECC	1.4848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 47	2777.88	-20.94	78.92	199.78	133.75	15 57 5	1777.9	-2.92	62.37
60.00	16 17 39	2600.05	-15.27	68.04	204.92	127.76	17 0 59	1600.1	.63	49.77
70.00	17 42 31	2350.54	-9.72	51.83	208.95	122.90	18 21 42	1350.5	4.20	32.24
80.00	19 23 52	2033.39	-5.19	30.52	211.71	119.44	19 57 45	1033.4	7.18	10.00
90.00	21 1 15	1719.24	-3.29	8.46	212.76	118.10	21 29 54	719.2	8.43	347.57
100.00	22 6 43	1507.86	-5.19	351.89	211.71	119.44	22 31 51	507.9	7.18	331.37
110.00	22 41 56	1397.36	-9.72	340.75	208.95	122.90	23 5 15	397.4	4.20	321.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3058	TRA	-.7507	TC3	.1287	BAU	.0588	SGT	925.1	SGR	594.4	SG3	117.1	ST	20.6	SR	27.2	SS	8.6
RDE	-.5114	RRA	.2059	RC3	.0759	FAU	.03738	RRT	-.0272	RRF	.0341	RTF	-.5835	CRT	.6957	CRS	.1053	CST	.7775
FDE	.0440	FRA	.5642	FC3	-1.0985	BSP	1250	SGB	1099.6	R23	-.0071	R13	.5837	LSA	31.9	MSA	15.0	SSA	1.2
BDE	.5959	BRA	.7785	BC3	.1494	FSP	143	SG1	925.3	SG2	594.0	THA	178.29	EL1	31.7	EL2	12.7	ALF	56.01

LAUNCH DATE MAY 24 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 30 1971

HELIOCENTRIC CONIC DISTANCE 270.799 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	34.566	GAL	.77	AZL	91.82	HCA	87.27	SMA	238.16	ECC	.36410	INC	1.8230	V1	29.409
RP	206.77	LAP	-1.82	LOP	329.47	VP	26.952	GAP	20.02	AZP	90.09	TAL	2.87	TAP	90.14	RCA	151.45	APO	324.88	V2	26.485
RC	59.485	GL	-12.08	GP	-1.09	ZAL	88.47	ZAP	172.92	ETS	188.94	ZAE	169.60	ETE	19.45	ZAC	98.32	ETC	278.63	LVI	-18.14

PLANETOCENTRIC CONIC

C3	27.625	VHL	5.256	DLA	-22.50	RAL	337.28	RAD	6646.1	VEL	12.148	PTH	7.12	VHP	9.541	DPA	-16.80	RAP	325.83	ECC	1.4546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 40	2754.04	-19.82	77.77	198.76	134.19	15 57 34	1754.0	-1.73	61.38
60.00	16 19 9	2574.58	-14.20	66.73	203.89	128.12	17 2 3	1574.6	1.75	48.56
70.00	17 44 52	2322.57	-8.68	50.33	207.92	123.16	18 23 35	1322.6	5.27	30.77
80.00	19 27 18	2002.03	-4.13	28.78	210.71	119.60	20 0 40	1002.0	8.21	8.24
90.00	21 5 20	1685.79	-2.22	6.59	211.77	118.20	21 33 26	685.8	9.47	345.66
100.00	22 10 10	1476.50	-4.13	350.15	210.71	119.60	22 34 46	476.5	8.21	329.61
110.00	22 44 19	1369.39	-8.68	339.25	207.92	123.16	23 7 8	369.4	5.27	319.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2923	TRA	-.7449	TC3	.1528	BAU	.0638	SGT	948.6	SGR	598.1	SG3	125.8	ST	20.7	SR	27.4	SS	8.8
RDE	-.4981	RRA	.2003	RC3	.0803	FAU	.03889	RRT	-.0373	RRF	.0373	RTF	-.5979	CRT	.6813	CRS	.0674	CST	.7659
FDE	.0380	FRA	.5850	FC3	-1.2188	BSP	1286	SGB	1121.5	R23	-.0003	R13	.5981	LSA	31.9	MSA	15.4	SSA	1.2
BDE	.5775	BRA	.7714	BC3	.1726	FSP	156	SG1	949.1	SG2	597.4	THA	177.77	EL1	31.7	EL2	13.1	ALF	56.32

LAUNCH DATE MAY 24 1971 FLIGHT TIME 100.00 ARRIVAL DATE SEP 1 1971

HELIOCENTRIC CONIC DISTANCE 273.614 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	34.403	GAL	.81	AZL	91.81	HCA	88.54	SMA	233.44	ECC	.35128	INC	1.8139	V1	29.409
RP	206.74	LAP	-1.81	LOP	330.73	VP	26.747	GAP	19.53	AZP	90.05	TAL	3.12	TAP	91.66	RCA	151.44	APO	315.45	V2	26.489
RC	60.233	GL	-12.34	GP	-1.12	ZAL	88.15	ZAP	171.93	ETS	188.07	ZAE	169.15	ETE	17.88	ZAC	98.24	ETC	278.68	LVI	-18.17

PLANETOCENTRIC CONIC

C3	25.956	VHL	5.095	DLA	-22.87	RAL	337.06	RAD	6645.4	VEL	12.080	PTH	7.06	VHP	9.223	DPA	-16.74	RAP	326.11	ECC	1.4272

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 30	2730.66	-18.70	76.66	197.76	134.58	15 58 1	1730.7	-.55	60.40
60.00	16 20 37	2549.52	-13.14	65.46	202.87	128.45	17 3 6	1549.5	2.85	47.36
70.00	17 47 14	2294.88	-7.65	48.86	206.92	123.39	18 25 28	1294.9	6.31	29.31
80.00	19 30 48	1970.72	-3.08	27.06	209.74	119.71	20 3 39	970.7	9.23	6.48
90.00	21 9 33	1652.20	-1.14	4.71	210.81	118.26	21 37 5	652.2	10.49	343.72
100.00	22 13 40	1445.19	-3.08	348.43	209.74	119.71	22 37 45	445.2	9.23	327.85
110.00	22 46 40	1341.70	-7.65	337.77	206.92	123.39	23 9 2	341.7	6.31	318.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2899	TRA	-.7298	TC3	.1746	BAU	.0673	SGT	965.1	SGR	601.4	SG3	134.9	ST	21.1	SR	27.5	SS	9.1
RDE	-.4851	RRA	.1948	RC3	.0846	FAU	.04048	RRT	-.0321	RRF	.0390	RTF	-.[illegible]64	CRT	.6846	CRS	.0355	CST	.7424
FDE	.0328	FRA	.6043	FC3	-1.3501	BSP	1317	SGB	1137.1	R23	-.0073	R13	.6067	LSA	32.2	MSA	15.7	SSA	1.3
BDE	.5651	BRA	.7554	BC3	.1940	FSP	170	SG1	965.4	SG2	600.9	THA	178.13	EL1	32.1	EL2	13.2	ALF	55.75

LAUNCH DATE MAY 24 1971 FLIGHT TIME 102.00 ARRIVAL DATE SEP 3 1971

HELIOCENTRIC CONIC DISTANCE 276.566 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	34.249	GAL	.86	AZL	91.80	HCA	89.81	SMA	229.20	ECC	.33930	INC	1.8048	V1	29.409
RP	206.71	LAP	-1.80	LOP	332.00	VP	26.553	GAP	19.05	AZP	90.01	TAL	3.38	TAP	93.19	RCA	151.43	APO	306.96	V2	26.492
RC	61.050	GL	-12.60	GP	-1.16	ZAL	87.80	ZAP	170.93	ETS	187.39	ZAE	168.76	ETE	16.49	ZAC	98.17	ETC	278.73	LVI	-18.21

PLANETOCENTRIC CONIC

C3	24.439	VHL	4.944	DLA	-23.24	RAL	336.82	RAD	6644.8	VEL	12.017	PTH	7.01	VHP	8.917	DPA	-16.69	RAP	326.37	ECC	1.4022

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 13 16	2707.77	-17.61	75.60	196.79	134.95	15 58 24	1707.8	.60	59.44
60.00	16 22 2	2524.90	-12.10	64.22	201.89	128.74	17 4 7	1524.9	3.94	46.18
70.00	17 49 35	2267.53	-6.62	47.40	205.95	123.58	18 27 22	1267.5	7.34	27.87
80.00	19 34 23	1939.51	-2.03	25.34	208.79	119.80	20 6 43	939.5	10.24	4.71
90.00	21 13 55	1618.49	-.05	2.83	209.88	118.28	21 40 53	618.5	11.50	341.76
100.00	22 17 15	1413.98	-2.03	346.71	208.79	119.80	22 40 49	414.0	10.24	326.08
110.00	22 49 1	1314.35	-6.62	336.32	205.95	123.58	23 10 55	314.3	7.34	316.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2833	TRA	-.7199	TC3	.1995	BAU	.0713	SGT	985.6	SGR	604.2	SG3	144.7	ST	21.3	SR	27.6	SS	9.3
RDE	-.4728	RRA	.1895	RC3	.0888	FAU	.04217	RRT	-.0334	RRF	.0417	RTF	-.6166	CRT	.6802	CRS	-.0009	CST	.7220
FDE	.0263	FRA	.6253	FC3	-1.4939	BSP	1370	SGB	1156.0	R23	-.0087	R13	.6169	LSA	32.3	MSA	16.1	SSA	1.3
BDE	.5511	BRA	.7445	BC3	.2184	FSP	185	SG1	985.9	SG2	603.7	THA	178.12	EL1	32.2	EL2	13.4	ALF	55.52

LAUNCH DATE MAY 24 1971 FLIGHT TIME 104.00 ARRIVAL DATE SEP 5 1971

HELIOCENTRIC CONIC DISTANCE 279.638 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	34.105	GAL	.90	AZL	91.80	HCA	91.08	SMA	225.36	ECC	.32810	INC	1.7957	V1	29.409
RP	206.69	LAP	-1.80	LOP	333.27	VP	26.369	GAP	18.58	AZP	89.97	TAL	3.65	TAP	94.73	RCA	151.42	APO	299.30	V2	26.495
RC	61.933	GL	-12.86	GP	-1.19	ZAL	87.44	ZAP	169.91	ETS	186.84	ZAE	168.42	ETE	15.23	ZAC	98.10	ETC	278.78	LVI	-18.23

PLANETOCENTRIC CONIC

C3	23.057	VHL	4.802	DLA	-23.62	RAL	336.56	RAD	6644.2	VEL	11.960	PTH	6.96	VHP	8.623	DPA	-16.64	RAP	326.62	ECC	1.3795

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 13 59	2665.41	-16.53	74.57	195.85	135.28	15 58 44	1685.4	1.72	58.51
60.00	16 23 25	2500.76	-11.07	63.01	200.93	129.00	17 5 5	1500.8	4.99	45.02
70.00	17 51 55	2240.55	-5.60	45.98	205.00	123.75	18 29 16	1240.5	8.35	26.43
80.00	19 38 3	1908.41	-.97	23.64	207.87	119.84	20 9 51	908.4	11.24	2.94
90.00	21 18 26	1584.65	1.04	.94	208.99	118.26	21 44 50	584.6	12.51	339.78
100.00	22 20 55	1382.89	-.97	345.00	207.87	119.84	22 43 57	382.9	11.24	324.31
110.00	22 51 22	1287.37	-5.60	334.90	205.00	123.75	23 12 49	287.4	8.35	315.35

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2749	TRA	-.7087	TC3	.2266	BAU	.0755	SGT	1003.4	SGR	606.7	SG3	155.3	ST	21.5	SR	27.7	SS	9.6
RDE	-.4609	RRA	.1845	RC3	.0928	FAU	.04400	RRT	-.0361	RRF	.0449	RTF	-.6272	CRT	.6738	CRS	-.0414	CST	.6998
FDE	.0185	FRA	.6475	FC3	-1.6522	BSP	1400	SGB	1172.6	R23	-.0093	R13	.6275	LSA	32.4	MSA	16.4	SSA	1.3
BDE	.5366	BRA	.7323	BC3	.2449	FSP	201	SG1	1003.8	SG2	606.1	THA	178.03	EL1	32.3	EL2	13.6	ALF	55.52

LAUNCH DATE MAY 24 1971 FLIGHT TIME 106.00 ARRIVAL DATE SEP 7 1971

HELIOCENTRIC CONIC DISTANCE 282.816 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	33.970	GAL	.95	AZL	91.79	HCA	92.35	SMA	221.88	ECC	.31761	INC	1.7866	V1	29.409
RP	206.68	LAP	-1.79	LOP	334.54	VP	26.194	GAP	18.11	AZP	89.93	TAL	3.93	TAP	96.28	RCA	151.41	APO	292.36	V2	26.496
RC	62.879	GL	-13.11	GP	-1.23	ZAL	87.06	ZAP	168.87	ETS	186.39	ZAE	168.15	ETE	14.09	ZAC	98.03	ETC	278.82	LVI	-18.25

PLANETOCENTRIC CONIC

C3	21.796	VHL	4.669	DLA	-23.99	RAL	336.27	RAD	6643.6	VEL	11.908	PTH	6.92	VHP	8.339	DPA	-16.60	RAP	326.86	ECC	1.3587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 14 38	2663.58	-15.47	73.57	194.92	135.58	15 59 1	1663.6	2.82	57.60
60.00	16 24 45	2477.10	-10.05	61.84	199.99	129.24	17 6 2	1477.1	6.03	43.88
70.00	17 54 16	2213.93	-4.59	44.58	204.07	123.88	18 31 10	1213.9	9.34	25.01
80.00	19 41 47	1877.40	.08	21.93	206.97	119.86	20 13 5	877.4	12.22	1.16
90.00	21 23 7	1550.59	2.14	359.04	208.12	118.21	21 48 58	550.6	13.50	337.77
100.00	22 24 39	1351.87	.08	343.30	206.97	119.86	22 47 11	351.9	12.22	322.53
110.00	22 53 42	1260.75	-4.59	333.50	204.07	123.88	23 14 43	260.8	9.34	313.92

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2575	TRA	-.6888	TC3	.2721	BAU	.0841	SGT	1010.2	SGR	608.8	SG3	166.4	ST	21.0	SR	27.8	SS	9.9
RDE	-.4495	RRA	.1796	RC3	.0966	FAU	.04588	RRT	-.0423	RRF	.0479	RTF	-.6535	CRT	.6590	CRS	-.0749	CST	.6903
FDE	.0118	FRA	.6715	FC3	-1.8224	BSP	1322	SGB	1179.5	R23	-.0046	R13	.6538	LSA	32.1	MSA	16.8	SSA	1.3
BDE	.5180	BRA	.7118	BC3	.2888	FSP	221	SG1	1010.8	SG2	608.0	THA	177.71	EL1	32.1	EL2	13.7	ALF	56.63

LAUNCH DATE MAY 24 1971 FLIGHT TIME 108.00 ARRIVAL DATE SEP 9 1971

HELIOCENTRIC CONIC DISTANCE 286.090 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	33.842	GAL	.99	AZL	91.78	HCA	93.62	SMA	218.73	ECC	.30782	INC	1.7774	V1	29.409
RP	206.67	LAP	-1.77	LOP	335.81	VP	26.030	GAP	17.66	AZP	89.89	TAL	4.22	TAP	97.83	RCA	151.40	APO	286.06	V2	26.496
RC	63.888	GL	-13.35	GP	-1.27	ZAL	86.67	ZAP	167.81	ETS	186.02	ZAE	167.94	ETE	13.04	ZAC	97.96	ETC	278.86	LVI	-18.27

PLANETOCENTRIC CONIC

C3	20.648	VHL	4.544	DLA	-24.37	RAL	335.97	RAD	6643.1	VEL	11.860	PTH	6.87	VHP	8.066	DPA	-16.56	RAP	327.08	ECC	1.3398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 14	2642.40	-14.44	72.62	194.03	135.84	15 59 16	1642.4	3.88	56.71
60.00	16 26 2	2454.07	-9.06	60.71	199.09	129.44	17 6 56	1454.1	7.03	42.76
70.00	17 56 35	2187.86	-3.60	43.21	203.18	123.99	18 33 3	1187.9	10.30	23.60
80.00	19 45 37	1846.66	1.12	20.25	206.12	119.84	20 16 23	846.7	13.18	359.38
90.00	21 27 58	1516.51	3.23	357.14	207.29	118.11	21 53 15	516.5	14.47	335.75
100.00	22 28 28	1321.13	1.12	341.62	206.12	119.84	22 50 30	321.1	13.18	320.75
110.00	22 56 2	1234.68	-3.60	332.13	203.18	123.99	23 16 36	234.7	10.30	312.52

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2537	TRA	-.6825	TC3	.2950	BAU	.0860	SGT	1032.8	SGR	610.5	SG3	178.4	ST	21.4	SR	27.9	SS	10.2
RDE	-.4386	RRA	.1749	RC3	.1001	FAU	.04799	RRT	-.0436	RRF	.0517	RTF	-.6552	CRT	.6557	CRS	-.1221	CST	.6986
FDE	.0012	FRA	.6935	FC3	-2.0121	BSP	1414	SGB	1199.7	R23	-.0079	R13	.6556	LSA	32.3	MSA	17.2	SSA	1.4
BDE	.5067	BRA	.7045	BC3	.3115	FSP	239	SG1	1033.3	SG2	609.6	THA	177.74	EL1	32.2	EL2	14.0	ALF	56.17

LAUNCH DATE MAY 24 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 11 1971

HELIOCENTRIC CONIC DISTANCE 289.448 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	33.723	GAL	1.04	AZL	91.77	HCA	94.88	SMA	215.86	ECC	.29867	INC	1.7682	V1	29.409
RP	206.68	LAP	-1.76	LOP	337.08	VP	25.873	GAP	17.21	AZP	89.85	TAL	4.51	TAP	99.40	RCA	151.39	APO	280.33	V2	26.496
RC	64.956	GL	-13.59	GP	-1.31	ZAL	86.26	ZAP	166.74	ETS	185.70	ZAE	167.80	ETE	12.06	ZAC	97.89	ETC	278.90	LVI	-18.27

PLANETOCENTRIC CONIC

C3	19.601	VHL	4.427	DLA	-24.74	RAL	335.65	RAD	6642.7	VEL	11.816	PTH	6.84	VHP	7.803	DPA	-16.54	RAP	327.28	ECC	1.3226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 46	2621.84	-13.43	71.70	193.17	136.09	15 59 28	1621.8	4.91	55.85
60.00	16 27 17	2431.63	-8.09	59.61	198.21	129.62	17 7 19	1431.6	8.01	41.67
70.00	17 58 54	2162.28	-2.63	41.87	202.31	124.06	18 34 57	1162.3	11.24	22.21
80.00	19 49 31	1816.12	2.15	18.57	205.29	119.79	20 19 47	816.1	14.11	357.60
90.00	21 33 2	1482.25	4.33	355.22	206.49	117.97	21 57 44	482.3	15.43	333.69
100.00	22 32 22	1290.59	2.15	339.94	205.29	119.79	22 53 53	290.6	14.11	318.97
110.00	22 58 21	1209.10	-2.63	330.79	202.31	124.06	23 18 30	209.1	11.24	311.13

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2486	TRA	-.6743	TC3	.3197	BAU	.0880	SGT	1052.1	SGR	611.9	SG3	191.4	ST	21.6	SR	27.9	SS	10.5
RDE	-.4281	RRA	.1705	RC3	.1033	FAU	.05025	RRT	-.0454	RRF	.0559	RTF	-.6581	CRT	.6514	CRS	-.1696	CST	.6263
FDE	-.0104	FRA	.7168	FC3	-2.2193	BSP	1480	SGB	1217.1	R23	-.0108	R13	.6585	LSA	32.4	MSA	17.5	SSA	1.4
BDE	.4951	BRA	.6956	BC3	.3360	FSP	260	SG1	1052.7	SG2	610.9	THA	177.72	EL1	32.4	EL2	14.2	ALF	55.88

LAUNCH DATE MAY 24 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 13 1971

HELIOCENTRIC CONIC DISTANCE 292.883 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 33.611 GAL 1.08 AZL 91.76 HCA 96.15 SMA 213.24 ECC .29010 INC 1.7590 V1 29.409
RP 206.70 LAP -1.75 LOP 338.35 VP 25.725 GAP 16.77 AZP 89.81 TAL 4.81 TAP 100.96 RCA 151.38 APO 275.10 V2 26.494
RC 66.082 GL -13.82 GP -1.35 ZAL 85.85 ZAP 165.64 ETS 185.43 ZAE 167.73 ETE 11.15 ZAC 97.83 ETC 278.93 LVI -18.27

PLANETOCENTRIC CONIC

C3 18.643 VHL 4.318 DLA -25.11 RAL 335.32 RAD 6642.2 VEL 11.776 PTH 6.80 VHP 7.550 DPA -16.52 RAP 327.47 ECC 1.3068

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 16 15	2601.93	-12.45	70.82	192.32	136.30	15 59 37	1601.9	5.91	55.01
60.00	16 28 29	2409.82	-7.14	58.55	197.36	129.77	17 8 39	1409.8	8.96	40.60
70.00	18 1 12	2137.24	-1.67	40.57	201.48	124.12	18 36 49	1137.2	12.15	20.85
80.00	19 53 30	1785.80	3.18	16.90	204.49	119.70	20 23 15	785.8	15.03	355.82
90.00	21 38 18	1447.77	5.43	353.28	205.73	117.80	22 2 26	447.8	16.38	331.60
100.00	22 36 21	1260.27	3.18	338.27	204.49	119.70	22 57 22	260.3	15.03	317.18
110.00	23 0 38	1184.06	-1.67	329.48	201.48	124.12	23 20 22	184.1	12.15	309.77

DIFFERENTIAL CORRECTIONS

TDE -.2422 TRA -.6657 TC3 .3476 BAU .0906
RDE -.4181 RRA .1662 RC3 .1062 FAU .05260
FDE -.0214 FRA .7418 FC3-2.4424 BSP 1532
BDE .4832 BRA .6861 BC3 .3635 FSP 280

MID-COURSE EXECUTION ACCURACY

SGT 1070.1 SGR 612.8 SG3 205.0
RRT -.0485 RRF .0599 RTF -.6634
SGB 1233.1 R23 -.0121 R13 .6639
SG1 1070.7 SG2 611.7 THA 177.64

ORBIT DETERMINATION ACCURACY

ST 21.7 SR 28.0 SS 10.9
CRT .6451 CRS -.2111 CST .5995
LSA 32.4 MSA 17.9 SSA 1.5
EL1 32.4 EL2 14.3 ALF 55.79

LAUNCH DATE MAY 24 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 15 1971

HELIOCENTRIC CONIC DISTANCE 296.385 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 33.505 GAL 1.12 AZL 91.75 HCA 97.42 SMA 210.84 ECC .28210 INC 1.7498 V1 29.409
RP 206.72 LAP -1.74 LOP 339.62 VP 25.584 GAP 16.35 AZP 89.77 TAL 5.11 TAP 102.53 RCA 151.36 APO 270.32 V2 26.491
RC 67.265 GL -14.04 GP -1.39 ZAL 85.44 ZAP 164.52 ETS 185.20 ZAE 167.73 ETE 10.28 ZAC 97.76 ETC 278.96 LVI -18.27

PLANETOCENTRIC CONIC

C3 17.768 VHL 4.215 DLA -25.47 RAL 334.98 RAD 6641.8 VEL 11.739 PTH 6.77 VHP 7.305 DPA -16.51 RAP 327.63 ECC 1.2924

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 16 41	2582.70	-11.50	69.98	191.51	136.49	15 59 44	1582.7	6.87	54.19
60.00	16 29 38	2388.67	-6.21	57.52	196.53	129.90	17 9 27	1388.7	9.87	39.56
70.00	18 3 29	2112.78	-.74	39.29	200.67	124.15	18 38 41	1112.8	13.04	19.50
80.00	19 57 34	1755.72	4.19	15.24	203.73	119.59	20 26 49	755.7	15.92	354.03
90.00	21 43 49	1413.02	6.53	351.32	205.01	117.58	22 7 22	413.0	17.30	329.47
100.00	22 40 25	1230.19	4.19	336.61	203.73	119.59	23 0 56	230.2	15.92	315.40
110.00	23 2 55	1159.60	-.74	328.21	200.67	124.15	23 22 14	159.6	13.04	308.42

DIFFERENTIAL CORRECTIONS

TDE -.2355 TRA -.6558 TC3 .3756 BAU .0929
RDE -.4085 RRA .1622 RC3 .1086 FAU .05507
FDE -.0351 FRA .7676 FC3-2.6834 BSP 1576
BDE .4715 BRA .6755 BC3 .3910 FSP 304

MID-COURSE EXECUTION ACCURACY

SGT 1085.2 SGR 613.4 SG3 219.5
RRT -.0515 RRF .0651 RTF -.6681
SGB 1246.6 R23 -.0146 R13 .6687
SG1 1085.9 SG2 612.2 THA 177.55

ORBIT DETERMINATION ACCURACY

ST 21.8 SR 28.0 SS 11.3
CRT .6388 CRS -.2588 CST .5664
LSA 32.4 MSA 18.3 SSA 1.5
EL1 32.4 EL2 14.5 ALF 55.78

LAUNCH DATE MAY 24 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 17 1971

HELIOCENTRIC CONIC DISTANCE 299.950 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 33.406 GAL 1.17 AZL 91.74 HCA 98.69 SMA 208.65 ECC .27461 INC 1.7405 V1 29.409
RP 206.75 LAP -1.72 LOP 340.89 VP 25.451 GAP 15.93 AZP 89.74 TAL 5.42 TAP 104.11 RCA 151.35 APO 265.94 V2 26.487
RC 68.502 GL -14.26 GP -1.44 ZAL 85.02 ZAP 163.38 ETS 185.00 ZAE 167.80 ETE 9.45 ZAC 97.69 ETC 278.98 LVI -18.25

PLANETOCENTRIC CONIC

C3 16.968 VHL 4.119 DLA -25.83 RAL 334.63 RAD 6641.5 VEL 11.705 PTH 6.74 VHP 7.070 DPA -16.51 RAP 327.77 ECC 1.2793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 4	2564.16	-10.59	69.17	190.72	136.66	15 59 48	1564.2	7.79	53.40
60.00	16 30 45	2368.21	-5.32	56.54	195.73	130.01	17 10 13	1368.2	10.75	38.55
70.00	18 5 43	2088.95	.18	38.05	199.89	124.15	18 40 32	1088.9	13.89	18.18
80.00	20 1 43	1725.91	5.19	13.60	203.00	119.44	20 30 29	725.9	16.79	352.24
90.00	21 49 37	1377.90	7.63	349.33	204.33	117.31	22 12 35	377.9	18.21	327.29
100.00	22 44 35	1200.38	5.19	334.97	203.00	119.44	23 4 35	200.4	16.79	313.61
110.00	23 5 10	1135.77	.18	326.96	199.89	124.15	23 24 5	135.8	13.89	307.10

DIFFERENTIAL CORRECTIONS

TDE -.2284 TRA -.6461 TC3 .4053 BAU .0953
RDE -.3993 RRA .1583 RC3 .1104 FAU .05775
FDE -.0484 FRA .7943 FC3-2.9466 BSP 1615
BDE .4600 BRA .6653 BC3 .4201 FSP 330

MID-COURSE EXECUTION ACCURACY

SGT 1099.7 SGR 613.6 SG3 235.1
RRT -.0554 RRF .0699 RTF -.[illegible]33
SGB 1259.3 R23 -.0159 R13 .6739
SG1 1100.5 SG2 612.2 THA 177.43

ORBIT DETERMINATION ACCURACY

ST 21.8 SR 28.0 SS 11.6
CRT .6314 CRS -.3006 CST .5382
LSA 32.3 MSA 18.7 SSA 1.5
EL1 32.3 EL2 14.7 ALF 55.86

LAUNCH DATE MAY 24 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 19 1971

HELIOCENTRIC CONIC DISTANCE 303.570 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 33.313 GAL 1.21 AZL 91.73 HCA 99.96 SMA 206.63 ECC .26761 INC 1.7311 V1 29.409
RP 206.79 LAP -1.71 LOP 342.16 VP 25.324 GAP 15.52 AZP 89.70 TAL 5.72 TAP 105.68 RCA 151.34 APO 261.93 V2 26.483
RC 69.791 GL -14.46 GP -1.49 ZAL 84.59 ZAP 162.22 ETS 184.82 ZAE 167.94 ETE 8.64 ZAC 97.63 ETC 279.00 LVI -18.23

PLANETOCENTRIC CONIC

C3 16.236 VHL 4.029 DLA -26.17 RAL 334.28 RAD 6641.1 VEL 11.674 PTH 6.71 VHP 6.843 DPA -16.52 RAP 327.90 ECC 1.2672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 24	2546.34	-9.70	68.40	189.96	136.81	15 59 50	1546.3	8.68	52.64
60.00	16 31 47	2348.47	-4.45	55.59	194.96	130.10	17 10 56	1348.5	11.59	37.57
70.00	18 7 56	2065.78	1.06	36.84	199.14	124.14	18 42 22	1065.8	14.71	16.89
80.00	20 5 57	1696.38	6.18	11.96	202.30	119.27	20 34 14	696.4	17.63	350.46
90.00	21 55 45	1342.29	8.74	347.30	203.68	117.00	22 18 7	342.3	19.11	325.06
100.00	22 48 49	1170.85	6.18	333.33	202.30	119.27	23 8 20	170.9	17.63	311.82
110.00	23 7 22	1112.60	1.06	325.76	199.14	124.14	23 25 55	112.6	14.71	305.81

DIFFERENTIAL CORRECTIONS

TDE -.2212 TRA -.6357 TC3 .4361 BAU .0977
RDE -.3904 RRA .1546 RC3 .1117 FAU .06062
FDE -.0631 FRA .8229 FC3-3.2323 BSP 1640
BDE .4488 BRA .6542 BC3 .4502 FSP 356

MID-COURSE EXECUTION ACCURACY

SGT 1112.2 SGR 613.5 SG3 251.8
RRT -.0593 RRF .0754 RTF -.6789
SGB 1270.2 R23 -.0177 R13 .6796
SG1 1113.1 SG2 611.9 THA 177.31

ORBIT DETERMINATION ACCURACY

ST 21.8 SR 28.0 SS 12.1
CRT .6240 CRS -.3422 CST .5090
LSA 32.3 MSA 19.0 SSA 1.6
EL1 32.3 EL2 14.8 ALF 56.01

LAUNCH DATE MAY 24 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 21 1971

HELIOCENTRIC CONIC DISTANCE 307.241 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	33.226	GAL	1.25	AZL	91.72	HCA	101.23	SMA	204.79	ECC	.26107	INC	1.7217	V1	29.409
RP	206.84	LAP	-1.69	LOP	343.43	VP	25.203	GAP	15.12	AZP	89.66	TAL	6.02	TAP	107.25	RCA	151.32	APO	258.25	V2	26.477
RC	71.130	GL	-14.65	GP	-1.54	ZAL	84.18	ZAP	161.04	ETS	184.66	ZAE	168.16	ETE	7.84	ZAC	97.57	ETC	279.02	LVI	-18.20

PLANETOCENTRIC CONIC

C3	15.565	VHL	3.945	DLA	-26.51	RAL	333.92	RAD	6640.8	VEL	11.645	PTH	6.68	VHP	6.625	DPA	-16.54	RAP	327.99	ECC	1.2562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 41	2529.25	-8.86	67.67	189.22	136.94	15 59 50	1529.2	9.53	51.91
60.00	16 32 47	2329.47	-3.62	54.67	194.22	130.17	17 11 37	1329.5	12.40	36.62
70.00	18 10 6	2043.32	1.92	35.67	198.42	124.11	18 44 10	1043.3	15.50	15.63
80.00	20 10 17	1667.16	7.15	10.33	201.64	119.07	20 38 4	667.2	18.45	348.67
90.00	22 2 16	1305.99	9.85	345.21	203.08	116.64	22 24 2	306.0	19.99	322.77
100.00	22 53 9	1141.64	7.15	331.70	201.64	119.07	23 12 10	141.6	18.45	310.04
110.00	23 9 33	1090.13	1.92	324.58	198.42	124.11	23 27 43	90.1	15.50	304.54

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2142	TRA	-.6249	TC3	.4639	BAU	.0993	SGT	1122.2	SGR	613.0	SG3	269.3	ST	21.8	SR	28.0	SS	12.8
RDE	-.3820	RRA	.1511	RC3	.1123	FAU	.06361	RRT	-.0636	RRF	.0816	RTF	-.6824	CRT	.6166	CRS	-.3862	CST	.4760
FDE	-.0801	FRA	.8514	FC3	-3.5379	BSP	1667	SGB	1278.7	R23	-.0200	R13	.6832	LSA	32.2	MSA	19.4	SSA	1.6
BDE	.4380	BRA	.6429	BC3	.4773	FSP	385	SG1	1123.2	SG2	611.3	THA	177.17	EL1	32.2	EL2	14.9	ALF	56.19

LAUNCH DATE MAY 24 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 23 1971

HELIOCENTRIC CONIC DISTANCE 310.958 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	33.145	GAL	1.28	AZL	91.71	HCA	102.49	SMA	203.09	ECC	.25495	INC	1.7122	V1	29.409
RP	206.90	LAP	-1.67	LOP	344.70	VP	25.088	GAP	14.73	AZP	89.63	TAL	6.32	TAP	108.81	RCA	151.31	APO	254.87	V2	26.470
RC	72.517	GL	-14.84	GP	-1.59	ZAL	83.76	ZAP	159.82	ETS	184.51	ZAE	168.45	ETE	7.05	ZAC	97.50	ETC	279.02	LVI	-18.16

PLANETOCENTRIC CONIC

C3	14.950	VHL	3.866	DLA	-26.84	RAL	333.56	RAD	6640.5	VEL	11.619	PTH	6.66	VHP	6.414	DPA	-16.57	RAP	328.07	ECC	1.2460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 54	2512.91	-8.04	66.97	188.51	137.05	15 59 47	1512.9	10.34	51.20
60.00	16 33 43	2311.25	-2.82	53.80	193.51	130.22	17 12 15	1311.2	13.18	35.70
70.00	18 12 14	2021.60	2.75	34.53	197.72	124.06	18 45 55	1021.6	16.25	14.39
80.00	20 14 41	1638.27	8.10	8.72	201.01	118.84	20 42 0	638.3	19.24	346.89
90.00	22 9 17	1268.73	10.98	343.06	202.53	116.22	22 30 26	268.7	20.85	320.38
100.00	22 57 33	1112.75	8.10	330.09	201.01	118.84	23 16 6	112.7	19.24	308.25
110.00	23 11 40	1068.42	2.75	323.45	197.72	124.06	23 29 28	68.4	16.25	303.31

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2075	TRA	-.6146	TC3	.4913	BAU	.1007	SGT	1131.6	SGR	612.2	SG3	288.1	ST	21.7	SR	27.9	SS	13.0
RDE	-.3739	RRA	.1479	RC3	.1123	FAU	.06681	RRT	-.0683	RRF	.0860	RTF	-.6856	CRT	.6093	CRS	-.4254	CST	.4463
FDE	-.0972	FRA	.8816	FC3	-3.8690	BSP	1687	SGB	1286.6	R23	-.0221	R13	.6865	LSA	32.1	MSA	19.7	SSA	1.6
BDE	.4276	BRA	.6321	BC3	.5040	FSP	415	SG1	1132.7	SG2	610.2	THA	177.02	EL1	32.0	EL2	15.0	ALF	56.38

LAUNCH DATE MAY 24 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 25 1971

HELIOCENTRIC CONIC DISTANCE 314.717 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	33.068	GAL	1.32	AZL	91.70	HCA	103.76	SMA	201.52	ECC	.24924	INC	1.7026	V1	29.409
RP	206.96	LAP	-1.65	LOP	345.96	VP	24.979	GAP	14.35	AZP	89.59	TAL	6.62	TAP	110.37	RCA	151.30	APO	251.75	V2	26.462
RC	73.950	GL	-15.01	GP	-1.65	ZAL	83.35	ZAP	158.59	ETS	184.38	ZAE	168.81	ETE	6.23	ZAC	97.44	ETC	279.03	LVI	-18.11

PLANETOCENTRIC CONIC

C3	14.386	VHL	3.793	DLA	-27.15	RAL	333.20	RAD	6640.2	VEL	11.595	PTH	6.64	VHP	6.211	DPA	-16.61	RAP	328.11	ECC	1.2360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 5	2497.33	-7.26	66.31	187.83	137.15	15 59 43	1497.3	11.11	50.53
60.00	16 34 36	2293.82	-2.05	52.97	192.82	130.26	17 12 50	1293.8	13.91	34.81
70.00	18 14 18	2000.67	3.54	33.44	197.06	123.99	18 47 38	1000.7	16.97	13.20
80.00	20 19 11	1609.73	9.03	7.11	200.41	118.58	20 46 1	609.7	19.99	345.11
90.00	22 16 55	1230.04	12.13	340.80	202.03	115.74	22 37 25	230.0	21.71	317.87
100.00	23 2 3	1084.20	9.03	328.48	200.41	118.58	23 20 7	84.2	19.99	306.47
110.00	23 13 44	1047.49	3.54	322.35	197.06	123.99	23 31 11	47.5	16.97	302.12

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2010	TRA	-.6040	TC3	.5180	BAU	.1019	SGT	1139.3	SGR	611.1	SG3	308.1	ST	21.8	SR	27.9	SS	13.6
RDE	-.3661	RRA	.1448	RC3	.1114	FAU	.07024	RRT	-.0731	RRF	.0951	RTF	-.6884	CRT	.6021	CRS	-.4635	CST	.4159
FDE	-.1160	FRA	.9134	FC3	-4.2269	BSP	1712	SGB	1292.9	R23	-.0247	R13	.6894	LSA	32.0	MSA	20.0	SSA	1.7
BDE	.4177	BRA	.6211	BC3	.5298	FSP	449	SG1	1140.5	SG2	608.8	THA	176.86	EL1	31.9	EL2	15.1	ALF	56.59

LAUNCH DATE MAY 24 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 27 1971

HELIOCENTRIC CONIC DISTANCE 318.515 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.996	GAL	1.35	AZL	91.69	HCA	105.02	SMA	200.08	ECC	.24391	INC	1.6929	V1	29.409
RP	207.04	LAP	-1.64	LOP	347.23	VP	24.874	GAP	13.98	AZP	89.56	TAL	6.90	TAP	111.93	RCA	151.28	APO	248.89	V2	26.454
RC	75.426	GL	-15.17	GP	-1.71	ZAL	82.95	ZAP	157.32	ETS	184.26	ZAE	169.25	ETE	5.39	ZAC	97.39	ETC	279.03	LVI	-18.06

PLANETOCENTRIC CONIC

C3	13.868	VHL	3.724	DLA	-27.45	RAL	332.84	RAD	6640.0	VEL	11.573	PTH	6.62	VHP	6.016	DPA	-16.67	RAP	328.13	ECC	1.2282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 14	2482.52	-6.52	65.68	187.18	137.23	15 59 36	1482.5	11.84	49.88
60.00	16 35 25	2277.20	-1.32	52.17	192.16	130.28	17 13 22	1277.2	14.61	33.97
70.00	18 16 18	1980.56	4.31	32.38	196.42	123.91	18 49 18	980.6	17.65	12.04
80.00	20 23 45	1581.54	9.95	5.52	199.85	118.30	20 50 7	581.5	20.72	343.33
90.00	22 25 27	1189.13	13.33	338.40	201.59	115.17	22 45 16	189.1	22.58	315.18
100.00	23 6 37	1056.01	9.95	326.89	199.85	118.30	23 24 13	56.0	20.72	304.70
110.00	23 15 44	1027.38	4.31	321.30	196.42	123.91	23 32 51	27.4	17.65	300.96

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1950	TRA	-.5936	TC3	.5391	BAU	.1020	SGT	1144.7	SGR	609.7	SG3	329.1	ST	21.5	SR	27.8	SS	14.1
RDE	-.3587	RRA	.1419	RC3	.1097	FAU	.07377	RRT	-.0785	RRF	.1024	RTF	-.6896	CRT	.5956	CRS	-.4950	CST	.3905
FDE	-.1341	FRA	.9478	FC3	-4.6055	BSP	1717	SGB	1296.9	R23	-.0272	R13	.6907	LSA	32.0	MSA	20.4	SSA	1.7
BDE	.4083	BRA	.6103	BC3	.5502	FSP	483	SG1	1146.0	SG2	607.1	THA	176.67	EL1	31.8	EL2	15.2	ALF	56.78

LAUNCH DATE MAY 24 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 29 1971

HELIOCENTRIC CONIC DISTANCE 322.347 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.929 GAL 1.38 AZL 91.68 HCA 106.29 SMA 198.76 ECC .23893 INC 1.6832 V1 29.409
RP 207.12 LAP -1.62 LOP 348.49 VP 24.775 GAP 13.62 AZP 89.53 TAL 7.19 TAP 113.47 RCA 151.27 APO 246.24 V2 26.444
RC 76.944 GL -15.32 GP -1.77 ZAL 82.57 ZAP 156.03 ETS 184.16 ZAE 169.76 ETE 4.49 ZAC 97.33 ETC 279.02 LVI -17.99

PLANETOCENTRIC CONIC

C3 13.392 VHL 3.660 DLA -27.73 RAL 332.49 RAD 6639.7 VEL 11.552 PTH 6.60 VHP 5.828 DPA -16.74 RAP 328.13 ECC 1.2204

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 20	2468.49	-5.82	65.08	186.55	137.30	15 59 28	1468.5	12.54	49.27
60.00	16 36 10	2261.42	-.63	51.42	191.53	130.30	17 13 52	1261.4	15.27	33.15
70.00	18 18 13	1961.33	5.04	31.37	195.81	123.82	18 50 55	961.3	18.30	10.92
80.00	20 28 25	1553.73	10.84	3.94	199.32	117.99	20 54 19	553.7	21.42	341.56
90.00	22 35 20	1144.44	14.61	335.74	201.22	114.49	22 54 24	144.4	23.46	312.20
100.00	23 11 17	1028.21	10.84	325.31	199.32	117.99	23 28 25	28.2	21.42	302.93
110.00	23 17 40	1008.15	5.04	320.29	195.81	123.82	23 34 28	8.1	18.30	299.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1892 TRA -.5830 TC3 .5597 BAU .1020 SGT 1148.4 SGR 608.0 SG3 351.7 ST 21.4 SR 27.8 SS 14.8
RDE -.3515 RRA .1392 RC3 .1070 FAU .07762 RRT -.0842 RRF .1109 RTF -.6898 CRT .5893 CRS -.5298 CST .3602
FDE -.1557 FRA .9828 FC3-5.0179 BSP 1729 SGB 1299.4 R23 -.0306 R13 .6912 LSA 31.9 MSA 20.7 SSA 1.8
BDE .3992 BRA .5994 BC3 .5699 FSP 522 SG1 1150.0 SG2 605.0 THA 176.47 EL1 31.6 EL2 15.2 ALF 57.00

LAUNCH DATE MAY 24 1971 FLIGHT TIME 130.00 ARRIVAL DATE OCT 1 1971

HELIOCENTRIC CONIC DISTANCE 326.212 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.866 GAL 1.41 AZL 91.67 HCA 107.55 SMA 197.53 ECC .23428 INC 1.6732 V1 29.409
RP 207.21 LAP -1.60 LOP 349.76 VP 24.680 GAP 13.26 AZP 89.50 TAL 7.46 TAP 115.01 RCA 151.25 APO 243.81 V2 26.433
RC 78.502 GL -15.46 GP -1.84 ZAL 82.19 ZAP 154.70 ETS 184.05 ZAE 170.34 ETE 3.51 ZAC 97.27 ETC 279.01 LVI -17.91

PLANETOCENTRIC CONIC

C3 12.955 VHL 3.599 DLA -28.00 RAL 332.15 RAD 6639.5 VEL 11.534 PTH 6.58 VHP 5.847 DPA -16.82 RAP 328.09 ECC 1.2132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 23	2455.24	-5.16	64.53	185.95	137.36	15 59 19	1455.2	13.19	48.68
60.00	16 36 52	2246.49	.03	50.71	190.93	130.30	17 14 18	1246.5	15.89	32.38
70.00	18 20 4	1943.00	5.73	30.41	195.23	123.73	18 52 27	943.0	18.90	9.85
80.00	20 33 9	1526.33	11.71	2.37	198.82	117.66	20 58 35	526.3	22.09	339.80
90.00	22 47 48	1092.05	16.06	332.58	200.97	113.59	23 6 0	92.1	24.41	308.66
100.00	23 16 1	1000.80	11.71	323.74	198.82	117.66	23 32 41	.8	22.09	301.17
110.00	23 19 30	6277.86	5.73	297.23	195.23	123.73	25 4 8	5277.9	18.90	276.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1836 TRA -.5725 TC3 .5768 BAU .1015 SGT 1150.3 SGR 606.1 SG3 375.5 ST 21.3 SR 27.7 SS 15.4
RDE -.3447 RRA .1367 RC3 .1034 FAU .08165 RRT -.0905 RRF .1202 RTF -.6894 CRT .5830 CRS -.5611 CST .3324
FDE -.1782 FRA 1.0203 FC3-5.4560 BSP 1737 SGB 1300.2 R23 -.0343 R13 .6910 LSA 31.9 MSA 20.9 SSA 1.8
BDE .3905 BRA .5886 BC3 .5860 FSP 561 SG1 1152.1 SG2 602.7 THA 176.24 EL1 31.4 EL2 15.2 ALF 57.23

LAUNCH DATE MAY 24 1971 FLIGHT TIME 132.00 ARRIVAL DATE OCT 3 1971

HELIOCENTRIC CONIC DISTANCE 330.106 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.807 GAL 1.44 AZL 91.66 HCA 108.81 SMA 196.40 ECC .22995 INC 1.6632 V1 29.409
RP 207.31 LAP -1.57 LOP 351.02 VP 24.589 GAP 12.91 AZP 89.46 TAL 7.72 TAP 116.53 RCA 151.24 APO 241.56 V2 26.422
RC 80.098 GL -15.59 GP -1.90 ZAL 81.83 ZAP 153.35 ETS 183.96 ZAE 170.99 ETE 2.41 ZAC 97.22 ETC 278.99 LVI -17.82

PLANETOCENTRIC CONIC

C3 12.553 VHL 3.543 DLA -28.25 RAL 331.82 RAD 6639.3 VEL 11.516 PTH 6.56 VHP 5.473 DPA -16.91 RAP 328.02 ECC 1.2066

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 25	2442.78	-4.54	64.00	185.38	137.41	15 59 7	1442.8	13.80	48.13
60.00	16 37 29	2232.42	.65	50.04	190.36	130.30	17 14 42	1232.4	16.47	31.65
70.00	18 21 49	1925.62	6.39	29.49	194.68	123.62	18 53 54	925.6	19.48	8.82
80.00	20 37 57	1499.35	12.56	-.82	198.36	117.31	21 2 56	499.3	22.73	336.05
90.00	23 9 36	1010.15	18.23	327.54	201.05	112.00	23 26 26	10.1	25.71	303.02
100.00	23 20 49	6261.86	12.56	300.09	198.36	117.31	25 5 11	5261.9	22.73	277.32
110.00	23 21 15	6260.48	6.39	296.31	194.68	123.62	25 5 35	5260.5	19.48	275.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1788 TRA -.5615 TC3 .5898 BAU .1003 SGT 1149.2 SGR 603.9 SG3 400.7 ST 21.2 SR 27.6 SS 16.1
RDE -.3381 RRA .1344 RC3 .0988 FAU .08589 RRT -.0966 RRF .1298 RTF -.6876 CRT .5786 CRS -.5880 CST .3062
FDE -.2008 FRA 1.0595 FC3-5.9237 BSP 1738 SGB 1298.2 R23 -.0387 R13 .6895 LSA 31.9 MSA 21.2 SSA 1.8
BDE .3824 BRA .5774 BC3 .5979 FSP 606 SG1 1151.3 SG2 600.0 THA 176.01 EL1 31.3 EL2 15.2 ALF 57.40

