NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Technical Report No. 32-911

Atlas-Centaur VI Flight Path and Its Determination from Tracking Data

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JET PROPULSION LABORATORY
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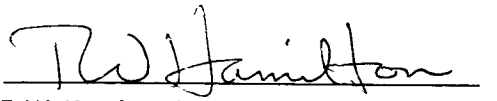

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ABSTRACT

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This Report describes the best current estimate of the *Atlas-Centaur VI* (*A/C-6*) spacecraft flight path and the way in which the flight path was obtained. This document also includes Orbit Determination Program (ODP) printout data facsimiles.

I. INTRODUCTION

The *Atlas-Centaur VI* (*A/C-6*) spacecraft (see Appendix A) was launched from Cape Kennedy on August 11, 1965. The primary objective of the *Atlas-Centaur VI* (*A/C-6*) mission was to demonstrate the *Atlas-Centaur* capability. In support of this objective the Deep-Space Network (DSN) provided almost continuous coverage from injection to loss of signal at approximately 16 hr after launch.

The best current estimate of the *A/C-6* spacecraft flight path and the way in which it was determined is described. Information is presented on the tracking coverage, signal strengths, and the tumbling rate. The *A/C-6* flight also resulted in a determination of the mass of the Earth. There were insufficient data for the determination of the station locations.

Section II of this Report summarizes the key spacecraft events for the mission and describes the *A/C-6* orbit in terms of its trajectory parameters near the Earth and in translunar flight.

Section III of this Report describes the Deep-Space Instrumentation Facility (DSIF) transponder orbit determination. The solution for the mass of the Earth is compared to determinations based upon the previous *Ranger* missions.

Section IV describes the Air Force Eastern Test Range (AFETR) tracking of the *Centaur* launch vehicle.

Section V summarizes the key events in the DSIF tracking of the *A/C-6* mission and gives a general description of the DSIF stations and tracking modes.

Section VI discusses the considerations associated with the simulated midcourse maneuver.

A JPL internal document contains much additional information on the *A/C-6* in-flight operations.

II. TRAJECTORY DESCRIPTION

A. Launch Phase

The *Surveyor* Dynamic Model SD-2 was launched from pad 36B at the Air Force Eastern Test Range (AFETR), Cape Kennedy, Florida, on Wednesday August 11, 1965, using a General Dynamics/Convair *Atlas-Centaur* launch vehicle (*A/C-6*). Launch occurred at 14:31:04.430 GMT. Two seconds after liftoff, the launch vehicle began a programmed roll that oriented the vehicle from an azimuth of 115 deg to a launch azimuth of 94.539 deg. At 15 sec a programmed pitch-over maneuver was initiated. The *Atlas* booster engines were shut off, and jettisoned. The *Atlas* sustainer engine continued to provide thrust. The insulation panels and the payload shroud were jettisoned. The sustainer engine was shut off, and *Atlas-Centaur* staging occurred at 236.6 sec after liftoff.

At 244.01 sec, the *Centaur* main engines were started. Injection into the transit trajectory occurred at 679.07 sec after liftoff, when the *Centaur* main engines were cut off. The spacecraft was physically separated from the *Centaur* vehicle at 747.77 sec. The *Centaur* was then turned 180 deg and a retro maneuver was initiated. The Mark Event time for retro start was not received in real time, but occurred at 737.44 sec after liftoff. Completion of this retro maneuver occurred at 1854.07 sec after liftoff. Mark Events are shown in Table 1. They cover the period from liftoff to the end of *Centaur* retro thrust.

The launch phase ascent trajectory profile is illustrated in Fig. 1. The sequence of events from launch to the acquisition of the spacecraft by the Earth is shown in Fig. 2.

Table 1. Summary of mark events*

Mark	Event	Nominal time		Real time		Post-flight time	
		L + time	GMT	GMT	L + time	GMT	L + time
0	Lift-off (2-in. motion)	L + 0	14:31:00.000	14:31:04:430		14:31:04.430	
1	*Atlas* booster-engine cutoff	142.6	14:33:22.600	14:33:36:370	141.94	14:33:26.2	142.77
2	*Atlas* booster-engine jettison	145.7	14:33:25.700	14:33:29.6	145.17	14:33:29.6	145.17
3	*Centaur* insulation-panel jettison	172.6	14:33:52.600	14:33:56.5	172.07	14:33:56.5	172.07
4	*Centaur* nose-fairing jettison	197.6	14:34:17.600	14:34:21.0	196.57	14:34:21.0	196.57
5	*Atlas* sustainer-engine cutoff	234.9	14:34:54.9	14:34:58.8	234.37	14:34:58.5	234.07
6	*Atlas* vernier-engine cutoff	234.9	14:34:54.9	14:34:58.8	234.37	14:34:58.5	234.07
7	*Atlas-Centaur* separation	236.8	14:34:56.8	14:35:01.0	236.57	14:35:01.0	236.57
8	*Centaur* main-engine start	243.4	14:35:03.4	14:35:08.44	244.01	14:35:08.4	243.97
9	*Centaur* main-engine cutoff (injection)	675.2	14:42:15.2	14:42:23.6	679.17	14:42:23.505	679.075
13	*Surveyor* landing-gear-extend command sent	706.4	14:42:46.4	14:43:10.3(?)	725.87(?)	14:42:51.02	706.59
14	*Surveyor* omni-antenna-extend command sent	716.9	14:42:56.9	14:43:18.0(?)	733.57(?)	14:43:01.39	716.96
15	*Surveyor* high-power transmitter ON	737.4	14:43:17.4	Not Available		14:43:21.87	737.44
16	*Centaur/Surveyor* electrical disconnect	742.9	14:43:22.9	14:43:26.8	742.37	14:43:26.8	742.37
17	*Centaur/Surveyor* separation	748.4	14:43:28.4	14:43:32.2	747.77	14:43:32.215	747.785
18	*Centaur* retro start	873.4	14:45:33.4	Not Available		14:45:37.2	872.77
19	End retro-maneuver thrust	1854.4	15:01:54.4	15:01:59.0	1854.57	15:01:58.5	1854.07

*The mark events given in this table and the text were obtained from a JPL internal document.

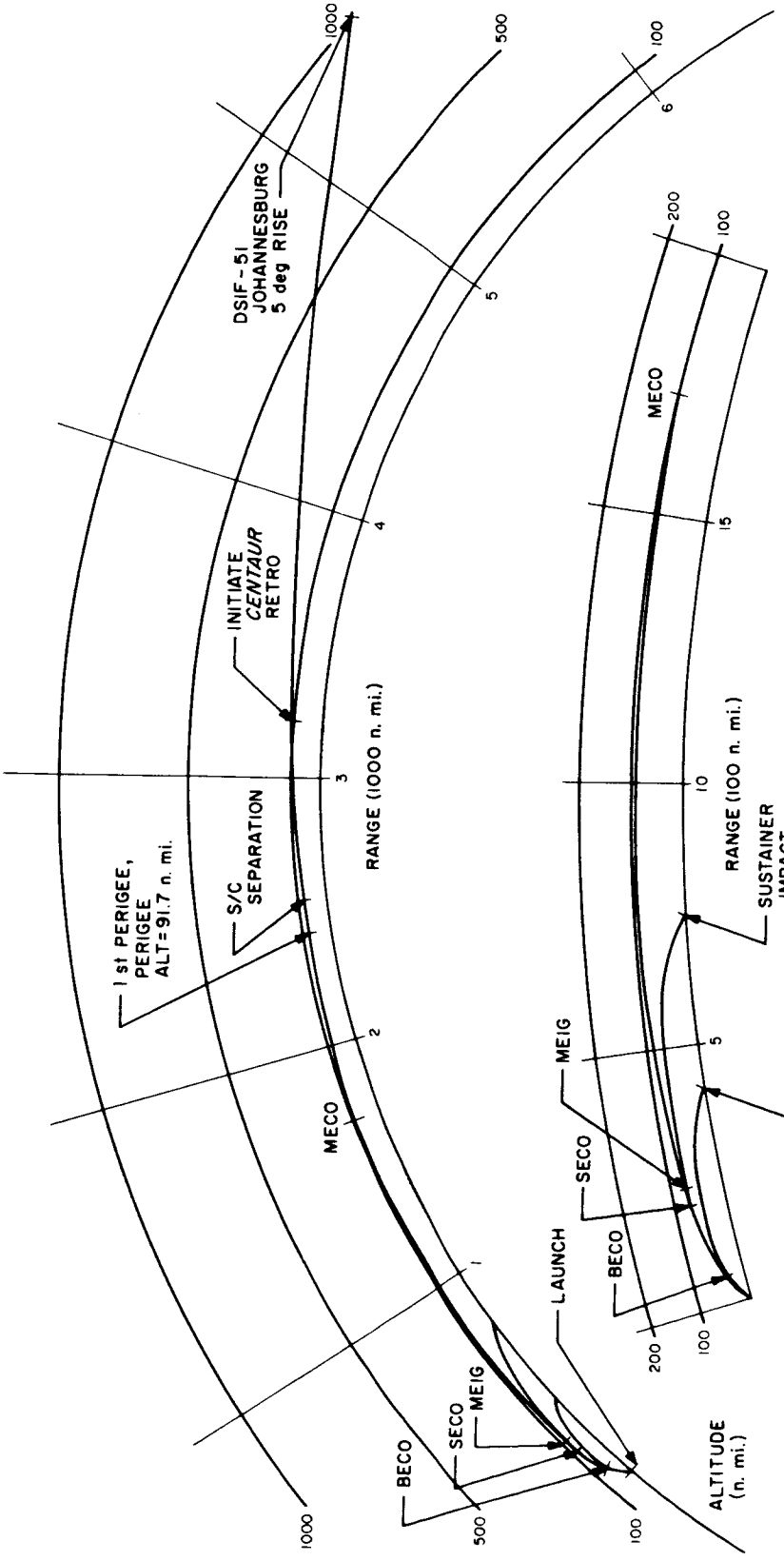
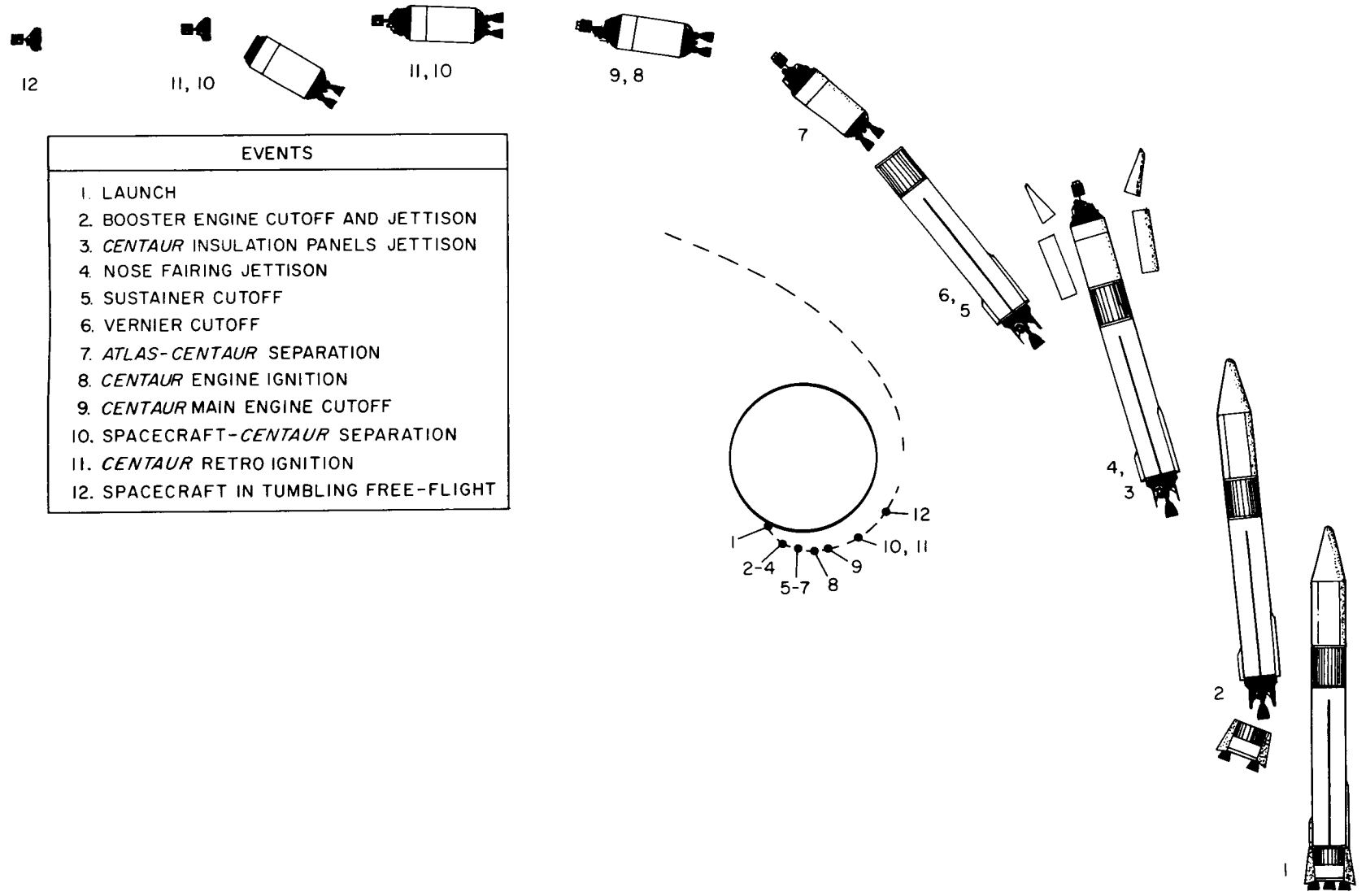


Fig. 1. Launch phase ascent trajectory



EVENTS
1. LAUNCH
2. BOOSTER ENGINE CUTOFF AND JETTISON
3. *CENTAUR* INSULATION PANELS JETTISON
4. NOSE FAIRING JETTISON
5. SUSTAINER CUTOFF
6. VERNIER CUTOFF
7. *ATLAS-CENTAUR* SEPARATION
8. *CENTAUR* ENGINE IGNITION
9. *CENTAUR* MAIN ENGINE CUTOFF
10. SPACECRAFT-*CENTAUR* SEPARATION
11. *CENTAUR* RETRO IGNITION
12. SPACECRAFT IN TUMBLING FREE-FLIGHT

Fig. 2. Sequence of events to spacecraft acquisition

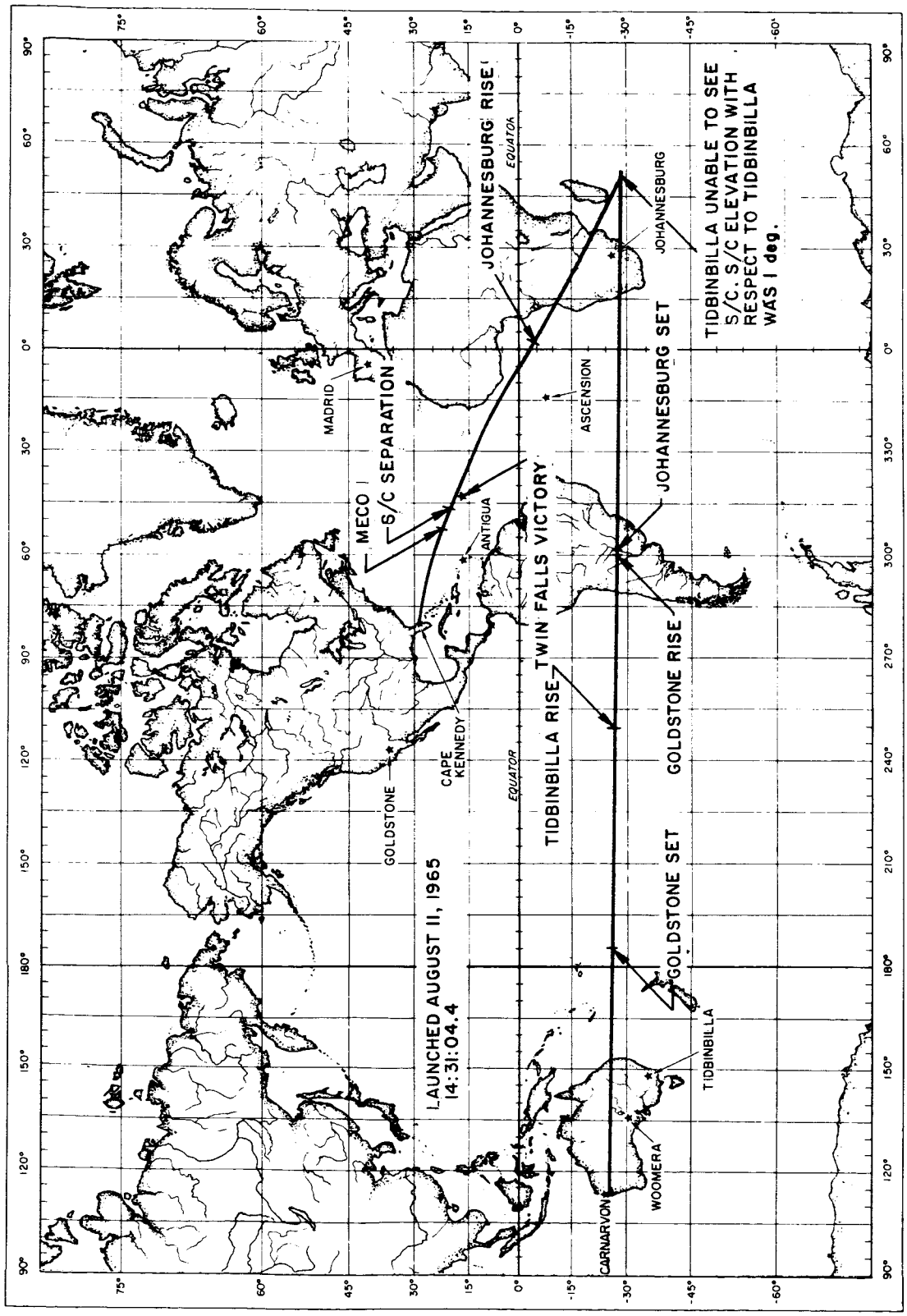


Fig. 3. Earth track

B. Actual Trajectory of Spacecraft

Injection, defined here as *Centaur* main engine cutoff (MECO), occurred at 14:42:23.6 GMT on August 11, 1965 at a geocentric latitude and longitude of 23.0 and 307.4 deg, respectively. The *Centaur/Spacecraft* combination was in sunlight at injection and never entered the Earth's shadow during the lifetime of 20 hr.

Figure 3 shows the Earth track of *A/C-6*. Figures 4 and 5 are plots of probe geocentric radius and velocity vs time from MECO.

The Sun-probe-Moon, Earth-probe-Moon, and Earth-probe-Sun angles vs time from MECO are shown in Fig. 6.

Using the best set of in-flight injection conditions available, the spacecraft trajectory was integrated out from MECO using the space trajectories program described in Ref. 1 and 2. This trajectory is given in Appendix C. A plot of the trajectory projection on the Earth's equatorial plane for 100 days is shown in Fig. 7. It is interesting to note that although the trajectory was chosen from one that was originally targeted to impact the Moon and then biased in time to preclude impact, it comes within 66,000 km of impact at the radius of closest approach (RCA). The original orbit is perturbed considerably during this pass of the Moon. To illustrate the magnitude of this perturbation, a plot of the orbital energy vs time from MECO is shown in Fig. 8.

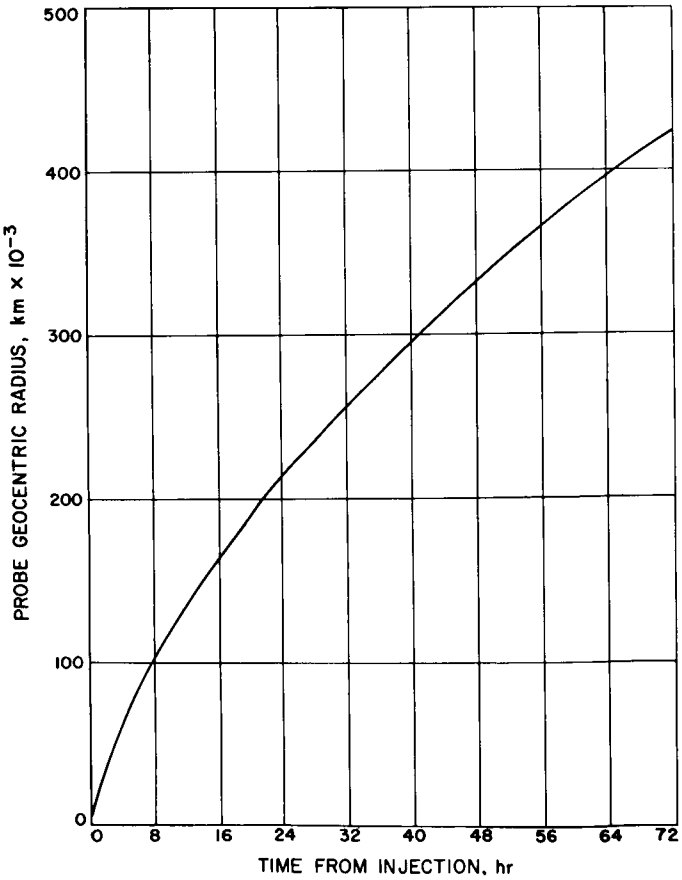


Fig. 4. Probe geocentric radius

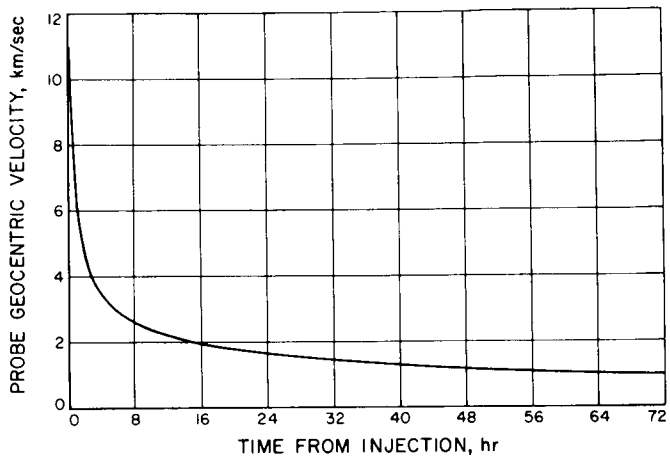


Fig. 5. Probe geocentric velocity

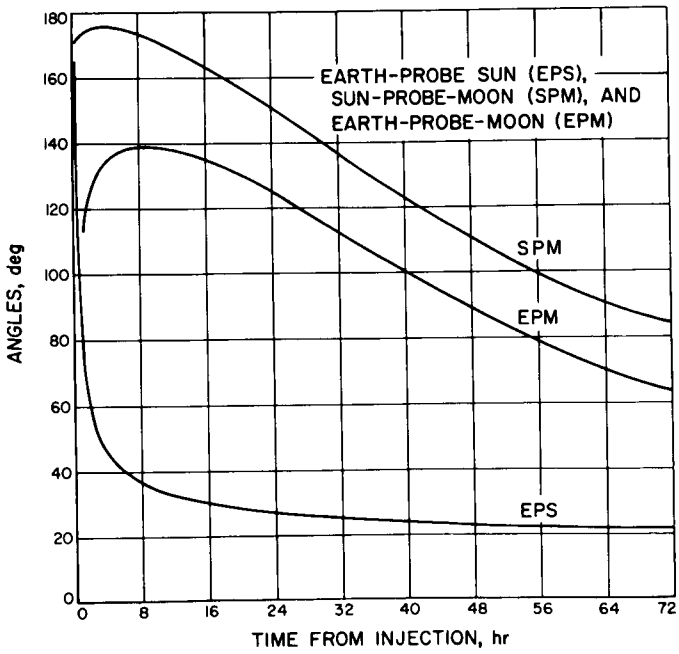


Fig. 6. Sun-Probe-Moon, Earth-Probe-Moon, and Earth-Probe-Sun angles

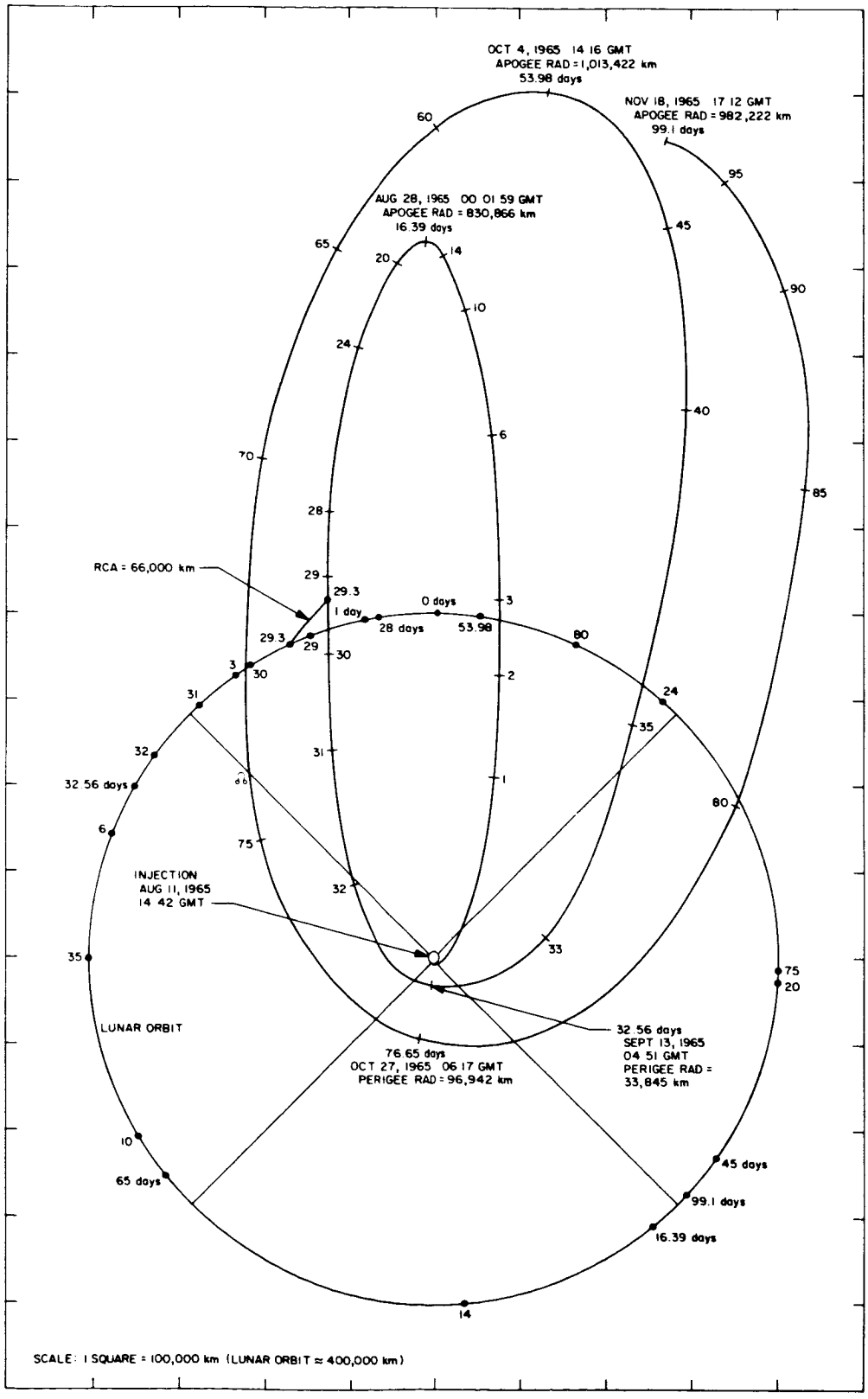


Fig. 7. Trajectory in Earth's equatorial plane

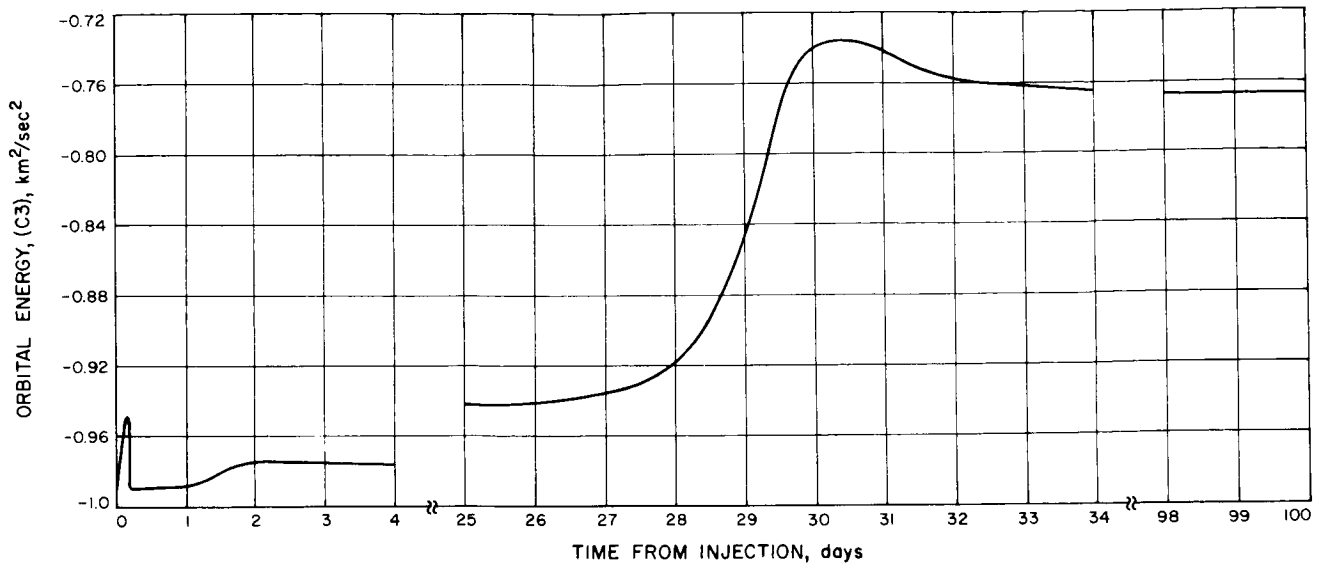


Fig. 8. Orbital energy

III. ANALYSIS OF DSIF TRANSPONDER TRACKING DATA

A. Introduction

The purpose of this section is to present the techniques used to determine the best estimate of the *A/C-6* spacecraft flight path, and other significant results obtained from the DSIF tracking data. Not only was it possible to determine the spacecraft flight path to a high degree of accuracy, but, in addition, confirmation of the mass of the Earth was obtained.

The Orbit Determination Program (ODP) of the Jet Propulsion Laboratory (JPL) (Ref. 3) is the principal analysis tool. This program utilizes an iterative, modified-least-squares technique to find the initial conditions at injection epoch which causes the weighted sum of squares of the residuals (observed minus computed) to be minimized. The term "modified" is used to indicate that the weighting of individual data types is accomplished in a different manner than in the usual least-squares method.

The initial real-time estimate of the *A/C-6* spacecraft orbital elements, ignition conditions, and initial DSIF acquisition information were provided by AFETR. These elements were obtained from tracking the *Centaur* vehicle C-band transponder during the period from injection into lunar transfer orbit to *Centaur* spacecraft separation by the AFETR tracking stations. AFETR tracking data were not used for the flight path determination results presented in this section; however, Appendix E is included to show the residuals of the AFETR data compared to the DSIF orbit. A complete discussion of the AFETR data may be found in Section V.

B. Summary of Data Used in Orbit Determination

The DSIF tracking stations provided continuous tracking data from shortly after transfer orbit injection until loss of signal. Figure 9 summarizes the tracking station view periods and their data coverage for the entire mission. Figures 10, 11 and 12 are tracking station stereographic projections which show the trace of the spacecraft trajectory for the view periods shown in Fig. 9. A more complete sequence of tracking events and ground station tracking modes may be found in Section VI.

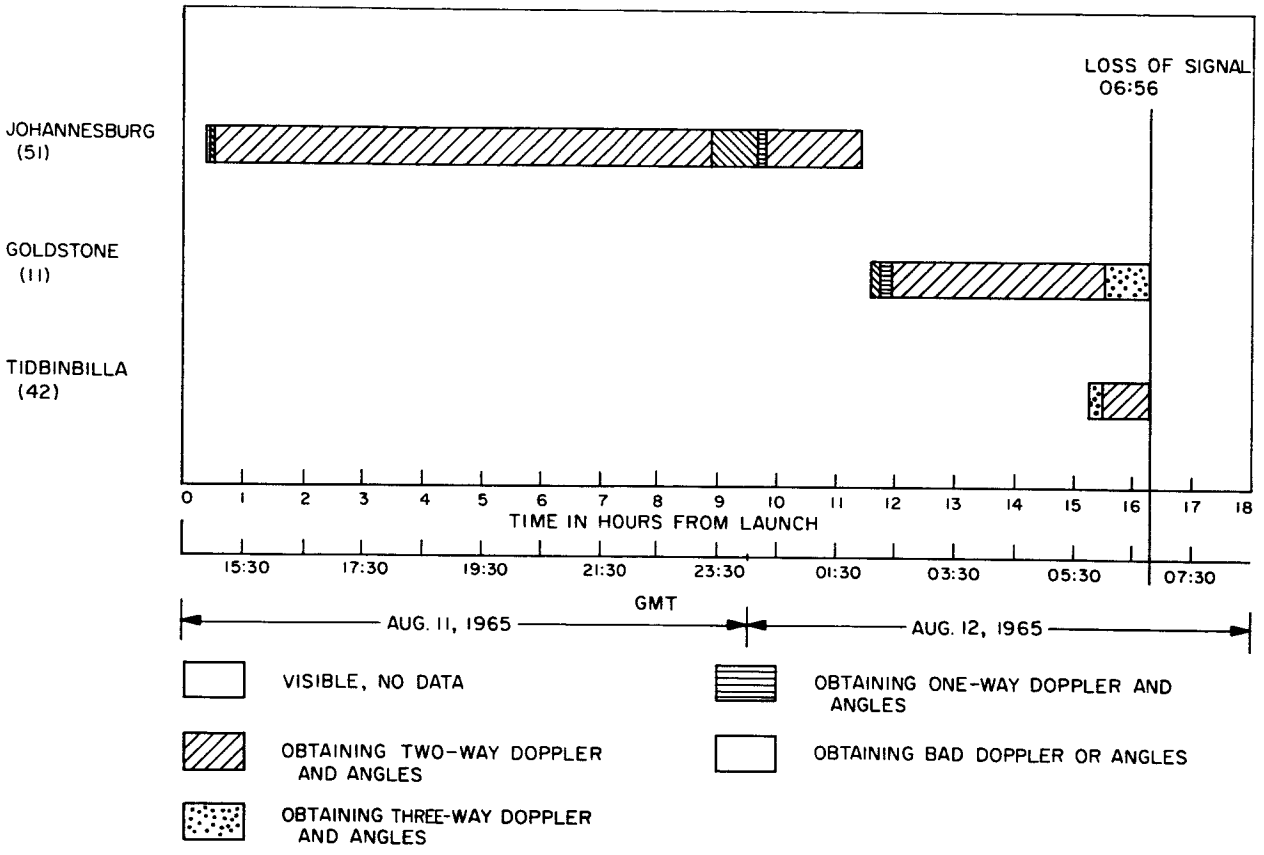


Fig. 9. *Atlas-Centaur VI* tracking station view periods and data coverage

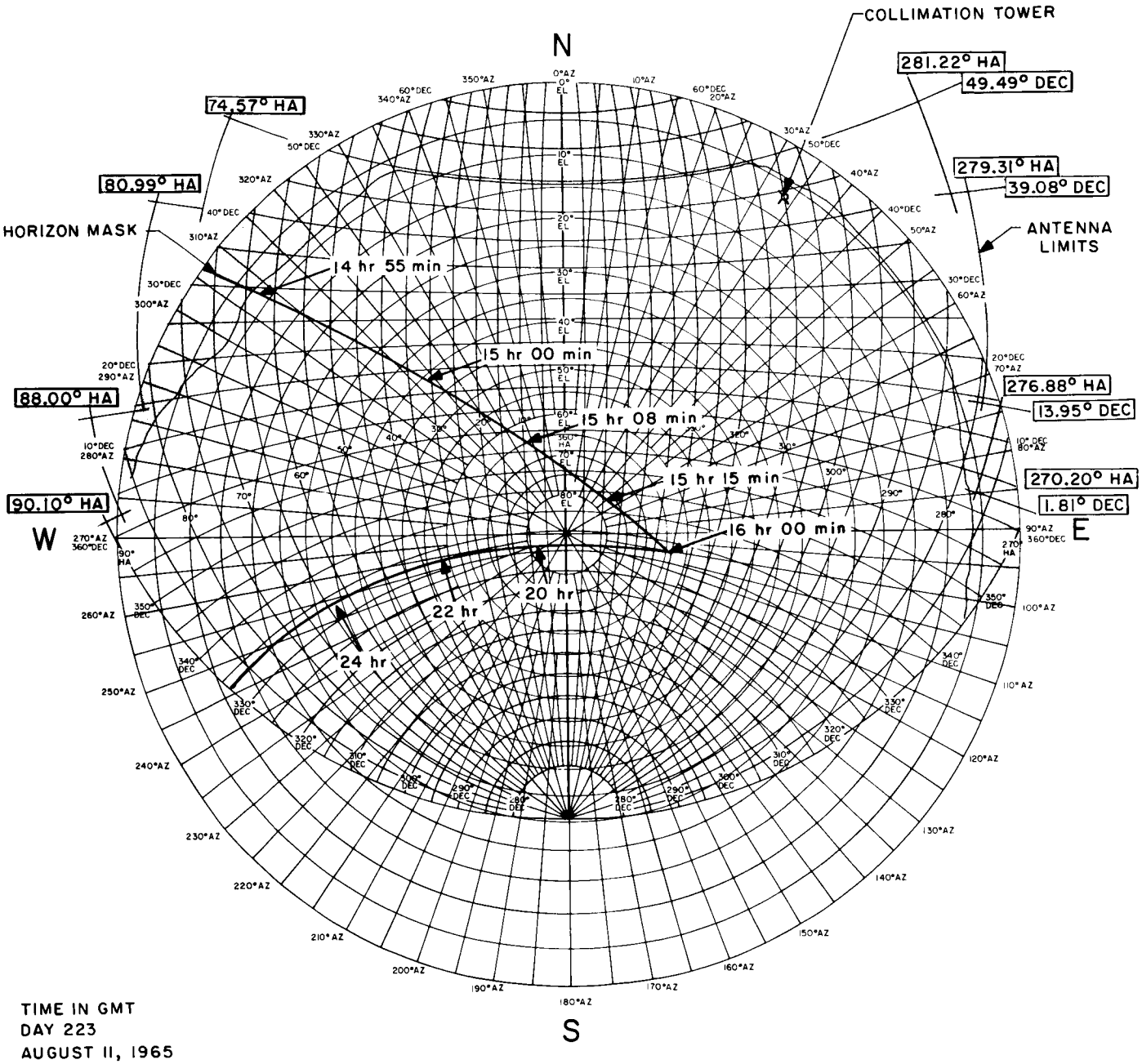


Fig. 10. Station 51 trajectory trace

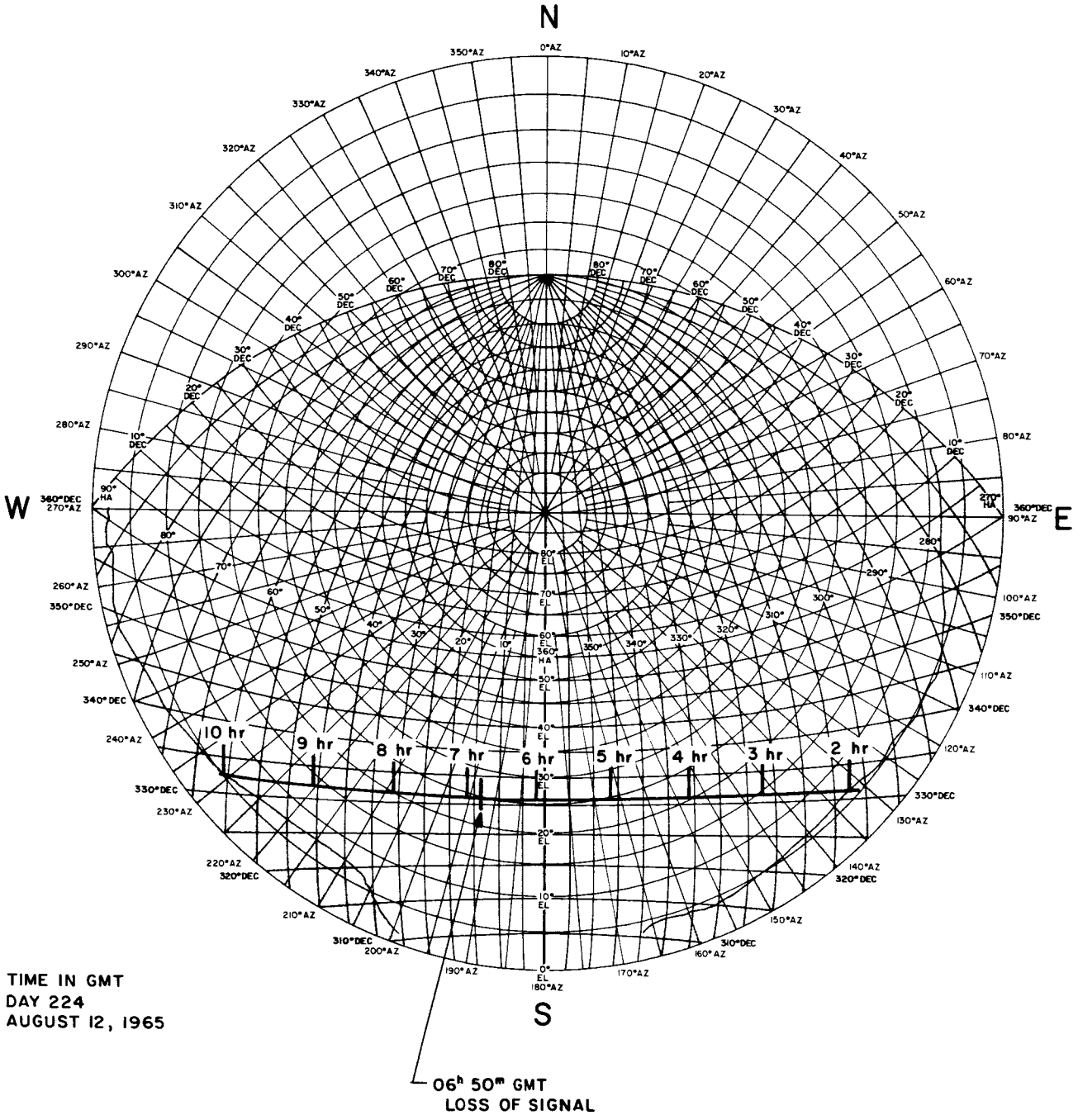


Fig. 11. Station 11 trajectory trace

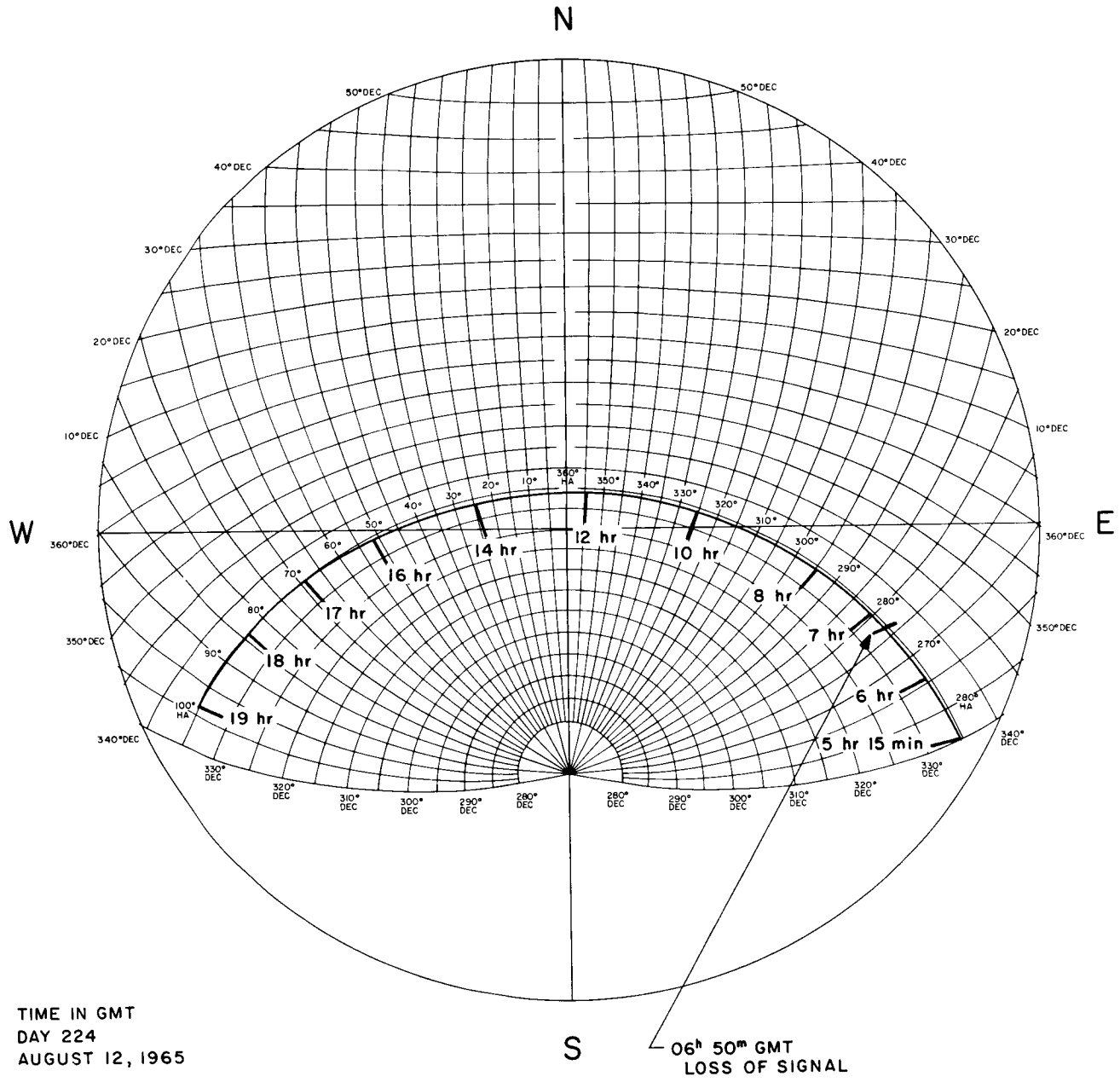


Fig. 12. Station 42 trajectory trace

Table 2 summarizes the tracking data used for both the inflight and post-flight orbital calculations and analyses. This table provides a general picture of the performance of the data recording and handling systems. The JPL Tracking Data Processor (TDP) and the Orbit Data Generator (ODG) computer programs (Ref. 4) are used to edit all incoming tracking data, and to prepare a data tape for input to the ODP. The total number of data points received are shown in column 3, and the number of points rejected by the editing program are shown in columns 5, 6 and 7. The points in column 6 are the result of applying a doppler differencing test to detect gross errors. Hence, whenever a bad point is found, the following point will automatically fail the difference test and be rejected. It should be noted that during flight operations, no attempt is made to reconstruct data points which were rejected for bad format. A data point is given a bad data condition code when

Table 2. Summary of data used in orbit determination

Data type	Station number	Start of data (GMT) (1)	End of data (GMT) (2)	Points received (3)	Number of points used in real time (4)	Bad format (5)	Points lost due to adjacent point (6)	Bad data condition code (7)	Blunder points (8)	Rejection limits on blunder points (9)	Comments
	51										
One-way doppler (C1)		14 56 21	15 02 11	81	0	2	—	36	—	—	
Three-way doppler (C3)		—	—	0	—	—	—	—	—	—	
Two-way doppler (CC3)		15 02 21	01 55 02	500/10 s 530/1 m	792	43	102	40	34	1 cps	10 sec from 15 02 21 to 15 33 41 1 min from 15 33 41 to 16 13 41 10 sec from 16 13 41 to 17 05 41 1 min from 17 05 41 to 01 55 02
Hour angle (HA)		14 56 21	01 55 02	1111	499	44	—	16	106	0.06	
Declination (Dec)		14 56 21	01 55 02	1111	499	44	—	16	106	0.06	
	11										
One-way doppler (C1)		02 11 02	02 27 02	18	0	—	—	7	—	—	
Three-way doppler (C3)		06 03 02	06 50 02	48	0	0	—	3	0	—	
Two-way doppler (CC3)		02 28 02	05 58 02	212	133	2	8	1	0	—	69 points lost in data handling system 02 50 02 to 03 59 02
Hour angle (HA)		02 11 02	06 54 02	282	0	3	—	21	0	—	
Declination (Dec)		02 11 02	06 54 02	283	0	3	—	21	0	—	
	42										
Three-way doppler (C3)		05 45 02	06 02 02	18	0	0	—	—	1	100 cps	
Two-way doppler (CC3)		06 03 02	06 50 02	48	42	1	4	2	0	—	
Hour angle (HA)		05 48 02	06 50 02	64	0	0	—	4	0	—	
Declination (Dec)		05 48 02	06 50 02	64	0	2	—	4	0	—	

automatic detectors, at the tracking stations, sense that the data would be unusable. These detectors have manual overrides which are used whenever an equipment malfunction is suspected, and during periods when the transmitter is being retuned prior to sending commands to the spacecraft or transferring transmitting assignment to another station. The reason for the excessive number of points shown in column 7 for the first pass for Station 51 is given in Section V. Otherwise, the number of rejected points shown in columns 5, 6 and 7 appear reasonable.

The blunder points shown in column 8 result from applying the rejection limits seen in column 9. These limits are based on experience gained in previous missions, and on the philosophy that it is better to immediately reject questionable points, which could create difficulties in converging to an orbit, than to attempt to salvage every point. This is particularly true when very few data are available during the early phase of the mission.

C. Data Weighting and Error Sources

In the modified-least-squares method used in the ODP, the weighting values for the individual data points are determined by the expected (or measured) "effective variances."[1] The weighting scheme used in the program was developed by T. W. Hamilton[2] and considers all known error sources to determine the "effective variance." Error sources associated with the data are divided into two types, viz., those associated with (1) two-way and three-way doppler, and (2) hour angle (HA) and declination (Dec).

The error sources for two-way and three-way doppler are:

1. Trajectory computation errors due to rounding errors in the Cowell integration (Ref. 7).
2. Doppler counter rounding errors due to "start" and "stop" gate pulses not occurring at times such that an integral number of cycles has passes, or by variations between "start" and "stop" pulses.
3. Ground station transmitter reference frequency errors either in absolute frequency or reference oscillator frequency drift. The reference frequency is controlled by a temperature stabilized, voltage controlled oscillator (VCO) or a frequency synthesizer (SYNTHESIZER) driven by a rubidium frequency standard. The drift rate is 1 part in 10^8/15 min for the VCO, and less than 3 parts in 10^{11}/hr for the rubidium standard.
4. Doppler counter error due to dropped or added cycles in the presence of a low signal-to-noise ratio.
5. Refraction correction errors due to the difference between the atmospheric model in the ODP and the actual atmosphere at a given time.
6. Spacecraft antenna motion caused by spacecraft tumbling or stabilization motion.

The error sources associated with angular data (HA and Dec) are:

1. Angle jitter or variation about the aiming point caused by the antenna drive servomechanisms.
2. Angle correction errors caused by differences between the empirical correction model, which is based on the antenna optical axis, and the RF pointing axis.
3. Angular encoder readout errors caused by inaccuracies in compensation cams. Resolution is plus or minus one count which corresponds to 0.002 deg.
4. Refraction correction errors due to the difference between the atmospheric model used in the ODP and the actual atmosphere at a given time.

The manner in which the error sources enter into the weighting scheme may be seen in the following expression which is used to compute the effective variance σ^2 for weighting a given data point:

$$\sigma^2 \triangleq \sum_{i=1}^{6} s_i^2 g_i^2 \max\left(1, \frac{T_{\text{correlation}}}{T_{\text{sample}}}\right)$$

[1]This approach was first used at JPL by A. R. M. Noton in "Effect of Correlated Data in Orbit Determination From Radio Tracking Data," August 1959 (internal communication). Further discussion was given by A. R. M. Noton, E. Cutting, and F. Barnes (Ref. 5). T. A. Magness and J. B. McGuire have developed mathematical expressions to contrast the performance of least-squares, modified-least-squares, and minimum covariance estimators in terms of the eigenvalues and eigenvectors of the data noise covariance matrix (Ref. 6).

[2]T. W. Hamilton, "*A-priori* Weighting Coefficients," April 12, 1962 (internal communication).

where

i = basic error source

$s_i^2 \triangleq$ variance of the basic error source

$g_i \triangleq$ sensitivity coefficient

$T_{correlation} \triangleq$ "correlation width," in sec, of the basic error source

$T_{sample} \triangleq$ sample spacing, in sec

Table 3 shows the functional form of the sensitivity coefficients associated with HA, Dec, and two- and three-way doppler. T_{sample} is obtained directly from the

Table 3. Sensitivity coefficients g_i for HA, Dec, two-way doppler, and three-way doppler

Error source	Sensitivity coefficient			
	Hour angle (HA)	Declination (Dec)	Two-way doppler	Three-way doppler
1	1/cos (Dec)	1	1	1
2	1	1	$1/T_c$	$1/T_c$
3	1	1	ρ/c	1
4	Δr (HA)	Δr (Dec)	$1/\sqrt{3T_c}$	$1\sqrt{3T_c}$
5	—	—	$\Delta r\dot{\rho}$	$(\Delta r\dot{\rho}_T + \Delta r\dot{\rho}_r)/2$
6	—	—	1	1

$$\Delta r\,(\mathrm{HA}) = \frac{\cos\phi \sin^2(\mathrm{HA})}{\cos^2\gamma \sin\sigma}\,(\Delta r\,\gamma)$$

$$\Delta r\,(\mathrm{Dec}) = \frac{\cos\gamma \sin\phi - \sin\gamma \cos\phi \cos\sigma}{\cos(\mathrm{Dec})}\,(\Delta r\,\gamma)$$

ϕ = geocentric latitude of tracking station

γ = elevation angle

σ = azimuth angle

$\Delta r\gamma$ = refraction correction for elevation angle

$= 57.2957795\, n\, b_1\, b_2/340.0$, for $\gamma < 0.3$ rad

$= 57.2957795\, n \times 10^{-6} \cot\gamma$, for $\gamma \geq 0.3$ rad

n = index of refraction, nominally 340.0

$b_1 = 1.0 - (1.216 \times 10^5\, b_3\, \gamma) - (51.0 - 300.0\,\gamma)\sqrt{b_3}$

$b_2 = [7.0 \times 10^{-4}/(0.0589 + \gamma)] - 1.26 \times 10^{-3}$

$b_3 = 1/10^3\,(r - RE)$

r = geocentric radius to spacecraft

RE = Earth's radius

$\Delta r\dot{\rho} = 0.0018958\,\left|(\sin A + 0.06483)^{-1.4} - (\sin B + 0.06483)^{-1.4}\right| n/340.0$

$A = \gamma + T_c\,\dot{\gamma}/2$

$B = \gamma - T_c\,\dot{\gamma}/2$

T_c = doppler count interval, sec

ρ = range from station to spacecraft

sample time indicated in the tracking data. The numerical values used for $T_{correlation}$ and s_i^2 are based on a prior knowledge of the individual tracking stations gained from previous missions and on error models for the various error sources. Table 4 presents values of g_i, s_i^2, $T_{correlation}$, and the resulting contribution to the total weight from each basic error source computed at two different times along the trajectory. The individual data weights for the entire trajectory for a given orbital calculation may be seen in the tracking data residual listings in Appendix E.

Spacecraft tumbling was considered to be the major error source contributing to the total weight. Figure 13 presents a dramatic example of doppler sensitivity to spacecraft motion. The doppler residuals were observed at Station 51 during the early part of the mission when it was taking 10-sec doppler data. Figure 14 shows how the doppler would look without the tumbling and also provides a comparison of the difference in the noise levels between the two.

The analysis of the tumbling is done by considering the noise to be an additional velocity in the form

$$\Delta \rho = \omega l \cos \omega t$$

where

$l = 2.5$ (distance from c.g. to antenna in meters)

$\omega = \frac{2\pi}{T}$ (rotation rate of spacecraft in rad/sec)

$T = 200$ (period of tumbling in sec)

Then by assuming a zero mean and by taking the root mean square (rms) we have

$$s_i = \frac{\omega l}{\sqrt{2}} \cdot \text{(meters/sec)}$$

Table 4. Contribution from individual error sources to total weight for *Atlas-Centaur VI* mission

Error source	L/S band doppler (range = 55,000 km)				S band doppler (range = 160,000 km)				Comments
	g_i^2	s_i^2	Correlation width, sec	σ_i^2, cps^2	g_i^2	s_i^2	Correlation width, sec	σ_i^2, cps^2	
(1) Computing error	1	0.84×10^{-5}	36,000	50.4×10^{-4}	1	6.9×10^{-5}	36,000	39.0×10^{-3}	
(2) Counter rounding error	2.78×10^{-4}	0.16	1	0.47×10^{-4}	2.78×10^{-4}	0.16	1	0.47×10^{-4}	
(3) Transmitter reference frequency error	0.034		600		0.284		600		
(4) Dropped or added cycles	5.56×10^{-3}	0.1	2.5	5.56×10^{-4}	5.56×10^{-3}	0.1	2.5	5.56×10^{-4}	
(5) Refraction correction error	1.11×10^{-6}	0.04	1,000	0.007×10^{-4}	1.11×10^{-6}	0.04	1,000	0.007×10^{-4}	
(6) Spacecraft motion	1	0.097	50	0.097	1	0.75	50	0.75	
Total $\sum_{i=1}^{6} \sigma_i^2 = 0.097$ $\sigma = 0.31$					$\sum_{i=1}^{6} \sigma_i^2 = 0.75$ $\sigma = 0.865$				

Table 4. (Cont'd)

Error source	Early angles (range = 55,000 km)				3-way doppler S band (range = 160,000 km)				
	g_i^2	s_i^2	Correlation width, sec	σ_i^2, deg^2	g_i^2	s_i^2	Correlation width, sec	σ_i^2, cps^2	Comments
(1) Angle jitter	Dec = 1 HA = 1.026	9.0×10^{-6}	1	Dec = 0.09×10^{-4} HA = 0.0924×10^{-4}	1	6.9×10^{-5}	36,000		(1) Computing error
(2) Angle correction error	1	1.0×10^{-4}	20,000	333.33×10^{-4}	2.78×10^{-4}	0.16	1	0.04×10^{-4}	(2) Computer rounding error
(3) Angle encoder error	1	1.44×10^{-6}	1	0.0144×10^{-4}	0.284		600		(3) Transmitter reference frequency error
(4) Refraction correction error	Dec = 1.26×10^{-4} HA = 2.48×10^{-4}	4.0×10^{-2}	1,000	Dec = 0.84×10^{-4} HA = 1.65×10^{-4}	5.56×10^{-3}	0.1	2.5	5.56×10^{-4}	(4) Dropped or added cycles
					1.11×10^{-6}	0.04	1,000	0.007×10^{-4}	(5) Refraction correction error
					1	0.75	50	0.75	(6) Spacecraft motion
Total	$\sum_{i=1}^{6} \sigma_i^2 = 334.27 \times 10^{-4}$ (Dec) $= 335.06 \times 10^{-4}$ (HA) $\sigma = 0.183$ (Dec) $= 0.183$ (HA)				$\sum_{i=1}^{6} \sigma_i^2 = 0.75$ $\sigma = 0.865$				

Note: sample rate = count time = 60 sec

$$\sigma = \left[\sum_{i=1}^{6} \sigma_i^2\right]^{1/2} = \left[\sum_{i=1}^{6} g_i^2 s_i^2 \max\left\{1, \frac{T_{\text{correlation}}}{T_{\text{sample}}}\right\}\right]^{1/2}$$

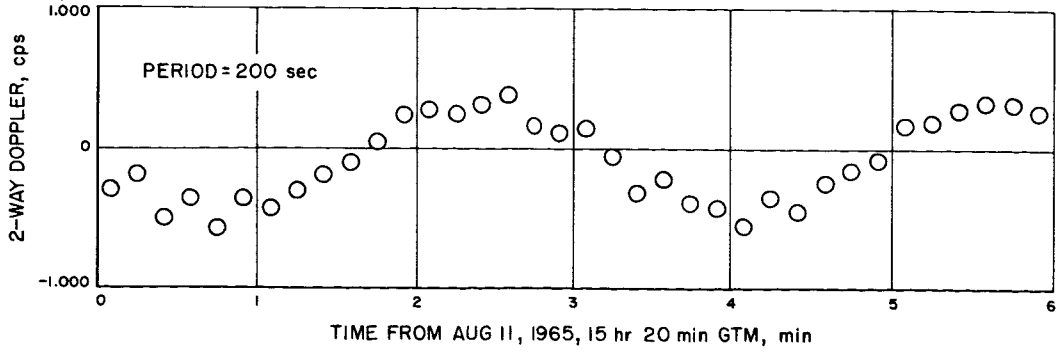


Fig. 13. Station 51 doppler variation due to spacecraft tumbling

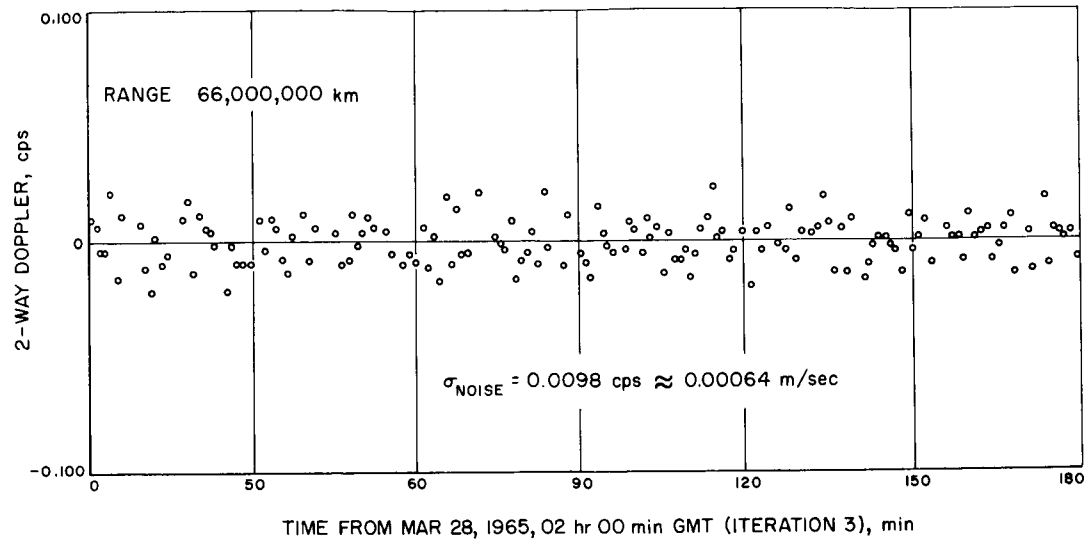


Fig. 14. Normal S-band data without tumbling

or in cps we have

$$s_i = \frac{\omega l \cdot}{\sqrt{2}} \left\{ \frac{L\text{-}s}{s} \text{ conversion from (meters/sec) to cps} \right\}$$

In order to complete the formula $g_i^2 s_i^2 \max\left\{1, \frac{T_{\text{correlation}}}{T_{\text{sample}}}\right\}$ we employ

$$T_{\text{correlation}} = \frac{T}{4}$$

In Table 3 it may be seen that the effect on the total weight for the doppler counter error sources (rounding and added or dropped cycles) may be minimized by using a long counting base. This is accomplished at the DSIF stations by taking continuous count doppler with a dual counter system. That is, one counter continuously counts cycles that have passed from some start time. When it receives a pulse to supply a doppler sample, it transfers its contents to another counter without interrupting its counting action. The contents of the second are then translated from binary-coded decimal (BCD) to decimal and punched on paper tape. Doppler refraction correction (error source 5) is not a predominant error source except possibly for the early part of a mission when the elevation angle rates are high.

For the angular data types (HA, Dec), the predominant error sources are angle correction errors and encoder errors. During *A/C-6*, correction errors of 0.06 deg and encoder errors of approximately 0.02 deg peak-to-peak were noted. Plots of these errors may be seen in Fig. 15 and 16 in which the residuals represent the error remaining after the angle corrections had been applied. Due to these large errors, angular data were not used in the orbit calculations except during the early phase of the mission. They were very helpful in obtaining the first orbital estimates. The contribution due to refraction correction errors was relatively small for local elevation angles greater than 17 deg. The effect of angle jitter errors on the total HA weight was determined by the declination angles seen during the mission. For *A/C-6*, declination angles ranged between 30 and 330 deg. Table 3 shows that this error source contributes very heavily to total HA weight for declination angles near 90 and 270 deg.

For both doppler and angular data, an additional error source exists, namely, the differences in absolute time between the station clocks. The effect of such biases on the estimate of the *A/C-6* flight path is considered small.

The sample spacing to be used at the tracking stations is determined by the tradeoff between doppler counter rounding errors and truncation errors occurring in the doppler frequency computations. However, when a sample time of 60 sec or greater is allowable, the policy has been to sample every 60 sec. This allows for better evaluation of station performance. The expression used in the ODP for these computations is

$$f(t_{ob}) = \frac{1}{\tau} \int_{T-1/2\tau}^{T+1/2\tau} F(T)dt$$

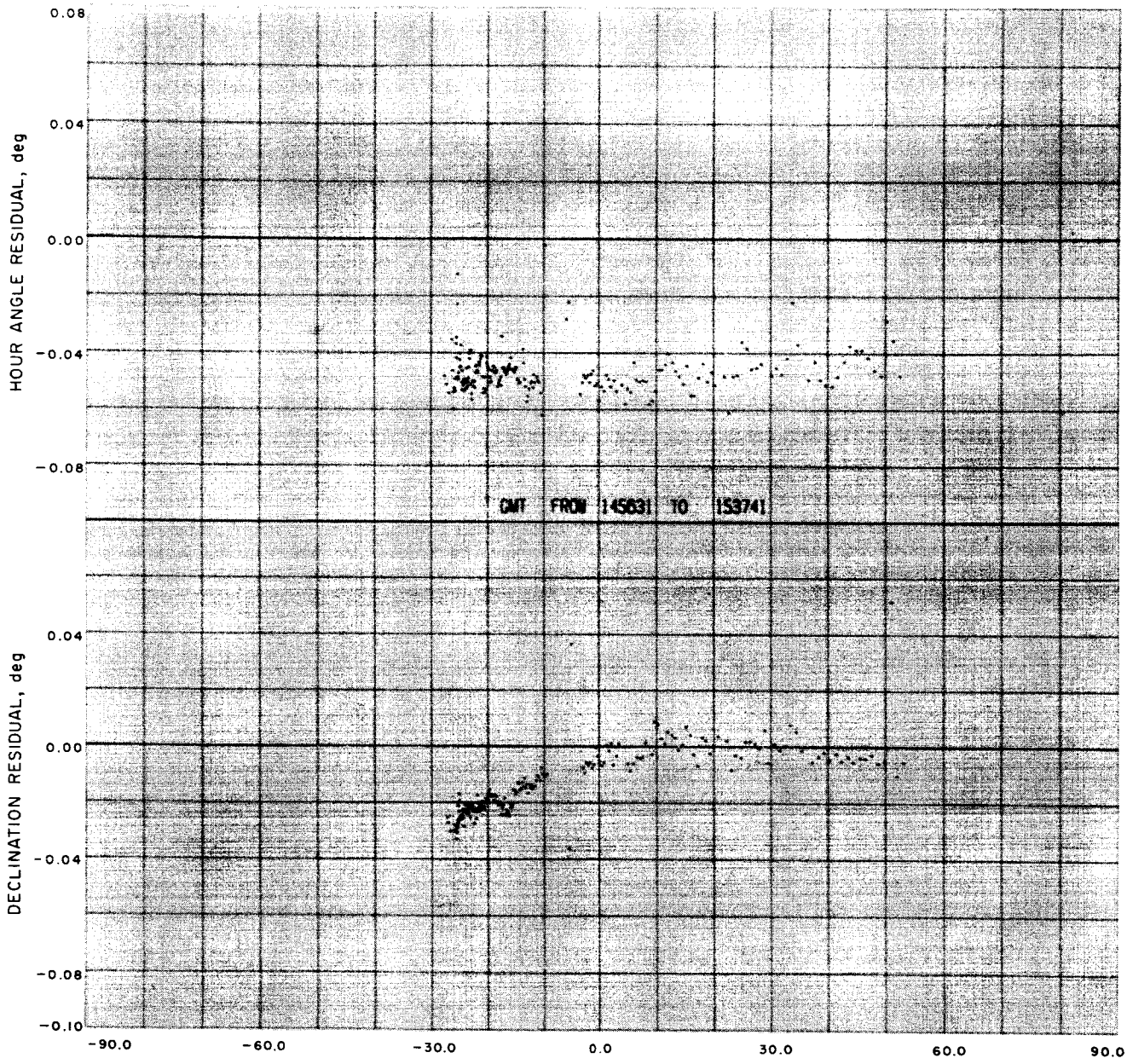


Fig. 15. Station 51 angular residuals vs hour angle

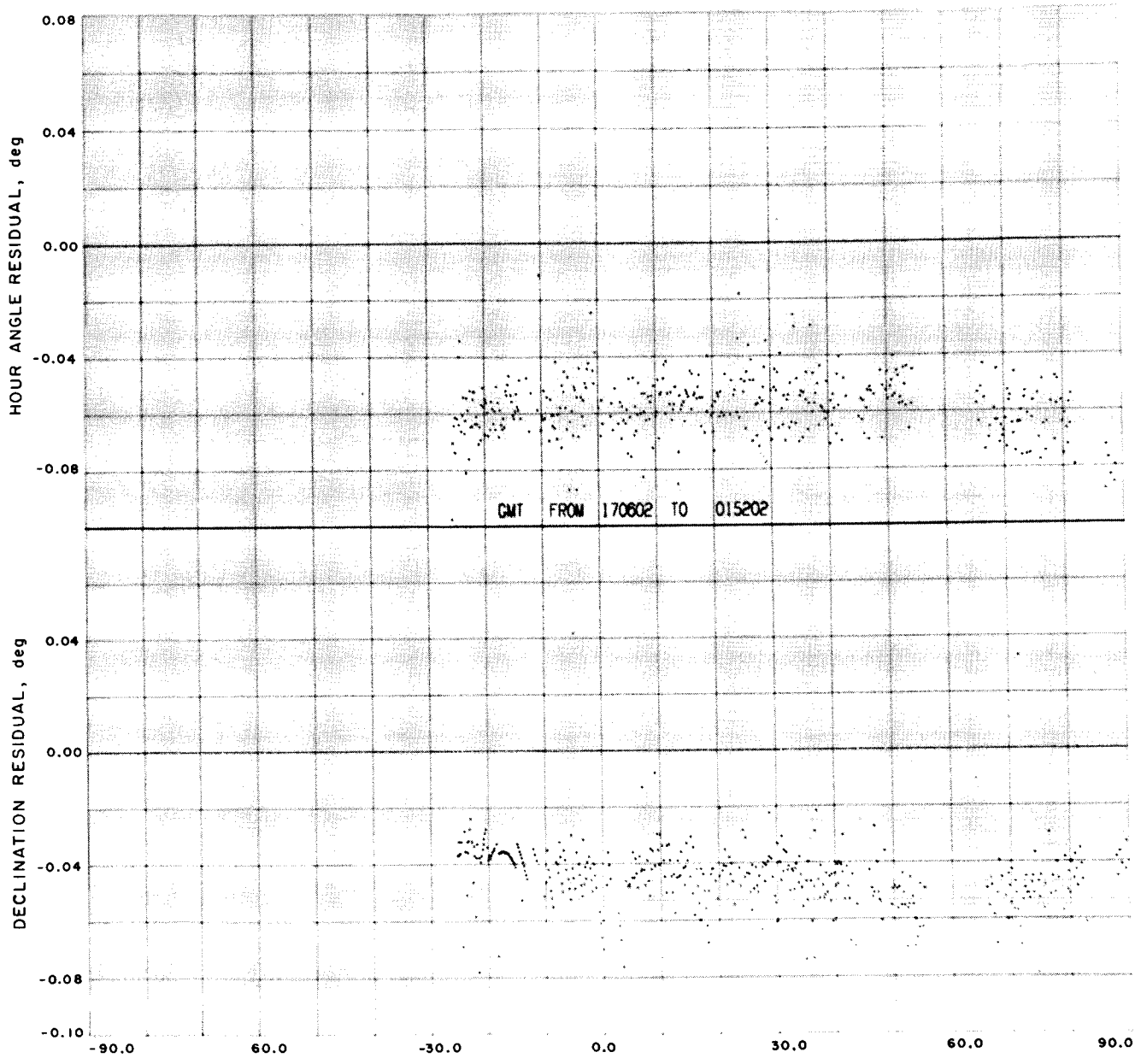


Fig. 16. Station 51 angular residuals vs hour angle (cont'd)

where

$f(t_{ob})$ = the averaged integrated doppler frequency, which should be observed by a station at time t_{ob}

$T = t_{ob} - 1/2\tau$

τ = sample spacing

$F(t)$ = the instantaneous frequency of the doppler shift which should have been observed at time t

This integral is evaluated by expanding a Taylor series about T and integrating term by term leading to

$$f(t_{ob}) = F(T) + \frac{\tau^2}{24}\ddot{F}(T) + 0(F^{iv})$$

Thus, the truncation error is a function of τ and the fourth derivative of the frequency (which is, in turn, dependent on the fifth derivative of range).* For this mission sample spacing had to be reduced during the near Earth phase of the flight. For this phase a sample spacing of 10 sec was used. At all other times, a sample spacing of 60 sec was used. It is believed that the total weight applied to angular and two-way doppler data is somewhat conservative, and that all error sources which contribute a measurable amount of the total weight have been taken into account.

*See Ref. 8 for detailed explanation and doppler equations.

D. Orbit Based on DSIF Tracking Only

Table 5 summarizes the data used for the post-flight analysis of the data, and presents the statistics pertaining to these data. It will be noted that only two-way doppler data were used in the orbit calculation. Angular data were not used because of biases due to the inadequacy of the angular correction model. These biases may be seen in Fig. 15 and 16, and the correction model errors will be explained more fully in Section V. The three-way doppler was not used because known clock rate biases (See Fig. 31, 32, and 33) exist, and at present the ODP cannot solve for them.

From Table 5 it may be seen that the noise level for Station 51 was approximately 0.226 cps, while for Stations 11 and 42 it varied between 0.467 and 0.425 cps. The high level of the noise is primarily due to the spacecraft tumbling. The difference in the noise levels between DSIF Station 51 and Stations 11 and 42 may be explained by the fact that Station 51 is an L/S station, while the other two are S-band stations. The spacecraft tumbling will be "magnified" more in the S-band doppler than in the L/S doppler since S-band doppler frequency is approximately 2½ times that for L/S. Residual plots for the data may be seen in Fig. 17 through 33. It should

Table 5. Statistics on DSIF data

Station	Number of 2-way doppler points	Standard deviation[a] (cps)	Mean (cps)	Remarks	
DSIF 51	792	.2260	−.0031	Above 17° elevation, L/S band data	10 and 60 sec sample rate
	4	.1470	.0241	Below 17° elevation, L/S band data	60 sec sample rate
DSIF 11	86	.4690	.0043	Below 17° elevation, S band data	60 sec sample rate
	114	.4610	−.0122	Above 17° elevation, S band data	
DSIF 42	29	.4330	.0119	Below 17° elevation, S band data	60 sec sample rate
	14	.4130	−.0217	Above 17° elevation, S band data	

[a]In the A/C-6 station configuration:
For L/S band frequency, 5.6 cps = 1 m/sec.
For S band frequency, 15.5 cps = 1 m/sec.

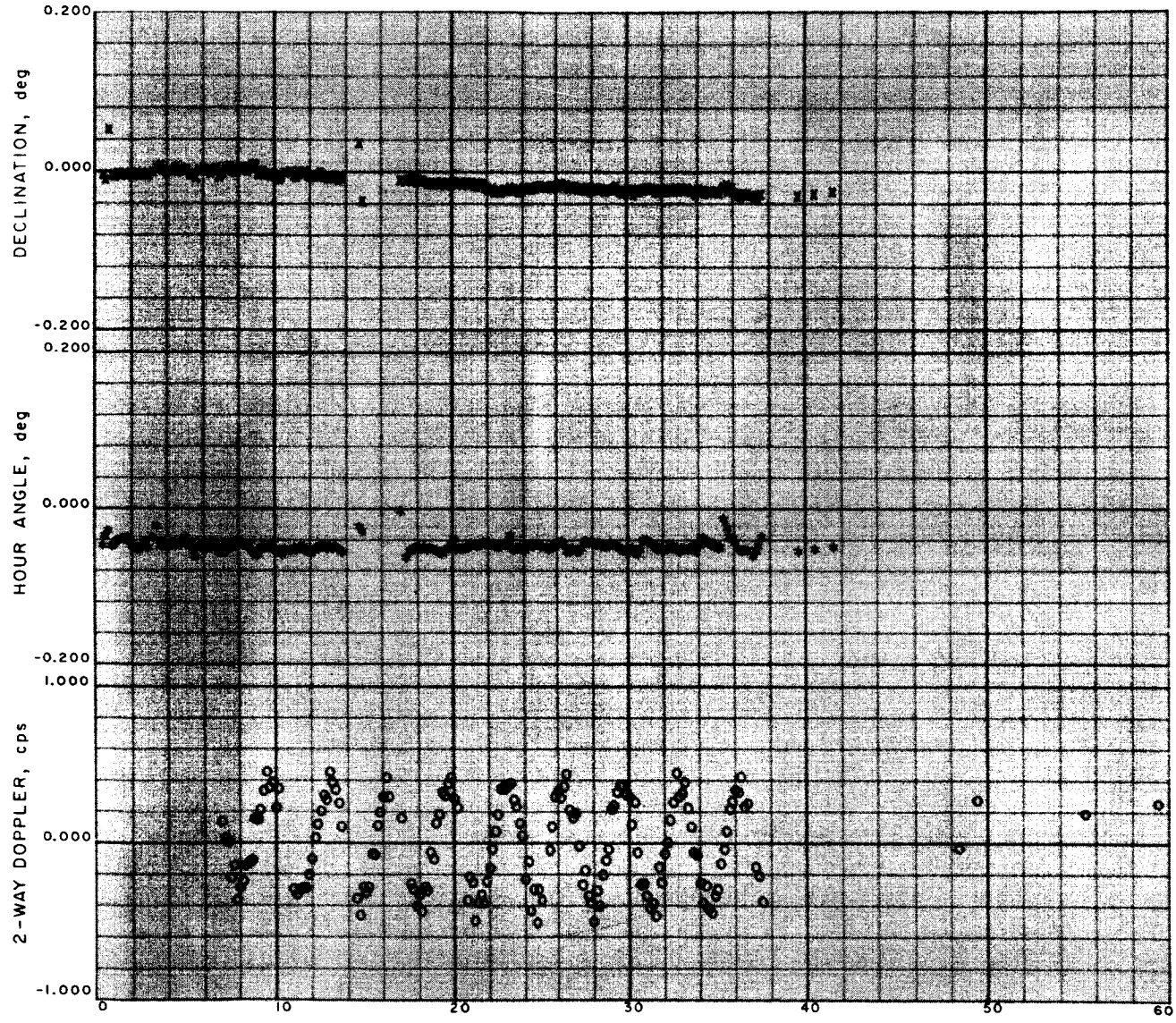


Fig. 17. Station 51 two-way doppler and angle residuals; start 14^{h}:56^{m} GMT

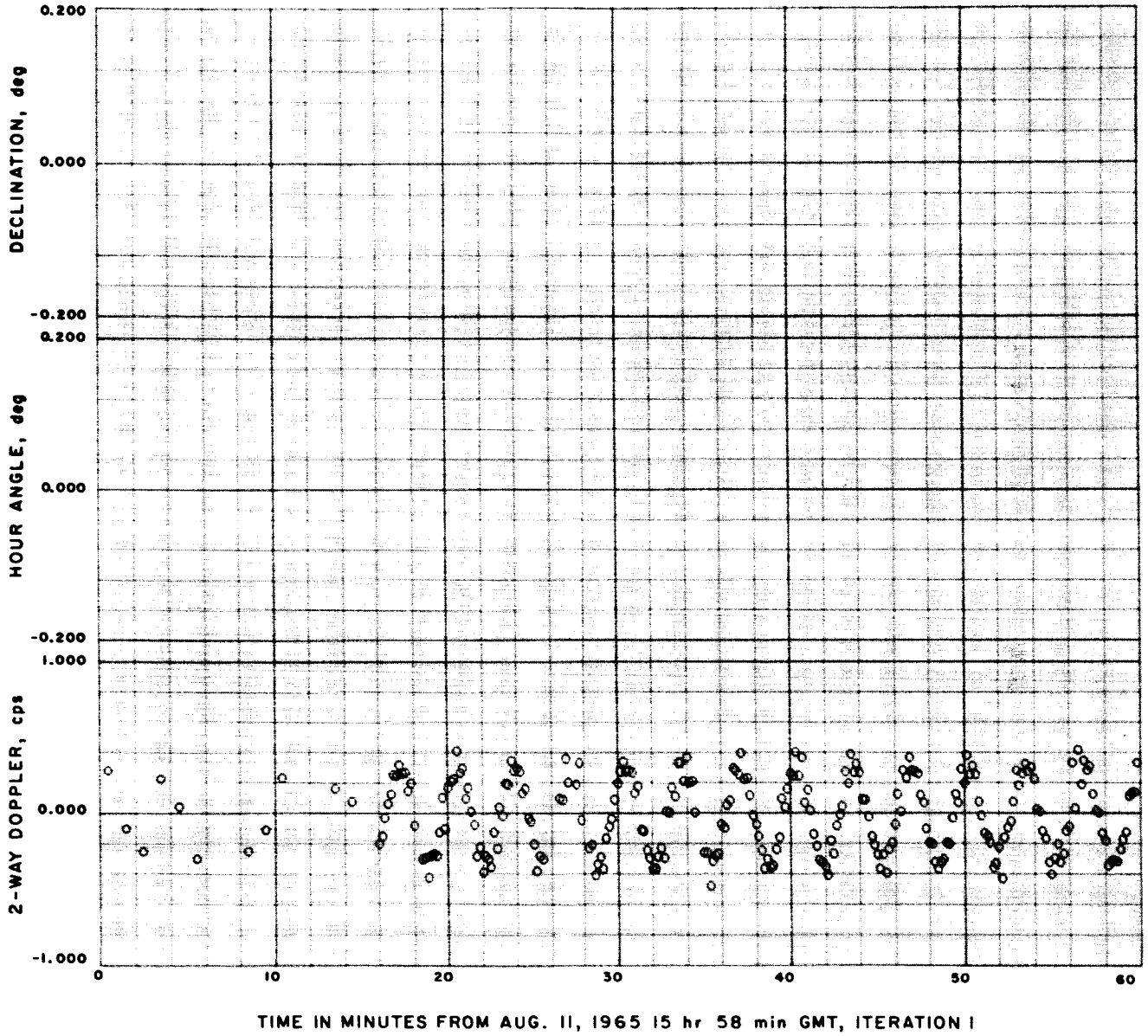


Fig. 18. Station 51 two-way doppler and angle residuals; start $15^h{:}58^m$ GMT

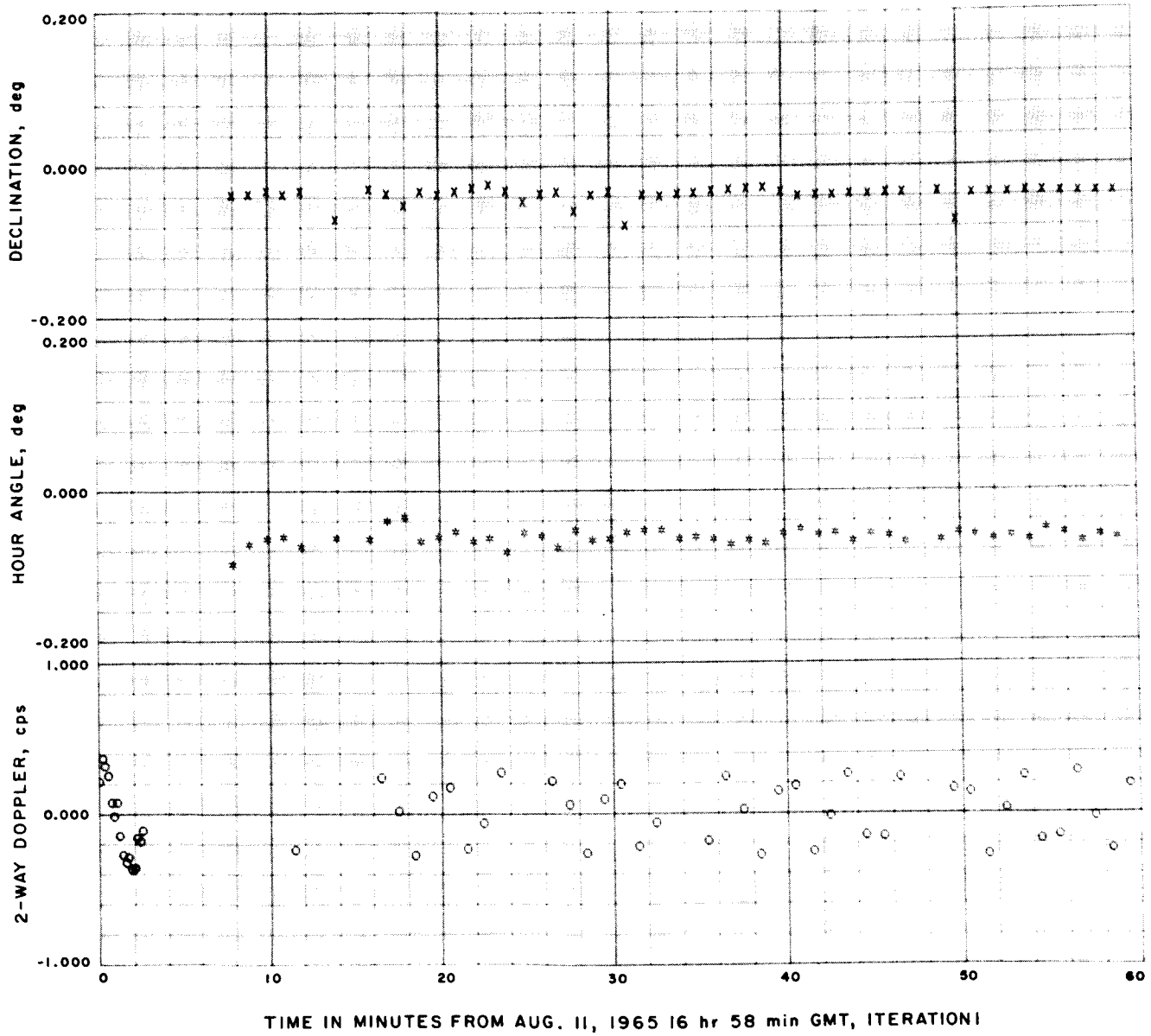


Fig. 19. Station 51 two-way doppler and angle residuals; start $16^{h}:58^{m}$ GMT

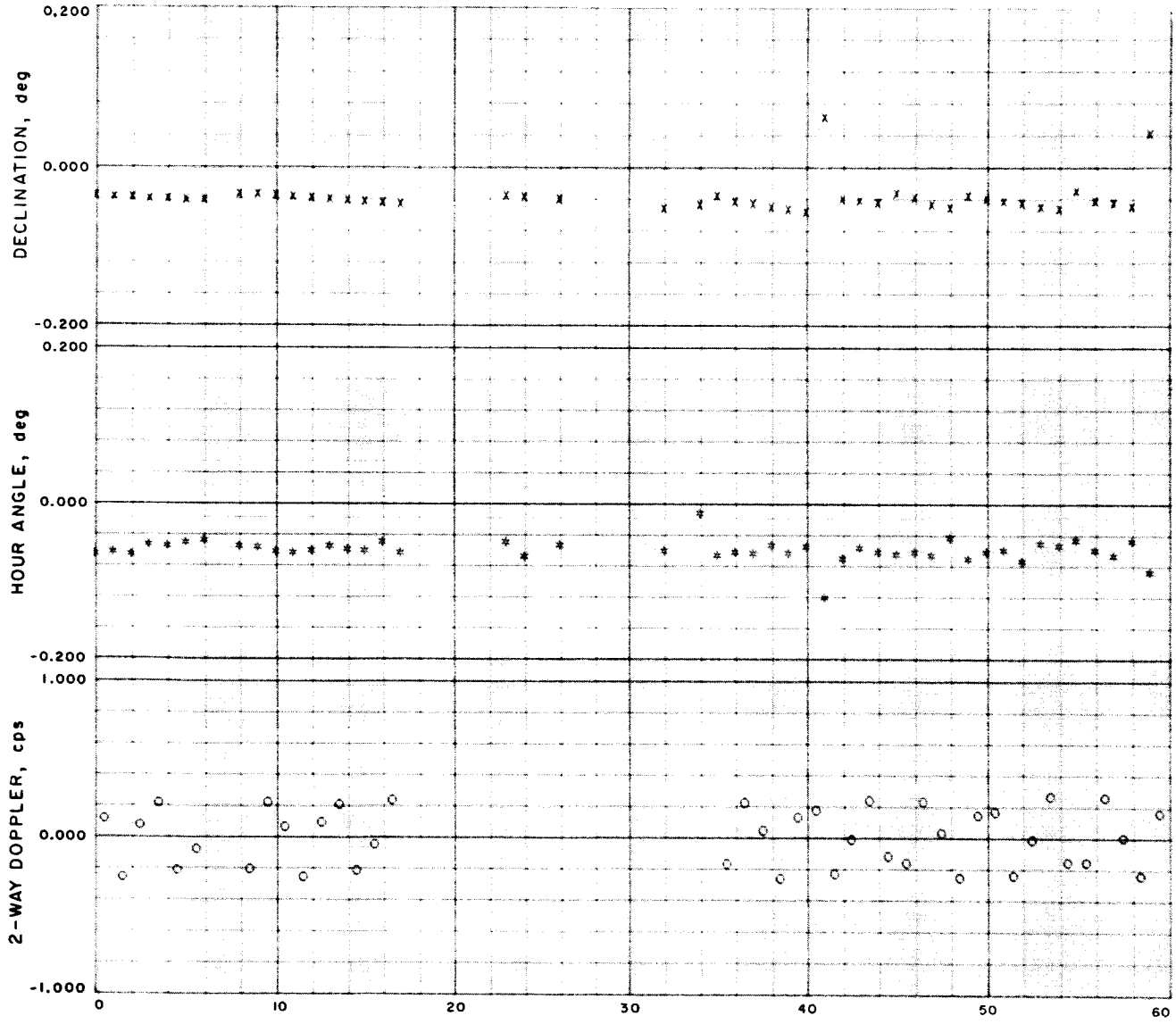


Fig. 20. Station 51 two-way doppler and angle residuals; start 17^{h}:58^{m} GMT

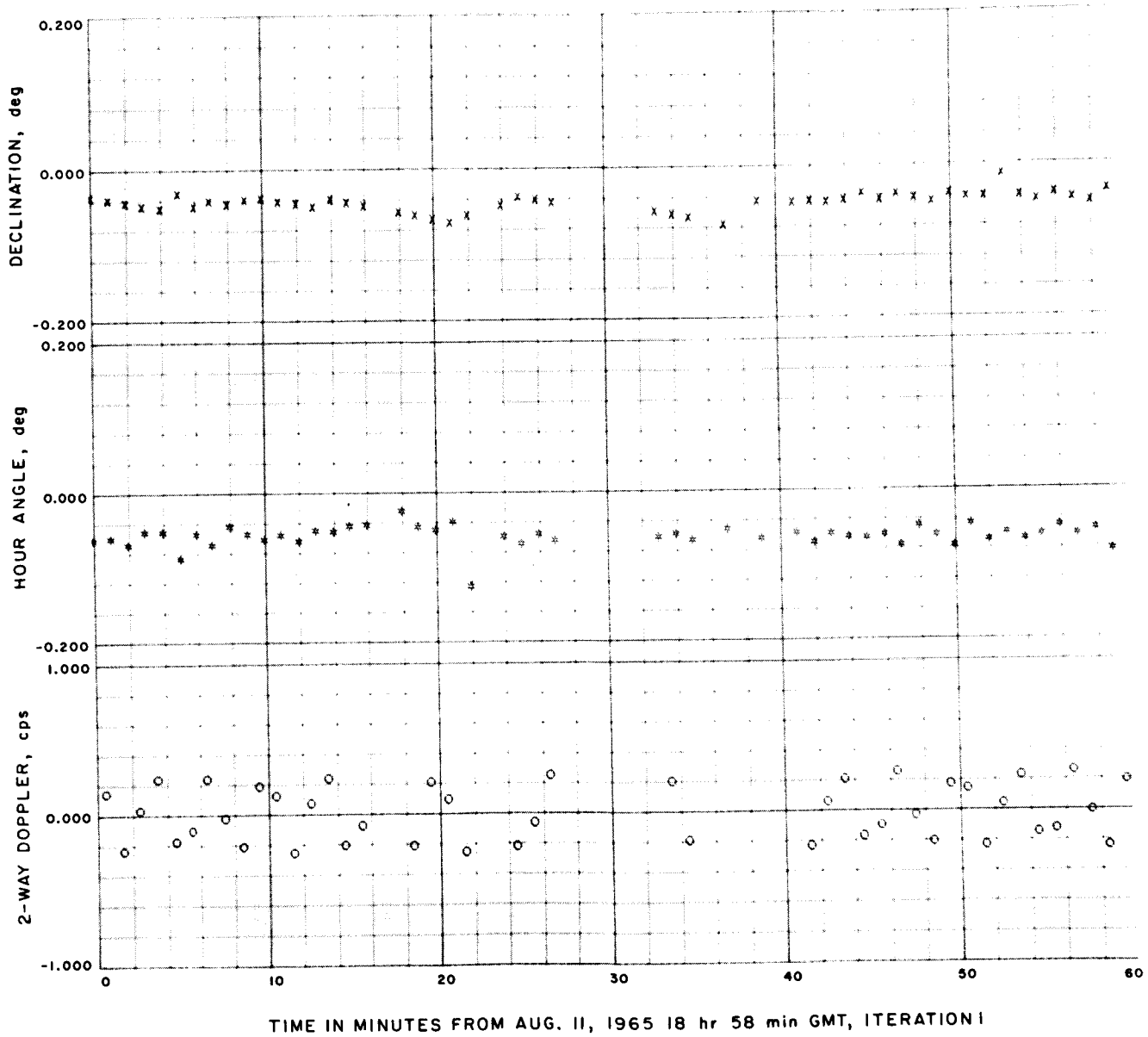


Fig. 21. Station 51 two-way doppler and angle residuals; start $18^h{:}58^m$ GMT

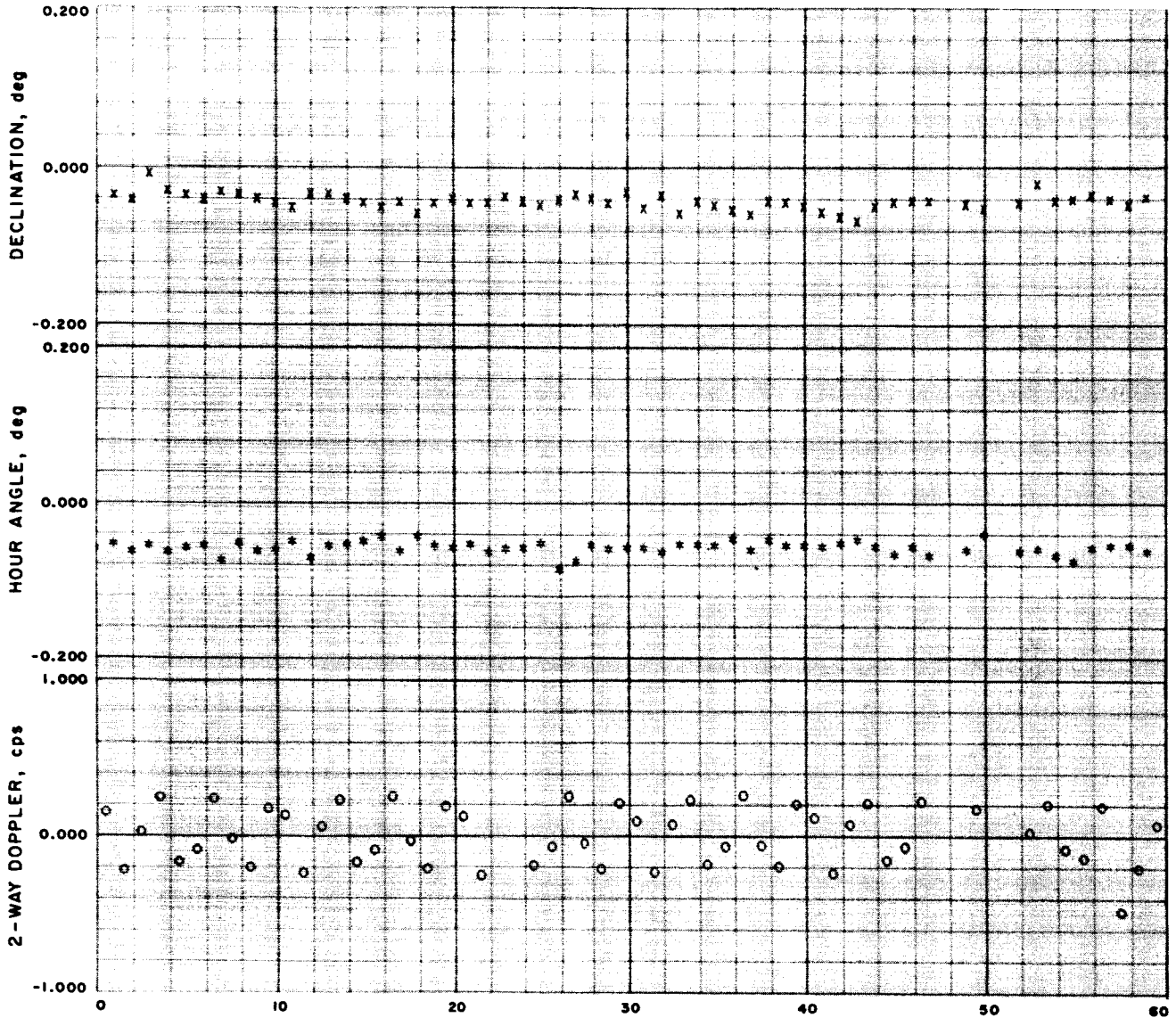


Fig. 22. Station 51 two-way doppler and angle residuals; start $19^{h}:58^{m}$ GMT

