

N69-35877
NASA CR.61291

NASA CONTRACTOR
REPORT

Report No. 61291

AS-506 "G" MANNED LUNAR LANDING MISSION
POST-LAUNCH OPERATIONAL TRAJECTORY
FOR JULY 16, 1969


Northrop Corporation
Huntsville, Alabama

**CASE FILE
COPY**

August 1969

Prepared For

NASA-GEORGE C. MARSHALL SPACE FLIGHT CENTER
Marshall Space Flight Center, Alabama 35812

1. REPORT NO. NASA CR-61291		2. GOVERNMENT ACCESSION NO.		3. RECIPIENT'S CATALOG NO.	
4. TITLE AND SUBTITLE AS-506 "G" Manned Lunar Landing Mission Post-Launch Operational Trajectory for July 16, 1969				5. REPORT DATE August 1969	
				6. PERFORMING ORGANIZATION CODE	
7. AUTHOR(S)				8. PERFORMING ORGANIZATION REPORT #	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Northrop Corporation Huntsville, Alabama				10. WORK UNIT NO.	
				11. CONTRACT OR GRANT NO. NAS 8-20082	
12. SPONSORING AGENCY NAME AND ADDRESS George C. Marshall Space Flight Center Marshall Space Flight Center, Alabama 35812 Aero-Astroynamics Laboratory				13. TYPE OF REPORT & PERIOD COVERED NASA Contractor Report	
				14. SPONSORING AGENCY CODE	
15. SUPPLEMENTARY NOTES Distribution of this report is provided in the interest of information exchange. Responsibility for the contents resides in the author or organization that prepared it.					
16. ABSTRACT The AS-506 post launch trajectory contains the Real-Time Operational Trajectory using the actual Greenwich Mean Time of Guidance Reference Release as supplied by the Manned Spacecraft Center, Houston, Texas. Presented in this report are the following: <ul style="list-style-type: none"> (a) Critical Sequence of Events (b) AS-506 Trajectory Data (c) Translunar Midcourse Correction (TLMC) (d) Trajectory Summary (e) S-IC and S-II Spent Stage Trajectory Data (f) S-IVB Slingshot Trajectory Data 					
17. KEY WORDS			18. DISTRIBUTION STATEMENT Public Release, STAR announcement  E. D. Geissler, Dir, Aero-Astroynamics Lab, MSFC		
19. SECURITY CLASSIF. (of this report) U		20. SECURITY CLASSIF. (of this page) U		21. NO. OF PAGES 123	22. PRICE 3.00

FOREWORD

This report was prepared under contract NAS8-20082 and presents the AS-506 "G" Post-Launch operational trajectory for 16 July 1969.

The work was conducted in coordination with G. Wittenstein, Section Chief, S&E-AERO-MFT, Aero-Astroynamics Laboratory, George C. Marshall Space Flight Center. The data presented in this report were prepared by Messrs. J. Bradford, R. Maples, J. Reaves, R. Miller, J. Oliver, R. Stewart, and R. Wells.

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
	FOREWORD.	ii
	LIST OF TABLES.	iv
	NOMENCLATURE LIST	v
1.0	PURPOSE	1
2.0	PRESENTATION OF DATA.	1

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
2.1	CRITICAL SEQUENCE OF EVENTS.	2
2.2	AS-506 TRAJECTORY DATA	7
2.3	TRANSLUNAR MIDCOURSE CORRECTION (TLMC)	115
2.4	TRAJECTORY SUMMARY	116
2.5	S-IC AND S-II SPENT STAGE TRAJECTORY DATA.	119
2.6	S-IVB SLINGSHOT TRAJECTORY DATA.	121

NOMENCLATURE LIST

<u>Printout Symbol</u>	<u>Trajectory Key Event</u>
TIME BASE 1	Liftoff
MACH 1	Mach One
S-IC CECO	S-IC Center-Engine Cutoff
S-IC OEEO	S-IC Outboard-Engine Cutoff
S-IC/S-II SEP	S-IC/S-II Separation
S-II ENGINE START	S-II Engines Ignition
S-II 90 THRUST	S-II Engines 90-Percent Thrust
INITIATE IGM	Initiate Iterative Guidance Mode
S-II CUTOFF	S-II Engines Cutoff
S-IVB ULL IGN	S-IVB Ullage Rocket Ignition
S-II/S-IVB SEP	S-II/S-IVB Separation
S-IVB ENGINE START	S-IVB Engine Ignition
S-IVB 90 THRUST	S-IVB Engine 90-Percent Thrust
S-IVB ULLAGE JETT	S-IVB Ullage Case Jettison
S-IVB GCS1	S-IVB Guidance Cutoff Signal 1
EPOI	Earth Parking Orbit Insertion
TB6	Time Base 6
S-IVB REIGNITION	S-IVB Engine Reignition
S-IVB 90 THRUST	S-IVB 90-Percent Thrust
S-IVB GCS2	S-IVB Guidance Cutoff Signal 2
TLI	Translunar Injection

1.0 PURPOSE

This report is prepared to provide post-launch trajectory data of the AS-506 "G" Manned Lunar Landing Mission to those working groups that require immediate information about the real-time trajectory.

2.0 PRESENTATION OF DATA

The data presented herein is for the launch date of July 16, 1969, and is designated "G" mission profile. The Greenwich Mean Time of Guidance Reference Release (GRR) is 13:31:43.02 and is based on data received in real-time from the Houston Guidance Flight Controller.

Table 1 contains the critical sequence of events from Guidance Reference Release to Translunar Injection (TLI) + approximately 3 hours.

Table 2.2 contains trajectory listings which begin at time of first motion and include launch vehicle boost to orbit, parking orbit, TLI (first opportunity) and post-TLI (TLI + 25 minutes). The trajectory data are presented in both metric and English units.

Table 2.3 presents the Translunar Midcourse Correction (TLMC) results for mid-course delta velocities applied at Time Base 7 (TB7) + 2 hours.

Summarized in Table 2.4 are key trajectory parameters including data for the S-IC, S-II, and S-IVB first and second burns (first opportunity).

Presented in Table 2.5 are the spent stage trajectories for the S-IC and S-II from the time of S-IC/S-II separation and S-II/S-IVB separation until each stage impacts.

Table 2.6 contains the trajectory listing for the slingshot maneuvers of the S-IVB stage to place the stage in a heliocentric orbit.

TABLE 2-1
 CRITICAL EVENT SEQUENCE
 AS-506, 72.06° DEGREE AZIMUTH, JULY 16, 1969 LAUNCH DATE

NOMINAL TIME FROM FIRST MOTION (HR-MIN-SEC)	NOMINAL TIME FROM FIRST MOTION (SEC)	PROGRAM TIME REFERENCE (SEC)	PREDICTED SEQUENCE OF EVENTS	GUIDANCE REFERENCE RELEASE (GRR)
-0 00 17.3	-17.3			
0 00 00.0	0.0		FIRST MOTION (HOLD-DOWN ARM RELEASE)	
0 00 00.40	0.40	0.0(TB1)	LIFT-OFF, TIMEBASE 1 SET	
0 00 01.4	1.4	1.0(TB1)	BEGIN TOWER CLEARANCE YAW MANEUVER	
0 00 10.4	10.4	10.0(TB1)	END YAW MANEUVER	
0 00 13.5	13.5 *		PITCH AND ROLL INITIATION	
0 00 20.4	20.4	20.0(TB1)	S-IC RADIAL ENGINE CANT	
0 00 31.5	31.5		ROLL MANEUVER COMPLETE	
0 00 34.0	34.0 *		BEGIN SECOND SEGMENT OF PITCH POLYNOMIAL	
0 01 05.8	65.8		MACH 1	
0 01 09.0	69.0 *		BEGIN THIRD SEGMENT OF PITCH POLYNOMIAL	
0 01 21.0	81.0 **		MAXIMUM DYNAMIC PRESSURE	
0 01 36.0	96.0 *		BEGIN FOURTH SEGMENT OF PITCH POLYNOMIAL	
0 01 45.4	105.4	105.0(TB1)	COMPUTER SWITCH POINT NO. 1	
0 02 10.4	130.4	130.0(TB1)	COMPUTER SWITCH POINT NO. 2	
0 02 15.00	135.00	134.6(TB1)	S-IC CENTER ENGINE CUTOFF	
0 02 15.05	135.05	0.0(TB2)	TIMEBASE 2' SET	
0 02 40.5	160.5 *		BEGIN TILT ARREST	
0 02 40.82	160.82	0.0(TB3)	S-IC OUTBOARD ENGINE CUTOFF, TIMEBASE 3 SET	
0 02 41.3	161.3	0.5(TB3)	S-II ULLAGE IGNITION	
0 02 41.5	161.5	0.7(TB3)	SIGNAL TO FIRE SEPARATION DEVICES AND RETROCKET MOTORS	
0 02 41.6	161.6		SEPARATION STRUCTURE COMPLETELY SEVERED	
0 02 41.6	161.6		S-IC RETROCKET THRUST BUILD-UP BEGINS	

*DEOTES SIMULATION MAJOR CYCLE OCCURRENCE TIME. THESE SIMULATED DATA POINTS
 MAY NOT BE EXACTLY CONSISTENT WITH THE SWITCH SELECTOR ICD SEQUENCE AND
 ACTUAL LVDC PRESETTINGS, BUT THE EFFECTS OF DIFFERENCES ARE CONSIDERED
 NEGLIGIBLE.

**NEAREST TIME PRINT AVAILABLE

TABLE 2.1
 CRITICAL EVENT SEQUENCE
 AS-506, 72.06° DEGREE AZIMUTH, JULY 16, 1969 LAUNCH DATE

NOMINAL TIME FROM FIRST MOTION (HR-MIN-SEC)	NOMINAL TIME FROM FIRST MOTION (SEC)	PROGRAM TIME REFERENCE (SEC)	PREDICTED SEQUENCE OF EVENTS
0 02 42.2	162.2	1.4(TB3)	S-II ENGINE START SEQUENCE INITIATED
0 02 43.2	163.2		S-II IGNITION
0 02 45.2	165.2		S-II ENGINE AT 90 PERCENT THRUST
0 02 45.8	165.8		S-II ULLAGE THRUST TERMINATION
0 02 47.7	167.7	6.9(TB3)	S-II P. U. VALVE COMMANDED TO 5.5 MIXTURE RATIO
0 03 11.5	191.5	30.7(TB3)	S-II SECOND PLANE SEPARATION (JETTISON S-II AFT INTERSTAGE)
0 03 17.2	197.2		LET JETTISON
0 03 21.5 *	201.5 *		IGM ENABLE
0 03 42.2	222.2	61.4(TB3)	COMPUTER SWITCH POINT NO. 3
0 03 42.5 *	222.5 *		SMC TURN-ON
0 04 21.1	261.1	100.3(TB3)	LX STEP PRESSURIZATION
0 05 52.2	352.2	191.4(TB3)	COMPUTER SWITCH POINT NO. 4
0 07 39.8	459.8	299.3(TB2)	S-II CENTER ENGINE CUTOFF
0 08 08.5	488.5 **		TII LE C, SIGNAL PU T2 INITIATE MRS, START ARTIFICIAL TAU MØDE
0 08 19.0	499.0 *		END ARTIFICIAL TAU MØDE, BEGIN IGM PHASE 2
0 09 11.38	551.38	0.0(TB4)	S-II ENGINE CUTOFF, TIMEPHASE 4 SET, ENABLE CHI FREEZE
0 09 12.1	552.1	0.7(TB4)	S-IVB ULLAGE IGNITION
0 09 12.2	552.2	0.8(TB4)	SIGNAL TO FIRE SEPARATION DEVICES AND RETROCKET MOTORS
0 09 12.3	552.3		SEPARATION STRUCTURE COMPLETELY SEVERED
0 09 12.4	552.4	1.0(TB4)	S-IVB ENGINE START SEQUENCE INITIATED
0 09 15.4	555.4		S-IVB IGNITION
0 09 17.9	557.9		S-IVB ENGINE AT 90 PERCENT THRUST

*DENOTES SIMULATION MAJOR CYCLE OCCURRENCE TIME. THESE SIMULATED DATA POINTS MAY NOT BE EXACTLY CONSISTENT WITH THE SWITCH SELECTOR ICD SEQUENCE AND ACTUAL LVDC PRESETTINGS, BUT THE EFFECTS OF DIFFERENCES ARE CONSIDERED NEGLIGIBLE.

**THERE IS APPROXIMATELY 6 SECONDS DELAY AFTER TII GOES TO ZERO BEFORE THRUST DROP IS SENSED.

TABLE 2.1
 CRITICAL EVENT SEQUENCE
 AS-506, 72.063 DEGREE AZIMUTH, JULY 16, 1969 LAUNCH DATE

NOMINAL TIME FROM FIRST MOTION (HR-MIN-SEC)	NOMINAL TIME FROM FIRST MOTION (SEC)	PROGRAM TIME REFERENCE (SEC)	PREDICTED SEQUENCE OF EVENTS
0 09 19.9	559.9		S-IVB ULLAGE THRUST TERMINATION
0 09 21.0	561.0 *		END CHI FREEZE (BEGIN IGM PHASE 3), START ARTIFICIAL TAL MODE
0 09 24.2	564.2	12.8(TB4)	S-IVB ULLAGE CASE JETTISON
0 09 26.4	566.4		SMC TURN-ON
0 09 31.0	571.0 *		END ARTIFICIAL TAL MODE
0 11 05.1	665.1 *		BEGIN CHI STEERING
0 11 32.1	692.1		BEGIN CHI FREEZE, END IGM
0 11 39.2	699.2		S-IVB FIRST GUIDANCE CUTOFF (GCSI)
0 11 39.43	699.43	0.0(TB5)	SET TIMEBASE 5
0 11 39.7	699.7	0.3(TB5)	S-IVB APS ULLAGE ENGINE NO. 1 IGNITION
0 11 39.8	699.8	0.4(TB5)	S-IVB APS ULLAGE ENGINE NO. 2 IGNITION
0 11 49.2	709.2	9.8(TB5)	PARKING ORBIT INSERTION
0 11 59.4	719.4		BEGIN ORBITAL GUIDANCE
0 12 38.4	758.4	59.0(TB5)	H2 CONTINUOUS VENT ON
0 13 06.4	786.4	87.0(TB5)	S-IVB APS ULLAGE ENGINE NO. 1 CUTOFF
0 13 06.5	786.5	87.1(TB5)	S-IVB APS ULLAGE ENGINE NO. 2 CUTOFF
0 13 19.4	799.4		FIRST ORBITAL NAVIGATION CALCULATED
2 34 37.00	9277.00	0.0(TB6)	BEGIN S-IVB RESTART PREPARATIONS, TIMEBASE 6 SET
2 35 19.0	9319.0	42.0(TB6)	HELIUM HEATER ON
2 35 19.2	9319.2	42.2(TB6)	H2 CONTINUOUS VENT OFF
2 42 53.3	9773.3	496.3(TB6)	S-IVB APS ULLAGE ENGINE NO. 1 IGNITION
2 42 53.4	9773.4	496.4(TB6)	S-IVB APS ULLAGE ENGINE NO. 2 IGNITION
2 42 53.8	9773.8	496.8(TB6)	HELIUM HEATER OFF

*DENOTES SIMULATION MAJOR CYCLE OCCURRENCE TIME. THESE SIMULATED DATA POINTS
 MAY NOT BE EXACTLY CONSISTENT WITH THE SWITCH SELECTOR ICD SEQUENCE AND
 ACTUAL LVDC PRESETTINGS, BUT THE EFFECTS OF DIFFERENCES ARE CONSIDERED
 NEGLIGIBLE.

TABLE 2.1

CRITICAL EVENT SEQUENCE
AS-506, 72.063 DEGREE AZIMUTH, JULY 16, 1969 LAUNCH DATE

NOMINAL TIME FROM FIRST MOTION (HR-MIN-SEC)	NOMINAL TIME FROM FIRST MOTION (SEC)	PROGRAM TIME REFERENCE (SEC)	PREDICTED SEQUENCE OF EVENTS
2 44 07.0	9847.0	570.0(TB6)	INITIATE J-2 FUEL LEAD
2 44 10.0	9850.0	573.0(TB6)	S-IVB APS ULLAGE ENGINE NO. 1 CUTOFF
2 44 10.1	9850.1	573.1(TB6)	S-IVB APS ULLAGE ENGINE NO. 2 CUTOFF
2 44 15.0	9855.0	578.0(TB6)	S-IVB REIGNITION
2 44 17.5	9857.5		S-IVB 90 PERCENT THRUST
2 44 21.0	9861.0		INITIATE OUT-OF-ORBIT IGM, PHASE 4
2 44 32.8	9872.8		SMC TURN-ON
2 46 12.2	9972.2		IGM MR SHIFT, START ARTIFICIAL TAU MODE
2 46 20.5	9980.5		END ARTIFICIAL TAU MODE, BEGIN IGM PHASE 5
2 48 35.0	10115.0 *	838.0(TB6)	COMPUTER SWITCH POINT NO. 5
2 49 33.5	10173.5 *		BEGIN CHI STEERING
2 50 00.5	10200.5		BEGIN CHI FREEZE, END IGM
2 50 03.8	10203.8		S-IVB SECOND GUIDANCE CUTOFF SIGNAL (GCS2)
2 50 04.00	10204.00	0.0(TB7)	SET TIMEBASE 7
2 50 04.5	10204.5	0.5(TB7)	H2 CONTINUOUS VENT ON
2 50 13.8	10213.8		TRANSUNAR INJECTION
2 50 24.0	10224.0		BEGIN ORBITAL GUIDANCE, FIRST CALCULATION IN ORBITAL NAVIGATION
3 05 03.8	11103.8	899.8(TB7)	H2 CONTINUOUS VENT OFF
3 05 04.0	11104.0		BEGIN MANEUVER TO TRANSPOSITION AND DOCKING ATTITUDE
3 10 04.0	11404.0		SIMULATED CSM SEPARATION
4 50 04.00	17404.00	7200.0(TB7)§	BEGIN MANEUVER TO AND MAINTAIN THE SLINGSHOT ATTITUDE,
4 50 04.00	17404.00	0.0(TB8)	TIMEBASE 8 SET

*DEVELOPS SIMULATION MAJOR CYCLE OCCURRENCE TIME. THESE SIMULATED DATA POINTS
MAY NOT BE EXACTLY CONSISTENT WITH THE SWITCH SELECTOR ICD SEQUENCE AND
ACTUAL LVDC PRESETTINGS, BUT THE EFFECTS OF DIFFERENCES ARE CONSIDERED
NEGLECTIBLE.

§THE IU DOES NOT RECOGNIZE GROUND COMMAND TO RELEASE THE INHIBIT PRIOR
TO TB7 + 2 HOURS.

CT

TABLE 2.1
 CRITICAL EVENT SEQUENCE
 AS-506, 72.063 DEGREE AZIMUTH, JULY 16, 1969 LAUNCH DAY

NOMINAL TIME FROM FIRST MOTION (HR-MIN-SEC)	NOMINAL TIME FROM FIRST MOTION (SEC)	PROGRAM TIME REFERENCE (SEC)	PREDICTED SEQUENCE OF EVENTS
4 50 04.4	17404.4	0.4(TB8)	H2 CONTINUOUS VENT ON
5 02 04.0	18124.0	720.0(TB8)	BEGIN L0X DUMP
5 03 52.2	18232.2	828.2(TB8)	END L0X DUMP
5 36 44.0	20204.0	2800.0(TB8)	APS ULLAGE IGNITION
5 41 24.0	20484.0	3080.0(TB8)	APS ULLAGE CUTOFF
5 41 44.0	20504.0	3100.0(TB8)	INITIATE MANEUVER T0 AND MAINTAIN COMMUNICATIONS ATTITUDE

TABLE 2.2 (BTØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	TOTAL VEHICLE ENGINE THRUST (NEWTONS)	TOTAL VEHICLE WEIGHT (KG)	ALTITUDE ABOVE SPHERICAL EARTH (M)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (M/SEC)	SPACE FIXED PATH ANGLE (DEG)	SPACE FIXED VELOCITY IN XPP SYSTEM (M/SEC)	VEHICLE LONGITUDINAL ACCELERATION (M/S**2)
0.00	34046046.00	2902326.66	55.7	408.64	90.00	408.64	10.607
0.40	34205496.00	2897073.63	55.6	408.64	89.92	408.64	11.812
5.00	34339774.50	2836333.50	79.2	408.76	88.49	408.76	12.129
10.00	34336414.00	2776246.69	161.1	409.63	86.76	409.63	12.413
15.00	34468396.00	2704511.19	308.6	410.55	84.82	410.55	12.759
20.00	34616934.50	2638543.69	530.3	412.65	82.65	412.65	13.125
25.00	34795146.00	2572534.13	835.4	416.63	80.27	416.63	13.518
30.00	35033816.00	2506476.16	1233.6	423.20	77.71	423.20	13.952
35.00	35317584.50	2446363.44	1735.3	433.20	75.03	433.20	14.422
40.00	35634274.00	2374208.06	2351.2	447.48	72.33	447.48	14.926
45.00	35990157.00	2308008.53	3092.4	466.87	69.71	466.87	15.469
50.00	36375300.50	2241767.31	3968.9	492.00	67.29	492.00	16.050
55.00	36775154.50	2175488.38	4990.2	523.33	65.16	523.33	16.673
60.00	37180718.50	2105184.03	6165.0	561.10	63.40	561.10	17.303
65.00	37573365.50	2042826.41	7499.7	605.20	62.05	605.20	17.872
65.75	37630312.00	2032850.09	7713.8	612.31	61.89	612.31	17.935
70.00	37955338.00	1976316.88	8996.3	655.07	61.16	655.07	18.481
75.00	38344152.50	1905765.09	10656.3	711.47	60.61	711.47	19.358
80.00	38718815.50	1843126.09	12484.3	774.96	60.36	774.96	20.374
81.00	38787107.50	1829821.41	12870.5	788.53	60.34	788.53	20.575
85.00	39044678.00	1776568.38	14485.3	845.68	60.36	845.68	21.418
90.00	39322030.50	1705910.59	16662.4	923.72	60.58	923.72	22.515
95.00	39544724.50	1643138.13	19017.8	1009.15	60.98	1009.15	23.682
100.00	39716511.00	1576263.63	21554.0	1102.01	61.49	1102.01	24.903
105.00	39851298.50	1509287.16	24272.5	1202.58	62.11	1202.58	26.186
110.00	39963828.00	1442215.53	27173.8	1311.06	62.80	1311.06	27.550
115.00	40058686.00	1375038.03	30261.9	1427.56	63.49	1427.56	29.016
120.00	40145785.50	1307759.50	33537.6	1553.10	64.27	1553.10	30.612
125.00	40238781.00	1246353.50	36998.7	1688.11	65.07	1688.11	32.377
130.00	40334532.50	1172814.13	40649.6	1833.33	65.84	1833.33	34.351
135.00	40427432.00	1105109.03	44497.3	1989.82	66.59	1989.82	36.554
140.00	41778193.00	1056610.53	48509.5	2120.69	67.40	2120.69	30.233
145.00	41819812.75	997349.63	52639.4	2257.02	68.18	2257.02	31.902
150.00	41863600.25	944019.09	56892.3	2402.86	68.92	2402.86	33.760
155.00	41930868.25	896589.53	61276.3	2559.25	69.62	2559.25	35.868
160.00	41915897.25	837403.78	65802.2	2727.28	70.26	2727.28	38.133
160.82	41160189.25	826691.91	66557.7	2755.61	70.37	2755.61	37.624
161.59	41718261.80	824990.88	67270.1	2765.96	70.48	2765.96	2.112

TIME BASE I

MACH I

MAX Q

S-IC CECØ

S-IC ØECØ

S-IC/S-II SEP

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	**** RADIAL DISTANCE OF THE C G (M)	MAGNITUDE OF THE EARTH FIXED VELOCITY (M/SEC)	SUB VEHICLE LATITUDE SPHERICAL EARTH (DEG)	LONGITUDE ØN EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (KM)
0.00	637353.56	0.000	28.6084	-80.60	0.00
0.40	637353.69	0.590	28.6084	-80.60	0.00
5.00	637379.38	10.768	28.6084	-80.60	0.00
10.00	6373463.44	23.183	28.6084	-80.60	0.00
15.00	6373613.31	37.127	28.6083	-80.60	0.01
20.00	6373837.25	52.845	28.6082	-80.60	0.02
25.00	6374144.69	70.476	28.6082	-80.60	0.03
30.00	6374545.19	90.216	28.6081	-80.60	0.03
35.00	6375049.19	112.314	28.6082	-80.60	0.06
40.00	6375667.44	137.038	28.6083	-80.60	0.12
45.00	6376410.75	164.710	28.6087	-80.60	0.24
50.00	6377289.50	195.699	28.6092	-80.60	0.43
55.00	6378313.31	230.398	28.6099	-80.60	0.72
60.00	6379490.44	269.207	28.6111	-80.59	1.13
65.00	6380827.44	312.225	28.6127	-80.59	1.70
65.75	6381042.00	319.009	28.6129	-80.59	1.80
70.00	6382326.44	359.195	28.6147	-80.58	2.45
75.00	6383988.94	411.502	28.6174	-80.57	3.41
80.00	6385819.38	470.218	28.6208	-80.56	4.63
81.00	6386206.06	482.771	28.6216	-80.56	4.91
85.00	6387822.81	535.734	28.6250	-80.54	6.14
90.00	6390002.56	608.323	28.6302	-80.53	7.99
95.00	6392360.63	688.299	28.6363	-80.50	10.20
100.00	6394899.44	775.916	28.6436	-80.48	12.82
105.00	6397620.88	871.421	28.6522	-80.45	15.90
110.00	6400525.00	975.100	28.6621	-80.41	19.47
115.00	6403616.06	1087.310	28.6736	-80.37	23.57
120.00	6406894.75	1208.554	28.6866	-80.33	28.25
125.00	6410359.19	1339.545	28.7013	-80.28	33.56
130.00	6414013.44	1481.138	28.7178	-80.22	39.55
135.00	6417864.63	1634.332	28.7363	-80.15	46.27
140.00	6421880.50	1762.021	28.7567	-80.08	53.70
145.00	6426014.19	1895.443	28.7788	-80.00	61.79
150.00	6430271.06	2038.628	28.8027	-79.92	70.57
155.00	6434659.25	2192.610	28.8286	-79.82	80.10
160.00	6439189.38	2358.469	28.8565	-79.72	90.43
160.82	6439945.69	2386.463	28.8613	-79.71	92.20
161.59	6440658.81	2396.459	28.8658	-79.69	93.89

*** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	X CØRDINATE EARTH FIXED, PT. CENTERED PLUMBIN. SYS, (M)	Y CØRDINATE EARTH FIXED, PT. CENTERED PLUMBIN. SYS, (M)	Z CØRDINATE EARTH FIXED, PT. CENTERED PLUMBIN. SYS, (M)	X CØMPONENT OF VEL. IN THE XXE SYSTEM (M/S)	Y CØMPONENT OF VEL. IN THE XXE SYSTEM (M/S)	Z CØMPONENT OF VEL. IN THE XXE SYSTEM (M/S)
0.00	59.125	-0.056	0.006	0.000	-0.000	-0.000
0.40	59.250	-0.051	0.004	0.590	0.000	0.001
5.00	84.938	-0.146	-0.083	10.767	0.128	-0.067
10.00	169.063	4.498	-0.750	23.122	1.672	-0.198
15.00	318.813	14.402	-2.125	37.078	1.856	-0.373
20.00	542.813	22.985	-3.379	52.819	1.654	0.081
25.00	850.125	30.723	0.267	70.444	1.434	1.578
30.00	1250.625	37.408	15.025	90.089	1.229	4.638
35.00	1754.625	42.991	50.341	111.871	1.005	9.923
40.00	2372.875	47.397	119.270	135.820	0.767	18.210
45.00	3116.375	50.676	238.770	161.900	0.549	30.287
50.00	3995.313	52.923	429.731	189.991	0.350	46.917
55.00	5019.375	54.234	716.669	219.890	0.173	68.785
60.00	6196.750	54.669	1127.328	251.323	0.016	96.483
65.00	7534.063	54.429	1691.885	283.693	-0.115	130.396
65.75	7748.688	54.340	1791.780	288.558	-0.133	136.019
70.00	9033.563	53.575	2441.602	316.107	-0.232	170.580
75.00	10596.375	52.146	3409.320	349.186	-0.336	217.722
80.00	12527.188	50.167	4631.369	383.296	-0.452	272.377
81.00	12913.938	49.731	4909.638	390.230	-0.479	284.233
85.00	14530.688	47.583	6146.059	418.214	-0.583	334.825
90.00	16709.938	44.396	7993.178	453.552	-0.678	405.397
95.00	19066.813	40.718	10213.630	489.255	-0.820	484.132
100.00	21603.188	35.924	12848.022	525.352	-1.118	571.007
105.00	24320.313	29.651	15937.949	561.474	-1.367	666.424
110.00	27217.688	22.407	19526.906	597.617	-1.618	770.501
115.00	30298.438	12.661	23656.450	634.651	-2.219	882.868
120.00	33562.125	1.884	28372.772	670.684	-1.959	1005.377
125.00	37005.313	-6.449	33726.955	706.667	-1.381	1137.980
130.00	40630.188	-11.901	39769.933	743.470	-0.792	1281.024
135.00	44441.688	-14.283	46556.206	781.292	-0.183	1435.487
140.00	48405.313	-13.826	54068.173	803.024	0.403	1568.398
145.00	52472.000	-9.947	62253.106	823.777	1.169	1707.072
150.00	56644.375	-1.965	71154.498	845.302	2.036	1855.119
155.00	60926.875	10.601	80821.519	867.940	3.018	2013.507
160.00	65326.125	28.360	91308.590	891.997	4.121	2183.277
160.82	66058.250	31.823	93108.427	895.948	4.313	2211.891
161.59	66747.938	35.191	94818.007	893.543	4.446	2223.641

TIME BASE I

MACH I

MAX Q

S-IC CECØ

S-IC ØECØ
S-IC/S-II SEP

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	COMMANDED PITCH ATTITUDE (DEG)	EULERIAN ANGLE OF ATTITUDE IN PITCH (DEG)	COMMANDED YAW ATTITUDE (DEG)	EULERIAN ANGLE OF ATTITUDE IN YAW (DEG)	COMMANDED ROLL ATTITUDE (DEG)	EULERIAN ANGLE OF ATTITUDE IN ROLL (DEG)
0.00	C.000	-0.0602	0.000	0.019472	-17.941	-17.90646720
0.40	-C.000	-0.0605	C.000	0.018234	-17.941	-17.90665102
5.00	-C.000	0.0311	1.250	1.083350	-17.941	-17.94329882
10.00	-0.000	0.0106	0.398	1.211642	-17.941	-17.94140601
15.00	-0.455	-0.0567	0.000	-0.300452	-17.339	-17.91676998
20.00	-1.223	-1.0160	C.000	-0.032072	-12.339	-12.96141338
25.00	-2.371	-2.0379	0.000	-0.056187	-7.339	-7.95028305
30.00	-3.976	-3.5489	0.000	-0.053513	-2.339	-2.95075205
35.00	-6.067	-5.5475	0.000	-0.057094	0.000	-0.04340151
40.00	-8.612	-8.0190	0.000	-0.048697	0.000	-0.00134260
45.00	-11.556	-10.9161	0.000	-0.039106	0.000	0.00000304
50.00	-14.813	-14.1472	0.000	-0.030898	0.000	-0.00007119
55.00	-18.296	-17.6231	0.000	-0.026270	0.000	-0.00013201
60.00	-21.921	-21.2570	0.000	-0.022511	0.000	-0.00018454
65.00	-25.607	-24.9714	0.000	-0.019885	0.000	-0.00029461
65.75	-26.161	-25.5282	0.000	-0.020716	0.000	-0.00032593
70.00	-29.277	-28.6634	0.000	-0.024904	0.000	-0.00046113
75.00	-32.871	-32.2826	0.000	-0.029853	0.000	-0.00066216
80.00	-36.342	-35.7437	0.000	-0.047231	0.000	-0.00115376
81.00	-37.018	-36.4228	0.000	-0.049226	0.000	-0.00119968
85.00	-39.656	-39.0863	0.000	-0.056556	0.000	-0.00130693
90.00	-42.792	-42.2980	0.000	-0.053196	0.000	-0.00102629
95.00	-45.734	-45.2038	0.000	-0.097992	0.000	-0.00190414
100.00	-48.468	-47.9198	0.000	-0.139355	0.000	-0.00212825
105.00	-51.008	-50.5639	0.000	-0.111802	0.000	-0.00155601
110.00	-53.364	-52.6032	0.000	-0.286405	0.000	-0.00182584
115.00	-55.544	-54.8616	0.000	-0.228863	0.000	-0.00034027
120.00	-57.556	-57.3569	0.000	-0.004493	0.000	0.00025871
125.00	-59.408	-59.2269	0.000	-0.017150	0.000	0.00002773
130.00	-61.109	-60.9037	0.000	-0.039859	0.000	-0.00003884
135.00	-62.669	-62.5270	0.000	-0.095340	0.000	-0.00009962
140.00	-64.099	-63.9310	0.000	-0.059533	0.000	-0.00006093
145.00	-65.411	-65.2527	0.000	-0.055902	0.000	-0.00004295
150.00	-66.619	-66.4665	0.000	-0.056383	0.000	-0.00004540
155.00	-67.734	-67.5891	0.000	-0.058090	0.000	-0.00004794
160.00	-68.773	-68.6338	0.000	-0.058739	0.000	-0.00004798
160.82	-68.873	-68.7982	0.000	-0.058797	0.000	-0.00003508
161.59	-68.873	-68.9424	0.000	-0.058897	0.000	0.00024871

TIME BASE I

MACH I

MAX Q

S-IC CECØ

S-IC ØECØ
S-IC/S-II SEP

TABLE 2.2 (BTØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MØTTLØN (SEC)	MACH NUMBER	DYNAMIC PRESSURE (NT/M**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALØNG VELOCITY VECTOR (KG)	AERØDYNAMIC LOAD (KG/M**2)	MAGNITUDE ØF THE AERØDYNAMIC FORCE VECTOR (KG)
0.00	0.00	0.23	89.9999	0.2479	2.0784	2.6061
0.40	0.00	0.43	46.4985	0.4728	2.0473	4.9692
5.00	0.03	68.30	2.8933	573.0772	20.1500	128.5485
10.00	0.07	313.69	3.5136	1342.1770	112.3922	718.9962
15.00	0.11	792.93	3.4406	2774.5317	278.1964	1786.8495
20.00	0.15	1573.59	2.0342	5014.2706	326.4039	2127.0305
25.00	0.21	2719.39	1.3926	8220.4706	386.1637	2454.7604
30.00	0.26	4288.57	0.9761	12559.0575	426.8661	2713.4970
35.00	0.33	6327.19	0.6836	18203.4446	441.0261	2803.5089
40.00	0.41	8855.95	0.4568	25317.0327	412.5026	2622.1909
45.00	0.49	11865.21	0.2959	34044.1367	358.0639	2276.1359
50.00	0.59	15306.78	0.1789	44497.9580	279.2355	1775.0405
55.00	0.70	15096.35	0.1084	55117.1084	211.1810	1342.4328
60.00	0.83	23085.39	0.0950	73051.4863	223.7084	1599.8252
65.00	0.98	27017.95	0.1301	111261.4287	358.5265	2848.8461
65.75	1.01	27574.59	0.1364	122109.3994	383.5135	3047.3925
70.00	1.16	30459.63	0.1630	148122.2441	506.2599	3821.5964
75.00	1.36	33164.56	0.2102	141919.0000	710.9591	5084.3427
80.00	1.60	34654.57	0.3024	120214.5029	1068.4655	7216.5085
81.00	1.66	34725.24	0.3106	117273.8135	1099.8737	7428.6420
85.00	1.87	34093.45	0.3251	102149.1348	1130.1521	7184.1365
90.00	2.14	31161.01	0.2930	84525.8828	931.0210	5918.3020
95.00	2.41	26479.97	0.5300	64718.3350	1431.0999	9097.1974
100.00	2.68	21853.85	0.6696	47416.6582	1492.1756	9485.4426
105.00	2.97	17584.08	0.5622	33594.1196	1008.1338	6408.4916
110.00	3.29	13835.72	0.8322	23592.4438	1174.0683	7463.3020
115.00	3.62	10582.29	0.5853	16455.2366	631.6106	3011.2607
120.00	3.95	7890.84	0.0897	11532.8325	72.1861	344.1538
125.00	4.31	5801.97	0.1320	8111.6811	78.1127	372.4096
130.00	4.68	4199.42	0.1798	4850.9570	77.0058	367.1321
135.00	5.08	2015.55	0.2542	3238.1631	78.1674	310.5584
140.00	5.41	1070.21	0.1859	1568.8853	39.2494	155.9375
145.00	5.88	1459.97	0.1710	252.0057	25.4528	101.1240
150.00	6.45	1013.15	0.1550	-671.9060	16.0179	63.6391
155.00	7.11	681.70	0.1457	-1301.3289	10.1288	36.2176
160.00	7.87	438.89	0.1449	-1685.4988	6.4870	23.1957
160.82	8.00	406.13	0.1456	-1734.6624	6.0295	21.5596
161.59	8.07	371.97	0.1517	-1776.1748	5.7529	20.5707

TIME BASE I

MACH I

MAX Q

S-IC CECØ

S-IC ØECØ

S-IC/S-II SEP

TABLE 2.2 (BT0)
 AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME	X PØSI CØRÐ	Y PØSI CØRÐ	Z PØSI CØRÐ	X VEL. CØMP.	Y VEL. CØMP.	Z VEL. CØMP.
FRØM	SPACE FIXED	SPACE FIXED	SPACE FIXED	SPACE FIXED	SPACE FIXED	SPACE FIXED
FIRST	EARTH CENTER	EARTH CENTER	EARTH CENTER	EARTH CENTER	EARTH CENTER	EARTH CENTER
MØTTON	PLUMBLIN SYS	PLUMELIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS
(SEC)	(M)	(M)	(M)	(M/S)	(M/S)	(M/S)
0.00	6373324.5	19255.8	1174.6	-0.451	125.644	388.843
0.40	6373324.4	19305.8	1329.4	0.128	125.636	388.846
5.00	6373347.7	19883.8	3118.8	10.185	125.707	388.814
10.00	6373428.6	20516.1	5062.7	22.408	127.192	388.735
15.00	6373574.4	21153.5	7006.1	36.234	127.322	388.626
20.00	6373793.9	21789.3	8950.1	51.843	127.072	389.163
25.00	6374096.0	22424.0	10899.4	69.333	126.808	390.762
30.00	6374490.6	23057.5	12860.3	88.836	126.561	393.945
35.00	6374987.9	23689.6	14842.6	110.466	126.298	399.380
40.00	6375598.8	24320.4	16859.2	134.249	126.022	407.843
45.00	6376333.9	24949.9	18927.4	160.139	125.762	420.127
50.00	6377203.5	25578.0	21068.1	188.009	125.514	436.996
55.00	6378217.0	26205.0	23306.1	217.649	125.277	459.136
60.00	6379382.5	26830.8	25669.3	248.774	125.042	487.141
65.00	6380706.2	27455.4	28188.0	280.778	124.812	521.394
65.75	6380918.6	27549.0	28581.1	285.583	124.776	527.070
70.00	6382190.0	28078.9	30893.6	312.761	124.567	561.947
75.00	6383834.9	28701.1	33819.1	345.333	124.302	609.492
80.00	6385644.9	29321.8	37001.1	378.845	123.986	664.585
81.00	6386027.2	29445.8	37671.6	385.648	123.914	676.533
85.00	6387624.5	29940.8	40478.0	413.067	123.609	727.507
90.00	6389776.1	30557.9	44289.8	447.596	123.215	798.587
95.00	6392100.9	31172.8	48477.5	482.370	122.715	877.863
100.00	6394600.3	31784.7	53082.0	517.405	121.995	965.313
105.00	6397274.7	32392.7	58145.0	552.321	121.251	1061.337
110.00	6400122.9	32997.2	63710.1	587.103	120.427	1166.052
115.00	6403147.4	33596.1	69819.0	622.613	119.171	1279.095
120.00	6406346.7	34190.4	76518.2	656.932	118.676	1402.307
125.00	6409716.4	34783.1	83858.9	690.998	118.392	1535.645
130.00	6413257.7	35374.2	91892.1	725.666	118.008	1679.463
135.00	6416974.3	35963.1	100672.6	761.115	117.521	1834.740
140.00	6420831.3	36549.3	110182.6	780.543	117.009	1968.342
145.00	6424779.6	37133.3	120369.0	798.812	116.578	2107.717
150.00	6428820.4	37715.1	131275.4	817.629	116.127	2256.488
155.00	6432957.3	38294.6	142951.1	837.313	115.660	2415.631
160.00	6437195.4	38871.6	155450.8	858.145	115.170	2586.190
160.82	6437899.6	38965.9	157580.6	861.545	115.089	2614.935
161.59	6438562.7	39054.5	159600.6	858.782	115.035	2626.743

TIME BASE 1

MACH 1

MAX Q

S-IC CECØ

S-IC ØECØ

S-IC/S-II SEP

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG
 TABLE 2.2 (BTØ)

TIME FROM MOTION (SEC)	GIMBAL DEFLECTION ANG REQUIRED PITCH CHANL (DEG)	GIMBAL DEFLECTION ANG REQUIRED YAW CHANNEL (DEG)	GIMBAL DEFLECTION ANG REQUIRED ROLL CHANNEL (DEG)	EULERIAN ATTITUDE RATE IN PITCH (DEG/S)	EULERIAN ATTITUDE RATE IN YAW (DEG/S)	EULERIAN ATTITUDE RATE IN ROLL (DEG/S)
0.00	0.0000	0.000000	0.000000	-0.00366798	0.00000000	0.00200055
0.40	-0.000798	-0.000000	-0.002564	0.000567030	-0.00032230	-0.000937538
5.00	-0.0426	-0.191529	-0.000409	-0.13706344	0.42336835	-0.00284825
10.00	-0.0562	0.189391	-0.000106	0.05065309	-0.15279737	-0.00129102
15.00	0.1887	-0.123611	-0.026242	-0.13683445	0.01410904	0.17937678
20.00	0.0108	-0.025652	-0.000048	-0.14093527	-0.06522282	1.01946378
25.00	0.0226	-0.020498	0.000011	-0.26076571	-0.02666029	1.00017834
30.00	0.0266	-0.029037	-0.000030	-0.34838488	-0.01866175	1.00031622
35.00	0.0231	-0.029114	-0.013553	-0.44895082	-0.00405367	-0.15339026
40.00	0.0217	-0.026180	0.000132	-0.53945705	0.00344738	0.00526924
45.00	0.0175	-0.026117	-0.000005	-0.61585466	0.00131322	0.00035672
50.00	0.0146	-0.023604	-0.000008	-0.67370060	0.00155769	0.00036256
55.00	0.0122	-0.022802	-0.000021	-0.71343417	0.00021666	0.00031437
60.00	0.0099	-0.020653	-0.000035	-0.73789839	0.00149455	0.00027338
65.00	0.0060	-0.020231	-0.000061	-0.74290618	-0.00101982	0.00022610
65.75	0.0068	-0.020773	-0.000067	-0.74166379	-0.00116567	0.00022145
70.00	0.0121	-0.022531	-0.000098	-0.73211418	-0.00133737	0.00026483
75.00	0.0194	-0.024844	-0.000144	-0.71091814	-0.00157937	0.00027549
80.00	0.0507	-0.035202	-0.000256	-0.67978097	-0.00267320	0.00048856
81.00	0.0520	-0.035654	-0.000266	-0.67797603	-0.00143375	0.00056900
85.00	0.0584	-0.040666	-0.000284	-0.65461238	-0.00174552	0.00079776
90.00	0.0443	-0.039951	-0.000226	-0.61406037	-0.00246606	0.00049592
95.00	0.0969	-0.068831	-0.000424	-0.55666297	-0.01179380	0.00080526
100.00	0.1232	-0.088367	-0.000488	-0.53852332	0.00066508	0.00141500
105.00	0.0885	-0.076536	-0.000344	-0.51449201	0.00754855	0.00116564
110.00	0.1482	-0.108625	-0.000536	-0.34371769	-0.04505831	0.00200425
115.00	0.0542	-0.056500	-0.000178	-0.56667902	0.07528769	0.00261750
120.00	-0.0189	-0.022442	0.000062	-0.41553970	0.00869327	0.00003762
125.00	-0.0046	-0.029720	0.000018	-0.34612139	-0.00745193	0.00004920
130.00	-0.0021	-0.029693	0.000007	-0.32616656	-0.00188764	0.00023704
135.00	-0.0077	-0.032156	0.000024	-0.29956479	-0.00800199	0.00045357
140.00	-0.0013	-0.020261	0.000005	-0.27357468	0.00676547	0.00030575
145.00	-0.0027	-0.021641	0.000008	-0.25293688	-0.00069523	0.00024423
150.00	-0.0023	-0.020775	0.000005	-0.23324159	-0.00008580	0.00022954
155.00	-0.0022	-0.020647	0.000003	-0.21629738	-0.00034758	0.00021958
160.00	-0.0022	-0.020282	0.000002	-0.20209075	-0.00008781	0.00020722
160.82	-0.0096	-0.020233	0.000006	-0.19701491	-0.00004141	0.00033730
161.59	-0.0314	-0.020203	0.000097	-0.18134203	-0.00034408	0.00063060

AS-506 TRAJECTORY DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	TOTAL VEHICLE ENGINE THRUST (LB)	TOTAL VEHICLE WEIGHT (LB)	ALTITUDE ABOVE SPHERICAL EARTH (FT)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (FT/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (FT/S**2)
0.00	7653855.50	6398534.88	182.7	1340.67	90.00	34.800
0.40	7689701.31	6386953.94	182.5	1340.68	89.92	38.754
5.00	7719888.31	6253044.88	259.8	1341.07	88.49	39.793
10.00	7719132.81	6107740.81	528.4	1343.92	86.76	40.726
15.00	7748803.56	5962426.44	1012.5	1346.96	84.82	41.860
20.00	7782196.31	5816993.00	1739.9	1353.85	82.65	43.062
25.00	7822259.88	5671466.81	2740.7	1366.90	80.27	44.352
30.00	7875915.00	5525833.94	4047.3	1388.47	77.71	45.774
35.00	7939708.75	5380080.38	5693.3	1421.25	75.03	47.316
40.00	8010903.38	5234232.69	7714.0	1468.12	72.33	48.970
45.00	8090909.06	5088287.75	10145.5	1531.72	69.71	50.753
50.00	8177452.75	4942250.81	13021.2	1614.18	67.29	52.659
55.00	8267383.50	4796130.81	16372.1	1716.95	65.16	54.701
60.00	8358557.94	4649554.75	20226.5	1840.87	63.40	56.769
65.00	8446828.38	4503661.25	24605.2	1985.56	62.05	58.634
65.75	8459630.50	4481667.25	25307.9	2008.91	61.89	58.840
70.00	8532699.25	4357032.81	29515.3	2149.19	61.16	60.632
75.00	8620108.25	4210311.25	34961.7	2334.21	60.61	63.510
80.00	8704335.88	4063397.41	40959.1	2542.53	60.36	66.844
81.00	8719688.50	4034065.59	42226.1	2587.03	60.34	67.503
85.00	8777592.63	3916662.78	47523.8	2774.53	60.36	70.271
90.00	8839944.00	3769707.53	54666.8	3030.59	60.58	73.868
95.00	8890007.50	3622499.44	62394.4	3310.86	60.98	77.698
100.00	8928626.75	3475066.38	70715.1	3615.51	61.49	81.702
105.00	8958928.13	3327408.56	79634.3	3945.47	62.11	85.913
110.00	8984225.75	3175540.94	89152.8	4301.37	62.80	90.387
115.00	9005550.75	3031439.91	99284.4	4683.60	63.49	95.196
120.00	9025131.50	2883116.13	110031.5	5095.46	64.27	100.432
125.00	9046037.63	2734511.34	121386.7	5538.40	65.07	106.225
130.00	9067563.50	2585612.50	133364.8	6014.87	65.84	112.699
135.00	9088448.13	2436348.31	145988.6	6528.28	66.59	119.926
140.00	9144021.88	2316199.69	159151.9	6957.63	67.40	127.189
145.00	9153378.38	2198779.50	172701.5	7404.94	68.18	134.665
150.00	9163222.19	2081205.81	186654.6	7883.40	68.92	142.462
155.00	9178344.63	1963413.80	201037.8	8396.48	69.62	150.677
160.00	9174979.00	1846159.30	215886.4	8947.77	70.26	159.107
160.82	7005089.13	1826952.89	218365.3	9040.72	70.37	123.440
161.59	386280.61	1818793.52	220702.5	9074.66	70.48	6.928

TIME BASE I

MACH I

MAX Q

S-IC CECØ

S-IC ØECØ
S-IC/S-II SEP

TABLE 2.2 (RT0)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	*** RADIAL DISTANCE OF THE C G (FT)	MAGNITUDE OF THE EARTH FIXED VELOCITY (FT/SEC)	SUB VEHICLE LATITUDE ØN SPHERICAL EARTH (DEG)	LONGITUDE ØN EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (NM)
0.00	20909952.50	0.000	28.6084	-80.60	0.00
0.40	20909953.00	1.934	28.6084	-80.60	0.00
5.00	20910037.25	35.327	28.6084	-80.60	0.00
10.00	20910313.00	76.059	28.6084	-80.60	0.00
15.00	20910804.75	121.806	28.6083	-80.60	0.01
20.00	20911539.50	173.376	28.6082	-80.60	0.01
25.00	20912548.00	231.222	28.6082	-80.60	0.01
30.00	20913862.00	295.985	28.6081	-80.60	0.02
35.00	20915515.50	368.486	28.6082	-80.60	0.03
40.00	20917544.00	449.599	28.6083	-80.60	0.07
45.00	20919982.50	540.386	28.6087	-80.60	0.13
50.00	20922865.75	642.057	28.6092	-80.60	0.23
55.00	20926224.50	755.898	28.6099	-80.60	0.39
60.00	20930086.50	883.225	28.6111	-80.59	0.61
65.00	20934473.00	1024.362	28.6127	-80.59	0.92
65.75	20935177.00	1046.617	28.6129	-80.59	0.97
70.00	20939391.00	1178.460	28.6147	-80.58	1.32
75.00	20944845.50	1350.073	28.6174	-80.57	1.84
80.00	20950850.75	1542.710	28.6208	-80.56	2.50
81.00	20952119.50	1583.895	28.6216	-80.56	2.65
85.00	20957423.75	1757.658	28.6250	-80.54	3.32
90.00	20964575.25	1995.809	28.6302	-80.53	4.31
95.00	20972311.50	2258.197	28.6363	-80.50	5.51
100.00	20980641.00	2545.655	28.6436	-80.48	6.92
105.00	20989569.75	2858.994	28.6522	-80.45	8.58
110.00	20999097.50	3199.147	28.6621	-80.41	10.51
115.00	21009239.00	3567.288	28.6736	-80.37	12.73
120.00	21019995.75	3965.073	28.6866	-80.33	15.26
125.00	21031362.00	4394.832	28.7013	-80.28	18.12
130.00	21043351.00	4859.378	28.7178	-80.22	21.36
135.00	21055986.25	5361.981	28.7363	-80.15	24.98
140.00	21069161.50	5780.909	28.7567	-80.08	29.00
145.00	21082723.50	6218.646	28.7788	-80.00	33.36
150.00	21096689.75	6688.412	28.8027	-79.92	38.11
155.00	21111086.50	7193.602	28.8286	-79.82	43.25
160.00	21125949.25	7737.758	28.8565	-79.72	48.83
160.82	21128430.50	7829.602	28.8613	-79.71	49.79
161.59	21130770.25	7862.398	28.8658	-79.69	50.69

**** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TABLE 2.2 (BTØ)

TIME FROM FIRST MOTION (SEC)	X COORDINATE		Y COORDINATE		Z COORDINATE		COMPONENT OF VEL. IN THE XXE SYSTEM (FT/S)	COMPONENT OF VEL. IN THE YXXE SYSTEM (FT/S)	COMPONENT OF VEL. IN THE XXXE SYSTEM (FT/S)
	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)				
0.00	193.980	-0.183	C.019	C.019	0.000	-0.000	-0.000	0.000	0.000
0.40	194.390	-0.167	C.015	C.015	1.934	0.001	0.003	0.003	0.003
5.00	278.666	-0.477	-0.271	-0.271	35.324	0.420	-0.219	-0.219	-0.219
10.00	594.667	14.757	-2.462	-2.462	75.859	5.485	-0.649	-0.649	-0.649
15.00	1045.973	47.252	-6.971	-6.971	121.648	6.088	-1.224	-1.224	-1.224
20.00	1780.881	75.410	-11.084	-11.084	173.290	5.427	0.267	0.267	0.267
25.00	2789.124	100.799	0.877	0.877	231.116	4.706	5.177	5.177	5.177
30.00	4103.100	122.730	49.294	49.294	295.566	4.032	15.215	15.215	15.215
35.00	5756.644	141.048	165.162	165.162	367.030	3.297	32.557	32.557	32.557
40.00	7785.023	155.502	391.305	391.305	445.604	2.516	59.745	59.745	59.745
45.00	10224.327	166.260	783.366	783.366	531.168	1.802	99.366	99.366	99.366
50.00	13107.981	173.632	1409.878	1409.878	623.331	1.147	153.929	153.929	153.929
55.00	16467.766	177.934	2351.277	2351.277	721.424	0.569	225.674	225.674	225.674
60.00	20330.544	179.360	3698.582	3698.582	824.552	0.052	316.546	316.546	316.546
65.00	24718.053	178.573	5550.803	5550.803	930.750	-0.377	427.809	427.809	427.809
65.75	25422.203	178.281	5878.544	5878.544	946.712	-0.437	446.255	446.255	446.255
70.00	29637.672	175.772	8010.504	8010.504	1037.095	-0.762	559.645	559.645	559.645
75.00	35093.094	171.081	11185.435	11185.435	1145.625	-1.104	714.311	714.311	714.311
80.00	41099.696	164.591	15194.780	15194.780	1257.533	-1.484	893.624	893.624	893.624
81.00	42368.561	163.159	16107.735	16107.735	1280.281	-1.570	932.524	932.524	932.524
85.00	47672.859	156.113	20164.234	20164.234	1372.094	-1.914	1098.507	1098.507	1098.507
90.00	54822.629	145.655	26224.337	26224.337	1488.030	-2.225	1330.044	1330.044	1330.044
95.00	62555.159	133.589	33509.284	33509.284	1605.169	-2.690	1588.358	1588.358	1588.358
100.00	70876.599	117.862	42152.304	42152.304	1723.597	-3.669	1873.382	1873.382	1873.382
105.00	79791.051	97.281	52285.858	52285.858	1842.105	-4.486	2186.430	2186.430	2186.430
110.00	89296.874	73.515	64064.653	64064.653	1960.687	-5.307	2527.889	2527.889	2527.889
115.00	99404.322	41.539	77613.023	77613.023	2082.187	-7.280	2896.548	2896.548	2896.548
120.00	110111.958	6.180	93086.522	93086.522	2200.408	-6.426	3298.480	3298.480	3298.480
125.00	121408.505	-21.158	110652.737	110652.737	2318.463	-4.530	3733.531	3733.531	3733.531
130.00	133301.139	-39.046	130478.781	130478.781	2439.205	-2.598	4202.836	4202.836	4202.836
135.00	145806.061	-46.862	152743.455	152743.455	2563.293	-0.599	4709.604	4709.604	4709.604
140.00	158810.080	-45.360	177385.018	177385.018	2634.592	1.322	5145.661	5145.661	5145.661
145.00	172152.230	-32.635	204242.475	204242.475	2702.679	3.834	5600.631	5600.631	5600.631
150.00	185841.125	-6.446	233446.514	233446.514	2773.300	6.679	6086.347	6086.347	6086.347
155.00	199891.320	34.780	265162.461	265162.461	2847.573	9.900	6605.993	6605.993	6605.993
160.00	214324.557	93.044	299568.863	299568.863	2926.498	13.521	7162.983	7162.983	7162.983
160.82	216726.541	104.405	305473.840	305473.840	2939.462	14.152	7256.861	7256.861	7256.861
161.59	218989.295	115.456	311082.695	311082.695	2931.570	14.586	7295.409	7295.409	7295.409

TABLE 2-2 (BTØ)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (LB/FT**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALØNG VELOCITY VECTOR (LB)	AERØDYNAMIC LOAD (LB/FT**2)	MAGNITUDE ØF THE AERØDYNAMIC FORCE VECTOR (FT)
0.00	0.00	0.00	89.9999	0.5466	0.4257	5.7455
0.40	0.00	0.01	46.4985	1.0424	0.4193	10.9551
5.00	0.03	1.43	2.8933	1263.4190	4.1270	283.4010
10.00	0.07	6.55	3.5136	2958.9938	23.0197	1585.1154
15.00	0.11	16.56	3.4406	6116.7952	56.9791	3939.3289
20.00	0.15	32.87	2.0342	11054.5742	66.8528	4689.2994
25.00	0.21	56.80	1.3926	18123.0352	79.0926	5411.8203
30.00	0.26	89.57	0.9761	27687.9819	87.4291	5982.2369
35.00	0.33	132.15	0.6836	40131.7251	90.3293	6180.6790
40.00	0.41	184.96	0.4568	55814.5020	84.4872	5780.9413
45.00	0.49	247.81	0.2959	75054.4727	73.3373	5018.0206
50.00	0.59	319.69	0.1789	98101.2031	57.1919	3913.2944
55.00	0.70	398.84	0.1084	121512.4219	43.2533	2959.5577
60.00	0.83	482.15	0.0950	161050.9570	45.8191	3527.0108
65.00	0.98	564.28	0.1301	245289.4590	73.4320	6280.6305
65.75	1.01	575.91	0.1364	269205.1406	78.5498	6718.3502
70.00	1.16	636.16	0.1630	326553.6445	103.6902	8425.1779
75.00	1.36	692.66	0.2102	312877.8320	145.6159	11209.0568
80.00	1.60	723.78	0.3024	265027.6094	218.8390	15909.6776
81.00	1.66	725.25	0.3106	258544.4980	225.2719	16377.3521
85.00	1.87	712.06	0.3251	225200.2891	231.4734	15838.3096
90.00	2.14	650.81	0.2930	186347.6699	190.6881	13047.6223
95.00	2.41	553.05	0.5300	142679.5020	293.1124	20055.8867
100.00	2.68	456.43	0.6696	104535.8359	305.6216	20911.8210
105.00	2.97	367.25	0.5622	74062.3545	206.4821	14128.3053
110.00	3.29	288.96	0.8322	52012.4346	240.4681	16453.7642
115.00	3.62	221.02	0.5853	36277.5859	129.3640	6638.6934
120.00	3.95	164.80	0.0897	25425.5430	14.7849	758.7293
125.00	4.31	121.18	0.1320	17883.1953	15.9988	821.0226
130.00	4.68	87.71	0.1798	10694.5294	15.7720	809.3876
135.00	5.08	62.98	0.2542	7138.9274	16.0099	684.6642
140.00	5.41	43.24	0.1859	3458.7999	8.0389	343.7833
145.00	5.88	30.49	0.1710	555.5775	5.2132	222.9402
150.00	6.45	21.16	0.1550	-1481.2990	3.2807	140.3003
155.00	7.11	14.24	0.1457	-2868.9391	2.0745	79.8461
160.00	7.87	9.17	0.1449	-3715.8886	1.3287	51.1377
160.82	8.00	8.48	0.1456	-3824.2760	1.2349	47.5308
161.59	8.07	7.77	0.1517	-3915.7950	1.1783	45.3505

TABLE 2.2 (BTØ)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MØTTØN (SEC)	X PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	Y PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	Z PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	X VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	Y VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	Z VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)
0.00	20909857.3	63175.2	3853.7	-1.481	412.209	1275.730
0.40	20909857.0	63339.3	4361.4	0.420	412.193	1275.741
5.00	20909933.3	65235.4	10232.3	33.415	412.423	1275.636
10.00	20910198.5	67310.2	16609.8	73.518	417.296	1275.378
15.00	20910677.3	69401.3	22986.0	118.878	417.724	1275.019
20.00	20911397.0	71487.3	29363.7	170.087	416.902	1276.782
25.00	20912388.3	73569.6	35759.1	227.469	416.035	1282.026
30.00	20913682.8	75647.8	42192.7	291.456	415.227	1292.471
35.00	20915314.5	77721.8	48696.1	362.422	414.365	1310.302
40.00	20917318.8	79791.3	55312.3	440.448	413.458	1338.068
45.00	20919730.5	81856.5	62097.6	525.389	412.606	1378.368
50.00	20922583.5	83917.5	69121.1	616.829	411.790	1433.713
55.00	20925908.8	85974.5	76463.6	714.070	411.013	1506.352
60.00	20929732.5	88027.6	84216.7	816.188	410.243	1598.231
65.00	20934075.3	90076.9	92480.2	921.187	409.488	1710.610
65.75	20934772.0	90384.0	93770.1	936.951	409.371	1729.232
70.00	20938943.5	92122.4	101356.9	1026.118	408.685	1843.659
75.00	20944340.0	94163.7	110955.1	1132.981	407.815	1999.644
80.00	20950278.5	96200.3	121394.7	1242.931	406.778	2180.396
81.00	20951532.5	96606.9	123594.6	1265.249	406.543	2219.598
85.00	20956773.3	98231.1	132801.8	1355.206	405.540	2386.834
90.00	20963832.0	100255.6	145307.7	1468.490	404.249	2620.036
95.00	20971459.5	102273.0	159047.0	1582.577	402.609	2880.126
100.00	20979659.5	104280.4	174153.5	1697.524	400.245	3167.037
105.00	20988433.8	106275.4	190764.3	1812.078	397.806	3482.076
110.00	20997778.5	108258.5	209022.5	1926.192	395.102	3825.630
115.00	21007701.3	110223.4	229065.0	2042.694	390.981	4196.506
120.00	21018197.8	112173.3	251044.0	2155.287	389.356	4600.743
125.00	21029253.0	114117.9	275127.6	2267.052	388.426	5038.206
130.00	21040871.5	116057.0	301483.3	2380.793	387.166	5510.048
135.00	21053065.3	117989.1	330290.7	2497.097	385.567	6019.487
140.00	21065719.3	119912.5	361491.4	2560.836	383.889	6457.814
145.00	21078673.0	121828.5	394911.3	2620.774	382.473	6915.081
150.00	21091930.3	123737.1	430693.5	2682.509	380.995	7403.177
155.00	21105502.8	125638.3	468599.7	2747.089	379.461	7925.298
160.00	21119407.5	127531.6	510009.0	2815.437	377.855	8484.875
160.82	21121717.8	127841.0	516996.8	2826.590	377.588	8579.184
161.59	21123893.3	128131.7	523624.0	2817.527	377.412	8617.922

TIME BASE I

MACH I

MAX Q

S-IC CECØ

S-IC ØECØ
S-IC/S-II SEP

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM MØTION (SEC)	TOTAL VEHICLE ENGINE THRUST (NEWTONS)	TOTAL VEHICLE WEIGHT (KG)	ALTITUDE ABOVE SPHERICAL EARTH (M)	MAGNITUDE OF SPACE FIXED VELOCITY XPP SYSTEM (M/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (M/S**2)
S-IC/S-II SEP						
S-II ENGINE START						
S-II 90 THRUST						
161.59	411783.57	659530.11	67270.1	2765.96	70.48	0.620
162.22	415439.86	659446.64	67850.2	2764.33	70.58	0.626
165.22	3742629.69	658353.04	70567.9	2760.10	71.07	5.682
170.00	4963369.63	653340.27	74773.5	2777.47	71.82	7.616
175.00	5068814.00	647343.84	79034.4	2801.37	72.56	7.852
180.00	5103496.31	641243.48	83160.4	2826.64	73.29	7.981
185.00	5129079.81	635102.30	87153.7	2853.04	74.00	8.099
190.00	5143899.56	628934.80	91017.3	2880.49	74.68	8.202
195.00	5151635.50	618783.38	94753.4	2909.07	75.35	8.338
197.02	5153035.50	616283.48	96226.6	2920.89	75.62	8.374
200.00	5154314.00	608544.84	98365.0	2938.77	76.00	8.483
201.42	5154523.75	606788.55	99367.7	2947.38	76.18	8.508
205.00	5154554.63	602356.28	101854.7	2969.45	76.63	8.570
210.00	5154931.25	596168.56	105230.0	3000.23	77.17	8.659
215.00	5152863.06	585982.83	108510.1	3031.04	77.66	8.747
220.00	5152872.50	582805.84	111697.8	3062.92	78.14	8.840
225.00	5149509.88	577629.26	114792.4	3095.61	78.62	8.928
230.00	5148156.63	571452.67	117795.0	3129.10	79.09	9.022
235.00	514747.06	565276.08	120706.4	3163.39	79.54	9.120
240.00	5146752.00	559099.49	123527.6	3198.52	79.98	9.219
245.00	5146066.81	552922.90	126259.6	3234.48	80.41	9.321
250.00	5146080.50	546751.81	128903.2	3271.25	80.83	9.426
255.00	5146177.31	540581.16	131459.8	3308.86	81.24	9.534
260.00	5146263.19	534411.00	133930.6	3347.30	81.64	9.644
265.00	5152267.19	528235.51	136316.8	3386.62	82.02	9.768
270.00	5154301.00	522052.73	138619.7	3426.80	82.39	9.888
275.00	5156109.94	515869.63	140840.4	3467.86	82.76	10.010
280.00	5157729.94	505686.55	142980.3	3509.79	83.11	10.135
285.00	5159174.81	503503.45	145040.8	3552.60	83.45	10.262
290.00	5159767.00	497320.36	147023.1	3596.30	83.77	10.391
295.00	5160158.94	491137.27	148928.7	3640.87	84.09	10.522
300.00	5160414.56	484951.18	150759.1	3686.34	84.40	10.657
305.00	5160582.19	478764.77	152515.4	3732.71	84.69	10.795
310.00	5161036.00	472578.05	154199.5	3779.99	84.97	10.937
315.00	5161453.81	466390.87	155812.7	3828.20	85.25	11.083
320.00	5161890.25	460203.37	157356.5	3877.35	85.51	11.233
325.00	5162286.69	454015.40	158832.6	3927.46	85.76	11.387
330.00	5162411.31	447827.30	160242.4	3978.54	86.01	11.545
340.00	5162174.00	435450.82	162869.6	4030.61	86.24	11.707
345.00	5161833.88	429263.30	164090.3	4083.67	86.46	11.873
350.00	5161953.25	423075.88	165251.4	4137.76	86.68	12.043
355.00	5162162.00	416888.38	166354.5	4192.88	86.88	12.219
360.00	5162291.50	410700.59	167401.2	4249.07	87.08	12.401
365.00	5162404.75	404512.80	168394.1	4306.33	87.26	12.588
370.00	5162101.88	398325.09	169334.4	4364.69	87.44	12.781
375.00	5161811.31	392137.85	170224.1	4424.19	87.61	12.979
380.00	5161476.50	385951.11	171065.2	4484.85	87.77	13.183
385.00	5161230.19	375764.48	171859.4	4546.70	87.92	13.394
				4609.76	88.06	13.611

TABLE 2-2 (BT0)
 AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	TOTAL VEHICLE ENGINE THRUST (NEWTONS)	TOTAL VEHICLE WEIGHT (KG)	ALTITUDE ABOVE SPHERICAL EARTH (M)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (M/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (M/S**2)
390.00	5160762.19	373578.42	172609.0	4674.07	88.19	13.835
395.00	5160347.44	367394.05	173315.7	4739.65	88.32	14.067
400.00	5159910.31	361209.77	173982.0	4806.55	88.43	14.307
405.00	5159485.06	355025.48	174609.8	4874.79	88.54	14.555
410.00	5159193.50	348841.20	175201.6	4944.41	88.64	14.812
415.00	5158906.75	342656.91	175759.8	5015.46	88.74	15.078
420.00	5158573.25	336472.63	176286.3	5087.99	88.82	15.354
425.00	5158305.63	330289.67	176784.3	5162.03	88.90	15.641
430.00	5157801.00	324107.16	177255.9	5237.64	88.97	15.938
435.00	5157327.31	317925.21	177703.9	5314.86	89.03	16.246
440.00	5156813.25	311744.05	178131.2	5393.76	89.09	16.567
445.00	5156285.69	305563.30	178540.7	5474.38	89.13	16.900
450.00	5155749.06	299383.21	178935.5	5556.79	89.17	17.247
455.00	5155245.63	293203.82	179318.5	5641.07	89.20	17.609
460.00	5154635.31	287025.01	179693.0	5727.26	89.23	17.986
465.00	4103357.72	281897.52	180054.5	5799.29	89.28	14.584
470.00	4102928.75	276972.60	180395.7	5870.23	89.31	14.841
475.00	4102392.53	272047.33	180737.0	5941.50	89.30	15.108
480.00	4101581.88	267117.72	181090.2	6014.27	89.29	15.384
485.00	4100735.88	262188.86	181454.6	6088.74	89.27	15.670
490.00	3086127.97	25712.39	181827.7	6158.17	89.28	11.997
495.00	3080208.78	254057.10	182190.0	6216.47	89.32	12.139
500.00	3078457.59	250404.50	182536.5	6275.51	89.35	12.309
505.00	3076726.34	246754.82	182873.3	6335.29	89.36	12.484
510.00	3074915.63	243107.71	183207.3	6395.90	89.37	12.664
515.00	3073084.72	239463.34	183539.7	6457.64	89.38	12.849
520.00	3071198.94	235821.91	183870.2	6520.44	89.39	13.039
525.00	3069165.03	232183.41	184200.2	6584.29	89.39	13.235
530.00	3067030.44	228547.95	184531.8	6649.18	89.39	13.436
535.00	3064651.41	224915.91	184868.0	6715.14	89.39	13.643
540.00	3061921.63	221287.49	185211.3	6782.17	89.38	13.854
545.00	3058420.22	217663.45	185564.9	6850.31	89.36	14.068
550.00	3052677.69	214045.13	185931.7	6919.54	89.35	14.279
551.38	3040184.78	213043.95	186036.1	6938.88	89.34	14.288
552.08	122878.88	212963.27	186088.9	6941.82	89.35	0.577
552.26	103329.44	212943.09	186102.0	6941.90	89.35	0.485

S-II ØECØ
 S-IVB ULL IGN
 S-II/S-IVB SEP

TABLE 2.2 (BIØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	**** RADIAL DISTANCE ØF THE C G (M)	MAGNITUDE ØF THE EARTH FIXED VELOCITY (M/SEC)	SUB VEHICLE LATITUDE ØN SPHERICAL EARTH (DEG)	LONGITUDE ØN EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (KM)
161.59	6440658.81	2396.459	28.8658	-79.69	93.89
162.22	6441239.50	2394.523	28.8695	-79.68	95.26
165.22	6443959.75	2388.857	28.8872	-79.61	101.83
170.00	6448169.69	2404.084	28.9154	-79.51	112.36
175.00	6452435.13	2425.901	28.9453	-79.40	123.52
180.00	6456565.75	2449.216	28.9754	-79.29	134.84
185.00	6460563.88	2473.786	29.0059	-79.18	146.33
190.00	6464432.19	2499.523	29.0367	-79.06	157.98
195.00	6468173.19	2526.500	29.0678	-78.95	169.80
197.02	6469648.31	2537.702	29.0804	-78.90	174.62
200.00	6471789.69	2554.698	29.0992	-78.83	181.79
201.42	6472793.75	2562.911	29.1082	-78.79	185.23
205.00	6475284.25	2583.986	29.1310	-78.71	193.96
210.00	6478664.63	2613.574	29.1631	-78.59	206.31
215.00	6481949.88	2643.341	29.1954	-78.46	218.82
220.00	6485142.81	2674.206	29.2281	-78.34	231.51
225.00	6488242.81	2705.938	29.2611	-78.21	244.37
230.00	6491250.69	2738.529	29.2943	-78.08	257.40
235.00	6494167.44	2771.977	29.3279	-77.95	270.62
240.00	6496994.25	2806.307	29.3617	-77.82	284.01
245.00	6499731.75	2841.509	29.3958	-77.69	297.60
250.00	6502381.25	2877.580	29.4303	-77.55	311.37
255.00	6504943.69	2914.525	29.4650	-77.41	325.34
260.00	6507420.38	2952.344	29.5000	-77.27	339.50
265.00	6509812.56	2991.076	29.5354	-77.13	353.86
270.00	6512121.63	3030.716	29.5710	-76.98	368.42
275.00	6514348.63	3071.268	29.6069	-76.84	383.18
280.00	6516494.88	3112.728	29.6431	-76.69	398.16
285.00	6518561.81	3155.097	29.6796	-76.54	413.34
290.00	6520550.69	3198.378	29.7164	-76.38	428.75
295.00	6522463.06	3242.571	29.7535	-76.23	444.37
300.00	6524300.19	3287.682	29.7909	-76.07	460.22
305.00	6526063.63	3333.719	29.8286	-75.91	476.29
310.00	6527754.75	3380.694	29.8665	-75.75	492.60
315.00	6529375.25	3428.620	29.9048	-75.58	509.14
320.00	6530926.44	3477.509	29.9433	-75.41	525.92
325.00	6532410.06	3527.375	29.9822	-75.24	542.94
330.00	6533827.56	3578.231	30.0213	-75.07	560.22
335.00	6535180.56	3630.091	30.0607	-74.89	577.74
340.00	6536470.69	3682.968	30.1004	-74.71	595.52
345.00	6537699.56	3736.876	30.1403	-74.53	613.57
350.00	6538868.88	3791.837	30.1806	-74.35	631.87
355.00	6539980.50	3847.874	30.2211	-74.16	650.45
360.00	6541036.00	3905.004	30.2619	-73.97	669.31
365.00	6542037.63	3963.234	30.3030	-73.78	688.45
370.00	6542987.13	4022.623	30.3443	-73.58	707.87
375.00	6543886.19	4083.183	30.3859	-73.38	727.59
380.00	6544736.63	4144.934	30.4277	-73.18	747.60
385.00	6545540.63	4207.907	30.4699	-72.97	767.91

S-IC/S-II SEP
S-II ENGINE START
S-II 90 THRUST

INITIATE IGM

**** MEASURED FROM THE CENTER ØF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	*** RADIAL DISTANCE OF THE C G (M)	MAGNITUDE OF THE EARTH FIXED VELOCITY (M/SEC)	SUB VEHICLE LATITUDE θ_N SPHERICAL EARTH (DEG)	LONGITUDE θ_N EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (KM)
390.00	6546299.94	4272.133	30.5122	-72.76	788.54
395.00	6547016.88	4337.639	30.5548	-72.55	809.48
400.00	6547693.50	4404.462	30.5976	-72.33	830.74
405.00	6548332.00	4472.638	30.6407	-72.11	852.33
410.00	6548934.69	4542.204	30.6839	-71.89	874.25
415.00	6549503.81	4613.203	30.7274	-71.66	896.51
420.00	6550041.94	4685.678	30.7711	-71.43	919.12
425.00	6550551.44	4759.676	30.8150	-71.20	942.09
430.00	6551035.00	4835.242	30.8591	-70.96	965.42
435.00	6551495.38	4912.427	30.9034	-70.72	989.12
440.00	6551935.19	4991.285	30.9478	-70.47	1013.19
445.00	6552357.50	5071.873	30.9924	-70.22	1037.66
450.00	6552765.38	5154.254	31.0371	-69.97	1062.51
455.00	6553161.88	5238.495	31.0820	-69.71	1087.78
460.00	6553550.44	5324.663	31.1270	-69.44	1113.45
465.00	6553926.06	5396.656	31.1720	-69.17	1139.51
470.00	6554281.75	5467.561	31.2170	-68.90	1165.92
475.00	6554637.94	5538.808	31.2619	-68.63	1192.67
480.00	6555006.44	5611.556	31.3067	-68.35	1219.76
485.00	6555386.38	5686.009	31.3514	-68.06	1247.21
490.00	6555775.25	5755.409	31.3960	-67.78	1275.02
495.00	6556153.94	5813.676	31.4403	-67.48	1303.13
500.00	6556517.13	5872.684	31.4843	-67.19	1331.52
505.00	6556870.88	5932.437	31.5280	-66.89	1360.20
510.00	6557222.44	5993.019	31.5714	-66.59	1389.17
515.00	6557572.50	6054.730	31.6144	-66.29	1418.44
520.00	6557921.00	6117.505	31.6570	-65.98	1448.01
525.00	6558269.44	6181.326	31.6992	-65.67	1477.88
530.00	6558620.00	6246.193	31.7410	-65.35	1508.06
535.00	6558975.38	6312.120	31.7824	-65.04	1538.56
540.00	6559338.44	6379.128	31.8233	-64.71	1569.38
545.00	6559712.19	6447.234	31.8637	-64.39	1600.53
550.00	6560099.56	6516.438	31.9036	-64.06	1632.01
551.38	6560209.69	6535.774	31.9146	-63.97	1640.78
552.08	6560265.50	6538.710	31.9201	-63.92	1645.22
552.26	6560279.31	6538.782	31.9215	-63.91	1646.33

S-II DECØ
S-IVB ULL IGN
S-II/S-IVB SEP

**** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

TABLE 2.2 (BTØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	X CØRDINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	Y CØRDINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	Z CØRDINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	X CØMPØNENT ØF VEL. IN THE XXE SYSTEM (M/S)	Y CØMPØNENT ØF VEL. IN THE XXE SYSTEM (M/S)	Z CØMPØNENT ØF VEL. IN THE XXE SYSTEM (M/S)
S-IC/S-II SEP	66747.938	35.191	94818.007	893.543	4.446	2223.641
S-II ENGINE START	67309.188	38.057	96218.953	887.819	4.523	2223.848
S-II 90 THRUST	69932.188	52.145	102893.397	861.761	4.903	2228.000
	73971.938	77.135	113609.505	829.023	5.526	2256.615
	78037.438	106.333	124978.467	797.245	6.166	2291.148
	81944.688	138.853	136522.191	765.722	6.839	2326.431
	85695.188	174.770	148243.566	734.547	7.533	2362.203
	89290.625	214.234	160144.941	703.658	8.252	2398.419
	92732.438	257.353	172228.668	673.104	8.997	2435.170
	94079.000	275.812	177160.367	660.849	9.307	2450.127
	96022.188	304.216	184497.463	642.892	9.770	2472.464
	96928.438	318.270	188013.453	634.377	9.992	2483.139
INITIATE IGM	99161.563	355.060	196954.045	612.926	10.562	2510.218
	102157.188	410.141	209597.803	586.125	11.475	2546.977
	105027.250	469.765	222422.227	561.790	12.390	2582.923
	107773.563	534.207	235428.668	536.683	13.395	2619.765
	110394.125	603.798	248620.660	511.530	14.460	2657.109
	112888.688	678.901	262000.617	486.291	15.569	2694.962
	115257.000	759.333	275571.094	461.028	16.613	2733.319
	117498.750	845.195	289334.711	435.666	17.755	2772.227
	119613.563	937.019	303294.238	410.234	18.979	2811.676
	121601.000	1035.013	317452.375	384.747	20.237	2851.671
	123460.938	1139.500	331811.855	359.202	21.546	2892.225
	125193.000	1250.597	346375.531	333.598	22.900	2933.346
	126796.875	1368.564	361146.332	307.949	24.295	2975.082
	128272.313	1493.604	376127.363	282.233	25.731	3017.437
	129619.000	1625.946	391321.738	256.421	27.208	3060.424
	130836.375	1765.754	406732.648	230.526	28.725	3104.047
	131924.063	1913.245	422363.270	204.550	30.281	3148.314
	132881.688	2068.609	438216.855	178.483	31.874	3193.235
	133708.750	2232.039	454296.711	152.318	33.506	3238.818
	134404.750	2403.741	470606.145	126.050	35.176	3285.076
	134969.063	2583.867	487148.605	99.671	36.882	3332.025
	135401.188	2772.611	503927.574	73.170	38.628	3379.681
	135700.563	2970.227	520946.617	46.537	40.416	3428.066
	135866.313	3176.851	538209.438	19.760	42.245	3477.196
	135897.875	3392.742	555719.813	-7.174	44.114	3527.092
	135794.375	3618.096	573481.609	-34.276	46.027	3577.771
	135554.813	3853.076	591498.820	-61.557	47.982	3629.252
	135178.438	4097.985	609775.461	-89.029	49.983	3681.552
	134664.188	4352.954	628315.695	-116.704	52.031	3734.691
	134011.063	4618.380	647123.766	-144.591	54.123	3788.693
	133217.938	4894.292	666204.055	-172.704	56.261	3843.584
	132283.625	5181.042	685561.086	-201.043	58.433	3899.388
	131207.250	5478.313	705195.414	-229.573	60.668	3956.117
	129987.313	5785.991	725123.844	-258.431	62.634	4013.824
	128622.375	6104.902	745339.281	-287.598	64.947	4072.524
	127110.875	6435.523	765850.750	-317.061	67.305	4132.241
	125451.188	6778.088	786663.414	-346.852	69.736	4193.008

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM MØTTIØN (SEC)	X CØRÐINATE			Y CØRÐINATE			Z CØRÐINATE			X CØMPONENT ØF VEL. IN THE XXXE SYSTEM (M/S)			Y CØMPONENT ØF VEL. IN THE XXXE SYSTEM (M/S)			Z CØMPONENT ØF VEL. IN THE XXXE SYSTEM (M/S)		
	EARTH FIXED, PT. CENTERED, PLUMBIN SYS, (M)			EARTH FIXED, PT. CENTERED, PLUMBIN SYS, (M)			EARTH FIXED, PT. CENTERED, PLUMBIN SYS, (M)			CØMPONENT ØF VEL. IN THE XXXE SYSTEM (M/S)			CØMPONENT ØF VEL. IN THE XXXE SYSTEM (M/S)			CØMPONENT ØF VEL. IN THE XXXE SYSTEM (M/S)		
390.00	123641.688	7132.996	807782.602	-376.983	72.245	4254.855												
395.00	121680.750	7500.627	829213.766	-407.464	74.818	4317.811												
400.00	119566.500	7881.305	850962.570	-438.319	77.459	4381.913												
405.00	117296.938	8275.345	873034.844	-469.568	80.166	4447.198												
410.00	114870.125	8683.072	895436.555	-501.227	82.940	4513.702												
415.00	112283.938	9104.840	918173.914	-533.316	85.781	4581.469												
420.00	109536.250	9541.023	941253.344	-565.857	88.691	4650.540												
425.00	106624.625	9991.873	964681.531	-598.871	91.672	4720.960												
430.00	103546.688	10457.849	988465.242	-632.381	94.726	4792.774												
435.00	100300.000	10939.259	1012611.625	-666.411	97.852	4866.031												
440.00	96881.625	11436.458	1037128.000	-700.984	101.051	4940.783												
445.00	93289.125	11949.889	1062021.938	-736.125	104.329	5017.084												
450.00	89519.375	12479.906	1087301.422	-771.862	107.687	5094.995												
455.00	85569.375	13026.889	1112974.594	-808.221	111.128	5174.578												
460.00	81436.125	13591.345	1139050.016	-845.233	114.656	5255.898												
465.00	77114.063	14172.987	1165498.922	-883.762	118.015	5322.494												
470.00	72600.438	14771.568	1192275.922	-921.051	121.367	5388.057												
475.00	67910.375	15286.179	1219381.734	-954.806	124.488	5454.470												
480.00	63050.563	16016.548	1246822.719	-989.391	127.678	5522.170												
485.00	58014.125	16663.160	1274605.641	-1025.448	130.977	5591.243												
490.00	52793.500	17326.404	1302730.547	-1063.188	134.271	5654.762												
495.00	47377.688	18005.732	1331133.031	-1103.402	137.463	5706.350												
500.00	41760.688	18700.900	1359795.063	-1143.368	140.618	5758.590												
505.00	35944.188	19411.977	1388720.000	-1183.019	143.811	5811.505												
510.00	29930.500	20139.681	1417911.219	-1222.661	147.047	5865.131												
515.00	23715.438	20882.624	1447372.484	-1263.528	150.385	5919.513												
520.00	17293.750	21643.090	1477107.500	-1305.273	153.807	5974.652												
525.00	10661.563	22420.829	1507120.203	-1347.721	157.303	6030.564												
530.00	3815.500	23216.197	1537414.391	-1390.773	160.868	6087.266												
535.00	-3247.125	24029.629	1567994.125	-1434.403	164.500	6144.778												
540.00	-10529.375	24861.365	1598863.484	-1478.619	168.198	6203.118												
545.00	-18034.375	25711.704	1630026.641	-1523.440	171.966	6262.299												
550.00	-25764.875	26581.107	1661487.813	-1568.872	175.802	6322.317												
551.38	-27944.938	26825.137	1670249.469	-1581.554	176.875	6339.065												
552.08	-29054.125	26949.140	1674687.953	-1587.483	177.271	6340.600												
552.26	-29332.125	26980.152	1675797.531	-1588.916	177.355	6340.312												

S-II ØECØ
S-IVB ULL IGN
S-II/S-IVB SEP

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	COMMANDED PITCH ATTITUDE (DEG)	EULERIAN ANGLE OF ATTITUDE IN PITCH (DEG)	COMMANDED YAW ATTITUDE (DEG)	EULERIAN ANGLE OF ATTITUDE IN YAW (DEG)	COMMANDED ROLL ATTITUDE (DEG)	EULERIAN ANGLE OF ATTITUDE IN ROLL (DEG)
S-IC/S-II SEP	161.59	-68.873	0.000	-0.058897	0.000	0.00024871
S-II ENGINE START	162.22	-68.873	0.000	-0.059554	0.000	0.00060583
S-II 90 THRUST	165.22	-68.873	0.000	-0.078274	0.000	0.01103689
	170.00	-68.873	0.000	-0.154215	0.000	-0.01109149
	175.00	-68.873	0.000	-0.158255	0.000	0.00105932
	180.00	-68.873	0.000	-0.156730	0.000	-0.00008016
	185.00	-68.873	0.000	-0.157589	0.000	0.00029827
	190.00	-68.873	0.000	-0.157408	0.000	0.00057237
	195.00	-68.873	0.000	-0.152115	0.000	0.00051951
	197.02	-68.873	0.000	-0.151532	0.000	0.00059130
	200.00	-68.873	0.000	-0.156902	0.000	0.00075286
	201.42	-68.873	0.000	-0.158401	0.000	0.00075727
	205.00	-65.373	0.134	-0.074252	0.000	0.04719649
	210.00	-62.021	0.158	-0.005687	0.000	-0.02809792
	215.00	-62.808	0.221	0.035871	0.000	-0.00097442
	220.00	-63.468	0.269	0.096556	0.000	0.00292005
	225.00	-64.025	0.303	0.132082	0.000	-0.00095535
	230.00	-64.552	0.327	0.069353	0.000	-0.00144901
	235.00	-65.081	0.378	0.044087	0.000	0.00005880
	240.00	-65.592	0.430	0.148450	0.000	-0.00056938
	245.00	-66.084	0.454	0.169325	0.000	-0.00071783
	250.00	-66.567	0.475	0.182909	0.000	-0.00067253
	255.00	-67.045	0.493	0.205649	0.000	-0.00081106
	260.00	-67.519	0.504	0.216527	0.000	-0.00083077
	265.00	-68.009	0.514	0.224626	0.000	-0.00110829
	270.00	-68.515	0.522	0.233696	0.000	-0.00095776
	275.00	-69.007	0.528	0.239867	0.000	-0.00077269
	280.00	-69.490	0.532	0.243292	0.000	-0.00093353
	285.00	-69.972	0.535	0.245670	0.000	-0.00093298
	290.00	-70.454	0.537	0.247145	0.000	-0.00091880
	295.00	-70.936	0.538	0.247760	0.000	-0.00090900
	300.00	-71.418	0.539	0.246579	0.000	-0.00093297
	305.00	-71.906	0.540	0.245255	0.000	-0.00091380
	310.00	-72.398	0.541	0.246951	0.000	-0.00093648
	315.00	-72.896	0.541	0.247295	0.000	-0.00094467
	320.00	-73.400	0.541	0.245954	0.000	-0.00092568
	325.00	-73.908	0.542	0.244640	0.000	-0.00091091
	330.00	-74.419	0.543	0.244779	0.000	-0.00091163
	335.00	-74.933	0.543	0.243567	0.000	-0.00088128
	340.00	-75.449	0.543	0.244880	0.000	-0.00089901
	345.00	-75.968	0.543	0.243509	0.000	-0.00088073
	350.00	-76.491	0.543	0.240623	0.000	-0.00087629
	355.00	-77.021	0.543	0.240648	0.000	-0.00091766
	360.00	-77.555	0.543	0.135362	0.000	-0.00204849
	365.00	-78.115	0.584	0.065823	0.000	-0.00086568
	370.00	-78.673	0.637	0.187759	0.000	-0.00128913
	375.00	-79.219	0.655	0.209465	0.000	-0.00160237
	380.00	-79.770	0.671	0.207817	0.000	-0.00151558
	385.00	-80.324	0.685	0.229732	0.000	-0.00158334

INITIATE IGM

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TABLE 2.2 (BTØ)

TIME FROM FIRST MOTION (SEC)	COMMANDED PITCH ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN PITCH (DEG)	COMMANDED YAW ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN YAW (DEG)	COMMANDED ROLL ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN ROLL (DEG)
390.00	-80.878	-80.5254	0.694	0.238616	0.000	-0.00163327
395.00	-81.435	-81.0811	0.700	0.242469	0.000	-0.00169604
400.00	-81.995	-81.6436	0.705	0.246878	0.000	-0.00165059
405.00	-82.556	-82.2063	0.707	0.248920	0.000	-0.00165515
410.00	-83.119	-82.7709	0.709	0.249794	0.000	-0.00164998
415.00	-83.685	-83.3382	0.711	0.250061	0.000	-0.00163354
420.00	-84.253	-83.9076	0.711	0.249644	0.000	-0.00161610
425.00	-84.823	-84.4790	0.711	0.249814	0.000	-0.00159798
430.00	-85.394	-85.0521	0.710	0.249049	0.000	-0.00157926
435.00	-85.966	-85.6262	0.709	0.245636	0.000	-0.00153654
440.00	-86.539	-86.2010	0.709	0.243766	0.000	-0.00151565
445.00	-87.113	-86.7770	0.708	0.242191	0.000	-0.00148668
450.00	-87.687	-87.3539	0.707	0.240692	0.000	-0.00145907
455.00	-88.262	-87.9312	0.706	0.239304	0.000	-0.00142970
460.00	-88.837	-88.5087	0.704	0.236660	0.000	-0.00139499
465.00	-88.368	-88.8010	0.662	0.324879	0.000	0.01430113
470.00	-85.750	-86.1829	0.475	0.141715	0.000	-0.00323004
475.00	-86.087	-85.4922	0.446	0.054260	0.000	-0.00943866
480.00	-87.315	-86.7818	0.466	0.077919	0.000	-0.00174625
485.00	-88.472	-87.9904	0.485	0.097036	0.000	-0.00159390
490.00	-90.647	-89.1614	0.599	0.142540	0.000	-0.01454529
495.00	-90.178	-90.3870	0.502	0.121080	0.000	0.01621805
500.00	-90.004	-90.2475	0.484	0.092672	0.000	-0.00377900
505.00	-90.069	-89.6656	0.477	0.064947	0.000	-0.01817474
510.00	-91.143	-90.7252	0.508	0.095824	0.000	-0.00074113
515.00	-92.076	-91.7668	0.531	0.123516	0.000	-0.00051921
520.00	-92.805	-92.5443	0.544	0.138872	0.000	-0.00077517
525.00	-93.417	-93.1863	0.552	0.147831	0.000	-0.00090477
530.00	-93.980	-93.7591	0.556	0.153367	0.000	-0.00107135
535.00	-94.534	-94.3139	0.560	0.156491	0.000	-0.00113062
540.00	-95.086	-94.8675	0.563	0.159971	0.000	-0.00113041
545.00	-95.633	-95.4178	0.565	0.163860	0.000	-0.00108673
550.00	-96.159	-95.9537	0.565	0.164604	0.000	-0.00099512
551.38	-96.134	-96.0971	0.565	0.164120	0.000	-0.00095668
552.08	-96.134	-96.1674	0.565	0.163928	0.000	-0.00074446
552.26	-96.134	-96.1845	0.565	0.163917	0.000	-0.00063474

S-II ØECØ
S-IVB ULL IGN
S-II/S-IVB SEP

TABLE 2.2 (BTØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (NT/M**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALONG VELOCITY VECTOR (KG)	AERODYNAMIC LOAD (KG/M**2)	MAGNITUDE ØF THE AERODYNAMIC FORCE VECTOR (KG)
S-IC/S-II SEP	7.98	363.29	0.2303	308.5919	8.5304	42.3639
S-II ENGINE START	8.00	335.15	0.2149	283.8172	7.3456	36.4800
S-II 90 THRUST	8.13	228.35	0.0984	188.8433	2.2906	11.3756
	8.42	124.75	1.7438	138.0910	22.1821	110.1617
	8.75	65.35	2.7304	83.3107	18.1947	80.6906
	9.09	33.59	3.6843	48.2703	12.6185	51.2071
	9.18	16.40	4.6514	25.3157	7.7786	30.9042
	9.18	8.06	5.5837	13.0568	4.5913	18.2412
	9.01	4.04	6.5019	6.8465	2.6770	10.7590
	8.95	3.11	6.8653	5.3701	2.1774	8.8143
	8.87	2.15	7.3968	3.8153	1.6242	6.6357
	8.83	1.82	7.6467	3.2637	1.4193	5.8209
INITIATE IGM	8.66	1.19	9.6002	2.3692	1.1683	5.0577
	8.44	0.70	15.7393	1.8902	1.1182	5.7510
	8.26	0.43	16.2693	1.1789	0.7116	3.6186
	7.96	0.27	16.0030	0.7350	0.4367	2.2551
	7.64	0.17	16.2123	0.4688	0.2887	1.4598
	7.38	0.12	16.4108	0.3158	0.2015	0.9986
	7.07	0.08	16.5609	0.2151	0.1425	0.6932
	6.68	0.06	16.6812	0.1501	0.1021	0.4999
	6.37	0.05	16.8406	0.1115	0.0774	0.3812
	6.13	0.04	16.9898	0.0865	0.0612	0.3020
	5.94	0.03	17.1302	0.0692	0.0499	0.2464
	5.78	0.02	17.2637	0.0565	0.0418	0.2056
	5.65	0.02	17.3835	0.0473	0.0358	0.1753
	5.55	0.02	17.4580	0.0404	0.0312	0.1522
	5.46	0.02	17.5257	0.0352	0.0276	0.1342
	5.39	0.01	17.6028	0.0312	0.0247	0.1200
	5.33	0.01	17.6676	0.0280	0.0224	0.1086
	5.28	0.01	17.7197	0.0254	0.0205	0.0993
	5.24	0.01	17.7614	0.0233	0.0190	0.0917
	5.24	0.01	17.7917	0.0218	0.0178	0.0859
	5.24	0.01	17.8067	0.0206	0.0168	0.0811
	5.25	0.01	17.8058	0.0196	0.0160	0.0770
	5.26	0.01	17.7884	0.0188	0.0153	0.0735
	5.27	0.01	17.7544	0.0180	0.0146	0.0706
	5.30	0.01	17.7064	0.0174	0.0141	0.0680
	5.33	0.01	17.6447	0.0170	0.0136	0.0661
	5.38	0.01	17.5710	0.0167	0.0133	0.0645
	5.42	0.01	17.4853	0.0165	0.0129	0.0632
	5.47	0.01	17.3880	0.0163	0.0127	0.0621
	5.53	0.01	17.2792	0.0162	0.0124	0.0612
	5.58	0.01	17.1560	0.0161	0.0122	0.0604
	5.64	0.01	17.0784	0.0161	0.0120	0.0598
	5.70	0.01	16.9235	0.0161	0.0118	0.0594
	5.76	0.01	16.7138	0.0162	0.0116	0.0591
	5.83	0.01	16.5460	0.0163	0.0115	0.0590
	5.91	0.01	16.3632	0.0165	0.0114	0.0590
	5.98	0.01	16.1641	0.0167	0.0113	0.0591

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (NT/M**2)	TOTAL ANGLE OF ATTACK (DEG)	DRAG ALONG VELOCITY VECTOR (KG)	AERODYNAMIC LOAD (KG/M**2)	MAGNITUDE OF THE AERODYNAMIC FORCE VECTOR (KG)
390.00	6.06	0.01	15.9629	0.0168	0.0113	0.0591
395.00	6.14	0.01	15.7525	0.0168	0.0112	0.0583
400.00	6.22	0.01	15.5288	0.0169	0.0111	0.0575
405.00	6.31	0.01	15.2987	0.0169	0.0111	0.0568
410.00	6.40	0.01	15.0608	0.0170	0.0110	0.0560
415.00	6.49	0.01	14.8142	0.0171	0.0110	0.0553
420.00	6.58	0.01	14.5599	0.0172	0.0110	0.0545
425.00	6.67	0.01	14.2982	0.0173	0.0109	0.0537
430.00	6.77	0.01	14.0294	0.0174	0.0109	0.0529
435.00	6.87	0.01	13.7546	0.0173	0.0109	0.0521
440.00	6.97	0.01	13.4741	0.0174	0.0108	0.0513
445.00	7.07	0.01	13.1876	0.0178	0.0108	0.0507
450.00	7.18	0.01	12.8956	0.0180	0.0108	0.0503
455.00	7.29	0.01	12.5986	0.0183	0.0107	0.0498
460.00	7.40	0.01	12.2972	0.0185	0.0107	0.0493
465.00	7.49	0.01	12.3145	0.0190	0.0109	0.0502
470.00	7.58	0.01	15.2228	0.0225	0.0136	0.0684
475.00	7.67	0.01	16.1602	0.0240	0.0147	0.0746
480.00	7.77	0.01	15.1166	0.0234	0.0139	0.0702
485.00	7.86	0.01	14.1604	0.0229	0.0132	0.0656
490.00	7.95	0.01	13.2621	0.0222	0.0126	0.0607
495.00	8.02	0.01	12.3499	0.0213	0.0118	0.0554
500.00	8.09	0.01	12.7933	0.0221	0.0123	0.0587
505.00	8.17	0.01	13.6692	0.0233	0.0133	0.0651
510.00	8.24	0.01	12.8961	0.0226	0.0127	0.0606
515.00	8.32	0.01	12.1453	0.0219	0.0120	0.0561
520.00	8.40	0.01	11.6598	0.0216	0.0117	0.0536
525.00	8.48	0.01	11.3092	0.0214	0.0114	0.0520
530.00	8.56	0.01	11.0260	0.0214	0.0113	0.0508
535.00	8.64	0.01	10.7586	0.0213	0.0111	0.0497
540.00	8.72	0.01	10.4902	0.0212	0.0109	0.0486
545.00	8.81	0.01	10.2229	0.0211	0.0108	0.0474
550.00	8.89	0.01	9.9681	0.0211	0.0106	0.0462
551.38	8.92	0.01	9.9021	0.0210	0.0105	0.0460
552.08	8.92	0.01	9.8815	0.0210	0.0105	0.0458
552.26	8.92	0.01	9.8777	0.0210	0.0105	0.0458

S-II ØECØ
S-IVB ULL IGN
S-II/S-IVB SEP

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG
 TABLE 2-2 (BTØ)

TIME FROM MOTION (SEC)	X PØSI CØRÐ			Y PØSI CØRÐ			Z PØSI CØRÐ			X VEL. CØMP.			Y VEL. CØMP.			Z VEL. CØMP.		
	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS
	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)
S-IC/S-II SEP	6438562.7	39054.5	159600.6	858.782	115.035	2626.743												
S-II ENGINE START	6439101.9	39127.0	161255.5	852.869	115.006	2626.956												
S-II 90 THRUST	6441618.8	39471.8	169139.3	825.870	114.858	2631.143												
	6445482.7	40020.2	181783.1	791.375	114.513	2659.883												
	6449355.2	40591.7	195168.8	757.676	114.094	2694.544												
	6453059.8	41161.1	208729.7	724.193	113.676	2729.928												
	6456597.6	41728.4	222468.8	691.019	113.248	2765.775												
	6459970.3	42293.6	236388.2	658.093	112.815	2802.041												
	6463179.1	42856.6	250490.1	625.462	112.378	2838.816												
	6464428.6	43083.3	256236.7	612.356	112.202	2853.777												
	6466225.4	43417.3	264777.1	593.132	111.936	2876.111												
	6467060.6	43576.1	268865.9	584.008	111.808	2886.782												
	6469110.6	43975.9	279251.9	561.007	111.483	2913.841												
	6471841.2	44532.4	293913.7	532.027	111.144	2950.591												
	6474435.3	45087.3	308756.2	505.490	110.798	2986.539												
	6476894.4	45640.5	323780.7	478.135	110.503	3023.349												
	6479216.6	46192.4	338990.5	450.693	110.238	3060.636												
	6481401.1	46742.9	354387.9	423.123	109.984	3098.407												
	6483447.7	47292.0	369975.3	395.488	109.633	3136.658												
	6485355.8	47839.4	385755.3	367.708	109.346	3175.433												
	6487124.6	48385.5	401730.5	339.815	109.108	3214.725												
	6488753.8	48930.5	417903.4	311.822	108.871	3254.537												
	6490242.6	49474.3	434276.7	283.724	108.649	3294.884												
	6491590.8	50017.0	450853.1	255.521	108.438	3335.773												
	6492797.7	50558.7	467635.4	227.225	108.231	3377.250												
	6493862.9	51099.3	484626.6	198.813	108.030	3419.321												
	6494785.6	51639.0	501829.6	170.254	107.833	3461.999												
	6495565.1	52175.3	519247.6	141.562	107.637	3505.286												
	6496200.9	52715.3	536883.5	112.737	107.442	3549.190												
	6496692.3	53252.1	554740.5	83.769	107.246	3593.721												
	6497038.4	53787.8	572821.7	54.649	107.049	3638.888												
	6497238.5	54322.5	591130.4	25.371	106.849	3684.703												
	6497291.8	54856.3	609669.9	-4.074	106.645	3731.180												
	6497197.4	55389.0	628443.4	-33.698	106.440	3778.338												
	6496954.5	55920.7	647454.4	-63.512	106.234	3826.195												
	6496561.9	56451.3	666706.5	-93.529	106.025	3874.770												
	6496018.8	56980.9	686203.3	-123.764	105.812	3924.081												
	6495323.9	57509.4	705948.5	-154.230	105.598	3974.145												
	6494476.1	58036.9	725946.0	-184.938	105.379	4024.981												
	6493474.1	58563.2	746199.6	-215.901	105.160	4076.606												
	6492316.7	59088.5	766713.3	-247.134	104.940	4129.038												
	649102.3	59612.6	787491.3	-278.646	104.714	4182.302												
	6489529.8	60135.6	808537.7	-310.454	104.485	4236.423												
	6487897.3	60657.5	829857.0	-342.560	104.237	4291.423												
	6486103.8	61177.6	851453.4	-374.926	103.802	4347.314												
	6484147.3	61695.6	873331.6	-407.696	103.442	4404.148												
	6482026.1	62212.2	895496.4	-440.852	103.175	4461.942												
	6479738.2	62727.4	917952.7	-474.383	102.896	4520.716												
	6477281.6	63241.2	940705.3	-508.320	102.632	4580.503												