LAUNCH DATE MAY 24 1971 FLIGHT TIME 134.00 ARRIVAL DATE OCT 5 1971

HELIOCENTRIC CONIC DISTANCE 334.028 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.752 GAL 1.47 AZL 91.65 HCA 110.08 SMA 195.36 ECC .22590 INC 1.6530 V1 29.409
RP 207.42 LAP -1.55 LOP 352.28 VP 24.502 GAP 12.57 AZP 89.43 TAL 7.97 TAP 118.05 RCA 151.23 APO 239.49 V2 26.409
RC 81.730 GL -15.70 GP -1.97 ZAL 81.49 ZAP 151.96 ETS 183.87 ZAE 171.72 ETE 1.15 ZAC 97.17 ETC 278.96 LVI -17.73

PLANETOCENTRIC CONIC

C3 12.183 VHL 3.490 DLA -28.48 RAL 331.49 RAD 6639.2 VEL 11.500 PTH 6.55 VHP 5.306 DPA -17.02 RAP 327.93 ECC 1.2005

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 23	2431.07	-3.95	63.51	184.83	137.45	15 58 54	1431.1	14.37	47.60
60.00	16 38 3	2219.18	1.23	49.40	189.81	130.29	17 15 2	1219.2	17.02	30.95
70.00	18 23 27	1909.17	7.01	28.62	194.15	123.51	18 55 16	909.2	20.01	7.85
80.00	20 42 50	1472.69	13.38	359.27	197.92	116.94	21 7 23	472.7	23.33	336.30
86.48	22 50 47	1060.58	19.48	331.76	200.76	111.19	23 8 27	60.6	26.51	306.89
100.00	23 25 42	6235.20	13.38	298.55	197.92	116.94	25 9 37	5235.2	23.33	275.58
110.00	23 22 54	6244.03	7.01	295.44	194.15	123.51	25 6 58	5244.0	20.01	274.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1649 TRA -.5414 TC3 .6274 BAU .1033 SGT 1134.7 SGR 601.5 SG3 428.0 ST 20.3 SR 27.5 SS 16.8
RDE -.3318 RRA .1322 RC3 .0927 FAU .09064 RRT -.1080 RRF .1410 RTF -.6997 CRT .5591 CRS -.6247 CST .2847
FDE -.2313 FRA 1.0941 FC3-6.4408 BSP 1614 SGB 1284.2 R23 -.0367 R13 .7018 LSA 31.6 MSA 21.1 SSA 1.8
BDE .3706 BRA .5573 BC3 .6342 FSP 644 SG1 1137.2 SG2 596.7 THA 175.47 EL1 30.7 EL2 15.1 ALF 59.33

LAUNCH DATE MAY 24 1971 FLIGHT TIME 136.00 ARRIVAL DATE OCT 7 1971

HELIOCENTRIC CONIC DISTANCE 337.975 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.701 GAL 1.49 AZL 91.64 HCA 111.33 SMA 194.40 ECC .22214 INC 1.6427 V1 29.409
RP 207.54 LAP -1.53 LOP 353.54 VP 24.418 GAP 12.24 AZP 89.40 TAL 8.21 TAP 119.54 RCA 151.21 APO 237.58 V2 26.395
RC 83.399 GL -15.80 GP -2.05 ZAL 81.17 ZAP 150.54 ETS 183.79 ZAE 172.51 ETE 359.62 ZAC 97.12 ETC 278.93 LVI -17.62

PLANETOCENTRIC CONIC

C3 11.843 VHL 3.441 DLA -28.69 RAL 331.19 RAD 6639.0 VEL 11.486 PTH 6.53 VHP 5.146 DPA -17.15 RAP 327.80 ECC 1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 21	2420.21	-3.40	63.05	184.32	137.48	15 58 41	1420.2	14.90	47.12
60.00	16 38 32	2206.89	1.77	48.82	189.29	130.27	17 15 19	1206.9	17.52	30.30
70.00	18 24 58	1893.84	7.58	27.80	193.66	123.40	18 56 32	893.8	20.50	6.93
80.00	20 47 44	1446.71	14.18	357.75	197.53	116.55	21 11 51	446.7	23.90	334.58
84.93	22 36 48	1095.87	19.77	334.47	200.12	111.23	22 55 4	95.9	26.78	309.53
100.00	23 30 36	6209.22	14.18	297.03	197.53	116.55	25 14 5	5209.2	23.90	273.86
110.00	23 24 25	6228.69	7.58	294.63	193.66	123.40	25 8 14	5228.7	20.50	273.75

DIFFERENTIAL CORRECTIONS

TDE -.1649 TRA -.5348 TC3 .6158 BAU .0984
RDE -.3257 RRA .1303 RC3 .0860 FAU .09524
FDE -.2555 FRA 1.1406 FC3-6.9622 BSP 1655
BDE .3650 BRA .5505 BC3 .6218 FSP 694

MID-COURSE EXECUTION ACCURACY

SGT 1133.8 SGR 598.9 SG3 455.8
RRT -.1136 RRF .1527 RTF -.6875
SGB 1282.3 R23 -.0454 R13 .6901
SG1 1136.6 SG2 593.6 THA 175.28

ORBIT DETERMINATION ACCURACY

ST 20.5 SR 27.4 SS 17.6
CRT .5625 CRS -.6447 CST .2558
LSA 31.9 MSA 21.4 SSA 1.9
EL1 30.7 EL2 15.1 ALF 58.73

LAUNCH DATE MAY 24 1971 FLIGHT TIME 138.00 ARRIVAL DATE OCT 9 1971

HELIOCENTRIC CONIC DISTANCE 341.944 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.653 GAL 1.51 AZL 91.63 HCA 112.59 SMA 193.51 ECC .21864 INC 1.6322 V1 29.409
RP 207.66 LAP -1.51 LOP 354.80 VP 24.338 GAP 11.92 AZP 89.37 TAL 8.43 TAP 121.03 RCA 151.20 APO 235.82 V2 26.381
RC 85.104 GL -15.89 GP -2.13 ZAL 80.87 ZAP 149.09 ETS 183.70 ZAE 173.36 ETE 357.71 ZAC 97.07 ETC 278.89 LVI -17.49

PLANETOCENTRIC CONIC

C3 11.529 VHL 3.395 DLA -28.89 RAL 330.90 RAD 6638.8 VEL 11.472 PTH 6.52 VHP 4.991 DPA -17.29 RAP 327.63 ECC 1.1897

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 16	2410.12	-2.90	62.63	183.84	137.51	15 58 26	1410.1	15.39	46.66
60.00	16 38 57	2195.48	2.27	48.27	188.81	130.25	17 15 33	1195.5	17.99	29.70
70.00	18 26 22	1879.55	8.12	27.04	193.19	123.29	18 57 42	879.6	20.95	6.07
80.00	20 52 41	1421.25	14.95	356.26	197.16	116.15	21 16 22	421.2	24.44	332.88
83.85	22 26 49	1118.83	20.04	336.26	199.50	111.25	22 45 27	118.8	27.03	311.27
100.00	23 35 33	6183.76	14.95	295.53	197.16	116.15	25 18 37	5183.8	24.44	272.16
110.00	23 25 48	6214.41	8.12	293.87	193.19	123.29	25 9 23	5214.4	20.95	272.89

DIFFERENTIAL CORRECTIONS

TDE -.1647 TRA -.5257 TC3 .6054 BAU .0941
RDE -.3197 RRA .1286 RC3 .0780 FAU .10019
FDE -.2775 FRA 1.1864 FC3-7.5238 BSP 1664
BDE .3596 BRA .5412 BC3 .6104 FSP 746

MID-COURSE EXECUTION ACCURACY

SGT 1128.1 SGR 596.0 SG3 485.3
RRT -.1181 RRF .1639 RTF -.6765
SGB 1275.9 R23 -.0542 R13 .6796
SG1 1131.1 SG2 590.3 THA 175.09

ORBIT DETERMINATION ACCURACY

ST 20.6 SR 27.2 SS 18.2
CRT .5676 CRS -.6596 CST .2306
LSA 32.0 MSA 21.6 SSA 1.9
EL1 30.6 EL2 15.1 ALF 58.23

LAUNCH DATE MAY 24 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 11 1971

HELIOCENTRIC CONIC DISTANCE 345.934 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.609 GAL 1.53 AZL 91.62 HCA 113.85 SMA 192.69 ECC .21537 INC 1.6215 V1 29.409
RP 207.80 LAP -1.48 LOP 356.05 VP 24.262 GAP 11.61 AZP 89.34 TAL 8.64 TAP 122.49 RCA 151.19 APO 234.19 V2 26.365
RC 86.843 GL -15.97 GP -2.21 ZAL 80.59 ZAP 147.60 ETS 183.62 ZAE 174.28 ETE 355.17 ZAC 97.03 ETC 278.85 LVI -17.36

PLANETOCENTRIC CONIC

C3 11.239 VHL 3.352 DLA -29.06 RAL 330.64 RAD 6638.7 VEL 11.460 PTH 6.51 VHP 4.844 DPA -17.44 RAP 327.43 ECC 1.1850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 10	2400.82	-2.43	62.24	183.38	137.53	15 58 10	1400.8	15.84	46.24
60.00	16 39 18	2184.96	2.74	47.77	188.34	130.22	17 15 43	1185.0	18.41	29.14
70.00	18 27 37	1866.36	8.61	26.34	192.74	123.18	18 58 44	866.4	21.37	5.27
80.00	20 57 38	1396.39	15.69	354.78	196.83	115.73	21 20 55	396.4	24.95	331.21
83.01	22 18 58	1135.35	20.28	337.58	198.93	111.27	22 37 54	135.3	27.26	312.54
100.00	23 40 30	6158.90	15.69	294.06	196.83	115.73	25 23 9	5158.9	24.95	270.48
110.00	23 27 4	6201.22	8.61	293.16	192.74	123.18	25 10 25	5201.2	21.37	272.09

DIFFERENTIAL CORRECTIONS

TDE -.1631 TRA -.5160 TC3 .5911 BAU .0894
RDE -.3139 RRA .1271 RC3 .0687 FAU .10538
FDE -.3040 FRA 1.2364 FC3-8.1173 BSP 1660
BDE .3538 BRA .5314 BC3 .5951 FSP 802

MID-COURSE EXECUTION ACCURACY

SGT 1119.2 SGR 593.1 SG3 516.5
RRT -.1249 RRF .1773 RTF -.[illegible]53
SGB 1266.6 R23 -.0631 R13 .6691
SG1 1122.6 SG2 586.7 THA 174.78

ORBIT DETERMINATION ACCURACY

ST 20.6 SR 27.1 SS 19.0
CRT .5695 CRS -.6770 CST .2094
LSA 32.2 MSA 21.8 SSA 2.0
EL1 30.5 EL2 15.0 ALF 58.01

LAUNCH DATE MAY 24 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 13 1971

HELIOCENTRIC CONIC DISTANCE 349.944 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.567 GAL 1.54 AZL 91.61 HCA 115.10 SMA 191.94 ECC .21234 INC 1.6106 V1 29.409
RP 207.94 LAP -1.46 LOP 357.31 VP 24.188 GAP 11.30 AZP 89.32 TAL 8.84 TAP 123.94 RCA 151.18 APO 232.69 V2 26.349
RC 88.616 GL -16.04 GP -2.29 ZAL 80.34 ZAP 146.07 ETS 183.54 ZAE 175.25 ETE 351.53 ZAC 96.99 ETC 278.79 LVI -17.21

PLANETOCENTRIC CONIC

C3 10.972 VHL 3.312 DLA -29.22 RAL 330.39 RAD 6638.5 VEL 11.448 PTH 6.50 VHP 4.702 DPA -17.61 RAP 327.20 ECC 1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 18 1	2392.28	-2.00	61.88	182.95	137.54	15 57 54	1392.3	16.26	45.85
60.00	16 39 34	2175.34	3.16	47.31	187.91	130.20	17 15 50	1175.3	18.80	28.62
70.00	18 28 43	1854.30	9.06	25.69	192.32	123.07	18 59 37	854.3	21.74	4.53
80.00	21 2 34	1372.24	16.40	353.34	196.52	115.31	21 25 26	372.2	25.41	329.57
82.34	22 12 38	1147.59	20.51	338.58	198.38	111.28	22 31 46	147.6	27.46	313.48
100.00	23 45 26	6134.76	16.40	292.61	196.52	115.31	25 27 41	5134.8	25.41	268.64
110.00	23 28 10	6189.16	9.06	292.52	192.32	123.07	25 11 19	5189.2	21.74	271.36

DIFFERENTIAL CORRECTIONS

TDE -.1612 TRA -.5053 TC3 .5706 BAU .0841
RDE -.3084 RRA .1258 RC3 .0582 FAU .11078
FDE -.3324 FRA 1.2879 FC3-8.7407 BSP 1633
BDE .3480 BRA .5207 BC3 .5735 FSP 858

MID-COURSE EXECUTION ACCURACY

SGT 1106.1 SGR 590.1 SG3 549.0
RRT -.1323 RRF .1919 RTF -.6523
SGB 1253.7 R23 -.0730 R13 .6569
SG1 1109.9 SG2 582.9 THA 174.42

ORBIT DETERMINATION ACCURACY

ST 20.5 SR 26.9 SS 19.8
CRT .5716 CRS -.6939 CST .1798
LSA 32.4 MSA 21.9 SSA 2.0
EL1 30.4 EL2 14.9 ALF 57.90

LAUNCH DATE MAY 24 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 15 1971

HELIOCENTRIC CONIC DISTANCE 353.972 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.528	GAL	1.56	AZL	91.60	HCA	116.36	SMA	191.24	ECC	.20952	INC	1.5995	V1	29.409
RP	208.08	LAP	-1.43	LOP	358.56	VP	24.117	GAP	11.00	AZP	89.29	TAL	9.02	TAP	125.37	RCA	151.17	APO	231.31	V2	26.332
RC	90.421	GL	-16.09	GP	-2.38	ZAL	80.11	ZAP	144.51	ETS	183.47	ZAE	176.26	ETE	345.79	ZAC	96.94	ETC	278.73	LVI	-17.05

PLANETOCENTRIC CONIC

C3	10.725	VHL	3.275	DLA	-29.35	RAL	330.16	RAD	6638.4	VEL	11.437	PTH	6.49	VHP	4.566	DPA	-17.80	RAP	326.93	ECC	1.1765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 52	2384.51	-1.61	61.56	182.56	137.56	15 57 37	1384.5	16.63	45.50
60.00	16 39 46	2166.62	3.54	46.89	187.51	130.17	17 15 53	1166.6	19.15	28.15
70.00	18 29 39	1843.40	9.46	25.11	191.92	122.97	19 0 23	843.4	22.08	3.87
80.00	21 7 25	1348.98	17.07	351.94	196.24	114.87	21 29 54	349.0	25.85	327.98
81.80	22 7 27	1156.66	20.72	339.33	197.88	111.27	22 26 44	156.7	27.65	314.19
100.00	23 50 17	6111.49	17.07	291.21	196.24	114.87	25 32 9	5111.5	25.85	267.25
110.00	23 29 6	6178.26	9.46	291.93	191.92	122.97	25 12 4	5178.3	22.08	270.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1599	TRA	-.4937	TC3	.5448	BAU	.0784	SGT	1089.7	SGR	586.9	SG3	583.2	ST	20.4	SR	26.8	SS	20.5
RDE	-.3030	RRA	.1246	RC3	.0463	FAU	.11647	RRT	-.1387	RRF	.2072	RTF	-.6372	CRT	.5763	CRS	-.7087	CST	.1537
FDE	-.3609	FRA	1.3404	FC3	-9.4016	BSP	1597	SGB	1237.7	R23	-.0847	R13	.6428	LSA	32.7	MSA	22.0	SSA	2.0
BDE	.3426	BRA	.5091	BC3	.5467	FSP	919	SG1	1093.9	SG2	579.0	THA	174.06	EL1	30.3	EL2	14.8	ALF	57.73

LAUNCH DATE MAY 24 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 17 1971

HELIOCENTRIC CONIC DISTANCE 358.017 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.492	GAL	1.57	AZL	91.59	HCA	117.61	SMA	190.60	ECC	.20691	INC	1.5882	V1	29.409
RP	208.24	LAP	-1.41	LOP	359.81	VP	24.049	GAP	10.71	AZP	89.26	TAL	9.18	TAP	126.78	RCA	151.16	APO	230.04	V2	26.313
RC	92.259	GL	-16.13	GP	-2.47	ZAL	79.90	ZAP	142.92	ETS	183.39	ZAE	177.26	ETE	335.41	ZAC	96.90	ETC	278.67	LVI	-16.88

PLANETOCENTRIC CONIC

C3	10.497	VHL	3.240	DLA	-29.47	RAL	329.95	RAD	6638.3	VEL	11.428	PTH	6.48	VHP	4.437	DPA	-18.00	RAP	326.62	ECC	1.1728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 41	2377.51	-1.26	61.27	182.19	137.56	15 57 19	1377.5	16.97	45.17
60.00	16 39 54	2158.80	3.89	46.51	187.13	130.14	17 15 53	1158.8	19.47	27.73
70.00	18 30 25	1833.68	9.82	24.59	191.55	122.88	19 0 59	833.7	22.37	3.27
80.00	21 12 7	1326.86	17.70	350.60	195.98	114.45	21 34 14	326.9	26.24	326.45
81.36	22 3 14	1163.18	20.90	339.89	197.41	111.26	22 22 38	163.2	27.80	314.71
100.00	23 54 59	6089.37	17.70	289.87	195.98	114.45	25 36 28	5089.4	26.24	265.72
110.00	23 29 52	6168.54	9.82	291.41	191.55	122.88	25 12 40	5168.5	22.37	270.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1594	TRA	-.4819	TC3	.5112	BAU	.0719	SGT	1071.1	SGR	583.7	SG3	619.1	ST	20.4	SR	26.6	SS	21.3
RDE	-.2977	RRA	.1236	RC3	.0330	FAU	.12244	RRT	-.1445	RRF	.2233	RTF	-.6192	CRT	.5832	CRS	-.7194	CST	.1298
FDE	-.3876	FRA	1.3970	FC	-10.0981	BSP	1546	SGB	1219.8	R23	-.0984	R13	.6261	LSA	33.0	MSA	22.0	SSA	2.0
BDE	.3377	BRA	.4975	BC3	.5123	FSP	981	SG1	1075.8	SG2	575.1	THA	173.69	EL1	30.1	EL2	14.6	ALF	57.43

LAUNCH DATE MAY 24 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 19 1971

HELIOCENTRIC CONIC DISTANCE 362.077 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.459	GAL	1.58	AZL	91.58	HCA	118.86	SMA	190.01	ECC	.20448	INC	1.5766	V1	29.409
RP	208.41	LAP	-1.38	LOP	1.06	VP	23.983	GAP	10.43	AZP	89.24	TAL	9.32	TAP	128.18	RCA	151.16	APO	228.86	V2	26.294
RC	94.128	GL	-16.16	GP	-2.57	ZAL	79.72	ZAP	141.29	ETS	183.31	ZAE	178.14	ETE	313.26	ZAC	96.87	ETC	278.59	LVI	-16.69

PLANETOCENTRIC CONIC

C3	10.286	VHL	3.207	DLA	-29.56	RAL	329.77	RAD	6638.2	VEL	11.418	PTH	6.47	VHP	4.313	DPA	-18.22	RAP	326.28	ECC	1.1693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 29	2371.25	-.95	61.01	181.65	137.57	15 57 0	1371.3	17.27	44.89
60.00	16 39 57	2151.87	4.19	46.18	186.78	130.12	17 15 49	1151.9	19.74	27.35
70.00	18 31 0	1825.18	10.14	24.13	191.21	122.79	19 1 26	825.2	22.63	2.74
80.00	21 16 31	1306.27	18.27	349.34	195.74	114.03	21 38 18	306.3	26.59	325.02
81.02	21 59 52	1167.59	21.06	340.29	196.98	111.23	22 19 19	167.6	27.94	313.06
100.00	0 3 19	6068.78	18.27	288.61	195.74	114.03	1 44 28	5068.8	26.59	264.29
110.00	23 30 27	6160.04	10.14	290.95	191.21	122.79	25 13 7	5160.0	22.63	269.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1597	TRA	-.4698	TC3	.4665	BAU	.0642	SGT	1049.8	SGR	580.5	SG3	656.0	ST	20.3	SR	26.4	SS	22.0
RDE	-.2925	RRA	.1229	RC3	.0184	FAU	.12854	RRT	-.1491	RRF	.2403	RTF	-.[illegible]62	CRT	.5925	CRS	-.7280	CST	.1058
FDE	-.4136	FRA	1.4564	FC	-10.8186	BSP	1494	SGB	1199.6	R23	-.1151	R13	.6047	LSA	33.2	MSA	22.0	SSA	2.1
BDE	.3333	BRA	.4856	BC3	.4669	FSP	1048	SG1	1054.8	SG2	571.2	THA	173.32	EL1	30.1	EL2	14.4	ALF	57.03

LAUNCH DATE MAY 24 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 23 1971

HELIOCENTRIC CONIC DISTANCE 370.238 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.400	GAL	1.59	AZL	91.55	HCA	121.35	SMA	188.97	ECC	.20015	INC	1.5527	V1	29.409
RP	208.76	LAP	-1.33	LOP	3.56	VP	23.857	GAP	9.88	AZP	89.19	TAL	9.55	TAP	130.90	RCA	151.15	APO	226.79	V2	26.254
RC	97.955	GL	-16.19	GP	-2.77	ZAL	79.44	ZAP	137.91	ETS	183.15	ZAE	177.76	ETE	233.11	ZAC	96.79	ETC	278.41	LVI	-16.27

PLANETOCENTRIC CONIC

C3	9.910	VHL	3.148	DLA	-29.68	RAL	329.48	RAD	6638.0	VEL	11.402	PTH	6.45	VHP	4.082	DPA	-18.70	RAP	325.47	ECC	1.1631

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 17 1	2360.92	-.43	60.57	181.26	137.57	15 56 22	1360.9	17.77	44.41
60.00	16 39 49	2140.63	4.68	45.64	186.16	130.07	17 15 30	1140.6	20.19	26.74
70.00	18 31 37	1811.79	10.63	23.40	190.58	122.65	19 1 48	811.8	23.03	1.91
80.00	21 23 41	1272.10	19.21	347.23	195.29	113.31	21 44 53	272.1	27.13	322.63
80.59	21 55 20	1170.93	21.33	340.65	196.21	111.14	22 14 51	170.9	28.14	315.35
100.00	0 10 29	6034.61	19.21	286.51	195.29	113.31	1 51 3	5034.6	27.13	261.90
110.00	23 31 3	6146.65	10.63	290.23	190.58	122.65	25 13 30	5146.6	23.03	268.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1494	TRA	-.4323	TC3	.4003	BAU	.0531	SGT	978.5	SGR	574.7	SG3	738.0	ST	19.2	SR	26.0	SS	23.8
RDE	-.2831	RRA	.1214	RC3	-.0172	FAU	.14251	RRT	-.1653	RRF	.2807	RTF	-.5619	CRT	.5962	CRS	-.7626	CST	.0489
FDE	-.4912	FRA	1.5622	FC	-12.4503	BSP	1207	SGB	1134.8	R23	-.1434	R13	.5757	LSA	34.0	MSA	21.3	SSA	2.1
BDE	.3201	BRA	.4490	BC3	.4006	FSP	1164	SG1	985.4	SG2	562.8	THA	171.75	EL1	29.3	EL2	13.7	ALF	58.67

LAUNCH DATE MAY 24 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 25 1971

HELIOCENTRIC CONIC DISTANCE 374.336 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.373	GAL	1.59	AZL	91.54	HCA	122.59	SMA	188.51	ECC	.19823	INC	1.5403	V1	29.409
RP	208.94	LAP	-1.30	LOP	4.80	VP	23.798	GAP	9.61	AZP	89.17	TAL	9.64	TAP	132.23	RCA	151.14	APO	225.88	V2	26.232
RC	99.910	GL	-16.18	GP	-2.88	ZAL	79.35	ZAP	136.17	ETS	183.06	ZAE	176.59	ETE	216.16	ZAC	96.76	ETC	278.31	LVI	-16.04

PLANETOCENTRIC CONIC

C3	9.742	VHL	3.121	DLA	-29.71	RAL	329.38	RAD	6637.9	VEL	11.395	PTH	6.45	VHP	3.975	DPA	-18.97	RAP	325.02	ECC	1.1603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 16 47	2356.89	-.22	60.41	181.02	137.58	15 56 3	1356.9	17.96	44.22
60.00	16 39 39	2136.40	4.87	45.44	185.90	130.06	17 15 16	1136.4	20.36	26.51
70.00	18 31 37	1807.07	10.80	23.15	190.30	122.60	19 1 44	807.1	23.17	1.62
80.00	21 25 32	1261.52	19.49	346.57	195.05	113.08	21 46 33	261.5	27.29	321.88
80.49	21 54 12	1169.90	21.43	340.61	195.89	111.08	22 13 41	169.9	28.21	315.28
100.00	0 12 20	6024.03	19.49	285.85	195.05	113.08	1 52 44	5024.0	27.29	261.16
110.00	23 31 3	6141.93	10.80	289.97	190.30	122.60	25 13 25	5141.9	23.17	268.44

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1601	TRA	-.4281	TC3	.2890	BAU	.0379	SGT	968.3	SGR	571.6	SG3	776.7	ST	20.0	SR	25.8	SS	24.3
RDE	-.2779	RRA	.1216	RC3	-.0346	FAU	.14848	RRT	-.1562	RRF	.3006	RTF	-.5014	CRT	.6250	CRS	-.7560	CST	.0227
FDE	-.5041	FRA	1.6475	FC-13.1940		BSP	1229	SGB	1124.4	R23	-.1844	R13	.5177	LSA	34.3	MSA	21.8	SSA	2.1
BDE	.3207	BRA	.4450	BC3	.2911	FSP	1252	SG1	974.5	SG2	561.0	THA	172.10	EL1	29.7	EL2	13.6	ALF	56.17

LAUNCH DATE MAY 24 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 27 1971

HELIOCENTRIC CONIC DISTANCE 378.446 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.349	GAL	1.59	AZL	91.53	HCA	123.83	SMA	188.09	ECC	.19646	INC	1.5276	V1	29.409
RP	209.14	LAP	-1.27	LOP	6.04	VP	23.740	GAP	9.35	AZP	89.15	TAL	9.71	TAP	133.54	RCA	151.14	APO	225.05	V2	26.209
RC	101.892	GL	-16.17	GP	-3.00	ZAL	79.29	ZAP	134.39	ETS	182.97	ZAE	175.22	ETE	207.82	ZAC	96.72	ETC	278.20	LVI	-15.79

PLANETOCENTRIC CONIC

C3	9.587	VHL	3.096	DLA	-29.72	RAL	329.30	RAD	6637.8	VEL	11.388	PTH	6.44	VHP	3.874	DPA	-19.25	RAP	324.52	ECC	1.1578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 16 31	2353.56	-.06	60.27	180.80	137.58	15 55 44	1353.6	18.12	44.06
60.00	16 39 25	2133.01	5.02	45.27	185.66	130.04	17 14 58	1133.0	20.49	26.32
70.00	18 31 25	1803.54	10.93	22.96	190.05	122.56	19 1 28	803.5	23.28	1.40
80.00	21 25 51	1256.33	19.63	346.25	194.78	112.96	21 46 48	256.3	27.37	321.52
80.47	21 53 42	1167.35	21.52	340.46	195.60	111.01	22 13 9	167.4	28.25	315.10
100.00	0 12 39	6018.84	19.63	285.53	194.78	112.96	1 52 58	5018.8	27.37	260.79
110.00	23 30 51	6138.40	10.93	289.78	190.05	122.56	25 13 9	5138.4	23.28	268.22

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1651	TRA	-.4165	TC3	.1946	BAU	.0259	SGT	946.3	SGR	568.8	SG3	818.7	ST	20.3	SR	25.6	SS	25.0
RDE	-.2730	RRA	.1216	RC3	-.0547	FAU	.15523	RRT	-.1482	RRF	.3221	RTF	-.4470	CRT	.6451	CRS	-.7562	CST	-.0040
FDE	-.5247	FRA	1.7232	FC-14.0178		BSP	1168	SGB	1104.1	R23	-.2221	R13	.4663	LSA	34.6	MSA	22.0	SSA	2.1
BDE	.3190	BRA	.4339	BC3	.2021	FSP	1334	SG1	952.1	SG2	559.1	THA	172.21	EL1	29.8	EL2	13.3	ALF	54.97

LAUNCH DATE MAY 24 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 29 1971

HELIOCENTRIC CONIC DISTANCE 382.566 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.327	GAL	1.59	AZL	91.51	HCA	125.07	SMA	187.71	ECC	.19483	INC	1.5144	V1	29.409
RP	209.34	LAP	-1.24	LOP	7.28	VP	23.684	GAP	9.10	AZP	89.13	TAL	9.76	TAP	134.83	RCA	151.14	APO	224.28	V2	26.186
RC	103.900	GL	-16.14	GP	-3.11	ZAL	79.25	ZAP	132.58	ETS	182.88	ZAE	173.74	ETE	203.00	ZAC	96.69	ETC	278.08	LVI	-15.53

PLANETOCENTRIC CONIC

C3	9.443	VHL	3.073	DLA	-29.70	RAL	329.25	RAD	6637.8	VEL	11.382	PTH	6.43	VHP	3.778	DPA	-19.55	RAP	323.99	ECC	1.1554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 16 14	2350.89	.08	60.16	180.60	137.58	15 55 25	1350.9	18.25	43.94
60.00	16 39 5	2130.44	5.13	45.15	185.45	130.03	17 14 36	1130.4	20.59	26.18
70.00	18 31 1	1801.21	11.02	22.83	189.81	122.53	19 1 2	801.2	23.35	1.25
80.00	21 24 32	1256.92	19.61	346.29	194.49	112.97	21 45 29	256.9	27.36	321.56
80.51	21 53 50	1163.24	21.58	340.18	195.34	110.92	22 13 14	163.2	28.27	314.80
100.00	0 11 20	6019.43	19.61	285.56	194.49	112.97	1 51 39	5019.4	27.36	260.83
110.00	23 30 27	6136.07	11.02	289.65	189.81	122.53	25 12 43	5136.1	23.35	268.07

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1643	TRA	-.3962	TC3	.1155	BAU	.0176	SGT	910.8	SGR	566.5	SG3	863.5	ST	20.0	SR	25.3	SS	25.7
RDE	-.2685	RRA	.1216	RC3	-.0774	FAU	.16274	RRT	-.1417	RRF	.3460	RTF	-.4966	CRT	.6583	CRS	-.7663	CST	-.0373
FDE	-.5589	FRA	1.7868	FC-14.9200		BSP	1020	SGB	1072.6	R23	-.2578	R13	.4202	LSA	35.1	MSA	21.7	SSA	2.1
BDE	.3148	BRA	.4163	BC3	.1391	FSP	1403	SG1	916.4	SG2	557.4	THA	171.98	EL1	29.6	EL2	12.9	ALF	55.01

LAUNCH DATE MAY 24 1971 FLIGHT TIME 160.00 ARRIVAL DATE OCT 31 1971

HELIOCENTRIC CONIC DISTANCE 386.694 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.307	GAL	1.58	AZL	91.50	HCA	126.31	SMA	187.36	ECC	.19333	INC	1.5010	V1	29.409
RP	209.55	LAP	-1.21	LOP	8.51	VP	23.629	GAP	8.85	AZP	89.11	TAL	9.79	TAP	136.09	RCA	151.14	APO	223.59	V2	26.162
RC	105.933	GL	-16.10	GP	-3.23	ZAL	79.24	ZAP	130.73	ETS	182.79	ZAE	172.18	ETE	199.88	ZAC	96.65	ETC	277.96	LVI	-15.25

PLANETOCENTRIC CONIC

C3	9.309	VHL	3.051	DLA	-29.67	RAL	329.23	RAD	6637.7	VEL	11.376	PTH	6.43	VHP	3.687	DPA	-19.86	RAP	323.42	ECC	1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 56	2348.95	.18	60.08	180.44	137.58	15 55 5	1348.9	18.35	43.85
60.00	16 38 42	2128.76	5.20	45.07	185.26	130.02	17 14 11	1128.8	20.66	26.09
70.00	18 30 25	1800.16	11.06	22.77	189.60	122.52	19 0 25	800.2	23.36	1.18
80.00	21 21 38	1263.17	19.45	346.68	194.18	113.11	21 42 41	263.2	27.27	322.00
80.64	21 54 42	1157.43	21.62	339.76	195.12	110.82	22 14 0	157.4	28.27	314.37
100.00	0 8 26	6025.68	19.45	285.95	194.18	113.11	1 48 51	5025.7	27.27	261.27
110.00	23 29 51	6135.02	11.06	289.60	189.60	122.52	25 12 6	5135.0	23.36	268.01

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1722	TRA	-.3879	TC3	-.0093	BAU	.0125	SGT	898.5	SGR	564.3	SG3	906.9	ST	20.5	SR	25.1	SS	26.2
RDE	-.2635	RRA	.1222	RC3	-.0999	FAU	.16953	RRT	-.1204	RRF	.3696	RTF	-.3184	CRT	.6824	CRS	-.7595	CST	-.0594
FDE	-.5704	FRA	1.8789	FC-15.7654		BSP	961	SGB	1061.0	R23	-.3086	R13	.3428	LSA	35.3	MSA	22.0	SSA	2.2
BDE	.3148	BRA	.4067	BC3	.1003	FSP	1493	SG1	902.7	SG2	557.6	THA	172.99	EL1	29.8	EL2	12.6	ALF	53.28

LAUNCH DATE MAY 24 1971 FLIGHT TIME 162.00 ARRIVAL DATE NOV 2 1971

HELIOCENTRIC CONIC DISTANCE 390.832 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.288	GAL	1.57	AZL	91.49	HCA	127.84	SMA	187.09	ECC	.19196	INC	1.4872	V1	29.409
RP	209.76	LAP	-1.18	LOP	9.75	VP	23.576	GAP	8.61	AZP	89.09	TAL	9.80	TAP	137.34	RCA	151.14	APO	222.95	V2	26.137
RC	107.990	GL	-16.08	GP	-3.36	ZAL	79.26	ZAP	128.85	ETS	182.69	ZAE	170.56	ETE	197.68	ZAC	96.61	ETC	277.82	LVI	-14.96

PLANETOCENTRIC CONIC

C3	9.185	VHL	3.031	DLA	-29.61	RAL	329.23	RAD	6637.6	VEL	11.371	PTH	6.42	VHP	3.601	DPA	-20.18	RAP	322.81	ECC	1.1312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 38	2347.66	.24	60.02	180.31	137.58	15 54 46	1347.7	18.41	43.79
60.00	16 38 15	2127.89	5.24	45.03	185.10	130.02	17 13 42	1127.9	20.70	26.04
70.00	18 29 37	1800.27	11.05	22.78	189.40	122.52	18 59 37	800.3	23.37	1.19
80.00	21 17 42	1273.21	19.18	347.30	193.86	113.33	21 38 55	273.2	27.12	322.71
80.83	21 56 14	1149.98	21.64	339.22	194.93	110.72	22 15 24	150.0	28.25	313.81
100.00	0 4 30	6035.73	19.18	286.58	193.86	113.33	1 45 6	5035.7	27.12	281.98
110.00	23 29 3	6135.13	11.05	289.60	189.40	122.52	25 11 18	5135.1	23.37	268.01

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1746	TRA	-.3705	TC3	-.1225	BAU	.0215	SGT	873.9	SGR	562.6	SG3	952.3	ST	20.5	SR	24.8	SS	26.9
RDE	-.2590	RRA	.1227	RC3	-.1248	FAU	.17692	RRT	-.0971	RRF	.3952	RTF	-.2389	CRT	.7009	CRS	-.7636	CST	-.0917
FDE	-.5967	FRA	1.9541	FC-16.6746		BSP	830	SGB	1039.3	R23	-.3569	R13	.2634	LSA	35.7	MSA	21.8	SSA	2.2
BDE	.3123	BRA	.3903	BC3	.1749	FSP	1573	SG1	876.8	SG2	558.1	THA	173.97	EL1	29.8	EL2	12.2	ALF	52.73

LAUNCH DATE MAY 24 1971 FLIGHT TIME 164.00 ARRIVAL DATE NOV 4 1971

HELIOCENTRIC CONIC DISTANCE 394.978 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.271	GAL	1.56	AZL	91.47	HCA	128.77	SMA	186.76	ECC	.19070	INC	1.4728	V1	29.409
RP	209.99	LAP	-1.15	LOP	10.98	VP	23.525	GAP	8.38	AZP	89.08	TAL	9.79	TAP	138.56	RCA	151.14	APO	222.37	V2	26.111
RC	110.071	GL	-15.98	GP	-3.49	ZAL	79.31	ZAP	126.94	ETS	182.58	ZAE	168.86	ETE	196.03	ZAC	96.58	ETC	277.68	LVI	-14.65

PLANETOCENTRIC CONIC

C3	9.070	VHL	3.012	DLA	-29.53	RAL	329.26	RAD	6637.6	VEL	11.366	PTH	6.42	VHP	3.520	DPA	-20.52	RAP	322.16	ECC	1.1493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 15 18	2347.01	.27	59.99	180.19	137.58	15 54 26	1347.0	18.44	43.76
60.00	16 37 42	2127.80	5.24	45.02	184.96	130.02	17 13 10	1127.8	20.70	26.03
70.00	18 28 38	1801.52	11.01	22.85	189.23	122.54	18 58 39	801.5	23.34	1.27
80.00	21 13 7	1285.87	18.83	348.08	193.55	113.60	21 34 32	285.9	26.92	323.60
81.11	21 58 30	1140.61	21.65	338.53	194.76	110.59	22 17 31	140.6	28.20	313.11
100.00	23 55 58	6048.38	18.83	287.36	193.55	113.60	25 36 47	5048.4	26.92	282.87
110.00	23 28 4	6136.38	11.01	289.67	189.23	122.54	25 10 21	5136.4	23.34	268.09

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1711	TRA	-.3459	TC3	-.2192	BAU	.0324	SGT	834.0	SGR	561.9	SG3	1001.3	ST	19.8	SR	24.6	SS	27.7
RDE	-.2549	RRA	.1228	RC3	-.1533	FAU	.18531	RRT	-.0705	RRF	.4231	RTF	-.1573	CRT	.7155	CRS	-.7791	CST	-.1370
FDE	-.6413	FRA	2.0097	FC-17.6875		BSP	623	SGB	1005.6	R23	-.4032	R13	.1809	LSA	36.3	MSA	21.1	SSA	2.2
BDE	.3070	BRA	.3671	BC3	.2675	FSP	1621	SG1	835.7	SG2	559.4	THA	175.06	EL1	29.4	EL2	11.6	ALF	53.40

LAUNCH DATE MAY 24 1971 FLIGHT TIME 166.00 ARRIVAL DATE NOV 6 1971

HELIOCENTRIC CONIC DISTANCE 399.129 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.256	GAL	1.55	AZL	91.46	HCA	130.00	SMA	186.50	ECC	.18956	INC	1.4581	V1	29.409
RP	210.22	LAP	-1.12	LOP	12.21	VP	23.474	GAP	8.15	AZP	89.06	TAL	9.76	TAP	139.76	RCA	151.15	APO	221.65	V2	26.085
RC	112.177	GL	-15.91	GP	-3.63	ZAL	79.39	ZAP	125.00	ETS	182.48	ZAE	167.12	ETE	194.75	ZAC	96.54	ETC	277.53	LVI	-14.33

PLANETOCENTRIC CONIC

C3	8.963	VHL	2.994	DLA	-29.43	RAL	329.32	RAD	6637.5	VEL	11.361	PTH	6.41	VHP	3.445	DPA	-20.87	RAP	321.49	ECC	1.1475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 14 59	2347.10	.27	60.00	180.12	137.58	15 54 6	1347.1	18.43	43.76
60.00	16 37 7	2128.63	5.21	45.06	184.86	130.02	17 12 35	1128.6	20.67	26.08
70.00	18 27 27	1804.06	10.91	22.98	189.08	122.57	18 57 31	804.1	23.26	1.43
80.00	21 7 57	1301.01	18.42	349.02	193.25	113.92	21 29 38	301.0	26.68	324.65
81.48	22 1 42	1128.92	21.63	337.66	194.64	110.46	22 20 30	128.9	28.13	312.23
100.00	23 50 49	6063.53	18.42	288.29	193.25	113.92	25 31 52	5063.5	26.68	283.93
110.00	23 26 53	6138.92	10.91	289.81	189.08	122.57	25 9 12	5138.9	23.26	268.25

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1860	TRA	-.3393	TC3	-.4090	BAU	.0534	SGT	861.7	SGR	560.5	SG3	1042.2	ST	21.0	SR	24.2	SS	27.9
RDE	-.2495	RRA	.1245	RC3	-.1773	FAU	.19107	RRT	-.0167	RRF	.4478	RTF	-.1548	CRT	.7443	CRS	-.7571	CST	-.1448
FDE	-.6258	FRA	2.1328	FC-18.4551		BSP	619	SGB	1027.9	R23	-.4468	R13	.0402	LSA	36.3	MSA	22.0	SSA	2.2
BDE	.3112	BRA	.3614	BC3	.4458	FSP	1740	SG1	861.8	SG2	560.3	THA	178.92	EL1	30.0	EL2	11.3	ALF	50.41

LAUNCH DATE MAY 24 1971 FLIGHT TIME 168.00 ARRIVAL DATE NOV 8 1971

HELIOCENTRIC CONIC DISTANCE 403.287 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.242	GAL	1.54	AZL	91.44	HCA	131.23	SMA	186.27	ECC	.18852	INC	1.4428	V1	29.409
RP	210.45	LAP	-1.09	LOP	13.43	VP	23.425	GAP	7.92	AZP	89.05	TAL	9.71	TAP	140.94	RCA	151.15	APO	221.38	V2	26.058
RC	114.307	GL	-15.82	GP	-3.76	ZAL	79.50	ZAP	123.03	ETS	182.36	ZAE	165.33	ETE	193.71	ZAC	96.50	ETC	277.37	LVI	-13.99

PLANETOCENTRIC CONIC

C3	8.864	VHL	2.977	DLA	-29.31	RAL	329.41	RAD	6637.5	VEL	11.357	PTH	6.41	VHP	3.374	DPA	-21.23	RAP	320.78	ECC	1.1459

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 14 39	2347.80	.23	60.03	180.06	137.58	15 53 47	1347.8	18.40	43.79
60.00	16 36 26	2130.20	5.14	45.14	184.77	130.03	17 11 57	1130.2	20.60	26.17
70.00	18 26 6	1807.64	10.78	23.18	188.95	122.61	18 56 14	807.6	23.16	1.65
80.00	21 2 36	1317.22	17.97	350.01	192.97	114.25	21 24 33	317.2	26.41	325.78
81.96	22 5 43	1114.96	21.60	336.61	194.55	110.31	22 24 18	115.0	28.03	311.18
100.00	23 45 28	6079.73	17.97	289.28	192.97	114.25	25 26 47	5079.7	26.41	265.06
110.00	23 25 32	6142.50	10.78	290.00	188.95	122.61	25 7 55	5142.5	23.16	268.48

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1917	TRA	-.3214	TC3	-.5660	BAU	.0714	SGT	867.7	SGR	560.0	SG3	1087.8	ST	21.3	SR	23.9	SS	28.3
RDE	-.2447	RRA	.1256	RC3	-.2059	FAU	.19833	RRT	.0378	RRF	.4747	RTF	.0791	CRT	.7660	CRS	-.7524	CST	-.1710
FDE	-.6347	FRA	2.2191	FC-19.3709		BSP	530	SGB	1032.7	R23	.4698	R13	.0918	LSA	36.5	MSA	22.1	SSA	2.2
BDE	.3108	BRA	.3451	BC3	.6023	FSP	1820	SG1	868.1	SG2	559.3	THA	2.39	EL1	30.1	EL2	10.9	ALF	49.30

LAUNCH DATE MAY 24 1971 FLIGHT TIME 170.00 ARRIVAL DATE NOV 10 1971

HELIOCENTRIC CONIC DISTANCE 407.451 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.230	GAL	1.52	AZL	91.43	HCA	132.45	SMA	186.06	ECC	.18758	INC	1.4269	VI	29.409
RP	210.70	LAP	-1.05	LOP	14.65	VP	23.377	GAP	7.70	AZP	89.04	TAL	9.65	TAP	142.10	RCA	151.16	APO	220.96	V2	26.030
RC	116.460	GL	-15.72	GP	-3.91	ZAL	79.63	ZAP	121.04	ETS	182.24	ZAE	163.49	ETE	192.85	ZAC	96.45	ETC	277.21	LVI	-13.64

PLANETOCENTRIC CONIC

C3	8.772	VHL	2.962	DLA	-29.17	RAL	329.52	RAD	6637.4	VEL	11.353	PTH	6.41	VHP	3.308	DPA	-21.60	RAP	320.05	ECC	1.1444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 14 17	2349.14	.17	60.08	180.04	137.58	15 53 26	1349.1	18.34	43.86
60.00	16 35 42	2132.56	5.04	45.25	184.71	130.04	17 11 15	1132.6	20.51	26.30
70.00	18 24 35	1812.32	10.61	23.43	188.84	122.66	18 54 47	812.3	23.02	1.94
80.00	20 57 6	1334.43	17.48	351.06	192.71	114.59	21 19 21	334.4	26.11	326.97
82.55	22 10 52	1097.83	21.54	335.33	194.48	110.15	22 29 10	97.8	27.92	309.90
100.00	23 39 58	6096.95	17.48	290.33	192.71	114.59	25 21 35	5096.9	26.11	286.23
110.00	23 24 1	6147.18	10.61	290.26	188.84	122.66	25 6 28	5147.2	23.02	268.77

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1976	TRA	-.3028	TC3	-.7360	BAU	.0906	SGT	886.7	SGR	560.3	SG3	1132.9	ST	21.6	SR	23.6	SS	28.7
RDE	-.2398	RRA	.1270	RC3	-.2356	FAU	.20539	RRT	.0995	RRF	.5024	RTF	.1954	CRT	.7870	CRS	-.7458	CST	-.1944
FDE	-.6400	FRA	2.3122	FC-20.2705		BSP	492	SGB	1048.9	R23	.4717	R13	.2263	LSA	36.7	MSA	22.2	SSA	2.2
BDE	.3107	BRA	.3284	BC3	.7728	FSP	1907	SG1	889.6	SG2	555.7	THA	5.91	EL1	30.2	EL2	10.4	ALF	48.17