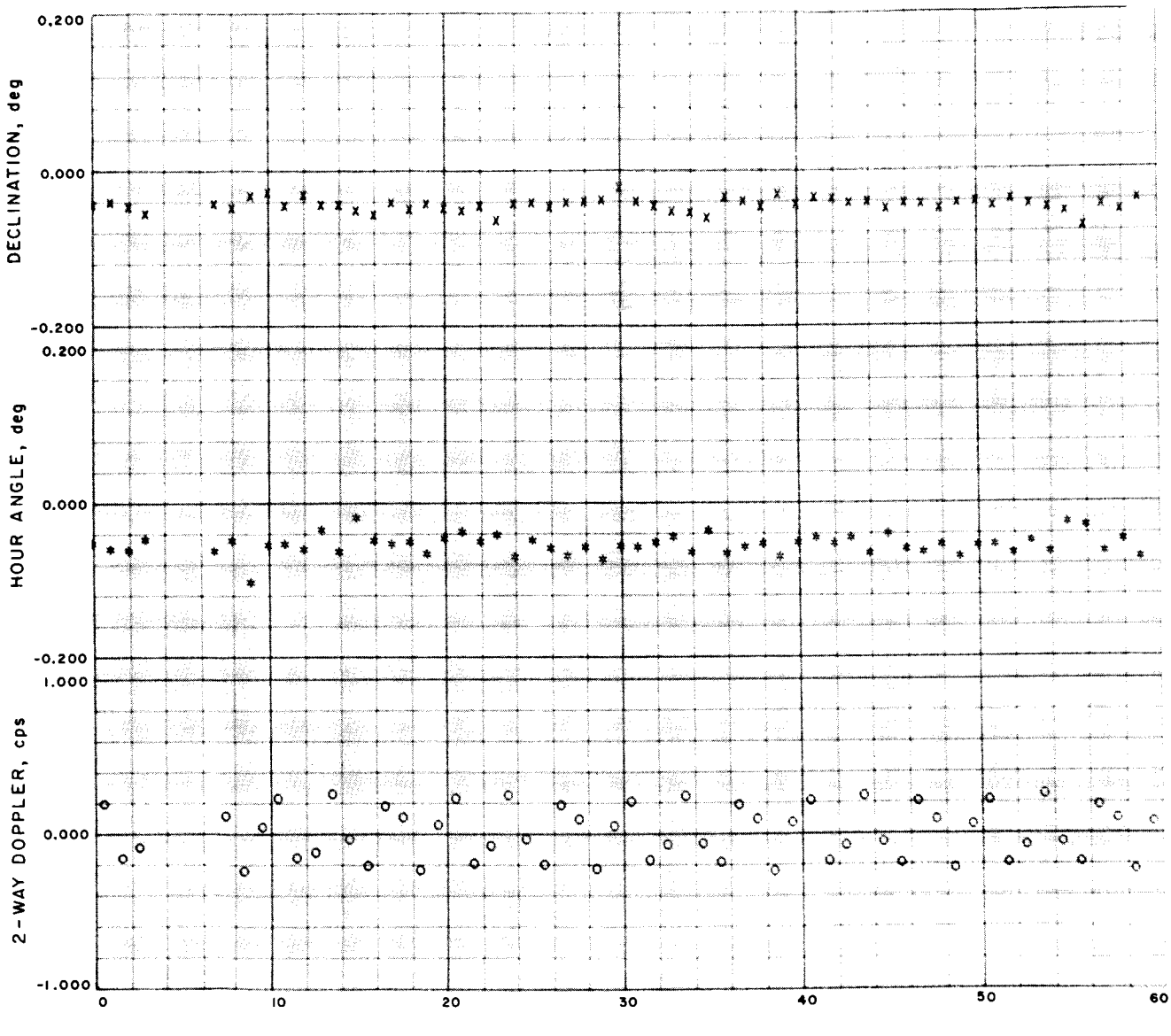


Fig. 23. Station 51 two-way doppler and angle residuals; start 20^{h}:58^{m} GMT

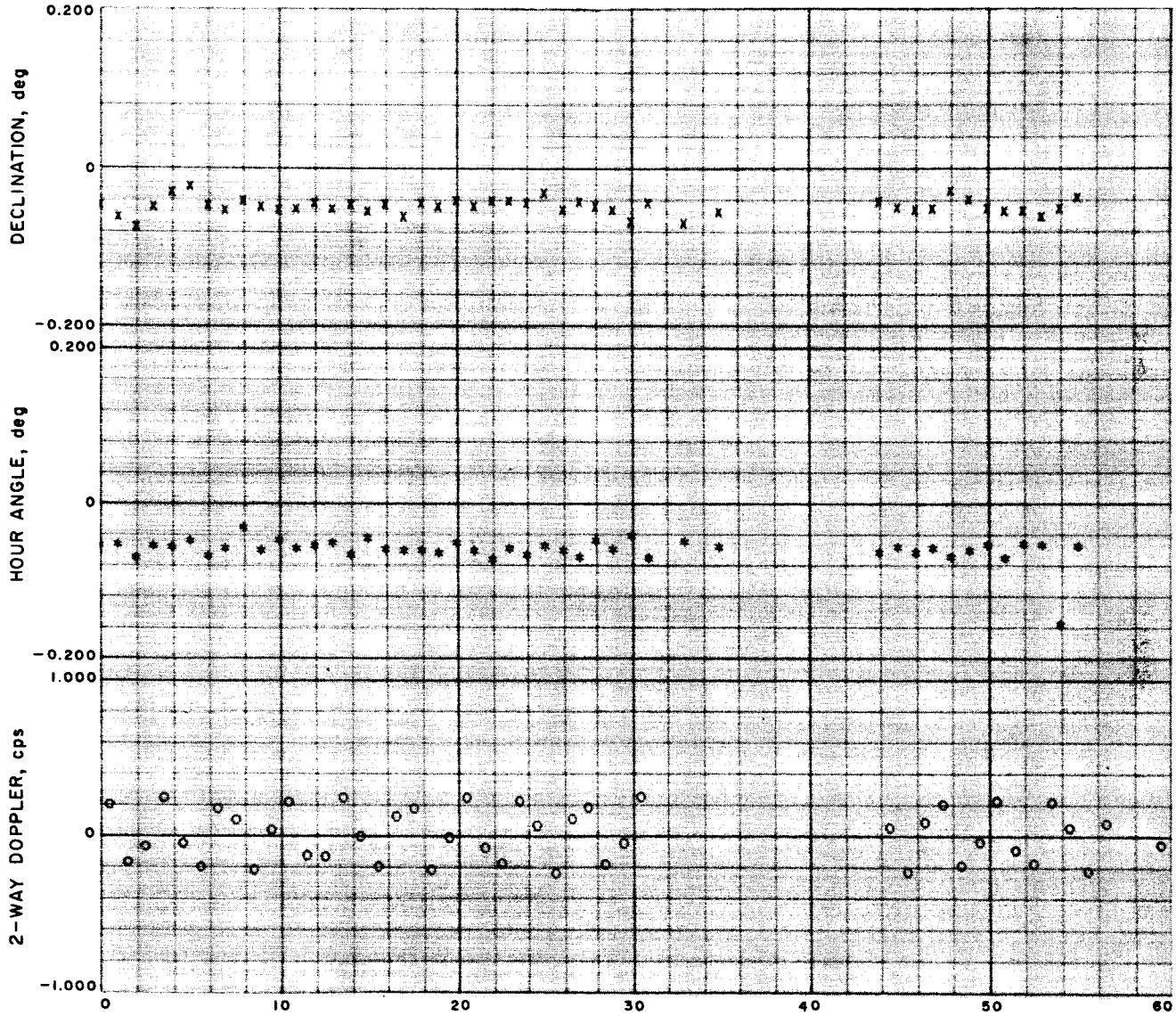


Fig. 24. Station 51 two-way doppler and angle residuals; start $21^{h}:58^{m}$ GMT

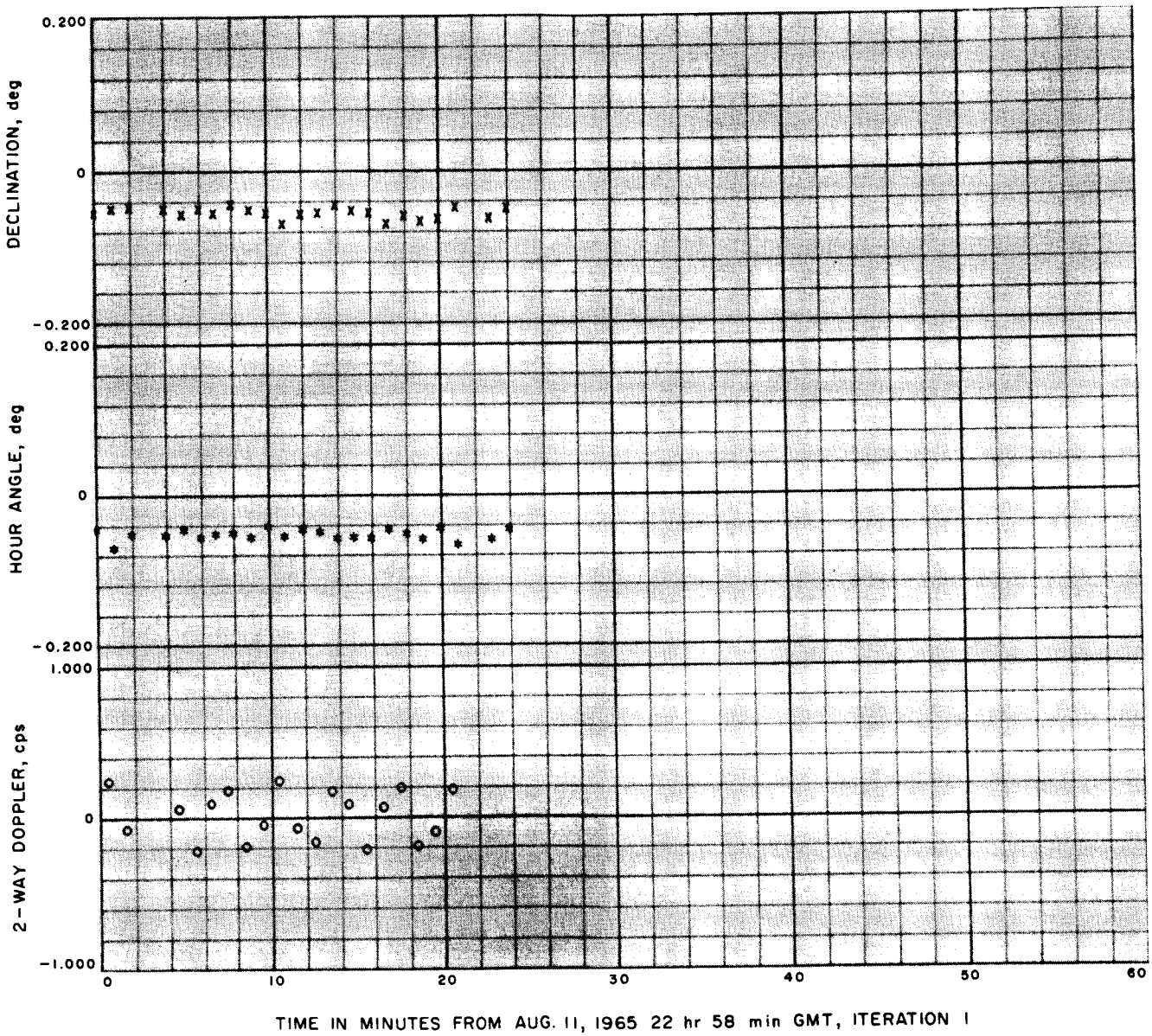


Fig. 25. Station 51 two-way doppler and angle residuals; start $22^h{:}58^m$ GMT

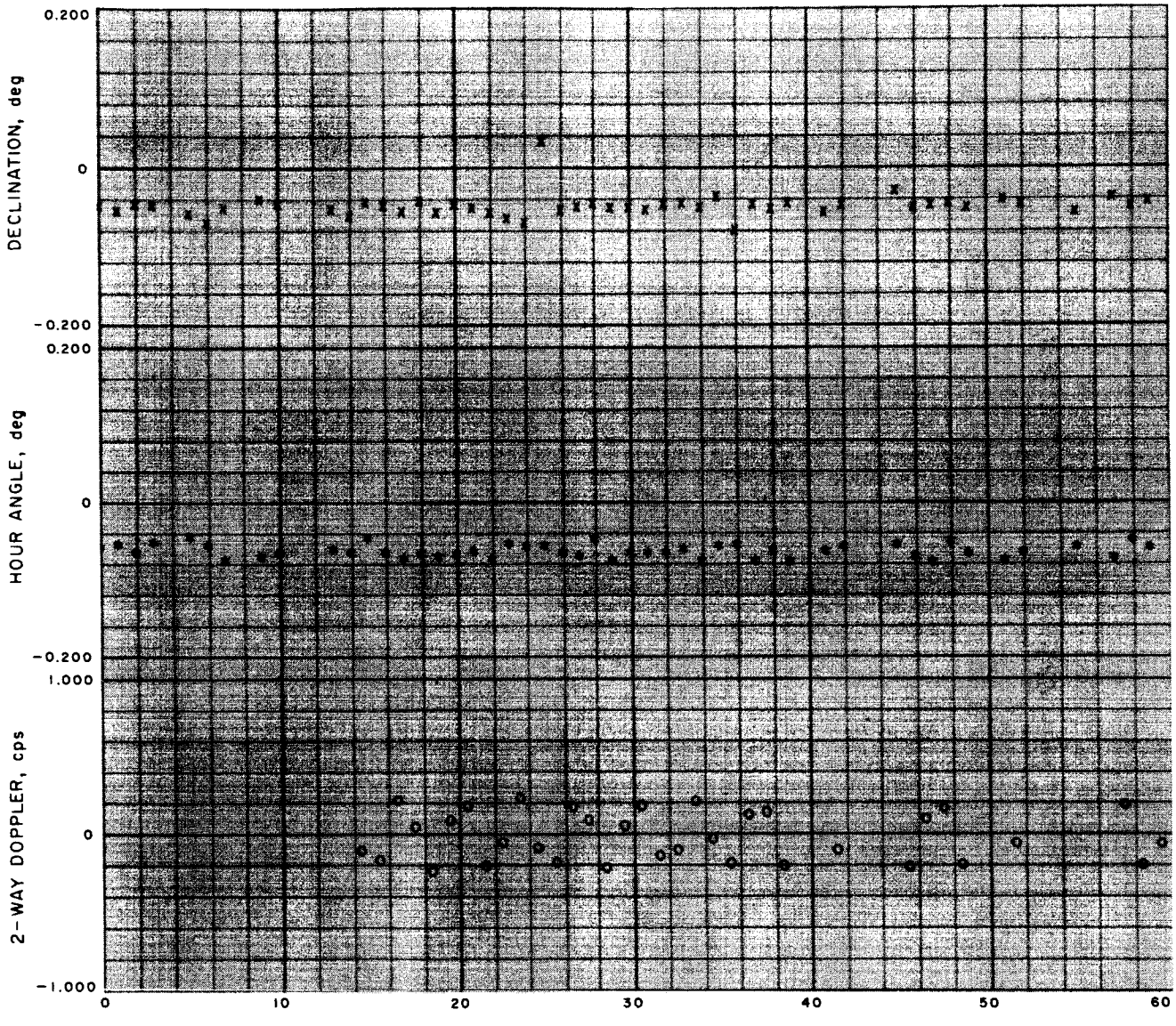


Fig. 26. Station 51 two-way doppler and angle residuals; start $00^{h}:09^{m}$ GMT

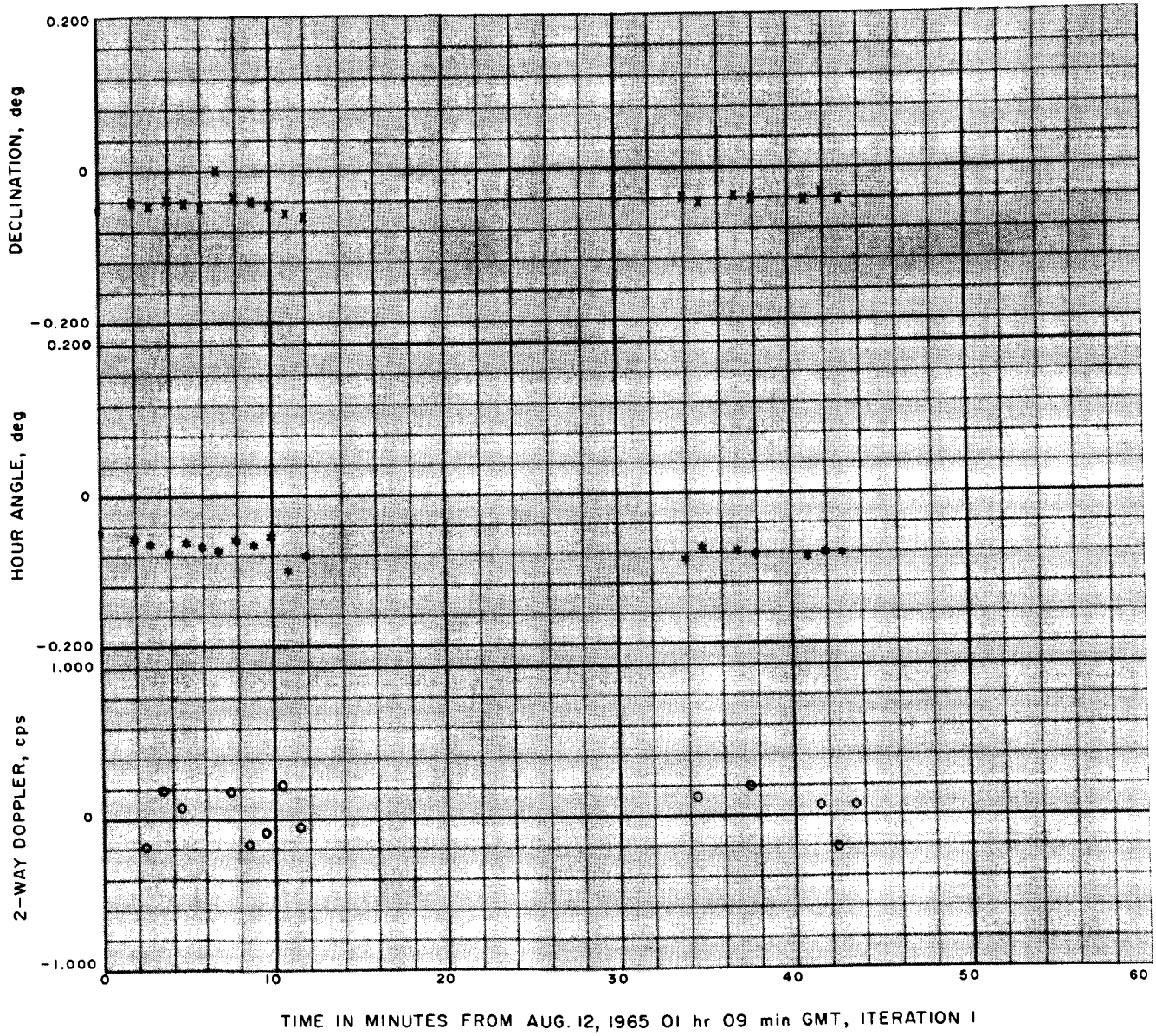


Fig. 27. Station 51 two-way doppler and angle residuals; start $01^h{:}09^m$ GMT

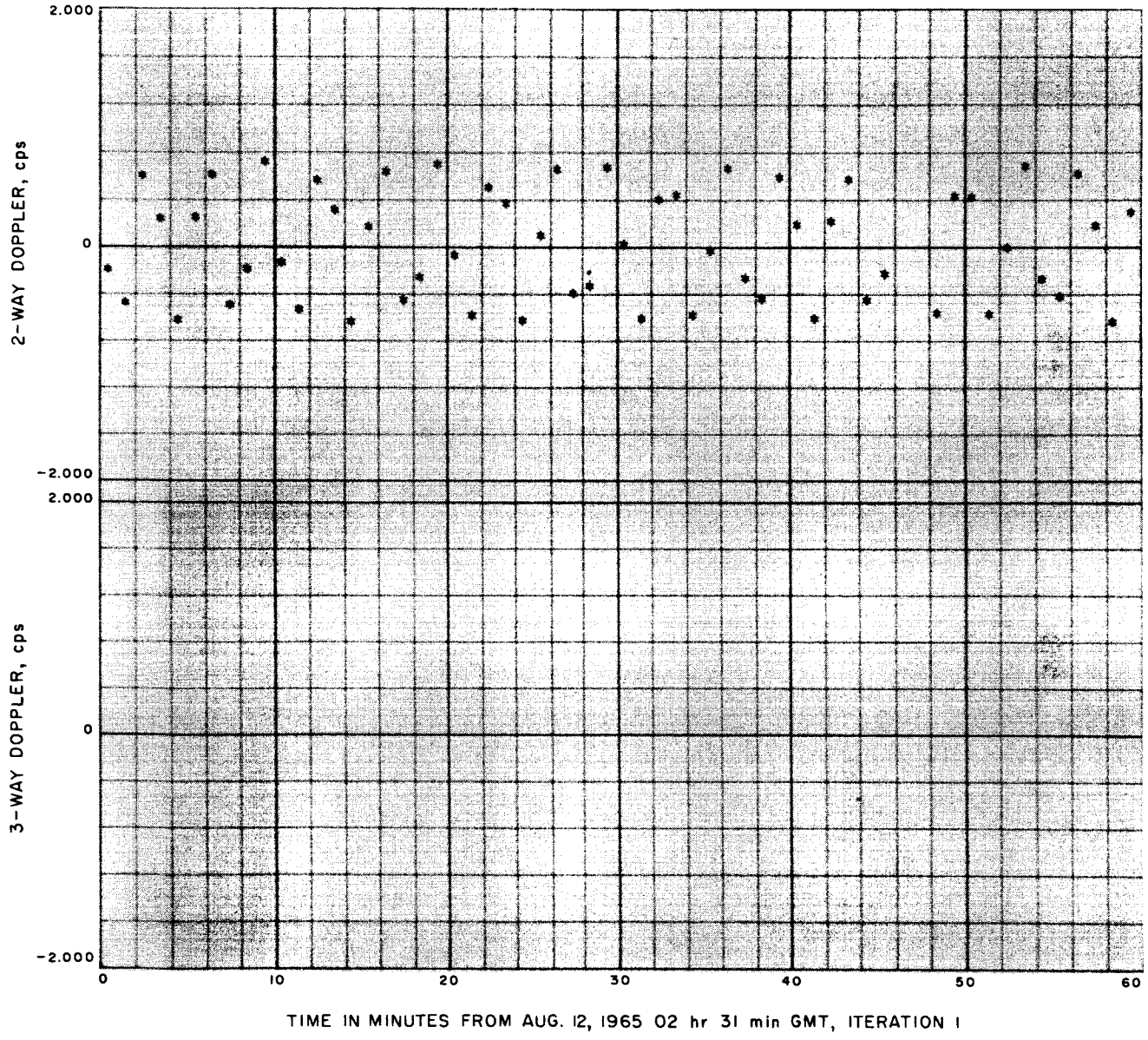


Fig. 28. Station 11 two and three-way doppler residuals; start 02^h:31^m GMT

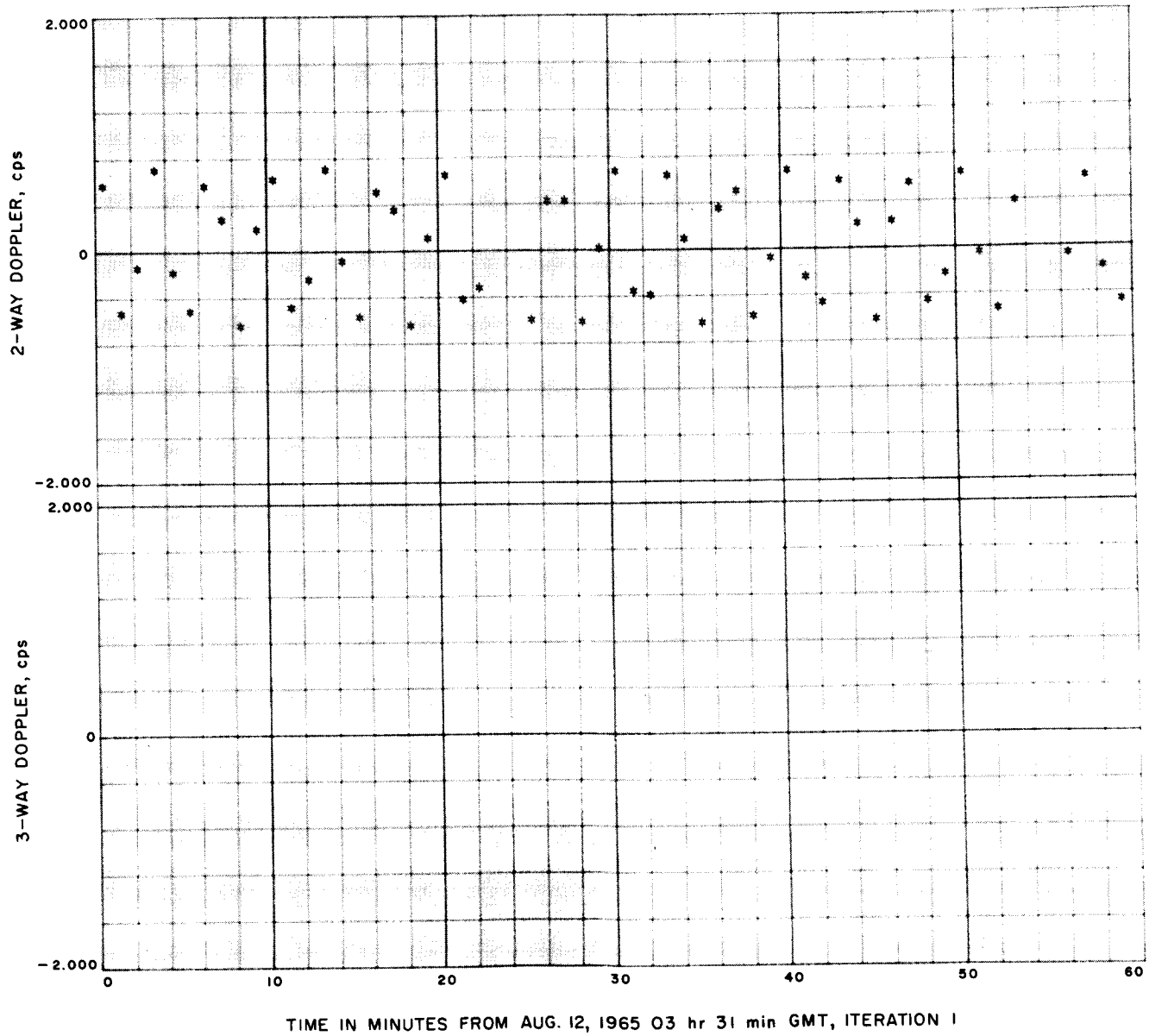


Fig. 29. Station 11 two and three-way doppler residuals; start $03^{h}:31^{m}$ GMT

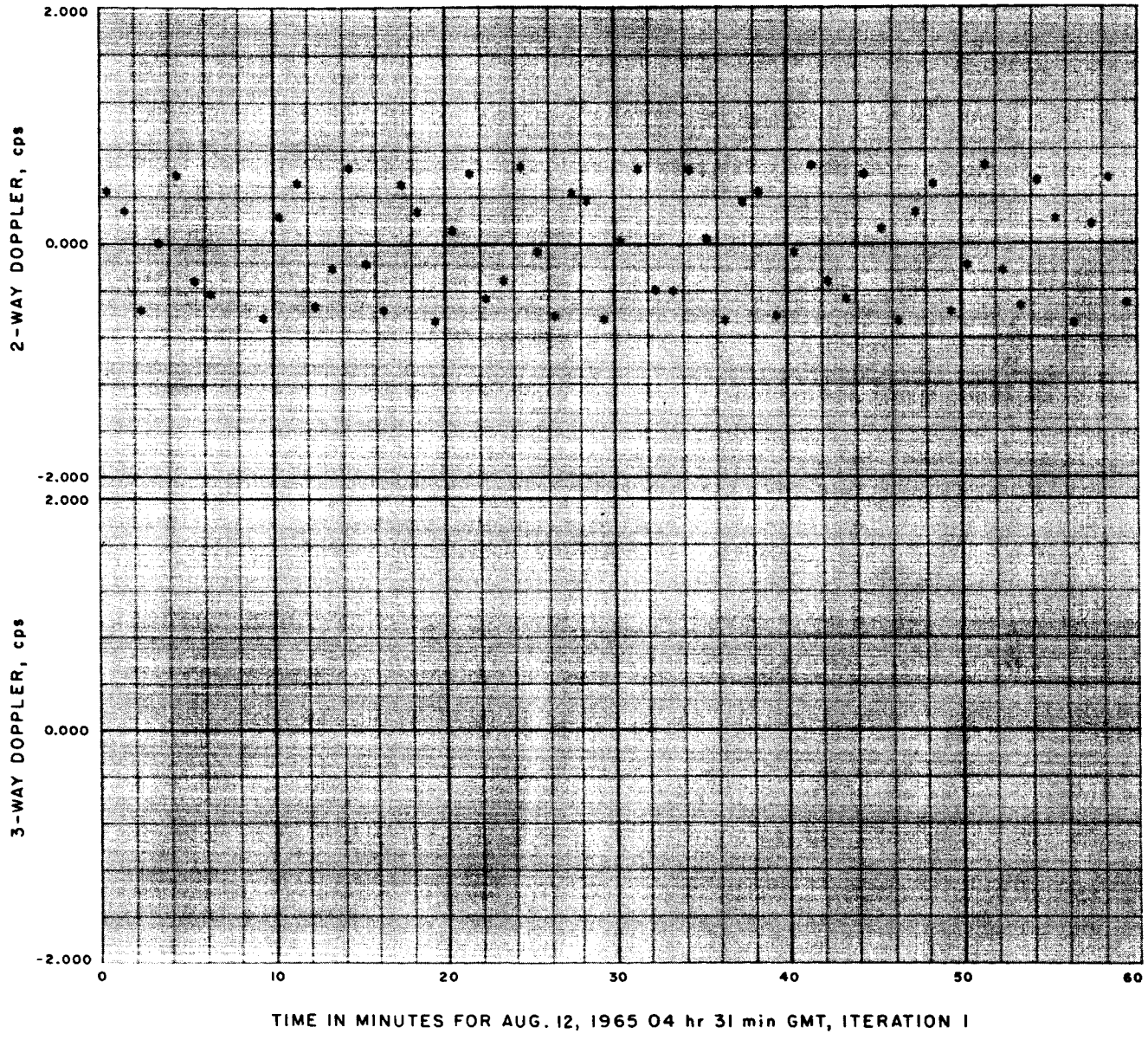


Fig. 30. Station 11 two and three-way doppler residuals; start $04^{h}:31^{m}$ GMT

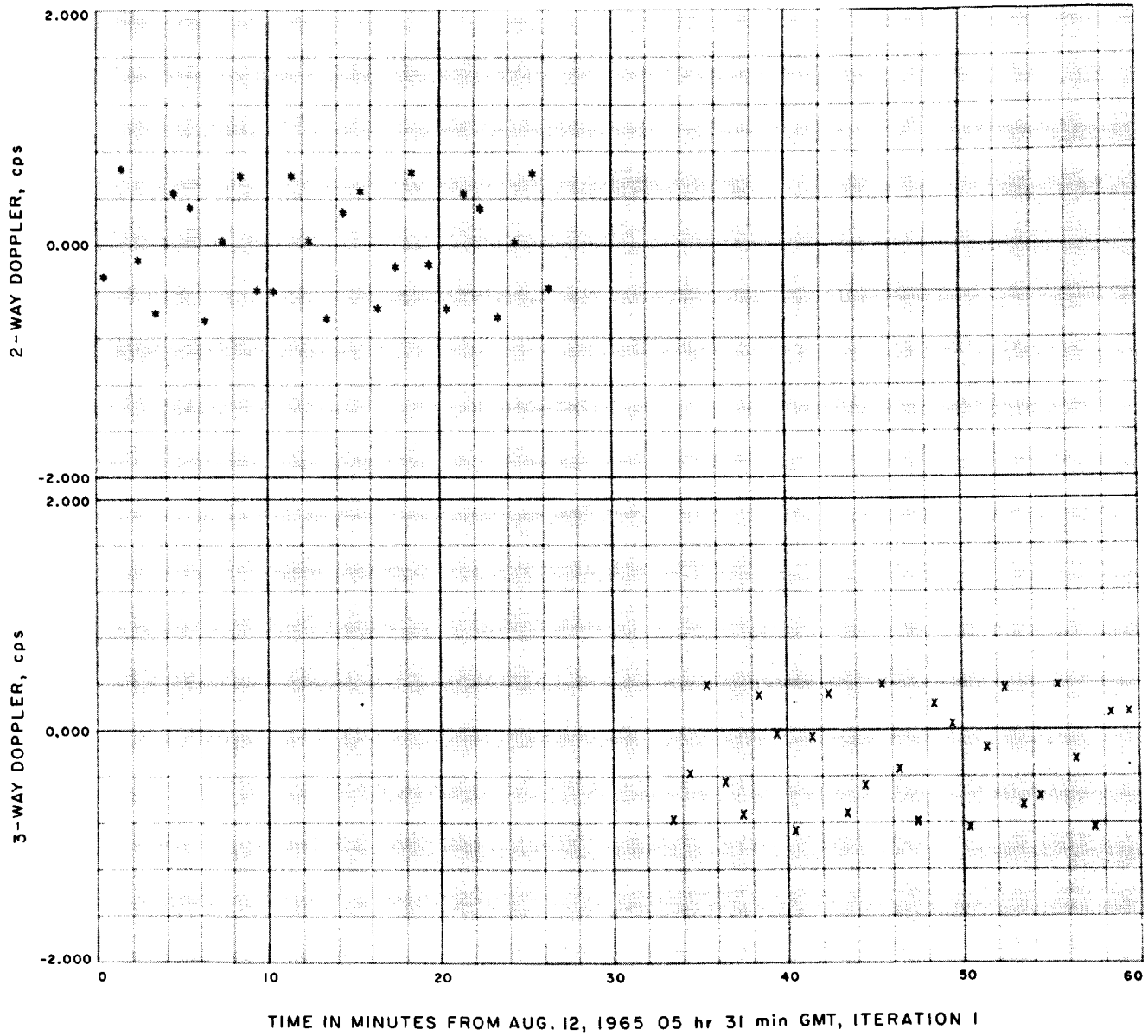


Fig. 31. Station 11 two and three-way doppler residuals; start $05^{h}:31^{m}$ GMT

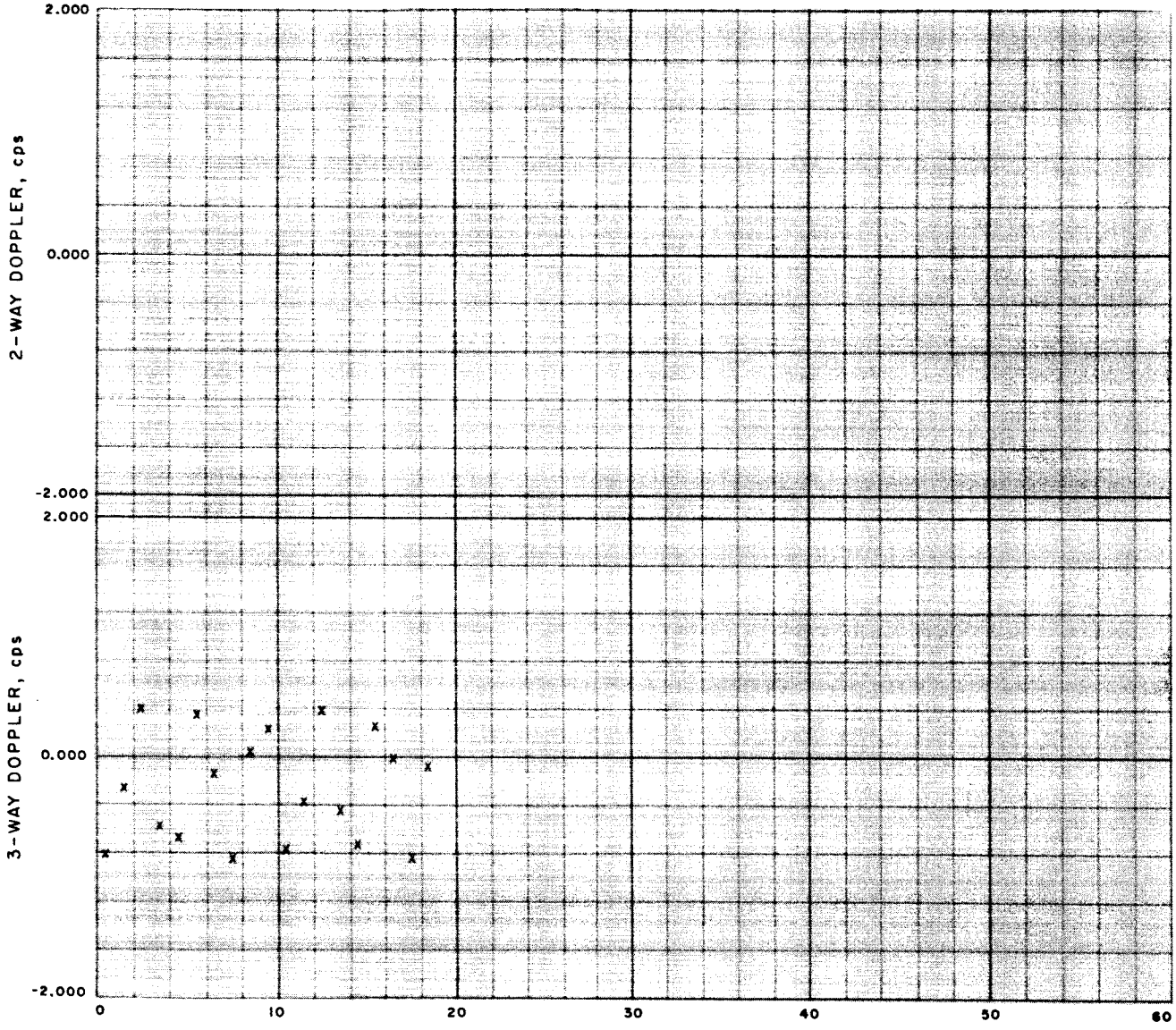


Fig. 32. Station 11 two and three-way doppler residuals; start $06^{h}:31^{m}$ GMT

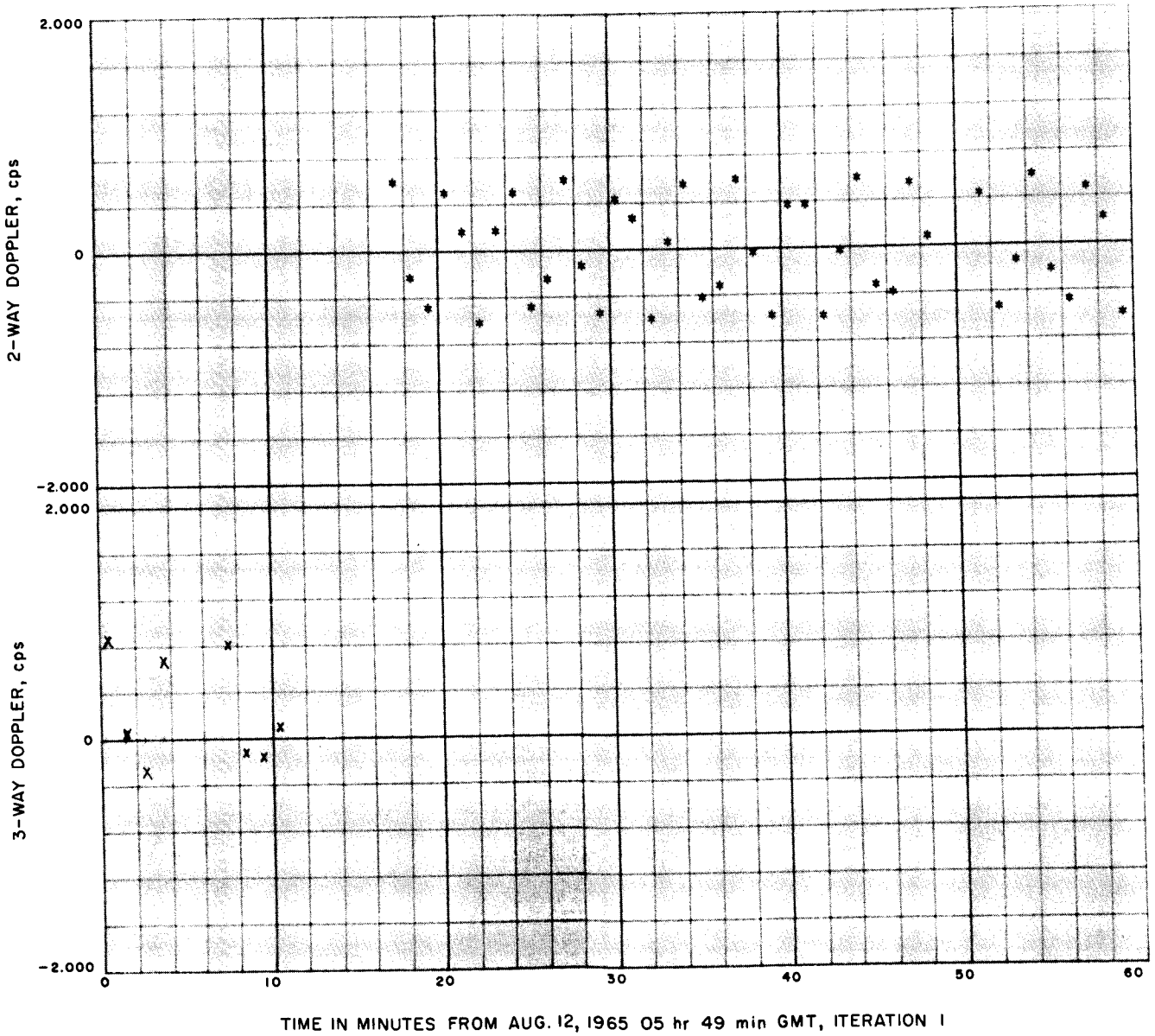


Fig. 33. Station 42 two and three-way doppler residuals; start 05^{h}:49^{m} GMT

be noted that these plots are not from the final DSIF run given in Appendix E, but they deviate only by an insignificant amount from the residuals in that orbit.

Table 6 Column 1, shows the parameters that were estimated. Columns 2 and 3 provide the units and where appropriate give the *a priori* information used. Column 4 gives the solution values obtained at injection epoch. Column 5 provides the solution at nominal maneuver epoch. Column 6 gives the *a priori* values used for the statistics, while columns 7 and 8 provide the final solution statistics that were obtained.

Table 7 provides essentially the same information, except that the conditions are converted to Earth-fixed spherical coordinates and their uncertainties.

Table 6. Values of estimated cartesian parameters and statistics at injection and nominal midcourse epoch

Parameters estimated (1)	Units (2)	Nominal value used (3)	At injection epoch[a] (4)	At nominal maneuver epoch[b] (5)	*A Priority* used (1σ) (6)	Standard deviation (1σ)	
						At injection epoch[a] (7)	At nominal maneuver epoch[b] (8)
Space-fixed geocentric equatorial cartesian coordinates:							
X	km		−3713.0018	55364.576	3.15×10^4	1.187	5.935
Y	km		4765.1105	−136098.81	3.15×10^4	0.429	3.578
Z	km		2561.1945	−73582.973	3.15×10^4	0.973	4.936
DX	m/sec		−8732.4204	1058.6097	3.15×10^7	0.956	0.053
DY	m/sec		−5812.5542	−1458.6207	3.15×10^7	2.323	0.155
DZ	m/sec		−3240.0480	−784.38339	3.15×10^7	4.967	0.238
$GM_\oplus$	km^3/sec^2	398601.33	398601.36		1.0	0.975	

[a]Injection epoch = August 11, 1965, 14:42:23.600 GMT.

[b]Nominal maneuver epoch = August 12, 1965, 06:24:00.000 GMT.

Table 7. Values of estimated spherical parameters and statistics at injection and nominal midcourse epoch

Corresponding parameters	Units	At injection epoch[a]	At nominal maneuver epoch[b]	Standard deviation (1σ)	
				At injection epoch[a]	At nominal maneuver epoch[b]
Earth-fixed spherical coordinates:					
Radius (R)	km	6561.4366	164324.60	0.596	0.476
Latitude (LAT)	deg	22.975688	−26.602004	0.0114	0.0019
Longitude (LON)	deg	307.47638	235.64053	0.0066	0.0025
Velocity (VE)	km/sec	10.560146	10.460569	0.503	0.175
Pitch angle (PTE)	deg	−2.9552299	10.554019	0.0049	0.0002
Azimuth angle (AZE)	deg	108.16845	270.45847	0.0339	0.0013

[a]Injection epoch = August 11, 1965, 14:42:23.600 GMT.

[b]Nominal maneuver epoch = August 12, 1965, 06:24:00.000 GMT.

Table 8. Correlation matrix on cartesian data at injection epoch

Parameters	X	Y	Z	DX	DY	DZ	KE
X	0.10000000 01	−0.94079937 00	0.97651053 00	−0.99571592 00	−0.96506704 00	0.98442870 00	0.11678495 00
Y	−0.94079937 00	0.10000000 01	−0.98711815 00	0.93169178 00	0.96059220 00	−0.96146580 00	−0.16372974 00
Z	0.97651053 00	−0.98711815 00	0.10000000 01	−0.96382396 00	−0.98206911 00	0.98753442 00	0.15974564 00
DX	−0.99571592 00	0.93169178 00	−0.96382396 00	0.99999999 00	0.94170830 00	−0.96769943 00	−0.11199609 00
DY	−0.96506704 00	0.96059220 00	−0.98206911 00	0.94170830 00	0.10000000 01	−0.99602211 00	−0.18409328 00
DZ	0.98442870 00	−0.96146580 00	0.98753442 00	−0.96769943 00	−0.99602211 00	0.10000000 01	0.16408975 00
$GM_\oplus$	0.11678495 00	−0.16372974 00.	0.15974564 00	−0.11199609 00	−0.18409328 00	0.16408975 00	0.10000000 01

Table 9. Covariance matrix of estimated parameters at injection epoch

A. Covariance matrix of estimated parameters at injection epoch

Parameters	Units	X	Y	Z	DX	DY	DZ	$GM_\oplus$
X	km	0.14099796 E-01	−0.47942991 E-00	0.11281192 E-01	−0.11307209 E-02	−0.26620341 E-02	0.58058555 E-02	0.13515949 E-00
Y	km		0.18418039 E-00	−0.41215682 E-00	0.38239087 E-03	0.95765809 E-03	−0.20494205 E-02	−0.68486113 E-01
Z	km			0.94654947 E-00	−0.89677384 E-03	−0.22195424 E-02	0.47719892 E-02	0.15147952 E-00
DX	km/sec				0.91459139 E-06	0.20920868 E-05	−0.45965246 E-05	−0.10439259 E-03
DY	km/sec					0.53963421 E-05	−0.11491964 E-04	−0.41681267 E-03
DZ	km/sec						0.24668974 E-04	0.79434698 E-03
$GM_\oplus$	km^3/sec^2							0.94996254 E-00

Table 9. (Cont'd)

B. Covariance matrix of Earth-fixed spherical parameters at injection epoch

Parameters	Units	R	LAT	LON	VE	PTE	AZE
R	km	0.35487660 E-00	−0.67032590 E-02	0.38563099 E-02	−0.29943520 E-03	0.28790020 E-02	0.19897844 E-01
LAT	deg		0.12991937 E-03	−0.71538391 E-04	0.56586790 E-05	−0.55376170 E-04	−0.38300326 E-03
LON	deg			0.43359813 E-04	−0.32495920 E-05	0.31613089 E-04	0.21523465 E-03
VE	km/sec				0.25285380 E-06	−0.24235883 E-05	−0.16764063 E-04
PTE	deg					0.24477293 E-04	0.16694758 E-03
AZE	deg						0.11508450 E-02

Table 8 gives the correlation matrix at injection of the parameters estimated in Table 6. Table 9 provides the covariance matrices of the estimated parameters in cartesian and spherical coordinates at the injection epoch.

E. Observation and Conclusions

1. The Mass of the Earth

An estimate of the physical constant $GM_{\oplus}$, was obtained from the *A/C-6* tracking data. In Table 10 it may be seen that the uncertainty in $GM_{\oplus}$ for *A/C-6* is larger than the uncertainty quoted by the International Astronomical Union in 1961. However, comparison with the results of *Rangers VI, VII, VIII, and IX* shows very close agreement. Results of *Ranger III, IV,* and *V* have been included to show the consistency obtained from the *Ranger* missions. Figure 34 graphs the $GM_{\oplus}$ values obtained for these missions along with the probable error. The results given in Table 10 for the *A/C-6* mission were derived in a manner identical to the run presented in Appendix E, except that no *a priori* information was used to constrain the solution for $GM_{\oplus}$. The solution vector for this run is shown in Table 11. Solution uncertainties for *Ranger IV* and *V* are also large due to the limited amount of available data.

Table 10. Physical constants estimate

GM_{Earth} estimates = $GM_{\oplus}$			
Source	**Value, (km^3/sec^2)**	**Standard deviation, (km^3/sec^2)**	**Remarks**
Nominal JPL[a]	398603.20	±4.0	International Astronomical Union, 1961
Ranger III	398601.63	±2.5	4 days of tracking
Ranger IV	398601.87	±13.3	8 hr of tracking
Ranger V	398599.20	±13.2	8 hr of tracking
Ranger VI[b]	398600.61	±1.1	65 hr of tracking
Ranger VII[b]	398601.28	±1.5	68 hr of tracking
Ranger VIII[b]	398601.23	±0.7	65 hr of tracking
Ranger IX[b]	398601.44	±0.5	63 hr of tracking
Atlas-Centaur VI	398600.38	±4.2	16 hr of tracking

[a]Kaula, 1961 (adopted by the *Ad Hoc* NASA Standard Constants Committee, Ref. 9); see also Appendix B.

[b]With *REM* constraint applied. *REM* is defined as the lunar ephemeris scale factor. The constraint is as applied by imposing the equation:

$$REM = 86.315745\,(GM_{\oplus} + GM_{\mathbb{C}})^{1/3}$$

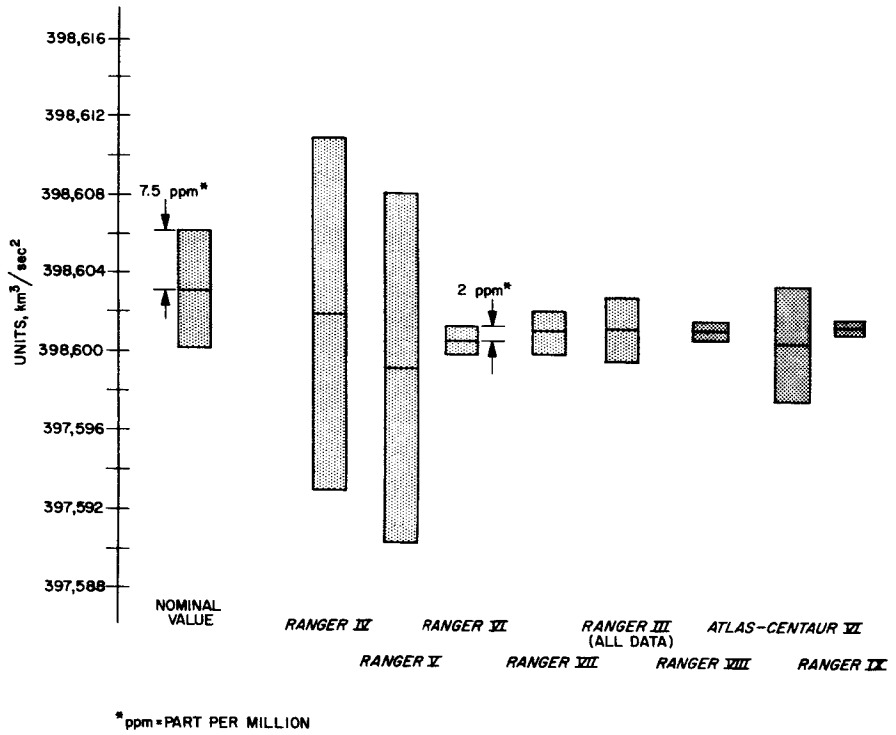


Fig. 34. $GM_{\oplus}$ with probable errors

Table 11. *Atlas-Centaur VI* $GM_{\oplus}$ solution vector without *a-priori* information*
(epoch 65/08/11 144223.600, SOS 0.22930 03, QSOS 0.22930 03)

Q	DQ	STDEVDQ	OLD Q	NEW Q	NOMINAL Q	DQ (NOM)
X	−0.17776342 02	0.12558576 01	−0.37131034 04	−0.37131052 04	−0.37129761 04	−0.12015639 00
Y	0.12674585 03	0.50779283 00	0.47651182 04	0.47651180 04	0.47650928 04	0.25268555 01
Z	−0.14808019 03	0.11374133 01	0.25611524 04	0.25611522 04	0.25612324 04	−0.86139159 01
DX	0.17714166 05	0.10008471 02	−0.87323293 01	−0.87323275 01	−0.87324467 01	0.11920929 03
DY	0.69453897 06	0.28553554 02	−0.58124247 01	−0.58124241 01	−0.58126368 01	0.21266937 03
DZ	−0.36765932 05	0.58256773 02	−0.32403710 01	−0.32403747 01	−0.32398809 01	−0.49379468 03
$GM_{\oplus}$	0.15354623 02	0.41543964 01	0.39860038 06	0.39860038 06	0.39860133 06	−0.94531250 00

*Explanation of the printout is given in Appendix G.

Table 12. Limitations of *Atlas-Centaur VI* analysis

	Limitation of ODP used for A/C-6 analysis
1.	Trajectory and most other computations are in single precision. Errors are introduced during computations due to interpolation and the build-up of roundoff error, which contribute to the data weighting sigma; e. g., computing noise contributed 0.012 m/sec out of a total station weighting sigma of 0.052 m/sec for DSIF 11 two-way S-band doppler.
2.	A fixed empirical correction is applied for tropospheric effects. Ionospheric effects are ignored but could appear as an "inward" displacement for a daylight tracking pass.

2. Limitations

This section discusses the limitations of the *A/C-6* flight path analysis described in this Report.

The ODP used for the *A/C-6* analysis lacks certain desirable capabilities which will be incorporated in the next generation ODP. The principal items are summarized in Table 12. It is significant to note that errors introduced during computations due to interpolation and the buildup of roundoff error are the relatively minor contributions to the two-way doppler weighting sigma discussed in Section II-C. The major contributor to the doppler weighting sigma was due to the tumbling of the spacecraft.

3. Conclusions

The conclusion presented is that a good fit was made to all of the doppler data, and that the solution for $GM_{\oplus}$ is consistent with presently accepted values.

IV. ANALYSIS OF AIR FORCE EASTERN TEST RANGE (AFETR) TRACKING DATA

A. Introduction

During the *Atlas-Centaur* missions, the AFETR is responsible for providing classical orbital elements for both the spacecraft transfer orbit and the *Centaur* post retro orbit, and also for providing initial acquisition information to the DSIF tracking stations. These calculations are performed on a CDC 3600 computer located at AFETR using *Centaur* vehicle tracking data obtained from the down range AFETR tracking stations. Results of these calculations are transmitted to the JPL SFOF in Pasadena. The acquisition information is relayed to the DSIF stations, and the initial orbital elements are used in the JPL orbital calculations.

In addition to fulfilling these requirements AFETR transmits tracking data, obtained during the transfer orbit and the *Centaur* post-retro orbit, to the SFOF. The transfer orbit data is used during flight operations to verify the initial orbital estimates based on DSIF data. *Centaur* post-retro data are important for verifying the *Centaur* retro firing, and the *Centaur* post-retro orbit. For future *Surveyor* flights the post-retro orbit analyzed in conjunction with the spacecraft will provide verification that the *Centaur* and the spacecraft are separated by 326 km within 5 hr after separation. (This requirement is to ensure that the Canopus seeker on board the spacecraft (S/C) does not lock up on the *Centaur* instead of Canopus.)

During this mission AFETR stations tracked the *Centaur* vehicle from launch until it was lost after the end of the pass by the Twin Falls Victory Ship. The Twin Falls tracking included the start of the retro maneuver. Two additional stations, Ascension and Pretoria, attempted to track the *Centaur* through the retro maneuver and for approximately 40 min after. However, they were unsuccessful, apparently due to the low signal strength from the *Centaur* beacon. The names, locations, and radar types for the AFETR stations are given in Table 13. Table 14 summarizes the tracking data coverage provided by these stations. Figure 35 shows the station view period and elevation angle.

Table 13. AFETR station locations[a]

Station name	Latitude (deg)	Longitude (deg)	Radar type
Antigua	17.0 N	298.2 E	FPQ6
Ascension	7.9 S	345.6 E	FPQ6
Twin Falls Ship	18. N[b]	316. E[b]	FPS16
Pretoria	25.85	28.3 E	FPS16

[a]See Ref. 10.

[b]Reported during mission.

Table 14. Summary of data received during *Atlas-Centaur VI*

Station	Data type	Start of data (GMT)	End of data (GMT)	Points received	Number of usable points	Bad format	Bad data condition code	Blunder points	Rejection limits on blunder points	Comments
Antigua	Range Azimuth Elevation	14^{h}37^{m}42^s	14^{h}43^{m}18^s	57	8	9	3	1 1 0	0.1 km 0.14 deg	All but 8 points were in the powered flight phase and were not used. There was also a roundoff in the data tag of 0.003 sec.
Twin Falls (Ship)	Range Azimuth Elevation	14^{h}44^{m}39^s	14^{h}46^{m}54^s	45	13	6	0	1 1 1	0.1 km 0.15 deg 0.3 deg	Only 22 points were before the start of the *Centaur* post-retro maneuver.
Ascension		14^{h}48^{m}30^s	15^{h}19^{m}48^s	310	0	28	0			All data were out of lock.
Pretoria		14^{h}53^{m}50^s	15^{h}44^{m}20^s	505	0	23	0			All data were out of lock.

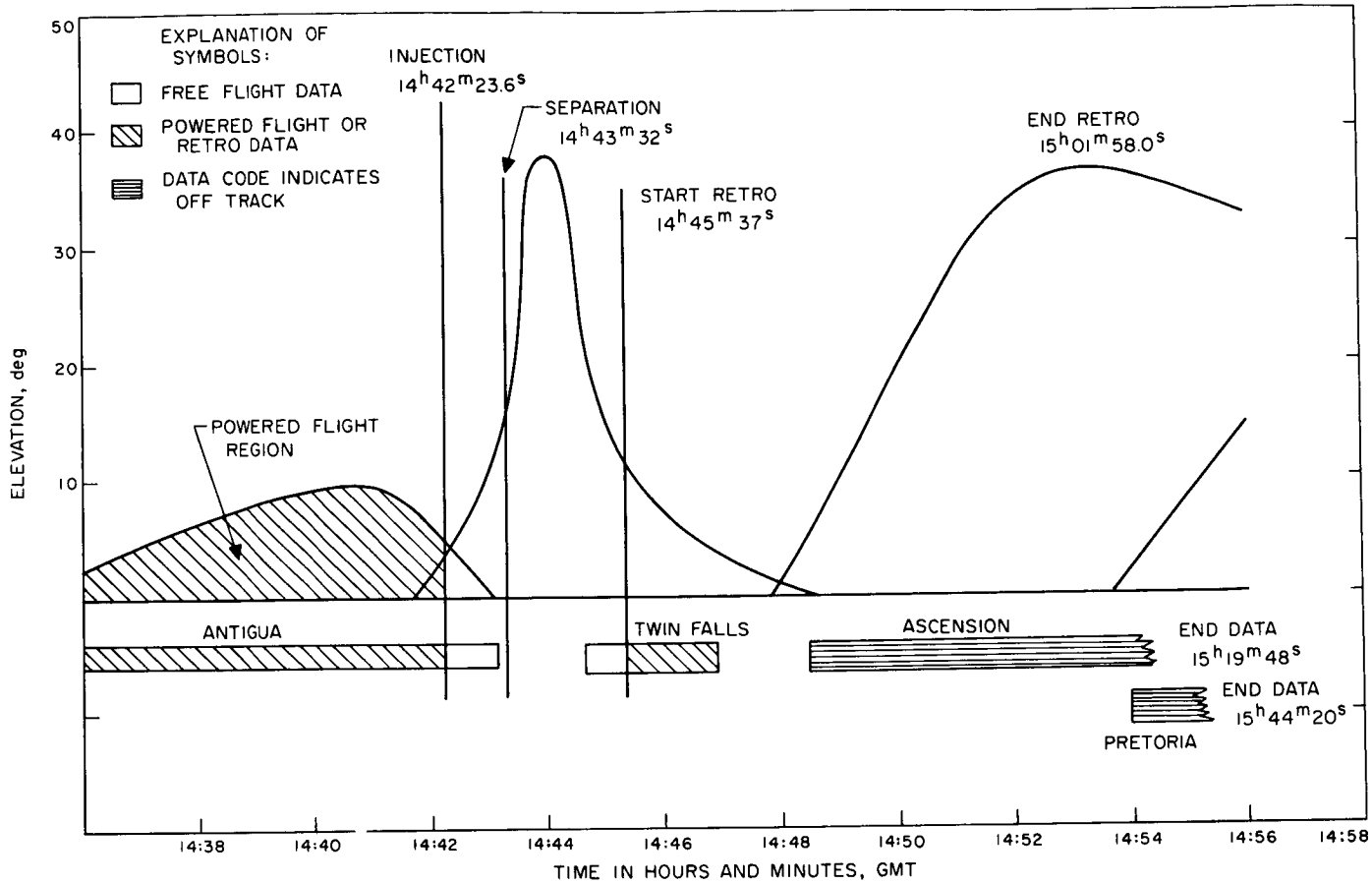


Fig. 35. AFETR station view and elevation angles for *Atlas-Centaur VI*

B. Acquisition Information

Approximately 5 hr of initial acquisition information were provided for DSIF 51, based on the actual *Centaur* orbit and using data from the Antigua radar station. These predictions included pointing angles, receiver doppler detector output for both one-way and two-way doppler, and the ground station transmitter reference frequency required to establish uplink lock with the spacecraft. A comparison between the AFETR predicted trajectory and the actual trajectory showed that the predicted values were within the beam width of the DSIF 51 antenna. Figures 36, 37, 38, and 39 provide a comparison of the predicted data that were generated and those obtained from the best estimate of the injection conditions.

C. Analysis of the Transfer Orbit Data

Two stations, Antigua and Twin Falls, obtained angular and range data for use in determining the *Centaur* transfer orbit. During flight operations at JPL, both stations were used for the initial transfer orbit calculations. Numerical values for the parameters in this solution are given in Table 15, column 2. These values are in good agreement with the orbital elements obtained from the AFETR solution given in column 1. Column 3 gives the injection conditions as reported by the *Centaur* guidance system. Column 4 reports the final solution and the orbit using both Antigua and Twin Falls data with data corrections applied, while column 5 provides a comparison with the final DSIF orbit. The summary of the data used in these calculations is given in Table 16. Table 1, Section II, gives the reported *Centaur* mark times that were used for determining which data could not be used, because this was during the powered flight portion of the trajectory.

During post-flight analysis, two corrections were applied to the data. These are described below.

1. *Antigua data:* a correction of 3 msec was subtracted from the time tag on the data. Although the radar time tagged the data correctly, the data message prescribed by JPL can only handle hours, minutes and seconds, and the 3 msec were the added round-off before transmission to JPL.

Table 15. Summary of AFETR injection conditions for *Atlas-Centaur VI*

Epoch, August 11, 1965 $14^h42^m23.600^s$ GMT					
Parameter	**Best inflight orbit reported by ETR (1)**	**Real time ETR orbit* at JPL (2)**	**Inflight guidance† telemetry conditions (3)**	**Post analysis ETR orbit at JPL (4)**	**Post analysis DSIF orbit (5)**
r_0, km	6563.8289			6562.3415	6561.4358
ϕ_0, deg	22.983992			22.976336	22.975690
λ_0, deg	307.43822			307.47277	307.47636
V_0, km/sec	10.560347			10.559583	10.560147
γ_0, deg	−3.0492360			−2.9921982	−2.9552324
σ_0, deg	108.09473			108.13060	108.16843
a, km	440243.81	413468.43	413703.3	418668.29	415498.98
e	0.98512978	0.98416925	0.9841723	0.98436550	0.98424744
i, deg	28.52785	28.547242	28.55535	28.541817	28.562397
Ω, deg	359.177165	359.12713	359.1873	359.13998	359.08041
ω, deg	131.06456	130.98789	130.82833	131.01839	131.00283
C3	−0.90		−0.96	−0.95	−0.96

*Real Time ETR Orbit, Epoch, $14^h42^m24.000^s$

$r_0 = 6564.1396$, $\phi_0 = 23.088054$, $\lambda_0 = 307.10245$

$V_0 = 10.557471$, $\gamma_0 = -3.1621513$, $\sigma_0 = 107.98213$

†Inflight Guidance Telemetry Conditions, Epoch, $14^h42^m29.4^s$

$r_0 = 6560.$, $\phi_0 = 22.839$, $\lambda_0 = 308.003$

$V_0 = 10.560$, $\gamma_0 = -2.639$, $\sigma_0 = 108.346$

Definition of terms

Parameter	Definition (Earth as central body)	Parameter	Definition (Earth as central body)
r_0	Probe radius distance, km	a	Semimajor axis, km
ϕ_0	Probe geocentric latitude, deg	e	Eccentricity
λ_0	Probe East longitude, deg	i	Inclination, deg
V_0	Probe Earth-fixed velocity, km/sec	Ω	Longitude of the ascending node, deg
γ_0	Path angle of the probe Earth-fixed velocity vector with respect to the local horizontal, deg	ω	Argument of pericenter, deg
		C3	Vis-viva energy
σ_0	Azimuth angle of the probe Earth-fixed velocity vector measured East of true North, deg		

2. *Twin Falls data:* a multiplication factor of 1.00006106 was applied to each range point to account for range reference oscillator timing errors. This error is discussed in Ref. 10.

Table 16. Statistics on AFETR data received during *Atlas-Centaur VI*

Station	Number of points	Standard deviation	Mean	Sample rate
Antigua				
Range, km	6	0.0059	−0.00411	1 pt/6 sec
Elevation, deg	6	0.0370	0.02190	1 pt/6 sec
Azimuth, deg	6	0.0082	0.00029	1 pt/6 sec
Twin Falls				
Range, km	13	0.0081	0.00000	1 pt/3 sec
Elevation, deg	13	0.0374	0.01990	1 pt/3 sec
Azimuth, deg	13	0.0272	0.04170	1 pt/3 sec

A third correction, although it was not applied, should be discussed. The ship is moving while it is taking tracking data and this can cause a data error due to changing station location. Thus for the mission under discussion, the reported ship location could cause the range data values to have a slanting bias of 0 to 50 meters larger. The angle data were not analyzed to determine the magnitude of this type of error, although it is assumed small.

The spacecraft *Centaur* separation velocity increment of approximately $\Delta V = 0.05$ meters/sec was undetectable in the data and its effect was not analyzed.

The Antigua post injection data were limited to elevations of from 3 to 0.5 deg. Although AFETR does not commit themselves to obtaining valid tracking data at elevations of 2 deg or less, this data proved quite valuable in the analysis of the orbit.

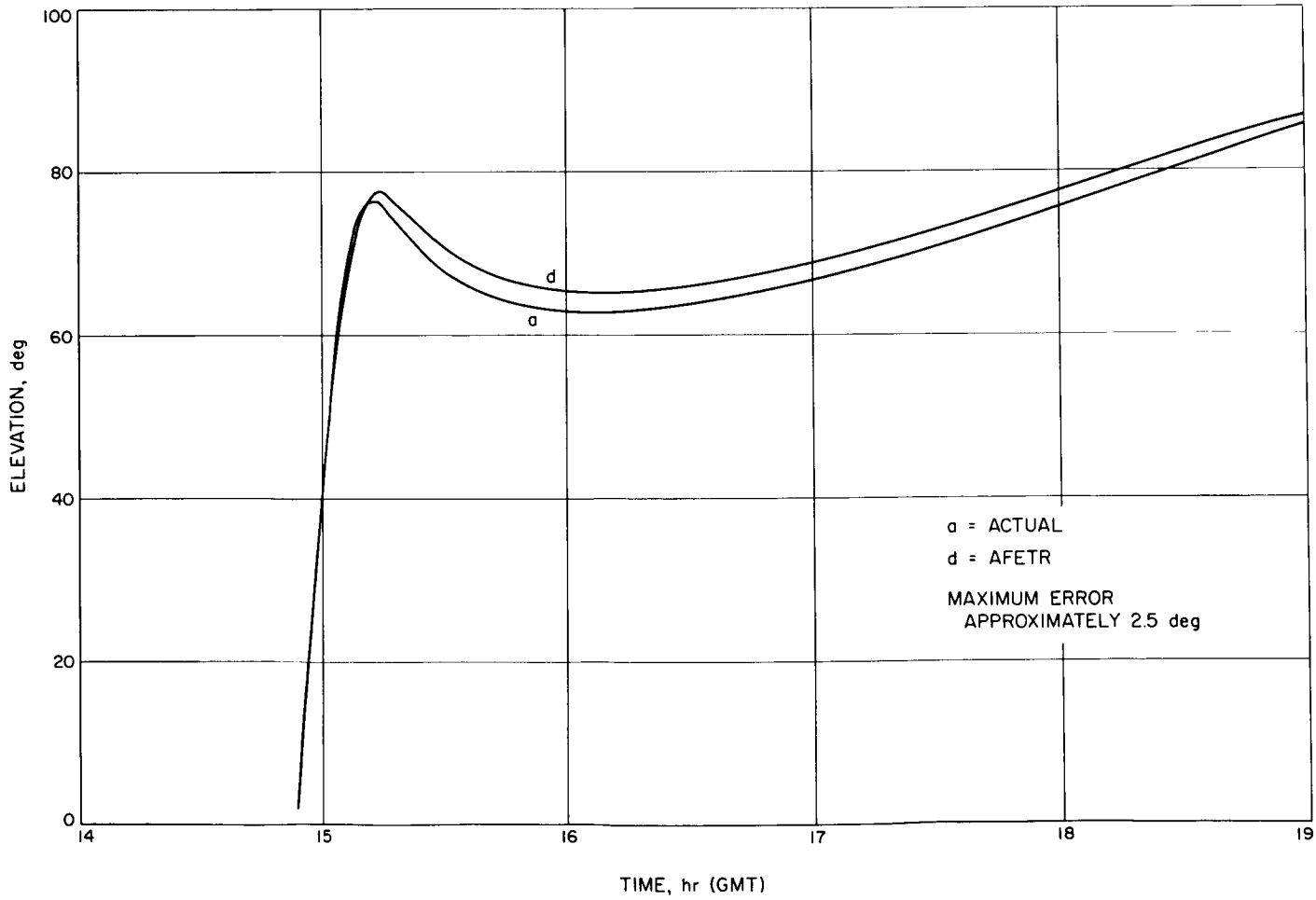


Fig. 36. Comparison of elevation angles vs time

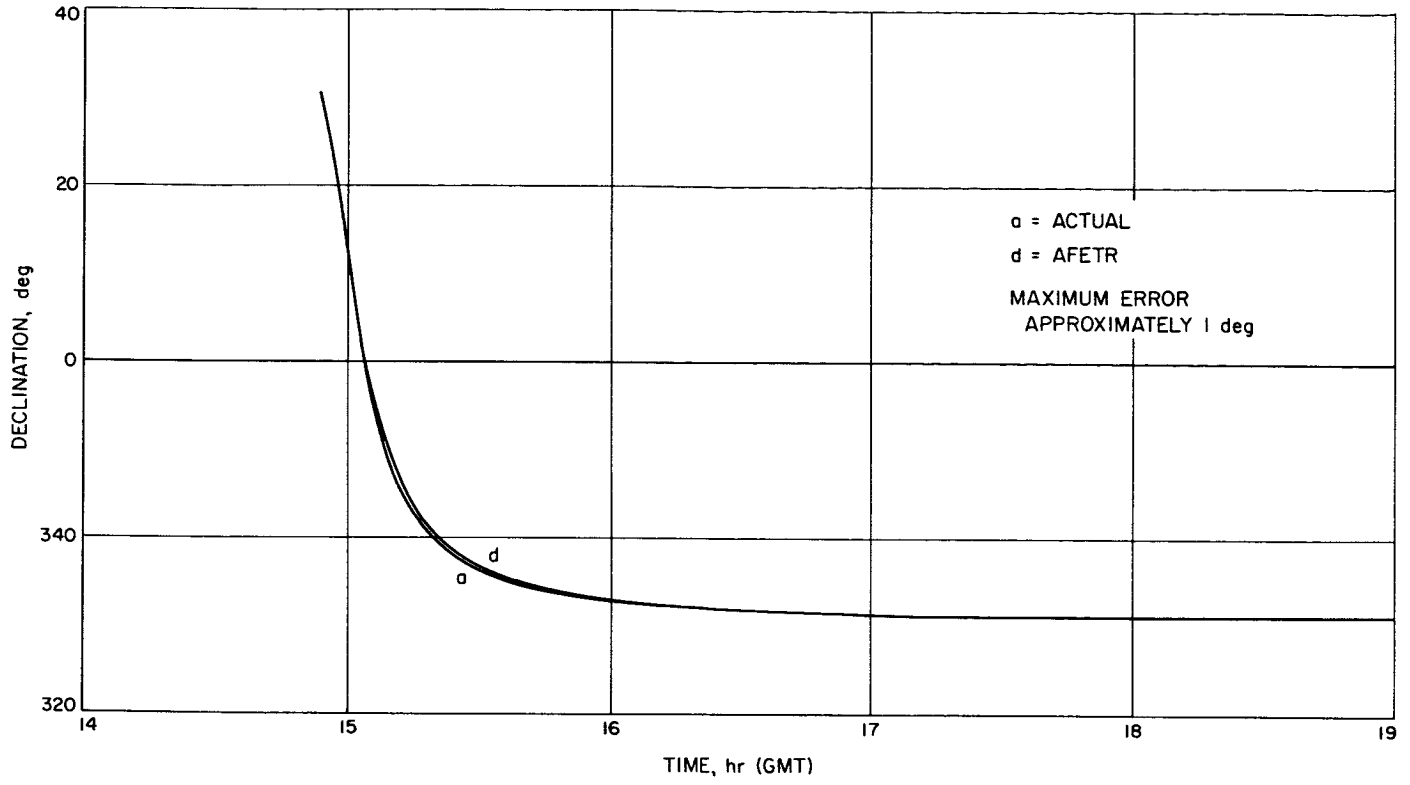


Fig. 37. Comparison of declination (Dec) angles vs time

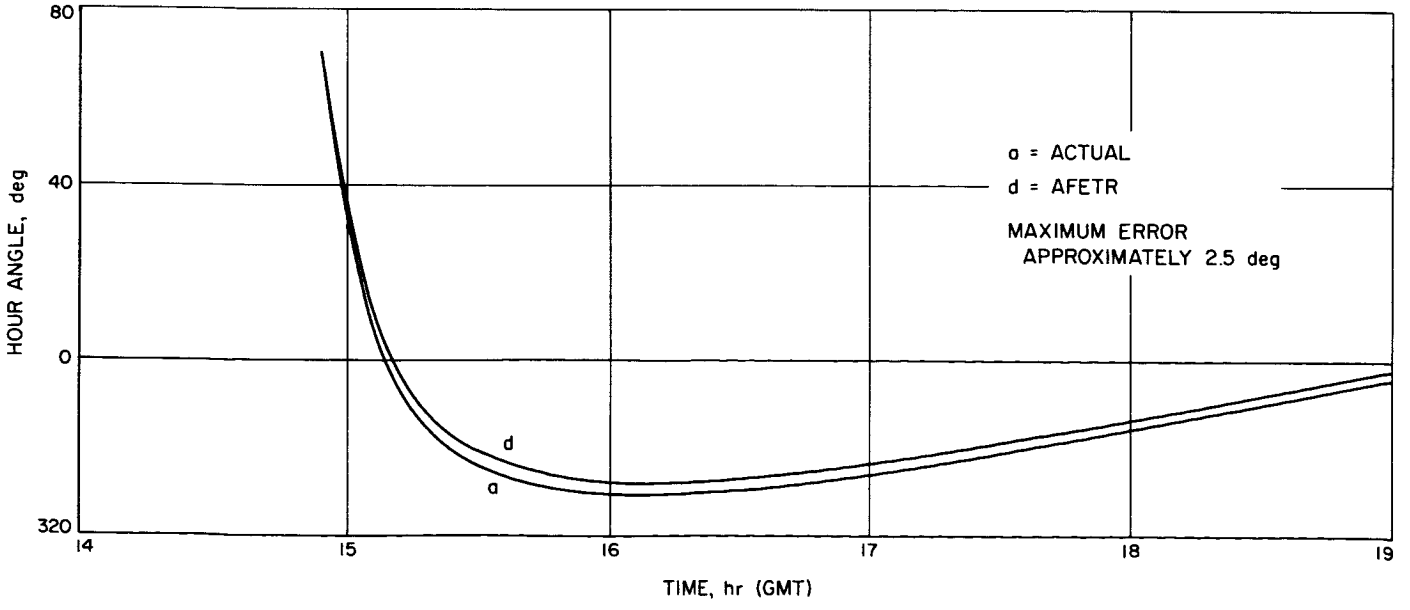


Fig. 38. Comparison of hour angle (HA) angles vs time

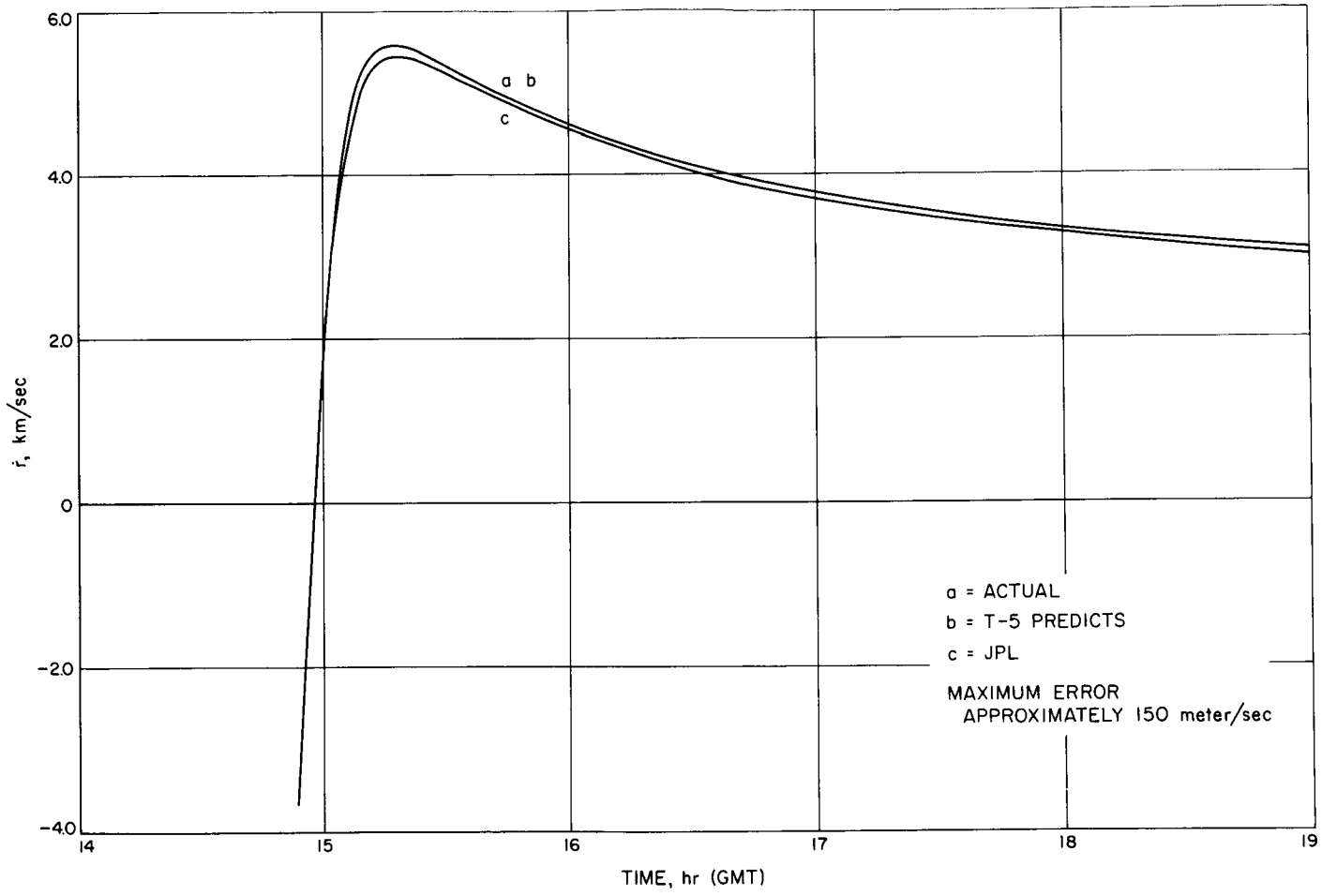


Fig. 39. Comparison of radial range rate vs time

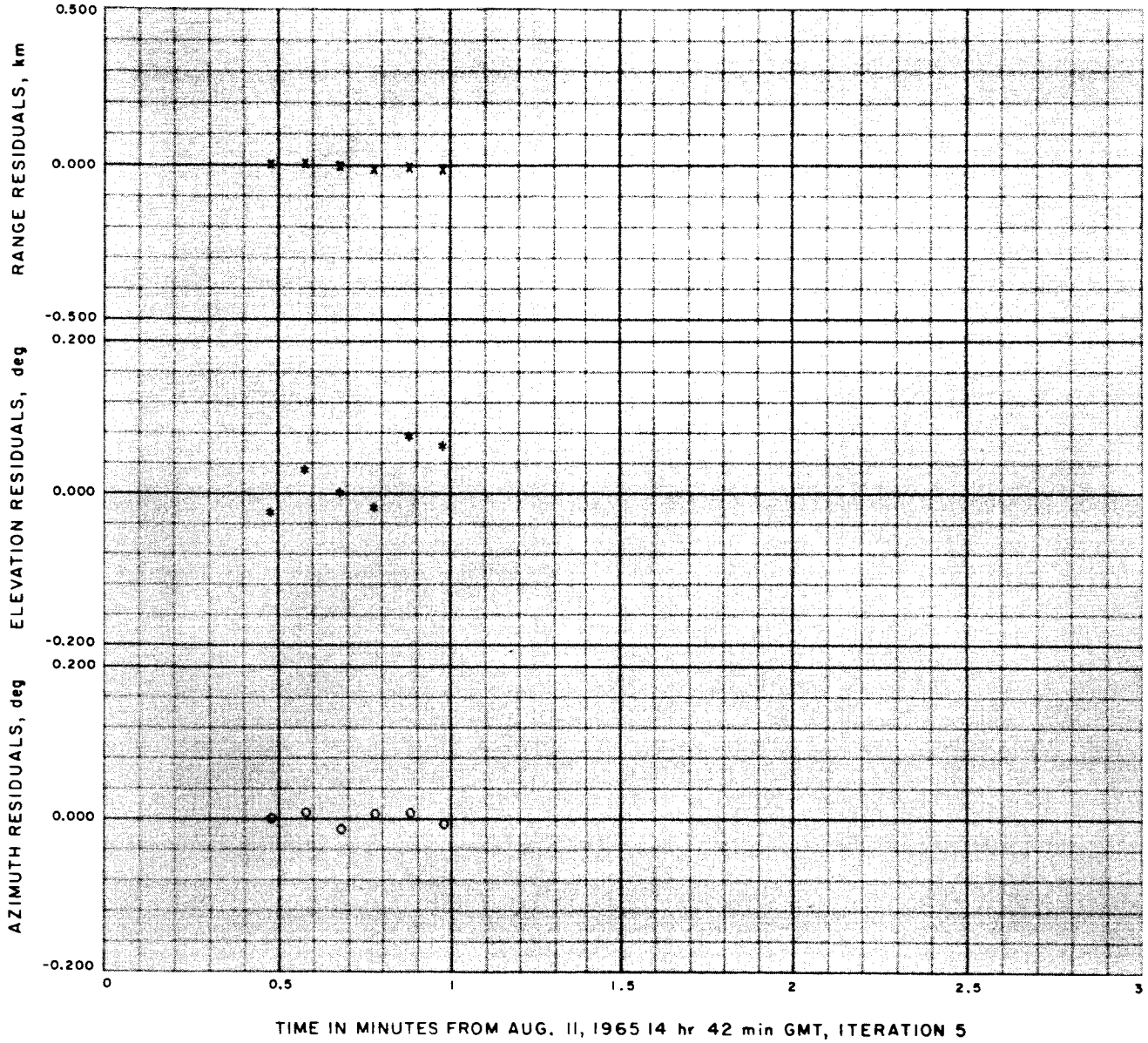


Fig. 40. Antigua residuals

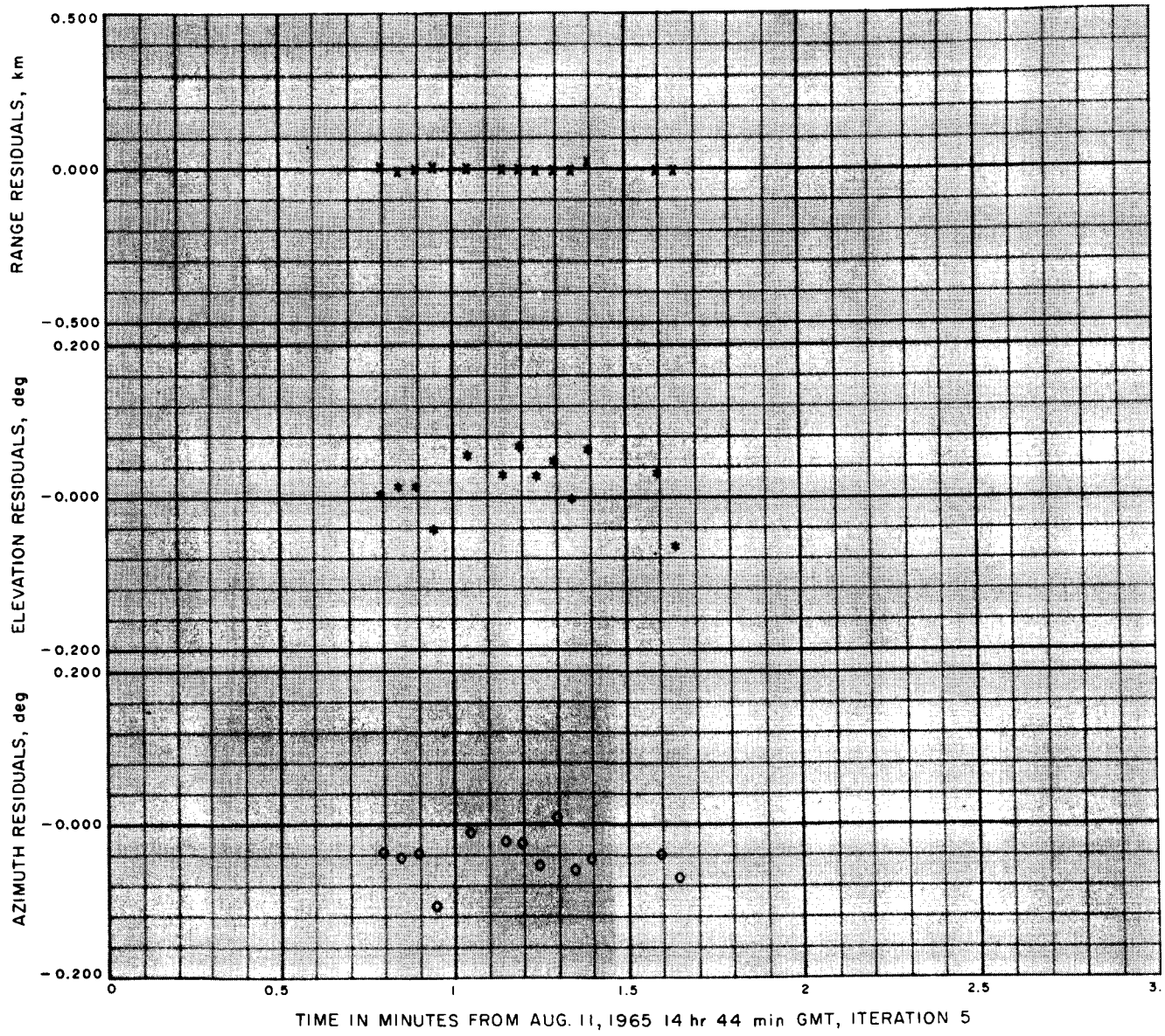


Fig. 41. Twin Falls residuals

The residuals obtained from the post-flight analysis are given in Fig. 40 and 41. Table 16 gives the statistics of the data used in the orbit. Appendix F gives the final post-flight run.

The Twin Falls, reported, ship location is given in Table 17, column 2. The location in column 3 is based on the in-flight combined fit of Antigua and the ship. The adjusted location given in column 4 of the same table was determined during post-flight processing.

D. Analysis of Centaur Guidance System Injection Conditions

Telemetry measurements from the *Centaur* guidance systems were obtained by the Antigua radar and transmitted up range to Cape Kennedy. These data were then converted to the standard orbital element message and retransmitted to JPL. These conditions are given in Table 15, column 3.

E. Analysis of the Centaur Post-Retro Data

No post-retro tracking data were available.

F. Conclusions

The Antigua and Twin Falls data were very useful in providing the initial acquisition information for the Johannesburg antenna, and in providing the initial orbit estimates. In addition, combined DSIF and AFETR solutions were obtainable.

Table 17. Summary of AFETR station locations used during *Atlas-Centaur VI*

Stations (1)	Nominal (ship reported location before start of track (2)	In flight (3)	Postflight analysis (4)
Antigua			
Radius from center of Earth, km	6376.3090	Same	Same
Geocentric latitude, deg	17.035500	Same	Same
Geocentric longitude, deg	298.20720	Same	Same
Twin Falls			
Radius from center of Earth, km	—	6376.1376	6376.1376
Geocentric latitude, deg	17.870633*	17.904104	17.904002
Geocentric longitude, deg	−44.016666*	−44.017372	−44.017600

*Actual pretrack report from the ship at $14^h42^m00^s$ was:

Geodetic latitude 17°59′ N

Longitude 44°01′ W

Speed 2.5 knots

Bearing 210° clockwise from North

Accuracy ± 1 mile

The conversion between geodetic and geocentric was geodetic latitude = geocentric latitude +0.1127 deg.

V. DSIF TRACKING OF *ATLAS-CENTAUR VI*

A. General Information

The DSIF is primarily composed of various tracking stations located around the world and interfaces which connect these tracking stations with the main control center at JPL.

DSIF Stations 11, 42 and 51 were committed to the support of this mission. The locations of the DSIF stations employed in the *Atlas-Centaur VI (A/C-6)* mission are given in Table 18. Details of the DSIF 11 and DSIF 42 station parameters, as configured for this mission, appear in Table 19. It will be noted that the configuration shown is a GSDS S-band system.

The tracking and communications system at DSIF 51, on the other hand, is the hybrid configuration of L-band and S-band components known as the L to S conversions system. However, the characteristics listed in Table 19 for DSIF 11 and DSIF 42 are applicable, except as noted in Table 20.

Table 21 and Figure 42 show the nominal view periods of the spacecraft to the DSIF stations during the course of the mission. Rise and set times (in GMT) refer to that time at which the spacecraft is at a 5-deg geometrical elevation angle. Since the spacecraft signal can frequently be received when the spacecraft is lower than 5 deg, it is possible that acquisition of the spacecraft will occur before nominal rise time and loss of signal after nominal set time. The modes of operation of the DSIF are identified as ground modes (GM) and can be seen in Table 22.

Table 18. DSIF station locations

Station	Location	Geodetic latitude, deg	Geodetic longitude, deg
11	Goldstone, California	35.4 N	116.8 W
12	Goldstone, California	35.4 N	116.8 W
42	Tidbinbilla, Australia	35.2 S	148.98 E
51	Johannesburg, South Africa	25.9 S	27.7 E

Table 19. DSIF 11 and DSIF 42 RF system characteristics, S-band

Item	Characteristics	
Antenna Microwave Subsystem		
Cassegrain feed and microwave circuitry		
(1) Type	Receive	Transmit
(2) Gain	$53\ ^{+1.0}_{-0.5}$ db	$51\ ^{+1.0}_{-0.5}$ db
(3) Losses	0.16 ± 0.03 db	0.4 ± 0.1 db
(4) Polarization	RHC	RHC
(5) Ellipticity	0.7 db max	1 ± 0.5 db
(6) Effective noise temperature	27° ± 3° K (including losses)	
(7) Beamwidth	0.32 ± 0.03°	0.36 ± 0.03°
Low-noise amplifier		
(1) Type	TWM	
(2) Gain	35 ± 1 db	
(3) Bandwidth	10 mc at 1 db pt 15 mc at 3 db pt	
(4) Effective noise temperature	13° ± 2° K	

Table 19. (Cont'd)

Item	Characteristics
(5) Maximum input signal level	−80 dbm
Receiver Subsystem	
Type	Phase-coherent double conversion superheterodyne
Effective noise temperature	
(Antenna at or near zenith)	
(1) SCM, TWM, and reference receiver	55° ± 10° K
Input signal level	−89 dbm to threshold (receiver and TWM)
Frequency	
(1) Range	2290 to 2300 mc/sec
(2) Nominal	2295 mc/sec
Noise bandwidth (2 B_L)	Threshold BW
(1) RF	152 cps $^{+0\%}_{-20\%}$
Detected telemetry	
(1) Modulation	Phase modulation
(2) Bandwidth (at 1 db pt)	Selectable 4.5 kc, 20 kc, 420 kc, and 2.2 mc
Precision doppler	
(1) Accuracy	0.2 cps rms (uncorrelated error for 1 min sample spacing).
Transmitter Subsystem	
Frequency control	Phase stable, crystal-controlled oscillator: Frequency synthesized from an atomic frequency standard.
Stability	
(1) Frequency	
(a) Precision operation	1 part in 10^{11} for 20 min 5 parts in 10^{11} for 10 hr to 1 yr
(b) Manual operation	1 part in 10^{7} for 20 min 1 part in 10^{8} for 10 hr
Frequency	
(1) Range	2110 to 2120 mc/sec
(2) Nominal	2113 5/16 mc/sec
Power Output	10 kw
RF Threshold Signal Levels	Threshold BW
(Antenna at or near zenith)	152 $^{+0\%}_{-20\%}$
$-(159.8\ ^{+1.4}_{-1.2}$ dbm)	

Table 20. DSIF 51 RF system characteristics, L/S system

Item	Characteristics
Receiver Subsystem	
Effective noise temperature (Antenna at or near zenith)	
(1) SCM and reference receiver	3000° ± 300° K (at preselector)
Input signal level	−85 dbm to threshold, at preselector. (−65 dbm to −150 dbm with 20 db pad inserted between mixer/30 mc preamplifier, and 30 mc balanced mixer.)
Telemetry	
(1) Bandwidth	15 kc, 3 db predetection bandwidth 10 kc, 10 db predetection bandwidth
(2) Phase	Phase symmetry of ±10° over the 1 db prediction bandwidth.
Acquisition Aid Antenna	
(1) Type	Single horn: High performance monopulse performance and transmission at 10 kw cw power level.
(2) Gain	Receive: 21.0 db ± 1.0 db Transmit: 20.0 db ± 2.0 db
(3) Beamwidth	0.16°
(4) Polarization	RHC
(5) Ellipticity	Receive and transmit: 1.5 db

Table 21. Nominal view periods vs actual tracking at DSIF stations

DSIF station	Nominal rise (GMT)	Nominal set (GMT)	Nominal view period	Acquisition by station	End of station track	Actual view period
51	$14^h54^m32^s$ Aug. 11, 1965	$01^h51^m24^s$ Aug. 12, 1965	$10^h56^m52^s$	$14^h55^m06^s$ Aug. 11, 1965	$01^h55^m06^s$ Aug. 12, 1965	$11^h00^m00^s$
11	$01^h53^m54^s$ Aug. 12, 1965	$09^h57^m24^s$ Aug. 12, 1965	$8^h03^m30^s$	$02^h09^m52^s$ Aug. 12, 1965	$06^h51^m45^s$ Aug. 12, 1965	$4^h41^m53^s$
42	$05^h26^m43^s$ Aug. 12, 1965	$19^h11^m44^s$ Aug. 12, 1965	$13^h45^m01^s$	$05^h41^m01^s$ Aug. 12, 1965	$06^h50^m37^s$ Aug. 12, 1965	$1^h09^m36^s$

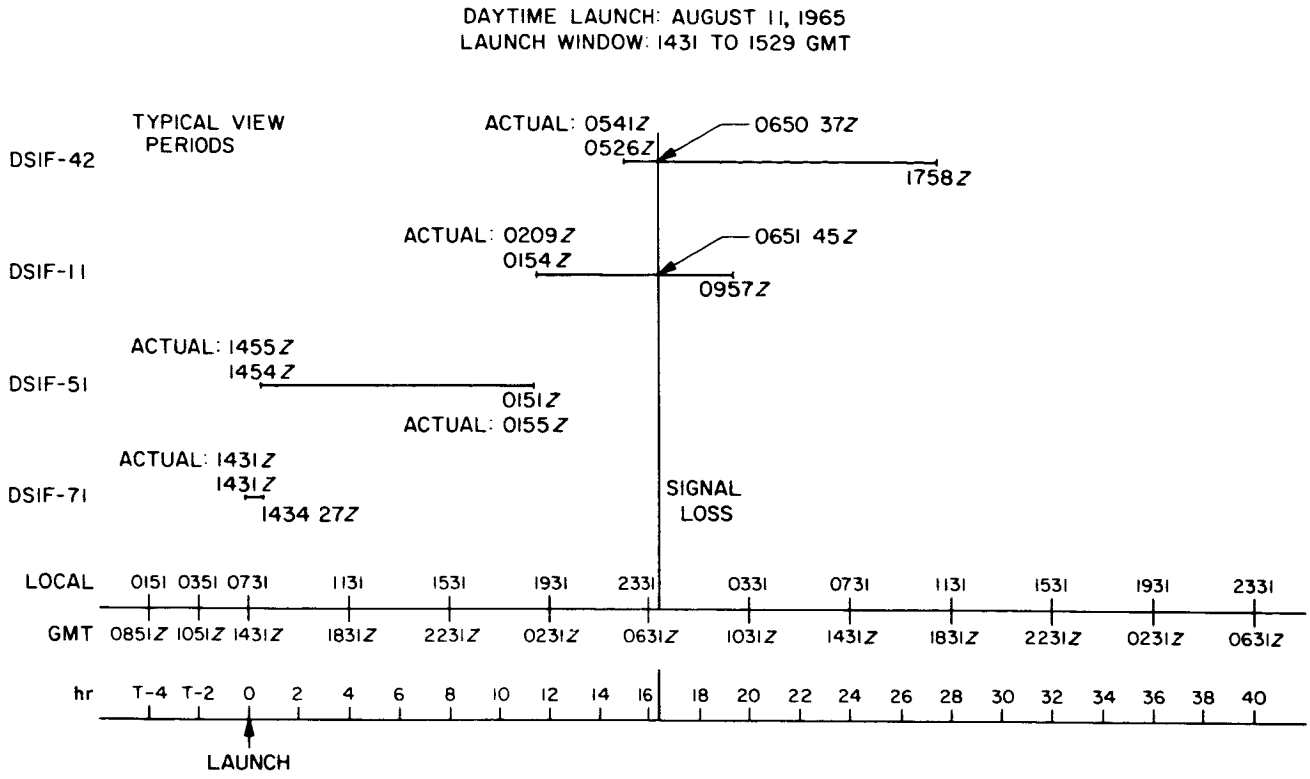


Fig. 42. Station view schedule

Table 22. Ground station tracking modes

Transmit/receive		Antenna feed	
GM-0[a]	No receive (transmit only)	0	Not used
GM-1	One-way doppler (receive only)	1	Horn feed diplexer combination (85-ft D reflector)
GM-2	Two-way, one-station (transmit/receive)	2	Tracking feed diplexer combination (85-ft D reflector)
GM-3	Two-way, two-station noncoherent (receive only)	3	Acquisition antenna
GM-4	Two-way, two-station coherent (receive only with reference signal from transmit station)	4	Dipole (6-ft D reflector)
GM-5	Receive only (no doppler)	5	Horn feed, no diplexer (receive only) (85-ft D reflector)

[a]Telemetry will be available in all receive modes except GM-0.
Example: GM-2-1; transmitting to spacecraft and receiving two-way doppler; horn feed and diplexer.