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FRØM FIRST MØTID (SEC)	X ØSI CØRD			Y ØSI CØRD			Z ØSI CØRD			X VEL. CØMP.			Y VEL. CØMP.			Z VEL. CØMP.		
	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS
	(M)	(M)	(M)	(M)	(M)	(M)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)
390.00	6474654.3	63753.7	963759.4	-542.681	102.387	4641.333												
395.00	6471854.1	64265.0	987120.3	-577.476	102.146	4703.234												
400.00	6468878.8	64775.2	1010793.5	-612.732	101.909	4766.242												
405.00	6465725.9	65284.1	1034784.6	-648.470	101.676	4830.391												
410.00	6462393.3	65791.9	1059099.4	-684.709	101.443	4895.720												
415.00	6458878.0	66298.6	1083743.8	-721.472	101.210	4962.268												
420.00	6455177.6	66804.0	1108724.1	-758.784	100.976	5030.077												
425.00	6451289.3	67308.3	1134046.7	-796.668	100.742	5099.190												
430.00	6447209.9	67811.5	1159718.2	-835.150	100.508	5169.651												
435.00	6442936.7	68313.4	1185745.5	-874.256	100.269	5241.507												
440.00	6438466.3	68814.1	1212135.6	-914.014	100.027	5314.810												
445.00	6433795.4	69313.7	1238896.0	-954.453	99.782	5389.612												
450.00	6428920.5	69812.0	1266034.3	-995.601	99.535	5465.971												
455.00	6423838.1	70309.0	1293558.3	-1037.492	99.286	5543.949												
460.00	6418544.3	70804.8	1321476.5	-1080.158	99.035	5623.610												
465.00	6413034.4	71299.3	1349760.6	-1123.978	98.799	5688.469												
470.00	6407306.3	71792.8	1378362.1	-1166.588	98.539	5752.296												
475.00	6401375.2	72284.2	1407285.0	-1205.748	98.019	5817.038												
480.00	6395246.9	72773.0	1436534.5	-1245.837	97.494	5883.008												
485.00	6388914.3	73259.2	1466117.1	-1287.500	96.993	5950.272												
490.00	6382369.4	73743.0	1496032.5	-1330.737	96.523	6011.897												
495.00	6375602.9	74224.5	1526215.7	-1376.129	96.098	6061.482												
500.00	6368609.2	74703.8	1556648.3	-1421.339	95.587	6111.685												
505.00	6361389.6	75180.4	1587333.5	-1466.301	95.066	6162.535												
510.00	6353946.1	75654.4	1618274.7	-1511.326	94.535	6214.057												
515.00	6346274.1	76125.8	1649475.1	-1557.648	94.040	6266.258												
520.00	6338368.0	76594.8	1680938.3	-1604.922	93.564	6319.148												
525.00	6330223.6	77061.5	1712667.9	-1652.973	93.099	6372.746												
530.00	6321837.1	77525.8	1744666.9	-1701.705	92.639	6427.073												
535.00	6313205.4	77987.9	1776939.6	-1751.093	92.181	6482.149												
540.00	6304325.1	78447.7	1809489.6	-1801.146	91.724	6537.991												
545.00	6295192.8	78905.1	1842320.8	-1851.885	91.269	6594.610												
550.00	6285805.1	79360.3	1875436.9	-1903.318	90.815	6652.002												
551.38	6283161.0	79485.9	1884654.3	-1917.675	90.689	6668.011												
552.08	6281816.3	79549.4	1889323.0	-1924.211	90.621	6669.191												
552.26	6281479.4	79565.3	1890490.0	-1925.773	90.604	6668.816												

S-II ØECØ
S-IVB ULL IGN
S-II/S-IVB SEP

TABLE 2-2 (BTØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	GIMBAL DEFLECTION ANG REQUIRED PITCH CHANL (DEG)	GIMBAL DEFLECTION ANG REQUIRED YAW CHANNEL (DEG)	GIMBAL DEFLECTION ANG REQUIRED ROLL CHANNEL (DEG)	EULERIAN ATTITUDE RATE IN PITCH (DEG/S)	EULERIAN ATTITUDE RATE IN YAW (DEG/S)	EULERIAN ATTITUDE RATE IN ROLL (DEG/S)
S-IC/S-II SEP	0.0000	0.000000	0.000000	-0.18134203	-0.00034408	0.000063060
S-II ENGINE START	-0.3382	-0.046743	0.000225	-0.18277502	-0.00175370	0.00087263
S-II 90 THRUST	0.6843	-0.075824	0.003603	-0.06371170	-0.01446111	0.01476796
	0.3107	-0.136319	-0.002692	0.14612412	-0.00979261	-0.000468804
	0.0376	-0.123472	0.000466	-0.04469779	0.00254326	0.00221993
	0.0822	-0.126453	-0.000113	0.00956807	-0.00085263	-0.00056891
	0.0697	-0.125745	0.000060	-0.00364621	0.00035073	0.00022817
	0.0676	-0.126311	0.000081	-0.00010270	-0.00029454	-0.00000438
	0.0689	-0.120174	0.000065	0.00008146	0.00107297	-0.00003988
	0.0679	-0.121456	0.000094	-0.00043427	-0.00026875	0.00006932
	0.0708	-0.127827	0.000115	0.00075627	-0.00168152	0.00001015
	0.0707	-0.127691	0.000113	0.00014591	-0.00047171	0.00000518
	-0.4920	-0.112439	0.006999	0.94087083	0.04474987	-0.01357170
	0.9081	-0.134880	-0.007786	0.71423797	-0.00427220	-0.02370935
	-0.0168	-0.127266	0.001353	-0.34526778	0.01578708	0.00996401
	0.0465	-0.126561	0.000281	-0.08805897	0.00836343	-0.00286778
	0.0743	-0.128491	0.000042	-0.11607338	0.00641096	0.00022840
	0.0813	-0.140574	-0.000027	-0.08925535	-0.03070620	0.00048981
	0.0670	-0.141755	0.000216	-0.11312565	0.01991293	-0.00011690
	0.0612	-0.120377	0.000120	-0.10123435	0.01263926	-0.00037408
	0.0665	-0.131520	0.000132	-0.09661678	0.00046730	-0.00026026
	0.0652	-0.132157	0.000146	-0.09711642	0.00488875	-0.00033045
	0.0648	-0.130576	0.000132	-0.09555455	0.00330638	-0.00035949
	0.0647	-0.132234	0.000137	-0.09481926	0.00156398	-0.00035600
	0.0630	-0.132941	0.000088	-0.09764718	0.00177949	-0.00052621
	0.0616	-0.132836	0.000147	-0.10163718	0.00163718	-0.00032284
	0.0633	-0.133246	0.000158	-0.09773568	0.00086641	-0.00043507
	0.0626	-0.134038	0.000134	-0.09617049	0.00055874	-0.00042549
	0.0620	-0.134371	0.000140	-0.09674991	0.00038825	-0.00040802
	0.0617	-0.134714	0.000140	-0.09665490	0.00020022	-0.00041236
	0.0616	-0.135985	0.000137	-0.09678468	-0.0005064	-0.00042040
	0.0611	-0.136613	0.000140	-0.09780824	0.00056588	-0.00041478
	0.0607	-0.136303	0.000137	-0.09878250	0.00023187	-0.00042256
	0.0602	-0.136538	0.000138	-0.09878250	0.00022735	-0.00043297
	0.0596	-0.137601	0.000141	-0.10019165	-0.00001800	-0.00042918
	0.0591	-0.137988	0.000144	-0.10192654	-0.00057418	-0.00042670
	0.0584	-0.138548	0.000143	-0.10259095	0.00041195	-0.00042983
	0.0579	-0.138988	0.000146	-0.10302598	-0.00016884	-0.00044127
	0.0574	-0.138487	0.000144	-0.10367930	0.00015360	-0.00044116
	0.0568	-0.139427	0.000146	-0.10404297	-0.00066362	-0.00043653
	0.0565	-0.140508	0.000145	-0.10489758	-0.00038257	-0.00044735
	0.0561	-0.140225	0.000139	-0.10648405	0.00035740	-0.00044705
	0.0654	-0.148349	0.000008	-0.09123770	-0.04383323	0.00009568
	0.0566	-0.154903	0.000216	-0.12058398	0.01867747	-0.00010386
	0.0499	-0.132213	0.000148	-0.11196471	0.01690924	-0.00048972
	0.0542	-0.141175	0.000134	-0.10747480	-0.00291093	-0.00038928
	0.0530	-0.143855	0.000159	-0.11150894	0.00346514	-0.00040101
	0.0516	-0.141415	0.000152	-0.11115681	0.00349001	-0.00046515

INITIATE IGM

TABLE 2-2 (BTØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	GIMBAL DEFLECTION ANG REQUIRED PITCH CHANL (DEG)	GIMBAL DEFLECTION ANG REQUIRED YAW CHANNEL (DEG)	GIMBAL DEFLECTION ANG REQUIRED ROLL CHANNEL (DEG)	EULERIAN ATTITUDE RATE IN PITCH (DEG/S)	EULERIAN ATTITUDE RATE IN YAW (DEG/S)	EULERIAN ATTITUDE RATE IN ROLL (DEG/S)
390.00	0.0523	-0.142721	0.000153	-0.11034727	0.00070383	-0.000047437
395.00	0.0520	-0.143345	0.000150	-0.11213500	0.00096084	-0.000046695
400.00	0.0508	-0.143529	0.000157	-0.11256897	0.00065099	-0.000048092
405.00	0.0503	-0.144021	0.000155	-0.11264289	0.00023426	-0.000049128
410.00	0.0497	-0.144414	0.000156	-0.11319355	0.00011987	-0.000049288
415.00	0.0489	-0.144775	0.000157	-0.11370611	-0.00002556	-0.000049295
420.00	0.0483	-0.145147	0.000158	-0.11406409	-0.00013191	-0.000049469
425.00	0.0476	-0.144980	0.000159	-0.11449290	0.00021912	-0.000049590
430.00	0.0468	-0.145361	0.000159	-0.11473768	-0.00066026	-0.000048811
435.00	0.0461	-0.146081	0.000162	-0.11489086	-0.00052648	-0.000048589
440.00	0.0454	-0.146358	0.000162	-0.11509703	-0.00031416	-0.000048399
445.00	0.0446	-0.146620	0.000163	-0.11529699	-0.00032195	-0.000048089
450.00	0.0438	-0.146759	0.000164	-0.11543504	-0.00028453	-0.000047811
455.00	0.0430	-0.146766	0.000164	-0.11550358	-0.00028719	-0.000047459
460.00	0.0422	-0.147214	0.000166	-0.11550246	-0.00058668	-0.000045899
465.00	-0.0660	-0.105790	0.002551	0.15673845	-0.00228017	0.00369483
470.00	0.2014	-0.129730	-0.003707	0.66314520	-0.04866845	-0.02066302
475.00	0.0783	-0.121969	-0.000690	-0.22143361	0.00315706	0.00436341
480.00	0.0337	-0.119738	0.000074	-0.25279788	0.00424576	-0.00050957
485.00	0.0308	-0.120223	0.000123	-0.22697345	0.00335001	-0.00019823
490.00	0.2408	-0.131884	-0.003240	-0.40336674	0.01468645	-0.02100065
495.00	0.0010	-0.131978	-0.000728	0.16231329	-0.02469529	-0.02701504
500.00	-0.0855	-0.122179	0.000216	-0.06989873	0.00448353	-0.01133563
505.00	0.1145	-0.130369	-0.003177	-0.03776510	-0.00070750	-0.000045426
510.00	-0.0022	-0.125749	0.000417	-0.25479939	0.00765640	0.00112275
515.00	0.0053	-0.126149	0.000137	-0.17293176	0.00390538	-0.00064887
520.00	0.0073	-0.126257	0.000095	-0.14019175	0.00233604	-0.00031351
525.00	0.0091	-0.126273	0.000041	-0.11905068	0.00134936	-0.00034499
530.00	0.0104	-0.126207	0.000008	-0.11176832	0.00092726	-0.00031922
535.00	0.0106	-0.126568	-0.000000	-0.11066964	0.00040979	-0.00030693
540.00	0.0103	-0.126332	0.000001	-0.11069164	0.00088928	-0.00030432
545.00	0.0099	-0.125984	0.000006	-0.10909419	0.00059460	-0.00030720
550.00	0.0094	-0.126102	0.000017	-0.10460972	-0.00026111	-0.00028060
551.38	0.0091	-0.126158	0.000021	-0.10247153	-0.00045730	-0.00025450
552.08	-0.0538	-0.126327	-0.000143	-0.09836495	-0.00009571	0.00029364
552.26	-0.0597	-0.126299	-0.000129	-0.09754047	-0.00003261	0.00039809

S-II ØECØ
S-IVB ULL IGN
S-II/S-IVB SEP

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	TOTAL VEHICLE ENGINE THRUST (LB)	TOTAL VEHICLE WEIGHT (LB)	ALTITUDE ABOVE SPHERICAL EARTH (FT)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (FT/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (FT/S**2)
161.59	92572.63	1454014.97	220702.5	9074.66	70.48	2.033
162.22	93394.59	1453830.95	222605.5	9069.32	70.58	2.053
165.22	841376.61	1451419.98	231522.0	9055.45	71.07	18.641
170.00	1115809.86	1440368.70	245319.7	9112.45	71.82	24.988
175.00	1139514.70	1427148.84	259299.1	9190.84	72.56	25.761
180.00	1147311.59	1413699.84	272835.8	9273.75	73.29	26.185
185.00	1153062.98	1400160.86	285937.4	9360.37	74.00	26.572
190.00	1156394.61	1386563.86	298613.1	9450.44	74.68	26.910
195.00	1158133.72	1364183.81	310870.6	9544.21	75.35	27.355
197.02	1158448.44	1358672.47	315704.1	9582.98	75.62	27.474
200.00	1158735.86	1341611.70	322720.0	9641.62	76.00	27.830
201.42	1158783.02	1337739.73	326009.6	9669.90	76.18	27.912
205.00	1158789.95	1327968.27	334168.8	9742.28	76.63	28.117
210.00	1158874.63	1314326.67	345242.8	9843.28	77.17	28.409
215.00	1158409.67	1300689.47	356004.2	9944.36	77.66	28.698
225.00	1157655.86	1273454.50	376615.5	10156.19	78.62	29.292
230.00	1157351.63	1255837.47	386466.6	10266.07	79.09	29.601
235.00	1157192.11	1246220.41	396018.3	10378.58	79.54	29.921
240.00	1157035.86	1232603.36	405274.2	10493.84	79.98	30.247
245.00	1156881.83	1218986.31	414237.4	10611.80	80.41	30.581
250.00	1156884.89	1205381.39	422910.7	10732.46	80.83	30.926
255.00	1156906.66	1191777.44	431298.7	10855.84	81.24	31.280
260.00	1156925.97	1178174.56	439405.0	10981.96	81.64	31.641
265.00	1158275.72	1164559.92	447233.5	11110.94	82.02	32.049
270.00	1158732.94	1150929.23	454789.0	11242.78	82.39	32.441
275.00	1159139.61	1137297.84	462074.7	11377.49	82.76	32.841
280.00	1159503.80	1123666.47	469095.5	11515.07	83.11	33.250
285.00	1159828.61	1110035.08	475855.6	11655.53	83.45	33.668
290.00	1159961.75	1096403.69	482359.2	11798.87	83.77	34.090
295.00	1160049.86	1082772.33	488611.2	11945.12	84.09	34.522
300.00	1160107.33	1068134.33	494616.4	12094.29	84.40	34.964
305.00	1160145.00	1053495.61	500378.7	12246.41	84.69	35.417
310.00	1160247.03	1041856.26	505903.8	12401.53	84.97	35.884
315.00	1160340.95	1028215.84	511196.6	12559.70	85.25	36.363
320.00	1160439.08	1014574.74	516261.6	12720.96	85.51	36.855
325.00	1160528.19	1000932.60	521104.3	12885.36	85.76	37.360
330.00	1160556.20	987290.19	525729.7	13052.95	86.01	37.877
335.00	1160575.91	973647.16	530143.0	13223.77	86.24	38.409
340.00	1160502.86	960004.71	534349.2	13397.88	86.46	38.952
345.00	1160426.39	946363.56	538354.1	13575.32	86.68	39.511
350.00	1160453.23	932722.65	542163.5	13756.17	86.88	40.090
355.00	1160500.16	919081.55	545782.5	13940.51	87.08	40.686
360.00	1160529.28	905439.80	549216.7	14128.39	87.26	41.300
365.00	1160554.73	891798.05	552473.9	14319.83	87.44	41.933
370.00	1160486.64	878156.48	555559.1	14515.05	87.61	42.582
375.00	1160421.33	864515.96	558478.0	14714.09	87.77	43.252
380.00	1160346.06	850876.53	561237.6	14917.00	87.92	43.942
385.00	1160290.69	837237.36	563843.2	15123.90	88.06	44.656

TABLE 2.2 (BTØ)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MØTILØN (SEC)	TOTAL VEHICLE ENGINE THRUST (LB)	TOTAL VEHICLE WEIGHT (LB)	ALTITUDE ABOVE SPHERICAL EARTH (FT)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (FT/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (FT/S**2)
390.00	1160185.47	823599.43	566302.4	15334.88	88.19	45.391
395.00	1160092.23	805965.23	568621.1	15550.05	88.32	46.151
400.00	1159993.97	796331.23	570806.9	15769.51	88.43	46.938
405.00	1159898.36	782697.20	572866.7	15993.39	88.54	47.751
410.00	1159832.81	765063.18	574808.5	16221.82	88.64	48.595
415.00	1159768.36	755429.17	576639.6	16454.93	88.74	49.469
420.00	1159693.38	741795.16	578367.2	16692.87	88.82	50.375
425.00	1159633.22	728164.07	580000.8	16935.80	88.90	51.316
430.00	1159519.77	714533.95	581548.3	17183.86	88.97	52.290
435.00	1159413.28	700905.10	583018.1	17437.22	89.03	53.301
440.00	1159297.72	687277.97	584420.1	17696.06	89.09	54.353
445.00	1159179.11	672651.74	585763.6	17960.57	89.13	55.447
450.00	1159058.48	660026.98	587058.7	18230.95	89.17	56.585
455.00	1158945.30	646403.77	588315.2	18507.43	89.20	57.772
460.00	1158808.09	632781.81	589544.1	18790.23	89.23	59.009
465.00	922471.50	621477.65	590730.1	19026.54	89.28	47.847
470.00	922375.06	610620.05	591849.5	19259.27	89.31	48.692
475.00	922254.52	595761.68	592969.1	19493.09	89.30	49.568
480.00	922072.27	588893.76	594128.0	19731.84	89.29	50.473
485.00	921882.09	578027.48	595323.5	19976.19	89.27	51.411
490.00	693789.16	568158.55	596547.4	20203.98	89.28	39.359
495.00	692458.47	560100.02	597736.1	20395.25	89.32	39.826
500.00	692064.79	552047.41	598872.9	20588.94	89.35	40.384
505.00	691675.59	544001.25	599977.9	20785.08	89.36	40.958
510.00	691268.52	535960.75	601073.9	20983.93	89.37	41.548
515.00	690856.91	527926.30	602164.4	21186.48	89.38	42.155
520.00	690432.98	515898.32	603248.7	21392.52	89.39	42.780
525.00	689975.73	511876.80	604331.3	21602.00	89.39	43.422
530.00	689495.86	503861.98	605419.1	21814.91	89.39	44.082
535.00	688961.03	495854.70	606522.3	22031.29	89.39	44.759
540.00	688347.35	487855.40	607648.7	22251.22	89.38	45.452
545.00	687560.20	475865.75	608808.6	22474.76	89.36	46.156
550.00	686269.23	471888.72	610012.3	22701.89	89.35	46.849
551.38	683460.72	466681.51	610354.5	22765.36	89.34	46.876
552.08	27624.27	469503.63	610528.0	22775.01	89.35	1.893
552.26	23229.38	469459.16	610570.8	22775.25	89.35	1.592

S-II ØECØ
S-IVB ULL IGN
S-II/S-IVB SEP

TABLE 2-2 (BTØ)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	**** RADIAL DISTANCE ØF THE C G (FT)	ØF THE EARTH FIXED VELOCITY (FT/SEC)	MAGNITUDE	SUB VEHICLE LATITUDE ØN SPHERICAL EARTH (DEG)	LONGITUDE ØN EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (NM)
S-IC/S-II SEP	161.59	21130770.25	7862.398	28.8658	-79.69	50.69
S-II ENGINE START	162.22	21132675.25	7856.048	28.8695	-79.68	51.44
S-II 90 THRUST	165.22	21141600.00	7837.458	28.8872	-79.61	54.98
	170.00	21155412.25	7887.416	28.9154	-79.51	60.67
	175.00	21169406.50	7958.994	28.9453	-79.40	66.70
	180.00	21182958.25	8035.485	28.9754	-79.29	72.81
	185.00	21196075.50	8116.097	29.0059	-79.18	79.01
	190.00	21208766.75	8200.536	29.0367	-79.06	85.30
	195.00	21221040.50	8289.041	29.0678	-78.95	91.68
	197.02	21225880.25	8325.793	29.0804	-78.90	94.29
	200.00	21232905.75	8381.555	29.0992	-78.83	98.16
	201.42	21236199.75	8408.501	29.1082	-78.79	100.02
INITIATE IGM	205.00	21244370.75	8477.644	29.1310	-78.71	104.73
	210.00	21255461.25	8574.716	29.1631	-78.59	111.40
	215.00	21266239.50	8672.378	29.1954	-78.46	118.16
	220.00	21276715.00	8773.641	29.2281	-78.34	125.00
	225.00	21286885.75	8877.749	29.2611	-78.21	131.95
	230.00	21296754.00	8984.674	29.2943	-78.08	138.99
	235.00	21306323.50	9094.413	29.3279	-77.95	146.12
	240.00	21315597.75	9207.045	29.3617	-77.82	153.36
	245.00	21324579.00	9322.536	29.3958	-77.69	160.69
	250.00	21333271.75	9440.878	29.4303	-77.55	168.13
	255.00	21341678.50	9562.089	29.4650	-77.41	175.67
	260.00	21349804.25	9686.167	29.5000	-77.27	183.31
	265.00	21357652.50	9813.241	29.5354	-77.13	191.07
	270.00	21365228.25	9943.295	29.5710	-76.98	198.93
	275.00	21372534.75	10076.340	29.6069	-76.84	206.90
	280.00	21379576.25	10212.363	29.6431	-76.69	214.99
	285.00	21386357.50	10351.369	29.6796	-76.54	223.19
	290.00	21392882.75	10493.366	29.7164	-76.38	231.51
	295.00	21399156.75	10638.356	29.7535	-76.23	239.94
	300.00	21405184.25	10786.358	29.7909	-76.07	248.50
	305.00	21410969.75	10937.399	29.8286	-75.91	257.18
	310.00	21416518.00	11091.516	29.8665	-75.75	265.98
	315.00	21421834.75	11248.752	29.9048	-75.58	274.91
	320.00	21426923.75	11409.149	29.9433	-75.41	283.97
	325.00	21431791.50	11572.753	29.9822	-75.24	293.17
	330.00	21436442.00	11739.604	30.0213	-75.07	302.49
	335.00	21440881.00	11909.747	30.0607	-74.89	311.96
	340.00	21445113.75	12083.227	30.1004	-74.71	321.56
	345.00	21449145.50	12260.092	30.1403	-74.53	331.30
	350.00	21452981.75	12440.410	30.1806	-74.35	341.18
	355.00	21456628.75	12624.257	30.2211	-74.16	351.22
	360.00	21460091.75	12811.693	30.2619	-73.97	361.40
	365.00	21463378.00	13002.735	30.3030	-73.78	371.73
	370.00	21466493.00	13197.581	30.3443	-73.58	382.22
	375.00	21469442.75	13396.271	30.3859	-73.38	392.87
	380.00	21472232.75	13598.863	30.4277	-73.18	403.67
	385.00	21474870.75	13805.471	30.4699	-72.97	414.64

**** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG
 TABLE 2-2 (BTØ)

TIME FRØM FIRST MØTION (SEC)	*** RADIAL DISTANCE ØF THE C G (FT)	MAGNITUDE ØF THE EARTH FIXED VELOCITY (FT/SEC)	SUB VEHICLE LATITUDE ØN SPHERICAL EARTH (DEG)	LØNGITUDE ØN EARTH (DEG)	ARC RANGE ALØNG SPHER. EARTH TØ SUB VEHICLE PT. (NM)
390.00	21477361.75	14016.185	30.5122	-72.76	425.78
395.00	21479714.00	14231.101	30.5548	-72.55	437.08
400.00	21481934.00	14450.335	30.5976	-72.33	448.56
405.00	21484028.75	14674.007	30.6407	-72.11	460.22
410.00	21486006.00	14902.244	30.6839	-71.89	472.06
415.00	21487873.25	15135.181	30.7274	-71.66	484.08
420.00	21489638.75	15372.961	30.7711	-71.43	496.29
425.00	21491310.25	15615.733	30.8150	-71.20	508.69
430.00	21492896.75	15863.654	30.8591	-70.96	521.28
435.00	21494407.25	16116.885	30.9034	-70.72	534.08
440.00	21495850.25	16375.605	30.9478	-70.47	547.08
445.00	21497235.75	16640.004	30.9924	-70.22	560.29
450.00	21498574.00	16910.283	31.0371	-69.97	573.71
455.00	21499874.75	17186.662	31.0820	-69.71	587.35
460.00	21501149.50	17469.366	31.1270	-69.44	601.22
465.00	21502382.00	17705.566	31.1720	-69.17	615.29
470.00	21503549.00	17938.193	31.2170	-68.90	629.54
475.00	21504717.50	18171.943	31.2619	-68.63	643.99
480.00	21505926.50	18410.617	31.3067	-68.35	658.62
485.00	21507173.00	18654.885	31.3514	-68.06	673.44
490.00	21508448.75	18882.575	31.3960	-67.78	688.46
495.00	21509691.25	19073.740	31.4403	-67.48	703.63
500.00	21510882.75	19267.336	31.4843	-67.19	718.97
505.00	21512043.50	19463.376	31.5280	-66.89	734.45
510.00	21513196.75	19662.137	31.5714	-66.59	750.09
515.00	21514345.25	19864.598	31.6144	-66.29	765.90
520.00	21515488.75	20070.554	31.6570	-65.98	781.86
525.00	21516631.75	20279.942	31.6992	-65.67	797.99
530.00	21517782.00	20492.760	31.7410	-65.35	814.29
535.00	21518948.00	20709.057	31.7824	-65.04	830.76
540.00	21520139.00	20928.898	31.8233	-64.71	847.40
545.00	21521365.25	21152.342	31.8637	-64.39	864.22
550.00	21522636.25	21379.388	31.9036	-64.06	881.21
551.38	21522997.50	21442.829	31.9146	-63.97	885.95
552.08	21523180.50	21452.461	31.9201	-63.92	888.35
552.26	21523226.00	21452.696	31.9215	-63.91	888.95

S-II ØECØ
 S-IVB ULL IGN
 S-II/S-IVB SEP

*** MEASURED FROM THE CENTER ØF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG
 TABLE 2.2 (BTØ)

TIME FROM FIRST MOTION (SEC)	X COORDINATE		Y COORDINATE		Z COORDINATE		COMPONENT OF VEL. IN THE XXE SYSTEM (FT/S)	COMPONENT OF VEL. IN THE YXXE SYSTEM (FT/S)	COMPONENT OF VEL. IN THE ZXXE SYSTEM (FT/S)
	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)			
S-IC/S-II SEP	161.59	218989.295	115.456	311082.695	2931.570	14.586	7295.409		
S-II ENGINE START	162.22	220830.666	124.859	315678.977	2912.792	14.840	7296.089		
S-II 90 THRUST	165.22	229436.309	171.079	337576.762	2827.300	16.087	7309.711		
	170.00	242690.082	253.069	372734.594	2719.893	18.128	7403.593		
	175.00	256028.336	348.862	410034.336	2615.633	20.230	7516.891		
	180.00	268847.398	455.553	447907.449	2512.212	22.437	7632.647		
	185.00	281152.188	573.392	486363.402	2409.010	24.714	7750.010		
	190.00	292948.242	702.866	525409.906	2308.588	27.073	7868.830		
	195.00	304240.277	844.332	565054.680	2208.347	29.519	7989.401		
	197.02	308658.133	904.893	581234.797	2168.138	30.536	8038.474		
	200.00	315033.422	998.083	605306.633	2109.226	32.053	8111.758		
	201.42	318006.684	1044.191	616842.031	2081.291	32.782	8146.781		
INITIATE IGM	205.00	325333.207	1164.895	646174.680	2010.911	34.653	8235.623		
	210.00	335161.375	1345.608	687656.828	1922.984	37.649	8356.224		
	215.00	344577.590	1541.225	729731.711	1843.144	40.651	8474.156		
	220.00	353587.801	1752.648	772403.758	1760.772	43.946	8595.030		
	225.00	362185.445	1980.965	815684.578	1678.248	47.441	8717.549		
	230.00	370368.707	2227.365	859582.070	1595.444	51.081	8841.737		
	235.00	378139.762	2491.248	904104.633	1512.561	54.505	8967.582		
	240.00	385494.586	2772.950	949260.859	1429.350	58.250	9095.232		
	245.00	392432.945	3074.210	995059.828	1345.912	62.266	9224.659		
	250.00	398953.410	3395.712	1041510.414	1262.295	66.395	9355.875		
	255.00	405055.566	3738.518	1088621.563	1178.484	70.688	9488.926		
	260.00	410738.188	4103.009	1136402.656	1094.484	75.132	9623.840		
	265.00	416000.242	4490.040	1184863.281	1010.332	79.708	9760.767		
	270.00	420840.918	4900.276	1234013.656	925.962	84.419	9899.727		
	275.00	425259.184	5334.469	1283863.969	841.276	89.267	10040.763		
	280.00	429253.195	5793.157	1334424.688	756.320	94.243	10183.882		
	285.00	432821.727	6277.049	1385706.250	671.097	99.346	10329.115		
	290.00	435963.539	6786.775	1437719.328	585.576	104.574	10476.493		
	295.00	438677.000	7322.962	1490474.766	493.732	109.928	10626.043		
	300.00	440960.465	7886.288	1543983.406	413.551	115.406	10777.810		
	305.00	442811.883	8477.253	1598256.563	327.005	121.003	10931.840		
	310.00	444225.613	9096.493	1653305.672	240.060	126.732	11088.194		
	315.00	445211.816	9744.839	1709142.438	152.682	132.599	11246.934		
	320.00	445755.617	10422.740	1765778.984	64.830	138.600	11408.123		
	325.00	445859.168	11131.045	1823227.719	-23.536	144.732	11571.824		
	330.00	445519.602	11870.393	1881501.328	-112.454	151.007	11738.094		
	335.00	444733.633	12641.325	1940612.922	-201.959	157.421	11906.994		
	340.00	443498.809	13444.832	2000575.656	-292.090	163.987	12078.583		
	345.00	441811.637	14281.345	2061403.188	-382.886	170.706	12252.923		
	350.00	439668.836	15152.166	2123109.438	-474.380	177.569	12430.094		
	355.00	437066.723	16057.388	2185708.813	-566.613	184.585	12610.185		
	360.00	434001.391	16998.171	2249216.156	-659.591	191.709	12793.266		
	365.00	430465.977	17573.469	2313646.344	-753.193	198.386	12979.386		
	370.00	426467.559	18562.911	2379015.219	-847.872	205.492	13168.714		
	375.00	421989.418	20029.206	2445338.844	-943.564	213.080	13361.201		
	380.00	417030.426	21113.919	2512633.688	-1040.228	220.816	13557.222		
	385.00	411585.258	22237.822	2580916.688	-1137.966	228.792	13756.588		

TABLE 2-2 (BIØ)
 AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	X COORDINATE			Y COORDINATE			Z COORDINATE			X COMPONENT OF VEL. IN THE XXE SYSTEM (FT/S)	Y COMPONENT OF VEL. IN THE XXE SYSTEM (FT/S)	Z COMPONENT OF VEL. IN THE XXE SYSTEM (FT/S)
	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)				
390.00	405648.578	23402.217	2650205.375	-1236.819	237.023	13959.496						
395.00	399215.055	24608.357	2720517.594	-1336.823	245.467	14166.047						
400.00	392278.539	25657.299	2751871.938	-1438.056	254.129	14376.356						
405.00	384832.469	27150.083	2864287.531	-1540.578	263.012	14590.543						
410.00	376870.488	28487.770	2937783.938	-1644.446	272.112	14808.735						
415.00	368385.621	29871.521	3012381.594	-1749.725	281.434	15031.067						
420.00	359370.895	31202.569	3088101.500	-1856.487	290.981	15257.677						
425.00	349818.320	32781.736	3164965.625	-1964.800	300.760	15488.713						
430.00	339720.102	34310.527	3242996.188	-2074.741	310.781	15724.325						
435.00	329068.238	35889.957	3322216.594	-2186.387	321.037	15964.668						
440.00	317853.098	37521.187	3402650.906	-2299.815	331.534	16209.917						
445.00	306066.680	39205.674	3484323.906	-2415.108	342.286	16460.250						
450.00	293698.734	40544.572	3567261.875	-2532.355	353.303	16715.862						
455.00	280739.418	42739.137	3651491.438	-2651.645	364.594	16976.961						
460.00	267178.887	44591.027	3737040.719	-2773.075	376.167	17243.761						
465.00	252998.891	46499.301	3823818.625	-2899.481	387.188	17462.249						
470.00	238190.410	48463.148	3911666.375	-3021.822	398.187	17677.353						
475.00	222803.066	50479.591	4000596.219	-3132.566	408.424	17895.244						
480.00	206858.799	52547.730	4090625.688	-3246.034	418.890	18117.357						
485.00	190335.055	54669.159	4181777.000	-3364.330	429.716	18343.974						
490.00	173207.020	56845.158	4274050.313	-3488.151	440.522	18552.369						
495.00	155438.605	59073.923	4367234.513	-3620.085	450.994	18721.622						
500.00	137010.129	61354.658	4461269.875	-3751.208	461.345	18893.010						
505.00	117927.124	63687.588	4556167.938	-3881.295	471.821	19066.619						
510.00	98197.178	66073.099	4651939.625	-4011.356	482.437	19242.555						
515.00	77806.553	68512.546	4748597.375	-4145.433	493.390	19420.974						
520.00	56738.024	71007.514	4846153.188	-4282.391	504.618	19601.878						
525.00	34978.879	73559.148	4944620.063	-4421.656	516.087	19785.314						
530.00	12518.045	76168.624	5044010.438	-4562.904	527.783	19971.344						
535.00	-10653.297	78837.366	5144337.625	-4706.045	539.698	20160.032						
540.00	-34545.193	81566.158	5245615.063	-4851.112	551.831	20351.437						
545.00	-59167.896	84355.982	5347856.375	-4998.162	564.192	20545.599						
550.00	-84530.429	87208.355	5451075.438	-5147.218	576.779	20742.510						
551.38	-91682.865	88008.979	5479821.063	-5188.825	580.300	20797.458						
552.08	-95321.932	88415.813	5494383.000	-5208.276	581.597	20802.493						
552.26	-96234.005	88517.558	5498023.375	-5212.980	581.874	20801.548						

S-II ØECØ
 S-IVB ULL IGN
 S-II/S-IVB SEP

TABLE 2.2 (BTØ)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (LB/FT**2)	TOTAL ANGLE OF ATTACK (DEG)	DRAG ALONG VELOCITY VECTOR (LB)	AERODYNAMIC LOAD (LB/FT**2)	MAGNITUDE OF THE AERODYNAMIC FORCE VECTOR (FT)
S-IC/S-II SEP	7.98	7.59	0.2303	680.3286	1.7472	93.3963
S-II ENGINE START	8.00	7.00	0.2149	625.7098	1.5045	80.4247
S-II 90 THRUST	8.13	4.77	0.0984	416.3281	0.4692	25.0790
	8.42	2.61	1.7438	304.4385	4.5433	242.8650
	8.75	1.36	2.7304	183.6687	3.7266	177.8924
	9.09	0.70	3.6843	106.4177	2.5845	112.8922
	9.18	0.34	4.6514	55.8116	1.5932	68.1321
	9.18	0.17	5.5837	28.7853	0.9404	40.2149
	9.01	0.08	6.5019	15.0939	0.5483	23.7196
	8.95	0.06	6.8653	11.8390	0.4460	19.4321
	8.87	0.04	7.3968	8.4113	0.3327	14.6293
INITIATE IGM	8.83	0.04	7.6467	7.1951	0.2907	11.1502
	8.66	0.02	9.6002	5.2233	0.2393	12.8330
	8.44	0.01	15.7393	4.1672	0.2290	11.1502
	8.26	0.01	16.2693	2.5990	0.1457	12.6789
	7.96	0.01	16.0030	1.6204	0.0894	4.9717
	7.64	0.00	16.2123	1.0335	0.0591	3.2184
	7.38	0.00	16.4108	0.6963	0.0413	2.2015
	7.07	0.00	16.5609	0.4742	0.0292	1.5283
	6.68	0.00	16.6812	0.3310	0.0209	1.1022
	6.37	0.00	16.8406	0.2458	0.0159	0.8403
	6.13	0.00	16.9898	0.1907	0.0125	0.6659
	5.94	0.00	17.1302	0.1525	0.0102	0.5432
	5.78	0.00	17.2637	0.1245	0.0086	0.4532
	5.65	0.00	17.3835	0.1042	0.0073	0.3864
	5.55	0.00	17.4580	0.0891	0.0064	0.3355
	5.46	0.00	17.5257	0.0777	0.0056	0.2960
	5.39	0.00	17.6028	0.0687	0.0051	0.2646
	5.33	0.00	17.6676	0.0617	0.0046	0.2395
	5.28	0.00	17.7197	0.0560	0.0042	0.2190
	5.24	0.00	17.7614	0.0514	0.0039	0.2021
	5.24	0.00	17.7917	0.0481	0.0036	0.1893
	5.24	0.00	17.8067	0.0454	0.0034	0.1788
	5.25	0.00	17.8058	0.0432	0.0033	0.1698
	5.26	0.00	17.7884	0.0413	0.0031	0.1621
	5.27	0.00	17.7544	0.0398	0.0030	0.1556
	5.30	0.00	17.7064	0.0384	0.0029	0.1499
	5.33	0.00	17.6447	0.0375	0.0028	0.1457
	5.38	0.00	17.5710	0.0369	0.0027	0.1423
	5.42	0.00	17.4853	0.0364	0.0026	0.1394
	5.47	0.00	17.3880	0.0360	0.0026	0.1369
	5.53	0.00	17.2792	0.0357	0.0025	0.1349
	5.58	0.00	17.1560	0.0356	0.0025	0.1332
	5.64	0.00	17.0784	0.0355	0.0025	0.1319
	5.70	0.00	16.9235	0.0355	0.0024	0.1309
	5.76	0.00	16.7138	0.0357	0.0024	0.1302
	5.83	0.00	16.5460	0.0360	0.0024	0.1300
	5.91	0.00	16.3632	0.0364	0.0023	0.1301
	5.98	0.00	16.1641	0.0368	0.0023	0.1303

TABLE 2-2 (BTØ)
 AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FRØM FIRST MØTØN (SEC)	MACH NUMBER	DYNAMIC PRESSURE (LB/FT**2)	TØIAL ANGLE ØF ATTACK (DEG)	DRAG ALØNG VELOCITY VECTØR (LB)	AERØDYNAMIC LOAD (LB/FT**2)	MAGNITUDE ØF THE AERØDYNAMIC FØRCE VECTØR (FT)
390.00	6.06	0.00	15.9629	0.0371	0.0023	0.1303
395.00	6.14	0.00	15.7525	0.0371	0.0023	0.1285
400.00	6.22	0.00	15.5288	0.0372	0.0023	0.1268
405.00	6.31	0.00	15.2987	0.0373	0.0023	0.1251
410.00	6.40	0.00	15.0608	0.0374	0.0023	0.1235
415.00	6.49	0.00	14.8142	0.0376	0.0023	0.1218
420.00	6.58	0.00	14.5599	0.0379	0.0022	0.1201
425.00	6.67	0.00	14.2982	0.0381	0.0022	0.1184
430.00	6.77	0.00	14.0294	0.0384	0.0022	0.1166
435.00	6.87	0.00	13.7546	0.0381	0.0022	0.1149
440.00	6.97	0.00	13.4741	0.0383	0.0022	0.1131
445.00	7.07	0.00	13.1876	0.0392	0.0022	0.1118
450.00	7.18	0.00	12.8956	0.0397	0.0022	0.1108
455.00	7.29	0.00	12.5986	0.0403	0.0022	0.1098
460.00	7.40	0.00	12.2972	0.0408	0.0022	0.1086
465.00	7.49	0.00	12.0145	0.0418	0.0022	0.1108
470.00	7.58	0.00	11.7228	0.0496	0.0028	0.1509
475.00	7.67	0.00	11.4602	0.0529	0.0030	0.1644
480.00	7.77	0.00	11.1666	0.0515	0.0029	0.1548
485.00	7.86	0.00	10.8604	0.0505	0.0027	0.1445
490.00	7.95	0.00	10.5261	0.0490	0.0026	0.1339
495.00	8.02	0.00	10.2349	0.0471	0.0024	0.1220
500.00	8.09	0.00	9.9333	0.0486	0.0025	0.1295
505.00	8.17	0.00	9.6692	0.0514	0.0027	0.1434
510.00	8.24	0.00	9.4961	0.0498	0.0026	0.1335
515.00	8.32	0.00	9.2145	0.0483	0.0025	0.1237
520.00	8.40	0.00	8.9598	0.0476	0.0024	0.1182
525.00	8.48	0.00	8.7309	0.0473	0.0023	0.1147
530.00	8.56	0.00	8.5260	0.0471	0.0023	0.1121
535.00	8.64	0.00	8.3486	0.0469	0.0023	0.1096
540.00	8.72	0.00	8.1902	0.0468	0.0022	0.1070
545.00	8.81	0.00	8.0429	0.0466	0.0022	0.1044
550.00	8.89	0.00	7.9081	0.0464	0.0022	0.1019
551.38	8.92	0.00	7.8021	0.0464	0.0022	0.1013
552.08	8.92	0.00	7.8815	0.0463	0.0022	0.1010
552.26	8.92	0.00	7.8777	0.0463	0.0022	0.1009

S-II ØECØ
 S-IVB ULL IGN
 S-II/S-IVB SEP

TABLE 2-2 (BTØ)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FRØM MØTION (SEC)	X PØSI CØRD		Y PØSI CØRD		Z PØSI CØRD		X VEL. CØMP.		Y VEL. CØMP.		Z VEL. CØMP.	
	SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	
S-IC/S-II SEP	161.59	21123893.3	128131.7	523624.0	2817.527	377.412	8617.922					
S-II ENGINE START	162.22	21125662.3	128369.4	52953.5	2798.125	377.316	8618.623					
S-II 90 THRUST	165.22	21133919.8	129500.6	554519.0	2709.548	376.830	8632.358					
	170.00	21146596.5	131299.7	596401.4	2596.374	375.698	8726.650					
	175.00	21159301.8	133174.8	640317.5	2485.815	374.324	8840.368					
	180.00	21171455.8	135043.0	684808.8	2375.962	372.951	8956.455					
	185.00	21183063.0	136904.2	729884.5	2267.123	371.549	9074.066					
	190.00	21194128.3	138758.4	775551.7	2159.096	370.129	9193.048					
	195.00	21204655.5	140605.5	821817.8	2052.040	368.694	9313.702					
	197.02	21208755.3	141349.3	840671.7	2009.043	368.116	9362.784					
	200.00	21214650.0	142445.4	868691.3	1945.970	367.245	9436.060					
	201.42	21217390.3	142966.2	882105.9	1916.038	366.825	9471.069					
	205.00	21224115.8	144277.8	916180.7	1840.574	365.759	9559.844					
	210.00	21233074.5	146103.8	964283.8	1745.495	364.647	9680.418					
	215.00	21241585.3	147924.2	1012979.7	1658.433	363.510	9798.356					
	220.00	21249653.5	149739.2	1062272.6	1568.685	362.543	9919.124					
	225.00	21257272.0	151549.7	1112173.4	1478.652	361.673	10041.458					
	230.00	21264439.3	153356.1	1162689.8	1388.200	360.841	10165.377					
	235.00	21271153.8	155157.5	1213829.7	1297.532	359.689	10290.871					
	240.00	21277413.8	156953.4	1265601.3	1206.391	358.747	10418.087					
	245.00	21283217.0	158745.2	1318013.3	1114.878	357.967	10546.998					
	250.00	21288562.0	160533.1	1371074.1	1023.038	357.187	10677.616					
	255.00	21293446.8	162317.2	1424792.4	930.853	356.460	10809.986					
	260.00	21297870.0	164097.7	1479176.9	838.322	355.768	10944.136					
	265.00	21301829.5	165874.9	1534236.9	745.488	355.090	11080.217					
	270.00	21305324.3	167648.6	1589982.2	652.272	354.428	11218.245					
	275.00	21308351.5	169419.2	1646422.6	558.576	353.782	11358.264					
	280.00	21310909.0	171186.5	1703568.1	464.443	353.140	11500.281					
	285.00	21312995.0	172950.6	1761428.8	369.873	352.499	11644.323					
	290.00	21314607.0	174711.5	1820014.7	274.832	351.856	11790.424					
	295.00	21315742.5	176469.1	1879336.4	179.293	351.210	11938.609					
	300.00	21316399.0	178223.5	1939404.3	83.237	350.555	12088.920					
	305.00	21316574.0	179974.6	2000229.2	-13.368	349.885	12241.406					
	310.00	21316264.5	181722.4	2061822.0	-110.558	349.212	12396.123					
	315.00	21315467.3	183466.8	2124194.2	-208.371	348.536	12553.134					
	320.00	21314179.5	185207.7	2187357.2	-306.855	347.851	12712.500					
	325.00	21312397.5	186945.2	2251323.1	-406.051	347.153	12874.281					
	330.00	21310117.8	188679.3	2316104.0	-506.003	346.449	13038.534					
	335.00	21307336.3	190409.7	2381712.5	-606.752	345.733	13205.318					
	340.00	21304648.8	192136.6	2448161.4	-708.338	345.014	13374.691					
	345.00	21300251.5	193859.8	2515463.7	-810.806	344.291	13546.713					
	350.00	21295939.3	195579.5	2583632.9	-914.194	343.551	13721.462					
	355.00	21291108.0	197295.3	2652682.8	-1018.550	342.798	13899.024					
	360.00	21285752.3	199007.4	2722627.8	-1123.883	341.987	14079.470					
	365.00	21279867.8	200713.9	2793482.2	-1230.072	341.153	14262.841					
	370.00	21273449.0	202413.5	2865261.3	-1337.586	339.378	14449.306					
	375.00	21266489.8	204108.2	2937980.4	-1446.366	338.499	14638.916					
	380.00	21258983.5	205798.4	3011655.7	-1556.373	337.584	14831.744					
	385.00	21250523.8	207484.2	3086303.3	-1667.718	336.719	15027.897					

INITIATE IGM

TABLE 2-2 (BTØ)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FRØM FIRST MØTION (SEC)	X PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	Y PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	Z PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	X VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	Y VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	Z VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)
390.00	21242303.8	209165.7	3161940.3	-1780.448	335.915	15227.470
395.00	21233116.8	210843.3	3238583.7	-1894.605	335.124	15430.558
400.00	21223355.3	212517.0	3316251.7	-2010.274	334.348	15637.277
405.00	21213011.5	214186.8	3394962.7	-2127.526	333.581	15847.741
410.00	21202077.5	215852.8	3474735.5	-2246.421	332.817	16062.074
415.00	21190544.5	217515.0	3555589.9	-2367.036	332.053	16280.408
420.00	21178404.3	219173.3	3637546.3	-2489.448	331.286	16502.877
425.00	21165647.0	220827.9	3720625.7	-2613.739	330.517	16729.625
430.00	21152263.5	222478.5	3804849.8	-2739.992	329.750	16960.797
435.00	21138243.5	224125.3	3890241.2	-2868.295	328.968	17196.546
440.00	21123576.8	225768.2	3976822.9	-2998.734	328.173	17437.039
445.00	21108252.5	227407.0	4064619.4	-3131.406	327.370	17682.453
450.00	21092258.8	229041.9	4153655.7	-3266.409	326.559	17932.975
455.00	21075584.0	230672.6	4243957.8	-3403.845	325.743	18188.809
460.00	21058216.0	232299.3	4335552.8	-3543.825	324.918	18450.164
465.00	21040138.8	233921.7	4428348.5	-3687.592	324.143	18662.957
470.00	21021346.0	235540.7	4522185.4	-3827.390	323.289	18872.363
475.00	21001887.0	237153.0	4617076.6	-3955.866	321.585	19084.771
480.00	20981781.3	238756.6	4713039.7	-4087.390	319.862	19301.208
485.00	20961004.5	240351.7	4810095.4	-4224.082	318.220	19521.889
490.00	20939532.0	241938.9	4908243.0	-4365.936	316.676	19724.071
495.00	20917332.0	243518.8	5007269.3	-4514.857	315.282	19886.750
500.00	20894387.0	245091.1	5107113.8	-4663.184	313.607	20051.458
505.00	20870700.5	246654.9	5207787.1	-4810.699	311.898	20218.292
510.00	20846279.5	248210.0	5309300.1	-4958.420	310.155	20387.326
515.00	20821109.0	249756.7	5411663.8	-5110.394	308.531	20558.588
520.00	20795170.5	251295.4	5514889.4	-5265.491	306.970	20732.112
525.00	20768449.8	252826.4	5618988.5	-5423.141	305.443	20907.958
530.00	20740935.3	254349.9	5723972.7	-5583.023	303.933	21086.197
535.00	20712616.0	255865.8	5829854.3	-5745.055	302.431	21266.894
540.00	20683481.3	257374.2	5936645.6	-5909.273	300.930	21450.102
545.00	20653519.5	258875.1	6044359.4	-6075.740	299.439	21635.860
550.00	20622720.0	260368.6	6153008.3	-6244.482	297.950	21824.153
551.38	20614045.0	260780.7	6183249.1	-6291.584	297.536	21876.678
552.08	20609633.3	260988.9	6198566.2	-6313.028	297.313	21880.547
552.26	20608528.0	261040.9	6202395.1	-6318.154	297.256	21879.317