LAUNCH DATE MAY 24 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 12 1971

HELIOCENTRIC CONIC DISTANCE 411.620 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.219	GAL	1.50	AZL	91.41	HCA	133.67	SMA	185.87	ECC	.18673	INC	1.4106	VI	29.409
RP	210.95	LAP	-1.02	LOP	15.87	VP	23.330	GAP	7.49	AZP	89.03	TAL	9.56	TAP	143.23	RCA	151.17	APO	220.58	V2	26.001
RC	118.637	GL	-15.61	GP	-4.06	ZAL	79.80	ZAP	119.03	ETS	182.11	ZAE	161.61	ETE	192.12	ZAC	96.41	ETC	277.04	LVI	-13.27

PLANETOCENTRIC CONIC

C3	8.686	VHL	2.947	DLA	-29.00	RAL	329.66	RAD	6637.4	VEL	11.349	PTH	6.40	VHP	3.247	DPA	-21.98	RAP	319.28	ECC	1.1430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 13 55	2351.11	.07	60.17	180.03	137.58	15 53 6	1351.1	18.24	43.95
60.00	16 34 54	2135.69	4.90	45.40	184.67	130.05	17 10 29	1135.7	20.39	26.47
70.00	18 22 53	1818.05	10.40	23.74	188.76	122.72	18 53 11	818.0	22.85	2.30
80.00	20 51 32	1352.42	16.97	352.15	192.48	114.94	21 14 4	352.4	25.78	328.21
83.29	22 17 23	1076.76	21.47	333.74	194.44	109.98	22 35 20	76.8	27.78	308.32
100.00	23 34 23	6114.94	16.97	291.42	192.48	114.94	25 16 18	5114.9	25.78	287.49
110.00	23 22 20	6152.91	10.40	290.57	188.76	122.72	25 4 53	5152.9	22.85	269.12

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2031	TRA	-.2833	TC3	-.9174	BAU	.1109	SGT	919.2	SGR	561.3	SG3	1178.0	ST	21.9	SR	23.2	SS	29.1
RDE	-.2350	RRA	.1285	RC3	-.2665	FAU	.21239	RRT	.1656	RRF	.5308	RTF	.3090	CRT	.8067	CRS	-.7400	CST	-.2184
FDE	-.6454	FRA	2.4073	FC-21.1677		BSP	525	SGB	1077.0	R23	.4555	R13	.3528	LSA	37.0	MSA	22.2	SSA	2.2
BDE	.3106	BRA	.3111	BC3	.9553	FSP	1986	SG1	926.5	SG2	549.2	THA	8.94	EL1	30.4	EL2	9.9	ALF	47.12

LAUNCH DATE MAY 24 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 14 1971

HELIOCENTRIC CONIC DISTANCE 415.794 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.209	GAL	1.48	AZL	91.39	HCA	134.88	SMA	185.71	ECC	.18597	INC	1.3936	VI	29.409
RP	211.20	LAP	-.99	LOP	17.09	VP	23.284	GAP	7.28	AZP	89.02	TAL	9.46	TAP	144.35	RCA	151.17	APO	220.25	V2	25.972
RC	120.836	GL	-15.48	GP	-4.21	ZAL	79.99	ZAP	117.00	ETS	181.98	ZAE	159.70	ETE	191.49	ZAC	96.36	ETC	276.86	LVI	-12.89

PLANETOCENTRIC CONIC

C3	8.607	VHL	2.934	DLA	-28.81	RAL	329.82	RAD	6637.3	VEL	11.345	PTH	6.40	VHP	3.191	DPA	-22.37	RAP	318.50	ECC	1.1417

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 13 31	2353.72	-.06	60.27	180.05	137.58	15 52 45	1353.7	18.12	44.07
60.00	16 34 1	2139.59	4.73	45.59	184.65	130.07	17 9 40	1139.6	20.23	26.68
70.00	18 21 3	1824.79	10.15	24.11	188.69	122.79	18 51 28	824.8	22.64	2.72
80.00	20 45 55	1371.04	16.43	353.27	192.27	115.28	21 8 46	371.0	25.44	329.49
84.25	22 25 44	1050.21	21.38	331.75	194.43	109.79	22 43 14	50.2	27.62	306.34
100.00	23 28 47	6133.55	16.43	292.54	192.27	115.28	25 11 0	5133.6	25.44	268.76
110.00	23 20 29	6159.65	10.15	290.93	188.69	122.79	25 3 9	5159.7	22.64	269.54

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2081	TRA	-.2618	TC3	-1.1079	BAU	.1320	SGT	963.4	SGR	562.9	SG3	1220.9	ST	22.1	SR	22.9	SS	29.4
RDE	-.2302	RRA	.1301	RC3	-.2982	FAU	.21904	RRT	.2346	RRF	.5387	RTF	.4164	CRT	.8262	CRS	-.7337	CST	-.2427
FDE	-.6473	FRA	2.4970	FC-22.0317		BSP	638	SGB	1115.8	R23	.4257	R13	.4660	LSA	37.1	MSA	22.2	SSA	2.2
BDE	.3103	BRA	.2923	BC3	1.1473	FSP	2056	SG1	976.5	SG2	539.8	THA	11.30	EL1	30.4	EL2	9.4	ALF	46.16

LAUNCH DATE MAY 24 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 16 1971

HELIOCENTRIC CONIC DISTANCE 419.972 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.200	GAL	1.46	AZL	91.38	HCA	136.10	SMA	185.57	ECC	.18529	INC	1.3758	VI	29.409
RP	211.46	LAP	-.95	LOP	18.30	VP	23.238	GAP	7.07	AZP	89.01	TAL	9.34	TAP	145.44	RCA	151.18	APO	219.95	V2	25.942
RC	123.058	GL	-15.34	GP	-4.36	ZAL	80.21	ZAP	114.96	ETS	181.84	ZAE	157.74	ETE	190.93	ZAC	96.30	ETC	276.68	LVI	-12.50

PLANETOCENTRIC CONIC

C3	8.534	VHL	2.921	DLA	-28.60	RAL	330.00	RAD	6637.3	VEL	11.342	PTH	6.40	VHP	3.139	DPA	-22.76	RAP	317.69	ECC	1.1404

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 13 7	2356.94	-.23	60.41	180.10	137.58	15 52 23	1356.9	17.96	44.22
60.00	16 33 4	2144.23	4.53	45.81	184.66	130.09	17 8 48	1144.2	20.05	26.94
70.00	18 19 3	1832.51	9.87	24.52	188.64	122.86	18 49 36	832.5	22.41	3.20
80.00	20 40 18	1390.17	15.87	354.41	192.08	115.62	21 3 28	390.2	25.07	330.79
85.54	22 37 3	1014.44	21.26	329.08	194.45	109.59	22 53 57	14.4	27.43	303.68
100.00	23 23 10	6152.68	15.87	293.69	192.08	115.62	25 5 43	5152.7	25.07	270.06
110.00	23 18 30	6167.37	9.87	291.35	188.64	122.86	25 1 17	5167.4	22.41	270.02

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2110	TRA	-.2375	TC3	-1.3005	BAU	.1532	SGT	1015.0	SGR	565.7	SG3	1265.4	ST	22.2	SR	22.6	SS	29.8
RDE	-.2257	RRA	.1315	RC3	-.3328	FAU	.22622	RRT	.3049	RRF	.5878	RTF	.5164	CRT	.8447	CRS	-.7359	CST	-.2794
FDE	-.6626	FRA	2.5725	FC-22.9497		BSP	821	SGB	1162.0	R23	.3877	R13	.5662	LSA	37.5	MSA	21.9	SSA	2.2
BDE	.3090	BRA	.2715	BC3	1.3424	FSP	2115	SG1	1034.9	SG2	528.4	THA	13.12	EL1	30.4	EL2	8.8	ALF	45.57

LAUNCH DATE MAY 24 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 18 1971

HELIOCENTRIC CONIC — DISTANCE 424.152 — EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.193 GAL 1.43 AZL 91.36 HCA 137.31 SMA 185.44 ECC .18470 INC 1.3572 V1 29.409
RP 211.73 LAP -.92 LOP 19.51 VP 23.194 GAP 6.67 AZP 89.00 TAL 9.20 TAP 146.51 RCA 151.19 APO 219.69 V2 25.911
RC 128.302 GL -15.19 GP -4.52 ZAL 80.46 ZAP 112.90 ETS 181.69 ZAE 155.77 ETE 190.44 ZAC 96.24 ETC 276.49 LV1 -12.10

PLANETOCENTRIC CONIC

C3 8.466 VHL 2.910 DLA -28.37 RAL 330.22 RAD 6637.2 VEL 11.339 PTH 6.39 VHP 3.092 DPA -23.16 RAP 316.87 ECC 1.1393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 41	2360.82	-.42	60.57	180.17	137.57	15 52 2	1360.8	17.78	44.40
60.00	16 32 3	2149.67	4.29	46.08	184.69	130.11	17 7 53	1149.7	19.83	27.23
70.00	18 16 56	1841.25	9.54	24.99	188.61	122.95	18 47 37	841.3	22.14	3.73
80.00	20 34 40	1409.93	15.29	355.59	191.93	115.96	20 58 10	409.9	24.67	332.12
87.69	22 55 50	6242.91	21.13	302.57	194.50	109.38	24 39 53	5242.9	27.23	277.19
100.00	23 17 32	6172.44	15.29	294.86	191.93	115.96	25 0 24	5172.4	24.67	271.40
110.00	23 16 22	6176.11	9.54	291.82	188.61	122.95	24 59 18	5176.1	22.14	270.56

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2215 TRA -.2198 TC3-1.5390 BAU .1790 — SGT 1110.9 SGR 567.7 SG3 1302.2 — ST 23.1 SR 22.1 SS 29.7
RDE -.2198 RRA .1342 RC3 -.3634 FAU .23115 — RRT .3653 RRF .6137 RTF .5903 — CRT .8613 CRS -.7066 CST -.2698
FDE -.6204 FRA 2.6975 FC-23.6379 BSP 980 — SGB 1247.6 R23 .3614 R13 .6330 — LSA 37.2 MSA 22.6 SSA 2.2
BDE .3120 BRA .2575 BC3 1.5813 FSP 2218 — SG1 1135.4 SG2 517.1 THA 13.40 — EL1 30.8 EL2 8.4 ALF 43.60

LAUNCH DATE MAY 24 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 20 1971

HELIOCENTRIC CONIC — DISTANCE 428.336 — EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.187 GAL 1.40 AZL 91.34 HCA 138.52 SMA 185.34 ECC .18418 INC 1.3379 V1 29.409
RP 212.01 LAP -.89 LOP 20.72 VP 23.150 GAP 6.67 AZP 89.00 TAL 9.04 TAP 147.56 RCA 151.20 APO 219.47 V2 25.880
RC 127.566 GL -15.02 GP -4.69 ZAL 80.74 ZAP 110.84 ETS 181.54 ZAE 153.76 ETE 189.99 ZAC 96.17 ETC 276.30 LV1 -11.69

PLANETOCENTRIC CONIC

C3 8.403 VHL 2.899 DLA -28.11 RAL 330.45 RAD 6637.2 VEL 11.336 PTH 6.39 VHP 3.048 DPA -23.57 RAP 316.03 ECC 1.1383

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 13	2365.30	-.65	60.76	180.26	137.57	15 51 39	1365.3	17.56	44.61
60.00	16 30 58	2155.83	4.02	46.37	184.74	130.13	17 6 54	1155.8	19.59	27.57
70.00	18 14 40	1850.88	9.19	25.51	188.60	123.04	18 45 31	850.9	21.85	4.32
80.00	20 29 4	1430.06	14.69	356.78	191.80	116.29	20 52 54	430.1	24.26	333.47
90.00	22 48 51	6267.27	19.00	303.51	193.79	111.35	24 33 18	5267.3	26.14	278.76
100.00	23 11 56	6192.57	14.69	296.05	191.80	116.29	24 55 8	5192.6	24.26	272.75
110.00	23 14 6	6185.74	9.19	292.33	188.60	123.04	24 57 12	5185.7	21.85	271.15

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2272 TRA -.1963 TC3-1.7664 BAU .2034 — SGT 1201.6 SGR 571.3 SG3 1341.9 — ST 23.5 SR 21.7 SS 29.7
RDE -.2144 RRA .1364 RC3 -.3984 FAU .23719 — RRT .4260 RRF .6406 RTF .6585 — CRT .8772 CRS -.6897 CST -.2790
FDE -.5968 FRA 2.7907 FC-24.4368 BSP 1197 — SGB 1330.5 R23 .3300 R13 .6951 — LSA 37.1 MSA 22.8 SSA 2.2
BDE .3124 BRA .2390 BC3 1.8108 FSP 2289 — SG1 1231.2 SG2 504.4 THA 13.81 — EL1 30.9 EL2 7.9 ALF 42.44

LAUNCH DATE MAY 24 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 22 1971

HELIOCENTRIC CONIC — DISTANCE 432.523 — EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.181 GAL 1.37 AZL 91.32 HCA 139.72 SMA 185.25 ECC .18373 INC 1.3177 V1 29.409
RP 212.29 LAP -.85 LOP 21.93 VP 23.107 GAP 6.68 AZP 88.99 TAL 8.87 TAP 148.59 RCA 151.22 APO 219.29 V2 25.848
RC 129.850 GL -14.84 GP -4.86 ZAL 81.04 ZAP 108.78 ETS 181.38 ZAE 151.74 ETE 189.59 ZAC 96.10 ETC 276.11 LV1 -11.26

PLANETOCENTRIC CONIC

C3 8.345 VHL 2.889 DLA -27.83 RAL 330.71 RAD 6637.2 VEL 11.334 PTH 6.39 VHP 3.009 DPA -23.97 RAP 315.18 ECC 1.1373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 44	2370.40	-.90	60.97	180.37	137.57	15 51 15	1370.4	17.31	44.85
60.00	16 29 49	2162.73	3.71	46.70	184.81	130.16	17 5 51	1162.7	19.31	27.94
70.00	18 12 16	1861.41	8.79	26.07	188.61	123.14	18 43 18	861.4	21.52	4.97
80.00	20 23 29	1450.62	14.06	357.98	191.69	116.61	20 47 40	450.6	23.82	334.84
90.00	22 32 46	1033.67	17.62	329.00	193.38	112.48	22 50 0	33.7	25.36	304.65
100.00	23 6 21	6213.13	14.06	297.26	191.69	116.61	24 49 54	5213.1	23.82	274.12
110.00	23 11 43	6196.27	8.79	292.90	188.61	123.14	24 54 59	5196.3	21.52	271.79

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2323 TRA -.1717 TC3-2.0036 BAU .2287 — SGT 1304.0 SGR 575.6 SG3 1378.0 — ST 23.8 SR 21.2 SS 29.8
RDE -.2090 RRA .1387 RC3 -.4334 FAU .24250 — RRT .4809 RRF .6670 RTF .7146 — CRT .8916 CRS -.6745 CST -.2898
FDE -.5748 FRA 2.8827 FC-25.1571 BSP 1435 — SGB 1425.4 R23 .3025 R13 .7451 — LSA 37.1 MSA 22.9 SSA 2.1
BDE .3124 BRA .2207 BC3 2.0500 FSP 2356 — SG1 1337.9 SG2 491.9 THA 13.90 — EL1 31.0 EL2 7.4 ALF 41.36

LAUNCH DATE MAY 24 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 24 1971

HELIOCENTRIC CONIC — DISTANCE 436.712 — EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.177 GAL 1.34 AZL 91.30 HCA 140.92 SMA 185.18 ECC .18334 INC 1.2965 V1 29.409
RP 212.57 LAP -.82 LOP 23.13 VP 23.065 GAP 6.29 AZP 88.99 TAL 8.68 TAP 149.61 RCA 151.23 APO 219.13 V2 25.815
RC 132.153 GL -14.64 GP -5.04 ZAL 81.37 ZAP 106.72 ETS 181.21 ZAE 149.70 ETE 189.22 ZAC 96.02 ETC 275.91 LV1 -10.83

PLANETOCENTRIC CONIC

C3 8.292 VHL 2.880 DLA -27.52 RAL 330.98 RAD 6637.2 VEL 11.332 PTH 6.38 VHP 2.975 DPA -24.38 RAP 314.33 ECC 1.1365

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 13	2376.13	-1.19	61.21	180.51	137.56	15 50 49	1376.1	17.04	45.11
60.00	16 28 34	2170.36	3.38	47.07	184.90	130.18	17 4 45	1170.4	19.00	28.35
70.00	18 9 45	1872.82	8.37	26.68	188.63	123.23	18 40 58	872.8	21.17	5.66
80.00	20 17 55	1471.62	13.42	359.21	191.61	116.92	20 42 26	471.6	23.36	336.23
90.00	22 20 48	1075.31	16.52	331.56	193.11	113.29	22 38 44	75.3	24.70	307.52
100.00	23 0 47	6234.13	13.42	298.48	191.61	116.92	24 44 41	5234.1	23.36	275.50
110.00	23 9 12	6207.68	8.37	293.51	188.63	123.23	24 52 39	5207.7	21.17	272.49

DIFFERENTIAL CORRECTIONS — MID-COURSE EXECUTION ACCURACY — ORBIT DETERMINATION ACCURACY

TDE -.2367 TRA -.1462 TC3-2.2506 BAU .2549 — SGT 1417.6 SGR 581.0 SG3 1412.2 — ST 24.1 SR 20.8 SS 29.9
RDE -.2035 RRA .1415 RC3 -.4689 FAU .24734 — RRT .5301 RRF .6930 RTF .7594 — CRT .9045 CRS -.6563 CST -.2957
FDE -.5466 FRA 2.9826 FC-25.8235 BSP 1683 — SGB 1532.0 R23 .2801 R13 .7845 — LSA 37.0 MSA 23.1 SSA 2.1
BDE .3121 BRA .2034 BC3 2.2990 FSP 2414 — SG1 1454.9 SG2 480.0 THA 13.79 — EL1 31.1 EL2 6.9 ALF 40.31

LAUNCH DATE MAY 24 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 26 1971

HELIOCENTRIC CONIC DISTANCE 440.903 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.174	GAL	1.31	AZL	91.27	HCA	142.12	SMA	185.12	ECC	.18302	INC	1.2743	V1	29.409
RP	212.86	LAP	-.78	LOP	24.33	VP	23.023	GAP	6.10	AZP	88.99	TAL	8.48	TAP	150.60	RCA	151.24	APO	219.00	V2	25.782
RC	134.475	GL	-14.43	GP	-5.22	ZAL	81.73	ZAP	104.66	ETS	181.04	ZAE	147.66	ETE	188.88	ZAC	95.93	ETC	275.71	LVI	-10.39

PLANETOCENTRIC CONIC

C3	8.243	VHL	2.871	DLA	-27.19	RAL	331.28	RAD	6637.1	VEL	11.329	PTH	6.38	VHP	2.944	DPA	-24.79	RAP	313.47	ECC	1.1357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 39	2382.50	-1.51	61.48	180.66	137.56	15 50 22	1382.5	16.73	45.40
60.00	16 27 16	2178.73	3.01	47.47	185.00	130.21	17 3 34	1178.7	18.67	28.80
70.00	18 7 7	1885.09	7.91	27.34	188.68	123.33	18 38 32	885.1	20.78	6.40
80.00	20 12 22	1493.04	12.75	.45	191.55	117.23	20 37 15	493.0	22.87	337.64
90.00	22 10 36	1111.75	15.52	333.77	192.92	113.94	22 29 8	111.7	24.06	310.00
100.00	22 55 14	6255.55	12.75	299.73	191.55	117.23	24 39 29	5255.6	22.87	276.91
110.00	23 6 34	6219.95	7.91	294.16	188.68	123.33	24 50 14	5220.0	20.78	273.23

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2403	TRA	-.1194	TC3	-2.5053	BAU	.2817	SGT	1539.9	SGR	587.1	SG3	1444.1	ST	24.4	SR	20.3	SS	29.9
RDE	-.1978	RRA	.1442	RC3	-.5056	FAU	.25190	RRT	.5755	RRF	.7179	RTF	.7965	CRT	.9164	CRS	-.6370	CST	-.3005
FDE	-.5137	FRA	3.0727	FC-26.4558		BSP	1948	SGB	1648.0	R23	.2597	R13	.8171	LSA	36.8	MSA	23.3	SSA	2.1
BDE	.3112	BRA	.1872	BC3	2.5558	FSP	2469	SG1	1580.2	SG2	467.9	THA	13.59	EL1	31.1	EL2	6.4	ALF	39.32

LAUNCH DATE MAY 24 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 28 1971

HELIOCENTRIC CONIC DISTANCE 445.096 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.171	GAL	1.27	AZL	91.25	HCA	143.32	SMA	185.08	ECC	.18276	INC	1.2510	V1	29.409
RP	213.16	LAP	-.75	LOP	25.52	VP	22.982	GAP	5.92	AZP	89.00	TAL	8.26	TAP	151.58	RCA	151.25	APO	218.90	V2	25.749
RC	136.814	GL	-14.20	GP	-5.41	ZAL	82.10	ZAP	102.61	ETS	180.85	ZAE	145.60	ETE	188.56	ZAC	95.83	ETC	275.52	LVI	-9.94

PLANETOCENTRIC CONIC

C3	8.198	VHL	2.863	DLA	-26.83	RAL	331.59	RAD	6637.1	VEL	11.327	PTH	6.38	VHP	2.916	DPA	-25.20	RAP	312.61	ECC	1.1349

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 3	2389.49	-1.86	61.77	180.83	137.55	15 49 52	1389.5	16.39	45.72
60.00	16 25 52	2187.83	2.61	47.90	185.13	130.23	17 2 19	1187.8	18.30	29.29
70.00	18 4 22	1898.19	7.42	28.03	188.74	123.43	18 36 0	898.2	20.36	7.19
80.00	20 6 49	1514.88	12.07	1.71	191.51	117.52	20 32 4	514.9	22.36	339.06
90.00	22 1 24	1145.35	14.56	335.79	192.77	114.50	22 20 30	145.4	23.44	312.26
100.00	22 49 41	6277.39	12.07	300.99	191.51	117.52	24 34 18	5277.4	22.36	278.33
110.00	23 3 48	6233.05	7.42	294.86	188.74	123.43	24 47 41	5233.0	20.36	274.01

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2412	TRA	-.0894	TC3	-2.7566	BAU	.3080	SGT	1662.9	SGR	594.7	SG3	1475.5	ST	24.4	SR	19.9	SS	29.9
RDE	-.1924	RRA	.1464	RC3	-.5456	FAU	.25685	RRT	.6201	RRF	.7425	RTF	.8305	CRT	.9284	CRS	-.6273	CST	-.3203
FDE	-.4935	FRA	3.1352	FC-27.1231		BSP	2241	SGB	1766.0	R23	.2364	R13	.8473	LSA	36.8	MSA	23.1	SSA	2.1
BDE	.3086	BRA	.1715	BC3	2.8101	FSP	2492	SG1	1706.5	SG2	454.6	THA	13.48	EL1	31.0	EL2	5.8	ALF	38.69

LAUNCH DATE MAY 24 1971 FLIGHT TIME 190.00 ARRIVAL DATE NOV 30 1971

HELIOCENTRIC CONIC DISTANCE 449.289 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.169	GAL	1.24	AZL	91.23	HCA	144.51	SMA	185.05	ECC	.18256	INC	1.2262	V1	29.409
RP	213.46	LAP	-.71	LOP	26.71	VP	22.941	GAP	5.74	AZP	89.00	TAL	8.02	TAP	152.53	RCA	151.27	APO	218.83	V2	25.714
RC	139.171	GL	-13.95	GP	-5.60	ZAL	82.51	ZAP	100.58	ETS	180.66	ZAE	143.55	ETE	188.27	ZAC	95.73	ETC	275.32	LVI	-9.49

PLANETOCENTRIC CONIC

C3	8.158	VHL	2.856	DLA	-26.45	RAL	331.92	RAD	6637.1	VEL	11.326	PTH	6.38	VHP	2.893	DPA	-25.61	RAP	311.77	ECC	1.1343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 9 24	2397.16	-2.25	62.09	181.02	137.54	15 49 21	1397.2	16.02	46.07
60.00	16 24 23	2197.73	2.18	48.38	185.27	130.25	17 1 1	1197.7	17.90	29.82
70.00	18 1 29	1912.20	6.89	28.78	188.82	123.53	18 33 22	912.2	19.91	8.03
80.00	20 1 16	1537.28	11.36	3.00	191.50	117.80	20 26 53	537.3	21.83	340.51
90.00	21 52 51	1177.46	13.67	337.71	192.67	115.00	22 12 28	177.5	22.81	314.41
100.00	22 44 8	1011.76	11.36	324.37	191.50	117.80	23 1 0	11.8	21.83	301.87
110.00	23 0 56	6247.05	6.89	295.60	188.82	123.53	24 45 3	5247.1	19.91	274.85

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2461	TRA	-.0633	TC3	-3.0405	BAU	.3376	SGT	1811.2	SGR	600.7	SG3	1495.6	ST	24.9	SR	19.3	SS	29.8
RDE	-.1853	RRA	.1504	RC3	-.5782	FAU	.25860	RRT	.6520	RRF	.7638	RTF	.8485	CRT	.9361	CRS	-.5796	CST	-.2854
FDE	-.4117	FRA	3.2553	FC-27.4436		BSP	2493	SGB	1908.3	R23	.2306	R13	.8625	LSA	36.1	MSA	23.9	SSA	2.1
BDE	.3081	BRA	.1632	BC3	3.0950	FSP	2578	SG1	1855.8	SG2	444.5	THA	12.96	EL1	31.0	EL2	5.4	ALF	37.25

LAUNCH DATE MAY 24 1971 FLIGHT TIME 192.00 ARRIVAL DATE DEC 2 1971

HELIOCENTRIC CONIC DISTANCE 453.483 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.169	GAL	1.20	AZL	91.20	HCA	145.70	SMA	185.04	ECC	.18242	INC	1.2002	V1	29.409
RP	213.77	LAP	-.68	LOP	27.90	VP	22.901	GAP	5.56	AZP	89.01	TAL	7.77	TAP	153.47	RCA	151.28	APO	218.79	V2	25.680
RC	141.545	GL	-13.67	GP	-5.80	ZAL	82.94	ZAP	98.56	ETS	180.46	ZAE	141.50	ETE	187.99	ZAC	95.61	ETC	275.13	LVI	-9.03

PLANETOCENTRIC CONIC

C3	8.121	VHL	2.850	DLA	-26.04	RAL	332.26	RAD	6637.1	VEL	11.324	PTH	6.38	VHP	2.873	DPA	-26.02	RAP	310.94	ECC	1.1337

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 8 41	2405.48	-2.66	62.44	181.22	137.52	15 48 47	1405.5	15.62	46.45
60.00	16 22 48	2208.36	1.71	48.89	185.43	130.27	16 59 37	1208.4	17.46	30.38
70.00	17 58 29	1927.01	6.34	29.56	188.91	123.63	18 30 37	927.0	19.43	8.91
80.00	19 55 43	1560.12	10.63	4.30	191.51	118.06	20 21 43	560.1	21.26	341.97
90.00	21 44 44	1208.50	12.77	339.54	192.61	115.45	22 4 53	208.5	22.17	316.46
100.00	22 38 34	1034.60	10.63	325.67	191.51	118.06	22 55 49	34.6	21.26	303.34
110.00	22 57 56	6261.87	6.34	296.39	188.91	123.63	24 42 18	5261.9	19.43	275.73

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2469	TRA	-.0334	TC3	-3.3155	BAU	.3661	SGT	1955.2	SGR	608.8	SG3	1516.3	ST	25.0	SR	18.7	SS	29.8
RDE	-.1788	RRA	.1538	RC3	-.6150	FAU	.26105	RRT	.6848	RRF	.7852	RTF	.8675	CRT	.9444	CRS	-.5476	CST	-.2742
FDE	-.3533	FRA	3.3416	FC-27.8290		BSP	2780	SGB	2047.8	R23	.2199	R13	.8792	LSA	35.7	MSA	24.2	SSA	2.1
BDE	.3049	BRA	.1574	BC3	3.3721	FSP	2615	SG1	2001.4	SG2	433.4	THA	12.64	EL1	30.8	EL2	5.0	ALF	36.35

LAUNCH DATE MAY 24 1971 FLIGHT TIME 194.00 ARRIVAL DATE DEC 4 1971

HELIOCENTRIC CONIC DISTANCE 457.677 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.168	GAL	1.16	AZL	91.17	HCA	146.88	SMA	185.03	ECC	.18232	INC	1.1725	V1	29.409
RP	214.08	LAP	-.64	LOP	29.08	VP	22.861	GAP	5.39	AZP	89.02	TAL	7.51	TAP	154.39	RCA	151.30	APO	218.77	V2	25.645
RC	143.936	GL	-13.38	GP	-6.01	ZAL	83.39	ZAP	96.57	ETS	180.25	ZAE	139.46	ETE	187.73	ZAC	95.48	ETC	274.94	LVI	-8.57

PLANETOCENTRIC CONIC

C3	8.088	VHL	2.844	DLA	-25.60	RAL	332.62	RAD	6637.0	VEL	11.323	PTH	6.38	VHP	2.856	DPA	-26.43	RAP	310.12	ECC	1.1331

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 7 55	2414.48	-3.12	62.81	181.44	137.50	15 48 9	1414.5	15.18	46.86
60.00	16 21 7	2219.76	1.21	49.43	185.60	130.29	16 58 7	1219.8	16.99	30.98
70.00	17 55 22	1942.67	5.74	30.39	189.02	123.73	18 27 45	942.7	18.92	9.83
80.00	19 50 8	1583.49	9.88	5.63	191.53	118.32	20 16 31	583.5	20.67	343.45
90.00	21 36 57	1238.96	11.87	341.33	192.57	115.86	21 57 36	239.0	21.52	318.45
100.00	22 32 59	1057.96	9.88	327.00	191.53	118.32	22 50 37	58.0	20.67	304.82
110.00	22 54 48	6277.53	5.74	297.21	189.02	123.73	24 39 26	5277.5	18.92	276.65

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2465	TRA	-.0024	TC3	-3.5949	BAU	.3951	SGT	2104.2	SGR	618.6	SG3	1536.8			ST	25.0	SR	18.2	SS	29.8
RDE	-.1724	RRA	.1573	RC3	-.6546	FAU	.26366	RRT	.7160	RRF	.8061	RTF	.8839			CRT	.9521	CRS	-.5192	CST	-.2683
FDE	-.2985	FRA	3.4190	FC	-28.2216	BSP	3071	SGB	2193.3	R23	.2099	R13	.8937			LSA	35.3	MSA	24.4	SSA	2.1
BDE	.3008	BRA	.1573	BC3	3.6540	FSP	2644	SG1	2152.2	SG2	422.2	THA	12.37			EL1	30.6	EL2	4.5	ALF	35.54

LAUNCH DATE MAY 24 1971 FLIGHT TIME 196.00 ARRIVAL DATE DEC 6 1971

HELIOCENTRIC CONIC DISTANCE 461.872 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.169	GAL	1.11	AZL	91.14	HCA	148.06	SMA	185.04	ECC	.18228	INC	1.1431	V1	29.409
RP	214.39	LAP	-.60	LOP	30.26	VP	22.821	GAP	5.22	AZP	89.03	TAL	7.23	TAP	155.30	RCA	151.31	APO	218.77	V2	25.609
RC	146.344	GL	-13.07	GP	-6.23	ZAL	83.87	ZAP	94.59	ETS	180.04	ZAE	137.43	ETE	187.49	ZAC	95.33	ETC	274.75	LVI	-8.10

PLANETOCENTRIC CONIC

C3	8.059	VHL	2.839	DLA	-25.13	RAL	332.99	RAD	6637.0	VEL	11.321	PTH	6.37	VHP	2.843	DPA	-26.84	RAP	309.32	ECC	1.1326

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 7 4	2424.19	-3.60	63.22	181.68	137.47	15 47 28	1424.2	14.71	47.30
60.00	16 19 20	2231.96	.67	50.01	185.78	130.30	16 56 32	1232.0	16.49	31.62
70.00	17 52 7	1959.19	5.12	31.26	189.15	123.81	18 24 46	959.2	18.37	10.80
80.00	19 44 30	1607.43	9.11	6.98	191.58	118.56	20 11 18	607.4	20.06	344.96
90.00	21 29 24	1269.15	10.97	343.08	192.56	116.23	21 50 33	269.1	20.84	320.40
100.00	22 27 22	1081.90	9.11	328.35	191.58	118.56	22 45 24	81.9	20.06	306.33
110.00	22 51 33	1006.01	5.12	320.18	189.15	123.81	23 8 19	6.0	18.37	299.72

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2447	TRA	.0294	TC3	-3.8795	BAU	.4246	SGT	2258.2	SGR	628.5	SG3	1551.5			ST	24.9	SR	17.5	SS	29.9
RDE	-.1652	RRA	.1612	RC3	-.6929	FAU	.26507	RRT	.7431	RRF	.8252	RTF	.8962			CRT	.9584	CRS	-.4785	CST	-.2476
FDE	-.2230	FRA	3.5001	FC	-28.4761	BSP	3368	SGB	2344.1	R23	.2036	R13	.9046			LSA	34.7	MSA	24.8	SSA	2.1
BDE	.2952	BRA	.1638	BC3	3.9409	FSP	2678	SG1	2307.7	SG2	411.6	THA	12.07			EL1	30.2	EL2	4.1	ALF	34.72

LAUNCH DATE MAY 24 1971 FLIGHT TIME 198.00 ARRIVAL DATE DEC 8 1971

HELIOCENTRIC CONIC DISTANCE 466.066 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.170	GAL	1.07	AZL	91.11	HCA	149.24	SMA	185.06	ECC	.18228	INC	1.1118	V1	29.409
RP	214.72	LAP	-.57	LOP	31.44	VP	22.782	GAP	5.05	AZP	89.04	TAL	6.94	TAP	156.18	RCA	151.33	APO	218.79	V2	25.573
RC	148.770	GL	-12.72	GP	-6.46	ZAL	84.36	ZAP	92.65	ETS	179.81	ZAE	135.42	ETE	187.26	ZAC	95.17	ETC	274.57	LVI	-7.63

PLANETOCENTRIC CONIC

C3	8.033	VHL	2.834	DLA	-24.63	RAL	333.37	RAD	6637.0	VEL	11.320	PTH	6.37	VHP	2.833	DPA	-27.25	RAP	308.54	ECC	1.1322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 6 8	2434.62	-4.13	63.66	181.92	137.44	15 46 42	1434.6	14.20	47.76
60.00	16 17 26	2244.99	.10	50.64	185.98	130.30	16 54 51	1245.0	15.95	32.30
70.00	17 48 43	1976.60	4.46	32.17	189.28	123.90	18 21 40	976.6	17.78	11.81
80.00	19 38 50	1631.98	8.30	8.36	191.64	118.78	20 6 2	632.0	19.41	346.49
90.00	21 21 59	1299.28	10.06	344.83	192.57	116.57	21 43 38	299.3	20.14	322.34
100.00	22 21 42	1106.45	8.30	329.73	191.64	118.78	22 40 8	106.4	19.41	307.86
110.00	22 48 9	1023.42	4.46	321.09	189.28	123.90	23 5 13	23.4	17.78	300.73

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2414	TRA	.0620	TC3	-4.1676	BAU	.4544	SGT	2416.2	SGR	640.3	SG3	1565.0			ST	24.7	SR	16.9	SS	30.0
RDE	-.1581	RRA	.1651	RC3	-.7337	FAU	.26648	RRT	.7687	RRF	.8436	RTF	.9172			CRT	.9642	CRS	-.4437	CST	-.2351
FDE	-.1340	FRA	3.5686	FC	-28.7203	BSP	3667	SGB	2499.6	R23	.1976	R13	.9145			LSA	34.1	MSA	25.0	SSA	2.0
BDE	.2886	BRA	.1763	BC3	4.2317	FSP	2701	SG1	2467.2	SG2	401.1	THA	11.83			EL1	29.7	EL2	3.7	ALF	34.01

LAUNCH DATE MAY 24 1971 FLIGHT TIME 200.00 ARRIVAL DATE DEC 10 1971

HELIOCENTRIC CONIC DISTANCE 470.259 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.172	GAL	1.02	AZL	91.08	HCA	150.41	SMA	185.09	ECC	.18233	INC	1.0784	V1	29.409
RP	215.04	LAP	-.53	LOP	32.61	VP	22.744	GAP	4.88	AZP	89.06	TAL	6.64	TAP	157.06	RCA	151.34	APO	218.84	V2	25.536
RC	151.211	GL	-12.35	GP	-6.70	ZAL	84.88	ZAP	90.74	ETS	179.57	ZAE	133.43	ETE	187.05	ZAC	95.00	ETC	274.39	LVI	-7.16

PLANETOCENTRIC CONIC

C3	8.010	VHL	2.830	DLA	-24.09	RAL	333.76	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.826	DPA	-27.66	RAP	307.79	ECC	1.1318

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 5 6	2445.83	-4.69	64.13	182.18	137.40	15 45 51	1445.8	13.65	48.26
60.00	16 15 23	2258.87	-.52	51.30	186.19	130.30	16 53 2	1258.9	15.38	33.02
70.00	17 45 10	1994.92	3.76	33.13	189.43	123.97	18 18 25	994.9	17.16	12.87
80.00	19 33 5	1657.20	7.47	9.78	191.71	118.99	20 0 42	657.2	18.72	348.06
90.00	21 14 40	1329.56	9.13	346.57	192.60	116.88	21 36 49	329.6	19.42	324.26
100.00	22 15 56	1131.67	7.47	331.15	191.71	118.99	22 34 48	131.7	18.72	309.42
110.00	22 44 36	1041.74	3.76	322.05	189.43	123.97	23 1 58	41.7	17.16	301.79

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY								ORBIT DETERMINATION ACCURACY					
TDE	-.2360	TRA	.0960	TC3	-4.4558	BAU	.4843	SGT	2575.8	SGR	652.6	SG3	1573.3			ST	24.4	SR	16.3	SS	30.2
RDE	-.1505	RRA	.1696	RC3	-.7735	FAU	.26675	RRT	.7911	RRF	.8605	RTF	.9157			CRT	.9692	CRS	-.4017	CST	-.2154
FDE	-.0707	FRA	3.6421	FC	-28.8306	BSP	3971	SGB	2657.2	R23	.1944	R13	.9220			LSA	33.6	MSA	25.3	SSA	2.0
BDE	.2799	BRA	.1949	BC3	4.5224	FSP	2718	SG1	2628.3	SG2	391.2	THA	11.59			EL1	29.1	EL2	3.4	ALF	33.35

LAUNCH DATE MAY 24 1971 FLIGHT TIME 202.00 ARRIVAL DATE DEC 12 1971

HELIOCENTRIC CONIC DISTANCE 474.452 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.174	GAL	.98	AZL	91.04	HCA	151.58	SMA	185.13	ECC	.18243	INC	1.0426	V1	29.409
RP	215.37	LAP	-.50	LOP	33.78	VP	22.706	GAP	4.72	AZP	89.08	TAL	6.33	TAP	157.91	RCA	151.35	APO	218.90	V2	25.499
RC	153.669	GL	-11.95	GP	-6.95	ZAL	85.42	ZAP	88.86	ETS	179.32	ZAE	131.45	ETE	186.84	ZAC	94.81	ETC	274.22	LVI	-6.68

PLANETOCENTRIC CONIC

C3	7.991	VHL	2.827	DLA	-23.52	RAL	334.16	RAD	6637.0	VEL	11.318	PTH	6.37	VHP	2.822	DPA	-28.07	RAP	307.07	ECC	1.1315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 3 57	2457.83	-5.29	64.63	182.45	137.35	15 44 55	1457.8	13.06	48.79
60.00	16 13 12	2273.65	-1.17	52.00	186.41	130.29	16 51 6	1273.7	14.76	33.78
70.00	17 41 27	2014.20	3.03	34.14	189.59	124.04	18 15 1	1014.2	16.51	13.97
80.00	19 27 14	1683.17	6.62	11.23	191.80	119.18	19 55 17	683.2	18.01	349.65
90.00	21 7 23	1360.14	8.18	348.32	192.65	117.16	21 30 3	360.1	18.66	326.19
100.00	22 10 5	1157.64	6.62	332.59	191.80	119.18	22 29 23	157.6	18.01	311.02
110.00	22 40 54	1061.01	3.03	323.06	189.59	124.04	22 58 35	61.0	16.51	302.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2283	TRA	.1306	TC3-4.7435	BAU	.5142	SGT	2736.7	SGR	665.6	SG3	1576.8	ST	23.9	SR	15.6	SS	30.5
RDE	-.1424	RRA	.1741	RC3	-.8136	FAU	.26633	RRT	.8116	RRF	.8761	RTF	.9229	CRT	.9735	CRS	-.3587	CST	-.1965
FDE	.0182	FRA	3.7019	FC-28.8542	BSP	4277	SGB	2816.5	R23	.1921	R13	.9285	LSA	33.0	MSA	25.4	SSA	2.0
BDE	.2691	BRA	.2176	BC3	4.8128	FSP	2729	SG1	2790.5	SG2	381.4	THA	11.38	EL1	28.3	EL2	3.0	ALF	32.81

LAUNCH DATE MAY 24 1971 FLIGHT TIME 204.00 ARRIVAL DATE DEC 14 1971

HELIOCENTRIC CONIC DISTANCE 478.644 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.177	GAL	.93	AZL	91.00	HCA	152.75	SMA	185.17	ECC	.18256	INC	1.0042	V1	29.409
RP	215.71	LAP	-.46	LOP	34.95	VP	22.668	GAP	4.56	AZP	89.11	TAL	6.00	TAP	158.75	RCA	151.37	APO	218.98	V2	25.461
RC	156.143	GL	-11.52	GP	-7.22	ZAL	85.98	ZAP	87.02	ETS	179.06	ZAE	129.50	ETE	186.65	ZAC	94.60	ETC	274.05	LVI	-6.20

PLANETOCENTRIC CONIC

C3	7.975	VHL	2.824	DLA	-22.91	RAL	334.56	RAD	6637.0	VEL	11.318	PTH	6.37	VHP	2.820	DPA	-28.49	RAP	306.39	ECC	1.1312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 2 41	2470.69	-5.93	65.16	182.73	137.29	15 43 51	1470.7	12.43	49.36
60.00	16 10 51	2289.38	-1.86	52.76	186.64	130.27	16 49 0	1289.4	14.10	34.59
70.00	17 37 33	2034.48	2.26	35.20	189.76	124.09	18 11 28	1034.5	15.80	15.13
80.00	19 21 15	1709.95	5.72	12.71	191.91	119.35	19 49 45	709.9	17.25	351.28
90.00	21 0 5	1391.19	7.21	350.08	192.72	117.42	21 23 16	391.2	17.87	328.12
100.00	22 4 7	1184.42	5.72	334.08	191.91	119.35	22 23 51	184.4	17.25	312.65
110.00	22 37 0	1081.30	2.26	324.12	189.76	124.09	22 55 1	81.3	15.80	304.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2187	TRA	.1664	TC3-5.0323	BAU	.5442	SGT	2899.9	SGR	680.8	SG3	1579.0	ST	23.3	SR	14.9	SS	31.0
RDE	-.1343	RRA	.1791	RC3	-.8559	FAU	.26565	RRT	.8304	RRF	.8909	RTF	.9290	CRT	.9772	CRS	-.3217	CST	-.1864
FDE	.1051	FRA	3.7624	FC-28.8378	BSP	4586	SGB	2978.8	R23	.1911	R13	.9341	LSA	32.8	MSA	25.3	SSA	2.0
BDE	.2567	BRA	.2445	BC3	5.1045	FSP	2736	SG1	2955.4	SG2	372.2	THA	11.21	EL1	27.5	EL2	2.7	ALF	32.34

LAUNCH DATE MAY 24 1971 FLIGHT TIME 206.00 ARRIVAL DATE DEC 16 1971

HELIOCENTRIC CONIC DISTANCE 482.834 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.180	GAL	.87	AZL	90.96	HCA	153.91	SMA	185.23	ECC	.18274	INC	.9628	V1	29.409
RP	216.04	LAP	-.42	LOP	36.11	VP	22.630	GAP	4.40	AZP	89.14	TAL	5.67	TAP	159.58	RCA	151.38	APO	219.08	V2	25.424
RC	158.631	GL	-11.05	GP	-7.51	ZAL	86.56	ZAP	85.22	ETS	178.79	ZAE	127.58	ETE	186.47	ZAC	94.36	ETC	273.90	LVI	-5.71

PLANETOCENTRIC CONIC

C3	7.962	VHL	2.822	DLA	-22.25	RAL	334.96	RAD	6637.0	VEL	11.317	PTH	6.37	VHP	2.821	DPA	-28.92	RAP	305.74	ECC	1.1310

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 1 16	2484.46	-6.62	65.76	183.01	137.22	15 42 40	1484.5	11.75	49.97
60.00	16 8 19	2306.12	-2.60	53.56	186.87	130.23	16 46 45	1306.1	13.39	35.44
70.00	17 33 27	2055.83	1.44	36.32	189.93	124.13	18 7 43	1055.8	15.06	16.33
80.00	19 15 5	1737.64	4.80	14.26	192.02	119.50	19 44 2	737.6	16.45	352.96
90.00	20 52 43	1422.86	6.22	351.87	192.80	117.64	21 16 26	422.9	17.04	330.07
100.00	21 57 59	1212.11	4.80	335.61	192.02	119.50	22 18 11	212.1	16.45	314.32
110.00	22 32 54	1102.65	1.44	325.24	189.93	124.13	22 51 16	102.7	15.06	305.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2064	TRA	.2033	TC3-5.3182	BAU	.5741	SGT	3063.1	SGR	697.4	SG3	1577.4	ST	22.5	SR	14.1	SS	31.6
RDE	-.1256	RRA	.1848	RC3	-.8988	FAU	.26425	RRT	.8473	RRF	.9044	RTF	.9540	CRT	.9801	CRS	-.2849	CST	-.1797
FDE	.2009	FRA	3.8200	FC-28.7319	BSP	4895	SGB	3141.5	R23	.1915	R13	.9386	LSA	32.9	MSA	24.9	SSA	2.0
BDE	.2416	BRA	.2748	BC3	5.3936	FSP	2733	SG1	3120.4	SG2	363.7	THA	11.07	EL1	26.4	EL2	2.4	ALF	31.98

LAUNCH DATE MAY 24 1971 FLIGHT TIME 208.00 ARRIVAL DATE DEC 18 1971

HELIOCENTRIC CONIC DISTANCE 487.023 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.184	GAL	.82	AZL	90.92	HCA	155.07	SMA	185.30	ECC	.18295	INC	.9176	V1	29.409
RP	216.39	LAP	-.39	LOP	37.27	VP	22.592	GAP	4.24	AZP	89.17	TAL	5.32	TAP	160.39	RCA	151.40	APO	219.20	V2	25.385
RC	161.134	GL	-10.53	GP	-7.81	ZAL	87.16	ZAP	83.46	ETS	178.50	ZAE	125.68	ETE	186.30	ZAC	94.10	ETC	273.75	LVI	-5.21