This mode description is used to define the station configuration. The code is broken into two parts. The first defines the transmit/receive mode, and the second the antenna feed configuration.

During *A/C-6*, the DSIF stations provided both angular and doppler data throughout the mission. Both data types were used during the early part of the mission, and the angular data were very useful in obtaining the initial orbit estimates. For the post-flight analysis, only two-way doppler data were used. Plots of the doppler residuals may be seen in Fig. 17 through 33. Relatively large biases were seen in the angular data from Station 51. This is mainly due to angular correction model errors which, in turn, were caused by recent extensive equipment changes and RF feed realignment at the angle tracking stations. New correction coefficients are being determined to remove these biases during future missions.

B. Spacecraft Acquisition to End of Mission

1. DSIF Acquisition and Tracking

a. DSIF 51 was initially instructed to use the pre-flight nominal predictions with a launch azimuth of 96 deg for September 28, 1965 and time from launch for their acquisition. However, nominal predictions generated at T−5m were transmitted to DSIF 51 and were the ones actually used for acquisition. AFETR in-flight predictions were received by DSIF 51 but were not used for

acquisition. The detailed sequence of DSIF 51's acquisition is listed in Table 23.

The general sequence of DSIF 51's acquisition is as follows:

GMT	*Event*
1455:06	First RF lock on acquisition aid antenna
1455:59	Autotracking on acquisition aid antenna
1456:09	Autotracking on main 85-ft antenna
1456:50	10-kw transmitter turned on using 85-ft antenna
1459:06	Receiver in two-way lock
1502:16	Two-way lock verified

b. The 4 min from first acquisition to two-way lock compare very favorably with practice-aircraft-carried transponder acquisitions conducted at DSIF 51 prior to the *A/C-6* mission. The 3 min 10 sec required to verify two-way lock also compare favorably with practice times.

c. DSIF 51 tracked *A/C-6* from acquisition to signal loss at the horizon which occurred at 0155:06Z August 12, 1965, a total of 11 hr. During this time there were approximately 13 reported, dropped, lock periods. Signal strength at acquisition was reported as −97 dbm. Two-way doppler was obtained during DSIF 51's track with the exception of dropped lock periods. Since there were approximately 14 min between spacecraft set at DSIF 51 and rise at DSIF 11, there was no station transfer involved.

d. DSIF 11 first acquired the spacecraft at 0209:52Z August 12, 1965 at a signal level of −113 dbm. At 0221:50Z, the 85-ft antenna was on autotrack in two-way mode. No dropped lock events were reported during DSIF 11's track. However, for a period of approximately 10 seconds, some 2 hr after acquisition (0426:30Z), the spacecraft static phase error became erratic and the signal level dropped to −132 dbm. Good two-way doppler was obtained during the 3 hr 50 min and 10 sec that DSIF 11 was in two-way mode with the spacecraft. Two-way mode ended at 0600:02Z, at which time this station went into three-way mode until 0651:45Z when the spacecraft stopped transmitting.

Table 23. Tracking sequence

GMT	Station	Event
1431:04.430Z		AC-6 launch
1434:27Z	71	R_x (Receiver) lost lock
1455:06Z	51	One-way acquisition on the S-band acquisition aid (SAA) paramp
1456:05Z	51	T_x (Transmitter) on 10 kw
1459:06Z	51	Two-way acquisition on the S-band cassegrain monopulse (SCM) mixer
1502:16Z	51	Two-way verified
1700:52Z	51	T_x out of lock; two-way lost
1703:30Z	51	Two-way confirmed on SCM mixer
1815:53Z	51	T_x off. Remove 3-v bias
1816:28Z	51	R_x out of lock
1817:14Z	51	T_x on 10 kw; R_x out of lock
1819:28Z	51	R_x in lock; two-way, on SCM mixer
1822:10Z through 1825:45Z	51	R_x in and out of lock
1830:20Z	51	T_x sweeping to confirm two-way lock
1830:30Z	51	R_x in lock
1831:27Z	51	T_x on synthesizer
1832:55Z	51	Two-way lock confirmed
2319:40Z	51	Servo to aided track

Table 23. (Cont'd)

GMT	Station	Event
2320:25Z	51	Servo to autotrack
2323:58Z	51	R_x out of lock
2335:20Z	51	T_x off
2335:36Z	51	R_x to one way
2355:00Z	51	SAA paramp in circuit
0000:30Z	51	One-way acquisition; R_x in and out of lock
0007:38Z	51	R_x in lock on SCM mixer
0012:36Z	51	T_x on 10 kw, sweeping $\pm$ 50 cps
0018:00Z	51	T_x sweeping $\pm$ 100 cps
0019:55Z	51	R_x out of lock
0020:20Z	51	R_x in lock, two-way on SCM mixer
0152:22Z	51	Antenna at limits
0155:00Z	51	T_x off
0155:06Z	51	R_x out of lock; end of track
0209:52Z	11	One-way acquisition on SCM mixer
0210:00Z	11	Servo in autotrack
0210:10Z	11	R_x to good data
0214:00Z	11	T_x on 10 kw
0218:10Z	11	R_x out of lock, servo to aided track
0220:48Z	11	R_x in lock, two-way on SCM maser
0221:50Z	11	Servo to autotrack
0223:44Z	11	Synthesizer on loop
0426:30Z	11	Spacecraft static phase error (SPE) became erratic for approximately 10 seconds
0541:01Z	42	Three-way acquisition on SCM maser
0547:03Z	42	Autotrack in HA
0600:00Z	42	T_x on, 10 kw; two-way on SCM maser
0600:02Z	11	T_x off
0601:15Z	11	R_x to good data, three-way
0620:00Z	42	Autotrack in both axes
0650:37Z	42	Both R_x out of lock
0651:45Z	11	R_x out of lock
0652:00Z	42	Antenna to aided track on predicts
0653:40Z	42	T_x off; X_a changed to 3574—searching
0654:16Z	11	Servo to aided track
0702:00Z	42	X_a changed to 3688—searching
0703:58Z	11	T_x on 10 kw
0717:00Z	42	X_a changed to 3574—searching
0730:00Z	11	R_x searching $\pm$ 50 cps
0823:22Z	11	T_x off
0830:00Z	11	R_x searching $\pm$ 100 cps
0900:00Z	11, 42	End of search; unable to reacquire spacecraft. Tracking terminated.

e. Two-way mode control was transferred from DSIF 11 to DSIF 42 at 0600Z. This transfer was accomplished by DSIF 11 turning off its transmitter at 0600:00Z. The XA (ground transmitter VCO frequency setting) change was handled as follows: Prior to transfer it was determined that DSIF 11's actual XA was 10 cycles below the predicted value for the time of transfer. DSIF 42 was requested to set its XA for 10 cycles below the predicted value also for time of transfer. In this manner, no two-way doppler data were lost at DSIF 11, and a smooth two-way lock was accomplished at DSIF 42. This was the only station transfer made during the mission.

f. DSIF 42 reported its receiver to be in lock at 0541:51Z. The station was on autotrack at 0547:03Z in three-way mode. From 0600Z, when the transmitter was first turned on, it required 20 min to lock in autotrack on the 85-ft antenna in two-way mode. At 0650:37Z both receivers dropped lock simultaneously.

g. Signal loss occurred at 0650Z simultaneously at DSIF 11, DSIF 12, and DSIF 42. DSIF 12 was tracking at the time on a purely voluntary basis. Signal loss was sudden from an average value of -120 dbm to below threshold. At signal loss time, DSIF 11 and DSIF 12 were tracking three-way and DSIF 42 was two-way. DSIF 42 was requested to turn off its transmitter and attempt to reacquire in one-way mode. TDA (Tracking Data Analysis) had by this time a good spacecraft trajectory and hence a high degree of confidence in the look angles for each station.

h. In order to cover both one-way and two-way acquisition, the stations were configured for search and reacquisition as follows:

1) DSIF 12 and DSIF 42 were instructed to search in one-way mode using the D_1 predicted values and varying this value over the VCO's range.

2) DSIF 11 was in two-way mode using the following procedure: The XA was varied ± 50 cps about the predicted value with the receiver operator varying the D_2 in step with the XA so that when uplink was established, the ground receiver VCO would be set for the proper value. This procedure was followed twice, and then the XA value was varied ± 100 cps. During the last 55 min of the search, DSIF 12 swept ± 1 deg about the predicted values of HA and Dec.

i. The best chance for reacquisition existed in the above station configuration. After 2 hr (at 0900Z), no sign of the spacecraft signal had been received by any of the three stations, and DSIF tracking support was secured.

C. Data Validation

The validity of tracking data generated by the DSIF stations was continuously checked by the Tracking Data Analysis (TDA). This analysis in turn directly affects data weights assigned by Flight Path Analysis.

Validity was checked using visual comparison (i.e., correlation between received data, predicted data, and station reports), as well as by computer analysis using an SDS 930 at the ECHO site at Goldstone. Utilizing the computer, data were examined for standard deviation related to residuals from orbital computations and statistical biases.

Figure 43 is a plot of the received signal level at DSIF 51 for its entire view period, again based on voice reports. According to the voice report plots in Figure 44 of the received signal levels at all stations, DSIF 51 apparently averaged about 10–12 db below the nominal

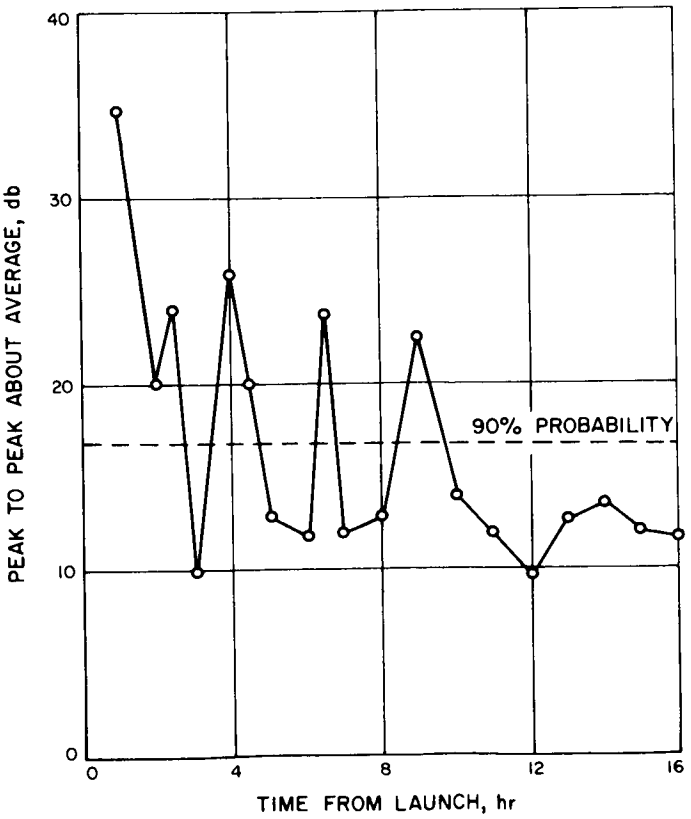


Fig. 43. Long-term signal level variation at Johannesburg

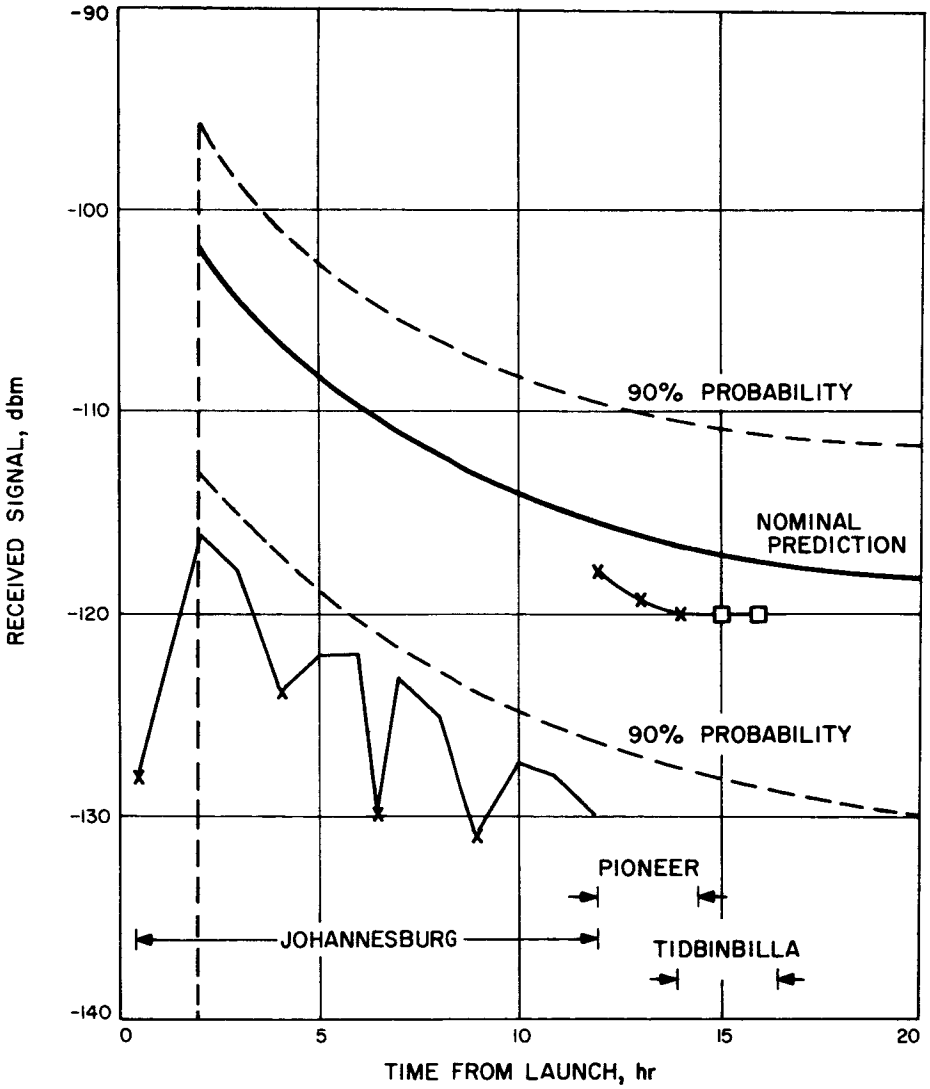


Fig. 44. Average received signal level

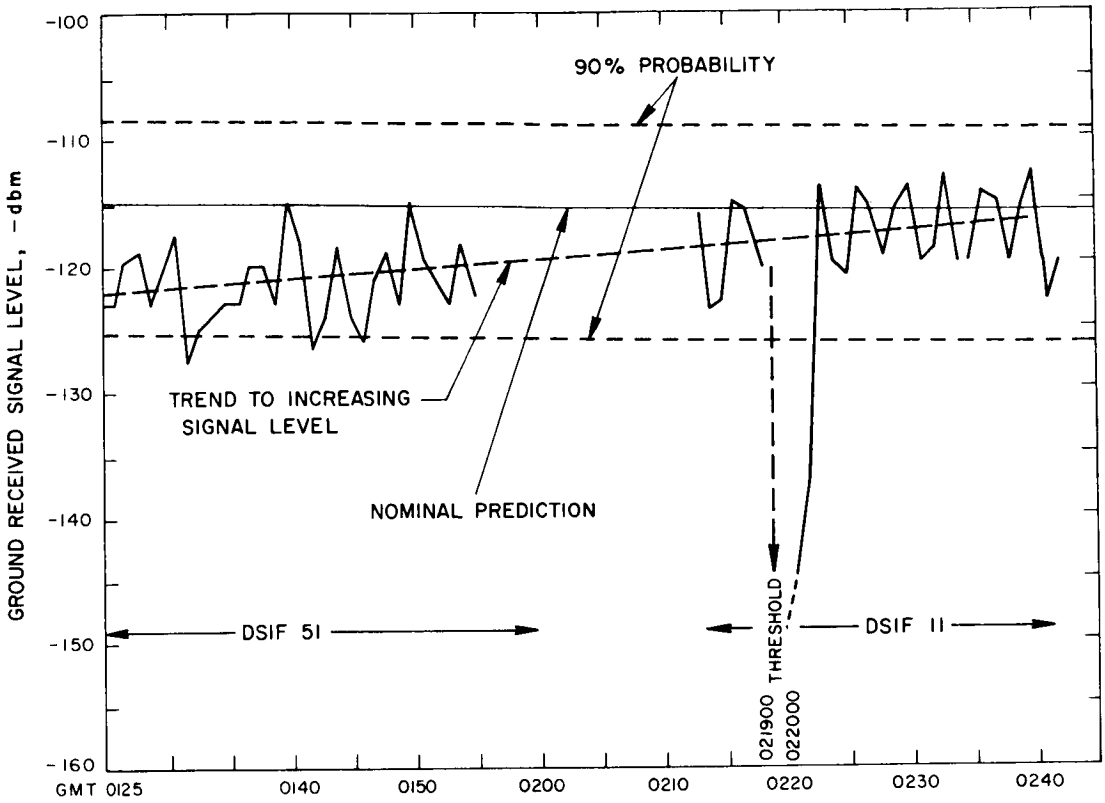


Fig. 45. Actual received signal levels at transfer

preflight predictions, while DSIF 11 and DSIF 12 apparently averaged within 3 db of the preflight data.

Figure 45, by contrast, shows a detailed plot of actual station records from DSIF 51 and DSIF 11 of the received signal levels at 1-min intervals for the period from 30 min before DSIF set to 30 min after DSIF rise. The average signal level during the DSIF track exhibits an upward trend which appears to continue smoothly across the tracking gap and on into the DSIF 11 data.

Figure 46 shows the variation in the signal level at DSIF 51. This was apparently due to the spacecraft tumbling.

Data appeared very noisy due to S/C tumble rates, however, validation was satisfactorily performed. A summary of data actually used is shown in Section III.

D. Performance Summary

The DSN met all of the requirements specified for the *A/C-6* mission. Early acquisition was followed by immediate lockup. Excellent two-way doppler data were obtained in spite of a wide range of varying signal strength, and a variety of other, relatively minor, prob-

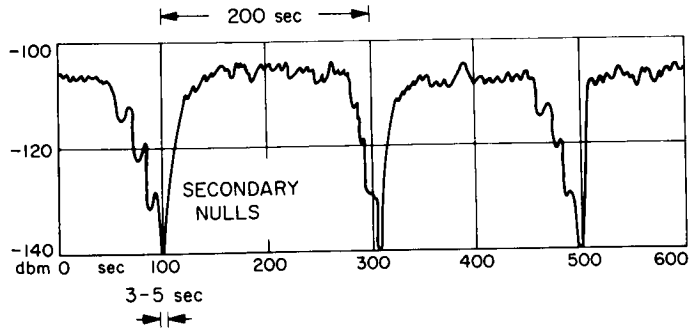


Fig. 46. Short-term signal level variation at Johannesburg

lems. This fact is reflected in the tracking residuals and in the orbits computed.

The view schedules of the supporting DSIF stations are shown in Fig. 42, and a history of RF events during the mission appears in Table 23.

Many receiver dropouts of short duration were experienced by DSIF 51. It now appears that these were due in part to spacecraft tumbling and in part to a defective transmitter VCO at the station.

VI. MIDCOURSE MANEUVER ANALYSIS

A. Introduction

Although the *A/C-6* spacecraft was launched on August 11, 1965 on a non-impacting lunar trajectory, it has a direct relationship with a September 28, 1965 trajectory that was targeted for lunar impact. This section will describe the midcourse maneuver that would have been made, had the launch date been on September 28.

B. Simulated Trajectory

The design of the *A/C-6* trajectory was based on a launch window, extending from September 27, 1965 through October 2, 1965, that was targeted for lunar impact conditions. The launch window characteristics are shown in Table 24. The second launch day, September 28, was chosen as the launch day.

In order to avoid impacting the Moon, the spacecraft was launched, per this launch window, on August 11, 1965. In order to satisfy test support requirements for morning-through-early-afternoon launches, six hours were added to the targeted launch window. Simulated lunar trajectories and corresponding trajectory corrections were computed, in real time, by using the converged orbit determination program earth-fixed spherical conditions and the appropriate September 28 injection epoch.

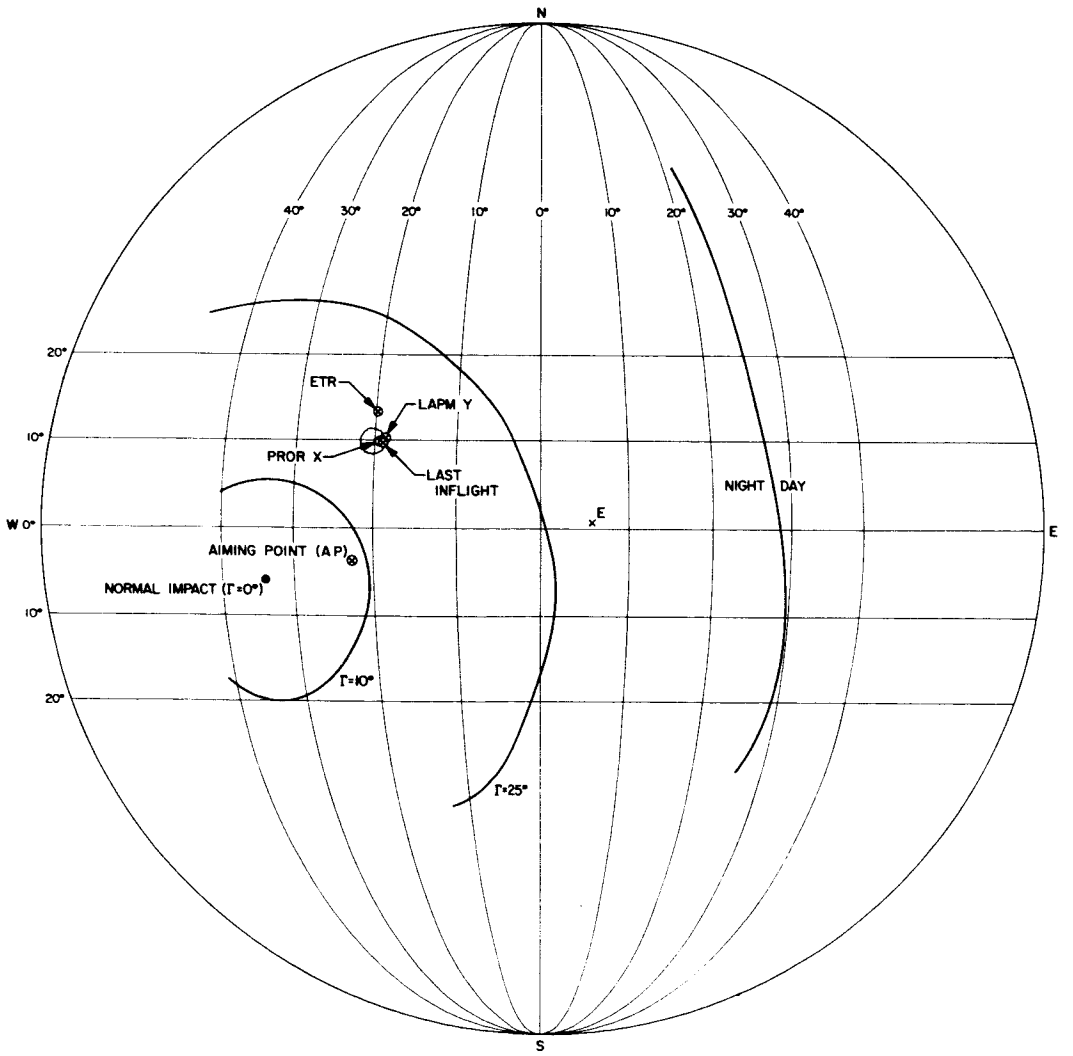


Fig. 47. Targeted and simulated impacts

Table 25 summarizes the simulated lunar parameters for selected orbit computations.

On the September 28 date, *A/C-6* was targeted so that impact would occur on the lunar surface at a latitude of −3.75 deg and a longitude of 337.25 deg.

Figure 47 shows the approximate relationship between the simulated impact points and the targeted aiming point. It is noted that if the spacecraft were on a lunar trajectory, unbraked impact would have occurred in the crater Copernicus, only 15 deg from the desired landing site.

Table 24. Launch window characteristics

Actual launch day	Simulated launch day (1965)	Launch azimuth (deg)		Launch window (GMT)				Window duration (min)
				Plan I		Plan II		
		Opening	Closing	Opening	Closing	Opening	Closing	
1	Sept. 27	103.0	111.0	13:43	14:10	22:43	23:10	27
2	Sept. 28	94.5	111.0	14:31	15:29	22:31	23:29	58
3	Sept. 29	93.0	111.0	15:40	16:37	22:40	23:37	57
4	Sept. 30	93.0	111.0	16:32	17:27	22:32	23:27	55
5	Oct. 1	94.5	111.0	17:07	18:03	22:07	23:03	56
6	Oct. 2	102.5	111.0	18:00	18:27	22:00	22:27	27

Table 25. Orbit computations

Orbit identification	Simulated target parameters								
	B (km)	*B.TQ* (km)	*B.RQ* (km)	*TF* (hr)	Impact velocity (km/sec)	Flight path angle (deg)	Latitude (deg)	Longitude (deg)	Arrival GMT
AFETR Check Run B	1138.	—	—	62.10	2.676	−75.3	13.24	340.23	22:36:49
PROR X	1033.	431.	−939.	61.98	2.676	−74.1	9.98	340.61	22:32:43
PROR Y	915.8	887.	−229.	62.01	2.676	−75.9	−6.67	345.5	22:34:48
ICEV Y	915.8	598.	−634.	61.98	2.676	−75.9	4.12	342.36	22:33:09
PREL Y	1064.	465.	−957.	61.97	2.676	−73.6	10.16	341.42	22:32:19
DACO YA	1053.	439.	−957.	61.97	2.676	−73.8	10.31	340.89	22:32:23
DACO YB	1188.	507.	−1074.	61.97	2.676	−71.6	12.33	343.11	22:31:48
DACO YD	1053.	461.	−947.	61.97	2.676	−73.8	9.99	341.26	22:32:18
LAPM Y	1066.	461.	−961.	61.97	2.676	−73.6	10.27	341.38	22:32:16
Final In-flight Orbit Using All DSIF Data	1048.	455.	−944.	61.97	2.676	−73.9	9.96	341.13	22:32:09

The grouping of various solutions is shown in Fig. 48. During the flight, the impact points varied from the floor of the crater to the east wall. The final inflight orbit, computed after the nominal maneuver time, showed an unbraked impact at 9.96 deg latitude and 341.13 deg longitude. Due to the added complication of changing the injection epoch, no orbit determination statistics were mapped to the moon.

C. Simulated Trajectory Correction

The *Surveyor* trajectory correction computed to enable the spacecraft to soft land at the desired landing site, −3.75 deg latitude and 337.25 deg longitude, was 18.51 m/sec which is well below the maximum capability of approximately 50 m/sec. The simulated maneuver time was chosen to be 15.69 hr after injection. This time was found to be a good compromise between pre- and post-maneuver Goldstone visibility. The maneuver epoch was September 29, 1965, 00 hr, 24 min, 00 sec, GMT. As required by the Sequence of Events list, the above correction was based upon the results of the last pre-maneuver orbit (LAPM Y) available at L + 794m. The characteristics of the orbit are given in Table 25.

Table 26 summarizes the results of the nominal correction. Using the program described in Reference 11, the required component in the critical plane, to correct miss only, was found to be 4.24 m/sec. The component in the noncritical direction, which results from an optimum tradeoff between flight time, main retro-burnout velocity, and vernier-engine fuel margin, was 18.04 m/sec. If the maneuver strategy were to correct miss plus flight time, the required noncritical component would have been −14.5 m/sec, giving a total of approximately 15 m/sec.

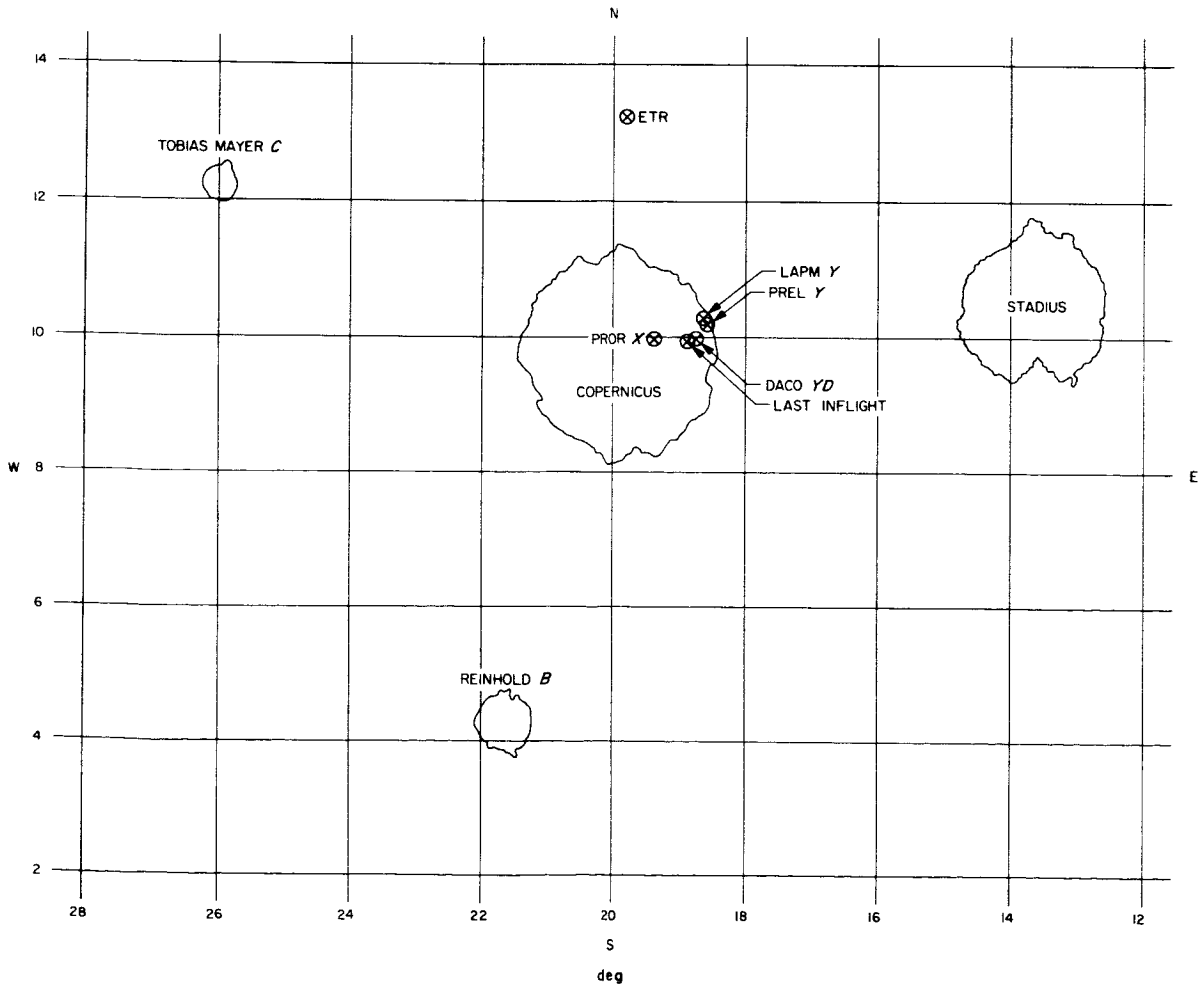


Fig. 48. Simulated impact solutions

Table 26. Trajectory maneuver

Parameters	No M/C	15½ hr M/C	40 hr M/C
Midcourse (M/C) Data:			
Time, GMT		9-29-65, 000-24-00	9-30-65, 00-42-23.60
V_c (Critical miss), m/sec	0	4.25	8.01
U3 (Noncritical), m/sec	0	18.04	16.67
ΔV (Magnitude), m/sec	0	18.51	18.5
$W_{M/C}$ (Prop weight), lb	0	15.17	15.16
Roll, deg/sec	0	33.44, 66.89	Not Available
Yaw, deg/sec	0	149.54, 299.08	Not Available
EBT, sec	0	18.94	Not Available
Omni	*B*	*B*	*B*
3σ Execution errors (on surface), km	0	28.	14.
Terminal Data:			
Lat, deg	10.17	−3.75	−3.74
Long, deg	341.42	337.24	337.26
Impact time, GMT	9-30-65, 22:32:19.35	9-30-65, 23:10:20.27	9-30-65, 22:39:50.57
γ (Incidence angle), deg	16.39	8.47	8.02
VIMP (Impact velocity) m/sec	2676.39	2667.68	2668.98
Touchdown time, GMT	9-30-65, 22:35:05.82	9-30-65, 23:12:51.50	Not Available
VBO (Burnout vel), ft/sec	512.04	395.15	404.37
HBO (Burnout alt), ft	43788.	31542.	Not Available
FM (Fuel margin) lb	19.28	20.95	22.32
WFT (Descent prop), lb	141.71	124.87	123.5
Descent time, sec		126.01	Not Available
Roll, deg/sec	73.29, 146.58	67.65	Not Available
Yaw, deg/sec	143.08, 286.17	143.56	Not Available
ΔT (Ignition delay), sec	5.85	7.59	Not Available

The appropriate maneuver rotations were 33.44 deg in roll and 149.54 deg in yaw. A roll–yaw maneuver was selected to enable the spacecraft to remain on one omni-antenna (omni B) during the maneuver. The required engine burn time was 18.94 sec.

Key terminal parameters indicate that the terminal descent phase would have been very nominal with an associated high probability of success. They are: pre- and post-landing, Goldstone visibility of 3 and 5.5 hr, respectively, an unbraked impact velocity of 2667.18 m/sec, nominal main retro-burnout velocity of 395.15 ft/sec, a fuel margin of 20.95 lb, and a main retro-ignition delay of 7.59 sec. The terminal maneuvers would have been roll 67.75 deg, yaw 143.56 deg.

Figure 47 shows that the uncorrected trajectory would have intersected at the Moon at or near a possible landing site. The only limitation would have been the quality of the terrain. Had a real time decision been required, the FPAC recommendation would have been to wait until the second pass at Goldstone (about 1 + 40h) to decide if a correction were necessary. By waiting, additional tracking data and the resulting orbit determination would have pinpointed the uncorrected landing site. If the final impact point had been in a favorable region, a trajectory correction may not have been required. If the region had proved not acceptable, a trajectory maneuver could still have been executed and have been well within the spacecraft capability.

The required 40-hr correction, and the associated terminal parameters, were tabulated. The maneuver was found to be 18.5 m/sec, approximately the same as at 15.69 hr. The apparent paradox is a result of the *Surveyor* maneuver guidance logic and will occur whenever small misses are encountered.

An estimate of the tracking uncertainties was made and combined with the execution errors to predict the landing errors. Total 3-sigma landing errors were estimated to be 28 km for the 15.69-hr correction and 14 km at 40 hr.

APPENDIX A

Description of *Atlas-Centaur VI* and Spacecraft Dynamic Model

The descriptions of the vehicles that composed the *A/C-6* mission are shown in Fig. A-1 and A-2 which follow.

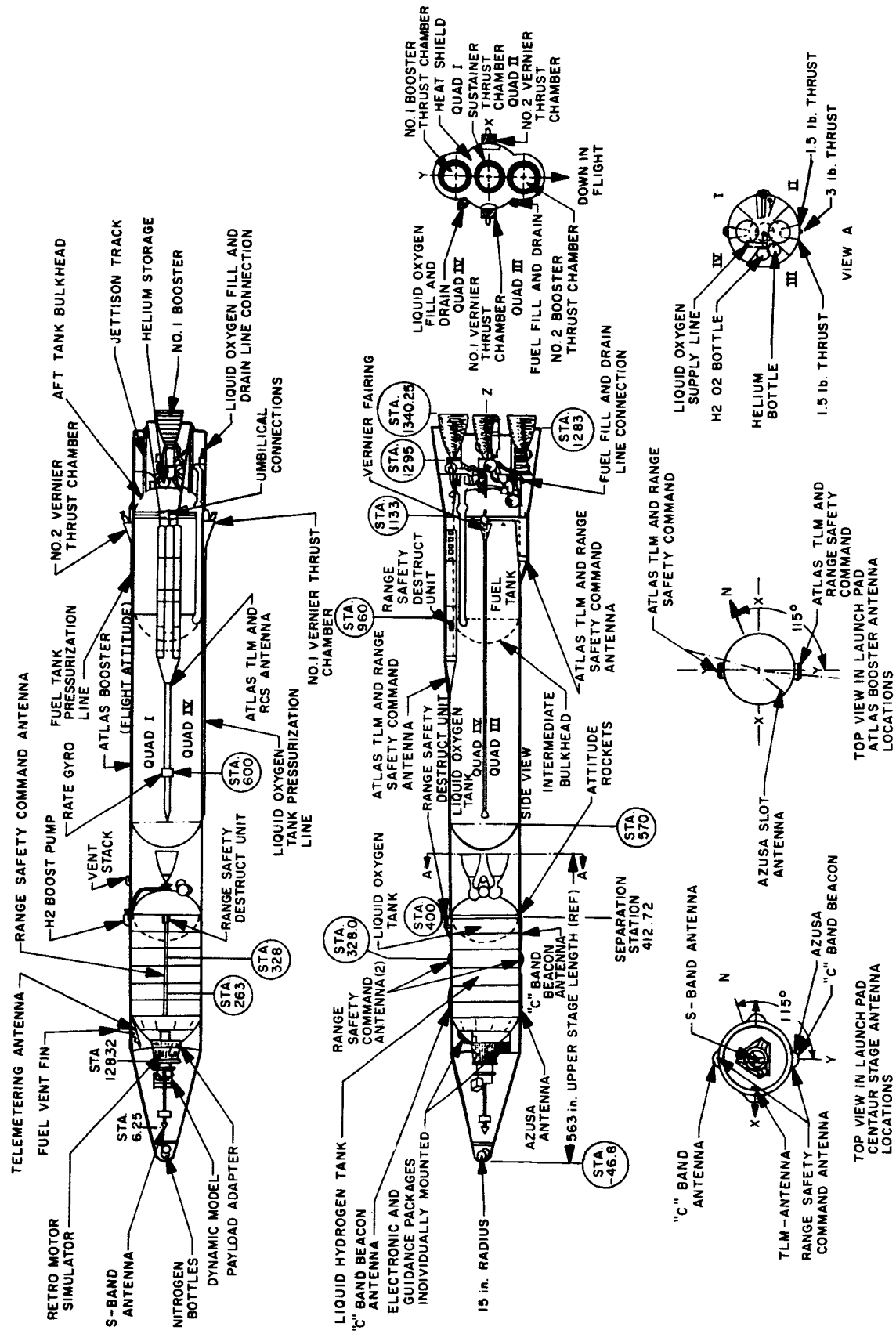


Fig. A-1. *Atlas-Centaur*

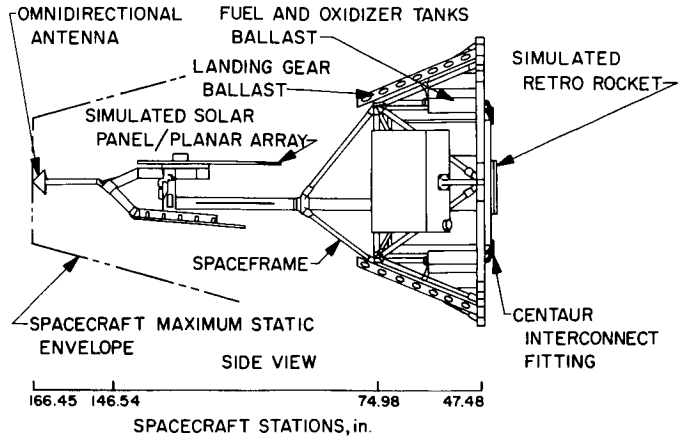


Fig. A-2. Spacecraft dynamic model

APPENDIX B

Definition of the miss parameter *B*

The miss parameter $\boldsymbol{B}$ is used at JPL to measure miss distances for lunar and interplanetary trajectories and is described by W. Kizner of JPL in Ref. 9. $\boldsymbol{B}$ has the desirable feature of being very nearly a linear function of changes in injection conditions.

The osculating conic at closest approach to the target body is used in defining $\boldsymbol{B}$. $\boldsymbol{B}$ is the vector from the target's center of mass perpendicular to the incoming asymptote. Let $\boldsymbol{S}_I$ be a unit vector in the direction of the incoming asymptote. The orientation of $\boldsymbol{B}$ in the plane normal to $\boldsymbol{S}_I$ is described in terms of two unit vectors $\boldsymbol{R}$ and $\boldsymbol{T}$, normal to $\boldsymbol{S}_I$. $\boldsymbol{T}$ is taken parallel to a fixed reference plane and $\boldsymbol{R}$ completes a right-handed orthogonal system. Figure B-1 illustrates the situation.

The *Ranger* work has used the orbital plane of the Moon as the reference plane. If $\boldsymbol{W}$ is a unit vector normal to the orbital plane ($\boldsymbol{W}$ in direction of $\boldsymbol{R}_M \times \boldsymbol{V}_M$, where $\boldsymbol{R}_M$ is a radius vector to the Moon from Earth, and $\boldsymbol{V}_M$ is the space-fixed velocity of the Moon relative to the Earth's center), then $\boldsymbol{T} = \boldsymbol{S}_I \times \boldsymbol{W}$ defines our coordinate system.