S-II ØECØ
S-IVB ULL IGN
S-II/S-IVB SEP

TABLE 2-2 (BTØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	TOTAL ENGINE THRUST (NEWTONS)	TOTAL VEHICLE WEIGHT (KG)	ALTITUDE ABOVE SPHERICAL EARTH (M)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (M/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (M/S**2)
S-II/SIVB SEP	28057.60	166492.60	186102.0	6941.90	89.35	0.169
S-IVB ENGINE START	27419.89	166492.60	186111.3	6941.90	89.35	0.165
	29590.00	166455.42	186299.7	6942.07	89.39	0.178
S-IVB 90 THRUST	821429.03	166240.40	186492.7	6947.03	89.43	4.941
	876252.34	165805.11	186628.1	6957.48	89.45	5.285
S-IVB ULLAGE JETT	900974.79	164936.96	186884.5	6979.27	89.48	5.462
	902091.87	164701.98	186932.8	6983.61	89.48	5.477
	907250.80	163630.73	187212.2	7010.57	89.53	5.544
	909059.80	162552.53	187466.0	7037.81	89.57	5.599
	909615.63	161472.73	187695.3	7065.33	89.61	5.630
	909525.98	160393.31	187900.0	7093.11	89.65	5.671
	909420.95	159313.82	188080.7	7121.12	89.69	5.709
	909227.76	158234.45	188238.7	7149.37	89.73	5.747
	909048.85	157155.14	188374.4	7177.85	89.76	5.785
	908821.38	156075.92	188489.2	7206.55	89.79	5.824
	911927.50	154996.67	188584.2	7235.49	89.82	5.863
	909618.47	153916.08	188660.5	7264.70	89.85	5.925
	909249.41	152834.76	188719.5	7294.15	89.88	5.952
	908830.19	151754.76	188762.2	7323.81	89.90	5.992
	908481.31	150675.11	188790.2	7353.70	89.93	6.032
	908213.52	149595.81	188804.5	7383.80	89.95	6.073
	907900.11	148516.80	188806.7	7414.14	89.96	6.115
	907210.86	147438.08	188798.2	7444.71	89.98	6.158
	906866.91	146359.59	188780.2	7475.51	89.99	6.201
	906507.66	145281.35	188754.4	7506.54	90.00	6.244
	906148.42	144203.32	188722.1	7537.80	90.01	6.289
	905816.03	143125.54	188684.7	7569.29	90.01	6.334
	905506.99	142047.95	188643.5	7601.04	90.02	6.379
	905204.26	140970.54	188594.7	7633.06	90.03	6.425
	904913.95	139893.30	188541.2	7665.30	90.04	6.473
	904628.78	138816.18	188486.5	7697.78	90.03	6.521
	41038.01	137739.21	188434.2	7730.47	90.03	6.570
S-IVB GCSI	630.81	136662.33	188387.5	7763.39	90.02	6.620
	630.81	135751.80	188354.9	7791.41	90.00	6.664
	630.81	135741.69	188349.7	7792.91	90.00	0.302
	630.81	135740.66	188315.9	7793.08	90.00	0.005
EPØI	630.81	135740.66	188287.0	7793.10	90.00	0.005

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM MOTION (SEC)	*** RADIAL DISTANCE OF THE C G (M)	MAGNITUDE OF THE EARTH FIXED VELOCITY (M/SEC)	SUB VEHICLE LATITUDE SPHERICAL EARTH (DEG)	LONGITUDE ØN EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (KM)
552.26	6560279.31	6538.782	31.9215	-63.91	1646.33
552.38	6560289.19	6538.788	31.9225	-63.90	1647.13
555.00	6560488.63	6538.932	31.9429	-63.73	1663.74
557.88	6560694.00	6543.875	31.9651	-63.53	1682.06
560.00	6560838.19	6554.311	31.9813	-63.39	1695.52
564.18	656112.81	6576.069	32.0127	-63.11	1722.19
565.00	6561164.63	6580.412	32.0188	-63.06	1727.41
570.00	6561466.06	6607.338	32.0554	-62.72	1759.42
575.00	6561742.19	6634.554	32.0912	-62.38	1791.57
580.00	6561994.06	6662.049	32.1262	-62.04	1823.85
585.00	6562221.75	6689.800	32.1603	-61.70	1856.26
590.00	6562425.88	6717.791	32.1934	-61.36	1888.80
595.00	6562607.50	6746.019	32.2257	-61.02	1921.48
600.00	6562767.38	6774.478	32.2571	-60.67	1954.30
605.00	6562906.69	6803.168	32.2875	-60.32	1987.26
610.00	6563026.56	6832.087	32.3169	-59.97	2020.35
615.00	6563128.19	6861.285	32.3454	-59.62	2053.59
620.00	6563212.81	6890.725	32.3730	-59.27	2086.96
625.00	6563281.63	6920.374	32.3995	-58.91	2120.48
630.00	6563336.00	6950.248	32.4250	-58.56	2154.15
635.00	6563377.25	6980.348	32.4495	-58.20	2187.96
640.00	6563406.69	7010.678	32.4730	-57.84	2221.91
645.00	6563425.81	7041.240	32.4954	-57.47	2256.02
650.00	6563436.00	7072.033	32.5168	-57.11	2290.27
655.00	6563438.69	7103.058	32.5371	-56.75	2324.67
660.00	6563435.19	7134.315	32.5562	-56.38	2359.22
665.00	6563427.19	7165.806	32.5743	-56.01	2393.93
670.00	6563415.88	7197.548	32.5913	-55.64	2428.79
675.00	6563397.38	7229.568	32.6070	-55.27	2463.80
680.00	6563374.56	7261.810	32.6217	-54.89	2498.97
685.00	6563351.06	7294.280	32.6351	-54.52	2534.30
690.00	6563330.38	7326.973	32.6474	-54.14	2569.78
695.00	6563315.75	7359.890	32.6585	-53.76	2605.43
699.23	6563310.56	7387.906	32.6669	-53.44	2635.69
700.00	6563310.38	7389.405	32.6683	-53.38	2641.23
705.00	6563309.50	7389.579	32.6769	-52.99	2677.10
709.23	6563308.69	7389.596	32.6831	-52.67	2707.43

**** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED; EARTH CENTERED PLUMBLINE SYSTEM

TABLE 2.2 (BTØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM MOTION (SEC)	X CØRÐINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	Y CØRÐINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	Z CØRÐINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	X CØRÐINATE VEL. IN THE XXXE SYSTEM (M/S)	Y CØRÐINATE VEL. IN THE XXXE SYSTEM (M/S)	Z CØRÐINATE VEL. IN THE XXXE SYSTEM (M/S)
S-II/SIVB SEP	552.26	-29332.125	26580.152	1675797.531	-1588.916	6340.312
S-IVB ENGINE START	552.38	-29530.813	27020.320	1676590.047	-1589.937	6340.061
	555.00	-33718.000	27468.071	1663168.750	-1611.293	6334.781
S-IVB 90 THRUST	557.88	-38399.125	27585.353	1711432.625	-1635.232	6333.709
	560.00	-41878.438	28367.728	1724841.063	-1653.229	6339.790
S-IVB ULLAGE JETT	564.18	-48865.375	29131.893	1751393.875	-1688.747	6352.874
	565.00	-50250.313	29282.094	1756578.875	-1695.906	6355.452
	570.00	-58841.313	30210.405	1788395.563	-1740.425	6371.251
	575.00	-67654.000	31153.204	1820291.563	-1784.712	6387.175
	580.00	-76689.438	32110.810	1852267.078	-1829.503	6403.011
	585.00	-85949.563	33683.750	1884321.531	-1874.587	6418.791
	590.00	-95435.750	34772.216	1916454.750	-1919.941	6434.504
	595.00	-105149.313	35076.535	1948666.359	-1965.535	6450.152
	600.00	-115091.438	36096.779	1980956.063	-2011.348	6465.726
	605.00	-125263.125	37133.175	2013323.531	-2057.371	6481.256
	610.00	-135665.563	38185.811	2045768.406	-2103.600	6496.712
	615.00	-146299.563	39254.804	2078290.453	-2150.040	6512.153
	620.00	-157166.313	40340.230	2110889.656	-2196.690	6527.541
	625.00	-168266.813	41442.252	2143565.563	-2243.550	6542.840
	630.00	-179602.063	42560.849	2176317.781	-2290.592	6558.075
	635.00	-191173.063	43696.138	2209146.000	-2337.827	6573.242
	640.00	-202980.750	44848.159	2242049.906	-2385.255	6588.346
	645.00	-215025.875	46017.071	2275029.188	-2432.883	6603.386
	650.00	-227309.813	47202.865	2308083.563	-2480.711	6618.359
	655.00	-239833.313	48405.637	2341212.594	-2528.740	6633.266
	660.00	-252597.563	49625.477	2374415.938	-2576.973	6648.105
	665.00	-265603.313	50862.446	2407693.344	-2625.414	6662.876
	670.00	-278852.063	52116.648	2441044.406	-2674.423	6677.452
	675.00	-292348.813	53388.353	2474466.938	-2724.524	6691.639
	680.00	-306096.375	54677.738	2507961.000	-2774.123	6706.020
	685.00	-320090.813	55984.794	2541527.063	-2823.647	6720.437
	690.00	-334332.500	57309.618	2575165.313	-2873.026	6734.917
	695.00	-348820.813	58652.230	2608876.188	-2922.300	6749.451
S-IVB GCSI	699.23	-361264.125	59601.426	2637438.250	-2963.954	6761.762
	700.00	-363555.188	60012.613	2642658.688	-2970.339	6760.580
	705.00	-378502.125	61387.868	2676420.000	-3008.435	6743.800
EPØI	709.23	-391289.375	62560.652	2704901.625	-3040.531	6729.321

TABLE 2.2 (BIØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FRØM FIRST MØTION (SEC)	CØMMANDED PITCH ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN PITCH (DEG)	CØMMANDED YAW ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN YAW (DEG)	CØMMANDED ROLL ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN RØLL (DEG)
S-II/SIVB SEP	552.26	-96.134	0.565	0.163917	0.000	-0.00063474
S-IVB ENGINE START	552.38	-96.134	0.565	0.163884	0.000	-0.00055016
	555.00	-96.134	0.565	0.150598	0.000	0.00131241
S-IVB 90 THRUST	557.88	-96.134	0.565	0.169151	0.000	0.05096086
	560.00	-96.134	0.565	0.342893	0.000	0.23566859
S-IVB ULLAGE JETT	564.18	-95.509	0.101	-0.136499	0.000	-0.13249274
	565.00	-99.671	0.106	-0.242284	0.000	-0.21366115
	570.00	-100.199	0.259	0.035569	0.000	0.33424254
	575.00	-101.050	0.390	0.107586	0.000	0.65638945
	580.00	-101.879	0.508	0.252154	0.000	0.83556080
	585.00	-102.562	0.579	0.324083	0.000	0.87656877
	590.00	-103.184	0.627	0.377243	0.000	0.89657822
	595.00	-103.751	0.656	0.408590	0.000	0.92925724
	600.00	-104.291	0.673	0.427259	0.000	0.96103910
	605.00	-104.814	0.681	0.437774	0.000	0.94387063
	610.00	-105.325	0.682	0.438497	0.000	0.92864455
	615.00	-105.834	0.680	0.435794	0.000	0.91464245
	620.00	-106.363	0.678	0.433476	0.000	0.89328048
	625.00	-106.834	0.669	0.424847	0.000	0.88433227
	630.00	-107.305	0.660	0.414503	0.000	0.87657604
	635.00	-107.779	0.651	0.404363	0.000	0.86827458
	640.00	-108.255	0.642	0.394311	0.000	0.85925148
	645.00	-108.733	0.633	0.384760	0.000	0.84925419
	650.00	-109.207	0.625	0.375681	0.000	0.84036057
	655.00	-109.684	0.618	0.367063	0.000	0.83135838
	660.00	-110.162	0.611	0.359401	0.000	0.82110444
	665.00	-110.643	0.606	0.352988	0.000	0.81157409
	670.00	-111.125	0.690	0.441369	0.000	0.29923621
	675.00	-111.607	0.677	0.424277	0.000	0.47868049
	680.00	-112.089	0.666	0.411045	0.000	0.63893504
	685.00	-112.571	0.653	0.399414	0.000	0.78235377
	690.00	-113.052	0.632	0.379816	0.000	0.89572895
	695.00	-113.532	0.633	0.373009	0.000	0.94726235
S-IVB GCS1	699.23	-112.330	0.633	0.373879	0.000	0.91710813
	700.00	-112.330	0.633	0.373277	0.000	0.90618584
	705.00	-112.330	0.633	0.367939	0.000	0.83522893
EPØI	709.23	-112.330	0.633	0.361217	0.000	0.77519783

TABLE 2.2 (BTØ)
 AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FRØM FIRST MØTIØN (SEC)	MACH NUMBER	DYNAMIC PRESSURE (NT/M**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALØNG VELOCITY VECTØR (KG)	AERØDYNAMIC LOAD (KG/M**2)	MAGNITUDE ØF THE AERØDYNAMIC FØRCE VECTOR (KG)
S-II/SIVB SEP	8.92	0.01	9.8777	0.0118	0.0105	0.0174
S-IVB ENGINE START	8.92	0.01	9.8752	0.0118	0.0104	0.0172
	8.92	0.01	9.8310	0.0117	0.0105	0.0175
S-IVB 90 THRUST	8.92	0.01	9.9757	0.0118	0.0112	0.0192
	8.93	0.01	10.6532	0.0115	0.0092	0.0143
S-IVB ULLAGE JETT	8.95	0.01	8.7334	0.0113	0.0082	0.0123
	8.96	0.01	7.8528	0.0113	0.0077	0.0115
	8.98	0.01	7.3488	0.0113	0.0074	0.0110
	9.02	0.01	7.0393	0.0113	0.0068	0.0101
	9.05	0.01	6.4538	0.0113	0.0064	0.0096
	9.08	0.01	6.1274	0.0113	0.0061	0.0091
	9.11	0.01	5.8362	0.0114	0.0059	0.0088
	9.15	0.01	5.6133	0.0114	0.0057	0.0086
	9.18	0.01	5.4186	0.0114	0.0056	0.0083
	9.22	0.01	5.2411	0.0115	0.0054	0.0081
	9.26	0.01	5.0774	0.0116	0.0053	0.0079
	9.29	0.01	4.9204	0.0116	0.0051	0.0076
	9.33	0.01	4.7293	0.0117	0.0050	0.0075
	9.37	0.01	4.5974	0.0118	0.0049	0.0073
	9.41	0.01	4.4712	0.0119	0.0048	0.0071
	9.45	0.01	4.3420	0.0119	0.0047	0.0070
	9.49	0.01	4.2089	0.0120	0.0046	0.0068
	9.53	0.01	4.0706	0.0121	0.0045	0.0066
	9.57	0.01	3.9364	0.0122	0.0043	0.0065
	9.62	0.01	3.8008	0.0123	0.0042	0.0063
	9.66	0.01	3.6585	0.0124	0.0041	0.0061
	9.70	0.01	3.5179	0.0125	0.0041	0.0061
	9.74	0.01	1.0913	0.0126	0.0021	0.0019
	9.79	0.01	1.7746	0.0128	0.0021	0.0031
	9.83	0.01	2.3652	0.0129	0.0028	0.0042
	9.88	0.01	2.8771	0.0129	0.0035	0.0052
	9.92	0.01	3.3744	0.0130	0.0041	0.0061
	9.97	0.01	3.7303	0.0132	0.0046	0.0068
S-IVB GCSI	10.00	0.01	4.0009	0.0133	0.0049	0.0074
	10.01	0.01	4.0952	0.0133	0.0050	0.0075
	10.01	0.01	4.4125	0.0133	0.0055	0.0081
EPØI	10.01	0.01	4.7162	0.0133	0.0058	0.0087

TABLE 2.2 (BTØ)
 AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME	X PØSI CØRD	Y PØSI CØRD	Z PØSI CØRD	X VEL. CØMP.	Y VEL. CØMP.	Z VEL. CØMP.
FRØM	SPACE FIXED	SPACE FIXED	SPACE FIXED	SPACE FIXED	SPACE FIXED	SPACE FIXED
FIRST	EARTH CENTER	EARTH CENTER	EARTH CENTER	EARTH CENTER	EARTH CENTER	EARTH CENTER
MØTIØN	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS
(SEC)	(M)	(M)	(M)	(M/S)	(M/S)	(M/S)
S-II/SIVB SEP	6281479.4	79565.3	1890490.0	-1925.773	90.604	6668.816
S-IVB ENGINE START	6281238.6	79576.6	1891323.6	-1926.884	90.591	6668.503
	6276167.4	79813.2	1908759.8	-1950.126	90.331	6661.919
S-IVB 90 THRUST	6270506.0	80073.3	1927965.1	-1976.308	90.027	6659.382
	6266303.1	80263.6	1942061.5	-1996.193	89.828	6664.361
S-IVB ULLAGE JETT	6257809.2	80638.8	1969967.7	-2035.487	89.450	6675.249
	6256205.0	80711.7	1975415.6	-2043.384	89.325	6677.386
	6245865.3	81156.5	2008835.1	-2092.432	88.636	6690.437
	6235281.3	81598.2	2042320.1	-2141.267	88.069	6703.583
	6224451.7	82037.3	2075870.6	-2190.617	87.552	6716.581
	6213374.6	82473.8	2109485.7	-2240.269	87.085	6729.471
	6202048.5	82908.2	2143165.0	-2290.204	86.645	6742.241
	6190472.1	83340.3	2176907.8	-2340.389	86.223	6754.897
	6178644.3	83770.4	2210713.7	-2390.802	85.810	6767.436
	6166563.8	84198.4	2244581.9	-2441.437	85.403	6779.860
	6154229.5	84624.4	2278511.9	-2492.286	84.995	6792.170
	6141640.5	85048.4	2312503.3	-2543.358	84.585	6804.412
	6128795.6	85470.3	2346555.7	-2594.652	84.171	6816.549
	6115693.6	85890.1	2380668.4	-2646.163	83.751	6828.545
	6102333.6	86307.8	2414840.8	-2697.866	83.324	6840.425
	6088714.6	86723.3	2449072.3	-2749.771	82.889	6852.186
	6074835.6	87136.6	2483362.3	-2801.878	82.446	6863.831
	6060695.5	87547.8	2517710.3	-2854.194	81.995	6875.359
	6046293.3	87956.6	2552115.6	-2906.720	81.536	6886.767
	6031628.0	88363.1	2586577.6	-2959.454	81.070	6898.055
	6016698.4	88767.3	2621095.8	-3012.402	80.598	6909.222
	6001503.7	89169.1	2655669.5	-3065.566	80.118	6920.267
	5986042.4	89568.5	2690298.0	-3119.301	79.650	6931.046
	5970308.5	89965.6	2724978.8	-3174.123	79.214	6941.347
	5954302.1	90360.6	2759711.7	-3228.461	78.760	6951.815
	5938024.1	90753.2	2794496.8	-3282.738	78.298	6962.274
	5921475.0	91143.5	2829334.3	-3336.883	77.825	6972.757
	5904655.4	91531.4	2864224.3	-3390.936	77.338	6983.251
S-IVB GC S1	5890222.3	91857.6	2893767.6	-3436.641	76.928	6992.110
	5887566.1	91916.9	2899165.6	-3443.616	76.842	6990.350
	5870244.1	92299.7	2934066.7	-3485.133	76.258	6969.947
EPØI	5855435.3	92621.0	2963498.0	-3520.094	75.761	6952.383

TABLE 2-2 (BTØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTIØN (SEC)	GIMBAL DEFLECTIØN ANG REQUIRED PITCH CHANL (DEG)	GIMBAL DEFLECTIØN ANG REQUIRED YAW CHANL (DEG)	GIMBAL DEFLECTIØN ANG REQUIRED RØLL CHANL (DEG)	EULERIAN ATTITUDE RATE IN PITCH (DEG/S)	EULERIAN ATTITUDE RATE IN YAW (DEG/S)	EULERIAN ATTITUDE RATE IN RØLL (DEG/S)
S-II/SIVB SEP	0.0000	0.000000	0.000000	-0.09754047	-0.00003261	0.00039809
S-IVB ENGINE START	-0.0131	-0.037970	0.000000	-0.09725539	-0.00049523	0.00039791
	-0.3225	-0.343120	0.000000	-0.09077111	-0.000966290	0.00057110
S-IVB 90 THRUST	-0.1864	-0.274223	0.000000	0.18654976	0.06824908	0.07199447
	0.2996	-0.127238	0.000000	0.20489661	0.06092363	0.07519590
S-IVB ULLAGE JETT	-0.0561	-0.341896	0.000000	-1.21792682	0.17605795	-0.11470229
	-0.4787	-0.364774	0.000000	-1.04163486	-0.08729824	-0.06284157
	0.2659	-0.140574	0.000000	0.12611097	0.03803986	0.12566721
	0.0869	-0.203092	0.000000	-0.29474812	0.02227439	0.03794278
	0.1046	-0.186881	0.000000	-0.13704765	0.02273922	0.02647148
	0.1117	-0.194325	0.000000	-0.13628961	0.01419409	0.00161086
	0.1102	-0.193969	0.000000	-0.11958167	0.01016279	0.00489106
	0.1131	-0.195708	0.000000	-0.11119465	0.00655923	0.00632198
	0.1140	-0.196308	0.000000	-0.10669375	0.00470421	-0.00445093
	0.1141	-0.195982	0.000000	-0.10347662	0.00269825	-0.00398264
	0.1157	-0.197503	0.000000	-0.10137145	0.00134176	-0.00368374
	0.1192	-0.198584	0.000000	-0.10121891	0.00086484	-0.00371696
	0.1098	-0.198554	0.000000	-0.10623351	0.00090105	-0.00487239
	0.1187	-0.200193	0.000000	-0.09127526	0.00077410	-0.00163520
	0.1168	-0.200954	0.000000	-0.09512758	-0.00053369	-0.00250249
	0.1190	-0.201765	0.000000	-0.09413963	-0.00062501	-0.00228922
	0.1192	-0.202541	0.000000	-0.09533472	-0.00052016	-0.00255760
	0.1187	-0.203281	0.000000	-0.09584789	-0.00044360	-0.00267057
	0.1204	-0.204003	0.000000	-0.09430297	-0.00040376	-0.00230741
	0.1213	-0.204733	0.000000	-0.09552383	-0.00026127	-0.00257726
	0.1202	-0.205406	0.000000	-0.09537685	-0.00004812	-0.00251635
	0.1234	-0.206122	0.000000	-0.09583614	0.00022305	-0.00258966
	-0.3885	-0.185952	0.000000	-0.52466641	0.01627021	-0.10001982
	0.2346	-0.211635	0.000000	0.18840791	-0.00754165	0.06429737
	0.1054	-0.208795	0.000000	0.01098639	-0.00160352	0.02328319
	0.1290	-0.209493	0.000000	0.04191452	-0.00379283	0.03030310
	0.1250	-0.209849	0.000000	0.02844244	-0.00518000	0.01515109
	0.1142	-0.209197	0.000000	-0.01518351	0.00295784	0.00596576
S-IVB GCS1	0.1282	-0.211686	0.000000	0.00376140	-0.00087952	-0.01403308
	0.1296	-0.212113	0.000000	0.00325740	-0.00085180	-0.01414953
	0.1436	-0.216890	0.000000	0.00351921	-0.00140133	-0.01417321
EPØI	0.1565	-0.222699	0.000000	0.00382093	-0.00188190	-0.01417716

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM MOTION (SEC)	TOTAL VEHICLE THRUST (LB)	TOTAL VEHICLE WEIGHT (LB)	ALTITUDE ABOVE EARTH (FT)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (FT/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (FT/S**2)
552.26	6307.60	367053.34	610570.8	22775.25	89.35	0.553
552.38	6164.24	367053.34	610601.4	22775.27	89.35	0.540
555.00	6652.10	366971.37	611219.4	22775.81	89.39	0.583
557.88	18466.4.59	366497.34	611852.8	22792.10	89.43	16.211
560.00	196989.36	365537.69	612296.8	22826.39	89.45	17.338
564.18	202547.19	363623.76	613138.1	22897.86	89.48	17.921
565.00	202758.32	363105.70	613296.6	22912.12	89.48	17.969
570.00	203958.09	360744.00	614213.4	23000.55	89.53	18.190
575.00	204614.49	358366.97	615046.1	23089.94	89.57	18.370
580.00	204364.77	355986.44	615798.2	23180.23	89.61	18.470
585.00	204489.73	353606.72	616469.8	23271.35	89.65	18.606
590.00	204469.57	351226.85	617062.8	23363.26	89.69	18.730
595.00	204445.96	348847.23	617580.9	23455.94	89.73	18.856
600.00	204402.53	346467.78	618026.3	23549.37	89.76	18.981
605.00	204362.31	344088.51	618402.8	23643.55	89.79	19.109
610.00	204311.17	341709.16	618714.6	23738.48	89.82	19.237
615.00	205009.46	339326.87	618964.8	23834.31	89.85	19.438
620.00	204490.36	336942.97	619158.4	23930.94	89.88	19.526
625.00	204407.40	334561.97	619298.6	24028.25	89.90	19.657
630.00	204313.15	332181.75	619390.5	24126.30	89.93	19.789
635.00	204234.72	329802.30	619437.4	24225.08	89.95	19.924
640.00	204174.52	327423.50	619444.4	24324.61	89.96	20.063
645.00	204104.06	325045.31	619416.7	24424.90	89.98	20.203
650.00	204026.42	322667.66	619357.7	24525.95	89.99	20.344
655.00	203949.11	320290.54	619273.0	24627.75	90.00	20.487
660.00	203871.79	317913.89	619167.0	24730.31	90.01	20.632
665.00	203791.03	315537.80	619044.1	24833.64	90.01	20.780
670.00	203710.27	313162.13	618909.0	24937.79	90.02	20.928
675.00	203635.54	310786.84	618748.9	25042.85	90.03	21.081
680.00	203566.07	308411.93	618573.5	25148.64	90.04	21.236
685.00	203498.01	306037.29	618393.9	25255.17	90.03	21.394
690.00	203432.75	303662.98	618222.3	25362.44	90.03	21.554
695.00	203389.19	301288.86	618069.3	25470.44	90.02	21.719
699.23	203368.64	299281.49	617962.3	25562.36	90.00	21.863
700.00	9225.71	295259.20	617945.0	25567.28	90.00	0.992
705.00	141.81	295256.92	617834.3	25567.85	90.00	0.015
709.23	141.81	295256.92	617739.4	25567.92	90.00	0.015

S-II/SIVB SEP

S-IVB ENGINE START

S-IVB 90 THRUST

S-IVB ULLAGE JETT

S-IVB GCS1

EP01

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG
 TABLE 2-2 (BTØ)

TIME FROM FIRST MOTION (SEC)	**** RADIAL DISTANCE OF THE C G (FT)	MAGNITUDE OF THE EARTH FIXED VELOCITY (FT/SEC)	SUB VEHICLE LATITUDE SPHERICAL EARTH (DEG)	LONGITUDE OF EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (NM)
S-II/SIVB SEP	552.26	21523226.00	31.9215	-63.91	888.95
S-IVB ENGINE START	552.38	21523258.25	31.9225	-63.90	889.38
	555.00	21523912.75	31.9429	-63.73	898.35
S-IVB 90 THRUST	557.88	21524586.50	31.9651	-63.53	908.24
	560.00	21525059.50	31.9813	-63.39	915.51
S-IVB ULLAGE JETT	564.18	21525960.50	32.0127	-63.11	929.91
	565.00	21526130.50	32.0188	-63.06	932.72
	570.00	21527119.50	32.0554	-62.72	950.01
	575.00	21528025.50	32.0912	-62.38	967.37
	580.00	21528851.75	32.1262	-62.04	984.80
	585.00	21529598.75	32.1603	-61.70	1002.30
	590.00	21530268.50	32.1934	-61.36	1019.87
	595.00	21530864.25	32.2257	-61.02	1037.52
	600.00	21531388.75	32.2571	-60.67	1055.24
	605.00	21531846.00	32.2875	-60.32	1073.03
	610.00	21532239.25	32.3169	-59.97	1090.90
	615.00	21532572.75	32.3454	-59.62	1108.85
	620.00	21532850.25	32.3730	-59.27	1126.87
	625.00	21533076.00	32.3995	-58.91	1144.97
	630.00	21533254.50	32.4250	-58.56	1163.15
	635.00	21533389.75	32.4495	-58.20	1181.40
	640.00	21533486.25	32.4730	-57.84	1199.74
	645.00	21533549.00	32.4954	-57.47	1218.15
	650.00	21533582.50	32.5168	-57.11	1236.65
	655.00	21533591.25	32.5371	-56.75	1255.22
	660.00	21533579.75	32.5562	-56.38	1273.88
	665.00	21533553.50	32.5743	-56.01	1292.62
	670.00	21533516.50	32.5913	-55.64	1311.44
	675.00	21533455.75	32.6070	-55.27	1330.35
	680.00	21533381.00	32.6217	-54.89	1349.34
	685.00	21533303.75	32.6351	-54.52	1368.41
	690.00	21533236.00	32.6474	-54.14	1387.57
	695.00	21533188.00	32.6585	-53.76	1406.82
S-IVB GCSI	699.23	21533171.00	32.6669	-53.44	1423.16
	700.00	21533170.25	32.6683	-53.38	1426.15
	705.00	21533167.50	32.6769	-52.99	1445.52
EPØI	709.23	21533164.75	32.6831	-52.67	1461.90

**** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

TABLE 2.2 (BTØ)
 AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MØTØN (SEC)	X CØRDINATE EARTH FIXED, PT. CENTERED PLUMB IN SYS, (FT)	Y CØRDINATE EARTH FIXED, PT. CENTERED PLUMB IN SYS, (FT)	Z CØRDINATE EARTH FIXED, PT. CENTERED PLUMB IN SYS, (FT)	X CØMPONENT ØF VEL. IN THE XXE SYSTEM (FT/S)	Y CØMPONENT ØF VEL. IN THE XXE SYSTEM (FT/S)	Z CØMPONENT ØF VEL. IN THE XXE SYSTEM (FT/S)
S-II/SIVB SEP	552.26	-96234.005	88517.558	5498023.375	-5212.980	20801.548
S-IVB ENGINE START	552.58	-96885.867	88590.287	5500623.500	-5216.329	20800.724
	555.00	-110623.359	90118.342	5555015.563	-5286.393	20783.400
S-IVB 90 THRUST	557.88	-125981.381	91815.462	5614936.375	-5364.934	20779.886
	560.00	-137396.447	93669.972	5658927.313	-5423.981	20799.834
S-IVB ULLAGE JETT	564.18	-160332.594	95577.076	5746042.875	-5540.507	20842.763
	565.00	-164863.229	96669.862	5763054.000	-5563.996	20851.219
	570.00	-193048.924	99115.502	5867439.500	-5710.055	20903.053
	575.00	-221961.941	102208.674	5972085.125	-5855.355	20955.298
	580.00	-251605.766	105350.426	6076991.688	-6002.308	21007.254
	585.00	-281986.750	108542.486	6182157.188	-6150.218	21059.026
	590.00	-313108.414	111785.486	6287581.188	-6299.018	21110.576
	595.00	-344978.059	115680.495	6393262.313	-6448.605	21161.917
	600.00	-377596.578	118427.751	6459199.625	-6598.910	21213.043
	605.00	-410968.254	121828.001	6605392.125	-6749.906	21263.963
	610.00	-445096.988	125281.531	6711838.563	-6901.573	21314.672
	615.00	-479985.438	128788.726	6818538.188	-7053.936	21365.333
	620.00	-515637.504	132349.836	6925490.938	-7206.990	21415.816
	625.00	-552056.469	135865.393	7032695.375	-7360.728	21466.011
	630.00	-589245.609	139635.330	7140150.188	-7515.067	21515.992
	635.00	-627208.203	143360.031	7247854.313	-7670.036	21565.754
	640.00	-665947.336	147139.627	7355806.750	-7825.641	21615.308
	645.00	-705465.461	150974.641	7464006.500	-7981.900	21664.651
	650.00	-745767.094	154865.043	7572452.563	-8138.817	21713.776
	655.00	-786854.695	158811.145	7681143.625	-8296.390	21762.683
	660.00	-828732.156	162813.242	7750078.500	-8454.636	21811.368
	665.00	-871401.938	166871.541	7859256.313	-8613.563	21859.830
	670.00	-914868.969	170586.379	8008675.813	-8774.353	21907.650
	675.00	-959152.922	175158.635	8118329.813	-8938.727	21954.196
	680.00	-1004253.195	179388.904	8228218.438	-9101.453	22001.379
	685.00	-1050166.703	183677.145	8338343.313	-9263.934	22048.677
	690.00	-1096891.391	188623.680	8448705.000	-9425.939	22096.184
	695.00	-1144425.234	192428.576	8559305.000	-9587.598	22143.866
S-IVB GCS1	699.23	-1185249.750	196198.902	8653012.500	-9724.259	22184.258
	700.00	-1192766.359	196691.775	8670140.000	-9745.205	22180.381
	705.00	-1241804.859	201403.766	8780905.375	-9870.195	22125.327
EPØI	709.23	-1283757.781	205251.482	8874349.125	-9975.497	22077.825

TABLE 2.2 (BTØ)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM FIRST MOTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (LB/FT**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALØNG VELOCITØ VEKTØR (LB)	AERØDYNAMIC LØAD (LB/FT**2)	MAGNITUDE ØF THE AERØDYNAMIC FØRCE VECTØR (FT)
S-II/SIVB SEP	8.92	0.00	9.8777	0.0261	0.0022	0.0384
S-IVB ENGINE START	8.92	0.00	9.8752	0.0261	0.0022	0.0384
	8.92	0.00	9.8310	0.0259	0.0021	0.0379
S-IVB 90 THRUST	8.92	0.00	9.9757	0.0258	0.0021	0.0386
	8.93	0.00	10.6532	0.0261	0.0023	0.0423
S-IVB ULLAGE JETT	8.95	0.00	8.7334	0.0253	0.0019	0.0316
	8.96	0.00	7.8528	0.0250	0.0017	0.0270
	8.98	0.00	7.3488	0.0249	0.0016	0.0253
	9.02	0.00	7.0393	0.0249	0.0015	0.0242
	9.05	0.00	6.4538	0.0249	0.0014	0.0222
	9.08	0.00	6.1274	0.0249	0.0013	0.0211
	9.11	0.00	5.8362	0.0250	0.0013	0.0202
	9.15	0.00	5.6133	0.0250	0.0012	0.0195
	9.18	0.00	5.4186	0.0251	0.0012	0.0189
	9.22	0.00	5.2411	0.0252	0.0011	0.0183
	9.26	0.00	5.0774	0.0253	0.0011	0.0178
	9.29	0.00	4.9204	0.0255	0.0011	0.0174
	9.33	0.00	4.7293	0.0256	0.0010	0.0168
	9.37	0.00	4.5974	0.0258	0.0010	0.0164
	9.41	0.00	4.4712	0.0259	0.0010	0.0161
	9.45	0.00	4.3420	0.0261	0.0010	0.0157
	9.49	0.00	4.2089	0.0263	0.0010	0.0154
	9.53	0.00	4.0706	0.0265	0.0009	0.0150
	9.57	0.00	3.9364	0.0267	0.0009	0.0146
	9.62	0.00	3.8008	0.0270	0.0009	0.0142
	9.66	0.00	3.6585	0.0272	0.0009	0.0138
	9.70	0.00	3.5179	0.0274	0.0008	0.0134
	9.74	0.00	1.0913	0.0275	0.0003	0.0042
	9.79	0.00	1.7746	0.0278	0.0004	0.0069
	9.83	0.00	2.3652	0.0281	0.0006	0.0093
	9.88	0.00	2.8771	0.0284	0.0007	0.0114
	9.92	0.00	3.3744	0.0287	0.0008	0.0135
	9.97	0.00	3.7303	0.0290	0.0009	0.0150
S-IVB GCSI	10.00	0.00	4.0009	0.0292	0.0010	0.0162
	10.01	0.00	4.0552	0.0293	0.0010	0.0165
	10.01	0.00	4.4125	0.0293	0.0011	0.0179
EPØI	10.01	0.00	4.7162	0.0293	0.0012	0.0192

TABLE 2.2 (BTØ)
 AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG

TIME FROM MOTION (SEC)	X PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	Y PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	Z PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	X VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	Y VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	Z VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)
S-II/SIVB SEP	20608528.0	261040.9	6202395.1	-6318.154	297.256	21879.317
S-IVB ENGINE START	20607738.0	261078.0	6205129.9	-6321.799	297.215	21878.289
	20591100.3	261854.4	6262335.4	-6398.051	296.361	21856.688
S-IVB 90 THRUST	20572525.0	262707.7	6325344.7	-6483.949	295.363	21848.366
	20558737.0	263332.0	6371592.7	-6549.190	294.711	21864.701
S-IVB ULLAGE JETT	20531066.8	264562.8	6463148.6	-6678.106	293.473	21900.424
	20525606.8	264802.2	6481022.3	-6704.016	293.061	21907.433
	20491684.0	266261.4	6590666.3	-7025.155	288.940	21993.382
	20456959.3	267710.8	6700525.3	-7187.063	287.244	22036.026
	20421429.3	269151.1	6810598.9	-7349.965	285.713	22078.317
	20385087.0	270583.5	6920884.8	-7513.792	284.268	22120.214
	20347928.0	272008.4	7031381.1	-7678.440	282.883	22161.734
	20309947.8	273426.3	7142085.9	-7843.839	281.529	22202.872
	20271142.5	274837.3	7252997.5	-8009.963	280.192	22243.635
	20231508.3	276241.6	7364113.8	-8176.791	278.856	22284.021
	20191041.5	277639.2	7475432.8	-8344.352	277.510	22324.187
	20149739.0	279030.1	7586953.1	-8512.638	276.150	22364.005
	20107596.8	280414.3	7698673.5	-8681.636	274.775	22403.364
	20064611.3	281791.6	7810591.8	-8851.267	273.373	22442.340
	20020779.5	283162.0	7922705.9	-9021.557	271.945	22480.925
	19976097.8	284525.3	8035014.0	-9192.514	270.491	22519.130
	19930562.8	285881.4	8147514.0	-9364.155	269.012	22556.951
	19884171.5	287230.2	8260204.2	-9536.483	267.507	22594.378
	19836920.3	288571.5	8373082.5	-9709.495	265.979	22631.414
	19788805.5	289905.2	8486146.9	-9883.209	264.428	22668.050
	19739824.0	291231.2	8599395.4	-10057.632	262.855	22704.286
	19689972.5	292549.4	8712826.3	-10233.927	261.318	22739.653
	19639246.5	293859.8	8826437.0	-10413.788	259.890	22773.448
	19587626.3	295162.8	8940219.1	-10592.064	258.398	22807.792
	19535111.5	296458.6	9054172.0	-10770.136	256.883	22842.108
	19481706.0	297746.8	9168296.5	-10947.778	255.332	22876.500
	19427411.3	299027.3	9282592.9	-11125.117	253.735	22910.928
	19372229.0	300300.0	9397061.1	-11275.068	252.388	22939.994
S-IVB GCSI	19324876.0	301369.9	9493988.0	-11297.954	252.107	22934.219
	19316161.5	301564.7	9511698.1	-11434.163	250.189	22867.280
	19259331.0	302820.4	9626203.0	-11548.866	248.560	22809.655
EPØI	19210745.5	303874.8	9722762.3			

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	TOTAL ENGINE THRUST (NEWTONS)	TOTAL VEHICLE WEIGHT (KG)	ALTITUDE ABOVE SPHERICAL EARTH (M)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (M/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (M/S**2)
709.00	630.81	135740.66	188287.0	7793.10	90.00	0.005
712.00	630.81	135739.98	188267.7	7793.11	90.00	0.005
717.00	630.81	135738.75	188233.0	7793.14	90.00	0.005
721.00	630.81	135737.77	188204.8	7793.16	90.00	0.005
726.00	630.81	135736.54	188169.1	7793.18	90.00	0.005
731.00	630.81	135735.31	188133.2	7793.20	90.00	0.005
736.00	630.81	135734.08	188096.8	7793.23	90.00	0.005
741.00	630.81	135732.86	188060.2	7793.25	90.00	0.005
746.00	630.81	135731.63	188023.2	7793.28	90.00	0.005
751.00	630.81	135730.40	187985.9	7793.30	90.00	0.005
756.00	630.81	135729.17	187948.1	7793.33	90.00	0.005
761.00	830.98	135727.94	187910.0	7793.36	90.00	0.006
766.00	830.98	135726.71	187871.6	7793.39	90.00	0.006
771.00	830.98	135725.48	187832.8	7793.43	90.00	0.006
776.00	830.98	135724.26	187793.8	7793.46	90.00	0.006
781.00	830.98	135723.03	187754.2	7793.49	90.00	0.006
786.00	830.98	135721.80	187714.5	7793.53	90.00	0.006
791.00	817.18	135720.57	187674.5	7793.56	90.00	0.006
796.00	608.66	135687.16	186475.4	7794.49	90.00	0.004
927.00	190.77	135608.56	183197.0	7796.33	90.00	0.001
1247.00	187.96	135529.95	180343.6	7797.90	90.00	0.001
1567.00	185.15	135447.32	179231.1	7798.96	89.99	0.001
1887.00	158.61	135371.13	180688.2	7799.02	89.99	0.001
2207.00	126.35	135319.02	184622.3	7797.97	89.99	0.001
2527.00	104.38	135266.91	190013.4	7796.15	89.98	0.001
2847.00	94.42	135214.80	195363.0	7794.16	89.97	0.001
3167.00	90.85	135162.70	199355.4	7792.55	89.96	0.001
3487.00	86.47	135110.59	201381.7	7791.55	89.96	0.001
3807.00	79.07	135067.73	201676.5	7791.07	89.97	0.001
4127.00	71.67	135029.51	201024.4	7790.79	89.98	0.001
4447.00	65.59	134991.29	200219.4	7790.46	89.99	0.000
4767.00	64.45	134954.30	199588.1	7790.02	90.01	0.000
5087.00	63.32	134921.46	198848.9	7789.70	90.02	0.000
5407.00	62.28	134888.63	198379.8	7789.85	90.02	0.000
5727.00	62.28	134855.74	194726.9	7790.75	90.02	0.000
6047.00	62.28	134822.43	191049.5	7792.36	90.01	0.000
6367.00	62.28	134789.13	187235.9	7794.29	90.01	0.000
6687.00	60.55	134755.82	184599.2	7795.91	90.00	0.000
7007.00	58.76	134722.32	184288.4	7796.65	90.00	0.000
7327.00	56.96	134688.82	186713.5	7796.23	90.00	0.000
7647.00	55.56	134655.32	191300.1	7794.81	89.99	0.000
7967.00	55.38	134625.05	196719.5	7792.88	89.98	0.000
8287.00	55.33	134616.13	198276.1	7792.30	89.98	0.000
8383.00	55.31	134612.42	198897.3	7792.06	89.98	0.000
8423.00	55.29	134608.70	199498.8	7791.83	89.97	0.000
8463.00	55.27	134604.99	200078.6	7791.60	89.97	0.000
8503.00	55.24	134601.27	200634.5	7791.38	89.97	0.000
8543.00	55.22	134597.56	201165.3	7791.17	89.97	0.000

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	TOTAL VEHICLE ENGINE THRUST (NEWTONS)	TOTAL VEHICLE WEIGHT (KG)	ALTITUDE ABOVE SPHERICAL EARTH (M)	MAGNITUDE ØF SPACE FIXED VELØITY IN XPP SYSTEM (M/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LØNGITUDINAL ACCELERATION (M/S**2)
8623.00	55.20	134593.84	201668.9	7790.97	89.97	0.000
8663.00	55.18	134590.13	202144.2	7790.77	89.97	0.000
8703.00	55.13	134586.41	202590.2	7790.58	89.97	0.000
8743.00	54.79	134582.70	203005.8	7790.40	89.97	0.000
8783.00	54.45	134578.98	203390.3	7790.23	89.97	0.000
8823.00	54.11	134575.27	203743.8	7790.08	89.96	0.000
8863.00	53.77	134571.55	204065.4	7789.93	89.96	0.000
8903.00	53.44	134567.83	204355.4	7789.79	89.96	0.000
8943.00	53.10	134564.12	204614.0	7789.66	89.96	0.000
8983.00	52.76	134560.40	204841.7	7789.54	89.96	0.000
9023.00	52.42	134554.68	205039.1	7789.43	89.96	0.000
9063.00	52.08	134542.06	205207.0	7789.32	89.96	0.000
9103.00	51.75	134529.44	205346.4	7789.23	89.96	0.000
9143.00	51.41	134516.82	205458.3	7789.14	89.96	0.000
9183.00	51.07	134504.20	205544.1	7789.07	89.96	0.000
9223.00	50.73	134491.58	205605.0	7789.00	89.96	0.000
9263.00	50.39	134478.96	205642.9	7788.93	89.96	0.000
9267.00	50.36	134477.70	205645.2	7788.93	89.96	0.000
9272.00	50.32	134476.12	205648.0	7788.92	89.96	0.000
9277.00	50.27	134474.54	205650.4	7788.91	89.96	0.000

T86

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	*** RADIAL DISTANCE ØF THE C G (M)	MAGNITUDE ØF THE EARTH FIXED VELOCITY (M/SEC)	SUB VEHICLE LATITUDE ØN SPHERICAL EARTH (DEG)	LONGITUDE ØN EARTH (DEG)	ARC RANGE ALONG SPHER- EARTH TO SUB VEHICLE PT. (KM)
709.00	6563308.69	0.000	32.6831	-52.69	1461.02
712.00	6563308.00	0.000	32.6867	-52.46	1472.63
717.00	6563306.75	0.000	32.6922	-52.08	1492.00
721.00	6563305.81	0.000	32.6956	-51.77	1507.49
726.00	6563304.44	0.000	32.6987	-51.39	1526.86
731.00	6563303.13	0.000	32.7006	-51.01	1546.23
736.00	6563301.81	0.000	32.7011	-50.62	1565.60
741.00	6563300.38	0.000	32.7003	-50.24	1584.97
746.00	6563298.94	0.000	32.6983	-49.86	1604.33
751.00	6563297.50	0.000	32.6950	-49.48	1623.70
756.00	6563296.00	0.000	32.6903	-49.09	1643.07
761.00	6563294.50	0.000	32.6844	-48.71	1662.44
766.00	6563292.94	0.000	32.6772	-48.33	1681.81
771.00	6563291.38	0.000	32.6687	-47.95	1701.17
776.00	6563289.75	0.000	32.6589	-47.56	1720.54
781.00	6563288.13	0.000	32.6478	-47.18	1739.91
786.00	6563286.50	0.000	32.6354	-46.80	1759.28
791.00	6563284.75	0.000	32.6217	-46.42	1778.65
796.00	6563283.13	0.000	32.6067	-46.04	1798.02
927.00	6563240.88	0.000	31.7613	-36.11	2305.51
1247.00	6563214.19	0.000	26.3404	-13.29	3545.60
1567.00	6563347.31	0.000	17.3049	6.77	4786.15
1887.00	6563586.00	0.000	6.2205	24.66	6026.57
2207.00	6563896.94	0.000	-5.5325	41.75	7265.83
2527.00	6564330.81	0.000	-16.6916	59.55	8502.70
2847.00	6565006.50	0.000	-25.8889	79.45	9734.16
3167.00	6566039.75	0.000	-31.5659	102.11	10583.80
3487.00	6567452.88	0.000	-32.3924	126.42	9395.13
3807.00	6569114.06	0.000	-28.1466	149.80	8163.88
4127.00	6570749.00	0.000	-19.9072	170.54	6931.35
4447.00	6572026.94	0.000	-9.2378	-171.16	5698.41
4767.00	6572685.50	0.000	2.4346	-154.05	4465.25
5087.00	6572636.06	0.000	13.8488	-136.64	3232.75
5407.00	6571996.44	0.000	23.6965	-117.45	2003.21
5727.00	6571033.88	0.000	30.4664	-95.56	790.05
6047.00	6570050.06	0.000	32.6879	-71.50	530.65
6367.00	6569266.69	0.000	29.7589	-47.62	1727.80
6687.00	6568768.31	0.000	22.4510	-26.10	2956.32
7007.00	6568523.88	0.000	12.2803	-7.23	4189.15
7327.00	6568466.25	0.000	0.7357	10.08	5422.97
7647.00	6568576.63	0.000	-10.8868	27.29	6656.02
7967.00	6568920.81	0.000	-21.3057	45.90	7886.83
8287.00	6569613.06	0.000	-29.0579	67.07	9112.61
8383.00	6569902.19	0.000	-30.6255	73.96	9477.70
8423.00	6570034.25	0.000	-31.1565	76.89	9628.95
8463.00	6570173.00	0.000	-31.6122	79.86	9779.35
8503.00	6570318.31	0.000	-31.9905	82.85	9928.48
8543.00	6570470.13	0.000	-32.2896	85.87	10075.54
8583.00	6570628.31	0.000	-32.5081	88.91	10218.99

*** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	*** RADIALLY DISTANCE ØF THE C G (M)	MAGNITUDE ØF THE EARTH FIXED VELOCITY (M/SEC)	SUB VEHICLE LATITUDE ØN SPHERICAL EARTH (DEG)	L ØNGITUDE ØN ØBLATE EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TØ SUB VEHICLE PT. (KM)
8623.00	6570792.69	0.000	-32.6450	91.96	10355.38
8663.00	6570962.81	0.000	-32.6996	95.01	10475.95
8703.00	6571138.69	0.000	-32.6715	98.06	10556.95
8743.00	6571319.63	0.000	-32.5611	101.11	10556.98
8783.00	6571505.38	0.000	-32.3689	104.15	10476.06
8823.00	6571695.56	0.000	-32.0957	107.18	10355.58
8863.00	6571889.69	0.000	-31.7429	110.18	10219.28
8903.00	6572087.31	0.000	-31.3123	113.15	10075.93
8943.00	6572287.69	0.000	-30.8057	116.10	9928.99
8983.00	6572490.38	0.000	-30.2254	119.00	9779.99
9023.00	6572694.94	0.000	-29.5740	121.87	9629.72
9063.00	6572900.56	0.000	-28.8542	124.70	9478.61
9103.00	6573106.69	0.000	-28.0688	127.49	9326.92
9143.00	6573312.50	0.000	-27.2209	130.23	9174.82
9183.00	6573517.56	0.000	-26.3136	132.93	9022.41
9223.00	6573720.81	0.000	-25.3501	135.58	8869.76
9263.00	6573921.94	0.000	-24.3334	138.19	8716.92
9272.00	6573941.75	0.000	-24.2290	138.45	8701.63
9272.00	6573966.50	0.000	-24.0977	138.77	8682.51
9277.00	6573991.19	0.000	-23.9656	139.09	8663.39