PLANETOCENTRIC CONIC

C3	7.953	VHL	2.820	DLA	-21.55	RAL	335.36	RAD	6637.0	VEL	11.317	PTH	6.37	VHP	2.825	DPA	-29.35	RAP	305.13	ECC	1.1309

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 59 40	2499.22	-7.36	66.39	183.30	137.14	15 41 20	1499.2	11.02	50.61
60.00	16 5 35	2323.96	-3.38	54.41	187.11	130.18	16 44 18	1324.0	12.64	36.34
70.00	17 29 7	2078.35	.58	37.49	190.12	124.15	18 3 46	1078.4	14.26	17.59
80.00	19 8 49	1766.36	3.83	15.83	192.14	119.63	19 38 15	766.4	15.61	354.66
90.00	20 45 15	1455.31	5.19	353.70	192.89	117.84	21 9 30	455.3	16.17	332.06
100.00	21 51 40	1240.83	3.83	337.20	192.14	119.63	22 12 21	240.8	15.61	316.03
110.00	22 28 34	1125.17	.58	326.41	190.12	124.15	22 47 19	125.2	14.26	306.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1917	TRA	.2404	TC3-5.6075	BAU	.6046	SGT	3229.6	SGR	716.5	SG3	1574.9	ST	21.5	SR	13.4	SS	32.4
RDE	-.1164	RRA	.1905	RC3	-.9453	FAU	.26285	RRT	.8630	RRF	.9171	RTF	.9384	CRT	.9818	CRS	-.2528	CST	-.1812
FDE	.3013	FRA	3.8690	FC-28.6133	BSP	5201	SGB	3308.1	R23	.1926	R13	.9426	LSA	33.3	MSA	24.1	SSA	2.0
BDE	.2242	BRA	.3068	BC3	5.6867	FSP	2730	SG1	3289.0	SG2	355.5	THA	10.97	EL1	25.3	EL2	2.2	ALF	31.66

LAUNCH DATE MAY 24 1971 FLIGHT TIME 210.00 ARRIVAL DATE DEC 20 1971

HELIOCENTRIC CONIC DISTANCE 491.210 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.189	GAL	.77	AZL	90.87	HCA	156.23	SMA	185.37	ECC	.18320	INC	.8885
RP	216.73	LAP	-.35	LOP	38.43	VP	22.555	GAP	4.09	AZP	89.20	TAL	4.98	TAP	161.19	RCA	151.41	APO	219.33
RC	163.649	GL	-9.97	GP	-8.14	ZAL	87.77	ZAP	81.74	ETS	178.19	ZAE	123.82	ETE	186.14	ZAC	93.62	ETC	273.60

V1	29.409	V2	25.347	LVI	-4.70														

PLANETOCENTRIC CONIC

C3	7.947	VHL	2.819	DLA	-20.80	RAL	335.76	RAD	6637.0	VEL	11.316	PTH	6.37	VHP	2.831	DPA	-29.80	RAP	304.56

ECC	1.1308																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 57 54	2515.04	-8.15	67.06	183.60	137.04	15 39 49	1515.0	10.24	51.30
60.00	16 2 36	2342.98	-4.21	55.32	187.36	130.12	16 41 39	1343.0	11.83	37.30
70.00	17 24 31	2102.14	-.33	38.73	190.30	124.15	17 59 34	1102.1	13.42	18.92
80.00	19 2 16	1796.23	2.83	17.48	192.27	119.74	19 32 12	796.2	14.72	356.43
90.00	20 37 36	1488.72	4.12	355.58	192.99	118.00	21 2 25	488.7	15.25	334.08
100.00	21 45 8	1270.71	2.83	338.85	192.27	119.74	22 6 18	270.7	14.72	317.80
110.00	22 23 58	1148.96	-.33	327.65	190.30	124.15	22 43 7	149.0	13.42	307.83

DIFFERENTIAL CORRECTIONS

TDE	-.1748	TRA	.2773	TC3	-5.8952	BAU	.6352
RDE	-.1071	RRA	.1965	RC3	-.9945	FAU	.26111
FDE	.3934	FRA	3.9008	FC	-28.4461	BSP	5504
BDE	.2050	BRA	.3399	BC3	5.9785	FSP	2714

MID-COURSE EXECUTION ACCURACY

SGT	3396.6	SGR	737.8	SG3	1569.0		
RRT	.8774	RRF	.9286	RTF	.9425		
SGB	3475.8	R23	.1937	R13	.9464		
SG1	3458.4	SG2	347.7	THA	10.90		

ORBIT DETERMINATION ACCURACY

ST	20.6	SR	12.7	SS	33.1
CRT	.9823	CRS	-.2334	CST	-.2012
LSA	33.9	MSA	23.0	SSA	2.0
EL1	24.1	EL2	2.0	ALF	31.43

LAUNCH DATE MAY 24 1971 FLIGHT TIME 212.00 ARRIVAL DATE DEC 22 1971

HELIOCENTRIC CONIC DISTANCE 495.394 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.193	GAL	.71	AZL	90.82	HCA	157.38	SMA	185.45	ECC	.18348	INC	.8154
RP	217.08	LAP	-.31	LOP	39.58	VP	22.518	GAP	3.93	AZP	89.25	TAL	4.60	TAP	161.98	RCA	151.42	APO	219.47
RC	166.178	GL	-9.36	GP	-8.50	ZAL	88.41	ZAP	80.07	ETS	177.86	ZAE	121.98	ETE	185.98	ZAC	93.50	ETC	273.47

V1	29.409	V2	25.308	LVI	-4.17														

PLANETOCENTRIC CONIC

C3	7.944	VHL	2.818	DLA	-20.00	RAL	336.15	RAD	6637.0	VEL	11.316	PTH	6.37	VHP	2.839	DPA	-30.27	RAP	304.04

ECC	1.1307																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 55 54	2532.05	-8.99	67.79	183.89	136.92	15 38 6	1532.1	9.39	52.03
60.00	15 59 21	2363.31	-5.11	56.30	187.61	130.03	16 38 44	1363.3	10.96	38.31
70.00	17 19 38	2127.32	-1.29	40.05	190.49	124.13	17 55 5	1127.3	12.51	20.30
80.00	18 55 27	1827.44	1.77	19.19	192.41	119.81	19 25 54	827.4	13.77	358.26
90.00	20 29 44	1523.29	3.02	357.52	193.10	118.13	20 55 7	523.3	14.28	336.15
100.00	21 38 18	1301.91	1.77	340.56	192.41	119.81	22 0 0	301.9	13.77	319.63
110.00	22 19 4	1174.14	-1.29	328.97	190.49	124.13	22 38 38	174.1	12.51	309.22

DIFFERENTIAL CORRECTIONS

TDE	-.1522	TRA	.3172	TC3	-6.1714	BAU	.6647
RDE	-.0963	RRA	.2040	RC3	-1.0433	FAU	.25822
FDE	.5151	FRA	3.9501	FC	-28.1411	BSP	5824
BDE	.1801	BRA	.3771	BC3	6.2590	FSP	2706

MID-COURSE EXECUTION ACCURACY

SGT	3559.3	SGR	760.8	SG3	1559.4		
RRT	.8896	RRF	.9390	RTF	.9453		
SGB	3639.7	R23	.1977	R13	.9490		
SG1	3623.6	SG2	341.3	THA	10.87		

ORBIT DETERMINATION ACCURACY

ST	19.3	SR	11.8	SS	34.5
CRT	.9802	CRS	-.2146	CST	-.2336
LSA	35.1	MSA	21.6	SSA	2.0
EL1	22.6	EL2	2.0	ALF	31.31

LAUNCH DATE MAY 24 1971 FLIGHT TIME 214.00 ARRIVAL DATE DEC 24 1971

HELIOCENTRIC CONIC DISTANCE 499.577 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.199	GAL	.65	AZL	90.76	HCA	158.53	SMA	185.53	ECC	.18380	INC	.7566
RP	217.43	LAP	-.28	LOP	40.73	VP	22.482	GAP	3.78	AZP	89.30	TAL	4.22	TAP	162.75	RCA	151.43	APO	219.64
RC	168.717	GL	-8.68	GP	-8.89	ZAL	89.06	ZAP	78.44	ETS	177.51	ZAE	120.18	ETE	185.84	ZAC	93.15	ETC	273.35

V1	29.409	V2	25.269	LVI	-3.63														

PLANETOCENTRIC CONIC

C3	7.944	VHL	2.819	DLA	-19.13	RAL	336.53	RAD	6637.0	VEL	11.316	PTH	6.37	VHP	2.849	DPA	-30.76	RAP	303.57

ECC	1.1307																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 53 38	2550.38	-9.90	68.58	184.19	136.78	15 36 9	1550.4	8.48	52.82
60.00	15 55 47	2385.08	-6.06	57.35	187.86	129.92	16 35 33	1385.1	10.02	39.39
70.00	17 14 23	2154.06	-2.31	41.44	190.69	124.08	17 50 17	1154.1	11.54	21.77
80.00	18 48 17	1860.15	.66	20.99	192.54	119.85	19 19 17	860.1	12.76	.17
90.00	20 21 34	1559.24	1.86	359.53	193.21	118.22	20 47 33	559.2	13.25	338.29
100.00	21 31 9	1334.62	.66	342.36	192.54	119.85	21 53 24	334.6	12.76	321.53
110.00	22 13 49	1200.88	-2.31	330.36	190.69	124.08	22 33 50	200.9	11.54	310.68

DIFFERENTIAL CORRECTIONS

TDE	-.1287	TRA	.3552	TC3	-6.4489	BAU	.6948
RDE	-.0859	RRA	.2112	RC3	-1.0967	FAU	.25529
FDE	.6124	FRA	3.9701	FC	-27.8203	BSP	6117
BDE	.1547	BRA	.4133	BC3	6.5415	FSP	2674

MID-COURSE EXECUTION ACCURACY

SGT	3724.0	SGR	786.9	SG3	1546.7		
RRT	.9010	RRF	.9484	RTF	.9582		
SGB	3806.2	R23	.2007	R13	.9518		
SG1	3791.5	SG2	335.3	THA	10.87		

ORBIT DETERMINATION ACCURACY

ST	18.2	SR	11.1	SS	35.5
CRT	.9743	CRS	-.2195	CST	-.2974
LSA	36.3	MSA	20.0	SSA	2.0
EL1	21.2	EL2	2.1	ALF	31.06

LAUNCH DATE MAY 24 1971 FLIGHT TIME 216.00 ARRIVAL DATE DEC 26 1971

HELIOCENTRIC CONIC DISTANCE 503.757 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.204	GAL	.60	AZL	90.69	HCA	159.68	SMA	185.63	ECC	.18415	INC	.6914
RP	217.79	LAP	-.24	LOP	41.87	VP	22.445	GAP	3.63	AZP	89.35	TAL	3.84	TAP	163.51	RCA	151.44	APO	219.81
RC	171.268	GL	-7.93	GP	-9.31	ZAL	89.73	ZAP	76.86	ETS	177.14	ZAE	118.40	ETE	185.70	ZAC	92.76	ETC	273.23

V1	29.409	V2	25.229	LVI	-3.07														

PLANETOCENTRIC CONIC

C3	7.949	VHL	2.819	DLA	-18.18	RAL	336.90	RAD	6637.0	VEL	11.317	PTH	6.37	VHP	2.862	DPA	-31.27	RAP	303.14

ECC	1.1308																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 51 4	2570.18	-10.89	69.43	184.49	136.61	15 33 55	1570.2	7.49	53.66
60.00	15 51 52	2408.50	-7.08	58.48	188.11	129.78	16 32 1	1408.5	9.01	40.54
70.00	17 8 43	2182.57	-3.40	42.94	190.88	124.00	17 45 6	1182.6	10.50	23.32
80.00	18 40 44	1894.61	-.51	22.88	192.68	119.85	19 12 18	894.6	11.68	2.15
90.00	20 13 2	1596.85	.65	1.62	193.32	118.27	20 39 39	596.9	12.15	340.50
100.00	21 23 36	1369.08	-.51	344.25	192.68	119.85	21 46 25	369.1	11.68	323.52
110.00	22 8 10	1229.39	-3.40	331.85	190.88	124.00	22 28 39	229.4	10.50	312.23

DIFFERENTIAL CORRECTIONS

TDE	-.1001	TRA	.3939	TC3	-6.7270	BAU	.7253
RDE	-.0739	RRA	.2197	RC3	-1.1558	FAU	.25237
FDE	.7305	FRA	3.9926	FC	-27.4876	BSP	6424
BDE	.1244	BRA	.4511	BC3	6.8256	FSP	2655

MID-COURSE EXECUTION ACCURACY

SGT	3890.9	SGR	817.4	SG3	1534.4		
RRT	.9114	RRF	.9570	RTF	.9506		
SGB	3975.8	R23	.2048	R13	.9540		
SG1	3962.1	SG2	330.4	THA	10.92		

ORBIT DETERMINATION ACCURACY

ST	17.2	SR	10.3	SS	37.1
CRT	.9615	CRS	-.2373	CST	-.3869
LSA	37.9	MSA	18.2	SSA	2.0
EL1	19.9	EL2	2.5	ALF	30.58

LAUNCH DATE MAY 24 1971 FLIGHT TIME 218.00 ARRIVAL DATE DEC 28 1971

HELIOCENTRIC CONIC DISTANCE 507.934 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.210	GAL	.54	AZL	90.62	HCA	160.82	SMA	185.73	ECC	.18454	INC	.6204	V1	29.409
RP	218.15	LAP	-.20	LOP	43.01	VP	22.409	GAP	3.48	AZP	89.41	TAL	3.44	TAP	164.26	RCA	151.45	APO	220.00	V2	25.189
RC	173.829	GL	-7.10	GP	-9.78	ZAL	90.41	ZAP	75.33	ETS	176.73	ZAE	116.67	ETE	185.57	ZAC	92.32	ETC	273.13	LVI	-2.48

PLANETOCENTRIC CONIC

C3	7.957	VHL	2.821	DLA	-17.16	RAL	337.24	RAD	6637.0	VEL	11.317	PTH	6.37	VHP	2.877	DPA	-31.82	RAP	302.77	ECC	1.1309

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 48 9	2591.66	-11.95	70.37	184.79	136.41	15 31 21	1591.7	6.42	54.57
60.00	15 47 32	2433.78	-8.18	59.72	188.35	129.60	16 28 5	1433.8	7.92	41.78
70.00	17 2 35	2213.10	-4.56	44.54	191.07	123.88	17 39 29	1213.1	9.37	24.96
80.00	18 32 41	1931.12	-1.74	24.88	192.82	119.81	19 4 52	931.1	10.51	4.24
90.00	20 4 2	1636.41	-.63	3.83	193.44	118.27	20 31 18	636.4	10.97	342.81
100.00	21 15 33	1405.59	-1.74	346.25	192.82	119.81	21 38 59	405.6	10.51	325.61
110.00	22 2 2	1259.92	-4.56	333.45	191.07	123.88	22 23 2	259.9	9.37	313.88

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0657	TRA	.4328	TC3	-6.9862	BAU	.7543	SGT	4049.4	SGR	849.4	SG3	1514.7	ST	16.4	SR	9.6	SS	38.7
RDE	-.0611	RRA	.2287	RC3	-1.2150	FAU	.24819	RRT	.9202	RRF	.9643	RTF	.9527	CRT	.9363	CRS	-.2781	CST	-.5149
FDE	.8517	FRA	3.9990	FC	-27.0048	BSP	6740	SGB	4137.6	R23	.2092	R13	.9560	LSA	39.9	MSA	16.2	SSA	2.1
BDE	.0897	BRA	.4695	BC3	7.0911	FSP	2628	SG1	4124.7	SG2	326.4	THA	11.00	EL1	18.8	EL2	3.0	ALF	29.55

LAUNCH DATE MAY 24 1971 FLIGHT TIME 220.00 ARRIVAL DATE DEC 30 1971

HELIOCENTRIC CONIC DISTANCE 512.108 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.216	GAL	.47	AZL	90.54	HCA	161.95	SMA	185.83	ECC	.18495	INC	.5399	V1	29.409
RP	218.51	LAP	-.17	LOP	44.15	VP	22.373	GAP	3.34	AZP	89.49	TAL	3.04	TAP	165.00	RCA	151.46	APO	220.20	V2	25.149
RC	176.400	GL	-6.18	GP	-10.31	ZAL	91.11	ZAP	73.85	ETS	176.29	ZAE	114.96	ETE	185.46	ZAC	91.82	ETC	273.03	LVI	-1.86

PLANETOCENTRIC CONIC

C3	7.969	VHL	2.823	DLA	-16.04	RAL	337.56	RAD	6637.0	VEL	11.317	PTH	6.37	VHP	2.895	DPA	-32.41	RAP	302.45	ECC	1.1312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 44 49	2615.09	-13.10	71.40	185.08	136.16	15 28 24	1615.1	5.25	55.56
60.00	15 42 41	2461.21	-9.37	61.06	188.60	129.38	16 23 42	1461.2	6.72	43.11
70.00	16 55 53	2245.98	-5.80	46.27	191.26	123.72	17 33 19	1246.0	8.15	26.72
80.00	18 24 3	1970.04	-3.06	27.02	192.96	119.72	18 56 53	970.0	9.26	6.44
90.00	19 54 27	1678.41	-1.98	6.17	193.56	118.22	20 22 26	678.4	9.69	345.23
100.00	21 6 55	1444.51	-3.06	348.39	192.96	119.72	21 31 0	444.5	9.26	327.81
110.00	21 55 20	1292.80	-5.80	335.18	191.26	123.72	22 16 53	292.8	8.15	315.64

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0264	TRA	.4723	TC3	-7.2461	BAU	.7840	SGT	4211.4	SGR	887.6	SG3	1495.9	ST	16.4	SR	9.0	SS	40.8
RDE	-.0467	RRA	.2393	RC3	-1.2814	FAU	.24407	RRT	.9281	RRF	.9709	RTF	.9543	CRT	.8994	CRS	-.3509	CST	-.6631
FDE	.9816	FRA	4.0099	FC	-26.5141	BSP	7023	SGB	4303.9	R23	.2147	R13	.9576	LSA	42.5	MSA	14.2	SSA	2.2
BDE	.0537	BRA	.5295	BC3	7.3586	FSP	2580	SG1	4291.7	SG2	324.4	THA	11.13	EL1	18.4	EL2	3.5	ALF	27.38

LAUNCH DATE MAY 24 1971 FLIGHT TIME 222.00 ARRIVAL DATE JAN 1 1972

HELIOCENTRIC CONIC DISTANCE 516.280 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.223	GAL	.41	AZL	90.45	HCA	163.09	SMA	185.94	ECC	.18539	INC	.4488	V1	29.409
RP	218.88	LAP	-.13	LOP	45.28	VP	22.337	GAP	3.19	AZP	89.57	TAL	2.63	TAP	165.72	RCA	151.47	APO	220.42	V2	25.109
RC	178.981	GL	-5.14	GP	-10.89	ZAL	91.83	ZAP	72.43	ETS	175.80	ZAE	113.29	ETE	185.34	ZAC	91.26	ETC	272.94	LVI	-1.19

PLANETOCENTRIC CONIC

C3	7.987	VHL	2.826	DLA	-14.81	RAL	337.85	RAD	6637.0	VEL	11.318	PTH	6.37	VHP	2.914	DPA	-33.05	RAP	302.19	ECC	1.1315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 40 58	2640.80	-14.36	72.55	185.36	135.86	15 24 59	1640.8	3.96	56.64
60.00	15 37 14	2491.16	-10.66	62.54	188.84	129.10	16 18 45	1491.2	5.41	44.36
70.00	16 48 31	2281.62	-7.15	48.15	191.44	123.49	17 26 32	1281.6	6.81	28.61
80.00	18 14 42	2011.84	-4.46	29.33	193.10	119.55	18 48 14	1011.8	7.89	8.79
90.00	19 44 10	1723.25	-3.42	8.68	193.67	118.09	20 12 53	723.3	8.31	347.80
100.00	20 57 34	1486.31	-4.46	350.69	193.10	119.55	21 22 20	486.3	7.85	330.16
110.00	21 47 57	1328.44	-7.15	337.07	191.44	123.49	22 10 5	328.4	6.81	317.53

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0171	TRA	.5096	TC3	-7.4993	BAU	.8138	SGT	4371.7	SGR	930.8	SG3	1473.5	ST	17.3	SR	8.6	SS	42.7
RDE	-.0316	RRA	.2508	RC3	-1.3540	FAU	.23957	RRT	.9348	RRF	.9766	RTF	.9658	CRT	.8668	CRS	-.4527	CST	-.7995
FDE	1.1018	FRA	4.0019	FC	-25.9664	BSP	7329	SGB	4469.7	R23	.2201	R13	.9591	LSA	45.3	MSA	12.1	SSA	2.3
BDE	.0360	BRA	.5680	BC3	7.6205	FSP	2549	SG1	4457.9	SG2	324.1	THA	11.32	EL1	18.9	EL2	4.0	ALF	24.26

LAUNCH DATE MAY 24 1971 FLIGHT TIME 224.00 ARRIVAL DATE JAN 3 1972

HELIOCENTRIC CONIC DISTANCE 520.448 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.230	GAL	.35	AZL	90.35	HCA	164.22	SMA	186.06	ECC	.18586	INC	.3469	V1	29.409
RP	219.25	LAP	-.09	LOP	46.41	VP	22.302	GAP	3.05	AZP	89.67	TAL	2.22	TAP	166.44	RCA	151.48	APO	220.64	V2	25.068
RC	181.572	GL	-3.96	GP	-11.55	ZAL	92.55	ZAP	71.06	ETS	175.26	ZAE	111.65	ETE	185.24	ZAC	90.62	ETC	272.86	LVI	-.46

PLANETOCENTRIC CONIC

C3	8.012	VHL	2.831	DLA	-13.45	RAL	338.09	RAD	6637.0	VEL	11.319	PTH	6.37	VHP	2.937	DPA	-33.76	RAP	302.00	ECC	1.1319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 36 31	2669.21	-15.74	73.83	185.65	135.50	15 21 0	1669.2	2.53	57.83
60.00	15 31 4	2524.12	-12.07	64.18	189.07	128.75	16 13 8	1524.1	3.97	46.14
70.00	16 40 19	2320.57	-8.60	50.23	191.62	123.18	17 18 59	1320.6	5.34	30.67
80.00	18 4 28	2057.13	-5.98	31.83	193.23	119.31	18 38 46	1057.1	6.39	11.32
90.00	19 32 59	1771.61	-4.97	11.39	193.78	117.88	20 2 30	771.6	6.80	350.55
100.00	20 47 20	1531.60	-5.98	353.20	193.23	119.31	21 12 52	531.6	6.39	332.69
110.00	21 39 45	1367.39	-8.60	339.14	191.62	123.18	22 2 32	367.4	5.34	319.59

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0712	TRA	.5485	TC3	-7.7465	BAU	.8439	SGT	4533.8	SGR	982.8	SG3	1452.8	ST	19.7	SR	8.5	SS	45.4
RDE	-.0133	RRA	.2645	RC3	-1.4374	FAU	.23526	RRT	.9410	RRF	.9816	RTF	.9572	CRT	.8385	CRS	-.5853	CST	-.9042
FDE	1.2515	FRA	3.9974	FC	-25.4215	BSP	7615	SGB	4639.1	R23	.2252	R13	.9606	LSA	49.2	MSA	9.9	SSA	2.4
BDE	.0725	BRA	.6089	BC3	7.8788	FSP	2494	SG1	4627.6	SG2	325.7	THA	11.59	EL1	21.0	EL2	4.3	ALF	20.70

LAUNCH DATE MAY 24 1971 FLIGHT TIME 226.00 ARRIVAL DATE JAN 5 1972

HELIOCENTRIC CONIC DISTANCE 524.612 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.237	GAL	.28	AZL	90.23	HCA	165.34	SMA	186.18	ECC	.18636	INC	.2294	V1	29.409
RP	219.62	LAP	-.06	LOP	47.54	VP	22.266	GAP	2.90	AZP	89.78	TAL	1.80	TAP	167.14	RCA	151.48	APO	220.88	V2	25.026
RC	184.172	GL	-2.61	GP	-12.30	ZAL	93.29	ZAP	89.75	ETS	174.65	ZAE	110.04	ETE	185.15	ZAC	89.89	ETC	272.79	LVI	.34

PLANETOCENTRIC CONIC

C3	8.045	VHL	2.836	DLA	-11.93	RAL	338.28	RAD	6637.0	VEL	11.321	PTH	6.37	VHP	2.962	DPA	-34.56	RAP	301.87	ECC	1.1324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 31 19	2700.90	-17.28	75.28	185.93	135.05	15 16 20	1700.9	.94	59.16
60.00	15 24 2	2560.71	-13.62	66.03	189.30	128.31	16 6 42	1560.7	2.36	47.89
70.00	16 31 6	2363.51	-10.20	52.53	191.80	122.77	17 10 30	1363.5	3.71	32.92
80.00	17 53 9	2106.68	-7.62	34.59	193.36	118.96	18 28 16	1106.7	4.74	14.07
90.00	19 20 41	1824.30	-6.64	14.37	193.89	117.55	19 51 5	824.3	5.13	353.52
100.00	20 36 1	1581.15	-7.62	355.96	193.36	118.96	21 2 22	581.2	4.74	335.43
110.00	21 30 32	1410.33	-10.20	341.45	191.80	122.77	21 54 3	410.3	3.71	321.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1323	TRA	.5822	TC3	-7.9827	BAU	.8742	SGT	4692.8	SGR	1041.0	SG3	1426.6	ST	23.4	SR	8.7	SS	48.1
RDE	.0069	RRA	.2782	RC3	-1.5302	FAU	.23056	RRT	.9467	RRF	.9858	RTF	.9588	CRT	.8467	CRS	-.7187	CST	-.9610
FDE	1.3970	FRA	3.9521	FC	-24.8118	BSP	7962	SGB	4806.8	R23	.2284	R13	.9622	LSA	53.6	MSA	7.8	SSA	2.7
BDE	.1325	BRA	.6453	BC3	8.1280	FSP	2475	SG1	4795.6	SG2	328.0	THA	11.92	EL1	24.6	EL2	4.4	ALF	18.13

LAUNCH DATE MAY 24 1971 FLIGHT TIME 228.00 ARRIVAL DATE JAN 7 1972

HELIOCENTRIC CONIC DISTANCE 528.773 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.245	GAL	.22	AZL	90.09	HCA	166.46	SMA	186.31	ECC	.18688	INC	.0857	V1	29.409
RP	219.99	LAP	-.02	LOP	48.66	VP	22.231	GAP	2.76	AZP	89.91	TAL	1.37	TAP	167.83	RCA	151.49	APO	221.12	V2	24.987
RC	186.781	GL	-1.06	GP	-13.17	ZAL	94.04	ZAP	88.51	ETS	173.97	ZAE	108.46	ETE	185.06	ZAC	89.03	ETC	272.74	LVI	1.23

PLANETOCENTRIC CONIC

C3	8.089	VHL	2.844	DLA	-10.21	RAL	338.40	RAD	6637.0	VEL	11.323	PTH	6.38	VHP	2.990	DPA	-35.45	RAP	301.81	ECC	1.1331

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 25 12	2736.61	-18.99	76.94	186.21	134.49	15 10 48	1736.6	-.85	60.65
60.00	15 15 54	2601.76	-15.34	68.13	189.54	127.74	15 59 16	1601.8	.56	49.86
70.00	16 20 38	2411.41	-11.95	55.13	191.98	122.24	17 0 50	1411.4	1.89	35.43
80.00	17 40 28	2161.55	-9.42	37.68	193.49	118.46	18 16 29	1161.5	2.89	17.09
90.00	19 6 59	1882.42	-8.45	17.67	194.00	117.09	19 38 21	882.4	3.28	356.78
100.00	20 23 19	1636.02	-9.42	359.04	193.49	118.46	20 50 36	636.0	2.89	338.46
110.00	21 20 5	1458.23	-11.95	344.05	191.98	122.24	21 44 23	458.2	1.89	324.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2020	TRA	.6145	TC3	-8.1927	BAU	.9032	SGT	4844.1	SGR	1105.5	SG3	1392.8	ST	28.6	SR	9.6	SS	51.0
RDE	.0299	RRA	.2951	RC3	-1.6245	FAU	.22413	RRT	.9505	RRF	.9891	RTF	.9594	CRT	.8763	CRS	-.8317	CST	-.9859
FDE	1.5422	FRA	3.9097	FC	-23.9881	BSP	8205	SGB	4968.6	R23	.2344	R13	.9629	LSA	58.9	MSA	5.9	SSA	3.0
BDE	.2042	BRA	.6817	BC3	8.3522	FSP	2395	SG1	4957.3	SG2	335.6	THA	12.30	EL1	29.9	EL2	4.5	ALF	16.84

LAUNCH DATE MAY 24 1971 FLIGHT TIME 230.00 ARRIVAL DATE JAN 9 1972

HELIOCENTRIC CONIC DISTANCE 532.930 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.252	GAL	.15	AZL	89.93	HCA	167.58	SMA	186.44	ECC	.18743	INC	.0504	V1	29.409
RP	220.36	LAP	.01	LOP	49.78	VP	22.196	GAP	2.62	AZP	90.06	TAL	.94	TAP	168.52	RCA	151.49	APO	221.38	V2	24.946
RC	189.399	GL	.74	GP	-14.18	ZAL	94.79	ZAP	87.34	ETS	173.20	ZAE	106.91	ETE	184.98	ZAC	88.04	ETC	272.69	LVI	2.23

PLANETOCENTRIC CONIC

C3	8.149	VHL	2.855	DLA	-8.26	RAL	338.44	RAD	6637.1	VEL	11.325	PTH	6.38	VHP	3.023	DPA	-36.48	RAP	301.84	ECC	1.1341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 17 55	2777.37	-20.92	78.89	186.50	133.76	15 4 12	1777.4	-2.90	62.35
60.00	15 6 24	2648.43	-17.27	70.56	189.79	127.00	15 50 32	1648.4	-1.50	52.08
70.00	16 8 36	2465.54	-13.90	58.12	192.17	121.52	16 49 41	1465.5	-.18	38.25
80.00	17 26 2	2223.15	-11.39	41.18	193.63	117.79	18 3 5	1223.2	.81	20.47
90.00	18 51 28	1947.48	-10.45	21.41	194.13	116.43	19 23 56	947.5	1.18	.42
100.00	20 8 53	1697.62	-11.39	2.55	193.63	117.79	20 37 11	697.6	.81	341.84
110.00	21 8 2	1512.36	-13.90	347.04	192.17	121.52	21 33 15	512.4	-.18	327.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2854	TRA	.6438	TC3	-8.3896	BAU	.9334	SGT	4997.5	SGR	1184.1	SG3	1359.1	ST	35.4	SR	11.3	SS	54.3
RDE	.0576	RRA	.3141	RC3	-1.7366	FAU	.21803	RRT	.9542	RRF	.9920	RTF	.9603	CRT	.9101	CRS	-.9109	CST	-.9941
FDE	1.7024	FRA	3.8468	FC	-23.1633	BSP	8537	SGB	5135.9	R23	.2382	R13	.9640	LSA	65.6	MSA	4.6	SSA	3.2
BDE	.2912	BRA	.7163	BC3	8.5674	FSP	2356	SG1	5124.3	SG2	345.4	THA	12.80	EL1	36.9	EL2	4.5	ALF	16.38

LAUNCH DATE MAY 24 1971 FLIGHT TIME 232.00 ARRIVAL DATE JAN 11 1972

HELIOCENTRIC CONIC DISTANCE 537.086 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.260	GAL	.08	AZL	89.74	HCA	168.70	SMA	186.57	ECC	.18800	INC	.2561	V1	29.409
RP	220.74	LAP	.05	LOP	50.89	VP	22.161	GAP	2.47	AZP	90.25	TAL	.50	TAP	169.20	RCA	151.50	APO	221.65	V2	24.904
RC	192.025	GL	2.88	GP	-15.37	ZAL	95.54	ZAP	86.26	ETS	172.30	ZAE	105.39	ETE	184.91	ZAC	86.86	ETC	272.65	LVI	3.40

PLANETOCENTRIC CONIC

C3	8.232	VHL	2.869	DLA	-5.99	RAL	338.35	RAD	6637.1	VEL	11.329	PTH	6.38	VHP	3.061	DPA	-37.67	RAP	301.97	ECC	1.1355

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 9 8	2824.56	-23.12	81.22	186.83	132.82	14 56 13	1824.6	-5.27	64.33
60.00	14 55 7	2702.26	-19.45	73.44	190.07	126.02	15 40 10	1702.3	-3.87	54.66
70.00	15 54 30	2527.65	-16.08	61.61	192.39	120.55	16 36 38	1527.6	-2.55	41.50
80.00	17 9 19	2293.43	-13.59	45.24	193.80	116.84	17 47 33	1293.4	-1.58	24.33
90.00	18 33 36	2021.48	-12.65	25.72	194.27	115.50	19 7 18	1021.5	-1.20	4.55
100.00	19 52 11	1767.90	-13.59	6.61	193.80	116.84	20 21 39	767.9	-1.58	345.70
110.00	20 53 57	1574.47	-16.08	350.53	192.39	120.55	21 20 11	574.5	-2.55	330.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3851	TRA	.6656	TC3	-8.5880	BAU	.9678	SGT	5163.6	SGR	1286.6	SG3	1330.4	ST	44.0	SR	13.5	SS	57.2
RDE	.0886	RRA	.3322	RC3	-1.8923	FAU	.21471	RRT	.9601	RRF	.9943	RTF	.9641	CRT	.9339	CRS	-.9552	CST	-.9948
FDE	1.8420	FRA	3.7161	FC	-22.5808	BSP	8741	SGB	5321.5	R23	.2302	R13	.9679	LSA	73.2	MSA	5.0	SSA	2.4
BDE	.3951	BRA	.7439	BC3	8.7940	FSP	2214	SG1	5310.0	SG2	349.8	THA	13.51	EL1	45.8	EL2	4.6	ALF	16.11

LAUNCH DATE MAY 24 1971 FLIGHT TIME 234.00 ARRIVAL DATE JAN 13 1972

HELIOCENTRIC CONIC DISTANCE 541.234 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.268	GAL	.01	AZL	89.51	HCA	169.81	SMA	186.71	ECC	.18860	INC	.4831	V1	29.409
RP	221.12	LAP	.09	LOP	52.00	VP	22.127	GAP	2.33	AZP	90.48	TAL	.06	TAP	169.86	RCA	151.50	APO	221.92	V2	24.863
RC	194.659	GL	5.43	GP	-16.79	ZAL	96.29	ZAP	65.28	ETS	171.25	ZAE	103.89	ETE	184.85	ZAC	85.45	ETC	272.62	LVI	4.76

PLANETOCENTRIC CONIC

C3	8.352	VHL	2.890	DLA	-3.34	RAL	338.12	RAD	6637.2	VEL	11.334	PTH	6.39	VHP	3.106	DPA	-39.08	RAP	302.22	ECC	1.1374

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 58 26	2880.30	-25.67	84.07	187.23	131.54	14 46 26	1880.3	-8.05	66.70
60.00	14 41 33	2765.60	-21.94	76.94	190.42	124.69	15 27 38	1765.6	-6.64	57.71
70.00	15 37 44	2600.41	-18.54	65.80	192.68	119.21	16 21 4	1600.4	-5.32	45.31
80.00	16 49 36	2375.37	-16.05	50.08	194.03	115.52	17 29 11	1375.4	-4.34	28.84
90.00	18 12 36	2107.57	-15.12	30.84	194.48	114.19	18 47 43	1107.6	-3.97	9.36
100.00	19 32 28	1849.84	-16.05	11.44	194.03	115.52	20 3 18	849.8	-4.34	350.21
110.00	20 37 10	1647.23	-18.54	354.72	192.68	119.21	21 4 37	647.2	-5.32	334.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3788	TRA	.7954	TC3	-8.9498	BAU	1.0282	SGT	5460.6	SGR	1511.0	SG3	1377.2	ST	45.1	SR	13.9	SS	47.9
RDE	.0566	RRA	.4212	RC3	-2.1684	FAU	.22090	RRT	.9561	RRF	.9967	RTF	.9627	CRT	.8359	CRS	-.9423	CST	-.9691
FDE	1.2374	FRA	4.2991	FC	-22.8982	BSP	8832	SGB	5665.8	R23	.2407	R13	.9677	LSA	66.4	MSA	10.0	SSA	1.3
BDE	.3830	BRA	.9001	BC3	9.2087	FSP	2060	SG1	5649.6	SG2	427.8	THA	14.91	EL1	46.6	EL2	7.4	ALF	14.81

LAUNCH DATE MAY 24 1971 FLIGHT TIME 236.00 ARRIVAL DATE JAN 15 1972

HELIOCENTRIC CONIC DISTANCE 545.378 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.277	GAL	-.06	AZL	89.23	HCA	170.91	SMA	186.85	ECC	.18922	INC	.7691	V1	29.409
RP	221.50	LAP	.12	LOP	53.11	VP	22.092	GAP	2.19	AZP	90.76	TAL	359.61	TAP	170.52	RCA	151.50	APO	222.21	V2	24.821
RC	197.299	GL	8.54	GP	-18.51	ZAL	97.02	ZAP	64.44	ETS	170.01	ZAE	102.43	ETE	184.80	ZAC	83.73	ETC	272.61	LVI	6.39

PLANETOCENTRIC CONIC

C3	8.530	VHL	2.921	DLA	-.16	RAL	337.68	RAD	6637.3	VEL	11.342	PTH	6.39	VHP	3.162	DPA	-40.78	RAP	302.63	ECC	1.1404

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 45 5	2947.49	-28.65	87.69	187.78	129.76	14 34 13	1947.5	-11.38	69.59
60.00	14 24 50	2841.74	-24.83	81.31	190.93	122.83	15 12 12	1841.7	-9.94	61.43
70.00	15 17 16	2687.56	-21.36	71.00	193.11	117.31	16 2 3	1687.6	-8.60	49.93
80.00	16 25 43	2473.20	-18.83	56.02	194.39	113.61	17 6 57	1473.2	-7.60	34.27
90.00	17 47 14	2210.19	-17.88	37.10	194.82	112.28	18 24 4	1210.2	-7.22	15.14
100.00	19 8 35	1947.67	-18.83	17.38	194.39	113.61	19 41 3	947.7	-7.60	355.64
110.00	20 16 42	1734.38	-21.36	359.92	193.11	117.31	20 45 37	734.4	-8.60	338.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6591	TRA	.7060	TC3	-8.6846	BAU	1.0195	SGT	5415.1	SGR	1508.6	SG3	1213.6	ST	68.3	SR	21.8	SS	67.0
RDE	.1875	RRA	.3956	RC3	-2.1235	FAU	.19171	RRT	.9600	RRF	.9972	RTF	.9601	CRT	.9680	CRS	-.9923	CST	-.9907
FDE	2.2567	FRA	3.5508	FC	-19.4582	BSP	9525	SGB	5621.3	R23	.2508	R13	.9652	LSA	97.9	MSA	7.6	SSA	1.0
BDE	.6653	BRA	.8092	BC3	8.9404	FSP	2146	SG1	5606.5	SG2	408.1	THA	15.05	EL1	71.6	EL2	5.2	ALF	17.29

LAUNCH DATE MAY 24 1971 FLIGHT TIME 238.00 ARRIVAL DATE JAN 17 1972

HELIOCENTRIC CONIC DISTANCE 549.517 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.285	GAL	-.14	AZL	88.87	HCA	172.01	SMA	187.00	ECC	.18986	INC	1.1300	V1	29.409
RP	221.88	LAP	.16	LOP	54.21	VP	22.058	GAP	2.06	AZP	91.12	TAL	359.15	TAP	171.17	RCA	151.49	APO	222.50	V2	24.780
RC	199.945	GL	12.40	GP	-20.65	ZAL	97.71	ZAP	63.78	ETS	168.52	ZAE	100.98	ETE	184.77	ZAC	81.60	ETC	272.61	LVI	8.38

PLANETOCENTRIC CONIC

C3	8.808	VHL	2.968	DLA	3.71	RAL	336.96	RAD	6637.4	VEL	11.354	PTH	6.41	VHP	3.232	DPA	-42.86	RAP	303.24	ECC	1.1450

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 28 5	3030.62	-32.18	92.48	188.66	127.15	14 18 35	2030.6	-15.46	73.28
60.00	14 3 43	2935.79	-28.17	87.02	191.74	120.10	14 52 39	1935.8	-13.95	66.14
70.00	14 51 34	2795.04	-24.56	77.70	193.82	114.52	15 38 9	1795.0	-12.54	55.75
80.00	15 55 52	2593.69	-21.93	63.61	195.01	110.79	16 39 6	1593.7	-11.50	41.09
90.00	17 15 34	2336.53	-20.95	45.10	195.40	109.45	17 54 30	1336.5	-11.11	22.39
100.00	18 38 44	2068.16	-21.93	24.98	195.01	110.79	19 13 12	1068.2	-11.50	2.46
110.00	19 51 1	1841.86	-24.56	6.61	193.82	114.52	20 21 43	841.9	-12.54	344.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8693	TRA	.7039	TC3	-8.6936	BAU	1.0596	SGT	5594.5	SGR	1695.8	SG3	1169.3	ST	86.7	SR	29.3	SS	74.8
RDE	.2735	RRA	.4321	RC3	-2.3211	FAU	.18445	RRT	.9627	RRF	.9982	RTF	.9611	CRT	.9791	CRS	-.9976	CST	-.9904
FDE	2.5774	FRA	3.3730	FC	-18.1301	BSP	9791	SGB	5845.8	R23	.2482	R13	.9668	LSA	117.9	MSA	8.9	SSA	.6
BDE	.9113	BRA	.8259	BC3	8.9981	FSP	2020	SG1	5829.3	SG2	440.1	THA	16.36	EL1	91.3	EL2	5.7	ALF	18.38

LAUNCH DATE MAY 24 1971 FLIGHT TIME 240.00 ARRIVAL DATE JAN 19 1972

HELIOCENTRIC CONIC DISTANCE 553.652 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.294	GAL	-.21	AZL	88.40	HCA	173.11	SMA	187.15	ECC	.19052	INC	1.6030	V1	29.409
RP	222.27	LAP	.19	LOP	55.31	VP	22.024	GAP	1.92	AZP	91.59	TAL	358.70	TAP	171.81	RCA	151.49	APO	222.80	V2	24.738
RC	202.595	GL	17.28	GP	-23.34	ZAL	98.30	ZAP	63.38	ETS	166.70	ZAE	99.56	ETE	184.75	ZAC	78.91	ETC	272.64	LVI	10.87

PLANETOCENTRIC CONIC

C3	9.267	VHL	3.044	DLA	8.52	RAL	335.83	RAD	6637.7	VEL	11.374	PTH	6.43	VHP	3.326	DPA	-45.47	RAP	304.17	ECC	1.1525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	13 5 43	3136.73	-36.34	99.19	190.20	123.12	13 57 59	2136.7	-20.55	78.23
60.00	13 36 6	3055.88	-32.02	94.86	193.15	115.91	14 27 1	2055.9	-18.90	72.43
70.00	14 18 1	2932.53	-28.13	86.78	195.07	110.22	15 6 54	1932.5	-17.37	63.48
80.00	15 16 51	2748.26	-25.30	73.85	196.12	106.41	16 2 39	1748.3	-16.22	50.13
90.00	16 34 8	2498.86	-24.23	55.85	196.45	105.04	17 15 47	1498.9	-15.78	32.01
100.00	17 59 43	2222.73	-25.30	35.22	196.12	106.41	18 36 46	1222.7	-16.22	11.50
110.00	19 17 28	1979.35	-28.13	15.70	195.07	110.22	19 50 27	979.3	-17.37	352.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1251	TRA	.6766	TC3	-8.5001	BAU	1.0972	SGT	5738.1	SGR	1901.5	SG3	1090.5	ST	107.9	SR	38.6	SS	81.0
RDE	.3637	RRA	.4719	RC3	-2.4841	FAU	.17193	RRT	.9635	RRF	.9988	RTF	.9604	CRT	.9844	CRS	-.9993	CST	-.9899
FDE	2.8389	FRA	3.1151	FC	-16.0611	BSP	10064	SGB	6045.0	R23	.2497	R13	.9671	LSA	140.0	MSA	10.3	SSA	.4
BDE	1.1887	BRA	.8250	BC3	8.8557	FSP	1876	SG1	6025.5	SG2	484.5	THA	17.83	EL1	114.4	EL2	6.4	ALF	19.46

LAUNCH DATE MAY 24 1971 FLIGHT TIME 242.00 ARRIVAL DATE JAN 21 1972

HELIOCENTRIC CONIC DISTANCE 557.781 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.303	GAL	-.28	AZL	87.75	HCA	174.20	SMA	187.30	ECC	.19120	INC	2.2543	V1	29.409
RP	222.65	LAP	.23	LOP	56.41	VP	21.990	GAP	1.78	AZP	92.24	TAL	358.24	TAP	172.44	RCA	151.48	APO	223.11	V2	24.696
RC	205.250	GL	23.59	GP	-26.84	ZAL	98.72	ZAP	83.37	ETS	164.47	ZAE	98.17	ETE	184.76	ZAC	75.41	ETC	272.70	LVI	14.07

PLANETOCENTRIC CONIC

C3	10.082	VHL	3.175	DLA	14.64	RAL	334.08	RAD	6638.1	VEL	11.410	PTH	6.46	VHP	3.463	DPA	-48.83	RAP	305.61	ECC	1.1659

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	12 35 2	3277.38	-41.11	109.26	193.16	116.44	13 29 39	2277.4	-27.01	85.38
60.00	12 58 8	3215.87	-36.20	106.35	195.80	109.07	13 51 44	2215.9	-25.08	81.44
70.00	13 31 36	3117.40	-31.77	99.93	197.35	103.24	14 23 33	2117.4	-23.26	74.58
80.00	14 22 14	2958.72	-28.51	88.65	198.10	99.28	15 11 33	1958.7	-21.88	63.19
90.00	15 35 46	2721.38	-27.26	71.42	198.31	97.83	16 21 8	1721.4	-21.34	45.96
100.00	17 5 6	2433.19	-28.51	50.01	198.10	99.28	17 45 39	1433.2	-21.88	24.56
110.00	18 31 2	2164.22	-31.77	28.84	197.35	103.24	19 7 6	1164.2	-23.26	3.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4897	TRA	.6339	TC3	-8.0105	BAU	1.1356		SGT	5873.8	SGR	2167.3	SG3	991.3		ST	135.8	SR	52.1	SS	87.7
RDE	.5530	RRA	.5230	RC3	-2.6112	FAU	.15603		RRT	.9639	RRF	.9992	RTF	.9592		CRT	.9882	CRS	-.9999	CST	-.9901
FDE	3.1270	FRA	2.8010	FC	-13.3983	BSP	10552		SGB	6260.9	R23	.2504	R13	.9674		LSA	169.4	MSA	11.8	SSA	.2
BDE	1.5890	BRA	.8218	BC3	8.4254	FSP	1726		SG1	6237.3	SG2	543.1	THA	19.74		EL1	145.2	EL2	7.5	ALF	20.81