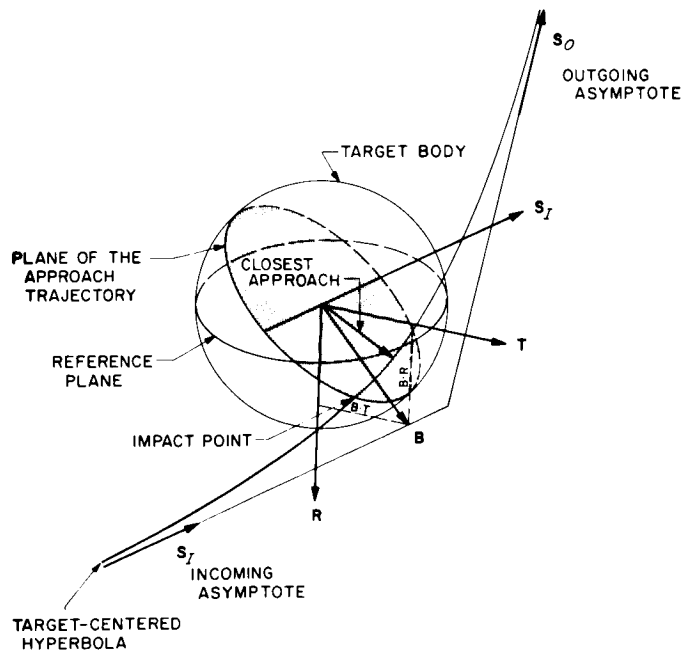


Fig. B-1. Definition of $B \cdot T$, $B \cdot R$ system

APPENDIX C

Atlas-Centaur VI Space Trajectory Printout

The following pages contain the printout data sheets for the *Atlas-Centaur VI* space trajectory.

```
CASE 1                                  IESYS-JPTRAJ-SPACE C9C165                                  1

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONIC. AS OF 1 SEPT 65

ECUBLE PRECISION EPHEMERIS TAPE - EPHEM1

  GME  .3986C0C3 06     J  .16234500-02     M -.57499999-05     C  .78749995-05     RE  .63781650 04    REM  .63783112 04
  G    .6677C998-19     A  .68781196 29     E  .6880C194 29     C  .88836976 29     GME .4178C741-C2    AL  .14955650 09
  GMM  .49CC26293 04    GMS .13271411 12    GMV  .32476627 06   GMA  .42977367 05   GMC  .3751870C 08    GMJ  .1267.935 09
  EGM  .3986C32C 06     MGM  .49027779 04   JA  .39200C00-02    MA  .CCCCCCCC CC    CA  .CCCCCCCC CC     KA  .3417CCCC 04

INJECTION CONDITIONS                EARTH        23572563.62320271463CCCC J.D.= 2438584.11277314  AUG. 11,1965 14 42 23.600

GEOCENTRIC          XC-.371C5266 04   YC .47667794 04   ZC .25621308 04 DXC-.87339C47 C1 DYC-.5E1CC732 C1 DZC-.323894C8 C1
CARTESIAN           TC .32943599 05 GHA .18044963 C2 OMC .31924731 03
CATE OF RUN 1.1365A 1C2121

                                                EARTH    IS THE CENTRAL BODY FOR INTEGRATION   COWELL EQUATIONS OF MOTION

   0 DAYS   0 HRS.   0 MIN.   0.CCC SEC.        23572563.62320271463CCCC J.D.= 2438584.11277314  AUG. 11,1965 14 42 23.600

        GEOCENTRIC                                                                                EQUATORIAL COORDINATES

    X -.371C5266 04      Y  .47667792 04      Z  .25621307 04     DX -.87339C42 C1    DY -.5E1C6729 C1    DZ -.323894C7 C1
    R  .65616C84 04    DEC  .22983932 02     RA  .12789768 03     V  .10978877 02    PTH -.26559855 C1    AZ  .11743923 03
    R  .65616C83 04    LAT  .22983932 02    LCN  .3C744806 03    VE  .10555956 02    PTE -.25693726 C1    AZE  .11815649 03
   XS -.11385615 09     YS  .5178C495 08     ZS  .39401219 08   DXS -.19163341 C2   DYS -.2C428715 C2   DZS -.88596225 01
   XM  .26372C56 06     YM -.26962367 06     ZM -.15228803 06   DXM  .73C647B3 CC   DYM  .6C446962 CC   DZM  .21499768 00
   XT  .CCCCCCCC CC     YT  .CCCCCCCC CC     ZT -.CCCCCCCC CC   DXT -.CCCCCCCC CC   DYT -.CCCCCCCC CC   DZT  .CCCCCCCC CC
   RS  .15155174 09     VS  .29377925 02     RM  .40599591 06    VM  .57234447 CC    RT  .CCCCCCCC CC    VT  .CCCCCCCC CC
  GEO  .23124146 02    ALT  .18669421 03    LCS  .32C66771 03   RAS  .14113734 03   RAM  .31436615 03   LCM  .13391652 03
  CUT  .35CCCCCC 02     DT  .75CCCCCC 01    DR -.54703C49 CC    SHA -.1666C981 C4   DES  .15221739 02   DEM -.21726181 02
  CCL  .27773321 03    MCL  .16778647 03    TCL  .17999999 03

                                                GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE                  23572563.6422C271421CCC J.D.= 2438584.11346681  AUG. 11,1965 14 43 23.533
  SMA  .41561501 06    ECC  .58425195 00      E  .73469526 05    SLR  .129873C2 05    APO  .82465283 06    RCA  .6545188C C4
   VH  .77244132-01     C3 -.55505291 00     C1  .71549613 05   TFP -.59933351 02     TF  .1664E153-01    PER  .44442935 05
   TA -.57577127 01    MTA  .18CCCCC0 03     EA -.51337067 00    MA -.8C912769-02                         TFI  .CCCCCCCC CC

                                                                ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
    X -.371C5266 04      Y  .47667792 04      Z  .25621307 04     DX -.87339C42 C1    DY -.5E1C6729 C1    DZ -.323894C7 C1
  INC  .28562189 02    LAN  .35908120 03    APF  .13103220 03    PX -.82471524 CC    PY -.49367585 CC    PZ -.2759C276 CC
   WX -.7666E42C-02     WY -.47805C92 00     WZ  .67829867 00    QX -.64537488 CC    QY  .67327351 CC    QZ  .56282393 CC
   QX -.76382744 CC     QY -.56406559 00     QZ -.31368381 00    BX -.24968715 CC    BY  .26C48C77 CC    BZ -.93263388 CC
   BX  .76382749 CC     BY  .56406562 00     BZ  .31368383 00    TX  .7219C548 CC    TY  .65195167 CC    TZ  .CCCCCCCC CC
  CAP  .21155C85 02    RAP  .13378757 03

  BTC  .65185188 05    BRC -.24710E74 05      E  .73469526 05    THA  .34034584 03    T VECTOR IN  EARTH EQUATOR PLANE

   0 DAYS   0 HRS.   0 MIN. 59.985 SEC.        23572563.64222C271266C627 J.D.= 2438584.11346741  AUG. 11,1965 14 43 23.585


CASE 1                                  IESYS-JPTRAJ-SPACE C9C165                                  2

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONIC. AS OF 1 SEPT 65

        GEOCENTRIC                                                                                EQUATORIAL COORDINATES

    X -.42245277 04      Y  .44C63786 04      Z  .23614612 04     DX -.83961C40 C1    DY -.62C1128C C1    DZ -.3449161 C1
    R  .65451741 04    DEC  .22148SEC 02     RA  .13379297 03     V  .10992964 02    PTH -.93198556-06    AZ  .1C965892 03
    R  .65451741 04    LAT  .22148981 02    LCN  .13309273 03    VE  .10574E35 02    PTE -.16954634-05    AZE  .11C47C32 03
   XS -.11386730 09     YS  .51778270 08     ZS  .39800688 08   DXS -.19163682 C2   DYS -.2C428924 C2   DZS -.88595128 01
   XM  .26376619 06     YM -.26958662 06     ZM -.15227513 06   DXM  .73055389 CC   DYM  .6C456606 CC   DZM  .21505166 CC
   XT  .CCCCCCCC CC     YT  .CCCCCCCC CC     ZT -.CCCCCCCC CC   DXT -.CCCCCCCC CC   DYT -.CCCCCCCC CC   DZT  .CCCCCCCC CC
   RS  .15155173 09     VS  .29377928 02     RM  .40599553 06    VM  .57234579 CC    RT  .CCCCCCCC CC    VT  .CCCCCCCC CC
  GEO  .21286251 02    ALT  .16977844 03    LCS  .32C43775 03   RAS  .14113800 03   RAM  .31437476 03   LCM  .13367451 03
  CUT  .15CCCCCC 02     DT  .75CCCCCC 01    DR -.14923C44-06    SHA -.1641C754 C4   DES  .15221532 02   DEM -.21724243 02
  CCL  .2C531266 03    MCL  .17510666 03    TCL  .17999999 03

                                                GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE                  23572563.6422C2712661671 J.D.= 2438984.11346741  AUG. 11,1965 14 43 23.585
  SMA  .41755773 06    ECC  .58432510 00      E  .73641971 05    SLR  .12987753 05    APO  .82857029 06    RCA  .6545174I C4
   VH  .66837362-01     C3 -.55466552 00     C1  .71955863 05   TFP -.1629CE87-04     TF  .16662436-01    PER  .44754265 05
   TA -.6431C191-05    MTA  .18CCCCC0 03     EA -.68301891-05    MA -.2184C447-08                         TFI  .16662431-01

                                                                ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
    X -.42245277 04      Y  .44C63786 04      Z  .23614612 04     DX -.83961C40 C1    DY -.62C1128C C1    DZ -.3449161 01
  INC  .28564.18 02    LAN  .35907C32 03    APF  .13101149 03    PX -.76377C73 CC    PY -.5640997Z CC    MZ -.31376C7C CC
   WX -.77C779CC-02     WY -.47C67829 00     WZ  .67828341 00    QX -.64544161 CC    PY  .67322552 CC    PZ  .36C79422 00
   QX -.76377 69 CC     QY -.56409971 00     QZ -.31376.70 00    RX -.24968922 CC    RY  .26C43754 CC    RZ -.93264541 CC
   BX  .76377171 CC     BY  .56409973 00     BZ  .31376C71 CC    TX  .72184510 CC    TY  .65205466 CC    TZ  .CCCCCCCC CC
  CAP  .21148979 02    RAP  .13379267 03

  BTC  .69346527 05    BRC -.24774641 05      E  .73641971 05    THA  .34034108 03    T VECTOR IN  EARTH EQUATOR PLANE

   5 DAYS   0 HRS.   0 MIN.   0.CCO SEC.        23572615.35632027146300C J.D.= 2438589.11277314  AUG. 16,1965 14 42 23.600

        GEOCENTRIC                                                                                EQUATORIAL COORDINATES

    X  .31107266 06      Y -.40904665 06      Z -.21999615 06     DX  .48034301 00    DY -.41281C44 00    DZ -.22C4C419 00
    R  .55900238 06    DEC -.23175656 02     RA  .30725234 03     V  .67061157 00    PTH  .78C63969 02    AZ  .7275C118 02
    R  .55900237 06    LAT -.23175657 02    LCN  .12187456 03    VE  .37346950 02    PTE  .1CC66256 C1    AZE  .27006311 03
   XS -.12176241 09     YS  .82639892 08     ZS  .35837544 08   DXS -.17232145 C2   DYS -.21863419 C2   DZS -.948C8301 01
   XM  .38676918 06     YM  .82280263 05     ZM  .30981305 04   DXM -.23097422 00    DYM  .86691843 00    DZM  .4276C793 00
   XT  .CCCCCCCC CC     YT  .CCCCCCCC CC     ZT -.CCCCCCCC CC   DXT -.CCCCCCCC CC   DYT -.CCCCCCCC CC   DZT  .CCCCCCCC CC
   RS  .15145879 09     VS  .29408197 02     RM  .39543650 06    VM  .99385370 CC    RT  .CCCCCCCC CC    VT  .CCCCCCCC 00
  GEO -.23316773 02    ALT  .55262751 06    LOS  .32045756 03   RAS  .14583534 03   RAM  .12009903 C2   LOM  .18663213 C3
  CUT  .35CCCCCC 02     DT  .1920CCCC 04    DR  .65611236 00    SHA  .1911C3C7 C6   DES  .13686888 02   DEM  .44890C52 00

                                                GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE                  23572563033520260363CCCC J.D.= 2438984.10434C61  AUG. 11,1965 14 30 15.C30
  SMA  .40823733 06    ECC  .981356C0 00      E  .78462733 05    SLR  .1508C444 C5    APO  .8C886349 06    RCA  .76111734 04
   VH  .85851917-01     C3 -.57639435 00     C1  .77531119 05   TFP  .43272857 C6    TF -.2C238018 CC    PER  .43264204 05
   TA  .17252787 03    MTA  .18CCCCC0 03     EA  .11210617 03    MA  .60012C00 02                         TFI  .12000000 03
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CASE 1 IBSYS-JPTRAJ-SPACE C9C165 3

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.31107266 06	Y	-.4C904665 06	Z	-.21999615 06	DX	.48034301 CC	DY	-.41281C44 CC	DZ	-.22C49415 CC
INC	.28603617 02	LAN	.35897943 03	APF	.13218212 03	PX	.83081826 CC	MY	.4852C577 CC	MZ	.27260953 CC
WX	-.85270267-02	WY	-.47867053 0C	WZ	.87795274 CC	PX	-.65975553 CC	PY	.66243224 CC	PZ	.35475823 CC
QX	-.75139664 0C	QY	-.57624425 0C	QZ	-.32147350 CC	RX	-.25035122 CC	RY	.25135168 CC	RZ	-.93495806 CC
BX	.75139681 0C	BY	.57624438 0C	BZ	.32147357 CC	TX	.7C851544 CC	TY	.7C569531 CC	TZ	.CCCCCCCC CC
DAP	.2CC778626 02	RAP	.13488574 03								

BTQ .73678797 05 BRQ -.26978424 05 E .78462733 05 THA .33986915 03 T VECTOR IN EARTH EQUATOR PLANE

10 DAYS 0 HRS. 0 MIN. 0.CCC SEC. 2357264765232C271463CCCC J.D.= 2438594.11277314 AUG. 21,1965 14 42 23.6CC

GEOCENTRIC EQUATORIAL COORDINATES

X	.46613383 06	Y	-.52280246 06	Z	-.2799C308 06	DX	.2588C123 CC	DY	-.14679652 CC	DZ	-.7466281C-01
R	.75426720 06	DEC	-.21782423 02	RA	.31172039 03	V	.3C676041 CC	PTH	-.7C624C18 02	AZ	.6C741394 02
R	.75428699 06	LAT	-.21782424 02	LCN	.12141441 03	VE	.5C981566 02	PTE	-.32522970 CC	AZE	.27CC3961 03
XS	-.12876637 09	YS	.72909854 08	ZS	.21618279 C8	DXS	-.15170636 02	DYS	-.2315826C 02	DZS	-.1C341766 02
XM	.84829275 05	YM	.33246751 06	ZM	.14727171 C6	DXM	-.10346729 01	DYM	.13C13656 CC	DZM	.15611737 CC
XT	.CCCCCCCC 0C	YT	.CCCCCCCC 0C	ZT	-.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC CC
RS	.15131527 09	VS	.29446752 02	RM	.37160966 06	VM	.1C546383 01	RT	.CCCCCCCC CC	VT	.CCCCCCCC CC
GED	-.21916845 02	ALT	.74791176 06	LCS	.82C17476 03	RAS	.15C48C74 03	RAM	.75603812 02	LCM	.24526733 03
DUT	.35CCCCCC 02	DT	.38403CCC 04	DR	.28938606 CC	SHA	.26269320 06	DES	.12C61196 02	DEM	.23347547 02
CCL	.9C8C1692 02	MCL	.18586990 03	TCL	.18CCCCCC 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357256353272C221663CCCC J.D.= 2438984.22255920 AUG. 11,1965 17 20 29.116

SMA	.41402498 06	ECC	.58198263 00	E	.78235C10 05	SLR	.14784158 C5	APO	.82C55L67 06	RCA	.74552771 C4
VH	.93559891-01	C3	-.96275187 0C	C1	.76765712 05	TFP	.E5451448 06	TF	.26348667 01	PER	.441843CC C5
TA	.17674643 03	MTA	.18CCCCCC 03	EA	.14682550 03	MA	.11623666 03			TFI	.24CCCCCC C3

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.46613383 06	Y	-.52280246 06	Z	-.2799C308 06	DX	.2588C123 CC	DY	-.14679692 CC	DZ	-.7466281C-01
INC	.29406754 02	LAN	.35887465 03	APF	.13416174 03	PX	.78573839 CC	MY	.52842256 CC	MZ	.32153496 CC
WX	-.26769884-01	WY	-.49C27615 0C	WZ	.87115593 00	PX	-.66157777 CC	PY	.66220C39 CC	PZ	.35223618 CC
QX	-.74935956 0C	QY	-.5669C8C7 0C	QZ	-.34207748 CC	RX	-.2489E9C5 CC	RY	.24914810 CC	RZ	-.93591113 CC
BX	.74939657 0C	BY	.5669C8C8 0C	BZ	.34207748 CC	TX	.7C733252 CC	TY	.7C688C96 CC	TZ	.CCCCCCCC CC
DAP	.2C624150 02	RAP	.13498170 03								

BTQ .72821970 05 BRQ -.28595C63 05 E .78235C10 05 THA .33856151 03 T VECTOR IN EARTH EQUATOR PLANE

15 DAYS 0 HRS. 0 MIN. 0.CCC SEC. 2357270214632C271463CCCC J.D.= 2438599.11277314 AUG. 26,1965 14 42 23.6CC

GEOCENTRIC EQUATORIAL COORDINATES

X	.54538111 06	Y	-.54938558 06	Z	-.29199434 06	DX	.1150124 CC	DY	.1EC74528-01	DZ	.15184109-01
R	.82736072 06	DEC	-.20666182 02	RA	.31479042 03	V	.1174C960 CC	PTH	.29858293 02	AZ	.67915629 02
R	.82736070 06	LAT	-.20666182 02	LCN	.11955611 03	VE	.56355559 02	PTE	.55428621-01	AZE	.27CC3891 03
XS	-.13485152 09	YS	.62652952 08	ZS	.27171732 C8	DXS	-.12978575 02	DYS	-.24294576 02	DZS	-.1C535566 02
XM	-.31235454 06	YM	.14852510 06	ZM	.98166702 C5	DXM	-.55020214 CC	DYM	-.87548903 CC	DZM	-.36130473 CC
XT	.CCCCCCCC 0C	YT	.CCCCCCCC 0C	ZT	-.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC CC
RS	.15115744 09	VS	.29490133 02	RM	.35952165 C6	VM	.10953285 01	RT	.CCCCCCCC CC	VT	.CCCCCCCC CC
GED	-.21795306 02	ALT	.82C98520 06	LCS	.31984578 03	RAS	.1550EEC9 03	RAM	.15457182 03	LCM	.31933751 03
DUT	.35CCCCCC 02	DT	.38400CCC 04	DR	.58453144-01	SHA	.31C84C76 06	DES	.1C355268 02	DEM	.15845725 02
CCL	.86411111 02	MCL	.17510057 03	TCL	.17999999 03						

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 4

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357256572552C271663CCCC J.D.= 2438984.64731C36 AUG. 12,1965 03 32 07.616

SMA	.41966459 06	ECC	.57855710 00	E	.86445C48 05	SLR	.17805619 05	APO	.83C36988 06	RCA	.85952955 04
VH	.1C145558 0C	C3	-.64976235 0C	C1	.84245658 05	TFP	.12498160 07	TF	.12E28895 02	PER	.45C56638 C5
TA	.17927662 03	MTA	.18CCCCCC 03	EA	.17305980 03	MA	.16626503 03			TFI	.36CCCCCC 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.54538111 06	Y	-.54938558 06	Z	-.29199434 06	DX	.1150124 CC	DY	.1EC74528-01	DZ	.15184109-01
INC	.29884747 02	LAN	.35581364 03	APF	.13562543 03	PX	.7511C345 CC	MY	.55E6931C CC	MZ	.35171805 CC
WX	-.36373499-01	WY	-.49692759 0C	WZ	.86702941 00	PX	-.66861190 CC	PY	.65691554C CC	PZ	.34845408 CC
QX	-.74272143 0C	QY	-.56703185 0C	QZ	-.35614571 CC	RX	-.24855676 CC	RY	.24421154 CC	RZ	-.93732582 CC
BX	.74272144 0C	BY	.56703185 0C	BZ	.35614571 CC	TX	.7CC83596 CC	TY	.71331654 CC	TZ	.CCCCCCCC CC
DAP	.2C392789 02	RAP	.13550556 03								

BTQ .79961544 05 BRQ -.32845662 05 E .86445C48 05 THA .33766883 03 T VECTOR IN EARTH EQUATOR PLANE

16 DAYS 9 HRS. 19 MIN. 43.162 SEC. 2357271141372C254141233 J.D.= 2439CCC.5C146715 AUG. 28,1965 C3 C2 06.762

GEOCENTRIC EQUATORIAL COORDINATES

X	.55705883 06	Y	-.54463472 06	Z	-.28879334 06	DX	.79651C67-01	DY	.61214116-01	DZ	.38196854-01
R	.83C86888 06	DEC	-.20339363 02	RA	.31564611 03	V	.1C7473C6 CC	PTH	-.74475661-06	AZ	.67725658 02
R	.83086886 06	LAT	-.20339364 02	LCN	.33911324 03	VE	.56712837 02	PTE	-.6C431142-06	AZE	.27CC4116 03
XS	-.13637105 09	YS	.59721809 08	ZS	.25899187 C8	DXS	-.12346775 02	DYS	-.24577593 02	DZS	-.10656915 02
XM	-.35802566 06	YM	.36586267 05	ZM	.49708743 05	DXM	-.2150596C CC	DYM	-.97C32785 CC	DZM	-.43771124 00
XT	.CCCCCCCC 0C	YT	.CCCCCCCC 0C	ZT	-.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC CC
RS	.15111057 09	VS	.29498655 02	RM	.36331C80 06	VM	.1C84C585 01	RT	.CCCCCCCC CC	VT	.CCCCCCCC CC
GED	-.21466513 02	ALT	.82449327 06	LCS	.17981712 03	RAS	.15635CCC 03	RAM	.17416535 03	LCM	.19763247 03
DUT	.35CCCCCC 02	DT	.38400CCC 04	DR	-.11753509-08	SHA	.31832787 06	DES	.58687814 01	DEM	.78635647 01
CCL	.87790714 02	MCL	.16777337 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357256655302C275541233 J.D.= 2438984.797452C3 AUG. 12,1965 C7 C8 19.856

SMA	.42049649 06	ECC	.57592347 00	E	.91715845 05	SLR	.20004435 05	APO	.83C86888 06	RCA	.10124294 05
VH	.1C747306 0C	C3	-.64792654 0C	C1	.89296.26 05	TFP	.13568269 07	TF	.16432293 02	PER	.45227563 C5
TA	.18CCCCCC 03	MTA	.18CCCCCC 03	EA	.18CCCCCC 03	MA	.18CCCCCC 03			TFI	.39332865 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.55705883 06	Y	-.54463472 06	Z	-.28879334 06	DX	.79651C67-01	DY	.61214116-01	DZ	.38196854-01
INC	.29805560 02	LAN	.35596303 03	APF	.13563803 03	PX	.74112584 CC	MY	.56957633 CC	MZ	.35546861 CC
WX	-.34997122-01	WY	-.49588535 0C	WZ	.86768250 00	PX	-.67C45334 CC	PY	.6555CC2C CC	PZ	.34757952 CC
QX	-.74112584 0C	QY	-.56557032 0C	QZ	-.35546861 CC	RX	-.2485326C CC	RY	.24298699 CC	RZ	-.93765036 CC
BX	.74112584 0C	BY	.56957633 0C	BZ	.35546861 CC	TX	.699C6810 CC	TY	.71503555 CC	TZ	.CCCCCCCC CC
DAP	.2C339363 02	RAP	.13564611 03								

BTQ .84871969 05 BRQ -.34764132 05 E .91715845 05 THA .33772566 03 T VECTOR IN EARTH EQUATOR PLANE

20 DAYS 0 HRS. 0 MIN. 0.CCC SEC. 2357273444232C271463CCCC J.D.= 2439CC4.11277314 AUG. 31,1965 14 42 23.6CC

CASE 1 IBSYS-JPTRAJ-SPACE C5C165

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONL. AS OF 1 SEPT 65

GEOCENTRIC — EQUATORIAL COORDINATES

X	.56692385 04	Y	-.5074C398 04	Z	-.26729158 04	DX	-.1950955C-01	DY	.17930492 00	DZ	.10C5C981 00
R	.80641356 04	DEC	-.19357244 02	RA	.31817090 03	V	.2C647784 00	PTH	-.5C73C623 02	AZ	.6732933C 02
R	.80641355 04	LAT	-.19357245 02	LCN	.11800849 03	VE	.55360C51 02	PTE	-.16544255 00	AZE	.27CC5213 03
XS	-.13996456 09	YS	.51945184 08	ZS	.22526941 08	DXS	-.1.677E12 02	DYS	-.25245937 02	DZS	-.1C945394 02
XM	-.28383957 06	YM	-.2418E9C3 06	ZM	-.8813928 05	DXM	.62856376 00	DYM	-.2C725878 00	DZM	-.39C48754 00
XT	.CCCCC.CC 00	YT	.CCCCCCCC 00	ZT	-.CCCCCCCC 00	DXT	-.CCCCCCCC 00	DYT	-.CCCCCCCC 00	DZT	.CCCCCCCC 00
RS	.15C98292 09	VS	.29517151 02	RM	.4832C208 06	VM	.1C236151 01	RT	.CCCCCCCC 00	VT	.CCCCCCCC 00
GED	-.13476298 02	ALT	.8CC83772 06	LCS	.31947613 03	RAS	.15963854 03	RAM	.22C43774 03	LCM	.2.275328 02
DUT	.35CCC.CC 02	DT	.38400000 04	DR	-.15985073 00	SHA	.32047411 06	DES	.85E06754 01	DEM	-.13297586 02
CCL	.86316111 02	MCL	.71356481 02	TCL	.18CCCCCC 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357?3C364357?C217663CCCC J.D.= 2439C16.62663183 SEPT. 13,1965 03 02 2C.991

SMA	.42137407 06	ECC	.9663E827 00	E	.1.836274 06	SLR	.27866788 05	APO	.82858644 06	RCA	.14171703 05
VH	.12715634 00	C3	-.945943.0 00	C1	.10539316 00	TFP	-.1CM11974 07	TF	.78C33260 03	PER	.45372C3C 05
TA	-.17745327 03	MTA	.18CCCCCC 03	EA	-.16101535 03	MA	-.14298391 03			TFI	.48CCCCCC 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.56692385 06	Y	-.5C74C398 06	Z	-.26729158 06	DX	-.1950955C-01	DY	.17930492 00	DZ	.10C5C981 00
INC	.29474643 02	LAN	.3566.341 03	APF	.13514456 03	PX	.71C57726 00	MY	.60236374 00	MZ	.3636452I 00
WX	-.29151632-01	WY	-.49117410 00	WZ	.87C57353 00	PX	-.67126396 00	PY	.65495395 00	PZ	.347C4468 00
QX	-.74C64489 00	QY	-.57426772 00	QZ	-.3488CC38 00	RX	-.2483968C 00	RY	.24236138 00	RZ	-.9378485? 00
BX	.74.64490 00	BY	.57426772 00	BZ	.3488CC38 00	TX	.69835787 00	TY	.71574876 00	TZ	.CCCCCCCC 00
DAP	.2C306660 02	RAP	.1357.459 03								

RTU .10C58951 06 BRC -.4C3C1777 05 E .1.836274 06 TFA .3381662C 03 T VECTOR IN EARTH EQUATOR PLANE

25 DAYS 0 HRS. 0 MIN. 0.CCC SEC. 2357276673622C271463CCCC J.D.= 2439C9.11277314 SEPT. 5,1965 14 42 23.6CC

GEOCENTRIC — EQUATORIAL COORDINATES

X	.51914881 06	Y	-.39C04721 06	Z	-.20291897 06	DX	-.2216392C 00	DY	.37231168 00	DZ	.2C17955C 00
R	.68831207 06	DEC	-.17353626 02	RA	.92308206 03	V	.47797611 00	PTH	-.67E75156 02	AZ	.66C58957 02
R	.68831207 06	LAT	-.17353626 02	LCN	.11799138 03	VE	.47186557 02	PTE	-.52762724 00	AZE	.27CC8E7C 03
XS	-.14406676 08	YS	.4LE66E84 08	ZS	.17722150 08	DXS	-.83C24234 01	DYS	-.26C09548 02	DZS	-.11286459 02
XM	.96365565 05	YM	-.3517A7C2 06	ZM	-.17454823 06	DXM	.54212354 00	DYM	.22607523 00	DZM	.2C938272-01
XT	.CCCCC.CC 00	YT	.CCCCCCCC 00	ZT	-.CCCCCCCC 00	DXT	-.CCCCCCCC 00	DYT	-.CCCCCCCC 00	DZT	.CCCCCCCC 00
RS	.15C75591 05	VS	.29541.83 02	RM	.4.4319?3 06	VM	.569C5596 00	RT	.CCCCCCCC 00	VT	.CCCCCCCC 00
GED	-.17465C2C 02	ALT	.67393579 06	LCS	.31907247 03	RAS	.16416315 03	RAM	.28532127 03	LCM	.8C23C588 02
DUT	.35CCC.CC 02	DT	.38400CC0 04	DR	-.44278067 00	SHA	.26745290 06	DES	.67492317 01	DEM	-.25576C3C 02
CCL	.84535998 02	MCL	.14157221 02	TCL	.18CCCCCC 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357?3C37442.2C221563CCCC J.D.= 2439C16.81779C60 SEPT. 13,1965 C7 37 37.1C8

SMA	.42253475 06	ECC	.55443557 00	E	.12609157 06	SLR	.37627873 05	APO	.82581695 06	RCA	.19252552 05
VH	.14829561 00	C3	-.94335584 00	C1	.12246834 06	TFP	-.6657135C 06	TF	.78492642 03	PER	.45556807 05
TA	-.17186532 03	MTA	.18CCCCCC 03	EA	-.12973259 03	MA	-.6767653C 02			TFI	.59995995 03

CASE 1 IBSYS-JPTRAJ-SPACE C5C165 6

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONL. AS OF 1 SEPT 65

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.51914881 06	Y	-.39C04221 06	Z	-.20291897 06	DX	-.2216392C 00	DY	.37231168 00	DZ	.2C17955C 00
INC	.29265903 02	LAN	.35697496 03	APF	.1342 594 03	PX	.64576C66 00	MY	.65EC0662 00	MZ	.36732469 00
WX	-.2579E384-01	WY	-.46816219 00	WZ	.87230C34 00	PX	-.66326737 00	PY	.66126471 00	PZ	.35C43596 00
QX	-.74793769 00	QY	-.56956744 00	QZ	-.34C89488 00	RX	-.24817CC2 00	RY	.24742C7C 00	RZ	-.93656669 00
BX	.74793773 00	BY	.56956746 00	BZ	.34C85490 00	TX	.72603685 00	TY	.7LE17510 00	TZ	.CCCCCCCC 00
DAP	.2C513981 02	RAP	.13508663 03								

BTU .11744485 06 BRC -.45888896 05 E .12609157 06 TFA .33865806 03 T VECTOR IN EARTH EQUATOR PLANE

CLOSE ENCOUNTER WITH THE MOON. LUNAR CONIC FOLLOWS.

28 DAYS 12 HRS. 1 MIN. 3C.CCC SEC. 2357?C1131322?231463CCCC J.D.= 2439 12.61381482 SEPT. 9,1965 C2 43 53.6CC

SELENOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357?3C1?6002?C261143CCCC J.D.= 2439C13.41568372 SEPT. 9,1965 21 58 35.C75

SMA	-.46215682 04	ECC	.15296642 02	E	.70521558 05	SLR	.1C76C114 07	APO	.CCCCCCCC CC	RCA	.6665C893 05
VH	1.2995142 01	C3	1.6657233 01	C1	.72731158 05	TFP	-.65281475 05	TF	.70326984 03	LTF	.6998705 03
TA	-.49752510 02	MTA	.63749788 02	EA	-.83304783 02	MA	-.88453260 03			TFI	.6842499 03
									C3J -.15526196 01		
ZAE	-.44431931 02	ZAP	.24671542 02	ZAC	.52641006 02	DEF	.74995902 01	IK	.43689530 04	GP	-.4C70511C 00

30 DAYS 0 HRS. 0 MIN. 0.CCC SEC. 2357?C2123234C271463CCCC J.D.= 2439C14.11277314 SEPT. 10,1965 14 42 23.6CC

GEOCENTRIC — EQUATORIAL COORDINATES

X	.33009581 06	Y	-.16237714 06	Z	-.8424C569 05	DX	-.76913775 00	DY	.79883662 00	DZ	.37714C2C 00
R	.37739376 06	DEC	-.12898.33 02	RA	.33387C1 03	V	.11713012 01	PTH	-.6999981C 02	AZ	.7C331463 02
R	.37739376 06	LAT	-.12898633 02	LCN	.12378813 03	VE	.26471949 02	PTE	-.23829292 01	AZE	.27C29215 03
XS	-.14713C01 05	YS	.29498749 08	ZS	.12791778 08	DXS	-.587C2862 01	DYS	-.2659141C 02	DZS	-.11531753 02
XM	.18299.33 06	YM	-.5C1674E7 05	ZM	-.769?5324 05	DXM	.25335992 00	DYM	.86948671 00	DZM	.38814347 00
XT	.CCCCC.CC 00	YT	.CCCC..CC 00	ZT	-.CCCCCCCC 00	DXT	-.CCCCCCCC 00	DYT	-.CCCCCCCC 00	DZT	.CCCCCCCC 00
RS	.15C66217 09	VS	.29572701 02	RM	.4C09C638 06	VM	.5853248C 00	RT	.CCCCCCCC 00	VT	.CCCCCCCC 00
GED	-.12982961 02	ALT	.37101663 06	LCS	.31864414 03	RAS	.16866301 03	RAM	.3467665C 03	LCM	.13674763 03
DUT	.35CCC.CC 02	DT	.95999999 03	DR	-.11C06339 01	SHA	.1C855163 06	DES	.48724332 01	DEM	-.11C69715 02
CCL	.84C13777 02	MCL	.20234766 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357?3C3660172C2601C3CCCC J.D.= 2439C16.66369222 SEPT. 13,1965 03 55 43.C08

SMA	.53832991 06	ECC	.64521648 00	E	.17573465 06	SLR	.57367549 05	APO	.1C471682 07	RCA	.29491662 05
VH	.1444 615 00	C3	-.74C43536 00	C1	.15121753 06	TFP	-.22039941 06	TF	.7812226 03	PER	.6551374C 05
TA	-.15376447 03	MTA	.18CCCCCC 03	EA	-.71561813 02	MA	-.20185C24 02			TFI	.72CCCCCC 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.33009581 06	Y	-.16237714 06	Z	-.8424C569 05	DX	-.76913775 00	DY	.79883662 00	DZ	.37714C2C 00
INC	.23379533 02	LAN	.57517582 01	APF	.11955464 03	PX	.48305EC1 00	MY	.8117976C 00	MZ	.328C8588 00
WX	.4C044644-01	WY	-.39479417 00	WZ	.91789643 00	PX	-.57131168 00	PY	.74461282 00	PZ	.34518793 00
QX	-.81975367 00	QY	-.53822786 00	QZ	-.19573276 00	RX	-.21012556 00	RY	.27386485 00	RZ	-.93853357 00
BX	.81975372 00	BY	.53822789 00	BZ	.19573277 00	TX	.79337899 00	TY	.6C872801 00	TZ	.CCCCCCCC 00
DAP	.2C193268 02	RAP	.12749759 03								

BTU .17187048 06 BRC -.36649761 05 E .17573465 06 TFA .34796250 03 T VECTOR IN EARTH EQUATOR PLANE

32 DAYS 14 HRS. 8 MIN. 17.786 SEC. 2357?C3675102C2261276771 J.D.= 2439C16.7C186789 SEPT. 13,1965 C4 5C 41.386

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AC-6 POST FLIGHT TRAJECTORY BASED ENBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

GEOCENTRIC — EQUATORIAL COORDINATES

X	-.16333570 05	Y	.25914112 05	Z	.11734787 05	DX	-.40072054 01	DY	-.24577851 01	DZ	-.83299895 00
R	.32843260 05	DEC	.22288603 02	RA	.12527643 03	V	.47741271 01	PTH	-.1C282923-05	AZ	.10072775 03
R	.32843260 05	LAT	.21288603 02	LCN	.60633598 02	VE	.25365614 01	PTE	-.1C939C78-05	AZE	.11049451 03
XS	-.14633041 05	YS	.23523171 04	ZS	.10200633 04	DXS	-.45917547 00	DYS	-.26822262 02	DZS	-.11631263 02
XM	.37797194 06	YM	.10796089 06	ZM	.17171524 05	DXM	-.30255937 00	DYM	.85298324 00	DZM	.43119306 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15950149 05	VS	.29593960 02	RP	.39346473 06	VP	.11025218 01	RT	.00000000 00	VT	.00000000 00
GED	.2.414E8E 02	ALT	.27467649 05	LCS	.11634212 03	HAS	.17C56E56 03	RAM	.15941878 02	LCM	.31129704 03
DUT	.35000000 02	DT	.24000000 03	DR	-.28E55449-07	SHA	-.24906631 05	DES	.38663759 01	DEM	.25012861 01
CCL	.25806626 03	MCL	.11639234 02	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 23573036751C2226130463C J.D.= 2439C16.7C186789 SEPT. 13,1965 04 5C 41.386

SMA	.52214 19 6	ECC	.63516358 00	E	.18492291 06	SLR	.6549292C 05	APO	.1C104371 07	HCA	.3384326C 05
VH	.15990239 01	C3	-.76339771 00	C1	.16157202 06	TFP	-.88661966-04	TF	.78213827 03	PER	.62586684 05
TA	-.6-3C1691-05	MTA	.18000000 03	EA	-.68301891-05	MA	-.65005749-06			TFI	.78213827 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.16333570 05	Y	.25914112 05	Z	.11734787 05	DX	-.40072054 01	DY	-.24577851 01	DZ	-.83299895 00
INC	.22843868 02	LAN	.66429297 01	APF	.11671190 03	MX	-.83935875 00	MY	-.51481348 00	MZ	-.17448193 00
WX	.44903545-01	WY	-.36555659 00	WZ	.92156989 00	PX	-.54171997 00	PY	.76570565 00	PZ	.34673525 00
QX	-.83933072 00	QY	-.51481347 00	QZ	-.17448193 00	RX	-.25025927 00	RY	.28306235 00	RZ	-.59756150 00
BX	.83935875 00	BY	.51481349 00	BZ	.17448194 00	TX	.81635509 00	TY	.57755032 00	TZ	.00000000 00
DAP	.2.28E02 2	RAP	.12527643 03								

PTO	.18169517 06	BRC	-.34399617 05	E	.18492291 06	THA	.34927525 03	T VECTOR IN EARTH EQUATOR PLANE	

35 DAYS 0 HRS. 0 MIN. 0.000 SEC. 235730536526270271463C000 J.D.= 2439C19.11277314 SEPT. 19,1965 14 42 23.600

GEOCENTRIC — EQUATORIAL COORDINATES

X	.23421184 05	Y	-.32994568 06	Z	-.13917775 06	DX	.52611151 00	DY	-.99452262 00	DZ	-.44135150 00
R	.35886369 06	DEC	-.22819481 02	RA	.27406033 03	V	.12206008 01	PTH	.6E17C059 -2	AZ	.90555297 02
R	.35886369 06	LAT	-.22819482 02	LCN	.69113966 02	VE	.23696631 02	PTE	.27C76526 01	AZE	.26958106 03
XS	-.14913192 05	YS	.17917277 04	ZS	.07697130 04	DXS	-.33900823 01	DYS	-.26593771 02	DZS	-.11745250 02
XM	.26438450 06	YM	.26127997 06	ZM	.13000733 06	DXM	-.7663674C 00	DYM	.57535570 00	DZM	.34353464 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15042521 05	VS	.29617742 02	RP	.38494137 06	VP	.12046671 01	RT	.00000000 00	VT	.00000000 00
GED	-.22958917 02	ALT	.3524BE73 06	LCS	.31822213 03	HAS	.17314910 03	RAM	.44661619 02	LCM	.31671465 03
DUT	.35000000 02	DT	.99999999 03	DR	.11193205 01	SHA	.35202634 06	DES	.25611516 1	DEM	.15067376 02
CCL	.76246202 02	MCL	.18077440 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 23573036753620235C03CCCC J.D.= 2439C16.7C289135 SEPT. 13,1965 04 52 09.613

SMA	.51967313 06	ECC	.93534611 00	E	.18375727 06	SLR	.64976674 05	APO	.1C057734 07	HCA	.3397297C 05
VH	.16001042 01	C3	-.76702181 00	C1	.16C93422 06	TFP	.2.821379 06	TF	.78216263 03	PER	.62137678 05
TA	.15111393 03	MTA	.18000000 03	EA	.7.681724 02	MA	.72105.75 02			TFI	.84000000 03

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AC-6 POST FLIGHT TRAJECTORY BASED ENBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.23421184 05	Y	-.32994568 06	Z	-.13917775 06	DX	.52611151 00	DY	-.99452262 00	DZ	-.44135150 00
INC	.22840188 02	LAN	.66355100 01	APF	.11652256 03	MX	.99685537 00	MY	.7754.845-01	MZ	-.16C75137-01
WX	.44853135-01	WY	-.36556184 00	WZ	.92159111 00	PX	-.53884382 00	PY	.76767781 00	PZ	.34731128 00
QX	-.84121169 00	QY	-.51217171 00	QZ	-.17333385 00	RX	-.19956978 00	RY	.26424816 00	RZ	-.13774985 00
BX	.84121173 00	BY	.51217173 00	BZ	.17333386 00	TX	.81842485 00	TY	.57461358 00	TZ	.00000000 00
DAP	.2.323948 02	RAP	.12507257 03								

PTO	.18059087 06	BRC	-.33965723 05	E	.18375727 06	THA	.34934618 03	T VECTOR IN EARTH EQUATOR PLANE	

40 DAYS 0 HRS. 0 MIN. 0.000 SEC. 23573106 2232C271463C000 J.D.= 2439C24.11277314 SEPT. 24,1965 14 42 23.600

GEOCENTRIC — EQUATORIAL COORDINATES

X	.22173316 06	Y	-.60816903 06	Z	-.26524690 06	DX	.40204277 00	DY	-.42390155 00	DZ	-.19707577 00
R	.69955540 06	DEC	-.22281968 02	RA	.29002892 03	V	.61657E4C 00	PTH	.67748939 02	AZ	.6E874702 02
R	.69955540 06	LAT	-.22281968 02	LCN	.70153660 02	VE	.46974170 02	PTE	.65607311 00	AZE	.27CC2544 03
XS	-.15005258 05	YS	.62016346 07	ZS	.26895230 07	DXS	-.864B5120 00	DYS	-.27211173 02	DZS	-.11759404 02
XM	-.15999957 06	YM	.29398843 06	ZM	.15356838 06	DXM	-.55014487 00	DYM	-.47170512 00	DZM	-.13795220 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15022477 05	VS	.29670987 02	RP	.36654235 06	VP	.10697303 01	RT	.00000000 00	VT	.00000000 00
GED	-.22416426 02	ALT	.6931629 06	LCS	.31775806 03	RAS	.17763332 03	RAM	.11795127 03	LCM	.25807621 03
DUT	.35000000 02	DT	.38400000 04	DR	.57066397 00	SHA	.65284530 06	DES	.10255755 01	DEM	.24772698 02
CCL	.76567174 02	MCL	.17863288 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 23573036767420271163C000 J.D.= 2439C16.7C726361 SEPT. 13,1965 04 58 27.577

SMA	.52487935 06	ECC	.93407314 00	E	.18742482 06	SLR	.66925985 05	APO	.10151550 07	HCA	.3460364? 05
VH	.16085162 00	C3	-.75541381 00	C1	.16333015 06	TFP	.639826C2 06	TF	.78226776 03	PER	.63C73779 05
TA	.16550244 03	MTA	.18000000 03	EA	.11087198 03	MA	.6CB65483 02			TFI	.95955995 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.22173316 06	Y	-.60816903 06	Z	-.26524690 06	DX	.40204277 00	DY	-.42390155 00	DZ	-.19707577 00
INC	.22834538 02	LAN	.67200649 01	APF	.11679641 03	MX	.54736449 00	MY	.30930132 00	MZ	.82663421-01
WX	.45411529-01	WY	-.36540511 00	WZ	.92162938 00	PX	-.54395078 00	PY	.76425292 00	PZ	.34636785 00
QX	-.83786144 00	QY	-.51708834 00	QZ	-.17495094 00	RX	-.20008738 00	RY	.28220770 00	RZ	-.93E0E768 00
BX	.83786146 00	BY	.51708835 00	BZ	.17495094 00	TX	.81465242 00	TY	.57589332 00	TZ	.00000000 00
DAP	.2.267149 02	RAP	.12544304 03								

PTO	.18413694 06	BRC	-.34954246 05	E	.18742482 06	THA	.34925155 03	T VECTOR IN EARTH EQUATOR PLANE	

45 DAYS 0 HRS. 0 MIN. 0.000 SEC. 235731403163202271463C000 J.D.= 2439C29.11277314 SEPT. 29,1965 14 42 23.600

GEOCENTRIC — EQUATORIAL COORDINATES

X	.37753305 06	Y	-.73641405 06	Z	-.32659778 06	DX	.32431116 00	DY	-.18691962 00	DZ	-.94212321-01
R	.86566451 06	DEC	-.21537111 02	RA	.29714258 03	V	.38595564 00	PTH	.57E84514 02	AZ	.8223.544 02
R	.86966451 06	LAT	-.21537111 02	LCN	.72339162 02	VE	.60142374 02	PTE	.31145321 00	AZE	.27CC2643 03
XS	-.14987449 05	YS	-.55636133 07	ZS	-.24126574 07	DXS	.16921534 01	DYS	-.27221395 02	DZS	-.11EC5727 02
XM	-.36279986 06	YM	-.62114669 06	ZM	.30604756 06	DXM	-.11593758 00	DYM	-.95783556 00	DZM	-.46EC7887 00
XT	.00000000 00	YT	.00000000 00	ZT	.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.14995713 05	VS	.29719402 02	RP	.36809148 06	VP	.10715172 01	RT	.00000000 00	VT	.00000000 00
GED	-.21672219 02	ALT	.6832B922 06	LCS	.31732251 03	RAS	.16212594 03	RAM	.18971536 03	LCM	.32491194 03
DUT	.35000000 02	DT	.38400000 04	DR	.32692992 00	SHA	.62016194 06	DES	-.92162389 00	DEM	.47638776 00
CCL	.76614034 02	MCL	.17794302 03	TCL	.18000000 03						

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 9

AC-6 POST FLIGHT TRAJECTORY BASED ENBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 235730362471202734630000 J.D.= 2439016.58268200 SEPT. 13,1965 01 59 03.725

SMA	.53354699 06	ECC	.91830334 00	B	.21121923 06	SLR	.83616935 05	APO	.1C235050 C7	RCA	.43589005 05
VH	.17837178 0C	C3	-.74707689 00	C1	.18256441 06	TFP	.10825999 07	TF	.77927781 C3	PER	.64642573 05
TA	.17061545 03	MTA	.18000000 03	EA	.13662152 03	MA	.10048485 03			TFI	.10800000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.37753305 06	Y	-.73641405 06	Z	-.32659778 06	DX	.32431116 CC	DY	-.18691962 CC	DZ	-.94212321-01
INC	.22832733 02	LAN	.67541356 01	APF	.11829312 03	MX	.9C434537 CC	MY	.4C785621 CC	MZ	.12574863 00
WX	.45637282-01	WY	-.38534914 00	WZ	.92164161 00	PX	-.56613720 CC	PY	.75C16C25 CC	PZ	.34168441 00
QX	-.82304670 0C	QY	-.53736518 0C	QZ	-.18392521 00	RX	-.2058287 CC	RY	.27273254 CC	RZ	-.93981473 00
BX	.82304671 0C	BY	.53736918 00	BZ	.18392521 00	TX	.7982CC14 0C	TY	.6C239235 CC	TZ	.00000000 00
CAP	.19979530 02	RAP	.12704143 03								

BTQ .20713490 06 BRQ -.41336380 05 E .21121923 06 THA .34871416 C3 T VECTOR IN EARTH EQUATOR PLANE

50 DAYS 0 HRS. 0 MIN. 0.000 SEC. 235731726123202714630000 J.D.= 2439C34.11277314 SEPT. 30,1965 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.5C288283 06	Y	-.77718116 06	Z	-.34966575 C6	DX	.25416662 CC	DY	-.65566459-C2	DZ	-.14315675-01
R	.98952909 06	DEC	-.2C693321 02	RA	.30290529 C3	V	.25465491 CC	PTH	.33191552 C2	AZ	.799C4187 C2
R	.98952910 06	LAT	-.2C693320 02	LCN	.73173702 02	VE	.67292714 C2	PTE	.11869929 CC	AZE	.27CC3181 C3
XS	-.14855127 05	YS	-.17287136 08	ZS	-.74972304 C7	DXS	.42446806 C1	DYS	-.27C17563 C2	DZS	-.11718025 02
XM	-.9658C727 05	YM	-.34812C65 06	ZM	-.15719753 06	DXM	.94535711 CC	DYM	-.23597969 CC	DZM	-.19816021 C0
XT	-.0CCCC.CC 0C	YT	-.CCCC0CCC 0C	ZT	.CCCC0CCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC 00
RS	-.14978123 05	VS	.29753987 02	RM	.39398843 06	VM	.5943528C CC	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GEO	-.2C822784 02	ALT	.98315357 06	LCS	.31690437 03	RAS	.18663597 C3	RAM	.25449414 C3	LCM	.24762550 02
CUT	.35C0CCC0 02	DT	.38400000 04	DR	.13943825 CC	SHA	.9C87C775 C6	DES	-.28691123 C1	DEM	-.23515068 02
CCL	.76678564 02	MCL	.18011C40 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 235730332166202306630000 J.D.= 2439C16.00474C19 SEPT. 12,1965 12 06 49.553

SMA	.53807659 06	ECC	.89031827 0C	B	.24500713 06	SLR	.11156124 C6	APO	.1C171360 C7	RCA	.59C17175 05
VH	.2.732258 0C	C3	-.74C78789 0C	C1	.21087527 06	TFP	.1564E34C C7	TF	.7654C720 03	PER	.654675C4 05
TA	.17524827 03	MTA	.18000000 03	EA	.16045389 C3	MA	.1433E723 C3			TFI	.12000000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.5C288283 06	Y	-.77718116 06	Z	-.34966575 C6	DX	.25416662 CC	DY	-.65566459-C2	DZ	-.14315675-01
INC	.22927258 02	LAN	.61629648 01	APF	.11964621 03	MX	.86022C55 CC	MY	.48283466 C0	MZ	.16398561 C0
WX	.41822124-01	WY	-.38731C71 0C	WZ	.92100018 00	PX	-.57771665 CC	PY	.7427C844 CC	PZ	.33E567CC 00
QX	-.81516523 0C	QY	-.54623673 0C	QZ	-.19269420 CC	RX	-.2C787226 CC	RY	.2672391C CC	RZ	-.94C94227 C0
BX	.81516524 0C	BY	.54623674 0C	BZ	.19269420 CC	TX	.78932413 CC	TY	.61397672 CC	TZ	.00000000 00
CAP	.19789591 02	RAP	.12787760 03								

BTQ .23981450 06 BRQ -.50174651 05 E .24500713 06 THA .34818288 C3 T VECTOR IN EARTH EQUATOR PLANE

53 DAYS 23 HRS. 32 MIN. 42.803 SEC. 235732176072202463436332 J.D.= 2439C38.09382410 OCT. 4,1965 14 15 06.403

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 10

AC-6 POST FLIGHT TRAJECTORY BASED ENBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

GEOCENTRIC EQUATORIAL COORDINATES

X	.57885912 06	Y	-.75710230 06	Z	-.34446985 06	DX	.1854C854 CC	DY	.12175453 CC	DZ	.43987027-01
R	.1C134C39 07	DEC	-.19871614 02	RA	.3074C242 C3	V	.22613127 CC	PTH	-.5C144241-C6	AZ	.78C63226 02
R	.1C134.39 07	LAT	-.19871614 02	LCN	.80568540 C2	VE	.69277183 C2	PTE	.22481714-C6	AZE	.27CC3868 C3
XS	-.14678492 05	YS	-.26531473 08	ZS	-.11506545 08	DXS	.62537C23 C1	DYS	-.26710636 C2	DZS	-.11584CC 02
XM	.22376565 06	YM	-.29602372 06	ZM	-.16142.73 C6	DXM	.8C343992 CC	DYM	.51C13847 CC	DZM	.17C41146 C0
XT	-.CCCCCCCC CC	YT	-.CCCCCCCC 0C	ZT	.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC 00
RS	.14961659 09	VS	.29778525 02	RM	.40466994 C6	VM	.9668450C CC	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GEO	-.19996336 02	ALT	.10C72282 07	LCS	.32341174 C3	RAS	.19024563 C3	RAM	.3C708579 C3	LCM	.8C251916 C2
CUT	.35C0CCC0 02	DT	.76800000 04	DR	-.19272917-08	SHA	.92798626 C6	DES	-.44110898 C1	DEM	-.23509105 02
CCL	.7677C973 02	MCL	.18252175 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 235730264631202425436332 J.D.= 2439C15.11747680 SEPT. 11,1965 14 49 10.168

SMA	.54192919 06	ECC	.86999327 0C	E	.26726554 06	SLR	.13174933 C6	APO	.1C134C39 C7	RCA	.70454442 05
VH	.22613126 0C	C3	-.73552161 0C	C1	.22916232 06	TFP	.19851562 C7	TF	.74411292 C3	PER	.66171875 05
TA	.18000000 03	MTA	.18000000 03	EA	.18000000 03	MA	.18000000 03			TFI	.12955452 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.57885912 06	Y	-.75710230 06	Z	-.34446985 06	DX	.1854C854 CC	DY	.12175453 CC	DZ	.43987C27-01
INC	.23056377 02	LAN	.55231435 01	APF	.11978089 03	MX	.81991552 CC	MY	.53842413 CC	MZ	.19451987 00
WX	.37694187-01	WY	-.38981846 0C	WZ	.92C11994 00	PX	-.57124222 CC	PY	.74708837 CC	PZ	.33991367 C0
QX	-.81991552 0C	QY	-.53842412 0C	QZ	-.19451987 0C	RX	-.20646676 CC	RY	.27CC2366 CC	RZ	-.94045664 C0
BX	.81991554 0C	BY	.53842413 0C	BZ	.19451987 CC	TX	.79438895 CC	TY	.6C74C942 CC	TZ	.CCCCCCCC C0
CAP	.19871614 02	RAP	.12740242 03								

BTQ .26142742 06 BRQ -.55267669 05 E .26726554 06 THA .348C63C3 C3 T VECTOR IN EARTH EQUATOR PLANE

55 DAYS 0 HRS. 0 MIN. 0.000 SEC. 235732251063202714630000 J.D.= 2439C39.11277314 OCT. 5,1965 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.59435140 06	Y	-.74499527 06	Z	-.33996.32 06	DX	.16545777 CC	DY	.15318734 CC	DZ	.5H426816-C1
R	.1C116520 07	DEC	-.19632C38 02	RA	.3C858259 03	V	.23292568 CC	PTH	-.86589766 C1	AZ	.77594085 02
R	.1C116520 07	LAT	-.19632C38 02	LCN	.73922741 02	VE	.69271398 C2	PTE	-.2514C148-C1	AZE	.27CC4C91 C3
XS	-.14621189 05	YS	-.28878862 08	ZS	-.12524559 08	DXS	.67634662 C1	DYS	-.2E612149 C2	DZS	-.11541264 02
XM	.28872599 06	YM	-.24444858 06	ZM	-.14271133 06	DXM	.66651C72 CC	DYM	.65695941 CC	DZM	.2529EP314 00
XT	-.CCCCCCCC CC	YT	-.CCCCCCCC 0C	ZT	.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC C0
RS	.14956192 05	VS	.29785091 02	RM	.40433219 06	VM	.96944972 CC	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GEO	-.19755502 02	ALT	.10C54763 07	LCS	.31651301 03	RAS	.19117287 C3	RAM	.31974718 C3	LCM	.85C87324 02
CUT	.35CCCCC0 02	DT	.76800000 04	DR	-.35229041-01	SHA	.92563125 C6	DES	-.48C3668E C1	DEM	-.23668C2 02
CCL	.76802599 02	MCL	.18272952 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 235734103026202C5663000C J.D.= 2439C60.96622C93 OCT. 27,1965 11 11 20.366

SMA	.54334344 06	ECC	.86566617 0C	E	.27201045 06	SLR	.13617481 C6	APO	.1C136969 C7	RCA	.72985952 05
VH	.22983133 0C	C3	-.73367714 0C	C1	.23297933 06	TFP	-.18881368 C7	TF	.18444824 C4	PER	.66431C74 05
TA	-.17P63701 03	MTA	.18000000 03	EA	-.17492364 03	MA	-.17053496 03			TFI	.13200000 04

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 11

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.59435140 06	Y	-.74499527 06	Z	-.33996032 06	DX	.16545777 CC	DY	.15318734 CC	DZ	.58426816-01
INC	.23C91866 02	LAN	.53689302 01	APF	.11969604 03	MX	.6C847181 CC	MY	.55265611 CC	MZ	.2C234763 CC
WX	.36698168-01	WY	-.39548288 0C	WZ	.91987718 00	PX	-.56795273 CC	PY	.74932644 CC	PZ	.34C65637 00
QX	-.82221497 0C	QY	.53498647 0C	CZ	-.19429864 0C	RX	-.2C582699 CC	RY	.2714945C CC	RZ	-.94C17337 00
BX	.822215CC 0C	BY	.53498649 0C	BZ	.19429864 0C	TX	.79686111 CC	TY	.6C413615 CC	TZ	.CCCCCCCC CC
CAP	.19915305 02	RAP	.12716670 03								
BTC	.26613836 06	BRC	-.56214376 05	B	.27201045 06	THA	.34807315 C3	T VECTOR IN EARTH EQUATOR PLANE			

60 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357325740232C271463CCCC J.D.= 2439C44.11277314 OCT. 10,1965 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.64224485 06	Y	-.64677610 06	Z	-.29985686 06	DX	.51293365-01	DY	.25549323 CC	DZ	.126524C3 CC
R	.95553733 06	DEC	-.18210647 02	RA	.31473859 03	V	.32914364 CC	PTH	-.38587335 C2	AZ	.752655C3 02
R	.95553733 06	LAT	-.18210647 02	LCN	.75210636 02	VE	.66219177 C2	PTE	-.17517722 CC	AZE	.27CC563C C3
XS	-.14275448 09	YS	-.40253229 08	ZS	-.17457220 08	DXS	.92341585 C1	DYS	-.26C15791 C2	DZS	-.11281434 02
XM	.37213C60 06	YM	.11660528 06	ZM	.22266265 05	DXM	-.23614967 CC	DYM	.84858017 CC	DZM	.43621886 CC
XT	-.CCCCCCCC CC	YT	-.CCCCCCCC 0C	ZT	.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC 00
RS	.14934496 09	VS	.29822170 C2	RM	.39066666 06	VM	.10116184 C1	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.18325878 02	ALT	.95316123 06	LCS	.31615917 03	RAS	.19574713 C3	RAM	.17426160 02	LCM	.13783820 03
DUT	.35CCCCCC 02	DT	.38400000 04	DR	-.2C708028 CC	SHA	.67CC5832 C6	DES	-.67127602 C1	DEM	.32673746 01
CCL	.77CC5459 02	MCL	.16171454 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357340643552C22C663CCCC J.D.= 2439C60.62C614C4 OCT. 27,1965 02 53 41.053

SMA	.55170947 06	ECC	.85203551 0C	E	.28881107 06	SLR	.15116798 C6	APO	.1C217855 C7	RCA	.61633413 05
VH	.24C25247 0C	C3	-.72248285 0C	C1	.24548651 06	TFP	-.14262774 C7	TF	.16361882 C4	PER	.67971253 05
TA	-.17139148 03	MTA	.18CCCCCC 03	EA	-.15C17846 03	MA	-.1259C123 03			TFI	.144CCCCC C4

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.64224485 06	Y	-.64677610 06	Z	-.29985686 06	DX	.51293365-01	DY	.25549323 CC	DZ	.126524C3 00
INC	.23266278 02	LAN	.47159697 01	APF	.11909992 03	MX	.74225725 CC	MY	.62504599 CC	MZ	.24162222 CC
WX	.32475648-01	WY	-.39366756 0C	WZ	.91867902 CC	PX	-.55C68423 CC	PY	.76CC1456 CC	PZ	.3451445C 00
QX	-.83408162 0C	QY	-.51711691 0C	CZ	-.19211440 0C	RX	-.2C25C996 CC	RY	.27548961 CC	RZ	-.93854954 00
BX	.83408165 CC	BY	.51711692 0C	BZ	.19211440 0C	TX	.8C977564 CC	TY	.58673964 CC	TZ	.CCCCCCCC CC
CAP	.20196616 02	RAP	.12592598 03								
BTC	.28269649 06	BRC	-.59114488 05	B	.28881107 06	THA	.34816910 C3	T VECTOR IN EARTH EQUATOR PLANE			

65 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357331167632C271463CCCC J.D.= 2439C49.11277314 OCT. 15,1965 14 42 23.6C0

GEOCENTRIC EQUATORIAL COORDINATES

X	.63313478 06	Y	-.46693715 06	Z	-.23C85242 06	DX	-.1C231320 CC	DY	.44172620 CC	DZ	.19357793 00
R	.83142.64 06	DEC	-.16122667 02	RA	.32243650 03	V	.49301363 CC	PTH	-.52353744 C2	AZ	.72873618 02
R	.83142.64 06	LAT	-.16122667 02	LCN	.77920339 02	VE	.57957820 C2	PTE	-.36591166 CC	AZE	.27CC8766 03
XS	-.13824125 09	YS	-.51330479 08	ZS	-.22268542 08	DXS	.11656462 C2	DYS	-.25235226 C2	DZS	-.1C942549 02
XM	.4C3C6653 05	YM	.33775171 06	ZM	.15815228 06	DXM	-.1C385784 C1	DYM	.35811757-C1	DZM	.11371712 CC
XT	-.CCCCCCCC CC	YT	-.CCCCCCCC 0C	ZT	.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC 00
RS	.14913414 09	VS	.25671211 C2	RM	.37511729 06	VM	.13459411 C1	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.16224404 02	ALT	.62504429 06	LCS	.31585434 03	RAS	.2C037251 C3	RAM	.83194612 C2	LCM	.19867845 03
DUT	.35CCCCCC 02	DT	.38400000 04	DR	-.29036663 CC	SHA	.73695655 C6	DES	-.85643490 C1	DEM	.24936120 C2
CCL	.77341787 02	MCL	.17585548 03	TCL	.18CCCCCC 03						

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AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357340622352C212763CCCC J.D.= 2439C60.56357275 OCT. 27,1965 01 31 32.686

SMA	.55687602 06	ECC	.84712258 0C	E	.29592252 06	SLR	.15725251 C6	APO	.1C286183 C7	RCA	.85133771 05
VH	.24339605 0C	C3	-.71577983 0C	C1	.25C36164 06	TFP	-.56934508 C6	TF	.16348192 C4	PER	.68928274 05
TA	-.16317567 03	MTA	.18CCCCCC 03	EA	-.12558994 03	MA	-.86115875 02			TFI	.1560CCCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.63313478 06	Y	-.48693715 06	Z	-.23C85242 06	DX	-.1C231320 CC	DY	.44172620 CC	DZ	.19357793 00
INC	.23352951 02	LAN	.44576361 01	APF	.11871133 03	MX	.64742100 CC	MY	.7C768134 CC	MZ	.2829C119 CC
WX	.30808538-01	WY	-.39519562 0C	WZ	.91808643 CC	PX	-.54152586 CC	PY	.76543041 CC	PZ	.34765785 00
QX	-.84C11934 0C	QY	-.5C787511 0C	CZ	-.19C42652 CC	RX	-.2CC79C77 CC	RY	.2E381168 CC	RZ	-.93762143 0C
BX	.84C11938 0C	BY	-.5C787514 0C	BZ	.19042653 CC	TX	.81635335 CC	TY	.57755277 CC	TZ	.CCCCCCCC 00
CAP	.2.344127 02	RAP	.12527860 03								
BTC	.28975019 06	BRC	-.66101481 05	B	.29592252 06	THA	.3482E197 C3	T VECTOR IN EARTH EQUATOR PLANE			

70 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357334417232C271463CCCC J.D.= 2439C54.11277314 OCT. 20,1965 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.53991757 06	Y	-.26108188 06	Z	-.13C54639 06	DX	-.36C64632 CC	DY	.61273974 CC	DZ	.27556938 CC
R	.61377283 06	DEC	-.12280331 02	RA	.33419350 03	V	.76253146 CC	PTH	-.56587258 C2	AZ	.7C02C831 02
R	.61377283 06	LAT	-.12280331 02	LCN	.84749046 02	VE	.43343200 C2	PTE	-.84143C63 CC	AZE	.27C18967 03
XS	-.13269676 09	YS	-.62029946 08	ZS	-.26900304 08	DXS	.14005506 C2	DYS	-.24263905 C2	DZS	-.1C522482 02
XM	-.33101634 06	YM	.13172446 06	ZM	.33289484 05	DXM	-.46038677 CC	DYM	-.88277894 CC	DZM	-.38115929 C0
XT	-.0CCCCCC 0 0C	YT	-.CCCCCCCC 0C	ZT	.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC CC
RS	.14892875 09	VS	.29926812 02	RM	.36827445 06	VM	.1L66LE23 C1	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.12361454 02	ALT	.6C739560 06	LCS	.31560957 03	RAS	.2C505403 C3	RAM	.15833C43 C3	LCM	.26885597 C3
DUT	.35CCCCCC 02	DT	.38400000 04	DR	-.63650440 CC	SHA	.5C506590 C6	DES	-.1C406187 C2	DEM	.14673770 C2
CCL	.77945332 02	MCL	.17827C61 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357340672452C266463CCCC J.D.= 2439C60.68841913 OCT. 27,1965 04 31 19.412

SMA	.55561861 06	ECC	.83671289 0C	E	.30427998 06	SLR	.16663644 C6	APO	.1C2C5119 C7	RCA	.90725359 05
VH	.25254333 0C	C3	-.71739969 0C	C1	.25772347 06	TFP	-.56813581 C6	TF	.16378155 C4	PER	.68654949 05
TA	-.15053714 03	MTA	.18CCCCCC 03	EA	-.47186050 02	MA	-.49622495 02			TFI	.168CCCCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.53991757 06	Y	-.26108188 06	Z	-.13C54639 C6	DX	-.36C64632 CC	DY	.61273974 CC	DZ	.27556938 0C
INC	.23315366 02	LAN	.45226929 01	APF	.11803683 03	MX	.47455502 CC	MY	.61445137 CC	MZ	.3338E034 CC
WX	.31214805-01	WY	-.39462325 0C	WZ	.91831267 CC	PX	-.53245C1C CC	PY	.77C95631 CC	PZ	.3494CC45 00
QX	-.84586146 0C	QY	-.49589850 0C	CZ	-.18E06773 CC	RX	-.1985E728 CC	RY	.2E749210 CC	RZ	-.93673349 0C
BX	.84586045 0C	BY	.49589689 0C	BZ	.18806773 CC	TX	.82281549 CC	TY	.56E3C86C CC	TZ	.CCCCCCCC CC
CAP	.2045C647 02	RAP	.12463236 03								
BTC	.25821991 06	BRC	-.6C425161 05	B	.30427998 06	THA	.34854584 C3	T VECTOR IN EARTH EQUATOR PLANE			

75 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357337646632C271463CCCC J.D.= 2439C59.11277314 OCT. 25,1965 14 42 23.6C0

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 13

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONS. AS OF 1 SEPT 65

GEOCENTRIC EQUATORIAL COORDINATES

X	.23808973 06	Y	.47346913 05	Z	.12207952 05	DX	-.13626549 01	DY	.75212793 CC	DZ	.36951509 CC
R	.24305861 06	DEC	.28789699 01	RA	.11247225 02	V	.15997422 01	PTH	-.46588900 02	AZ	.66861018 02
R	.24305861 06	LAT	.28789699 01	LON	.11687462 02	VE	.16744690 02	PTE	-.40C58837 01	AZE	.27147103 03
XS	-.12615283 09	YS	-.72266249 08	ZS	-.31339725 08	DXS	.16272032 02	DYS	-.23C92622 02	DZS	-.10C15685 02
XM	-.26966101 06	YM	-.25087770 06	ZM	-.95864716 05	DXM	.68962044 CC	DYM	-.67252276 CC	DZM	-.38596668 CC
XT	-.CCCCCCCC CC	YT	-.CCCCCCCC CC	ZT	.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC CC
RS	.14872499 09	VS	.29972650 02	RM	.38C54483 06	VM	.10377C59 01	RT	.CCCCCCCC CC	VT	.CCCCCCCC CC
GED	.28985961 01	ALT	.23668145 06	LCS	.31543351 03	RAS	.2098C61C 03	RAM	.22293977 03	LCM	.32856719 03
CUT	.35CC0000 02	DT	.65999959 03	DR	-.11697661 01	SMA	.85475980 05	DES	-.12164705 02	DEM	-.1459CB23 02
CCL	.81582599 02	MCL	.65111126 02	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357340722542C273423CCCC J.D.= 2439.6C.75985788 OCT. 27,1965 C6 14 11.721

SMA	.55307632 06	ECC	.82515810 00	E	.31243382 06	SLR	.17645446 06	APO	.1CC94517 07	RCA	.967CC918 05
VH	.26275378 00	C3	-.72C69733 00	C1	.26523726 06	TFP	-.1423C812 06	TF	.183953CC C4	PER	.68224CC6 05
TA	-.1C938345 03	MTA	.18CCCCCC 03	EA	-.4721C7C8 02	MA	-.12515370 02			TFI	.18CCCCCC C4

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.23808973 06	Y	.47346913 05	Z	.12207952 05	DX	-.13626949 01	DY	.75212793 CC	DZ	.36951509 CC
INC	.23307.24 02	LAN	.45436491 01	APF	.11667646 03	PX	-.16871C51 CC	PY	.858C4871 CC	PZ	.39245715 CC
WX	.31342474-01	WY	-.39441466 0C	WZ	.91835788 CC	PX	-.51255C99 CC	PY	.78249539 CC	PZ	.35354261 CC
QX	-.85808448 0C	QY	-.48180697 0C	QZ	-.17763149 CC	RX	-.16371532 CC	RY	.25574516 CC	RZ	-.93541839 CC
BX	.85808453 CC	BY	.48180700 0C	BZ	.17763150 CC	TX	.83651915 CC	TY	.54793769 CC	TZ	.CCCCCCCC CC
DAP	.20704151 02	RAP	.12322564 03								

BTO .3C674d89 06 BRO -.59329694 05 E .31243382 06 THA .34905332 03 T VECTOR IN EARTH EQUATOR PLANE

76 DAYS 15 HRS. 33 MIN. 28.696 SEC. 2357340723062C2C45721CC3 J.D.= 2439C6C.761C2154 OCT. 27,1965 C6 15 52.296

GEOCENTRIC EQUATORIAL COORDINATES

X	-.49552255 C3	Y	.75925526 05	Z	.34302884 C5	DX	-.23515139 C1	DY	-.13156803 C1	DZ	-.48477275 CC
R	.96937089 05	DEC	.2C724.51 02	RA	.12313019 03	V	.27378160 01	PTH	-.62366555-06	AZ	.10C91281 03
R	.96937089 05	LAT	.2C724.51 02	LCN	.35376344 03	VE	.39571679 01	PTE	-.21575370-06	AZE	.26247377 03
XS	-.12378393 C9	YS	-.75524717 08	ZS	-.32752953 08	DXS	.16993214 C2	DYS	-.22664168 C2	DZS	-.58295390 C1
XM	-.15462158 06	YM	-.32642913 06	ZM	-.14267323 06	DXM	.9C3522BE CC	DYM	-.37864285 CC	DZM	-.22468211 CC
XT	-.CCCCCCCC CC	YT	-.CCCCCCCC CC	ZT	.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC CC
RS	.14865BCC 09	VS	.29984355 02	RM	.38835481 06	VM	.1C147E11 C1	RT	.CCCCCCCC CC	VT	.CCCCCCCC CC
GED	.2C853170 C2	ALT	.9C561586 05	LCS	.62C22411 02	RAS	.21136E76 C3	RAM	.24465421 C3	LCM	.11528746 03
CUT	.35CC3CCC 02	DT	.48CCCCCC 03	DR	-.10374188-C7	SMA	.96814667 05	DES	-.12728C74 C2	DEM	-.21554.36 C2
CCL	.25733315 03	MCL	.18C32285 03	TCL	.18CCCCCC C3						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357340723C62C2C5741362 J.D.= 2439C6C.761C22E1 OCT. 27,1965 C6 15 52.371

SMA	.54732775 06	ECC	.82289C24 0C	E	.31C95182 06	SLR	.17671567 06	APO	.9577184C 06	RCA	.96937CB9 05
VH	.2660C282 CC	C3	-.72826680 0C	C1	.26539992 06	TFP	-.75115188-C1	TF	.1E39558C C4	PER	.67163114 05
TA	-.6B3C1491-05	MTA	.18CCCCCC 03	EA	-.6B3C1491-05	MA	-.67103965-05			TFI	.1839558C C4

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 14

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONS. AS OF 1 SEPT 65

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.49552255 05	Y	.75925526 05	Z	.34302884 05	DX	-.23515139 C1	DY	-.13156BC3 C1	DZ	-.48477275 CC
INC	.23309313 02	LAN	.45468230 01	APF	.11656211 02	PX	-.65E9C135 CC	PY	-.4EC55831 CC	PZ	-.17706549 CC
WX	.31368232-01	WY	-.39444951 0C	WZ	.91830207 CC	PX	-.51117553 CC	PY	.78324536 CC	PZ	.35386748 CC
QX	-.85B9C133 0C	QY	-.48C59831 0C	QZ	-.17706549 CC	RX	-.19340390 CC	RY	.25633954 CC	RZ	-.93529557 CC
BX	.85E9C134 0C	BY	.48C59832 0C	BZ	.17706550 CC	TX	.83743C85 CC	TY	.54654330 CC	TZ	.CCCCCCCC CC
DAP	.20724 49 02	RAP	.12313.19 03								

BTO .3C536797 0C BRO -.58875419 05 E .31099182 06 THA .34908718 02 T VECTOR IN EARTH EQUATOR PLANE

80 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357343C7a232C271463CCCC J.D.= 2439C64.11277314 OCT. 30,1965 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	-.11496721 06	Y	-.34926318 06	Z	-.14620939 06	DX	.38192CCC CC	DY	-.9E568C3C CC	DZ	-.43773128 CC
R	.39571882 06	DEC	-.21683426 02	RA	.25178C93 03	V	.11441316 01	PTH	.5359C291 02	AZ	.98885861 02
R	.39571882 06	LAT	-.21683427 02	LCN	.35246005 03	VE	.26155E55 02	PTE	.2C171444 01	AZE	.26977CCC C3
XS	-.11865529 09	YS	-.81655548 08	ZS	-.35554279 08	DXS	.18414182 02	DYS	-.21733425 02	DZS	-.94259545 01
XM	.12394108 06	YM	-.33981462 06	ZM	-.17466640 06	DXM	.93158337 CC	DYM	.27585211 CC	DZM	.48753557-01
XT	-.CCCCCCCC CC	YT	-.CCCCCCCC 0C	ZT	.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC CC
RS	.14852282 09	VS	.30CC4541 02	RM	.40168530 06	VM	.6739310C CC	RT	.CCCCCCCC CC	VT	.CCCCCCCC CC
GED	-.21817359 02	ALT	.B6934256 06	LCS	.31533206 03	RAS	.21463694 03	RAM	.25C03864 03	LCM	.31.737758 02
CUT	.35CC0000 02	DT	.65999959 03	DR	.9207B94C CC	SMA	-.2333E18C 06	DES	-.12E45454 02	DEM	-.25777896 02
CCL	.75673425 02	MCL	.34720219 03	TCL	.18CCCCCC C3						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357340721752C272523CCCC J.D.= 2439C6C.757E8132 OCT. 27,1965 C6 11 03.666

SMA	.56496B05 06	ECC	.82426245 0C	E	.31993873 06	SLR	.18117575 06	APO	.1C3C6161 C7	RCA	.9932CCCC 05
VH	.26075157 0C	C3	-.7C552772 0C	C1	.26873477 06	TFP	.28987953 06	TF	.1B394778 C4	PER	.72436127 05
TA	.13113136 03	MTA	.18CCCCCC 03	EA	.6868C522 02	MA	.24693CC4 02			TFI	.192CCCCC C4

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.11496721 06	Y	-.34926318 06	Z	-.14620939 06	DX	.38192CCC CC	DY	-.9E568C3C CC	DZ	-.43773128 CC
INC	.23353479 02	LAN	.47257638 01	APF	.11762962 03	PX	.9563C518 CC	PY	-.25466CCC CC	PZ	-.14366C51 CC
WX	.32656442-01	WY	-.39505908 0C	WZ	.91807678 CC	PX	-.52916991 CC	PY	.77241C3C CC	PZ	.35115844 CC
QX	-.84787469 0C	QY	-.49736654 0C	QZ	-.18383344 CC	RX	-.19845457 CC	RY	.26572444 CC	RZ	-.93631C3 CC
BX	.84787468 CC	BY	.49736654 0C	BZ	.18383344 CC	TX	.82495935 CC	TY	.5E5152C6 CC	TZ	.CCCCCCCC CC
DAP	.20566634 02	RAP	.12441563 03								

BTO .31371140 06 BRO -.62816EC2 05 E .31993873 06 THA .34867698 03 T VECTOR IN EARTH EQUATOR PLANE

85 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357346325632C271463CCCC J.D.= 2439C69.11277314 NOV. 4,1965 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.71649139 05	Y	-.63459677 06	Z	-.27588842 06	DX	.46567E1C CC	DY	-.43471543 CC	DZ	-.20292613 CC
R	.69566398 06	DEC	-.23364731 02	RA	.27644180 03	V	.64137224 CC	PTH	.5403C1B4 C2	AZ	.89392731 C2
R	.69566399 06	LAT	-.23364731 02	LCN	.12212697 02	VE	.46197934 02	PTE	.64EC12C5 CC	AZE	.27CCC492 03
XS	-.11026294 09	YS	-.51C2.553 08	ZS	-.39473637 08	DXS	.2C412.44 02	DYS	-.2C2C8647 C2	DZS	-.87635206 C1
XM	.38834C63 06	YM	-.62815986 05	ZM	-.26919205 05	DXM	.17C5EE5C CC	DYM	.87593C2C CC	DZM	.43694482 CC
XT	-.CCCCCCCC 0C	YT	-.CCCCCCCC 0C	ZT	.CCCCCCCC CC	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC CC
RS	.14834699 09	VS	.20C31470 02	RM	.39886224 06	VM	.9838C919 CC	RT	.CCCCCCCC CC	VT	.CCCCCCCC CC
GED	-.23506729 02	ALT	.6B926517 06	LCS	.31531.22 03	RAS	.21953933 03	RAM	.35CB1123 03	LCM	.86582123 02
CUT	.35CCC.CC 02	DT	.3B4CC.CC 04	DR	.52C8E798 CC	SMA	-.56231496 06	DES	-.15433856 02	DEM	-.95124683 01
CCL	.77414856 02	MCL	.18d23c15 03	TCL	.18CCCCCC 03						

CASE 1 IESYS-JPTRAJ-SPACE C9C165 15

AC-6 POST FLIGHT TRAJECTORY BASED CNBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE				2357340725C320226463CCCC J.C.= 2439C6C.766821900				OCT. 27,1965 C6 24 13.412			
SMA	.5426.982 C6	ECC	.62662516 CC	E	.30375506 06	SLR	.17004324 C6	APO	.95222996 C6	RCA	.92989666 C5
VH	.2623E338 0C	C3	-.73459E59 0C	C1	.26C34466 06	TFP	.721C9C18 C6	TF	.18396972 C4	PER	.66256574 C5
TA	.15575976 03	MTA	.18C0CCC0 03	EA	.10990172 C3	MA	.6526C399 C2			TFI	.2C4CCCCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.71645139 C5	Y	-.63456677 C6	Z	-.27588842 C6	DX	.42567E1C CC	DY	-.43471543 CC	DZ	-.20292613 00
INC	.23372178 02	LAN	.49108474 01	APF	.11564561 03	MX	.9941C211 CC	MY	.1C6C1C89 CC	MZ	.97295727-02
WX	.34559924-01	WY	-.39524595 0C	WZ	.91794737 00	PX	-.5C205506 CC	PY	.78743059 C0	PZ	.35762236 00
QX	-.88411463 0C	QY	-.43700498 0C	QZ	-.17169416 0C	RX	-.19226106 CC	RY	.3C154508 CC	RZ	-.93386627 C0
BX	.88411463 0C	BY	.43700498 0C	BZ	.17169416 0C	TX	.84319416 CC	TY	.53760916 CC	TZ	.00000000 00
DAP	.2C554248 C2	RAP	.122521C3 03								

BTQ	.29857717 06	BRQ	-.55846289 05	E	.30375506 06	THA	.2494C572 C3

T VECTOR IN EARTH EQUATOR PLANE

90 DAYS 0 HRS. 0 MIN. 0.CCC SEC. 2357351555232C271463CCCC J.C.= 2439C74.11277314 NOV. 9,1965 14 42 23.600

GEOCENTRIC

EQUATORIAL COORDINATES

X	.23831447 06	Y	-.7642B7C8 06	Z	-.33792410 06	DX	.34168225 CC	DY	-.1E843624 CC	DZ	-.94C14397-01
R	.86897711 06	DEC	-.22E84561 02	RA	.28731814 03	V	.40136477 00	PTH	.47517436 C2	AZ	.85154958 02
B	.8689779C 06	LAT	-.22884561 02	LCN	.18163888 02	VE	.581CS879 C2	PTE	.25185398 CC	AZE	.27CC2257 03
XS	-.10103453 0S	YS	-.993951C2 08	ZS	-.43104776 C8	DXS	.22261621 C2	DYS	-.18536235 C2	DZS	-.8C372902 01
XM	.23315329 06	YM	.27777454 06	ZM	.11245714 C6	CXM	-.84945169 CC	DYM	.51457807 CC	DZM	.32597718C C0
XT	-.CCCCCCCC 0C	YT	-.CCCCCCC0 0C	ZT	.00000000 00	CXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC 00
RS	.14814315 0S	VS	.3CC62765 02	RM	.37785910 06	VM	.10452829 C1	RT	.CCCCCCCC CC	VT	.00000000 00
GEO	-.23C2435 C2	ALT	.8626C216 06	LCS	.31537267 03	RAS	.22452994 C3	RAM	.5C356462 C2	LCM	.1411992C 03
OUT	.35CCCCCC 02	DT	.3840CCC0 04	DR	.29599967 CC	SHA	-.74424554 C6	DES	-.16915859 C2	DEM	.17314505 C2
CCL	.78399280 02	MCL	.18C55757 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE				2357341050732C2C7663CCCC J.C.= 2439C61.01532974				OCT. 27,1965 12 22 04.491			
SMA	.52703462 06	ECC	.85783631 0C	E	.27085521 06	SLR	.13919873 C6	APO	.975144C5 06	RCA	.74925184 05
VH	.24C56919 0C	C3	-.75630824 0C	C1	.23555191 06	TFP	.11316191 C7	TF	.1E456613 C4	PER	.63462671 05
TA	.16823438 03	MTA	.18000000 03	EA	.13914143 03	MA	.10698753 C3			TFI	.216CCCCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.23831447 06	Y	-.7642B7C8 06	Z	-.33792410 06	DX	.34168225 CC	DY	-.1E843624 CC	DZ	-.94C14397-01
INC	.23364826 02	LAN	.50215975 01	APF	.11308094 03	MX	.96103252 C0	MY	.26525763 CC	MZ	.77813254-01
WX	.34713550-01	WY	-.39506227 00	WZ	.91799825 00	PX	-.46444792 C0	PY	.8C695780 C0	PZ	.36483862 00
QX	-.88491984 0C	QY	-.43902722 0C	QZ	-.15547347 0C	RX	-.18199319 CC	RY	.3162C515 CC	RZ	-.931C7076 C0
BX	.88491984 0C	BY	.43902722 0C	BZ	.15547347 0C	TX	.86669868 CC	TY	.49683203 C0	TZ	.CCCCCCCC 00
DAP	.21397651 02	RAP	.11592275 03								

BTQ	.26705232 06	BRQ	-.45228357 05	E	.27085521 06	THA	.35038751 C3

T VECTOR IN EARTH EQUATOR PLANE

95 DAYS 0 HRS. 0 MIN. 0.CCC SEC. 2357355C0463202714630CCC J.C.= 2439C79.11277314 NOV. 14,1965 14 42 23.600

CASE 1 IESYS-JPTRAJ-SPACE C9C165 16

AC-6 POST FLIGHT TRAJECTORY BASED CNBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

GEOCENTRIC

EQUATORIAL COORDINATES

X	.36635514 C6	Y	-.8C93C566 06	Z	-.36237663 C6	DX	.25227660 CC	DY	-.27435434-C1	DZ	-.226CC679-01
R	.95943137 C6	DEC	-.22191250 02	RA	.29435523 03	V	.25676847 CC	PTH	.3C162532 C2	AZ	.82747386 02
B	.95943136 06	LAT	-.22191250 02	LCN	.26269598 02	VE	.64562185 C2	PTE	.1136C312 C0	AZE	.27CC2468 03
XS	-.91C49742 08	YS	-.1C70127C 09	ZS	-.46409624 08	DXS	.2395879C C2	DYS	-.16724775 C2	DZS	-.72522677 01
XM	-.19880666 06	YM	.27309825 06	ZM	.14985126 C6	CXM	-.89056247 CC	DYM	-.54644C31 CC	DZM	-.18C56941 C0
XT	-.CCCCCCCC 0C	YT	-.CCCCCCC0 0C	ZT	.00000000 00	CXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC C0
RS	.14797488 09	VS	.3C105432 02	RM	.36954315 06	VM	.1L603319 C1	RT	.CCCCCCCC CC	VT	.CCCCCCCC C0
GEO	-.22327669 02	ALT	.55305624 06	LCS	.31552334 03	RAS	.2296C898 C3	RAM	.126C534C C3	LCM	.21196776 03
OUT	.35000000 02	DT	.3840CCC0 04	DR	.12800961 CC	SHA	-.63443185 C6	DES	-.18278234 C2	DEM	.23922721 02
CCL	.79348784 02	MCL	.17881EC8 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE				2357341JJ5212C215C63CCCC J.C.= 2439C61.47857428				OCT. 27,1965 23 29 08.819			
SMA	.52036420 06	ECC	.885815C8 0C	E	.24146897 06	SLR	.11205.87 C6	APO	.9E131C65 C6	RCA	.5941774C 05
VH	.21536250 0C	C3	-.7660C317 0C	C1	.21133752 06	TFP	.15235948 C7	TF	.18567752 C4	PER	.62261666 C5
TA	.17560573 03	MTA	.18000000 03	EA	.16227598 03	MA	.14682499 C3			TFI	.22800000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.36635514 06	Y	-.8C93C566 06	Z	-.36237663 C6	DX	.25227660 CC	DY	-.27435434-C1	DZ	-.226CC679-C1
INC	.23289318 02	LAN	.57344511 01	APF	.11159089 03	MX	.92336122 CC	MY	.36565435 CC	MZ	.11689306 00
WX	.39505038-01	WY	-.39339568 0C	WZ	.91852010 00	PX	-.45147245 CC	PY	.81303057 CC	PZ	.36763284 C0
QX	-.89141008 CC	QY	-.42920987 0C	QZ	-.14548851 0C	RX	-.17847448 CC	RY	.3214C435 CC	RZ	-.929971CC C0
BX	.89141010 0C	BY	.42920988 0C	BZ	.14548851 00	TX	.87425367 CC	TY	.48546938 CC	TZ	.CCCCCCCC 00
DAP	.21569701 02	RAP	.11904323 03								

BTQ	.23849571 06	BRQ	-.3777640C 05	E	.24146897 06	THA	.35095943 C3

T VECTOR IN EARTH EQUATOR PLANE

99 DAYS 2 HRS. 27 MIN. 37.716 SEC. 2357357555322C225C4C772C J.C.= 2439C83.215293C1 NOV. 18,1965 17 10 01.316

GEOCENTRIC

EQUATORIAL COORDINATES

X	.44338928 06	Y	-.79B5C624 C6	Z	-.36131543 C6	DX	.18197102 CC	DY	.88121311-C1	DZ	.28558383-C1
R	.98221947 06	DEC	-.21583457 02	RA	.29904225 03	V	-.20419206 CC	PTH	-.25395261-C6	AZ	.81349511 02
B	.98221944 C6	LAT	-.21583458 02	LCN	.34400583 03	VE	.664CC587 C2	PTE	.5234C289-C7	AZE	.27CC265C 03
XS	-.82328241 08	YS	-.112666C5 09	ZS	-.48859435 08	DXS	.2523C186 C2	DYS	-.15132C25 C2	DZS	-.65627664 01
XM	-.37295763 06	YM	-.15794432 05	ZM	.26925304 05	CXM	-.16225118-C1	DYM	-.94571826 CC	DZM	-.45372617 CC
XT	-.CCCCCCCC 0C	YT	-.CCCCCCC0 0C	ZT	.00000000 00	CXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC 00
RS	.14784729 09	VS	.3C143165 02	RM	.37426170 06	VM	.1C49C537 C1	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GEO	-.21716896 02	ALT	.97584418 06	LCS	.27880692 03	RAS	.23384335 C3	RAM	.16242498 C3	LCM	.22738856 C3
OUT	.35000000 02	DT	.3840CCC0 04	DR	-.99424058-09	SHA	-.85638350 C6	DES	-.15297443 C2	DEM	.41255622 01
CCL	.80188058 02	MCL	.17872130 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE				2357341444772C2C1040772C J.C.= 2439C61.76217669				OCT. 26,1965 C6 17 32.066			
SMA	.51773477 06	ECC	.89725794 0C	E	.22857014 C6	SLR	.1CC91525 C6	APO	.9E221948 C6	RCA	.5319CC54 05
VH	.2C419206 0C	C3	-.76993816 0C	C1	.2CC56142 C6	TFP	.18535492 C7	TF	.18635857 C4	PER	.61784975 C5
TA	.18C00CCC 03	MTA	.18000000 03	EA	.18000000 03	MA	.18000000 03			TFI	.2378466C 04

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CASE 1                              IBSYS-JPTRAJ-SPACE C9C165                                    17

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

                                                                ALL VECTORS REFERENCED TO EARTH ECLATOR PLANE
   X  .44336928 06     Y -.79850624 06     Z -.36131543 06     DX  .18197102 00     DY  .88121311-01     DZ  .28558383-01
 INC  .23175368 02   LAN  .65733413 01   APF  .11C81701 03     MX  .89117577 00     MY  .43156099 00     MZ  .13986039 00
  WX  .45051245-01   WY -.39095962 00     WZ  .91930461 00     PX -.45141569 00     PY  .81296111 00     PZ  .36785610 00
  QX -.89117577 00    QY -.43156089 00     QZ -.13986040 00     RX -.17857737 00     RY  .32160260 00     RZ -.92988271 00
  BX  .89117578 00    BY  .43156089 00     BZ  .13986040 00     TX  .87426157 00     TY  .48545443 00     TZ  .00000000 00
 DAP  .21583457 02   RAP  .11904225 03

 BTQ  .22596997 06   BRQ -.34378431 05      B  .22857014 06    THA  .35134951 03    T VECTOR IN  EARTH EQUATOR PLANE

 100 DAYS  0 HRS.  0 MIN.  0.000 SEC.        2357360234232027146300000 J.D.= 2439C84.11277314  NOV. 19,1965 14 42 23.600

      GEOCENTRIC                                                                    EQUATORIAL COORDINATES

   X  .45687535 06     Y -.79068480 06     Z -.35865974 06     DX  .16576072 00     DY  .11365934 00     DZ  .39968004-01
   R  .98109853 06   DEC -.21442637 02    RA  .30002028 03      V  .20492572 00    PTH -.81414001 01     AZ  .81054678 02
   R  .98109852 06   LAT -.21442637 02   LON  .21006438 02     VE  .6639C549 02    PTE -.25C45449-01     AZE  .27002722 03
  XS -.80361607 08    YS -.11382548 09     ZS -.49362281 08    DXS  .25491967 02    DYS -.14772930 02     DZS -.64C64000 01
  XM -.36565368 06    YM -.88265866 05     ZM -.86367638 04    DXM  .20325631 00    DYM -.91645078 00     DZM -.45998994 00
  XT -.00000000 00    YT -.00000000 00     ZT  .00000000 00    DXT -.00000000 00    DYT -.00000000 00     DZT  .00000000 00
  RS  .14782037 09    VS  .30150667 02     RP  .37625531 06     VM  .10453640 01     RT  .00000000 00      VT  .00000000 00
 GED -.21575375 02   ALT  .97472320 06   LOS  .31576377 03    RAS  .23477763 03    RAM  .19357111 03     LOM  .27455726 03
 OUT  .35000000 02    DT  .38400000 04    DR -.29020163-01    SHA -.85552607 00    DES -.19507741 02     DEM -.13153126 01
 CCL  .80381504 02   MCL  .17883302 03   TCL  .18000000 03

                                                GEOCENTRIC CONIC

 EPOCH OF PERICENTER PASSAGE                 2357375652652021766300000 J.D.= 2439104.62579650  DEC. 10,1965 03 15 32.991
  SMA  .51728203 06   ECC  .89883114 00      P  .22672217 06    SLR  .99371219 05    APO  .98223122 06     RCA  .52332836 05
   VH  .22262151 00    C3 -.77056731 00     C1  .19902118 06    TFP -.17731894 07     TF  .28925526 04     PER  .61705314 05
   TA -.17907632 03   MTA  .18000000 03     EA -.17599985 03     MA -.17240730 03                          TFI  .24000000 04

                                                                ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
   X  .45687535 06     Y -.79068480 06     Z -.35865974 06     DX  .16576072 00     DY  .11365934 00     DZ  .39968004-01
 INC  .23152283 02   LAN  .67246254 01   APF  .11067496 03     MX  .88375616 00     MY  .44500395 00     MZ  .13472925 00
  WX  .46040001-01   WY -.39047146 00     WZ  .91946310 00     PX -.45137008 00     PY  .81298684 00     PZ  .36785516 00
  QX -.89114834 00    QY -.43195417 00     QZ -.13881721 00     RX -.17655880 00     RY  .32161184 00     RZ -.92988309 00
  BX  .89114834 00    BY  .43195417 00     BZ  .13881722 00     TX  .87428932 00     TY  .48540519 00     TZ  .00000000 00
 DAP  .21583400 02   RAP  .11903902 03

 BTQ  .22418158 06   BRQ -.33846126 05      B  .22672217 06    THA  .35141453 03    T VECTOR IN  EARTH EQUATOR PLANE

 105 DAYS  0 HRS.  0 MIN.  0.000 SEC.        2357363463632027146300000 J.D.= 2439C89.11277314  NOV. 24,1965 14 42 23.600

      GEOCENTRIC                                                                    EQUATORIAL COORDINATES

   X  .50648028 06     Y -.70972018 06     Z -.32695016 06     DX  .57656591-01     DY  .26375795 00     DZ  .10842108 00
   R  .93115355 06   DEC -.20555143 02    RA  .30551293 03      V  .29094273 00    PTH -.45561597 02     AZ  .79278246 02
   R  .93115353 06   LAT -.20555144 02   LON  .21570827 02     VE  .6338C797 02    PTE -.18779178 00     AZE  .27003426 03
  XS -.69051971 08    YS -.11976044 09     ZS -.51936392 08    DXS  .26830290 00    DYS -.12684222 02     DZS -.55018862 01
  XM -.74661989 05    YM -.35038722 06     ZM -.16179647 06    DXM  .97352658 00    DYM -.17616926 00     DZM -.17506878 00
  XT -.00000000 00    YT -.00000000 00     ZT  .00000000 00    DXT -.00000000 00    DYT -.00000000 00     DZT  .00000000 00
  RS  .14767575 09    VS  .30183184 02     RP  .39309504 06     VM  .10047082 01     RT  .00000000 00      VT  .00000000 00
 GED -.20683401 02   ALT  .92481799 06   LOS  .31609081 03    RAS  .24003293 03    RAM  .25797107 03     LOM  .33402896 03
 OUT  .35000000 02    DT  .38400000 04    DR -.20773415 00    SHA -.81317823 00    DES -.20590845 02     DEM -.24305151 02
 CCL  .81525399 02   MCL  .18053731 03   TCL  .17999999 03
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CASE 1                              IBSYS-JPTRAJ-SPACE C9C165                                    18

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

                                                GEOCENTRIC CONIC

 EPOCH OF PERICENTER PASSAGE                 2357375461052027306300000 J.D.= 2439104.27508504  DEC.  9,1965 18 36 07.694
  SMA  .51668396 06   ECC  .90645772 00      P  .21596188 06    SLR  .90267249 05    APO  .98606948 06     RCA  .47298427 05
   VH  .19236501 00    C3 -.77145926 00     C1  .18968527 06    TFP -.13100241 07     TF  .28838956 04     PER  .61602324 05
   TA -.17375285 03   MTA  .18000000 03     EA -.15201737 03     MA -.12759493 03                          TFI  .25200000 04

                                                                ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
   X  .50648028 06     Y -.70972018 06     Z -.32695016 06     DX  .57656591-01     DY  .26375795 00     DZ  .10842108 00
 INC  .23075615 02   LAN  .71759313 01   APF  .11014021 03     MX  .83771763 00     MY  .51757618 00     MZ  .17419536 00
  WX  .48960454-01   WY -.38887559 00     WZ  .91998839 00     PX -.44951621 00     PY  .81395726 00     PZ  .36797923 00
  QX -.89192932 00    QY -.43156613 00     QZ -.13495416 00     RX -.17785480 00     RY  .32212134 00     RZ -.92983399 00
  BX  .89192940 00    BY  .43156614 00     BZ  .13495416 00     TX  .87537912 00     TY  .48343707 00     TZ  .00000000 00
 DAP  .21591045 02   RAP  .11891012 03

 BTQ  .21367516 06   BRQ -.31344256 05      B  .21596188 06    THA  .35165473 03    T VECTOR IN  EARTH EQUATOR PLANE

 110 DAYS  0 HRS.  0 MIN.  0.000 SEC.        2357366713232027146300000 J.D.= 2439C94.11277314  NOV. 29,1965 14 42 23.600

      GEOCENTRIC                                                                    EQUATORIAL COORDINATES

   X  .49888074 06     Y -.55918769 06     Z -.26298260 06     DX -.10523662 00     DY  .44041583 00     DZ  .19139311 00
   R  .79916982 06   DEC -.19337644 02    RA  .31173783 03      V  .49160163 00    PTH -.63403218 02     AZ  .77250244 02
   R  .79916861 06   LAT -.19337644 02   LON  .22867367 02     VE  .54432899 02    PTE -.46270518 00     AZE  .27005113 03
  XS -.59210249 08    YS -.12477017 09     ZS -.54109307 08    DXS  .27952319 02    DYS -.10492501 02     DZS -.45505355 01
  XM -.31718341 06    YM -.22519448 06     ZM -.13691482 06    DXM  .62247387 00    DYM  .68822130 00     DZM  .27272474 00
  XT -.00000000 00    YT -.00000000 00     ZT  .00000000 00    DXT -.00000000 00    DYT -.00000000 00     DZT  .00000000 00
  RS  .14754127 09    VS  .30201520 02     RP  .40474667 06     VM  .96579095 00     RT  .00000000 00      VT  .00000000 00
 GED -.19459553 02   ALT  .78781098 06   LOS  .31649688 03    RAS  .24536735 03    RAM  .32375506 03     LOM  .34884590 02
 OUT  .35000000 02    DT  .38400000 04    DR -.43958606 00    SHA -.69966173 00    DES -.21514713 02     DEM -.19771682 02
 CCL  .82785539 02   MCL  .18465153 03   TCL  .17999999 03

                                                GEOCENTRIC CONIC

 EPOCH OF PERICENTER PASSAGE                 2357375234402027233630000 J.D.= 2439103.83482681  DEC.  9,1965 08 02 09.209
  SMA  .52301320 06   ECC  .92381867 00      P  .20022532 06    SLR  .76652323 05    APO  .10C61826 07     RCA  .39843840 05
   VH  .17772401 00    C3 -.76212344 00     C1  .17479606 06    TFP -.83998561 06     TF  .28733293 04     PER  .62377702 05
   TA -.16795601 03   MTA  .18000000 03     EA -.12414155 03     MA -.80333091 02                          TFI  .26400000 04

                                                                ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
   X  .49888074 06     Y -.55918769 06     Z -.26298260 06     DX -.10523662 00     DY  .44041583 00     DZ  .19139311 00
 INC  .23027395 02   LAN  .73920619 01   APF  .11012681 03     MX  .77645046 00     MY  .59477707 00     MZ  .20824255 00
  WX  .53273920-01   WY -.38792127 00     WZ  .92031793 00     PX -.45232179 00     PY  .81277984 00     PZ  .36729784 00
  QX -.89043469 00    QY -.43476900 00     QZ -.13456322 00     RX -.17862188 00     RY  .32293913 00     RZ -.93010337 00
  BX  .89043468 00    BY  .43476900 00     BZ  .13456322 00     TX  .87378443 00     TY  .48631346 00     TZ  .00000000 00
 DAP  .21545064 02   RAP  .11909856 03

 BTQ  .19811878 06   BRQ -.28967707 05      B  .20022532 06    THA  .35168150 03    T VECTOR IN  EARTH EQUATOR PLANE

 115 DAYS  0 HRS.  0 MIN.  0.000 SEC.        2357372142632027146300000 J.D.= 2439C99.11277314  DEC.  4,1965 14 42 23.600
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CASE 1 IBSYS-JPTRAJ-SPACE C9C165 19

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

GEOCENTRIC EQUATORIAL COORDINATES

X	.39797255 06	Y	-.31798434 06	Z	-.15589525 06	DX	-.40386413 CC	DY	.7CC7669C CC	DZ	.3171C488 00
R	.53272837 06	DEC	-.17C158C7 02	RA	.32137477 C3	V	.66875562 CC	PTH	-.69321513 C2	AZ	.74325521 02
R	.53272836 06	LAT	-.17C158C7 02	LON	.27576111 C2	VE	.3686C278 C2	PTE	-.12635022 C1	AZE	.27012886 03
XS	-.44931955 08	YS	-.12881524 09	ZS	-.55863392 08	DXS	.28853252 C2	DYS	-.82232273 C1	DZS	-.3565161C1 01
XM	.36354395 06	YM	.13509853 06	ZM	.31347313 05	DXM	-.4C738192 CC	DYM	.81700115 CC	DZM	.431126C5 C0
XT	-.CCCC0.000 0C	YT	-.C0C0C0C0 0C	ZT	.00000000 0C	DXT	-.CCCCCCC0 CC	DYT	-.CCC0C0C0 CC	DZT	.C0CCC0GC 00
RS	.14742104 09	VS	.30213275 02	RM	.38909970 C6	VM	.10096141 C1	RT	.CCC0C0CC C0	VT	.C0CCCCCC 00
GED	-.17125003 02	ALT	.526352C1 06	LCS	.31697208 C3	RAS	.25077C75 C3	RAM	.2C385898 C2	LCM	.26587238 C2
DUT	.35CCCGCO 02	DT	.19200CC0 04	DR	-.81278734 CC	SMA	-.48713783 C6	DES	-.22267897 C2	DEM	.462C9687 C1
CCL	.84232351 02	MCL	.18457C20 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357375130442C233123CCCC J.C.= 2439103.63353E16 DEC. 9,1965 C3 12 17.698

SMA	.53740489 06	ECC	.93558175 00	B	.18976312 06	SLR	.67007288 05	APO	.1C401911 C7	RCA	.34618681 05
VH	.15711472 CC	C3	-.74171379 0C	C1	.16342933 06	TFP	-.39055409 06	TF	.2EE84583 C4	PER	.65344954 05
TA	-.15513333 03	MTA	.18C00CCC 03	EA	-.89467C72 02	MA	-.3586645C7 02			TFI	.276CCCCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.39797255 06	Y	-.31798434 06	Z	-.15589525 06	DX	-.40386413 CC	DY	.7CC7669C CC	DZ	.3171C488 00
INC	.22976635 02	LAN	.75768768 01	APF	.11C572C4 03	MX	.66277681 0C	MY	.7C284C55 CC	MZ	.25834456 00
WX	.5147.848-01	WY	-.38694729 0C	WZ	.92C66411 0C	PX	-.46197108 CC	PY	.8C80962C CC	PZ	.36546302 00
QX	-.8854C312 0C	QY	-.44413086 0C	QZ	-.13716506 00	RX	-.18138C17 CC	RY	.31727662 CC	RZ	-.93082584 00
BX	.88540319 0C	BY	.44413089 0C	BZ	.13716507 CC	TX	.86814973 CC	TY	.4963C238 CC	TZ	.CCCCCCCC 00
DAP	.21436080 02	RAP	.11975566 03								

BTQ .18769150 06 BRQ -.279632C4 05 B .18976312 06 THA .35152612 03 T VECTOR IN EARTH EQUATOR PLANE

119 DAYS 11 HRS. 51 MIN. 16.741 SEC. 2357375117412020535547S6 J.C.= 2439103.6C671652 DEC. 9,1965 02 33 40.341

GEOCENTRIC EQUATORIAL COORDINATES

X	-.15482288 05	Y	.26527331 05	Z	.12007785 05	DX	-.42683644 01	DY	-.21844319 01	DZ	-.67763542 00
R	.32978590 05	DEC	.21352728 02	RA	.12026934 03	V	.48425C62 01	PTH	-.15426969-06	AZ	.98641326 02
R	.32978589 05	LAT	.21352728 02	LON	.42214150 01	VE	.2649628C 01	PTE	-.48333593-06	AZE	.10593798 03
XS	-.3360156 08	YS	-.13160423 09	ZS	-.57C72262 08	DXS	.29477760 02	DYS	-.61350125 01	DZS	-.26592593 01
XM	.51557694 05	YM	.32964848 06	ZM	.15389338 06	DXM	-.10634419 01	DYM	.67467675-01	DZM	.13C82025 00
XT	-.00000000 0C	YT	-.CCCCCCCC 0C	ZT	.C0000000 0C	DXT	-.C0000000 0C	DYT	-.CCCCCCCC CC	DZT	.CCCCCCCC 00
RS	.14732949 09	VS	.30226617 02	RM	.36743637 06	VM	.10735803 01	RT	.CCCCCCCC 00	VT	.C000CC0C 00
GED	.21485019 02	ALT	.26603246 05	LCS	.13962917 03	RAS	.25562771C 03	RAM	.81110834 02	LCM	.3250629C 03
DUT	.35C0CCCO 02	DT	.24C0CCC0 03	DR	-.C0000C00 00	SMA	.21719395 05	DES	-.22791474 C2	DEM	.2476C744 02
CCL	.26453345 03	MCL	.32C13710 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357375117412020535547S6 J.C.= 2439103.6C671652 DEC. 9,1965 02 33 40.341

SMA	.55098654 06	ECC	.94C14628 0C	B	.18776031 06	SLR	.63983288 05	APO	.10689945 07	RCA	.3297859C 05
VH	.14939181 0C	C3	-.72343C78 0C	C1	.15969903 06	TFP	-.0C000C00 00	TF	.28678546 C4	PER	.678377CC 05
TA	-.68301891-05	MTA	.18C00CC0 03	EA	-.68301891-05	MA	-.C0000CCC C0			TFI	.28678546 C4

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 20

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.15482288 05	Y	.26527331 05	Z	.12007785 05	DX	-.42683644 01	DY	-.21844319 01	DZ	-.67763542 00
INC	.22959026 02	LAN	.76144C04 01	APF	.11102286 03	MX	-.881437C5 0C	MY	-.45109531 00	MZ	-.13993485 00
WX	.51686782-01	WY	-.38663321 0C	WZ	.92C78404 00	PX	-.46966482 CC	PY	.8C438039 00	PZ	.3641C856 00
QX	-.88143706 0C	QY	-.45109531 0C	QZ	-.13993486 00	RX	-.18353458 CC	RY	.31446790 CC	RZ	-.93135655 00
BX	.88143705 0C	BY	.45109531 0C	BZ	.13993485 0C	TX	.86366536 CC	TY	.5C406563 CC	TZ	.C0000CCC C0
DAP	.21352728 02	RAP	.12C26934 03								

BTQ .18562891 06 BRQ -.28210692 05 B .18776031 06 THA .35135867 03 T VECTOR IN EARTH EQUATOR PLANE

120 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357375372232027146300CC J.C.= 2439104.11277314 DEC. 9,1965 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	-.63801006 05	Y	-.56331499 05	Z	-.36869707 05	DX	.50632695-01	DY	-.22288907 C1	DZ	-.93875186 00
R	.12128356 06	DEC	-.17697766 02	RA	.23648322 03	V	.24190591 01	PTH	.57C12771 C2	AZ	.10486812 03
R	.12128355 06	LAT	-.17697766 02	LON	.29775623 03	VE	.74425263 01	PTE	.15821C77 C2	AZE	.26729485 03
XS	-.32311216 08	YS	-.13186731 09	ZS	-.57186288 08	DXS	.29537648 02	DYS	-.58973664 C1	DZS	-.25562568 01
XM	.47877563 04	YM	.33004673 06	ZM	.15840939 06	DXM	-.10731269 01	DYM	-.49493054-C1	DZM	.75379222-01
XT	-.00000000 0C	YT	-.C0C0C0C0 0C	ZT	.C0000000 00	DXT	-.C0000000 CC	DYT	-.CCCCCCCC CC	DZT	.00000000 00
RS	.14732030 09	VS	.30228699 02	RM	.36612471 06	VM	.10769C9C 01	RT	.CCCCCCCC CC	VT	.00000CCC 00
GED	-.17810775 02	ALT	.11490735 06	LCS	.31750518 03	RAS	.25623217 03	RAM	.85168908 C2	LCM	.15044192 03
DUT	.35000000 02	DT	.48C00CC0 03	DR	.20290874 01	SMA	-.39901698 05	DES	-.22841086 C2	DEM	.25636815 02
CCL	.2698C621 03	MCL	.35160714 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357375117422C2C5753CCCC J.C.= 2439103.6C676357 DEC. 9,1965 02 33 44.372

SMA	.55269895 06	ECC	.94C30762 0C	B	.18809765 06	SLR	.64014463 05	APO	.1C724C6C C7	RCA	.32991914 05
VH	.14895284 0C	C3	-.72118939 0C	C1	.15973793 06	TFP	.43715227 C5	TF	.28678552 C4	PER	.68154195 05
TA	.12C14349 03	MTA	.18C00CC0 03	EA	.33889684 02	MA	.38488512 C1			TFI	.2880CCCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.63801006 05	Y	-.56331459 05	Z	-.36869707 05	DX	.50632695-C1	DY	-.22288907 C1	DZ	-.93875186 00
INC	.22960379 02	LAN	.76143786 01	APF	.11105280 03	MX	.84886248 CC	MY	-.46865987 CC	MZ	-.24445133 00
WX	.51688880-01	WY	-.38665CC2 0C	WZ	.92C77687 CC	PX	-.46992426 CC	PY	.8C413803 00	PZ	.3640S111 00
QX	-.88119203 0C	QY	-.45151277 0C	QZ	-.14C13123 00	RX	-.18368C82 CC	RY	.31431603 CC	RZ	-.93137897 00
BX	.88119206 CC	BY	.45151278 0C	BZ	.14C13123 CC	TX	.86338436 CC	TY	.5C454678 CC	TZ	.00000000 00
DAP	.21349197 02	RAP	.12C3C127 03								

BTQ .18595649 06 BRQ -.28300355 05 B .18809765 06 THA .35134666 03 T VECTOR IN EARTH EQUATOR PLANE

125 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357400621632027146300CC J.C.= 2439109.11277314 DEC. 14,1965 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.1047C125 06	Y	-.54562090 06	Z	-.23690857 06	DX	.39085164 CC	DY	-.63536107 CC	DZ	-.2899C755 00
R	.6C759456 06	DEC	-.22949039 02	RA	.28C78546 C3	V	.6C034477 CC	PTH	.7C653977 02	AZ	.88935432 02
R	.6C759456 06	LAT	-.22949039 02	LON	.33713010 C3	VE	.4.541670 C2	PTE	.1C672862 01	AZE	.270CC696 03
XS	-.19440216 08	YS	-.13390369 09	ZS	-.58C69254 08	DXS	.3001C695 C2	DYS	-.35213778 01	DZS	-.15271707 01
XM	-.35C64562 06	YM	.51275116 05	ZM	.76272430 05	DXM	-.36147937 CC	DYM	-.9C807165 CC	DZM	-.43387882 00
XT	-.00000000 0C	YT	-.CCCCCCCC 0C	ZT	.CCCC0000 0C	DXT	-.CCCCCCCC CC	DYT	-.CCCCCCCC 00	DZT	.CCCCCCCC 00
RS	.14724184 09	VS	.30255151 02	RM	.37C27150 06	VM	.10575346 01	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.23C89088 02	ALT	.6C121964 06	LCS	.31808411 03	RAS	.26173947 C3	RAM	.1654C937 C3	LCM	.221754CC C3
DUT	.35C0C0C0 02	DT	.19200CC0 04	DR	.75515346 0C	SMA	-.1828C945 C6	DES	-.2322732C C2	DEM	.11887491 02
CCL	.84148132 02	MCL	.17619794 03	TCL	.18C00000 03						

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CASE 1                          IBSYS-JPTRAJ-SPACE C9C165                          21

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

                                  GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE          2357375133332C230323CCCC J.D.= 2439103.642CC840   DEC. 5,1965 03 24 29.526
  SMA  .59358902 06   ECC  .54356757 00     B  .19658485 06   SLR  .65104979 05   APO  .115368C4 07   RCA  .33497667 05
   VH  .13963381 00    C3 -.67150944 00    C1  .16109278 06   TFP  .472674C7 06    TF  .28687C16 04   PER  .75855732 05
   TA  .16112861 03   MTA  .18000000 03    EA  .91432875 02    MA  .37387344 02                       TFI  .30000000 04

                                  ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
    X  .10470125 06     Y -.54962090 06     Z -.23690857 06    DX  .39089164 00    DY -.63538107 00    DZ -.28990755 00
  INC  .22972378 02   LAN  .85693958 01   APF  .11138381 03    MX  .98352C87 00    MY  .17598349 00    MZ  .17108625-01
   WX  .54701564-01    WY -.38643502 00    WZ  .92069311 00    PX -.48117297 00    PY  .79774605 00    PZ  .36341960 00
   QX -.87491737 00    QY -.46289221 00    QZ -.14230411 00    RX -.1877C168 00    RY  .31119428 00    RZ -.93162555 00
   BX  .87491735 00    BY  .46289220 00    BZ  .14230411 00    TX  .85629472 00    TY  .51648751 00    TZ  .00000000 00
  DAP  .21311354 02   RAP  .12109693 03

  BTQ  .19427795 06   BRQ -.30C27981 05     B  .19658485 06   THA  .35121377 03    T VECTOR IN  EARTH EQUATOR PLANE

130 DAYS  0 HRS.  0 MIN.  0.000 SEC.       2357404051232C271463CCCC J.D.= 2439114.11277314  DEC. 15,1965 14 42 23.600

     GEOCENTRIC                                                          EQUATORIAL COORDINATES

    X  .25821459 06     Y -.75927258 06     Z -.33424171 06    DX  .32084447 00    DY -.36935922 00    DZ -.17493197 00
    R  .86884240 06   DEC -.22624976 02    RA  .28878222 03     V  .51956503 00   PTH  .69109131 02     AZ  .86039821 02
    R  .86884239 06   LAT -.22624977 02   LCN  .34C19864 03    VE  .58296382 02   PTE  .47708615 00   AZE  .27CC1258 03
   XS -.64134549 07    YS -.13490330 09    ZS -.58503124 08   DXS  .30256499 02   DYS -.11CC4444 01   DZS -.47834184 00
   XM -.25072302 06    YM -.27456285 06    ZM -.10904859 06   DXM  .74426518 00   DYM -.59455042 00   DZM -.35461089 00
   XT -.00000000 00    YT -.00000000 00    ZT  .00000000 00   DXT -.00000000 00   DYT -.00000000 00   DZT  .00000000 00
   RS  .14718233 09    VS  .3028C283 02    RM  .38747694 06    VM  .10164056 01    RT  .00000000 00    VT  .00000000 00
  GED -.22763485 02   ALT  .66246739 06   LCS  .31869456 03   RAS  .26727613 03   RAM  .22759855 03   LOM  .27901497 03
  OUT  .35000000 02    DT  .38400000 04    DR  .48542820 00   SHA -.29415321 06   DES -.23421156 02   DEM -.16345716 02
  CCL  .86642268 02   MCL  .17946784 03   TCL  .17999999 03

                                  GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE          2357375202702C214363CCCC J.D.= 2439103.75885791   DEC. 5,1965 06 12 48.780
  SMA  .61552761 06   ECC  .54571671 00     B  .20004165 06   SLR  .65011966 05   APO  .11576424 07   RCA  .33412863 05
   VH  .13441213 00    C3 -.64757553 00    C1  .16097767 06   TFP  .89457481 06    TF  .28715C7C 04   PER  .80099769 05
   TA  .16803604 03   MTA  .18000000 03    EA  .11579567 03    MA  .67C09592 02                       TFI  .31200000 04

                                  ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
    X  .25821459 06     Y -.75927258 06     Z -.33424171 06    DX  .32084447 00    DY -.36935922 00    DZ -.17493197 00
  INC  .22950999 02   LAN  .85807296 01   APF  .11137293 03    MX  .95304296 00    MY  .25604954 00    MZ  .63748186-01
   WX  .56180694-01    WY -.38557903 00    WZ  .92083868 00    PX -.48830053 00    PY  .79353741 00    PZ  .36312664 00
   QX -.87073393 00    QY -.47077259 00    QZ -.14210990 00    RX -.19C3C52C 00    RY  .3C926557 00    RZ -.93173978 00
   BX  .87073392 00    BY  .47077259 00    BZ  .14210990 00    TX  .85167277 00    TY  .52407393 00    TZ  .00000000 00
  DAP  .21292337 02   RAP  .12106552 03

  BTQ  .19770121 06   BRQ -.30510553 05     B  .20004165 06   THA  .35122694 03    T VECTOR IN  EARTH EQUATOR PLANE

135 DAYS  0 HRS.  0 MIN.  0.000 SEC.       23574C7300632C271463CCCC J.D.= 2439119.11277314  DEC. 24,1965 14 42 23.600

CASE 1                          IBSYS-JPTRAJ-SPACE C9C165                          22

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

     GEOCENTRIC                                                          EQUATORIAL COORDINATES

    X  .38198490 06     Y -.88467276 06     Z -.39461926 06    DX  .25181391 00    DY -.22226569 00    DZ -.10913674 00
    R  .10412890 07   DEC -.22270614 02    RA  .29335377 03     V  .35316159 00   PTH  .65976556 02     AZ  .84345978 02
    R  .10412889 07   LAT -.22270614 02   LCN  .33984181 03    VE  .70125747 02   PTE  .26355651 00   AZE  .27CC1157 03
   XS  .66671866 07    YS -.13485179 09    ZS -.58481096 08   DXS  .30256237 02   DYS  .13393485 01   DZS  .58007605 00
   XM  .15025206 06    YM -.33C92361 06    ZM -.17291344 06   DXM  .61535686 00   DYM  .34234738 00   DZM  .81233684-01
   XT -.00000000 00    YT -.00000000 00    ZT  .00000000 00   DXT  .00000000 00   DYT  .00000000 00   DZT -.00000000 00
   RS  .14713767 09    VS  .3029142C 02    RM  .40247381 06    VM  .98065224 00    RT  .00000000 00    VT  .00000000 00
  GED -.22406415 02   ALT  .31349139 07   LCS  .31931849 03   RAS  .27283C45 03   RAM  .29441988 03   LOM  .34090792 03
  OUT  .35000000 02    DT  .76800000 04    DR  .32257037 00   SHA -.33785059 06   DES -.23419384 02   DEM -.25443863 02
  CCL  .88695398 02   MCL  .18639174 03   TCL  .18000000 03

                                  GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE          2357375322172C232263CCCC J.D.= 2439103.99404683   DEC. 5,1965 11 51 25.647
  SMA  .62197022 06   ECC  .55372540 00     B  .18701339 06   SLR  .56230995 05   APO  .12151590 07   RCA  .28781422 05
   VH  .12320370 00    C3 -.64086770 00    C1  .14971209 06   TFP  .13062579 07    TF  .28771505 04   PER  .61361576 05
   TA  .17270176 03   MTA  .18000000 03    EA  .13498236 03    MA  .96331023 02                       TFI  .32400000 04

                                  ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
    X  .38198490 06     Y -.88467276 06     Z -.39461926 06    DX  .25181391 00    DY -.22226569 00    DZ -.10913674 00
  INC  .22941104 02   LAN  .87129541 01   APF  .11082528 03    MX  .92840884 00    MY  .34C20076 00    MZ  .91172322-01
   WX  .59046515-01    WY -.38528638 00    WZ  .92090601 00    PX -.48180602 00    PY  .79695305 00    PZ  .36431962 00
   QX -.87428626 00    QY -.46520985 00    QZ -.13857599 00    RX -.18848522 00    RY  .31177252 00    RZ -.93127397 00
   BX  .87428628 00    BY  .46520985 00    BZ  .13857599 00    TX  .85576649 00    TY  .51736227 00    TZ  .00000000 00
  DAP  .21365716 02   RAP  .12115548 03

  BTQ  .18493135 06   BRQ -.27828C79 05     B  .18701339 06   THA  .35144245 03    T VECTOR IN  EARTH EQUATOR PLANE

140 DAYS  0 HRS.  0 MIN.  0.000 SEC.       2357412530232C271463CCCC J.D.= 2439124.11277314  DEC. 29,1965 14 42 23.600

     GEOCENTRIC                                                          EQUATORIAL COORDINATES

    X  .47586386 06     Y -.95884728 06     Z -.43165447 06    DX  .18320233 00    DY -.12844860 00    DZ -.65391417-01
    R  .11541924 07   DEC -.21961799 02    RA  .29639462 03     V  .23311550 00   PTH  .62462866 02     AZ  .83155816 02
    R  .11541924 07   LAT -.21961799 02   LCN  .33795439 03    VE  .77950735 02   PTE  .15192816 00   AZE  .27CCC944 03
   XS  .19693831 08    YS -.13374861 09    ZS -.58C02664 08   DXS  .30005C37 02   DYS  .37655558 01   DZS  .16334461 01
   XM  .39678561 06    YM -.40509624 05    ZM -.55509657 05   DXM  .11484478 00   DYM  .87257956 00   DZM  .40991173 00
   XT -.00000000 00    YT -.00000000 00    ZT  .00000000 00   DXT  .00000000 00   DYT  .00000000 00   DZT -.00000000 00
   RS  .14710774 09    VS  .3028d444 02    RM  .40269240 06    VM  .97088209 00    RT  .00000000 00    VT  .00000000 00
  GED -.22097699 02   ALT  .11478172 07   LCS  .31993613 03   RAS  .27837637 03   RAM  .35417C61 03   LOM  .35730373 02
  OUT  .35000000 02    DT  .76800000 04    DR  .20669730 00   SHA -.33114C40 06   DES -.23221512 02   DEM -.79232413 01

                                  GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE          2357375631772C266C63CCCC J.D.= 2439104.58591876   DEC. 16,1965 02 03 43.381
  SMA  .62637371 06   ECC  .56851947 00     B  .15592811 06   SLR  .38816394 05   APO  .12330288 07   RCA  .19718572 05
   VH  .10087959 00    C3 -.63636231 00    C1  .12438745 06   TFP  .16871202 07    TF  .26913555 04   PER  .02226142 05
   TA  .17616135 03   MTA  .18000000 03    EA  .15046414 03    MA  .12310831 03                       TFI  .33600000 04
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CASE 1 IBSYS-JPTRAJ-SPACE C9C165 23

AC-6 POST FLIGHT TRAJECTORY BASED CNBEST ESTIMATE OF INJ.CONE. AS OF 1 SEPT 65

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.4758E386 06	Y	-.55884728 06	Z	-.43165447 06	DX	.1832C233 CC	DY	-.12644860 CC	DZ	-.65391417-01
INC	.22953685 02	LAN	.86015143 01	APF	.11C28223 03	MX	.5C9163C5 CC	MY	.4C146130 CC	MZ	.11052190 00
WX	.58325581-01	WY	-.38559109 00	WZ	.92C82448 CC	PX	-.47192658 CC	PY	.8C217C54 CC	PZ	.36579746 00
QX	-.8797C646 0C	QY	-.45589688 0C	QZ	-.13518362 CC	RX	-.18548462 CC	RY	.31528272 CC	RZ	-.93069451 00
BX	.8797C645 0C	BY	.45589688 0C	BZ	.13518361 CC	TX	.8619C931 CC	TY	.5C706927 CC	TZ	.00000000 00
DAP	.21456664 02	RAP	.12046881 03								
BTQ	.15427448 06	BRQ	-.22648557 05	B	.15592811 06	THA	.35164822 03	T VECTOR IN EARTH EQUATOR PLANE			

145 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357415757632C271463CCCC J.D.= 2439129.11277314 JAN. 3,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.54113975 06	Y	-.1C0085E7 07	Z	-.45340619 06	DX	.12C94387 CC	DY	-.71217799-01	DZ	-.3761C85C-01
R	.12248296 07	DEC	-.21726656 02	RA	.29839BC4 03	V	.14530648 0C	PTH	.59775968 02	AZ	.82502171 02
R	.12248296 07	LAT	-.21726656 02	LCN	.33502959 03	VE	.82898586 02	PTE	.86777552-01	AZE	.27000660 03
XS	.32562125 08	YS	-.13160395 09	ZS	-.57072415 08	DXS	.29525978 02	DYS	.61519206 01	DZS	.26691915 01
XM	.2183C7C0 06	YM	.28458624 06	ZM	.11726578 06	DXM	-.88494150 CC	DYM	.45938650 CC	DZM	.30138441 00
XT	-.00000000 CC	YT	-.CCCCOCCO 0C	ZT	.CCCCOCCO 0C	DXT	.CCCCCCCC CC	DYT	.CCCCCCCC CC	DZT	-.CCCCCCCC 00
RS	.14709570 09	VS	.30277947 02	RP	.37735278 06	VP	.10416C59 01	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.21866852 02	ALT	.12184544 07	LCS	.32C52881 03	RAS	.28385727 03	RAM	.52507487 02	LOM	.69139034 02
CUT	.35000000 02	DT	.76800000 04	DR	.12555406 0C	SHA	-.2850C681 06	DES	-.22829807 02	DEM	.1810A978 02
CCL	.93113392 02	MCL	.12074096 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE				2357376500741202E3663CCCC J.D.= 2439105.8586C232 DEC. 11,1965 C0 36 23.241							
SMA	.63294747 06	ECC	.98396467 0C	P	.11289469 06	SLR	.2013E282 05	APO	.12557454 07	RCA	.1.149516 05
VH	.71343927-01	C3	-.62975309 00	C1	.69589813 05	TFP	.2C0916C4 07	TF	.25218999 04	PER	.63523969 05
TA	.17635655 03	MTA	.18000000 03	EA	.16187126 03	MA	.14432537 03			TFI	.3480CCCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.54113975 06	Y	-.1C0085E7 07	Z	-.45340619 06	DX	.12C94387 CC	DY	-.71217799-01	DZ	-.3761C85C-01
INC	.22924720 02	LAN	.88254C70 01	APF	.10977520 03	MX	.89511675 CC	MY	.42SC3565 CC	MZ	.12122232 CC
WX	.59761917-01	WY	-.3849C955 0C	WZ	.92101743 CC	PX	-.46725797 CC	PY	.8C453312 CC	PZ	.36655C18 00
QX	-.8820T769 0C	QY	-.45229530 0C	QZ	-.13178700 CC	RX	-.18411C57 CC	RY	.31696293 CC	RZ	-.93035827 00
BX	.8820T773 0C	BY	.45229532 0C	BZ	.13178700 CC	TX	.864719C7 CC	TY	.5C225585 CC	TZ	.CCCCCCCC 00
DAP	.21503114 02	RAP	.12014935 03								
BTQ	.11175642 06	BRQ	-.15991C59 05	B	.11289469 06	THA	.351856SC 03	T VECTOR IN EARTH EQUATOR PLANE			

150 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357421207232027146 3CCCC J.D.= 2439134.11277314 JAN. 8,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.58323596 06	Y	-.1C234405 07	Z	-.46568840 06	DX	.78284557-01	DY	-.34609494-01	DZ	-.20161594-01
R	.12666720 07	DEC	-.21570569 02	RA	.29967785 03	V	.87936220-01	PTH	.54311514 02	AZ	.82658189 02
R	.12666729 07	LAT	-.21570569 02	LCN	.33138L96 03	VE	.85847495 02	PTE	.47669597-01	AZE	.27000438 03
XS	.45174444 08	YS	-.12644C60 09	ZS	-.55700139 08	DXS	.28825555 02	DYS	.84823150 01	DZS	.36791475 01
XM	-.2179C925 06	YM	.24914495 06	ZM	.13947798 06	DXM	-.86886466 CC	DYM	-.62853663 CC	DZM	-.22491345 00
XT	-.CCCCCCCC 0C	YT	-.CCCCOCCO 0C	ZT	.CCCCCCCC 0C	DXT	.CCCCCCCC CC	DYT	.CCCCCCCC CC	DZT	-.CCCCCCCC 00
RS	.14710616 09	VS	.30272073 02	RP	.35918206 06	VP	.10957053 01	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.21703944 02	ALT	.12602977 07	LCS	.32108063 03	RAS	.28937752 03	RAM	.13117386 03	LOM	.16287697 03
CUT	.35000000 02	DT	.76800000 04	DR	.71421866-01	SHA	-.21077406 06	DES	-.22249408 02	DEM	.22850075 02
CCL	.96296006 02	MCL	.17705152 03	TCL	.17999999 03						

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 24

AC-6 POST FLIGHT TRAJECTORY BASED CNBEST ESTIMATE OF INJ.CONE. AS OF 1 SEPT 65

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE				2357400003652025006 3CCCC J.D.= 2439107.933593E2 DEC. 13,1965 10 24 22.506							
SMA	.64121483 06	ECC	.9917C534 0C	P	.82416721 05	SLR	.1C593189 05	APO	.12771110 07	RCA	.5318E525 04
VH	.50886770-01	C3	-.62163351 0C	C1	.64980394 05	TFP	.22618811 07	TF	.29716996 04	PER	.85165748 05
TA	.17932729 03	MTA	.18000000 03	EA	.16960438 03	MA	.15935146 03			TFI	.36CCCC0C 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.58323596 06	Y	-.1C234405 07	Z	-.46568840 06	DX	.78284557-01	DY	-.34609494-01	DZ	-.20161594-01
INC	.22725232 02	LAN	.10364447 02	APF	.10858569 03	MX	.88496123 CC	MY	.45C24539 CC	MZ	.11883875 00
WX	.69512539-01	WY	-.38007223 0C	WZ	.92234108 CC	PX	-.47080545 CC	PY	.8C263347 CC	PZ	.36622632 00
QX	-.87949429 0C	QY	-.45970552 0C	QZ	-.12314697 CC	RX	-.18525454 CC	RY	.31589183 CC	RZ	-.93052579 00
BX	.87949432 0C	BY	.45970553 0C	BZ	.12314698 CC	TX	.862559C7 CC	TY	.5C595637 CC	TZ	.CCCCCCCC 00
DAP	.21483C72 02	RAP	.12039485 03								
BTQ	.81691800 05	BRQ	-.10907135 05	B	.82416721 05	THA	.352355C5 03	T VECTOR IN EARTH EQUATOR PLANE			

155 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357424436632027146 3CCCC J.D.= 2435139.11277314 JAN. 13,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.61187755 06	Y	-.10299914 07	Z	-.47057873 06	DX	.55872128-01	DY	.6643194C-02	DZ	-.13466122-02
R	.12871366 07	DEC	-.21444588 02	RA	.30071288 03	V	.56281792-01	PTH	.22719044 02	AZ	.82149166 02
R	.12871366 07	LAT	-.21444588 02	LCN	.32748777 03	VE	.8731C3C9 02	PTE	.14264850-01	AZE	.27000466 03
XS	.57438689 08	YS	-.12426284 09	ZS	-.53897275 08	DXS	.27915303 02	DYS	.1C755705 02	DZS	.46636282 01
XM	-.35292554 06	YM	-.12837174 06	ZM	-.30413856 05	DXM	.29841C89 CC	DYM	-.8859C251 CC	DZM	-.45388530 00
XT	-.CCCCCCCC 0C	YT	-.CCCCOCCO 0C	ZT	.CCCCCCCC 0C	DXT	.CCCCCCCC CC	DYT	.CCCCCCCC CC	DZT	-.CCCCCCCC 00
RS	.14714056 09	VS	.30277C34 02	RP	.37677678 06	VP	.10391573 01	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.21577336 02	ALT	.12807613 07	LCS	.32157942 03	RAS	.2948C454 03	RAM	.15598815 03	LOM	.22676303 03
CUT	.35000000 02	DT	.76800000 04	DR	.21736741-01	SHA	-.12332974 06	DES	-.21487479 02	DEM	.46300187 01
CCL	.10236698 03	MCL	.18504702 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE				23574C14022622C2C4063CCCC J.D.= 2439110.2C472518 DEC. 15,1965 16 54 48.256							
SMA	.64687667 06	ECC	.99130367 0C	P	.85125236 05	SLR	.11201984 05	APO	.12881279 07	RCA	.56254522 04
VH	.51874922-01	C3	-.61619261 0C	C1	.66821536 05	TFP	.24976553 07	TF	.3C262C68 04	PER	.86296237 05
TA	.17978938 03	MTA	.18000000 03	EA	.17681375 03	MA	.17365684 03			TFI	.372CCCCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.61187755 06	Y	-.10299914 07	Z	-.47057873 06	DX	.55872128-01	DY	.6643194C-02	DZ	-.13466122-02
INC	.22772725 02	LAN	.10048869 02	APF	.10938579 03	MX	.87718486 CC	MY	.46301471 CC	MZ	.12713826 00
WX	.67540270-01	WY	-.38113870 0C	WZ	.92204752 CC	PX	-.47866C12 CC	PY	.76651174 CC	PZ	.36513141 00
QX	-.87543146 0C	QY	-.46595312 0C	QZ	-.12848132 CC	RX	-.18771235 CC	RY	.31318528 CC	RZ	-.93095599 00
BX	.87543146 0C	BY	.46595313 0C	BZ	.12848133 CC	TX	.8577336C CC	TY	.51409531 CC	TZ	.CCCCCCCC 00
DAP	.21415669 02	RAP	.12093700 03								
BTQ	.84310658 05	BRQ	-.11748142 05	B	.85125236 05	THA	.35206728 03	T VECTOR IN EARTH EQUATOR PLANE			

156 DAYS 20 HRS. 36 MIN. 49.626 SEC. 2357425622142C2266513163 J.D.= 2439140.97168317 JAN. 15,1966 11 19 13.427

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 25

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

GEOCENTRIC — EQUATORIAL COORDINATES

X	.62023505 06	Y	-.10274269 07	Z	-.47009736 06	DX	.48025729-01	DY	.25562749-01	DZ	.74950098-02
R	.12889101 07	DEC	-.21390641 02	RA	.30111845 03	V	.54915C31-01	PTH	-.13C56247-05	AZ	.61571778 02
R	.12885100 07	LAT	-.21390644 02	LCN	.16855505 02	VE	.8746CC92 C2	PTE	.3726477E-06	AZE	.27CCC527 03
XS	.61891033 08	YS	-.12246665 09	ZS	-.53119324 08	DXS	.2752C6C4 C2	DYS	.11583997 C2	DZS	.50225568 01
XM	-.2733.137 06	YM	-.25420418 06	ZM	-.98196212 05	DXM	.6732C756 CC	DYM	-.65944944 CC	DZM	-.37769573 00
XT	-.CCCOCCOO OC	YT	-.CCOOOCCO OC	ZT	.CCOCCOOO CC	DXT	.CCCOCCCC CC	DYT	.CCCOCCCC CC	DZT	-.CCCCCOOO 00
RS	.14715853 09	VS	.3C278683 02	RM	.3859480E 06	VM	.1C153C34 C1	RT	.CCCOCCCC CC	VT	.CCCCCOCC 00
GED	-.21523123 02	ALT	.12825347 07	LCS	.12541592 02	RAS	.2968C654 03	RAM	.22292663 03	LCM	.29866168 03
DUT	.35COCCCO 02	DT	.7680CCCO 04	DR	-.11364980-08	SHA	-.9C461C63 C5	DES	-.21159573 02	DEM	-.14739726 02
CCL	.1070.623 03	MCL	.19012864 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357402C000052C2C46513163 J.D.= 2439110.95653126 DEC. 16,1965 10 57 24.302

SMA	.64761306 06	ECC	.99024717 00	B	.90226587 05	SLR	.1257C512 C5	APO	.12889101 07	RCA	.6316C559 04
VH	.54915328-01	C3	-.61549194 00	C1	.7C785692 05	TFP	.259332C1 C7	TF	.3C4425C2 C4	PER	.86443637 C5
TA	.18000000 03	MTA	.18000000 03	EA	.18000000 03	MA	.18000000 03			TFI	.37646138 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.62023505 06	Y	-.10274269 07	Z	-.47009736 06	DX	.48025729-01	DY	.25562749-01	DZ	.74950098-02
INC	.22918516 02	LAN	.90088722 01	APF	.11051500 03	MX	.87446245 CC	MY	.46546248 CC	MZ	.13647380 CC
WX	.66978511-01	WY	-.38461778 00	WZ	.92105960 CC	PX	-.4812C894 CC	PY	.75712849 CC	PZ	.36472471 CC
QX	-.87448246 CC	QY	-.46546248 CC	CZ	-.13647380 CC	RX	-.18849306 CC	RY	.31224167 CC	RZ	-.93111539 CC
BX	.87448246 CC	BY	.46546248 CC	BZ	.13647380 CC	TX	.85610066 CC	TY	.51680913 CC	TZ	.CCCCCOCC 00
DAP	.21390641 02	RAP	.12111645 03								

BTQ	.89252163 05	BRQ	-.13224532 05	B	.90226587 05	THA	.35157178 03

T VECTOR IN EARTH EQUATOR PLANE

160 DAYS 0 HRS. 0 MIN. 0.CCO SEC. 2357427666232C271463CCCC J.D.= 2439144.11277314 JAN. 18,1966 14 42 23.600

GEOCENTRIC — EQUATORIAL COORDINATES

X	.63115352 06	Y	-.10158C38 07	Z	-.46582887 06	DX	.31613352-01	DY	.6C594369-01	DZ	.24281867-01
R	.12834363 07	DEC	-.21281748 02	RA	.30185409 03	V	.7253C619-01	PTH	-.34637862 C2	AZ	.86352382 02
R	.12834362 07	LAT	-.21281748 02	LCN	.32370169 03	VE	.8714E654 C2	PTE	-.271C4751-01	AZE	.27CCC657 03
XS	.69262198 08	YS	-.11915760 09	ZS	-.51675026 08	DXS	.26783C7E C2	DYS	.1295653C C2	DZS	.56177904 01
XM	-.38996594 05	YM	-.35825439 06	ZM	-.16918637 06	DXM	.6775766E CC	DYM	-.85221482-01	DZM	-.12765453 00
XT	-.CCOCOCOO OC	YT	-.CCCOOCCO OC	ZT	.CCOCOOOO CC	DXT	.CCOOCCCC CC	DYT	.CCCOCCCC CC	DZT	-.CCCCCCCC CC
RS	.14715407 09	VS	.3C278117 02	RM	.39810925 06	VM	.98955270 CC	RT	.CCCOCCCC CC	VT	.CCCCCOCC 00
GED	-.21413684 02	ALT	.1277C6C9 07	LCS	.32201454 03	RAS	.30016795 03	RAM	.26378771 C3	LCM	.28563430 03
DUT	.35COCCCO 02	DT	.7680CCCO 04	DR	-.41225503-01	SHA	-.38871356 C5	DES	-.21552609 C2	DEM	-.25149065 C2
CCL	.13C0E5C0 03	MCL	.214247C8 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357452233022C257463CCCC J.D.= 2439172.09716406 FEB. 15,1966 14 19 54.975

SMA	.64715948 06	ECC	.98856535 00	B	.57593201 05	SLR	.14716371 C5	APO	.12869584 07	RCA	.74CC4965 04
VH	.59512186-C1	C3	-.61588527 00	C1	.76589521 05	TFP	.24178514 C7	TF	.45116254 C4	PER	.8636.841 05
TA	-.17954089 03	MTA	.18000000 03	EA	-.17395111 03	MA	-.16758247 03			TFI	.3840CCCC C4

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.63115352 06	Y	-.10158C38 07	Z	-.46582887 06	DX	.31613352-01	DY	.6C594369-01	DZ	.24281867-01
INC	.23273612 02	LAN	.67577172 01	APF	.11282049 03	MX	.86948375 CC	MY	.46862791 CC	MZ	.15615974 CC
WX	.46696520-01	WY	-.35237741 00	WZ	.91862845 CC	PX	-.4847E558 CC	PY	.7552C162 CC	PZ	.36419406 CC
QX	-.87335634 CC	QY	-.46227C85 CC	CZ	-.15324640 00	RX	-.18957549 CC	RY	.31C96373 CC	RZ	-.93132307 00
BX	.87335636 CC	BY	.46227C86 CC	BZ	.15324640 CC	TX	.85384C77 CC	TY	.52C53427 CC	TZ	.CCCCCCCC 00
DAP	.21357992 02	RAP	.121368C9 03								

BTQ	.96262931 05	BRQ	-.16058666 05	B	.97593201 05	THA	.35052907 03

T VECTOR IN EARTH EQUATOR PLANE

165 DAYS 0 HRS. 0 MIN. 0.CCO SEC. 2357433115632C271463CCCC J.D.= 2439149.11277314 JAN. 23,1966 14 42 23.600

GEOCENTRIC — EQUATORIAL COORDINATES

X	.63739054 06	Y	-.97682247 06	Z	-.44905443 06	DX	-.47317311-02	DY	.12C23762 CC	DZ	.53685787-01
R	.12498395 07	DEC	-.21C56579 02	RA	.3C3125C1 03	V	.13176357 CC	PTH	-.61389439 C2	AZ	.78116574 02
R	.12498394 07	LAT	-.21C56580 02	LCN	.32004328 03	VE	.8499237C C2	PTE	-.77981122-01	AZE	.27CCC876 03
XS	.80548802 08	YS	-.11311263 09	ZS	-.49049586 08	DXS	.25431249 C2	DYS	.15C54412 C2	DZS	.65285230 01
XM	.32935797 06	YM	-.2C200479 06	ZM	-.12618698 06	DXM	.5648EC13 CC	DYM	.72866940 CC	DZM	.3C255C21 CO
XT	-.CCOCOCOO OC	YT	-.CCOOOCCC OC	ZT	.CCOOCOOO CC	DXT	.CCOOCCCO CC	DYT	.CCCOCCOC CC	DZT	-.CCCCCOCC 00
RS	.14726225 09	VS	.3C265580 02	RM	.40648815 06	VM	.97035316 CC	RT	.CCOOCCOC CC	VT	.CCCCCOCC 00
GED	-.21187384 02	ALT	.12434640 07	LCS	.32237576 03	RAS	.3C545750 C3	RAM	.32848110 C3	LCM	.34539936 03
DUT	.35COCCCO 02	DT	.7680CCCO 04	DR	-.11567454 00	SHA	-.59120538 05	DES	-.19455609 C2	DEM	-.18085569 C2
CCL	.25138189 03	MCL	.15336862 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357453C61012C262C63CCCC J.D.= 2439173.3CCC8253 FEB. 16,1966 19 12 02.131

SMA	.6424C556 06	ECC	.98778231 00	B	.10011248 06	SLR	.15601519 C5	APO	.12769624 07	RCA	.78487062 04
VH	.61755310-C1	C3	-.62C48128 00	C1	.78859212 05	TFP	.2C897835 C7	TF	.45404554 C4	PER	.85403C86 05
TA	-.17867245 03	MTA	.18000000 03	EA	-.16318760 03	MA	-.14681789 03			TFI	.398CCCCC C4

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.63739054 06	Y	-.97682247 06	Z	-.44905443 06	DX	-.47317311-02	DY	.12C23762 CC	DZ	.53685787-01
INC	.24045.61 02	LAN	.27681116 01	APF	.11681314 03	MX	.85996737 CC	MY	.47279488 CC	MZ	.19217093 CC
WX	.19677522-01	WY	-.4C697854 00	WZ	.91322571 CC	PX	-.48991731 CC	PY	.75233233 CC	PZ	.36364548 CC
QX	-.87154676 CC	QY	-.45456.74 CC	CZ	-.18379529 CC	RX	-.1912496E CC	RY	.3C929210 CC	RZ	-.93153742 00
BX	.87154679 CC	BY	.45456.76 CC	BZ	.18379529 CC	TX	.85053196 CC	TY	.52592339 CC	TZ	.CCCCCCCC 00
DAP	.21324246 02	RAP	.12173.42 03								

BTQ	.98144520 05	BRQ	-.19752510 05	B	.10011248 06	THA	.34862069 03

T VECTOR IN EARTH EQUATOR PLANE

170 DAYS 0 HRS. 0 MIN. 0.CCO SEC. 2357436345232C271463CCCC J.D.= 2439154.11277314 JAN. 28,1966 14 42 23.600

GEOCENTRIC — EQUATORIAL COORDINATES

X	.62569246 06	Y	-.91187215 06	Z	-.41937265 06	DX	-.50712634-01	DY	.1EC59692 CC	DZ	.83763853-01
R	.11827390 07	DEC	-.2C767552 02	RA	.3C445651 03	V	.2.543466 CC	PTH	-.72351433 C2	AZ	.75735126 C2
R	.11827390 07	LAT	-.2C767552 02	LCN	.31644661 03	VE	.8C582825 C2	PTE	-.13919413 CC	AZE	.27CC1091 03
XS	.91206542 08	YS	-.11616864 09	ZS	-.46042448 08	DXS	.23877339 C2	DYS	.17C23127 C2	DZS	.73934148 01
XM	.36032967 06	YM	-.15793527 06	ZM	.45139089 05	DXM	.45009265 CC	DYM	.77578820 CC	DZM	.41455185 CO
XT	-.CCOCOCCC OC	YT	-.CCOOOCCC OC	ZT	.CCOCOOOC CC	DXT	.CCOOCCCO CC	DYT	.CCCOCCCC CC	DZT	-.CCCCCCCC 00
RS	.14734422 09	VS	.3C239527 02	RM	.39600322 06	VM	.98808760 CC	RT	.CCCOCCCC CC	VT	.CCCCCOCC 00
GED	-.20896893 02	ALT	.11763635 07	LCS	.32265507 03	RAS	.31066496 03	RAM	.2366821C C2	LCM	.35658314 C2
DUT	.35COC CO 02	DT	.7680CCCO 04	DR	-.19576569 00	SHA	-.1315660C 06	DES	-.18208883 C2	DEM	.65451824 01
CCL	.26621830 03	MCL	.17047435 03	TCL	.17999999 03						

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 27

AC-6 PCST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE					2357453567762C2CC663CCCC J.D.= 2439174.26879651				FEB. 17,1966 18 27 04.053		
SMA	.63C87056 06	ECC	.58915140 0C	E	.92674682 05	SLR	.13613875 05	APO	.1254897C C7	RCA	.6844C616 04
VH	.58701844-01	C3	-.63182632 0C	C1	.73664775 05	TFP	-.1741480C C7	TF	.45637446 C4	PER	.83113204 05
TA	-.1779C488 03	MTA	.18CCCCCC 03	EA	-.15217376 03	MA	-.12571E68 03			TFI	.40800C0C 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.62569246 06	Y	-.91187015 06	Z	-.41937265 06	DX	-.5C712634-01	DY	.18C59692 CC	DZ	.83763853-01
INC	.25015227 02	LAN	.35881470 03	APF	.12091863 03	PX	.84856433 CC	MY	.47629467 CC	MZ	.23C39512 00
WX	-.87470817-02	WY	-.42276542 00	WZ	.90619991 00	PX	-.49762885 CC	PY	.76788675 CC	PZ	.36276716 00
QX	-.86734593 00	QY	-.44777654 0C	QZ	-.21727195 CC	RX	-.19371962 CC	RY	.3CE71277 CC	RZ	-.93187986 00
BX	.86734598 00	BY	.44777657 0C	BZ	.21727196 CC	TX	.84548107 CC	TY	.53400535 CC	TZ	.CCCCCCCC 00
DAP	.21270234 02	RAP	.12227648 03								

BTQ .90120541 05 BRQ -.21607519 05 B .92674682 05 THA .34651714 03 T VECTOR IN EARTH EQUATOR PLANE

175 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357441574632C271463CCCC J.D.= 2439159.11277314 FEB. 2,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.59286738 06	Y	-.62CCCCC2 06	Z	-.37644594 06	DX	-.1C2C3615 CC	DY	.24696149 CC	DZ	.11573543 0C
R	.11795961 C7	DEC	-.2C467259 02	RA	.30586451 03	V	.2911576C CC	PTH	-.772CC326 C2	AZ	.7394618C 02
R	.11795961 C7	LAT	-.2C467259 02	LCN	.31292632 03	VE	.73723C99 C2	PTE	-.22C6B939 CC	AZE	.27CC1387 03
XS	.11115404 09	YS	-.68415202 08	ZS	-.42679484 08	DXS	.22146559 02	DYS	.18845368 C2	DZS	.81737566 01
XM	-.39311185 04	YM	.32992114 06	ZM	.15998695 06	DXM	-.1C65918C C1	DYM	-.1C383282 CC	DZM	.41871271-01
XT	-.CCCCCCCC 0C	YT	-.CCCCCCCC 0C	ZT	.CCCCCCCC CC	DXT	.CCCCCCCC CC	DYT	.CCCCCCCC CC	DZT	-.CCCCCCCC 00
RS	.14744229 09	VS	.30206427 02	RM	.36668594 06	VM	.1C717815 C1	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.20534758 02	ALT	.10732225 07	LCS	.32284807 03	RAS	.31576626 03	RAM	.9C682665 C2	LOM	.97744472 02
DUT	.35CCCCCC C2	DT	.76800CC0 04	DR	-.28396152 CC	SHA	-.18855563 06	DES	-.16825968 C2	DEM	.25868369 02
CCL	.27113942 03	MCL	.17872678 03	TCL	.18CCCCCC 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE					2357454254262024746 3CCCC J.D.= 2439175.18252E64				FEB. 18,1966 16 22 50.475		
SMA	.60582792 06	ECC	.58597179 0C	E	.86147456 05	SLR	.12165622 05	APO	.12135403 C7	RCA	.61154747 04
VH	.57392254-01	C3	-.6536280C 0C	C1	.69647822 05	TFP	-.13884269 C7	TF	.45856741 C4	PER	.78985721 05
TA	-.17712717 03	MTA	.18CCCCC0 03	EA	-.14109C24 03	MA	-.1C546386 03			TFI	.42000CCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.59286738 06	Y	-.62CCCCC2 06	Z	-.37644594 06	DX	-.1C2C3615 CC	DY	.24696149 CC	DZ	.11573543 0C
INC	.25751368 02	LAN	.35633285 03	APF	.12375080 03	PX	.83525462 CC	MY	.48487814 CC	MZ	.25918392 C0
WX	-.27788495-01	WY	-.43357745 0C	WZ	.90C68786 CC	PX	-.5C654544 CC	PY	.78288914 CC	PZ	.36124273 00
QX	-.86176540 0C	QY	-.44622C96 0C	QZ	-.24138199 CC	RX	-.19623741 CC	RY	.3C329385 CC	RZ	-.93247181 0C
BX	.86176533 0C	BY	.44620C62 0C	BZ	.24138197 CC	TX	.83958478 CC	TY	.54322869 CC	TZ	.CCCCCCCC 00
DAP	.21176536 02	RAP	.12290370 03								

BTQ .83211049 05 BRQ -.22300343 05 B .86147456 05 THA .34499742 03 T VECTOR IN EARTH EQUATOR PLANE

180 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357445024232C271463CCCC J.D.= 2439164.11277314 FEB. 7,1966 14 42 23.600

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 28

AC-6 PCST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65

GEOCENTRIC EQUATORIAL COORDINATES

X	.53678669 06	Y	-.69416960 06	Z	-.31766569 06	DX	-.16032139 CC	DY	.34428146 CC	DZ	.16013584 C0
R	.93323249 06	DEC	-.19900812 02	RA	.3C771402 03	V	.41216036 CC	PTH	-.77774C25 C2	AZ	.737C5470 02
R	.93323247 06	LAT	-.19900812 02	LCN	.3C984752 03	VE	.63906C16 C2	PTE	-.36114881 CC	AZE	.27CC2195 03
XS	.11C32269 09	YS	-.89906880 08	ZS	-.38989644 08	DXS	.2C265532 02	DYS	.2C518437 C2	DZS	.E898EC21 01
XM	-.34777595 06	YM	.66219901 05	ZM	.61791448 05	DXM	-.29866234 CC	DYM	-.95703467 CC	DZM	-.43856595 C0
XT	-.CCCCCCCC 0C	YT	-.CCCCCCCC 0C	ZT	.CCCCCCCC CC	DXT	.CCCCCCCC CC	DYT	.CCCCCCCC CC	DZT	-.CCCCCCCC C0
RS	.14756C48 09	VS	.3C186664 02	RM	.35937636 06	VM	.1C942827 C1	RT	.CCCCCCCC CC	VT	.CCCCCCCC C0
GED	-.2CE25685 02	ALT	.92685678 06	LCS	.32295485 03	RAS	.32082136 03	RAM	.16521937 C3	LOM	.1713528E 03
DUT	.35CCC0C0 02	DT	.3840CCC0 04	DR	-.40281257 CC	SHA	-.21468325 06	DES	-.15321C98 C2	DEM	.99C068CC 01
CCL	.27395888 03	MCL	.21908189 03	TCL	.18CCCCCC 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE					2357454642562C212563CCCC J.D.= 2439175.91255775				FEB. 19,1966 09 54 00.670		
SMA	.58244260 06	ECC	.9656C712 0C	E	.98463126 05	SLR	.16645384 05	APO	.11565C22 C7	RCA	.8383C197 04
VH	.74431302-01	C3	-.68436E35 0C	C1	.81454653 05	TFP	-.10194571 C7	TF	.46C31536 C4	PER	.73729168 05
TA	-.1752C923 03	MTA	.18CCCCC0 03	EA	-.12766685 03	MA	-.82965568 02			TFI	.432CC0CC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.53678669 06	Y	-.69416960 06	Z	-.31766569 06	DX	-.16032139 CC	DY	.34428146 CC	DZ	.16013584 00
INC	.25507618 02	LAN	.35706659 03	APF	.12297991 03	PX	.81772245 CC	MY	.51162709 CC	MZ	.26375702 00
WX	-.22537101-01	WY	-.43C65750 0C	WZ	.90253254 CC	PX	-.5C488714 CC	PY	.78396457 CC	PZ	.36123196 00
QX	-.8629C4C2 0C	QY	-.44771658 0C	QZ	-.23446681 CC	RX	-.19558827 CC	RY	.3C37C01C CC	RZ	-.93247599 C0
BX	.8629C4C1 CC	BY	.44771658 0C	BZ	.23446681 CC	TX	.84073433 CC	TY	.54144787 CC	TZ	.CCCCCCCC 00
DAP	.21175673 02	RAP	.12278225 03								

BTQ .95301299 05 BRQ -.24751765 05 B .98463126 05 THA .34544C75 03 T VECTOR IN EARTH EQUATOR PLANE

185 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357450253632C271463CCCC J.D.= 2439169.11277314 FEB. 12,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.4466.782 06	Y	-.51138645 06	Z	-.23303435 06	DX	-.275CC7C1 CC	DY	.52C07288 CC	DZ	.24CC54C2 00
R	.71782582 06	DEC	-.18543C63 02	RA	.31113160 03	V	.63539798 CC	PTH	-.77165573 C2	AZ	.73C35927 02
R	.71782582 06	LAT	-.18543C63 02	LCN	.30833694 03	VE	.49378836 C2	PTE	-.71E88167 CC	AZE	.27CC4776 03
XS	.11864296 09	YS	-.8C707479 08	ZS	-.35CC0500 08	DXS	.18237538 02	DYS	.22C44785 C2	DZS	.9559C499 01
XM	-.21419572 06	YM	.29613332 06	ZM	-.12552353 06	DXM	.80149367 CC	DYM	-.52744C94 CC	DZM	-.32473C2 00
XT	-.CCCCCCCC 0C	YT	-.CCCCCCCC 0C	ZT	.CCCCCCCC CC	DXT	.CCCCCCCC CC	DYT	.CCCCCCCC CC	DZT	-.CCCCCCCC 00
RS	.14769863 09	VS	.3C165473 02	RM	.38643357 06	VM	.10129348 C1	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.19C634C8 02	ALT	.71145388 06	LCS	.32297963 03	RAS	.32577430 03	RAM	.23412146 C3	LOM	.2313268C 03
DUT	.35CCC1C0 02	DT	.3840CCC0 04	DR	-.61953311 CC	SHA	-.18563499 06	DES	-.13707918 C2	DEM	-.18955C1C C2
CCL	.27584453 03	MCL	.35307432 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE					2357455C135C2C255763CCCC J.D.= 2439176.22336658				FEB. 19,1966 17 21 38.873		
SMA	.56391855 06	ECC	.97691353 0C	E	.12C47279 06	SLR	.25737210 05	APO	.11140102 C7	RCA	.13018885 05
VH	.90854336-01	C3	-.7C684078 0C	C1	.11128607 06	TFP	-.21435527 C6	TF	.46106542 C4	PER	.7C239948 05
TA	-.17072657 03	MTA	.18CCCCC0 03	EA	-.11C622332 03	MA	-.52475132 02			TFI	.444CC0CC 04

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 29

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.44660782 07	Y	-.51138645 06	Z	-.23303435 06	DX	-.2750C701 CC	DY	.52C07288 CC	DZ	.24CC54C2 00
INC	.25216756 02	LAN	.35792089 03	APF	.12108744 03	MX	.78273446 CC	MY	.55785549 CC	MZ	.2759C606 00
WX	-.15456561-01	WY	-.42576361 CC	WZ	.90470248 CC	PX	-.48785788 CC	PY	.75299179 CC	PZ	.3648557C CC
QX	-.87276391 CC	QY	-.43576361 CC	QZ	-.21998603 CC	RX	-.19119234 CC	RY	.31C74937 CC	RZ	-.9310C4C7 CC
BX	.87276386 CC	BY	.43576259 CC	BZ	-.21998603 CC	TX	.8517C485 CC	TY	.5240218C CC	TZ	.COCCCCCC 00
DAP	.21398722 02	RAP	.12160241 03								
BTO	.11706178 06	BRO	-.28464560 05	B	.12047279 06	THA	.34633328 03	T VECTOR IN EARTH EQUATOR PLANE			

190 DAYS 0 HRS. 0 MIN. 0.CCO SEC. 2357453503232027146300CC J.D.= 2439174.11277314 FEB. 17,1966 14 42 23.600

GEOCENTRIC — EQUATORIAL COORDINATES

X	.26107381 C6	Y	-.21469C42 06	Z	-.96651632 C5	DX	-.71057554 CC	DY	.93418729 CC	DZ	.42568116 CC
R	.35155803 06	DEC	-.15957465 02	RA	.32056830 03	V	.12485303 C1	PTH	-.76733C99 C2	AZ	.7C58C759 02
R	.35155803 06	LAT	-.15957465 02	LCN	.31284533 03	VE	.24408391 C2	PTE	-.28537367 C1	AZE	.27022389 03
XS	.12605726 09	YS	-.70883542 08	ZS	-.30743590 08	DXS	.16062927 C2	DYS	.23403957 C2	DZS	.10149029 C2
XM	.18748784 06	YM	-.31637579 06	ZM	-.16955300 06	DXM	.86740C88 CC	DYM	.42C12735 CC	DZM	.13C82353 C0
XT	-.OCCOC3CC OC	YT	-.COCOCCCO OC	ZT	.OOCOCOOO OC	DXT	.COOOCCCC CC	DYT	.CCCOCOOC CC	DZT	-.COCCCOCC 00
RS	.14785091 09	VS	.3C145739 02	RM	.40496117 06	VM	.97262E42 CC	RT	.CCCOCOCC CC	VT	.COCCOCOC 00
GED	-.16C6C622 02	ALT	.34518145 06	LCS	.32292743 03	RAS	.33065C42 03	RAM	.3CC65145 03	LCM	.29292847 03
DUT	.35COCCCC 02	DT	.95999999 03	DR	-.12152C90 01	SHA	-.64372236 05	DES	-.12CC3261 02	DEM	-.2475188C 02
CCL	.27705809 03	MCL	.75931396 01	TCL	.17995999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357455C201202226423C00C J.D.= 2439176.23668256 FEB. 19,1966 17 40 49.4C9

SMA	.56236327 06	ECC	.97710581 00	B	.11964500 06	SLR	.2545494C 05	APO	.11118517 C7	RCA	.12874850 05
VH	.9C595817-01	C3	-.70879561 CC	C1	.10072912 06	TFP	-.1835C581 C6	TF	.46109738 C4	PER	.69949571 05
TA	-.16168223 03	MTA	.18COOCCO 03	EA	-.6744C720 02	MA	-.1574C4C8 02			TFI	.456CCOCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.26107381 C6	Y	-.21469C42 06	Z	-.96651632 C5	DX	-.71057554 CC	DY	.93418729 CC	DZ	.42568116 00
INC	.24937355 02	LAN	.35851726 03	APF	.12098558 03	MX	.66962486 CC	MY	.67C385C8 CC	MZ	.31966617 00
WX	-.1C9C9878-01	WY	-.42148603 0C	WZ	.90676931 00	PX	-.49453499 CC	PY	.75C43154 CC	PZ	.36145969 00
QX	-.8690E923 0C	QY	-.44448569 0C	QZ	-.21706312 00	RX	-.19171688 CC	RY	.3C642739 CC	RZ	-.93238772 00
BX	.86908922 0C	BY	.44448568 0C	BZ	.21706312 00	TX	.84774984 CC	TY	.53C39629 CC	TZ	.COCCCOOC 00
DAP	.21189867 02	RAP	.12203223 03								
BTO	.11635761 06	BRO	-.27853771 05	B	.11964500 06	THA	.34653782 C3	T VECTOR IN EARTH EQUATOR PLANE			

192 DAYS 2 HRS. 59 MIN. 33.987 SEC. 2357455020312023130511?5 J.D.= 2439176.237472C6 FEB. 19,1966 17 41 57.587

GEOCENTRIC — EQUATORIAL COORDINATES

X	-.6040.671 04	Y	.92317225 04	Z	.41739584 04	DX	-.70216974 C1	DY	-.37944761 C1	DZ	-.17685786 01
R	.11795297 05	DEC	.2C723979 02	RA	.12319564 03	V	.81749710 C1	PTH	-.15665627-06	AZ	.10337404 03
R	.11795297 05	LAT	.2C723979 02	LCN	.68486848 02	VE	.73946562 C1	PTE	-.46183276-06	AZE	.10481599 03
XS	.12891795 09	YS	-.66538624 08	ZS	-.28856438 08	DXS	.15C9E527 C2	DYS	.2392524C C2	DZS	.10375594 02
XM	.32312596 06	YM	-.21C34974 06	ZM	-.12942804 06	DXM	.8e586161 CC	DYM	.71455438 CC	DZM	.29847019 00
XT	-.CCCOCLCO OC	YT	-.CCCOCCCO OC	ZT	.COOOOCOO CC	DXT	.COOOCCCC CC	DYT	.CCCCCCOC CC	DZT	-.CCCCCCOC 00
RS	.14791863 09	VS	.3.133629 02	RM	.4067C907 06	VM	.9710C565 CC	RT	.CCCOOOOC CC	VT	.OOOOCOOC 00
GED	.23853098 02	ALT	.54197945 04	LCS	.27794152 03	RAS	.3327CC31 03	RAM	.32693652 C3	LCM	.27222773 03
DUT	.35000000 02	DT	.59999999 02	DR	-.COOOOOOO 0.	SHA	.58695514 C4	DES	-.11249584 C2	DEM	-.18556258 02
CCL	.98794015 02	MCL	.20867241 03	TCL	.18COOOOC 03						

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 30

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357455G203120231305117S J.D.= 2439176.237472C6 FEB. 19,1966 17 41 57.587

SMA	.52710141 06	ECC	.97762234 00	B	.11C88511 06	SLR	.23326643 C5	APO	.1C424C75 07	RCA	.11795297 05
VH	.92503370-01	C3	-.75621241 00	C1	.96426214 05	TFP	-.COCOCCCC CC	TF	.46109927 C4	PER	.63474734 05
TA	-.68301891-05	MTA	.18COOCCC 03	EA	-.68301891-05	MA	-.COOOCCCC CC			TFI	.461C5927 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.6040C671 04	Y	.92317225 04	Z	.41739584 04	DX	-.70216974 C1	DY	-.37944761 C1	DZ	-.17685786 C1
INC	.24504112 02	LAN	.35529936 03	APF	.12144005 03	MX	-.85892625 CC	MY	-.4C415773 CC	MZ	-.21634365 00
WX	-.5C716628-02	WY	-.41472753 0C	WZ	.90993150 00	PX	-.51207417 CC	PY	.78266128 CC	PZ	.35386632 00
QX	-.85892626 0C	QY	-.46415773 0C	QZ	-.21634365 0C	RX	-.19374166 CC	RY	.25611744 CC	RZ	-.9352960C 00
BX	.85892626 0C	BY	.46415773 0C	BZ	.21634365 CC	TX	.8368C596 CC	TY	.54749957 CC	TZ	.COCCCCCC 00
DAP	.2.723979 02	RAP	.12319564 03								
BTO	.1.787799 06	BRO	-.25648518 05	B	.11C88511 06	THA	.34662595 C3	T VECTOR IN EARTH EQUATOR PLANE			

195 DAYS 0 HRS. 0 MIN. 0.CCO SEC. 2357456732632027146300CC J.D.= 2439179.11277314 FEB. 22,1966 14 42 23.600

GEOCENTRIC — EQUATORIAL COORDINATES

X	.11678427 06	Y	-.36938675 06	Z	-.16773231 06	DX	.50801797 CC	DY	-.84472556 CC	DZ	-.36225354 00
R	.42216024 06	DEC	-.23410686 02	RA	.28754472 03	V	.10572423 C1	PTH	.7734C4C9 C2	AZ	.4254259C 02
R	.42216023 06	LAT	-.23410687 02	LCN	.27489357 03	VE	.28039507 C2	PTE	.21C83180 C1	AZE	.27CC6149 03
XS	.13251357 09	YS	-.65512919 08	ZS	-.26243250 08	DXS	.13761495 C2	DYS	.24573959 C2	DZS	.10657626 02
XM	.4.253746 06	YM	-.62625761 04	ZM	-.36663067 05	DXM	.31520143-C1	DYM	.87742273 CC	DZM	.42529561 C0
XT	-.OCCOC3CC OC	YT	-.CCCOCCCO OC	ZT	.COCOOOOO CC	DXT	.COOOCCCC CC	DYT	.CCCCCCCC CC	DZT	-.COCCCCOC 00
RS	.14801256 09	VS	.3C113837 02	RM	.40425216 06	VM	.97557185 CC	RT	.CCCOCCCC CC	VT	.COCCCCCC 00
GED	-.23552900 02	ALT	.41578544 06	LCS	.32280319 03	RAS	.33545434 C3	RAM	.35910868 C3	LCM	.34645753 03
DUT	.35000000 02	DT	.19200000 04	DR	.10315401 01	SHA	-.31115888 06	DES	-.12212777 02	DEM	-.52C35087 C1
CCL	.27954296 03	MCL	.17578805 03	TCL	.18COOOOO 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357455C16552C2C67C3CCCC J.D.= 2439176.23245867 FEB. 19,1966 17 34 44.430

SMA	.51724385 06	ECC	.97652276 00	B	.11142638 06	SLR	.24003832 C5	APO	.1C223432 C7	RCA	.12144488 05
VH	.9567810-01	C3	-.77C62418 0C	C1	.97815860 05	TFP	.24885517 C6	TF	.46108724 C4	PER	.617C2483 05
TA	.16497595 03	MTA	.18COOCCO 03	EA	.79149486 02	MA	.24195269 C2			TFI	.460CCOCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.11678427 C6	Y	-.36938675 06	Z	-.16773231 06	DX	.50801797 CC	DY	-.84472556 CC	DZ	-.36225354 00