T86

**** MEASURED FROM THE CENTER ØF THE EARTH IN THE SPACE FIXED; EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FRØM FIRST MØTION (SEC)	X CØORDINATE				Y CØORDINATE				Z CØORDINATE						
	EARTH FIXED,				EARTH FIXED,				EARTH FIXED,						
	PT. CENTERED PLUMBIN SYS, (M)				PT. CENTERED PLUMBIN SYS, (M)				PT. CENTERED PLUMBIN SYS, (M)						
				CØMPONENT ØF VEL. IN THE XXXE SYSTEM (M/S)				CØMPONENT ØF VEL. IN THE XXXE SYSTEM (M/S)				CØMPONENT ØF VEL. IN THE XXXE SYSTEM (M/S)			
709.00	5982673.813	79577.352	2697840.844	-3038.794	278.332	6730.107									
712.00	5973521.875	80421.017	2718010.219	-3061.538	279.867	6719.745									
717.00	5958119.438	81826.658	271565.375	-3099.352	282.391	6702.306									
721.00	5945661.438	82560.229	2778346.406	-3129.532	284.405	6688.202									
726.00	5929919.375	84388.533	2811742.844	-3167.170	286.914	6670.379									
731.00	5913989.500	85829.382	2845049.719	-3204.707	289.414	6652.344									
736.00	5897872.188	87282.659	2878265.875	-3242.142	291.905	6634.098									
741.00	5881567.875	88748.404	2911390.188	-3279.474	294.386	6615.640									
746.00	5865077.250	90226.499	2944421.781	-3316.702	296.859	6596.973									
751.00	5848400.750	91716.969	2977359.500	-3353.825	299.321	6578.095									
756.00	5831538.875	93219.718	3010202.250	-3390.841	301.774	6559.009									
761.00	5814492.188	94734.696	3042949.094	-3427.752	304.217	6539.717									
766.00	5797261.188	96261.853	3075598.938	-3464.556	306.650	6520.221									
771.00	5779846.438	97801.139	3108150.781	-3501.249	309.072	6500.517									
776.00	5762248.563	99352.533	3140603.625	-3537.832	311.484	6480.606									
781.00	5744468.063	100915.975	3172956.406	-3574.302	313.885	6460.489									
786.00	5726505.438	102491.359	3205208.063	-3610.659	316.275	6440.167									
791.00	5708361.375	104078.740	3237357.625	-3646.901	318.654	6419.640									
796.00	5690036.250	105677.894	3269404.000	-3683.027	321.022	6398.908									
927.00	5147525.438	151595.191	4068922.563	-4584.539	378.422	5785.239									
1247.00	3381560.906	289091.332	5617583.938	-6332.984	466.579	3788.405									
1567.00	1181564.625	439312.668	6441151.750	-7267.878	453.260	1302.932									
1887.00	-1169820.984	566411.211	6433611.500	-7268.808	321.077	-1349.078									
2207.00	-3370399.781	632749.914	5556853.938	-6335.693	76.752	-3822.695									
2527.00	-5137617.938	606854.133	4040674.063	-4590.096	-248.230	-5796.211									
2847.00	-6245320.750	470782.488	1968156.891	-2258.818	-601.863	-7014.915									
3167.00	-6552748.813	225441.758	-351476.199	357.366	-920.021	-7324.571									
3487.00	-6021956.313	-107246.084	-2618391.875	2923.678	-1137.432	-6689.815									
3807.00	-4721911.000	-485857.332	-4541008.375	5113.664	-1199.403	-5196.749									
4127.00	-2819309.688	-854612.648	-5873318.563	6649.283	-1072.512	-3041.010									
4447.00	-557376.711	-115153.172	-6446300.688	7335.380	-752.569	-503.000									
4767.00	1774998.375	-1318608.563	-6189575.500	7084.916	-268.233	2087.898									
5087.00	3880166.594	-1311960.922	-5140292.688	5930.861	320.876	4396.549									
5407.00	5489874.625	-1110892.266	-343775.906	4021.853	931.678	6126.623									
5727.00	6399441.250	-723469.961	-1304694.422	1602.082	1468.613	7059.241									
6047.00	6493460.688	-187549.248	982445.734	-1020.719	1843.058	7080.011									
6367.00	5760061.750	430539.488	3129151.219	-3513.920	1978.032	6191.957									
6687.00	4292368.063	1047787.672	4860702.875	-5560.706	1831.209	4514.263									
7007.00	2277061.125	1571553.188	5957303.063	-5560.706	1399.387	2267.420									
7327.00	-28925.053	1917211.500	6282373.000	-7357.623	723.497	-254.593									
7647.00	-2331132.375	2017601.375	5800112.375	-5517.131	-114.366	-2723.040									
7967.00	-4335606.563	1838742.453	4579548.125	-5517.131	-1001.169	-4819.026									
8287.00	-5786886.563	1385302.688	2784366.063	-3456.123	-1808.889	-6276.428									
8383.00	-6084519.375	1201510.188	2167627.906	-2738.611	-2016.785	-6559.611									
8423.00	-6187905.938	1119217.094	1903292.375	-2429.859	-2097.226	-6654.905									
8463.00	-6278843.125	1033784.695	1635417.063	-2173.719	-2173.719	-6736.580									
8503.00	-6357149.688	945374.938	1364549.500	-1798.428	-2246.059	-6804.490									
8543.00	-6422669.188	854157.914	1051242.844	-1477.015	-2314.051	-6858.520									
8583.00	-6475271.250	760311.305	816054.125	-1152.661	-2377.508	-6898.581									

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG IST 0PP

TIME FRØM FIRST MØTTON (SEC)	X CØORDINATE		Y CØORDINATE		Z CØORDINATE		CØMPONENT OF VEL. IN THE XXE SYSTEM (M/S)	CØMPONENT OF VEL. IN THE XXE SYSTEM (M/S)	CØMPONENT OF VEL. IN THE XXE SYSTEM (M/S)
	EARTH FIXED, PT. CENTERED PLUMB IN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMB IN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMB IN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMB IN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMB IN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMB IN SYS, (M)			
8623.00	-6514851.125	664020.102	539563.438	-826.015	-2436.252	-6924.614			
8663.00	-6541330.188	565476.227	262272.453	-497.732	-2490.114	-6936.587			
8703.00	-6554656.250	464878.176	-15196.050	-168.470	-2538.935	-6934.497			
8743.00	-6554803.125	362430.586	-252300.148	161.114	-2582.566	-6918.370			
8783.00	-6541771.250	258243.857	-568479.242	490.359	-2620.869	-6888.258			
8823.00	-6515587.313	152833.732	-843175.492	818.607	-2653.716	-6844.245			
8863.00	-6476304.313	46120.878	-1115834.906	1145.201	-2680.991	-6786.438			
8903.00	-6424001.625	-61569.798	-1385908.359	1469.489	-2702.590	-6714.977			
8943.00	-6358784.250	-170009.395	-1652852.969	1790.820	-2718.421	-6630.023			
8983.00	-6280783.500	-278965.457	-1916132.813	2108.552	-2728.402	-6531.771			
9023.00	-6190156.063	-388202.652	-2175220.063	2422.051	-2732.468	-6420.436			
9063.00	-6087084.063	-497483.273	-2429596.375	2730.686	-2730.563	-6296.264			
9103.00	-5971774.063	-606567.547	-2678753.500	3033.842	-2722.646	-6159.523			
9143.00	-5844457.563	-715214.367	-2922194.469	3330.910	-2708.687	-6010.509			
9183.00	-5705390.000	-823181.672	-3159434.656	3621.296	-2688.672	-5849.540			
9223.00	-5554850.438	-930227.281	-3350002.656	3904.415	-2662.600	-5676.960			
9263.00	-5393140.875	-1036108.977	-3613441.156	4179.702	-2630.483	-5493.133			
9267.00	-5376367.750	-1046623.852	-3635375.656	4206.779	-2626.939	-5474.146			
9272.00	-5355249.375	-1059747.266	-3662686.594	4240.505	-2622.425	-5450.261			
9277.00	-5333962.625	-1072647.906	-3689877.906	4274.099	-2617.817	-5426.208			

TR6

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTIØN (SEC)	CØMMANDED PITCH ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN PITCH (DEG)	CØMMANDED YAW ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN YAW (DEG)	CØMMANDED RØLL ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN RØLL (DEG)
709.00	-112.139	-112.1385	0.361	0.361217	0.775	0.77519783
712.00	-112.139	-112.1385	0.361	0.361217	0.775	0.77519783
717.00	-112.139	-112.1385	0.361	0.361217	0.775	0.77519783
721.00	-117.6531	-117.6531	0.544	0.544211	0.000	0.00000000
726.00	-117.9933	-117.9933	0.539	0.539355	0.000	0.00000000
731.00	-118.3334	-118.3334	0.534	0.534481	0.000	0.00000000
736.00	-118.674	-118.6736	0.530	0.529588	0.000	0.00000000
741.00	-119.014	-119.0137	0.525	0.524677	0.000	0.00000000
746.00	-119.354	-119.3538	0.520	0.519746	0.000	0.00000000
751.00	-119.694	-119.6940	0.515	0.514798	0.000	0.00000000
756.00	-120.034	-120.0341	0.510	0.509831	0.000	0.00000000
761.00	-120.374	-120.3743	0.505	0.504846	0.000	0.00000000
766.00	-120.714	-120.7144	0.500	0.499844	0.000	0.00000000
771.00	-121.055	-121.0546	0.495	0.494824	0.000	0.00000000
776.00	-121.395	-121.3947	0.490	0.489786	0.000	0.00000000
781.00	-121.735	-121.7349	0.485	0.484731	0.000	0.00000000
786.00	-122.075	-122.0750	0.480	0.479659	0.000	0.00000000
791.00	-122.415	-122.4152	0.475	0.474571	0.000	0.00000000
796.00	-122.755	-122.7553	0.469	0.469465	0.000	0.00000000
927.00	-131.668	-131.6677	0.330	0.330342	0.000	0.00000000
1247.00	-153.442	-153.4417	-0.036	-0.035900	0.000	0.00000000
1567.00	-175.220	-175.2204	-0.397	-0.397090	0.000	0.00000000
1887.00	162.996	162.9960	-0.702	-0.701630	0.000	0.00000000
2207.00	141.209	141.2094	-0.906	-0.905970	0.000	0.00000000
2527.00	119.424	119.4238	-0.981	-0.980896	0.000	0.00000000
2847.00	97.644	97.6441	-0.916	-0.915770	0.000	0.00000000
3167.00	75.874	75.8742	-0.720	-0.720030	0.000	0.00000000
3487.00	54.116	54.1158	-0.422	-0.421747	0.000	0.00000000
3807.00	32.368	32.3680	-0.064	-0.063528	0.000	0.00000000
4127.00	10.628	10.6281	0.304	0.303611	0.000	0.00000000
4447.00	-11.107	-11.1074	0.627	0.627481	0.000	0.00000000
4767.00	-32.841	-32.8411	0.862	0.862092	0.000	0.00000000
5087.00	-54.575	-54.5747	0.974	0.974141	0.000	0.00000000
5407.00	-76.309	-76.3089	0.948	0.947720	0.000	0.00000000
5727.00	-98.044	-98.0441	0.787	0.786562	0.000	0.00000000
6047.00	-119.782	-119.7818	0.514	0.513517	0.000	0.00000000
6367.00	-141.524	-141.5240	0.167	0.167338	0.000	0.00000000
6687.00	-163.273	-163.2726	-0.203	-0.202769	0.000	0.00000000
7007.00	174.971	174.9714	-0.544	-0.544096	0.000	0.00000000
7327.00	153.209	153.2091	-0.808	-0.807947	0.000	0.00000000
7647.00	131.444	131.4442	-0.957	-0.956640	0.000	0.00000000
7967.00	109.682	109.6819	-0.969	-0.968971	0.000	0.00000000
8287.00	87.927	87.9270	-0.843	-0.843273	0.000	0.00000000
8383.00	81.402	81.4025	-0.781	-0.780863	0.000	0.00000000
8423.00	78.684	78.6843	-0.752	-0.751826	0.000	0.00000000
8463.00	75.966	75.9662	-0.721	-0.721098	0.000	0.00000000
8503.00	73.248	73.2484	-0.689	-0.688750	0.000	0.00000000
8543.00	70.531	70.5307	-0.655	-0.654855	0.000	0.00000000
8583.00	67.813	67.8132	-0.619	-0.619488	0.000	0.00000000

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	COMMANDED PITCH ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN PITCH (DEG)	COMMANDED YAW ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN YAW (DEG)	COMMANDED RØLL ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN RØLL (DEG)
8623.00	65.096	65.0958	-0.583	-0.582730	0.000	0.00000000
8663.00	62.379	62.3787	-0.545	-0.544664	0.000	0.00000000
8703.00	59.662	59.6617	-0.505	-0.505375	0.000	0.00000000
8743.00	56.945	56.9449	-0.465	-0.464951	0.000	0.00000000
8783.00	54.228	54.2283	-0.423	-0.423485	0.000	0.00000000
8823.00	51.512	51.5118	-0.381	-0.381069	0.000	0.00000000
8863.00	48.795	48.7955	-0.338	-0.337799	0.000	0.00000000
8903.00	46.079	46.0793	-0.294	-0.293772	0.000	0.00000000
8943.00	43.363	43.3633	-0.249	-0.249087	0.000	0.00000000
8983.00	40.647	40.6474	-0.204	-0.203844	0.000	0.00000000
9023.00	37.932	37.9317	-0.158	-0.158146	0.000	0.00000000
9063.00	35.216	35.2161	-0.112	-0.112095	0.000	0.00000000
9103.00	32.501	32.5006	-0.066	-0.065793	0.000	0.00000000
9143.00	29.785	29.7852	-0.019	-0.019346	0.000	0.00000000
9183.00	27.070	27.0700	0.027	0.027142	0.000	0.00000000
9223.00	24.355	24.3548	0.074	0.073568	0.000	0.00000000
9263.00	21.640	21.6398	0.120	0.119826	0.000	0.00000000
9267.00	21.368	21.3683	0.124	0.124439	0.000	0.00000000
9272.00	21.029	21.0289	0.130	0.130201	0.000	0.00000000
9277.00	20.690	20.6895	0.136	0.135958	0.000	0.00000000

T86

TABLE 2.2 (EPØ)
 AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FRØM FIRST MØTØN (SEC)	MACH NUMBER	DYNAMIC PRESSURE (NT/M**2)	TØTAL ANGLE ØF ATTACK (DEG)	DRAG ALØNG VELOCITY VECTØR (KG)	AERØDYNAMIC LOAD (KG/M**2)	MAGNITUDE ØF THE AERØDYNAMIC FØRCE VECTØR (KG)
709.00	10.01	0.01	4.7162	1.0953	0.0000	0.0000
712.00	10.01	0.01	4.9049	1.0953	0.0000	0.0000
717.00	10.01	0.01	5.2454	1.0953	0.0000	0.0000
721.00	10.01	0.01	0.0321	1.0953	0.0000	0.0000
726.00	10.01	0.01	0.0198	1.0953	0.0000	0.0000
731.00	10.01	0.01	0.0076	1.0953	0.0000	0.0000
736.00	10.01	0.01	0.0053	1.0953	0.0000	0.0000
741.00	10.01	0.01	0.0174	1.0954	0.0000	0.0000
746.00	10.01	0.01	0.0297	1.0955	0.0000	0.0000
751.00	10.01	0.01	0.0420	1.0956	0.0000	0.0000
756.00	10.01	0.01	0.0544	1.0957	0.0000	0.0000
761.00	10.01	0.01	0.0667	1.0958	0.0000	0.0000
766.00	10.01	0.01	0.0790	1.0959	0.0000	0.0000
771.00	10.01	0.01	0.0914	1.0961	0.0000	0.0000
776.00	10.01	0.01	0.1037	1.0962	0.0000	0.0000
781.00	10.01	0.01	0.1160	1.0964	0.0000	0.0000
786.00	10.01	0.01	0.1284	1.0966	0.0000	0.0000
791.00	10.01	0.01	0.1407	1.0968	0.0000	0.0000
796.00	10.01	0.01	0.1530	1.0970	0.0000	0.0000
927.00	10.01	0.01	0.4722	1.1071	0.0000	0.0000
1247.00	10.06	0.01	1.1864	1.1636	0.0000	0.0000
1567.00	10.12	0.01	1.7240	1.2410	0.0000	0.0000
1887.00	10.16	0.01	2.0056	1.2939	0.0000	0.0000
2207.00	10.15	0.01	1.9895	1.2840	0.0000	0.0000
2527.00	10.10	0.01	1.6781	1.2102	0.0000	0.0000
2847.00	10.02	0.01	1.1173	1.1103	0.0000	0.0000
3167.00	9.96	0.01	0.3906	1.0275	0.0000	0.0000
3487.00	9.93	0.01	0.3989	0.9811	0.0000	0.0000
3807.00	9.93	0.01	1.1265	0.9735	0.0000	0.0000
4127.00	9.94	0.01	1.6888	0.9906	0.0000	0.0000
4447.00	9.95	0.01	2.0018	1.0080	0.0000	0.0000
4767.00	9.95	0.01	2.0191	1.0040	0.0000	0.0000
5087.00	9.93	0.01	1.7378	0.9735	0.0000	0.0000
5407.00	9.90	0.01	1.1989	0.9328	0.0000	0.0000
5727.00	9.87	0.01	0.4817	0.9062	0.0000	0.0000
6047.00	9.88	0.01	0.3100	0.9123	0.0000	0.0000
6367.00	9.91	0.01	1.0550	0.9565	0.0000	0.0000
6687.00	9.97	0.01	1.6453	1.0281	0.0000	0.0000
7007.00	10.01	0.01	1.9926	1.0979	0.0000	0.0000
7327.00	10.04	0.01	2.0454	1.1293	0.0000	0.0000
7647.00	10.02	0.01	1.7953	1.1026	0.0000	0.0000
7967.00	9.97	0.01	1.2787	1.0322	0.0000	0.0000
8287.00	9.91	0.01	0.5715	0.9535	0.0000	0.0000
8383.00	9.90	0.01	0.3376	0.9333	0.0000	0.0000
8423.00	9.89	0.01	0.2388	0.9256	0.0000	0.0000
8463.00	9.89	0.01	0.1402	0.9184	0.0000	0.0000
8503.00	9.88	0.01	0.0471	0.9117	0.0000	0.0000
8543.00	9.88	0.01	0.0699	0.9055	0.0000	0.0000
8583.00	9.87	0.01	0.1663	0.8999	0.0000	0.0000

TABLE 2.2 (EPØ)
 AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FRØM FIRST MØTØN (SEC)	MACH NUMBER	DYNAMIC PRESSURE (NT/M**2)	TØTAL ANGLE ØF ATTACK (DEG)	DRAG ALØNG VELOCITY VECTØR (KG)	AERØDYNAMIC LØAD (KG/M**2)	MAGNITUDE ØF THE AERØDYNAMIC FØRCE VECTØR (KG)
8623.00	9.87	0.01	0.2653	0.8948	0.0000	0.0000
8663.00	9.86	0.01	0.3642	0.8903	0.0000	0.0000
8703.00	9.86	0.01	0.4624	0.8863	0.0000	0.0000
8743.00	9.86	0.01	0.5598	0.8829	0.0000	0.0000
8783.00	9.85	0.01	0.6559	0.8800	0.0000	0.0000
8823.00	9.85	0.01	0.7505	0.8777	0.0000	0.0000
8863.00	9.85	0.01	0.8434	0.8759	0.0000	0.0000
8903.00	9.85	0.01	0.9345	0.8746	0.0000	0.0000
8943.00	9.85	0.01	1.0233	0.8738	0.0000	0.0000
8983.00	9.85	0.01	1.1099	0.8735	0.0000	0.0000
9023.00	9.85	0.01	1.1938	0.8736	0.0000	0.0000
9063.00	9.85	0.01	1.2751	0.8742	0.0000	0.0000
9103.00	9.85	0.01	1.3533	0.8751	0.0000	0.0000
9143.00	9.85	0.01	1.4285	0.8763	0.0000	0.0000
9183.00	9.85	0.01	1.5003	0.8779	0.0000	0.0000
9223.00	9.86	0.01	1.5687	0.8797	0.0000	0.0000
9263.00	9.86	0.01	1.6334	0.8818	0.0000	0.0000
9267.00	9.86	0.01	1.6396	0.8820	0.0000	0.0000
9272.00	9.86	0.01	1.6474	0.8823	0.0000	0.0000
9277.00	9.86	0.01	1.6551	0.8825	0.0000	0.0000

T86

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FRØM MØTIDN (SEC)	X ØSI CØRD			Y ØSI CØRD			Z ØSI CØRD			X VEL. CØMP.			Y VEL. CØMP.			Z VEL. CØMP.		
	SPACE FIXED			SPACE FIXED			SPACE FIXED			EARTH CENTER			EARTH CENTER			EARTH CENTER		
	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS
(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	
709.00	5856238.6	52597.3	2961918.5	-3518.203	75.771	6953.336												
712.00	5845645.6	52830.6	2982754.3	-3542.969	75.434	6940.772												
717.00	5827827.6	53206.3	3017405.4	-3584.131	74.843	6919.638												
721.00	5813425.2	53504.7	3045049.8	-3616.970	74.368	6902.556												
726.00	5795237.7	53875.1	3079508.7	-3657.906	73.772	6880.984												
731.00	5776845.9	54242.4	3113859.1	-3698.713	73.174	6859.169												
736.00	5758250.4	54606.8	3148099.8	-3739.389	72.573	6837.112												
741.00	5739451.9	54968.1	3182229.7	-3779.935	71.969	6814.815												
746.00	5720451.0	55326.5	3216247.4	-3820.347	71.363	6792.277												
751.00	5701248.3	55681.8	3250151.9	-3860.625	70.754	6769.500												
756.00	5681844.6	56034.0	3283941.9	-3900.767	70.143	6746.485												
761.00	5662240.6	56383.2	3317616.3	-3940.774	69.529	6723.236												
766.00	5642436.8	56729.3	3351173.7	-3980.644	68.913	6699.752												
771.00	5622434.1	57072.3	3384613.2	-4020.374	68.294	6676.032												
776.00	5602233.0	57412.2	3417933.5	-4059.962	67.673	6652.077												
781.00	5581834.4	57749.0	3451133.5	-4099.408	67.050	6627.888												
786.00	5561238.9	58082.7	3484211.9	-4138.709	66.424	6603.465												
791.00	5540447.2	58413.3	3517167.6	-4177.865	65.796	6578.809												
796.00	5519460.1	58740.7	3549999.4	-4216.874	65.166	6553.921												
927.00	4902589.9	106160.5	4362278.6	-5182.017	47.878	5822.243												
1247.00	2933954.3	114151.1	5869809.4	-6973.629	1.349	3485.863												
1567.00	546066.8	106905.2	6539718.0	-7770.605	-46.282	650.220												
1887.00	-1920275.2	85098.5	6275823.8	-7457.766	-88.609	-2279.828												
2207.00	-4112627.8	51390.1	5115505.4	-6078.842	-119.783	-4884.471												
2527.00	-5717674.9	10111.1	3224675.3	-3831.748	-135.336	-6790.265												
2847.00	-6506512.6	-33292.6	873783.2	-1039.442	-132.855	-7725.400												
3167.00	-6367326.4	-72983.1	-1601470.3	1898.410	-112.337	-7558.597												
3487.00	-5320756.2	-103516.3	-3848412.2	4563.635	-76.219	-6315.950												
3807.00	-3516331.4	-120581.9	-5547443.9	6578.257	-29.079	-4175.397												
4127.00	-1211023.3	-121604.9	-6457041.0	7656.568	22.929	-1441.231												
4447.00	1267066.3	-106130.5	-6447853.8	7645.084	72.850	1497.949												
4767.00	3565165.5	-75936.4	-5521233.9	6545.160	113.848	4223.645												
5087.00	5356126.9	-34842.1	-3809230.4	4513.747	140.149	6347.506												
5407.00	6385201.9	11768.3	-1555698.0	1840.772	147.870	7567.632												
5727.00	6506238.8	57651.0	918705.6	-1093.320	135.586	7711.553												
6047.00	5702111.5	56534.9	3262233.0	-3872.219	104.560	6759.498												
6367.00	4086879.8	122970.5	5141746.6	-6101.891	58.616	4846.074												
6687.00	1889776.1	133086.1	6289654.4	-7464.980	3.691	2241.659												
7007.00	-576835.7	125155.1	6541949.5	-7765.652	-52.886	-684.167												
7327.00	-2961559.4	59892.5	5862076.2	-6959.109	-103.359	-3513.947												
7647.00	-4924267.8	60420.9	4346738.6	-5159.973	-140.619	-5842.606												
7967.00	-6185204.2	11893.1	2212200.2	-2626.236	-159.245	-7337.338												
8287.00	-6565217.6	-39185.6	-237064.6	279.278	-156.311	-7786.309												
8423.00	-6495966.5	-53959.1	-981388.9	1161.851	-151.148	-7703.712												
8463.00	-6442204.4	-59951.8	-1288316.3	1525.735	-148.430	-7639.786												
8463.00	-6373553.6	-65829.2	-1592342.8	1886.152	-145.386	-7558.697												
8503.00	-6291368.9	-71578.4	-1892785.5	2244.294	-142.021	-7460.631												
8543.00	-6194637.4	-77186.7	-2188969.8	2593.362	-138.342	-7345.814												
8583.00	-6083977.7	-82641.6	-2480230.6	2938.572	-134.356	-7214.504												

TABLE 2.2 (EPØ)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG IST ØPP

TIME FROM FIRST MØTION (SEC)	X POSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (M)	Y POSI CØRD SPACE FIXED EARTH CENTER PLUMELIN SYS (M)	Z POSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (M)	X VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (M/S)	Y VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (M/S)	Z VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (M/S)
8623.00	-5959639.7	-87931.2	-2765914.0	3277.151	-130.071	-7067.001
8663.00	-5821903.8	-93043.5	-3045379.0	3608.341	-125.496	-6903.637
8703.00	-5671080.5	-57967.1	-3317998.3	3931.401	-120.640	-6724.782
8743.00	-5507509.4	-102691.0	-3583160.2	4245.609	-115.512	-6530.838
8783.00	-5331558.8	-107204.6	-3840269.8	4550.263	-110.122	-6322.242
8823.00	-5143624.5	-111497.5	-4088750.3	4844.680	-104.483	-6099.463
8863.00	-4944129.3	-115560.0	-4328044.2	5128.203	-98.605	-5863.000
8903.00	-4733521.8	-119382.8	-4557614.7	5400.197	-92.500	-5613.386
8943.00	-4512275.1	-122957.2	-4776946.8	5660.054	-86.181	-5351.179
8983.00	-4280886.6	-126274.7	-4985548.6	5907.193	-79.662	-5076.969
9023.00	-4039876.4	-129327.6	-5182952.1	6141.060	-72.955	-4791.368
9063.00	-3789785.6	-132108.7	-5368714.5	6361.133	-66.074	-4495.019
9103.00	-3531176.2	-134611.4	-5542418.9	6566.916	-59.034	-4188.584
9143.00	-3264628.8	-136829.5	-5703675.6	6757.951	-51.850	-3872.750
9183.00	-2990742.3	-138757.7	-5852122.7	6933.807	-44.537	-3548.226
9223.00	-2710131.8	-140391.0	-5987427.1	7094.091	-37.110	-3215.738
9263.00	-2423427.4	-141725.2	-6109285.1	7238.442	-29.585	-2876.032
9267.00	-2394446.4	-141842.0	-6120720.4	7251.988	-28.828	-2841.694
9272.00	-2358144.6	-141983.8	-6134821.2	7268.691	-27.880	-2798.681
9277.00	-2321759.8	-142120.8	-6148706.8	7285.139	-26.931	-2755.570

T86

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	GIMBAL DEFLECTION ANG REQUIRED PITCH CHANL (DEG)	GIMBAL DEFLECTION ANG REQUIRED YAW CHANNEL (DEG)	GIMBAL DEFLECTION ANG REQUIRED ROLL CHANNEL (DEG)	EULERIAN ATTITUDE RATE IN PITCH (DEG/S)	EULERIAN ATTITUDE RATE IN YAW (DEG/S)	EULERIAN ATTITUDE RATE IN ROLL (DEG/S)
709.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
712.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
717.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
721.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
726.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
731.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
736.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
741.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
746.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
751.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
756.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
761.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
766.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
771.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
776.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
781.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
786.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
791.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
796.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
927.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
1247.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
1567.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
1887.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
2207.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
2527.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
2847.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
3167.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
3487.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
3807.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
4127.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
4447.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
4767.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
5087.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
5407.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
5727.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
6047.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
6367.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
6687.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
7007.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
7327.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
7647.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
7967.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8287.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8383.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8423.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8463.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8503.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8543.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8583.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	GIMBAL DEFLECTION ANG REQUIRED PITCH CHANL (DEG)	GIMBAL DEFLECTION ANG REQUIRED YAW CHANNEL (DEG)	GIMBAL DEFLECTION ANG REQUIRED ROLL CHANNEL (DEG)	EULERIAN ATTITUDE RATE IN PITCH (DEG/S)	EULERIAN ATTITUDE RATE IN YAW (DEG/S)	EULERIAN ATTITUDE RATE IN ROLL (DEG/S)
8623.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8663.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8703.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8743.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8783.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8823.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8863.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8903.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8943.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
8983.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
9023.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
9063.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
9103.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
9143.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
9183.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
9223.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
9263.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
9267.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
9272.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
9277.00	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000

TB6

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	TOTAL VEHICLE ENGINE THRUST (LB)	TOTAL VEHICLE WEIGHT (LB)	ALTITUDE ABOVE SPHERICAL EARTH (FT)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (FT/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (FT/S**2)
709.00	141.81	295256.92	617739.6	25567.92	90.00	0.015
712.00	141.81	295255.42	617676.2	25567.96	90.00	0.015
717.00	141.81	295252.71	617562.2	25568.04	90.00	0.015
721.00	141.81	295250.55	617469.7	25568.10	90.00	0.015
726.00	141.81	295247.84	617352.6	25568.17	90.00	0.015
731.00	141.81	295245.13	617234.7	25568.25	90.00	0.015
736.00	141.81	295242.42	617115.6	25568.33	90.00	0.015
741.00	141.81	295239.72	616995.4	25568.41	90.00	0.015
746.00	141.81	295237.01	616873.9	25568.50	90.00	0.015
751.00	141.81	295234.30	616751.6	25568.58	90.00	0.015
756.00	141.81	295231.59	616627.6	25568.66	90.00	0.015
761.00	186.81	295228.88	616502.5	25568.76	90.00	0.020
766.00	186.81	295226.18	616376.6	25568.87	90.00	0.020
771.00	186.81	295223.47	616249.5	25568.98	90.00	0.020
776.00	186.81	295220.77	616121.3	25569.09	90.00	0.020
781.00	186.81	295218.05	615991.5	25569.20	90.00	0.020
786.00	186.81	295215.35	615861.1	25569.32	90.00	0.020
791.00	185.50	295212.64	615729.9	25569.43	90.00	0.020
796.00	183.71	295209.93	615597.0	25569.54	90.00	0.020
801.00	136.83	295138.98	611795.8	25572.48	90.00	0.015
806.00	42.89	298965.69	601040.0	25578.51	90.00	0.005
811.00	42.89	298792.39	591678.5	25583.66	90.00	0.005
816.00	41.62	298610.21	588028.5	25587.13	89.99	0.004
821.00	35.66	298442.25	592808.9	25587.34	89.99	0.004
826.00	28.40	298327.37	605716.3	25583.89	89.99	0.003
831.00	23.47	298212.49	623403.6	25577.91	89.98	0.003
836.00	21.23	298097.61	640954.8	25571.40	89.97	0.002
841.00	20.42	297982.73	654053.2	25566.10	89.96	0.002
846.00	19.44	297867.85	667010.0	25562.83	89.96	0.002
851.00	17.78	297773.36	661668.3	25561.24	89.97	0.002
856.00	16.11	297689.11	659528.8	25560.35	89.98	0.002
861.00	14.75	297604.85	656887.7	25559.25	89.99	0.002
866.00	14.49	297523.30	654816.7	25557.80	90.01	0.002
871.00	14.23	297450.91	652391.5	25556.75	90.02	0.002
876.00	14.00	297378.52	647571.5	25557.26	90.02	0.001
881.00	14.00	297306.02	638867.7	25560.21	90.02	0.001
886.00	14.00	297232.58	626802.7	25565.50	90.01	0.001
891.00	14.00	297159.15	614290.9	25571.82	90.01	0.001
896.00	13.61	297085.72	605640.4	25577.14	90.00	0.001
901.00	13.21	297011.88	604620.9	25579.55	90.00	0.001
906.00	12.81	296938.02	612577.3	25578.17	90.00	0.001
911.00	12.49	296864.17	627624.9	25573.51	89.99	0.001
916.00	12.45	296797.42	645405.3	25567.20	89.98	0.001
921.00	12.44	296777.76	650512.1	25565.29	89.98	0.001
926.00	12.43	296761.38	652550.3	25564.51	89.98	0.001
931.00	12.43	296753.19	654523.5	25563.74	89.97	0.001
936.00	12.42	296745.00	656425.9	25563.00	89.97	0.001
941.00	12.42	296736.81	658249.8	25562.28	89.97	0.001
946.00	12.41	296728.62	659991.1	25561.58	89.97	0.001

TABLE 2.2 (EPØ)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG IST ØPP

TIME FROM FIRST MOTION (SEC)	TOTAL VEHICLE ENGINE THRUST (LB)	TOTAL VEHICLE WEIGHT (LB)	ALTITUDE ABOVE SPHERICAL EARTH (FT)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (FT/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (FT/S**2)
8623.00	12.41	296728.62	661643.4	25560.91	89.97	0.001
8663.00	12.40	296720.43	663202.8	25560.27	89.97	0.001
8703.00	12.39	296712.24	664666.0	25559.65	89.97	0.001
8743.00	12.32	296704.05	666029.5	25559.07	89.97	0.001
8783.00	12.24	296695.86	667290.9	25558.51	89.97	0.001
8823.00	12.16	296687.67	668450.7	25557.99	89.96	0.001
8863.00	12.09	296679.48	669505.8	25557.50	89.96	0.001
8903.00	12.01	296671.29	670457.5	25557.04	89.96	0.001
8943.00	11.94	296663.10	671305.8	25556.62	89.96	0.001
8983.00	11.86	296654.91	672052.9	25556.22	89.96	0.001
9023.00	11.78	296642.29	672700.3	25555.86	89.96	0.001
9063.00	11.71	296614.47	673251.4	25555.52	89.96	0.001
9103.00	11.63	296586.64	673708.5	25555.22	89.96	0.001
9143.00	11.56	296558.82	674075.9	25554.94	89.96	0.001
9183.00	11.48	296531.00	674357.3	25554.68	89.96	0.001
9223.00	11.40	296503.17	674557.1	25554.45	89.96	0.001
9263.00	11.33	296475.34	674681.3	25554.24	89.96	0.001
9267.00	11.32	296472.56	674688.9	25554.22	89.96	0.001
9272.00	11.31	296469.09	674698.2	25554.20	89.96	0.001
9277.00	11.30	296465.61	674706.2	25554.17	89.96	0.001

T86

TABLE 2.2 (EP0)
 AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST 0PP

TIME FROM FIRST MOTION (SEC)	*** RADIAL DISTANCE OF THE C (FT)	MAGNITUDE OF THE EARTH FIXED VELOCITY (FT/SEC)	SUB VEHICLE LATITUDE 0N SPHERICAL EARTH (DEG)	L 0NGITUDE 0N 0BLATE EARTH (DEG)	ARC RANGE AL0NG SPHER. EARTH TO SUB VEHICLE PT. (NM)
709.00	21533164.75	0.000	32.6831	-52.69	788.89
712.00	21533162.50	0.000	32.6867	-52.46	795.16
717.00	21533158.50	0.000	32.6922	-52.08	805.62
721.00	21533155.50	0.000	32.6956	-51.77	813.98
726.00	21533151.00	0.000	32.6987	-51.39	824.44
731.00	21533146.50	0.000	32.7006	-51.01	834.90
736.00	21533142.25	0.000	32.7011	-50.62	845.36
741.00	21533137.50	0.000	32.7003	-50.24	855.81
746.00	21533132.75	0.000	32.6983	-49.86	866.27
751.00	21533128.00	0.000	32.6950	-49.48	876.73
756.00	21533123.25	0.000	32.6903	-49.09	887.19
761.00	21533118.25	0.000	32.6844	-48.71	897.64
766.00	21533113.25	0.000	32.6772	-48.33	908.10
771.00	21533108.00	0.000	32.6687	-47.95	918.56
776.00	21533102.75	0.000	32.6589	-47.56	929.02
781.00	21533097.25	0.000	32.6478	-47.18	939.48
786.00	21533092.00	0.000	32.6354	-46.80	949.93
791.00	21533086.25	0.000	32.6217	-46.42	960.39
796.00	21533081.00	0.000	32.6067	-46.04	970.85
927.00	21532942.25	0.000	31.7613	-36.11	1244.88
1247.00	21532854.75	0.000	26.3404	-13.29	1914.47
1567.00	21533291.50	0.000	17.3049	6.77	2584.31
1887.00	21534074.75	0.000	6.2205	24.66	3254.09
2207.00	21535094.75	0.000	-5.5325	41.75	3923.23
2527.00	21536518.25	0.000	-16.6916	59.55	4591.09
2847.00	21538735.00	0.000	-25.8889	79.45	5256.03
3167.00	21542125.00	0.000	-31.5659	102.11	5714.80
3487.00	21546761.25	0.000	-32.3924	126.42	5072.96
3807.00	21552211.25	0.000	-28.1466	149.80	4408.14
4127.00	21557575.25	0.000	-19.9072	170.54	3742.63
4447.00	21561768.00	0.000	-9.2378	-171.16	3076.89
4767.00	21563928.75	0.000	2.4346	-154.05	2411.04
5087.00	21563766.50	0.000	13.8488	-136.64	1745.54
5407.00	21561668.00	0.000	23.6965	-117.45	1081.65
5727.00	21558510.00	0.000	30.4664	-95.56	426.59
6047.00	21555282.25	0.000	32.6879	-71.50	286.53
6367.00	21552712.00	0.000	29.7589	-47.62	932.94
6687.00	21551077.00	0.000	22.4510	-26.10	1596.28
7007.00	21550275.00	0.000	12.2803	-7.23	2261.96
7327.00	21550086.00	0.000	0.7357	10.08	2928.17
7647.00	21550448.00	0.000	-10.8868	27.29	3593.96
7967.00	21551577.25	0.000	-21.3057	45.90	4258.55
8287.00	21553848.50	0.000	-29.0579	67.07	4920.42
8383.00	21554797.00	0.000	-30.6255	73.96	5117.55
8423.00	21555230.25	0.000	-31.1565	76.89	5199.22
8463.00	21555685.50	0.000	-31.6122	79.86	5280.43
8503.00	21556162.25	0.000	-31.9905	82.85	5360.95
8543.00	21556660.25	0.000	-32.2896	85.87	5440.35
8583.00	21557179.25	0.000	-32.5081	88.91	5517.81

**** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	**** RADIAL DISTANCE ØF THE C G (FT)	MAGNITUDE ØF THE EARTH FIXED VELOCITY (FT/SEC)	SUB VEHICLE LATITUDE SPHERICAL EARTH (DEG)	LØNGITUDE ØN ØBLATE EARTH (DEG)	ARC RANGE ALØNG SPHER. EARTH TØ SUB VEHICLE PT. (NM)
8623.00	21557718.75	0.000	-32.6450	91.96	5591.46
8663.00	21558276.75	0.000	-32.6996	95.01	5656.56
8703.00	21558853.75	0.000	-32.6715	98.06	5700.30
8743.00	21559447.50	0.000	-32.5611	101.11	5700.31
8783.00	21560056.75	0.000	-32.3689	104.15	5656.62
8823.00	21560680.75	0.000	-32.0957	107.18	5591.56
8863.00	21561317.75	0.000	-31.7429	110.18	5517.97
8903.00	21561966.00	0.000	-31.3123	113.15	5440.57
8943.00	21562623.50	0.000	-30.8057	116.10	5361.22
8983.00	21563288.50	0.000	-30.2254	119.00	5280.77
9023.00	21563959.50	0.000	-29.5740	121.87	5199.63
9063.00	21564634.25	0.000	-28.8542	124.70	5118.04
9103.00	21565310.50	0.000	-28.0688	127.49	5036.14
9143.00	21565985.75	0.000	-27.2209	130.23	4954.01
9183.00	21566658.50	0.000	-26.3136	132.93	4871.71
9223.00	21567325.25	0.000	-25.3501	135.58	4789.29
9263.00	21567985.25	0.000	-24.3334	138.19	4706.76
9267.00	21568050.25	0.000	-24.2290	138.45	4698.50
9272.00	21568131.50	0.000	-24.0977	138.77	4688.18
9277.00	21568212.50	0.000	-23.9656	139.09	4677.86

T86

*** MEASURED FROM THE CENTER ØF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	X COORDINATE		Y COORDINATE		Z COORDINATE		X COMPONENT OF VEL. IN THE XXKE SYSTEM (FT/S)		Y COMPONENT OF VEL. IN THE XXKE SYSTEM (FT/S)		Z COMPONENT OF VEL. IN THE XXKE SYSTEM (FT/S)	
	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	COMPONENT OF VEL. IN THE XXKE SYSTEM (FT/S)	COMPONENT OF VEL. IN THE XXKE SYSTEM (FT/S)	COMPONENT OF VEL. IN THE XXKE SYSTEM (FT/S)	COMPONENT OF VEL. IN THE XXKE SYSTEM (FT/S)	COMPONENT OF VEL. IN THE XXKE SYSTEM (FT/S)	COMPONENT OF VEL. IN THE XXKE SYSTEM (FT/S)
709.00	19628194.750	26180.549	8851183.750	-9969.797	913.162	22080.405						
712.00	19598168.750	263848.477	8917356.250	-10044.415	926.199	22046.406						
717.00	19547635.750	268460.164	9027445.375	-10168.476	918.499	21989.193						
721.00	19506763.000	272179.227	9115308.625	-10267.494	933.087	21942.918						
726.00	19455116.000	276865.266	9224878.000	-10390.977	941.318	21884.445						
731.00	19402852.500	281592.457	9334152.500	-10514.130	949.520	21825.276						
736.00	19349974.250	286360.430	9443129.375	-10636.948	957.693	21765.412						
741.00	19296482.500	291169.305	9551805.000	-10759.429	965.835	21704.857						
746.00	1924379.250	296018.695	9660176.375	-10881.569	973.946	21643.611						
751.00	19187666.250	300508.688	9768239.750	-11003.363	982.025	21581.677						
756.00	19132345.250	305838.965	9875991.500	-11124.808	990.072	21519.057						
761.00	19076417.750	310809.367	9983428.750	-11245.906	998.087	21455.765						
766.00	19019885.750	315819.723	10090547.625	-11366.652	1006.068	21391.800						
771.00	18962750.750	320869.875	10157345.000	-11487.038	1014.016	21327.155						
776.00	18905014.750	325959.754	1033817.625	-11607.059	1021.928	21261.831						
781.00	18846679.750	331089.152	1049961.875	-11726.712	1029.806	21195.830						
786.00	18787747.250	336257.738	10515774.375	-11845.993	1037.648	21129.156						
791.00	18728219.500	341465.680	10621252.000	-11964.898	1045.453	21061.810						
796.00	18668097.750	346712.246	10726391.000	-12083.423	1053.221	20993.792						
927.00	16888206.750	497359.551	13349483.375	-15041.139	1241.542	18980.444						
1247.00	11094359.875	948462.367	18430393.250	-20777.506	1530.770	12429.151						
1567.00	3876524.344	1441314.516	21132387.500	-23844.744	1487.074	4274.711						
1887.00	-3837995.344	1858304.484	21107649.000	-23847.796	1053.402	-4426.108						
2207.00	-11057742.000	2075951.156	18362381.500	-20786.395	251.810	-12541.649						
2527.00	-16855701.750	1990591.234	13256804.625	-17410.819	-814.403	-19016.442						
2847.00	-20489897.250	1544561.953	6457207.625	-7410.819	-1974.615	-23014.814						
3167.00	-21498519.500	739638.305	-1153137.125	1172.461	-3018.440	-24030.745						
3487.00	-19757074.250	-351857.227	-8550524.500	9592.119	-3731.732	-21948.211						
3807.00	-15491833.875	-1594020.109	-14898321.375	16777.113	-3935.049	-17049.702						
4127.00	-9249703.625	-2803847.250	-19269417.750	21815.233	-3518.739	-9977.067						
4447.00	-1828663.734	-3778061.563	-21149280.250	24066.207	-2469.057	-1650.262						
4767.00	5823485.438	-4326143.563	-20307006.000	23244.473	-880.028	6850.061						
5087.00	12730205.250	-4304233.688	-16864477.250	19458.205	1052.741	14424.374						
5407.00	18011399.500	-3644659.656	-11278805.375	13195.054	3056.687	20100.470						
5727.00	20995942.000	-23735894.094	-4280493.500	5256.176	4821.565	23160.238						
6047.00	21304004.750	-616631.383	3223247.125	-3348.816	6046.779	23228.383						
6367.00	18897840.250	142531.125	10266244.125	-11528.609	6489.607	20314.820						
6687.00	14082572.250	3437623.563	15947187.875	-18243.787	6007.905	14810.574						
7007.00	7470672.938	5157226.688	19544957.500	-22635.857	4591.164	7439.041						
7327.00	-94898.468	6290063.938	20611459.750	-24139.182	2373.677	-835.280						
7647.00	-7648072.063	6619427.063	19029240.000	-22559.239	-375.216	-8933.858						
7967.00	-14224430.875	6032619.563	15024764.125	-18100.823	-3284.675	-15810.454						
8287.00	-18985848.250	4544556.313	9135050.125	-11338.988	-5934.674	-20591.955						
8383.00	-19962333.750	3941962.531	7111640.063	-8984.943	-6616.749	-21521.033						
8423.00	-20301528.500	3611572.063	6244391.500	-7971.979	-6880.664	-21833.678						
8463.00	-20599878.750	3391682.063	5365541.500	-6943.095	-7131.623	-22101.639						
8503.00	-20856790.250	3101623.781	4476868.375	-5900.354	-7368.959	-22324.442						
8543.00	-21071749.250	2802355.344	3580193.031	-4845.849	-7592.030	-22501.706						
8583.00	-21244328.000	2494459.656	2677342.906	-3781.695	-7800.223	-22633.140						

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG IST ØPP

TIME FROM FIRST MOTION (SEC)	X CØRDINATE			Y CØRDINATE			Z CØRDINATE			X COMPONENT ØF VEL. IN THE XXE SYSTEM (FT/S)	Y COMPONENT ØF VEL. IN THE XXE SYSTEM (FT/S)	Z COMPONENT ØF VEL. IN THE XXE SYSTEM (FT/S)
	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)				
8623.00	-21374183.250	2178543.625	1770155.625	-2710.023	-7992.953	-22718.550						
8663.00	-21461057.000	1855236.953	860473.922	-1632.980	-8169.665	-22757.832						
8703.00	-21504777.500	1525190.859	-49855.807	-552.722	-8329.839	-22750.975						
8743.00	-21505259.500	1189076.719	-958989.984	528.590	-8472.986	-22698.063						
8783.00	-21462504.000	847584.828	-1865089.359	1608.790	-8598.651	-22599.273						
8823.00	-21376598.750	501423.004	-2766323.781	2685.719	-8706.417	-22454.871						
8863.00	-21247717.500	151315.217	-3660875.656	3757.222	-8795.902	-22265.218						
8903.00	-21076120.750	-202000.648	-4546943.375	4821.157	-8866.765	-22030.763						
8943.00	-20862153.000	-557173.602	-5422745.938	5875.393	-8918.703	-21752.045						
8983.00	-20606245.000	-915240.992	-6286524.938	6917.823	-8951.452	-21429.694						
9023.00	-20308910.750	-1273630.734	-7136548.750	7946.360	-8964.791	-21064.423						
9063.00	-19970748.000	-1632162.953	-7971116.688	8958.945	-8958.541	-20657.034						
9103.00	-19592434.500	-1990051.000	-8788561.250	9953.550	-8932.564	-20208.410						
9143.00	-19174725.500	-2346503.813	-9587252.125	10928.183	-8886.768	-19719.519						
9183.00	-18718471.000	-2700727.250	-10365599.250	11880.891	-8821.104	-19191.406						
9223.00	-18224574.750	-3051926.750	-11122055.875	12809.762	-8735.565	-18625.196						
9263.00	-17694031.500	-3399307.656	-11855121.875	13712.934	-8630.192	-18022.090						
9267.00	-17639001.750	-343605.281	-11927085.375	13801.767	-8618.567	-17959.797						
9272.00	-17569715.750	-3476861.094	-12016688.250	13912.418	-8603.757	-17881.434						
9277.00	-17499877.250	-3519842.188	-12105898.500	14022.634	-8588.639	-17802.518						

T86

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (LB/FT**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALONG VELOCITY VECTOR (LB)	AERODYNAMIC LOAD (LB/FT**2)	MAGNITUDE ØF THE AERODYNAMIC FORCE VECTOR (FT)
709.00	10.01	0.00	4.7162	2.4147	0.0000	0.0000
712.00	10.01	0.00	4.9049	2.4147	0.0000	0.0000
717.00	10.01	0.00	5.2454	2.4146	0.0000	0.0000
721.00	10.01	0.00	0.0321	2.4146	0.0000	0.0000
726.00	10.01	0.00	0.0198	2.4147	0.0000	0.0000
731.00	10.01	0.00	0.0076	2.4147	0.0000	0.0000
736.00	10.01	0.00	0.0053	2.4148	0.0000	0.0000
741.00	10.01	0.00	0.0174	2.4150	0.0000	0.0000
746.00	10.01	0.00	0.0297	2.4151	0.0000	0.0000
751.00	10.01	0.00	0.0420	2.4153	0.0000	0.0000
756.00	10.01	0.00	0.0544	2.4155	0.0000	0.0000
761.00	10.01	0.00	0.0667	2.4158	0.0000	0.0000
766.00	10.01	0.00	0.0790	2.4161	0.0000	0.0000
771.00	10.01	0.00	0.0914	2.4164	0.0000	0.0000
776.00	10.01	0.00	0.1037	2.4167	0.0000	0.0000
781.00	10.01	0.00	0.1160	2.4171	0.0000	0.0000
786.00	10.01	0.00	0.1284	2.4175	0.0000	0.0000
791.00	10.01	0.00	0.1407	2.4180	0.0000	0.0000
796.00	10.01	0.00	0.1530	2.4184	0.0000	0.0000
927.00	10.01	0.00	0.4722	2.4408	0.0000	0.0000
1247.00	10.06	0.00	1.1864	2.5652	0.0000	0.0000
1567.00	10.12	0.00	1.7240	2.7360	0.0000	0.0000
1887.00	10.16	0.00	2.0056	2.8526	0.0000	0.0000
2207.00	10.15	0.00	1.9895	2.8308	0.0000	0.0000
2527.00	10.10	0.00	1.6781	2.6681	0.0000	0.0000
2847.00	10.02	0.00	1.1173	2.4478	0.0000	0.0000
3167.00	9.96	0.00	0.3906	2.2653	0.0000	0.0000
3487.00	9.93	0.00	0.3989	2.1631	0.0000	0.0000
3807.00	9.93	0.00	1.1265	2.1463	0.0000	0.0000
4127.00	9.94	0.00	1.6888	2.1838	0.0000	0.0000
4447.00	9.95	0.00	2.0018	2.2224	0.0000	0.0000
4767.00	9.95	0.00	2.0191	2.2134	0.0000	0.0000
5087.00	9.93	0.00	1.7378	2.1463	0.0000	0.0000
5407.00	9.90	0.00	1.1989	2.0564	0.0000	0.0000
5727.00	9.87	0.00	0.4817	1.9978	0.0000	0.0000
6047.00	9.88	0.00	0.3100	2.0112	0.0000	0.0000
6367.00	9.91	0.00	1.0550	2.1088	0.0000	0.0000
6687.00	9.97	0.00	1.6453	2.2665	0.0000	0.0000
7007.00	10.01	0.00	1.9926	2.4205	0.0000	0.0000
7327.00	10.04	0.00	2.0454	2.4898	0.0000	0.0000
7647.00	10.02	0.00	1.7953	2.4308	0.0000	0.0000
7967.00	9.97	0.00	1.2787	2.2756	0.0000	0.0000
8287.00	9.91	0.00	0.5715	2.1022	0.0000	0.0000
8383.00	9.90	0.00	0.3376	2.0575	0.0000	0.0000
8423.00	9.89	0.00	0.2388	2.0406	0.0000	0.0000
8463.00	9.89	0.00	0.1402	2.0247	0.0000	0.0000
8503.00	9.88	0.00	0.0471	2.0099	0.0000	0.0000
8543.00	9.88	0.00	0.0699	1.9963	0.0000	0.0000
8583.00	9.87	0.00	0.1663	1.9839	0.0000	0.0000