LAUNCH DATE MAY 24 1971 FLIGHT TIME 244.00 ARRIVAL DATE JAN 23 1972

HELIOCENTRIC CONIC DISTANCE 561.905 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.312	GAL	-.36	AZL	86.80	HCA	175.29	SMA	187.45	ECC	.19191	INC	3.2007	V1	29.409
RP	223.04	LAP	.26	LOP	57.50	VP	21.956	GAP	1.64	AZP	93.19	TAL	357.77	TAP	173.07	RCA	151.48	APO	223.42	V2	24.654
RC	207.907	GL	31.88	GP	-31.49	ZAL	98.82	ZAP	83.99	ETS	161.75	ZAE	96.83	ETE	184.83	ZAC	70.75	ETC	272.83	LVI	18.29

PLANETOCENTRIC CONIC

C3	11.670	VHL	3.416	DLA	22.55	RAL	331.33	RAD	6638.9	VEL	11.478	PTH	6.53	VHP	3.677	DPA	-53.25	RAP	307.96	ECC	1.1921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	11 50 13	3472.86	-45.82	125.64	199.13	104.55	12 48 6	2472.9	-35.16	96.87
60.00	12 1 49	3441.95	-39.75	124.45	200.72	97.28	12 59 11	2442.0	-32.57	95.87
70.00	12 20 27	3387.06	-34.13	120.54	201.25	91.31	13 16 54	2387.1	-30.03	92.58
80.00	12 54 28	3280.40	-29.71	112.38	201.17	86.93	13 49 8	2280.4	-27.96	85.09
90.00	13 59 12	3071.39	-27.90	96.88	201.03	85.18	14 50 23	2071.4	-27.09	69.90
100.00	15 37 19	2754.87	-29.71	73.75	201.17	86.93	16 23 14	1754.9	-27.96	46.46
110.00	17 19 53	2433.88	-34.13	49.46	201.25	91.31	18 0 27	1433.9	-30.03	21.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0263	TRA	.5241	TC3	-7.1246	BAU	1.1853		SGT	6012.5	SGR	2506.8	SG3	855.2		ST	170.7	SR	72.0	SS	93.5
RDE	.8377	RRA	.5671	RC3	-2.6383	FAU	.13531		RRT	.9640	RRF	.9993	RTF	.9568		CRT	.9912	CRS	-1.0000	CST	-.9911
FDE	3.4257	FRA	2.3310	FC	-10.0386	BSP	11022		SGB	6514.1	R23	.2522	R13	.9673		LSA	207.1	MSA	12.9	SSA	.1
BDE	2.1926	BRA	.7722	BC3	7.5974	FSP	1506		SG1	6484.8	SG2	617.9	THA	22.11		EL1	185.0	EL2	8.8	ALF	22.74

LAUNCH DATE MAY 24 1971 FLIGHT TIME 246.00 ARRIVAL DATE JAN 25 1972

HELIOCENTRIC CONIC DISTANCE 566.020 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.321	GAL	-.43	AZL	85.29	HCA	176.38	SMA	187.61	ECC	.19263	INC	4.7061	V1	29.409
RP	223.42	LAP	.30	LOP	58.58	VP	21.923	GAP	1.50	AZP	94.70	TAL	357.31	TAP	173.69	RCA	151.47	APO	223.75	V2	24.612
RC	210.566	GL	42.84	GP	-37.82	ZAL	98.35	ZAP	65.68	ETS	158.55	ZAE	95.61	ETE	185.06	ZAC	64.40	ETC	273.09	LVI	23.95

PLANETOCENTRIC CONIC

C3	15.215	VHL	3.901	DLA	32.79	RAL	326.81	RAD	6640.6	VEL	11.630	PTH	6.67	VHP	4.060	DPA	-59.13	RAP	312.29	ECC	1.2504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	10 37 16	3763.88	-47.22	153.31	209.73	83.38	11 40 0	2763.9	-44.29	118.65
60.00	10 23 32	3800.51	-38.50	154.54	207.67	77.04	11 26 53	2800.5	-39.67	123.45
70.00	9 46 50	3909.27	-27.88	159.47	203.85	69.42	10 51 59	2909.3	-33.72	132.32
72.67	8 50 37	4082.49	-20.87	169.54	200.55	64.11	9 58 40	3082.5	-29.68	144.84
72.67	8 50 37	4082.49	-20.87	169.54	200.55	64.11	9 58 40	3082.5	-29.68	144.84
72.67	8 50 37	4082.49	-20.87	169.54	200.55	64.11	9 58 40	3082.5	-29.68	144.84
110.00	14 46 16	2956.09	-27.88	88.39	203.85	69.42	15 35 32	1956.1	-33.72	61.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.8668	TRA	.2885	TC3	-5.7065	BAU	1.2648		SGT	6148.5	SGR	2942.8	SG3	664.0		ST	210.8	SR	100.5	SS	93.5
RDE	1.3521	RRA	.5753	RC3	-2.4675	FAU	.10835		RRT	.9638	RRF	.9990	RTF	.9523		CRT	.9934	CRS	-.9999	CST	-.9919
FDE	3.5785	FRA	1.6482	FC	-6.1654	BSP	11324		SGB	6816.5	R23	.2573	R13	.9661		LSA	251.1	MSA	13.9	SSA	.1
BDE	3.1696	BRA	.6436	BC3	6.2171	FSP	1164		SG1	6779.3	SG2	711.5	THA	25.06		EL1	233.3	EL2	10.4	ALF	25.39

LAUNCH DATE MAY 24 1971 FLIGHT TIME 248.00 ARRIVAL DATE JAN 27 1972

HELIOCENTRIC CONIC DISTANCE 570.123 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.330	GAL	-.51	AZL	82.52	HCA	177.45	SMA	187.77	ECC	.19337	INC	7.4745	V1	29.409
RP	223.81	LAP	.33	LOP	59.67	VP	21.889	GAP	1.36	AZP	97.47	TAL	356.86	TAP	174.31	RCA	151.46	APO	224.08	V2	24.571
RC	213.227	GL	57.15	GP	-46.50	ZAL	96.99	ZAP	69.18	ETS	155.39	ZAE	94.72	ETE	185.83	ZAC	55.67	ETC	273.74	LVI	31.48

PLANETOCENTRIC CONIC

C3	25.071	VHL	5.007	DLA	45.68	RAL	318.63	RAD	6645.0	VEL	12.043	PTH	7.03	VHP	4.870	DPA	-66.71	RAP	321.94	ECC	1.4126

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	7 51 45	4301.59	-32.86	195.90	213.08	53.43	9 3 27	3301.6	-44.69	168.64
52.50	6 38 30	4488.03	-22.98	204.59	204.18	49.36	7 53 18	3488.0	-37.39	182.04
52.50	6 38 30	4488.03	-22.98	204.59	204.18	49.36	7 53 18	3488.0	-37.39	182.04
52.50	6 38 30	4488.03	-22.98	204.59	204.18	49.36	7 53 18	3488.0	-37.39	182.04
52.50	6 38 30	4488.03	-22.98	204.59	204.18	49.36	7 53 18	3488.0	-37.39	182.04
52.50	6 38 30	4488.03	-22.98	204.59	204.18	49.36	7 53 18	3488.0	-37.39	182.04
52.50	6 38 30	4488.03	-22.98	204.59	204.18	49.36	7 53 18	3488.0	-37.39	182.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.3768	TRA	-.2047	TC3	-3.7050	BAU	1.4011		SGT	6242.0	SGR	3503.0	SG3	402.1		ST	250.5	SR	141.5	SS	79.3
RDE	2.4655	RRA	.4546	RC3	-1.9355	FAU	.07025		RRT	.9637	RRF	.9971	RTF	.9411		CRT	.9951	CRS	-.9997	CST	-.9922
FDE	3.2734	FRA	.8009	FC	-3.4260	BSP	11638		SGB	7157.7	R23	.2775	R13	.9606		LSA	298.1	MSA	14.4	SSA	.0
BDE	5.0235	BRA	.4985	BC3	4.1802	FSP	718		SG1	7110.5	SG2	821.0	THA	28.83		EL1	287.5	EL2	12.2	ALF	29.40

LAUNCH DATE MAY 24 1971 FLIGHT TIME 258.00 ARRIVAL DATE FEB 6 1972

HELIOCENTRIC CONIC DISTANCE 590.741 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.379	GAL	-.94	AZL	100.02	HCA	182.88	SMA	188.60	ECC	.19739	INC	10.0159
RP	225.76	LAP	.50	LOP	65.03	VP	21.726	GAP	.69	AZP	79.99	TAL	354.32	TAP	177.20	RCA	151.37	APO	225.83
RC	226.550	GL	-65.09	GP	42.39	ZAL	97.87	ZAP	64.26	ETS	205.25	ZAE	92.32	ETE	178.67	ZAC	144.24	ETC	276.00

V1	29.409																		
V2	24.361																		
LVI	-50.28																		

PLANETOCENTRIC CONIC

C3	38.557	VHL	6.209	DLA	-59.07	RAL	35.92	RAD	6650.2	VEL	12.587	PTH	7.45	VHP	4.610	DPA	19.58	RAP	293.43
ECC	1.6346																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.70	22 53 20	2068.81	21.85	58.15	292.01	146.38	23 27 49	1068.8	41.60	41.17
35.70	22 53 20	2068.81	21.85	58.15	292.01	146.38	23 27 49	1068.8	41.60	41.17
35.70	22 53 20	2068.81	21.85	58.15	292.01	146.38	23 27 49	1068.8	41.60	41.17
35.70	22 53 20	2068.81	21.85	58.15	292.01	146.38	23 27 49	1068.8	41.60	41.17
35.70	22 53 20	2068.81	21.85	58.15	292.01	146.38	23 27 49	1068.8	41.60	41.17
35.70	22 53 20	2068.81	21.85	58.15	292.01	146.38	23 27 49	1068.8	41.60	41.17
35.70	22 53 20	2068.81	21.85	58.15	292.01	146.38	23 27 49	1068.8	41.60	41.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6828	TRA	3.1880	TC3	-2.8427	BAU	1.6054	SGT	6754.2	SGR	3386.4	SG3	460.2	ST	91.6	SR	51.7	SS	38.8
RDE	-.5783	RRA	-1.6416	RC3	1.2725	FAU	.08722	RRT	-.9667	RRF	-.9943	RTF	.9346	CRT	-.6267	CRS	.9674	CST	-.4089
FDE	1.5137	FRA	2.5226	FC3	-1.9583	BSP	12229	SGB	7555.6	R23	.3067	R13	-.9514	LSA	100.9	MSA	49.0	SSA	.1
BDE	.8948	BRA	3.5858	BC3	3.1145	FSP	822	SG1	7515.4	SG2	778.8	THA	153.84	EL1	98.2	EL2	37.6	ALF	156.97

LAUNCH DATE MAY 24 1971 FLIGHT TIME 260.00 ARRIVAL DATE FEB 8 1972

HELIOCENTRIC CONIC DISTANCE 594.818 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.389	GAL	-1.02	AZL	97.80	HCA	183.93	SMA	188.77	ECC	.19824	INC	7.8024
RP	226.15	LAP	.53	LOP	66.09	VP	21.694	GAP	.55	AZP	82.22	TAL	353.84	TAP	177.78	RCA	151.35	APO	226.20
RC	229.216	GL	-57.30	GP	34.18	ZAL	99.89	ZAP	59.46	ETS	202.83	ZAE	90.58	ETE	180.25	ZAC	136.15	ETC	274.73

V1	29.409																		
V2	24.319																		
LVI	-42.90																		

PLANETOCENTRIC CONIC

C3	27.290	VHL	5.224	DLA	-53.77	RAL	25.55	RAD	6645.9	VEL	12.134	PTH	7.10	VHP	4.044	DPA	11.40	RAP	294.37
ECC	1.4491																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.15	22 29 33	1946.05	25.03	48.16	275.54	139.29	23 1 59	946.0	42.35	27.51
42.15	22 29 33	1946.05	25.03	48.16	275.54	139.29	23 1 59	946.0	42.35	27.51
42.15	22 29 33	1946.05	25.03	48.16	275.54	139.29	23 1 59	946.0	42.35	27.51
42.15	22 29 33	1946.05	25.03	48.16	275.54	139.29	23 1 59	946.0	42.35	27.51
42.15	22 29 33	1946.05	25.03	48.16	275.54	139.29	23 1 59	946.0	42.35	27.51
42.15	22 29 33	1946.05	25.03	48.16	275.54	139.29	23 1 59	946.0	42.35	27.51
42.15	22 29 33	1946.05	25.03	48.16	275.54	139.29	23 1 59	946.0	42.35	27.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0801	TRA	3.0450	TC3	-3.8260	BAU	1.4773	SGT	7022.7	SGR	2794.9	SG3	652.3	ST	103.6	SR	37.3	SS	38.9
RDE	-.1460	RRA	-1.3052	RC3	1.3258	FAU	.11176	RRT	-.9698	RRF	-.9964	RTF	.9473	CRT	-.6783	CRS	.9598	CST	-.4448
FDE	.9740	FRA	3.4978	FC3	-3.5453	BSP	13084	SGB	7558.4	R23	.2875	R13	-.9572	LSA	108.8	MSA	42.3	SSA	.1
BDE	1.0900	BRA	3.3130	BC3	4.0492	FSP	1211	SG1	7531.7	SG2	635.2	THA	158.74	EL1	106.8	EL2	26.5	ALF	165.36

LAUNCH DATE MAY 24 1971 FLIGHT TIME 262.00 ARRIVAL DATE FEB 10 1972

HELIOCENTRIC CONIC DISTANCE 598.893 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.399	GAL	-1.10	AZL	96.53	HCA	184.99	SMA	188.95	ECC	.19910	INC	6.5263
RP	226.55	LAP	.57	LOP	67.15	VP	21.662	GAP	.41	AZP	83.50	TAL	353.36	TAP	178.34	RCA	151.33	APO	226.57
RC	231.880	GL	-51.47	GP	28.23	ZAL	101.58	ZAP	56.18	ETS	200.33	ZAE	89.10	ETE	181.07	ZAC	130.24	ETC	274.20

V1	29.409																		
V2	24.278																		
LVI	-37.53																		

PLANETOCENTRIC CONIC

C3	22.148	VHL	4.706	DLA	-49.16	RAL	19.83	RAD	6643.8	VEL	11.922	PTH	6.93	VHP	3.784	DPA	5.51	RAP	295.25
ECC	1.3645																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.95	22 24 39	1853.55	25.80	39.34	265.11	133.42	22 55 33	853.5	40.99	16.60
47.95	22 24 39	1853.55	25.80	39.34	265.11	133.42	22 55 33	853.5	40.99	16.60
47.95	22 24 39	1853.55	25.80	39.34	265.11	133.42	22 55 33	853.5	40.99	16.60
47.95	22 24 39	1853.55	25.80	39.34	265.11	133.42	22 55 33	853.5	40.99	16.60
47.95	22 24 39	1853.55	25.80	39.34	265.11	133.42	22 55 33	853.5	40.99	16.60
47.95	22 24 39	1853.55	25.80	39.34	265.11	133.42	22 55 33	853.5	40.99	16.60
47.95	22 24 39	1853.55	25.80	39.34	265.11	133.42	22 55 33	853.5	40.99	16.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.1408	TRA	2.9347	TC3	-4.7213	BAU	1.4507	SGT	7178.3	SGR	2337.5	SG3	769.1	ST	107.6	SR	29.9	SS	39.5
RDE	-.0239	RRA	-1.0669	RC3	1.3088	FAU	.12701	RRT	-.9706	RRF	-.9967	RTF	.5.06	CRT	-.7316	CRS	.9536	CST	-.4924
FDE	.6880	FRA	4.0448	FC3	-4.9646	BSP	12973	SGB	7549.3	R23	.2858	R13	-.9573	LSA	112.0	MSA	38.5	SSA	.1
BDE	1.1411	BRA	3.1226	BC3	4.8994	FSP	1419	SG1	7530.2	SG2	536.1	THA	162.37	EL1	109.9	EL2	20.0	ALF	168.12

LAUNCH DATE MAY 24 1971 FLIGHT TIME 264.00 ARRIVAL DATE FEB 12 1972

HELIOCENTRIC CONIC DISTANCE 602.968 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.409	GAL	-1.19	AZL	95.70	HCA	186.04	SMA	189.12	ECC	.19999	INC	5.6969
RP	226.94	LAP	.60	LOP	68.20	VP	21.631	GAP	.27	AZP	84.33	TAL	352.87	TAP	178.91	RCA	151.30	APO	226.95
RC	234.543	GL	-46.97	GP	23.85	ZAL	103.04	ZAP	53.80	ETS	198.16	ZAE	87.76	ETE	181.54	ZAC	125.88	ETC	273.94

V1	29.409																		
V2	24.236																		
LVI	-33.59																		

PLANETOCENTRIC CONIC

C3	19.365	VHL	4.401	DLA	-45.30	RAL	16.38	RAD	6642.6	VEL	11.806	PTH	6.83	VHP	3.653	DPA	1.20	RAP	296.03
ECC	1.3187																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	20 47 51	2034.39	15.81	46.56	248.81	135.48	21 21 45	1034.4	32.47	27.25
53.01	22 28 40	1776.92	25.52	31.71	258.17	128.79	22 58 17	776.9	39.00	7.89
53.01	22 28 40	1776.92	25.52	31.71	258.17	128.79	22 58 17	776.9	39.00	7.89
53.01	22 28 40	1776.92	25.52	31.71	258.17	128.79	22 58 17	776.9	39.00	7.89
53.01	22 28 40	1776.92	25.52	31.71	258.17	128.79	22 58 17	776.9	39.00	7.89
53.01	22 28 40	1776.92	25.52	31.71	258.17	128.79	22 58 17	776.9	39.00	7.89
53.01	22 28 40	1776.92	25.52	31.71	258.17	128.79	22 58 17	776.9	39.00	7.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0970	TRA	2.8785	TC3	-5.4722	BAU	1.4533	SGT	7322.7	SGR	1994.7	SG3	837.8	ST	107.4	SR	25.0	SS	39.9
RDE	.0153	RRA	-.8982	RC3	1.2521	FAU	.13666	RRT	-.9717	RRF	-.9963	RTF	.9528	CRT	-.7727	CRS	.9441	CST	-.5204
FDE	.5659	FRA	4.3417	FC3	-6.1094	BSP	12822	SGB	7589.5	R23	.2829	R13	-.9575	LSA	111.5	MSA	36.3	SSA	.2
BDE	1.0971	BRA	3.0154	BC3	5.6136	FSP	1512	SG1	7575.8	SG2	455.2	THA	165.12	EL1	109.2	EL2	15.6	ALF	169.58

LAUNCH DATE MAY 24 1971 FLIGHT TIME 266.00 ARRIVAL DATE FEB 14 1972

HELIOCENTRIC CONIC DISTANCE 607.037 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.419 GAL -1.27 AZL 95.12 HCA 187.09 SMA 189.30 ECC .20089 INC 5.1155 V1 29.409
RP 227.33 LAP .63 LOP 69.25 VP 21.600 GAP .14 AZP 84.92 TAL 352.38 TAP 179.46 RCA 151.27 APO 227.33 V2 24.195
RC 237.203 GL -43.39 GP 20.55 ZAL 104.34 ZAP 51.97 ETS 196.34 ZAE 86.52 ETE 181.83 ZAC 122.57 ETC 273.81 LVI -30.64

PLANETOCENTRIC CONIC

C3 17.698 VHL 4.207 DLA -42.06 RAL 14.19 RAD 6641.8 VEL 11.736 PTH 6.77 VHP 3.583 DPA -2.03 RAP 296.73 ECC 1.2913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 51 42	2148.09	10.22	51.59	240.24	136.73	20 27 30	1148.1	27.62	33.76
57.47	22 37 39	1708.64	24.79	24.97	253.39	125.13	23 6 7	708.6	36.92	.61
57.47	22 37 39	1708.64	24.79	24.97	253.39	125.13	23 6 7	708.6	36.92	.61
57.47	22 37 39	1708.64	24.79	24.97	253.39	125.13	23 6 7	708.6	36.92	.61
57.47	22 37 39	1708.64	24.79	24.97	253.39	125.13	23 6 7	708.6	36.92	.61
57.47	22 37 39	1708.64	24.79	24.97	253.39	125.13	23 6 7	708.6	36.92	.61
57.47	22 37 39	1708.64	24.79	24.97	253.39	125.13	23 6 7	708.6	36.92	.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.9946 TRA 2.8869 TC3-6.0300 BAU 1.4527 SGT 7457.8 SGR 1735.1 SG3 878.4 ST 104.7 SR 21.6 SS 40.8
RDE .0202 RRA -.7834 RC3 1.1553 FAU .13984 RRT -.9721 RRF -.9954 RTF .9534 CRT -.8018 CRS .9310 CST -.5285
FDE .5898 FRA 4.5477 FC3-6.8407 BSP 13092 SGB 7657.0 R23 .2813 R13 -.9568 LSA 108.7 MSA 35.7 SSA .2
BDE .9948 BRA 2.9913 BC3 6.1397 FSP 1598 SG1 7646.7 SG2 397.1 THA 167.22 EL1 106.1 EL2 12.8 ALF 170.44

LAUNCH DATE MAY 24 1971 FLIGHT TIME 268.00 ARRIVAL DATE FEB 16 1972

HELIOCENTRIC CONIC DISTANCE 611.080 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.429 GAL -1.36 AZL 94.68 HCA 188.13 SMA 189.48 ECC .20180 INC 4.6841 V1 29.409
RP 227.72 LAP .66 LOP 70.30 VP 21.568 GAP -.00 AZP 85.36 TAL 351.88 TAP 180.01 RCA 151.24 APO 227.72 V2 24.153
RC 239.859 GL -40.48 GP 17.99 ZAL 105.53 ZAP 50.49 ETS 194.84 ZAE 85.34 ETE 182.02 ZAC 120.00 ETC 273.75 LVI -28.37

PLANETOCENTRIC CONIC

C3 16.635 VHL 4.079 DLA -39.31 RAL 12.76 RAD 6641.3 VEL 11.691 PTH 6.73 VHP 3.546 DPA -4.51 RAP 297.38 ECC 1.2738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	19 17 40	2222.52	6.52	54.77	235.21	137.23	19 54 42	1222.5	24.28	37.68
60.00	21 42 46	1834.48	17.73	30.31	245.50	126.80	22 13 20	834.5	31.14	8.27
61.47	22 49 45	1644.57	23.88	18.82	250.01	122.20	23 17 10	644.6	34.95	354.21
61.47	22 49 45	1644.57	23.88	18.82	250.01	122.20	23 17 10	644.6	34.95	354.21
61.47	22 49 45	1644.57	23.88	18.82	250.01	122.20	23 17 10	644.6	34.95	354.21
61.47	22 49 45	1644.57	23.88	18.82	250.01	122.20	23 17 10	644.6	34.95	354.21
61.47	22 49 45	1644.57	23.88	18.82	250.01	122.20	23 17 10	644.6	34.95	354.21

END OF TAPE, CHANGE AND PRESS START

TDE -.9056 TRA 2.9008 TC3-6.5161 BAU 1.4684 SGT 7590.0 SGR 1530.7 SG3 899.5 ST 101.7 SR 19.0 SS 41.2
RDE .0243 RRA -.6938 RC3 1.0653 FAU .14185 RRT -.9723 RRF -.9942 RTF .9539 CRT -.8331 CRS .9117 CST -.5325
FDE .6264 FRA 4.6527 FC3-7.3823 BSP 13140 SGB 7742.9 R23 .2769 R13 -.9564 LSA 105.7 MSA 35.2 SSA .2
BDE .9059 BRA 2.9826 BC3 6.6026 FSP 1618 SG1 7734.9 SG2 350.9 THA 168.88 EL1 103.0 EL2 10.4 ALF 171.06

LAUNCH DATE MAY 24 1971 FLIGHT TIME 270.00 ARRIVAL DATE FEB 18 1972

HELIOCENTRIC CONIC DISTANCE 615.161 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.439 GAL -1.45 AZL 94.35 HCA 189.17 SMA 189.66 ECC .20273 INC 4.3521 V1 29.409
RP 228.10 LAP .69 LOP 71.34 VP 21.538 GAP -.14 AZP 85.70 TAL 351.38 TAP 180.56 RCA 151.21 APO 228.11 V2 24.112
RC 242.511 GL -38.07 GP 15.95 ZAL 106.63 ZAP 49.23 ETS 193.59 ZAE 84.22 ETE 182.15 ZAC 117.96 ETC 273.74 LVI -26.60

PLANETOCENTRIC CONIC

C3 15.932 VHL 3.991 DLA -36.95 RAL 11.82 RAD 6641.0 VEL 11.661 PTH 6.70 VHP 3.530 DPA -6.47 RAP 297.99 ECC 1.2622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 53 53	2280.27	3.62	57.20	231.92	137.47	19 31 53	1280.3	21.60	40.56
60.00	20 49 29	1972.12	11.98	37.39	239.80	128.77	21 22 21	972.1	26.55	17.03
65.16	23 4 20	1581.62	22.92	13.01	247.59	119.81	23 30 41	581.6	33.12	348.30
65.16	23 4 20	1581.62	22.92	13.01	247.59	119.81	23 30 41	581.6	33.12	348.30
65.16	23 4 20	1581.62	22.92	13.01	247.59	119.81	23 30 41	581.6	33.12	348.30
65.16	23 4 20	1581.62	22.92	13.01	247.59	119.81	23 30 41	581.6	33.12	348.30
65.16	23 4 20	1581.62	22.92	13.01	247.59	119.81	23 30 41	581.6	33.12	348.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8045 TRA 2.9459 TC3-6.8840 BAU 1.4807 SGT 7715.6 SGR 1368.3 SG3 909.3 ST 98.5 SR 17.0 SS 41.9
RDE .0242 RRA -.6273 RC3 .9714 FAU .14138 RRT -.9722 RRF -.9924 RTF .9541 CRT -.8652 CRS .8874 CST -.5371
FDE .7044 FRA 4.7285 FC3-7.6827 BSP 13404 SGB 7836.0 R23 .2701 R13 -.9560 LSA 102.6 MSA 35.1 SSA .3
BDE .8049 BRA 3.0120 BC3 6.9522 FSP 1642 SG1 7829.6 SG2 315.7 THA 170.20 EL1 99.6 EL2 8.4 ALF 171.43

LAUNCH DATE MAY 24 1971 FLIGHT TIME 272.00 ARRIVAL DATE FEB 20 1972

HELIOCENTRIC CONIC DISTANCE 619.215 EARTH TO MARS

RL 151.50 LAL -.00 LOL 242.20 VL 32.449 GAL -1.54 AZL 94.09 HCA 190.21 SMA 189.84 ECC .20368 INC 4.0882 V1 29.409
RP 228.49 LAP .72 LOP 72.38 VP 21.507 GAP -.28 AZP 85.98 TAL 350.88 TAP 181.10 RCA 151.17 APO 228.50 V2 24.071
RC 245.157 GL -36.03 GP 14.31 ZAL 107.67 ZAP 48.14 ETS 192.55 ZAE 83.14 ETE 182.23 ZAC 116.29 ETC 273.76 LVI -25.19

PLANETOCENTRIC CONIC

C3 15.458 VHL 3.932 DLA -34.88 RAL 11.21 RAD 6640.7 VEL 11.641 PTH 6.68 VHP 3.525 DPA -8.04 RAP 298.57 ECC 1.2544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 36 9	2328.25	1.22	59.21	229.68	137.56	19 14 57	1328.2	19.33	42.87
60.00	20 18 25	2055.92	8.38	41.54	236.50	129.57	20 52 40	1055.9	23.48	21.98
68.67	23 21 11	1517.30	21.97	7.31	245.85	117.81	23 46 28	517.3	31.46	342.57
68.67	23 21 11	1517.30	21.97	7.31	245.85	117.81	23 46 28	517.3	31.46	342.57
68.67	23 21 11	1517.30	21.97	7.31	245.85	117.81	23 46 28	517.3	31.46	342.57
68.67	23 21 11	1517.30	21.97	7.31	245.85	117.81	23 46 28	517.3	31.46	342.57
68.67	23 21 11	1517.30	21.97	7.31	245.85	117.81	23 46 28	517.3	31.46	342.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.7101 TRA 3.0022 TC3-7.1825 BAU 1.4956 SGT 7836.8 SGR 1235.9 SG3 910.9 ST 95.6 SR 15.5 SS 42.6
RDE .0253 RRA -.5752 RC3 .8828 FAU .13966 RRT -.9714 RRF -.9899 RTF .9539 CRT -.8989 CRS .8571 CST -.5454
FDE .7862 FRA 4.7769 FC3-7.8216 BSP 13660 SGB 7933.6 R23 .2615 R13 -.9554 LSA 99.9 MSA 35.0 SSA .3
BDE .7105 BRA 3.0568 BC3 7.2366 FSP 1651 SG1 7928.3 SG2 289.9 THA 171.28 EL1 96.7 EL2 6.7 ALF 171.69

LAUNCH DATE MAY 24 1971 FLIGHT TIME 274.00 ARRIVAL DATE FEB 22 1972

HELIOCENTRIC CONIC DISTANCE 623.263 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.460	GAL	-1.63	AZL	93.87	HCA	191.25	SMA	190.02	ECC	.20464	INC	3.8727	V1	29.409
RP	228.88	LAP	.76	LOP	73.42	VP	21.477	GAP	-.42	AZP	86.20	TAL	350.38	TAP	181.63	RCA	151.13	APO	228.90	V2	24.030
RC	247.796	GL	-34.28	GP	12.95	ZAL	108.66	ZAP	47.16	ETS	191.66	ZAE	82.09	ETE	182.30	ZAC	114.92	ETC	273.79	LVI	-24.06

PLANETOCENTRIC CONIC

C3	15.142	VHL	3.891	DLA	-33.06	RAL	10.84	RAD	6640.6	VEL	11.627	PTH	6.67	VHP	3.529	DPA	-9.32	RAP	299.14	ECC	1.2492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 22 23	2369.67	-.87	60.94	228.13	137.57	19 1 53	1369.7	17.35	44.81
60.00	19 56 20	2119.63	5.60	44.63	234.33	129.98	20 31 39	1119.6	21.02	25.58
70.00	22 22 17	1689.41	15.03	16.66	241.15	121.04	22 50 27	689.4	26.45	354.05
72.12	23 40 37	1448.77	21.04	1.47	244.59	116.11	24 4 45	448.8	29.93	336.75
72.12	23 40 37	1448.77	21.04	1.47	244.59	116.11	24 4 45	448.8	29.93	336.75
72.12	23 40 37	1448.77	21.04	1.47	244.59	116.11	24 4 45	448.8	29.93	336.75
110.00	3 25 39	6024.27	15.03	283.48	241.15	121.04	5 6 4	5024.3	26.45	260.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6287	TRA	3.0598	TC3-7.4534	BAU	1.5176	SGT	7962.4	SGR	1127.6	SG3	908.1	ST	93.4	SR	14.2	SS	43.2
RDE	.0283	RRA	-.5328	RC3 .8062	FAU	.13809	RRT	-.9701	RRF	-.9868	RTF	.9535	CRT	-.9311	CRS	.8193	CST	-.5548
FDE	.8611	FRA	4.8000	FC3-7.8954	BSP	13816	SGB	8041.9	R23	.2502	R13	-.9547	LSA	97.9	MSA	34.9	SSA	.4
BDE	.6294	BRA	3.1058	BC3 7.4968	FSP	1642	SG1	8037.3	SG2	271.3	THA	172.17	EL1	94.3	EL2	5.1	ALF	171.90

LAUNCH DATE MAY 24 1971 FLIGHT TIME 276.00 ARRIVAL DATE FEB 24 1972

HELIOCENTRIC CONIC DISTANCE 627.307 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.470	GAL	-1.72	AZL	93.69	HCA	192.28	SMA	190.20	ECC	.20561	INC	3.6940	V1	29.409
RP	229.27	LAP	.79	LOP	74.45	VP	21.447	GAP	-.56	AZP	86.39	TAL	349.88	TAP	182.16	RCA	151.09	APO	229.31	V2	23.990
RC	250.428	GL	-32.76	GP	11.81	ZAL	109.61	ZAP	46.27	ETS	190.90	ZAE	81.08	ETE	182.34	ZAC	113.76	ETC	273.85	LVI	-23.13

PLANETOCENTRIC CONIC

C3	14.936	VHL	3.865	DLA	-31.43	RAL	10.64	RAD	6640.5	VEL	11.618	PTH	6.66	VHP	3.537	DPA	-10.37	RAP	299.69	ECC	1.2458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 11 25	2406.37	-2.71	62.47	227.07	137.52	18 51 31	1406.4	15.57	46.49
60.00	19 39 27	2172.09	3.30	47.15	232.84	130.19	20 15 39	1172.1	18.93	28.45
70.00	21 44 7	1805.17	10.87	23.05	238.45	122.58	22 14 12	805.2	23.23	1.50
75.69	0 7 29	1371.79	20.16	355.15	243.70	114.63	0 30 20	371.8	28.54	330.47
75.69	0 7 29	1371.79	20.16	355.15	243.70	114.63	0 30 20	371.8	28.54	330.47
75.69	0 7 29	1371.79	20.16	355.15	243.70	114.63	0 30 20	371.8	28.54	330.47
110.00	2 47 29	6140.03	10.87	289.87	238.45	122.58	4 29 49	5140.0	23.23	268.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5465	TRA	3.1298	TC3-7.6669	BAU	1.5379	SGT	8083.5	SGR	1037.0	SG3	901.5	ST	91.5	SR	13.2	SS	43.9
RDE	.0318	RRA	-.4987	RC3 .7346	FAU	.13575	RRT	-.9680	RRF	-.9828	RTF	.9531	CRT	-.9603	CRS	.7750	CST	-.5699
FDE	.9385	FRA	4.8138	FC3-7.8687	BSP	14034	SGB	8149.8	R23	.2361	R13	-.9541	LSA	96.3	MSA	34.7	SSA	.4
BDE	.5475	BRA	3.1693	BC3 7.7020	FSP	1630	SG1	8145.7	SG2	258.2	THA	172.91	EL1	92.4	EL2	3.7	ALF	172.08

LAUNCH DATE MAY 24 1971 FLIGHT TIME 278.00 ARRIVAL DATE FEB 26 1972

HELIOCENTRIC CONIC DISTANCE 631.344 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.480	GAL	-1.81	AZL	93.54	HCA	193.31	SMA	190.39	ECC	.20660	INC	3.5429	V1	29.409
RP	229.65	LAP	.82	LOP	75.48	VP	21.417	GAP	-.70	AZP	86.55	TAL	349.38	TAP	182.69	RCA	151.05	APO	229.72	V2	23.949
RC	253.053	GL	-31.42	GP	10.85	ZAL	110.52	ZAP	45.44	ETS	190.25	ZAE	80.09	ETE	182.36	ZAC	112.77	ETC	273.91	LVI	-22.37

PLANETOCENTRIC CONIC

C3	14.811	VHL	3.849	DLA	-29.95	RAL	10.57	RAD	6640.4	VEL	11.613	PTH	6.65	VHP	3.550	DPA	-11.25	RAP	300.23	ECC	1.2438

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	18 2 28	2439.50	-4.37	63.86	226.35	137.42	18 43 7	1439.5	13.96	47.98
60.00	19 26 1	2217.21	1.32	49.31	231.82	130.28	20 2 58	1217.2	17.10	30.85
70.00	21 19 27	1883.52	7.97	27.25	236.80	123.32	21 50 50	883.5	20.83	6.31
79.70	0 36 26	1277.32	19.32	347.67	243.08	113.34	0 57 43	277.3	27.25	323.05
79.70	0 36 26	1277.32	19.32	347.67	243.08	113.34	0 57 43	277.3	27.25	323.05
79.70	0 36 26	1277.32	19.32	347.67	243.08	113.34	0 57 43	277.3	27.25	323.05
110.00	2 22 49	6218.38	7.97	294.08	236.80	123.32	4 6 28	5218.4	20.83	273.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4728	TRA	3.2017	TC3-7.8528	BAU	1.5606	SGT	8203.3	SGR	960.3	SG3	892.0	ST	90.2	SR	12.4	SS	44.5
RDE	.0367	RRA	-.4702	RC3 .6705	FAU	.13328	RRT	-.9651	RRF	-.9779	RTF	.9527	CRT	-.9829	CRS	.7229	CST	-.5872
FDE	1.0052	FRA	4.8132	FC3-7.7902	BSP	14204	SGB	8259.3	R23	.2199	R13	-.9535	LSA	95.3	MSA	34.4	SSA	.5
BDE	.4742	BRA	3.2361	BC3 7.8614	FSP	1608	SG1	8255.6	SG2	249.8	THA	173.55	EL1	91.0	EL2	2.3	ALF	172.27

LAUNCH DATE MAY 24 1971 FLIGHT TIME 280.00 ARRIVAL DATE FEB 28 1972

HELIOCENTRIC CONIC DISTANCE 635.376 EARTH TO MARS

RL	151.50	LAL	-.00	LOL	242.20	VL	32.491	GAL	-1.91	AZL	93.41	HCA	194.34	SMA	190.57	ECC	.20760	INC	3.4136	V1	29.409
RP	230.04	LAP	.84	LOP	76.51	VP	21.388	GAP	-.84	AZP	86.69	TAL	348.87	TAP	183.21	RCA	151.01	APO	230.13	V2	23.909
RC	255.671	GL	-30.23	GP	10.02	ZAL	111.42	ZAP	44.67	ETS	189.68	ZAE	79.13	ETE	182.38	ZAC	111.91	ETC	273.98	LVI	-21.74

PLANETOCENTRIC CONIC

C3	14.750	VHL	3.841	DLA	-28.60	RAL	10.60	RAD	6640.4	VEL	11.611	PTH	6.65	VHP	3.565	DPA	-11.99	RAP	300.78	ECC	1.2427

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	17 55 4	2469.84	-5.89	65.14	225.90	137.30	18 36 13	1469.8	12.47	49.32
60.00	19 15 0	2257.13	-.44	51.22	231.13	130.30	19 52 37	1257.1	15.45	32.94
70.00	21 1 1	1945.41	5.64	30.53	235.72	123.74	21 33 26	945.4	18.83	9.99
80.00	23 22 15	1503.06	12.44	1.03	239.78	117.36	23 47 18	503.1	22.64	338.29
85.54	1 22 54	1127.42	18.52	336.25	242.68	112.20	1 41 41	127.4	26.05	311.68
100.00	2 9 3	6265.57	12.44	300.31	239.78	117.36	3 53 29	5265.6	22.64	277.56
110.00	2 4 23	6280.27	5.64	297.36	235.72	123.74	3 49 3	5280.3	18.83	276.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4002	TRA	3.2815	TC3-8.0057	BAU	1.5833	SGT	8322.4	SGR	895.5	SG3	881.2	ST	89.3	SR	11.8	SS	45.2
RDE	.0419	RRA	-.4470	RC3 .6120	FAU	.13050	RRT	-.9612	RRF	-.9719	RTF	.9521	CRT	-.9963	CRS	.6645	CST	-.6073
FDE	1.0718	FRA	4.8118	FC3-7.6595	BSP	14417	SGB	8370.4	R23	.2027	R13	-.9527	LSA	94.8	MSA	34.1	SSA	.5
BDE	.4023	BRA	3.3118	BC3 8.0291	FSP	1592	SG1	8366.8	SG2	245.6	THA	174.09	EL1	90.1	EL2	1.0	ALF	172.48

LAUNCH DATE MAY 25 1971 FLIGHT TIME 88.00 ARRIVAL DATE AUG 21 1971

HELIOCENTRIC CONIC DISTANCE 257.965 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 35.478 GAL .80 AZL 91.87 HCA 80.61 SMA 269.19 ECC .43728 INC 1.8693 V1 29.404
RP 207.05 LAP -1.84 LOP 323.76 VP 28.088 GAP 22.44 AZP 90.30 TAL 2.62 TAP 83.23 RCA 151.48 APO 386.90 V2 26.453
RC 57.030 GL -10.82 GP -1.04 ZAL 88.34 ZAP 177.30 ETS 202.62 ZAE 172.06 ETE 29.04 ZAC 98.55 ETC 278.39 LVI -17.88

PLANETOCENTRIC CONIC

C3 38.018 VHL 6.166 DLA -21.03 RAL 337.59 RAD 6650.0 VEL 12.586 PTH 7.43 VHP 11.196 DPA -17.15 RAP 324.62 ECC 1.6257

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 2 17	2865.86	-25.02	83.32	203.41	131.89	15 50 3	1865.9	-7.33	66.08
60.00	16 7 20	2692.84	-19.07	72.93	208.61	126.20	16 52 13	1692.8	-3.45	54.21
70.00	17 29 45	2450.59	-13.36	57.29	212.61	121.73	18 10 35	1450.6	.39	37.47
80.00	19 8 3	2142.91	-8.81	36.63	215.30	118.64	19 43 46	1142.9	3.52	16.06
90.00	20 43 42	1834.37	-6.95	14.94	216.30	117.48	21 14 17	834.4	4.81	354.09
100.00	21 50 55	1617.38	-8.81	357.99	215.30	118.64	22 17 53	617.4	3.52	337.43
110.00	22 29 11	1497.41	-13.36	346.21	212.61	121.73	22 54 8	497.4	.39	326.39

DIFFERENTIAL CORRECTIONS

TDE -.3251 TRA -.7789 TC3 .0660 BAU .0450
RDE -.5648 RRA .2273 RC3 .0589 FAU .03255
FDE .0507 FRA .4779 FC3 -.7413 BSP 1034
BDE .6517 BRA .8114 BC3 .0885 FSP 103

MID-COURSE EXECUTION ACCURACY

SGT 836.2 SGR 576.2 SG3 89.1
RRT -.0228 RRF .0277 RTF -.5305
SGB 1015.4 R23 -.0047 R13 .5307
SG1 836.4 SG2 575.9 THA 178.29

ORBIT DETERMINATION ACCURACY

ST 19.1 SR 26.5 SS 7.4
CRT .7075 CRS .1868 CST .8155
LSA 30.6 MSA 13.4 SSA 1.1
EL1 30.4 EL2 11.7 ALF 57.63

LAUNCH DATE MAY 25 1971 FLIGHT TIME 90.00 ARRIVAL DATE AUG 23 1971

HELIOCENTRIC CONIC DISTANCE 259.827 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 35.258 GAL .83 AZL 91.86 HCA 81.88 SMA 260.95 ECC .41954 INC 1.8593 V1 29.404
RP 206.97 LAP -1.84 LOP 325.03 VP 27.818 GAP 21.91 AZP 90.26 TAL 2.81 TAP 84.68 RCA 151.47 APO 370.43 V2 26.462
RC 57.440 GL -11.09 GP -1.06 ZAL 88.12 ZAP 176.40 ETS 197.24 ZAE 171.43 ETE 26.11 ZAC 98.47 ETC 278.46 LVI -17.94

PLANETOCENTRIC CONIC

C3 35.379 VHL 5.948 DLA -21.36 RAL 337.48 RAD 6649.0 VEL 12.461 PTH 7.36 VHP 10.812 DPA -17.07 RAP 324.94 ECC 1.5823

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 3 20	2840.60	-23.86	82.03	202.27	132.47	15 50 41	1840.6	-6.07	65.01
60.00	16 8 56	2666.17	-17.99	71.50	207.46	126.69	16 53 22	1666.2	-2.28	52.93
70.00	17 32 3	2421.81	-12.33	55.70	211.48	122.11	18 12 25	1421.8	1.49	35.97
80.00	19 11 9	2111.43	-7.78	34.88	214.20	118.92	19 46 20	1111.4	4.58	14.35
90.00	20 47 22	1801.32	-5.91	13.07	215.21	117.71	21 17 23	801.3	5.86	352.23
100.00	21 54 5	1585.90	-7.78	356.23	214.20	118.92	22 20 31	585.9	4.58	335.70
110.00	22 31 29	1468.63	-12.33	344.62	211.48	122.11	22 55 58	468.6	1.49	324.89

DIFFERENTIAL CORRECTIONS

TDE -.3185 TRA -.7690 TC3 .0815 BAU .0487
RDE -.5496 RRA .2210 RC3 .0631 FAU .03373
FDE .0477 FRA .4948 FC3 -.8253 BSP 1091
BDE .6352 BRA .8002 BC3 .1030 FSP 111

MID-COURSE EXECUTION ACCURACY

SGT 858.0 SGR 581.5 SG3 95.7
RRT -.0243 RRF .0294 RTF -.5430
SGB 1036.5 R23 -.0050 R13 .5432
SG1 858.3 SG2 581.2 THA 178.26

ORBIT DETERMINATION ACCURACY

ST 19.4 SR 26.7 SS 7.6
CRT .7039 CRS .1595 CST .8025
LSA 30.9 MSA 13.8 SSA 1.1
EL1 30.8 EL2 12.0 ALF 57.31

LAUNCH DATE MAY 25 1971 FLIGHT TIME 92.00 ARRIVAL DATE AUG 25 1971

HELIOCENTRIC CONIC DISTANCE 261.956 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 35.052 GAL .86 AZL 91.85 HCA 83.14 SMA 253.71 ECC .40300 INC 1.8494 V1 29.404
RP 206.90 LAP -1.84 LOP 326.30 VP 27.564 GAP 21.38 AZP 90.22 TAL 3.01 TAP 86.15 RCA 151.46 APO 355.95 V2 26.469
RC 57.930 GL -11.36 GP -1.09 ZAL 87.88 ZAP 175.47 ETS 194.01 ZAE 170.82 ETE 23.62 ZAC 98.40 ETC 278.52 LVI -17.99

PLANETOCENTRIC CONIC

C3 32.992 VHL 5.744 DLA -21.70 RAL 337.35 RAD 6648.1 VEL 12.366 PTH 7.29 VHP 10.445 DPA -16.99 RAP 325.26 ECC 1.5430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 4 20	2815.66	-22.71	80.77	201.17	133.00	15 51 16	1815.7	-4.82	63.96
60.00	16 10 29	2639.75	-16.91	70.11	206.35	127.14	16 54 28	1639.7	-1.12	51.67
70.00	17 34 22	2393.15	-11.28	54.14	210.37	122.45	18 14 15	1393.2	2.58	34.48
80.00	19 14 28	2079.87	-6.74	33.10	213.12	119.16	19 49 8	1079.9	5.63	12.58
90.00	20 51 8	1768.05	-4.85	11.19	214.15	117.89	21 20 36	768.1	6.91	350.35
100.00	21 57 20	1554.34	-6.74	354.47	213.12	119.16	22 23 14	554.3	5.63	333.95
110.00	22 33 48	1439.97	-11.28	343.06	210.37	122.45	22 57 48	440.0	2.58	323.39

DIFFERENTIAL CORRECTIONS

TDE -.3113 TRA -.7584 TC3 .0989 BAU .0528
RDE -.5350 RRA .2149 RC3 .0673 FAU .03507
FDE .0438 FRA .5124 FC3 -.9201 BSP 1140
BDE .6190 BRA .7883 BC3 .1196 FSP 122