INC	.24505926 02	LAN	.35931C31 03	APF	.12171127 03	MX	.96C962C1 CC	MY	.24573149 CC	MZ	.11910495 00
WX	-.49927797-02	WY	-.41475711 0C	WZ	.90991837 0C	PX	-.51628358 CC	PY	.78C34557 CC	PZ	.35286263 C0
QX	-.8564C3C2 0C	QY	-.46801415 0C	QZ	-.21802839 CC	RX	-.19471132 CC	RY	.25426461 CC	RZ	-.93567512 00
BX	.8564C.12 0C	BY	.46801421 0C	BZ	.21802841 CC	TX	.8339620C CC	TY	.55177654 CC	TZ	.CCCCCCCC CC
DAP	.2.662506 02	RAP	.12348897 03								
BTO	.1.835910 06	BRO	-.25964262 05	B	.11142638 06	THA	.34652523 C3	T VECTOR IN EARTH EQUATOR PLANE			

200 DAYS 0 HRS. 0 MIN. 0.CCO SEC. 2357462162232027146300CC J.D.= 2439184.11277314 FEB. 27,1966 14 42 23.600

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 31

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONC. AS OF 1 SEPT 65

GEOCENTRIC EQUATORIAL COORDINATES

X	.29479596	06	Y	-.61971199	06	Z	-.28070021	06	DX	.33975619	CC	DY	-.4C200492	CC	DZ	-.18C7C968	00
R	.74144468	06	DEC	-.22246053	02	RA	.29544036	03	V	.55652578	00	PTH	.75797141	02	AZ	.79263596	02
R	.74144467	06	LAT	-.22246093	02	LCN	.2778e107	03	VE	.49911356	02	PTE	.61935215	CC	AZE	.27CC292C	03
XS	.13793326	09	YS	-.49686467	08	ZS	-.21545056	08	DXS	.11361875	02	DYS	.25541429	C2	DZS	.11C77818	02
XM	.2C045705	06	YM	.3029866?	06	ZM	.13131841	06	DXM	-.89331239	CC	DYM	.35644881	CC	DZM	.26883953	00
XT	-.CCCCCCCC	0C	YT	-.CCCCCCCC	0C	ZT	.CCCCCCCC	0C	DXT	.CCCCCCCC	0C	DYT	.CCCCCCCC	CC	DZT	-.CCCCCCCC	00
RS	.14818204	09	VS	.3CC695C1	02	RM	.38630161	06	VM	.10136337	01	RT	.CCCCCCCC	CC	VT	.CCCCCCCC	00
GED	-.22382778	02	ALT	.73506956	06	LCS	.32261285	C3	RAS	.34015213	C3	RAM	.56511239	C2	LOM	.38931958	C2
DUT	.35CCCCCC	02	DT	.3840CCC0	04	DR	.53951841	CC	SHA	-.52557C02	06	DES	-.83602C51	C1	DEM	.19873C99	C2
CCL	.28C36076	03	MCL	.17549438	03	TCL	.17999999	C3									

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357455C22062C2C1263CCCC J.D.= 2439176.2425CC97 FEB. 19,1966 17 49 12.084

SMA	.52772357	06	ECC	.97499568	00	B	.11571717	06	SLR	.25715112	05	APO	.10284268	C7	RCA	.13C2C338	05
VH	.9e444124	-01	C3	-.76547451	0C	C1	.10124258	06	TFP	.67995151	06	TF	.46111134	C4	PER	.62326177	C5
TA	.17192036	03	MTA	.18CCCCC0	03	EA	.11576901	03	MA	.65461242	C2				TFI	.48CCC0CC	04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.29479596	06	Y	-.61971199	06	Z	-.28070021	06	DX	.33979619	CC	DY	-.4C200492	CC	DZ	-.18C7C968	00
INC	.24582406	02	LAN	.35883689	03	APF	.12256624	C3	MX	.91752136	0C	MY	.35836323	CC	MZ	.17242452	C0
WX	-.84442147	-02	WY	-.41591570	0C	WZ	.90936389	00	PX	-.5226C7C4	CC	PY	.77715259	CC	PZ	.35C59339	00
QX	-.85253181	0C	QY	-.47227945	0C	QZ	-.22392289	0C	RX	-.19564C3C	CC	RY	.25C93C57	CC	RZ	-.93652776	00
BX	.85253188	0C	BY	.47227949	0C	BZ	.22392291	0C	TX	.82982333	CC	TY	.5580262C	CC	TZ	.CCCCCCCC	0C
DAP	.2C523612	02	RAP	.12391940	03												

BTQ .11236181 06 BRQ -.27667867 05 B .11571717 06 THA .34616663 C3 T VECTOR IN EARTH EQUATOR PLANE

205 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357465411632C271463CCCC J.D.= 2439189.11277314 MARCH 4,1966 14 42 23.6C0

GEOCENTRIC EQUATORIAL COORDINATES

X	.42197991	06	Y	-.74790877	06	Z	-.33820598	C6	DX	.25784292	CC	DY	-.2C7C4655	CC	DZ	-.92831358	-01
R	.92293978	06	DEC	-.21496491	02	RA	.29943226	C3	V	.34346602	CC	PTH	.68555125	C2	AZ	.77587792	02
R	.92293977	06	LAT	-.21496491	02	LCN	.27692465	03	VE	.62498313	C2	PTE	.2953C7744	CC	AZE	.27CC2396	03
XS	.14231111	09	YS	-.38473822	08	ZS	-.16684685	C8	DXS	.88964513	C1	DYS	.26304466	C2	DZS	.114C795C	C2
XM	-.22387827	06	YM	.24593528	06	ZM	.13897598	C6	DXM	-.82655755	CC	DYM	-.66358C31	CC	DZM	-.25566692	00
XT	-.CCCCCCCC	0C	YT	-.CCCCCCCC	0C	ZT	.CCCCCCCC	0C	DXT	.CCCCCCCC	0C	DYT	.CCCCCCCC	CC	DZT	-.CCCCCCCC	C0
RS	.14836126	09	VS	.3CC2C211	02	RM	.36044411	C6	VM	.10903677	C1	RT	.CCCCCCCC	CC	VT	.CCCCCCCC	00
GED	-.21629497	02	ALT	.91656447	06	LCS	.32236412	C3	RAS	.34487173	C3	RAM	.13231202	C3	LOM	.10986442	C3
DUT	.35CCC000	02	DT	.3840CCC0	04	DR	.31968779	CC	SHA	-.668C5977	06	DES	-.64571352	C1	DEM	.22679051	C2
CCL	.28116595	03	MCL	.18167820	03	TCL	.18CC0000	C3									

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357455C702C2C256663CCCC J.D.= 2439176.35558943 FEB. 19,1966 2C 32 02.928

SMA	.53446470	C6	ECC	.56796189	0C	B	.13420257	C6	SLR	.33697678	C5	APO	.10518C62	C7	RCA	.17123237	C5
VH	.11C18BC6	0C	C3	-.74575411	0C	C1	.11589648	C6	TFP	.1102222C	C7	TF	.46138275	C4	PER	.64BC5424	C5
TA	.17446948	03	MTA	.18CCCCC0	03	EA	.13866897	03	MA	.10204263	C3				TFI	.492CCC0C	C4

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.42197991	06	Y	-.74790877	06	Z	-.33820598	C6	DX	.25784292	CC	DY	-.2C7C4655	CC	DZ	-.92831358	-01
INC	.24485468	02	LAN	.35929C26	03	APF	.12336420	C3	MX	.88934247	CC	MY	.41421277	CC	MZ	.19364322	C0
WX	-.51338410	-02	WY	-.41443C60	0C	WZ	.91C06642	CC	PX	-.54C5C2C6	CC	PY	.76683369	CC	PZ	.34C15549	00
QX	-.8413277C3	0C	QY	-.49C11562	0C	QZ	-.22793738	0C	RX	-.19942690	CC	RY	.28293557	CC	RZ	-.93817715	00
BX	.84132706	0C	BY	-.49C11564	0C	BZ	.22793738	0C	TX	.81736555	CC	TY	.57611940	CC	TZ	.CCCCCCCC	00
DAP	.2C252346	02	RAP	.12517EC6	C3												

BTQ .13C16144 06 BRQ -.32605553 05 B .13420257 06 THA .34593682 C3 T VECTOR IN EARTH EQUATOR PLANE

210 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357470641232C271463CCCC J.D.= 2439194.11277314 MARCH 9,1966 14 42 23.6CC

GEOCENTRIC EQUATORIAL COORDINATES

X	.52269281	06	Y	-.8C494716	06	Z	-.36391812	C6	DX	.21079251	CC	DY	-.5934171C	-01	DZ	-.27206203	-01
R	.11264424	07	DEC	-.2C765446	02	RA	.30299769	C3	V	.22C66566	CC	PTH	.47819498	C2	AZ	.77168194	02
R	.11264424	07	LAT	-.2C765446	02	LCN	.27556195	C3	VE	.69842847	C2	PTE	.13414747	CC	AZE	.27CC2699	C3
XS	.14561393	09	YS	-.26980668	08	ZS	-.11700331	C8	DXS	.63868961	C1	DYS	.2E875590	C2	DZS	.11654227	C2
XM	-.3344E349	06	YM	-.14363829	06	ZM	-.42677454	C5	DXM	.37471472	CC	DYM	-.85C24543	CC	DZM	-.46797256	C0
XT	-.0CCC0CCC	0C	YT	-.CCCCCCCC	0C	ZT	.CCCCCCCC	0C	DXT	.CCCCCCCC	CC	DYT	.CCCCCCCC	CC	DZT	-.CCCCCCCC	00
RS	.14855382	09	VS	.29981861	02	RM	.36651402	C6	VM	.10732876	C1	RT	.CCCCCCCC	CC	VT	.CCCCCCCC	00
GED	-.20896277	02	ALT	.10206669	07	LCS	.32206725	C3	RAS	.34956259	C3	RAM	.2C324229	C3	LOM	.1758C455	C3
DUT	.35CCCCC0	02	DT	.76800CC0	04	DR	.16352354	CC	SHA	-.76245271	C6	DES	-.45173837	C1	DEM	.66867781	C1
CCL	.28180498	C3	MCL	.18224364	03	TCL	.17999999	C3									

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357455CC3442C272663C0CC J.D.= 2439176.34172923 FEB. 19,1966 22 12 03.678

SMA	.54755146	C6	ECC	.94552388	0C	B	.17825688	C6	SLR	.58C32C13	C5	APO	.10652744	C7	RCA	.29828477	C5
VH	.14277142	0C	C3	-.72796925	0C	C1	.15209075	C6	TFP	.15354199	C7	TF	.46134944	C4	PER	.672C429E	C5
TA	.17621634	03	MTA	.18CCCCC0	03	EA	.15766754	03	MA	.1370823C	C3				TFI	.50399999	04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.52269281	06	Y	-.8C494716	06	Z	-.36391812	C6	DX	.21079251	CC	DY	-.5934171C	-01	DZ	-.27206203	-01
INC	.24260299	02	LAN	.27875410	0C	APF	.12414197	C3	MX	.86062957	CC	MY	.46496551	CC	MZ	.2C766270	C0
WX	.19990152	-02	WY	-.41C87789	0C	WZ	.91168819	00	PX	-.56490585	CC	PY	.75181871	CC	PZ	.34CC6686	00
QX	-.82515C20	0C	QY	-.5157C144	0C	QZ	-.23C60607	0C	RX	-.2042E2C7	CC	RY	.27187185	CC	RZ	-.94C4C123	00
BX	.82515221	0C	BY	.5157C144	0C	BZ	.23C60607	0C	TX	.79946587	CC	TY	.6CC7115C	CC	TZ	.CCCCCCCC	0C
DAP	.1988C946	02	RAP	.12692C87	03												

BTQ .17281420 06 BRQ -.43712317 05 B .17825688 06 THA .3458C511 C3 T VECTOR IN EARTH EQUATOR PLANE

215 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357474C7C632C271463CCCC J.D.= 2439199.11277314 MARCH 14,1966 14 42 23.6CC

GEOCENTRIC EQUATORIAL COORDINATES

X	.60323710	06	Y	-.79998942	06	Z	-.36190785	06	DX	.1588C569	CC	DY	.E15235C6	-01	DZ	.3639C095	-01
R	.11c652559	07	DEC	-.19866131	02	RA	.30701835	03	V	.18218C22	CC	PTH	.51465731	C1	AZ	.75772557	02
R	.11c652559	07	LAT	-.19866131	02	LCN	.27465438	C3	VE	.72886541	C2	PTE	.12E46615	-01	AZE	.27C03505	C3
XS	.14782283	09	YS	-.1528C17C	08	ZS	-.66266568	07	DXS	.38319869	C1	DYS	.27255334	C2	DZS	.11818932	C2
XM	.27784543	C4	YM	-.35528971	06	ZM	-.17474167	C6	DXM	.9840C576	CC	DYM	-.1CC05281	-01	DZM	-.87146198	-01
XT	-.0CCCCCCC	0C	YT	-.CCCCCCCC	0C	ZT	.CCCCCCCC	0C	DXT	.CCCCCCCC	CC	DYT	.CCCCCCCC	CC	DZT	-.CCCCCCCC	00
RS	.14875815	09	VS	.2995370E	02	RM	.39594589	C6	VM	.9879C8C1	CC	RT	.CCCCCCCC	CC	VT	.CCCCCCCC	00
GED	-.19984792	02	ALT	.10589202	07	LCS	.32173443	C3	RAS	.35405840	C3	RAM	.27C44BC6	C3	LOM	.2388C409	03
DUT	.35CCC.CC	02	DT	.7680CCC0	04	DR	.16342277	-01	SHA	-.80499336	06	DES	-.25532485	C1	DEM	.26188659	C2
CCL	.28232256	03	MCL	.17831121	03	TCL	.17999999	C3									

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 33

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONS. AS OF 1 SEPT 65

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE				2357454547752C234463C0CC J.C.= 2439175.7384CC32		FEB. 19,1966 05 43 17.787					
SMA	.55736783 06	ECC	-.91204593 0C	B	.22856989 06	SLR	.93733787 C5	APO	.1C657129 C7	RCA	.49022769 05
VH	.18137475 0C	C3	-.71514824 0C	C1	.19329342 06	TFP	.20195458 07	TF	.45990150 C4	PER	.69C19606 05
TA	.17950214 03	MTA	.18C0CCC0 03	EA	.17767903 03	MA	.17556279 03			TFI	.516CCCCC 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.6.323710 06	Y	-.79998942 06	Z	-.36190785 06	DX	.1588C569 0C	DY	.815235C6-C1	DZ	.3639CC95-01
INC	.24261897 02	LAN	.2831C4C7 0C	APF	.12472984 03	MX	.82422248 0C	MY	.51693BC8 CC	MZ	.23115436 CC
WX	.2C303364-02	WY	-.41C90317 0C	WZ	.91167673 0C	PX	-.57340285 0C	PY	.74643505 CC	PZ	.33777384 00
QX	-.81927102 0C	QY	-.52344368 0C	QZ	-.23409754 0C	RX	-.20572626 0C	RY	.2678BC99 CC	RZ	-.94412524C 00
BX	.81922104 0C	BY	.52344369 0C	BZ	.23409754 00	TX	.793C2324 0C	TY	.60919137 CC	TZ	.CCCCCCCC 00
DAP	.19737040 02	RAP	.12753106 03								
BTQ	.22138784 06	BRQ	-.56847288 05	B	.22856989 06	THA	.3455589C 03	T VECTOR IN EARTH EQUATOR PLANE			

215 DAYS 13 HRS. 15 MIN. 14.089 SEC. 2357474363142C2330165611 J.C.= 2439199.665C1955 MARCH 15,1966 C3 57 37.689

GEOCENTRIC						EQUATORIAL COORDINATES					
X	.61C64632 06	Y	-.79573481 06	Z	-.36C0C519 06	DX	.15169C18 CC	DY	.96792C3C-C1	DZ	.43355675-01
R	.1.656859 07	DEC	-.19743835 02	RA	.3C75C261 03	V	.18509CC4 CC	PTH	-.1189224C-05	AZ	.75585253 02
R	.1.656859 07	LAT	-.19743835 02	LCN	.75785611 02	VE	.72963344 02	PTE	-.31602935-06	AZE	.27CC3617 03
XS	.14799888 09	YS	-.13978923 08	ZS	-.60625858 C7	DXS	.35474059 01	DYS	.27284796 C2	DZS	.11831795 C2
XM	.49602.51 05	YM	-.35314126 06	ZM	-.17759873 06	DXM	.97631152 0C	DYM	.99610969-01	DZM	-.32629716-01
XT	-.CCCCCCCC 0C	YT	-.CCCCCCCC 0C	ZT	.00000000 0C	DXT	.CCCCCCCC CC	DYT	.CCCCCCCC CC	DZT	-.CCCCCCCC 00
RS	.14878116 09	VS	.29956552 02	RM	.39838477 06	VM	.98192220 0C	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.19867886 02	ALT	.105931C2 07	LCS	.12288726 03	RAS	.35466426 03	RAM	.27799543 C3	LOM	.46278435 02
DUT	.35C0CCC0 C2	DT	.7680CCC0 04	DR	-.18327397-08	SHA	-.80626265 C6	DES	-.23353526 C1	DEM	-.26474342 C2
CCL	.28237162 03	MCL	.17784739 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE				2357454504 1C2C2164165611 J.C.= 2439175.63223273		FEB. 19,1966 03 10 24.908					
SMA	.55841618 06	ECC	.9C840804 0C	B	.23346527 06	SLR	.97608265 05	APO	.10656859 07	RCA	.51146434 05
VH	.18505C04 0C	C3	-.71380365 0C	C1	.19724785 06	TFP	.2C764328 07	TF	.45964669 C4	PER	.69214425 05
TA	.18C0C000 03	MTA	.18C0CCC0 03	EA	.18C0C000 03	MA	.18000CCC 03			TFI	.51732539 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.61C64632 06	Y	-.79573481 06	Z	-.36C0C519 06	DX	.15169C18 CC	DY	.96792C3C-C1	DZ	.43355675-01
INC	.2427c799 02	LAN	.24449643 0C	APF	.12473741 03	MX	.8195486C CC	MY	.52294562 CC	MZ	.23424099 00
WX	.17542CC1-02	WY	-.41107791 0C	WZ	.91159853 0C	PX	-.57300775 CC	PY	.74668790 CC	PZ	.33781546 00
QX	-.81954806 0C	QY	-.52294563 0C	QZ	-.23424099 00	RX	-.20566121 0C	RY	.26799766 CC	RZ	-.94121236 00
BX	.81954806 0C	BY	.52294563 0C	BZ	.23424099 00	TX	.79332564 0C	TY	.60879752 CC	TZ	.CCCCCCCC 00
DAP	.19743835 02	RAP	.12750261 03								
BTQ	.22611964 06	BRQ	-.5810C867 05	B	.23346527 06	THA	.34556925 03	T VECTOR IN EARTH EQUATOR PLANE			

220 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357477320232CC271463CCCC J.C.= 2439204.11277314 MARCH 19,1966 14 42 23.600

CASE 1 IBSYS-JPTRAJ-SPACE C9C165 34

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONS. AS OF 1 SEPT 65

GEOCENTRIC						EQUATORIAL COORDINATES					
X	.65634388 06	Y	-.73516674 06	Z	-.33264822 06	DX	.82605833-01	DY	.21781652 CC	DZ	.98797555-01
R	.1C4015C1 07	DEC	-.18651307 02	RA	.31175791 03	V	.25304C68 CC	PTH	-.31821776 C2	AZ	.74C06921 02
R	.1C4015C1 07	LAT	-.18651307 02	LCN	.27446571 03	VE	.71658599 02	PTE	-.1C668C72 CC	AZE	.27CC4737 03
XS	.14892.25 09	YS	-.34604918 07	ZS	-.15C11913 C7	DXS	.12453282 01	DYS	.27427827 C2	DZS	.11894835 02
XM	.35108.12 06	YM	-.17026342 06	ZM	-.11281663 06	DXM	.47820375 0C	DYM	.77221335 CC	DZM	.34C20425 00
XT	-.CCCCCCCC 0C	YT	-.CCCCCCCC 0C	ZT	.CC000000 0C	DXT	.CCCCCCCC CC	DYT	.CCCCCCCC CC	DZT	-.CCCCCCCC 00
RS	.14896861 09	VS	.29921959 02	RM	.40617049 06	VM	.96991298 0C	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.18765538 02	ALT	.10337741 07	LCS	.32137664 03	RAS	.35866884 03	RAM	.33412799 C3	LOM	.29683575 03
DUT	.35C0CCC0 C2	DT	.7680CCC0 04	DR	-.13342298 0C	SHA	-.7900477C C6	DES	-.57739431 CC	DEM	-.16126369 02
CCL	.28274758 03	MCL	.17687843 03	TCL	.18C0C000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE				2357514330653202C3463C0CC J.C.= 2439223.8C5697C5		APRIL 6,1966 C7 2C 12.225					
SMA	.56748424 06	ECC	.88254061 0C	B	.26684310 06	SLR	.12547528 06	APO	.1C683167 C7	RCA	.66651814 05
VH	.2C933799 0C	C3	-.7C239546 0C	C1	.22363928 06	TFP	-.17C14686 07	TF	.57526301 C4	PER	.7L9C72C1 C5
TA	-.17513429 03	MTA	.18C0CCC0 03	EA	-.16C69299 03	MA	-.14397426 03			TFI	.528CCCCC C4

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.65634388 06	Y	-.73516674 06	Z	-.33264822 06	DX	.82605833-01	DY	.21781852 CC	DZ	.98797555-01
INC	.24382460 02	LAN	.35989.92 03	APF	.12435822 03	MX	.77577526 0C	MY	.57447787 CC	MZ	.261C5151 C0
WX	-.7858C696-03	WY	-.41282486 0C	WZ	.91081C08 0C	PX	-.56293295 0C	PY	.75296962 CC	PZ	.34C75796 00
QX	-.82652217 0C	QY	-.51245718 0C	QZ	-.23298440 CC	RX	-.20406227 0C	RY	.27295C25 CC	RZ	-.94C13655 00
BX	.82652220 0C	BY	.51245720 0C	BZ	.23298441 CC	TX	.8C091515 0C	TY	.59877786 CC	TZ	.CCCCCCCC 00
DAP	.19925497 02	RAP	.12678242 03								
BTQ	.25851924 06	BRQ	-.66128991 05	B	.26684310 06	THA	.34565146 03	T VECTOR IN EARTH EQUATOR PLANE			

225 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357502547632C271463CCCC J.C.= 2439209.11277314 MARCH 24,1966 14 42 23.600

GEOCENTRIC						EQUATORIAL COORDINATES					
X	.67732677 06	Y	-.61252702 06	Z	-.27686054 06	DX	-.23939871-01	DY	.34549977 CC	DZ	.15921361 00
R	.9493.453 06	DEC	-.16956503 02	RA	.31757975 03	V	.38480147 0C	PTH	-.48646183 C2	AZ	.72C43893 02
R	.9493.451 06	LAT	-.16956503 02	LCN	.27535947 03	VE	.65973764 02	PTE	-.25C85577 CC	AZE	.27CC6BC7 03
XS	.14886815 09	YS	.83868513 07	ZS	.36369982 07	DXS	-.13456502 01	DYS	.27384793 C2	DZS	.11877187 C2
XM	.34C9C320 06	YM	.19117642 06	ZM	.66113312 05	DXM	-.53318252 0C	DYM	.73487801 CC	DZM	.49691087 00
XT	-.CCCCCCCC 0C	YT	-.CCCCCCCC 0C	ZT	-.CCCCCCCC CC	DXT	.CCCCCCCC CC	DYT	.CCCCCCCC CC	DZT	-.CCCCCCCC 00
RS	.14917850 09	VS	.29879855 02	RM	.39639.15 06	VM	.99490413 0C	RT	.CCCCCCCC CC	VT	.CCCCCCCC 00
GED	-.17C65364 02	ALT	.94292815 06	LCS	.3210.357 03	RAS	.32238569 01	RAM	.29286880 02	LOM	.34706C6C 03
DUT	.35C0CCC0 02	DT	.3840CCC0 04	DR	-.78884888 CC	SHA	-.7120CC8C 06	DES	.13970187 C1	DEM	.96C10986 01
CCL	.28310634 03	MCL	.17884540 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE				2357514353162C2263263CCCC J.C.= 2439223.914C1662		APRIL 6,1966 C9 56 11.2C9					
SMA	.57626C77 06	ECC	.86394577 0C	B	.29019620 06	SLR	.14613841 06	APO	.1C741188 C7	RCA	.78402715 05
VH	.22465781 0C	C3	-.69170182 0C	C1	.24135216 06	TFP	-.12780276 07	TF	.57552298 C4	PER	.72558485 05
TA	-.16832.29 03	MTA	.18C0CCC0 03	EA	-.13852956 03	MA	-.10574870 03			TFI	.54CCCCCC 04

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CASE  1                                  IBSYS-JPTRAJ-SPACE C9C165                                        35

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONS. AS OF 1 SEPT 65

                                                                    ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
   X  .67C32677 C6     Y -.61252722 06     Z -.27686054 C6    DX -.23935671-01    DY  .34549977 CC    DZ  .15921361 CO
 INC  .24503369 02   LAN  .35956500 03   APF  .12363681 03    MX  .7C8C8113 CC    MY  .64161CC2 CC    MZ  .25488588 CC
  WX -.31487031-02    WY -.41473480 0C    WZ  .90993688 0C    PX -.54815515 CC    PY  .76176557 CC    PZ  .34533384 00
  QX -.83636810 0C    QY -.49770299 0C    QZ -.22973926 CC    RX -.2C16E7C4 CC    RY  .28C28C36 CC    RZ -.93845093 CO
  BX  .83636810 0C    BY  .49770299 0C    BZ  .22973926 CC    TX  .81165198 0C    TY  .5E4D8572 CC    TZ  .CCCCCCCC CO
 DAP  .2C20C343 02   RAP  .12573842 03

 BTQ  .28136683 C6   BRQ -.71C38998 05     B  .29019620 06   THA  .34583C19 C3    T VECTOR IN  EARTH EQUATOR PLANE

230 DAYS  0 HRS.  0 MIN.  0.000 SEC.        2357/5C5777232C271463CCCC J.D.= 2439214.11277314 MARCH 29,1966 14 42 23.600

     GEOCENTRIC                                                                    EQUATORIAL COORDINATES

   X  .6284C435 06     Y -.43230C51 06     Z -.19482791 C6    DX -.18274681 CC    DY  .4882C956 CC    DZ  .2218C97C CO
   R  .78723164 06   DEC -.14328727 02    RA  .32547460 03     V  .56651965 CC   PTH -.55855726 C2    AZ  .6992C535 02
   R  .78723163 C6   LAT -.14328728 02   LCN  .27832609 C3    VE  .55323487 C2   PTE -.48558803 CC   AZE  .27C113C6 03
  XS  .14776129 09    YS  .20169.95 08    ZS  .87473371 C7   DXS -.39098975 C1   DYS  .2712775C C2   DZS  .11765538 02
  XM -.34546705 05    YM  .33494568 06    ZM  .16839895 C6   DXM -.1026e368 C1   DYM -.16635236 CC   DZM  .35447409-C2
  XT  .CCCCCCCC 0C    YT  .CCCCCCCC 0C    ZT -.CCCCCCCC CC   DXT  .CCCCCCCC CC   DYT  .CCCCCCCC CC   DZT -.CCCCCCCC 00
  RS  .14936784 09    VS  .29826666 02    RP  .37647966 C6    VP  .1C402305 C1    RT  .CCCCCCCC CC    VT  .CCCCCCCC CO
 GEO -.14422316 02   ALT  .78C85475 06   LCS  .32C62439 03   RAS  .77725C63 11   RAM  .9588882C C2   LDM  .4874C301 02
 DUT  .35C0C000 02    DT  .38400000 04    DR -.46886689 CC   SHA -.5614E431 C6   DES  .33568475 C1   DEM  .2657C519 02
 CCL  .28341348 03   MCL  .18102C31 03   TCL  .17999999 03

                                        GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE                  2357514447222C266563CCCC J.D.= 2439224.091984C3  APRIL 8,1966 14 12 27.42C
  SMA  .57624593 C6   ECC  .85275952 0C     B  .30097540 C6   SLR  .1572C058 C6   APO  .1CE76451 C7   RCA  .64846729 05
   VH  .23446020 0C    C3 -.691T1963 0C    C1  .25C32030 C6   TFP -.8622E381 C6    TF  .5759501C C4   PER  .72555684 05
   TA -.1598C364 03   MTA  .18000000 03    EA -.11542677 C3    MA -.7130C035 C2                       TFI  .55159999 C4

                                                                    ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
   X  .6284C435 C6     Y -.43230C51 06     Z -.19482791 C6    DX -.18274681 CC    DY  .4882C956 CC    DZ  .2218C97C CO
 INC  .24494648 02   LAN  .35957402 03   APF  .12315155 C3    MX  .6.232398 CC    MY  .72564086 CC    MZ  .33264287 CO
  WX -.3.824452-02    WY -.41459683 0C    WZ  .91CCCCOO C3    PX -.54117615 CC    PY  .76592114 CC    PZ  .34712124 00
  QX -.84C9C363 CC    QY -.49140.28 0C    QZ -.22873.81 CC    RX -.2C03CE89 CC    RY  .28349515 CC    RZ -.93702C23 0C
  BX  .84C9C363 0C    BY  .49140C28 0C    BZ  .22873C81 .C    TX  .8167C357 0C    TY  .57705744 CC    TZ  .CCCCCCCC CO
 DAP  .2?311336 02   RAP  .12524384 03

 BTQ  .2920470? C6   BRQ -.7276495C 05     B  .30097540 C6   THA  .3460C934 C3    T VECTOR IN  EARTH EQUATOR PLANE

235 DAYS  0 HRS.  0 MIN.  0.000 SEC.        235751122663202271463C0CC J.D.= 2439219.11277314  APRIL 3,1966 14 42 23.600

     GEOCENTRIC                                                                    EQUATORIAL COORDINATES

   X  .49C97462 06     Y -.18458203 06     Z -.82685789 05    DX -.5C542173 CC    DY  .67C0C502 CC    DZ  .30227746 00
   R  .53100238 06   DEC -.85583497 01    RA  .33939623 03     V  .89203672 CC   PTH -.56901971 C2    AZ  .67271175 02
   R  .53100737 06   LAT -.85583497 01   LCN  .28731947 C3    VE  .37807538 C2   PTE -.11325649 C1   AZE  .27028527 03
  XS  .14552796 09    YS  .31797531 08    ZS  .13790233 C8   DXS -.64184828 C1   DYS  .26672018 C2   DZS  .11566533 02
  XM -.35131840 06    YM  .59179228 05    ZM  .58499954 C5   DXM -.2347C218 CC   DYM -.961490A9 C0   DZM -.4560726C 00
  XT  .CCCCCCCC 0C    YT  .CCCCCCCC 0C    ZT -.CCCCCCCC CC   DXT  .CCCCCCCC CC   DYT  .CCCCCCCC CC   DZT -.CCCCCCCC 00
  RS  .14955826 09    VS  .29772103 02    RP  .36103884 C6    VP  .10897480 C1    RT  .CCCCCCCC CC    VT  .CCCCCCCC 00
 GEO -.9C183988 01   ALT  .52462469 06   LCS  .32C24853 03   RAS  .12325293 C2   RAM  .17C43834 C3   LDM  .11836158 C3
 DUT  .35000000 02    DT  .19200000 04    DR -.74729265 CC   SHA -.31049783 C6   DES  .52891353 C1   DEM  .93248789 01
 CCL  .26372300 03   MCL  .18352521 03   TCL  .17999999 03


CASE  1                                  IBSYS-JPTRAJ-SPACE C9C165                                        36

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.CONS. AS OF 1 SEPT 65

                                        GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE                  2357514544212C274263CCCC J.D.= 2439224.27268254  APRIL 8,1966 18 32 39.772
  SMA  .56492268 06   ECC  .83837894 0C     B  .30793248 C6   SLR  .16785C25 C6   APO  .1C385420 C7   RCA  .913034C3 05
   VH  .24906112 0C    C3 -.7C558438 0C    C1  .25866042 C6   TFP -.44581617 C6    TF  .57638377 C4   PER  .72427642 05
   TA -.1446636C 03   MTA  .18000000 03    EA -.85893001 02    MA -.3798C783 C2                       TFI  .564CCCOC 04

                                                                    ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
   X  .49C97462 06     Y -.18458203 06     Z -.82685789 05    DX -.5C542173 CC    DY  .67C0C502 CO    DZ  .30227746 00
 INC  .24343176 02   LAN  .35978767 03   APF  .12246509 C3    MX  .38C85153 CC    MY  .84217548 CC    MZ  .38165703 00
  WX -.15274611-02    WY -.41219820 0C    WZ  .91109291 CC    PX -.53393345 CC    PY  .77C68989 CC    PZ  .34778168 00
4 103432 JOB C70   TIME ESTIMATE EXCEEDED
4 103591 JOB C70 TERMINATED POSSIBLE LOOP

  $JCH  LHE,1081000,10024-0,65585,A  FP3,15,10000                    A 11*52**05*** 10/13/65 ******V13M8G**

  $JCH  LHE,1081000,10024-0,65585,A  FP3,15,10000                    115206 A   10/13/65   ******V13M8G******

      *      JPTRAJ
  $RESTORE
      *      DATA
```

```
          SOURCE PROGRAM LISTING                                  10/13/65     PAGE 1

     * A      SPACE    CR
     PAGECD   =(AC-6 POST FLIGHT T)
     PAGECD+3 =(RAJECTORY BASED ON)
     PAGECD+6 =(BEST ESTIMATE OF I)
     PAGECD+9 =(NJ.COND. AS OF 1 S)
     PAGECD+12=(EPT 65)
     PAGECD+15=(INJ.+235 DAYS)
     TARGCD=(EARTH )
     INJBCD=(EARTH )
     INJT=65080114,4223600
     INJX =-3710.5266
     INJY =4766.7794
     INJZ =2562.1308
     INJDX=-8.7339047
     INJDY=-5.8106732
     INJDZ=-3.2369406
     INJT=660400314,4223600
     INJX =.49097462E6
     INJY =-.18458203E6
     INJZ =-.82685789E5
     INJDX=-.50542173E0
     INJDY=.67000502E0
     INJDZ=.30227746E0
     INJBCX=(       )
     MOCPH1=-0
     MOCPH1+2=0
     MOCPH1+4=0,
     MOCPH1+11=36500,0
     MOCPH1+13=500,0
     MOCPH1+11=13000,0
     MOCPH1+13=500,0
     MOCPH1+27=1100000100000/8
     MOCPH1+38=1000000000000/8
     * END  END

               THERE WERE NO GLARING SOURCE DECK ERRORS.

               THE OBJECT STRING HAS 00131 OCTAL OR   89 DECIMAL WORDS.


   START TRAJECTORY (SPACE)       115325       A


CASE  1                               IBSYS-JPTRAJ-SPACE 090165                                     1

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65        INJ.+235 DAYS

DOUBLE PRECISION EPHEMERIS TAPE - EPHEM1

  GME  .39860063 06    J  .16234500-02    H -.57499999-05    D  .78749999-05   RE  .63781650 04  REM  .63783112 04
    G  .66709996-19    A  .88781796 29    B  .88800194 29    C  .88836976 29  OME  .41780741-02   AU  .14959850 09
  GMM  .49026293 04  GMS  .13271411 12  GMV  .32476627 06  GMA  .42977367 05  GMC  .37918700 08  GMJ  .12670935 09
  EGM  .39860320 06  MGM  .49027779 04   JA  .29200000-02   HA  .00000000 00   DA  .00000000 00   RA  .34170000 04

INJECTION CONDITIONS           EARTH        2357511226632027146300000 J.D.= 2439219.11277314  APRIL 3,1966 14 42 23.600

GEOCENTRIC        X0 .49097462 06  Y0-.18458203 06  Z0-.82685789 05 DX0-.50542173 00 DY0 .67000502 00 DZ0 .30227746 00
CARTESIAN         T0 .52943599 05 GHA .52076761 02 GH0 .19087447 03
DATE OF RUN 101365A 11.410
                                     EARTH     IS THE CENTRAL BODY FOR INTEGRATION   COWELL EQUATIONS OF MOTION

   0 DAYS  0 HRS.  0 MIN.  0.000 SEC.      2357511226632027146300000 J.D.= 2439219.11277314  APRIL 3,1966 14 42 23.600

      GEOCENTRIC                                                                              EQUATORIAL COORDINATES

    X  .49097461 06     Y -.18458202 06     Z -.82685786 05    DX -.50542171 00    DY  .67000499 00    DZ  .30227745 00
    R  .53100237 06   DEL -.89583497 01    RA  .33939623 03     V  .89203668 00   PTH -.56901971 02    AZ  .67271175 02
    R  .53100237 06   LAT -.89583497 01   LON  .28731947 03    VE  .37807538 02   PTE -.11325649 01   AZE  .27028527 03
   XS  .14552796 09    YS  .31797528 08    ZS  .13790231 08   DXS -.64184821 01   DYS  .26672018 02   DZS  .11566534 02
   XM -.35131840 06    YM  .59179236 05    ZM  .58499958 05   DXM -.23470220 00   DYM -.96149048 00   DZM -.45607201 00
   XT  .00000000 00    YT  .00000000 00    ZT -.00000000 00   DXT  .00000000 00   DYT  .00000000 00   DZT -.00000000 00
   RS  .14959826 09    VS  .29772103 02    RM  .36103884 06    VM  .10897480 01    RT  .00000000 00    VT  .00000000 00
  GED -.90183988 01   ALT  .52462468 06   LOS  .32024853 03   RAS  .12325292 02   RAM  .17043834 03   LOM  .11836158 03
  DUT  .35000000 02    DT  .48000000 03    DR -.74729259 00   SHA -.31049782 06   DES  .52891353 01   DEM  .93248797 01
  CCL  .28372300 03   MCL  .18352521 03   TCL  .18000000 03

                                                 GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE              2357514544212027372300000 J.D.= 2439224.27268222  APRIL 8,1966 18 32 39.745
  SMA  .56492259 06   ECC  .83837894 00     B  .30793243 06   SLR  .16785023 06   APO  .10385418 07   RCA  .91303390 05
   VH  .24906114 00    C3 -.70558450 00    C1  .25866041 06   TFP -.44581614 06    TF  .12383782 03   PER  .70427625 05
   TA -.14466061 03   MTA  .18000000 03    EA -.85893009 02    MA -.37980789 02                       TFI  .00000000 00

                                                          ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
    X  .49097461 06     Y -.18458202 06     Z -.82685786 05    DX -.50542171 00    DY  .67000499 00    DZ  .30227745 00
  INC  .24343172 02   LAN  .35978767 03   APF  .12246509 03    MX  .38089154 00    MY  .84217551 00    MZ  .38165705 00
   WX -.15274631-02    WY -.41219822 00    WZ  .91109294 00    PX -.53393354 00    PY  .77068984 00    PZ  .34778167 00
   QX -.84552505 00    QY -.48593185 00    QZ -.22126366 00    RX -.19805583 00    RY  .28587755 00    RZ -.93757551 00
   BX  .84552506 00    BY  .48593185 00    BZ  .22126366 00    TX  .82200295 00    TY  .56948324 00    TZ  .00000000 00
  DAP  .20351692 02   RAP  .12471420 03

  BTQ  .29923461 06   BRQ -.72670680 05     B  .30793243 06   THA  .34634968 03     T VECTOR IN  EARTH EQUATOR PLANE

   5 DAYS  0 HRS.  0 MIN.  0.000 SEC.      2357514456232027146300000 J.D.= 2439224.11277314  APRIL 8,1966 14 42 23.600
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CASE 1 IBSYS-JPTRAJ-SPACE 090165 2

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

GEOCENTRIC EQUATORIAL COORDINATES

X	-.47408120 04	Y	.91447655 05	Z	.41241349 05	DX	-.25841627 01	DY	-.66385783 00	DZ	-.30307537 00
R	.10042907 06	DEC	.24245768 02	RA	.92967661 02	V	.26852297 01	PTH	-.13063841 02	AZ	.91293196 02
R	.10042907 06	LAT	.24245768 02	LON	.35962768 02	VE	.41078736 01	PTE	-.84968670 01	AZE	.26916744 03
XS	.14222454 09	YS	.43189180 08	ZS	.18730051 08	DXS	-.88651855 01	DYS	.26036737 02	DZS	.11290237 02
XM	-.18959931 06	YM	-.29903982 06	ZM	-.13236755 06	DXM	.86093215 00	DYM	-.49230235 00	DZM	-.31599833 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.14981301 09	VS	.29731677 02	RM	.37801306 06	VM	.10408750 01	RT	.00000000 00	VT	.00000000 00
GED	.24391799 02	ALT	.94054502 05	LOS	.31988701 03	RAS	.16891907 02	RAM	.23762420 03	LOM	.18061930 03
DUT	.35000000 02	DT	.48000000 03	DR	-.60696021 00	SHA	-.96726373 05	DES	.71820761 01	DEM	-.20497504 02
CCL	.10328172 03	MCL	.17978478 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357514564322023205700000 J.D.= 2439224.32048182 APRIL 8,1966 19 41 29.631

SMA	.54790848 06	ECC	.82705502 00	B	.30799085 06	SLR	.17312812 06	APO	.10010590 07	RCA	.94758023 05
VH	.26241776 00	C3	-.72749489 00	C1	.26269560 06	TFP	-.17946031 05	TF	.12498501 03	PER	.67270038 05
TA	-.28924754 02	MTA	.18000000 03	EA	-.90740735 01	MA	-.16006559 01			TFI	.12000000 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.47408120 04	Y	.91447655 05	Z	.41241349 05	DX	-.25841627 01	DY	-.66385783 00	DZ	-.30307537 00
INC	.24278148 02	LAN	.35982115 03	APF	.12179345 03	MX	-.99888438 00	MY	-.42503696-01	MZ	-.20577881-01
WX	-.12833861-02	WY	-.41116477 00	WZ	.91156015 00	PX	-.52443787 00	PY	.77642383 00	PZ	.34947236 00
QX	-.85144772 00	QY	-.47760815 00	QZ	-.21662683 00	RX	-.19561043 00	RY	.28959884 00	RZ	-.93694665 00
BX	.85144775 00	BY	.47760816 00	BZ	.21662683 00	TX	.82867453 00	TY	.55973076 00	TZ	.00000000 00
DAP	.20455045 02	RAP	.12403718 03								

BTQ	.29964584 06	BRQ	-.71209045 05	B	.30799085 06	THA	.34663197 03	T VECTOR IN	EARTH EQUATOR PLANE

5 DAYS 4 HRS. 59 MIN. 8.259 SEC. 2357514564322027557734 24 J.D.= 2439224.32050762 APRIL 8,1966 19 41 31.859

GEOCENTRIC EQUATORIAL COORDINATES

X	-.49698584 05	Y	.73569959 05	Z	.33114152 05	DX	-.23602270 01	DY	-.13240834 01	DZ	-.60056420 00
R	.94757769 05	DEC	.20454354 02	RA	.12404013 03	V	.27721013 01	PTH	-.26948940-06	AZ	.10336916 03
R	.94757769 05	LAT	.20454354 02	LON	.35204608 03	VE	.38312067 01	PTE	.30641487-06	AZE	.26036887 03
XS	.14206452 09	YS	.43656243 08	ZS	.18932581 08	DXS	-.89655859 01	DYS	.26006470 02	DZS	.11277115 02
XM	-.17352472 06	YM	-.30751335 06	ZM	-.13787800 06	DXM	.88476066 00	DYM	-.45178795 00	DZM	-.29794556 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.14982202 09	VS	.29730313 02	RM	.37924445 06	VM	.10371525 01	RT	.00000000 00	VT	.00000000 00
GED	.20582095 02	ALT	.68382199 05	LOS	.24508807 03	RAS	.17082125 02	RAM	.24050747 03	LOM	.10851341 03
DUT	.35000000 02	DT	.48000000 03	DR	-.10305883-07	SHA	.92285639 05	DES	.72597140 01	DEM	-.21318971 02
CCL	.10345012 03	MCL	.18015549 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357514564322027674637 33 J.D.= 2439224.32050849 APRIL 8,1966 19 41 31.934

SMA	.54715393 06	ECC	.82681698 00	B	.30775823 06	SLR	.17310510 06	APO	.99955008 06	RCA	.94757769 05
VH	.26279636 00	C3	-.72849815 00	C1	.26267813 06	TFP	-.75079195-01	TF	.12498565 03	PER	.67131123 05
TA	-.68301891-05	MTA	.18000000 03	EA	-.68301891-05	MA	-.67103774-05			TFI	.12498563 03

CASE 1 IBSYS-JPTRAJ-SPACE 090165 3

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.49698584 05	Y	.73569959 05	Z	.33114152 05	DX	-.23602270 01	DY	-.13240834 01	DZ	-.60056420 00
INC	.24278173 02	LAN	.35982090 03	APF	.12179653 03	MX	-.85142162 00	MY	-.47764613 00	MZ	-.21664584 00
WX	-.12851602-02	WY	-.41116519 00	WZ	.91155997 00	PX	-.52448029 00	PY	.77640025 00	PZ	.34946106 00
QX	-.85142159 00	QY	-.47764612 00	QZ	-.21664583 00	RX	-.19561905 00	RY	.28957938 00	RZ	-.93695086 00
BX	.85142161 00	BY	.47764613 00	BZ	.21664584 00	TX	.82864564 00	TY	.55977353 00	TZ	.00000000 00
DAP	.20454354 02	RAP	.12404013 03								

BTQ	.29941812 06	BRQ	-.71161187 05	B	.30775823 06	THA	.34663083 03	T VECTOR IN	EARTH EQUATOR PLANE

10 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357517705632027146300 00 J.D.= 2439229.11277314 APRIL 13,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	-.50058402 05	Y	-.45550093 06	Z	-.20587637 06	DX	.45561768 00	DY	-.74666806 00	DZ	-.33827645 00
R	.50236642 06	DEC	-.24193099 02	RA	.26372850 03	V	.93783347 00	PTH	.55215053 02	AZ	.92656679 02
R	.50236642 06	LAT	-.24193099 02	LON	.20179531 03	VE	.32890201 02	PTE	.13419085 01	AZE	.26995678 03
XS	.13787691 09	YS	.54267741 08	ZS	.23534117 08	DXS	-.11250008 02	DYS	.25218940 02	DZS	.10936332 02
XM	.21847058 06	YM	-.29524242 06	ZM	-.16470779 06	DXM	.82831038 00	DYM	.47833768 00	DZM	.16759074 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15002961 09	VS	.29701194 02	RM	.40252470 06	VM	.97107758 00	RT	.00000000 00	VT	.00000000 00
GED	-.24338893 02	ALT	.42599184 06	LOS	.31955118 03	RAS	.21484382 02	RAM	.30650033 03	LOM	.24456714 03
DUT	.35000000 02	DT	.19200000 04	DR	.77024183 00	SHA	.43965261 06	DES	.90248697 01	DEM	-.24153761 02
CCL	.28301090 03	MCL	.14806496 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357514551232024062300 00 J.D.= 2439224.28757001 APRIL 8,1966 18 54 06.049

SMA	.56350431 06	ECC	.82362824 00	B	.31958023 06	SLR	.18124357 06	APO	.10276224 07	RCA	.99386249 05
VH	-.61555723 00	C3	-.70736039 00	C1	.26878207 06	TFP	.41689755-06	TF	.12419512 03	PER	.70162569 05
TA	.14090514 03	MTA	.18000000 03	EA	.82430467 02	MA	.35651277 02			TFI	.24000000 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.50058402 05	Y	-.45550093 06	Z	-.20587637 06	DX	.45561768 00	DY	-.74666806 00	DZ	-.33827645 00
INC	.24329805 02	LAN	.14830063 00	APF	.12320453 03	MX	.99502210 00	MY	-.90240732-01	MZ	-.42280117-01
WX	.13533881-02	WY	-.41196616 00	WZ	.91118908 00	PX	-.55013207 00	PY	.76060714 00	PZ	.34471933 00
QX	-.83507652 00	QY	-.50174112 00	QZ	-.22561696 00	RX	-.20202407 00	RY	.27931647 00	RZ	-.93870576 00
BX	.83507654 00	BY	-.50174113 00	BZ	.22561696 00	TX	.81027215 00	TY	.58605378 00	TZ	.00000000 00
DAP	.20164663 02	RAP	.12587747 03								

BTQ	.31021223 06	BRQ	-.76810769 05	B	.31958023 06	THA	.34609286 03	T VECTOR IN	EARTH EQUATOR PLANE

15 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357523135232027146300 00 J.D.= 2439234.11277314 APRIL 18,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.14344768 06	Y	-.67682542 06	Z	-.30617740 06	DX	.41839160 00	DY	-.33513521 00	DZ	-.15161175 00
R	.75658077 06	DEC	-.23871431 02	RA	.28196630 03	V	.55709358 00	PTH	.52250132 02	AZ	.85098619 02
R	.75658077 06	LAT	-.23871431 02	LON	.21510495 03	VE	.50113335 02	PTE	.50362740 00	AZE	.27003332 03
XS	.13251597 09	YS	.64952033 08	ZS	.28167724 08	DXS	-.13552890 02	DYS	.24213240 02	DZS	.10501422 02
XM	.39984245 06	YM	.28557682 05	ZM	-.19316078 05	DXM	-.70503749-01	DYM	.87536973 00	DZM	.44040179 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15024204 09	VS	.29668867 02	RM	.40132608 06	VM	.98244423 00	RT	.00000000 00	VT	.00000000 00
GED	-.24015765 02	ALT	.75020610 06	LOS	.31925020 03	RAS	.26111549 02	RAM	.40852317 01	LOM	.29722388 03
DUT	.35000000 02	DT	.38400000 04	DR	.44048888 00	SHA	.72282103 06	DES	.10805892 02	DEM	-.27587475 01
CCL	.28285234 03	MCL	.17724815 03	TCL	.18000000 03						

CASE 1 — 18SYS-JPTRAJ-SPACE 090165 — 4

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 — INJ.+235 DAYS

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357514541462024626300000 J.D.= 2439224.26474996 APRIL 8,1966 18 21 14.397

SMA	.53623189 06	ECC	.82974742 00	P	.29929195 06	SLR	.16706654 06	APO	.98116891 06	RCA	.91294864 05
VH	.26299285 00	C3	-.74333630 00	C1	.25804042 06	TFP	.85086920 06	TF	.12364744 03	PER	.65131125 05
TA	.15989950 03	MTA	.18000000 03	EA	.11968531 03	MA	.78383647 02			TFI	.36000000 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.14344768 06	Y	-.67682542 06	Z	-.30617740 06	DX	.41839160 00	DY	-.33513521 00	DZ	-.15161175 00
INC	.24340535 02	LAN	.20806463-02	APF	.12102803 03	MX	.98186143 00	MY	.17275283 00	MZ	.78131962-01
WX	.14952640-04	WY	-.41215906 00	WZ	.91111191 00	PX	-.51548576 00	PY	.78072691 00	PZ	.35318534 00
QX	-.85689810 00	QY	-.46967052 00	QZ	-.21245047 00	RX	-.19460356 00	RY	.29473605 00	RZ	-.93555334 00
BX	.85689813 00	BY	.46967053 00	BZ	.21245047 00	TX	.83450816 00	TY	.55099558 00	TZ	.00000000 00
DAP	.20682268 02	RAP	.12343534 03								

BTQ .29147291 06 BRQ -.67964815 05 B .29929195 06 THA .34687446 03 T VECTOR IN EARTH EQUATOR PLANE

20 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357526364632027146300000 J.D.= 2439239.11277314 APRIL 23,1966 14 42 23.600

GEOCENTRIC — EQUATORIAL COORDINATES

X	.30515378 06	Y	-.77054890 06	Z	-.34840441 06	DX	.32859987 00	DY	-.11475168 00	DZ	-.51287499-01
R	.89902729 06	DEC	-.22801197 02	RA	.29160462 03	V	.35181846 00	PTH	.40773869 02	AZ	.81157676 02
R	.89902727 06	LAT	-.27801198 02	LON	.21981511 03	VE	.60172257 02	PTE	.21878206 00	AZE	.27003900 03
XS	.12618255 09	YS	.75161913 08	ZS	.32595881 08	DXS	-.15747324 02	DYS	.23023772 02	DZS	.99860234 01
XM	.15921467 06	YM	.31916726 06	ZM	.14525150 06	DXM	-.94414334 00	DYM	.31600073 00	DZM	.23657791 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15044548 09	VS	.29627571 02	RM	.38511692 06	VM	.10233436 01	RT	.00000000 00	VT	.00000000 00
GEO	-.22940547 02	ALT	.89265232 06	LOS	.31899106 03	RAS	.30780567 02	RAM	.63487959 02	LOM	.35169845 03
DUT	.35000000 02	DT	.38400000 04	DR	.22976395 00	SHA	.87545776 06	DES	.12513076 02	DEM	.22158005 02
CCL	.28258597 03	MCL	.18016861 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357514610402020726300000 J.D.= 2439224.38000531 APRIL 8,1966 21 07 12.459

SMA	.52243845 06	ECC	.85116977 00	P	.27422316 06	SLR	.14393714 06	APO	.96712299 06	RCA	.77754692 05
VH	.24767017 00	C3	-.76296131 00	C1	.23952752 06	TFP	.12729111 07	TF	.12641357 03	PER	.62634385 05
TA	.17066468 03	MTA	.18000000 03	EA	.14787255 03	MA	.12193728 03			TFI	.48000000 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.30515378 06	Y	-.77054890 06	Z	-.34840441 06	DX	.32859987 00	DY	-.11475168 00	DZ	-.51287499-01
INC	.24370128 02	LAN	.35973305 03	APF	.11942044 03	MX	.94063057 00	MY	.30843833 00	MZ	.14170360 00
WX	-.19223941-02	WY	-.41262510 00	WZ	.91089891 00	PX	-.48751282 00	PY	.79570796 00	PZ	.35941627 00
QX	-.87311367 00	QY	-.44338396 00	QZ	-.20268969 00	RX	-.18776714 00	RY	.30646950 00	RZ	-.93317731 00
BX	.87311371 00	BY	.44338398 00	BZ	.20268970 00	TX	.85268678 00	TY	.52242249 00	TZ	.00000000 00
DAP	.21064350 02	RAP	.12149488 03								

BTQ .26767643 06 BRQ -.59562320 05 B .27422316 06 THA .34745514 03 T VECTOR IN EARTH EQUATOR PLANE

25 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357531614232027146300000 J.D.= 2439244.11277314 APRIL 28,1966 14 42 23.600

CASE 1 — 18SYS-JPTRAJ-SPACE 090165 — 5

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 — INJ.+235 DAYS

GEOCENTRIC — EQUATORIAL COORDINATES

X	.42753649 06	Y	-.78426371 06	Z	-.35444138 06	DX	.23882023 00	DY	.46524880-01	DZ	.20974658-01
R	.96098162 06	DEC	-.21643640 02	RA	.29859673 03	V	.24421220 00	PTH	.14354355 02	AZ	.78642751 02
R	.96098162 06	LAT	-.21643640 02	LON	.22187888 03	VE	.64903331 02	PTE	.53449644-01	AZE	.27004113 03
XS	.11852930 09	YS	.84821185 08	ZS	.36785.05 08	DXS	-.17805887 02	DYS	.21666412 02	DZS	.93963840 01
XM	-.25532383 06	YM	.23072981 06	ZM	.13626914 06	DXM	-.74310556 00	DYM	-.69758002 00	DZM	-.28400948 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15063852 09	VS	.29576597 02	RM	.37012942 06	VM	.10580572 01	RT	.00000000 00	VT	.00000000 00
GEO	-.21777376 02	ALT	.95460635 06	LOS	.31877887 03	RAS	.35496723 02	RAM	.13789666 03	LOM	.61178807 02
DUT	.35000000 02	DT	.38400000 04	DR	.60544652-01	SHA	.94188752 06	DES	.14134278 02	DEM	.21602567 02
CCL	.28221659 03	MCL	.18123069 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357514701132025406300000 J.D.= 2439224.54794857 APRIL 9,1966 01 09 02.756

SMA	.51771013 06	ECC	.86574211 00	P	.25910892 06	SLR	.12968153 06	APO	.96591359 06	RCA	.69506673 05
VH	.23538011 00	C3	-.76993012 00	C1	.22735685 06	TFP	.16904008 07	TF	.13044421 03	PER	.61785935 05
TA	.17771389 03	MTA	.18000000 03	EA	.17149234 03	MA	.16415394 03			TFI	.59999999 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.42753649 06	Y	-.78426371 06	Z	-.35444138 06	DX	.23882023 00	DY	.46524880-01	DZ	.20974658-01
INC	.24315096 02	LAN	.24899027-01	APF	.11868C06 03	MX	.89558243 00	MY	.40549703 00	MZ	.18304172 00
WX	.17892439-03	WY	-.41175447 00	WZ	.91129481 00	PX	-.48026572 00	PY	.79928229 00	PZ	.36123764 00
QX	-.87712301 00	QY	-.43772828 00	QZ	-.19760854 00	RX	-.18605355 00	RY	.30963964 00	RZ	-.93247376 00
BX	.87712304 00	BY	.43772829 00	BZ	.19760855 00	TX	.85716329 00	TY	.51504474 00	TZ	.00000000 00
DAP	.21176223 02	RAP	.12100044 03								

BTQ .25322367 06 BRQ -.54910002 05 B .25910892 06 THA .34776518 03 T VECTOR IN EARTH EQUATOR PLANE

26 DAYS 20 HRS. 42 MIN. 58.802 SEC. 2357533001102024633457S0 J.D.= 2439245.97595372 APRIL 30,1966 11 25 22.402

GEOCENTRIC — EQUATORIAL COORDINATES

X	.46334257 06	Y	-.77224802 06	Z	-.34905758 06	DX	.2C591131 0C	DY	.10278674 00	DZ	.45925433-01
R	.96586465 06	DEC	-.21185822 02	RA	.30096361 03	V	.23467792 0C	PTH	-.10232C59-05	AZ	.77884635 02
R	.96586464 06	LAT	-.21185823 02	LON	.27166412 03	VE	.65442257 02	PTE	-.23870492-06	AZE	.27004312 03
XS	.11600386 09	YS	.82265647 08	ZS	.38279004 08	DXS	-.18534808 02	DYS	.21123188 02	DZS	.91602322 01
XM	-.34463700 06	YM	.98518024 C5	ZM	.78084473 05	DXM	-.34560147 00	DYM	-.91738938 00	DZM	-.42692155 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 0C	DXT	.00000000 0C	DYT	.00000000 00	DZT	-.00000000 00
RS	.15070835 09	VS	.29557369 02	RM	.36684845 06	VM	.10692547 01	RT	.00000000 00	VT	.00000000 00
GEO	-.21317278 02	ALT	.95948926 06	LOS	.79676835 01	RAS	.37266973 02	RAM	.16404688 03	LOM	.13474759 03
DUT	.35000000 02	DT	.38400000 04	DR	-.20221518-08	SHA	.94811885 06	DES	.14713977 02	DEM	.12289546 02
CCL	.28205028 03	MCL	.18127755 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357514675652024733457S0 J.D.= 2439224.53803778 APRIL 9,1966 00 54 46.464

SMA	.51746020 06	ECC	.86654872 00	P	.25826050 06	SLR	.12889588 06	APO	.96586466 06	RCA	.69055727 05
VH	.23467791 00	C3	-.77033200 00	C1	.22666711 06	TFP	.18522359 07	TF	.13020635 03	PER	.61741198 05
TA	.18CC0000 03	MTA	.18000000 03	EA	.18000000 03	MA	.18000000 03			TFI	.64471633 03

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AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.46334257 06	Y	-.77224802 06	Z	-.34905758 06	DX	.20591131 00	DY	.10278674 00	DZ	.45925433-01
INC	.24266238 02	LAN	.25381323 00	APF	.11843564 03	MX	.87742089 00	MY	.43799066 00	MZ	.19569558 00
WX	.18205839-02	WY	-.41097322 00	WZ	.91164560 00	PX	-.47971790 00	PY	.79954062 00	PZ	.36139388 00
QX	-.87742089 00	QY	.43799067 00	QZ	-.19569558 00	RX	-.18593378 00	RY	.30989380 00	RZ	-.93241324 00
BX	.87742089 00	BY	.43799067 00	BZ	.19569558 00	TX	.85749599 00	TY	.51449066 00	TZ	.00000000 00
DAP	.21165822 02	RAP	.12096341 03								
BTQ	.25250826 06	BRQ	-.54203904 05	B	.25826050 06	THA	.34788463 03	T VECTOR IN EARTH EQUATOR PLANE			

30 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357535043632027146300000 J.D.= 2439249.11277314 MAY 3,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.51123190 06	Y	-.73129524 06	Z	-.33079144 06	DX	.14593088 00	DY	.20036588 00	DZ	.89358800-01
R	.95161639 06	DEC	-.20341206 02	RA	.30495652 03	V	.26349061 00	PTH	-.23873813 02	AZ	.76617531 02
R	.95161638 06	LAT	-.20341206 02	LON	.22331052 03	VE	.64831265 02	PTE	-.94246364-01	AZE	.27004929 03
XS	.11381916 09	YS	.93862240 08	ZS	.40705882 08	DXS	-.19715869 02	DYS	.20167979 02	DZS	.87452170 01
XM	-.33085066 06	YM	-.15475999 06	ZM	-.49030826 05	DXM	.43985673 00	DYM	-.85772058 00	DZM	-.46378597 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15062432 09	VS	.29526659 02	RM	.36853336 06	VM	.10696990 01	RT	.00000000 00	VT	.00000000 00
GED	-.29468364 02	ALT	.94524080 06	LOS	.31961811 03	RAS	.40264122 02	RAM	.20506849 03	LOM	.12342249 03
DUT	.35000000 02	DT	.38400000 04	DR	-.10664089 00	SHA	.93653434 06	DES	.15657683 02	DEM	-.76454788 01
CCL	.28173683 03	MCL	.18083313 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357551043022026146300000 J.D.= 2439267.31494328 MAY 21,1966 19 33 31.100

SMA	.51860416 06	ECC	.86358132 00	B	.26158602 06	SLR	.13189418 06	APO	.96683375 06	RCA	.70774578 05
VH	.23715375 00	C3	-.76836652 00	C1	.22926826 06	TFP	-.15726675 07	TF	.11568521 04	PER	.61981889 05
TA	-.17592664 03	MTA	.18000000 03	EA	-.16502418 03	MA	-.15223810 03			TFI	.72000000 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.51123190 06	Y	-.73129524 06	Z	-.33079144 06	DX	.14593088 00	DY	.20036588 00	DZ	.89358800-01
INC	.24191736 02	LAN	.56811590 00	APF	.11790362 03	MX	.84342932 00	MY	.49145769 00	MZ	.21701681 00
WX	.46632297-02	WY	-.40977133 00	WZ	.91217922 00	PX	-.47595580 00	PY	.80145572 00	PZ	.36214747 00
QX	-.87945979 00	QY	.43562848 00	QZ	-.19177658 00	RX	-.18491830 00	RY	.31137761 00	RZ	-.93212079 00
BX	.87945981 00	BY	.43562849 00	BZ	.19177659 00	TX	.85980887 00	TY	.51061601 00	TZ	.00000000 00
DAP	.21232138 02	RAP	.12070487 03								
BTQ	.25598971 06	BRQ	-.53819282 05	B	.26158602 06	THA	.34812705 03	T VECTOR IN EARTH EQUATOR PLANE			

35 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357540273232027146300000 J.D.= 2439254.11277314 MAY 8,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.54817548 06	Y	-.60862005 06	Z	-.27589281 06	DX	.14933006-01	DY	.37126454 00	DZ	.16672272 00
R	.86430988 06	DEC	-.18614907 02	RA	.31200892 03	V	.40725522 00	PTH	-.48534961 02	AZ	.74264568 02
R	.86430986 06	LAT	-.18614908 02	LON	.22543461 03	VE	.59470526 02	PTE	-.29402342 00	AZE	.27007046 03
XS	.10191442 09	YS	.10222881 09	ZS	.44333591 08	DXS	-.21484328 02	DYS	.18542607 02	DZS	.80404254 01
XM	.27181067 05	YM	-.34761518 06	ZM	-.17526678 06	DXM	.10045831 01	DYM	.45259186-01	DZM	-.62583605-01
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15100578 09	VS	.29496662 02	RM	.39024808 06	VM	.10075477 01	RT	.00000000 00	VT	.00000000 00
GED	-.18732942 02	ALT	.85793387 06	LOS	.31851393 03	RAS	.45088236 02	RAM	.27447103 03	LOM	.18789672 03
DUT	.35000000 02	DT	.38400000 04	DR	-.30518074 00	SHA	.85550435 06	DES	.17072928 02	DEM	-.26687003 02
CCL	.28117158 03	MCL	.17811596 03	TCL	.18000000 03						

CASE 1 IBSYS-JPTRAJ-SPACE 090165 7

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357550656752025030000 J.D.= 2439266.97100140 MAY 21,1966 11 18 14.522

SMA	.52690171 06	ECC	.86100928 00	B	.26797653 06	SLR	.13628999 06	APO	.98056898 06	RCA	.73234448 05
VH	.23769651 00	C3	-.75649901 00	C1	.23307783 06	TFP	-.11109509 07	TF	.11485975 04	PER	.63438667 05
TA	-.16803826 03	MTA	.18000000 03	EA	-.13805055 03	MA	-.10507323 03			TFI	.84000000 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.54817548 06	Y	-.60862005 06	Z	-.27589281 06	DX	.14933006-01	DY	.37126454 00	DZ	.16672272 00
INC	.24193007 02	LAN	.57491109 00	APF	.11687749 03	MX	.77312946 00	MY	.57984270 00	MZ	.25700822 00
WX	.41120333-02	WY	-.40979107 00	WZ	.91217013 00	PX	-.46022562 00	PY	.80905594 00	PZ	.36554185 00
QX	-.88779245 00	QY	.42130721 00	QZ	-.18526950 00	RX	-.18073985 00	RY	.31773252 00	RZ	-.93079489 00
BX	.88779246 00	BY	.42130722 00	BZ	.18526950 00	TX	.86920969 00	TY	.49444365 00	TZ	.00000000 00
DAP	.21446932 02	RAP	.11963307 03								
BTQ	.26261445 06	BRQ	-.53339222 05	B	.26797653 06	THA	.34851892 03	T VECTOR IN EARTH EQUATOR PLANE			

40 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357543522632027146300000 J.D.= 2439259.11277314 MAY 13,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.51059223 06	Y	-.40518831 06	Z	-.18429357 06	DX	-.21315909 00	DY	.58200382 00	DZ	.26223164 00
R	.67738180 06	DEC	-.15787331 02	RA	.32156570 03	V	.67300124 00	PTH	-.59546500 02	AZ	.71455892 02
R	.67738179 06	LAT	-.15787331 02	LON	.23006311 03	VE	.47212467 02	PTE	-.70407724 00	AZE	.27013166 03
XS	.92276736 08	YS	.10986523 09	ZS	.47645162 08	DXS	-.23106414 02	DYS	.16787993 02	DZS	.72806978 01
XM	.36454783 06	YM	-.14243799 06	ZM	-.10177438 06	DXM	.41100059 00	DYM	.79661778 00	DZM	.36151775 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15118011 09	VS	.29474593 02	RM	.40440292 06	VM	.96654873 00	RT	.00000000 00	VT	.00000000 00
GED	-.15889503 02	ALT	.67100519 06	LOS	.31847022 03	RAS	.49972811 02	RAM	.33865816 03	LOM	.24715557 03
DUT	.35000000 02	DT	.38400000 04	DR	-.58015454 00	SHA	.67614681 06	DES	.18370168 02	DEM	-.14576105 02
CCL	.28056503 03	MCL	.17349989 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357550462112027446300000 J.D.= 2439266.60120124 MAY 21,1966 02 25 43.787

SMA	.52058721 06	ECC	.86900681 00	B	.27155848 06	SLR	.13393702 06	APO	.10295468 07	RCA	.71627646 05
VH	.22442602 00	C3	-.72395547 00	C1	.23105710 06	TFP	-.64700019 06	TF	.11397223 04	PER	.67763963 05
TA	-.15725742 03	MTA	.18000000 03	EA	-.10535086 03	MA	-.57287101 02			TFI	.95999999 03

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.51059223 06	Y	-.40518831 06	Z	-.18429357 06	DX	-.21315909 00	DY	.58200382 00	DZ	.26223164 00
INC	.24172626 02	LAN	.60943257 00	APF	.11562033 03	MX	.65712027 00	MY	.68886419 00	MZ	.30603774 00
WX	.43554870-02	WY	-.40946410 00	WZ	.91231585 00	PX	-.44113098 00	PY	.81797035 00	PZ	.36922612 00
QX	-.89743216 00	QY	-.40405895 00	QZ	-.17706464 00	RX	-.17526110 00	RY	.32497918 00	RZ	-.92933957 00
BX	.89743216 00	BY	.40405895 00	BZ	.17706464 00	TX	.88016305 00	TY	.47467148 00	TZ	.00000000 00
DAP	.21667897 02	RAP	.11833796 03								
BTQ	.26658404 06	BRQ	-.51739325 05	B	.27155848 06	THA	.34901643 03	T VECTOR IN EARTH EQUATOR PLANE			

45 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357546752232027146300000 J.D.= 2439264.11277314 MAY 18,1966 14 42 23.600

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AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 — INJ.+235 DAYS

GEOCENTRIC — EQUATORIAL COORDINATES

X	.31561755 06	Y	-.88455233 05	Z	-.41421886 05	DX	-.85418068 00	DY	.91759563 00	DZ	.41524404 00
R	.33057650 08	DEC	-.71981955 01	RA	.34435332 03	V	.13206188 01	PTH	-.57484353 02	AZ	.66953669 02
R	.33057669 08	LAT	-.71981955 01	LON	.24792258 03	VI	.23291111 02	PTE	-.27404938 01	AZE	.27068442 03
XS	.81973559 08	YS	.11671617 09	ZS	.50616521 08	DXS	-.24563225 02	DYS	.14908706 02	DZS	.64666750 01
XM	.41754696 08	YM	.21443421 08	ZM	.79776108 05	DXM	-.62255347 00	DYM	.68780866 00	DZM	.39499495 00
XT	.00000000 00	YT	.00000000 00	ZT	.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	.00000000 00
RS	.15134187 09	VS	.29452324 02	RM	.39138514 06	VM	.10088028 01	RT	.00000000 00	VT	.00000000 00
GEO	-.72467298 01	ALT	.32419863 08	LOS	.31848764 03	RAS	.54918385 02	RAM	.34030504 02	LOM	.29759976 03
DUT	.35000000 02	DT	.95999999 03	DR	-.11136648 01	SHA	-.31837339 06	DES	.19539189 02	DEM	.11761028 02
CCL	.27958554 03	MCL	.17643798 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE — 2357550417352020502300000 J.D.= 2439266.49836327 MAY 20,1966 23 57 40.315

SMA	.65714152 08	ECC	.87672096 00	E	.28722465 06	SLR	.13815487 06	APO	.11206680 07	RCA	.73615029 05
VH	.20038934 01	CJ	-.66751450 00	C1	.23466703 06	TFP	-.20611671 06	TF	.11372546 04	PER	.76537722 05
TA	-.13180209 03	MTA	.18000000 03	EA	-.59391315 02	MA	-.16158049 02			TFI	.10800000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.31561755 06	Y	-.88455233 05	Z	-.41421886 05	DX	-.85418068 00	DY	.91759563 00	DZ	.41524404 00
INC	.24084668 02	LAN	.76463837 03	APF	.11371939 03	MX	.29541375 00	MY	.87289964 00	MZ	.38838992 00
WX	.94461576-02	WY	-.40869574 00	WZ	.91293629 00	PX	-.41337601 00	PY	.83037473 00	PZ	.37362825 00
QX	-.91954411 00	QY	-.37942076 00	QZ	-.16416221 00	RX	-.16650769 00	RY	.33447460 00	RZ	-.92757852 00
BX	.91954414 00	BY	.37942078 00	BZ	.16416222 00	TX	.89520694 00	TY	.44565069 00	TZ	.00000000 00
DAP	.21939555 02	RAP	.11646498 03								

BTG .28269069 06 DR -.50632827 05 R .28722465 06 THA .34980613 03 T VECTOR IN EARTH EQUATOR PLANE

47 DAYS 9 HRS. 11 MIN. 26.290 SEC. 2357550416432023617027 36 J.D.= 2439266.49971631 MAY 20,1966 23 53 49.890

GEOCENTRIC — EQUATORIAL COORDINATES

X	-.30000491 00	Y	.62087727 00	Z	.27923515 00	DX	-.29030731 01	DY	-.11745108 01	DZ	-.50749028 00
R	.74395147 00	DEC	.22045362 02	RA	.11578961 03	V	.31725156 01	PTH	-.43731293-06	AZ	.99938016 02
R	.74395146 00	LAT	.22045362 02	LON	.23915056 03	VI	.19806131 01	PTE	-.75436433-06	AZE	.25395213 03
XS	.70853486 08	YS	.11368991 09	ZS	.49906315 08	DXS	-.25193052 02	DYS	.13972672 02	DZS	.60607796 01
XM	.15054101 06	YM	.31903700 06	ZM	.14597368 06	DXM	-.96358238 00	DYM	.29812954 00	DZM	.22996802 00
XT	.00000000 00	YT	.00000000 00	ZT	.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	.00000000 00
RS	.15141313 09	VS	.29434063 02	RM	.48177941 06	VM	.10345325 01	RT	.00000000 00	VT	.00000000 00
GEO	.22181071 02	ALT	.68019982 05	LOS	.18065725 03	RAS	.57296294 02	RAM	.64739216 02	LOM	.18810017 03
DUT	.35000000 02	DT	.24000000 03	DR	-.13126696-07	SHA	-.60406121 05	DES	.20048319 02	DEM	.22479376 02
CCL	.97256125 02	MCL	.15216225 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE — 2357550416432023752123 43 J.D.= 2439266.49971734 MAY 20,1966 23 53 49.979

SMA	.61237063 06	ECC	.87851208 00	E	.29254086 06	SLR	.13975224 06	APO	.11501461 07	RCA	.74395145 05
VH	.26517282 01	CJ	-.65091401 00	C1	.23601977 06	TFP	-.88981798-01	TF	.11371906 04	PER	.79484263 05
TA	-.68301891-05	MTA	.18000000 03	EA	-.68301891-05	MA	-.67169368-05			TFI	.11371906 04

CASE 1 — JBSYS-JPTRAJ-SPACE C90165 — 9

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 — INJ.+235 DAYS

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.30000491 00	Y	.62087727 00	Z	.27923515 00	DX	-.29030731 01	DY	-.11745108 01	DZ	-.50749028 00
INC	.24079661 02	LAN	.76609790 03	APF	.11308299 03	MX	-.91506974 00	MY	-.37021434 00	MZ	-.15996462 00
WX	.54552759-02	WY	-.40796991 00	WZ	.91297927 00	PX	-.40325869 00	PY	.83456684 00	PZ	.37534053 00
QX	-.91506970 00	QY	-.37021433 00	QZ	-.15996462 00	RX	-.16329859 00	RY	.33795574 00	RZ	-.92688693 00
BX	.91506975 00	BY	.37021435 00	BZ	.15996463 00	TX	.90039768 00	TY	.43506784 00	TZ	.00000000 00
DAP	.21045361 02	RAP	.11578961 03								

BTG .28815129 06 DR -.54487480 05 R .29254086 06 THA .35006198 03 T VECTOR IN EARTH EQUATOR PLANE

50 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357552201632027146300 00 J.D.= 2439269.11277314 MAY 23,1966 14 42 23.600

GEOCENTRIC — EQUATORIAL COORDINATES

X	-.13664467 06	Y	-.29785704 06	Z	-.13229402 06	DX	.19848276 00	DY	-.11494805 01	DZ	-.51499036 00
R	.35340153 08	DEC	-.21981854 02	RA	.24535627 03	V	.12751141 01	PTH	.58297880 02	AZ	.10009199 03
R	.35340152 08	LAT	-.21981854 02	LON	.14339718 03	VI	.23262523 02	PTE	.26729783 01	AZE	.26971048 03
XS	.71080146 08	YS	.12273287 09	ZS	.53225293 08	DXS	-.25832874 02	DYS	.12914516 02	DZS	.56032377 01
XM	-.86965347 05	YM	.32459060 06	ZM	.16808346 06	DXM	-.10183382 01	DYM	-.26108859 00	DZM	-.43696861-01
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15148658 09	VS	.27421449 02	RM	.37393309 06	VM	.10521831 01	RT	.00000000 00	VT	.00000000 00
GEO	-.22119263 02	ALT	.34702585 06	LOS	.31856343 03	RAS	.59922526 02	RAM	.10401714 03	LOM	.26380477 01
DUT	.35000000 02	DT	.36999999 03	DR	.10848565 01	SHA	.32377426 05	DES	.20570103 02	DEM	.26711702 02
CCL	.27460093 03	MCL	.18077565 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE — 2357550420202026622300 00 J.D.= 2439266.50078001 MAY 21,1966 00 01 07.393

SMA	.63281807 08	ECC	.88186470 00	E	.29837508 06	SLR	.14068451 06	APO	.11908781 07	RCA	.74758029 05
VH	.19884964 00	CJ	-.62784187 00	C1	.23680569 06	TFP	.22567621 06	TF	.11373122 04	PER	.83498357 05
TA	.17304284 03	MTA	.18000000 03	EA	.59954105 02	MA	.16216573 02			TFI	.12000000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.13664467 06	Y	-.29785704 06	Z	-.13229402 06	DX	.19848276 00	DY	-.11494805 01	DZ	-.51499036 00
INC	.24084866 02	LAN	.78567301 02	APF	.11349345 03	MX	.92220699 00	MY	-.35090147 00	MZ	-.16248807 00
WX	.55913188-02	WY	-.40865088 00	WZ	.91294205 00	PX	-.41100782 00	PY	.83172362 00	PZ	.37426091 00
QX	-.91203296 00	QY	-.37647080 00	QZ	-.16268238 00	RX	-.16550475 00	RY	.33567753 00	RZ	-.92732342 00
BX	.91203298 00	BY	.37647082 00	BZ	.16268239 00	TX	.89690781 00	TY	.44221758 00	TZ	.00000000 00
DAP	.21978639 02	RAP	.11624545 03								

BTG .29374774 06 DR -.52344594 05 R .29837508 06 THA .34989619 03 T VECTOR IN EARTH EQUATOR PLANE

55 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357555431232027146300 00 J.D.= 2439274.11277314 MAY 28,1966 14 42 23.600

GEOCENTRIC — EQUATORIAL COORDINATES

X	-.78923689 00	Y	-.64749984 00	Z	-.28954449 00	DX	.32935804 00	DY	-.59263125 00	DZ	-.26777759 00
R	.70933373 00	DEC	-.24391322 02	RA	.26930165 03	V	.72896732 00	PTH	.62501487 02	AZ	.90715348 02
R	.70933371 00	LAT	-.24391322 02	LON	.16301427 03	VI	.46887841 02	PTE	.79016665 00	AZE	.26999485 03
XS	.59681971 08	YS	.12780645 09	ZS	.55452630 08	DXS	-.26899823 02	DYS	.10845185 02	DZS	.47026167 01
XM	-.36027664 06	YM	.27384185 06	ZM	.44606639 05	DXM	-.13289931 00	DYM	-.94515567 00	DZM	-.45901746 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15161385 09	VS	.29386494 02	RM	.36999165 06	VM	.10590931 01	RT	.00000000 00	VT	.00000000 00
GEO	-.24236655 02	ALT	.70295912 06	LOS	.31869168 03	RAS	.64979670 02	RAM	.17572424 03	LOM	.29436856 02
DUT	.35000000 02	DT	.38400000 04	DR	.64661065 00	SHA	.27205331 06	DES	.21491691 02	DEM	.69244926 01
CCL	.27760409 03	MCL	.18177469 03	TCL	.18000000 03						

CASE 1 IBSYS-JPTRAJ-SPACE 090165 10

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357550445022027216300000 J.D.= 2439266.56235693 MAY 21,1966 01 29 47.639

SMA	.07276641 06	ECC	.88737778 00	P	.31017426 06	SLR	.14300369 06	APO	.12697643 07	RCA	.75768448 05
VH	.18802667 00	C3	-.59247997 00	C1	.23874957 06	TFP	.65235595 06	TF	.11387900 04	PER	.91528445 05
TA	.15412211 03	MTA	.18000000 03	EA	.93511678 02	MA	.42764145 02			TFI	.13200000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.78923689 04	Y	-.64749984 06	Z	-.28954449 06	DX	.32935804 00	DY	-.59263125 00	DZ	-.26777759 00
INC	.24101309 02	LAN	.10536847 01	APF	.11427850 03	MX	.99990989 00	MY	-.70912795-02	MZ	-.11397402-01
WX	.75092655-02	WY	-.40824222 00	WZ	.91282485 00	PX	-.42640435 00	PY	.82439063 00	PZ	.37223572 00
QX	-.90450145 00	QY	-.39202772 00	QZ	-.16790275 00	RX	-.17102117 00	RY	.33062768 00	RZ	-.92813823 00
BX	.90450148 00	BY	.39202773 00	BZ	.16790275 00	TX	.88821967 00	TY	.45941901 00	TZ	.00000000 00
DAP	.21853566 02	RAP	.11734962 03								

BTQ	.30565669 06	ERR	-.56111371 05	P	.31017426 06	THA	.34957765 03	T VECTOR IN	EARTH EQUATOR PLANE

60 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357560660632027146300000 J.D.= 2439279.11277314 JUNE 2,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.13163673 06	Y	-.95147961 06	Z	-.38202701 06	DX	.30971301 00	DY	-.37232161 00	DZ	-.16931285 00
R	.94249159 06	DEC	-.23912267 02	RA	.27878822 03	V	.51304226 00	PTH	.60893629 02	AZ	.86888976 02
R	.94249158 06	LAT	-.23912267 02	LON	.16757261 03	VE	.62580901 02	PTE	.41040130 00	AZE	.27001240 03
XS	.47865801 08	YS	.13209332 09	ZS	.57285130 08	DXS	-.27771470 02	DYS	.87143519 01	DZS	.37779095 01
XM	-.17362118 06	YM	-.35869361 06	ZM	-.13885103 06	DXM	.90035375 00	DYM	-.42824715 00	DZM	-.28894394 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15172794 09	VS	.29335759 02	RM	.38041512 06	VM	.10380371 01	RT	.00000000 00	VT	.00000000 00
GED	-.24056788 02	ALT	.93611693 06	LOS	.31886572 03	RAS	.70081328 02	RAM	.24064492 03	LOM	.12942931 03
DUT	.35000000 02	DT	.38400000 04	DR	.44825433 00	SHA	.41946976 06	DES	.22182108 02	DEM	-.21407503 02
CCL	.27617337 03	MCL	.17925555 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357550514602022566300000 J.D.= 2439266.68001580 MAY 21,1966 04 19 13.366

SMA	.08413781 06	ECC	.89281952 00	P	.30814563 06	SLR	.13879330 06	APO	.12949494 07	RCA	.73326220 05
VH	.18163537 00	C3	-.58263206 00	C1	.23520867 06	TFP	.10741902 07	TF	.11416138 04	PER	.93858806 05
TA	.16276676 03	MTA	.18000000 03	EA	.11502211 03	MA	.68668476 02			TFI	.14400000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.13163675 06	Y	-.95147961 06	Z	-.38202701 06	DX	.30971301 00	DY	-.37232161 00	DZ	-.16931285 00
INC	.24102006 02	LAN	.11510772 01	APF	.11421144 03	MX	.99016420 00	MY	.13081769 00	MZ	.49612676-01
WX	.62034799-02	WY	-.40827985 00	WZ	.91281988 00	PX	-.42674678 00	PY	.82412020 00	PZ	.37244202 00
QX	-.90433387 00	QY	-.39259828 00	QZ	-.16747147 00	RX	-.17125963 00	RY	.33073131 00	RZ	-.92805545 00
BX	.90433393 00	BY	.39259831 00	BZ	.16747148 00	TX	.88800751 00	TY	.45982897 00	TZ	.00000000 00
DAP	.21866301 02	RAP	.11737607 03								

BTQ	.30308693 06	ERR	-.55606163 05	P	.30814563 06	THA	.34960378 03	T VECTOR IN	EARTH EQUATOR PLANE

65 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357564110232027146300000 J.D.= 2439284.11277314 JUNE 7,1966 14 42 23.600

CASE 1 IBSYS-JPTRAJ-SPACE 090165 11

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

GEOCENTRIC EQUATORIAL COORDINATES

X	.25567449 06	Y	-.98041357 06	Z	-.44063691 06	DX	.26149793 00	DY	-.23415342 00	DZ	-.10612784 00
R	.11248715 07	DEC	-.23503982 02	RA	.28461619 03	V	.36670439 00	PTH	.57891593 02	AZ	.64301016 02
R	.11248715 07	LAT	-.23503982 02	LON	.16647220 03	VE	.73690629 02	PTE	.24151037 00	AZE	.27001505 03
XS	.35712579 08	YS	-.14538861 09	ZS	.58713791 08	DXS	-.28458266 02	DYS	.65317693 01	DZS	.28322262 01
XM	.23874934 06	YM	-.27864227 06	ZM	-.15870061 06	DXM	.80445192 00	DYM	.52793334 00	DZM	.19507622 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15183140 09	VS	.29335276 02	RM	.39992517 06	VM	.98178980 00	RT	.00000000 00	VT	.00000000 00
GED	-.23646627 02	ALT	.10384967 07	LOS	.31907920 03	RAS	.75223198 02	RAM	.31057068 03	LOM	.19442669 03
DUT	.35000000 02	DT	.76800000 04	DR	.31061474 00	SHA	.50150526 06	DES	.22749560 02	DEM	-.23379891 02
CCL	.27511970 03	MCL	.17226786 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357550665732227463000O J.D.= 2439266.97089434 MAY 21,1966 11 18 05.272

SMA	.67897665 06	ECC	.91229723 00	P	.28106595 06	SLR	.11634873 06	APO	.12970472 07	RCA	.60906085 05
VH	.16603285 00	C3	-.58706088 00	C1	.21535244 06	TFP	.14810583 07	TF	.11485949 04	PER	.92798697 05
TA	.16937657 03	MTA	.18000000 03	EA	.13355666 03	MA	.95759423 02			TFI	.15600000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.25567449 06	Y	-.98041357 06	Z	-.44063691 06	DX	.26149793 00	DY	-.23415342 00	DZ	-.10612784 00
INC	.24146879 02	LAN	.56748880 00	APF	.11348559 03	MX	.97284869 00	MY	.21277427 00	MZ	.91063216-01
WX	.42516746-02	WY	-.40905713 00	WZ	.91249977 00	PX	-.40678800 00	PY	.83292042 00	PZ	.37518938 00
QX	-.91351360 00	QY	-.37271411 00	QZ	-.16302481 00	RX	-.16465056 00	RY	.33713092 00	RZ	-.92694816 00
BX	.91351361 00	BY	.37271411 00	BZ	.16302481 00	TX	.89856202 00	TY	.43884654 00	TZ	.00000000 00
DAP	.22036018 02	RAP	.11603031 03								

BTQ	.27668455 06	ERR	-.49431805 05	P	.28106595 06	THA	.34987055 03	T VECTOR IN	EARTH EQUATOR PLANE

70 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357567337632027146300O0 J.D.= 2439289.11277314 JUNE 12,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.35596538 06	Y	-.10604162 07	Z	-.47677748 06	DX	.20196717 00	DY	-.14488404 00	DZ	-.64223855-01
R	.12164891 07	DEC	-.23078601 02	RA	.28854959 03	V	.25672325 00	PTH	.55137534 02	AZ	.82188357 02
R	.12162891 07	LAT	-.23078601 02	LON	.16747737 03	VE	.81449792 02	PTE	.14818095 00	AZE	.27001403 03
XS	.23304151 08	YS	.13772987 09	ZS	.59729330 08	DXS	-.28952925 02	DYS	.42976365 01	DZS	.18654372 01
XM	.39733656 06	YM	.53335971 06	ZM	-.67526305 04	DXM	-.14107252 00	DYM	.85968661 00	DZM	.43946586 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15192167 09	VS	.29329624 02	RM	.40095718 06	VM	.97575241 00	RT	.00000000 00	VT	.00000000 00
GED	-.23219261 02	ALT	.12099142 07	LOS	.31932418 03	RAS	.80396402 02	RAM	.76453269 01	LOM	.24657311 03
DUT	.35000000 02	DT	.76800000 04	DR	.21064823 00	SHA	.53036370 06	DES	.23151188 02	DEM	-.96497851 00
CCL	.27400324 03	MCL	.17338268 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357551272322021766300O0 J.D.= 2439267.76343738 MAY 22,1966 00 19 20.991

SMA	.07613235 06	ECC	.93904001 00	P	.23245964 06	SLR	.79921453 05	APO	.13110477 07	RCA	.41217021 05
VH	.13613688 00	C3	-.58954048 00	C1	.17848826 07	TFP	.18445826 07	TF	.11676159 04	PER	.92216195 05
TA	.17423509 03	MTA	.18000000 03	EA	.14829377 03	MA	.12001683 03			TFI	.16800000 04

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AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.35596538 06	Y	-.10608162 07	Z	-.47677748 06	DX	.20196717 00	DY	-.14488404 00	DZ	-.64223855-01
INC	.24296153 02	LAN	.35026055 03	APF	.11345668 03	MX	.95620028 00	MY	.26466256 00	MZ	.12503913 00
WX	-.53099175-02	WY	-.41141892 00	WZ	.91143090 00	PX	-.38723224 00	PY	.84117880 00	PZ	.37745121 00
QX	-.92196690 00	QY	-.35093122 00	QZ	-.16378127 00	RX	-.15783653 00	RY	.34286593 00	RZ	-.92602947 00
BX	.92196690 00	BY	.35093122 00	BZ	.16378127 00	TX	.90837152 00	TY	.41816406 00	TZ	.00000000 00
DAP	.22175894 02	SAP	.11471873 03								

BTO	.22879498 06	BRO	-.41113736 05	B	.23245964 06	THA	.34981285 03

T VECTOR IN EARTH EQUATOR PLANE

75 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357572567232027146300000 J.D.= 2439294.11277314 JUNE 17,1966 14 42 23.600

GEOCENTRIC

EQUATORIAL COORDINATES

X	.43059190 06	Y	-.11105168 07	Z	-.49841665 06	DX	.14481677 00	DY	-.89857829-01	DZ	-.38244684-01
R	.12911230 07	DEC	-.22707912 02	RA	.29118927 03	V	.17466821 00	PTH	.53461577 02	AZ	.80440837 02
R	.12911230 07	LAT	-.22707912 02	LON	.16518880 03	VE	.86749668 02	PTE	.92690788-01	AZE	.27001141 03
XS	.10726897 08	YS	.13908806 09	ZS	.60323032 08	DXS	-.29241470 02	DYS	.20290598 01	DZS	.88112836 00
XM	.12867586 06	YM	.32319480 06	ZM	.14994267 06	DXM	-.99479781 00	DYM	.23776592 00	DZM	.20107399 00
XT	.00000000 00	YT	.00000000 00	ZT	.00000000 00	DXT	.00000000 00	DYT	.00000000 00	DZT	-.00000000 00
RS	.15199400 09	VS	.29326023 02	RM	.37860417 06	VM	.10423944 01	RT	.00000000 00	VT	.00000000 00
GED	-.22846817 02	ALT	.12947480 07	LOS	.41959016 03	RAS	.85590629 02	RAM	.68387525 02	LOM	.30238205 03
DUT	.35000000 02	DT	.76800000 04	DR	.14033851 00	SHA	.51555049 06	DES	.23383130 02	DEM	.23330898 02
CCL	.27282965 03	MCL	.18169034 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357552253712024746300000 J.D.= 2439269.23748234 MAY 23,1966 17 41 58.475

SMA	.47911760 06	ECC	.96612886 00	B	.17525318 06	SLR	.45225853 05	APO	.13352329 07	RCA	.23002487 05
VH	.17055539 00	C3	-.58693896 00	C1	.13426486 06	TFP	.21492251 07	TF	.12029930 04	PER	.92827612 05
TA	.17719545 03	MTA	.18000000 03	EA	.15887099 03	MA	.13891718 03			TFI	.18000000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.43059190 06	Y	-.11105168 07	Z	-.49841665 06	DX	.14481677 00	DY	-.89857829-01	DZ	-.38244684-01
INC	.24539412 02	LAN	.35762038 03	APF	.11444967 03	MX	.94261641 00	MY	.29665835 00	MZ	.15319324 00
WX	-.17244064-01	WY	-.41496098 00	WZ	.90967579 00	PX	-.37915403 00	PY	.84457159 00	PZ	.37807547 00
QX	-.92517286 00	QY	-.33838770 00	QZ	-.17189799 00	RX	-.15484202 00	RY	.34491305 00	RZ	-.92577478 00
BX	.92517287 00	BY	.33838771 00	BZ	.17189799 00	TX	.91228624 00	TY	.40955321 00	TZ	.00000000 00
DAP	.22214524 02	SAP	.11417677 03								

BTO	.17220557 06	BRO	-.32941032 05	B	.17525318 06	THA	.34929921 03

T VECTOR IN EARTH EQUATOR PLANE

80 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357576016632027146300000 J.D.= 2439299.11277314 JUNE 22,1966 14 42 23.600

GEOCENTRIC

EQUATORIAL COORDINATES

X	.48369192 06	Y	-.11410909 07	Z	-.51122048 06	DX	.10498798 00	DY	-.52697367-01	DZ	-.21698150-01
R	.13406687 07	DEC	-.22415317 02	RA	.29297138 03	V	.11945835 00	PTH	.49623956 02	AZ	.79527185 02
R	.13406687 07	LAT	-.22415317 02	LON	.16204249 03	VE	.90300475 02	PTE	.57743271-01	AZE	.27000893 03
XS	-.19301975 07	YS	.13948064 09	ZS	.60489348 08	DXS	-.29309398 02	DYS	-.25782840 00	DZS	-.11174010 00
XM	-.28502611 06	YM	.10647346 06	ZM	.12119089 06	DXM	-.67143901 00	DYM	-.76749463 00	DZM	-.32614209 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15204452 09	VS	.29317744 02	RM	.36675508 06	VM	.10706293 01	RT	.00000000 00	VT	.00000000 00
GED	-.22552830 02	ALT	.13342937 07	LOS	.31986394 03	RAS	.90792833 02	RAM	.14542764 03	LOM	.14498751 02
DUT	.35000000 02	DT	.76800000 04	DR	.91004480-01	SHA	.46802139 06	DES	.23443198 02	DEM	.19295539 02
CCL	.27155839 03	MCL	.18183928 03	TCL	.18000000 03						

CASE 1 IBSYS-JPTRAJ-SPACE C90165 13

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357553532142025606300000 J.D.= 2439271.27095927 MAY 25,1966 18 30 10.881

SMA	.80681754 06	ECC	.98614436 00	B	.13618569 06	SLR	.27003609 05	APO	.13599969 07	RCA	.13637192 05
VH	.76285495-01	C3	-.58035976 00	C1	.10374804 06	TFP	.24055327 07	TF	.12517964 04	PER	.94410699 05
TA	.17861521 03	MTA	.18000000 03	EA	.16623703 03	MA	.15287670 03			TFI	.19200000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.48369192 06	Y	-.11410909 07	Z	-.51122048 06	DX	.10498798 00	DY	-.52697367-01	DZ	-.21698150-01
INC	.24626419 02	LAN	.35710903 03	APF	.11516642 03	MX	.93241255 00	MY	.31995468 00	MZ	.16803521 00
WX	-.21016474-01	WY	-.41616968 00	WZ	.90904406 00	PX	-.38321189 00	PY	.84315681 00	PZ	.37714533 00
QX	-.92342134 00	QY	-.34943025 00	QZ	-.17720127 00	RX	-.15605025 00	RY	.34334664 00	RZ	-.92615408 00
BX	.92342133 00	BY	.34943025 00	BZ	.17720127 00	TX	.91038287 00	TY	.41376688 00	TZ	.00000000 00
DAP	.22156969 02	SAP	.11444169 03								

BTO	.13366975 06	BRO	-.26056437 05	B	.13618569 06	THA	.34896957 03

T VECTOR IN EARTH EQUATOR PLANE

85 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357601246232027146300000 J.D.= 2439304.11277314 JUNE 27,1966 14 42 23.600

GEOCENTRIC

EQUATORIAL COORDINATES

X	.52339421 06	Y	-.11553252 07	Z	-.51688786 06	DX	.79483142-01	DY	-.11431183-01	DZ	-.36177645-02
R	.13696813 07	DEC	-.22172228 02	RA	.29437180 03	V	.80382375-01	PTH	.30984625 02	AZ	.79161815 02
R	.13696813 07	LAT	-.22172229 02	LON	.15851470 03	VE	.92422010 02	PTE	.25655043-01	AZE	.27000803 03
XS	-.14567509 08	YS	.13887765 09	ZS	.60227660 08	DXS	-.29160398 02	DYS	-.25289858 01	DZS	-.10978945 01
XM	-.31865810 06	YM	.18044858 06	ZM	-.67436108 05	DXM	.52028946 00	DYM	-.79120040 00	DZM	-.43633308 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15267427 09	VS	.29290441 02	RM	.37630254 06	VM	.10426340 01	RT	.00000000 00	VT	.00000000 00
GED	-.22308856 02	ALT	.13632562 07	LOS	.32013102 03	RAS	.95988116 02	RAM	.21059927 03	LOM	.74742182 02
DUT	.35000000 02	DT	.76800000 04	DR	.41381494-01	SHA	.40001667 06	DES	.23330920 02	DEM	-.10323582 02
CCL	.27014042 03	MCL	.18006813 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357554755232026206300000 J.D.= 2439273.22387882 MAY 27,1966 17 22 23.131

SMA	.69253534 06	ECC	.98373111 00	B	.12440619 06	SLR	.22349213 05	APO	.13737398 07	RCA	.11266251 05
VH	.68706146-01	C3	-.57553404 00	C1	.94344374 05	TFP	.26688005 07	TF	.12986665 04	PER	.95585531 05
TA	.17942632 03	MTA	.18000000 03	EA	.17370420 03	MA	.16752329 03			TFI	.20400000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.52339421 06	Y	-.11553252 07	Z	-.51688786 06	DX	.79483142-01	DY	-.11431183-01	DZ	-.36177645-02
INC	.24558853 02	LAN	.35747311 03	APF	.11533964 03	MX	.92392204 00	MY	.34065574 00	MZ	.17413129 00
WX	-.18324147-01	WY	-.41523358 00	WZ	.90953482 00	PX	-.39132567 00	PY	.84009507 00	PZ	.37563877 00
QX	-.92006978 00	QY	-.34904103 00	QZ	-.17788176 00	RX	-.15861293 00	RY	.34050906 00	RZ	-.92676614 00
BX	.92006986 00	BY	.34904103 00	BZ	.17788176 00	TX	.90648009 00	TY	.42224856 00	TZ	.00000000 00
DAP	.22063798 02	SAP	.11497663 03								

BTO	.12209311 06	BRO	-.23878292 05	B	.12440619 06	THA	.34893408 03

T VECTOR IN EARTH EQUATOR PLANE

88 DAYS 11 HRS. 32 MIN. 45.522 SEC. 2357603475132022175473 24 J.D.= 2439307.59385558 JULY 1,1966 02 15 09.123

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AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

GEOCENTRIC EQUATORIAL COORDINATES

X	.54441585 06	Y	-.11537065 07	Z	-.51566306 06	DX	.59379766-01	DY	.22626985-01	DZ	.12066769-01
R	.13759853 07	DEC	-.22004425 02	RA	.29526188 03	V	.64680320-01	PTH	.15468630-06	AZ	.78391397 02
R	.13759853 07	LAT	-.22004426 02	LON	.34278394 03	VE	.92962628 02	PTE	-.32269746-06	AZE	.27000802 03
XS	-.23307618 08	YS	.13784149 09	ZS	.59795208 08	DXS	-.28939802 02	DYS	-.40924510 01	DZS	-.17759170 01
XM	-.77782550 05	YM	-.34757586 06	ZM	-.16383162 06	DXM	.98596841 00	DYM	-.18639173 00	DZM	-.17338380 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15206555 09	VS	.29281635 02	RM	.38757564 06	VM	.10183013 01	RT	.00000000 00	VT	.00000000 00
GED	-.22144960 02	ALT	.13696101 07	LOS	.14711668 03	RAS	.99594632 02	RAM	.25720594 03	LOM	.30472799 03
DUT	.35000000 02	DT	.76600000 04	DR	.17742967-09	SHA	.34461715 06	DES	.23151780 02	DEM	-.25005721 02
CCL	.26905932 03	MCL	.17765478 03	TCL	.18000000 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357555557612020771547324 J.D.= 2439274.36894093 MAY 28,1966 20 51 16.498

SMA	.69299671 06	ECC	.48553823 00	B	.11734987 06	SLR	.19871652 05	APO	.13759853 07	RCA	.10008093 05
VH	.64680319-01	C3	-.57518401 00	C1	.88999174 05	TFP	.28706326 07	TF	.13261480 04	PER	.95687758 05
TA	.17999999 03	MTA	.18000000 03	EA	.17999999 03	MA	.17999999 03			TFI	.21235459 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.54441569 06	Y	-.11537065 07	Z	-.51566306 06	DX	.59379766-01	DY	.22626985-01	DZ	.12066769-01
INC	.24747975 02	LAN	.35653220 03	APF	.11646473 03	MX	.91804994 00	MY	.34982795 00	MZ	.18656013 00
WX	-.25321691-01	WY	-.41786109 00	WZ	.90815797 00	PX	-.39565527 00	PY	.63845841 00	PZ	.37475912 00
QX	-.91804993 00	QY	-.34782795 00	QZ	-.18656013 00	RX	-.15993082 00	RY	.33891965 00	RZ	-.92712221 00
BX	.91804995 00	BY	.34982796 00	BZ	.18656013 00	TX	.90436665 00	TY	.42675633 00	TZ	.00000000 00
DAP	.22003425 02	RAP	.11526188 03								

BTQ .11434949 06 ERR -.23613723 05 R .11734987 06 THA .34839140 03 T VECTOR IN EARTH EQUATOR PLANE

90 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357604475632027146300O0 J.D.= 2439309.11277314 JULY 2,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.55152715 06	Y	-.11497314 07	Z	-.51360497 06	DX	.48766342-01	DY	.37930775-01	DZ	.19305244-01
R	.13747186 07	DEC	-.21038244 02	RA	.29562707 03	V	.64727059-01	PTH	-.17413759 02	AZ	.77839162 02
R	.13747198 07	LAT	-.21936246 02	LON	.15484163 03	VE	.92926658 02	PTE	-.11943555-01	AZE	.27000802 03
XS	-.27097613 08	YS	.13729988 09	ZS	.59542847 08	DXS	-.28814871 02	DYS	-.47699715 01	DZS	-.20695109 01
XM	.93706241 05	YM	-.34675708 06	ZM	-.17667958 06	DXM	.99820710 00	DYM	.12038188 00	DZM	-.21556218-01
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15206865 09	VS	.29280237 02	RM	.39786221 06	VM	.10056709 01	RT	.00000000 00	VT	.00000000 00
GED	-.22073429 02	ALT	.13683446 07	LOS	.32049909 03	RAS	.10116454 03	RAM	.27880442 03	LOM	.13801898 03
DUT	.35000000 02	DT	.76830000 04	DR	-.19170865-01	SHA	.31865364 06	DES	.23047956 02	DEM	-.26725980 02
CCL	.26856195 03	MCL	.17572547 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357631617752025606300O0 J.D.= 2439341.21396852 AUG. 3,1966 17 08 06.881

SMA	.69236270 06	ECC	.98685340 00	B	.11189815 06	SLR	.18084742 05	APO	.13756218 07	RCA	.91022024 04
VH	.61720023-01	C3	-.57571130 00	C1	.84903412 05	TFP	-.27735433 07	TF	.29304286 04	PER	.95556331 05
TA	-.17976045 03	MTA	.18000000 03	EA	-.17705566 03	MA	-.17415130 03			TFI	.21600000 04

CASE 1 IBSYS-JPTRAJ-SPACE G90165 15

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.55152715 06	Y	-.11497314 07	Z	-.51360497 06	DX	.48766342-01	DY	.37930775-01	DZ	.19305244-01
INC	.24936971 02	LAN	.35565120 03	APF	.11737072 03	MX	.91543570 00	MY	.35184566 00	MZ	.19540238 00
WX	-.43197574-01	WY	-.42040715 00	WZ	.90677214 00	PX	-.39736143 00	PY	.83780249 00	PZ	.37442073 00
QX	-.91710509 00	QY	-.34834582 00	QZ	-.19383861 00	RX	-.16045179 00	RY	.33829884 00	RZ	-.92725893 00
BX	.91710510 00	BY	.34834582 00	BZ	.19383861 00	TX	.90352594 00	TY	.42853341 00	TZ	.00000000 00
DAP	.21988515 02	RAP	.11537452 03								

BTQ .10942588 06 ERR -.23391719 05 R .11189815 06 THA .34793362 03 T VECTOR IN EARTH EQUATOR PLANE

95 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357607725232027146300O0 J.D.= 2439314.11277314 JULY 7,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.56397869 06	Y	-.11227949 07	Z	-.50019620 06	DX	.76635309-02	DY	.85786513-01	DZ	.42379537-01
R	.13523816 07	DEC	-.21707178 02	RA	.29667C33 03	V	.95990004-01	PTH	-.60689978 02	AZ	.74834473 02
R	.13523817 07	LAT	-.21707178 02	LON	.15095657 03	VE	.91578596 02	PTE	-.52368767-01	AZE	.27000769 03
XS	-.39437930 08	YS	.13477057 09	ZS	.58441652 08	DXS	-.28280183 02	DYS	-.69796029 01	DZS	-.30265913 01
XM	.37643794 06	YM	-.11899021 06	ZM	-.69550350 05	DXM	.35477743 00	DYM	.81805795 00	DZM	.37856225 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15208941 09	VS	.29285557 02	RM	.40481763 06	VM	.96870801 00	RT	.00000000 00	VT	.00000000 00
GED	-.21841228 02	ALT	.13466065 07	LOS	.32059845 03	RAS	.10631221 03	RAM	.34245967 03	LOM	.19674591 03
DUT	.35000000 02	DT	.76800000 04	DR	-.83701716-01	SHA	.22629749 06	DES	.22597715 02	DEM	-.12780205 02
CCL	.26675895 03	MCL	.93180947 01	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357632417642021206300O0 J.D.= 2439342.35130359 AUG. 4,1966 20 25 52.631

SMA	.68692818 06	ECC	.97259800 00	B	.83424934 05	SLR	.10131647 05	APO	.13687717 07	RCA	.50846419 04
VH	.46627758-01	C3	-.58026536 00	C1	.63549643 05	TFP	-.24398090 07	TF	.29577247 04	PER	.94433616 05
TA	-.17922969 03	MTA	.18000000 03	EA	-.16741198 03	MA	-.15501740 03			TFI	.22800000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.56397860 06	Y	-.11227949 07	Z	-.50019620 06	DX	.76635309-02	DY	.85786513-01	DZ	.42379537-01
INC	.26268490 02	LAN	.35643512 03	APF	.12254C74 03	MX	.90591443 00	MY	.34675988 00	MZ	.24305688 00
WX	-.73540664-01	WY	-.43642546 00	WZ	.89672995 00	PX	-.40480927 00	PY	.83482199 00	PZ	.37309742 00
QX	-.91143909 00	QY	-.33856677 00	QZ	-.23806244 00	RX	-.16278785 00	RY	.33571089 00	RZ	-.92779216 00
BX	.91143909 00	BY	.33556677 00	BZ	.23806244 00	TX	.89279418 00	TY	.43631460 00	TZ	.00000000 00
DAP	.21906770 02	RAP	.11586897 03								

BTQ .06631889 06 ERR -.21406026 05 R .83424934 05 THA .34513216 03 T VECTOR IN EARTH EQUATOR PLANE

100 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357613154632027146300O0 J.D.= 2439319.11277314 JULY 12,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.55776973 06	Y	-.10765370 07	Z	-.47745174 06	DX	-.36108375-01	DY	.12755691 00	DZ	.62404669-01
R	.13030729 07	DEC	-.21494041 02	RA	.29738934 03	V	.14652277 00	PTH	-.78740626 02	AZ	.68510574 02
R	.13030729 07	LAT	-.21494042 02	LON	.14674740 03	VE	.88386858 02	PTE	-.93154387-01	AZE	.27000679 03
XS	-.31504920 08	YS	.13127465 09	ZS	.56930276 08	DXS	-.27550983 02	DYS	-.91510634 01	DZS	-.39674398 01
XM	.30467556 06	YM	-.23081069 06	ZM	-.90411170 05	DXM	-.66978803 00	DYM	.63872813 00	DZM	.37198487 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15207513 09	VS	.29300839 02	RM	.39277849 06	VM	.99747800 00	RT	.00000000 00	VT	.00000000 00
GED	-.21627436 02	ALT	.12966976 07	LOS	.32078036 03	RAS	.11142230 03	RAM	.37146194 02	LOM	.24650426 03
DUT	.35000000 02	DT	.76800000 04	DR	-.14370270 00	SHA	.12634179 06	DES	.21984529 02	DEM	.13307882.02
CCL	.26424249 03	MCL	.35541922 03	TCL	.17999999 03						

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CASE  1                              IBSYS-JPTRAJ-SPACE C90165                                        16

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65         INJ.+235 DAYS

                                           GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE              2357633277432020146300C0 J.D.= 2439343.63051041   AUG. 6,1966 03 07 56.100
   SMA  .67523187 06   ECC  .99741492 00      B  .48520412 05   SLR  .34865411 04   APO  .13487182 07   RCA  .17455267 04
    VH  .27640452-01   C3 -.59031667 00     C1  .37279183 05   TFP -.21183325 07    TF  .29884257 04   PER  .92032034 05
    TA -.17922794 03  MTA  .18000000 03     EA -.15878453 03    MA -.13810403 03                       TFI  .24000000 04

                                                    ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
     X  .55776973 06    Y -.10765370 07      Z -.47745174 06    DX -.36108375-01    DY  .12755691 00    DZ  .62404669-01
   INC  .30226683 02  LAN  .34033291 03    APF  .13215889 03    MX  .88792647 00    MY  .30887705 00    MZ  .34085319 00
    WX -.16842079 00   WY -.47123966 00     WZ  .86577498 00    PX -.41603848 00    PY  .83023950 00    PZ  .37096407 00
    QX -.59361355 00   QY -.29771695 00     QZ -.33588510 00    RX -.16619371 00    RY  .33165342 00    RZ -.92864721 00
    BX  .59361365 00   BY  .29771705 00     BZ  .33588521 00    TX  .89403112 00    TY  .44800488 00    TZ  .00000000 00
   DAP  .21775066 02  MAP  .11661575 03

   BTQ  .65235446 05  BRQ -.17549493 05      B  .48520412 05   THA  .33879579 03    T VECTOR IN  EARTH EQUATOR PLANE

 105 DAYS  0 HRS.  0 MIN.  0.000 SEC.     2357616404232027146300000 J.D.= 2439324.11277314  JULY 17,1966 14 42 23.600

       GEOCENTRIC                                                                          EQUATORIAL COORDINATES

     X  .53385474 06    Y -.10126138 07      Z -.44650292 06    DX -.72473033-01    DY  .16965971 00    DZ  .81133348-01
     R  .12287199 07  DEC -.21308453 02     RA  .29779840 03     V  .20154249 00   PTH -.85051194 02    AZ  .59716497 02
     R  .12287199 07  LAT -.21308453 02    LON  .14222810 03    VE  .63459644 02   PTE -.13784602 00   AZE  .27000602 03
    XS -.63213952 08   YS  .12686126 09     ZS  .55016737 08   DXS -.26619145 02   DYS -.11269083 02   DZS -.48864056 01
    XM -.1[illegible] 06   YM  .31084074 06     ZM  .16305465 06   DXM -.10149972 01   DYM -.34529664 00   DZM -.91185675-01
    XT  .00000000 00   YT  .00000000 00     ZT -.00000000 00   DXT -.00000000 00   DYT -.00000000 00   DZT  .00000000 00
    RS  .15204152 09   VS  .23316344 02     RM  .36638702 06    VM  .10759944 01    RT  .00000000 00    VT  .00000000 00
   GED -.21446522 02  ALT  .12223445 07    LOS  .32091640 03   RAS  .11648671 03   RAM  .10866911 03   LOM  .31309880 03
   DUT  .35000000 02   DT  .76800000 04     DP -.20079118 00   SHA  .26290129 05   DES  .21214061 02   DEM  .26425508 02
   CCL  .25255472 03  MCL  .29247378 03    TCL  .18000000 03

                                           GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE              2357634245512026626300C0 J.D.= 2439345.07082634   AUG. 7,1966 13 41 59.397
   SMA  .65534159 06   ECC  .99912615 00      B  .27392995 05   SLR  .11449180 04   APO  .13102105 07   RCA  .57270925 03
    VH  .16304706-01   C3 -.60816697 00     C1  .21362702 05   TFP -.18107758 07    TF  .30229932 04   PER  .88005725 05
    TA -.17933286 03  MTA  .18000000 03     EA -.15111068 03    MA -.12345395 03                       TFI  .25200000 04

                                                    ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
     X  .53385474 06    Y -.10126138 07      Z -.44650292 06    DX -.72473033-01    DY  .16965971 00    DZ  .81133348-01
   INC  .36437334 02  LAN  .32969143 03    APF  .14166135 03    MX  .84934331 00    MY  .24062138 00    MZ  .46980524 00
    WX -.29973727 00   WY -.51276294 00     WZ  .80450694 00    PX -.42530723 00    PY  .82666485 00    PZ  .36842773 00
    QX -.85397373 00   QY -.23173116 00     QZ -.46586405 00    RX -.16855150 00    RY  .32761164 00    RZ -.92965639 00
    BX  .85397382 00   BY  .23173118 00     BZ  .46586410 00    TX  .88921547 00    TY  .45748863 00    TZ  .00000000 00
   DAP  .11616654 02  MAP  .11722517 03

   BTQ  .23705380 05  BRQ -.13727021 05      B  .27392995 05   THA  .32992625 03    T VECTOR IN  EARTH EQUATOR PLANE

 110 DAYS  0 HRS.  0 MIN.  0.000 SEC.     2357621633632027146300000 J.D.= 2439329.11277314  JULY 22,1966 14 42 23.600
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CASE  1                              IBSYS-JPTRAJ-SPACE C90165                                        17

AC-6 POST FLIGHT TRAJECTORY BASED ONBEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65         INJ.+235 DAYS

       GEOCENTRIC                                                                          EQUATORIAL COORDINATES

     X  .49698822 06    Y -.92680823 06      Z -.40617694 06    DX -.97596267-01    DY  .23366999 00    DZ  .10817437 00
     R  .11273644 07  DEC -.21117943 02     RA  .29820182 03     V  .27536955 00   PTH -.84493805 02    AZ  .67532381 02
     R  .11273644 07  LAT -.21117943 02    LON  .13770323 03    VE  .76663703 02   PTE -.20485189 00   AZE  .27000755 03
    XS -.74475617 08   YS  .12154934 09     ZS  .52713307 08   DXS -.25482790 02   DYS -.13305027 02   DZS -.57708069 01
    XM -.36535463 06   YM -.13359409 05     ZM  .21818645 05   DXM -.28737292-01   DYM -.95868033 00   DZM -.47581421 00
    XT  .00000000 00   YT  .00000000 00     ZT -.00000000 00   DXT -.00000000 00   DYT -.00000000 00   DZT  .00000000 00
    RS  .15198517 09   VS  .29320617 02     RM  .36627166 06    VM  .10706507 01    RT  .00000000 00    VT  .00000000 00
   GED -.21243017 02  ALT  .11209890 07    LOS  .32099801 03   RAS  .12149660 03   RAM  .18218808 03   LOM  .21689495 02
   DUT  .35000000 02   DT  .76800000 04     DP -.27409896 00   SHA  .62738654 05   DES  .20293633 02   DEM  .34151065 01
   CCL  .89656858 02  MCL  .10051863 02    TCL  .17999999 03

                                           GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE              2357635053322022446300C0 J.D.= 2439346.22566304   AUG. 8,1966 17 24 57.287
   SMA  .63136775 06   ECC  .99823559 00      B  .37490395 05   SLR  .22260841 04   APO  .12616615 07   RCA  .11140248 04
    VH  .23610050-01   C3 -.63130877 00     C1  .29787692 05   TFP -.14785537 07    TF  .30507093 04   PER  .83215428 05
    TA -.17682421 03  MTA  .18000000 03     EA -.14169879 03    MA -.10660670 03                       TFI  .26400000 04

                                                    ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
     X  .49698822 06    Y -.92680823 06      Z -.40617694 06    DX -.97596267-01    DY  .23366999 00    DZ  .10817437 00
   INC  .30454144 02  LAN  .33926442 03    APF  .13352101 03    MX  .87946443 00    MY  .31536518 00    MZ  .35649588 00
    WX -.17945328 00   WY -.47401925 00     WZ  .86203507 00    PX -.42270141 00    PY  .82833990 00    PZ  .36752836 00
    QX -.88832535 00   QY -.29842919 00     QZ -.34902765 00    RX -.16704592 00    RY  .32737251 00    RZ -.93001230 00
    BX  .88832436 00   BY  .29842386 00     BZ  .34902726 00    TX  .89074080 00    TY  .45451163 00    TZ  .00000000 00
   DAP  .21563765 02  MAP  .11703351 03

   BTQ  .34750077 05  BRQ -.14069890 05      B  .37490395 05   THA  .33795756 03    T VECTOR IN  EARTH EQUATOR PLANE

 115 DAYS  0 HRS.  0 MIN.  0.000 SEC.     2357625063232027146300000 J.D.= 2439334.11277314  JULY 27,1966 14 42 23.600

       GEOCENTRIC                                                                          EQUATORIAL COORDINATES

     X  .44746917 06    Y -.82418175 06      Z -.35995148 06    DX -.13705232 00    DY  .34263019 00    DZ  .15545899 00
     R  .98463709 06  DEC -.21426747 02     RA  .29900867 03     V  .40043262 00   PTH -.82937604 02    AZ  .72767791 02
     R  .98463708 06  LAT -.21426747 02    LON  .13366706 03    VE  .67063782 02   PTE -.33951969 00   AZE  .27001295 03
    XS -.85206062 08   YS  .11530062 09     ZS  .50037577 08   DXS -.24165600 02   DYS -.15234623 02   DZS -.66080423 01
    XM -.13825487 06   YM -.32726191 06     ZM -.15733843 06   DXM  .92669162 00   DYM -.33500265 00   DZM -.24006519 00
    XT  .00000000 00   YT  .00000000 00     ZT -.00000000 00   DXT -.00000000 00   DYT -.00000000 00   DZT  .00000000 00
    RS  .15190957 09   VS  .29321253 02     RM  .33655111 06    VM  .10160609 01    RT  .00000000 00    VT  .00000000 00
   GED -.20956389 02  ALT  .97826251 06    LOS  .32101874 03   RAS  .12044506 03   RAM  .24703791 03   LOM  .81671095 02
   DUT  .35000000 02   DT  .38400000 04     DP -.33733447 00   SHA  .12140949 06   DES  .19231787 02   DEM -.23209635 02
   CCL  .65738569 02  MCL  .35012794 03    TCL  .17999999 03

                                           GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE              2357635330422026066300C0 J.D.= 2439346.73864645   AUG. 9,1966 05 43 39.053
   SMA  .61389976 06   ECC  .99518660 00      B  .60160995 05   SLR  .58956565 04   APO  .12243446 07   RCA  .29549399 04
    VH  .39579022-01   C3 -.64923266 00     C1  .49476926 05   TFP -.10908754 07    TF  .30630209 04   PER  .79782172 05
    TA -.17721640 03  MTA  .18000000 03     EA -.12736045 03    MA -.82039038 02                       TFI  .27600000 04
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CASE 1 IBSYS-JPTRAJ-SPACE C90165 18

AC-6 POST FLIGHT TRAJECTORY BASED ON BEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.4474[illegible]7 06	Y	-.[illegible]410175 06	Z	-.35006148 06	DX	-.13705232 00	DY	.34263019 00	DZ	.15545899 00
INC	.2722[illegible]196 [illegible]	LAN	.34676572 03	APF	.12620280 03	MX	.66463317 00	MY	.36696455 00	MZ	.28777365 00
WX	-.12456110 [illegible]	WY	-.44529951 00	WZ	.86925519 00	PX	-.41097473 00	PY	.83358592 00	PZ	.36909926 00
QX	-.[illegible]563[illegible]51 [illegible]	QY	-.32656895 00	QZ	-.27016754 00	RX	-.16321509 00	RY	.33105150 00	RZ	-.92938996 00
BX	.[illegible]056[illegible] [illegible]	BY	.32666814 00	BZ	.27016760 00	TX	.89691728 00	TY	.44219838 00	TZ	.00000000 00
DAP	.2166[illegible]076 [illegible]2	RAP	.11624423 03								

BTQ	.57563017 05	BRQ	-.17469407 05	B	.60160995 05	THA	.34310052 03	T VECTOR IN EARTH EQUATOR PLANE

120 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357630312632027146300000 J.D.= 2439339.11277314 AUG. 1,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.37105992 06	Y	-.62116946 06	Z	-.26764377 06	DX	-.22929401 00	DY	.52110996 00	DZ	.23313334 00
R	.77148881 06	DEC	-.20295950 02	RA	.30085146 03	V	.61520930 00	PTH	-.83096965 02	AZ	.72153843 02
R	.77148880 06	LAT	-.20298951 02	LON	.13049630 03	VE	.52697132 02	PTE	-.66406172 00	AZE	.27002464 03
XS	-.15332936 09	YS	.10846149 09	ZS	.47010659 08	DXS	-.22689256 02	DYS	-.17056015 02	DZS	-.73970342 01
XM	.26564272 06	YM	-.26165149 06	ZM	-.15106581 06	DXM	.75022728 00	DYM	.58775062 00	DZM	.23548597 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15181980 09	VS	.29333020 02	RM	.40230541 06	VM	.98176535 00	RT	.00000000 00	VT	.00000000 00
GEO	-.20425691 02	ALT	.76511320 06	LOS	.32097462 03	RAS	.13132979 03	RAM	.31543368 03	LOM	.14507851 03
DUT	.35000000 02	DT	.38400000 04	DR	-.61074964 00	SHA	.13595655 06	DES	.18038001 02	DEM	-.22055854 02
CCL	.83379664 02	MCL	.10257423 03	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357635370432027456300000 J.D.= 2439346.83351614 AUG. 9,1966 08 00 15.795

SMA	.60869381 06	ECC	.99327125 00	B	.70493544 05	SLR	.81639285 04	APD	.12132919 07	RCA	.40957439 04
VH	.47016623-01	C3	-.65484586 00	C1	.57045132 05	TFP	-.66707219 06	TF	.30652978 04	PER	.78769475 05
TA	-.17455152 03	MTA	.15000000 03	EA	-.10562036 03	MA	-.50811981 02			TFI	.28800000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.37105992 06	Y	-.62118948 06	Z	-.26764372 06	DX	-.22929401 00	DY	.52110996 00	DZ	.23313334 00
INC	.26777015 02	LAN	.34798895 03	APF	.12459400 03	MX	.67171230 00	MY	.39686570 00	MZ	.28742951 00
WX	-.93753240-01	WY	-.44065694 00	WZ	.89276662 00	PX	-.40239068 00	PY	.83698275 00	PZ	.37086604 00
QX	-.91065499 00	QY	-.32447102 00	QZ	-.25578604 00	RX	-.16069261 00	RY	.33424468 00	RZ	-.92868636 00
BX	.91065466 00	BY	.32447094 00	BZ	.25578599 00	TX	.90125447 00	TY	.43324017 00	TZ	.00000000 00
DAP	.21767038 02	RAP	.11567654 03								

BTQ	.67766976 05	BRQ	-.19415879 05	B	.70493544 05	THA	.34401249 03	T VECTOR IN EARTH EQUATOR PLANE

125 DAYS 0 HRS. 0 MIN. 0.000 SEC. 2357633542232027146300000 J.D.= 2439344.11277314 AUG. 6,1966 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	.22977311 06	Y	-.32647133 06	Z	-.13718749 06	DX	-.48113224 00	DY	.91710982 00	DZ	.40163232 00
R	.42213697 06	DEC	-.18964565 02	RA	.30513819 03	V	.11108047 01	PTH	-.62651383 02	AZ	.71063618 02
R	.42213696 06	LAT	-.18964565 02	LON	.12985486 03	VE	.28998400 02	PTE	-.21772517 01	AZE	.27009116 03
XS	-.10478832 09	YS	.10065920 09	ZS	.43653300 08	DXS	-.21058894 02	DYS	-.18768100 02	DZS	-.81384385 01
XM	.39567559 06	YM	.50301664 05	ZM	.98904230 04	DXM	-.20481996 00	DYM	.64157654 00	DZM	.43707158 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15171841 09	VS	.29359032 02	RM	.40400999 06	VM	.97017207 00	RT	.00000000 00	VT	.00000000 00
GEO	-.15084464 02	ALT	.41576104 06	LOS	.32086805 03	RAS	.13615138 03	RAM	.11468033 02	LOM	.19618470 03
DUT	.35000000 02	DT	.19200000 04	DR	-.11016809 01	SHA	.78509312 05	DES	.16721850 02	DEM	.14027765 01
CCL	.60042218 02	MCL	.18575738 03	TCL	.18000000 03						

CASE 1 IBSYS-JPTRAJ-SPACE C90165 19

AC-6 POST FLIGHT TRAJECTORY BASED ON BEST ESTIMATE OF INJ.COND. AS OF 1 SEPT 65 INJ.+235 DAYS

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357635371332022110300000 J.D.= 2439346.83607720 AUG. 9,1966 08 03 57.071

SMA	.62892019 06	ECC	.99256203 00	B	.74129885 05	SLR	.90245598 04	APD	.12133112 07	RCA	.45291236 04
VH	.49432180-01	C3	-.65460242 00	C1	.59976622 05	TFP	-.23529347 06	TF	.30653593 04	PER	.78813422 05
TA	-.17038599 03	MTA	.18000000 03	EA	-.71998423 02	MA	-.17912695 02			TFI	.30000000 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.22977311 06	Y	-.32647133 06	Z	-.13718749 06	DX	-.48113224 00	DY	.91710982 00	DZ	.40163232 00
INC	.26551015 02	LAN	.34858600 03	APF	.12374702 03	MX	.83420745 00	MY	.45815714 00	MZ	.30690311 00
WX	-.88456586-01	WY	-.43815378 00	WZ	.89453671 00	PX	-.39734378 00	PY	.83903260 00	PZ	.37167489 00
QX	-.91339616 00	QY	-.32256074 00	QZ	-.24831730 00	RX	-.15907863 00	RY	.33591102 00	RZ	-.92836295 00
BX	.91339641 00	BY	.32256082 00	BZ	.24831737 00	TX	.90377647 00	TY	.42800478 00	TZ	.00000000 00
DAP	.21818949 02	RAP	.11534100 03								

BTQ	.71428870 05	BRQ	-.19828169 05	B	.74129885 05	THA	.34448570 03	T VECTOR IN EARTH EQUATOR PLANE

PROBE IMPACTED TARGET

127 DAYS 17 HRS. 13 MIN. 53.640 SEC. 2357635367502022366144310 J.D.= 2439346.83075509 AUG. 9,1966 07 56 17.240

GEOCENTRIC EQUATORIAL COORDINATES

X	.42697197 04	Y	.40728457 04	Z	.24181705 04	DX	-.10957831 02	DY	.20770934 01	DZ	-.70954400-01
R	.63769998 04	DEC	.22284255 02	RA	.43648143 02	V	.11153179 02	PTH	-.32771641 02	AZ	.75188484 02
R	.63769998 04	LAT	.22284256 02	LON	.32721239 03	VE	.10806306 02	PTE	-.33963668 02	AZE	.74485274 02
XS	-.10962297 09	YS	.96147470 08	ZS	.41696898 08	DXS	-.20107714 02	DYS	-.19650039 02	DZS	-.85206389 01
XM	.29433545 06	YM	.25282894 06	ZM	.10486074 06	DXM	-.72346655 00	DYM	.58222559 00	DZM	.34722466 00
XT	.00000000 00	YT	.00000000 00	ZT	-.00000000 00	DXT	-.00000000 00	DYT	-.00000000 00	DZT	.00000000 00
RS	.15165805 09	VS	.29377636 02	RM	.39467062 06	VM	.99144109 00	RT	.00000000 00	VT	.00000000 00
GEO	.22421126 02	ALT	.16982544 01	LOS	.62311074 02	RAS	.13874683 03	RAM	.41643256 02	LOM	.32520749 03
DUT	.35000000 02	DT	.30000000 02	DR	-.60371279 01	SHA	-.63749758 04	DES	.15958451 02	DEM	.15408062 02
CCL	.26786455 03	MCL	.61196539 01	TCL	.17999999 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357635371452020645634310 J.D.= 2439346.83653254 AUG. 9,1966 08 04 36.412

SMA	.64441385 06	ECC	.99301373 00	B	.76038925 05	SLR	.89724974 04	APD	.12843057 07	RCA	.45019747 04
VH	.46564746-01	C3	-.61855718 00	C1	.59803370 05	TFP	-.49917149 03	TF	.30653702 04	PER	.85801882 05
TA	-.55903165 02	MTA	.18000000 03	EA	-.43872388 01	MA	-.34906331-01			TFI	.30652315 04

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.42697197 04	Y	.40728457 04	Z	.24181705 04	DX	-.10957831 02	DY	.20770934 01	DZ	-.70954400-01
INC	.26547250 02	LAN	.34853711 03	APF	.12384711 03	MX	-.73743735 00	MY	.63263851 00	MZ	.23654734 00
WX	-.88202282-01	WY	-.43801790 00	WZ	.89456765 00	PX	-.39821792 00	PY	.83883301 00	PZ	.37118943 00
QX	-.91258050 00	QY	-.32326371 00	QZ	-.24893197 00	RX	-.15918706 00	RY	.33532234 00	RZ	-.92855712 00
BX	.91258055 00	BY	.32326372 00	BZ	.24893197 00	TX	.90337255 00	TY	.42885667 00	TZ	.00000000 00
DAP	.21788990 02	RAP	.11539502 03								

BTQ	.73255546 05	BRQ	-.20384873 05	B	.76038925 05	THA	.34444967 03	T VECTOR IN EARTH EQUATOR PLANE

223736544052	622553736302	621505743334	600401236622	200527757177	177466240656	EARTH
	066400314		4223600		000000000000	INITIAL
215414015357	214773121172	214455320146	604536321063	202416774775	574667064747	EARTH
				235763536750	202236614431	END

APPENDIX D

Tables related to trajectory printout

Table D-1. A/C 6 trajectory key

	COLUMN ROW	1	2	3	4	5	6
	1	GME	J	H	D	RE	REM
	2	G	A	B	C	OME	AU
GROUP A	3	GMM	GMS	GMV	GMA	GMB	GMJ
	4	EGM	MGM	JA			RA
	5	ARA	GB	MAS			SC
		INJECTION CONDITIONS		TARGET	JULIAN DATE	MONTH, DAY, YEAR	hr, min, sec
GROUP B	6	GEOCENTRIC	XO	YO	ZO DXO	DYO	DZO
	7	CARTESIAN			TO GHA	GHO	
		TIME PAST INJECTION			JULIAN DATE	MONTH, DAY, YEAR	hr, min, sec
		GEOCENTRIC				EQUATORIAL COORDINATES	
	8	X	Y	Z	DX	DY	DZ
	9	R	DEC	RA	V	PTH	AZ
	10	R	LAT	LON	VE	PTE	AZE
	11	XS	YS	ZS	DXS	DYS	DZS
GROUP C	12	XM	YM	ZM	DXM	DYM	DZM
	13	XT	YT	ZT	DXT	DYT	DZT
	14	RS	VS	RM	VM	RT	VT
	15	GED	ALT	LOS	RAS	RAM	LOM
	16	DUT	DT	DR	SHA	DES	DEM
				GEOCENTRIC CONIC			
		EPOCH OF PERICENTER PASSAGE			JULIAN DATE	MONTH, DAY, YEAR	hr, min, sec
	17	SMA	ECC	B	SLR	APO	RCA
GROUP D	18	VH	C3	C1	TFP	TF	PER
	19	TA	MTA	EA	MA	C3J	TFI
				ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE			
	20	X	Y	Z	DX	DY	DZ
	21	INC	LAN	APF	MX	MY	MZ
	22	WX	WY	WZ	PX	PY	PZ
GROUP E	23	QX	QY	QZ	RX	RY	RZ
	24	BX	BY	BZ	TX	TY	TZ
	25	DAP	RAP				
	26	BTQ	BRQ	B	THA		
		HELIOCENTRIC				EQUATORIAL COORDINATES	
	27	X	Y	Z	DX	DY	DZ
	28	R	LAT	LON	V	PTH	AZ
	29	XE	YE	ZE	DXE	DYE	DZE
	30	XT	YT	ZT	DXT	DYT	DZT
	31	LTE	LOE	LTT	LOT	RST	VST
GROUP F	32	EPS	ESP	SEP	EPM	EMP	MEP
	33	MPS	MSP	SMP	SEM	EMS	ESM
	34	EPT	ETP	TEP	TPS	TSP	STP
	35	SET	STE	EST	RPM	RPT	SPN
	36	GCE	GCT	SIP	CPT	SIN	D1
	37	REP	VEP	CPE	CPS	D2	D3

Table D-1. (Cont'd)

	COLUMN ROW	1	2	3	4	5	6
		SELENOCENTRIC				EQUATORIAL COORDINATES	
	38	X	Y	Z	DX	DY	DZ
	39	R	DEC	RA	V	PTH	AZ
GROUP G	40	R	LAT	LON	VP	PTP	AZP
	41	LTS	LNS	LTE	LNE		
	42	ALT	SHA	ALP	DR	DP	ASD
	43	HGE	SVL	HNG	SIA		
				SELENOCENTRIC CONIC			
		EPOCH OF PERICENTER PASSAGE			JULIAN DATE	MONTH, DAY, YEAR	hr, min, sec
	44	SMA	ECC	B	SLR	APO	RCA
	45	VH	C3	C1	TFP	TF	LTF
GROUP H	46	TA	MTA	EA	MA	C3J	TFI
	47	ZAE	ZAP	ZAC	DEF	IR	GP
	48	OP1	OY	OP2			
					ALL VECTORS REFERENCED TO PRINCIPAL PLANE		
	49	X	Y	Z	DX	DY	DZ
	50	INC	LAN	APF	MX	MY	MZ
	51	WX	WY	WZ	PX	PY	PZ
	52	QX	QY	QZ	RX	RY	RZ
GROUP I	53	BX	BY	BZ	TX	TY	TZ
	54	SXI	SY1	SZI	DAI	RAI	
	55	SXO	SYO	SZO	DAO	RAO	
	56	ETE	ETS	ETC			
	57	BT—	BR—	B	THA		
GROUP J	58	XOCTAL	YOCTAL	ZOCTAL	XOCTAL	YOCTAL	ZOCTAL
	59		YYMMDDDHH		TTSSSSS	SOCTAL	

Table D-2. *Atlas-Centaur VI* trajectory key definitions

Group A		
Row 1	GME	Universal gravitational constant times the mass of Earth, km^3/sec^2
	J	Coefficient of the second harmonic in the Earth's potential function
	H	Coefficient of the third harmonic in the Earth's potential function
	D	Coefficient of the fourth harmonic in the Earth's potential function
	RE	Earth radius used in the potential function, km
	REM	Conversion factor for converting lunar ephemerides into km
Row 2	G	Universal constant of gravitation, $km^3/kg\ sec^2$
	A, B, C	Moments of inertia about principal axis for the Moon, $kg\ km^2$
	OME	Sidereal rotation rate of the Earth, deg/sec
	AU	Astronomical unit, km
Row 3	GMM	Universal gravitational constant times the mass of Moon, km^3/sec^2
	GMS	Universal gravitational constant times the mass of Sun, km^3/sec^2
	GMV	Universal gravitational constant times the mass of Venus, km^3/sec^2

Table D-2. (Cont'd)

Row 3 (cont'd)	GMA	Universal gravitational constant times the mass of Mars, km^3/sec^2
	GMB	Universal gravitational constant times the mass of Earth–Moon, km^3/sec^2
	GMJ	Universal gravitational constant times the mass of Jupiter, km^3/sec^2
Row 4	EGM	Universal gravitational constant times the mass of Earth used for scaling ephemeris, km^3/sec^2
	MGM	Universal gravitational constant times the mass of Moon used for scaling ephemeris, km^3/sec^2
	JA	Coefficient of second harmonic in Mars potential function
	RA	Mars radius used in the potential function
Row 5	ARA	Frontal area of spacecraft, m^2
	GB	Multiple of % of reflected radiant energy
	MAS	Mass of spacecraft, kg
	SC	Solar radiation constant $(kg\text{-}km/sec^2)\ 10^{-6}$
Group B		Injection conditions are vernal equinox Cartesian coordinates in a geocentric equatorial system. The principal direction X is the vernal equinox direction of date, and the principal plane XY is the equatorial plane of date. Z is along the direction of the Earth's spin axis of date.
Row 6	XO, YO, ZO	Cartesian components of the probe radius vector, km
	DXO, DYO, DZO	Cartesian components of the probe space-fixed velocity vector, km/sec
Row 7	TO	Time of injection in seconds past midnight of day before launch, sec
	GHA	HA of Greenwich at injection epoch, deg
	GHO	HA of Greenwich at midnight of day before launch, deg
Group C		Inertial position and velocity of the probe, Sun, Moon and target body in a geocentric equatorial system. The principal direction X is the vernal equinox direction of date, and the principal plane XY is the equatorial plane of date. Z is along the direction of the Earth's spin axis of date. Miscellaneous parameters are also included.
Row 8	X, Y, Z	Cartesian components of the probe radius vector, km
	DX, DY, DZ	Cartesian components of the probe space-fixed velocity vector, km/sec
Row 9	R	Probe radius distance, km
	DEC	Probe declination angle, deg
	RA	Probe right-ascension angle, deg
	V	Probe space-fixed velocity, km/sec
	PTH	Pitch angle of the probe space-fixed velocity vector with respect to the local horizontal, deg
	AZ	Azimuth angle of the probe space-fixed velocity vector measured East of true North, deg
Row 10*	R	Probe radius distance, km
	LAT	Probe geocentric latitude, deg
	LON	Probe East longitude, deg
	VE	Probe Earth-fixed velocity, km/sec
	PTE	Pitch angle of the probe Earth-fixed velocity vector with respect to the local horizontal, deg
	AZE	Azimuth angle of the probe Earth-fixed velocity vector measured East of true North, deg
Row 11	XS, YS, ZS	Cartesian components of the Sun radius vector, km
	DXS, DYS, DZS	Cartesian components of the Sun space-fixed velocity vector, km/sec
Row 12	XM, YM, ZM	Cartesian components of the Moon radius vector, km
	DXM, DYM, DZM	Cartesian components of the Moon space-fixed velocity vector, km/sec
Row 13	XT, YT, ZT	Cartesian components of the target radius vector, km
	DXT, DYT, DZT	Cartesian components of the target space-fixed velocity vector, km/sec

*These are Earth-fixed spherical coordinates in a geocentric equatorial system. The principal direction X is directed toward Greenwich and is the intersection of the meridian plane of Greenwich with the equatorial plane. The principal plane is the Earth's geometrical equatorial plane. X, Y, Z are along the direction of the Earth's geometrical North direction.

Table D-2. (Cont'd)

Row 14	RS	Sun radius distance, km
	VS	Sun space-fixed velocity, km/sec
	RM	Moon radius distance, km
	VM	Moon space-fixed velocity, km/sec
	RT	Target radius distance, km
	VT	Target space-fixed velocity, km/sec
Row 15	GED	Geodetic latitude of the probe, deg
	ALT	Altitude of the probe above the Earth's surface, km
	LOS	East longitude of the Sun in coordinate system defined in Row 10, deg
	RAS	Right ascension of the Sun, deg
	RAM	Right ascension of the Moon, deg
	LOM	East longitude of the Moon in coordinate system defined in Row 10, deg
Row 16	DUT	Ephemeris time minus Universal Time, sec
	DT	Adams–Moulton step size, sec
	DR	Radial velocity of probe, km/sec
	SHA	Sun shadow parameter, km
	DES	Declination of the Sun, deg
	DEM	Declination of the Moon, deg
Group D		General characteristics of the geocentric conic
Row 17	SMA	Semimajor axis, km
	ECC	Eccentricity
	B	Magnitude of the impact parameter,** km
	SLR	Semilatus rectum, km
	APO	Apogee distance, km
	RCA	Magnitude of the closest approach vector, km
Row 18	VH	Hyperbolic excess speed, km/sec
	C3	Twice the energy (*vis viva* energy integral, km^2/sec^2)
	C1	Angular momentum, km^2/sec
	TFP	Time from pericenter passage, sec
	TF	Time from injection to pericenter passage, hr
	PER	Period, min
Row 19	TA	True anomaly, deg
	MTA	Maximum true anomaly, deg
	EA	Eccentric anomaly, deg
	MA	Mean anomaly, deg
	C3J	Earth–Moon Jacobi constant, km^2/sec^2
	TFI	Time from injection, hr
Group E		Characteristics of the Earth conic in the geocentric equatorial system described under Group B
Row 20	X, Y, Z	Cartesian components of the probe radius vector, km
	DX, DY, DZ	Cartesian components of the probe space-fixed velocity vector, km/sec
Row 21	INC	Inclination of the orbit plane to the equatorial plane, deg
	LAN	Longitude of the ascending node, deg
	APF	Argument of pericenter, deg
	MX, MY, MZ	Components of a unit vector which lies in the orbit plane and is normal to the radius vector **R**: $\mathbf{M} = \mathbf{W} \times \frac{\mathbf{R}}{\lvert\mathbf{R}\rvert}$
Row 22	WX, WY, WZ	Components of a unit vector normal to the conic: $\mathbf{W} = \frac{\mathbf{R} \times \mathbf{V}}{\lvert\mathbf{R} \times \mathbf{V}\rvert}$
	PX, PY, PZ	Components of a unit vector in the direction of perigee
Row 23	QX, QY, QZ	Components of a unit vector perpendicular to the perigee direction, vector **P**, and being in the orbit plane $\mathbf{Q} = \mathbf{W} \times \mathbf{P}$
	RX, RY, RZ	Components of the unit vector **R****

**See Appendix A.

Table D-2. (Cont'd)

Row 24	BX, BY, BZ	Components of the impact parameter **B**,** km
	TX, TY, TZ	Components of the unit vector **T****
Row 25	DAP	Declination of the asymptote, deg
	RAP	Right ascension of the asymptote, deg
Row 26	BTQ	Projection of the impact parameters **B**** upon the vector **T**, km
	BRQ	Projection of the impact parameters **B**** upon the vector **R**, km
	B	The magnitude of the impact parameter,** km
	THA	Angle between the parameter **B**** and the vector **T** measured clockwise from **T**, deg
Group F		Inertial position and velocity of the probe, Sun, Moon, and target body in a heliocentric equatorial system. The principal direction X is the vernal equinox direction of date and the principal plane XY is the equatorial plane of date. Z is along the direction of the Earth's spin axis of date. Miscellaneous parameters are also included.
Row 27	X, Y, Z	Cartesian components of the probe radius vector, km
	DX, DY, DZ	Cartesian components of the probe space-fixed velocity vector, km/sec
Row 28	R	Sun–probe radius distance, km
	LAT	Probe celestial declination, deg
	LON	Probe celestial right ascension, deg
	V	Probe space-fixed velocity, km/sec
	PTH	Pitch angle of the probe space-fixed velocity vector with respect to the local horizontal, deg
	AZ	Azimuth angle of the probe space-fixed velocity vector measured East of true North, deg
Row 29	XE, YE, ZE	Cartesian components of the Earth radius vector, km
	DXE, DYE, DZE	Cartesian components of the Earth space-fixed velocity vector, km/sec
Row 30	XT, YT, ZT	Cartesian components of the target radius vector, km
	DXT, DYT, DZT	Cartesian components of the target space-fixed velocity vector, km/sec
Row 31	LTE	Celestial latitude of the Earth, deg
	LOE	Celestial longitude of the Earth, deg
	LTT	Celestial latitude of the target, deg
	LOT	Celestial longitude of the target, deg
	RST	Sun–target range, km
	VST	Sun–target velocity, km/sec
Row 32	EPS	Earth–probe–Sun angle, deg
	ESP	Earth–Sun–probe angle, deg
	SEP	Sun–Earth–probe angle, deg
	EPM	Earth–probe–Moon angle, deg
	EMP	Earth–Moon–probe angle, deg
	MEP	Moon–Earth–probe angle, deg
Row 33	MPS	Moon–probe–Sun angle, deg
	MSP	Moon–Sun–probe angle, deg
	SMP	Sun–Moon–probe angle, deg
	SEM	Sun–Earth–Moon angle, deg
	EMS	Earth–Moon–Sun angle, deg
	ESM	Earth–Sun–Moon angle, deg
Row 34	EPT	Earth–probe–target angle, deg
	ETP	Earth–target–probe angle, deg
	TEP	Target–Earth–probe angle, deg
	TPS	Target–probe–Sun angle, deg
	TSP	Target–Sun–probe angle, deg
	STP	Sun–target–probe angle, deg
Row 35	SET	Sun–Earth–target angle, deg
	STE	Sun–target–Earth angle, deg
	EST	Earth–Sun–target angle, deg
	RPM	Moon–probe radius distance, km
	RPT	Target–probe radius distance, km
	SPN	Sun–probe–near limb of Earth angle, deg
Row 36	GCE	Clock angle of Earth, deg
	GCT	Clock angle of target, deg
	SIP	Sun–probe–near limb of target angle, deg
	CPT	Canopus–probe–near limb of target angle, deg
	SIN	Canopus–probe–near limb of target angle, deg
	D1	Radius of a circle (target) used in construction of visible planet, cm

**See Appendix A.

Table D-2. (Cont'd)

Row 37	REP	Earth–probe distance, km
	VEP	Velocity of the probe with respect to Earth, km/sec
	CPE	Canopus–probe–Earth angle, deg
	CPS	Canopus–probe–Sun angle, deg
	D2	Semiminor axis of ellipse used in construction of visible planet, cm
	D3	Distance from intersection of ellipse with circle to the diameter (of the circle) that is perpendicular to D1, in construction of visible planet, cm
Group G		
Row 38, 39		Inertial position of probe in a selenocentric equatorial system. The principal direction X is the vernal equinox direction of date and the principal plane XY is the geocentric equatorial plane of date. Z is along the direction of the Earth's spin axis of date.
Row 40, 41, 42		Selenocentric-fixed spherical coordinates of probe, Sun, and Earth in a selenocentric equatorial system. The principal direction X is in the direction of the mean Moon–Earth line. The principal plane XY is the mean selenocentric equatorial plane. Z is along the direction of the Moon's mean spin axis. Miscellaneous parameters are also included.
Row 38	X, Y, Z	Cartesian components of the probe radius vector, km
	DX, DY, DZ	Cartesian components of the probe velocity vector, km/sec
Row 39	R	Probe radius distance, km
	DEC	Probe declination angle, deg
	RA	Probe right-ascension angle, deg
	V	Probe space-fixed velocity, km/sec
	PTH	Pitch angle of the probe space-fixed velocity vector with respect to the local horizontal, deg
	AZ	Azimuth angle of the probe space-fixed velocity vector measured East of true North, deg
Row 40	R	Probe radius distance, km
	LAT	Probe selenocentric latitude, deg
	LON	Probe selenocentric East longitude, deg
	VP	Probe selenocentric-fixed velocity, km/sec
Row 40 (cont'd)	PTP	Pitch angle of the probe selenocentric-fixed velocity vector with respect to the local horizontal, deg
	AZP	Azimuth angle of the probe selenocentric-fixed velocity vector measured East of the Moon's mean spin axis, deg
Row 41	LTS	Selenocentric latitude of the Sun, deg
	LNS	Selenocentric longitude of the Sun, deg
	LTE	Selenocentric latitude of the Earth, deg
	LNE	Selenocentric longitude of the Earth, deg
Row 42	ALT	Altitude of the probe above the Moon's surface, km
	SHA	Sun shadow parameter, km
	ALP	Illuminated crescent orientation viewing angle, deg
	DR	First time derivative of the probe radius distance, km/sec
	DP	First time derivative of the probe radius direction, deg/sec
	ASD	Angular semidiameter of Moon as seen from the probe, deg
Row 43	HGE	Right ascension of Earth in probe coordinate system,† deg
	SVL	Declination of the Moon in probe coordinate system,† deg
	HNG	Right ascension of the Moon in probe coordinate system,† deg
	SIA	Earth–probe–Moon angle minus ASD, deg
Group H		Characteristics of the selenocentric conic in the geocentric equatorial system described under Group B, except centered at the Moon.
Row 44	SMA	Semimajor axis, km
	ECC	Eccentricity
	B	The magnitude of the impact parameter,** km
	SLR	Semilatus rectum, km
	APO	Apogee distance, km
	RCA	Magnitude of the closest approach vector, km
Row 45	VH	Hyperbolic excess speed, km/sec
	C3	Twice the energy (*vis viva* energy integral, km^2/sec^2)
	C1	Angular momentum, km^2/sec

†Same coordinate system as defined under Group B except centered at the probe.

Table D-2. (Cont'd)

Row 45 (cont'd)	TFP	Time from pericenter passage, sec
	TF	Time from injection to pericenter passage, hr
	LTF	Linearized time-of-flight, hr
Row 46	TA	True anomaly, deg
	MTA	Maximum true anomaly, deg
	EA	Eccentric anomaly, deg
	MA	Mean anomaly, deg
	C3J	Earth–Moon Jacobi constant, km^2/sec^2
	TFI	Time from injection, hr
Row 47	ZAE	Angle between the incoming asymptote and the Moon–Earth vector, deg
	ZAP	Angle between the incoming asymptote and the Moon–Sun vector, deg
	ZAC	Angle between the incoming asymptote and the Moon–Canopus vector, deg
	DEF	Angle between the incoming and outgoing asymptotes, deg
	IR	Maximum **B** vector magnitude for lunar impact, km
	GP	Angle between the incoming asymptote and its projection on the lunar orbital plane.
Row 48	OP1	Spacecraft nominal terminal maneuver first pitch turn, deg
	OY	Spacecraft nominal terminal maneuver yaw turn, deg
	OP2	Spacecraft nominal terminal maneuver second pitch turn, deg
Group I		Characteristics of the selenocentric conic in the specified "principal plane" coordinate system
Row 49	X, Y, Z	Cartesian components of the probe radius vector, km
	DX, DY, DZ	Cartesian components of the probe space-fixed velocity vector, km/sec
Row 50	INC	Inclination of the orbit plane to the equatorial plane, deg
	LAN	Longitude of the ascending node, deg
Row 50 (cont'd)	APF	Argument of pericenter, deg
	MX, MY, MZ	Components of a unit vector which lies in the orbit plane and is normal to the radius vector **R** $\mathbf{M} = \mathbf{W} \times \frac{\mathbf{R}}{\lvert \mathbf{R} \rvert}$
Row 51	WX, WY, WZ	Components of a unit vector normal to the conic $\mathbf{W} = \frac{\mathbf{R} \times \mathbf{V}}{\lvert \mathbf{R} \times \mathbf{V} \rvert}$
	PX, PY, PZ	Components of a unit vector in the direction of perigee
Row 52	QX, QY, QZ	Components of a unit vector perpendicular to the perigee direction, vector **P**, and being in the orbit plane $\mathbf{Q} = \mathbf{W} \times \mathbf{P}$
	RX, RY, RZ	Components of the unit vector **R****
Row 53	BX, BY, BZ	Components of the impact parameter **B**,** km
	TX, TY, TZ	Components of the unit vector **T****
Row 54	SXI, SYI, SZI	Components of the unit vector $\mathbf{S}_I$** along the direction of the incoming asymptote
	DAI	Declination of the outgoing asymptote,** deg
	RAI	Right ascension of the incoming asymptote,** deg
Row 55	SXO, SYO, SZO	Components of the unit vector $\mathbf{S}_O$** along the direction of the outgoing asymptote
	DAO	Declination of the outgoing asymptote,** deg
	RAO	Right ascension of the outgoing asymptote,** deg
Row 56	ETE	Angle between the **T** vector and the projection of the Moon–Earth vector on the **R**–**T** plane, deg
	ETS	Angle between the **T** vector and the projection of the Moon–Sun vector on the **R**–**T** plane, deg
	ETC	Angle between the **T** vector and the projection of the Moon–Canopus vector on the **R**–**T** plane, deg

**See Appendix A.

Table D-2. (Cont'd)

Row 57	BT††	Projection of the impact parameters **B**** upon the vector **T**, km
	BR††	Projection of the impact parameters **B**** upon the vector **R**, km
	B	The magnitude of the impact parameter,** km
	THA	Angle between the parameter **B** and the vector **T** measured clockwise from **T**, deg
Group J		Cartesian coordinates and epoch of injection conditions in the geocentric equatorial system described under Group B.
Row 58	XOCTAL, YOCTAL, ZOCTAL	Cartesian components of the probe radius vector at injection in octal representation, km
	XOCTAL, YOCTAL, ZOCTAL	Cartesian components of the probe space-fixed velocity vector at injection in octal representation, km/sec

Row 59		Epoch of injection
	YY	Years past 1900
	MM	Month
	DDD	Day of month
	HH	Hours
	TT	Minutes
	SSSSS	Milliseconds
	SOCTAL	Seconds in octal representation, GMT
		Time past midnight on day (DD), month (MM), and year (YY + 1900) at which the injection epoch occurs is the time determined by the sum of HH, TT, SSSSS and SOCTAL.
††Principal planes:		Q Earth equatorial plane C Ecliptic plane O Lunar orbital plane T True lunar equator.

††3.9860005×10^5 km³/sec² was used for the premidcourse orbit.

Table D-3. *Atlas-Centaur VI* trajectory constants and conversion factors

Constants	Conversion factors
GM_{Sun}	$1.32715445 \times 10^{11}$ km³/sec²
GM_{Venus}	3.247695×10^5 km³/sec²
$GM_{\oplus}$*	3.986032×10^5 km³/sec²
$GM_{\oplus\text{-}\leftmoon}$	4.03503×10^5 km³/sec²
$GM_{\leftmoon}$	4.900759×10^3 km³/sec²
GM_{Mars}	4.297780×10^4 km³/sec²
$GM_{Jupiter}$	1.267106×10^8 km³/sec²
M_{Sun}/M_{Venus}	408645
M_{Sun}/M_{Earth}	332951.3
M_{Earth}/M_{Moon}	81.335
$M_{Sun}/M_{Earth\text{-}Moon}$	328908
M_{Sun}/M_{Mars}	3,088,000
$M_{Sun}/M_{Jupiter}$	1047.39
Equatorial radius of Earth	6378.3149 km
1 AU	1.495990×10^8 km
Ellipticity of Earth	1/298.3
Conversion from feet to meters	0.3048
Atmospheric model	1959 ARDC
Sidereal rotation rate of Earth	4.1780742×10^{-3} deg/sec
Universal constant of gravitation	6.671×10^{-20} km³/kg sec²
Speed of light	2.997925×10^5 km/sec
Mean Moon radius	1738.09 km

Constants	Conversion factors
Moon moments of inertia about principal axis	$A = 0.88746 \times 10^{29}$ kg km² $B = 0.88764 \times 10^{29}$ kg km² $C = 0.88801 \times 10^{29}$ kg km²
Lunar and solar ephemerides	The Moon and Sun positions are obtained from the joint JPL–STL ephemerides. For purposes of converting into kilometers, the conversion factors are: 1 AU = 1.495990×10^8 km 1 e.r. = 6378.3149
Geometrical Earth model, used in locating tracking and launching facilities upon the Earth	Clarke spheroid of 1866 a = 6378.2064 km b = 6356.5838 km $e^2 = 0.006768657997291$

Earth potential function:

$$\Phi(\mathbf{R}, \phi) = \frac{GM_{\oplus}}{\mathbf{R}}\left[1 + \frac{J\mathbf{R}_E^2}{3\mathbf{R}^2}(1 - 3\sin^2\phi) + \frac{H}{5}\frac{\mathbf{R}_E^3}{\mathbf{R}^3}(3 - 5\sin^2\phi)(\sin\phi) + \frac{D}{35}\frac{\mathbf{R}_E^4}{\mathbf{R}^4}(3 - 30\sin^2\phi + 35\sin^4\phi)\right]$$

where

$\mathbf{R}$ = geocentric distance
ϕ = geocentric latitude
$J = 1.62345 \times 10^{-3}$
$H = -0.575 \times 10^{-5}$
$D = 0.7875 \times 10^{-5}$

*$(3.9860036 \times 10^5$ km³/sec²) was used for the analysis in this Report.

APPENDIX E

Atlas-Centaur VI ODP Printout

The following pages are facsimiles of the *Atlas-Centaur VI (A/C-6)* Orbit Determination Program (ODP) printout data.