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (LB/FT**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALONG VELOCITY VECTOR (LB)	AERØDYNAMIC LØAD (LB/FT**2)	MAGNITUDE ØF THE AERØDYNAMIC FORCE VECTOR (FT)
8623.00	9.87	0.00	0.2653	1.9727	0.0000	0.0000
8663.00	9.86	0.00	0.3642	1.9627	0.0000	0.0000
8703.00	9.86	0.00	0.4624	1.9539	0.0000	0.0000
8743.00	9.86	0.00	0.5598	1.9464	0.0000	0.0000
8783.00	9.85	0.00	0.6559	1.9401	0.0000	0.0000
8823.00	9.85	0.00	0.7505	1.9350	0.0000	0.0000
8863.00	9.85	0.00	0.8434	1.9310	0.0000	0.0000
8903.00	9.85	0.00	0.9345	1.9282	0.0000	0.0000
8943.00	9.85	0.00	1.0233	1.9265	0.0000	0.0000
8983.00	9.85	0.00	1.1099	1.9258	0.0000	0.0000
9023.00	9.85	0.00	1.1938	1.9260	0.0000	0.0000
9063.00	9.85	0.00	1.2751	1.9272	0.0000	0.0000
9103.00	9.85	0.00	1.3533	1.9292	0.0000	0.0000
9143.00	9.85	0.00	1.4285	1.9320	0.0000	0.0000
9183.00	9.85	0.00	1.5003	1.9354	0.0000	0.0000
9223.00	9.86	0.00	1.5687	1.9394	0.0000	0.0000
9263.00	9.86	0.00	1.6334	1.9440	0.0000	0.0000
9267.00	9.86	0.00	1.6396	1.9445	0.0000	0.0000
9272.00	9.86	0.00	1.6474	1.9451	0.0000	0.0000
9277.00	9.86	0.00	1.6551	1.9457	0.0000	0.0000

TB6

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FRØM MØTIDN (SEC)	X ØSI CØRD		Y ØSI CØRD		Z ØSI CØRD		X VEL. CØMP.		Y VEL. CØMP.		Z VEL. CØMP.	
	SPACE FIXED EARTH CENTER PLUMBLIN SYS	(FT)	SPACE FIXED EARTH CENTER PLUMBLIN SYS	(FT)	SPACE FIXED EARTH CENTER PLUMBLIN SYS	(FT)	SPACE FIXED EARTH CENTER PLUMBLIN SYS	(FT/S)	SPACE FIXED EARTH CENTER PLUMBLIN SYS	(FT/S)	SPACE FIXED EARTH CENTER PLUMBLIN SYS	(FT/S)
709.00	19213381.3	3C3797.0	9717580.3	-11542.661	248.592	22812.782						
712.00	19178627.0	3C4562.3	9785939.4	-11623.914	247.488	22771.560						
717.00	19120169.0	3C5794.9	9899624.0	-11758.959	245.548	22702.226						
721.00	19072517.3	3C6774.0	9990320.9	-11866.700	243.990	22646.181						
726.00	19013246.8	3C7989.0	1C103374.9	-12001.003	242.035	22575.405						
731.00	18952506.5	3C9194.3	1C216073.1	-12134.884	240.071	22503.834						
736.00	18891897.5	310389.7	1C328411.5	-12268.338	238.099	22431.470						
741.00	18830222.5	311575.3	1C440385.9	-12401.361	236.118	22358.316						
746.00	18767883.8	312750.9	1C551992.9	-12533.947	234.130	22284.374						
751.00	18704882.8	313916.5	1C663228.1	-12666.092	232.132	22209.647						
756.00	18641222.3	315072.2	1C774087.5	-12797.791	230.127	22134.137						
761.00	18576904.5	316217.8	1C884567.6	-12929.048	228.114	22057.860						
766.00	18511931.8	317353.3	1C994664.4	-13059.854	226.092	21980.814						
771.00	18446305.8	318478.7	11104374.0	-13190.202	224.063	21902.993						
776.00	18380029.5	319593.9	11213692.5	-13320.086	222.026	21824.400						
781.00	18313104.8	320698.9	11322616.3	-13449.501	219.981	21745.039						
786.00	18245534.3	321793.7	11431141.3	-13578.443	217.928	21664.910						
791.00	18177320.0	322878.1	11539263.6	-13706.907	215.867	21584.019						
796.00	18108464.8	323952.3	11646979.8	-13834.889	213.798	21502.365						
927.00	16084612.4	348295.5	14311937.5	-17001.368	157.081	19101.848						
1247.00	9625834.1	374511.3	19257904.8	-22879.361	4.426	11436.559						
1567.00	1791557.6	350739.0	214555767.5	-25494.112	-151.842	2133.267						
1887.00	-6300115.3	279194.4	20589972.8	-24467.737	-290.713	-7479.750						
2207.00	-13492873.4	188602.8	16783154.0	-19943.706	-392.987	-16025.167						
2527.00	-18758776.0	33173.0	1C579643.5	-12571.352	-444.017	-22277.773						
2847.00	-21346825.8	-1C9227.6	2866742.8	-3410.242	-435.875	-25345.800						
3167.00	-20890178.5	-239446.0	-5254167.6	6228.379	-368.558	-24798.545						
3487.00	-17456549.0	-339620.4	-12626024.3	14972.554	-250.062	-20721.621						
3807.00	-11536520.4	-355609.9	-18200275.0	21582.208	-95.405	-13698.808						
4127.00	-3973173.5	-358966.1	-21184517.5	25119.975	75.225	-4728.447						
4447.00	4157641.7	-348197.3	-21184517.5	25119.975	239.010	4914.531						
4767.00	11696737.3	-249135.1	-18114284.5	21473.621	373.518	13857.102						
5087.00	17572594.8	-114311.4	-12497474.9	14808.880	459.807	20825.152						
5407.00	2094825.0	38609.8	-5103996.1	6039.278	485.137	24828.190						
5727.00	21345927.8	189143.6	3014126.1	-3587.009	444.836	25300.372						
6047.00	1870714.8	316715.6	1C702864.3	-12704.131	343.046	22176.830						
6367.00	13408398.1	4C3446.7	16869247.0	-20019.328	192.309	15899.192						
6687.00	620052.9	426634.2	2C635348.8	-24491.404	12.111	7354.525						
7007.00	-1892505.6	410613.9	21463088.8	-25477.862	-173.511	-2244.643						
7327.00	-9716402.3	327731.3	19232533.3	-22831.721	-339.104	-11528.697						
7647.00	-16155734.0	158231.3	14260953.3	-16929.046	-461.348	-19168.654						
7967.00	-20292664.5	39019.3	7257874.5	-8616.260	-522.458	-24072.631						
8287.00	-21539427.5	-128561.7	-777771.1	916.266	-512.832	-25545.632						
8383.00	-21312226.0	-177031.3	-3219779.8	3811.848	-495.893	-25274.646						
8423.00	-21135841.3	-156692.3	-4226759.4	5005.694	-486.975	-25064.914						
8463.00	-20911921.3	-215975.1	-5224221.8	6188.163	-476.987	-24798.874						
8503.00	-20640974.0	-234837.2	-6209926.3	7356.606	-465.948	-24477.137						
8543.00	-20323613.3	-253237.1	-1181659.4	8508.407	-453.878	-24100.438						
8583.00	-19960556.5	-271134.0	-8137239.3	9640.986	-440.801	-23669.633						

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	X POSI CØRD		Y POSI CØRD		Z POSI CØRD		X VEL. CØMP.		Y VEL. CØMP.		Z VEL. CØMP.	
	SPACE FIXED	EARTH CENTER	SPACE FIXED	EARTH CENTER	SPACE FIXED	EARTH CENTER	SPACE FIXED	EARTH CENTER	SPACE FIXED	EARTH CENTER	SPACE FIXED	EARTH CENTER
	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS
	(FT)	(FT)	(FT)	(FT)	(FT)	(FT)	(FT/S)	(FT/S)	(FT/S)	(FT/S)	(FT/S)	(FT/S)
8623.00	-19552623.5	-288488.1	-9074521.0	10751.808	-426.743	-23185.698						
8663.00	-19100734.0	-305260.7	-9991400.8	11838.389	-411.733	-22649.729						
8703.00	-18605907.0	-321414.4	-10885821.0	12898.298	-395.799	-22062.933						
8743.00	-18069256.5	-336912.8	-11755774.9	13929.165	-378.975	-21426.634						
8783.00	-17491590.5	-351721.0	-12599310.3	14928.683	-361.294	-20742.264						
8823.00	-16875408.3	-365805.4	-13414535.0	15894.619	-342.792	-20011.360						
8863.00	-16220896.6	-379133.9	-14199620.0	16824.812	-323.507	-19235.566						
8903.00	-15529526.9	-391676.0	-14952804.0	17717.181	-303.478	-18416.620						
8943.00	-14804052.1	-403402.7	-15672397.6	18569.732	-282.747	-17556.363						
8983.00	-14044903.5	-414287.0	-16356786.8	19380.555	-261.357	-16656.721						
9023.00	-13254187.5	-424303.1	-17004436.0	20147.836	-239.352	-15719.712						
9063.00	-12433679.8	-433427.5	-17613892.5	20869.857	-216.778	-14747.436						
9103.00	-11585223.5	-441638.4	-18183788.8	21545.001	-193.682	-13742.072						
9143.00	-10710724.5	-448915.8	-18712846.3	22171.754	-170.113	-12705.873						
9183.00	-9812146.8	-455241.7	-19199877.5	22748.710	-146.119	-11641.161						
9223.00	-8891508.4	-460600.3	-19643789.5	23274.575	-121.753	-10550.322						
9263.00	-7950877.3	-464977.6	-20043586.0	23748.168	-97.065	-9435.802						
9267.00	-7855795.4	-465360.9	-20081103.5	23792.610	-94.580	-9323.143						
9272.00	-7736694.7	-465826.0	-20127366.0	23847.410	-91.471	-9182.025						
9277.00	-7617322.1	-466275.6	-20172922.3	23901.374	-88.357	-9040.585						

T86

TABLE 2.2 (TLI)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST 0PP

TIME FROM FIRST MOTION (SEC)	TOTAL ENGINE THRUST (NEWTONS)	TOTAL VEHICLE WEIGHT (KG)	ALTITUDE ABOVE SPHERICAL EARTH (M)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (M/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (M/S**2)
9287.00	0.00	134474.33	205654.8	7788.89	89.96	0.000
9297.00	0.00	134474.12	205657.7	7788.88	89.96	0.000
9307.00	0.00	134473.90	205659.6	7788.86	89.96	0.000
9317.00	0.00	134473.69	205660.1	7788.84	89.96	0.000
9327.00	47.81	134473.47	205659.3	7788.82	89.96	0.000
9337.00	139.45	134473.26	205657.5	7788.81	89.96	0.000
9347.00	46.85	134473.05	205654.5	7788.79	89.96	0.000
9357.00	24.28	134472.83	205650.3	7788.78	89.96	0.000
9367.00	30.40	134472.62	205645.2	7788.76	89.96	0.000
9377.00	36.51	134472.41	205638.9	7788.75	89.97	0.000
9387.00	42.63	134472.19	205631.6	7788.74	89.97	0.000
9397.00	48.74	134471.98	205623.3	7788.73	89.97	0.000
9407.00	54.86	134471.77	205614.0	7788.72	89.97	0.000
9417.00	60.97	134471.55	205603.7	7788.71	89.97	0.000
9427.00	67.09	134471.34	205592.4	7788.70	89.97	0.000
9437.00	73.21	134471.13	205580.4	7788.69	89.97	0.000
9447.00	158.75	134470.91	205567.2	7788.68	89.97	0.000
9457.00	83.46	134470.70	205553.3	7788.67	89.97	0.000
9467.00	85.63	134470.48	205538.3	7788.67	89.97	0.000
9477.00	111.11	134470.27	205522.7	7788.66	89.97	0.000
9487.00	89.95	134470.06	205506.3	7788.65	89.97	0.000
9497.00	92.12	134469.84	205489.1	7788.65	89.97	0.000
9507.00	94.28	134469.63	205471.2	7788.64	89.97	0.000
9517.00	96.44	134469.42	205452.5	7788.64	89.97	0.000
9527.00	98.61	134469.20	205433.4	7788.63	89.97	0.000
9537.00	100.77	134468.99	205413.6	7788.63	89.97	0.000
9547.00	102.93	134468.78	205393.1	7788.62	89.97	0.000
9557.00	105.10	134468.56	205372.1	7788.62	89.97	0.000
9567.00	125.75	134468.35	205350.5	7788.61	89.97	0.000
9577.00	109.43	134468.13	205328.4	7788.61	89.97	0.000
9587.00	111.59	134467.92	205305.5	7788.61	89.97	0.000
9597.00	113.75	134467.71	205282.4	7788.60	89.97	0.000
9607.00	115.92	134467.49	205258.8	7788.60	89.97	0.000
9617.00	118.08	134467.28	205234.7	7788.60	89.97	0.000
9627.00	120.24	134467.07	205210.4	7788.59	89.97	0.000
9637.00	136.27	134466.85	205185.5	7788.59	89.97	0.000
9647.00	124.57	134466.64	205160.5	7788.59	89.97	0.000
9657.00	126.73	134466.43	205134.9	7788.59	89.97	0.000
9667.00	128.90	134466.21	205109.3	7788.59	89.98	0.000
9677.00	131.06	134466.00	205083.1	7788.58	89.98	0.000
9687.00	133.23	134465.79	205057.0	7788.58	89.98	0.000
9697.00	135.39	134465.57	205030.4	7788.58	89.98	0.000
9707.00	137.55	134465.36	205003.5	7788.58	89.98	0.000
9717.00	139.72	134465.14	204976.7	7788.58	89.98	0.000
9727.00	141.88	134464.93	204949.6	7788.58	89.98	0.000
9737.00	144.04	134464.72	204922.3	7788.58	89.98	0.000
9747.00	146.21	134464.50	204895.1	7788.58	89.98	0.000
9757.00	148.37	134464.29	204867.7	7788.58	89.98	0.000
9767.00	150.54	134464.08	204840.2	7788.58	89.98	0.000

TABLE 2.2 (TLI)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST 0PP

TIME FROM FIRST MOTION (SEC)	TOTAL VEHICLE ENGINE THRUST (NEWTONS)	TOTAL VEHICLE WEIGHT (KG)	ALTITUDE ABOVE SPHERICAL EARTH (M)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (M/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (M/S**2)
9777.00	613.29	134462.95	204812.5	7788.59	89.98	0.000
9787.00	613.29	134460.26	204784.9	7788.62	89.98	0.000
9797.00	613.29	134457.58	204757.2	7788.66	89.98	0.000
9807.00	613.29	134454.89	204729.7	7788.69	89.98	0.000
9817.00	613.29	134452.21	204702.3	7788.72	89.98	0.000
9827.00	613.29	134449.52	204674.8	7788.76	89.98	0.000
9837.00	613.29	134446.84	204647.5	7788.79	89.98	0.000
9847.00	613.29	134444.15	204620.2	7788.82	89.98	0.000
9855.00	1718.00	134297.43	204598.6	7788.93	89.98	0.000
9857.00	715911.01	134239.06	204593.2	7792.57	89.98	0.000
9857.50	710921.39	134224.47	204591.8	7795.23	89.98	0.000
9867.00	789731.19	132479.45	204570.0	7850.79	89.98	0.000
9877.00	794240.59	130612.36	204542.0	7910.80	89.99	0.000
9887.00	795064.54	128739.34	204497.1	7971.90	90.00	0.000
9897.00	795274.30	126864.75	204449.5	8033.96	90.00	0.000
9907.00	795280.16	124989.23	204415.9	8096.95	89.98	0.000
9917.00	794877.20	123113.90	204413.7	8160.87	89.95	0.000
9927.00	794264.41	121239.44	204461.9	8225.68	89.91	0.000
9937.00	793205.34	115365.99	204579.3	8291.39	89.86	0.000
9947.00	792597.68	117494.00	204786.5	8357.97	89.79	0.000
9957.00	791952.89	115622.93	205104.1	8425.46	89.71	0.000
9967.00	791205.53	113752.77	205553.7	8493.87	89.62	0.000
9977.00	902036.64	111783.66	206157.3	8566.71	89.51	0.000
9987.00	901369.05	109638.43	206937.3	8647.19	89.39	0.000
9997.00	901008.22	107490.96	207921.8	8729.07	89.25	0.000
10007.00	900939.25	105343.58	209139.7	8812.36	89.10	0.000
10017.00	900713.45	103196.60	210618.0	8897.08	88.93	0.000
10027.00	900589.05	101050.29	212385.9	8983.29	88.75	0.000
10037.00	900463.61	98904.51	214474.4	9071.05	88.55	0.000
10047.00	900321.11	96759.05	216915.2	9160.41	88.33	0.000
10057.00	900177.57	92469.13	219741.2	9251.44	88.10	0.000
10067.00	900024.74	88180.60	222985.9	9344.19	87.85	0.000
10077.00	899850.29	86036.99	226683.7	9438.73	87.59	0.000
10087.00	899663.09	83893.78	230870.1	9535.15	87.31	0.000
10097.00	899450.29	81751.21	235581.5	9633.54	87.01	0.000
10107.00	899165.89	79609.39	240854.8	9733.98	86.70	0.000
10127.00	898860.13	77469.81	246727.8	9836.59	86.38	0.000
10137.00	897291.87	75609.39	253238.5	9941.47	86.04	0.000
10147.00	896977.43	73331.14	260425.9	10048.60	85.68	0.000
10157.00	896533.64	73193.56	268328.9	10158.28	85.31	0.000
10167.00	896024.16	71057.17	276986.7	10270.67	84.93	0.000
10177.00	895716.59	68921.29	286437.6	10385.94	84.54	0.000
10187.00	895379.07	66783.70	296719.3	10504.29	84.14	0.000
10197.00	895095.27	64647.63	307842.2	10625.87	83.75	0.000
10203.80	895547.87	63195.55	319833.8	10751.18	83.34	0.000
10207.00	0.00	63150.07	328523.8	10838.66	83.04	0.000
10213.80	0.00	63150.07	332760.8	10838.70	82.90	0.000
			342055.5	10831.07	82.59	0.000

S-IVB GCS2
TLI

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM MOTION (SEC)	*** RADIAL DISTANCE ØF THE C G (M)	MAGNITUDE ØF THE EARTH FIXED VELOCITY (M/SEC)	SUB VEHICLE SPHERICAL EARTH (DEG)	LØNGITUDE ØN EARTH (DEG)	ARC RANGE ALØNG TØ SUB VEHICLE PT. (KM)
9287.00	6574040.88	7386.820	-23.6993	139.73	8625.15
9297.00	6574090.38	7386.855	-23.4299	140.37	8586.89
9307.00	6574139.56	7386.890	-23.1576	141.00	8548.63
9317.00	6574188.69	7386.925	-22.8824	141.64	8510.36
9327.00	6574237.44	7386.961	-22.6044	142.27	8472.08
9337.00	6574285.94	7386.998	-22.3236	142.89	8433.80
9347.00	6574334.25	7387.035	-22.0400	143.52	8395.51
9357.00	6574382.25	7387.073	-21.7537	144.14	8357.21
9367.00	6574430.00	7387.112	-21.4648	144.76	8318.91
9377.00	6574477.44	7387.152	-21.1732	145.37	8280.60
9387.00	6574524.56	7387.192	-20.8791	145.99	8242.29
9397.00	6574571.31	7387.232	-20.5825	146.60	8203.97
9407.00	6574617.81	7387.273	-20.2835	147.21	8165.65
9417.00	6574663.94	7387.315	-19.9820	147.81	8127.32
9427.00	6574709.63	7387.357	-19.6782	148.42	8088.98
9437.00	6574755.06	7387.400	-19.3720	149.02	8050.65
9447.00	6574800.00	7387.442	-19.0636	149.62	8012.30
9457.00	6574844.50	7387.486	-18.7530	150.22	7973.96
9467.00	6574888.50	7387.529	-18.4402	150.81	7935.60
9477.00	6574932.06	7387.572	-18.1252	151.40	7897.25
9487.00	6574975.38	7387.615	-17.8082	151.99	7858.89
9497.00	6575018.13	7387.658	-17.4892	152.58	7820.52
9507.00	6575060.50	7387.701	-17.1681	153.16	7782.16
9517.00	6575102.44	7387.744	-16.8452	153.75	7743.79
9527.00	6575143.81	7387.786	-16.5203	154.33	7705.41
9537.00	6575184.81	7387.828	-16.1935	154.91	7667.03
9547.00	6575225.31	7387.870	-15.8650	155.48	7628.65
9557.00	6575265.38	7387.912	-15.5347	156.06	7590.27
9567.00	6575304.88	7387.953	-15.2026	156.63	7551.88
9577.00	6575343.88	7387.994	-14.8689	157.20	7513.49
9587.00	6575382.25	7388.034	-14.5336	157.77	7475.09
9597.00	6575420.13	7388.074	-14.1966	158.34	7436.69
9607.00	6575457.56	7388.113	-13.8581	158.90	7398.29
9617.00	6575494.44	7388.152	-13.5181	159.47	7359.89
9627.00	6575530.69	7388.190	-13.1767	160.03	7321.48
9637.00	6575566.50	7388.228	-12.8338	160.59	7283.08
9647.00	6575601.75	7388.264	-12.4895	161.15	7244.66
9657.00	6575636.38	7388.301	-12.1439	161.71	7206.25
9667.00	6575670.38	7388.336	-11.7970	162.26	7167.83
9677.00	6575703.88	7388.371	-11.4488	162.82	7129.41
9687.00	6575736.75	7388.405	-11.0995	163.37	7090.99
9697.00	6575769.06	7388.437	-10.7489	163.92	7052.56
9707.00	6575800.69	7388.469	-10.3972	164.47	7014.14
9717.00	6575831.75	7388.501	-10.0445	165.02	6975.71
9727.00	6575862.25	7388.532	-9.6906	165.56	6937.28
9737.00	6575892.13	7388.561	-9.3358	166.11	6898.84
9747.00	6575921.38	7388.590	-8.9800	166.66	6860.40
9757.00	6575949.94	7388.618	-8.6232	167.20	6821.97
9767.00	6575977.94	7388.645	-8.2656	167.74	6783.52

**** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED; EARTH CENTERED PLUMBLINE SYSTEM

TABLE 2-2 (TLI)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	**** RADIAL DISTANCE ØF THE C G (M)	MAGNITUDE ØF THE EARTH FIXED VELOCITY (M/SEC)	SUB VEHICLE LATITUDE ØN SPHERICAL EARTH (DEG)	LONGITUDE ØN EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (KM)
9777.00	6576005.19	7388.683	-7.9071	168.28	6745.08
9787.00	6576031.88	7388.742	-7.5478	168.82	6706.64
9797.00	6576058.00	7388.800	-7.1877	169.36	6668.19
9807.00	6576083.50	7388.856	-6.8269	169.90	6629.74
9817.00	6576108.38	7388.911	-6.4653	170.44	6591.29
9827.00	6576132.69	7388.965	-6.1031	170.98	6552.83
9837.00	6576156.31	7389.017	-5.7403	171.51	6514.38
9847.00	6576179.44	7389.069	-5.3769	172.05	6475.92
9855.00	6576197.44	7389.187	-5.0857	172.48	6445.15
9857.00	6576201.81	7392.834	-5.0129	172.58	6437.46
9857.50	6576202.94	7395.501	-4.9947	172.61	6435.53
9867.00	6576227.56	7451.058	-4.6469	173.12	6398.82
9877.00	6576248.25	7511.096	-4.2775	173.66	6359.88
9887.00	6576251.38	7572.214	-3.9048	174.20	6320.62
9897.00	6576251.50	7634.267	-3.5286	174.75	6281.04
9907.00	6576265.00	7697.238	-3.1492	175.30	6241.12
9917.00	6576309.44	7761.114	-2.7664	175.86	6200.88
9927.00	6576403.44	7825.875	-2.3803	176.42	6160.29
9937.00	6576566.31	7891.515	-1.9910	176.99	6119.37
9947.00	6576818.31	7958.011	-1.5984	177.56	6078.10
9957.00	6577180.13	8025.399	-1.2026	178.13	6036.48
9967.00	6577673.19	8093.682	-0.8036	178.71	5994.50
9977.00	6578319.50	8166.376	-0.4014	179.30	5952.16
9987.00	6579141.38	8246.691	0.0042	179.89	5909.42
9997.00	6580167.25	8328.408	0.4134	-179.52	5866.26
10007.00	6581425.69	8411.487	0.8262	-178.92	5822.68
10017.00	6582943.81	8495.964	1.2423	-178.31	5778.67
10027.00	6584750.69	8581.899	1.6619	-177.69	5734.22
10037.00	6586877.38	8669.359	2.0847	-177.07	5689.33
10047.00	6589355.50	8758.399	2.5109	-176.44	5644.00
10057.00	6592217.88	8849.072	2.9402	-175.81	5598.22
10067.00	6595498.06	8941.441	3.3726	-175.16	5551.99
10077.00	6599230.50	9035.578	3.8080	-174.51	5505.29
10087.00	6603450.75	9131.562	4.2464	-173.85	5458.14
10097.00	6608194.94	9229.477	4.6876	-173.19	5410.52
10107.00	6613500.00	9329.422	5.1315	-172.52	5362.44
10117.00	6619403.94	9431.497	5.5780	-171.83	5313.88
10127.00	6625944.63	9535.817	6.0270	-171.15	5264.85
10137.00	6633161.00	9642.352	6.4783	-170.45	5215.34
10147.00	6641092.00	9751.400	6.9318	-169.74	5165.35
10157.00	6649776.88	9863.125	7.3873	-169.02	5114.88
10167.00	6659254.06	9977.687	7.8447	-168.30	5063.91
10177.00	6669560.94	10095.306	8.3038	-167.57	5012.46
10187.00	6680708.38	10216.061	8.7644	-166.82	4960.52
10197.00	6692723.50	10340.541	9.2263	-166.07	4908.07
10203.80	6701429.13	10427.456	9.5412	-165.55	4872.11
10207.00	6705673.38	10427.354	9.6893	-165.31	4855.15
10213.80	6714982.94	10419.432	10.0028	-164.78	4819.17

S-IVB REIGNITION

S-IVB 90 THRUST

S-IVB GCS2

TLI

**** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM MOTION (SEC)	X CØRDINATE		Y CØRDINATE		Z CØRDINATE		X CØRDINATE	Y CØRDINATE	Z CØRDINATE
	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)			
9287.00	-11664156.375	-1116665.391	-3738365.188	-3738365.188	4340.873	-2608.320	-5377.602		
9297.00	-11620415.875	-1142099.531	-3791895.438	-3791895.438	4407.111	-2598.447	-5328.327		
9307.00	-11576016.000	-1168033.141	-3844925.594	-3844925.594	4472.796	-2588.200	-5278.395		
9317.00	-11530962.000	-1193862.297	-3897461.094	-3897461.094	4537.920	-2577.579	-5227.813		
9327.00	-11485259.375	-1219583.406	-3949483.625	-3949483.625	4602.475	-2566.585	-5176.587		
9337.00	-11438914.375	-1245192.781	-4000990.719	-4000990.719	4666.450	-2555.220	-5124.727		
9347.00	-11391932.375	-1270686.625	-4051976.094	-4051976.094	4729.841	-2543.484	-5072.236		
9357.00	-11344319.500	-1296061.234	-4102433.344	-4102433.344	4792.641	-2531.378	-5019.120		
9367.00	-11296081.625	-1321312.953	-4152356.469	-4152356.469	4854.840	-2518.903	-4965.389		
9377.00	-11247224.625	-1346438.078	-4201739.188	-4201739.188	4916.430	-2506.060	-4911.048		
9387.00	-11197755.000	-1371432.906	-4250575.375	-4250575.375	4977.404	-2492.850	-4856.105		
9397.00	-11147678.750	-1396293.859	-4298859.250	-4298859.250	5037.753	-2479.274	-4800.567		
9407.00	-11097002.000	-1421017.188	-4346584.750	-4346584.750	5097.471	-2465.334	-4744.441		
9417.00	-11045731.375	-1445599.297	-4393746.125	-4393746.125	5156.550	-2451.031	-4687.735		
9427.00	-10993873.250	-1470036.578	-4440337.563	-4440337.563	5214.982	-2436.366	-4630.457		
9437.00	-10941434.000	-1494325.406	-4486353.375	-4486353.375	5272.760	-2421.340	-4572.612		
9447.00	-10888420.125	-1518462.203	-4531787.938	-4531787.938	5329.883	-2405.954	-4514.205		
9457.00	-10834838.500	-1542443.281	-4576635.625	-4576635.625	5386.338	-2390.209	-4455.245		
9467.00	-10780695.625	-1566265.156	-4620891.063	-4620891.063	5442.110	-2374.110	-4395.750		
9477.00	-10725998.625	-1589524.313	-4664548.813	-4664548.813	5497.200	-2357.657	-4335.720		
9487.00	-10670754.000	-1613417.063	-4707603.750	-4707603.750	5551.601	-2340.839	-4275.166		
9497.00	-10614968.875	-1636739.969	-4750050.438	-4750050.438	5605.305	-2323.682	-4214.089		
9507.00	-10558650.250	-1659889.531	-4791883.813	-4791883.813	5658.306	-2306.174	-4152.501		
9517.00	-10501805.125	-1682622.281	-4833098.750	-4833098.750	5710.596	-2288.320	-4090.409		
9527.00	-10444440.625	-1705494.750	-4873690.313	-4873690.313	5762.170	-2270.119	-4027.821		
9537.00	-10386564.125	-1728263.500	-4913878.438	-4913878.438	5813.021	-2251.574	-3964.746		
9547.00	-10328182.750	-1750685.094	-4952983.625	-4952983.625	5863.142	-2232.687	-3901.192		
9557.00	-10269303.750	-1772516.125	-4991675.813	-4991675.813	5912.528	-2213.460	-3837.166		
9567.00	-10209934.625	-1794953.172	-5029725.375	-5029725.375	5961.177	-2193.893	-3772.671		
9577.00	-10150082.750	-1816792.875	-5067127.813	-5067127.813	6009.074	-2173.991	-3707.727		
9587.00	-10089755.625	-1838431.906	-5103878.438	-5103878.438	6056.216	-2153.757	-3642.339		
9597.00	-10028961.000	-1859666.906	-5139973.063	-5139973.063	6102.597	-2133.191	-3576.513		
9607.00	-9967706.250	-1881694.625	-5175407.313	-5175407.313	6148.212	-2112.295	-3510.259		
9617.00	-9905995.250	-1902111.703	-5210176.813	-5210176.813	6193.055	-2091.073	-3443.585		
9627.00	-9843847.750	-1922514.984	-5244277.625	-5244277.625	6237.121	-2069.525	-3376.499		
9637.00	-9781259.500	-1943501.172	-5277705.563	-5277705.563	6280.405	-2047.655	-3309.007		
9647.00	-9718242.250	-1963867.031	-5310456.438	-5310456.438	6322.903	-2025.464	-3241.117		
9657.00	-9654804.000	-1984009.406	-5342526.625	-5342526.625	6364.605	-2002.957	-3172.848		
9667.00	-9590952.750	-2003625.094	-5373912.125	-5373912.125	6405.506	-1980.135	-3104.202		
9677.00	-9526696.625	-2023611.063	-5404609.438	-5404609.438	6445.604	-1957.001	-3035.188		
9687.00	-9462043.375	-2043664.094	-5434614.688	-5434614.688	6484.892	-1933.558	-2965.815		
9697.00	-9397001.500	-2062281.063	-5463924.563	-5463924.563	6523.369	-1909.790	-2896.094		
9707.00	-9331578.750	-2081258.938	-5492535.375	-5492535.375	6561.026	-1885.735	-2826.027		
9717.00	-9265783.625	-2099594.750	-5520444.000	-5520444.000	6597.857	-1861.379	-2755.631		
9727.00	-9199624.375	-2118485.500	-5547647.000	-5547647.000	6633.859	-1836.725	-2684.912		
9737.00	-9133109.250	-2136728.281	-5574141.188	-5574141.188	6669.030	-1811.775	-2613.877		
9747.00	-9066246.625	-2154720.031	-559923.500	-559923.500	6703.363	-1786.532	-2542.535		
9757.00	-8999044.875	-2172457.938	-5624990.875	-5624990.875	6736.854	-1761.000	-2470.900		
9767.00	-8931512.375	-2189539.094	-5649340.563	-5649340.563	6769.498	-1735.182	-2398.980		

TABLE 2.2 (TLI)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	X CØRDINATE (M)		Y CØRDINATE (M)		Z CØRDINATE (M)		X COMPONENT OF VEL. IN THE XXE SYSTEM (M/S)		Y COMPONENT OF VEL. IN THE XXE SYSTEM (M/S)		Z COMPONENT OF VEL. IN THE XXE SYSTEM (M/S)	
	EARTH FIXED, PT. CENTERED PLUMBIN SYS,		EARTH FIXED, PT. CENTERED PLUMBIN SYS,		EARTH FIXED, PT. CENTERED PLUMBIN SYS,		VEL. IN THE XXE SYSTEM		VEL. IN THE XXE SYSTEM		VEL. IN THE XXE SYSTEM	
	(M)	(M)	(M)	(M)	(M)	(M)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)	(M/S)
9777.00	-8863657.625	-2207160.625	-5672969.500	6801.305	-1709.082	-2326.785						
9787.00	-8795489.000	-2224119.813	-5695875.250	6832.277	-1682.707	-2254.329						
9797.00	-8727015.000	-2240813.844	-5718055.250	6862.390	-1656.054	-2181.616						
9807.00	-8658244.125	-2257239.969	-5739506.750	6891.642	-1629.128	-2108.653						
9817.00	-8589185.000	-2273395.500	-5760227.500	6920.027	-1601.930	-2035.449						
9827.00	-8519846.375	-2289277.688	-5780215.063	6947.544	-1574.465	-1962.015						
9837.00	-8450237.000	-2304883.875	-5799467.000	6974.187	-1546.736	-1888.360						
9847.00	-8380365.625	-2320211.531	-5817981.500	6999.954	-1518.746	-1814.493						
9855.00	-8324285.438	-2332271.344	-5832260.563	7020.010	-1496.192	-1755.267						
9857.00	-8310238.688	-2335258.406	-5835756.688	7028.391	-1491.219	-1741.259						
9857.50	-8306723.563	-2336003.813	-5836626.563	7032.156	-1490.296	-1738.168						
9867.00	-8239560.438	-2350079.156	-5852869.313	7107.848	-1473.074	-1681.315						
9877.00	-8168074.188	-2364716.500	-5869358.938	7189.524	-1454.149	-1616.402						
9887.00	-8095768.938	-2379159.531	-5885196.500	7271.555	-1434.299	-1551.034						
9897.00	-8022642.625	-2393399.875	-5900378.625	7353.729	-1413.655	-1485.352						
9907.00	-7948694.063	-2407430.406	-5914902.750	7435.995	-1392.347	-1419.443						
9917.00	-7873922.500	-2421244.813	-5928766.813	7518.328	-1370.438	-1353.337						
9927.00	-7798327.313	-2434837.281	-5941968.875	7600.711	-1347.962	-1287.051						
9937.00	-7721908.063	-2448202.250	-5954507.375	7683.142	-1324.936	-1220.612						
9947.00	-7644664.375	-2461334.188	-5966380.688	7765.602	-1301.367	-1154.036						
9957.00	-7566595.813	-2474227.813	-5977987.688	7848.141	-1277.262	-1087.348						
9967.00	-7487701.313	-2486877.656	-5988127.313	7930.768	-1252.620	-1020.561						
9977.00	-7407973.938	-2499278.906	-5997999.375	8016.990	-1227.713	-954.099						
9987.00	-7327335.563	-2511432.063	-6007211.625	8109.970	-1203.010	-888.298						
9997.00	-7245773.000	-2523341.938	-6015765.000	8203.445	-1178.786	-822.399						
10007.00	-7163268.188	-2535025.594	-6023660.250	8297.641	-1153.119	-756.694						
10017.00	-7079817.813	-2546401.000	-6030899.188	8392.552	-1126.440	-691.091						
10027.00	-6995414.688	-2557529.469	-6037482.313	8488.199	-1099.161	-625.545						
10037.00	-6910051.063	-2568382.406	-6043410.313	8584.658	-1071.336	-560.067						
10047.00	-6823718.563	-2578554.188	-6048683.938	8682.003	-1042.916	-494.676						
10057.00	-6736407.875	-2589238.594	-6053304.125	8780.307	-1013.856	-429.387						
10067.00	-6648108.938	-2599229.094	-6057272.000	8879.652	-984.131	-364.200						
10077.00	-6558811.000	-2608518.906	-6060588.438	8980.125	-953.716	-299.114						
10087.00	-6468502.313	-2618301.031	-6063254.563	9081.820	-922.583	-234.117						
10097.00	-6377170.250	-2627368.094	-6065271.063	9184.840	-890.697	-169.192						
10107.00	-6284800.813	-2636112.344	-6066638.500	9289.297	-858.020	-104.306						
10117.00	-6191379.188	-2644525.688	-6067357.188	9395.306	-824.500	-39.413						
10127.00	-6096889.125	-2652599.219	-6067426.438	9502.997	-790.059	25.566						
10137.00	-6001313.938	-2660223.625	-6066845.313	9612.349	-754.645	90.679						
10147.00	-5904635.625	-2667688.531	-6065612.000	9723.668	-718.155	156.037						
10157.00	-5806833.563	-2674683.063	-6063723.188	9837.117	-680.553	221.822						
10167.00	-5707885.625	-2681295.313	-6061173.500	9952.859	-641.674	288.246						
10177.00	-5607768.125	-2687511.625	-6057955.125	10071.106	-601.279	355.652						
10187.00	-5506455.375	-2693300.469	-6054036.688	10191.909	-556.378	428.181						
10197.00	-5403919.563	-2698641.188	-6049397.313	10315.783	-511.867	499.412						
10203.80	-5333465.813	-2702020.563	-6045838.563	10401.946	-481.874	546.954						
10207.00	-5300190.375	-2703544.625	-6044054.375	10401.164	-471.389	568.588						
10213.80	-5229480.375	-2706677.313	-6040031.688	10391.578	-449.786	614.286						

S-IVB REIGNITION

S-IVB 90 THRUST

S-IVB GCS2

TLI

TABLE 2.2 (TLI)
 AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG IST ØPP

TIME FRØM FIRST MØTØIN (SEC)	CØMMANDED PITCH ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN PITCH (DEG)	CØMMANDED YAW ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN YAW (DEG)	CØMMANDED RØLL ATTITUDE (DEG)	EULERIAN ANGLE ØF ATTITUDE IN RØLL (DEG)
9287.00	19.745	20.2575	0.152	0.136000	0.000	-0.14135924
9297.00	19.065	19.7773	0.163	0.138121	0.000	-0.23855080
9307.00	18.386	19.2968	0.175	0.146727	0.000	-0.14720224
9317.00	17.706	18.8163	0.186	0.155311	0.000	-0.05578159
9327.00	17.027	18.3352	0.198	0.164164	0.000	0.03571325
9337.00	16.347	17.8538	0.209	0.174812	0.000	0.10563084
9347.00	15.668	17.0119	0.220	0.188930	0.000	0.10638135
9357.00	14.989	16.1829	0.232	0.208759	0.000	0.09278508
9367.00	14.309	15.3377	0.243	0.236346	0.000	0.07959298
9377.00	13.630	14.4720	0.254	0.273652	0.000	0.06696830
9387.00	12.950	13.5817	0.266	0.322637	0.000	0.05512107
9397.00	12.271	12.6627	0.277	0.385258	0.000	0.04431576
9407.00	11.592	11.7110	0.288	0.463464	0.000	0.03488035
9417.00	10.912	10.7224	0.299	0.559201	0.000	0.02721666
9427.00	10.233	9.6927	0.310	0.674401	0.000	0.02181215
9437.00	9.554	8.6179	0.321	0.810985	0.000	0.01925295
9447.00	8.874	7.6102	0.332	0.970917	0.000	0.05667327
9457.00	8.195	7.0974	0.343	1.150777	0.000	0.09535978
9467.00	7.516	6.6993	0.354	1.348721	0.000	-0.01591685
9477.00	6.836	6.2438	0.365	1.568232	0.000	0.01376365
9487.00	6.157	5.7232	0.375	1.810739	0.000	0.00292878
9497.00	5.478	5.1412	0.386	2.056331	0.000	-0.00401011
9507.00	4.798	4.4974	0.397	2.31501	0.000	-0.01300745
9517.00	4.119	3.7904	0.407	2.586971	0.000	-0.02432448
9527.00	3.440	3.0186	0.418	2.83472	0.000	-0.03813426
9537.00	2.760	2.1806	0.428	3.01748	0.000	-0.05451351
9547.00	2.081	1.2749	0.439	3.12451	0.000	-0.07343421
9557.00	1.402	0.3050	0.449	3.15370	0.000	-0.09310445
9567.00	0.722	-0.4816	0.460	3.09642	0.000	-0.03014459
9577.00	0.043	-0.9666	0.470	2.831063	0.000	0.08446702
9587.00	-0.636	-1.4840	0.480	2.345321	0.000	0.04192117
9597.00	-1.315	-2.0763	0.490	1.620508	0.000	-0.07196194
9607.00	-1.995	-2.7452	0.500	0.253037	0.000	-0.01481247
9617.00	-2.674	-3.4921	0.510	-0.148157	0.000	0.04307003
9627.00	-3.353	-4.3183	0.520	-0.005265	0.000	0.10246068
9637.00	-4.032	-5.1841	0.530	0.176325	0.000	0.17783980
9647.00	-4.712	-5.8350	0.540	0.404173	0.000	0.17554989
9657.00	-5.391	-6.3807	0.549	0.672872	0.000	0.22505154
9667.00	-6.070	-6.7028	0.559	0.977884	0.000	0.15983131
9677.00	-6.749	-7.1117	0.568	1.323654	0.000	0.08747068
9687.00	-7.429	-8.5040	0.578	1.711321	0.000	0.02352726
9697.00	-8.108	-9.2626	0.587	1.611725	0.000	0.05002781
9707.00	-8.787	-9.8555	0.596	1.249207	0.000	0.12237551
9717.00	-9.466	-10.4653	0.606	0.929330	0.000	0.17292056
9727.00	-10.146	-11.1676	0.615	0.654078	0.000	0.22204968
9737.00	-10.825	-11.9328	0.624	0.427494	0.000	0.18548168
9747.00	-11.504	-12.6162	0.633	0.251747	0.000	0.08334143
9757.00	-12.183	-13.2345	0.642	0.123233	0.000	0.03294859
9767.00	-12.863	-13.9106	0.650	0.042511	0.000	-0.00467485

TABLE 2.2 (TLI)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	COMMANDED PITCH ATTITUDE (DEG)	EULERIAN ANGLE ØF IN PITCH (DEG)	COMMANDED YAW ATTITUDE (DEG)	EULERIAN ANGLE ØF IN YAW (DEG)	COMMANDED ROLL ATTITUDE (DEG)	EULERIAN ANGLE ØF IN ROLL (DEG)
9777.00	-13.542	-14.6306	0.659	0.007021	0.000	-0.02593487
9787.00	-14.221	-15.2599	0.667	-0.026205	0.000	-0.01171641
9797.00	-14.900	-15.8585	0.676	-0.070653	0.000	0.00996029
9807.00	-15.579	-16.4503	0.684	-0.126308	0.000	0.03112578
9817.00	-16.259	-17.0353	0.693	-0.193161	0.000	0.05167758
9827.00	-16.938	-17.6134	0.701	-0.270117	0.000	0.04045432
9837.00	-17.617	-18.1846	0.709	-0.357164	0.000	-0.00262197
9847.00	-18.296	-18.7492	0.717	-0.453704	0.000	0.00217981
9855.00	-18.840	-19.1733	0.723	-0.425913	0.000	0.01951280
9857.00	-18.840	-19.1796	0.723	-0.233637	0.000	0.00466751
9857.50	-18.840	-19.1031	0.723	-0.092381	0.000	0.03317127
9867.00	-22.840	-21.1144	-0.405	-0.658771	0.000	-0.13131257
9877.00	-24.722	-24.3841	0.002	-0.345842	0.000	0.11975682
9887.00	-25.421	-25.1936	0.551	0.228988	0.000	-0.18843592
9897.00	-25.913	-25.6970	0.988	0.674196	0.000	-0.13024713
9907.00	-26.346	-26.1325	1.355	1.045740	0.000	-0.02276250
9917.00	-26.746	-26.5346	1.680	1.373911	0.000	0.08836313
9927.00	-27.121	-26.9119	1.986	1.678960	0.000	0.18277871
9937.00	-27.479	-27.2698	2.280	1.972655	0.000	0.183306238
9947.00	-27.824	-27.6144	2.570	2.261791	0.000	0.183359346
9957.00	-28.166	-27.9552	2.853	2.543274	0.000	0.13137064
9967.00	-28.502	-28.2907	3.134	2.823289	0.000	0.08162546
9977.00	-28.811	-28.6060	3.419	3.110629	0.000	0.03826684
9987.00	-29.125	-28.8925	3.720	3.419589	0.000	0.09507006
9997.00	-29.436	-29.1720	4.033	3.74042	0.000	-0.10299948
10007.00	-29.743	-29.4423	4.366	4.074042	0.000	-0.09171860
10017.00	-30.044	-29.7127	4.713	4.4249320	0.000	-0.12215049
10027.00	-30.342	-30.1274	5.071	4.787564	0.000	-0.16433610
10037.00	-30.637	-30.4391	5.444	5.1678781	0.000	-0.20058377
10047.00	-30.935	-30.7644	5.833	5.5610564	0.000	-0.17824911
10057.00	-31.238	-31.1038	6.235	5.971795	0.000	-0.15506645
10067.00	-31.543	-31.4574	6.658	6.403375	0.000	-0.13180078
10077.00	-31.852	-31.8308	7.103	6.853961	0.000	-0.10907272
10087.00	-32.166	-32.2255	7.566	7.33571	0.000	-0.08675644
10097.00	-32.486	-32.6490	8.053	7.8412143	0.000	-0.06525089
10107.00	-32.811	-33.1054	8.566	8.37630	0.000	-0.04451402
10117.00	-33.142	-33.6177	9.103	8.94540	0.000	-0.02453366
10127.00	-33.479	-34.1506	9.666	9.547706	0.000	-0.00491681
10137.00	-33.822	-34.7468	10.255	10.184488	0.000	0.01812969
10147.00	-34.171	-35.4122	10.877	10.842505	0.000	0.03597861
10157.00	-34.526	-36.1712	11.533	11.52222	0.000	0.05383410
10167.00	-34.888	-37.0530	12.225	12.22222	0.000	0.07489940
10177.00	-35.259	-38.0836	12.953	12.9515	0.000	0.10240751
10187.00	-35.646	-40.168	13.723	13.7230	0.000	0.10018786
10197.00	-36.041	-40.6220	14.533	14.5320	0.000	-0.21027236
10203.80	-40.145	-40.250	15.385	15.3850	0.000	-0.18159041
10207.00	-40.145	-39.9447	16.275	16.2750	0.000	-0.16424425
10213.80	-40.145	-39.9389	17.205	17.2050	0.000	-0.12742721

S-IVB REIGNITION

S-IVB 90 THRUST

S-IVB GCS2

TLI

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FRØM FØRST MØTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (NT/M**2)	TØTAL ANGLE ØF ATTACK (DEG)	DRAG ALØNG VELOCITY VECTØR (KG)	AERØDYNAMIC LOAD (KG/M**2)	MAGNITUDE ØF THE AERØDYNAMIC FØRCE VECTØR (KG)
9287.00	9.86	0.00	1.6768	0.0000	0.0000	0.0000
9297.00	9.86	0.00	1.7227	0.0000	0.0000	0.0000
9307.00	9.86	0.00	1.7953	0.0000	0.0000	0.0000
9317.00	9.86	0.00	1.8861	0.0000	0.0000	0.0000
9327.00	9.86	0.00	1.9924	0.0000	0.0000	0.0000
9337.00	9.86	0.00	2.0729	0.0000	0.0000	0.0000
9347.00	9.86	0.00	2.0362	0.0000	0.0000	0.0000
9357.00	9.86	0.00	1.9808	0.0000	0.0000	0.0000
9367.00	9.86	0.00	1.9361	0.0000	0.0000	0.0000
9377.00	9.86	0.00	1.9082	0.0000	0.0000	0.0000
9387.00	9.86	0.00	1.9054	0.0000	0.0000	0.0000
9397.00	9.86	0.00	1.9386	0.0000	0.0000	0.0000
9407.00	9.86	0.00	2.0197	0.0000	0.0000	0.0000
9417.00	9.86	0.00	2.1603	0.0000	0.0000	0.0000
9427.00	9.86	0.00	2.3695	0.0000	0.0000	0.0000
9437.00	9.87	0.00	2.6535	0.0000	0.0000	0.0000
9447.00	9.87	0.00	2.9536	0.0000	0.0000	0.0000
9457.00	9.87	0.00	3.0299	0.0000	0.0000	0.0000
9467.00	9.87	0.00	3.0980	0.0000	0.0000	0.0000
9477.00	9.87	0.00	3.2373	0.0000	0.0000	0.0000
9487.00	9.87	0.00	3.0055	0.0000	0.0000	0.0000
9497.00	9.87	0.00	2.6762	0.0000	0.0000	0.0000
9507.00	9.87	0.00	2.3898	0.0000	0.0000	0.0000
9517.00	9.87	0.00	2.1498	0.0000	0.0000	0.0000
9527.00	9.87	0.00	1.9653	0.0000	0.0000	0.0000
9537.00	9.87	0.00	1.8529	0.0000	0.0000	0.0000
9547.00	9.87	0.00	1.8346	0.0000	0.0000	0.0000
9557.00	9.87	0.00	1.9270	0.0000	0.0000	0.0000
9567.00	9.87	0.00	1.9418	0.0000	0.0000	0.0000
9577.00	9.87	0.00	1.7583	0.0000	0.0000	0.0000
9587.00	9.87	0.00	1.6315	0.0000	0.0000	0.0000
9597.00	9.87	0.00	1.5895	0.0000	0.0000	0.0000
9607.00	9.87	0.00	1.6323	0.0000	0.0000	0.0000
9617.00	9.87	0.00	1.7537	0.0000	0.0000	0.0000
9627.00	9.87	0.00	1.9543	0.0000	0.0000	0.0000
9637.00	9.87	0.00	2.2101	0.0000	0.0000	0.0000
9647.00	9.88	0.00	2.3685	0.0000	0.0000	0.0000
9657.00	9.88	0.00	2.5169	0.0000	0.0000	0.0000
9667.00	9.88	0.00	2.7551	0.0000	0.0000	0.0000
9677.00	9.88	0.00	3.0770	0.0000	0.0000	0.0000
9687.00	9.88	0.00	3.4730	0.0000	0.0000	0.0000
9697.00	9.88	0.00	3.4089	0.0000	0.0000	0.0000
9707.00	9.88	0.00	3.0396	0.0000	0.0000	0.0000
9717.00	9.88	0.00	2.7181	0.0000	0.0000	0.0000
9727.00	9.88	0.00	2.4852	0.0000	0.0000	0.0000
9737.00	9.88	0.00	2.3398	0.0000	0.0000	0.0000
9747.00	9.88	0.00	2.1982	0.0000	0.0000	0.0000
9757.00	9.88	0.00	2.0554	0.0000	0.0000	0.0000
9767.00	9.88	0.00	1.9875	0.0000	0.0000	0.0000