MID-COURSE EXECUTION ACCURACY

SGT 878.9 SGR 586.5 SG3 103.0
RRT -.0260 RRF .0313 RTF -.5450
SGB 1056.6 R23 -.0053 R13 .5552
SG1 879.1 SG2 586.2 THA 178.21

ORBIT DETERMINATION ACCURACY

ST 19.8 SR 26.9 SS 7.8
CRT .6999 CRS .1283 CST .7871
LSA 31.2 MSA 14.2 SSA 1.2
EL1 31.1 EL2 12.2 ALF 57.07

LAUNCH DATE MAY 25 1971 FLIGHT TIME 94.00 ARRIVAL DATE AUG 27 1971

HELIOCENTRIC CONIC DISTANCE 264.313 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 34.858 GAL .90 AZL 91.84 HCA 84.41 SMA 247.30 ECC .38757 INC 1.8395 V1 29.404
RP 206.85 LAP -1.83 LOP 327.56 VP 27.324 GAP 20.86 AZP 90.18 TAL 3.22 TAP 87.63 RCA 151.46 APO 343.15 V2 26.476
RC 58.496 GL -11.63 GP -1.12 ZAL 87.60 ZAP 174.52 ETS 191.88 ZAE 170.25 ETE 21.49 ZAC 98.33 ETC 278.58 LVI -18.04

PLANETOCENTRIC CONIC

C3 30.829 VHL 5.552 DLA -22.06 RAL 337.18 RAD 6647.3 VEL 12.278 PTH 7.22 VHP 10.091 DPA -16.92 RAP 325.57 ECC 1.5074

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 5 16	2791.07	-21.56	79.56	200.08	133.50	15 51 47	1791.1	-3.59	62.93
60.00	16 11 59	2613.61	-15.83	68.74	205.25	127.56	16 55 33	1613.6	.03	50.42
70.00	17 36 40	2364.67	-10.24	52.59	209.29	122.76	18 16 5	1364.7	3.67	32.99
80.00	19 17 46	2048.28	-5.68	31.34	212.06	119.36	19 51 54	1048.3	6.69	10.83
90.00	20 55 1	1734.60	-3.79	9.32	213.10	118.05	21 23 56	734.6	7.96	348.45
100.00	22 0 38	1522.75	-5.68	352.71	212.06	119.36	22 26 1	522.7	6.69	332.20
110.00	22 36 7	1411.49	-10.24	341.51	209.29	122.76	22 59 38	411.5	3.67	321.90

DIFFERENTIAL CORRECTIONS

TDE -.3046 TRA -.7482 TC3 .1184 BAU .0570
RDE -.5209 RRA .2091 RC3 .0715 FAU .03643
FDE .0385 FRA .5307 FC3-1.0231 BSP 1183
BDE .6034 BRA .7769 BC3 .1383 FSP 133

MID-COURSE EXECUTION ACCURACY

SGT 900.0 SGR 591.1 SG3 110.7
RRT -.0273 RRF .0342 RTF -.5673
SGB 1076.8 R23 -.0070 R13 .5675
SG1 900.3 SG2 590.7 THA 178.20

ORBIT DETERMINATION ACCURACY

ST 20.1 SR 27.1 SS 8.1
CRT .6960 CRS .0907 CST .7671
LSA 31.5 MSA 14.5 SSA 1.2
EL1 31.3 EL2 12.5 ALF 56.81

LAUNCH DATE MAY 25 1971 FLIGHT TIME 96.00 ARRIVAL DATE AUG 29 1971

HELIOCENTRIC CONIC DISTANCE 266.866 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	34.676	GAL	.94	AZL	91.83	HCA	85.68	SMA	241.61	ECC	.37316	INC	1.8297	V1	29.404
RP	206.80	LAP	-1.82	LOP	328.83	VP	27.097	GAP	20.36	AZP	90.14	TAL	3.46	TAP	89.13	RCA	151.45	APO	331.76	V2	26.482
RC	59.137	GL	-11.89	GP	-1.15	ZAL	87.30	ZAP	173.55	ETS	190.37	ZAE	169.73	ETE	19.63	ZAC	98.25	ETC	278.63	LVI	-18.08

PLANETOCENTRIC CONIC

C3	28.867	VHL	5.373	DLA	-22.42	RAL	336.98	RAD	6646.6	VEL	12.199	PTH	7.16	VHP	9.752	DPA	-16.85	RAP	325.86	ECC	1.4751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 6 8	2766.89	-20.43	78.39	199.03	133.96	15 52 15	1766.9	-2.37	61.91
60.00	16 13 28	2587.82	-14.76	67.41	204.18	127.94	16 56 36	1587.8	1.17	49.19
70.00	17 38 59	2336.41	-9.19	51.07	208.23	123.04	18 17 55	1336.4	4.74	31.50
80.00	19 21 8	2016.70	-4.63	29.59	211.02	119.53	19 54 45	1016.7	7.73	9.06
90.00	20 59 1	1700.98	-2.71	7.44	212.08	118.16	21 27 22	701.0	9.00	346.53
100.00	22 4 0	1491.17	-4.63	350.96	211.02	119.53	22 28 51	491.2	7.73	330.43
110.00	22 38 25	1383.23	-9.19	339.99	208.23	123.04	23 1 28	383.2	4.74	320.42

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2961	TRA	-.7369	TC3	.1405	BAU	.0616	SGT	919.3	SGR	595.3	SG3	118.9	ST	20.3	SR	27.3	SS	8.3
RDE	-.5073	RRA	.2033	RC3	.0757	FAU	.03789	RRT	-.0297	RRF	.0365	RTF	-.5802	CRT	.6904	CRS	.0556	CST	.7495
FDE	.0334	FRA	.5490	FC3	-1.1362	BSP	1227	SGB	1095.2	R23	-.0068	R13	.5805	LSA	31.6	MSA	14.9	SSA	1.2
BDE	.5874	BRA	.7645	BC3	.1596	FSP	145	SG1	919.6	SG2	594.8	THA	178.10	EL1	31.5	EL2	12.7	ALF	56.74

LAUNCH DATE MAY 25 1971 FLIGHT TIME 98.00 ARRIVAL DATE AUG 31 1971

HELIOCENTRIC CONIC DISTANCE 269.589 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	34.505	GAL	.98	AZL	91.82	HCA	86.94	SMA	236.52	ECC	.35970	INC	1.8199	V1	29.404
RP	206.75	LAP	-1.82	LOP	330.10	VP	26.883	GAP	19.86	AZP	90.10	TAL	3.70	TAP	90.65	RCA	151.44	APO	321.59	V2	26.487
RC	59.850	GL	-12.15	GP	-1.19	ZAL	86.98	ZAP	172.57	ETS	189.25	ZAE	169.25	ETE	18.01	ZAC	98.18	ETC	278.69	LVI	-18.12

PLANETOCENTRIC CONIC

C3	27.087	VHL	5.204	DLA	-22.78	RAL	336.76	RAD	6645.8	VEL	12.126	PTH	7.10	VHP	9.425	DPA	-16.79	RAP	326.15	ECC	1.4458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 6 56	2743.15	-19.30	77.25	198.00	134.37	15 52 39	1743.2	-1.18	60.92
60.00	16 14 54	2562.42	-13.69	66.11	203.14	128.28	16 57 36	1562.4	2.29	47.98
70.00	17 41 17	2308.43	-8.15	49.58	207.20	123.28	18 19 46	1308.4	5.80	30.03
80.00	19 24 35	1985.17	-3.57	27.85	210.02	119.66	19 57 40	985.2	8.76	7.30
90.00	21 3 9	1667.22	-1.62	5.55	211.09	118.24	21 30 56	667.2	10.03	344.59
100.00	22 7 27	1459.64	-3.57	349.22	210.02	119.66	22 31 46	459.6	8.76	328.66
110.00	22 40 44	1355.25	-8.15	338.50	207.20	123.28	23 3 19	355.2	5.80	318.95

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2891	TRA	-.7260	TC3	.1617	BAU	.0653	SGT	938.7	SGR	599.0	SG3	127.6	ST	20.6	SR	27.4	SS	8.5
RDE	-.4943	RRA	.1978	RC3	.0799	FAU	.03944	RRT	-.0312	RRF	.0386	RTF	-.5899	CRT	.6862	CRS	.0209	CST	.7303
FDE	.0279	FRA	.5674	FC3	-1.2606	BSP	1268	SGB	1113.5	R23	-.0076	R13	.5902	LSA	31.8	MSA	15.2	SSA	1.3
BDE	.5726	BRA	.7525	BC3	.1804	FSP	159	SG1	939.0	SG2	598.5	THA	178.08	EL1	31.8	EL2	12.9	ALF	56.56

LAUNCH DATE MAY 25 1971 FLIGHT TIME 100.00 ARRIVAL DATE SEP 2 1971

HELIOCENTRIC CONIC DISTANCE 272.460 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	34.345	GAL	1.02	AZL	91.81	HCA	88.21	SMA	231.95	ECC	.34713	INC	1.8100	V1	29.404
RP	206.72	LAP	-1.81	LOP	331.37	VP	26.680	GAP	19.37	AZP	90.06	TAL	3.96	TAP	92.18	RCA	151.43	APO	312.46	V2	26.491
RC	60.633	GL	-12.41	GP	-1.22	ZAL	86.63	ZAP	171.57	ETS	188.39	ZAE	168.83	ETE	16.56	ZAC	98.11	ETC	278.74	LVI	-18.15

PLANETOCENTRIC CONIC

C3	25.469	VHL	5.047	DLA	-23.15	RAL	336.51	RAD	6645.2	VEL	12.060	PTH	7.04	VHP	9.111	DPA	-16.74	RAP	326.42	ECC	1.4191

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 7 41	2719.91	-18.19	76.16	196.99	134.76	15 53 1	1719.9	-.01	59.95
60.00	16 16 17	2537.46	-12.63	64.85	202.12	128.59	16 58 34	1537.5	3.38	46.78
70.00	17 43 36	2280.77	-7.12	48.11	206.19	123.49	18 21 36	1280.8	6.84	28.57
80.00	19 28 6	1953.72	-2.51	26.12	209.04	119.76	20 0 39	953.7	9.79	5.52
90.00	21 7 26	1633.33	-.53	3.66	210.13	118.28	21 34 39	633.3	11.06	342.63
100.00	22 10 56	1428.19	-2.51	347.49	209.04	119.76	22 34 46	428.2	9.79	326.89
110.00	22 43 2	1327.59	-7.12	337.02	206.19	123.49	23 5 10	327.6	6.84	317.49

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2808	TRA	-.7156	TC3	.1885	BAU	.0703	SGT	958.4	SGR	602.4	SG3	137.0	ST	20.7	SR	27.6	SS	8.8
RDE	-.4818	RRA	.1925	RC3	.0840	FAU	.04109	RRT	-.0337	RRF	.0421	RTF	-.5931	CRT	.6799	CRS	-.0217	CST	.7070
FDE	.0205	FRA	.5876	FC3	-1.3969	BSP	1308	SGB	1132.0	R23	-.0085	R13	.6035	LSA	32.0	MSA	15.6	SSA	1.3
BDE	.5577	BRA	.7410	BC3	.2063	FSP	174	SG1	958.8	SG2	601.8	THA	177.99	EL1	31.9	EL2	13.1	ALF	56.52

LAUNCH DATE MAY 25 1971 FLIGHT TIME 102.00 ARRIVAL DATE SEP 4 1971

HELIOCENTRIC CONIC DISTANCE 275.462 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	34.194	GAL	1.06	AZL	91.80	HCA	89.48	SMA	227.83	ECC	.33539	INC	1.8003	V1	29.404
RP	206.70	LAP	-1.80	LOP	332.64	VP	26.489	GAP	18.89	AZP	90.02	TAL	4.23	TAP	93.72	RCA	151.42	APO	304.25	V2	26.494
RC	61.483	GL	-12.67	GP	-1.26	ZAL	86.27	ZAP	170.56	ETS	187.71	ZAE	168.46	ETE	15.27	ZAC	98.03	ETC	278.78	LVI	-18.18

PLANETOCENTRIC CONIC

C3	23.997	VHL	4.899	DLA	-23.52	RAL	336.24	RAD	6644.6	VEL	11.999	PTH	6.99	VHP	8.808	DPA	-16.69	RAP	326.68	ECC	1.3949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 8 22	2697.19	-17.10	75.11	196.01	135.11	15 53 19	1697.2	1.13	59.00
60.00	16 17 37	2512.98	-11.59	63.62	201.12	128.87	16 59 30	1513.0	4.46	45.61
70.00	17 45 54	2253.48	-6.09	46.66	205.21	123.67	18 23 27	1253.5	7.87	27.12
80.00	19 31 41	1922.39	-1.45	24.40	208.08	119.83	20 3 43	922.4	10.79	3.74
90.00	21 11 51	1599.33	.57	1.76	209.20	118.27	21 38 30	599.3	12.07	340.64
100.00	22 14 33	1396.86	-1.45	345.77	208.08	119.83	22 37 50	396.9	10.79	325.11
110.00	22 45 20	1300.30	-6.09	335.58	205.21	123.67	23 7 0	300.3	7.87	316.04

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2732	TRA	-.7056	TC3	.2130	BAU	.0739	SGT	977.6	SGR	605.3	SG3	146.9	ST	20.9	SR	27.7	SS	9.0
RDE	-.4697	RRA	.1874	RC3	.0879	FAU	.04282	RRT	-.0364	RRF	.0450	RTF	-.6126	CRT	.6739	CRS	-.0607	CST	.6851
FDE	.0133	FRA	.6077	FC3	-1.5450	BSP	1344	SGB	1149.9	R23	-.0088	R13	.6130	LSA	32.1	MSA	16.0	SSA	1.3
BDE	.5434	BRA	.7300	BC3	.2304	FSP	188	SG1	978.0	SG2	604.7	THA	177.91	EL1	32.0	EL2	13.4	ALF	56.45

LAUNCH DATE MAY 25 1971 FLIGHT TIME 104.00 ARRIVAL DATE SEP 6 1971

HELIOCENTRIC CONIC DISTANCE 278.579 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	34.052	GAL	1.11	AZL	91.79	HCA	90.75	SMA	224.11	ECC	.32441	INC	1.7905
RP	206.68	LAP	-1.79	LOP	333.91	VP	26.307	GAP	18.42	AZP	89.98	TAL	4.52	TAP	95.27	RCA	151.41	APO	296.82
RC	62.398	GL	-12.91	GP	-1.29	ZAL	85.88	ZAP	169.53	ETS	187.16	ZAE	168.16	ETE	14.09	ZAC	97.96	ETC	278.83

V1	29.404																		
V2	26.496																		
LVI	-18.20																		

PLANETOCENTRIC CONIC

C3	22.658	VHL	4.760	DLA	-23.90	RAL	335.95	RAD	6644.0	VEL	11.943	PTH	6.95	VHP	8.517	DPA	-16.65	RAP	326.92
ECC	1.3729																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 8 59	2675.04	-16.03	74.09	195.06	135.42	15 53 34	1675.0	2.24	58.08
60.00	16 18 55	2489.02	-10.56	62.43	200.16	129.12	17 0 24	1489.0	5.51	44.45
70.00	17 48 11	2226.61	-5.07	45.25	204.25	123.82	18 25 18	1226.6	8.87	25.68
80.00	19 35 21	1891.21	-.39	22.69	207.16	119.86	20 6 52	891.2	11.78	1.96
90.00	21 16 26	1565.20	1.67	359.86	208.30	118.23	21 42 31	565.2	13.08	338.64
100.00	22 18 13	1365.68	-.39	344.06	207.16	119.86	22 40 59	365.7	11.78	323.32
110.00	22 47 37	1273.43	-5.07	334.16	204.25	123.82	23 8 51	273.4	8.87	314.60

DIFFERENTIAL CORRECTIONS

TDE	-.2652	TRA	-.6948	TC3	.2413	BAU	.0782												
RDE	-.4582	RRA	.1824	RC3	.0917	FAU	.04469												
FDE	.0043	FRA	.6280	FC3	-1.7076	BSP	1390												
BDE	.5294	BRA	.7184	BC3	.2581	FSP	206												

MID-COURSE EXECUTION ACCURACY

SGT	995.7	SGR	607.9	SG3	157.6														
RRT	-.0389	RRF	.0485	RTF	-.6230														
SGB	1166.6	R23	-.0099	R13	.6234														
SG1	996.2	SG2	607.1	THA	177.83														

ORBIT DETERMINATION ACCURACY

ST	21.1	SR	27.8	SS	9.3														
CRT	.6675	CRS	-.1056	CST	.6583														
LSA	32.2	MSA	16.3	SSA	1.4														
EL1	32.1	EL2	13.6	ALF	56.46														

LAUNCH DATE MAY 25 1971 FLIGHT TIME 106.00 ARRIVAL DATE SEP 8 1971

HELIOCENTRIC CONIC DISTANCE 281.798 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	33.919	GAL	1.15	AZL	91.78	HCA	92.02	SMA	220.74	ECC	.31415	INC	1.7807
RP	206.67	LAP	-1.78	LOP	335.18	VP	26.136	GAP	17.95	AZP	89.94	TAL	4.81	TAP	96.83	RCA	151.40	APO	290.09
RC	63.376	GL	-13.16	GP	-1.33	ZAL	85.48	ZAP	168.48	ETS	186.70	ZAE	167.92	ETE	13.01	ZAC	97.89	ETC	278.87

V1	29.404																		
V2	26.496																		
LVI	-18.21																		

PLANETOCENTRIC CONIC

C3	21.437	VHL	4.630	DLA	-24.27	RAL	335.64	RAD	6643.5	VEL	11.893	PTH	6.90	VHP	8.237	DPA	-16.61	RAP	327.15
ECC	1.3528																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 9 32	2653.44	-14.98	73.11	194.13	135.71	15 53 46	1653.4	3.33	57.17
60.00	16 20 10	2465.58	-9.55	61.27	199.22	129.34	17 1 16	1465.6	6.53	43.32
70.00	17 50 28	2200.14	-4.07	43.86	203.32	123.94	18 27 8	1200.1	9.85	24.26
80.00	19 39 6	1860.14	.66	20.99	206.27	119.85	20 10 6	860.1	12.76	.16
90.00	21 21 12	1530.86	2.77	357.94	207.44	118.15	21 46 42	530.9	14.07	336.60
100.00	22 21 58	1334.61	.66	342.35	206.27	119.85	22 44 12	334.6	12.76	321.53
110.00	22 49 54	1246.96	-4.07	332.77	203.32	123.94	23 10 41	247.0	9.85	313.18

DIFFERENTIAL CORRECTIONS

TDE	-.2489	TRA	-.6761	TC3	.2859	BAU	.0863												
RDE	-.4472	RRA	.1776	RC3	.0950	FAU	.04668												
FDE	-.0040	FRA	.6511	FC3	-1.8853	BSP	1322												
BDE	.5118	BRA	.6991	BC3	.3013	FSP	225												

MID-COURSE EXECUTION ACCURACY

SGT	1003.7	SGR	610.1	SG3	169.1														
RRT	-.0450	RRF	.0521	RTF	-.6476														
SGB	1174.6	R23	-.0060	R13	.6480														
SG1	1004.3	SG2	609.1	THA	177.52														

ORBIT DETERMINATION ACCURACY

ST	20.7	SR	27.9	SS	9.6														
CRT	.6528	CRS	-.1444	CST	.6437														
LSA	31.9	MSA	16.6	SSA	1.4														
EL1	31.9	EL2	13.7	ALF	57.53														

LAUNCH DATE MAY 25 1971 FLIGHT TIME 108.00 ARRIVAL DATE SEP 10 1971

HELIOCENTRIC CONIC DISTANCE 285.108 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	33.794	GAL	1.19	AZL	91.77	HCA	93.29	SMA	217.68	ECC	.30456	INC	1.7709
RP	206.68	LAP	-1.77	LOP	336.45	VP	25.973	GAP	17.50	AZP	89.90	TAL	5.10	TAP	98.39	RCA	151.38	APO	283.98
RC	64.414	GL	-13.39	GP	-1.38	ZAL	85.08	ZAP	167.41	ETS	186.32	ZAE	167.74	ETE	12.01	ZAC	97.82	ETC	278.91

V1	29.404																		
V2	26.496																		
LVI	-18.22																		

PLANETOCENTRIC CONIC

C3	20.325	VHL	4.508	DLA	-24.65	RAL	335.32	RAD	6643.0	VEL	11.846	PTH	6.86	VHP	7.967	DPA	-16.58	RAP	327.36
ECC	1.3345																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 3	2632.53	-13.95	72.18	193.24	135.96	15 53 55	1632.5	4.38	56.29
60.00	16 21 23	2442.80	-8.57	60.16	198.31	129.53	17 2 6	1442.8	7.52	42.21
70.00	17 52 44	2174.25	-3.08	42.50	202.43	124.03	18 28 58	1174.2	10.80	22.86
80.00	19 42 55	1829.37	1.71	19.30	205.41	119.81	20 13 25	829.4	13.71	358.38
90.00	21 26 8	1496.48	3.88	356.01	206.61	118.03	21 51 5	496.5	15.04	334.55
100.00	22 25 47	1303.84	1.71	340.67	205.41	119.81	22 47 31	303.8	13.71	319.74
110.00	22 52 10	1221.06	-3.08	331.42	202.43	124.03	23 12 31	221.1	10.80	311.78

DIFFERENTIAL CORRECTIONS

TDE	-.2447	TRA	-.6690	TC3	.3084	BAU	.0879												
RDE	-.4366	RRA	.1731	RC3	.0982	FAU	.04884												
FDE	-.0153	FRA	.6715	FC3	-2.0805	BSP	1400												
BDE	.5005	BRA	.6910	BC3	.3236	FSP	243												

MID-COURSE EXECUTION ACCURACY

SGT	1024.2	SGR	611.8	SG3	181.3														
RRT	-.0465	RRF	.0560	RTF	-.6487														
SGB	1193.1	R23	-.0092	R13	.6492														
SG1	1024.9	SG2	610.8	THA	177.53														

ORBIT DETERMINATION ACCURACY

ST	20.9	SR	28.0	SS	9.9														
CRT	.6492	CRS	-.1928	CST	.6092														
LSA	32.1	MSA	17.0	SSA	1.4														
EL1	32.1	EL2	13.9	ALF	57.16														

LAUNCH DATE MAY 25 1971 FLIGHT TIME 110.00 ARRIVAL DATE SEP 12 1971

HELIOCENTRIC CONIC DISTANCE 288.499 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	33.677	GAL	1.23	AZL	91.76	HCA	94.56	SMA	214.89	ECC	.29560	INC	1.7610
RP	206.69	LAP	-1.76	LOP	337.72	VP	25.819	GAP	17.06	AZP	89.86	TAL	5.41	TAP	99.96	RCA	151.37	APO	278.41
RC	65.512	GL	-13.62	GP	-1.42	ZAL	84.66	ZAP	166.32	ETS	186.00	ZAE	167.64	ETE	11.07	ZAC	97.75	ETC	278.94

V1	29.404																		
V2	26.495																		
LVI	-18.22																		

PLANETOCENTRIC CONIC

C3	19.310	VHL	4.394	DLA	-25.02	RAL	334.98	RAD	6642.5	VEL	11.804	PTH	6.83	VHP	7.706	DPA	-16.56	RAP	327.55
ECC	1.3178																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO C3T TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 29	2612.26	-12.96	71.28	192.36	136.19	15 54 2	1612.3	5.39	55.44
60.00	16 22 32	2420.64	-7.61	59.07	197.42	129.70	17 2 53	1420.6	8.49	41.13
70.00	17 54 58	2148.89	-2.11	41.17	201.56	124.10	18 30 47	1148.9	11.73	21.48
80.00	19 46 49	1798.81	2.74	17.62	204.58	119.74	20 16 48	798.8	14.64	356.58
90.00	21 31 17	1461.90	4.98	354.07	205.81	117.87	21 55 39	461.9	15.99	332.46
100.00	22 29 41	1273.29	2.74	338.99	204.58	119.74	22 50 54	273.3	14.64	317.95
110.00	22 54 24	1195.70	-2.11	330.09	201.56	124.10	23 14 20	195.7	11.73	310.40

DIFFERENTIAL CORRECTIONS

TDE	-.2389	TRA	-.6609	TC3	.3354	BAU	.0904												
RDE	-.4265	RRA	.1687	RC3	.1010	FAU	.05112												
FDE	-.0276	FRA	.6945	FC3	-2.2921	BSP	1462												
BDE	.4888	BRA	.6821	BC3	.3503	FSP	264												

MID-COURSE EXECUTION ACCURACY

SGT	1043.1	SGR	613.2	SG3	194.3														
RRT	-.0492	RRF	.0608	RTF	-.6534														
SGB	1210.1	R23	-.0117	R13	.6539														
SG1	1043.8	SG2	612.1	THA	177.47														

ORBIT DETERMINATION ACCURACY

ST	21.1	SR	28.0	SS	10.3														
CRT	.6434	CRS	-.2413	CST	.5754														
LSA	32.2	MSA	17.4	SSA	1.5														
EL1	32.2	EL2	14.1	ALF	57.03														

LAUNCH DATE MAY 25 1971 FLIGHT TIME 112.00 ARRIVAL DATE SEP 14 1971

HELIOCENTRIC CONIC DISTANCE 291.964 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	33.567	GAL	1.27	AZL	91.75	HCA	95.83	SMA	212.35	ECC	.28722	INC	1.7512	V1	29.404
RP	206.71	LAP	-1.74	LOP	338.99	VP	25.673	GAP	16.62	AZP	89.82	TAL	5.71	TAP	101.54	RCA	151.36	APO	273.34	V2	26.493
RC	66.667	GL	-13.84	GP	-1.46	ZAL	84.23	ZAP	165.22	ETS	185.72	ZAE	167.60	ETE	10.19	ZAC	97.68	ETC	278.97	LVI	-18.22

PLANETOCENTRIC CONIC

C3	18.383	VHL	4.288	DLA	-25.38	RAL	334.63	RAD	6642.1	VEL	11.765	PTH	6.79	VHP	7.456	DPA	-16.55	RAP	327.72	ECC	1.3025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 53	2592.67	-12.00	70.42	191.52	136.40	15 54 5	1592.7	6.37	54.61
60.00	16 23 39	2399.13	-6.67	58.03	196.56	129.84	17 3 38	1399.1	9.42	40.08
70.00	17 37 11	2124.10	-1.17	39.88	200.72	124.14	18 32 35	1124.1	12.63	20.13
80.00	19 50 48	1768.51	3.76	15.95	203.78	119.64	20 20 17	768.5	15.55	354.79
90.00	21 36 40	1427.06	6.08	352.11	205.06	117.67	22 0 28	427.1	16.93	330.33
100.00	22 33 40	1242.98	3.76	337.32	203.78	119.64	22 54 23	243.0	15.55	316.16
110.00	22 56 38	1170.92	-1.17	328.80	200.72	124.14	23 16 9	170.9	12.63	309.04

DIFFERENTIAL CORRECTIONS

TDE	-.2325	TRA	-.6518	TC3	.3637	BAU	.0929												
RDE	-.4168	RRA	.1646	RC3	.1033	FAU	.05358												
FDE	-.0403	FRA	.7176	FC3	-2.5233	BSP	1509												
BDE	.4773	BRA	.6723	BC3	.3781	FSP	285												

MID-COURSE EXECUTION ACCURACY

SGT	1059.8	SGR	614.3	SG3	208.3						
RRT	-.0522	RRF	.0653	RTF	-.6581						
SGB	1225.0	R23	-.0137	R13	.6587						
SG1	1060.6	SG2	613.0	THA	177.40						

ORBIT DETERMINATION ACCURACY

ST	21.2	SR	28.1	SS	10.6						
CRT	.6372	CRS	-.2870	CST	.5430						
LSA	32.2	MSA	17.7	SSA	1.5						
EL1	32.2	EL2	14.3	ALF	56.99						

LAUNCH DATE MAY 25 1971 FLIGHT TIME 114.00 ARRIVAL DATE SEP 16 1971

HELIOCENTRIC CONIC DISTANCE 295.494 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	33.464	GAL	1.31	AZL	91.74	HCA	97.10	SMA	210.02	ECC	.27939	INC	1.7413	V1	29.404
RP	206.73	LAP	-1.73	LOP	340.26	VP	25.534	GAP	16.20	AZP	89.78	TAL	6.02	TAP	103.12	RCA	151.34	APO	268.70	V2	26.489
RC	67.877	GL	-14.05	GP	-1.51	ZAL	83.80	ZAP	164.09	ETS	185.48	ZAE	167.63	ETE	9.33	ZAC	97.61	ETC	278.99	LVI	-18.20

PLANETOCENTRIC CONIC

C3	17.536	VHL	4.188	DLA	-25.74	RAL	334.26	RAD	6641.7	VEL	11.729	PTH	6.76	VHP	7.214	DPA	-16.55	RAP	327.87	ECC	1.2886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 13	2573.78	-11.06	69.59	190.70	136.58	15 54 6	1573.8	7.31	53.61
60.00	16 24 42	2378.33	-5.76	57.02	195.74	129.96	17 4 20	1378.3	10.31	39.05
70.00	17 59 23	2099.94	-.25	38.62	199.90	124.15	18 34 23	1099.9	13.50	18.79
80.00	19 54 52	1738.48	4.77	14.29	203.02	119.51	20 23 51	738.5	16.43	353.00
90.00	21 42 20	1391.91	7.19	350.12	204.34	117.42	22 5 32	391.9	17.85	328.17
100.00	22 37 44	1212.95	4.77	335.66	203.02	119.51	22 57 57	213.0	16.43	314.37
110.00	22 58 49	1146.76	-.25	327.54	199.90	124.15	23 17 56	146.8	13.50	307.71

DIFFERENTIAL CORRECTIONS

TDE	-.2260	TRA	-.6423	TC3	.3915	BAU	.0950												
RDE	-.4075	RRA	.1606	RC3	.1052	FAU	.05610												
FDE	-.0534	FRA	.7425	FC3	-2.7699	BSP	1553												
BDE	.4660	BRA	.6621	BC3	.4054	FSP	309												

MID-COURSE EXECUTION ACCURACY

SGT	1074.7	SGR	615.0	SG3	223.0						
RRT	-.0556	RRF	.0702	RTF	-.6629						
SGB	1238.2	R23	-.0156	R13	.6635						
SG1	1075.5	SG2	613.5	THA	177.30						

ORBIT DETERMINATION ACCURACY

ST	21.3	SR	28.1	SS	11.0						
CRT	.6306	CRS	-.3289	CST	.5129						
LSA	32.2	MSA	18.1	SSA	1.5						
EL1	32.2	EL2	14.4	ALF	57.03						

LAUNCH DATE MAY 25 1971 FLIGHT TIME 116.00 ARRIVAL DATE SEP 18 1971

HELIOCENTRIC CONIC DISTANCE 299.083 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	33.367	GAL	1.35	AZL	91.73	HCA	98.36	SMA	207.89	ECC	.27207	INC	1.7313	V1	29.404
RP	206.77	LAP	-1.71	LOP	341.53	VP	25.403	GAP	15.78	AZP	89.75	TAL	6.33	TAP	104.70	RCA	151.33	APO	264.45	V2	26.485
RC	69.140	GL	-14.25	GP	-1.56	ZAL	83.37	ZAP	162.93	ETS	185.27	ZAE	167.74	ETE	8.91	ZAC	97.54	ETC	279.02	LVI	-18.18

PLANETOCENTRIC CONIC

C3	16.761	VHL	4.094	DLA	-26.08	RAL	333.90	RAD	6641.4	VEL	11.696	PTH	6.73	VHP	6.982	DPA	-16.56	RAP	328.01	ECC	1.2758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 29	2555.61	-10.16	68.80	189.90	136.74	15 54 5	1555.6	8.22	53.04
60.00	16 25 42	2358.24	-4.88	56.06	194.93	130.05	17 5 0	1358.2	11.18	38.06
70.00	18 1 32	2076.45	.65	37.39	199.12	124.15	18 36 9	1076.4	14.33	17.49
80.00	19 59 1	1708.74	5.76	12.65	202.29	119.35	20 27 30	708.7	17.28	351.21
90.00	21 48 18	1356.31	8.30	348.10	203.66	117.13	22 10 54	356.3	18.76	325.95
100.00	22 41 53	1183.21	5.76	334.01	202.29	119.35	23 1 36	183.2	17.28	312.57
110.00	23 0 59	1123.27	.65	326.31	199.12	124.15	23 19 42	123.3	14.33	306.40

DIFFERENTIAL CORRECTIONS

TDE	-.2189	TRA	-.6318	TC3	.4216	BAU	.0974												
RDE	-.3986	RRA	.1569	RC3	.1065	FAU	.05865												
FDE	-.0691	FRA	.7667	FC3	-3.0397	BSP	1586												
BDE	.4548	BRA	.6510	BC3	.4349	FSP	335												

MID-COURSE EXECUTION ACCURACY

SGT	1087.4	SGR	615.3	SG3	238.7						
RRT	-.0592	RRF	.0759	RTF	-.6578						
SGB	1249.4	R23	-.0179	R13	.6685						
SG1	1088.3	SG2	613.7	THA	177.19						

ORBIT DETERMINATION ACCURACY

ST	21.3	SR	28.1	SS	11.4						
CRT	.6233	CRS	-.3757	CST	.4777						
LSA	32.2	MSA	18.4	SSA	1.6						
EL1	32.1	EL2	14.6	ALF	57.19						

LAUNCH DATE MAY 25 1971 FLIGHT TIME 118.00 ARRIVAL DATE SEP 20 1971

HELIOCENTRIC CONIC DISTANCE 302.726 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	33.276	GAL	1.39	AZL	91.72	HCA	99.63	SMA	205.93	ECC	.26523	INC	1.7213	V1	29.404
RP	206.81	LAP	-1.70	LOP	342.79	VP	25.278	GAP	15.38	AZP	89.71	TAL	6.64	TAP	106.27	RCA	151.31	APO	260.55	V2	26.480
RC	70.455	GL	-14.44	GP	-1.62	ZAL	82.94	ZAP	161.76	ETS	185.08	ZAE	167.92	ETE	7.69	ZAC	97.48	ETC	279.03	LVI	-18.15

PLANETOCENTRIC CONIC

C3	16.052	VHL	4.006	DLA	-26.42	RAL	333.52	RAD	6641.0	VEL	11.666	PTH	6.70	VHP	6.758	DPA	-16.57	RAP	328.12	ECC	1.2642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 43	2538.18	-9.30	68.05	189.14	136.87	15 54 1	1538.2	9.09	52.29
60.00	16 26 38	2338.90	-4.04	55.13	194.16	130.13	17 5 37	1338.9	12.00	37.09
70.00	18 3 39	2053.66	1.52	36.21	198.37	124.12	18 37 53	1053.7	15.13	16.21
80.00	20 3 15	1679.32	6.74	11.01	201.59	119.16	20 31 14	679.3	18.11	349.41
90.00	21 54 38	1320.11	9.42	346.02	203.02	116.79	22 16 38	320.1	19.65	323.66
100.00	22 46 7	1153.79	6.74	332.38	201.59	119.16	23 5 20	153.8	18.11	310.78
110.00	23 3 5	1100.48	1.52	325.12	198.37	124.12	23 21 26	100.5	15.13	305.13

DIFFERENTIAL CORRECTIONS

TDE	-.2120	TRA	-.6219	TC3	.4506	BAU	.0994												
RDE	-.3901	RRA	.1533	RC3	.1071	FAU	.06181												
FDE	-.0848	FRA	.7938	FC3	-3.3335	BSP	1613												
BDE	.4440	BRA	.6405	BC3	.4632	FSP	363												

MID-COURSE EXECUTION ACCURACY

SGT	1099.3	SGR	615.3	SG3	255.7						
RRT	-.0636	RRF	.0818	RTF	-.6722						
SGB	1259.8	R23	-.0197	R13	.6730						
SG1	1100.3	SG2	613.4	THA	177.04						

ORBIT DETERMINATION ACCURACY

ST	21.3	SR	28.1	SS	11.9						
CRT	.6155	CRS	-.4164	CST	.4472						
LSA	32.1	MSA	18.7	SSA	1.6						
EL1	32.0	EL2	14.7	ALF	57.38						

LAUNCH DATE MAY 25 1971 FLIGHT TIME 120.00 ARRIVAL DATE SEP 22 1971

HELIOCENTRIC CONIC DISTANCE 306.418 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 33.190 GAL 1.43 AZL 91.71 HCA 100.90 SMA 204.13 ECC .25884 INC 1.7112 V1 29.404
RP 206.87 LAP -1.68 LOP 344.06 VP 25.159 GAP 14.98 AZP 89.68 TAL 6.95 TAP 107.85 RCA 151.30 APO 256.97 V2 26.474
RC 71.818 GL -14.62 GP -1.67 ZAL 82.51 ZAP 160.56 ETS 184.91 ZAE 168.17 ETE 6.88 ZAC 97.41 ETC 279.04 LVI -18.11

PLANETOCENTRIC CONIC

C3 15.402 VHL 3.925 DLA -26.75 RAL 333.14 RAD 6640.7 VEL 11.638 PTH 6.68 VHP 6.542 DPA -16.60 RAP 328.20 ECC 1.2535

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 54	2521.50	-8.47	67.34	188.40	137.00	15 53 55	1521.5	9.92	51.57
60.00	16 27 32	2320.34	-3.22	54.24	193.41	130.19	17 6 12	1320.3	12.79	36.16
70.00	18 5 43	2031.62	2.36	35.05	197.64	124.08	18 39 35	1031.6	15.90	14.96
80.00	20 7 34	1650.23	7.70	9.39	200.92	118.94	20 35 4	650.2	18.91	347.63
90.00	22 1 25	1283.05	10.55	343.89	202.43	116.39	22 22 48	283.0	20.52	321.30
100.00	22 50 25	1124.70	7.70	330.76	200.92	118.94	23 9 10	124.7	18.91	308.99
110.00	23 5 9	1078.43	2.36	323.97	197.64	124.08	23 23 8	78.4	15.90	303.88

DIFFERENTIAL CORRECTIONS

TDE -.2050 TRA -.6115 TC3 .4787 BAU .1010
RDE -.3820 RRA .1499 RC3 .1070 FAU .06490
FDE -.1025 FRA .8217 FC3-3.6480 BSP 1636
BDE .4335 BRA .6296 BC3 .4905 FSP 392

MID-COURSE EXECUTION ACCURACY

SGT 1109.2 SGR 614.9 SG3 273.6
RRT -.0684 RRF .0885 RTF -.6760
SGB 1268.2 R23 -.0220 R13 .6770
SG1 1110.3 SG2 612.9 THA 176.88

ORBIT DETERMINATION ACCURACY

ST 21.2 SR 28.1 SS 12.4
CRT .6076 CRS -.4577 CST .4147
LSA 32.1 MSA 19.1 SSA 1.6
EL1 31.9 EL2 14.8 ALF 57.63

LAUNCH DATE MAY 25 1971 FLIGHT TIME 122.00 ARRIVAL DATE SEP 24 1971

HELIOCENTRIC CONIC DISTANCE 310.154 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 33.110 GAL 1.46 AZL 91.70 HCA 102.17 SMA 202.48 ECC .25287 INC 1.7011 V1 29.404
RP 206.93 LAP -1.66 LOP 345.33 VP 25.045 GAP 14.59 AZP 89.64 TAL 7.25 TAP 109.42 RCA 151.28 APO 253.68 V2 26.466
RC 73.228 GL -14.79 GP -1.73 ZAL 82.09 ZAP 159.33 ETS 184.76 ZAE 168.50 ETE 6.05 ZAC 97.35 ETC 279.05 LVI -18.07

PLANETOCENTRIC CONIC

C3 14.807 VHL 3.848 DLA -27.07 RAL 332.77 RAD 6640.4 VEL 11.613 PTH 6.65 VHP 6.334 DPA -16.64 RAP 328.26 ECC 1.2437

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 2	2505.59	-7.68	66.66	187.68	137.10	15 53 47	1505.6	10.70	50.89
60.00	16 28 21	2302.57	-2.44	53.39	192.70	130.24	17 6 44	1302.6	13.54	35.26
70.00	18 7 44	2010.36	3.18	33.94	196.94	124.02	18 41 14	1010.4	16.64	13.75
80.00	20 11 57	1621.50	8.65	7.78	200.29	118.69	20 38 59	621.5	19.68	345.84
90.00	22 8 47	1244.73	11.70	341.66	201.89	115.93	22 29 32	244.7	21.39	318.82
100.00	22 54 49	1095.97	8.65	329.14	200.29	118.69	23 13 5	96.0	19.68	307.21
110.00	23 7 10	1057.18	3.18	322.86	196.94	124.02	23 24 47	57.2	16.64	302.67

DIFFERENTIAL CORRECTIONS

TDE -.1982 TRA -.6011 TC3 .5060 BAU .1023
RDE -.3742 RRA .1468 RC3 .1061 FAU .06821
FDE -.1210 FRA .8500 FC3-3.9879 BSP 1656
BDE .4234 BRA .6187 BC3 .5170 FSP 423

MID-COURSE EXECUTION ACCURACY

SGT 1117.6 SGR 614.3 SG3 292.6
RRT -.0735 RRF .0954 RTF -.6791
SGB 1275.2 R23 -.0242 R13 .6802
SG1 1118.9 SG2 611.9 THA 176.70

ORBIT DETERMINATION ACCURACY

ST 21.1 SR 28.1 SS 12.9
CRT .5997 CRS -.4959 CST .3839
LSA 32.0 MSA 19.4 SSA 1.7
EL1 31.8 EL2 14.9 ALF 57.91

LAUNCH DATE MAY 25 1971 FLIGHT TIME 124.00 ARRIVAL DATE SEP 26 1971

HELIOCENTRIC CONIC DISTANCE 313.931 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 33.035 GAL 1.49 AZL 91.69 HCA 103.43 SMA 200.96 ECC .24730 INC 1.6908 V1 29.404
RP 207.00 LAP -1.64 LOP 346.59 VP 24.937 GAP 14.22 AZP 89.61 TAL 7.55 TAP 110.98 RCA 151.26 APO 250.66 V2 26.458
RC 74.683 GL -14.95 GP -1.79 ZAL 81.68 ZAP 158.08 ETS 184.63 ZAE 168.90 ETE 5.20 ZAC 97.29 ETC 279.05 LVI -18.01

PLANETOCENTRIC CONIC

C3 14.261 VHL 3.776 DLA -27.37 RAL 332.39 RAD 6640.2 VEL 11.590 PTH 6.63 VHP 6.134 DPA -16.70 RAP 328.30 ECC 1.2347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 7	2490.46	-6.92	66.01	187.00	137.19	15 53 37	1490.5	11.45	50.23
60.00	16 29 7	2285.63	-1.69	52.58	192.01	130.27	17 7 12	1285.6	14.26	34.40
70.00	18 9 40	1989.93	3.95	32.87	196.28	123.95	18 42 50	989.9	17.33	12.58
80.00	20 16 25	1593.14	9.57	6.18	199.70	118.42	20 42 59	593.1	20.43	344.06
90.00	22 16 57	1204.49	12.89	339.30	201.41	115.39	22 37 1	204.5	22.26	316.19
100.00	22 59 17	1067.61	9.57	327.55	199.70	118.42	23 17 5	67.6	20.43	305.43
110.00	23 9 7	1036.75	3.95	321.79	196.28	123.95	23 26 23	36.7	17.33	301.50

DIFFERENTIAL CORRECTIONS

TDE -.1925 TRA -.5908 TC3 .5299 BAU .1030
RDE -.3667 RRA .1438 RC3 .1045 FAU .07169
FDE -.1395 FRA .8810 FC3-4.3520 BSP 1674
BDE .4141 BRA .6081 BC3 .5401 FSP 457

MID-COURSE EXECUTION ACCURACY

SGT 1124.4 SGR 613.3 SG3 312.9
RRT -.0782 RRF .1027 RTF -.6810
SGB 1280.8 R23 -.0273 R13 .6823
SG1 1125.9 SG2 610.6 THA 176.54

ORBIT DETERMINATION ACCURACY

ST 21.0 SR 28.1 SS 13.5
CRT .5935 CRS -.5286 CST .3557
LSA 32.0 MSA 19.6 SSA 1.7
EL1 31.7 EL2 15.0 ALF 58.09

LAUNCH DATE MAY 25 1971 FLIGHT TIME 126.00 ARRIVAL DATE SEP 28 1971

HELIOCENTRIC CONIC DISTANCE 317.745 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.965 GAL 1.53 AZL 91.68 HCA 104.70 SMA 199.56 ECC .24209 INC 1.6804 V1 29.404
RP 207.08 LAP -1.63 LOP 347.86 VP 24.834 GAP 13.85 AZP 89.57 TAL 7.84 TAP 112.54 RCA 151.25 APO 247.87 V2 26.449
RC 76.180 GL -15.10 GP -1.85 ZAL 81.28 ZAP 156.80 ETS 184.50 ZAE 169.37 ETE 4.29 ZAC 97.23 ETC 279.05 LVI -17.95

PLANETOCENTRIC CONIC

C3 13.760 VHL 3.709 DLA -27.65 RAL 332.03 RAD 6639.9 VEL 11.568 PTH 6.61 VHP 5.941 DPA -16.76 RAP 328.30 ECC 1.2265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 9	2476.11	-6.20	65.41	186.34	137.27	15 53 25	1476.1	12.16	49.60
60.00	16 29 49	2269.52	-.98	51.81	191.35	130.29	17 7 38	1269.5	14.93	33.57
70.00	18 11 33	1970.37	4.70	31.85	195.64	123.87	18 44 23	970.4	17.99	11.45
80.00	20 20 58	1565.17	10.47	4.59	199.14	118.12	20 47 4	565.2	21.14	342.29
90.00	22 26 17	1161.07	14.14	336.73	201.00	114.75	22 45 38	161.1	23.14	313.32
100.00	23 3 50	1039.64	10.47	325.96	199.14	118.12	23 21 10	39.6	21.14	303.66
110.00	23 10 59	1017.19	4.70	320.76	195.64	123.87	23 27 56	17.2	17.99	300.37

DIFFERENTIAL CORRECTIONS

TDE -.1861 TRA -.5805 TC3 .5506 BAU .1030
RDE -.3595 RRA .1410 RC3 .1020 FAU .07533
FDE -.1616 FRA .9127 FC3-4.7396 BSP 1682
BDE .4048 BRA .5974 BC3 .5600 FSP 492

MID-COURSE EXECUTION ACCURACY

SGT 1128.7 SGR 612.0 SG3 334.2
RRT -.0845 RRF .1115 RTF -.6816
SGB 1284.0 R23 -.0303 R13 .6831
SG1 1130.4 SG2 609.0 THA 176.30