```
PAGE HEADING                                                    (23
(AC6 FINAL 4  2 NOV 65)
EPOCH                                                           (01
65080111 4.223600
PROBE POSITION AND VELOCITY AT EPOCH                            (02
X=-3712.9761,Y=4765.0928,Z=2561.2324
DX=-8.7324469,DY=-5.8126368,DZ=-3.2398809
OTHER PARAMETER VALUES                                          (03
TARGET=(VENUS)
DAFLAG
SOLAR PRESSURE OFF
KE=398601.33
RI(8)=6376.1524,LA(8)=17.904104,LO(8)=-44.017372,NSDISP(8)=.1127
RI(2)=.6372020 4E4 LA(2)=.35208217E2 LO(2)=.24315070E3
RI(3)=.63716906E4 LA(3)=-.35219421E2 LO(3)=.14898140E3
ESTIMATE THESE PARAMETERS                                       (04
X,Y,Z,DX,DY,DZ
KE
COVARIANCE MATRIX OF ESTIMATED PARAMETERS                       (10
DIAG=1.E9,1.E9,1.E9,1.E9,1.E9,1.E9,
1.
STATISTICS,PLOT AND/OR PRINT RESIDUALS FOR THESE PARAMETERS     (14
HA(5)=.2,DEC(5)=.2
CC3(5)=1.
CC3(2)=2.
CC3(3)=2.
C3(2)=2.
C3(3)=2.
R(6)=.1,AZ(6)=.1,EL(6)=.1
R(8)=.1,AZ(8)=.1,EL(8)=.1
WEIGHTS BY DATA TYPE AND STATION                                (16
R(6)=-1.,AZ(6)=-1.,EL(6)=-1.
R(8)=-1.,AZ(8)=-1.,EL(8)=-1.
C3(2)=-1.
C3(3)=-1.
HA(2)=-1.,DEC(2)=-1.
HA(3)=-1.,DEC(3)=-1.
HA(5)=-1.,DEC(5)=-1.
CC3(5)=.5,CC3(2)=1.5,CC3(3)=1.5
CC3(5)=.35,CC3(2)=.86,CC3(3)=.86
DELETE THESE DATA TYPES                                         (13
R(7),AZ(7),EL(7)
R(9),EL(9),AZ(9)
C1(2)
C1(3)
C1(5)
RU(2)
RU(3)
HA(2),DEC(2)
HA(3),DEC(3)
REJECTION SIGMAS                                                (06
CC3(2)=1.5
CC3(3)=1.5
CC3(5)=.7
R(6)=100.,EL(6)=5.,AZ(6)=5.
R(8)=100.,EL(8)=5.,AZ(8)=5.
OFFLINE CONTROL                                                 (27
KEY(6)
KEY(14),KEY(16)
END DATA                                                        (0
```

INPUT COVARIANCE MATRIX OF ESTIMATED PARAMETERS ITERATION NUMBER 0

	X	Y	Z	DX	DY	DZ	KE
X	.99999999 09	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
Y	.00000000 00	.99999999 09	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
Z	.00000000 00	.00000000 00	.99999999 09	.00000000 00	.00000000 00	.00000000 00	.00000000 00
DX	.00000000 00	.00000000 00	.00000000 00	.99999999 09	.00000000 00	.00000000 00	.00000000 00
DY	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.99999999 09	.00000000 00	.00000000 00
DZ	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.99999999 09	.00000000 00
KE	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.10000000 01

INPUT J MATRIX OF ESTIMATED PARAMETERS ITERATION NUMBER 0

	X	Y	Z	DX	DY	DZ	KE
X	.99999997-09	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
Y	.00000000 00	.99999997-09	-.00000000 00	-.00000000 00	-.00000000 00	-.00000000 00	-.00000000 00
Z	.00000000 00	-.00000000 00	.99999997-09	-.00000000 00	-.00000000 00	-.00000000 00	-.00000000 00
DX	.00000000 00	-.00000000 00	-.00000000 00	.99999997-09	-.00000000 00	-.00000000 00	-.00000000 00
DY	.00000000 00	-.00000000 00	-.00000000 00	-.00000000 00	.99999997-09	-.00000000 00	-.00000000 00
DZ	.00000000 00	-.00000000 00	-.00000000 00	-.00000000 00	-.00000000 00	.99999997-09	-.00000000 00
KE	.00000000 00	-.00000000 00	-.00000000 00	-.00000000 00	-.00000000 00	-.00000000 00	.10000000 01

```
CASE  1                                IBSYS-JPTRAJ-SPACE 092765                                    1


DOUBLE PRECISION EPHEMERIS TAPE - EPHEM1

  GME  .39860136 06     J  .16234500-02     H -.57499999-05     D  .78749999-05    RE  .63781650 04   REM  .63783143 04
    G  .66709998-19     A  .88781796 29     B  .88800194 29     C  .88836976 29   OME  .41780741-02    AU  .14959850 09
  GMM  .49025800 04   GMS  .13271411 12   GMV  .32476627 06   GMA  .42977368 05   GMC  .37918700 08   GMJ  .12670935 09
  EGM  .39860136 06   MGM  .49025800 04    JA  .29200000-02    HA  .00000000 00    DA  .00000000 00    RA  .34170000 04
RADIATION PRESSURE INPUT
  ARA  .38300000 01    GB  .38300000 00   MAS  .19822000 03   GB1  .00000000 00   GB2  .00000000 00    SC  .10310000 09

INJECTION CONDITIONS   1950.0    VENUS       2357256306232027146300000 J.D.= 2438984.11277314  AUG. 11,1965 14 42 23.600

GEOCENTRIC          XO-.36928586 04   YO .47778283 04   ZO .25666310 04 DXO-.87570837 01 DYO-.57826677 01 DZO-.32269377 01
CARTESIAN           TO .52943599 05 GHA .18044963 03 GHO .31924731 03
DATE OF RUN 110465B 01PM24                    EARTH    IS THE CENTRAL BODY FOR INTEGRATION   COWELL EQUATIONS OF MOTION

   PROBE IS OUT OF EARTH'S    SHADOW

   0 DAYS  0 HRS.  0 MIN.  0.000 SEC.        2357256306232027146300000 J.D.= 2438984.11277314  AUG. 11,1965 14 42 23.600

        GEOCENTRIC                                                                    EQUATORIAL COORDINATES

    X -.37130099 04     Y  .47651108 04     Z  .25611944 04    DX -.87324224 01    DY -.58125544 01    DZ -.32400448 01
    R  .65614358 04   DEC  .22975690 02    RA  .12792599 03     V  .10979020 02   PTH -.28423892 01    AZ  .10745071 03
    R  .65614358 04   LAT  .22975690 02   LON  .30747636 03    VE  .10560147 02   PTE -.29552324 01   AZE  .10816843 03
   XS -.11389618 09    YS  .91780063 08    ZS  .39801205 08   DXS -.19163334 02   DYS -.20428721 02   DZS -.88598250 01
   XM  .26372386 06    YM -.26962224 06    ZM -.15028776 06   DXM  .73064569 00   DYM  .60447249 00   DZM  .21499923 00
   XT -.19890653 09    YT  .28956684 08    ZT  .16880855 08   DXT  .22178454 01   DYT -.45205320 02   DZT -.21370097 02
   RS  .15159174 09    VS  .29377925 02    RM  .40599610 06    VM  .97234498 00    RT  .20171083 09    VT  .50051182 02
  GED  .23115866 02   ALT  .18651935 03   LOS  .32068773 03   RAS  .14113736 03   RAM  .31436638 03   LOM  .13391675 03
  DUT  .36600000 02    DT  .37500000 01    DR -.54443560 00   SHA -.16630943 04   DES  .15221733 02   DEM -.21726129 02
  CCL  .27775553 03   MCL  .16780707 03   TCL  .19797701 03

                                                GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE                    2357256306422026374725OO J.D.= 2438984.11346350  AUG. 11,1965 14 43 23.247
  SMA  .41549898 06   ECC  .98424744 00     B  .73458737 05   SLR  .12987240 05   APD  .82445277 06   RCA  .65451718 04
   VH  .87269407-01    C3 -.95933174 00    C1  .71949507 05   TFP -.59647013 02    TF  .69035893-03   PER  .44423642 05
   TA -.57303169 01   MTA  .18000000 03    EA -.51099718 00    MA -.80561170-02                       TFI  .00000000 00

                                                ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE
    X -.37130099 04     Y  .47651108 04     Z  .25611944 04    DX -.87324224 01    DY -.58125544 01    DZ -.32400448 01
  INC  .28562397 02   LAN  .35908041 03   APF  .13100283 03    MX -.82444933 00    MY -.49401876 00    MZ -.27609557 00
   WX -.76733056-02    WY -.47805399 00    WZ  .87829694 00    PX -.64537403 00    PY  .67327495 00    PZ  .36082288 00
   QX -.76382814 00    QY -.56406133 00    QZ -.31368988 00    RX -.24968598 00    RY  .26048044 00    RZ -.93263432 00
   BX  .76382816 00    BY  .56406134 00    BZ  .31368988 00    TX  .72190668 00    TY  .69199043 00    TZ  .00000000 00
  DAP  .21150739 02   RAP  .13378788 03

  BTQ  .69178861 05   BRQ -.24707712 05     B  .73458737 05   THA  .34034545 03      T VECTOR IN EARTH EQUATOR PLANE

                                                ALL VECTORS REFERENCED TO ECLIPTIC PLANE
    X -.37130099 04     Y  .53907395 04     Z  .45378920 03    DX -.87324224 01    DY -.66218047 01    DZ -.65983415 00
  INC  .51323543 01   LAN  .35507930 03   APF  .13509620 03    MX -.82444933 00    MY -.56308427 00    MZ -.56739797-01
   WX -.76733058-02    WY -.89127082-01    WZ  .99599701 00    PX -.64537403 00    PY  .76125194 00    PZ  .63149195-01
   QX -.76382817 00    QY -.64230197 00    QZ -.63361622-01    RX -.40836356-01    RY  .48168588-01    RZ -.99800409 00
   BX  .76382818 00    BY  .64230198 00    BZ  .63361623-01    TX  .76277438 00    TY  .64666472 00    TZ  .00000000 00
  DAP  .36205910 01   RAP  .13029061 03


CASE  1                                IBSYS-JPTRAJ-SPACE 092765                                    2


  BTC  .73310500 05   BRC -.46637707 04     B  .73458697 05   THA  .35635993 03      T VECTOR IN ECLIPTIC PLANE

                                                ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE
    X  .43653086 04     Y  .48958708 04     Z  .16422193 03    DX -.84911939 01    DY  .68772105 01    DZ -.10688677 01
  INC  .57065928 01   LAN  .24278821 03   APF  .17115171 03    MX -.74132257 00    MY  .66421387 00    MZ -.96232740-01
   WX -.88429053-01    WY  .45469345-01    WZ  .99504413 00    PX  .58795496 00    PY  .80874898 00    PZ  .15294814-01
   QX -.80404549 00    QY  .58639365 00    QZ -.98250835-01    RX  .89937145-02    RY  .12371113-01    RZ -.99988296 00
   BX  .80404554 00    BY -.58639369 00    BZ  .98250841-01    TX  .80884364 00    TY -.58802377 00    TZ  .00000000 00
  DAP  .87636278 00   RAP  .53983103 02

  BTO  .73102967 05   BRO -.72181998 04     B  .73458465 05   THA  .35436088 03      T VECTOR IN ORBIT PLANE OF TARGET

       HELIOCENTRIC                                                                   EQUATORIAL COORDINATES

    X  .11389247 09     Y -.91775297 08     Z -.39798643 08    DX  .10430912 02    DY  .14616166 02    DZ  .56197801 01
    R  .15158539 09   LAT -.15221383 02   LON  .32113790 03     V  .18815370 02   PTH -.75969043 01    AZ  .73978973 02
   XE  .11389618 09    YE -.91780063 08    ZE -.39801205 08   DXE  .19163334 02   DYE  .20428721 02   DZE  .88598250 01
   XT -.85010348 08    YT -.62823379 08    ZT -.22920350 08   DXT  .21381179 02   DYT -.24776599 02   DZT -.12510272 02
  LTE -.15221733 02   LOE  .32113736 03   LTT -.12234241 02   LOT  .21646472 03   RST  .10816135 09   VST  .35036290 02
  EPS  .16531672 03   ESP  .27453512-18   SEP  .14682648 02   EPM  .59889601 01   EMP  .96153174-01   MEP  .17391443 03
  MPS  .17077952 03   MSP  .25217635-01   SMP  .91955605 01   SEM  .17086293 03   EMS  .91127625 01   ESM  .25217635-01
  EPT  .13402091 03   ETP  .00000000 00   TEP  .45977746 02   TPS  .31813325 02   TSP  .10055804 03   STP  .47628630 02
  SET  .31812591 02   STE  .47629962 02   EST  .10055744 03   RPM  .41252115 06   RPT  .20170627 09   SPN  .88896645 02
  SAC  .11989950-09
  GCE  .82244465 02   GCT  .10022149 03   SIP  .31811592 02   CPT  .85387562 02   SIN  .85385829 02
  REP  .65614358 04   VEP  .10979020 02   CPE  .99341995 02   CPS  .78320568 02

                                                HELIOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE                    2357345647522023646300000 J.D.= 2439068.21752213   NOV. 3,1965 17 13 13.912
  SMA  .94999612 08   ECC  .60503420 00     B  .75638640 08   SLR  .60223448 08   APD  .15247763 09   RCA  .37521598 08
   VH  .18541089 02    C3 -.13969963 04    C1  .28271012 10   TFP -.72666503 07    TF  .84104747 02   PER  .18483760 03
   TA -.17497568 03   MTA  .18000000 03    EA -.16989143 03    MA -.16380709 03                       TFI  .00000000 00

                                                ALL VECTORS REFERENCED TO ECLIPTIC PLANE
    X  .11389247 09     Y -.10003318 09     Z  .28665000 04    DX  .10430912 02    DY  .15645416 02    DZ -.65969563 00
  INC  .20269268 01   LAN  .13873736 03   APF  .35494504 03    MX  .65950064 00    MY  .75087143 00    MZ -.35369476-01
   WX  .23326580-01    WY  .26587043-01    WZ  .99937432 00    PX -.69069692 00    PY  .72313762 00    PZ -.31164450-02
   QX -.72276802 00    QY -.69019205 00    QZ  .35231916-01    RX  .21525295-02    RY -.22536296-02    RZ -.99999513 00
   BX  .72276803 00    BY  .69019207 00    BZ -.35231916-01    TX  .72314115 00    TY  .69070029 00    TZ  .00000000 00
  DAP -.17855993 00   RAP  .13368556 03

  BTC  .75591677 08   BRC  .26649071 07     B  .75638637 08   THA  .20190701 01      T VECTOR IN ECLIPTIC PLANE

                                                ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE
    X -.70414543 08     Y -.13400267 09     Z  .79503113 07    DX  .17661063 02    DY -.64829496 01    DZ -.27636360 00
  INC  .30397153 01   LAN  .14378388 03   APF  .27345937 03    MX  .88500787 00    MY -.46551029 00    MZ -.78231098-02
   WX  .31330653-01    WY  .42782667-01    WZ  .99859302 00    PX  .54024347 00    PY  .83984237 00    PZ -.52931351-01
   QX -.84092528 00    QY  .54114173 00    QZ  .31997535-02    RX -.28635961-01    RY -.44516397-01    RZ -.99859812 00
   BX  .84092531 00    BY -.54114175 00    BZ -.31997536-02    TX  .84102138 00    TY -.54100189 00    TZ  .00000000 00
  DAP -.30341595 01   RAP  .57248132 02