TABLE 2.2 (TLI)
 AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FRØM FIRST MØTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (NT/M**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALONG VELOCITY VECTOR (KG)	AERØDYNAMIC LOAD (KG/M**2)	MAGNITUDE ØF THE AERØDYNAMIC FØRCE VECTOR (KG)
9777.00	9.88	0.00	1.9839	0.0000	0.0000	0.0000
9787.00	9.88	0.00	1.9203	0.0000	0.0000	0.0000
9797.00	9.88	0.00	1.8275	0.0000	0.0000	0.0000
9807.00	9.88	0.00	1.7219	0.0000	0.0000	0.0000
9817.00	9.88	0.00	1.6036	0.0000	0.0000	0.0000
9827.00	9.88	0.00	1.4733	0.0000	0.0000	0.0000
9837.00	9.88	0.00	1.3310	0.0000	0.0000	0.0000
9847.00	9.88	0.00	1.1773	0.0000	0.0000	0.0000
9855.00	9.88	0.00	1.1246	0.0000	0.0000	0.0000
9857.00	9.89	0.00	1.2316	0.0000	0.0000	0.0000
9857.50	9.89	0.00	1.3266	0.0000	0.0000	0.0000
9867.00	9.96	0.00	1.8761	0.0000	0.0000	0.0000
9877.00	10.04	0.00	4.4229	0.0000	0.0000	0.0000
9887.00	10.13	0.00	4.6834	0.0000	0.0000	0.0000
9897.00	10.21	0.00	4.6669	0.0000	0.0000	0.0000
9907.00	10.29	0.00	4.6050	0.0000	0.0000	0.0000
9917.00	10.38	0.00	4.5345	0.0000	0.0000	0.0000
9927.00	10.46	0.00	4.4703	0.0000	0.0000	0.0000
9937.00	10.55	0.00	4.4239	0.0000	0.0000	0.0000
9947.00	10.63	0.00	4.4049	0.0000	0.0000	0.0000
9957.00	10.72	0.00	4.4163	0.0000	0.0000	0.0000
9967.00	10.80	0.00	4.4601	0.0000	0.0000	0.0000
9977.00	10.88	0.00	4.5342	0.0000	0.0000	0.0000
9987.00	10.97	0.00	3.8191	0.0000	0.0000	0.0000
9997.00	11.06	0.00	4.1432	0.0000	0.0000	0.0000
10007.00	11.15	0.00	4.8428	0.0000	0.0000	0.0000
10017.00	11.23	0.00	5.1075	0.0000	0.0000	0.0000
10027.00	11.31	0.00	5.2561	0.0000	0.0000	0.0000
10037.00	11.38	0.00	5.4295	0.0000	0.0000	0.0000
10047.00	11.45	0.00	5.6374	0.0000	0.0000	0.0000
10057.00	11.51	0.00	5.8584	0.0000	0.0000	0.0000
10067.00	11.56	0.00	6.0818	0.0000	0.0000	0.0000
10077.00	11.61	0.00	6.3031	0.0000	0.0000	0.0000
10087.00	11.65	0.00	6.5196	0.0000	0.0000	0.0000
10097.00	11.69	0.00	6.7285	0.0000	0.0000	0.0000
10107.00	11.74	0.00	6.9280	0.0000	0.0000	0.0000
10117.00	11.78	0.00	7.1237	0.0000	0.0000	0.0000
10127.00	11.81	0.00	7.2989	0.0000	0.0000	0.0000
10137.00	11.84	0.00	7.4975	0.0000	0.0000	0.0000
10147.00	11.86	0.00	7.6392	0.0000	0.0000	0.0000
10157.00	11.87	0.00	7.7751	0.0000	0.0000	0.0000
10167.00	11.88	0.00	7.9337	0.0000	0.0000	0.0000
10177.00	11.88	0.00	8.5363	0.0000	0.0000	0.0000
10187.00	11.88	0.00	8.9196	0.0000	0.0000	0.0000
10197.00	11.89	0.00	8.4193	0.0000	0.0000	0.0000
10203.80	11.90	0.00	8.2198	0.0000	0.0000	0.0000
10207.00	11.86	0.00	8.1942	0.0000	0.0000	0.0000
10213.80	11.76	0.00	8.1534	0.0000	0.0000	0.0000

S-IVB REIGNITION
 S-IVB 90 THRUST

S-IVB GCS2

TLI

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM MØTILØN (SEC)	X PØSI CØRD				Y PØSI CØRD				Z PØSI CØRD				X VEL. CØMP.				Y VEL. CØMP.				Z VEL. CØMP.			
	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	(M)	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	(M)	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	(M)	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	(M/S)	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	(M/S)	SPACE FIXED	EARTH CENTER	PLUMBLIN SYS	(M/S)
9287.00	-2248746.9	-142380.6	-6175830.3	7317.261	-25.030	-2669.068																		
9297.00	-2175417.9	-142621.4	-6202086.8	7348.359	-23.124	-2582.182																		
9307.00	-2101783.2	-142843.1	-6227472.7	7378.425	-21.214	-2494.934																		
9317.00	-2027852.9	-143045.6	-6251984.3	7407.456	-19.300	-2407.335																		
9327.00	-1953637.5	-143225.0	-6275618.3	7435.446	-17.382	-2319.399																		
9337.00	-1879147.5	-143393.3	-6298371.2	7462.392	-15.460	-2231.141																		
9347.00	-1804393.2	-143538.2	-6320240.0	7488.291	-13.535	-2142.569																		
9357.00	-1729385.1	-143664.0	-6341221.6	7513.140	-11.608	-2053.694																		
9367.00	-1654133.9	-143770.4	-6361312.9	7536.934	-9.677	-1964.531																		
9377.00	-1578650.0	-143857.5	-6380511.3	7559.671	-7.744	-1875.092																		
9387.00	-1502544.0	-143925.3	-6398813.9	7581.346	-5.809	-1785.389																		
9397.00	-1427026.6	-143973.7	-6416218.2	7601.957	-3.872	-1695.437																		
9407.00	-1350908.4	-144002.7	-6432721.8	7621.502	-1.933	-1605.246																		
9417.00	-1274600.1	-144012.3	-6448322.4	7639.976	0.007	-1514.830																		
9427.00	-1198112.5	-144002.5	-6463017.7	7657.379	1.949	-1424.201																		
9437.00	-1121456.1	-143973.3	-6476805.8	7673.706	3.891	-1333.373																		
9447.00	-1044641.9	-143924.7	-6489684.5	7688.958	5.834	-1242.349																		
9457.00	-967680.6	-143856.7	-6501652.1	7703.130	7.778	-1151.149																		
9467.00	-890582.9	-143769.2	-6512707.0	7716.220	9.721	-1059.798																		
9477.00	-813359.8	-143662.2	-6522847.6	7728.226	11.665	-968.297																		
9487.00	-736022.0	-143535.8	-6532072.5	7739.147	13.620	-876.660																		
9497.00	-658580.5	-143389.9	-6540380.4	7748.981	15.563	-784.900																		
9507.00	-581046.0	-143224.5	-6547770.1	7757.727	17.504	-693.030																		
9517.00	-503429.6	-143039.8	-6554240.7	7765.384	19.444	-601.063																		
9527.00	-425742.0	-142835.6	-6559791.1	7771.951	21.383	-509.011																		
9537.00	-347994.2	-142612.1	-6564420.6	7777.426	23.320	-416.887																		
9547.00	-270197.1	-142369.2	-6568128.6	7781.809	25.255	-324.705																		
9557.00	-192361.6	-142107.0	-6570914.6	7785.100	27.188	-232.476																		
9567.00	-114498.8	-141825.5	-6572778.0	7787.297	29.118	-140.206																		
9577.00	-36619.4	-141524.7	-6573718.7	7788.400	31.045	-47.922																		
9587.00	41265.6	-141204.6	-6573736.4	7788.410	32.970	44.365																		
9597.00	119145.2	-140865.3	-6572831.4	7787.326	34.891	136.646																		
9607.00	197008.5	-140506.8	-6571003.6	7785.149	36.808	228.908																		
9617.00	274844.5	-140129.1	-6568253.4	7781.878	38.722	321.137																		
9627.00	352642.4	-139732.4	-6564581.0	7777.514	40.632	413.322																		
9637.00	430391.2	-139316.5	-6559987.1	7772.058	42.537	505.452																		
9647.00	508079.9	-138881.6	-6554472.2	7765.510	44.438	597.515																		
9657.00	585697.7	-138427.8	-6548037.1	7757.871	46.334	689.487																		
9667.00	663233.7	-137955.0	-6540682.8	7749.144	48.225	781.362																		
9677.00	740677.0	-137463.3	-6532410.3	7739.328	50.111	873.128																		
9687.00	818016.6	-136952.8	-6523220.6	7728.424	51.991	964.771																		
9697.00	895241.8	-136423.4	-6513115.3	7716.435	53.882	1056.283																		
9707.00	972341.7	-135875.2	-6502095.4	7703.362	55.751	1147.646																		
9717.00	1049305.5	-135308.4	-6490162.9	7689.208	57.612	1238.844																		
9727.00	1126122.3	-134723.0	-6477319.2	7673.973	59.467	1329.868																		
9737.00	1202781.3	-134119.1	-6463566.1	7657.661	61.315	1420.707																		
9747.00	1279271.9	-133496.7	-6448905.7	7640.272	63.156	1511.349																		
9757.00	1355583.2	-132856.0	-6433339.9	7621.811	64.989	1601.775																		
9767.00	1431704.6	-132197.0	-6416870.9	7602.280	66.814	1691.976																		

TABLE 2.2 (TLI)
 AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	X PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (M)	Y PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (M)	Z PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (M)	X VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (M/S)	Y VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (M/S)	Z VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (M/S)
9777.00	1507625.3	-131519.7	-6399501.1	7591.693	68.632	1781.944
9787.00	1583334.9	-130824.3	-6381232.8	7560.062	76.441	1871.666
9797.00	1658823.0	-130110.9	-6362068.6	7537.369	72.242	1961.124
9807.00	1734078.8	-129379.5	-6342011.3	7513.617	74.035	2050.307
9817.00	1809091.8	-128630.3	-6321063.5	7488.809	75.818	2139.202
9827.00	1883851.5	-127863.2	-6299228.3	7462.949	77.592	2227.796
9837.00	1958347.3	-127078.4	-6276508.6	7436.041	79.357	2316.078
9847.00	2032568.8	-126276.1	-6252907.8	7408.088	81.111	2404.035
9855.00	2091741.8	-125621.6	-6233394.7	7385.051	82.498	2474.184
9857.00	2106507.7	-125456.3	-6228428.2	7382.598	82.782	2492.892
9857.50	2110199.3	-125414.9	-6227180.4	7383.636	82.840	2498.142
9867.00	2180456.6	-124618.7	-6202970.9	7407.693	84.652	2598.824
9877.00	2254653.6	-123768.8	-6176427.8	7431.596	85.476	2710.127
9887.00	2329087.5	-122907.4	-6148766.4	7455.094	86.917	2822.273
9897.00	2403754.0	-122028.7	-6119980.4	7478.126	88.887	2934.999
9907.00	2478648.6	-121128.2	-6090064.9	7500.730	91.294	3048.171
9917.00	2553767.2	-120201.6	-6059015.7	7522.917	94.090	3161.738
9927.00	2629105.6	-119245.2	-6026829.0	7544.691	97.245	3275.665
9937.00	2704659.7	-118255.5	-5993501.3	7566.067	100.754	3389.929
9947.00	2780425.6	-117228.9	-5959029.4	7587.042	104.614	3504.501
9957.00	2856399.4	-116162.0	-5923410.2	7607.666	108.832	3619.391
9967.00	2932577.8	-115051.1	-5886640.5	7627.955	113.413	3734.596
9977.00	3008962.9	-113892.2	-5848714.3	7651.025	118.540	3851.784
9987.00	3085616.5	-112678.1	-5809593.5	7679.721	124.155	3972.453
9997.00	3162358.5	-111412.1	-5769264.6	7708.684	129.227	4093.426
10007.00	3239790.3	-110088.7	-5727722.4	7737.704	135.657	4215.117
10017.00	3317312.9	-108695.9	-5684960.0	7766.846	143.011	4337.483
10027.00	3395128.0	-107226.8	-5640970.8	7796.220	150.893	4460.464
10037.00	3473238.4	-105676.4	-5595748.6	7825.904	159.263	4584.085
10047.00	3551647.3	-104039.7	-5549286.8	7855.953	168.177	4708.387
10057.00	3630358.8	-102310.9	-5501578.4	7886.418	177.689	4833.420
10067.00	3709377.3	-100483.8	-5452615.8	7917.355	187.829	4959.239
10077.00	3788707.7	-98552.1	-5402390.8	7948.823	198.624	5085.906
10087.00	3868355.7	-96509.1	-5350894.6	7980.883	210.102	5213.496
10097.00	3948327.5	-94347.7	-5298117.5	8013.593	222.297	5342.095
10107.00	4028629.9	-92060.7	-5244048.9	8047.011	235.239	5471.808
10117.00	4109270.3	-89640.3	-5188677.3	8081.189	248.966	5602.755
10127.00	4190256.3	-87078.5	-5131989.1	8116.161	263.529	5735.098
10137.00	4271595.8	-84366.9	-5073970.6	8151.865	278.955	5868.877
10147.00	4353296.6	-81496.3	-5014605.8	8188.456	295.319	6004.390
10157.00	4435367.9	-78457.5	-4953876.3	8225.949	312.596	6141.887
10167.00	4517818.4	-75241.1	-4891760.5	8264.308	330.865	6281.672
10177.00	4600656.6	-71836.6	-4828233.9	8303.446	350.230	6424.197
10187.00	4683874.4	-68226.5	-4763247.9	8340.330	371.852	6573.414
10197.00	4767474.2	-64398.9	-4696763.9	8380.184	393.725	6723.494
10203.80	4824569.0	-60669.9	-4650686.4	8409.215	408.768	6826.019
10207.00	4851441.9	-60360.4	-4628814.6	8391.402	409.576	6847.923
10213.80	4908366.2	-57572.8	-4582098.1	8347.547	410.131	6889.289

S-IVB REIGNITION

S-IVB 90 THRUST

S-IVB GCS2

TLI

TABLE 2.2 (TLI)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	GIMBAL DEFLECTION ANG REQUIRED PITCH CHANL (DEG)	GIMBAL DEFLECTION ANG REQUIRED YAW CHANNEL (DEG)	GIMBAL DEFLECTION ANG REQUIRED ROLL CHANNEL (DEG)	EULERIAN ATTITUDE RATE IN PITCH (DEG/S)	EULERIAN ATTITUDE RATE IN YAW (DEG/S)	EULERIAN ATTITUDE RATE IN ROLL (DEG/S)
9287.00	0.3689	-0.012528	0.000000	-0.04800695	-0.00011310	-0.01582052
9297.00	0.5303	-0.018671	0.000000	-0.04805155	0.00066167	0.00901542
9307.00	0.6914	-0.021163	0.000000	-0.04805047	0.00073610	0.00901542
9317.00	0.8526	-0.023910	0.000000	-0.04804927	0.00081053	0.00901542
9327.00	1.0130	-0.026586	0.000000	-0.04823921	0.00097680	0.00901542
9337.00	1.0990	-0.027579	0.000000	-0.06643097	0.00132937	0.00321908
9347.00	1.0090	-0.024807	0.000000	-0.08195375	0.00181295	-0.00156181
9357.00	0.8863	-0.017047	0.000000	-0.08363760	0.00247351	-0.00164653
9367.00	0.7501	-0.002808	0.000000	-0.08547555	0.00333072	-0.00164653
9377.00	0.5970	0.019498	0.000000	-0.08772477	0.00438448	-0.00164653
9387.00	0.4236	0.051456	0.000000	-0.09038531	0.00563467	-0.00164653
9397.00	0.2266	0.094650	0.000000	-0.09345723	0.00708117	-0.00164653
9407.00	0.0026	0.150660	0.000000	-0.09694057	0.00872387	-0.00164653
9417.00	-0.2516	0.221066	0.000000	-0.10083541	0.01056264	-0.00164653
9427.00	-0.5395	0.307442	0.000000	-0.10514179	0.01259737	-0.00164653
9437.00	-0.8644	0.411361	0.000000	-0.10985977	0.01482795	-0.00164653
9447.00	-1.0977	0.534814	0.000000	-0.07634367	0.01731685	-0.01108534
9457.00	-0.9242	0.673131	0.000000	-0.03694561	0.01859889	-0.01472232
9467.00	-0.7026	0.825777	0.000000	-0.04263450	0.02060864	0.00345104
9477.00	-0.5267	0.997115	0.000000	-0.04846843	0.02282689	0.00404543
9487.00	-0.4048	0.774323	0.000000	-0.05514409	-0.03289310	-0.00192121
9497.00	-0.3319	0.513779	0.000000	-0.06125144	-0.02997812	-0.00192121
9507.00	-0.3092	0.277303	0.000000	-0.06750516	-0.02699544	-0.00192121
9517.00	-0.3379	0.065470	0.000000	-0.07390529	-0.02394511	-0.00192121
9527.00	-0.4191	-0.121143	0.000000	-0.08045184	-0.02082718	-0.00192121
9537.00	-0.5540	-0.281960	0.000000	-0.08714484	-0.01764169	-0.00192121
9547.00	-0.7439	-0.416400	0.000000	-0.09398431	-0.01438870	-0.00192121
9557.00	-0.9811	-0.523875	0.000000	-0.09603511	-0.01106534	-0.00029475
9567.00	-1.0301	-0.603102	0.000000	-0.05668792	-0.00756334	0.01502658
9577.00	-0.8650	-0.651272	0.000000	-0.04804588	-0.00327640	0.00035343
9587.00	-0.7408	-0.667580	0.000000	-0.05544990	0.00067825	-0.01194114
9597.00	-0.6771	-0.652293	0.000000	-0.06305847	0.00481813	0.00605277
9607.00	-0.6765	-0.601807	0.000000	-0.07076871	0.00858903	0.00605277
9617.00	-0.7392	-0.520869	0.000000	-0.07862039	0.01243777	0.00605277
9627.00	-0.8661	-0.408885	0.000000	-0.08661344	0.01636449	0.00605277
9637.00	-1.0097	-0.265106	0.000000	-0.07883922	0.02038470	0.01129381
9647.00	-0.9616	-0.084005	0.000000	-0.05322633	0.02502083	0.00346583
9657.00	-0.8575	0.129714	0.000000	-0.05777730	0.02886468	-0.00245200
9667.00	-0.8192	0.372190	0.000000	-0.06642886	0.03269099	-0.00866023
9677.00	-0.8518	0.648057	0.000000	-0.07521559	0.03677513	-0.00866023
9687.00	-0.9486	0.958026	0.000000	-0.08044223	0.04091894	-0.00743748
9697.00	-0.9981	0.793344	0.000000	-0.06535827	-0.03811127	0.01027064
9707.00	-0.9197	0.496619	0.000000	-0.0575911	-0.03407811	0.00378353
9717.00	-0.8722	0.234745	0.000000	-0.0558840	-0.02956867	0.00395118
9727.00	-0.9002	0.009248	0.000000	-0.07480242	-0.02498272	0.00403904
9737.00	-0.9696	-0.176599	0.000000	-0.07419301	-0.01968009	-0.01413365
9747.00	-0.9610	-0.322571	0.000000	-0.06194192	-0.01512860	-0.00689304
9757.00	-0.9129	-0.429688	0.000000	-0.06324418	-0.01043682	-0.00406413
9767.00	-0.9184	-0.497812	0.000000	-0.07161459	-0.005666436	-0.00351446

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG IST ØPP

TIME FROM MOTION (SEC)	GIMBAL			GIMBAL DEFLECTION ANG REQUIRED			EULERIAN ATTITUDE RATE IN			EULERIAN ATTITUDE RATE IN		
	DEFLECTION ANG PITCH CHANL (DEG)	DEFLECTION ANG YAW CHANNEL (DEG)	DEFLECTION ANG ROLL CHANNEL (DEG)	DEFLECTION ANG YAW CHANNEL (DEG)	DEFLECTION ANG ROLL CHANNEL (DEG)	DEFLECTION ANG ROLL CHANNEL (DEG)	ATTITUDE RATE IN PITCH (DEG/S)	ATTITUDE RATE IN YAW (DEG/S)	ATTITUDE RATE IN ROLL (DEG/S)	ATTITUDE RATE IN PITCH (DEG/S)	ATTITUDE RATE IN YAW (DEG/S)	ATTITUDE RATE IN ROLL (DEG/S)
9777.00	-0.9470	-0.530952	0.000000	-0.530952	0.000000	-0.06717636	-0.00279059	-0.00279059	0.00014262			
9787.00	-0.8998	-0.565765	0.000000	-0.565765	0.000000	-0.06200056	-0.00389653	-0.00389653	0.00221725			
9797.00	-0.8340	-0.609544	0.000000	-0.609544	0.000000	-0.05952110	-0.00499491	-0.00499491	0.00221725			
9807.00	-0.7627	-0.662353	0.000000	-0.662353	0.000000	-0.05884206	-0.00609357	-0.00609357	0.00221725			
9817.00	-0.6858	-0.724187	0.000000	-0.724187	0.000000	-0.05816343	-0.00719252	-0.00719252	0.00221725			
9827.00	-0.6032	-0.794128	0.000000	-0.794128	0.000000	-0.05746963	-0.00810538	-0.00810538	-0.00399594			
9837.00	-0.5148	-0.872516	0.000000	-0.872516	0.000000	-0.05678250	-0.00926590	-0.00926590	-0.00399594			
9847.00	-0.4213	-0.957973	0.000000	-0.957973	0.000000	-0.05611755	-0.01009875	-0.01009875	0.00412891			
9855.00	-0.3183	-0.996663	0.000000	-0.996663	0.000000	-0.04937341	0.03513705	0.03513705	-0.02713175			
9857.00	-0.1643	-0.540998	0.000000	-0.540998	0.000000	0.11457224	0.24127607	0.24127607	0.04149767			
9857.50	-0.0341	-0.355937	0.000000	-0.355937	0.000000	0.18498392	0.31405346	0.31405346	0.06867917			
9867.00	0.2657	-0.485904	0.000000	-0.485904	0.000000	-1.16692996	-0.29046723	-0.29046723	0.02909369			
9877.00	0.1805	-0.230206	0.000000	-0.230206	0.000000	-0.09537979	0.05365619	0.05365619	-0.04277696			
9887.00	0.1311	-0.213507	0.000000	-0.213507	0.000000	-0.05501631	0.04865311	0.04865311	-0.00246207			
9897.00	0.1305	-0.215584	0.000000	-0.215584	0.000000	-0.04609909	0.03979106	0.03979106	0.00990024			
9907.00	0.1321	-0.216785	0.000000	-0.216785	0.000000	-0.04171686	0.03452502	0.03452502	0.01015610			
9917.00	0.1335	-0.217730	0.000000	-0.217730	0.000000	-0.03869681	0.03154414	0.03154414	0.01041571			
9927.00	0.1337	-0.219506	0.000000	-0.219506	0.000000	-0.03622544	0.03025122	0.03025122	-0.00113076			
9937.00	0.1351	-0.221396	0.000000	-0.221396	0.000000	-0.03418125	0.02875467	0.02875467	-0.00109759			
9947.00	0.1363	-0.221671	0.000000	-0.221671	0.000000	-0.03417534	0.02877066	0.02877066	-0.00662937			
9957.00	0.1374	-0.223500	0.000000	-0.223500	0.000000	-0.03369050	0.02841087	0.02841087	-0.00655409			
9967.00	0.1385	-0.224807	0.000000	-0.224807	0.000000	-0.03324084	0.02762868	0.02762868	-0.00654891			
9977.00	0.1403	-0.222449	0.000000	-0.222449	0.000000	-0.02660061	0.02782284	0.02782284	-0.00496093			
9987.00	0.1423	-0.267781	0.000000	-0.267781	0.000000	-0.01872313	-0.10400310	-0.10400310	-0.01338574			
9997.00	0.1408	-0.228116	0.000000	-0.228116	0.000000	-0.04853983	0.10283912	0.10283912	0.00051830			
10007.00	0.1414	-0.226835	0.000000	-0.226835	0.000000	-0.03792192	0.09306645	0.09306645	-0.00409373			
10017.00	0.1434	-0.230727	0.000000	-0.230727	0.000000	-0.03092407	0.02611113	0.02611113	-0.00628323			
10027.00	0.1439	-0.232876	0.000000	-0.232876	0.000000	-0.03070245	0.02345324	0.02345324	-0.00659552			
10037.00	0.1452	-0.234673	0.000000	-0.234673	0.000000	-0.03205681	0.02609758	0.02609758	-0.00059390			
10047.00	0.1463	-0.235634	0.000000	-0.235634	0.000000	-0.03343375	0.02796426	0.02796426	-0.00064026			
10057.00	0.1472	-0.237128	0.000000	-0.237128	0.000000	-0.03480899	0.02789021	0.02789021	-0.00094757			
10067.00	0.1489	-0.238483	0.000000	-0.238483	0.000000	-0.03608743	0.02783170	0.02783170	-0.00122720			
10077.00	0.1495	-0.239590	0.000000	-0.239590	0.000000	-0.03803154	0.02774209	0.02774209	-0.00164711			
10087.00	0.1509	-0.240529	0.000000	-0.240529	0.000000	-0.04064539	0.02811677	0.02811677	-0.00213748			
10097.00	0.1521	-0.242006	0.000000	-0.242006	0.000000	-0.04363328	0.02772889	0.02772889	-0.00278907			
10107.00	0.1532	-0.243270	0.000000	-0.243270	0.000000	-0.04718999	0.02772191	0.02772191	-0.00348981			
10117.00	0.1500	-0.242853	0.000000	-0.242853	0.000000	-0.05880695	0.03141585	0.03141585	-0.00527226			
10127.00	0.1546	-0.245713	0.000000	-0.245713	0.000000	-0.05518231	0.02710642	0.02710642	-0.00507244			
10137.00	0.1558	-0.246543	0.000000	-0.246543	0.000000	-0.06213277	0.02874091	0.02874091	-0.00613087			
10147.00	0.1569	-0.248459	0.000000	-0.248459	0.000000	-0.06989422	0.02484790	0.02484790	-0.00790764			
10157.00	0.1576	-0.249734	0.000000	-0.249734	0.000000	-0.07998277	0.02669795	0.02669795	-0.00938947			
10167.00	0.1589	-0.250504	0.000000	-0.250504	0.000000	-0.09436377	0.02786546	0.02786546	-0.01154498			
10177.00	0.2530	-0.285303	0.000000	-0.285303	0.000000	-0.09016677	0.33254286	0.33254286	-0.13798033			
10187.00	0.1610	-0.253069	0.000000	-0.253069	0.000000	0.06598764	-0.01586048	-0.01586048	-0.01738698			
10197.00	0.1605	-0.253861	0.000000	-0.253861	0.000000	0.04776391	-0.01518248	-0.01518248	0.01008585			
10203.80	0.1575	-0.252915	0.000000	-0.252915	0.000000	-0.00170559	0.00044478	0.00044478	0.00531462			
10207.00	0.1610	-0.254543	0.000000	-0.254543	0.000000	0.00083619	-0.00043041	-0.00043041	0.00554495			
10213.80	0.1655	-0.256974	0.000000	-0.256974	0.000000	0.00083591	-0.00043094	-0.00043094	0.00554495			

S-IVB REIGNITION
S-IVB 90 THRUST

S-IVB GCS2
TLI

TABLE 2.2 (TLI)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG IST ØPP

TIME FROM FIRST MOTION (SEC)	TOTAL VEHICLE ENGINE THRUST (LB)	TOTAL VEHICLE WEIGHT (LB)	ALTITUDE ABOVE SPHERICAL EARTH (FT)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (FT/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (FT/S**2)
9287.00	0.00	296465.14	674720.4	25554.11	89.96	0.000
9297.00	0.00	296464.67	674730.0	25554.05	89.96	0.000
9307.00	0.00	296464.20	674736.2	25553.99	89.96	0.000
9317.00	0.00	296463.73	674737.7	25553.94	89.96	0.000
9327.00	10.75	296463.26	674735.3	25553.88	89.96	0.000
9337.00	31.35	296462.79	674729.4	25553.83	89.96	0.000
9347.00	10.53	296462.32	674719.6	25553.78	89.96	0.000
9357.00	5.46	296461.85	674705.7	25553.73	89.96	0.000
9367.00	6.83	296461.37	674689.1	25553.69	89.96	0.000
9377.00	8.21	296460.90	674668.4	25553.65	89.97	0.000
9387.00	9.58	296460.43	674644.5	25553.61	89.97	0.000
9397.00	10.96	296459.96	674617.0	25553.57	89.97	0.000
9407.00	12.33	296459.49	674586.5	25553.53	89.97	0.000
9417.00	13.71	296459.02	674552.7	25553.50	89.97	0.000
9427.00	15.08	296458.55	674515.8	25553.47	89.97	0.000
9437.00	16.46	296458.08	674476.3	25553.44	89.97	0.000
9447.00	35.69	296457.61	674433.1	25553.41	89.97	0.000
9457.00	18.76	296457.14	674387.4	25553.39	89.97	0.000
9467.00	19.25	296456.67	674338.4	25553.36	89.97	0.000
9477.00	24.98	296456.19	674287.0	25553.34	89.97	0.000
9487.00	20.22	296455.72	674233.3	25553.32	89.97	0.000
9497.00	20.71	296455.25	674176.7	25553.30	89.97	0.000
9507.00	21.20	296454.78	674118.1	25553.28	89.97	0.000
9517.00	21.68	296454.31	674056.9	25553.27	89.97	0.000
9527.00	22.17	296453.84	673994.1	25553.25	89.97	0.000
9537.00	22.65	296453.37	673929.0	25553.23	89.97	0.000
9547.00	23.14	296452.90	673861.8	25553.22	89.97	0.000
9557.00	23.63	296452.43	673792.9	25553.21	89.97	0.000
9567.00	28.27	296451.96	673722.0	25553.19	89.97	0.000
9577.00	24.60	296451.49	673649.4	25553.18	89.97	0.000
9587.00	25.09	296451.01	673574.6	25553.17	89.97	0.000
9597.00	25.57	296450.54	673498.8	25553.16	89.97	0.000
9607.00	26.06	296450.07	673421.3	25553.15	89.97	0.000
9617.00	26.55	296449.60	673342.2	25553.14	89.97	0.000
9627.00	27.03	296449.13	673262.5	25553.13	89.97	0.000
9637.00	30.63	296448.66	673180.7	25553.12	89.97	0.000
9647.00	28.00	296448.19	673098.7	25553.12	89.97	0.000
9657.00	28.49	296447.72	673014.9	25553.11	89.97	0.000
9667.00	28.98	296447.25	672930.6	25553.11	89.98	0.000
9677.00	29.46	296446.78	672845.0	25553.10	89.98	0.000
9687.00	29.95	296446.30	672759.1	25553.09	89.98	0.000
9697.00	30.44	296445.83	672671.8	25553.09	89.98	0.000
9707.00	30.92	296445.36	672583.6	25553.08	89.98	0.000
9717.00	31.41	296444.89	672495.7	25553.08	89.98	0.000
9727.00	31.90	296444.42	672406.7	25553.08	89.98	0.000
9737.00	32.38	296443.95	672317.3	25553.08	89.98	0.000
9747.00	32.87	296443.48	672228.0	25553.07	89.98	0.000
9757.00	33.36	296443.01	672138.0	25553.07	89.98	0.000
9767.00	33.84	296442.54	672047.8	25553.07	89.98	0.000

TABLE 2.2 (TLI)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	TOTAL VEHICLE ENGINE THRUST (LB)	TOTAL VEHICLE WEIGHT (LB)	ALTITUDE ABOVE SPHERICAL EARTH (FT)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (FT/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (FT/S**2)
9777.00	137.87	296440.05	671956.9	25553.11	89.98	0.000
9787.00	137.87	296434.13	671866.3	25553.22	89.98	0.000
9797.00	137.87	296428.21	671775.7	25553.33	89.98	0.000
9807.00	137.87	296422.29	671685.3	25553.44	89.98	0.000
9817.00	137.87	296416.37	671595.3	25553.55	89.98	0.000
9827.00	137.87	296410.46	671505.3	25553.66	89.98	0.000
9837.00	137.87	296404.54	671415.5	25553.77	89.98	0.000
9847.00	137.87	296398.61	671326.2	25553.87	89.98	0.000
9855.00	386.22	296075.14	671255.2	25554.22	89.98	0.000
9857.00	160943.19	295946.47	671237.4	25566.17	89.98	0.000
9857.50	159821.48	295914.30	671233.1	25574.91	89.98	0.000
9867.00	177538.63	292067.18	671161.3	25757.20	89.98	0.000
9877.00	178552.38	287950.96	671069.5	25954.06	89.99	0.000
9887.00	178737.62	283821.65	670922.3	26154.53	90.00	0.000
9897.00	178784.77	275688.88	670766.0	26358.13	90.00	0.000
9907.00	178786.09	275554.07	670655.9	26564.80	89.98	0.000
9917.00	178695.50	271419.70	670648.8	26774.49	89.95	0.000
9927.00	178557.74	267287.20	670806.6	26987.14	89.91	0.000
9937.00	178319.65	263156.96	671192.0	27202.72	89.86	0.000
9947.00	178183.04	259029.92	671871.7	27421.16	89.79	0.000
9957.00	178038.09	254904.91	672913.8	27642.59	89.71	0.000
9967.00	177870.08	250781.92	674388.7	27867.02	89.62	0.000
9977.00	202785.90	246440.78	676368.9	28105.99	89.51	0.000
9987.00	202635.82	241711.35	678928.0	28370.05	89.39	0.000
9997.00	202554.70	236977.00	682158.0	28638.68	89.25	0.000
10007.00	202633.28	23242.83	686153.8	28911.94	89.10	0.000
10017.00	202539.20	227509.54	691003.9	29189.91	88.93	0.000
10027.00	202488.44	222777.75	696804.2	29472.75	88.75	0.000
10037.00	202460.47	218047.12	703656.1	29760.67	88.55	0.000
10047.00	202432.27	213317.20	711664.2	30053.85	88.33	0.000
10057.00	202400.23	208588.05	720935.8	30352.49	88.10	0.000
10067.00	202367.96	203859.52	731580.9	30656.78	87.85	0.000
10077.00	202333.61	195131.88	743712.8	30966.97	87.59	0.000
10087.00	202294.39	194404.95	757447.8	31283.32	87.31	0.000
10097.00	202252.31	185679.08	772905.3	31606.10	87.01	0.000
10107.00	202204.46	184954.13	790205.9	31935.64	86.70	0.000
10117.00	202140.53	180230.57	809474.3	32272.27	86.38	0.000
10127.00	202071.79	175508.66	830835.0	32616.38	86.04	0.000
10137.00	201719.23	170791.70	854415.6	32967.86	85.68	0.000
10147.00	201648.54	166076.72	880344.2	33327.70	85.31	0.000
10157.00	201548.78	161364.18	908749.1	33696.43	84.93	0.000
10167.00	201434.24	156654.24	939756.0	34074.59	84.54	0.000
10177.00	201690.84	151945.43	973488.5	34462.91	84.14	0.000
10187.00	201514.03	147232.86	1009980.9	34861.78	83.75	0.000
10197.00	201405.26	142523.63	1049323.4	35272.90	83.34	0.000
10203.80	201327.17	139323.33	1077833.8	35559.90	83.04	0.000
10207.00	0.00	135222.08	1091734.9	35560.04	82.90	0.000
10213.80	0.00	135222.08	1122229.3	35535.00	82.59	0.000

S-IVB REIGNITION

S-IVB 90 THRUST

S-IVB GC52

TLI

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	*** RADIAL DISTANCE ØF THE C G (FT)	MAGNITUDE ØF THE EARTH FIXED VELOCITY (FT/SEC)	SUB VEHICLE LATITUDE ØN SPHERICAL EARTH (DEG)	L ØNGITUDE ØN EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (NM)
9287.00	21568375.50	24234.975	-23.6993	139.73	4657.21
9297.00	21568537.75	24235.088	-23.4299	140.37	4636.55
9307.00	21568699.25	24235.203	-23.1576	141.00	4615.89
9317.00	21568860.25	24235.318	-22.8824	141.64	4595.23
9327.00	21569020.25	24235.436	-22.6044	142.27	4574.56
9337.00	21569179.50	24235.557	-22.3236	142.89	4553.89
9347.00	21569338.00	24235.679	-22.0400	143.52	4533.21
9357.00	21569495.50	24235.805	-21.7537	144.14	4512.53
9367.00	21569652.00	24235.932	-21.4648	144.76	4491.85
9377.00	21569807.75	24236.061	-21.1732	145.37	4471.17
9387.00	21569962.25	24236.193	-20.8791	145.99	4450.48
9397.00	21570115.75	24236.326	-20.5825	146.60	4429.79
9407.00	21570268.25	24236.461	-20.2835	147.21	4409.10
9417.00	21570419.50	24236.598	-19.9820	147.81	4388.40
9427.00	21570569.50	24236.736	-19.6782	148.42	4367.70
9437.00	21570718.50	24236.875	-19.3720	149.02	4347.00
9447.00	21570866.00	24237.016	-19.0636	149.62	4326.30
9457.00	21571012.00	24237.157	-18.7530	150.22	4305.59
9467.00	21571156.25	24237.300	-18.4402	150.81	4284.88
9477.00	21571299.25	24237.441	-18.1252	151.40	4264.17
9487.00	21571441.25	24237.581	-17.8082	151.99	4243.46
9497.00	21571581.50	24237.723	-17.4892	152.58	4222.75
9507.00	21571720.75	24237.864	-17.1681	153.16	4202.03
9517.00	21571858.25	24238.004	-16.8452	153.75	4181.31
9527.00	21571994.00	24238.144	-16.5203	154.33	4160.59
9537.00	21572128.50	24238.282	-16.1935	154.91	4139.87
9547.00	21572261.25	24238.419	-15.8650	155.48	4119.14
9557.00	21572392.75	24238.556	-15.5347	156.06	4098.42
9567.00	21572522.50	24238.690	-15.2026	156.63	4077.69
9577.00	21572650.25	24238.824	-14.8689	157.20	4056.96
9587.00	21572776.25	24238.957	-14.5336	157.77	4036.23
9597.00	21572900.50	24239.087	-14.1966	158.34	4015.49
9607.00	21573023.25	24239.217	-13.8581	158.90	3994.76
9617.00	21573144.25	24239.344	-13.5181	159.47	3974.02
9627.00	21573263.25	24239.469	-13.1767	160.03	3953.29
9637.00	21573380.75	24239.592	-12.8338	160.59	3932.55
9647.00	21573496.50	24239.713	-12.4895	161.15	3911.81
9657.00	21573610.00	24239.832	-12.1439	161.71	3891.06
9667.00	21573721.50	24239.948	-11.7970	162.26	3870.32
9677.00	21573831.50	24240.063	-11.4488	162.82	3849.57
9687.00	21573939.25	24240.174	-11.0995	163.37	3828.83
9697.00	21574045.25	24240.279	-10.7489	163.92	3808.08
9707.00	21574149.00	24240.385	-10.3972	164.47	3787.33
9717.00	21574251.00	24240.489	-10.0445	165.02	3766.58
9727.00	21574351.00	24240.589	-9.6906	165.56	3745.83
9737.00	21574449.00	24240.686	-9.3358	166.11	3725.08
9747.00	21574545.00	24240.780	-8.9800	166.66	3704.32
9757.00	21574638.75	24240.872	-8.6232	167.20	3683.57
9767.00	21574730.50	24240.959	-8.2656	167.74	3662.81

*** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	**** RADIAL DISTANCE ØF THE C G (FT)	MAGNITUDE ØF THE EARTH FIXED VELOCITY (FT/SEC)	SUB VEHICLE LATITUDE ØN SPHERICAL EARTH (DEG)	LONGITUDE ØN EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (NM)
9777.00	21574820.00	24241.087	-7.9071	168.28	3642.05
9787.00	21574907.50	24241.280	-7.5478	168.82	3621.29
9797.00	21574993.25	24241.469	-7.1877	169.36	3600.53
9807.00	21575077.00	24241.654	-6.8269	169.90	3579.77
9817.00	21575158.50	24241.835	-6.4653	170.44	3559.01
9827.00	21575238.25	24242.011	-6.1031	170.98	3538.25
9837.00	21575315.75	24242.183	-5.7403	171.51	3517.48
9847.00	21575391.75	24242.351	-5.3769	172.05	3496.72
9855.00	21575450.75	24242.740	-5.0857	172.48	3480.10
9857.00	21575465.00	24254.705	-5.0129	172.58	3475.95
9857.50	21575468.75	24263.453	-4.9947	172.61	3474.91
9867.00	21575549.50	24443.728	-4.6469	173.12	3455.09
9877.00	21575617.50	24642.703	-4.2775	173.66	3434.06
9887.00	21575627.75	24843.222	-3.9048	174.20	3412.86
9897.00	21575628.00	25046.806	-3.5286	174.75	3391.49
9907.00	21575672.50	25253.406	-3.1492	175.30	3369.94
9917.00	21575818.25	25462.971	-2.7664	175.86	3348.21
9927.00	21576126.50	25675.441	-2.3803	176.42	3326.29
9937.00	21576661.00	25890.798	-1.9910	176.99	3304.19
9947.00	21577487.75	26108.959	-1.5984	177.56	3281.91
9957.00	21578674.75	26330.050	-1.2026	178.13	3259.44
9967.00	21580292.50	26554.075	-0.8036	178.71	3236.77
9977.00	21582413.00	26792.573	-0.4014	179.30	3213.91
9987.00	21585109.25	27056.073	0.0042	179.89	3190.83
9997.00	21588475.00	27324.173	0.4134	-179.52	3167.53
10007.00	21592603.75	27596.743	0.8262	-178.92	3144.00
10017.00	21597584.50	27873.896	1.2423	-178.31	3120.23
10027.00	21603512.50	28155.836	1.6619	-177.69	3096.23
10037.00	21610490.00	28442.780	2.0847	-177.07	3071.99
10047.00	21618620.25	28734.904	2.5109	-176.44	3047.52
10057.00	21628011.25	29032.387	2.9402	-175.81	3022.80
10067.00	21638773.00	29335.437	3.3726	-175.16	2997.83
10077.00	21651018.50	29644.286	3.8080	-174.51	2972.62
10087.00	21664864.50	29959.193	4.2464	-173.85	2947.16
10097.00	21680429.50	30280.436	4.6876	-173.19	2921.45
10107.00	21697834.50	30608.339	5.1315	-172.52	2895.49
10117.00	21717204.25	30943.230	5.5780	-171.83	2869.27
10127.00	21738663.25	31285.488	6.0270	-171.15	2842.79
10137.00	21762339.00	31635.013	6.4783	-170.45	2816.06
10147.00	21788359.50	31992.783	6.9318	-169.74	2789.07
10157.00	21816853.00	32359.333	7.3873	-169.02	2761.81
10167.00	21847946.25	32735.193	7.8447	-168.30	2734.30
10177.00	21881761.50	33121.083	8.3038	-167.57	2706.51
10187.00	21918334.50	33517.259	8.7644	-166.82	2678.47
10197.00	21957754.00	33925.660	9.2263	-166.07	2650.15
10203.80	21986315.75	34210.813	9.5412	-165.55	2630.73
10207.00	22000240.50	34210.478	9.6893	-165.31	2621.57
10213.80	22030783.75	34184.487	10.0028	-164.78	2602.14

S-IVB REIGNITION

S-IVB 90 THRUST

S-IVB GCS2

TLI

**** MEASURED FROM THE CENTER ØF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

TABLE 2.2 (ILI)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG IST ØPP

TIME FRØM FIRST MØTIGN (SEC)	X CØRÐINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	Y CØRÐINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	Z CØRÐINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	COMPONENT ØF VEL. IN THE XXE SYSTEM (FT/S)	COMPONENT ØF VEL. IN THE XXE SYSTEM (FT/S)	COMPONENT ØF VEL. IN THE XXE SYSTEM (FT/S)	Z VEL. IN THE XXE SYSTEM (FT/S)
9287.00	-38268229.500	-3661631.844	-12264977.625	14241.710	-8557.481	-17643.051	-17643.051
9297.00	-38124723.500	-3747045.688	-12440601.750	14459.026	-8525.089	-17481.388	-17481.388
9307.00	-37979055.000	-3832129.719	-12614598.375	14674.528	-8491.469	-17317.570	-17317.570
9317.00	-37831240.000	-3916871.031	-12786945.750	14888.190	-8456.623	-17151.618	-17151.618
9327.00	-37681297.000	-4001257.875	-12957623.375	15099.984	-8420.555	-16983.554	-16983.554
9337.00	-37529246.500	-4085278.125	-13126609.875	15309.877	-8383.268	-16813.408	-16813.408
9347.00	-37375106.000	-4168519.344	-13253884.750	15517.851	-8344.765	-16641.195	-16641.195
9357.00	-37218895.500	-4252169.375	-13459426.875	15723.887	-8305.046	-16466.931	-16466.931
9367.00	-37060635.000	-4335016.188	-13623216.625	15927.952	-8264.117	-16290.645	-16290.645
9377.00	-36900343.000	-4417447.750	-13785233.500	16130.019	-8221.981	-16112.361	-16112.361
9387.00	-36738041.000	-4499451.750	-13945457.125	16330.065	-8178.641	-15932.102	-15932.102
9397.00	-36573749.000	-4581016.563	-14103868.875	16528.062	-8134.102	-15749.891	-15749.891
9407.00	-36407486.500	-4662129.813	-14260448.625	16723.987	-8088.367	-15565.752	-15565.752
9417.00	-36239276.000	-4742779.813	-14415177.500	16917.815	-8041.440	-15379.709	-15379.709
9427.00	-36069137.500	-4822554.625	-14568036.500	17109.522	-7993.327	-15191.787	-15191.787
9437.00	-35897093.000	-4902642.375	-14719007.000	17299.030	-7944.030	-15002.009	-15002.009
9447.00	-35723163.000	-4981831.313	-14868070.625	17486.492	-7893.549	-14810.382	-14810.382
9457.00	-355497370.000	-5060509.438	-15015208.625	17671.711	-7841.893	-14616.947	-14616.947
9467.00	-35369736.000	-5138665.188	-15160403.625	17854.693	-7789.075	-14421.752	-14421.752
9477.00	-35190284.000	-5216287.063	-15303637.750	18035.434	-7735.094	-14224.802	-14224.802
9487.00	-35009035.000	-5293363.000	-15444894.125	18213.915	-7679.918	-14026.136	-14026.136
9497.00	-34826013.000	-5369881.750	-15584154.875	18390.109	-7623.627	-13825.753	-13825.753
9507.00	-34641240.500	-5448331.750	-15721403.500	18563.995	-7566.189	-13623.690	-13623.690
9517.00	-34454741.000	-5521201.688	-15856623.125	18735.551	-7507.610	-13419.576	-13419.576
9527.00	-34266537.000	-559580.125	-15989797.500	18904.757	-7447.897	-13214.636	-13214.636
9537.00	-3407653.500	-5670155.813	-16120910.500	19071.590	-7387.055	-13007.698	-13007.698
9547.00	-33885113.500	-5743717.438	-16249946.250	19236.030	-7325.090	-12799.187	-12799.187
9557.00	-33691941.000	-5816653.938	-16376889.000	19398.058	-7262.009	-12589.128	-12589.128
9567.00	-33497160.750	-5889553.938	-16501723.625	19557.668	-7197.811	-12377.530	-12377.530
9577.00	-33300796.250	-5960606.500	-16624435.000	19714.811	-7132.518	-12164.457	-12164.457
9587.00	-33102872.500	-6031600.688	-16745007.875	19869.474	-7066.132	-11949.930	-11949.930
9597.00	-32903415.250	-6101525.500	-16863428.500	20021.642	-6998.658	-11733.968	-11733.968
9607.00	-32702448.250	-6171570.250	-16979682.750	20171.298	-6930.103	-11516.599	-11516.599
9617.00	-32499997.250	-6240523.938	-17093755.750	20318.422	-6860.475	-11297.851	-11297.851
9627.00	-32296088.250	-6308776.125	-17205635.000	20462.995	-6789.782	-11077.752	-11077.752
9637.00	-32090746.250	-6376316.125	-17315306.750	20605.005	-6718.028	-10856.322	-10856.322
9647.00	-31883996.750	-6443133.250	-17422757.250	20744.434	-6645.222	-10633.587	-10633.587
9657.00	-31675866.000	-6509217.188	-17527974.250	20881.248	-6571.380	-10409.605	-10409.605
9667.00	-31466380.250	-6574557.375	-17630945.250	21015.440	-6496.506	-10184.389	-10184.389
9677.00	-31255566.250	-6639143.875	-17731658.000	21146.994	-6420.608	-9957.966	-9957.966
9687.00	-31043449.250	-6702566.125	-17830100.500	21275.893	-6343.693	-9730.363	-9730.363
9697.00	-30830057.250	-6766013.938	-17926261.500	21402.130	-6265.715	-9501.620	-9501.620
9707.00	-30615415.750	-6828277.313	-18020129.000	21525.675	-6186.793	-9271.741	-9271.741
9717.00	-30399592.500	-6889746.500	-18111692.750	21646.512	-6106.886	-9040.783	-9040.783
9727.00	-30182494.500	-6950411.688	-18200941.500	21764.631	-6026.001	-8808.765	-8808.765
9737.00	-29964269.000	-7010263.375	-18287864.750	21880.018	-5944.145	-8575.711	-8575.711
9747.00	-29744903.500	-7069291.375	-18372452.250	21992.662	-5861.326	-8341.650	-8341.650
9757.00	-29524425.250	-7127486.625	-18454694.250	22102.540	-5777.559	-8106.627	-8106.627
9767.00	-29302862.000	-7184839.500	-18534581.750	22209.640	-5692.854	-7870.669	-7870.669

TABLE 2.2 (TLI)
 AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72-06 DEG 1ST ØPP