ORBIT DETERMINATION ACCURACY

ST 20.9 SR 28.0 SS 14.1
CRT .5856 CRS -.5644 CST .3247
LSA 31.9 MSA 19.9 SSA 1.8
EL1 31.6 EL2 15.1 ALF 58.42

LAUNCH DATE MAY 25 1971 FLIGHT TIME 128.00 ARRIVAL DATE SEP 30 1971

HELIOCENTRIC CONIC DISTANCE 321.593 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.899	GAL	1.56	AZL	91.67	HCA	105.96	SMA	198.27	ECC	.23724	INC	1.6699	V1	29.404
RP	207.17	LAP	-1.61	LOP	349.12	VP	24.736	GAP	13.48	AZP	89.54	TAL	8.12	TAP	114.08	RCA	151.23	APO	245.31	V2	26.439
RC	77.718	GL	-15.24	GP	-1.92	ZAL	80.89	ZAP	155.49	ETS	184.39	ZAE	169.92	ETE	3.31	ZAC	97.17	ETC	279.04	LVI	-17.87

PLANETOCENTRIC CONIC

C3	13.300	VHL	3.647	DLA	-27.92	RAL	331.67	RAD	6639.7	VEL	11.548	PTH	6.59	VHP	5.756	DPA	-16.84	RAP	328.28	ECC	1.2189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 9	2462.56	-5.53	64.83	185.71	137.33	15 53 11	1462.6	12.83	49.00
60.00	16 30 27	2254.27	-.31	51.08	190.71	130.30	17 8 1	1254.3	15.57	32.78
70.00	18 13 20	1951.72	5.40	30.86	195.03	123.78	18 45 52	951.7	18.62	10.36
80.00	20 25 36	1537.62	11.35	3.02	198.61	117.80	20 51 13	537.6	21.82	340.53
90.00	22 37 42	1111.57	15.53	333.76	200.69	113.94	22 56 14	111.6	24.07	309.99
100.00	23 8 27	1012.09	11.35	324.39	198.61	117.80	23 25 20	12.1	21.82	301.90
110.00	23 12 46	6286.58	5.40	297.69	195.03	123.78	24 57 33	5286.6	18.62	277.18

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1808	TRA	-.5698	TC3	.5705	BAU	.1029	SGT	1131.5	SGR	610.5	SG3	357.1	ST	20.8	SR	27.9	SS	14.7
RDE	-.3527	RRA	.1384	RC3	.0984	FAU	.07929	RRT	-.0902	RRF	.1204	RTF	-.6816	CRT	.5797	CRS	-.5955	CST	.2952
FDE	-.1839	FRA	.9452	FC3	-5.1612	BSP	1693	SGB	1285.7	R23	-.0342	R13	.6833	LSA	32.0	MSA	20.1	SSA	1.8
BDE	.3962	BRA	.5864	BC3	.5789	FSP	531	SG1	1133.4	SG2	607.0	THA	176.09	EL1	31.4	EL2	15.1	ALF	58.67

LAUNCH DATE MAY 25 1971 FLIGHT TIME 130.00 ARRIVAL DATE OCT 2 1971

HELIOCENTRIC CONIC DISTANCE 325.471 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.838	GAL	1.58	AZL	91.66	HCA	107.22	SMA	197.08	ECC	.23271	INC	1.6593	V1	29.404
RP	207.26	LAP	-1.58	LOP	350.39	VP	24.642	GAP	13.13	AZP	89.51	TAL	8.40	TAP	115.62	RCA	151.22	APO	242.94	V2	26.428
RC	79.295	GL	-15.36	GP	-1.99	ZAL	80.51	ZAP	154.15	ETS	184.28	ZAE	170.53	ETE	2.23	ZAC	97.11	ETC	279.02	LVI	-17.78

PLANETOCENTRIC CONIC

C3	12.876	VHL	3.588	DLA	-28.18	RAL	331.31	RAD	6639.5	VEL	11.530	PTH	6.58	VHP	5.577	DPA	-16.93	RAP	328.23	ECC	1.2119

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 6	2449.80	-4.89	64.30	185.11	137.38	15 52 56	1449.8	13.45	48.44
60.00	16 31 1	2239.88	.32	50.39	190.11	130.30	17 8 21	1239.9	16.16	32.04
70.00	18 15 1	1934.02	6.07	29.93	194.44	123.67	18 47 15	934.0	19.20	9.32
80.00	20 30 17	1510.51	12.21	1.46	198.11	117.46	20 55 27	510.5	22.47	338.77
90.00	22 54 35	1045.07	17.32	329.71	200.59	112.71	23 12 0	45.1	25.19	305.44
100.00	23 13 9	6273.02	12.21	300.74	198.11	117.46	24 57 42	5273.0	22.47	278.05
110.00	23 14 28	6268.87	6.07	296.76	194.44	123.67	24 58 57	5268.9	19.20	276.14

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1755	TRA	-.5595	TC3	.5853	BAU	.1020	SGT	1132.2	SGR	608.7	SG3	381.2	ST	20.7	SR	27.9	SS	15.4
RDE	-.3460	RRA	.1360	RC3	.0938	FAU	.08342	RRT	-.0966	RRF	.1297	RTF	-.6804	CRT	.5741	CRS	-.6211	CST	.2707
FDE	-.2059	FRA	.9806	FC3	-5.6085	BSP	1698	SGB	1285.5	R23	-.0379	R13	.6824	LSA	32.0	MSA	20.4	SSA	1.8
BDE	.3880	BRA	.5758	BC3	.5928	FSP	573	SG1	1134.4	SG2	604.7	THA	175.84	EL1	31.2	EL2	15.1	ALF	58.90

LAUNCH DATE MAY 25 1971 FLIGHT TIME 132.00 ARRIVAL DATE OCT 4 1971

HELIOCENTRIC CONIC DISTANCE 329.379 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.780	GAL	1.61	AZL	91.65	HCA	108.48	SMA	195.98	ECC	.22848	INC	1.6486	V1	29.404
RP	207.37	LAP	-1.56	LOP	351.65	VP	24.553	GAP	12.79	AZP	89.48	TAL	8.66	TAP	117.14	RCA	151.20	APO	240.76	V2	26.415
RC	80.909	GL	-15.47	GP	-2.06	ZAL	80.16	ZAP	152.78	ETS	184.18	ZAE	171.22	ETE	.99	ZAC	97.05	ETC	279.00	LVI	-17.89

PLANETOCENTRIC CONIC

C3	12.487	VHL	3.534	DLA	-28.41	RAL	330.98	RAD	6639.3	VEL	11.514	PTH	6.56	VHP	5.406	DPA	-17.04	RAP	328.15	ECC	1.2055

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 12 2	2437.83	-4.29	63.79	184.54	137.43	15 52 39	1437.8	14.04	47.91
60.00	16 31 31	2226.38	.91	49.75	189.53	130.29	17 8 37	1226.4	16.72	31.33
70.00	18 16 37	1917.30	6.70	29.05	193.89	123.57	18 48 34	917.3	19.75	8.33
80.00	20 35 1	1483.87	13.04	359.92	197.65	117.10	20 59 45	483.9	23.08	337.04
87.13	22 50 10	1048.35	19.31	330.79	200.58	111.25	23 7 39	48.3	26.38	305.96
100.00	23 17 53	6246.38	13.04	299.20	197.65	117.10	25 2 0	5246.4	23.08	276.31
110.00	23 18 3	6252.16	6.70	295.87	193.89	123.57	25 0 15	5252.2	19.75	275.15

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1707	TRA	-.5487	TC3	.5965	BAU	.1007	SGT	1130.2	SGR	606.7	SG3	406.8	ST	20.5	SR	27.8	SS	16.1
RDE	-.3397	RRA	.1338	RC3	.0881	FAU	.08782	RRT	-.1032	RRF	.1401	RTF	-.6777	CRT	.5694	CRS	-.6470	CST	.2438
FDE	-.2304	FRA	1.0167	FC3	-6.0884	BSP	1694	SGB	1282.7	R23	-.0426	R13	.6800	LSA	32.0	MSA	20.5	SSA	1.9
BDE	.3802	BRA	.5647	BC3	.6030	FSP	615	SG1	1132.6	SG2	602.2	THA	175.57	EL1	31.1	EL2	15.1	ALF	59.15

LAUNCH DATE MAY 25 1971 FLIGHT TIME 134.00 ARRIVAL DATE OCT 6 1971

HELIOCENTRIC CONIC DISTANCE 333.312 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.727	GAL	1.63	AZL	91.64	HCA	109.74	SMA	194.97	ECC	.22455	INC	1.6377	V1	29.404
RP	207.48	LAP	-1.54	LOP	352.91	VP	24.467	GAP	12.45	AZP	89.45	TAL	8.91	TAP	118.66	RCA	151.19	APO	238.75	V2	26.402
RC	82.560	GL	-15.57	GP	-2.14	ZAL	79.81	ZAP	151.37	ETS	184.09	ZAE	171.97	ETE	359.52	ZAC	97.00	ETC	278.97	LVI	-17.58

PLANETOCENTRIC CONIC

C3	12.128	VHL	3.483	DLA	-28.63	RAL	330.65	RAD	6639.1	VEL	11.498	PTH	6.55	VHP	5.241	DPA	-17.16	RAP	328.04	ECC	1.1996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 55	2426.63	-3.73	63.32	183.99	137.46	15 52 21	1426.6	14.59	47.41
60.00	16 31 57	2213.72	1.47	49.14	188.98	130.28	17 8 51	1213.7	17.24	30.67
70.00	18 18 5	1901.55	7.29	28.21	193.36	123.46	18 49 47	901.5	20.25	7.39
80.00	20 39 50	1457.62	13.85	358.39	197.22	116.72	21 4 8	457.6	23.67	335.31
85.32	22 33 55	1090.51	19.61	334.01	199.89	111.29	22 52 6	90.5	26.66	309.12
100.00	23 22 42	6220.13	13.85	297.67	197.22	116.72	25 6 22	5220.1	23.67	274.58
110.00	23 17 32	6236.41	7.29	295.04	193.36	123.46	25 1 28	5236.4	20.25	274.22

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1586	TRA	-.5298	TC3	.6286	BAU	.1028	SGT	1116.2	SGR	604.6	SG3	434.3	ST	19.8	SR	27.7	SS	16.8
RDE	-.3337	RRA	.1317	RC3	.0809	FAU	.09263	RRT	-.1143	RRF	.1521	RTF	-.6879	CRT	.5522	CRS	-.6780	CST	.2236
FDE	-.2609	FRA	1.0508	FC3	-6.6119	BSP	1585	SGB	1269.4	R23	-.0419	R13	.6906	LSA	32.0	MSA	20.5	SSA	1.9
BDE	.3695	BRA	.5459	BC3	.6338	FSP	656	SG1	1119.2	SG2	599.0	THA	175.03	EL1	30.6	EL2	15.0	ALF	60.86

LAUNCH DATE MAY 25 1971 FLIGHT TIME 136.00 ARRIVAL DATE OCT 8 1971

HELIOCENTRIC CONIC DISTANCE 337.270 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.677	GAL	1.65	AZL	91.63	HCA	111.00	SMA	194.03	ECC	.22088	INC	1.6267	V1	29.404
RP	207.60	LAP	-1.52	LOP	354.17	VP	24.384	GAP	12.12	AZP	89.42	TAL	9.15	TAP	120.15	RCA	151.18	APO	236.89	V2	26.388
RC	84.247	GL	-15.66	GP	-2.22	ZAL	79.50	ZAP	149.94	ETS	183.99	ZAE	172.79	ETE	357.72	ZAC	96.95	ETC	278.94	LVI	-17.46

PLANETOCENTRIC CONIC

C3	11.798	VHL	3.435	DLA	-28.83	RAL	330.34	RAD	6639.0	VEL	11.484	PTH	6.53	VHP	5.083	DPA	-17.29	RAP	327.89	ECC	1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 46	2416.27	-3.21	62.89	183.48	137.49	15 52 2	1416.3	15.09	46.94
60.00	16 32 19	2202.02	1.99	48.58	188.47	130.26	17 9 1	1202.0	17.72	30.05
70.00	18 19 26	1886.95	7.84	27.44	192.86	123.35	18 50 53	886.9	20.72	6.51
80.00	20 44 39	1432.10	14.62	356.90	196.82	116.32	21 8 31	432.1	24.21	333.61
84.15	22 23 4	1115.82	19.88	335.98	199.25	111.32	22 41 39	115.8	26.92	311.03
100.00	23 27 31	6194.61	14.62	296.17	196.82	116.32	25 10 45	5194.6	24.21	272.88
110.00	23 18 52	6221.80	7.84	294.26	192.86	123.35	25 2 34	5221.8	20.72	273.34

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1589	TRA	-.5229	TC3	.6158	BAU	.0978	SGT	1113.7	SGR	602.1	SG3	462.4	ST	20.0	SR	27.6	SS	17.5
RDE	-.3277	RRA	.1299	RC3	.0731	FAU	.09737	RRT	-.1194	RRF	.1638	RTF	-.6747	CRT	.5570	CRS	-.6947	CST	.1953
FDE	-.2850	FRA	1.0926	FC3	-7.1448	BSP	1615	SGB	1266.1	R23	-.0513	R13	.6779	LSA	32.2	MSA	20.7	SSA	1.9
BDE	.3642	BRA	.5387	BC3	.6201	FSP	707	SG1	1117.0	SG2	596.1	THA	174.83	EL1	30.6	EL2	15.0	ALF	60.26

LAUNCH DATE MAY 25 1971 FLIGHT TIME 138.00 ARRIVAL DATE OCT 10 1971

HELIOCENTRIC CONIC DISTANCE 341.249 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.630	GAL	1.67	AZL	91.62	HCA	112.26	SMA	193.17	ECC	.21747	INC	1.6155	V1	29.404
RP	207.73	LAP	-1.50	LOP	355.43	VP	24.305	GAP	11.81	AZP	89.39	TAL	9.37	TAP	121.63	RCA	151.16	APO	235.18	V2	26.373
RC	85.969	GL	-15.74	GP	-2.30	ZAL	79.20	ZAP	148.47	ETS	183.91	ZAE	173.67	ETE	355.40	ZAC	96.90	ETC	278.89	LVI	-17.33

PLANETOCENTRIC CONIC

C3	11.494	VHL	3.390	DLA	-29.01	RAL	330.05	RAD	6638.8	VEL	11.471	PTH	6.52	VHP	4.931	DPA	-17.44	RAP	327.71	ECC	1.1892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 36	2406.69	-2.73	62.49	182.99	137.52	15 51 43	1406.7	15.56	46.51
60.00	16 32 36	2191.21	2.46	48.07	187.98	130.24	17 9 7	1191.2	18.16	29.47
70.00	18 20 39	1873.43	8.35	26.72	192.38	123.24	18 51 52	873.4	21.15	5.70
80.00	20 49 28	1407.20	15.37	355.42	196.45	115.92	21 12 56	407.2	24.73	331.94
83.25	22 14 40	1133.66	20.13	337.40	198.64	111.34	22 33 34	133.7	27.15	312.39
100.00	23 32 20	6169.71	15.37	294.70	196.45	115.92	25 15 10	5169.7	24.73	271.21
110.00	23 20 5	6208.29	8.35	293.54	192.38	123.24	25 3 33	5208.3	21.15	272.52

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1583	TRA	-.5145	TC3	.6022	BAU	.0931	SGT	1107.5	SGR	599.6	SG3	492.1	ST	20.0	SR	27.5	SS	18.3
RDE	-.3220	RRA	.1283	RC3	.0640	FAU	.10236	RRT	-.1253	RRF	.1769	RTF	-.6628	CRT	.5605	CRS	-.7098	CST	.1702
FDE	-.3103	FRA	1.1384	FC3	-7.7102	BSP	1623	SGB	1259.4	R23	-.0608	R13	.6667	LSA	32.4	MSA	20.9	SSA	2.0
BDE	.3588	BRA	.5302	BC3	.6056	FSP	760	SG1	1111.1	SG2	592.9	THA	174.57	EL1	30.5	EL2	14.9	ALF	59.87

LAUNCH DATE MAY 25 1971 FLIGHT TIME 140.00 ARRIVAL DATE OCT 12 1971

HELIOCENTRIC CONIC DISTANCE 345.249 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.586	GAL	1.69	AZL	91.60	HCA	113.52	SMA	192.38	ECC	.21430	INC	1.6041	V1	29.404
RP	207.86	LAP	-1.47	LOP	356.68	VP	24.230	GAP	11.49	AZP	89.36	TAL	9.58	TAP	123.09	RCA	151.15	APO	233.61	V2	26.357
RC	87.725	GL	-15.80	GP	-2.39	ZAL	78.93	ZAP	146.96	ETS	183.82	ZAE	174.61	ETE	352.22	ZAC	96.85	ETC	278.84	LVI	-17.18

PLANETOCENTRIC CONIC

C3	11.213	VHL	3.349	DLA	-29.17	RAL	329.78	RAD	6638.7	VEL	11.459	PTH	6.51	VHP	4.786	DPA	-17.61	RAP	327.50	ECC	1.1845

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 24	2397.89	-2.28	62.12	182.54	137.53	15 51 22	1397.9	15.99	46.11
60.00	16 32 49	2181.29	2.90	47.59	187.52	130.21	17 9 10	1181.3	18.56	28.94
70.00	18 21 42	1861.03	8.81	26.05	191.93	123.13	18 52 43	861.0	21.53	4.94
80.00	20 54 16	1383.02	16.08	353.98	196.11	115.50	21 17 19	383.0	25.21	330.30
82.54	22 7 54	1146.83	20.37	338.46	198.07	111.34	22 27 1	146.8	27.36	313.41
100.00	23 37 8	6145.53	16.08	293.26	196.11	115.50	25 19 34	5145.5	25.21	269.58
110.00	23 21 8	6195.89	8.81	292.88	191.93	123.13	25 4 24	5195.9	21.53	271.77

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1567	TRA	-.5044	TC3	.5866	BAU	.0883	SGT	1096.9	SGR	596.9	SG3	523.7	ST	20.0	SR	27.3	SS	19.0
RDE	-.3165	RRA	.1268	RC3	.0534	FAU	.10774	RRT	-.1320	RRF	.1908	RTF	-.6504	CRT	.5631	CRS	-.7258	CST	.1441
FDE	-.3361	FRA	1.1831	FC3	-8.3183	BSP	1602	SGB	1248.8	R23	-.0706	R13	.6552	LSA	32.7	MSA	20.9	SSA	2.0
BDE	.3532	BRA	.5201	BC3	.5890	FSP	813	SG1	1100.9	SG2	589.5	THA	174.23	EL1	30.4	EL2	14.8	ALF	59.70

LAUNCH DATE MAY 25 1971 FLIGHT TIME 142.00 ARRIVAL DATE OCT 14 1971

HELIOCENTRIC CONIC DISTANCE 349.268 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.546	GAL	1.70	AZL	91.59	HCA	114.77	SMA	191.65	ECC	.21135	INC	1.5924	V1	29.404
RP	208.01	LAP	-1.45	LOP	357.94	VP	24.157	GAP	11.19	AZP	89.33	TAL	9.77	TAP	124.54	RCA	151.14	APO	232.15	V2	26.340
RC	89.514	GL	-15.85	GP	-2.48	ZAL	78.68	ZAP	145.42	ETS	183.74	ZAE	175.59	ETE	347.52	ZAC	96.80	ETC	278.79	LVI	-17.03

PLANETOCENTRIC CONIC

C3	10.953	VHL	3.310	DLA	-29.31	RAL	329.53	RAD	6638.5	VEL	11.447	PTH	6.50	VHP	4.647	DPA	-17.79	RAP	327.25	ECC	1.1803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 11 11	2389.86	-1.88	61.78	182.11	137.55	15 51 1	1389.9	16.38	45.74
60.00	16 32 58	2172.28	3.29	47.16	187.08	130.19	17 9 10	1172.3	18.93	28.46
70.00	18 22 36	1849.79	9.23	25.45	191.51	123.03	18 53 26	849.8	21.88	4.26
80.00	20 58 59	1359.73	16.76	352.59	195.80	115.08	21 21 39	359.7	25.65	328.71
81.97	22 2 24	1156.51	20.58	339.27	197.53	111.34	22 21 41	156.5	27.55	314.16
100.00	23 41 51	6122.24	16.76	291.86	195.80	115.08	25 23 53	5122.2	25.65	267.99
110.00	23 22 2	6184.65	9.23	292.28	191.51	123.03	25 5 7	5184.7	21.88	271.08

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1556	TRA	-.4940	TC3	.5634	BAU	.0827	SGT	1083.3	SGR	594.2	SG3	556.5	ST	20.0	SR	27.2	SS	19.8
RDE	-.3111	RRA	.1256	RC3	.0416	FAU	.11323	RRT	-.1387	RRF	.2061	RTF	-.6362	CRT	.5671	CRS	-.7390	CST	.1199
FDE	-.3664	FRA	1.2328	FC3	-8.9496	BSP	1579	SGB	1235.5	R23	-.0821	R13	.6420	LSA	32.9	MSA	21.0	SSA	2.0
BDE	.3478	BRA	.5097	BC3	.5650	FSP	873	SG1	1087.7	SG2	586.0	THA	173.86	EL1	30.3	EL2	14.7	ALF	59.50

LAUNCH DATE MAY 25 1971 FLIGHT TIME 144.00 ARRIVAL DATE OCT 16 1971

HELIOCENTRIC CONIC DISTANCE 353.304 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.508	GAL	1.71	AZL	91.58	HCA	116.02	SMA	190.97	ECC	.20862	INC	1.5606	V1	29.404
RP	208.16	LAP	-1.42	LOP	359.19	VP	24.087	GAP	10.89	AZP	89.31	TAL	9.94	TAP	125.96	RCA	151.13	APO	230.81	V2	26.323
RC	91.337	GL	-15.89	GP	-2.58	ZAL	78.45	ZAP	143.84	ETS	183.65	ZAE	176.59	ETE	339.80	ZAC	96.76	ETC	278.72	LVI	-16.85

PLANETOCENTRIC CONIC

C3	10.714	VHL	3.273	DLA	-29.42	RAL	329.30	RAD	6638.4	VEL	11.437	PTH	6.49	VHP	4.514	DPA	-17.99	RAP	326.97	ECC	1.1763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 56	2382.59	-1.52	61.48	181.72	137.56	15 50 39	1382.6	16.73	45.41
60.00	16 33 2	2164.17	3.65	46.77	186.68	130.16	17 9 6	1164.2	19.25	28.02
70.00	18 23 20	1839.74	9.60	24.91	191.11	122.94	18 54 0	839.7	22.19	3.64
80.00	21 3 33	1337.57	17.40	351.25	195.51	114.66	21 25 51	337.6	26.05	327.19
81.51	21 57 54	1163.53	20.77	339.87	197.03	111.32	22 17 17	163.5	27.72	314.71
100.00	23 46 25	6100.08	17.40	290.52	195.51	114.66	25 28 5	5100.1	26.05	266.46
110.00	23 22 46	6174.59	9.60	291.74	191.11	122.94	25 5 41	5174.6	22.19	270.46

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1550	TRA	-.4830	TC3	.5329	BAU	.0764	SGT	1066.5	SGR	591.3	SG3	590.8	ST	19.9	SR	27.0	SS	20.5
RDE	-.3059	RRA	.1246	RC3	.0284	FAU	.11900	RRT	-.1446	RRF	.2221	RTF	-.6188	CRT	.5733	CRS	-.7502	CST	.0956
FDE	-.3941	FRA	1.2834	FC3	-9.6158	BSP	1538	SGB	1219.5	R23	-.0953	R13	.6259	LSA	33.2	MSA	21.1	SSA	2.1
BDE	.3429	BRA	.4988	BC3	.5337	FSP	933	SG1	1071.4	SG2	582.5	THA	173.48	EL1	30.2	EL2	14.6	ALF	59.23

LAUNCH DATE MAY 25 1971 FLIGHT TIME 146.00 ARRIVAL DATE OCT 18 1971

HELIOCENTRIC CONIC DISTANCE 357.356 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.473	GAL	1.72	AZL	91.57	HCA	117.27	SMA	190.35	ECC	.20608	INC	1.5686	V1	29.404
RP	208.32	LAP	-1.39	LOP	.44	VP	24.019	GAP	10.60	AZP	89.28	TAL	10.10	TAP	127.37	RCA	151.12	APO	229.58	V2	26.304
RC	93.190	GL	-15.92	GP	-2.68	ZAL	78.25	ZAP	142.23	ETS	183.57	ZAE	177.54	ETE	325.31	ZAC	96.71	ETC	278.65	LVI	-16.67

PLANETOCENTRIC CONIC

C3	10.492	VHL	3.239	DLA	-29.52	RAL	329.10	RAD	6638.3	VEL	11.427	PTH	6.48	VHP	4.386	DPA	-18.21	RAP	326.64	ECC	1.1727

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 40	2376.08	-1.19	61.21	181.35	137.56	15 50 16	1376.1	17.04	45.11
60.00	16 33 2	2156.96	3.97	46.43	186.30	130.14	17 8 59	1157.0	19.54	27.63
70.00	18 23 53	1830.88	9.93	24.43	190.74	122.85	18 54 24	830.9	22.46	3.10
80.00	21 7 51	1316.90	17.98	349.99	195.25	114.25	21 29 48	316.9	26.41	325.76
81.15	21 54 17	1168.27	20.94	340.29	196.57	111.30	22 13 45	168.3	27.86	315.09
100.00	23 50 43	6079.41	17.98	289.26	195.25	114.25	25 32 2	5079.4	26.41	265.03
110.00	23 23 20	6165.74	9.93	291.26	190.74	122.85	25 6 5	5165.7	22.46	269.92

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1546	TRA	-.4714	TC3	.4957	BAU	.0696	SGT	1047.1	SGR	588.6	SG3	626.9	ST	19.8	SR	26.9	SS	21.3
RDE	-.3008	RRA	.1237	RC3	.0137	FAU	.12507	RRT	-.1502	RRF	.2395	RTF	-.5984	CRT	.5805	CRS	-.7609	CST	.0702
FDE	-.4237	FRA	1.3367	FC3	-10.3207	BSP	1489	SGB	1201.2	R23	-.1110	R13	.6072	LSA	33.5	MSA	21.1	SSA	2.1
BDE	.3382	BRA	.4874	BC3	.4959	FSP	996	SG1	1052.4	SG2	578.9	THA	173.06	EL1	30.1	EL2	14.4	ALF	58.96

LAUNCH DATE MAY 25 1971 FLIGHT TIME 148.00 ARRIVAL DATE OCT 20 1971

HELIOCENTRIC CONIC DISTANCE 361.423 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.441	GAL	1.73	AZL	91.56	HCA	118.52	SMA	189.78	ECC	.20372	INC	1.5562	V1	29.404
RP	208.49	LAP	-1.37	LOP	1.69	VP	23.954	GAP	10.32	AZP	89.26	TAL	10.23	TAP	128.75	RCA	151.12	APO	228.44	V2	26.284
RC	95.074	GL	-15.94	GP	-2.78	ZAL	78.08	ZAP	140.58	ETS	183.48	ZAE	178.20	ETE	295.67	ZAC	96.67	ETC	278.57	LVI	-16.47

PLANETOCENTRIC CONIC

C3	10.286	VHL	3.207	DLA	-29.60	RAL	328.92	RAD	6638.2	VEL	11.418	PTH	6.47	VHP	4.265	DPA	-18.44	RAP	326.28	ECC	1.1693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 23	2370.32	-.90	60.97	181.02	137.57	15 49 54	1370.3	17.32	44.84
60.00	16 32 58	2150.64	4.24	46.12	185.95	130.11	17 8 48	1150.6	19.79	27.29
70.00	18 24 16	1823.26	10.21	24.02	190.39	122.77	18 54 39	823.3	22.69	2.62
80.00	21 11 41	1298.29	18.49	348.85	194.99	113.87	21 33 19	298.3	26.72	324.46
80.88	21 51 27	1171.09	21.09	340.56	196.14	111.26	22 10 58	171.1	27.98	315.33
100.00	23 54 33	6060.80	18.49	288.12	194.99	113.87	25 35 34	5060.8	26.72	263.74
110.00	23 23 42	6158.11	10.21	290.85	190.39	122.77	25 6 20	5158.1	22.69	269.45

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1548	TRA	-.4595	TC3	.4495	BAU	.0618	SGT	1025.2	SGR	585.8	SG3	664.3	ST	19.8	SR	26.7	SS	22.1
RDE	-.2959	RRA	.1230	RC3	-.0024	FAU	.13135	RRT	-.1545	RRF	.2577	RTF	-.5734	CRT	.5898	CRS	-.7703	CST	.0449
FDE	-.4531	FRA	1.3910	FC3	-11.0552	BSP	1427	SGB	1180.8	R23	-.1296	R13	.5842	LSA	33.8	MSA	21.0	SSA	2.1
BDE	.3339	BRA	.4757	BC3	.4495	FSP	1062	SG1	1031.0	SG2	575.5	THA	172.65	EL1	30.0	EL2	14.2	ALF	58.61

LAUNCH DATE MAY 25 1971 FLIGHT TIME 150.00 ARRIVAL DATE OCT 22 1971

HELIOCENTRIC CONIC DISTANCE 365.504 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.411	GAL	1.73	AZL	91.54	HCA	119.77	SMA	189.25	ECC	.20154	INC	1.5436	V1	29.404
RP	208.67	LAP	-1.34	LOP	2.93	VP	23.891	GAP	10.04	AZP	89.23	TAL	10.35	TAP	130.12	RCA	151.11	APO	227.40	V2	26.264
RC	96.988	GL	-15.94	GP	-2.89	ZAL	77.94	ZAP	138.90	ETS	183.40	ZAE	178.08	ETE	254.06	ZAC	96.63	ETC	278.48	LVI	-16.26

PLANETOCENTRIC CONIC

C3	10.096	VHL	3.177	DLA	-29.65	RAL	328.77	RAD	6638.1	VEL	11.410	PTH	6.46	VHP	4.149	DPA	-18.68	RAP	325.88	ECC	1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 10 6	2365.29	-.65	60.76	180.71	137.57	15 49 31	1365.3	17.56	44.61
60.00	16 32 49	2145.21	4.48	45.86	185.63	130.09	17 8 34	1145.2	20.01	26.99
70.00	18 24 26	1816.86	10.44	23.68	190.06	122.70	18 54 43	816.9	22.88	2.23
80.00	21 14 48	1282.58	18.92	347.88	194.74	113.53	21 36 11	282.6	26.97	323.36
80.69	21 49 20	1172.19	21.22	340.69	195.75	111.21	22 8 52	172.2	28.07	315.43
100.00	0 1 36	6045.09	18.92	287.16	194.74	113.53	1 42 21	5045.1	26.97	262.64
110.00	23 23 53	6151.72	10.44	290.50	190.06	122.70	25 6 24	5151.7	22.88	269.05

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-.1560	TRA	-.4480	TC3	.3917	BAU	.0529	SGT	1002.5	SGR	583.2	SG3	703.0	ST	19.8	SR	26.5	SS	22.8
RDE	-.2910	RRA	.1225	RC3	-.0199	FAU	.13776	RRT	-.1570	RRF	.2776	RTF	-.5427	CRT	.6015	CRS	-.7771	CST	.0185
FDE	-.4820	FRA	1.4532	FC3	-11.8131	BSP	1364	SGB	1159.8	R23	-.1527	R13	.5560	LSA	34.2	MSA	21.1	SSA	2.1
BDE	.3302	BRA	.4644	BC3	.3922	FSP	1132	SG1	1008.7	SG2	572.4	THA	172.28	EL1	30.0	EL2	14.0	ALF	58.08

LAUNCH DATE MAY 23 1971 FLIGHT TIME 152.00 ARRIVAL DATE OCT 24 1971

HELIOCENTRIC CONIC DISTANCE 369,597 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.383 GAL 1.73 AZL 91.53 HCA 121.01 SMA 188.77 ECC .19953 INC 1.5307 V1 29.404
RP 208.85 LAP -1.31 LOP 4.18 VP 23.830 GAP 9.77 AZP 89.21 TAL 10.46 TAP 131.47 RCA 151.11 APO 226.44 V2 26.243
RC 98.929 GL -15.94 GP -3.00 ZAL 77.82 ZAP 137.17 ETS 183.31 ZAE 177.18 ETE 227.40 ZAC 96.59 ETC 278.39 LVI -16.03

PLANETOCENTRIC CONIC

C3 9.919 VHL 3.150 DLA -29.69 RAL 328.64 RAD 6638.0 VEL 11.402 PTH 6.45 VHP 4.038 DPA -18.95 RAP 325.45 ECC 1.1632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 9 46	2360.95	-.43	60.58	180.43	137.57	15 49 7	1360.9	17.77	44.41
60.00	16 32 36	2140.60	4.68	45.64	185.34	130.07	17 8 16	1140.6	20.19	26.74
70.00	18 24 26	1811.64	10.63	23.40	189.75	122.65	18 54 37	811.6	23.04	1.90
80.00	21 16 58	1270.49	19.25	347.13	194.48	113.27	21 38 8	270.5	27.16	322.51
80.56	21 47 51	1171.73	21.33	340.71	195.39	111.15	22 7 23	171.7	28.15	315.41
100.00	0 3 45	6033.00	19.25	286.41	194.48	113.27	1 44 18	5033.0	27.16	261.79
110.00	23 23 52	6146.50	10.63	290.22	189.75	122.65	25 6 18	5146.5	23.04	268.72

DIFFERENTIAL CORRECTIONS
TDE -.1473 TRA -.4247 TC3 .3683 BAU .0491
RDE -.2866 RRA .1217 RC3 -.0408 FAU .14538
FDE -.5284 FRA 1.4930 FC-12.6886 BSP 1156
BDE .3223 BRA .4418 BC3 .3706 FSP 1182

MID-COURSE EXECUTION ACCURACY
SGT 957.5 SGR 581.0 SG3 746.1
RRT -.1669 RRF .2997 RTF -.5294
SGB 1119.9 R23 -.1649 R13 .5468
SG1 965.0 SG2 568.3 THA 171.11

ORBIT DETERMINATION ACCURACY
ST 18.9 SR 26.4 SS 23.8
CRT .5988 CRS -.7971 CST -.0111
LSA 34.6 MSA 20.4 SSA 2.2
EL1 29.5 EL2 13.5 ALF 59.71

LAUNCH DATE MAY 25 1971 FLIGHT TIME 154.00 ARRIVAL DATE OCT 26 1971

HELIOCENTRIC CONIC DISTANCE 373,701 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.358 GAL 1.73 AZL 91.52 HCA 122.25 SMA 188.33 ECC .19767 INC 1.5175 V1 29.404
RP 209.04 LAP -1.28 LOP 5.42 VP 23.771 GAP 9.51 AZP 89.19 TAL 10.54 TAP 132.79 RCA 151.10 APO 225.56 V2 26.221
RC 100.898 GL -15.92 GP -3.11 ZAL 77.74 ZAP 135.41 ETS 183.21 ZAE 175.94 ETE 214.48 ZAC 96.55 ETC 278.28 LVI -15.79

PLANETOCENTRIC CONIC

C3 9.756 VHL 3.123 DLA -29.70 RAL 328.54 RAD 6637.9 VEL 11.395 PTH 6.45 VHP 3.934 DPA -19.23 RAP 324.97 ECC 1.1606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 9 27	2357.38	-.25	60.43	180.19	137.58	15 48 45	1357.4	17.94	44.24
60.00	16 32 19	2136.95	4.84	45.46	185.07	130.06	17 7 56	1137.0	20.34	26.54
70.00	18 24 13	1807.78	10.78	23.19	189.47	122.61	18 54 20	807.8	23.15	1.66
80.00	21 17 30	1264.22	19.42	346.74	194.20	113.14	21 38 35	264.2	27.25	322.07
80.52	21 47 11	1169.32	21.42	340.57	195.07	111.08	22 6 41	169.3	28.20	315.24
100.00	0 4 18	6026.73	19.42	286.02	194.20	113.14	1 44 45	5026.7	27.25	261.35
110.00	23 23 39	6142.64	10.78	290.01	189.47	122.61	25 6 2	5142.6	23.15	268.48

DIFFERENTIAL CORRECTIONS
TDE -.1581 TRA -.4204 TC3 .2579 BAU .0345
RDE -.2816 RRA .1220 RC3 -.0600 FAU .15157
FDE -.5397 FRA 1.5753 FC-13.4502 BSP 1168
BDE .3229 BRA .4378 BC3 .2648 FSP 1271

MID-COURSE EXECUTION ACCURACY
SGT 947.8 SGR 578.4 SG3 785.5
RRT -.1550 RRF .3201 RTF -.4666
SGB 1110.4 R23 -.2091 R13 .4867
SG1 954.4 SG2 567.4 THA 171.61

ORBIT DETERMINATION ACCURACY
ST 19.7 SR 26.1 SS 24.3
CRT .6281 CRS -.7893 CST -.0355
LSA 34.9 MSA 20.9 SSA 2.2
EL1 29.8 EL2 13.4 ALF 57.25

LAUNCH DATE MAY 25 1971 FLIGHT TIME 156.00 ARRIVAL DATE OCT 28 1971

HELIOCENTRIC CONIC DISTANCE 377,816 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.335 GAL 1.73 AZL 91.50 HCA 123.49 SMA 187.93 ECC .19596 INC 1.5040 V1 29.404
RP 209.24 LAP -1.25 LOP 6.66 VP 23.714 GAP 9.26 AZP 89.17 TAL 10.60 TAP 134.09 RCA 151.10 APO 224.75 V2 26.198
RC 102.893 GL -15.89 GP -3.23 ZAL 77.68 ZAP 133.62 ETS 183.12 ZAE 174.54 ETE 207.46 ZAC 96.50 ETC 278.17 LVI -15.53

PLANETOCENTRIC CONIC

C3 9.604 VHL 3.099 DLA -29.69 RAL 328.47 RAD 6637.8 VEL 11.389 PTH 6.44 VHP 3.835 DPA -19.52 RAP 324.46 ECC 1.1581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 9 7	2354.50	-.10	60.31	179.97	137.58	15 48 22	1354.5	18.08	44.11
60.00	16 31 57	2134.13	4.97	45.33	184.84	130.05	17 7 31	1134.1	20.45	26.38
70.00	18 23 48	1805.12	10.87	23.04	189.22	122.58	18 53 53	805.1	23.23	1.49
80.00	21 16 30	1263.44	19.44	346.69	193.90	113.12	21 37 34	263.4	27.27	322.02
80.55	21 47 8	1165.52	21.49	340.31	194.78	111.00	22 6 33	165.5	28.22	314.96
100.00	0 3 18	6025.95	19.44	285.97	193.90	113.12	1 43 44	5026.0	27.27	261.29
110.00	23 23 14	6139.98	10.87	289.87	189.22	122.58	25 5 34	5140.0	23.23	268.32

DIFFERENTIAL CORRECTIONS
TDE -.1627 TRA -.4093 TC3 .1585 BAU .0229
RDE -.2769 RRA .1221 RC3 -.0813 FAU .15821
FDE -.5647 FRA 1.6479 FC-14.2618 BSP 1098
BDE .3212 BRA .4271 BC3 .1782 FSP 1351

MID-COURSE EXECUTION ACCURACY
SGT 926.8 SGR 576.3 SG3 826.6
RRT -.1448 RRF .3430 RTF -.[illegible]71
SGB 1091.3 R23 -.2506 R13 .4305
SG1 932.7 SG2 566.6 THA 171.82

ORBIT DETERMINATION ACCURACY
ST 19.9 SR 25.9 SS 24.9
CRT .6476 CRS -.7912 CST -.0639
LSA 35.3 MSA 21.0 SSA 2.2
EL1 29.9 EL2 13.1 ALF 56.12

LAUNCH DATE MAY 25 1971 FLIGHT TIME 158.00 ARRIVAL DATE OCT 30 1971

HELIOCENTRIC CONIC DISTANCE 381,940 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.313 GAL 1.73 AZL 91.49 HCA 124.73 SMA 187.58 ECC .19438 INC 1.4901 V1 29.404
RP 209.44 LAP -1.22 LOP 7.90 VP 23.658 GAP 9.01 AZP 89.15 TAL 10.64 TAP 135.37 RCA 151.10 APO 224.02 V2 26.174
RC 104.913 GL -15.84 GP -3.36 ZAL 77.65 ZAP 131.79 ETS 183.02 ZAE 173.03 ETE 203.13 ZAC 96.46 ETC 278.05 LVI -15.25

PLANETOCENTRIC CONIC

C3 9.463 VHL 3.076 DLA -29.66 RAL 328.43 RAD 6637.8 VEL 11.383 PTH 6.44 VHP 3.741 DPA -19.83 RAP 323.91 ECC 1.1557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 8 47	2352.29	.01	60.21	179.79	137.58	15 47 59	1352.3	18.19	44.00
60.00	16 31 32	2132.15	5.05	45.23	184.63	130.04	17 7 4	1132.1	20.53	26.27
70.00	18 23 12	1803.66	10.93	22.96	188.98	122.56	18 53 15	803.7	23.27	1.40
80.00	21 14 2	1267.87	19.32	346.97	193.57	113.22	21 35 10	267.9	27.20	322.33
80.66	21 47 46	1160.03	21.54	339.92	194.53	110.90	22 7 6	160.0	28.23	314.56
100.00	0 0 50	6030.38	19.32	286.24	193.57	113.22	1 41 20	5030.4	27.20	261.60
110.00	23 22 38	6138.52	10.93	289.79	188.98	122.56	25 4 57	5138.5	23.27	268.23

DIFFERENTIAL CORRECTIONS
TDE -.1662 TRA -.3954 TC3 .0610 BAU .0154
RDE -.2722 RRA .1224 RC3 -.1050 FAU .16549
FDE -.5891 FRA 1.7204 FC-15.1401 BSP 989
BDE .3190 BRA .4139 BC3 .1214 FSP 1426

MID-COURSE EXECUTION ACCURACY
SGT 903.1 SGR 574.6 SG3 870.7
RRT -.1308 RRF .3671 RTF -.3445
SGB 1070.4 R23 -.2943 R13 .3709
SG1 908.2 SG2 566.4 THA 172.19

ORBIT DETERMINATION ACCURACY
ST 20.0 SR 25.7 SS 25.6
CRT .6662 CRS -.7928 CST -.0916
LSA 35.6 MSA 21.0 SSA 2.2
EL1 29.9 EL2 12.8 ALF 55.29

LAUNCH DATE MAY 25 1971 FLIGHT TIME 160.00 ARRIVAL DATE NOV 1 1971

HELIOCENTRIC CONIC DISTANCE 386.073 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.294	GAL	1.72	AZL	91.48	HCA	125.96	SMA	187.22	ECC	.19294	INC	1.4757	V1	29.404
RP	209.66	LAP	-1.19	LOP	9.13	VP	23.604	GAP	8.76	AZP	89.13	TAL	10.66	TAP	136.62	RCA	151.10	APO	223.35	V2	26.150
RC	106.958	GL	-15.79	GP	-3.49	ZAL	77.66	ZAP	129.93	ETS	182.92	ZAE	171.45	ETE	200.21	ZAC	96.42	ETC	277.92	LVI	-14.96

PLANETOCENTRIC CONIC

C3	9.332	VHL	3.055	DLA	-29.61	RAL	328.41	RAD	6637.7	VEL	11.377	PTH	6.43	VHP	3.652	DPA	-20.15	RAP	323.33	ECC	1.1536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 8 25	2350.76	.08	60.15	179.63	137.58	15 47 36	1350.8	18.26	43.93
60.00	16 31 2	2131.00	5.11	45.18	184.44	130.03	17 6 33	1131.0	20.57	26.21
70.00	18 22 24	1803.41	10.94	22.95	188.76	122.56	18 52 27	803.4	23.28	1.39
80.00	21 10 25	1276.55	19.09	347.51	193.24	113.40	21 31 42	276.6	27.07	322.94
80.84	21 49 4	1152.94	21.57	339.41	194.32	110.79	22 8 17	152.9	28.21	314.03
100.00	23 53 17	6039.06	19.09	286.78	193.24	113.40	25 33 56	5039.1	27.07	262.22
110.00	23 21 50	6138.27	10.94	289.77	188.76	122.56	25 4 8	5138.3	23.28	268.21

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1708	TRA	-.3813	TC3	-.0533	BAU	.0175	SGT	883.4	SGR	573.1	SG3	914.4	ST	20.2	SR	25.4	SS	26.1
RDE	-.2676	RRA	.1228	RC3	-.1298	FAU	.17264	RRT	-.1078	RRF	.3915	RTF	-.2670	CRT	.6871	CRS	-.7927	CST	-.1199
FDE	-.6095	FRA	1.7927	FC-	16.0162	BSP	888	SGB	1053.0	R23	-.3435	R13	.2939	LSA	35.9	MSA	21.0	SSA	2.2
BDE	.3175	BRA	.4006	BC3	.1403	FSP	1509	SG1	887.1	SG2	567.4	THA	173.21	EL1	30.0	EL2	12.4	ALF	54.27

LAUNCH DATE MAY 25 1971 FLIGHT TIME 162.00 ARRIVAL DATE NOV 3 1971

HELIOCENTRIC CONIC DISTANCE 390.215 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.276	GAL	1.71	AZL	91.46	HCA	127.20	SMA	186.92	ECC	.19161	INC	1.4610	V1	29.404
RP	209.87	LAP	-1.16	LOP	10.36	VP	23.552	GAP	8.52	AZP	89.12	TAL	10.66	TAP	137.86	RCA	151.10	APO	222.73	V2	26.124
RC	109.028	GL	-15.73	GP	-3.62	ZAL	77.69	ZAP	128.03	ETS	182.81	ZAE	169.80	ETE	198.09	ZAC	96.38	ETC	277.78	LVI	-14.66

PLANETOCENTRIC CONIC

C3	9.210	VHL	3.035	DLA	-29.54	RAL	328.42	RAD	6637.6	VEL	11.372	PTH	6.42	VHP	3.568	DPA	-20.49	RAP	322.71	ECC	1.1516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 8 3	2349.89	.13	60.11	179.49	137.58	15 47 13	1349.9	18.30	43.89
60.00	16 30 28	2130.66	5.12	45.16	184.28	130.03	17 5 59	1130.7	20.59	26.19
70.00	18 21 24	1804.32	10.90	23.00	188.57	122.57	18 51 29	804.3	23.25	1.44
80.00	21 6 2	1288.23	18.77	348.23	192.91	113.65	21 27 30	288.2	26.88	323.76
81.10	21 51 7	1143.94	21.58	338.75	194.13	110.67	22 10 11	143.9	28.17	313.35
100.00	23 48 53	6050.74	18.77	287.50	192.91	113.65	25 29 44	5050.7	26.88	263.03
110.00	23 20 51	6139.17	10.90	289.82	188.57	122.57	25 3 10	5139.2	23.25	268.27

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1738	TRA	-.3645	TC3	-.1698	BAU	.0284	SGT	862.5	SGR	572.2	SG3	959.6	ST	20.2	SR	25.2	SS	26.7
RDE	-.2631	RRA	.1233	RC3	-.1565	FAU	.18008	RRT	-.0787	RRF	.4174	RTF	-.1823	CRT	.7065	CRS	-.7950	CST	-.1509
FDE	-.6338	FRA	1.8634	FC-	16.9285	BSP	754	SGB	1035.0	R23	-.3925	R13	.2066	LSA	36.3	MSA	20.9	SSA	2.2
BDE	.3153	BRA	.3848	BC3	.2309	FSP	1582	SG1	864.6	SG2	569.0	THA	174.72	EL1	30.0	EL2	12.0	ALF	53.60