  BTO  .75638244 08   BRO  .24236473 06     B  .75638632 08   THA  .18358993 00      T VECTOR IN ORBIT PLANE OF TARGET

   0 DAYS 16 HRS.  7 MIN. 38.400 SEC.        2357256651062024000000OO J.D.= 2438984.78474537  AUG. 12,1965 06 50 02.000
```

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GEOCENTRIC EQUATORIAL COORDINATES

X	.57012146 05	Y	-.13836247 06	Z	-.74800214 05	DX	.10510113 01	DY	-.14398947 01	DZ	-.77426064 00
R	.16730101 06	DEC	-.26557749 02	RA	.29239407 03	V	.19435537 01	PTH	.77187711 02	AZ	.79074923 02
R	.16730101 06	LAT	-.26557749 02	LON	.22937211 03	VE	.10659469 02	PTE	.10241147 02	AZE	.27044618 03
XS	-.11500151 09	YS	.90588113 08	ZS	.39284287 08	DXS	-.18911343 02	DYS	-.20629379 02	DZS	-.89466988 01
XM	.30336227 06	YM	-.23193805 06	ZM	-.13633205 06	DXM	.63242678 00	DYM	.69151106 00	DZM	.26495952 00
XT	-.19875553 09	YT	.26337405 08	ZT	.15641678 08	DXT	.29835935 01	DYT	-.45019136 02	DZT	-.21315227 02
RS	.15157443 09	VS	.29381177 02	RM	.40547546 06	VM	.97383505 00	RT	.20110216 09	VT	.49899532 02
GED	-.26713690 02	ALT	.16092712 06	LOS	.78750101 02	RAS	.14177206 03	RAM	.32259998 03	LOM	.25957803 03
DUT	.36600000 02	DT	.48000000 03	DR	.18951628 01	SHA	.82870975 05	DES	.15021108 02	DEM	-.19647205 02
CCL	.91220710 02	MCL	.20344587 03	TCL	.11511678 02						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 23572563064220272O0000000 J.D.= 2438984.11346788 AUG. 11,1965 14 43 23.625

SMA	.40357385 06	ECC	.98370674 00	B	.72554739 05	SLR	.13043925 05	APO	.80057217 06	RCA	.65755308 04
VH	.90068518-01	C3	-.98767884 00	C1	.72106353 05	TFP	.57998375 05	TF	.69473186-03	PER	.42524945 05
TA	.15960377 03	MTA	.18000000 03	EA	.53476799 02	MA	.81832026 01			TFI	.67197222 00

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.57012146 05	Y	-.13836247 06	Z	-.74800214 05	DX	.10510113 01	DY	-.14398947 01	DZ	-.77426064 00
INC	.28565322 02	LAN	.35904305 03	APF	.13116151 03	MX	.94011076 00	MY	.29572364 00	MZ	.16952728 00
WX	-.79857354-02	WY	-.47809394 00	WZ	.87827253 00	PX	-.64704917 00	PY	.67211382 00	PZ	.35998664 00
QX	-.76240657 00	QY	-.56541069 00	QZ	-.31471756 00	RX	-.24966740 00	RY	.25933873 00	RZ	-.93295746 00
BX	.76240651 00	BY	.56541064 00	BZ	.31471753 00	TX	.72041208 00	TY	.69354628 00	TZ	.00000000 00
DAP	.21099375 02	RAP	.13391148 03								

BTQ	.68301965 05	BRQ	-.24475125 05	B	.72554739 05	THA	.34028551 03	T VECTOR IN EARTH EQUATOR PLANE	

ALL VECTORS REFERENCED TO ECLIPTIC PLANE

X	.57012146 05	Y	-.15670016 06	Z	-.13575836 05	DX	.10510113 01	DY	-.16290736 01	DZ	-.13746134 00
INC	.51375675 01	LAN	.35488377 03	APF	.13541681 03	MX	.94011088 00	MY	.33875880 00	MZ	.37874590-01
WX	-.79857294-02	WY	-.89193140-01	WZ	.99598256 00	PX	-.64704916 00	PY	.75985267 00	PZ	.62859020-01
QX	-.76240660 00	QY	-.64394767 00	QZ	-.63780321-01	RX	-.40753470-01	RY	.47858239-01	RZ	-.99802238 00
BX	.76240646 00	BY	.64394756 00	BZ	.63780309-01	TX	.76135834 00	TY	.64833131 00	TZ	.00000000 00
DAP	.36039322 01	RAP	.13041591 03								

BTC	.72406416 05	BRC	-.46367325 04	B	.72554727 05	THA	.35633592 03	T VECTOR IN ECLIPTIC PLANE	

ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE

X	-.13884773 06	Y	-.92981572 05	Z	-.80846916 04	DX	-.13354559 01	DY	-.14110427 01	DZ	-.54009936-01
INC	.57202502 01	LAN	.24268883 03	APF	.17139511 03	MX	.55079661 00	MY	-.83007465 00	MZ	.87175257-01
WX	-.88562465-01	WY	.45732337-01	WZ	.99502040 00	PX	.58593699 00	PY	.81021935 00	PZ	.14913062-01
QX	-.80550274 00	QY	.58634004 00	QZ	-.98551290-01	RX	.87390866-02	RY	.12084195-01	RZ	-.99988877 00
BX	.80550262 00	BY	-.58433995 00	BZ	.98551275-01	TX	.81030948 00	TY	-.58600217 00	TZ	.00000000 00
DAP	.85448739 00	RAP	.54126178 02								

BTO	.72201438 05	BRO	-.71511548 04	B	.72554714 05	THA	.35434362 03	T VECTOR IN ORBIT PLANE OF TARGET	

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HELIOCENTRIC EQUATORIAL COORDINATES

X	.11505853 09	Y	-.90726475 08	Z	-.39359087 08	DX	.19962354 02	DY	.19189484 02	DZ	.81724381 01
R	.15171979 09	LAT	-.15035624 02	LON	.32174335 03	V	.28870757 02	PTH	.30647033 01	AZ	.72066928 02
XE	.11500151 09	YE	-.90588113 08	ZE	-.39284287 08	DXE	.18911343 02	DYE	.20629379 02	DZE	.89466988 01
XT	-.83754011 08	YT	-.64250708 08	ZT	-.23642608 08	DXT	.21894936 02	DYT	-.24389757 02	DZT	-.12368529 02
LTE	-.15021108 02	LOE	.32177205 03	LTT	-.12624388 02	LOT	.21749311 03	RST	.10817514 09	VST	.35031828 02
EPS	.29660908 02	ESP	.32051055-01	SEP	.15030779 03	EPM	.13425590 03	EMP	.17188707 02	MEP	.28555386 02
MPS	.16296703 03	MSP	.29673510-01	SMP	.17003084 02	SEM	.17530692 03	EMS	.46805725 01	ESM	.13988227-01
EPT	.61280204 02	ETP	.40782339-01	TEP	.11867799 03	TPS	.31963023 02	TSP	.10009521 03	STP	.47941769 02
SET	.31973893 02	STE	.47900233 02	EST	.10012587 03	RPM	.27061215 06	RPT	.20118250 09	SPN	.27476098 02
SAC	.11968718-09										
GCE	.26877928 03	GCT	.10029097 03	SIP	.31961285 02	CPT	.85539889 02	SIN	.85538151 02		
REP	.16730101 06	VEP	.19435537 01	CPE	.80548404 02	CPS	.78412692 02				

HELIOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 23571350005220254O0000000 J.D.= 2438860.64716145 APRIL 10,1965 03 31 54.750

SMA	.14489345 09	ECC	.71215656-01	B	.14452516 09	SLR	.14415860 09	APO	.15521213 09	RCA	.13657477 09
VH	.28180790 02	C3	-.91594280 03	C1	.43740004 10	TFP	.10725487 08	TF	-.12346561 03	PER	.34816146 03
TA	.13441094 03	MTA	.18000000 03	EA	.13141847 03	MA	.12835863 03			TFI	.67197222 00

ALL VECTORS REFERENCED TO ECLIPTIC PLANE

X	.11505853 09	Y	-.98896059 08	Z	-.13129500 05	DX	.19962354 02	DY	.20856804 02	DZ	-.13701481 00
INC	.27205238 00	LAN	.13827584 03	APF	.46633231 02	MX	.65182594 00	MY	.75835373 00	MZ	-.47479628-02
WX	.31605080-02	WY	.35442670-02	WZ	.99998873 00	PX	-.99632517 00	PY	-.85568599-01	PZ	.34522105-02
QX	.85579889-01	QY	-.99632484 00	QZ	.32608021-02	RX	-.34395486-02	RY	-.29540291-03	RZ	-.99999291 00
BX	-.85579987-01	BY	.99632597 00	BZ	-.32608058-02	TX	-.85569204-01	TY	.99633223 00	TZ	.00000000 00
DAP	.19779801 00	RAP	.18490875 03								

BTC	.14452461 09	BRC	.47127150 06	B	.14452538 09	THA	.18683128 00	T VECTOR IN ECLIPTIC PLANE	

ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE

X	-.68990786 08	Y	-.13489019 09	Z	.79875718 07	DX	.24974272 02	DY	-.14466746 02	DZ	.72080860 00
INC	.32750655 01	LAN	.17579471 03	APF	.29273994 03	MX	.89062203 00	MY	-.45420292 00	MZ	.22183771-01
WX	.41893371-02	WY	.56975976-01	WZ	.99836677 00	PX	-.31798831 00	PY	.94662791 00	PZ	-.52688944-01
QX	-.94808386 00	QY	-.31724823 00	QZ	.22083438-01	RX	.16777797-01	RY	-.49946274-01	RZ	-.99860952 00
BX	.94808522 00	BY	.31724868 00	BZ	-.22083470-01	TX	.94794602 00	TY	.31843109 00	TZ	.00000000 00
DAP	-.30202515 01	RAP	.10856807 03								

BTO	.14448998 09	BRO	.31960555 07	B	.14452533 09	THA	.12671512 01	T VECTOR IN ORBIT PLANE OF TARGET	

0 DAYS 16 HRS. 7 MIN. 45.900 SEC. 23572566511020230000000O J.D.= 2438984.78483217 AUG. 12,1965 06 50 09.500

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GEOCENTRIC EQUATORIAL COORDINATES

X	.57020028 05	Y	-.13837327 06	Z	-.74806020 05	DX	.10509753 01	DY	-.14398065 01	DZ	-.77421294 00
R	.16731523 06	DEC	-.26557539 02	RA	.29239529 03	V	.19434499 01	PTH	.77188115 02	AZ	.79074381 02
R	.16731523 06	LAT	-.26557539 02	LON	.22934199 03	VE	.10660419 02	PTE	.10239689 02	AZE	.27044611 03
XS	-.11500166 09	YS	.90587959 08	ZS	.39284220 08	DXS	-.18911310 02	DYS	-.20629404 02	DZS	-.89467099 01
XM	.30336701 06	YM	-.23193287 06	ZM	-.13633006 06	DXM	.63241319 00	DYM	.69152144 00	DZM	.26496565 00
XT	-.19875550 09	YT	.26337067 08	ZT	.15641519 08	DXT	.29836920 01	DYT	-.45019111 02	DZT	-.21315220 02
RS	.15157443 09	VS	.29381177 02	RM	.40547538 06	VM	.97383527 00	RT	.20110208 09	VT	.49899513 02
GED	-.26713479 02	ALT	.16094133 06	LOS	.78718846 02	RAS	.14177214 03	RAM	.32260104 03	LOM	.25954774 03
DUT	.36600000 02	DT	.48000000 03	DR	.18950646 01	SHA	.82875425 05	DES	.15021081 02	DEM	-.19646911 02
CCL	.91220904 02	MCL	.20344359 03	TCL	.11511881 02						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 23572563064220272530000O J.D.= 2438984.11346836 AUG. 11,1965 14 43 23.667

SMA	.40357429 06	ECC	.98370674 00	B	.72554829 05	SLR	.13043945 05	APO	.80057304 06	RCA	.65755412 04
VH	.90068493-01	C3	-.98767777 00	C1	.72106410 05	TFP	.58005833 05	TF	.69521863-03	PER	.42525014 05
TA	.15960485 03	MTA	.18000000 03	EA	.53479319 02	MA	.81842417 01			TFI	.67205901 00

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.57020028 05	Y	-.13837327 06	Z	-.74806020 05	DX	.10509753 01	DY	-.14398065 01	DZ	-.77421294 00
INC	.28565332 02	LAN	.35904305 03	APF	.13116152 03	MX	.94010409 00	MY	.29573961 00	MZ	.16953589 00
WX	-.79857154-02	WY	-.47809388 00	WZ	.87827245 00	PX	-.64704940 00	PY	.67211363 00	PZ	.35998654 00
QX	-.76240624 00	QY	-.56541092 00	QZ	-.31471768 00	RX	-.24966741 00	RY	.25933857 00	RZ	-.93295749 00
BX	.76240625 00	BY	.56541092 00	BZ	.31471768 00	TX	.72041186 00	TY	.69354651 00	TZ	.00000000 00
DAP	.21099369 02	RAP	.13391150 03								

BTQ	.68302047 05	BRQ	-.24475163 05	B	.72554829 05	THA	.34028551 03

T VECTOR IN EARTH EQUATOR PLANE

ALL VECTORS REFERENCED TO ECLIPTIC PLANE

X	.57020028 05	Y	-.15671238 06	Z	-.13576867 05	DX	.10509753 01	DY	-.16289736 01	DZ	-.13745268 00
INC	.51377010 01	LAN	.35488378 03	APF	.13541682 03	MX	.94010408 00	MY	.33877682 00	MZ	.37876129-01
WX	-.79857087-02	WY	-.89193112-01	WZ	.99598236 00	PX	-.66704940 00	PY	.75985247 00	PZ	.62859003-01
QX	-.76240624 00	QY	-.64394780 00	QZ	-.63780311-01	RX	-.40753474-01	RY	.47858214-01	RZ	-.99802239 00
BX	.76240625 00	BY	.64394782 00	BZ	.63780313-01	TX	.76135814 00	TY	.64833155 00	TZ	.00000000 00
DAP	.36039305 01	RAP	.13041593 03								

BTC	.72406501 05	BRC	-.46367381 04	B	.72554812 05	THA	.35633592 03

T VECTOR IN ECLIPTIC PLANE

ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE

X	-.13885774 06	Y	-.92992160 05	Z	-.80851189 04	DX	-.13353672 01	DY	-.14109837 01	DZ	-.54005111-01
INC	.57204729 01	LAN	.24268896 03	APF	.17139500 03	MX	.55081247 00	MY	-.83006357 00	MZ	.87175932-01
WX	-.88562419-01	WY	.45732054-01	WZ	.99502002 00	PX	.58593670 00	PY	.81021955 00	PZ	.14913235-01
QX	-.80550279 00	QY	.58433938 00	QZ	-.98551100-01	RX	.87391837-02	RY	.12084339-01	RZ	-.99988876 00
BX	.80550297 00	BY	-.58433950 00	BZ	.98551121-01	TX	.81030969 00	TY	-.58600189 00	TZ	.00000000 00
DAP	.85449593 00	RAP	.54126198 02								

BTO	.72201543 05	BRO	-.71511536 04	B	.72554820 05	THA	.35434362 03

T VECTOR IN ORBIT PLANE OF TARGET

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HELIOCENTRIC EQUATORIAL COORDINATES

X	.11505868 09	Y	-.90726332 08	Z	-.39359026 08	DX	.19962285 02	DY	.19189598 02	DZ	.81724970 01
R	.15171980 09	LAT	-.15035599 02	LON	.32174343 03	V	.28870802 02	PTH	.30645103 01	AZ	.72066888 02
XE	.11500166 09	YE	-.90587959 08	ZE	-.39284220 08	DXE	.18911310 02	DYE	.20629404 02	DZE	.89467099 01
XT	-.83753844 08	YT	-.64250891 08	ZT	-.23642701 08	DXT	.21895002 02	DYT	-.24389707 02	DZT	-.12368510 02
LTE	-.15021081 02	LOE	.32177214 03	LTT	-.12624438 02	LOT	.21749324 03	RST	.10817514 09	VST	.35031827 02
EPS	.29659886 02	ESP	.29673510-01	SEP	.15030881 03	EPM	.13425385 03	EMP	.17190831 02	MEP	.28555308 02
MPS	.16296404 03	MSP	.27976454-01	SMP	.17006069 02	SEM	.17530704 03	EMS	.46804521 01	ESM	.98911702-02
EPT	.61279199 02	ETP	.40782339-01	TEP	.11867899 03	TPS	.31963041 02	TSP	.10009515 03	STP	.47941808 02
SET	.31973911 02	STE	.47900270 02	EST	.10012581 03	RPM	.27060200 06	RPT	.20118243 09	SPN	.27475263 02
SAC	.11968715-09										
GCE	.26877909 03	GCT	.10029098 03	SIP	.31961303 02	CPT	.85539910 02	SIN	.85538173 02		
REP	.16731523 06	VEP	.19434499 01	CPE	.80548388 02	CPS	.78412704 02				

HELIOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 23571350003520264000000O J.D.= 2438860.64656539 APRIL 10,1965 03 31 03.250

SMA	.14489388 09	ECC	.71211001-01	B	.14452589 09	SLR	.14415912 09	APO	.15521192 09	RCA	.13457584 09
VH	.28180879 02	C3	-.91594007 03	C1	.43740084 10	TFP	.10725546 08	TF	-.12346621 03	PER	.34816301 03
TA	.13441069 03	MTA	.18000000 03	EA	.13141842 03	MA	.12835877 03			TFI	.67205901 00

ALL VECTORS REFERENCED TO ECLIPTIC PLANE

X	.11505868 09	Y	-.98895904 08	Z	-.13131000 05	DX	.19962285 02	DY	.20856931 02	DZ	-.13700598 00
INC	.27187252 00	LAN	.13827573 03	APF	.46633646 02	MX	.65182488 00	MY	.75835467 00	MZ	-.47476484-02
WX	.31603055-02	WY	.35440267-02	WZ	.99998874 00	PX	-.99632245 00	PY	-.85573777-01	PZ	.34519979-02
QX	.85585053-01	QY	-.99632212 00	QZ	.32605540-02	RX	-.34393352-02	RY	-.29540326-03	RZ	-.99999063 00
BX	-.85585346-01	BY	.99632552 00	BZ	-.32605651-02	TX	-.85574577-01	TY	.99633177 00	TZ	.00000000 00
DAP	.19778606 00	RAP	.18490906 03								

BTC	.14452477 09	BRC	.47123614 06	B	.14452554 09	THA	.18681677 00

T VECTOR IN ECLIPTIC PLANE

ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE

X	-.68990590 08	Y	-.13489031 09	Z	.79875431 07	DX	.24974381 02	DY	-.14466647 02	DZ	.72080793 00
INC	.32750730 01	LAN	.17579498 03	APF	.29273999 03	MX	.89062271 00	MY	-.45420158 00	MZ	.22183891-01
WX	.41890558-02	WY	.56975865-01	WZ	.99836677 00	PX	-.31799413 00	PY	.94662721 00	PZ	-.52488862-01
QX	-.94808313 00	QY	-.31725409 00	QZ	.22083467-01	RX	.16778059-01	RY	-.49946101-01	RZ	-.99861070 00
BX	.94808339 00	BY	.31725417 00	BZ	-.22083473-01	TX	.94794419 00	TY	.31843653 00	TZ	.00000000 00
DAP	-.30202473 01	RAP	.10856840 03								

BTO	.14449063 09	BRO	.31960736 07	B	.14452597 09	THA	.12671529 01

T VECTOR IN ORBIT PLANE OF TARGET

614715466747	215452472403	214500650304	604430164037	603562056351	602635030455		EARTH
	21195338131		17569099776		000000000000		INITIAL
220670711777	622416510542	621444420416	201413373207	601561406164	600615136147		EARTH
				235725665110	202300000000		END

J MATRIX ITERATION NUMBER 3

	X	Y	Z	DX	DY	DZ	KE
X	.49700467 06	-.62333205 06	-.33540663 06	.82034568 09	.53242724 09	.29657165 09	.13603049 05
Y	-.62333205 06	.78329588 06	.42136430 06	-.10310831 10	-.67050431 09	-.37365571 09	-.17088851 05
Z	-.33540663 06	.42136430 06	.22674461 06	-.55448263 09	-.36040017 09	-.20082900 09	-.91914121 04
DX	.82034568 09	-.10310831 10	-.55448263 09	.13583075 13	.88398659 12	.49270036 12	.22505509 08
DY	.53242724 09	-.67050431 09	-.36040017 09	.88398659 12	.57668474 12	.32159277 12	.14637764 08
DZ	.29657165 09	-.37365571 09	-.20082900 09	.49270036 12	.32159277 12	.17936243 12	.81571429 07
KE	.13603049 05	-.17088851 05	-.91914121 04	.22505509 08	.14637764 08	.81571429 07	.37411219 03

CORRELATIONS BASED ON J MATRIX ITERATION NUMBER 3

	X	Y	Z	DX	DY	DZ	KE
X	-.10000000 01	.99902488 00	.99913214 00	-.99843000 00	-.99451379 00	-.99330736 00	-.99759693 00
Y	.99902488 00	-.10000000 01	-.99983040 00	.99961255 00	.99762983 00	.99688018 00	.99827228 00
Z	.99913214 00	-.99983040 00	-.10000000 01	.99912639 00	.99666057 00	.99584604 00	.99795931 00
DX	-.99843000 00	.99961255 00	.99912639 00	-.10000000 01	-.99879739 00	-.99820121 00	-.99836388 00
DY	-.99451379 00	.99762983 00	.99666057 00	-.99879739 00	-.10000000 01	-.99993392 00	-.99656259 00
DZ	-.99330736 00	.99688018 00	.99584604 00	-.99820121 00	-.99993392 00	-.10000000 01	-.99579833 00
KE	-.99759693 00	.99827228 00	.99795931 00	-.99836388 00	-.99656259 00	-.99579833 00	-.10000000 01

AC6 FINAL 4 2 NOV 65

ITERATION NUMBER 3 EPOCH 65/08/11 144223.600 CLOCK 094910 SOS .19401 03 QSOS .19401 03

X 614720100605561672026614 Y 215451643425162732200402 Z 214500114346161605174504
DX 604427337766551641260522 DY 603564001620550414544332 DZ 602636563624547676225276
AU 234435254222000000000000

Q	DQ	STDEVDQ	APRIORI STDEVDQ	OLD Q	NEW Q	NOMINAL Q	DQ(NOM)
X	-.18943357-02	.11874256 01	.00000000 00	-.37130100 04	-.37130119 04	-.37129761 04	-.35797119-01
Y	-.24744979-03	.42916243 00	.00000000 00	.47651109 04	.47651106 04	.47650928 04	.17883301-01
Z	.58459678-04	.97290774 00	.00000000 00	.25611944 04	.25611945 04	.25612324 04	-.37872314-01
DX	.20448439-05	.95634271-03	.00000000 00	-.87324227 01	-.87324207 01	-.87324467 01	.26106834-04
DY	.20553519-06	.23230028-02	.00000000 00	-.58125545 01	-.58125544 01	-.58126368 01	.82433222-04
DZ	-.32245693-05	.49667871-02	.00000000 00	-.32400448 04	-.32400480 01	-.32398809 01	-.16716122-03
KE	.24760969-02	.97468022 00	.00000000 00	.39860136 06	.39860136 06	.39860133 06	.31250000-01

COVARIANCE MATRIX OF ESTIMATED PARAMETERS ITERATION NUMBER 3

	X	Y	Z	DX	DY	DZ	KE
X	.14099796 01	-.47942991 00	.11281192 01	-.11307209-02	-.26620341-02	.58058555-02	.13515949 00
Y	-.47942991 00	.18418039 00	-.41215682 00	.38239087-03	.95765809-03	-.20494205-02	-.68486113-01
Z	.11281192 01	-.41215682 00	.94654947 00	-.89677384-03	-.22195424-02	.47719892-02	.15147952 00
DX	-.11307209-02	.38239087-03	-.89677384-03	.91459139-06	.20920868-05	-.45965246-05	-.10439259-03
DY	-.26620341-02	.95765809-03	-.22195424-02	.20920868-05	.53963421-05	-.11491964-04	-.41681267-03
DZ	.58058555-02	-.20494205-02	.47719892-02	-.45965246-05	-.11491964-04	.24668974-04	.79434698-03
KE	.13515949 00	-.68486113-01	.15147952 00	-.10439259-03	-.41681267-03	.79434698-03	.94996254 00

CORRELATION MATRIX OF ESTIMATED PARAMETERS ITERATION NUMBER 3

	X	Y	Z	DX	DY	DZ	KE
X	.10000000 01	-.94079937 00	.97651053 00	-.99571592 00	-.96506704 00	.98442870 00	.11678495 00
Y	-.94079937 00	.10000000 01	-.98711815 00	.93169178 00	.96059220 00	-.96146580 00	-.16372974 00
Z	.97651053 00	-.98711815 00	.10000000 01	-.96382396 00	-.98206911 00	.98753442 00	.15974564 00
DX	-.99571592 00	.93169178 00	-.96382396 00	.99999999 00	.94170830 00	-.96769943 00	-.11199609 00
DY	-.96506704 00	.96059220 00	-.98206911 00	.94170830 00	.10000000 01	-.99602211 00	-.18409328 00
DZ	.98442870 00	-.96146580 00	.98753442 00	-.96769943 00	-.99602211 00	.10000000 01	.16408975 00
KE	.11678495 00	-.16372974 00	.15974564 00	-.11199609 00	-.18409328 00	.16408975 00	.10000000 01

STATION NUMBER 11 65/08/12 ITERATION NUMBER 3 PASS NUMBER 08/123 PAGE 1

FREQUENCY2013706.0

TIME	TC	Q	CC3	C3
023132	60	11	.29056526 05 .980 00	-.2095
023232	60	11	.29051510 05 .977 00	-.4941
023332	60	11	.29046600 05 .975 00	.5918
023432	60	11	.29041796 05 .971 00	.2298
023532	60	11	.29037095 05 .969 00	-.6445
023632	60	11	.29032498 05 .967 00	.2358
023732	60	11	.29028006 05 .965 00	.5936
023832	60	11	.29023618 05 .963 00	-.5098
023932	60	11	.29019333 05 .959 00	-.2002
024032	60	11	.29015151 05 .957 00	.7070
024132	60	11	.29011072 05 .955 00	-.1470
024232	60	11	.29007094 05 .953 00	-.5430
024332	60	11	.29003219 05 .951 00	.5469
024432	60	11	.28999446 05 .949 00	.2959
024532	60	11	.28995774 05 .947 00	-.6504
024632	60	11	.28992203 05 .947 00	.1631
024732	60	11	.28988732 05 .945 00	.6250
024832	60	11	.28985363 05 .943 00	-.4629
024932	60	11	.28982093 05 .941 00	-.2686
025032	60	11	.28978923 05 .939 00	.6934
025132	60	11	.28975853 05 .939 00	-.0779
025232	60	11	.28972881 05 .938 00	-.5898
025332	60	11	.28970008 05 .936 00	.4922
025432	60	11	.28967234 05 .936 00	.3574
025532	60	11	.28964557 05 .934 00	-.6406
025632	60	11	.28961978 05 .932 00	.0889
025732	60	11	.28959497 05 .932 00	.6445
025832	60	11	.28957112 05 .930 00	-.4121
025932	60	11	.28954824 05 .928 00	-.3418
030032	60	11	.28952633 05 .928 00	.6582
030132	60	11	.28950537 05 .926 00	.0132
030232	60	11	.28948537 05 .926 00	-.6211
030332	60	11	.28946632 05 .924 00	.3936
030432	60	11	.28944821 05 .924 00	.4287
030532	60	11	.28943106 05 .922 00	-.5898
030632	60	11	.28941484 05 .922 00	-.0427
030732	60	11	.28939956 05 .920 00	.6523
030832	60	11	.28938523 05 .920 00	-.2813
030932	60	11	.28937181 05 .918 00	-.4561
031032	60	11	.28935933 05 .918 00	.5782
031132	60	11	.28934777 05 .916 00	.1729
031232	60	11	.28933712 05 .916 00	-.6411
031332	60	11	.28932740 05 .916 00	.2100

STATION NUMBER 11 65/08/12 ITERATION NUMBER 3 PASS NUMBER 08/123 PAGE 2

FREQUENCY2013706.0

TIME	TC	Q	CC3	C3
031432	60	11	.28931858 05 .914 00	.5586
031532	60	11	.28931068 05 .914 00	-.4678
031632	60	11	.28930368 05 .914 00	-.2432
031832	60	11	.28929238 05 .912 00	-.0386
031932	60	11	.28928808 05 .910 00	-.5762
032032	60	11	.28928466 05 .910 00	.4180
032132	60	11	.28928214 05 .910 00	.4111
032232	60	11	.28928047 05 .908 00	-.5820
032332	60	11	.28927972 05 .908 00	-.0220
032432	60	11	.28927982 05 .908 00	.6680
032532	60	11	.28928079 05 .908 00	-.2881
032632	60	11	.28928264 05 .906 00	-.4395
032732	60	11	.28928535 05 .906 00	.6055
032832	60	11	.28928892 05 .906 00	.1665
032932	60	11	.28929335 05 .904 00	-.6523
033032	60	11	.28929861 05 .904 00	.2803
033132	60	11	.28930475 05 .904 00	.5508
033232	60	11	.28931172 05 .904 00	-.5469
033332	60	11	.28931952 05 .902 00	-.1611
033432	60	11	.28932817 05 .902 00	.6914
033532	60	11	.28933766 05 .902 00	-.1909
033632	60	11	.28934796 05 .902 00	-.5293
033732	60	11	.28935910 05 .900 00	.5488
033832	60	11	.28937105 05 .900 00	.2617
033932	60	11	.28938382 05 .900 00	-.6582
034032	60	11	.28939740 05 .900 00	.1763
034132	60	11	.28941180 05 .900 00	.6035
034232	60	11	.28942700 05 .898 00	-.5000
034332	60	11	.28944300 05 .898 00	-.2588
034432	60	11	.28945980 05 .898 00	.6875
034532	60	11	.28947739 05 .898 00	-.1057
034632	60	11	.28949577 05 .898 00	-.5859
034732	60	11	.28951493 05 .896 00	.4962
034832	60	11	.28953488 05 .896 00	.3369
034932	60	11	.28955560 05 .896 00	-.6602
035032	60	11	.28957710 05 .896 00	.0901
035132	60	11	.28959937 05 .896 00	.6387
035232	60	11	.28962239 05 .896 00	-.4365
035332	60	11	.28964619 05 .895 00	-.3359
035632	60	11	.28972207 05 .895 00	-.6152
035732	60	11	.28974886 05 .895 00	.4141
035932	60	11	.28980466 05 .893 00	-.6328
040032	60	11	.28983367 05 .893 00	-.0002

STATION NUMBER 11 65/08/12 ITERATION NUMBER 3 PASS NUMBER 08/124 PAGE 3

FREQUENCY2013706.0

TIME	TC	Q	CC3	C3
040132	60	11	.28986340 05 .893 00	.6602
040232	60	11	.28989384 05 .893 00	-.3682
040332	60	11	.28992502 05 .893 00	-.4102
040432	60	11	.28995690 05 .893 00	.6270
040532	60	11	.28998949 05 .893 00	.0757
040632	60	11	.29002280 05 .891 00	-.6465
040732	60	11	.29005680 05 .891 00	.3369
040832	60	11	.29009150 05 .891 00	.4834
040932	60	11	.29012690 05 .891 00	-.5898
041032	60	11	.29016299 05 .891 00	-.0908
041132	60	11	.29019977 05 .891 00	.6641
041232	60	11	.29023722 05 .891 00	-.2559
041332	60	11	.29027535 05 .891 00	-.4854
041432	60	11	.29031416 05 .891 00	.5664
041532	60	11	.29035363 05 .889 00	.1948
041632	60	11	.29039377 05 .889 00	-.6348
041732	60	11	.29043456 05 .889 00	.2109
041832	60	11	.29047602 05 .889 00	.5391
041932	60	11	.29051812 05 .889 00	-.4707
042032	60	11	.29056087 05 .889 00	-.2368
042132	60	11	.29060426 05 .889 00	.6230
042232	60	11	.29064829 05 .889 00	-.0630
042332	60	11	.29069297 05 .889 00	-.5469
042432	60	11	.29073825 05 .889 00	.3750
042732	60	11	.29087787 05 .887 00	-.0796
042832	60	11	.29092565 05 .887 00	.5762
042932	60	11	.29097402 05 .887 00	-.1948
043032	60	11	.29102301 05 .887 00	-.4844
043132	60	11	.29107260 05 .887 00	.4238
043232	60	11	.29112277 05 .887 00	.2646
043332	60	11	.29117353 05 .887 00	-.5859
043432	60	11	.29122488 05 .887 00	-.0049
043532	60	11	.29127682 05 .887 00	.5684
043632	60	11	.29132932 05 .887 00	-.3330
043732	60	11	.29138241 05 .887 00	-.4414
043932	60	11	.29149027 05 .885 00	.1062
044032	60	11	.29154504 05 .885 00	-.6543
044132	60	11	.29160037 05 .885 00	.2129
044232	60	11	.29165624 05 .885 00	.5000
044332	60	11	.29171268 05 .885 00	-.5508
044432	60	11	.29176964 05 .885 00	-.2227
044532	60	11	.29182714 05 .885 00	.6367
044632	60	11	.29188516 05 .885 00	-.1836

STATION NUMBER 11 65/08/12 ITERATION NUMBER 3 PASS NUMBER 08/124 PAGE 4

FREQUENCY2013706.0

TIME	TC	Q	CC3	C3
044732	60	11	.29194373 05 .885 00	-.5820
044832	60	11	.29200282 05 .885 00	.4932
044932	60	11	.29206242 05 .885 00	.2578
045032	60	11	.29212255 05 .885 00	-.6797
045132	60	11	.29218317 05 .885 00	.0994
045232	60	11	.29224431 05 .885 00	.5859
045332	60	11	.29230594 05 .885 00	-.4863
045432	60	11	.29236807 05 .885 00	-.3242
045532	60	11	.29243069 05 .883 00	.6387
045632	60	11	.29249380 05 .883 00	-.0798
045732	60	11	.29255739 05 .883 00	-.6309
045832	60	11	.29262147 05 .883 00	.4199
045932	60	11	.29268601 05 .883 00	.3486
050032	60	11	.29275102 05 .883 00	-.6602
050132	60	11	.29281649 05 .883 00	.0093
050232	60	11	.29288243 05 .883 00	.6230
050332	60	11	.29294882 05 .883 00	-.4072
050432	60	11	.29301567 05 .883 00	-.4170
050532	60	11	.29308295 05 .883 00	.6133
050632	60	11	.29315068 05 .883 00	.0234
050732	60	11	.29321884 05 .883 00	-.6680
050832	60	11	.29328744 05 .883 00	.3467
050932	60	11	.29335647 05 .883 00	.4277
051032	60	11	.29342592 05 .883 00	-.6348
051132	60	11	.29349579 05 .883 00	-.0874
051232	60	11	.29356607 05 .883 00	.6504
051332	60	11	.29363677 05 .883 00	-.3359
051432	60	11	.29370786 05 .883 00	-.4863
051532	60	11	.29377936 05 .883 00	.5723
051632	60	11	.29385126 05 .883 00	.1077
051732	60	11	.29392353 05 .883 00	-.6797
051832	60	11	.29399621 05 .883 00	.2539
051932	60	11	.29406926 05 .883 00	.4902
052032	60	11	.29414269 05 .883 00	-.5938
052132	60	11	.29421649 05 .883 00	-.1909
052232	60	11	.29429066 05 .883 00	.6504
052332	60	11	.29436519 05 .881 00	-.2441
052432	60	11	.29444008 05 .881 00	-.5508
052532	60	11	.29451531 05 .881 00	.5195
052632	60	11	.29459092 05 .881 00	.1997
052732	60	11	.29466685 05 .881 00	-.6934
052832	60	11	.29474313 05 .881 00	.1533
052932	60	11	.29481975 05 .881 00	.5410

STATION NUMBER 11 65/08/12 ITERATION NUMBER 3 PASS NUMBER 08/124 PAGE 5

FREQUENCY2013706.0

TIME	TC	Q	CC3	C3
053032	60	11	.29489668 05 .881 00 -.5273	
053132	60	11	.29497395 05 .881 00 -.2959	
053232	60	11	.29505154 05 .881 00 .6367	
053332	60	11	.29512946 05 .881 00 -.1460	
053432	60	11	.29520768 05 .881 00 -.6094	
053532	60	11	.29528621 05 .881 00 .4297	
053632	60	11	.29536505 05 .881 00 .3037	
053732	60	11	.29544417 05 .881 00 -.6680	
053832	60	11	.29552359 05 .881 00 .0159	
053932	60	11	.29560329 05 .881 00 .5781	
054032	60	11	.29568330 05 .881 00 -.4141	
054132	60	11	.29576358 05 .881 00 -.4170	
054232	60	11	.29584412 05 .881 00 .5723	
054332	60	11	.29592494 05 .881 00 .0222	
054432	60	11	.29600603 05 .881 00 -.6523	
054532	60	11	.29608737 05 .881 00 .2627	
054632	60	11	.29616898 05 .881 00 .4434	
054732	60	11	.29625083 05 .881 00 -.5664	
054832	60	11	.29633294 05 .881 00 -.2021	
054932	60	11	.29641528 05 .881 00 .6055	
055032	60	11	.29649786 05 .881 00 -.1865	
055132	60	11	.29658068 05 .881 00 -.5684	
055232	60	11	.29666372 05 .881 00 .4287	
055332	60	11	.29674700 05 .881 00 .2920	
055432	60	11	.29683047 05 .881 00 -.6387	
055532	60	11	.29691417 05 .881 00 .0078	
055632	60	11	.29699808 05 .881 00 .5918	
055732	60	11	.29708220 05 .881 00 -.3877	
			FREQUENCY2013682.0	
060332	60	42		.27168035 05 .102 01 .2256*
060432	60	42		.27165133 05 .102 01 -.7891*
060532	60	42		.27162295 05 .102 01 -.3848*
060632	60	42		.27159517 05 .102 01 .3760*
060732	60	42		.27156802 05 .102 01 -.4668*
060832	60	42		.27154147 05 .102 01 -.7461*
060932	60	42		.27151554 05 .102 01 .2891*
061032	60	42		.27149022 05 .102 01 -.0452*
061132	60	42		.27146551 05 .102 01 -.8828*
061232	60	42		.27144140 05 .102 01 -.0715*
061332	60	42		.27141790 05 .102 01 .2959*
061432	60	42		.27139500 05 .102 01 -.7324*

STATION NUMBER 11 65/08/12 ITERATION NUMBER 3 PASS NUMBER 08/124 PAGE 6

FREQUENCY2013682.0

TIME	TC	Q	CC3	C3
061532	60	42		.27137269 05 .102 01 -.4922*
061632	60	42		.27135099 05 .102 01 .3779*
061732	60	42		.27132988 05 .102 01 -.3525*
061832	60	42		.27130935 05 .102 01 -.8086*
061932	60	42		.27128943 05 .102 01 .2173*
062032	60	42		.27127009 05 .102 01 .0342*
062132	60	42		.27125134 05 .102 01 -.8574*
062232	60	42		.27123317 05 .102 01 -.1650*
062332	60	42		.27121558 05 .102 01 .3438*
062432	60	42		.27119857 05 .102 01 -.6641*
062532	60	42		.27118215 05 .102 01 -.5879*
062632	60	42		.27116629 05 .102 01 .3730*
062732	60	42		.27115101 05 .102 01 -.2744*
062832	60	42		.27113630 05 .102 01 -.8613*
062932	60	42		.27112215 05 .102 01 .1284*
063032	60	42		.27110858 05 .103 01 .1362*
063132	60	42		.27109556 05 .103 01 -.8457*
063232	60	42		.27108311 05 .103 01 -.2842*
063332	60	42		.27107121 05 .103 01 .3721*
063432	60	42		.27105987 05 .103 01 -.6016*
063532	60	42		.27104909 05 .103 01 -.6914*
063632	60	42		.27103885 05 .103 01 .3330*
063732	60	42		.27102917 05 .103 01 -.1650*
063832	60	42		.27102003 05 .103 01 -.8770*
063932	60	42		.27101145 05 .103 01 .0237*
064032	60	42		.27100339 05 .103 01 .2046*
064132	60	42		.27099589 05 .103 01 -.7949*
064232	60	42		.27098891 05 .103 01 -.3809*
064332	60	42		.27098253 05 .103 01 .3740*
064432	60	42		.27097668 05 .103 01 -.4746*
064532	60	42		.27097132 05 .103 01 -.7637*
064632	60	42		.27096635 05 .103 01 .2500*
064732	60	42		.27096207 05 .103 01 -.0476*
064832	60	42		.27095828 05 .103 01 -.8691*
064932	60	42		.27095499 05 .103 01 -.1057*

MARINER STATISTICS STATION 11 ITERATION 3

PASS	DATA TYPE	BEGINNING TIME	END TIME	NUMBER OF POINTS	STD DEV	RMS	FIRST MOMENT	SECOND MOMENT
08/123	CC3	8/12-023132	8/12-040032	86	.469 00	.469 00	-.426-02	.220 00
08/124	CC3	8/12-040132	8/12-055732	114	.461 00	.461 00	-.122-01	.212 00

STATION NUMBER 42 65/08/12 ITERATION NUMBER 3 PASS NUMBER 08/125 PAGE 7

FREQUENCY2013706.0

TIME	TC	Q	CC3	C3
54932	60	11		.27215101 05 .118 01 314.0000*
55032	60	11		.27211310 05 .117 01 313.0000*
55132	60	11		.27207583 05 .117 01 312.0000*
55232	60	11		.27203921 05 .116 01 313.0000*
55632	60	11		.27189917 05 .114 01 .7969*
55732	60	11		.27186577 05 .114 01 -.1377*
55832	60	11		.27183299 05 .113 01 -.1680*
55932	60	11		.27180085 05 .113 01 .0884*
60032	60	11		.27176934 05 .112 01 -54.2500*
60132	60	11		.27173846 05 .112 01 -66.5000*

FREQUENCY2013682.0

60532	60	42	.24548219 05 .953 00	-.1279
60632	60	42	.24534090 05 .949 00	.6016
60732	60	42	.24520068 05 .947 00	-.2183
60832	60	42	.24506154 05 .945 00	-.4785
60932	60	42	.24492346 05 .943 00	.5039
61032	60	42	.24478647 05 .941 00	.1694
61132	60	42	.24465056 05 .938 00	-.6133
61232	60	42	.24451572 05 .936 00	.1782
61332	60	42	.24438195 05 .934 00	.5059
61432	60	42	.24424926 05 .932 00	-.4844
61532	60	42	.24411764 05 .932 00	-.2397
61632	60	42	.24398711 05 .930 00	.6055
61732	60	42	.24385765 05 .928 00	-.1318
61832	60	42	.24372927 05 .926 00	-.5430
61932	60	42	.24360196 05 .924 00	.4365
62032	60	42	.24347574 05 .922 00	.2676
62132	60	42	.24335060 05 .922 00	-.6016
62232	60	42	.24322653 05 .920 00	.0637
62332	60	42	.24310354 05 .918 00	.5547
62432	60	42	.24298163 05 .918 00	-.4219
62532	60	42	.24286080 05 .916 00	-.3223
62632	60	42	.24274104 05 .914 00	.5879
62732	60	42	.24262236 05 .914 00	-.0447
62832	60	42	.24250477 05 .912 00	-.5859
62932	60	42	.24238825 05 .912 00	.3662
63032	60	42	.24227281 05 .910 00	.3604
63132	60	42	.24215845 05 .908 00	-.5957
63232	60	42	.24204518 05 .908 00	-.0342
63332	60	42	.24193298 05 .906 00	.5859
63432	60	42	.24182185 05 .906 00	-.3350

STATION NUMBER 42 65/08/12 ITERATION NUMBER 3 PASS NUMBER 08/126 PAGE 8

FREQUENCY2013682.0

TIME	TC	Q	CC3	C3
63532	60	42	.24171181 05 .904 00	-.4063
63632	60	42	.24160283 05 .904 00	.5410
63732	60	42	.24149495 05 .902 00	.0720
64032	60	42	.24117775 05 .900 00	.4336
64132	60	42	.24107417 05 .900 00	-.5430
64232	60	42	.24097166 05 .898 00	-.1333
64332	60	42	.24087030 05 .898 00	.5879
64432	60	42	.24077001 05 .898 00	-.2349
64532	60	42	.24067074 05 .896 00	-.4990
64632	60	42	.24057242 05 .896 00	.4834
64732	60	42	.24047534 05 .896 00	.1997
64832	60	42	.24037930 05 .895 00	-.6133
64932	60	42	.24028432 05 .895 00	.1431

ARINER STATISTICS STATION 42 ITERATION 3

PASS	DATA TYPE	BEGINNING TIME	END TIME	NUMBER OF POINTS	STD DEV	RMS	FIRST MOMENT	SECOND MOMENT
08/125	CC3	8/12-060532	8/12-063332	29	.433 00	.433 00	.119-01	.188 00
08/126	CC3	8/12-063432	8/12-064932	14	.413 00	.414 00	-.217-01	.171 00

STATION NUMBER 51 65/08/11 ITERATION NUMBER 3 PASS NUMBER NONE PAGE 9

FREQUENCY .0

TIME	TC	Q	DEC	HA	CC3
145631	0	0	.24724787 02 .258 01	-.0045* .53357473 02 .284 01	-.0483*
145641	0	0	.24205106 02 .256 01	-.0095* .52247354 02 .280 01	-.0359*
145651	0	0	.23676106 02 .255 01	.0527* .51142664 02 .278 01	-.0292*
145701	0	0	.23138327 02 .254 01	-.0042* .50044017 02 .276 01	-.0485*
145711	0	0	.22592313 02 .253 01	-.0048* .48951986 02 .274 01	-.0468*
145721	0	0	.22038640 02 .252 01	-.0017* .47867133 02 .273 01	-.0422*
145731	0	0	.21477892 02 .252 01	-.0036* .46789967 02 .270 01	-.0397*
145741	0	0	.20910672 02 .252 01	-.0029* .45720988 02 .269 01	-.0394*
145751	0	0	.20337591 02 .251 01	-.0043* .44660664 02 .267 01	-.0378*
145801	0	0	.19759273 02 .250 01	-.0025* .43609427 02 .266 01	-.0436*
145811	0	0	.19176350 02 .250 01	-.0041* .42567695 02 .265 01	-.0490*
145821	0	0	.18589452 02 .249 01	-.0016* .41535850 02 .263 01	-.0524*
145831	0	0	.17999212 02 .249 01	-.0038* .40514239 02 .262 01	-.0520*
145841	0	0	.17406267 02 .249 01	-.0013* .39503203 02 .261 01	-.0503*
145851	0	0	.16811245 02 .248 01	-.0026* .38503024 02 .260 01	-.0436*
145901	0	0	.16214770 02 .248 01	-.0045* .37513992 02 .259 01	-.0500*
145921	0	0	.15019889 02 .248 01	-.0003* .35570302 02 .257 01	-.0376*
145931	0	0	.14422668 02 .248 01	.0066* .34616062 02 .256 01	-.0231*
145941	0	0	.13826363 02 .248 01	.0086* .33673788 02 .255 01	-.0426*
145951	0	0	.13231520 02 .248 01	.0012* .32743634 02 .255 01	-.0482*
150001	0	0	.12638672 02 .248 01	-.0002* .31825719 02 .254 01	-.0461*
150011	0	0	.12048327 02 .248 01	.0019* .30920133 02 .253 01	-.0483*
150031	0	0	.10877072 02 .247 01	.0067* .29146274 02 .252 01	-.0443*
150041	0	0	.10297063 02 .247 01	.0005* .28278092 02 .251 01	-.0461*
150051	0	0	.97213553 01 .247 01	.0020* .27422441 02 .251 01	-.0465*
150101	0	0	.91503372 01 .247 01	.0028* .26579322 02 .250 01	-.0393*
150111	0	0	.85843720 01 .247 01	.0026* .25748722 02 .250 01	-.0367*
150121	0	0	.80237892 01 .247 01	-.0030* .24930609 02 .249 01	-.0487*
150131	0	0	.74688996 01 .247 01	-.0023* .24124940 02 .248 01	-.0491*
150141	0	0	.69199839 01 .247 01	-.0075* .23331658 02 .248 01	-.0619*
150151	0	0	.63772991 01 .247 01	.0030* .22550697 02 .248 01	-.0490*
150201	0	0	.58410840 01 .247 01	52.8750* .21781967 02 .248 01	-.1357*
150211	0	0	.53115380 01 .246 01	.0045* .21025383 02 .248 01	-.0519*
			FREQUENCY2013723.0		
150221	0	51	.47888505 01 .246 01	.0011* .20280834 02 .248 01	-.0474*
150231	0	51	.42731816 01 .246 01	-.0014* .19548214 02 .247 01	-.0509*
150241	0	51	.37646735 01 .246 01	.0030* .18827406 02 .247 01	-.0442*
150251	0	51	.32634436 01 .246 01	.0041* .18118276 02 .247 01	-.0492*
150301	0	51	.27695933 01 .246 01	-.0061* .17420701 02 .247 01	-.0558*
150306	10	51			.16471968 05 .861 00 .1426
150311	0	51	.22832029 01 .246 01	-.0019* .16734536 02 .246 01	-.0558*

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FREQUENCY2013723.0

TIME	TC	Q	DEC	HA	CC3
150316	10	51			.16862572 05 .861 00 .0391
150321	0	51	.18043336 01 .246 01	.0049* .16059643 02 .246 01	-.0450*
150326	10	51			.17241499 05 .861 00 .0117
150331	0	51	.13330344 01 .246 01	.0081* .15395867 02 .246 01	-.0514*
150336	10	51			.17608929 05 .861 00 -.2178
150341	0	51	.86933387 00 .246 01	.0017* .14743061 02 .246 01	-.0488*
150346	10	51			.17965051 05 .861 00 -.1401
150351	0	51	.41324843 00 .246 01	-.0003* .14101066 02 .246 01	-.0470*
150356	10	51			.18310071 05 .861 00 -.3604
150401	0	51	.35996477 03 .246 01	.0041* .13469729 02 .246 01	-.0438*
150406	10	51			.18644200 05 .861 00 -.2891
150411	0	51	.35952391 03 .246 01	.0049* .12848886 02 .246 01	-.0411*
150416	10	51			.18967652 05 .861 00 -.2412
150421	0	51	.35909062 03 .246 01	.0061* .12238379 02 .246 01	-.0448*
150426	10	51			.19280654 05 .861 00 -.1436
150431	0	51	.35866490 03 .246 01	.0018* .11638045 02 .246 01	-.0468*
150436	10	51			.19583434 05 .861 00 -.1233
150441	0	51	.35824667 03 .246 01	.0040* .11047714 02 .246 01	-.0466*
150446	10	51			.19876222 05 .861 00 -.1118
150451	0	51	.35783589 03 .246 01	.0087* .10467224 02 .246 01	-.0543*
150456	10	51			.20159256 05 .861 00 .1548
150501	0	51	.35743251 03 .246 01	.0100* .98964102 01 .246 01	-.0576*
150506	10	51			.20432768 05 .861 00 .1426
150511	0	51	.35703646 03 .246 01	-.0020* .93351086 01 .246 01	-.0586*
150516	10	51			.20696999 05 .861 00 .2119
150521	0	51	.35664764 03 .246 01	.0008* .87831552 01 .246 01	-.0508*
150526	10	51			.20952182 05 .861 00 .3291
150531	0	51	.35626601 03 .246 01	.0024* .82403827 01 .246 01	-.0503*
150536	10	51			.21198560 05 .861 00 .4512
150541	0	51	.35589145 03 .246 01	-.0031* .77066386 01 .247 01	-.0508*
150546	10	51			.21436364 05 .861 00 .3477
150551	0	51	.35552388 03 .246 01	-.0036* .71817438 01 .247 01	-.0500*
150556	10	51			.21665828 05 .861 00 .3828
150601	0	51	.35516322 03 .246 01	-.0029* .66655442 01 .247 01	-.0441*
150606	10	51			.21887189 05 .861 00 .2217
150611	0	51	.35480934 03 .246 01	-.0051* .61578873 01 .247 01	-.0547*
150616	10	51			.22100669 05 .861 00 .3418
150621	0	51	.35446217 03 .246 01	-.0079* .56586074 01 .247 01	-.0536*
150631	0	51	.35412158 03 .246 01	-.0054* .51675539 01 .247 01	-.0587*
150641	0	51	.35378747 03 .246 01	.0007* .46845669 01 .248 01	-.0520*
150701	0	51	.35313829 03 .246 01	.0019* .37421957 01 .248 01	-.0541*
150706	10	51			.23057710 05 .859 00 -.2988
150711	0	51	.35282299 03 .246 01	-.0028* .32825086 01 .248 01	-.0505*

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FREQUENCY2013723.0

TIME	TC	Q	DEC	HA	CC3
150716	10	51			.23228549 05 .859 00 -.3379
150721	0	51	.35251373 03 .246 01 -.0056*	.28302971 01 .248 01 -.0526*	
150726	10	51			.23393013 05 .859 00 -.3027
150731	0	51	.35221041 03 .246 01 .0017*	.23854108 01 .248 01 -.0499*	
150736	10	51			.23551302 05 .859 00 -.2910
150741	0	51	.35191290 03 .246 01 -.0008*	.19477105 01 .248 01 -.0485*	
150746	10	51			.23703608 05 .859 00 -.2979
150751	0	51	.35162111 03 .246 01 .0010*	.15170591 01 .248 01 -.0540*	
150756	10	51			.23850119 05 .859 00 -.2080
150801	0	51	.35133492 03 .246 01 -.0048*	.10933211 01 .248 01 -.0525*	
150806	10	51			.23991018 05 .859 00 -.1074
150811	0	51	.35105422 03 .246 01 -.0061*	.67635749 00 .248 01 -.0577*	
150816	10	51			.24126485 05 .859 00 .0254
150821	0	51	.35077889 03 .246 01 -.0047*	.26603478 00 .249 01 -.0516*	
150826	10	51			.24256694 05 .859 00 .1172
150831	0	51	.35050883 03 .246 01 -.0026*	.35986222 03 .249 01 -.0520*	
150836	10	51			.24381814 05 .859 00 .1973
150841	0	51	.35024393 03 .246 01 .0003*	.35946481 03 .249 01 -.0469*	
150846	10	51			.24502010 05 .859 00 .3008
150851	0	51	.34998409 03 .246 01 -.0059*	.35907365 03 .249 01 -.0480*	
150856	10	51			.24617442 05 .859 00 .2695
150901	0	51	.34972920 03 .246 01 -.0070*	.35868863 03 .250 01 -.0511*	
150906	10	51			.24728264 05 .859 00 .4473
150911	0	51	.34947915 03 .246 01 -.0049*	.35830964 03 .250 01 -.0483*	
150916	10	51			.24834628 05 .859 00 .3828
150921	0	51	.34923385 03 .246 01 -.0056*	.35793655 03 .250 01 -.0494*	
150926	10	51			.24936679 05 .859 00 .3320
150931	0	51	.34899317 03 .246 01 -.0049*	.35756924 03 .250 01 -.0483*	
150936	10	51			.25034560 05 .859 00 .2510
150941	0	51	.34875705 03 .246 01 -.0087*	.35720760 03 .251 01 -.0509*	
150946	10	51			.25128408 05 .859 00 .1025
150951	0	51	.34852536 03 .246 01 -.0070*	.35685153 03 .251 01 -.0551*	
151036	10	51			.25541671 05 .859 00 -.3604
151046	10	51			.25613974 05 .859 00 -.4639
151051	0	51	.34722324 03 .245 01 .0374*	.35482604 03 .252 01 -.0228*	
151056	10	51			.25683093 05 .859 00 -.2832
151101	0	51	.34702004 03 .245 01 -.0354*	.35450600 03 .252 01 -.0289*	
151106	10	51			.25749134 05 .859 00 -.3232
151116	10	51			.25812196 05 .859 00 -.2852
151126	10	51			.25872383 05 .859 00 -.0720
151136	10	51			.25929786 05 .859 00 -.0757
151146	10	51			.25984502 05 .859 00 .1086
151156	10	51			.26036616 05 .859 00 .1943

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FREQUENCY2013723.0

TIME	TC	Q	DEC	HA	CC3
151206	10	51			.26086219 05 .859 00 .2910
151216	10	51			.26133393 05 .859 00 .4180
151226	10	51			.26178218 05 .859 00 .2930
151306	10	51			.26335556 05 .859 00 .1543
151311	0	51	.34468851 03 .245 01 -.0093*	.35074727 03 .255 01 -.0026*	
151331	0	51	.34437517 03 .245 01 -.0099*	.35022886 03 .255 01 -.0625*	
151336	10	51			.26432474 05 .859 00 -.2627
151341	0	51	.34422251 03 .245 01 -.0092*	.34997506 03 .255 01 -.0549*	
151346	10	51			.26461112 05 .859 00 -.3018
151351	0	51	.34407245 03 .245 01 -.0070*	.34972478 03 .255 01 -.0508*	
151356	10	51			.26488016 05 .859 00 -.4053
151401	0	51	.34392494 03 .245 01 -.0115*	.34947796 03 .255 01 -.0502*	
151406	10	51			.26513244 05 .859 00 -.3340
151411	0	51	.34377991 03 .245 01 -.0104*	.34923452 03 .256 01 -.0488*	
151416	10	51			.26536852 05 .859 00 -.4414
151421	0	51	.34363732 03 .245 01 -.0097*	.34899442 03 .256 01 -.0509*	
151426	10	51			.26558891 05 .859 00 -.2803
151431	0	51	.34349709 03 .245 01 -.0115*	.34875759 03 .256 01 -.0482*	
151436	10	51			.26579415 05 .859 00 -.3047
151441	0	51	.34335921 03 .245 01 -.0135*	.34852397 03 .256 01 -.0529*	
151446	10	51			.26598474 05 .859 00 -.0630
151451	0	51	.34322359 03 .245 01 -.0139*	.34829351 03 .256 01 -.0505*	
151456	10	51			.26616114 05 .859 00 -.1030
151501	0	51	.34309021 03 .245 01 -.0144*	.34806614 03 .257 01 -.0513*	
151506	10	51			.26632383 05 .859 00 .1279
151511	0	51	.34295901 03 .245 01 -.0132*	.34784183 03 .257 01 -.0531*	
151516	10	51			.26647327 05 .859 00 .1836
151521	0	51	.34282994 03 .245 01 -.0140*	.34762051 03 .257 01 -.0559*	
151526	10	51			.26660988 05 .859 00 .3232
151531	0	51	.34270296 03 .245 01 -.0130*	.34740213 03 .257 01 -.0577*	
151536	10	51			.26673408 05 .859 00 .3027
151541	0	51	.34257803 03 .245 01 -.0161*	.34718663 03 .258 01 -.0524*	
151546	10	51			.26684629 05 .859 00 .3818
151551	0	51	.34245509 03 .246 01 -.0130*	.34697398 03 .258 01 -.0498*	
151556	10	51			.26694690 05 .859 00 .4199
151601	0	51	.34233412 03 .246 01 -.0140*	.34676411 03 .258 01 -.0441*	
151606	10	51			.26703629 05 .859 00 .2822
151611	0	51	.34221506 03 .246 01 -.0109*	.34655699 03 .258 01 -.0392*	
151616	10	51			.26711483 05 .859 00 .2285
151621	0	51	.34209788 03 .246 01 -.0137*	.34635257 03 .259 01 -.0509*	
151631	0	51	.34198254 03 .246 01 -.0123*	.34615079 03 .259 01 -.0513*	
151641	0	51	.34186900 03 .246 01 -.0147*	.34595163 03 .259 01 -.0502*	
151646	10	51			.26728876 05 .859 00 -.3652

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FREQUENCY2013723.0

TIME	TC	Q	DEC		HA		CC3
151651	0	51	.34175722 03 .246 01	-.0148*	.34575503 03 .259 01	-.0497*	
151656	10	51					.26732728 05 .859 00 -.2178
151701	0	51	.34164717 03 .246 01	-.0127*	.34556094 03 .259 01	-.0458*	
151706	10	51					.26735662 05 .859 00 -.2520
151711	0	51	.34153881 03 .246 01	-.0123*	.34536933 03 .259 01	-.0463*	
151716	10	51					.26737706 05 .859 00 -.4961
151721	0	51	.34143210 03 .246 01	-.0156*	.34518015 03 .259 01	-.0472*	
151726	10	51					.26738891 05 .859 00 -.3799
151731	0	51	.34132702 03 .246 01	-.0164*	.34499338 03 .259 01	-.0466*	
151736	10	51					.26739242 05 .859 00 -.3320
151741	0	51	.34122353 03 .246 01	-.0149*	.34480896 03 .259 01	-.0463*	
151746	10	51					.26738788 05 .859 00 -.3779
151751	0	51	.34112159 03 .246 01	-.0149*	.34462686 03 .259 01	-.0424*	
151756	10	51					.26737555 05 .859 00 -.2446
151801	0	51	.34102118 03 .246 01	-.0204*	.34444704 03 .260 01	-.0446*	
151806	10	51					.26735569 05 .859 00 -.1582
151811	0	51	.34092227 03 .246 01	-.0214*	.34426947 03 .260 01	-.0452*	
151816	10	51					.26732852 05 .859 00 -.0417
151821	0	51	.34082482 03 .246 01	-.0200*	.34409410 03 .260 01	-.0459*	
151826	10	51					.26729432 05 .859 00 .0786
151831	0	51	.34072880 03 .246 01	-.0239*	.34392091 03 .260 01	-.0469*	
151836	10	51					.26725328 05 .859 00 .1831
151841	0	51	.34063420 03 .246 01	-.0232*	.34374985 03 .260 01	-.0479*	
151846	10	51					.26720565 05 .859 00 .3457
151851	0	51	.34054098 03 .246 01	-.0239*	.34358090 03 .261 01	-.0470*	
151856	10	51					.26715164 05 .859 00 .3477
151901	0	51	.34044910 03 .246 01	-.0220*	.34341402 03 .261 01	-.0463*	
151906	10	51					.26709143 05 .859 00 .3682
151911	0	51	.34035856 03 .246 01	-.0234*	.34324918 03 .261 01	-.0455*	
151916	10	51					.26702526 05 .859 00 .3848
151921	0	51	.34026931 03 .246 01	-.0181*	.34308634 03 .261 01	-.0348*	
151926	10	51					.26695331 05 .859 00 .2793
151931	0	51	.34018134 03 .246 01	-.0201*	.34292549 03 .261 01	-.0520*	
151936	10	51					.26687578 05 .859 00 .2324
151941	0	51	.34009462 03 .246 01	-.0213*	.34276657 03 .262 01	-.0492*	
151946	10	51					.26679283 05 .859 00 .1279
151951	0	51	.34000913 03 .246 01	-.0237*	.34260958 03 .262 01	-.0504*	
151956	10	51					.26670465 05 .859 00 .0454
152001	0	51	.33992484 03 .246 01	-.0234*	.34245446 03 .262 01	-.0514*	
152006	10	51					.26661142 05 .859 00 -.2319
152011	0	51	.33984173 03 .246 01	-.0203*	.34230120 03 .262 01	-.0522*	
152016	10	51					.26651330 05 .859 00 -.1194
152021	0	51	.33975977 03 .246 01	-.0203*	.34214978 03 .262 01	-.0469*	

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FREQUENCY2013723.0

TIME	TC	Q	DEC		HA		CC3
152026	10	51					.26641044 05 .859 00 -.4336
152031	0	51	.33967896 03 .246 01	-.0194*	.34200015 03 .262 01	-.0474*	
152036	10	51					.26630301 05 .859 00 -.2910
152041	0	51	.33959926 03 .246 01	-.0197*	.34185230 03 .262 01	-.0476*	
152046	10	51					.26619116 05 .859 00 -.5059
152051	0	51	.33952065 03 .246 01	-.0190*	.34170619 03 .262 01	-.0455*	
152056	10	51					.26607504 05 .859 00 -.2930
152101	0	51	.33944311 03 .246 01	-.0174*	.34156181 03 .262 01	-.0453*	
152106	10	51					.26595477 05 .859 00 -.3662
152111	0	51	.33936663 03 .246 01	-.0168*	.34141912 03 .262 01	-.0466*	
152131	0	51	.33921675 03 .246 01	-.0189*	.34113874 03 .262 01	-.0505*	
152136	10	51					.26557054 05 .859 00 -.0430
152141	0	51	.33914331 03 .246 01	-.0174*	.34100099 03 .263 01	-.0508*	
152146	10	51					.26543507 05 .859 00 .1040
152151	0	51	.33907085 03 .246 01	-.0168*	.34086484 03 .263 01	-.0487*	
152156	10	51					.26529611 05 .859 00 .2998
152201	0	51	.33899935 03 .246 01	-.0173*	.34073028 03 .263 01	-.0463*	
152206	10	51					.26515379 05 .859 00 .3320
152211	0	51	.33892879 03 .246 01	-.0167*	.34059726 03 .263 01	-.0454*	
152216	10	51					.26500820 05 .859 00 .2910
152221	0	51	.33885916 03 .246 01	-.0150*	.34046578 03 .263 01	-.0420*	
152226	10	51					.26485947 05 .859 00 .3643
152231	0	51	.33879044 03 .246 01	-.0162*	.34033579 03 .263 01	-.0441*	
152236	10	51					.26470770 05 .859 00 .4414
152241	0	51	.33872261 03 .246 01	-.0164*	.34020731 03 .264 01	-.0537*	
152246	10	51					.26455299 05 .859 00 .2119
152251	0	51	.33865565 03 .246 01	-.0193*	.34008029 03 .264 01	-.0547*	
152256	10	51					.26439545 05 .859 00 .1665
152301	0	51	.33858956 03 .246 01	-.0192*	.33995471 03 .264 01	-.0492*	
152306	10	51					.26423516 05 .859 00 .1943
152311	0	51	.33852432 03 .246 01	-.0179*	.33983056 03 .264 01	-.0531*	
152316	10	51					.26407224 05 .859 00 -.0132
152321	0	51	.33845990 03 .246 01	-.0195*	.33970782 03 .264 01	-.0544*	
152326	10	51					.26390675 05 .859 00 -.2646
152331	0	51	.33839630 03 .246 01	-.0219*	.33958647 03 .264 01	-.0492*	
152336	10	51					.26373881 05 .859 00 -.1709
152341	0	51	.33833351 03 .246 01	-.0210*	.33946648 03 .265 01	-.0413*	
152346	10	51					.26356851 05 .859 00 -.3398
152351	0	51	.33827151 03 .246 01	-.0189*	.33934784 03 .265 01	-.0427*	
152356	10	51					.26339588 05 .859 00 -.3779
152401	0	51	.33821028 03 .246 01	-.0217*	.33923053 03 .265 01	-.0415*	
152406	10	51					.26322107 05 .859 00 -.4961
152411	0	51	.33814980 03 .246 01	-.0212*	.33911453 03 .265 01	-.0436*	

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TIME	TC	Q	DEC		HA		CC3	
152416	10	51					.26304410 05 .859 00	-.2998
152421	0	51	.33809008 03 .246 01	-.0194*	.33899983 03 .265 01	-.0449*		
152426	10	51					.26286510 05 .859 00	-.3994
152431	0	51	.33803110 03 .246 01	-.0204*	.33888641 03 .265 01	-.0436*		
152436	10	51					.26268410 05 .861 00	-.1992
152441	0	51	.33797284 03 .246 01	-.0201*	.33877425 03 .265 01	-.0475*		
152446	10	51					.26250120 05 .861 00	-.1091
152451	0	51	.33791529 03 .246 01	-.0225*	.33866333 03 .266 01	-.0466*		
152456	10	51					.26231645 05 .861 00	-.0347
152501	0	51	.33785844 03 .246 01	-.0215*	.33855364 03 .266 01	-.0470*		
152506	10	51					.26212992 05 .861 00	.2188
152511	0	51	.33780228 03 .246 01	-.0214*	.33844515 03 .266 01	-.0446*		
152516	10	51					.26194169 05 .861 00	.2417
152521	0	51	.33774680 03 .246 01	-.0198*	.33833786 03 .266 01	-.0454*		
152526	10	51					.26175182 05 .861 00	.3291
152531	0	51	.33769198 03 .246 01	-.0170*	.33823176 03 .266 01	-.0474*		
152536	10	51					.26156037 05 .861 00	.3740
152541	0	51	.33763781 03 .246 01	-.0228*	.33812682 03 .266 01	-.0505*		
152546	10	51					.26136740 05 .861 00	.3701
152551	0	51	.33758429 03 .246 01	-.0252*	.33802303 03 .266 01	-.0527*		
152556	10	51					.26117296 05 .861 00	.3154
152601	0	51	.33753140 03 .246 01	-.0223*	.33792037 03 .266 01	-.0521*		
152606	10	51					.26097712 05 .861 00	.2988
152611	0	51	.33747913 03 .246 01	-.0220*	.33781883 03 .266 01	-.0507*		
152616	10	51					.26077992 05 .861 00	.1189
152621	0	51	.33742748 03 .246 01	-.0223*	.33771839 03 .266 01	-.0503*		
152626	10	51					.26058142 05 .861 00	.2686
152631	0	51	.33737643 03 .246 01	-.0272*	.33761905 03 .266 01	-.0551*		
152636	10	51					.26038168 05 .861 00	-.0576
152641	0	51	.33732597 03 .246 01	-.0226*	.33752079 03 .266 01	-.0569*		
152646	10	51					.26018074 05 .861 00	-.2637
152651	0	51	.33727609 03 .246 01	-.0227*	.33742358 03 .266 01	-.0516*		
152656	10	51					.25997865 05 .861 00	-.2549
152701	0	51	.33722679 03 .246 01	-.0214*	.33732743 03 .266 01	-.0396*		
152706	10	51					.25977546 05 .861 00	-.3359
152711	0	51	.33717806 03 .246 01	-.0206*	.33723232 03 .266 01	-.0405*		
152716	10	51					.25957122 05 .861 00	-.4121
152721	0	51	.33712988 03 .246 01	-.0204*	.33713823 03 .267 01	-.0425*		
152726	10	51					.25936598 05 .861 00	-.3867
152731	0	51	.33708225 03 .246 01	-.0208*	.33704515 03 .267 01	-.0455*		
152736	10	51					.25915976 05 .861 00	-.4658
152741	0	51	.33703515 03 .246 01	-.0216*	.33695307 03 .267 01	-.0494*		
152746	10	51					.25895261 05 .861 00	-.1509

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TIME	TC	Q	DEC		HA		CC3	
152751	0	51	.33698858 03 .246 01	-.0250*	.33686198 03 .267 01	-.0504*		
152756	10	51					.25874459 05 .861 00	-.2485
152801	0	51	.33694255 03 .246 01	-.0209*	.33677187 03 .267 01	-.0524*		
152806	10	51					.25853572 05 .861 00	-.0613
152811	0	51	.33689702 03 .246 01	-.0214*	.33668271 03 .267 01	-.0532*		
152816	10	51					.25832605 05 .861 00	.0056
152821	0	51	.33685200 03 .246 01	-.0223*	.33659451 03 .267 01	-.0511*		
152826	10	51					.25811562 05 .861 00	.1489
152831	0	51	.33680747 03 .246 01	-.0217*	.33650726 03 .267 01	-.0459*		
152836	10	51					.25790444 05 .861 00	.2666
152841	0	51	.33676345 03 .246 01	-.0237*	.33642092 03 .267 01	-.0497*		
152846	10	51					.25769258 05 .861 00	.4531
152851	0	51	.33671990 03 .246 01	-.0201*	.33633551 03 .268 01	-.0503*		
152856	10	51					.25748005 05 .861 00	.3057
152901	0	51	.33667682 03 .246 01	-.0229*	.33625100 03 .268 01	-.0538*		
152906	10	51					.25726691 05 .861 00	.3203
152911	0	51	.33663422 03 .246 01	-.0203*	.33616740 03 .268 01	-.0503*		
152916	10	51					.25705316 05 .861 00	.3955
152921	0	51	.33659207 03 .246 01	-.0222*	.33608466 03 .268 01	-.0515*		
152926	10	51					.25683884 05 .861 00	.2266
152931	0	51	.33655039 03 .246 01	-.0204*	.33600281 03 .268 01	-.0518*		
152936	10	51					.25662399 05 .861 00	.1111
152941	0	51	.33650915 03 .246 01	-.0231*	.33592183 03 .268 01	-.0508*		
152946	10	51					.25640865 05 .861 00	-.0542
152951	0	51	.33646835 03 .246 01	-.0223*	.33584170 03 .268 01	-.0468*		
152956	10	51					.25619282 05 .861 00	-.0710
153001	0	51	.33642799 03 .246 01	-.0279*	.33576242 03 .268 01	-.0535*		
153006	10	51					.25597655 05 .861 00	-.2441
153011	0	51	.33638806 03 .246 01	-.0219*	.33568396 03 .268 01	-.0450*		
153016	10	51					.25575986 05 .861 00	-.3750
153021	0	51	.33634854 03 .246 01	-.0224*	.33560634 03 .269 01	-.0375*		
153026	10	51					.25554277 05 .861 00	-.2666
153031	0	51	.33630945 03 .246 01	-.0253*	.33552954 03 .269 01	-.0408*		
153036	10	51					.25532533 05 .861 00	-.4229
153041	0	51	.33627076 03 .246 01	-.0245*	.33545353 03 .269 01	-.0428*		
153046	10	51					.25510753 05 .861 00	-.4424
153051	0	51	.33623248 03 .246 01	-.0242*	.33537833 03 .269 01	-.0457*		
153056	10	51					.25488943 05 .861 00	-.3320
153101	0	51	.33619460 03 .246 01	-.0243*	.33530392 03 .269 01	-.0472*		
153106	10	51					.25467101 05 .861 00	-.2910
153111	0	51	.33615711 03 .246 01	-.0248*	.33523028 03 .269 01	-.0497*		
153116	10	51					.25445234 05 .861 00	-.1235
153121	0	51	.33612000 03 .246 01	-.0256*	.33515742 03 .269 01	-.0488*		

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TIME	TC	Q	DEC		HA		CC3	
153126	10	51					.25423342 05 .861 00	-.0313
153131	0	51	.33608328 03 .246 01	-.0189*	.33508532 03 .269 01	-.0128*		
153136	10	51					.25401426 05 .861 00	.0840
153141	0	51	.33604693 03 .246 01	-.0165*	.33501398 03 .269 01	-.0235*		
153146	10	51					.25379491 05 .861 00	.2202
153151	0	51	.33601096 03 .246 01	-.0225*	.33494338 03 .270 01	-.0349*		
153156	10	51					.25357537 05 .861 00	.2744
153201	0	51	.33597535 03 .246 01	-.0209*	.33487352 03 .270 01	-.0371*		
153206	10	51					.25335564 05 .861 00	.3467
153211	0	51	.33594010 03 .246 01	-.0256*	.33480439 03 .270 01	-.0420*		
153216	10	51					.25313579 05 .861 00	.3320
153221	0	51	.33590520 03 .246 01	-.0266*	.33473597 03 .270 01	-.0497*		
153226	10	51					.25291581 05 .861 00	.4297
153231	0	51	.33587066 03 .246 01	-.0301*	.33466827 03 .270 01	-.0540*		
153236	10	51					.25269570 05 .861 00	.2402
153241	0	51	.33583646 03 .246 01	-.0278*	.33460129 03 .270 01	-.0531*		
153246	10	51					.25247551 05 .861 00	.2598
153251	0	51	.33580260 03 .246 01	-.0280*	.33453500 03 .270 01	-.0527*		
153311	0	51	.33573589 03 .246 01	-.0292*	.33440448 03 .270 01	-.0603*		
153316	10	51					.25181456 05 .861 00	-.1455
153321	0	51	.33570303 03 .246 01	-.0322*	.33434023 03 .270 01	-.0542*		
153326	10	51					.25159417 05 .861 00	-.2061
153331	0	51	.33567049 03 .246 01	-.0297*	.33427667 03 .270 01	-.0466*		
153336	10	51					.25137376 05 .861 00	-.3662
153341	0	51	.33563827 03 .246 01	-.0275*	.33421376 03 .270 01	-.0358*		
153541	0	51	.33527492 03 .246 01	-.0298*	.33350807 03 .271 01	-.0544*		
153641	0	51	.33510811 03 .246 01	-.0268*	.33318717 03 .271 01	-.0518*		
153741	0	51	.33495023 03 .246 01	-.0248*	.33288591 03 .271 01	-.0486*		
154332	60	51					.23859220 05 .352 00	-.3096
154432	60	51					.23737105 05 .352 00	-.0276
154532	60	51					.23616477 05 .352 00	.2832
155132	60	51					.22925001 05 .352 00	.1934
155532	60	51					.22494949 05 .352 00	.2627
155832	60	51					.22188193 05 .352 00	.2852
155932	60	51					.22088854 05 .352 00	-.0935
160032	60	51					.21990940 05 .352 00	-.2456
160132	60	51					.21894427 05 .352 00	.2344
160232	60	51					.21799296 05 .352 00	.0483
160332	60	51					.21705524 05 .352 00	-.2969
160632	60	51					.21432142 05 .352 00	-.2476
160732	60	51					.21343583 05 .352 00	-.1057
160832	60	51					.21256273 05 .352 00	.2378
161132	60	51					.21001611 05 .352 00	.1660

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TIME	TC	Q	DEC	HA	CC3	
161232	60	51			.20919075 05 .352 00	.0857
161356	10	51			.20805389 05 .861 00	-.2783
161406	10	51			.20792006 05 .861 00	-.1948
161416	10	51			.20778655 05 .861 00	-.1440
161426	10	51			.20765332 05 .861 00	-.0215
161436	10	51			.20752042 05 .861 00	.0684
161446	10	51			.20738782 05 .861 00	.1289
161456	10	51			.20725553 05 .861 00	.2578
161506	10	51			.20712353 05 .861 00	.2578
161516	10	51			.20699183 05 .861 00	.3271
161526	10	51			.20686045 05 .861 00	.2666
161536	10	51			.20672935 05 .861 00	.2754
161546	10	51			.20659856 05 .861 00	.1548
161556	10	51			.20646806 05 .861 00	.2046
161606	10	51			.20633787 05 .861 00	-.0762
161636	10	51			.20594905 05 .861 00	-.2939
161646	10	51			.20582003 05 .861 00	-.2920
161656	10	51			.20569130 05 .861 00	-.4199
161706	10	51			.20556287 05 .861 00	-.2764
161716	10	51			.20543473 05 .861 00	-.2627
161726	10	51			.20530687 05 .861 00	-.2764
161736	10	51			.20517931 05 .861 00	-.1201
161746	10	51			.20505203 05 .861 00	.1074
161756	10	51			.20492504 05 .861 00	-.0933
161806	10	51			.20479834 05 .861 00	.1763
161816	10	51			.20467193 05 .861 00	.2183
161826	10	51			.20454579 05 .861 00	.2314
161836	10	51			.20441995 05 .861 00	.4160
161846	10	51			.20429438 05 .861 00	.2734
161856	10	51			.20416910 05 .861 00	.3018
161906	10	51			.20404409 05 .861 00	.1016
161916	10	51			.20391937 05 .861 00	.1743
161926	10	51			.20379492 05 .861 00	.0186
161936	10	51			.20367075 05 .861 00	-.0647
161946	10	51			.20354687 05 .861 00	-.2764
161956	10	51			.20342326 05 .861 00	-.2153
162006	10	51			.20329993 05 .861 00	-.3818
162016	10	51			.20317686 05 .861 00	-.2754
162026	10	51			.20305408 05 .861 00	-.2979
162036	10	51			.20293156 05 .861 00	-.3457
162046	10	51			.20280932 05 .861 00	-.1216
162056	10	51			.20268735 05 .861 00	-.2241
162106	10	51			.20256565 05 .861 00	.0454

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TIME	TC	Q	DEC	HA	CC3	
162116	10	51			.20244423 05 .861 00	-.0120
162126	10	51			.20232307 05 .861 00	.2036
162136	10	51			.20220218 05 .861 00	.1929
162146	10	51			.20208155 05 .861 00	.3555
162156	10	51			.20196120 05 .861 00	.2910
162206	10	51			.20184110 05 .861 00	.3008
162216	10	51			.20172128 05 .861 00	.2822
162226	10	51			.20160172 05 .861 00	.1387
162236	10	51			.20148242 05 .861 00	.1694
162246	10	51			.20136338 05 .861 00	-.0276
162256	10	51			.20124460 05 .861 00	-.0496
162306	10	51			.20112609 05 .861 00	-.1987
162316	10	51			.20100784 05 .861 00	-.3730
162326	10	51			.20088985 05 .861 00	-.2744
162336	10	51			.20077211 05 .861 00	-.2998
162436	10	51			.20007107 05 .861 00	.1040
162446	10	51			.19995512 05 .861 00	.0986
162456	10	51			.19983942 05 .861 00	.3682
162506	10	51			.19972398 05 .861 00	.2134
162536	10	51			.19937914 05 .861 00	.1968
162546	10	51			.19926469 05 .861 00	.3418
162556	10	51			.19915049 05 .861 00	-.0383
162626	10	51			.19880937 05 .861 00	-.2261
162636	10	51			.19869615 05 .861 00	-.2041
162646	10	51			.19858317 05 .861 00	-.4063
162656	10	51			.19847044 05 .861 00	-.3330
162706	10	51			.19835796 05 .861 00	-.2852
162716	10	51			.19824571 05 .861 00	-.3604
162726	10	51			.19813370 05 .861 00	-.1597
162736	10	51			.19802193 05 .861 00	-.0825
162746	10	51			.19791041 05 .861 00	-.0303
162756	10	51			.19779911 05 .861 00	.0991
162806	10	51			.19768807 05 .861 00	.2041
162816	10	51			.19757725 05 .861 00	.2852
162826	10	51			.19746668 05 .861 00	.3428
162836	10	51			.19735633 05 .861 00	.2783
162846	10	51			.19724623 05 .861 00	.2881
162856	10	51			.19713636 05 .861 00	.2754
162906	10	51			.19702672 05 .861 00	.1392
162916	10	51			.19691731 05 .861 00	.1797
162926	10	51			.19680813 05 .861 00	-.1025
162936	10	51			.19669920 05 .861 00	-.1089
162946	10	51			.19659049 05 .861 00	-.2383

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FREQUENCY2013723.0

TIME	TC	Q	DEC	HA	CC3	
162956	10	51			.19648201 05 .861 00	-.2900
163006	10	51			.19637375 05 .861 00	-.3652
163016	10	51			.19626573 05 .861 00	-.3623
163026	10	51			.19615794 05 .861 00	-.2832
163036	10	51			.19605036 05 .861 00	-.2261
163046	10	51			.19594303 05 .861 00	-.2920
163056	10	51			.19583591 05 .861 00	.0198
163106	10	51			.19572902 05 .861 00	.0088
163116	10	51			.19562236 05 .861 00	.1753
163126	10	51			.19551591 05 .861 00	.1196
163136	10	51			.19540970 05 .861 00	.3408
163146	10	51			.19530370 05 .861 00	.3408
163156	10	51			.19519792 05 .861 00	.2183
163206	10	51			.19509237 05 .861 00	.3740
163216	10	51			.19498704 05 .861 00	.2070
163226	10	51			.19488193 05 .861 00	.2178
163236	10	51			.19477704 05 .861 00	.0071
163306	10	51			.19446367 05 .861 00	-.2559
163316	10	51			.19435964 05 .861 00	-.2539
163326	10	51			.19425584 05 .861 00	-.4736
163336	10	51			.19415225 05 .861 00	-.3145
163346	10	51			.19404887 05 .861 00	-.2764
163356	10	51			.19394571 05 .861 00	-.2607
163406	10	51			.19384276 05 .861 00	-.0652
163416	10	51			.19374003 05 .861 00	-.0920
163426	10	51			.19363750 05 .861 00	.0603
163436	10	51			.19353519 05 .861 00	.0913
163446	10	51			.19343309 05 .861 00	.3018
163456	10	51			.19333120 05 .861 00	.2910
163506	10	51			.19322952 05 .861 00	.2588
163516	10	51			.19312805 05 .861 00	.4053
163526	10	51			.19302679 05 .861 00	.2324
163536	10	51			.19292573 05 .861 00	.2378
163546	10	51			.19282489 05 .861 00	.1223
163556	10	51			.19272424 05 .861 00	-.0129
163606	10	51			.19262380 05 .861 00	-.0691
163616	10	51			.19252357 05 .861 00	-.1465
163626	10	51			.19242354 05 .861 00	-.2437
163636	10	51			.19232372 05 .861 00	-.3613
163646	10	51			.19222410 05 .861 00	-.2998
163656	10	51			.19212469 05 .861 00	-.3584
163706	10	51			.19202548 05 .861 00	-.3369
163716	10	51			.19192647 05 .861 00	-.2363

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FREQUENCY2013723.0

TIME	TC	Q	DEC	HA	CC3	
163726	10	51		.19182766 05	.861 00	-.1553
163736	10	51		.19172905 05	.861 00	.1057
163746	10	51		.19163064 05	.861 00	.0471
163756	10	51		.19153243 05	.861 00	.1680
163806	10	51		.19143442 05	.861 00	.2686
163816	10	51		.19133662 05	.861 00	.2490
163826	10	51		.19123901 05	.861 00	.4102
163836	10	51		.19114158 05	.861 00	.2529
163846	10	51		.19104436 05	.861 00	.3740
163856	10	51		.19094734 05	.861 00	.0767
163906	10	51		.19085051 05	.861 00	.1597
163916	10	51		.19075388 05	.861 00	.0229
163926	10	51		.19065744 05	.861 00	-.1333
163936	10	51		.19056119 05	.861 00	-.2085
163946	10	51		.19046514 05	.861 00	-.3037
163956	10	51		.19036928 05	.861 00	-.3174
164006	10	51		.19027361 05	.861 00	-.3506
164016	10	51		.19017814 05	.861 00	-.4033
164026	10	51		.19008285 05	.861 00	-.1748
164036	10	51		.18998776 05	.861 00	-.2656
164046	10	51		.18989285 05	.861 00	-.0740
164056	10	51		.18979814 05	.861 00	-.0029
164106	10	51		.18970362 05	.861 00	.0493
164116	10	51		.18960927 05	.861 00	.2832
164126	10	51		.18951512 05	.861 00	.1992
164136	10	51		.18942116 05	.861 00	.3945
164146	10	51		.18932738 05	.861 00	.2725
164156	10	51		.18923379 05	.861 00	.3320
164206	10	51		.18914039 05	.861 00	.2725
164216	10	51		.18904717 05	.861 00	.0935
164226	10	51		.18895414 05	.861 00	.0972
164236	10	51		.18886128 05	.861 00	-.0173
164246	10	51		.18876861 05	.861 00	-.1509
164256	10	51		.18867613 05	.861 00	-.2021
164306	10	51		.18858383 05	.861 00	-.2725
164316	10	51		.18849171 05	.861 00	-.3604
164326	10	51		.18839976 05	.861 00	-.2656
164336	10	51		.18830801 05	.861 00	-.3896
164346	10	51		.18821643 05	.861 00	-.2324
164356	10	51		.18812503 05	.861 00	-.1929
164406	10	51		.18803382 05	.861 00	-.0710
164416	10	51		.18794277 05	.861 00	.1338
164426	10	51		.18785192 05	.861 00	.0193

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FREQUENCY2013723.0

TIME	TC	Q	DEC	HA	CC3	
164436	10	51		.18776123 05	.861 00	.2881
164446	10	51		.18767072 05	.861 00	.2383
164456	10	51		.18758040 05	.861 00	.3701
164506	10	51		.18749025 05	.861 00	.2861
164516	10	51		.18740027 05	.861 00	.2842
164526	10	51		.18731047 05	.861 00	.2637
164536	10	51		.18722084 05	.861 00	.1270
164546	10	51		.18713139 05	.861 00	.0720
164556	10	51		.18704211 05	.861 00	-.1003
164606	10	51		.18695300 05	.861 00	-.1895
164616	10	51		.18686407 05	.861 00	-.1968
164626	10	51		.18677531 05	.861 00	-.3203
164636	10	51		.18668672 05	.861 00	-.3623
164646	10	51		.18659831 05	.861 00	-.3203
164656	10	51		.18651007 05	.861 00	-.2959
164706	10	51		.18642200 05	.861 00	-.1890
164716	10	51		.18633409 05	.861 00	-.1982
164726	10	51		.18624635 05	.861 00	-.0247
164736	10	51		.18615879 05	.861 00	.1318
164746	10	51		.18607140 05	.861 00	.0710
164756	10	51		.18598417 05	.861 00	.2939
164806	10	51		.18589711 05	.861 00	.2002
164816	10	51		.18581021 05	.861 00	.3896
164826	10	51		.18572349 05	.861 00	.2617
164836	10	51		.18563693 05	.861 00	.3174
164846	10	51		.18555054 05	.861 00	.2568
164856	10	51		.18546431 05	.861 00	.0798
164906	10	51		.18537824 05	.861 00	-.0137
164916	10	51		.18529235 05	.861 00	-.1240
164926	10	51		.18520661 05	.861 00	-.1499
164936	10	51		.18512104 05	.861 00	-.1934
164946	10	51		.18503563 05	.861 00	-.3525
164956	10	51		.18495039 05	.861 00	-.3281
165006	10	51		.18486531 05	.861 00	-.2202
165016	10	51		.18478039 05	.861 00	-.4277
165026	10	51		.18469563 05	.861 00	-.1519
165036	10	51		.18461103 05	.861 00	-.0925
165046	10	51		.18452660 05	.861 00	-.0491
165056	10	51		.18444232 05	.861 00	.0791
165106	10	51		.18435820 05	.861 00	.2910
165116	10	51		.18427424 05	.861 00	.1865
165126	10	51		.18419044 05	.861 00	.2666
165136	10	51		.18410680 05	.861 00	.3311

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TIME	TC	Q	DEC	HA	CC3	
165146	10	51			.18402332 05 .861 00	.2793
165156	10	51			.18393999 05 .861 00	.3115
165206	10	51			.18385682 05 .861 00	.2285
165216	10	51			.18377382 05 .861 00	.0293
165226	10	51			.18369096 05 .861 00	.0149
165236	10	51			.18360826 05 .861 00	-.1152
165246	10	51			.18352572 05 .861 00	-.1611
165256	10	51			.18344332 05 .861 00	-.3223
165306	10	51			.18336109 05 .861 00	-.3984
165316	10	51			.18327901 05 .861 00	-.2910
165326	10	51			.18319709 05 .861 00	-.1987
165336	10	51			.18311532 05 .861 00	-.3213
165346	10	51			.18303370 05 .861 00	-.2588
165356	10	51			.18295223 05 .861 00	-.1118
165406	10	51			.18287091 05 .861 00	-.0803
165416	10	51			.18278975 05 .861 00	.3359
165426	10	51			.18270874 05 .861 00	.0369
165436	10	51			.18262788 05 .861 00	.4229
165446	10	51			.18254717 05 .861 00	.1938
165456	10	51			.18246661 05 .861 00	.3496
165506	10	51			.18238620 05 .861 00	.2910
165516	10	51			.18230593 05 .861 00	.3174
165526	10	51			.18222582 05 .861 00	.1284
165536	10	51			.18214586 05 .861 00	.0249
165546	10	51			.18206604 05 .861 00	.0063
165556	10	51			.18198638 05 .861 00	-.1270
165606	10	51			.18190686 05 .861 00	-.1753
165616	10	51			.18182749 05 .861 00	-.3379
165626	10	51			.18174826 05 .861 00	-.3154
165636	10	51			.18166918 05 .861 00	-.3076
165646	10	51			.18159025 05 .861 00	-.3145
165656	10	51			.18151146 05 .861 00	-.2354
165706	10	51			.18143282 05 .861 00	-.1709
165716	10	51			.18135431 05 .861 00	-.1206
165726	10	51			.18127596 05 .861 00	.1147
165736	10	51			.18119775 05 .861 00	.1357
165746	10	51			.18111968 05 .861 00	.1426
165756	10	51			.18104176 05 .861 00	.3350
165806	10	51			.18096398 05 .861 00	.2129
165816	10	51			.18088634 05 .861 00	.3770
165826	10	51			.18080884 05 .861 00	.3262
165836	10	51			.18073149 05 .861 00	.2617
165846	10	51			.18065428 05 .861 00	.0825

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FREQUENCY2013723.0

TIME	TC	Q	DEC	HA	CC3	
165856	10	51			.18057721 05 .861 00	-.0100
165906	10	51			.18050027 05 .861 00	.0833
165916	10	51			.18042349 05 .861 00	-.1377
165926	10	51			.18034684 05 .861 00	-.2734
165936	10	51			.18027033 05 .861 00	-.3223
165946	10	51			.18019395 05 .861 00	-.2842
165956	10	51			.18011771 05 .861 00	-.3604
170006	10	51			.18004162 05 .861 00	-.3516
170016	10	51			.17996567 05 .861 00	-.1558
170026	10	51			.17988984 05 .861 00	-.1738
170036	10	51			.17981416 05 .861 00	-.1055

FREQUENCY2013915.0

170602	0	51	.33134700 03 .100 01	-.0370*	.33476095 03 .114 01	-.0979*
170632	60	51				.17720836 05 .352 00 -.2881
170702	0	51	.33134038 03 .100 01	-.0364*	.33490786 03 .114 01	-.0708*
170802	0	51	.33133398 03 .100 01	-.0321*	.33505596 03 .114 01	-.0647*
170902	0	51	.33132781 03 .100 01	-.0359*	.33520521 03 .114 01	-.0619*
170932	60	51				.17595129 05 .352 00 -.2314
171002	0	51	.33132184 03 .100 01	-.0320*	.33535561 03 .114 01	-.0742*
171202	0	51	.33131052 03 .100 01	-.0688*	.33565972 03 .114 01	-.0620*
171402	0	51	.33129999 03 .100 01	-.0283*	.33596814 03 .114 01	-.0642*
171432	60	51				.17394169 05 .352 00 .2456
171502	0	51	.33129501 03 .100 01	-.0354*	.33612392 03 .114 01	-.0399*
171532	60	51				.17355205 05 .352 00 .0256
171602	0	51	.33129021 03 .100 01	-.0507*	.33628073 03 .114 01	-.0347*
171632	60	51				.17316638 05 .352 00 -.2734
171702	0	51	.33128560 03 .100 01	-.0321*	.33643855 03 .114 01	-.0664*
171732	60	51				.17278461 05 .352 00 .1201
171802	0	51	.33128116 03 .100 01	-.0356*	.33659735 03 .114 01	-.0610*
171832	60	51				.17240668 05 .352 00 .1797
171902	0	51	.33127690 03 .100 01	-.0315*	.33675712 03 .114 01	-.0547*
171932	60	51				.17203256 05 .352 00 -.2251
172002	0	51	.33127280 03 .100 01	-.0274*	.33691785 03 .114 01	-.0674*
172032	60	51				.17166218 05 .352 00 -.0535
172102	0	51	.33126887 03 .100 01	-.0236*	.33707951 03 .114 01	-.0627*
172132	60	51				.17129549 05 .352 00 .2822
172202	0	51	.33126509 03 .100 01	-.0319*	.33724210 03 .114 01	-.0813*
172302	0	51	.33126148 03 .100 01	-.0463*	.33740560 03 .114 01	-.0547*
172402	0	51	.33125803 03 .100 01	-.0369*	.33757000 03 .114 01	-.0590*
172432	60	51				.17021709 05 .352 00 .2222
172502	0	51	.33125472 03 .100 01	-.0336*	.33773527 03 .114 01	-.0762*

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FREQUENCY2013915.0

TIME	TC	Q	DEC		HA		CC3
172532	60	51					.16986468 05 .352 00 .0630
172602	0	51	.33125157 03 .100 01	-.0585*	.33790140 03 .114 01	-.0521*	
172632	60	51					.16951573 05 .352 00 -.2588
172702	0	51	.33124855 03 .100 01	-.0375*	.33806839 03 .114 01	-.0649*	
172732	60	51					.16917018 05 .352 00 .0967
172802	0	51	.33124569 03 .100 01	-.0327*	.33823622 03 .114 01	-.0647*	
172832	60	51					.16882798 05 .352 00 .1992
172902	0	51	.33124296 03 .100 01	-.0779*	.33840487 03 .114 01	-.0553*	
172932	60	51					.16848912 05 .352 00 -.2139
173002	0	51	.33124037 03 .100 01	-.0375*	.33857433 03 .114 01	-.0526*	
173032	60	51					.16815351 05 .352 00 -.0532
173102	0	51	.33123792 03 .100 01	-.0391*	.33874458 03 .114 01	-.0527*	
173202	0	51	.33123560 03 .100 01	-.0367*	.33891563 03 .114 01	-.0637*	
173302	0	51	.33123340 03 .100 01	-.0347*	.33908745 03 .114 01	-.0613*	
173332	60	51					.16716594 05 .352 00 -.1792
173402	0	51	.33123133 03 .100 01	-.0326*	.33926003 03 .114 01	-.0637*	
173432	60	51					.16684301 05 .352 00 .2466
173502	0	51	.33122939 03 .100 01	-.0307*	.33943336 03 .114 01	-.0710*	
173532	60	51					.16652316 05 .352 00 .0322
173602	0	51	.33122757 03 .100 01	-.0289*	.33960744 03 .114 01	-.0649*	
173632	60	51					.16620633 05 .352 00 -.2695
173702	0	51	.33122587 03 .100 01	-.0273*	.33978223 03 .114 01	-.0696*	
173732	60	51					.16589250 05 .352 00 .1475
173802	0	51	.33122429 03 .100 01	-.0337*	.33995774 03 .114 01	-.0570*	
173832	60	51					.16558162 05 .352 00 .1855
173902	0	51	.33122282 03 .100 01	-.0383*	.34013397 03 .114 01	-.0510*	
173932	60	51					.16527367 05 .352 00 -.2529
174002	0	51	.33122147 03 .100 01	-.0370*	.34031088 03 .114 01	-.0579*	
174032	60	51					.16496859 05 .352 00 -.0110
174102	0	51	.33122023 03 .100 01	-.0378*	.34048849 03 .114 01	-.0553*	
174132	60	51					.16466636 05 .352 00 .2617
174202	0	51	.33121910 03 .100 01	-.0367*	.34066676 03 .114 01	-.0674*	
174232	60	51					.16436694 05 .352 00 -.1460
174302	0	51	.33121807 03 .100 01	-.0358*	.34084570 03 .114 01	-.0563*	
174332	60	51					.16407029 05 .352 00 -.1479
174402	0	51	.33121715 03 .100 01	-.0349*	.34102530 03 .114 01	-.0597*	
174432	60	51					.16377639 05 .352 00 .2417
174502	0	51	.33121634 03 .100 01	-.0341*	.34120554 03 .114 01	-.0679*	
174702	0	51	.33121501 03 .100 01	-.0328*	.34156792 03 .114 01	-.0659*	
174732	60	51					.16291081 05 .352 00 .1665
174802	0	51	.33121449 03 .100 01	-.0723*	.34175005 03 .114 01	-.0559*	
174832	60	51					.16262755 05 .352 00 .1426
174902	0	51	.33121407 03 .100 01	-.0360*	.34193278 03 .114 01	-.0585*	

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FREQUENCY2013915.0

TIME	TC	Q	DEC		HA		CC3
174932	60	51					.16234688 05 .352 00 -.2734
175002	0	51	.33121375 03 .100 01	-.0358*	.34211612 03 .114 01	-.0637*	
175032	60	51					.16206876 05 .352 00 .0383
175102	0	51	.33121352 03 .100 01	-.0355*	.34230005 03 .114 01	-.0594*	
175132	60	51					.16179316 05 .352 00 .2485
175202	0	51	.33121338 03 .100 01	-.0354*	.34248456 03 .114 01	-.0659*	
175232	60	51					.16152005 05 .352 00 -.1743
175302	0	51	.33121333 03 .100 01	-.0354*	.34266965 03 .114 01	-.0508*	
175332	60	51					.16124941 05 .352 00 -.1436
175402	0	51	.33121337 03 .100 01	-.0355*	.34285530 03 .114 01	-.0563*	
175432	60	51					.16098120 05 .352 00 .2773
175502	0	51	.33121350 03 .100 01	-.0356*	.34304152 03 .114 01	-.0684*	
175532	60	51					.16071540 05 .352 00 -.0256
175602	0	51	.33121371 03 .100 01	-.0359*	.34322829 03 .114 01	-.0590*	
175632	60	51					.16045198 05 .352 00 -.2334
175702	0	51	.33121401 03 .100 01	-.0363*	.34341560 03 .114 01	-.0642*	
175732	60	51					.16019090 05 .352 00 .1909
175802	0	51	.33121439 03 .100 01	-.0366*	.34360345 03 .114 01	-.0659*	
175832	60	51					.15993216 05 .352 00 .1155
175902	0	51	.33121486 03 .100 01	-.0372*	.34379184 03 .114 01	-.0620*	
175932	60	51					.15967571 05 .352 00 -.2568
180002	0	51	.33121540 03 .100 01	-.0377*	.34398074 03 .114 01	-.0647*	
180032	60	51					.15942154 05 .352 00 .0776
180102	0	51	.33121603 03 .100 01	-.0385*	.34417016 03 .114 01	-.0520*	
180132	60	51					.15916961 05 .351 00 .2207
180202	0	51	.33121673 03 .100 01	-.0392*	.34436009 03 .114 01	-.0538*	
180232	60	51					.15891990 05 .351 00 -.2090
180302	0	51	.33121751 03 .100 01	-.0399*	.34455052 03 .114 01	-.0500*	
180332	60	51					.15867239 05 .351 00 -.0750
180402	0	51	.33121836 03 .100 01	-.0409*	.34474145 03 .114 01	-.0469*	
180602	0	51	.33122029 03 .100 01	-.0328*	.34512476 03 .114 01	-.0538*	
180632	60	51					.15794280 05 .351 00 -.1987
180702	0	51	.33122137 03 .100 01	-.0339*	.34531714 03 .114 01	-.0560*	
180732	60	51					.15770383 05 .351 00 .2310
180802	0	51	.33122251 03 .100 01	-.0352*	.34550998 03 .114 01	-.0608*	
180832	60	51					.15746695 05 .351 00 .0693
180902	0	51	.33122373 03 .100 01	-.0364*	.34570329 03 .114 01	-.0619*	
180932	60	51					.15723213 05 .351 00 -.2480
181002	0	51	.33122502 03 .100 01	-.0377*	.34589706 03 .114 01	-.0596*	
181032	60	51					.15699933 05 .351 00 .0986
181102	0	51	.33122637 03 .100 01	-.0392*	.34609127 03 .114 01	-.0536*	
181132	60	51					.15676854 05 .351 00 .2100
181202	0	51	.33122779 03 .100 01	-.0405*	.34628594 03 .114 01	-.0581*	

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FREQUENCY2013915.0

TIME	TC	Q	DEC		HA		CC3	
181232	60	51					.15653975 05	.351 00 -.2109
181302	0	51	.33122927 03	.100 01 -.0421*	.34648105 03	.114 01 -.0590*		
181332	60	51					.15631292 05	.351 00 -.0447
181402	0	51	.33123083 03	.100 01 -.0437*	.34667659 03	.114 01 -.0483*		
181432	60	51					.15608805 05	.351 00 .2432
181502	0	51	.33123244 03	.100 01 -.0453*	.34687256 03	.114 01 -.0621*		

FREQUENCY2013879.0

182102	0	51	.33124344 03	.100 01 -.0345*	.34805709 03	.114 01 -.0477*		
182202	0	51	.33124548 03	.100 01 -.0366*	.34825592 03	.114 01 -.0664*		
182402	0	51	.33124974 03	.100 01 -.0389*	.34865473 03	.114 01 -.0529*		
183002	0	51	.33126382 03	.100 01 -.0511*	.34986012 03	.114 01 -.0591*		

FREQUENCY2013871.0

183202	0	51	.33126894 03	.100 01 -.0464*	.35026477 03	.114 01 -.0114*		
183232	60	51					.15235065 05	.351 00 -.1182
183302	0	51	.33127157 03	.100 01 -.0350*	.35046762 03	.114 01 -.0662*		
183332	60	51					.15215915 05	.351 00 -.1675
183402	0	51	.33127426 03	.100 01 -.0417*	.35067080 03	.114 01 -.0610*		
183432	60	51					.15196921 05	.351 00 .2256
183502	0	51	.33127699 03	.100 01 -.0444*	.35087433 03	.114 01 -.0624*		
183532	60	51					.15178086 05	.351 00 .0444
183602	0	51	.33127978 03	.100 01 -.0492*	.35107818 03	.114 01 -.0521*		
183632	60	51					.15159405 05	.351 00 -.2578
183702	0	51	.33128260 03	.100 01 -.0521*	.35128236 03	.114 01 -.0621*		
183732	60	51					.15140878 05	.351 00 .1353
183802	0	51	.33128548 03	.100 01 -.0551*	.35148687 03	.114 01 -.0544*		
183832	60	51					.15122503 05	.351 00 .1772
183902	0	51	.33128841 03	.100 01 .0640*	.35169168 03	.114 01 -.1191*		
183932	60	51					.15104279 05	.351 00 -.2319
184002	0	51	.33129138 03	.100 01 -.0389*	.35189683 03	.114 01 -.0701*		
184032	60	51					.15086204 05	.351 00 -.0071
184102	0	51	.33129440 03	.100 01 -.0400*	.35210228 03	.114 01 -.0553*		
184132	60	51					.15068275 05	.351 00 .2383
184202	0	51	.33129746 03	.100 01 -.0431*	.35230804 03	.114 01 -.0608*		
184232	60	51					.15050494 05	.351 00 -.1138
184302	0	51	.33130056 03	.100 01 -.0322*	.35251410 03	.114 01 -.0647*		
184332	60	51					.15032858 05	.351 00 -.1606
184402	0	51	.33130371 03	.100 01 -.0374*	.35272047 03	.114 01 -.0609*		
184432	60	51					.15015364 05	.351 00 .2329
184502	0	51	.33130690 03	.100 01 -.0465*	.35292713 03	.114 01 -.0654*		

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TIME	TC	Q	DEC		HA		CC3	
184532	60	51					.14998013 05	.351 00 .0343
184602	0	51	.33131014 03	.100 01 -.0498*	.35313409 03	.114 01 -.0421*		
184632	60	51					.14980802 05	.351 00 -.2549
184702	0	51	.33131342 03	.100 01 -.0352*	.35334135 03	.114 01 -.0691*		
184732	60	51					.14963730 05	.351 00 .1504
184802	0	51	.33131674 03	.100 01 -.0385*	.35354888 03	.114 01 -.0605*		
184832	60	51					.14946796 05	.351 00 .1670
184902	0	51	.33132010 03	.100 01 -.0419*	.35375671 03	.114 01 -.0581*		
184932	60	51					.14929999 05	.351 00 -.2354
185002	0	51	.33132350 03	.100 01 -.0453*	.35396481 03	.114 01 -.0720*		
185032	60	51					.14913337 05	.351 00 -.0071
185102	0	51	.33132695 03	.100 01 -.0487*	.35417319 03	.114 01 -.0503*		
185132	60	51					.14896809 05	.351 00 .2715
185202	0	51	.33133043 03	.100 01 -.0522*	.35438185 03	.114 01 -.0527*		
185232	60	51					.14880414 05	.351 00 -.1499
185302	0	51	.33133396 03	.100 01 -.0297*	.35459078 03	.114 01 -.0454*		
185332	60	51					.14864150 05	.351 00 -.1528
185402	0	51	.33133752 03	.100 01 -.0413*	.35479998 03	.114 01 -.0585*		
185432	60	51					.14848016 05	.351 00 .2646
185502	0	51	.33134112 03	.100 01 -.0449*	.35500945 03	.114 01 -.0657*		
185532	60	51					.14832011 05	.351 00 .0026
185602	0	51	.33134476 03	.100 01 -.0486*	.35521917 03	.114 01 -.0472*		
185632	60	51					.14816133 05	.351 00 -.2368
185702	0	51	.33134844 03	.100 01 .0417*	.35542916 03	.114 01 -.0872*		
185732	60	51					.14800383 05	.351 00 .1641
185802	0	51	.33135215 03	.100 01 -.0360*	.35563940 03	.114 01 -.0630*		
185832	60	51					.14784758 05	.351 00 .1392
185902	0	51	.33135590 03	.100 01 -.0398*	.35584990 03	.114 01 -.0594*		
185932	60	51					.14769256 05	.351 00 -.2427
190002	0	51	.33135969 03	.100 01 -.0436*	.35606065 03	.114 01 -.0679*		
190032	60	51					.14753878 05	.351 00 .0360
190102	0	51	.33136351 03	.100 01 -.0474*	.35627165 03	.114 01 -.0508*		
190132	60	51					.14738621 05	.351 00 .2427
190202	0	51	.33136738 03	.100 01 -.0513*	.35648289 03	.114 01 -.0518*		
190232	60	51					.14723485 05	.351 00 -.1719
190302	0	51	.33137127 03	.100 01 -.0312*	.35669437 03	.114 01 -.0872*		
190332	60	51					.14708469 05	.351 00 -.1050
190402	0	51	.33137520 03	.100 01 -.0471*	.35690610 03	.114 01 -.0546*		
190432	60	51					.14693571 05	.351 00 .2432
190502	0	51	.33137917 03	.100 01 -.0410*	.35711806 03	.114 01 -.0684*		
190532	60	51					.14678790 05	.351 00 -.0264
190602	0	51	.33138317 03	.100 01 -.0450*	.35733026 03	.114 01 -.0443*		
190632	60	51					.14664125 05	.351 00 -.2119

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TIME	TC	Q	DEC	HA	CC3
190702	0	51	.33138721 03 .100 01 -.0391*	.35754269 03 .114 01 -.0546*	
190732	60	51			.14649576 05 .351 00 .1880
190802	0	51	.33139127 03 .100 01 -.0372*	.35775535 03 .114 01 -.0610*	
190832	60	51			.14635140 05 .351 00 .1230
190902	0	51	.33139537 03 .100 01 -.0413*	.35796824 03 .114 01 -.0557*	
190932	60	51			.14620818 05 .351 00 -.2549
191002	0	51	.33139951 03 .100 01 -.0454*	.35818135 03 .114 01 -.0647*	
191032	60	51			.14606608 05 .351 00 .0725
191102	0	51	.33140367 03 .100 01 -.0496*	.35839469 03 .114 01 -.0497*	
191132	60	51			.14592508 05 .351 00 .2388
191202	0	51	.33140787 03 .100 01 -.0398*	.35860823 03 .114 01 -.0511*	
191232	60	51			.14578519 05 .351 00 -.2056
191302	0	51	.33141210 03 .100 01 -.0441*	.35882200 03 .114 01 -.0447*	
191332	60	51			.14564638 05 .351 00 -.0745
191402	0	51	.33141636 03 .100 01 -.0483*	.35903599 03 .114 01 -.0425*	
191602	0	51	.33142498 03 .100 01 -.0569*	.35946460 03 .114 01 -.0246*	
191632	60	51			.14523639 05 .351 00 -.2095
191702	0	51	.33142933 03 .100 01 -.0613*	.35967921 03 .114 01 -.0450*	
191732	60	51			.14510185 05 .351 00 .2124
191802	0	51	.33143372 03 .100 01 -.0657*	.35989404 03 .114 01 -.0497*	
191832	60	51			.14496834 05 .351 00 .0967
191902	0	51	.33143813 03 .100 01 -.0701*	.10906606 00 .114 01 -.0385*	
191932	60	51			.14483585 05 .351 00 -.2549
192002	0	51	.33144258 03 .100 01 -.0605*	.32429622 00 .114 01 -.1255*	
192202	0	51	.33145155 03 .100 01 -.0475*	.75534763 00 .114 01 -.0581*	
192232	60	51			.14444450 05 .351 00 -.2202
192302	0	51	.33145608 03 .100 01 -.0360*	.97116125 00 .114 01 -.0679*	
192332	60	51			.14431605 05 .351 00 -.0582
192402	0	51	.33146064 03 .100 01 -.0405*	.11871732 01 .114 01 -.0555*	
192432	60	51			.14418858 05 .351 00 .2549
192502	0	51	.33146523 03 .100 01 -.0452*	.14033757 01 .114 01 -.0635*	
193102	0	51	.33149333 03 .100 01 -.0571*	.27044769 01 .114 01 -.0614*	
193132	60	51			.14332312 05 .351 00 .2017
193202	0	51	.33149810 03 .100 01 -.0619*	.29219569 01 .114 01 -.0566*	
193232	60	51			.14320321 05 .351 00 -.1909
193302	0	51	.33150291 03 .100 01 -.0667*	.31396124 01 .114 01 -.0662*	
193502	0	51	.33151259 03 .100 01 -.0764*	.35754418 01 .114 01 -.0515*	
193702	0	51	.33152237 03 .100 01 -.0461*	.40119461 01 .114 01 -.0635*	
193902	0	51	.33153225 03 .100 01 -.0480*	.44491176 01 .114 01 -.0564*	
193932	60	51			.14238877 05 .351 00 -.2305
194002	0	51	.33153723 03 .100 01 -.0469*	.46679436 01 .114 01 -.0688*	
194032	60	51			.14227589 05 .351 00 .0579
194102	0	51	.33154223 03 .100 01 -.0480*	.48869374 01 .114 01 -.0577*	

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TIME	TC	Q	DEC	HA	CC3
194132	60	51			.14216385 05 .351 00 .2119
194202	0	51	.33154726 03 .100 01 -.0449*	.51060836 01 .114 01 -.0627*	
194232	60	51			.14205265 05 .351 00 -.1680
194302	0	51	.33155230 03 .100 01 -.0360*	.53253900 01 .114 01 -.0637*	
194332	60	51			.14194226 05 .351 00 -.0962
194402	0	51	.33155737 03 .100 01 -.0450*	.55448451 01 .114 01 -.0590*	
194432	60	51			.14183271 05 .351 00 .2588
194502	0	51	.33156247 03 .100 01 -.0381*	.57644603 01 .114 01 -.0745*	
194532	60	51			.14172397 05 .351 00 -.0333
194602	0	51	.33156759 03 .100 01 -.0432*	.59842280 01 .114 01 -.0480*	
194632	60	51			.14161604 05 .351 00 -.2070
194702	0	51	.33157273 03 .100 01 -.0483*	.62041482 01 .114 01 -.0616*	
194732	60	51			.14150890 05 .351 00 .1738
194802	0	51	.33157789 03 .100 01 -.0375*	.64242133 01 .114 01 -.0754*	
194832	60	51			.14140255 05 .351 00 .1421
194902	0	51	.33158308 03 .100 01 -.0426*	.66444308 01 .114 01 -.0475*	
194932	60	51			.14129698 05 .351 00 -.2349
195002	0	51	.33158829 03 .100 01 -.0417*	.68647857 01 .114 01 -.0676*	
195032	60	51			.14119220 05 .351 00 .0439
195102	0	51	.33159352 03 .100 01 -.0130*	.70852892 01 .114 01 -.0580*	
195132	60	51			.14108818 05 .351 00 .2285
195202	0	51	.33159877 03 .100 01 -.0422*	.73059376 01 .114 01 -.0664*	
195232	60	51			.14098493 05 .351 00 -.1465
195302	0	51	.33160404 03 .100 01 -.0475*	.75267270 01 .114 01 -.0609*	
195332	60	51			.14088243 05 .351 00 -.1299
195402	0	51	.33160933 03 .100 01 -.0387*	.77476574 01 .114 01 -.0497*	
195432	60	51			.14078068 05 .351 00 .2627
195502	0	51	.33161464 03 .100 01 -.0460*	.79687213 01 .114 01 -.0605*	
195532	60	51			.14067967 05 .351 00 -.0039
195602	0	51	.33161998 03 .100 01 -.0513*	.81899262 01 .114 01 -.0535*	
195632	60	51			.14057941 05 .351 00 -.2437
195702	0	51	.33162534 03 .100 01 -.0347*	.84112645 01 .114 01 -.0828*	
195732	60	51			.14047987 05 .351 00 .1934
195802	0	51	.33163071 03 .100 01 -.0420*	.86327363 01 .114 01 -.0599*	
195832	60	51			.14038104 05 .351 00 .1426
195902	0	51	.33163611 03 .100 01 -.0353*	.88543453 01 .114 01 -.0533*	
195932	60	51			.14028294 05 .351 00 -.2305
200002	0	51	.33164153 03 .100 01 -.0408*	.90760800 01 .114 01 -.0627*	
200032	60	51			.14018555 05 .351 00 .0254
200102	0	51	.33164696 03 .100 01 -.0081*	.92979482 01 .114 01 -.0546*	
200132	60	51			.14008885 05 .351 00 .2451
200202	0	51	.33165241 03 .100 01 -.0295*	.95199423 01 .114 01 -.0623*	
200232	60	51			.13999286 05 .351 00 -.1719

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TIME	TC	Q	DEC		HA		CC3	
200302	0	51	.33165789 03 .100 01	-.0350•	.97420657 01 .114 01	-.0562•		
200332	60	51					.13989755 05 .351 00	-.0916
200402	0	51	.33166339 03 .100 01	-.0404•	.99643113 01 .114 01	-.0542•		
200432	60	51					.13980293 05 .351 00	.2373
200502	0	51	.33166890 03 .100 01	-.0299•	.10186682 02 .114 01	-.0725•		
200532	60	51					.13970899 05 .351 00	-.0183
200602	0	51	.33167443 03 .100 01	-.0334•	.10409180 02 .114 01	-.0507•		
200632	60	51					.13961571 05 .351 00	-.2075
200702	0	51	.33167998 03 .100 01	-.0389•	.10631795 02 .114 01	-.0610•		
200732	60	51					.13952310 05 .351 00	.1704
200802	0	51	.33168555 03 .100 01	-.0444•	.10854536 02 .114 01	-.0596•		
200832	60	51					.13943115 05 .351 00	.1313
200902	0	51	.33169113 03 .100 01	-.0500•	.11077391 02 .114 01	-.0482•		
200932	60	51					.13933985 05 .351 00	-.2388
201002	0	51	.33169674 03 .100 01	-.0336•	.11300365 02 .114 01	-.0691•		
201032	60	51					.13924921 05 .351 00	.0593
201102	0	51	.33170236 03 .100 01	-.0332•	.11523456 02 .114 01	-.0538•		
201132	60	51					.13915920 05 .351 00	.2271
201202	0	51	.33170801 03 .100 01	-.0387•	.11746662 02 .114 01	-.0529•		
201232	60	51					.13906983 05 .351 00	-.1694
201302	0	51	.33171366 03 .100 01	-.0443•	.11969986 02 .114 01	-.0480•		
201332	60	51					.13898108 05 .351 00	-.0947
201402	0	51	.33171934 03 .100 01	-.0499•	.12193421 02 .114 01	-.0432•		
201432	60	51					.13889296 05 .351 00	.2510
201502	0	51	.33172503 03 .100 01	-.0436•	.12416966 02 .114 01	-.0605•		
201532	60	51					.13880545 05 .351 00	-.0316
201602	0	51	.33173074 03 .100 01	-.0573•	.12640621 02 .114 01	-.0420•		
201632	60	51					.13871857 05 .351 00	-.2100
201702	0	51	.33173647 03 .100 01	-.0449•	.12864387 02 .114 01	-.0535•		
201732	60	51					.13863228 05 .351 00	.1855
201802	0	51	.33174221 03 .100 01	-.0387•	.13088264 02 .114 01	-.0573•		
201832	60	51					.13854660 05 .351 00	.1204
201902	0	51	.33174798 03 .100 01	-.0444•	.13312243 02 .114 01	-.0530•		
201932	60	51					.13846151 05 .351 00	-.2539
202002	0	51	.33175375 03 .100 01	-.0441•	.13536333 02 .114 01	-.0627•		
202102	0	51	.33175955 03 .100 01	-.0359•	.13760526 02 .114 01	-.0588•		
202202	0	51	.33176535 03 .100 01	-.0416•	.13984821 02 .114 01	-.0569•		
202232	60	51					.13820975 05 .351 00	-.1943
202302	0	51	.33177118 03 .100 01	-.0474•	.14209220 02 .114 01	-.0510•		
202332	60	51					.13812698 05 .351 00	-.0684
202402	0	51	.33177702 03 .100 01	-.0411•	.14433718 02 .114 01	-.0854•		
202432	60	51					.13804478 05 .351 00	.2520
202502	0	51	.33178288 03 .100 01	-.0330•	.14658322 02 .114 01	-.0737•		

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TIME	TC	Q	DEC		HA		CC3	
202532	60	51					.13796315 05 .351 00	-.0519
202602	0	51	.33178875 03 .100 01	-.0388•	.14883021 02 .114 01	-.0543•		
202632	60	51					.13788207 05 .351 00	-.2104
202702	0	51	.33179464 03 .100 01	-.0447•	.15107823 02 .114 01	-.0588•		
202732	60	51					.13780155 05 .351 00	.2085
202802	0	51	.33180054 03 .100 01	-.0305•	.15332717 02 .114 01	-.0575•		
202832	60	51					.13772157 05 .351 00	.0901
202902	0	51	.33180646 03 .100 01	-.0503•	.15557710 02 .114 01	-.0563•		
202932	60	51					.13764213 05 .351 00	-.2329
203002	0	51	.33181239 03 .100 01	-.0342•	.15782798 02 .114 01	-.0632•		
203032	60	51					.13756323 05 .351 00	.0742
203102	0	51	.33181833 03 .100 01	-.0581•	.16007977 02 .114 01	-.0521•		
203132	60	51					.13748485 05 .352 00	.2285
203202	0	51	.33182430 03 .100 01	-.0420•	.16233255 02 .114 01	-.0532•		
203232	60	51					.13740700 05 .352 00	-.1870
203302	0	51	.33183027 03 .100 01	-.0480•	.16458621 02 .114 01	-.0544•		
203332	60	51					.13732968 05 .352 00	-.0713
203402	0	51	.33183627 03 .100 01	-.0538•	.16684079 02 .114 01	-.0457•		
203432	60	51					.13725287 05 .352 00	.2598
203502	0	51	.33184227 03 .100 01	-.0598•	.16909627 02 .114 01	-.0590•		
203532	60	51					.13717657 05 .352 00	-.0601
203602	0	51	.33184829 03 .100 01	-.0417•	.17135268 02 .114 01	-.0464•		
203632	60	51					.13710078 05 .352 00	-.1973
203702	0	51	.33185432 03 .100 01	-.0437•	.17360991 02 .114 01	-.0540•		
203732	60	51					.13702548 05 .352 00	.1987
203802	0	51	.33186036 03 .100 01	-.0497•	.17586803 02 .114 01	-.0536•		
203832	60	51					.13695069 05 .352 00	.1113
203902	0	51	.33186643 03 .100 01	-.0557•	.17812706 02 .114 01	-.0552•		
203932	60	51					.13687639 05 .352 00	-.2417
204002	0	51	.33187250 03 .100 01	-.0616•	.18038689 02 .114 01	-.0510•		
204032	60	51					.13680257 05 .352 00	.0732
204102	0	51	.33187859 03 .100 01	-.0676•	.18264759 02 .114 01	-.0469•		
204132	60	51					.13672923 05 .352 00	.2070
204202	0	51	.33188469 03 .100 01	-.0498•	.18490909 02 .114 01	-.0548•		
204232	60	51					.13665637 05 .352 00	-.1567
204302	0	51	.33189080 03 .100 01	-.0438•	.18717143 02 .114 01	-.0649•		
204332	60	51					.13658398 05 .352 00	-.0681
204402	0	51	.33189692 03 .100 01	-.0419•	.18943465 02 .114 01	-.0549•		
204432	60	51					.13651206 05 .352 00	.2236
204502	0	51	.33190307 03 .100 01	-.0419•	.19169863 02 .114 01	-.0671•		
204702	0	51	.33191538 03 .100 01	-.0461•	.19622898 02 .114 01	-.0598•		
204732	60	51					.13629907 05 .352 00	.1738
204802	0	51	.33192155 03 .100 01	-.0522•	.19849535 02 .114 01	-.0402•		

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TIME	TC	Q	DEC		HA		CC3
205002	0	51	.33193394 03 .100 01	-.0444*	.20303035 02 .114 01	-.0614*	
205032	60	51					.13609011 05 .352 00 .0195
205102	0	51	.33194015 03 .100 01	-.0206*	.20529904 02 .114 01	-.0580*	
205132	60	51					.13602134 05 .352 00 .1968
205202	0	51	.33194638 03 .100 01	-.0427*	.20756843 02 .114 01	-.0667*	
205232	60	51					.13595299 05 .352 00 -.0857
205302	0	51	.33195261 03 .100 01	-.0409*	.20983857 02 .114 01	-.0735*	
205332	60	51					.13588508 05 .352 00 -.1440
205402	0	51	.33195886 03 .100 01	-.0350*	.21210943 02 .114 01	-.0565*	
205432	60	51					.13581758 05 .352 00 .1885
205502	0	51	.33196511 03 .100 01	-.0413*	.21438106 02 .114 01	-.0535*	
205532	60	51					.13575051 05 .352 00 -.4873
205602	0	51	.33197138 03 .100 01	-.0474*	.21665337 02 .114 01	-.0544*	
205632	60	51					.13568384 05 .352 00 -.2041
205702	0	51	.33197766 03 .100 01	-.0376*	.21892636 02 .114 01	-.0615*	
205732	60	51					.13561759 05 .352 00 .0713
205802	0	51	.33198395 03 .100 01	-.0438*	.22120012 02 .114 01	-.0527*	
205832	60	51					.13555175 05 .352 00 .1890
205902	0	51	.33199026 03 .100 01	-.0400*	.22347452 02 .114 01	-.0599*	
205932	60	51					.13548630 05 .352 00 -.1665
210002	0	51	.33199657 03 .100 01	-.0463*	.22574964 02 .114 01	-.0613*	
210032	60	51					.13542126 05 .352 00 -.0955
210102	0	51	.33200289 03 .100 01	-.0544*	.22802538 02 .114 01	-.0466*	
210502	0	51	.33202829 03 .100 01	-.0415*	.23713511 02 .114 01	-.0609*	
210532	60	51					.13510183 05 .352 00 .1143
210602	0	51	.33203467 03 .100 01	-.0479*	.23941412 02 .114 01	-.0486*	
210632	60	51					.13503908 05 .352 00 -.2441
210702	0	51	.33204105 03 .100 01	-.0321*	.24169384 02 .114 01	-.1023*	
210732	60	51					.13497669 05 .352 00 .0444
210802	0	51	.33204744 03 .100 01	-.0284*	.24397410 02 .114 01	-.0542*	
210832	60	51					.13491467 05 .352 00 .2300
210902	0	51	.33205385 03 .100 01	-.0448*	.24625504 02 .114 01	-.0521*	
210932	60	51					.13485301 05 .352 00 -.1543
211002	0	51	.33206027 03 .100 01	-.0311*	.24853659 02 .114 01	-.0601*	
211032	60	51					.13479171 05 .352 00 -.1245
211102	0	51	.33206668 03 .100 01	-.0433*	.25081870 02 .114 01	-.0341*	
211132	60	51					.13473076 05 .352 00 .2539
211202	0	51	.33207312 03 .100 01	-.0437*	.25310143 02 .114 01	-.0621*	
211232	60	51					.13467016 05 .352 00 -.0360
211302	0	51	.33207956 03 .100 01	-.0500*	.25538473 02 .114 01	-.0182*	
211332	60	51					.13460991 05 .352 00 -.2104
211402	0	51	.33208601 03 .100 01	-.0564*	.25766867 02 .114 01	-.0485*	
211432	60	51					.13454999 05 .352 00 .1812

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TIME	TC	Q	DEC		HA		CC3
211502	0	51	.33209248 03 .100 01	-.0408*	.25995310 02 .114 01	-.0527*	
211532	60	51					.13449041 05 .352 00 .1057
211602	0	51	.33209894 03 .100 01	-.0492*	.26223815 02 .114 01	-.0491*	
211632	60	51					.13443117 05 .352 00 -.2368
211702	0	51	.33210542 03 .100 01	-.0415*	.26452376 02 .114 01	-.0654*	
211732	60	51					.13437226 05 .352 00 .0546
211802	0	51	.33211190 03 .100 01	-.0480*	.26680990 02 .114 01	-.0459*	
211832	60	51					.13431367 05 .352 00 .2300
211902	0	51	.33211840 03 .100 01	-.0503*	.26909666 02 .114 01	-.0364*	
211932	60	51					.13425540 05 .352 00 -.1938
212002	0	51	.33212490 03 .100 01	-.0447*	.27138390 02 .114 01	-.0490*	
212032	60	51					.13419746 05 .352 00 -.0823
212102	0	51	.33213141 03 .100 01	-.0630*	.27367172 02 .114 01	-.0415*	
212132	60	51					.13413982 05 .352 00 .2480
212202	0	51	.33213793 03 .100 01	-.0415*	.27596002 02 .114 01	-.0703*	
212232	60	51					.13408250 05 .352 00 -.0366
212302	0	51	.33214445 03 .100 01	-.0399*	.27824886 02 .114 01	-.0490*	
212332	60	51					.13402549 05 .352 00 -.2021
212402	0	51	.33215099 03 .100 01	-.0464*	.28053823 02 .114 01	-.0576*	
212432	60	51					.13396878 05 .352 00 .1851
212502	0	51	.33215753 03 .100 01	-.0408*	.28282810 02 .114 01	-.0684*	
212532	60	51					.13391237 05 .352 00 .0928
212602	0	51	.33216408 03 .100 01	-.0393*	.28511849 02 .114 01	-.0574*	
212632	60	51					.13385626 05 .352 00 -.2295
212702	0	51	.33217064 03 .100 01	-.0377*	.28740938 02 .114 01	-.0723*	
212732	60	51					.13380045 05 .352 00 .0524
212802	0	51	.33217721 03 .100 01	-.0222*	.28970076 02 .114 01	-.0552*	
212832	60	51					.13374491 05 .352 00 .2056
212902	0	51	.33218378 03 .100 01	-.0386*	.29199259 02 .114 01	-.0563*	
212932	60	51					.13368968 05 .352 00 -.1709
213002	0	51	.33219036 03 .100 01	-.0450*	.29428492 02 .114 01	-.0513*	
213032	60	51					.13363471 05 .352 00 -.0745
213102	0	51	.33219695 03 .100 01	-.0515*	.29657778 02 .114 01	-.0443*	
213132	60	51					.13358004 05 .352 00 .2432
213202	0	51	.33220354 03 .100 01	-.0541*	.29887105 02 .114 01	-.0635*	
213232	60	51					.13352563 05 .352 00 -.0664
213302	0	51	.33221014 03 .100 01	-.0605*	.30116482 02 .114 01	-.0347*	
213332	60	51					.13347150 05 .352 00 -.1865
213402	0	51	.33221675 03 .100 01	-.0331*	.30345901 02 .114 01	-.0659*	
213432	60	51					.13341764 05 .352 00 .1831
213502	0	51	.33222336 03 .100 01	-.0396*	.30575368 02 .114 01	-.0573*	
213532	60	51					.13336404 05 .352 00 .0928
213602	0	51	.33222999 03 .100 01	-.0460*	.30804878 02 .114 01	-.0526*	

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TIME	TC	Q	DEC		HA		CC3	
213632	60	51					.13331071 05 .352 00	-.2407
213702	0	51	.33223661 03 .100 01	-.0305•	.31034432 02 .114 01	-.0701•		
213732	60	51					.13325763 05 .352 00	.0674
213802	0	51	.33224325 03 .100 01	-.0431•	.31264033 02 .114 01	-.0514•		
213832	60	51					.13320482 05 .352 00	.2153
213902	0	51	.33224989 03 .100 01	-.0355•	.31493671 02 .114 01	-.0449•		
213932	60	51					.13315225 05 .352 00	-.1782
214002	0	51	.33225654 03 .100 01	-.0361•	.31723358 02 .114 01	-.0525•		
214032	60	51					.13309993 05 .352 00	-.0793
214102	0	51	.33226319 03 .100 01	-.0426•	.31953083 02 .114 01	-.0460•		
214132	60	51					.13304786 05 .352 00	.2446
214202	0	51	.33226985 03 .100 01	-.0411•	.32182854 02 .114 01	-.0657•		
214232	60	51					.13299603 05 .352 00	-.0560
214302	0	51	.33227651 03 .100 01	-.0497•	.32412662 02 .114 01	-.0392•		
214332	60	51					.13294444 05 .352 00	-.1973
214402	0	51	.33228318 03 .100 01	-.0422•	.32642508 02 .114 01	-.0590•		
214432	60	51					.13289309 05 .352 00	.2046
214502	0	51	.33228986 03 .100 01	-.0428•	.32872400 02 .114 01	-.0647•		
214532	60	51					.13284197 05 .352 00	.0835
214602	0	51	.33229654 03 .100 01	-.0493•	.33102325 02 .114 01	-.0544•		
214632	60	51					.13279108 05 .352 00	-.2275
214702	0	51	.33230323 03 .100 01	-.0419•	.33332292 02 .114 01	-.0703•		
214732	60	51					.13274042 05 .352 00	.0551
214802	0	51	.33230992 03 .100 01	-.0404•	.33562297 02 .114 01	-.0562•		
214832	60	51					.13268998 05 .352 00	.2158
214902	0	51	.33231662 03 .100 01	-.0470•	.33792343 02 .113 01	-.0540•		
214932	60	51					.13263975 05 .352 00	-.1953
215002	0	51	.33232332 03 .100 01	-.0376•	.34022420 02 .113 01	-.0659•		
215032	60	51					.13258976 05 .352 00	-.0793
215102	0	51	.33233003 03 .100 01	-.0442•	.34252534 02 .113 01	-.0498•		
215132	60	51					.13253998 05 .352 00	.2495
215202	0	51	.33233674 03 .100 01	-.0487•	.34482690 02 .113 01	-.0640•		
215232	60	51					.13249040 05 .352 00	-.0598
215302	0	51	.33234346 03 .100 01	-.0553•	.34712880 02 .113 01	-.0259•		
215332	60	51					.13244103 05 .352 00	-.1895
215402	0	51	.33235018 03 .100 01	-.0740•	.34943108 02 .113 01	-.0299•		
215432	60	51					.13239187 05 .352 00	.1763
215502	0	51	.33235690 03 .100 01	-.0465•	.35173365 02 .113 01	-.0642•		
215532	60	51					.13234291 05 .352 00	.0891
215602	0	51	.33236364 03 .100 01	-.0531•	.35403657 02 .113 01	-.0482•		
215632	60	51					.13229415 05 .352 00	-.2354
215702	0	51	.33237037 03 .100 01	-.0397•	.35633986 02 .113 01	-.0703•		
215732	60	51					.13224559 05 .352 00	.0715

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TIME	TC	Q	DEC		HA		CC3	
215802	0	51	.33237712 03 .100 01	-.0463•	.35864345 02 .113 01	-.0546•		
215832	60	51					.13219722 05 .352 00	.1919
215902	0	51	.33238386 03 .100 01	-.0609•	.36094743 02 .113 01	-.0529•		
215932	60	51					.13214904 05 .352 00	-.1738
220002	0	51	.33239061 03 .100 01	-.0735•	.36325170 02 .113 01	-.0691•		
220032	60	51					.13210105 05 .352 00	-.0750
220102	0	51	.33239736 03 .100 01	-.0481•	.36555631 02 .113 01	-.0535•		
220132	60	51					.13205324 05 .352 00	.2393
220202	0	51	.33240412 03 .100 01	-.0287•	.36786118 02 .113 01	-.0558•		
220232	60	51					.13200562 05 .352 00	-.0486
220302	0	51	.33241088 03 .100 01	-.0214•	.37016643 02 .113 01	-.0463•		
220332	60	51					.13195818 05 .352 00	-.2041
220402	0	51	.33241765 03 .100 01	-.0460•	.37247198 02 .113 01	-.0667•		
220432	60	51					.13191091 05 .352 00	.1724
220502	0	51	.33242441 03 .100 01	-.0526•	.37477780 02 .113 01	-.0570•		
220532	60	51					.13186381 05 .352 00	.0994
220602	0	51	.33243119 03 .100 01	-.0413•	.37708395 02 .113 01	-.0295•		
220632	60	51					.13181688 05 .352 00	-.2246
220702	0	51	.33243796 03 .100 01	-.0479•	.37939037 02 .113 01	-.0601•		
220732	60	51					.13177013 05 .352 00	.0342
220802	0	51	.33244474 03 .100 01	-.0525•	.38169712 02 .113 01	-.0466•		
220832	60	51					.13172353 05 .352 00	.2104
220902	0	51	.33245153 03 .100 01	-.0511•	.38400409 02 .113 01	-.0571•		
220932	60	51					.13167710 05 .352 00	-.1304
221002	0	51	.33245831 03 .100 01	-.0437•	.38631137 02 .113 01	-.0537•		
221032	60	51					.13163083 05 .352 00	-.1362
221102	0	51	.33246510 03 .100 01	-.0504•	.38861895 02 .113 01	-.0504•		
221132	60	51					.13158472 05 .352 00	.2417
221202	0	51	.33247189 03 .100 01	-.0450•	.39092679 02 .113 01	-.0649•		
221232	60	51					.13153876 05 .352 00	-.0123
221302	0	51	.33247869 03 .100 01	-.0536•	.39323493 02 .113 01	-.0437•		
221332	60	51					.13149295 05 .352 00	-.1978
221402	0	51	.33248548 03 .100 01	-.0443•	.39554330 02 .113 01	-.0585•		
221432	60	51					.13144729 05 .352 00	.1182
221502	0	51	.33249228 03 .100 01	-.0609•	.39785200 02 .113 01	-.0591•		
221532	60	51					.13140177 05 .353 00	.1699
221602	0	51	.33249909 03 .101 01	-.0436•	.40016085 02 .113 01	-.0599•		
221632	60	51					.13135640 05 .353 00	-.2266
221702	0	51	.33250589 03 .101 01	-.0482•	.40247000 02 .113 01	-.0627•		
221732	60	51					.13131116 05 .353 00	-.0197
221802	0	51	.33251270 03 .101 01	-.0409•	.40477945 02 .113 01	-.0496•		
221832	60	51					.13126607 05 .353 00	.2397
221902	0	51	.33251951 03 .101 01	-.0475•	.40708908 02 .113 01	-.0604•		

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TIME	TC	Q	DEC		HA		CC3	
221932	60	51					.13122112 05 .353 00	-.0815
222002	0	51	.33252632 03 .101 01	-.0402*	.40939897 02 .113 01	-.0713*		
222032	60	51					.13117629 05 .353 00	-.1821
222102	0	51	.33253314 03 .101 01	-.0408*	.41170913 02 .113 01	-.0562*		
222132	60	51					.13113159 05 .353 00	.2212
222202	0	51	.33253995 03 .101 01	-.0435*	.41401951 02 .113 01	-.0652*		
222232	60	51					.13108702 05 .353 00	.0613
222302	0	51	.33254677 03 .101 01	-.0301*	.41633008 02 .113 01	-.0541*		
222332	60	51					.13104258 05 .353 00	-.2446
222402	0	51	.33255359 03 .101 01	-.0527*	.41864090 02 .113 01	-.0590*		
222432	60	51					.13099826 05 .353 00	.1042
222502	0	51	.33256041 03 .101 01	-.0414*	.42095199 02 .113 01	-.0679*		
222532	60	51					.13095406 05 .353 00	.1743
222602	0	51	.33256724 03 .101 01	-.0481*	.42326327 02 .113 01	-.0470*		
222632	60	51					.13090998 05 .353 00	-.1841
222702	0	51	.33257407 03 .101 01	-.0527*	.42557476 02 .113 01	-.0580*		
222732	60	51					.13086601 05 .353 00	-.0537
222802	0	51	.33258089 03 .101 01	-.0674*	.42788648 02 .113 01	-.0410*		
222832	60	51					.13082215 05 .353 00	.2480
222902	0	51	.33258772 03 .101 01	-.0441*	.43019838 02 .113 01	-.0701*		
223102	0	51	.33260138 03 .101 01	-.0693*	.43482285 02 .113 01	-.0483*		
223302	0	51	.33261505 03 .101 01	-.0547*	.43944810 02 .113 01	-.0547*		
224202	0	51	.33267659 03 .101 01	-.0426*	.46027091 02 .113 01	-.0621*		
224232	60	51					.13021862 05 .353 00	.0518
224302	0	51	.33268343 03 .101 01	-.0493*	.46258542 02 .113 01	-.0554*		
224332	60	51					.13017616 05 .353 00	-.2358
224402	0	51	.33269027 03 .101 01	-.0519*	.46490012 02 .113 01	-.0627*		
224432	60	51					.13013378 05 .353 00	.0857
224502	0	51	.33269712 03 .101 01	-.0505*	.46721493 02 .113 01	-.0563*		
224532	60	51					.13009147 05 .353 00	.2002
224602	0	51	.33270395 03 .101 01	-.0272*	.46952992 02 .113 01	-.0676*		
224632	60	51					.13004922 05 .353 00	-.1919
224702	0	51	.33271080 03 .101 01	-.0399*	.47184505 02 .113 01	-.0591*		
224732	60	51					.13000705 05 .353 00	-.0414
224802	0	51	.33271763 03 .101 01	-.0505*	.47416037 02 .113 01	-.0525*		
224832	60	51					.12996494 05 .353 00	.2192
224902	0	51	.33272447 03 .101 01	-.0532*	.47647576 02 .113 01	-.0701*		
224932	60	51					.12992290 05 .353 00	-.0928
225002	0	51	.33273131 03 .101 01	-.0538*	.47879133 02 .113 01	-.0515*		
225032	60	51					.12988091 05 .353 00	-.1777
225102	0	51	.33273815 03 .101 01	-.0604*	.48110704 02 .113 01	-.0530*		
225132	60	51					.12983899 05 .353 00	.2148
225202	0	51	.33274499 03 .101 01	-.0511*	.48342285 02 .113 01	-.1543*		

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FREQUENCY2013871.0

TIME	TC	Q	DEC		HA		CC3	
225232	60	51					.12979712 05 .353 00	.0515
225302	0	51	.33275183 03 .101 01	-.0358*	.48573890 02 .113 01	-.0541*		
225332	60	51					.12975531 05 .353 00	-.2339
225432	60	51					.12971355 05 .353 00	.0757
225732	60	51					.12958856 05 .353 00	-.0591
225802	0	51	.33278600 03 .101 01	-.0549*	.49732071 02 .113 01	-.0459*		
225832	60	51					.12954699 05 .353 00	.2314
225902	0	51	.33279284 03 .101 01	-.0496*	.49963742 02 .113 01	-.0696*		
225932	60	51					.12950546 05 .353 00	-.0820
230002	0	51	.33279967 03 .101 01	-.0482*	.50195427 02 .113 01	-.0510*		
230202	0	51	.33281333 03 .101 01	-.0494*	.50658827 02 .113 01	-.0524*		
230232	60	51					.12938109 05 .353 00	.0541
230302	0	51	.33282015 03 .101 01	-.0560*	.50890547 02 .113 01	-.0460*		
230332	60	51					.12933971 05 .354 00	-.2246
230402	0	51	.33282698 03 .101 01	-.0486*	.51122271 02 .113 01	-.0557*		
230432	60	51					.12929836 05 .354 00	.0940
230502	0	51	.33283380 03 .101 01	-.0553*	.51354012 02 .113 01	-.0514*		
230532	60	51					.12925704 05 .354 00	.1763
230602	0	51	.33284063 03 .101 01	-.0438*	.51585756 02 .113 01	-.0491*		
230632	60	51					.12921575 05 .354 00	-.1953
230702	0	51	.33284745 03 .101 01	-.0504*	.51817515 02 .113 01	-.0548*		
230732	60	51					.12917449 05 .354 00	-.0516
230802	0	51	.33285427 03 .101 01	-.0551*	.52049281 02 .113 01	-.0405*		
230832	60	51					.12913324 05 .354 00	.2397
230902	0	51	.33286108 03 .101 01	-.0696*	.52281056 02 .113 01	-.0542*		
230932	60	51					.12909202 05 .354 00	-.0715
231002	0	51	.33286790 03 .101 01	-.0563*	.52512842 02 .113 01	-.0459*		
231032	60	51					.12905082 05 .354 00	-.1680
231102	0	51	.33287471 03 .101 01	-.0548*	.52744631 02 .113 01	-.0477*		
231132	60	51					.12900963 05 .354 00	.1670
231202	0	51	.33288153 03 .101 01	-.0454*	.52976438 02 .113 01	-.0575*		
231232	60	51					.12896846 05 .354 00	.0840
231302	0	51	.33288833 03 .101 01	-.0520*	.53208244 02 .113 01	-.0552*		
231332	60	51					.12892731 05 .354 00	-.2173
231402	0	51	.33289514 03 .101 01	-.0547*	.53440063 02 .113 01	-.0570*		
231432	60	51					.12888616 05 .354 00	.0637
231502	0	51	.33290194 03 .101 01	-.0693*	.53671886 02 .113 01	-.0448*		
231532	60	51					.12884504 05 .354 00	.1934
231602	0	51	.33290874 03 .101 01	-.0598*	.53903718 02 .113 01	-.0505*		
231632	60	51					.12880391 05 .354 00	-.1943
231702	0	51	.33291554 03 .101 01	-.0664*	.54135562 02 .113 01	-.0583*		
231732	60	51					.12876280 05 .354 00	-.0996
231802	0	51	.33292233 03 .101 01	-.0630*	.54367404 02 .113 01	-.0442*		

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FREQUENCY2013871.0

TIME	TC	Q	DEC		HA		CC3	
231832	60	51					.12872168 05 .354 00	.1787
231902	0	51	.33292913 03 .101 01	-.0475*	.54599264 02 .113 01	-.0662*		
232102	0	51	.33294271 03 .101 01	-.0627*	.55062991 02 .113 01	-.0577*		
232202	0	51	.33294949 03 .101 01	-.0492*	.55294862 02 .113 01	-.0455*		
					65/08/12			
000902	0	51	.33326348 03 .102 01	-.0492*	.66195939 02 .114 01	-.0576*		
001002	0	51	.33327003 03 .102 01	-.0554*	.66427863 02 .114 01	-.0536*		
001102	0	51	.33327656 03 .102 01	-.0457*	.66659788 02 .114 01	-.0637*		
001202	0	51	.33328310 03 .102 01	-.0479*	.66891710 02 .114 01	-.0516*		
001402	0	51	.33329614 03 .102 01	-.0583*	.67355536 02 .114 01	-.0436*		
001502	0	51	.33330264 03 .102 01	-.0686*	.67587445 02 .114 01	-.0555*		
001602	0	51	.33330915 03 .102 01	-.0508*	.67819351 02 .114 01	-.0735*		
001802	0	51	.33332213 03 .102 01	-.0392*	.68283148 02 .114 01	-.0696*		
001902	0	51	.33332861 03 .102 01	-.0454*	.68515037 02 .114 01	-.0654*		
			FREQUENCY2013767.0					
002202	0	51	.33334800 03 .102 01	-.0519*	.69210677 02 .114 01	-.0594*		
002232	60	51					.12602239 05 .357 00	.2231
002302	0	51	.33335445 03 .102 01	-.0601*	.69442550 02 .114 01	-.0635*		
002332	60	51					.12597808 05 .357 00	-.1128
002402	0	51	.33336088 03 .102 01	-.0442*	.69674414 02 .114 01	-.0454*		
002432	60	51					.12593367 05 .357 00	-.1724
002502	0	51	.33336731 03 .102 01	-.0483*	.69906276 02 .114 01	-.0632*		
002532	60	51					.12588918 05 .357 00	.2104
002602	0	51	.33337374 03 .102 01	-.0544*	.70138127 02 .114 01	-.0713*		
002632	60	51					.12584458 05 .357 00	.0371
002702	0	51	.33338016 03 .102 01	-.0425*	.70369971 02 .114 01	-.0652*		
002732	60	51					.12579988 05 .357 00	-.2432
002802	0	51	.33338656 03 .102 01	-.0566*	.70601814 02 .114 01	-.0691*		
002832	60	51					.12575508 05 .357 00	.0867
002902	0	51	.33339296 03 .102 01	-.0468*	.70833646 02 .114 01	-.0671*		
002932	60	51					.12571018 05 .358 00	.1768
003002	0	51	.33339935 03 .102 01	-.0508*	.71065477 02 .114 01	-.0630*		
003032	60	51					.12566518 05 .358 00	-.2065
003102	0	51	.33340573 03 .102 01	-.0569*	.71297296 02 .114 01	-.0730*		
003132	60	51					.12562007 05 .358 00	-.0625
003202	0	51	.33341210 03 .102 01	-.0630*	.71529111 02 .114 01	-.0529*		
003232	60	51					.12557487 05 .358 00	.2246
003302	0	51	.33341845 03 .102 01	-.0691*	.71760917 02 .114 01	-.0569*		
003332	60	51					.12552955 05 .358 00	-.0935

STATION NUMBER 51 65/08/12 ITERATION NUMBER 3 PASS NUMBER 08/111 PAGE 40

FREQUENCY2013767.0

TIME	TC	Q	DEC		HA		CC3	
003402	0	51	.33342481 03 .102 01	.0331*	.71992715 02 .114 01	-.0549*		
003432	60	51					.12548412 05 .358 00	-.1841
003502	0	51	.33343115 03 .102 01	-.0531*	.72224508 02 .114 01	-.0647*		
003532	60	51					.12543859 05 .358 00	.1689
003602	0	51	.33343749 03 .102 01	-.0491*	.72456289 02 .114 01	-.0686*		
003632	60	51					.12539295 05 .358 00	.0835
003702	0	51	.33344381 03 .102 01	-.0450*	.72688069 02 .114 01	-.0465*		
003732	60	51					.12534720 05 .359 00	-.2251
003802	0	51	.33345012 03 .103 01	-.0511*	.72919832 02 .115 01	-.0745*		
003832	60	51					.12530134 05 .359 00	.0447
003902	0	51	.33345643 03 .103 01	-.0511*	.73151594 02 .115 01	-.0642*		
003932	60	51					.12525535 05 .359 00	.1763
004002	0	51	.33346272 03 .103 01	-.0531*	.73383347 02 .115 01	-.0642*		
004032	60	51					.12520926 05 .359 00	-.1484
004102	0	51	.33346901 03 .103 01	-.0470*	.73615087 02 .115 01	-.0640*		
004132	60	51					.12516306 05 .359 00	-.1113
004202	0	51	.33347529 03 .103 01	-.0450*	.73846821 02 .115 01	-.0599*		
004232	60	51					.12511674 05 .359 00	.2046
004302	0	51	.33348155 03 .103 01	-.0509*	.74078542 02 .115 01	-.0759*		
004332	60	51					.12507030 05 .359 00	-.0350
004402	0	51	.33348780 03 .103 01	-.0369*	.74310261 02 .115 01	-.0557*		
004432	60	51					.12502374 05 .360 00	-.1963
004502	0	51	.33349405 03 .103 01	-.0789*	.74541963 02 .115 01	-.0535*		
004532	60	51					.12497707 05 .360 00	.1216
004602	0	51	.33350028 03 .103 01	-.0468*	.74773660 02 .115 01	-.0754*		
004632	60	51					.12493027 05 .360 00	.1343
004702	0	51	.33350650 03 .103 01	-.0526*	.75005349 02 .115 01	-.0613*		
004732	60	51					.12488336 05 .360 00	-.2075
004802	0	51	.33351271 03 .103 01	-.0444*	.75237020 02 .115 01	-.0750*		
005002	0	51	.33352511 03 .103 01	-.0563*	.75700340 02 .115 01	-.0627*		
005032	60	51					.12474187 05 .361 00	-.1089
005102	0	51	.33353129 03 .103 01	-.0481*	.75931989 02 .115 01	-.0565*		
005402	0	51	.33354975 03 .103 01	-.0295*	.76626847 02 .115 01	-.0540*		
005432	60	51					.12455146 05 .361 00	-.2178
005502	0	51	.33355588 03 .104 01	-.0514*	.76858446 02 .116 01	-.0696*		
005532	60	51					.12450354 05 .362 00	.0911
005602	0	51	.33356201 03 .104 01	-.0471*	.77090030 02 .116 01	-.0774*		
005632	60	51					.12445549 05 .362 00	.1626
005702	0	51	.33356812 03 .104 01	-.0448*	.77321602 02 .116 01	-.0492*		
005732	60	51					.12440731 05 .362 00	-.2026
005802	0	51	.33357421 03 .104 01	-.0507*	.77553166 02 .116 01	-.0649*		
010002	0	51	.33358636 03 .104 01	-.0402*	.78016242 02 .116 01	-.0745*		
010032	60	51					.12426197 05 .363 00	-.0686

STATION NUMBER 51 65/08/12 ITERATION NUMBER 3 PASS NUMBER 08/111 PAGE 41

FREQUENCY2013767.0

TIME	TC	Q	DEC	HA	CC3
010102	0	51	.33359243 03 .104 01 -.0458*	.78247765 02 .116 01 -.0640*	
010402	0	51	.33361052 03 .104 01 -.0569*	.78942242 02 .116 01 -.0571*	
010602	0	51	.33362252 03 .104 01 -.0382*	.79405155 02 .116 01 -.0706*	
010632	60	51			.12396764 05 .364 00 .1812
010702	0	51	.33362850 03 .104 01 -.0498*	.79636585 02 .116 01 -.0481*	
010732	60	51			.12391810 05 .365 00 -.1982
010802	0	51	.33363447 03 .104 01 -.0435*	.79868007 02 .116 01 -.0577*	
010832	60	51			.12386842 05 .365 00 -.0637
010902	0	51	.33364042 03 .104 01 -.0510*	.80099406 02 .116 01 -.0493*	
011102	0	51	.33365227 03 .105 01 -.0402*	.80562156 02 .117 01 -.0565*	
011132	60	51			.12371854 05 .366 00 -.1919
011202	0	51	.33365818 03 .105 01 -.0458*	.80793507 02 .117 01 -.0640*	
011232	60	51			.12366828 05 .366 00 .1836
011302	0	51	.33366407 03 .105 01 -.0372*	.81024840 02 .117 01 -.0757*	
011332	60	51			.12361789 05 .367 00 .0725
011402	0	51	.33366995 03 .105 01 -.0427*	.81256151 02 .117 01 -.0612*	
011502	0	51	.33367581 03 .105 01 -.0483*	.81487449 02 .117 01 -.0667*	
011602	0	51	.33368165 03 .105 01 .0003*	.81718726 02 .117 01 -.0723*	
011632	60	51			.12346583 05 .368 00 .1782
011702	0	51	.33368749 03 .105 01 -.0352*	.81949984 02 .117 01 -.0577*	
011732	60	51			.12341486 05 .368 00 -.1748
011802	0	51	.33369330 03 .105 01 -.0406*	.82181217 02 .118 01 -.0652*	
011832	60	51			.12336373 05 .368 00 -.0947
011902	0	51	.33369910 03 .105 01 -.0461*	.82412434 02 .118 01 -.0546*	
011932	60	51			.12331245 05 .369 00 .2163
012002	0	51	.33371310 03 .105 01 -.0558*	.82667840 02 .118 01 -.1001*	
012032	60	51			.12326103 05 .369 00 -.0577
012102	0	51	.33371879 03 .105 01 -.0610*	.82898676 02 .118 01 -.0793*	
014302	0	51	.33383815 03 .110 01 -.0381*	.87969472 02 .122 01 -.0881*	
014332	60	51			.12203525 05 .385 00 .1201
014402	0	51	.33384327 03 .110 01 -.0448*	.88199531 02 .123 01 -.0725*	
014602	0	51	.33385341 03 .111 01 -.0361*	.88659509 02 .123 01 -.0771*	
014632	60	51			.12186907 05 .388 00 .1880
014702	0	51	.33385843 03 .111 01 -.0408*	.88889420 02 .123 01 -.0833*	
015002	0	51	.33387330 03 .112 01 -.0425*	.89578847 02 .125 01 -.0857*	
015032	60	51			.12164515 05 .393 00 .0630
015102	0	51	.33387817 03 .112 01 -.0330*	.89808546 02 .125 01 -.0796*	
015132	60	51			.12158876 05 .394 00 -.2139
015202	0	51	.33388302 03 .113 01 -.0414*	.90038181 02 .125 01 -.0815*	
015232	60	51			.12153219 05 .396 00 .0594
015302	0	51	.33388782 03 .113 01 .2354*	.90267760 02 .126 01 1.7617*	

MARINER STATISTICS STATION 51 ITERATION 3

PASS	DATA TYPE	BEGINNING TIME	END TIME	NUMBER OF POINTS	STD DEV	RMS	FIRST MOMENT	SECOND MOMENT
08/111	CC3	8/11-150306	8/12-014332	792	.226 00	.226 00	-.312-02	.511-01
08/122	CC3	8/12-014632	8/12-015232	4	.147 00	.149 00	.241-01	.221-01

STATION NUMBER 91 65/08/11 ITERATION NUMBER 3 PASS NUMBER NONE PAGE 42

FREQUENCY2013767.0

TIME	TC	Q	R	EL	AZ
144229	1	0	.12418643 04 .216 01 -.0520*	.32541825 01 .216 01 .0143*	.56494318 02 .100 01 -.0143*
144235	1	0	.12827563 04 .260 01 -.0532*	.27000070 01 .260 01 .0686*	.58615925 02 .100 01 -.0059*
144241	1	0	.13253628 04 .330 01 -.0630*	.21736351 01 .330 01 .0347*	.60602845 02 .100 01 -.0284*
144247	1	0	.13694666 04 .455 01 -.0759*	.16767080 01 .455 01 .0125*	.62463452 02 .100 01 -.0089*
144253	1	0	.14149836 04 .697 01 -.0730*	.12110954 01 .697 01 .1030*	.64206084 02 .100 01 -.0089*
144259	1	0	.14617639 04 .127 02 -.0830*	.77932320 00 .127 02 .0864*	.65838918 02 .100 01 -.0239*

STATION NUMBER 77 65/08/11 ITERATION NUMBER 3 PASS NUMBER NONE PAGE 43

FREQUENCY2013767.0

TIME	TC	Q	R	EL	AZ
144439	1	0	.47577135 03 .104 01 -4.2344*	.22323350 02 .104 01 .4980*	.79520923 02 .108 01 -.0211*
144448	1	0	.55340283 03 .104 01 -.0391*	.19120891 02 .104 01 -.0074*	.85074264 02 .106 01 -.1528*
144451	1	0	.58036565 03 .105 01 -.0740*	.18206152 02 .105 01 .0037*	.86550676 02 .105 01 -.1543*
144454	1	0	.60758050 03 .105 01 -.0874*	.17357832 02 .105 01 .0033*	.87881855 02 .105 01 -.1450*
144457	1	0	.63550124 03 .106 01 -.0962*	.16543806 02 .106 01 -.0533*	.89087079 02 .104 01 -.2104*
144503	1	0	.69191956 03 .107 01 -.1309*	.15129821 02 .107 01 .0424*	.91181998 02 .104 01 -.1082*
144509	1	0	.74932224 03 .108 01 -.1587*	.13897236 02 .108 01 .0142*	.92937594 02 .103 01 -.1140*
144512	1	0	.77832168 03 .109 01 -.1685*	.13338697 02 .109 01 .0509*	.93712126 02 .103 01 -.1140*
144515	1	0	.80749030 03 .109 01 -.1821*	.12814009 02 .109 01 .0125*	.94427931 02 .102 01 -.1406*
144518	1	0	.83680874 03 .110 01 -.1904*	.12320119 02 .110 01 .0313*	.95091293 02 .102 01 -.0759*
144521	1	0	.86626096 03 .111 01 -.1992*	.11854289 02 .111 01 -.0193*	.95707650 02 .102 01 -.1431*
144524	1	0	.89583233 03 .112 01 -.1777*	.11414067 02 .112 01 .0447*	.96281748 02 .102 01 -.1265*
144536	1	0	.10150812 04 .116 01 -.2310*	.98688370 01 .116 01 .0106*	.98231061 02 .102 01 -.1150*
144539	1	0	.10450876 04 .116 01 -.2358*	.95280205 01 .116 01 -.0852*	.98646753 02 .102 01 -.1436*

APPENDIX F

Atlas-Centaur VI AFETR ODP Printout

The following pages are facsimiles of the *Atlas-Centaur VI (A/C-6)* AFETR ODP printout data.