LAUNCH DATE MAY 25 1971 FLIGHT TIME 164.00 ARRIVAL DATE NOV 5 1971

HELIOCENTRIC CONIC DISTANCE 394.365 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.259	GAL	1.70	AZL	91.45	HCA	128.43	SMA	186.64	ECC	.19040	INC	1.4458	V1	29.404
RP	210.10	LAP	-1.13	LOP	11.59	VP	23.501	GAP	8.29	AZP	89.10	TAL	10.65	TAP	139.07	RCA	151.11	APO	222.18	V2	26.098
RC	111.121	GL	-15.65	GP	-3.76	ZAL	77.74	ZAP	126.11	ETS	182.70	ZAE	168.09	ETE	196.47	ZAC	96.34	ETC	277.63	LVI	-14.34

PLANETOCENTRIC CONIC

C3	9.096	VHL	3.016	DLA	-29.44	RAL	328.46	RAD	6637.6	VEL	11.367	PTH	6.42	VHP	3.490	DPA	-20.84	RAP	322.05	ECC	1.1497

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 7 41	2349.65	.14	60.10	179.39	137.58	15 46 50	1349.7	18.31	43.88
60.00	16 29 50	2131.09	5.10	45.18	184.15	130.03	17 5 21	1131.1	20.57	26.21
70.00	18 20 14	1806.32	10.83	23.11	188.39	122.59	18 50 21	806.3	23.20	1.57
80.00	21 1 10	1301.90	18.40	349.07	192.59	113.94	21 22 52	301.9	26.66	324.72
81.44	21 53 56	1132.93	21.57	337.93	193.98	110.54	22 12 49	132.9	28.11	312.53
100.00	23 44 2	6064.41	18.40	288.35	192.59	113.94	25 25 7	5054.4	26.66	263.99
110.00	23 19 41	6141.18	10.83	289.93	188.39	122.59	25 2 2	5141.2	23.20	268.39

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1700	TRA	-.3403	TC3	-.2686	BAU	.0398	SGT	825.6	SGR	572.5	SG3	1009.1	ST	19.6	SR	25.0	SS	27.6
RDE	-.2592	RRA	.1234	RC3	-.1871	FAU	.18865	RRT	-.0478	RRF	.4463	RTF	-.1961	CRT	.7205	CRS	-.8100	CST	-.1962
FDE	-.6818	FRA	1.9143	FC-	17.9550	BSP	566	SGB	1004.7	R23	-.4376	R13	.1155	LSA	36.9	MSA	20.1	SSA	2.2
BDE	.3100	BRA	.3620	BC3	.3273	FSP	1633	SG1	826.4	SG2	571.3	THA	176.36	EL1	29.6	EL2	11.5	ALF	54.32

LAUNCH DATE MAY 25 1971 FLIGHT TIME 166.00 ARRIVAL DATE NOV 7 1971

HELIOCENTRIC CONIC DISTANCE 398.519 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.245	GAL	1.68	AZL	91.43	HCA	129.85	SMA	186.40	ECC	.18930	INC	1.4301	V1	29.404
RP	210.33	LAP	-1.10	LOP	12.82	VP	23.451	GAP	8.06	AZP	89.09	TAL	10.61	TAP	140.26	RCA	151.11	APO	221.68	V2	26.071
RC	113.239	GL	-15.56	GP	-3.90	ZAL	77.84	ZAP	124.16	ETS	182.58	ZAE	166.33	ETE	195.20	ZAC	96.29	ETC	277.48	LVI	-14.00

PLANETOCENTRIC CONIC

C3	8.991	VHL	2.998	DLA	-29.33	RAL	328.53	RAD	6637.5	VEL	11.362	PTH	6.41	VHP	3.416	DPA	-21.20	RAP	321.36	ECC	1.1480

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 7 18	2350.14	.12	60.12	179.32	137.58	15 46 28	1350.1	18.29	43.90
60.00	16 29 8	2132.42	5.04	45.25	184.04	130.04	17 4 41	1132.4	20.52	26.29
70.00	18 18 53	1809.60	10.71	23.29	188.25	122.63	18 49 3	809.6	23.10	1.77
80.00	20 55 53	1317.61	17.96	350.03	192.30	114.26	21 17 51	317.6	26.40	325.81
81.89	21 57 46	1119.32	21.54	336.91	193.86	110.39	22 16 26	119.3	28.02	311.50
100.00	23 38 45	6080.13	17.96	289.31	192.30	114.26	25 20 5	5080.1	26.40	265.08
110.00	23 18 20	6144.46	10.71	290.11	188.25	122.63	25 0 44	5144.5	23.10	268.60

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1865	TRA	-.3353	TC3	-.4654	BAU	.0615	SGT	863.2	SGR	571.7	SG3	1049.2	ST	21.0	SR	24.6	SS	27.6
RDE	-.2537	RRA	.1254	RC3	-.2125	FAU	.19435	RRT	.0127	RRF	.4707	RTF	.0289	CRT	.7500	CRS	-.7865	CST	-.2006
FDE	-.6602	FRA	2.0356	FC-	18.7151	BSP	576	SGB	1035.3	R23	.4701	R13	.0335	LSA	36.8	MSA	21.1	SSA	2.3
BDE	.3149	BRA	.3580	BC3	.5116	FSP	1753	SG1	863.2	SG2	571.6	THA	.86	EL1	30.3	EL2	11.3	ALF	51.05

LAUNCH DATE MAY 25 1971 FLIGHT TIME 168.00 ARRIVAL DATE NOV 9 1971

HELIOCENTRIC CONIC DISTANCE 402.680 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.232 GAL 1.67 AZL 91.41 HCA 130.88 SMA 186.17 ECC .18830 INC 1.4139 V1 29.404
RP 210.57 LAP -1.07 LOP 14.04 VP 23.402 GAP 7.84 AZP 89.07 TAL 10.55 TAP 141.43 RCA 151.12 APO 221.23 V2 26.044
RC 115.380 GL -15.46 GP -4.05 ZAL 77.96 ZAP 122.18 ETS 182.45 ZAE 164.52 ETE 194.15 ZAC 96.24 ETC 277.32 LVI -13.66

PLANETOCENTRIC CONIC

C3 8.892 VHL 2.982 DLA -29.19 RAL 328.62 RAD 6637.5 VEL 11.358 PTH 6.41 VHP 3.348 DPA -21.57 RAP 320.65 ECC 1.1463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 6 54	2351.22	.06	60.17	179.27	137.58	15 46 6	1351.2	18.24	43.96
60.00	16 28 23	2134.48	4.95	45.34	183.96	130.05	17 3 57	1134.5	20.44	26.40
70.00	18 17 23	1813.88	10.55	23.52	188.12	122.67	18 47 36	813.9	22.97	2.04
80.00	20 50 29	1334.17	17.49	351.04	192.02	114.59	21 12 43	334.2	26.11	326.96
82.45	22 2 35	1102.93	21.50	335.68	193.77	110.23	22 20 58	102.9	27.91	310.27
100.00	23 33 21	6096.68	17.49	290.32	192.02	114.59	25 14 57	5096.7	26.11	266.23
110.00	23 16 49	6148.74	10.55	290.34	188.12	122.67	24 59 18	5148.7	22.97	268.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1922 TRA -.3180 TC3 -.6286 BAU .0801 SGT 875.6 SGR 572.1 SG3 1092.9 ST 21.2 SR 24.3 SS 28.0
RDE -.2490 RRA .1265 RC3 -.2422 FAU .20132 RRT .0718 RRF .4977 RTF .1443 CRT .7713 CRS -.7827 CST -.2270
FDE -.6706 FRA 2.1164 FC-19.5998 BSP 518 SGB 1045.9 R23 .4803 R13 .1699 LSA 37.0 MSA 21.1 SSA 2.3
BDE .3146 BRA .3422 BC3 .6736 FSP 1836 SG1 877.3 SG2 569.6 THA 4.65 EL1 30.4 EL2 10.8 ALF 49.93

LAUNCH DATE MAY 25 1971 FLIGHT TIME 170.00 ARRIVAL DATE NOV 11 1971

HELIOCENTRIC CONIC DISTANCE 406.847 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.220 GAL 1.65 AZL 91.40 HCA 132.10 SMA 185.98 ECC .18739 INC 1.3971 V1 29.404
RP 210.82 LAP -1.04 LOP 15.26 VP 23.354 GAP 7.62 AZP 89.06 TAL 10.48 TAP 142.58 RCA 151.13 APO 220.83 V2 26.015
RC 117.545 GL -15.35 GP -4.20 ZAL 78.10 ZAP 120.19 ETS 182.32 ZAE 162.66 ETE 193.28 ZAC 96.19 ETC 277.15 LVI -13.29

PLANETOCENTRIC CONIC

C3 8.801 VHL 2.967 DLA -29.03 RAL 328.74 RAD 6637.4 VEL 11.354 PTH 6.41 VHP 3.284 DPA -21.95 RAP 319.90 ECC 1.1448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 6 30	2352.94	-.02	60.24	179.24	137.58	15 45 43	1352.9	18.15	44.04
60.00	16 27 33	2137.31	4.83	45.48	183.90	130.06	17 3 11	1137.3	20.32	26.56
70.00	18 15 42	1819.22	10.36	23.81	188.01	122.73	18 46 1	819.2	22.81	2.37
80.00	20 44 59	1351.59	17.00	352.10	191.77	114.92	21 7 30	351.6	25.80	328.16
83.16	22 8 42	1082.81	21.43	334.17	193.71	110.06	22 26 45	82.8	27.78	308.77
100.00	23 27 50	6114.10	17.00	291.37	191.77	114.92	25 9 44	5114.1	25.80	267.43
110.00	23 15 8	6154.08	10.36	290.63	188.01	122.73	24 57 43	5154.1	22.81	269.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1985 TRA -.3002 TC3 -.8022 BAU .0997 SGT 901.8 SGR 573.3 SG3 1137.4 ST 21.6 SR 24.0 SS 28.2
RDE -.2442 RRA .1279 RC3 -.2736 FAU .20837 RRT .1367 RRF .5253 RTF .2578 CRT .7920 CRS -.7760 CST -.2493
FDE -.6750 FRA 2.2033 FC-20.4978 BSP 519 SGB 1068.6 R23 .4699 R13 .3006 LSA 37.2 MSA 21.2 SSA 2.3
BDE .3147 BRA .3264 BC3 .8476 FSP 1915 SG1 907.4 SG2 564.4 THA 8.13 EL1 30.6 EL2 10.3 ALF 48.73

LAUNCH DATE MAY 25 1971 FLIGHT TIME 172.00 ARRIVAL DATE NOV 13 1971

HELIOCENTRIC CONIC DISTANCE 411.019 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.209 GAL 1.63 AZL 91.38 HCA 133.32 SMA 185.80 ECC .18658 INC 1.3798 V1 29.404
RP 211.07 LAP -1.00 LOP 16.48 VP 23.308 GAP 7.41 AZP 89.05 TAL 10.39 TAP 143.70 RCA 151.13 APO 220.47 V2 25.986
RC 119.734 GL -15.22 GP -4.35 ZAL 78.28 ZAP 118.17 ETS 182.19 ZAE 160.76 ETE 192.53 ZAC 96.14 ETC 276.98 LVI -12.92

PLANETOCENTRIC CONIC

C3 8.716 VHL 2.952 DLA -28.85 RAL 328.89 RAD 6637.4 VEL 11.350 PTH 6.40 VHP 3.225 DPA -22.34 RAP 319.13 ECC 1.1434

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 6 5	2355.27	-.14	60.34	179.25	137.58	15 45 20	1355.3	18.04	44.14
60.00	16 26 40	2140.90	4.67	45.65	183.87	130.08	17 2 21	1140.9	20.18	26.75
70.00	18 13 53	1825.58	10.12	24.15	187.92	122.79	18 44 18	825.6	22.62	2.77
80.00	20 39 25	1369.71	16.47	353.19	191.54	115.26	21 2 15	369.7	25.46	329.40
84.05	22 16 33	1057.58	21.35	332.28	193.68	109.88	22 34 10	57.6	27.63	306.88
100.00	23 22 17	6132.22	16.47	292.46	191.54	115.26	25 4 29	5132.2	25.46	268.67
110.00	23 13 19	6160.44	10.12	290.97	187.92	122.79	24 55 59	5160.4	22.62	269.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2046 TRA -.2815 TC3 -.9879 BAU .1205 SGT 941.8 SGR 575.1 SG3 1180.7 ST 22.0 SR 23.6 SS 28.5
RDE -.2394 RRA .1295 RC3 -.3059 FAU .21516 RRT .2045 RRF .5529 RTF .[illegible]63 CRT .8115 CRS -.7686 CST -.2701
FDE -.6765 FRA 2.2916 FC-21.3715 BSP 593 SGB 1103.5 R23 .4445 R13 .4184 LSA 37.4 MSA 21.3 SSA 2.3
BDE .3149 BRA .3099 BC3 1.0341 FSP 1994 SG1 953.0 SG2 556.3 THA 10.86 EL1 30.7 EL2 9.9 ALF 47.57

LAUNCH DATE MAY 25 1971 FLIGHT TIME 174.00 ARRIVAL DATE NOV 15 1971

HELIOCENTRIC CONIC DISTANCE 415.195 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.200 GAL 1.61 AZL 91.36 HCA 134.53 SMA 185.65 ECC .18586 INC 1.3617 V1 29.404
RP 211.33 LAP -.97 LOP 17.70 VP 23.262 GAP 7.20 AZP 89.04 TAL 10.27 TAP 144.81 RCA 151.14 APO 220.15 V2 25.957
RC 121.945 GL -15.09 GP -4.51 ZAL 78.48 ZAP 116.13 ETS 182.04 ZAE 158.83 ETE 191.88 ZAC 96.08 ETC 276.80 LVI -12.53

PLANETOCENTRIC CONIC

C3 8.637 VHL 2.939 DLA -28.64 RAL 329.06 RAD 6637.3 VEL 11.347 PTH 6.40 VHP 3.170 DPA -22.74 RAP 318.33 ECC 1.1421

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 5 39	2358.23	-.29	60.46	179.27	137.58	15 44 57	1358.2	17.90	44.28
60.00	16 25 42	2145.24	4.48	45.86	183.85	130.09	17 1 28	1145.2	20.01	26.99
70.00	18 11 54	1832.91	9.85	24.54	187.85	122.87	18 42 27	832.9	22.40	3.22
80.00	20 33 50	1388.40	15.93	354.31	191.34	115.59	20 56 59	388.4	25.10	330.67
85.25	22 26 59	1024.36	21.24	329.80	193.67	109.68	22 44 3	24.4	27.45	304.41
100.00	23 16 42	6150.91	15.93	293.58	191.34	115.59	24 59 13	5150.9	25.10	269.94
110.00	23 11 21	6167.77	9.85	291.37	187.85	122.87	24 54 8	5167.8	22.40	270.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2097 TRA -.2610 TC3-1.1808 BAU .1419 SGT 992.5 SGR 578.0 SG3 1224.0 ST 22.2 SR 23.3 SS 28.8
RDE -.2347 RRA .1311 RC3 -.3399 FAU .22202 RRT .2734 RRF .5811 RTF .4667 CRT .8300 CRS -.7640 CST -.2951
FDE -.6817 FRA 2.3748 FC-22.2552 BSP 733 SGB 1148.5 R23 .4108 R13 .5210 LSA 37.6 MSA 21.2 SSA 2.3
BDE .3147 BRA .2921 BC3 1.2288 FSP 2064 SG1 1010.4 SG2 546.1 THA 12.86 EL1 30.8 EL2 9.4 ALF 46.60

LAUNCH DATE MAY 25 1971 FLIGHT TIME 176.00 ARRIVAL DATE NOV 17 1971

HELIOCENTRIC CONIC DISTANCE 419.375 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.192 GAL 1.58 AZL 91.34 HCA 135.74 SMA 185.51 ECC .18521 INC 1.3429 V1 29.404
RP 211.60 LAP -.94 LOP 18.91 VP 23.217 GAP 6.99 AZP 89.04 TAL 10.15 TAP 145.89 RCA 151.15 APO 219.87 V2 25.926
RC 124.177 GL -14.94 GP -4.68 ZAL 78.72 ZAP 114.08 ETS 181.89 ZAE 156.87 ETE 191.31 ZAC 96.02 ETC 276.62 LVI -12.12

PLANETOCENTRIC CONIC

C3 8.563 VHL 2.926 DLA -28.42 RAL 329.25 RAD 6637.3 VEL 11.343 PTH 6.40 VHP 3.120 DPA -23.14 RAP 317.52 ECC 1.1409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 5 11	2361.79	-.47	60.61	179.32	137.57	15 44 33	1361.8	17.73	44.45
60.00	16 24 41	2150.31	4.26	46.11	183.86	130.11	17 0 31	1150.3	19.81	27.27
70.00	18 9 48	1841.18	9.54	24.99	187.80	122.95	18 40 29	841.2	22.15	3.73
80.00	20 28 16	1407.58	15.36	355.45	191.16	115.92	20 51 43	407.6	24.72	331.96
87.09	22 42 58	6261.55	21.12	303.93	193.69	109.47	24 27 19	9261.6	27.25	278.56
100.00	23 11 8	6170.09	15.36	294.72	191.16	115.92	24 53 58	5170.1	24.72	271.24
110.00	23 9 14	6176.04	9.54	291.81	187.80	122.95	24 52 10	5176.0	22.15	270.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2132 TRA -.2380 TC3-1.3782 BAU .1636 SGT 1051.4 SGR 581.9 SG3 1267.8 ST 22.4 SR 23.0 SS 29.1
RDE -.2301 RRA .1326 RC3 -.3764 FAU .22913 RRT .3422 RRF .6095 RTF .5583 CRT .8478 CRS -.7630 CST -.3257
FDE -.6910 FRA 2.4475 FC-23.1654 BSP 931 SGB 1201.7 R23 .3717 R13 .6098 LSA 37.8 MSA 21.0 SSA 2.3
BDE .3137 BRA .2724 BC3 1.4287 FSP 2121 SG1 1076.5 SG2 534.0 THA 14.31 EL1 30.8 EL2 8.8 ALF 45.89

LAUNCH DATE MAY 25 1971 FLIGHT TIME 178.00 ARRIVAL DATE NOV 19 1971

HELIOCENTRIC CONIC DISTANCE 423.557 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.185 GAL 1.55 AZL 91.32 HCA 136.95 SMA 185.40 ECC .18464 INC 1.3233 V1 29.404
RP 211.87 LAP -.90 LOP 20.12 VP 23.173 GAP 6.79 AZP 89.03 TAL 10.00 TAP 146.95 RCA 151.17 APO 219.63 V2 25.896
RC 126.431 GL -14.77 GP -4.85 ZAL 78.98 ZAP 112.03 ETS 181.74 ZAE 154.88 ETE 190.80 ZAC 95.95 ETC 276.43 LVI -11.71

PLANETOCENTRIC CONIC

C3 8.495 VHL 2.915 DLA -28.17 RAL 329.48 RAD 6637.3 VEL 11.340 PTH 6.39 VHP 3.075 DPA -23.55 RAP 316.70 ECC 1.1398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 4 43	2366.01	-.68	60.79	179.40	137.57	15 44 9	1366.0	17.53	44.64
60.00	16 23 36	2156.17	4.00	46.39	183.90	130.14	16 59 32	1156.2	19.57	27.59
70.00	18 7 34	1850.44	9.20	25.49	187.78	123.04	18 38 24	850.4	21.86	4.30
80.00	20 22 41	1427.36	14.77	356.62	191.01	116.25	20 46 28	427.4	24.31	333.29
90.00	22 46 10	6252.62	19.36	302.59	193.12	111.02	24 30 22	5252.6	26.33	277.73
100.00	23 5 33	6189.88	14.77	295.89	191.01	116.25	24 48 42	5189.9	24.31	272.57
110.00	23 7 0	6185.30	9.20	292.31	187.78	123.04	24 50 5	5185.3	21.86	271.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2237 TRA -.2211 TC3-1.6197 BAU .1897 SGT 1152.3 SGR 584.7 SG3 1302.9 ST 23.2 SR 22.5 SS 28.9
RDE -.2241 RRA .1354 RC3 -.4083 FAU .23389 RRT .4001 RRF .6344 RTF .6247 CRT .8634 CRS -.7338 CST -.3131
FDE -.6464 FRA 2.5657 FC-23.8366 BSP 1097 SGB 1292.2 R23 .3467 R13 .6679 LSA 37.5 MSA 21.7 SSA 2.3
BDE .3166 BRA .2593 BC3 1.6703 FSP 2222 SG1 1181.8 SG2 522.5 THA 14.34 EL1 31.2 EL2 8.4 ALF 43.91

LAUNCH DATE MAY 25 1971 FLIGHT TIME 180.00 ARRIVAL DATE NOV 21 1971

HELIOCENTRIC CONIC DISTANCE 427.743 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.180 GAL 1.52 AZL 91.30 HCA 138.16 SMA 185.30 ECC .18415 INC 1.3029 V1 29.404
RP 212.14 LAP -.87 LOP 21.32 VP 23.129 GAP 6.60 AZP 89.03 TAL 9.83 TAP 147.99 RCA 151.18 APO 219.42 V2 25.884
RC 128.706 GL -14.59 GP -5.02 ZAL 79.26 ZAP 109.97 ETS 181.57 ZAE 152.87 ETE 190.33 ZAC 95.88 ETC 276.24 LVI -11.29

PLANETOCENTRIC CONIC

C3 8.431 VHL 2.904 DLA -27.89 RAL 329.72 RAD 6637.2 VEL 11.338 PTH 6.39 VHP 3.033 DPA -23.96 RAP 315.86 ECC 1.1388

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 4 13	2370.82	-.92	60.99	179.49	137.57	15 43 44	1370.8	17.29	44.67
60.00	16 22 27	2162.72	3.71	46.70	183.95	130.16	16 58 30	1162.7	19.31	27.94
70.00	18 5 12	1860.56	8.83	26.03	187.77	123.13	18 36 12	860.6	21.55	4.92
80.00	20 17 7	1447.51	14.16	357.80	190.89	116.57	20 41 15	447.5	23.89	334.64
90.00	22 28 18	1024.51	17.86	328.44	192.64	112.30	22 45 22	24.5	25.50	304.02
100.00	22 59 59	6210.03	14.16	297.08	190.89	116.57	24 43 29	5210.0	23.89	273.91
110.00	23 4 38	6195.42	8.83	292.85	187.77	123.13	24 47 54	5195.4	21.55	271.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2294 TRA -.1989 TC3-1.8509 BAU .2148 SGT 1248.0 SGR 589.4 SG3 1339.9 ST 23.6 SR 22.1 SS 28.9
RDE -.2187 RRA .1378 RC3 -.4438 FAU .23934 RRT .4565 RRF .6806 RTF .6452 CRT .8781 CRS -.7174 CST -.3197
FDE -.6242 FRA 2.6613 FC-24.5751 BSP 1321 SGB 1380.2 R23 .3187 R13 .7216 LSA 37.4 MSA 21.9 SSA 2.2
BDE .3170 BRA .2420 BC3 1.9034 FSP 2290 SG1 1282.3 SG2 510.3 THA 14.51 EL1 31.4 EL2 8.0 ALF 42.75

LAUNCH DATE MAY 25 1971 FLIGHT TIME 182.00 ARRIVAL DATE NOV 23 1971

HELIOCENTRIC CONIC DISTANCE 431.932 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.175 GAL 1.49 AZL 91.28 HCA 139.36 SMA 185.22 ECC .18372 INC 1.2816 V1 29.404
RP 212.43 LAP -.83 LOP 22.53 VP 23.087 GAP 6.41 AZP 89.03 TAL 9.65 TAP 149.01 RCA 151.19 APO 219.25 V2 25.832
RC 130.999 GL -14.40 GP -5.20 ZAL 79.58 ZAP 107.91 ETS 181.40 ZAE 150.85 ETE 189.91 ZAC 95.79 ETC 276.04 LVI -10.86

PLANETOCENTRIC CONIC

C3 8.373 VHL 2.894 DLA -27.60 RAL 329.98 RAD 6637.2 VEL 11.335 PTH 6.39 VHP 2.996 DPA -24.37 RAP 315.01 ECC 1.1378

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 3 41	2378.25	-1.20	61.22	179.61	137.56	15 43 18	1376.2	17.03	45.12
60.00	16 21 13	2170.01	3.39	47.05	184.02	130.18	16 57 23	1170.0	19.02	28.33
70.00	18 2 43	1871.56	8.42	26.62	187.78	123.22	18 33 54	871.6	21.21	5.58
80.00	20 11 35	1468.10	13.53	359.00	190.79	116.87	20 36 3	468.1	23.44	336.00
90.00	22 15 48	1067.52	16.73	331.08	192.34	113.74	22 33 36	67.5	24.83	306.98
100.00	22 54 27	6230.61	13.53	298.28	190.79	116.87	24 38 18	5230.6	23.44	275.27
110.00	23 2 9	6206.42	8.42	293.44	187.78	123.22	24 45 36	5206.4	21.21	272.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2347 TRA -.1758 TC3-2.0926 BAU .2403 SGT 1355.3 SGR 594.6 SG3 1374.6 ST 24.0 SR 21.6 SS 28.9
RDE -.2132 RRA .1403 RC3 -.4802 FAU .24447 RRT .5083 RRF .6859 RTF .7351 CRT .8915 CRS -.6991 CST -.3234
FDE -.5957 FRA 2.7498 FC-25.2776 BSP 1559 SGB 1480.0 R23 .2936 R13 .7652 LSA 37.2 MSA 22.1 SSA 2.2
BDE .3171 BRA .2249 BC3 2.1470 FSP 2354 SG1 1393.8 SG2 498.0 THA 14.46 EL1 31.5 EL2 7.5 ALF 41.60

LAUNCH DATE MAY 25 1971 FLIGHT TIME 184.00 ARRIVAL DATE NOV 25 1971

HELIOCENTRIC CONIC DISTANCE 436.122 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.171 GAL 1.46 AZL 91.26 HCA 140.56 SMA 185.16 ECC .18337 INC 1.2892 V1 29.404
RP 212.72 LAP -.80 LOP 23.73 VP 23.044 GAP 6.22 AZP 89.03 TAL 9.45 TAP 150.02 RCA 151.21 APO 219.11 V2 25.799
RC 133.312 GL -14.18 GP -5.38 ZAL 79.92 ZAP 105.85 ETS 181.22 ZAE 148.81 ETE 189.53 ZAC 95.70 ETC 275.85 LVI -10.42

PLANETOCENTRIC CONIC

C3 8.319 VHL 2.884 DLA -27.28 RAL 330.26 RAD 6637.2 VEL 11.333 PTH 6.38 VHP 2.963 DPA -24.76 RAP 314.16 ECC 1.1389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 3 8	2382.30	-1.50	61.47	179.75	137.56	15 42 50	1382.3	16.74	45.39
60.00	16 19 55	2178.02	3.04	47.43	184.11	130.21	16 56 13	1178.0	18.69	28.77
70.00	18 0 7	1883.40	7.97	27.25	187.81	123.32	18 31 30	883.4	20.83	6.30
80.00	20 6 4	1489.12	12.88	.23	190.72	117.17	20 30 53	489.1	22.96	337.38
90.00	22 5 21	1104.46	15.72	333.33	192.12	113.81	22 23 45	104.5	24.20	309.51
100.00	22 48 56	6251.63	12.88	299.50	190.72	117.17	24 33 8	5251.6	22.96	276.65
110.00	22 59 33	6218.26	7.97	294.07	187.81	123.32	24 43 12	5218.3	20.83	273.13

DIFFERENTIAL CORRECTIONS

TDE -.2393 TRA -.1515 TC3-2.3416 BAU .2667
RDE -.2076 RRA .1430 RC3 -.5177 FAU .24927
FDE -.5661 FRA 2.8429 FC-25.9424 BSP 1812
BDE .3168 BRA .2084 BC3 2.3981 FSP 2410

MID-COURSE EXECUTION ACCURACY

SGT 1471.4 SGR 601.1 SG3 1408.0
RRT .5552 RRF .7108 RTF .7755
SGB 1569.5 R23 .2726 R13 .8004
SG1 1513.3 SG2 486.1 THA 14.29

ORBIT DETERMINATION ACCURACY

ST 24.4 SR 21.2 SS 28.9
CRT .9036 CRS -.6803 CST -.3260
LSA 37.1 MSA 22.3 SSA 2.2
EL1 31.5 EL2 7.0 ALF 40.53

LAUNCH DATE MAY 25 1971 FLIGHT TIME 186.00 ARRIVAL DATE NOV 27 1971

HELIOCENTRIC CONIC DISTANCE 440.314 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.168 GAL 1.43 AZL 91.24 HCA 141.76 SMA 185.11 ECC .18307 INC 1.2358 V1 29.404
RP 213.01 LAP -.76 LOP 24.92 VP 23.003 GAP 6.03 AZP 89.03 TAL 9.24 TAP 151.00 RCA 151.22 APO 218.99 V2 25.766
RC 135.643 GL -13.96 GP -5.57 ZAL 80.28 ZAP 103.80 ETS 181.03 ZAE 146.76 ETE 189.17 ZAC 95.61 ETC 275.65 LVI -9.97

PLANETOCENTRIC CONIC

C3 8.269 VHL 2.876 DLA -26.93 RAL 330.57 RAD 6637.1 VEL 11.331 PTH 6.38 VHP 2.933 DPA -25.20 RAP 313.30 ECC 1.1361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 2 32	2388.97	-1.84	61.75	179.90	137.55	15 42 21	1389.0	16.42	45.70
60.00	16 18 33	2186.77	2.66	47.85	184.22	130.23	16 55 0	1186.8	18.34	29.23
70.00	17 57 24	1896.09	7.50	27.92	187.86	123.42	18 29 0	896.1	20.43	7.06
80.00	20 0 34	1510.58	12.21	1.47	190.67	117.46	20 25 44	510.6	22.46	338.78
90.00	21 56 1	1138.27	14.78	335.37	191.95	114.38	22 14 59	138.3	23.58	311.79
100.00	22 43 26	6273.09	12.21	300.74	190.67	117.46	24 27 59	5273.1	22.46	278.05
110.00	22 56 51	6230.95	7.50	294.75	187.86	123.42	24 40 42	5230.9	20.43	273.89

DIFFERENTIAL CORRECTIONS

TDE -.2428 TRA -.1257 TC3-2.5978 BAU .2937
RDE -.2017 RRA .1457 RC3 -.5551 FAU .25335
FDE -.5264 FRA 2.9265 FC-26.5266 BSP 2078
BDE .3156 BRA .1924 BC3 2.6564 FSP 2461

MID-COURSE EXECUTION ACCURACY

SGT 1595.3 SGR 607.8 SG3 1437.0
RRT .5980 RRF .7342 RTF .8089
SGB 1707.2 R23 .2534 R13 .8293
SG1 1640.1 SG2 473.9 THA 14.03

ORBIT DETERMINATION ACCURACY

ST 24.7 SR 20.7 SS 28.8
CRT .9148 CRS -.6573 CST -.3237
LSA 36.8 MSA 22.5 SSA 2.2
EL1 31.5 EL2 6.5 ALF 39.54

LAUNCH DATE MAY 25 1971 FLIGHT TIME 188.00 ARRIVAL DATE NOV 29 1971

HELIOCENTRIC CONIC DISTANCE 444.508 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.166 GAL 1.39 AZL 91.21 HCA 142.95 SMA 185.07 ECC .18283 INC 1.2111 V1 29.404
RP 213.31 LAP -.73 LOP 26.12 VP 22.962 GAP 5.85 AZP 89.03 TAL 9.01 TAP 151.97 RCA 151.23 APO 218.91 V2 25.732
RC 137.991 GL -13.71 GP -5.77 ZAL 80.67 ZAP 101.76 ETS 180.84 ZAE 144.71 ETE 188.84 ZAC 95.50 ETC 275.46 LVI -9.52

PLANETOCENTRIC CONIC

C3 8.223 VHL 2.868 DLA -26.56 RAL 330.88 RAD 6637.1 VEL 11.329 PTH 6.38 VHP 2.908 DPA -25.61 RAP 312.46 ECC 1.1353

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 1 53	2396.27	-2.20	62.05	180.08	137.54	15 41 49	1396.3	16.06	46.03
60.00	16 17 5	2196.23	2.24	48.31	184.35	130.25	16 53 42	1196.2	17.96	29.74
70.00	17 54 35	1909.59	6.99	28.64	187.92	123.52	18 26 24	909.6	20.00	7.87
80.00	19 55 4	1532.46	11.52	2.72	190.64	117.74	20 20 36	532.5	21.94	340.19
90.00	21 47 24	1170.20	13.88	337.27	191.83	114.89	22 6 54	170.2	22.96	313.92
100.00	22 37 56	1006.93	11.52	324.09	190.64	117.74	22 54 42	6.9	21.94	301.56
110.00	22 54 1	6244.44	6.99	295.46	187.92	123.52	24 38 5	5244.4	20.00	274.70

DIFFERENTIAL CORRECTIONS

TDE -.2437 TRA -.0974 TC3-2.8519 BAU .3203
RDE -.1966 RRA .1479 RC3 -.5969 FAU .25820
FDE -.5140 FRA 2.9830 FC-27.1846 BSP 2372
BDE .3131 BRA .1771 BC3 2.9137 FSP 2487

MID-COURSE EXECUTION ACCURACY

SGT 1720.3 SGR 616.9 SG3 1467.6
RRT .6400 RRF .7579 RTF .8402
SGB 1827.6 R23 .2319 R13 .8569
SG1 1768.5 SG2 461.1 THA 13.89

ORBIT DETERMINATION ACCURACY

ST 24.7 SR 20.3 SS 28.8
CRT .9261 CRS -.6519 CST -.3464
LSA 36.8 MSA 22.2 SSA 2.2
EL1 31.4 EL2 6.0 ALF 38.94

LAUNCH DATE MAY 25 1971 FLIGHT TIME 190.00 ARRIVAL DATE DEC 1 1971

HELIOCENTRIC CONIC DISTANCE 448.701 EARTH TO MARS

RL 151.52 LAL -.00 LOL 243.16 VL 32.164 GAL 1.35 AZL 91.19 HCA 144.14 SMA 185.05 ECC .18265 INC 1.1851 V1 29.404
RP 213.61 LAP -.69 LOP 27.31 VP 22.921 GAP 5.67 AZP 89.04 TAL 8.77 TAP 152.91 RCA 151.25 APO 218.85 V2 25.697
RC 140.356 GL -13.45 GP -5.97 ZAL 81.09 ZAP 99.74 ETS 180.63 ZAE 142.66 ETE 188.53 ZAC 95.38 ETC 275.26 LVI -9.06

PLANETOCENTRIC CONIC

C3 8.181 VHL 2.860 DLA -26.16 RAL 331.22 RAD 6637.1 VEL 11.327 PTH 6.38 VHP 2.886 DPA -26.03 RAP 311.62 ECC 1.1346

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 1 12	2404.25	-2.60	62.39	180.27	137.52	15 41 16	1404.3	15.68	46.40
60.00	16 15 33	2206.48	1.79	48.80	184.50	130.27	16 52 20	1206.5	17.54	30.28
70.00	17 51 38	1923.97	6.45	29.40	188.01	123.61	18 23 42	924.0	19.53	8.73
80.00	19 49 33	1554.91	10.80	4.01	190.63	118.01	20 15 28	554.9	21.39	341.64
90.00	21 39 15	1201.15	12.98	339.11	191.75	115.35	21 59 16	201.1	22.33	315.97
100.00	22 32 25	1029.38	10.80	325.37	190.63	118.01	22 49 34	29.4	21.39	303.00
110.00	22 51 5	6258.83	6.45	296.22	188.01	123.61	24 35 23	5258.8	19.53	275.55

DIFFERENTIAL CORRECTIONS

TDE -.2483 TRA -.0724 TC3-3.1378 BAU .3501
RDE -.1891 RRA .1523 RC3 -.6317 FAU .26003
FDE -.4241 FRA 3.1069 FC-27.5184 BSP 2624
BDE .3121 BRA .1687 BC3 3.2007 FSP 2566

MID-COURSE EXECUTION ACCURACY

SGT 1869.6 SGR 624.2 SG3 1488.0
RRT .6702 RRF .7783 RTF .8559
SGB 1971.0 R23 .2277 R13 .8699
SG1 1918.7 SG2 451.4 THA 13.37

ORBIT DETERMINATION ACCURACY

ST 25.1 SR 19.6 SS 28.6
CRT .9331 CRS -.5982 CST -.3008
LSA 36.0 MSA 23.2 SSA 2.2
EL1 31.4 EL2 5.7 ALF 37.49

LAUNCH DATE MAY 25 1971 FLIGHT TIME 192.00 ARRIVAL DATE DEC 3 1971

HELIOCENTRIC CONIC DISTANCE 452.896 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.164	GAL	1.31	AZL	91.16	HCA	145.33	SMA	185.04	ECC	.18252	INC	1.1576	VI	29.404
RP	213.92	LAP	-.66	LOP	28.49	VP	22.881	GAP	5.50	AZP	89.05	TAL	8.51	TAP	153.84	RCA	151.27	APO	218.81	V2	25.662
RC	142.739	GL	-13.16	GP	-6.18	ZAL	81.52	ZAP	97.73	ETS	180.42	ZAE	140.62	ETE	188.24	ZAC	95.25	ETC	275.07	LVI	-8.60

PLANETOCENTRIC CONIC

C3	8.142	VHL	2.853	DLA	-25.73	RAL	331.57	RAD	6637.1	VEL	11.325	PTH	6.38	VHP	2.867	DPA	-26.44	RAP	310.80	ECC	1.1340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	15 0 27	2412.88	-3.04	62.75	180.48	137.50	15 40 40	1412.9	15.26	46.79
60.00	16 13 55	2217.47	1.31	49.32	184.66	130.28	16 50 53	1217.5	17.09	30.86
70.00	17 28 35	1939.15	5.88	30.20	188.11	123.70	18 20 54	939.2	19.03	9.62
80.00	19 44 2	1577.81	10.07	5.31	190.64	118.26	20 10 19	577.8	20.82	343.09
90.00	21 31 27	1231.36	12.10	340.88	191.70	115.76	21 51 59	231.4	21.68	317.95
100.00	22 26 53	1052.28	10.07	326.68	190.64	118.26	22 44 26	52.3	20.82	304.46
110.00	22 48 1	6274.01	5.88	297.03	188.11	123.70	24 32 35	5274.0	19.03	276.45

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2490	TRA	-.0442	TC3	-3.4154	BAU	.3789	SGT	2014.7	SGR	633.2	SG3	1507.2	ST	25.2	SR	19.1	SS	28.5
RDE	-.1826	RRA	.1555	RC3	-.6702	FAU	.26239	RRT	.7014	RRF	.7984	RTF	.8737	CRT	.9410	CRS	-.5675	CST	-.2889
FDE	-.3689	FRA	3.1813	FC	-27.8981	BSP	2906	SGB	2111.9	R23	.2171	R13	.8854	LSA	35.5	NSA	23.5	SSA	2.2
BDE	.3088	BRA	.1617	BC3	3.4806	FSP	2596	SG1	2065.5	SG2	440.3	THA	13.03	EL1	31.2	EL2	5.2	ALF	36.62

LAUNCH DATE MAY 25 1971 FLIGHT TIME 194.00 ARRIVAL DATE DEC 5 1971

HELIOCENTRIC CONIC DISTANCE 457.091 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.164	GAL	1.27	AZL	91.13	HCA	146.51	SMA	185.04	ECC	.18244	INC	1.1286	VI	29.404
RP	214.24	LAP	-.62	LOP	29.67	VP	22.842	GAP	5.32	AZP	89.06	TAL	8.24	TAP	154.75	RCA	151.28	APO	218.80	V2	25.627
RC	145.138	GL	-12.85	GP	-6.40	ZAL	81.99	ZAP	95.75	ETS	180.20	ZAE	138.58	ETE	187.97	ZAC	95.11	ETC	274.88	LVI	-8.14

PLANETOCENTRIC CONIC

C3	8.108	VHL	2.847	DLA	-25.27	RAL	331.94	RAD	6637.1	VEL	11.324	PTH	6.38	VHP	2.852	DPA	-26.85	RAP	309.99	ECC	1.1334

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 59 38	2422.19	-3.50	63.14	180.71	137.48	15 40 0	1422.2	14.80	47.21
60.00	16 12 11	2229.22	.79	49.88	184.83	130.29	16 49 20	1229.2	16.61	31.48
70.00	17 45 24	1955.17	5.27	31.05	188.22	123.79	18 17 59	955.2	18.50	10.56
80.00	19 38 29	1601.26	9.31	6.64	190.68	118.50	20 5 10	601.3	20.22	344.57
90.00	21 23 55	1261.21	11.21	342.62	191.67	116.13	21 44 56	261.2	21.02	319.89
100.00	22 21 20	1075.73	9.31	328.00	190.68	118.50	22 39 16	75.7	20.22	305.94
110.00	22 44 50	1001.99	5.27	319.96	188.22	123.79	23 1 32	2.0	18.50	299.48

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2481	TRA	-.0146	TC3	-3.6959	BAU	.4079	SGT	2163.4	SGR	643.4	SG3	1524.7	ST	25.2	SR	18.5	SS	28.5
RDE	-.1757	RRA	.1592	RC3	-.7100	FAU	.26440	RRT	.7300	RRF	.8177	RTF	.8882	CRT	.9480	CRS	-.5299	CST	-.2693
FDE	-.3023	FRA	3.2580	FC	-28.2329	BSP	3200	SGB	2257.0	R23	.2086	R13	.8982	LSA	34.8	NSA	23.8	SSA	2.2
BDE	.3040	BRA	.1598	BC3	3.7635	FSP	2631	SG1	2215.8	SG2	429.3	THA	12.74	EL1	30.8	EL2	4.8	ALF	35.83

LAUNCH DATE MAY 25 1971 FLIGHT TIME 196.00 ARRIVAL DATE DEC 7 1971

HELIOCENTRIC CONIC DISTANCE 461.286 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.165	GAL	1.23	AZL	91.10	HCA	147.69	SMA	185.08	ECC	.18242	INC	1.0977	VI	29.404
RP	214.55	LAP	-.59	LOP	30.85	VP	22.803	GAP	5.15	AZP	89.07	TAL	7.96	TAP	155.65	RCA	151.30	APO	218.81	V2	25.591
RC	147.555	GL	-12.52	GP	-6.62	ZAL	82.47	ZAP	93.80	ETS	179.97	ZAE	136.56	ETE	187.72	ZAC	94.96	ETC	274.70	LVI	-7.67

PLANETOCENTRIC CONIC

C3	8.077	VHL	2.842	DLA	-24.78	RAL	332.32	RAD	6637.0	VEL	11.322	PTH	6.38	VHP	2.840	DPA	-27.27	RAP	309.20	ECC	1.1329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 58 44	2432.21	-4.01	63.56	180.95	137.45	15 39 17	1432.2	14.31	47.66
60.00	16 10 20	2241.78	.24	50.48	185.02	130.30	16 47 42	1241.8	16.09	32.14
70.00	17 42 5	1972.05	4.63	31.93	188.35	123.88	18 14 57	972.1	17.94	11.55
80.00	19 32 53	1625.28	8.52	7.99	190.73	118.72	19 59 58	625.3	19.58	346.08
90.00	21 16 33	1290.95	10.31	344.35	191.67	116.48	21 38 4	291.0	20.34	321.81
100.00	22 15 45	1099.76	8.52	329.36	190.73	118.72	22 34 4	99.8	19.58	307.45
110.00	22 41 31	1018.87	4.63	320.65	188.35	123.88	22 58 30	18.9	17.94	300.46

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2461	TRA	.0158	TC3	-3.9827	BAU	.4376	SGT	2317.7	SGR	654.8	SG3	1539.8	ST	25.0	SR	17.9	SS	28.5
RDE	-.1686	RRA	.1630	RC3	-.7510	FAU	.26601	RRT	.7561	RRF	.8359	RTF	.9001	CRT	.9542	CRS	-.4907	CST	-.2485
FDE	-.2324	FRA	3.3317	FC	-28.5136	BSP	3494	SGB	2408.4	R23	.2021	R13	.9087	LSA	34.2	NSA	24.2	SSA	2.2
BDE	.2983	BRA	.1638	BC3	4.0529	FSP	2652	SG1	2371.8	SG2	418.8	THA	12.45	EL1	30.4	EL2	4.4	ALF	35.07

LAUNCH DATE MAY 25 1971 FLIGHT TIME 198.00 ARRIVAL DATE DEC 9 1971

HELIOCENTRIC CONIC DISTANCE 465.480 EARTH TO MARS

RL	151.52	LAL	-.00	LOL	243.16	VL	32.166	GAL	1.18	AZL	91.06	HCA	148.87	SMA	185.08	ECC	.18244	INC	1.0650	VI	29.404
RP	214.88	LAP	-.55	LOP	32.03	VP	22.764	GAP	4.99	AZP	89.09	TAL	7.66	TAP	156.53	RCA	151.32	APO	218.85	V2	25.554
RC	149.988	GL	-12.16	GP	-6.86	ZAL	82.98	ZAP	91.87	ETS	179.73	ZAE	134.56	ETE	187.48	ZAC	94.79	ETC	274.52	LVI	-7.19

PLANETOCENTRIC CONIC

C3	8.049	VHL	2.837	DLA	-24.26	RAL	332.70	RAD	6637.0	VEL	11.321	PTH	6.37	VHP	2.831	DPA	-27.68	RAP	308.44	ECC	1.1325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.00	14 57 46	2442.96	-4.55	64.01	181.20	137.41	15 38 29	1443.0	13.79	48.14
60.00	16 8 23	2255.16	-.35	51.12	185.23	130.30	16 45 58	1255.2	15.53	32.83
70.00	17 38 38	1989.81	3.96	32.87	188.49	123.95	18 11 48	989.8	17.34	12.57
80.00	19 27 14	1649.95	7.71	9.37	190.80	118.93	19 54 43	649.9	18.92	347.61
90.00	21 9 17	1320.77	9.40	346.06	191.70	116.79	21 31 18	320.8	19.63	323.71
100.00	22 10 5	1124.42	7.71	330.74	190.80	118.93	22 28 50	124.4	18.92	308.98
110.00	22 38 4	1036.63	3.96	321.78	188.49	123.95	22 55 21	36.6	17.34	301.49

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2421	TRA	.0471	TC3	-4.2695	BAU	.4672	SGT	2473.6	SGR	666.7	SG3	1549.3	ST	24.8	SR	17.2	SS	28.6
RDE	-.1611	RRA	.1673	RC3	-.7907	FAU	.26650	RRT	.7790	RRF	.8527	RTF	.9095	CRT	.9596	CRS	-.4468	CST	-.2230
FDE	-.1536	FRA	3.4051	FC	-28.6649	BSP	3794	SGB	2561.9	R23	.1981	R13	.9170	LSA	33.4	NSA	24.6	SSA	2.2
BDE	.2908	BRA	.1738	BC3	4.3421	FSP	2676	SG1	2529.0	SG2	408.8	THA	12.18	EL1	29.9	EL2	4.0	ALF	34.40