```
PAGE HEADING                                                    (23       C
(AC6 PF SHIP ANC ANTIGUA  )                                               C
EPOCH                                                           (01       C
650801114,4223600                                                         C
PROBE POSITION AND VELOCITY AT EPOCH                            (02       C
X=-.37129758E04 Y=.47650926E04 Z=.25612327E04                             C
DX=-.87324470E01 DY=-.58126377E01 DZ=-.32398791E01                        C
OTHER PARAMETER VALUES                                          (03       C
READB2                                                                    C
SOLAR PRESSURE OFF                                                        C
NHR=.05                                                                   C
RI(8)=6376.1876 LA(8)=.17904084E02 LO(8)=-.44017411E02                    C
RSDISP(8)=.1127                                                           C
ESTIMATE THESE PARAMETERS                                       (04       C
X,Y,Z,DX,DY,DZ                                                            C
LA(8) LO(8)                                                               C
STATISTICS,PLOT AND/OR PRINT RESIDUALS FOR THESE PARAMETERS     (14       C
R(6)=.5,AZ(6)=.2,EL(6)=.2                                                 C
R(8)=.5,AZ(8)=.2,EL(8)=.2                                                 C
WEIGHTS BY DATA TYPE AND STATION                                (16       C
R(8)=.03,AZ(8)=0.5,EL(8)=0.5                                              C
R(6)=.03,EL(6)=.03,AZ(6)=.03                                              C
REJECTION SIGMAS                                                (06       C
R(8)=3.,AZ(8)=.3,EL(8)=.3                                                 C
R(6)=3.,AZ(6)=.3,EL(6)=.3                                                 C
START AND STOP TIME                                             ,34       C
650801114,4223800,650801114,4537000                                       C
OFFLINE CONTROL                                                 (27       C
KEY(6)                                                                    C
KEY(14),KEY(16)                                                           C
KEY(15),KEY(17)                                                           C
END DATA                                                        (0        C
```

INPUT COVARIANCE MATRIX OF ESTIMATED PARAMETERS ITERATION NUMBER 0

	X	Y	Z	DX	DY	DZ	LA(08)	LO(08)
X	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
Y	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
Z	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
DX	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
DY	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
DZ	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
LA(08)	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
LO(08)	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00

INPUT J MATRIX OF ESTIMATED PARAMETERS ITERATION NUMBER 0

	X	Y	Z	DX	DY	DZ	LA(08)	LO(08)
X	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
Y	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
Z	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
DX	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
DY	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
DZ	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
LA(08)	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00
LO(08)	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00	.00000000 00

DOUBLE PRECISION EPHEMERIS TAPE - EPHEM1

GME	.39860127 06	J	.16234500-02	H	-.57499999-05	D	.78749999-05	RE	.63781650 04	REM	.63783143 04
G	.66709998-19	A	.88781796 29	B	.88800194 29	C	.88836976 29	CME	.41780741-02	AU	.14959850 09
GMM	.49025800 04	GMS	.13271411 12	GMV	.32476627 06	GMA	.42977368 05	GMC	.37918700 08	GMJ	.12670935 09
EGM	.39860127 06	MGM	.49025800 04	JA	.29200000-02	HA	.00000000 00	DA	.00000000 00	RA	.34170000 04

RADIATION PRESSURE INPUT

ARA	.38300000 01	GR	.38300000 00	MAS	.19822000 03	GB1	.00000000 00	GB2	.00000000 00	SC	.10310000 09

INJECTION CONDITIONS 1950.0 VENUS 23572563062320271463000O J.D.= 2438984.11277314 AUG. 11,1965 14 42 23.600

GEOCENTRIC	XO	-.36930507 04	YO	.47786970 C4	ZO	.25670528 04	DXO	-.87530717 01	DYO	-.57899839 01	DZO	-.32232244 01
CARTESIAN	TO	.52943599 05	GHA	.18044963 03	GHO	.31924731 03						

DATE OF RUN 111765G 01PM24

EARTH IS THE CENTRAL BODY FOR INTEGRATION COWELL EQUATIONS OF MOTION

PROBE IS OUT OF EARTH'S SHADOW

0 DAYS 0 HRS. 0 MIN. 0.000 SEC. 23572563062320271463000O J.D.= 2438984.11277314 AUG. 11,1965 14 42 23.600

GEOCENTRIC EQUATORIAL COORDINATES

X	-.37132056 04	Y	.47659789 04	Z	.25616160 04	DX	-.87283910 01	DY	-.58198570 01	DZ	-.32363256 01
R	.65623415 04	DEC	.22976336 C2	RA	.12792239 03	V	.10978586 02	PTH	-.28779010 01	AZ	.10741418 03
R	.65623415 04	LAT	.22976336 C2	LON	.30747277 03	VE	.10559583 02	PTE	-.29921982 01	AZE	.10813060 03
XS	-.11389618 09	YS	.91780063 08	ZS	.39801205 08	DXS	-.19163334 02	DYS	-.20428721 02	DZS	-.88598250 01
XM	.26372386 06	YM	-.26962224 06	ZM	-.15028776 C6	DXM	.73064569 00	DYM	.60447249 00	DZM	.21499923 00
XT	-.19890653 09	YT	.28956684 08	ZT	.16880855 08	DXT	.22178454 01	DYT	-.45205320 02	DZT	-.21370097 02
RS	.15159174 09	VS	.29377925 02	RM	.40599610 06	VM	.97234498 00	RT	.20171083 09	VT	.50051182 02
GEC	.23116514 02	ALT	.18742523 C3	LOS	.32068773 C3	RAS	.14113736 03	RAM	.31436638 03	LOM	.13391675 03
DUT	.36600000 02	DT	.37500000 01	DR	-.55121003 00	SHA	-.16636785 04	DES	.15221733 02	DEM	-.21726129 02
CCL	.27775131 03	MCL	.16780305 03	TCL	.19797279 03						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 23572563064220277740242O J.D.= 2438984.11347217 AUG. 11,1965 14 43 23.996

SMA	.41866829 06	ECC	.98436550 C0	R	.73743360 05	SLR	.12988997 05	APO	.83079089 06	RCA	.65456676 C4
VH	.86609475-01	C3	-.95206942 00	C1	.71954366 05	TFP	-.60396156 02	TF	.69902958-03	PER	.44932893 05
TA	-.58015558 01	MTA	.18000000 03	EA	-.51540265 C0	MA	-.80648476-02			TFI	.00000000 00

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	-.37132056 04	Y	.47659789 04	Z	.25616160 04	DX	-.87283910 01	DY	-.58198570 01	DZ	-.32363256 01
INC	.28541817 02	LAN	.35913998 C3	APF	.13101839 03	MX	-.82448699 00	MY	-.49426930 00	MZ	-.27553415 00
WX	-.71715017-02	WY	-.47774624 00	WZ	.87846862 00	PX	-.64627905 00	PY	.67257963 00	PZ	.36049961 00
QX	-.76306742 00	QY	-.56515C54 00	QZ	-.31358079 00	RX	-.24977863 00	RY	.25994347 00	RZ	-.93275933 00
BX	.76306745 00	BY	.56515C55 C0	BZ	.31358080 00	TX	.72106449 00	TY	.69286796 00	TZ	.00000000 00
DAP	.21130882 02	RAP	.13385756 03								

BTQ	.69451167 05	BRQ	-.24791498 05	B	.73743360 05	THA	.34035531 03

T VECTOR IN EARTH EQUATOR PLANE

ALL VECTORS REFERENCED TO ECLIPTIC PLANE

X	-.37132056 04	Y	.53917C36 04	Z	.45383057 03	DX	-.87283910 01	DY	-.66270245 01	DZ	-.65351650 00
INC	.51098529 01	LAN	.35538157 C3	APF	.13486302 03	MX	-.82448698 00	MY	-.56309074 00	MZ	-.56125051-01
WX	-.71715035-02	WY	-.88776430-01	WZ	.99602576 00	PX	-.64627900 00	PY	.76048540 00	PZ	.63129277-01
QX	-.76306744 00	QY	-.64325780 00	QZ	-.62828167-01	RX	-.40880670-01	RY	.48104847-01	RZ	-.99800529 00
BX	.76306748 00	BY	.64325784 00	BZ	.62828170-01	TX	.76200537 00	TY	.64757071 00	TZ	.00000000 00
DAP	.36194478 01	RAP	.13035869 03								

CASE 1 IBSYS-JPTRAJ-SPACE 111765 2

BTC	.73596979 05	BRC	-.46424133 04	B	.73743252 05	THA	.35639063 03	T VECTOR IN ECLIPTIC PLANE			

ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE

X	.43662002 04	Y	.48962890 04	Z	.16423796 03	DX	-.84953171 01	DY	.68724480 01	DZ	-.10622573 01
INC	.56725067 01	LAN	.24287393 03	APF	.17113430 03	MX	-.74133763 00	MY	.66428538 00	MZ	-.95621241-01
WX	-.87970144-01	WY	.45067102-01	WZ	.99510311 00	PX	.58699710 00	PY	.80944566 00	PZ	.15233446-01
QX	-.80479537 00	QY	.58546273 00	QZ	-.97661308-01	RX	.89430264-02	RY	.12332078-01	RZ	-.99988391 00
BX	.80479539 00	BY	-.58546275 00	BZ	.97661311-01	TX	.80953962 00	TY	-.58706524 00	TZ	.00000000 00
DAP	.87284523 00	RAP	.54050974 02								

BTO	.73390387 05	BRO	-.72026718 04	B	.73742983 05	THA	.35439483 03	T VECTOR IN ORBIT PLANE OF TARGET			

HELIOCENTRIC EQUATORIAL COORDINATES

X	.11389247 09	Y	-.91775297 08	Z	-.39798643 08	DX	.10434943 02	DY	.14608864 02	DZ	.56234993 01
R	.15158539 09	LAT	-.15221383 02	LON	.32113790 03	V	.18813045 02	PTH	-.75779590 01	AZ	.73959712 02
XE	.11389618 09	YE	-.91780063 08	ZE	-.39801205 08	DXE	.19163334 02	DYE	.20428721 02	DZE	.88598250 01
XT	-.85010348 08	YT	-.62823379 08	ZT	-.22920350 08	DXT	.21381179 02	DYT	-.24776599 02	DZT	-.12510272 02
LTE	-.15221733 02	LOE	.32113736 03	LTT	-.12234241 02	LOT	.21646472 03	RST	.10816135 09	VST	.35036290 02
EPS	.16531352 03	ESP	.27453512-18	SEP	.14685849 02	EPM	.59922650 01	EMP	.96153174-01	MEP	.17391105 03
MPS	.17077946 03	MSP	.25217635-01	SMP	.91956165 01	SEM	.17086293 03	EMS	.91127625 01	ESM	.25217635-01
EPT	.13401755 03	ETP	.00000000 00	TEP	.45981104 02	TPS	.31813324 02	TSP	.10055804 03	STP	.47628630 02
SET	.31812591 02	STE	.47629962 02	EST	.10055744 03	RPM	.41252201 06	RPT	.20170627 09	SPN	.88926146 02
SAC	.11989950-09										
GCE	.82248688 02	GCT	.10022149 03	SIP	.31811592 02	CPT	.85387564 02	SIN	.85385831 02		
REP	.65623415 04	VEP	.10978586 02	CPE	.99342467 02	CPS	.78320568 02				

HELIOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357345654322C2014630000 J.D.= 2439068.23157522 NOV. 3,1965 17 33 28.100

SMA	.94993663 08	ECC	.60508472 00	B	.75630254 08	SLR	.60213869 08	APO	.15247288 09	RCA	.37514449 08
VH	.18540191 02	C3	-.13970838 04	C1	.28268763 10	TFP	-.72678645 07	TF	.84118801 02	PER	.18482023 03
TA	-.17498961 03	MTA	.18000000 03	EA	-.16991855 03	MA	-.16384985 03			TFI	.00000000 00

ALL VECTORS REFERENCED TO ECLIPTIC PLANE

X	.11389247 09	Y	-.10003318 09	Z	.28670000 04	DX	.10434943 02	DY	.15640196 02	DZ	-.65337801 00
INC	.20076691 01	LAN	.13873766 03	APF	.35495867 03	MX	.65950844 00	MY	.75088032 00	MZ	-.35033526-01
WX	.23104879-01	WY	.26334632-01	WZ	.99938615 00	PX	-.69087192 00	PY	.72297060 00	PZ	-.30785426-02
QX	-.72260787 00	QY	-.69037668 00	QZ	.34898006-01	RX	.21268888-02	RY	-.22257064-02	RZ	-.99999523 00
BX	.72260788 00	BY	.69037670 00	BZ	-.34898007-01	TX	.72297403 00	TY	.69087520 00	TZ	.00000000 00
DAP	-.17638963 00	RAP	.13369943 03								

BTC	.75584185 08	BRC	.26393576 07	B	.75630254 08	THA	.19999263 01	T VECTOR IN ECLIPTIC PLANE			

ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE

X	-.70414563 08	Y	-.13400266 09	Z	.79503280 07	DX	.17656937 02	DY	-.64877159 01	DZ	-.26975138 00
INC	.30369366 01	LAN	.14414353 03	APF	.27311414 03	MX	.88501830 00	MY	-.46549601 00	MZ	-.74873573-02
WX	.31033147-01	WY	.42939275-01	WZ	.99859559 00	PX	.54004007 00	PY	.83997509 00	PZ	-.52901359-01
QX	-.84106696 00	QY	.54092333 00	QZ	.28781416-02	RX	-.28608914-01	RY	-.44498133-01	RZ	-.99859972 00
BX	.84106697 00	BY	-.54092334 00	BZ	-.28781416-02	TX	.84115293 00	TY	-.54079733 00	TZ	.00000000 00
DAP	-.30324392 01	RAP	.57262067 02								

BTO	.75629935 08	BRO	.21797983 06	B	.75630250 08	THA	.16513647 00	T VECTOR IN ORBIT PLANE OF TARGET			

0 DAYS 16 HRS. 7 MIN. 38.400 SEC. 2357256651062024C0000000 J.D.= 2438984.78474537 AUG. 12,1965 06 50 02.000

GEOCENTRIC EQUATORIAL COORDINATES

X	.57176717 05	Y	-.13838072 06	Z	-.74778288 05	DX	.10528935 01	DY	-.14403493 01	DZ	-.77443688 00
R	.16736246 06	DEC	-.26538845 02	RA	.29244964 03	V	.19449790 01	PTH	.77201152 02	AZ	.79083958 02
R	.16736246 06	LAT	-.26538845 02	LON	.22942768 03	VE	.10665559 02	PTE	.10243375 02	AZE	.27044543 03
XS	-.11500151 09	YS	.90588113 08	ZS	.39284287 08	DXS	-.18911343 02	DYS	-.20629379 02	DZS	-.89466988 01
XM	.30336227 06	YM	-.23193805 06	ZM	-.13633205 06	DXM	.63242678 00	DYM	.69151106 00	DZM	.26495952 00
XT	-.19875553 09	YT	.26337405 08	ZT	.15641678 08	DXT	.29835935 01	DYT	-.45019136 02	DZT	-.21315227 02
RS	.15157443 09	VS	.29381177 02	RM	.40547546 06	VM	.97383505 00	RT	.20110216 09	VT	.49899532 02
GED	-.26694708 02	ALT	.16098856 06	LOS	.78750101 02	RAS	.14177206 03	RAM	.32259998 03	LOM	.25957803 03
DUT	.36600000 02	DT	.48000000 03	DR	.18966537 01	SHA	.82766733 05	DES	.15021108 02	DEM	-.19647205 02
CCL	.91213475 02	MCL	.20347567 03	TCL	.11504452 02						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357256306432020735400000 J.D.= 2438984.11347762 AUG. 11,1965 14 43 24.466

SMA	.40657571 06	ECC	.98382580 00	B	.72829048 05	SLR	.13045713 05	APO	.80657538 06	RCA	.65760376 04
VH	.89404272-01	C3	-.98038634 00	C1	.72111288 05	TFP	.57997534 05	TF	.70446729-03	PER	.43000294 05
TA	.15958812 03	MTA	.18000000 03	EA	.53270798 02	MA	.80926236 01			TFI	.67197222 00

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.57176717 05	Y	-.13838072 06	Z	-.74778288 05	DX	.10528935 01	DY	-.14403493 01	DZ	-.77443688 00
INC	.28544778 02	LAN	.35910252 03	APF	.13117730 03	MX	.93980321 00	MY	.29676224 00	MZ	.16941670 00
WX	-.74845520-02	WY	-.47778674 00	WZ	.87844393 00	PX	-.64795437 00	PY	.67141483 00	PZ	.35966265 00
QX	-.76164230 00	QY	-.56649968 00	QZ	-.31460926 00	RX	-.24975821 00	RY	.25880120 00	RZ	-.93308238 00
BX	.76164235 00	BY	.56649972 00	BZ	.31460929 00	TX	.71956650 00	TY	.69442353 00	TZ	.00000000 00
DAP	.21079479 02	RAP	.13398129 03								

BTC	.68564401 05	BRQ	-.24555916 05	B	.72829048 05	THA	.34029533 03

T VECTOR IN EARTH EQUATOR PLANE

ALL VECTORS REFERENCED TO ECLIPTIC PLANE

X	.57176717 05	Y	-.15670818 06	Z	-.13548460 05	DX	.10528935 01	DY	-.16295607 01	DZ	-.13744219 00
INC	.51152614 01	LAN	.35518449 03	APF	.13518531 03	MX	.93980309 00	MY	.33966756 00	MZ	.37359935-01
WX	-.74845648-02	WY	-.88843121-01	WZ	.99601735 00	PX	-.64795437 00	PY	.75908251 00	PZ	.62839871-01
QX	-.76164219 00	QY	-.64490353 00	QZ	-.63247699-01	RX	-.40798001-01	RY	.47795109-01	RZ	-.99802360 00
BX	.76164231 00	BY	.64490364 00	BZ	.63247709-01	TX	.76058573 00	TY	.64923751 00	TZ	.00000000 00
DAP	.36028326 01	RAP	.13048414 03								

BTC	.72682652 05	BRC	-.46153915 04	B	.72829045 05	THA	.35636656 03

T VECTOR IN ECLIPTIC PLANE

ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE

X	-.13881673 06	Y	-.93141495 05	Z	-.80477815 04	DX	.13354857 01	DY	-.14129822 01	DZ	-.53875716-01
INC	.56864482 01	LAN	.24277368 03	APF	.17137871 03	MX	.55160722 00	MY	-.82959267 00	MZ	.86631116-01
WX	-.88104183-01	WY	.45330564-01	WZ	.99507903 00	PX	.58497517 00	PY	.81091518 00	PZ	.14852607-01
QX	-.80625147 00	QY	.58340505 00	QZ	-.97962278-01	RX	.86893650-02	RY	.12045534-01	RZ	-.99988969 00
BX	.80625167 00	BY	-.58340519 00	BZ	.97962302-01	TX	.81100465 00	TY	-.58503971 00	TZ	.00000000 00
DAP	.85102278 00	RAP	.54194203 02								

BTC	.72478652 05	BRQ	-.71352862 04	B	.72829028 05	THA	.35437753 03

T VECTOR IN ORBIT PLANE OF TARGET

CASE 1 IBSYS-JPTRAJ-SPACE 111765 4

HELIOCENTRIC EQUATORIAL COORDINATES

X	.11505869 09	Y	-.90726493 08	Z	-.39359064 08	DX	.19964236 02	DY	.19189030 02	DZ	.81722618 01
R	.15171992 09	LAT	-.15035603 02	LON	.32174338 03	V	.28871706 02	PTH	.30681081 01	AZ	.72066873 02
XE	.11500151 09	YE	-.90588113 08	ZE	-.39284287 08	DXE	.18911343 02	DYE	.20629379 02	DZE	.89466988 01
XT	-.83754011 08	YT	-.64250708 08	ZT	-.23642608 08	DXT	.21894936 02	DYT	-.24389757 02	DZT	-.12368529 02
LTE	-.15021108 02	LOE	.32177205 03	LTT	-.12624388 02	LOT	.21749311 03	RST	.10817514 09	VST	.35031828 02
EPS	.29607887 02	ESP	.32051055-01	SEP	.15036085 03	EPM	.13432072 03	EMP	.17175665 02	MEP	.28503615 02
MPS	.16297753 03	MSP	.30486634-01	SMP	.16992614 02	SEM	.17530692 03	EMS	.46805725 01	ESM	.13988227-01
EPT	.61227968 02	ETP	.40782339-01	TEP	.11873023 03	TPS	.31962990 02	TSP	.10009524 03	STP	.47941764 02
SET	.31973893 02	STE	.47900233 02	EST	.10012587 03	RPM	.27046103 06	RPT	.20118266 09	SPN	.27423880 02
SAC	.11968697-09										
GCE	.26878652 03	GCT	.10029098 03	SIP	.31961253 02	CPT	.85539883 02	SIN	.85538144 02		
REP	.16736246 06	VEP	.19449790 01	CPE	.80538537 02	CPS	.78412687 02				

HELIOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 23571350245720260C0000000 J.D.= 2438860.70665509 APRIL 10,1965 04 57 35.000

SMA	.14490236 09	ECC	.71218377-01	B	.14453383 09	SLR	.14416741 09	APO	.15522207 09	RCA	.13458265 09
VH	.28179846 02	C3	-.91588646 03	C1	.43741341 10	TFP	.10720347 08	TF	-.12340612 03	PER	.34819358 03
TA	.13434443 03	MTA	.18000000 03	EA	.13134853 03	MA	.12828528 03			TFI	.67197222 00

ALL VECTORS REFERENCED TO ECLIPTIC PLANE

X	.11505869 09	Y	-.98896067 08	Z	-.13102500 05	DX	.19964236 02	DY	.20856316 02	DZ	-.13699573 00
INC	.27214228 00	LAN	.13827785 03	APF	.46697767 02	MX	.65182544 00	MY	.75835416 00	MZ	-.47471645-02
WX	.31598502-02	WY	.35437797-02	WZ	.99998872 00	PX	-.99622396 00	PY	-.86725643-01	PZ	.34552940-02
QX	.86736909-01	QY	-.99622366 00	QZ	.32563582-02	RX	-.34422750-02	RY	-.29966507-03	RZ	-.99999176 00
BX	-.86737106-01	BY	.99622591 00	BZ	-.32563656-02	TX	-.86726359-01	TY	.99623217 00	TZ	.00000000 00
DAP	.19797474 00	RAP	.18497530 03								

BTC	.14453332 09	BRC	.47065756 06	B	.14453408 09	THA	.18657601 00	T VECTOR IN ECLIPTIC PLANE	

ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE

X	-.68990750 08	Y	-.13489036 09	Z	.79876084 07	DX	.24974243 02	DY	-.14468685 02	DZ	.72094271 00
INC	.32751029 01	LAN	.17579538 03	APF	.29280585 03	MX	.89062236 00	MY	-.45420225 00	MZ	-.22184530-01
WX	.41887086-02	WY	.56976499-01	WZ	.99836674 00	PX	-.31908996 00	PY	.94625954 00	PZ	-.52663995-01
QX	-.94771464 00	QY	-.31834823 00	QZ	.22144235-01	RX	.16827913-01	RY	-.49903083-01	RZ	-.99861179 00
BX	.94771511 00	BY	.31834839 00	BZ	-.22144247-01	TX	.94757497 00	TY	.31953354 00	TZ	.00000000 00
DAP	-.30188198 01	RAP	.10863472 03								

BTC	.14449878 09	BRC	.32050496 07	B	.14453432 09	THA	.12706384 01	T VECTOR IN ORBIT PLANE OF TARGET	

0 DAYS 16 HRS. 7 MIN. 45.900 SEC. 23572566511020230000000 J.D.= 2438984.78483217 AUG. 12,1965 06 50 09.500

GEOCENTRIC EQUATORIAL COORDINATES

X	.57184613 05	Y	-.13839152 06	Z	-.74784096 05	DX	.10528575 01	DY	-.14402611 01	DZ	-.77438925 00
R	.16737668 06	DEC	-.26538635 02	RA	.29245085 03	V	.19448752 01	PTH	.77201555 02	AZ	.79083416 02
R	.16737668 06	LAT	-.26538635 02	LON	.22939756 03	VE	.10666511 02	PTE	.10241915 02	AZE	.27044537 03
XS	-.11500166 09	YS	.90587959 08	ZS	.39284220 08	DXS	-.18911310 02	DYS	-.20629404 02	DZS	-.89467099 01
XM	.30336701 06	YM	-.23193287 06	ZM	-.13633006 06	DXM	.63241319 00	DYM	.69152144 00	DZM	.26496565 00
XT	-.19875550 09	YT	.26337067 08	ZT	.15641519 08	DXT	.29836920 01	DYT	-.45019111 02	DZT	-.21315220 02
RS	.15157443 09	VS	.29381177 02	RM	.40547538 06	VM	.97383527 00	RT	.20110208 09	VT	.49899513 02
GEC	-.26694497 02	ALT	.16100278 06	LOS	.78718846 02	RAS	.14177214 03	RAM	.32260104 03	LOM	.25954774 03
DUT	.36600000 02	DT	.48000000 03	DR	.18965555 01	SHA	.82771175 05	DES	.15021081 02	DEM	-.19646911 02
CCL	.91213670 02	MCL	.20347339 03	TCL	.11504657 02						

GEOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 23572563064320206150000O J.D.= 2438984.11347671 AUG. 11,1965 14 43 24.388

SMA	.40657613 06	ECC	.98382580 00	B	.72829141 05	SLR	.13045726 05	APO	.80657621 06	RCA	.65760440 04
VH	.89404222-01	C3	-.98038533 00	C1	.72111323 05	TFP	.58005112 05	TF	.70355335-03	PER	.43000360 05
TA	.15958922 03	MTA	.18000000 03	EA	.53273316 02	MA	.80936685 01			TFI	.67205901 00

ALL VECTORS REFERENCED TO EARTH EQUATOR PLANE

X	.57184613 05	Y	-.13839152 06	Z	-.74784096 05	DX	.10528575 01	DY	-.14402611 01	DZ	-.77438925 00
INC	.28544754 02	LAN	.35910252 03	APF	.13117732 03	MX	.93979684 00	MY	.29677828 00	MZ	.16942533 00
WX	-.74845212-02	WY	-.47778684 00	WZ	.87844412 00	PX	-.64795461 00	PY	.67141466 00	PZ	.35966256 00
QX	-.76164232 00	QY	-.56650002 00	QZ	-.31460942 00	RX	-.24975823 00	RY	.25880105 00	RZ	-.93308243 00
BX	.76164217 00	BY	.56649991 00	BZ	.31460936 00	TX	.71956629 00	TY	.69442376 00	TZ	.00000000 00
DAP	.21079474 02	RAP	.13398132 03								

BTC .68564487 05 BRQ -.24555954 05 B .72829141 05 THA .34029532 03 T VECTOR IN EARTH EQUATOR PLANE

ALL VECTORS REFERENCED TO ECLIPTIC PLANE

X	.57184613 05	Y	-.15672040 06	Z	-.13549490 05	DX	.10528575 01	DY	-.16294609 01	DZ	-.13743357 00
INC	.51151130 01	LAN	.35518452 03	APF	.13518531 03	MX	.93979672 00	MY	.33968573 00	MZ	.37361455-01
WX	-.74845206-02	WY	-.88843116-01	WZ	.99601758 00	PX	-.64795461 00	PY	.75908232 00	PZ	.62839866-01
QX	-.76164220 00	QY	-.64490387 00	QZ	-.63247675-01	RX	-.40795093-01	RY	.47795093-01	RZ	-.99802362 00
BX	.76164216 00	BY	.64490383 00	BZ	.63247671-01	TX	.76058554 00	TY	.64923775 00	TZ	.00000000 00
DAP	.36028326 01	RAP	.13048415 03								

BTC .72682749 05 BRC -.46153952 04 B .72829141 05 THA .35636656 03 T VECTOR IN ECLIPTIC PLANE

ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE

X	-.13882674 06	Y	-.93152104 05	Z	-.80482071 04	DX	-.13353970 01	DY	-.14129233 01	DZ	-.53870927-01
INC	.56863966 01	LAN	.24277382 03	APF	.17137860 03	MX	.55162337 00	MY	-.82958195 00	MZ	.86631785-01
WX	-.88104153-01	WY	.45330265-01	WZ	.99507912 00	PX	.58497480 00	PY	.81091542 00	PZ	.14852788-01
QX	-.80625185 00	QY	.58340476 00	QZ	-.97962086-01	RX	.86894653-02	RY	.12045684-01	RZ	-.99988965 00
BX	.80625196 00	BY	-.58340483 00	BZ	.97962099-01	TX	.81100490 00	TY	-.58503935 00	TZ	.00000000 00
DAP	.85103217 00	RAP	.54194228 02								

BTO .72478760 05 BRO -.71352816 04 B .72829136 05 THA .35437755 03 T VECTOR IN ORBIT PLANE OF TARGET

CASE 1 IBSYS-JPTRAJ-SPACE 111765 6

HELIOCENTRIC EQUATORIAL COORDINATES

X	.11505884 09	Y	-.90726350 08	Z	-.39359004 08	DX	.19964167 02	DY	.19189143 02	DZ	.81723207 01
R	.15171993 09	LAT	-.15035578 C2	LON	.32174346 03	V	.28871751 02	PTH	.30679160 01	AZ	.72066834 02
XE	.11500166 09	YE	-.90587959 08	ZE	-.39284220 08	DXE	.18911310 02	DYE	.20629404 02	DZE	.89467099 01
XT	-.83753844 08	YT	-.64250891 08	ZT	-.23642701 C8	DXT	.21895002 02	DYT	-.24389707 02	DZT	-.12368510 02
LTE	-.15021081 02	LOE	.32177214 03	LTT	-.12624438 02	LOT	.21749324 03	RST	.10817514 09	VST	.35031827 02
EPS	.29606865 02	ESP	.30486634-01	SEP	.15036187 C3	EPM	.13431866 03	EMP	.17177790 02	MEP	.28503540 02
MPS	.16297455 03	MSP	.29673510-01	SMP	.16995598 02	SEM	.17530703 03	EMS	.46804573 01	ESM	.98911702-C2
EPT	.61226963 02	ETP	.40782339-01	TEP	.11873124 03	TPS	.31963008 02	TSP	.10009519 03	STP	.47941803 02
SET	.31973911 02	STE	.47900269 02	EST	.10012581 03	RPM	.27045084 06	RPT	.20118259 09	SPN	.27423043 02
SAC	.11968695-09										
GCE	.26878632 03	GCT	.10029C99 03	SIP	.31961271 02	CPT	.85539902 02	SIN	.85538165 02		
REP	.16737668 06	VEP	.19448752 01	CPE	.80538522 02	CPS	.78412700 02				

HELIOCENTRIC CONIC

EPOCH OF PERICENTER PASSAGE 2357135024422025C0000000 J.D.= 2438860.70604745 APRIL 10,1965 04 56 42.5CC

SMA	.14490279 09	ECC	.71213564-C1	B	.14453488 09	SLR	.14416793 09	APO	.15522183 09	RCA	.13458375 C9
VH	.28179940 02	C3	-.91588376 C3	C1	.43741421 10	TFP	.10720407 08	TF	-.12340672 03	PER	.34819512 03
TA	.13434418 03	MTA	.18000000 C3	EA	.13134849 03	MA	.12828543 03			TFI	.67205901 00

ALL VECTORS REFERENCED TO ECLIPTIC PLANE

X	.11505884 09	Y	-.98895911 C8	Z	-.131C35CC C5	DX	.19964167 02	DY	.20856444 02	DZ	-.13698697 00
INC	.27205238 00	LAN	.13827778 C3	APF	.4669816C 02	MX	.65182436 00	MY	.75835510 00	MZ	-.47468523-02
WX	.31596467-02	WY	.35435432-02	WZ	.99998873 00	PX	-.99622609 00	PY	-.86731567-01	PZ	.34550984-02
QX	.86742847-01	QY	-.99622577 00	QZ	.32561290-02	RX	-.34420785-02	RY	-.29966778-03	RZ	-.99999439 CC
BX	-.86742816-01	BY	.99622542 00	BZ	-.32561279-02	TX	-.86732055-01	TY	.99623168 00	TZ	.00000000 0C
DAP	.19796364 00	RAP	.18497563 03								

BTC	.14453417 09	BRC	.47062723 C6	B	.14453494 09	THA	.18656363 00	T VECTOR IN ECLIPTIC PLANE	

ALL VECTORS REFERENCED TO ORBIT PLANE OF TARGET AND NODE

X	-.68990549 08	Y	-.13489C47 09	Z	.79875804 07	DX	.24974352 02	DY	-.14468585 02	DZ	.72094193 0C
INC	.32750954 01	LAN	.17579565 C3	APF	.29280589 03	MX	.89062303 00	MY	-.45420088 00	MZ	.22184648-01
WX	.41884306-02	WY	.56976391-01	WZ	.99836674 00	PX	-.31909465 00	PY	.94625627 00	PZ	-.52663776-01
QX	-.94771139 00	QY	-.31835291 C0	QZ	.22144190-01	RX	.16828117-01	RY	-.49902783-01	RZ	-.99861020 CC
BX	.94771337 00	BY	.31835357 00	BZ	-.22144236-01	TX	.94757321 00	TY	.31953875 00	TZ	.00000000 00
DAP	-.30188078 01	RAP	.10863503 C3								

BTO	.14449903 09	BRO	.32050487 C7	B	.14453457 09	THA	.12706363 01	T VECTOR IN ORBIT PLANE OF TARGET	

614715503176	215452526234	21450070330C2	604430062250	603562436144	602634445170	EARTH
	21195338131		17569099776		000000000000	INITIAL
220672134156	622416533404	621444345126	201413761563	601561502521	600615215116	EARTH
				235725665110	202300000000	END

J MATRIX ITERATION NUMBER 5

	X	Y	Z	DX	DY	DZ	LA(08)	LO(08)
X	.85771874 04	.54694007 04	-.62637498 03	.13890591 07	.89834151 06	-.56205403 05	-.42662618 05	.10251707 07
Y	.54694007 04	.35082400 04	-.38708081 03	.88744165 06	.57644767 06	-.30486000 05	-.30456607 05	.65195865 06
Z	-.62637498 03	-.38708081 03	.26839867 03	-.59560564 05	-.33190661 05	.17853939 05	-.59405497 04	-.48824070 05
DX	.13890591 07	.88744165 06	-.59560564 05	.23389582 09	.15214059 09	-.68979649 07	-.84242649 07	.17196471 09
DY	.89834151 06	.57644767 06	-.33190661 05	.15214059 09	.99361317 08	-.35601676 07	-.59976801 07	.11139625 09
DZ	-.56205403 05	-.30486000 05	.17853939 05	-.68979649 07	-.35601676 07	.24895239 07	-.10163588 07	-.61533780 07
LA(08)	-.42662618 05	-.30456607 05	-.59405497 04	-.84242649 07	-.59976801 07	-.10163588 07	.10184890 07	-.55805688 07
LO(08)	.10251707 07	.65195865 06	-.48824070 05	.17196471 09	.11139625 09	-.61533780 07	-.55805688 07	.12703033 09

CORRELATIONS BASED ON J MATRIX ITERATION NUMBER 5

	X	Y	Z	DX	DY	DZ	LA(08)	LO(08)
X	-.10000000 01	-.99706311 00	.41283050 00	-.98070198 00	-.97310644 00	.38463382 00	.45645385 00	-.98213237 00
Y	-.99706311 00	-.10000000 01	.39890256 00	-.97967929 00	-.97635233 00	.32621028 00	.50951701 00	-.97661117 00
Z	.41283050 00	.39890256 00	-.10000000 01	.23771544 00	.20324368 00	-.69069406 00	.35930088 00	.26441744 00
DX	-.98070198 00	-.97967929 00	.23771544 00	-.10000000 01	-.99798772 00	.28585882 00	.54581140 00	-.99764127 00
DY	-.97310644 00	-.97635233 00	.20324368 00	-.99798772 00	-.10000000 01	.22636205 00	.59620614 00	-.99153529 00
DZ	.38463382 00	.32621028 00	-.69069406 00	.28585882 00	.22636205 00	-.10000000 01	.63827927 00	.34602042 00
LA(08)	.45645385 00	.50951701 00	.35930088 00	.54581140 00	.59620614 00	.63827927 00	-.10000000 01	.49062150 00
LO(08)	-.98213237 00	-.97661117 00	.26441744 00	-.99764127 00	-.99153529 00	.34602042 00	.49062150 00	-.10000000 01

AC6 PF SHIP AND ANTIGUA

ITERATION NUMBER 5 EPOCH 65/08/11 144223.600 CLOCK 162020 SCS .19490 01 QSOS .19490 01

Q	DQ	STDEVQ	OLD Q	NEW Q	NOMINAL Q	DQ(NOM)
X	.50283556-07	.49881614 00	-.37132057 04	-.37132057 04	-.37129758 04	-.22991943 00
Y	.33090145-04	.84863517 00	.47659790 04	.47659790 04	.47650926 04	.88641357 00
Z	-.11265750-03	.31456845 00	.25616160 04	.25616159 04	.25612327 04	.38320923 00
DX	.10980322-05	.89237146-02	-.87283912 01	-.87283902 01	-.87324469 01	.40566921-02
DY	-.27204462-05	.10400408-01	-.58198571 01	-.58198598 01	-.58126377 01	-.72221755-02
DZ	.56812169-05	.78716312-02	-.32363257 01	-.32363200 01	-.32398790 01	.35590529-02
STA 8						
LA	.12566271-04	.11240083-01	.17903990 02	.17904002 02	.17904084 02	-.81777573-04
LO	.14539240-05	.53883412-02	-.44017602 02	-.44017600 02	-.44017411 02	-.18882751-03

COVARIANCE MATRIX OF ESTIMATED PARAMETERS ITERATION NUMBER 5

	X	Y	Z	DX	DY	DZ	LA(08)	LO(08)
X	.24881754 00	-.38950641 00	-.44589156-01	-.27916884-02	.34469749-02	-.10296573-02	-.20765694-02	.58924618-03
Y	-.38950641 00	.72018165 00	.15755765 00	.38807023-02	-.55865504-02	.21347170-02	.44749564-02	-.54664180-03
Z	-.44589156-01	.15755765 00	.98953307-01	.19584056-03	-.44979934-03	-.22320917-03	.74812511-03	-.25937511-03
DX	-.27916884-02	.38807023-02	.19584056-03	.79632683-04	-.82057384-04	.18715583-04	.23284951-04	-.31225285-04
DY	.34469749-02	-.55865504-02	-.44979934-03	-.82057384-04	.10816849-03	-.40052112-04	-.32909720-04	.13522759-04
DZ	-.10296573-02	.21347170-02	-.22320917-03	.18715583-04	-.40052112-04	.61962577-04	.72806299-04	.13254661-04
LA(08)	-.20765694-02	.44749564-02	.74812511-03	.23284951-04	-.32909720-04	.72806299-04	.12633946-03	.49404098-06
LO(08)	.58924618-03	-.54664180-03	-.25937511-03	-.31225285-04	.13522759-04	.13254661-04	.49404098-06	.29034221-04

CORRELATION MATRIX OF ESTIMATED PARAMETERS ITERATION NUMBER 5

	X	Y	Z	DX	DY	DZ	LA(08)	LO(08)
X	.99999999 00	-.92013825 00	-.28416697 00	-.62716351 00	.66442693 00	-.26223306 00	-.37037055 00	.21923060 00
Y	-.92013825 00	.10000000 01	.59020557 00	.51244072 00	-.63295422 00	.31956158 00	.46913547 00	-.11954371 00
Z	-.28416697 00	.59020557 00	.10000000 01	.69765676-01	-.13748435 00	-.90143027-01	.21158729 00	-.15302347 00
DX	-.62716351 00	.51244072 00	.69765676-01	.10000000 01	-.88414113 00	.26643603 00	.23214543 00	-.64939006 00
DY	.66442693 00	-.63295422 00	-.13748435 00	-.88414113 00	.10000000 01	-.48922686 00	-.28151678 00	.24130139 00
DZ	-.26223306 00	.31956158 00	-.90143027-01	.26643603 00	-.48922686 00	.10000000 01	.82287660 00	.31249912 00
LA(08)	-.37037055 00	.46913547 00	.21158729 00	.23214543 00	-.28151678 00	.82287660 00	.10000000 01	.81571484-02
LO(08)	.21923060 00	-.11954371 00	-.15302347 00	-.64939006 00	.24130139 00	.31249912 00	.81571484-02	.10000000 01

STATION NUMBER 91 65/08/11 ITERATION NUMBER 5 PASS NUMBER NONE PAGE 1

FREQUENCY2013767.0

TIME	TC	G	R		EL		AZ	
144229	1	0	.12418106 04	.642-01	.0018	.32938930 01 .642-01	-.0255	.56480842 02 .300-01	-.0008
144235	1	0	.12826992 04	.769-01	.0039	.27362629 01 .769-01	.0323	.58601674 02 .300-01	.0083
144241	1	0	.13252822 04	.974-01	-.0023	.22065346 01 .974-01	.0017	.60587838 02 .300-01	-.0133
144247	1	0	.13694023 04	.133 00	-.0116	.17063452 01 .133 00	-.0172	.62447712 02 .300-01	.0068
144253	1	0	.14149158 04	.203 00	-.0051	.12375228 01 .203 00	.0767	.64189639 02 .300-01	.0076
144259	1	0	.14616923 04	.365 00	-.0114	.80253905 00 .365 00	.0632	.65821800 02 .300-01	-.0068

MARINER STATISTICS STATION 91 ITERATION 5

PASS	DATA TYPE	BEGINNING TIME	END TIME	NUMBER OF POINTS	STD DEV	RMS	FIRST MOMENT	SECOND MOMENT
NONE	AZ	8/11-144229	8/11-144259	6	.815-02	.815-02	.294-03	.665-04
	EL	8/11-144229	8/11-144259	6	.387-01	.445-01	.219-01	.198-02
	R	8/11-144229	8/11-144259	6	.594-02	.722-02	-.411-02	.521-04

STATION NUMBER 77 65/08/11 ITERATION NUMBER 5 PASS NUMBER NONE PAGE 2

FREQUENCY2013767.0

TIME	TC	C	R		EL		AZ	
144448	1	0	.55335878 03	.314-01	.0050	.19110325 02 .521 00	.0031	.84959222 02 .529 00	-.0376
144451	1	0	.58030039 03	.315-01	-.0087	.18194819 02 .525 00	.0150	.86439856 02 .525 00	-.0433
144454	1	0	.60766597 03	.316-01	-.0028	.17345691 02 .527 00	.0154	.87774903 02 .523 00	-.0381
144457	1	0	.63539921 03	.317-01	.0058	.16530853 02 .529 00	-.0404	.88983677 02 .521 00	-.1069
144503	1	0	.69178757 03	.321-01	.0010	.15115281 02 .535 00	.0569	.91084883 02 .518 00	-.0110
144509	1	0	.74916538 03	.325-01	-.0020	.13881204 02 .541 00	.0302	.92845823 02 .516 00	-.0223
144512	1	0	.77815413 03	.326-01	-.0007	.13321988 02 .545 00	.0676	.93622731 02 .514 00	-.0247
144515	1	0	.80731289 03	.328-01	-.0048	.12796645 02 .547 00	.0299	.94340735 02 .512 00	-.0533
144518	1	0	.83662229 03	.331-01	-.0040	.12302120 02 .551 00	.0493	.95006140 02 .512 00	.0091
144521	1	0	.86606625 03	.333-01	-.0044	.11835689 02 .555 00	-.0007	.95624397 02 .512 00	-.0598
144524	1	0	.89563001 03	.336-01	.0246	.11394904 02 .559 00	.0637	.96200269 02 .510 00	-.0452
144536	1	0	.10148548 04	.347-01	-.0045	.98477292 01 .578 00	.0317	.98155605 02 .508 00	-.0394
144539	1	0	.10448562 04	.349-01	-.0045	.95064909 01 .582 00	-.0637	.98572580 02 .508 00	-.0691

MARINER STATISTICS STATION 77 ITERATION 5

PASS	DATA TYPE	BEGINNING TIME	END TIME	NUMBER OF POINTS	STD DEV	RMS	FIRST MOMENT	SECOND MOMENT
NONE	AZ	8/11-144448	8/11-144539	13	.273-01	.498-01	-.417-01	.248-02
	EL	8/11-144448	8/11-144539	13	.374-01	.423-01	.199-01	.179-02
	R	8/11-144448	8/11-144539	13	.809-02	.809-02	.000 00	.655-04

APPENDIX G

ODP format description

Block No. references are to Appendixes E and F. All units are in km and sec unless otherwise specified.

Block No. 1	Control card input.
Block No. 2	Input covariance matrix of estimated parameters from postmaneuver data *a priori.*
Block No. 3	Inverse of Block No. 2
Block No. 4	Trajectory based on injection conditions from previous iteration. Its format is explained in Appendix D.
Block No. 5	The normal equation coefficients combined with the *a priori* matrix at injection epoch.
Block No. 6	Correlation matrix based on Block No. 5
Block No. 7	Solution vector and statistics of estimated parameters from last iteration (see below for explanation of format).
Block No. 8	Covariance matrix of estimated parameters, at injection epoch, from last iteration.
Block No. 9	Correlation matrix of estimated parameters, at injection epoch, from last iteration.
Block No. 10	Residual listings and data statistics for the tracking stations. First the residuals will be listed and then followed by the statistics.

The above sequence is repeated until the orbit converges. See Appendix D for explanation of trajectory format.

BLOCK NO. 10 RESIDUAL LISTING FORMAT					
Frequency transmitter, frequency in cps					
GMT	TC	Q	CC3		
XX XX XX	X	X	.XXXXXXXX XX	.XXX XX	.XXXX[16]
hr min sec	Doppler count time in sec	Transmitting station	Two-way doppler (CC3) value in cps (floating point number)	Associated weight in floating point	Residual (observed minus calculated) in cps

[16]Residuals followed by an asterisk (*) have been deleted from fit.

BLOCK NO. 10 RESIDUAL LISTING FORMAT FOR AFETR DATA					
Frequency XXXXXXX.X (transmitter frequency in cps)[a]					
GMT	TC[a]	Q[a]	R		
XX XX XX	X	X	.XXXXXXXX XX	.XXX XX	.XXXX[b]
hr min sec	Doppler count time in sec	Transmitting station	Program computed value of range data (floating point number)	Associated data weight (floating point number)	Residual (station observed data minus program calculated)

[a]These columns refer to DSIF data only.

[b]Residuals followed by an asterisk (*) have been deleted from fit.

[c]Format of these three columns is repeated for Elevation (EL) and Azimuth (AZ) data.

BLOCK 7 JOB TITLE						
Iteration number	Epoch	year/month/day		XX XXX XX	Clock XXXXXX	SOS* XXXXX QSOS** XXXXX
		GMT		hr, min, sec	(PC time now) hr, min, sec	Floating pointing numbers
Q	DQ	STDEVDQ	OLD Q	NEW Q	NOMINAL Q	DQ (NOM)
X, Y, Z = Position space-fixed cartesian component in km DX, DY, DZ = Velocity space-fixed cartesian in km/sec RI = Radius in km LA = Latitude in deg LO = Longitude in deg KE = $GM_{\oplus}$ in km^3/sec^2	Difference in estimated parameters from previous iteration and this iteration	Standard deviations on estimated parameters	Value of estimated parameters from previous iteration (Initial estimate on 1st iteration)	Value of estimated parameters on this iteration	Initial estimate of parameters	Total Difference in new Q and nominal Q

*Weighted sum of the squares of the residuals.

**Weighted sum of the squares of the residuals plus the product $\delta x^T \Gamma^{-1} \delta x$ where δx is the difference in the a priori Q and the value of Q on the particular iteration, and Γ is on *a priori* covariance on Q.

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