TIME FROM FIRST MØTION (SEC)	X CØRÐINATE		Y CØRÐINATE		Z CØRÐINATE		X COMPONENT OF VEL. IN THE XXE SYSTEM (FT/S)		Y COMPONENT OF VEL. IN THE XXE SYSTEM (FT/S)		Z COMPONENT OF VEL. IN THE XXE SYSTEM (FT/S)	
	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	XXE SYSTEM (FT/S)	XXE SYSTEM (FT/S)	XXE SYSTEM (FT/S)	XXE SYSTEM (FT/S)	XXE SYSTEM (FT/S)	XXE SYSTEM (FT/S)
9777.00	-29080241.500	-7241240.563	-18612104.500	22313.993	-5607.225	-7633.809						
9787.00	-28856591.000	-7296581.000	-18687254.500	22415.607	-5520.691	-7396.093						
9797.00	-28631938.750	-7351751.438	-18760023.750	22514.404	-5433.248	-7157.532						
9807.00	-28406312.500	-7405642.875	-18830402.500	22610.373	-5344.907	-6918.151						
9817.00	-28179740.750	-7458646.625	-18858384.000	22703.502	-5255.676	-6677.983						
9827.00	-27952251.750	-7510753.500	-18896360.000	22793.778	-5165.568	-6437.058						
9837.00	-27723874.500	-7561554.938	-19027122.500	22881.191	-5074.593	-6195.406						
9847.00	-27494637.750	-7612242.500	-19087865.750	22965.729	-4982.763	-5953.059						
9855.00	-27310647.500	-7651808.813	-19134713.000	23031.528	-4908.765	-5758.750						
9857.00	-27264562.500	-7661608.875	-19146183.250	23059.026	-4892.450	-5712.791						
9857.50	-27253030.000	-7664054.438	-19149037.250	23071.378	-4889.424	-5702.652						
9867.00	-27032678.500	-7710233.438	-19202327.000	23319.710	-4832.920	-5516.124						
9877.00	-26798143.500	-7758256.188	-19256426.750	23587.678	-4770.830	-5303.156						
9887.00	-26560921.500	-7805641.438	-19308387.250	23856.807	-4705.705	-5088.693						
9897.00	-26321005.750	-7852261.750	-19358197.500	24126.409	-4637.976	-4873.201						
9907.00	-26078392.500	-7898293.688	-19405848.750	24396.310	-4568.069	-4656.967						
9917.00	-25833079.000	-7943716.563	-19451334.500	24666.432	-4496.188	-4440.082						
9927.00	-25585063.250	-7988211.250	-19494648.500	24936.716	-4422.448	-4222.609						
9937.00	-25334344.000	-8032159.563	-19535785.250	25207.158	-4346.903	-4004.632						
9947.00	-25080919.750	-8075243.375	-19574735.750	25477.698	-4269.577	-3786.209						
9957.00	-24824789.250	-8117545.250	-19611508.000	25748.492	-4190.492	-3567.415						
9967.00	-24565949.000	-8159047.375	-19646086.750	26019.581	-4109.646	-3348.298						
9977.00	-24304376.250	-8199733.875	-19678475.500	26302.459	-4027.931	-3130.246						
9987.00	-24039827.750	-8239606.438	-19708699.500	26607.512	-3946.884	-2914.363						
9997.00	-23772221.000	-8278680.875	-19736761.750	26914.189	-3867.410	-2698.160						
10007.00	-23501536.000	-8316537.625	-19762664.750	27223.232	-3783.200	-2482.593						
10017.00	-23227748.500	-8354333.938	-19786414.500	27534.618	-3695.670	-2267.359						
10027.00	-22950835.500	-8390644.625	-19808012.750	27848.423	-3606.170	-2052.314						
10037.00	-22670771.000	-8426451.375	-19827461.500	28164.889	-3514.881	-1837.490						
10047.00	-22387528.000	-8461135.750	-19844763.500	28484.261	-3421.642	-1622.954						
10057.00	-22101075.500	-8494877.250	-19859921.500	28806.782	-3326.300	-1408.749						
10067.00	-21811380.750	-8527654.375	-19872939.500	29132.716	-3228.777	-1194.882						
10077.00	-21518408.750	-8559445.125	-19883820.250	29462.351	-3128.988	-981.344						
10087.00	-21222120.250	-8590226.375	-19895267.250	29795.997	-3026.848	-768.101						
10097.00	-20922474.500	-8619574.000	-198959183.000	30133.989	-2922.235	-555.093						
10107.00	-20619425.000	-8648662.500	-19903669.500	30476.695	-2815.026	-342.211						
10117.00	-20312923.750	-8676265.250	-19906027.250	30824.496	-2705.052	-129.306						
10127.00	-20002917.000	-8702753.250	-19906254.500	31177.812	-2592.058	83.879						
10137.00	-19689350.000	-8728095.750	-19904348.000	31536.577	-2475.869	297.504						
10147.00	-19372164.000	-8752258.875	-19903001.750	31901.798	-2356.151	511.931						
10157.00	-19051291.000	-8775206.875	-19895104.750	32274.007	-2232.784	727.761						
10167.00	-18726658.750	-8796900.500	-19885739.750	32653.738	-2105.228	945.691						
10177.00	-18398189.250	-8817295.250	-19875180.750	33041.687	-1972.701	1166.837						
10187.00	-18065798.250	-8836287.500	-19862325.000	33438.020	-1825.387	1404.792						
10197.00	-17729394.750	-8853609.625	-19847104.000	33844.432	-1679.352	1638.491						
10203.80	-17498247.250	-8864896.750	-19835428.250	34127.118	-1580.951	1794.469						
10207.00	-17389076.000	-8869997.000	-19829574.500	34124.553	-1546.553	1865.447						
10213.80	-17157087.750	-8880174.875	-19816376.750	34093.105	-1475.676	2015.374						

S-IVB REIGNITION

S-IVB 90 THRUST

S-IVB GCS2

TLI

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTIØN (SEC)	MACH NUMBER	DYNAMIC PRESSURE (LB/FT**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALØNG VELOCITY VECTOR (LB)	AERØDYNAMIC LØAD (LB/FT**2)	MAGNITUDE ØF THE AERØDYNAMIC FORCE VECTOR (FT)
9287.00	9.86	0.00	1.6768	0.0000	0.0000	0.0000
9297.00	9.86	0.00	1.7227	0.0000	0.0000	0.0000
9307.00	9.86	0.00	1.7953	0.0000	0.0000	0.0000
9317.00	9.86	0.00	1.8861	0.0000	0.0000	0.0000
9327.00	9.86	0.00	1.9924	0.0000	0.0000	0.0000
9337.00	9.86	0.00	2.0729	0.0000	0.0000	0.0000
9347.00	9.86	0.00	2.0362	0.0000	0.0000	0.0000
9357.00	9.86	0.00	1.9808	0.0000	0.0000	0.0000
9367.00	9.86	0.00	1.9361	0.0000	0.0000	0.0000
9377.00	9.86	0.00	1.9082	0.0000	0.0000	0.0000
9387.00	9.86	0.00	1.9054	0.0000	0.0000	0.0000
9397.00	9.86	0.00	1.9386	0.0000	0.0000	0.0000
9407.00	9.86	0.00	2.0197	0.0000	0.0000	0.0000
9417.00	9.86	0.00	2.1603	0.0000	0.0000	0.0000
9427.00	9.86	0.00	2.3695	0.0000	0.0000	0.0000
9437.00	9.87	0.00	2.6535	0.0000	0.0000	0.0000
9447.00	9.87	0.00	2.9536	0.0000	0.0000	0.0000
9457.00	9.87	0.00	3.0299	0.0000	0.0000	0.0000
9467.00	9.87	0.00	3.0980	0.0000	0.0000	0.0000
9477.00	9.87	0.00	3.2373	0.0000	0.0000	0.0000
9487.00	9.87	0.00	3.0055	0.0000	0.0000	0.0000
9497.00	9.87	0.00	2.6762	0.0000	0.0000	0.0000
9507.00	9.87	0.00	2.3898	0.0000	0.0000	0.0000
9517.00	9.87	0.00	2.1498	0.0000	0.0000	0.0000
9527.00	9.87	0.00	1.9653	0.0000	0.0000	0.0000
9537.00	9.87	0.00	1.8529	0.0000	0.0000	0.0000
9547.00	9.87	0.00	1.8346	0.0000	0.0000	0.0000
9557.00	9.87	0.00	1.9270	0.0000	0.0000	0.0000
9567.00	9.87	0.00	1.9418	0.0000	0.0000	0.0000
9577.00	9.87	0.00	1.7583	0.0000	0.0000	0.0000
9587.00	9.87	0.00	1.6315	0.0000	0.0000	0.0000
9597.00	9.87	0.00	1.5895	0.0000	0.0000	0.0000
9607.00	9.87	0.00	1.6323	0.0000	0.0000	0.0000
9617.00	9.87	0.00	1.7537	0.0000	0.0000	0.0000
9627.00	9.87	0.00	1.9543	0.0000	0.0000	0.0000
9637.00	9.87	0.00	2.2101	0.0000	0.0000	0.0000
9647.00	9.88	0.00	2.3685	0.0000	0.0000	0.0000
9657.00	9.88	0.00	2.5169	0.0000	0.0000	0.0000
9667.00	9.88	0.00	2.7551	0.0000	0.0000	0.0000
9677.00	9.88	0.00	3.0770	0.0000	0.0000	0.0000
9687.00	9.88	0.00	3.4730	0.0000	0.0000	0.0000
9697.00	9.88	0.00	3.4089	0.0000	0.0000	0.0000
9707.00	9.88	0.00	3.0396	0.0000	0.0000	0.0000
9717.00	9.88	0.00	2.7181	0.0000	0.0000	0.0000
9727.00	9.88	0.00	2.4852	0.0000	0.0000	0.0000
9737.00	9.88	0.00	2.3398	0.0000	0.0000	0.0000
9747.00	9.88	0.00	2.1982	0.0000	0.0000	0.0000
9757.00	9.88	0.00	2.0554	0.0000	0.0000	0.0000
9767.00	9.88	0.00	1.9875	0.0000	0.0000	0.0000

TABLE 2.2 (TLI)
 AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (LB/FT**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALØNG VELOCITY VECTOR (LB)	AERØDYNAMIC LØAD (LB/FT**2)	MAGNITUDE ØF THE AERØDYNAMIC FØRCE VECTOR (FT)
9777.00	9.88	0.00	1.9839	0.0000	0.0000	0.0000
9787.00	9.88	0.00	1.9203	0.0000	0.0000	0.0000
9797.00	9.88	0.00	1.8275	0.0000	0.0000	0.0000
9807.00	9.88	0.00	1.7219	0.0000	0.0000	0.0000
9817.00	9.88	0.00	1.6036	0.0000	0.0000	0.0000
9827.00	9.88	0.00	1.4733	0.0000	0.0000	0.0000
9837.00	9.88	0.00	1.3310	0.0000	0.0000	0.0000
9847.00	9.88	0.00	1.1773	0.0000	0.0000	0.0000
9855.00	9.88	0.00	1.1246	0.0000	0.0000	0.0000
9857.00	9.89	0.00	1.2316	0.0000	0.0000	0.0000
9857.50	9.89	0.00	1.3266	0.0000	0.0000	0.0000
9867.00	9.96	0.00	1.8761	0.0000	0.0000	0.0000
9877.00	10.04	0.00	4.4229	0.0000	0.0000	0.0000
9887.00	10.13	0.00	4.6834	0.0000	0.0000	0.0000
9897.00	10.21	0.00	4.6669	0.0000	0.0000	0.0000
9907.00	10.29	0.00	4.6050	0.0000	0.0000	0.0000
9917.00	10.38	0.00	4.5345	0.0000	0.0000	0.0000
9927.00	10.46	0.00	4.4703	0.0000	0.0000	0.0000
9937.00	10.55	0.00	4.4239	0.0000	0.0000	0.0000
9947.00	10.63	0.00	4.4049	0.0000	0.0000	0.0000
9957.00	10.72	0.00	4.4163	0.0000	0.0000	0.0000
9967.00	10.80	0.00	4.4601	0.0000	0.0000	0.0000
9977.00	10.88	0.00	4.5342	0.0000	0.0000	0.0000
9987.00	10.97	0.00	3.8191	0.0000	0.0000	0.0000
9997.00	11.06	0.00	4.1432	0.0000	0.0000	0.0000
10007.00	11.15	0.00	4.8428	0.0000	0.0000	0.0000
10017.00	11.23	0.00	5.1075	0.0000	0.0000	0.0000
10027.00	11.31	0.00	5.2561	0.0000	0.0000	0.0000
10037.00	11.38	0.00	5.4295	0.0000	0.0000	0.0000
10047.00	11.45	0.00	5.6374	0.0000	0.0000	0.0000
10057.00	11.51	0.00	5.8584	0.0000	0.0000	0.0000
10067.00	11.56	0.00	6.0818	0.0000	0.0000	0.0000
10077.00	11.61	0.00	6.3031	0.0000	0.0000	0.0000
10087.00	11.65	0.00	6.5196	0.0000	0.0000	0.0000
10097.00	11.69	0.00	6.7285	0.0000	0.0000	0.0000
10107.00	11.74	0.00	6.9280	0.0000	0.0000	0.0000
10117.00	11.78	0.00	7.1237	0.0000	0.0000	0.0000
10127.00	11.81	0.00	7.2989	0.0000	0.0000	0.0000
10137.00	11.84	0.00	7.4975	0.0000	0.0000	0.0000
10147.00	11.86	0.00	7.6392	0.0000	0.0000	0.0000
10157.00	11.87	0.00	7.7751	0.0000	0.0000	0.0000
10167.00	11.88	0.00	7.9337	0.0000	0.0000	0.0000
10177.00	11.88	0.00	8.5363	0.0000	0.0000	0.0000
10187.00	11.88	0.00	8.9196	0.0000	0.0000	0.0000
10197.00	11.89	0.00	8.4193	0.0000	0.0000	0.0000
10203.80	11.90	0.00	8.2198	0.0000	0.0000	0.0000
10207.00	11.86	0.00	8.1942	0.0000	0.0000	0.0000
10213.80	11.76	0.00	8.1534	0.0000	0.0000	0.0000

S-IVB REIGNITION

S-IVB 90 THRUST

S-IVB GCS2

TLI

TABLE 2.2 (TLI)
AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST 0PP

TIME	X PØSI CØRD	Y PØSI CØRD	Z PØSI CØRD	X VEL. CØMP.	Y VEL. CØMP.	Z VEL. CØMP.
FRØM	SPACE FIXED	SPACE FIXED	SPACE FIXED	SPACE FIXED	SPACE FIXED	SPACE FIXED
FIRST	EARTH CENTER	EARTH CENTER	EARTH CENTER	EARTH CENTER	EARTH CENTER	EARTH CENTER
MOTION	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS	PLUMBLIN SYS
(SEC)	(FT)	(FT)	(FT)	(FT/S)	(FT/S)	(FT/S)
9287.00	-7377778.5	-467128.0	-2C261910.0	24006.761	-82.119	-8756.785
9297.00	-7137197.9	-467917.9	-20348053.8	24108.789	-75.867	-8471.726
9307.00	-6895614.0	-468645.2	-20431340.8	24207.431	-69.599	-8185.479
9317.00	-6653060.7	-469309.8	-2C511759.5	24302.676	-63.319	-7898.082
9327.00	-6409571.9	-469911.6	-2C589298.5	24394.509	-57.026	-7609.577
9337.00	-6165181.9	-470450.3	-2C663947.3	24482.914	-50.722	-7320.016
9347.00	-5919525.0	-470926.0	-2C735695.5	24567.884	-44.407	-7029.427
9357.00	-5673835.7	-471338.4	-2C804532.5	24649.408	-38.083	-6737.841
9367.00	-5426948.4	-471687.6	-2C870449.0	24727.474	-31.749	-6445.310
9377.00	-5179297.8	-471973.4	-2C933435.8	24802.069	-25.408	-6151.875
9387.00	-4930518.6	-472195.7	-2C993483.8	24873.182	-19.059	-5857.577
9397.00	-4681845.8	-472354.6	-21050584.5	24940.805	-12.703	-5562.456
9407.00	-4432114.1	-472449.8	-21104730.3	25004.927	-6.342	-5266.555
9417.00	-4181758.9	-472481.4	-21155913.3	25065.539	0.023	-4969.915
9427.00	-3930815.1	-472449.3	-21204126.0	25122.634	6.393	-4672.576
9437.00	-3679318.0	-472353.5	-21249362.5	25176.202	12.766	-4374.582
9447.00	-3427302.9	-472194.0	-21291615.8	25226.240	19.140	-4075.948
9457.00	-3174805.0	-471970.7	-21330879.5	25272.737	25.518	-3776.737
9467.00	-2921860.0	-471683.6	-21367148.8	25315.681	31.895	-3477.026
9477.00	-2668503.3	-471332.8	-21400418.3	25355.072	38.271	-3176.827
9487.00	-2414770.4	-470917.9	-21430684.0	25390.901	44.686	-2876.182
9497.00	-2160697.1	-470439.2	-21457940.8	25423.166	51.059	-2575.132
9507.00	-1906319.0	-469896.7	-21482185.3	25451.861	57.429	-2273.721
9517.00	-1651671.8	-469290.6	-21503414.3	25476.982	63.794	-1971.990
9527.00	-1396791.3	-468620.9	-21521624.0	25498.527	70.155	-1669.983
9537.00	-114713.2	-467887.6	-21536813.0	25516.490	76.510	-1367.740
9547.00	-886473.4	-467090.7	-21548978.3	25530.870	82.858	-1065.305
9557.00	-631107.8	-466230.4	-21558118.5	25541.666	89.199	-762.717
9567.00	-375652.1	-465306.8	-21564232.3	25548.874	95.532	-459.993
9577.00	-120142.2	-464319.8	-21567318.3	25552.494	101.855	-157.225
9587.00	135385.8	-463269.7	-21567376.5	25552.527	108.169	145.554
9597.00	390896.3	-462156.5	-21564407.3	25548.970	114.471	448.313
9607.00	646353.3	-460980.3	-21558410.8	25541.826	120.762	751.009
9617.00	901720.9	-459741.3	-21549387.5	25531.095	127.041	1053.600
9627.00	1156563.2	-458439.5	-21537339.0	25516.778	133.307	1356.043
9637.00	1412044.5	-457075.2	-21522267.0	25498.877	139.558	1658.307
9647.00	1666928.9	-455648.4	-21504173.8	25477.394	145.794	1960.350
9657.00	1921580.5	-454159.3	-21483061.3	25452.334	152.015	2262.098
9667.00	2175963.6	-452608.2	-21458932.8	25423.699	158.219	2563.525
9677.00	2430042.6	-450995.0	-21431792.0	25391.495	164.405	2864.592
9687.00	2683781.6	-449320.1	-21401642.3	25355.723	170.574	3165.260
9697.00	2937145.1	-447583.3	-21368488.3	25316.387	176.780	3465.497
9707.00	3190097.5	-445784.8	-21332334.0	25273.497	182.909	3765.243
9717.00	3442603.2	-443925.1	-21293185.3	25227.059	189.016	4064.449
9727.00	3694626.9	-442004.5	-21251047.0	25177.078	195.102	4363.083
9737.00	3946133.0	-440023.2	-21205925.5	25123.559	201.164	4661.111
9747.00	4197086.3	-437981.3	-21157827.0	25066.510	207.203	4958.493
9757.00	4447451.4	-435879.2	-21106758.0	25005.942	213.218	5255.168
9767.00	4697193.4	-433717.0	-21052726.0	24941.863	219.207	5551.101

TABLE 2-2 (TLI)
 AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST 0PP

TIME FROM MØTIØN (SEC)	X POSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	Y POSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	Z POSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	X VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	Y VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	Z VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)
9777.00	4946277.1	-421495.1	-20995738.3	24874.321	225.171	5846.272
9787.00	5194668.4	-429213.7	-20935803.0	24803.352	231.107	6140.635
9797.00	5442332.6	-426873.1	-20872928.5	24728.900	237.016	6434.133
9807.00	5689234.8	-424473.5	-20807123.3	24650.973	242.896	6726.727
9817.00	5935340.4	-422015.3	-20738397.3	24569.583	248.747	7018.378
9827.00	6180614.9	-419498.7	-20666759.3	24484.742	254.567	7309.043
9837.00	6425023.9	-416924.0	-20592219.5	24396.460	260.356	7598.681
9847.00	6668532.8	-414291.6	-20514789.0	24304.751	266.113	7887.253
9855.00	6862669.8	-412144.5	-20430769.8	24229.168	270.663	8117.401
9857.00	6911114.5	-411602.1	-20434475.5	24221.122	271.594	8178.779
9857.50	6923225.9	-411466.3	-20430381.8	24224.529	271.785	8196.003
9867.00	7153729.1	-408854.1	-20350954.3	24303.454	277.729	8526.327
9877.00	7397157.5	-406065.6	-20263870.5	24381.875	280.433	8891.491
9887.00	7641363.3	-403239.4	-20173117.8	24458.970	285.159	9259.427
9897.00	7886332.0	-400356.8	-20078675.8	24534.535	291.624	9629.261
9907.00	8132049.3	-397402.1	-19980527.8	24608.695	299.523	10000.560
9917.00	8378501.3	-394362.1	-19878660.3	24681.487	308.693	10373.155
9927.00	8625674.5	-391224.3	-19773060.8	24752.924	319.045	10746.933
9937.00	8873555.4	-387977.3	-19663717.8	24823.055	330.558	11121.813
9947.00	9122131.0	-384609.4	-19550621.3	24891.869	343.223	11497.706
9957.00	9371389.0	-381108.9	-19433760.3	24959.533	357.061	11874.643
9967.00	9621318.1	-377464.2	-19313124.8	25026.100	372.090	12252.610
9977.00	9871925.5	-373662.1	-19188695.0	25101.788	388.911	12637.086
9987.00	10123413.6	-369678.9	-19060346.0	25195.935	407.334	13032.982
9997.00	10375847.9	-365252.2	-18928033.3	25290.958	423.974	13429.874
10007.00	10629233.3	-361183.5	-18791740.3	25386.168	445.070	13829.124
10017.00	10883572.5	-356613.9	-18651443.5	25481.779	469.196	14230.587
10027.00	11138871.4	-351793.9	-18507121.8	25578.150	495.056	14634.069
10037.00	11395139.0	-346707.5	-18358755.0	25675.539	522.515	15039.648
10047.00	11652386.3	-341337.7	-18206321.5	25774.125	551.761	15447.464
10057.00	11910626.0	-335665.7	-18049797.8	25874.074	582.971	15857.678
10067.00	12169872.9	-329671.4	-17889159.3	25975.574	616.237	16270.469
10077.00	12430143.3	-323333.8	-17724379.0	26078.816	651.654	16686.044
10087.00	12691455.8	-316630.9	-17555428.3	26184.000	689.311	17104.645
10107.00	13217289.8	-302036.3	-17204884.8	26291.315	729.320	17526.557
10117.00	13481857.8	-294095.5	-17023219.3	26400.956	771.780	17952.125
10127.00	13747560.0	-285690.7	-16837234.5	26513.087	816.816	18381.744
10137.00	14014421.6	-276794.4	-16646885.1	26627.824	864.595	18815.938
10147.00	14282469.0	-267376.3	-16452118.8	26744.965	915.207	19254.845
10157.00	14551731.8	-257406.5	-16252874.8	26865.012	968.895	19699.443
10167.00	14822338.9	-246853.9	-16049082.9	26988.020	1025.576	20150.547
10177.00	15094017.8	-235684.5	-15840662.3	27113.870	1085.515	20609.159
10187.00	15367042.0	-223840.3	-15627453.8	27242.278	1149.048	21076.760
10197.00	15641319.4	-211282.4	-15409330.4	27363.286	1219.988	21566.320
10203.80	15828638.4	-202329.2	-15258157.5	27494.041	1291.750	22058.706
10207.00	15916804.1	-198032.9	-15186399.4	27589.287	1341.102	22395.075
10213.80	16103563.5	-188887.3	-15033130.3	27686.965	1343.754	22466.938
TLI					1345.574	22602.655

S-1VB REIGNITION
 S-1VB 90 THRUST

S-1VB GCS2
 10203.80
 10207.00
 10213.80

TABLE 2.2 (POST TLI)
AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	TOTAL ENGINE THRUST (NEWTONS)	TOTAL VEHICLE WEIGHT (KG)	ALTITUDE ABOVE SPHERICAL EARTH (M)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (M/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (M/S**2)
10213.50	196.90	63145.88	337458.3	10831.07	82.50	0.003
10233.50	180.40	63136.79	366705.0	10807.35	81.70	0.003
10283.50	139.09	63114.07	455084.6	10736.55	79.49	0.002
11713.50	0.00	62832.55	7014469.5	7622.41	44.97	-0.000

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	**** RADIAL DISTANCE ØF THE C G (M)	MAGNITUDE ØF THE EARTH FIXED VELOCITY (M/SEC)	SUB VEHICLE LATITUDE ØN SPHERICAL EARTH (DEG)	LONGITUDE ØN ØBLATE EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (KM)
10213.50	6714982.94	0.000	9.9401	-164.53	4801.69
10233.50	6744110.94	0.000	10.8328	-163.28	4715.54
10283.50	6832158.44	0.000	13.0236	-159.49	4457.10
11713.50	13386881.75	0.000	31.1807	-90.88	559.96

**** MEASURED FROM THE CENTER ØF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG IST ØPP

TIME FROM MOTION (SEC)	X COORDINATE			Y COORDINATE			Z COORDINATE			X COMPONENT OF VEL. IN THE XXE SYSTEM (M/S)	Y COMPONENT OF VEL. IN THE XXE SYSTEM (M/S)	Z COMPONENT OF VEL. IN THE XXE SYSTEM (M/S)
	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)	EARTH FIXED, PT. CENTERED PLUMBIN SYS, (M)			
10213.50	1177008.531	-2689017.313	-6039054.250	10390.226	-435.033	647.035						
10233.50	1348200.797	-2697860.438	-6032158.313	10360.823	-387.579	745.124						
10283.50	1863919.859	-2713335.219	-5986819.000	10263.526	-232.174	1065.398						
11713.50	13212018.000	-1284886.266	-1732120.391	6046.391	1537.232	3300.361						

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST 0PP

TIME FROM FIRST MOTION (SEC)	COMMANDER PITCH ATTITUDE (DEG)	EULERIAN ANGLE OF ATTITUDE IN PITCH (DEG)	COMMANDER YAW ATTITUDE (DEG)	EULERIAN ANGLE OF ATTITUDE IN YAW (DEG)	COMMANDER ROLL ATTITUDE (DEG)	EULERIAN ANGLE OF ATTITUDE IN ROLL (DEG)
10213.50	-39.939	-39.9389	8.968	8.968140	-0.127	-0.12742721
10233.50	-48.758	-48.7582	0.957	0.957448	0.000	0.00000000
10283.50	-53.244	-53.2441	0.971	0.971239	0.000	0.00000000
11713.50	-123.467	-123.4673	0.459	0.458655	0.000	0.00000000

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG IST ØPP

TIME FROM FIRST MOTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (NT/M**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALONG VELOCITY VECTOR (KG)	AERODYNAMIC LOAD (KG/M**2)	MAGNITUDE ØF THE AERODYNAMIC FORCE VECTOR (KG)
10213.50	11.76	0.00	8.1534	0.0950	0.0000	0.0000
10233.50	11.45	0.00	8.6301	0.0576	0.0000	0.0000
10283.50	10.73	0.00	10.9394	0.0149	0.0000	0.0000
11713.50	6.78	0.00	49.8326	0.0004	0.0000	0.0000

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FRØM FIRST MØTIØN (SEC)	X PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (M)	Y PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (M)	Z PØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (M)	X VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (M/S)	Y VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (M/S)	Z VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (M/S)
10213.50	4931064.4	-57035.3	-4557158.5	8323.354	410.664	6918.315
10233.50	5071539.9	-49478.9	-4445229.8	8218.805	411.594	7005.765
10283.50	5474114.0	-28825.4	-4087986.7	7882.125	414.315	7278.325
11713.50	11162068.9	488471.3	7374158.8	1524.686	292.526	7462.636

AS-506 TRAJ DATA (METRIC UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	GIMBAL DEFLECTION ANG REQUIRED PITCH CHANL (DEG)	GIMBAL DEFLECTION ANG REQUIRED YAW CHANNEL (DEG)	GIMBAL DEFLECTION ANG REQUIRED ROLL CHANNEL (DEG)	EULERIAN ATTITUDE RATE IN PITCH (DEG/S)	EULERIAN ATTITUDE RATE IN YAW (DEG/S)	EULERIAN ATTITUDE RATE IN ROLL (DEG/S)
10213.50	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
10233.50	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
10283.50	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000
11713.50	0.0000	0.000000	0.000000	0.00000000	0.00000000	0.00000000

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	TOTAL VEHICLE ENGINE THRUST (LB)	TOTAL VEHICLE WEIGHT (LB)	ALTITUDE ABOVE SPHERICAL EARTH (FT)	MAGNITUDE OF SPACE FIXED VELOCITY IN XPP SYSTEM (FT/SEC)	SPACE FIXED PATH ANGLE (DEG)	VEHICLE LONGITUDINAL ACCELERATION (FT/S**2)
10213.50	44.26	139212.84	1107146.5	35535.00	82.50	0.010
10233.50	40.55	135192.80	1203100.4	35457.20	81.70	0.009
10283.50	31.27	135142.70	1493059.6	35224.91	79.49	0.007
11713.50	0.00	136522.07	23013351.3	25007.92	44.97	-0.000

TABLE 2.2 (POST TLI)
 AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST 0PP

TIME FROM FIRST MOTION (SEC)	**** RADIAL DISTANCE OF THE C G (FT)	MAGNITUDE OF THE EARTH FIXED VELOCITY (FT/SEC)	SUB VEHICLE LATITUDE SPHERICAL EARTH (DEG)	LONGITUDE OF EARTH (DEG)	ARC RANGE ALONG SPHER. EARTH TO SUB VEHICLE PT. (NM)
10213.50	22030783.75	0.000	9.9401	-164.53	2592.70
10233.50	22126348.00	0.000	10.8328	-163.28	2546.19
10283.50	22415217.75	0.000	13.0236	-159.49	2406.64
11713.50	43920215.50	0.000	31.1807	-90.88	302.35

**** MEASURED FROM THE CENTER OF THE EARTH IN THE SPACE FIXED, EARTH CENTERED PLUMBLINE SYSTEM

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST OPP

TIME FROM FIRST MOTION (SEC)	X COORDINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	Y COORDINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	Z COORDINATE EARTH FIXED, PT. CENTERED PLUMBIN SYS, (FT)	X COMPONENT OF VEL. IN THE XXE SYSTEM (FT/S)	Y COMPONENT OF VEL. IN THE XXE SYSTEM (FT/S)	Z COMPONENT OF VEL. IN THE XXE SYSTEM (FT/S)
10213.50	3861576.531	-8822235.250	-19813170.000	34088.669	-1427.275	2122.818
10233.50	4423230.938	-8851248.125	-19790545.500	33992.200	-1271.583	2444.632
10283.50	6115222.625	-8902018.375	-19641794.500	33672.984	-761.725	3495.399
11713.50	43346515.500	-4215506.063	-5682809.625	19837.241	5043.411	10829.923

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	MACH NUMBER	DYNAMIC PRESSURE (LB/FT**2)	TOTAL ANGLE ØF ATTACK (DEG)	DRAG ALONG VELOCITY VECTOR (LB)	AERODYNAMIC LOAD (LB/FT**2)	MAGNITUDE ØF THE AERODYNAMIC FORCE VECTOR (FT)
10213.50	11.76	0.00	8.1534	0.2094	0.0000	0.0000
10233.50	11.45	0.00	8.6301	0.1270	0.0000	0.0000
10283.50	10.73	0.00	10.9394	0.0330	0.0000	0.0000
11713.50	6.78	0.00	49.8326	0.0008	0.0000	0.0000

AS-506 TRAJ DATA (ENGLISH UNITS) JULY 16 1969 AZIMUTH=72.06 DEG 1ST ØPP

TIME FROM FIRST MOTION (SEC)	X ØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	Y ØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	Z ØSI CØRD SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT)	X VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	Y VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)	Z VEL. CØMP. SPACE FIXED EARTH CENTER PLUMBLIN SYS (FT/S)
10213.50	16178032.6	-187123.8	-14951307.4	27307.593	1347.323	22697.882
10233.50	16638910.5	-162332.3	-14584087.0	26964.583	1350.374	22984.792
10283.50	17959691.5	-54571.4	-13412029.6	25859.990	1359.300	23879.019
11713.50	36620860.5	1662596.1	24193434.3	5002.251	959.731	24483.713

TABLE 2.3
TRANSLUNAR MIDCOURSE CORRECTION (TLMC)

The values presented below pertain to the preflight and real time midcourse velocities required to return the S/C probe to the nominal free return trajectory. The data presented are for a launch azimuth of 72.06 degrees.

Trajectory Prediction	Midcourse Velocity Requirements
PRE-FLIGHT*	9.7 m/sec (31.8 fps)
REAL TIME**	7.7 m/sec (25.3 fps)

Note: *Midcourse applied at TB7 + 2 hrs.

**The midcourse velocity required at TB7 + 1 hr. and 50 minutes based on real time performance predictions.

TABLE 2.4
TRAJECTORY SUMMARY

A. LAUNCH

Launch Complex and Pad	39, A
Latitude; deg North of Equator	28.608422
Longitude; deg East of GM	279.395867

B. INTO-ORBIT TRAJECTORY SUMMARY

S-IC Stage

Tilt and Roll Initiation; sec	13.50
Time of Maximum Dynamic Pressure; sec	81.00
Maximum Dynamic Pressure; new/m ²	34725.243
Time of Center-Engine Cutoff (CECO); sec	135.0
Time of Outboard-Engine Cutoff (OECO); sec	160.819
Pitch Attitude from Horizontal at OECO; deg	21.201758
Inertial Flight-Path Angle at OECO; deg	70.365148
Inertial Velocity at OECO; m/sec	2755.6109
Altitude at OECO; m	66731.000
Range at OECO; m	49.786266
Latitude at OECO; deg N	28.861279
Longitude at OECO; deg E	280.294490

S-II Stage

Time of 90% Thrust; sec	165.219
Time of S-II CECO; sec	462.000
Time of Engine Cutoff (ECO); sec	551.384
Pitch Attitude Angle from Horizontal at ECO; deg	-6.097084
Inertial Flight-Path Angle at ECO; deg	89.33912
Inertial Velocity at ECO; m/sec	6938.8816
Altitude at ECO; m	187986.0
Range at ECO; m	88.594922
Latitude at ECO; deg N	31.914594
Longitude at ECO; deg E	296.0333762

TABLE 2.4 (Continued)

TRAJECTORY SUMMARY

B. INTO-ORBIT TRAJECTORY SUMMARY ,(Continued)S-IVB First Burn

Time of 90% Thrust; sec	557.884
Time of Guidance Cutoff Signal (GCS1); sec	699.22793
Pitch Attitude from Local Horizontal at GCS1; deg	-22.17356
Inertial Flight-Path Angle at GCS1; deg	90.002205
Inertial Velocity at GCS1; m/sec	7791.4071
Altitude at GCS1; m	191339.56
Range at GCS1; m	1423.1607
Latitude at GCS1; deg N	32.666871
Longitude at GCS1; deg E	296.033762

Parking Orbit Insertion Conditions

Geocentric Radius; m	6563308.7
Inertial Velocity; m/sec	7793.1014
Inertial Path Angle; deg	90.001449
Inclination Angle; deg	32.531447
Descending Node; deg	123.10042
Eccentricity	.0010449
Orbital Period; sec	5284.3769

C. S-IVB SECOND BURN - FIRST OPPORTUNITY

Time of 90% Thrust; sec	9857.50
Time of Guidance Cutoff Signal (GCS2); sec	10203.801
Pitch Attitude from Horizontal at GCS2; deg	50.053105
Inertial Flight-Path Angle at GCS2; deg	83.041294
Inertial Velocity at GCS2; m/sec	10838.658
Altitude at GCS2; m	323847.31
Range at GCS2; m	4872.1147
Latitude at GCS2; deg N	9.5412146
Longitude at GCS2; deg E	194.45002

TABLE 2.4 (Continued)
 TRAJECTORY SUMMARY

C. S-IVB SECOND BURN - FIRST OPPORTUNITY (Continued)

First-Opportunity Injection Conditions

Geocentric Radius; m	6714982.9
Inertial Velocity; m/sec	10831.069
Inertial Path Angle; deg	82.588522
Inclination Angle; deg	31.379103
Descending Node; deg	121.86592
Eccentricity	0.97667179
Twice Specific Energy; m^2/sec^2	1408484.0
Radius of Apogee; km	559401.776
Radius of Perigee; km	6601.924
Orbital Period; sec	1498291.321

TABLE 2.5
S-IC SPENT STAGE TRAJECTORY

Time <u>sec</u>	Altitude Above Oblate Earth		Range <u>n. mi.</u>	Earth-Fixed Positions			Earth-Fixed Velocities			Longitude <u>Degrees</u>	Latitude <u>Degrees</u>
	<u>m</u>	<u>m</u>		<u>X_e m</u>	<u>Y_e m</u>	<u>Z_e m</u>	<u>Ẋ_e m/s</u>	<u>Ẏ_e m/s</u>	<u>Ż_e m/s</u>		
Sep.	161.59	67445	50.7	66748	35	94818	893.5	4.4	2223.6	79.69	28.87
	211.59	102836	109.0	99591	406	205064	425.7	10.6	2195.9	78.63	29.15
	261.59	117002	166.8	109391	1115	314377	-33.4	17.9	2175.7	77.57	29.43
Apex	270.59	117307	177.2	108719	1282	333940	-115.9	19.3	2171.6	77.38	29.47
	311.59	110037	224.5	96266	2206	422553	-491.7	25.9	2150.4	76.51	29.69
	361.59	81900	282.5	60183	3717	529329	-952.1	34.6	2119.3	75.44	29.93
	411.59	33724	339.9	2527	5630	631834	-1206.2	37.1	1754.9	74.37	30.17
	461.59	12231	356.3	-21931	6267	659985	-175.4	1.4	43.5	74.06	30.23
	511.59	4958	356.8	-29256	6287	660110	-123.1	0	-11.1	74.05	30.23
Impact	556.77	0	356.8	-34190	6285	659621	-97.7	0	-10.0	74.05	30.23

TABLE 2.5 (Continued)

S-II SPENT STAGE TRAJECTORY

Time sec	Altitude Above Earth m	Range n. mi.	Earth-Fixed Positions			Earth-Fixed Velocities			Longitude degrees	Latitude degrees	
			X _e m	Y _e m	Z _e m	\dot{X}_e m/s	\dot{Y}_e m/s	\dot{Z}_e m/s			
Sep.	552.3	188055	888.9	-29332	26980	1675798	-1588.9	177.4	6340.3	63.91	31.92
Apex	594	189775	1032.0	-102728	34794	1938451	-1927.2	197.0	6242.6	61.12	32.22
	600	189745	1052.6	-114436	35985	1975861	-1975.5	199.8	6227.5	60.72	30.26
	650	186972	1224.0	-223210	46554	2283885	-2374.4	222.9	6090.2	57.36	32.51
	700	179007	1395.7	-351772	58267	2584558	-2766.9	245.5	5933.5	53.98	32.65
	750	166402	1568.0	-499790	71094	2876907	-3152.6	267.4	5757.2	50.58	32.70
	800	148993	1741.1	-666915	84994	3159954	-3531.1	288.4	5561.4	47.16	32.64
	850	126805	1915.3	-852774	99918	3432715	-3901.9	308.4	5345.8	43.73	32.47
	900	99868	2091.0	-1056965	115808	3694194	-4264.2	327.0	5109.9	40.29	32.20
	950	68315	2267.6	-1278273	132535	3942516	-4529.5	337.5	4758.7	36.85	31.82
	1000	37720	2410.5	-1469425	146511	4130489	-2247.4	157.5	1980.9	34.10	31.44
	1050	23481	2440.9	-1516952	149445	4164405	-324.1	10.2	55.0	33.52	31.35
	1100	14495	2443.2	-1526568	149496	4161814	-114.9	-2.6	-83.7	33.47	31.34
	1150	8628	2443.3	-1531113	149367	4158101	-76.3	-2.3	-65.1	33.47	31.34
	1200	4135	2443.3	-1534527	149263	4155183	-61.5	-1.9	-52.6	33.47	31.34
Impact	1256.3	0	2443.3	-1537668	149166	4152496	-50.9	-1.6	-43.5	33.47	31.34

TABLE 2.6
AS-506 SLINGSHOT TRAJECTORY PARAMETERS

Day	G. M. T. (Hr:Min:Sec)	Inertial Velocity (km/sec)	Inertial Heading Angle (deg)	Inertial Flight Path Angle (deg)
July 16	16:17:14.0	10.671940	61.98126	12.224094
July 16	16:26:14.0	9.3678589	76.30392	30.536367
July 16	16:36:14.0	8.0478669	89.77580	41.901312
July 16	16:46:14.0	7.1249554	97.88207	48.472239
July 16	16:56:14.0	6.4680100	102.83207	52.737066
July 16	17:06:14.0	5.9767351	106.07833	55.754757
July 16	17:16:14.0	5.5931458	108.34975	58.023583
July 16	17:26:14.0	5.2832451	110.02301	59.805514
July 16	17:36:14.0	5.0260922	111.30583	61.251434
July 16	17:46:14.0	4.8081271	112.32075	62.454528
July 16	17:56:14.0	4.6201795	113.14420	63.475636
July 16	18:06:14.0	4.4558143	113.82617	64.356299
July 16	18:16:14.0	4.3103725	114.40066	65.125935
July 16	18:26:14.0	4.1803902	114.89158	65.806021
July 16	18:36:14.0	4.0632327	115.31622	66.412640
July 16	19:04:14.0	3.7618881	116.24152	67.988881
July 17	00:45:34.0	2.4032334	119.58713	73.981953
July 17	09:17:34.0	1.7590114	120.55581	76.076807
July 17	17:49:34.0	1.4320021	120.92301	76.732912
July 18	02:21:34.0	1.2163213	121.14196	76.928745
July 18	10:53:34.0	1.0567654	121.32366	76.959290
July 18	19:25:34.0	0.9318212	121.53790	77.052667
July 19	01:06:54.0	0.8634191	121.75732	77.349728
July 19	15:41:34.0	0.8001595	126.93781	84.576372
July 19	18:10:54.0	0.9590657	261.89170	88.767522
July 19	19:36:14.0	1.5960845	127.79794	87.193780
July 19	19:57:34.0	1.9518132	119.54631	75.522003
July 19	20:50:54.0	2.0453685	118.48207	49.764098
July 19	22:16:14.0	1.8767662	118.43348	41.363696
July 20	00:02:54.0	1.7864215	118.44118	39.146266
July 20	01:06:54.0	1.7545924	118.44487	38.745221
July 20	02:10:54.0	1.7305034	118.44561	38.614271
July 20	08:13:34.0	1.6510978	118.39139	39.559903
July 20	16:45:34.0	1.5885312	118.18044	41.911566

TABLE 2.6 (Continued)

AS-506 SLINGSHOT TRAJECTORY PARAMETERS

Day	G. M. T. (Hr:Min:Sec)	Geocentric Radius Vector (km)	Selenocentric Radius Vector (km)	Declination (deg)	Longitude (deg)	C ₃ (Twice Specific Energy Relative to The Earth) (km ² /sec ²)
July 16	16:17:14.0	6913.15	405996.54	14.735671	205.30539	-1.42699441584
July 16	16:26:14.0	8935.40	400994.01	28.497210	240.42183	-1.46201508270
July 16	16:36:14.0	12035.83	395844.08	31.364166	264.52283	-1.46788571317
July 16	16:46:14.0	15262.33	391315.55	30.457030	277.71427	-1.46860933045
July 16	16:56:14.0	18409.52	387283.20	28.868426	285.18495	-1.46886446325
July 16	17:06:14.0	21435.86	383627.43	27.300166	289.56504	-1.46893799137
July 16	17:16:14.0	24340.55	380263.43	25.894577	292.12847	-1.46890445545
July 16	17:26:14.0	27132.89	377132.00	24.661573	293.53867	-1.46886916902
July 16	17:36:14.0	29823.92	374190.82	23.581032	294.17003	-1.46883251250
July 16	17:46:14.0	32424.05	371408.69	22.628921	294.24902	-1.46879474290
July 16	17:56:14.0	34942.48	368761.94	21.783794	293.92062	-1.46875604115
July 16	18:06:14.0	37387.16	366232.16	21.027920	293.28211	-1.46871654185
July 16	18:16:14.0	39764.90	363804.75	20.346975	292.40132	-1.46867634547
July 16	18:26:14.0	42081.60	361467.86	19.729441	291.32707	-1.46863552943
July 16	18:36:14.0	44342.32	359211.75	19.166017	290.09550	-1.46859415749
July 16	19:04:14.0	50387.58	353280.42	17.830402	214.52153	-1.66968342893
July 17	00:45:34.0	107099.48	301672.54	10.928024	142.33536	-1.66807642711
July 17	09:17:34.0	167504.79	249488.18	7.512786	19.95458	-1.66518419260
July 17	17:49:34.0	214751.03	207718.08	5.757329	254.57543	-1.66160551904
July 18	02:21:34.0	254178.72	170553.24	4.594014	128.16653	-1.65696355083
July 18	10:53:34.0	288086.44	135682.06	3.731703	1.24206	-1.65049403834
July 18	19:25:34.0	317775.18	101895.92	3.054626	234.00191	-1.64042119375
July 19	01:06:54.0	335680.50	79576.06	2.679466	149.04466	-1.62940369324
July 19	15:41:34.0	377188.77	20939.41	1.996061	290.85048	-1.47329228641
July 19	18:10:54.0	384830.99	9983.95	1.959194	253.45017	-1.1517682416
July 19	19:36:14.0	390877.31	3890.95	1.961242	232.03420	0.50795464148
July 19	19:57:34.0	393125.87	3260.95	1.936832	226.72689	1.78170926357
July 19	20:50:54.0	398818.44	5811.41	1.709178	213.77357	2.18543007600
July 19	22:16:14.0	403801.59	12224.88	1.226519	193.27314	1.55772875908
July 20	00:02:54.0	413313.36	20021.06	0.630322	167.63457	1.26248339957
July 20	01:06:54.0	417582.21	24559.00	0.283013	152.23196	1.1694939447
July 20	02:10:54.0	421761.45	29023.50	-0.056661	136.81518	1.10445890384
July 20	08:13:34.0	444821.72	53578.90	-1.853074	49.21953	0.93393093211
July 20	16:45:34.0	477228.88	87559.42	-4.074338	285.00033	0.85294069641

TABLE 2.6 (Continued)
AS-506 SLINGSHOT TRAJECTORY PARAMETERS

Day	G.M.T. (Hr:Min:Sec)	X-Component		Y-Component		Z-Component		X		Y		Z	
		S.F.E. Apollo IV Coordinate System (km)	S.F.E. Apollo IV Coordinate System (km)	S.F.E. Apollo IV Coordinate System (km)	S.F.E. Apollo IV Coordinate System (km)	Component of Velocity in S.F.E. Apollo IV Coordinate System (km/sec)	Component of Velocity in S.F.E. Apollo IV Coordinate System (km/sec)	Component of Velocity in S.F.E. Apollo IV Coordinate System (km/sec)	Component of Velocity in S.F.E. Apollo IV Coordinate System (km/sec)	Component of Velocity in S.F.E. Apollo IV Coordinate System (km/sec)	Component of Velocity in S.F.E. Apollo IV Coordinate System (km/sec)		
July 16	16:17:14.0	6110.72	2712.699	1758.431	-2.8775923	8.7965721	5.3131983						
July 16	16:26:14.0	3769.86	6888.723	4263.226	-5.3062319	6.6331930	3.9498651						
July 16	16:36:14.0	373.35	10270.336	6264.361	-5.8197138	4.7917724	2.8174476						
July 16	16:46:14.0	-3097.24	12786.502	7736.353	-5.7073324	3.6862969	2.1453581						
July 16	16:56:14.0	-6452.76	14774.095	8888.116	-5.4715995	2.9876283	1.7236095						
July 16	17:06:14.0	-9662.21	16415.769	9831.607	-5.2288125	2.5124128	1.4382852						
July 16	17:16:14.0	-12731.39	17815.135	10629.926	-5.0056953	2.1692546	1.2331376						
July 16	17:26:14.0	-15673.86	19035.483	11321.407	-4.8064618	1.9097909	1.0785652						
July 16	17:36:14.0	-18503.60	20118.051	11930.930	-4.6294727	1.7065023	0.9578284						
July 16	17:46:14.0	-21233.09	21091.145	12475.521	-4.4718200	1.5426989	0.8608089						
July 16	17:56:14.0	-23873.07	21975.029	12967.339	-4.3306328	1.4077056	0.7810527						
July 16	18:06:14.0	-26432.64	22784.712	13415.368	-4.2034132	1.2943865	0.7142561						
July 16	18:16:14.0	-28919.54	23531.629	13826.437	-4.0880770	1.1977933	0.6574407						
July 16	18:26:14.0	-31340.37	24224.695	14205.864	-3.9829079	1.1143870	0.6084804						
July 16	18:36:14.0	-33700.78	24871.006	14557.871	-3.8864955	1.0415685	0.5658166						
July 16	19:04:14.0	-39993.85	26483.110	15428.701	-3.6256117	0.8840887	0.4744777						
July 17	00:45:34.0	-98733.15	36191.603	20303.458	-2.3862353	0.2604977	0.1164163						
July 17	09:17:34.0	-161020.29	40628.486	21900.823	-1.7576842	0.0675945	0.0099028						
July 17	17:49:34.0	-209605.77	41464.812	21542.822	-1.4317182	-0.0041558	-0.0282091						
July 18	02:21:34.0	-250068.63	40719.037	20358.390	-1.2147331	-0.0407474	-0.0469099						
July 18	10:53:34.0	-284800.59	39126.246	18749.957	-1.0534858	-0.0608804	-0.0566964						
July 18	19:25:34.0	-315148.74	37088.957	16933.615	-0.9272025	-0.0700497	-0.0606370						
July 19	01:06:54.0	-333413.45	35645.658	15692.552	-0.8584878	-0.0699131	-0.0600289						
July 19	15:41:34.0	-375507.50	33058.721	13137.784	-0.7999049	0.0097374	-0.0176767						
July 19	18:10:54.0	-383144.84	33493.685	13156.488	-0.9529632	0.1038063	0.0298728						
July 19	19:36:14.0	-389149.78	34184.427	13377.173	-1.5941607	0.0780539	0.0066948						
July 19	19:57:34.0	-391418.35	34104.050	13286.736	-1.9265725	-0.2582596	-0.1766214						
July 19	20:50:54.0	-397377.47	31714.309	11895.303	-1.6670569	-1.0320308	-0.5832533						
July 19	22:16:14.0	-404875.83	25981.593	8686.248	-1.3310560	-1.1557858	-0.6439724						
July 20	00:02:54.0	-412872.46	18536.402	4546.850	-1.1884588	-1.1660925	-0.6473760						
July 20	01:06:54.0	-417340.37	14059.272	2062.647	-1.1412206	-1.1655009	-0.6463882						
July 20	02:10:54.0	-421652.28	9586.374	-417.093	-1.1060695	-1.1640693	-0.6451318						
July 20	08:13:34.0	-444313.68	-15646.629	-14384.029	-0.9913872	-1.1554272	-0.6389549						
July 20	16:45:34.0	-473284.88	-50981.471	-33907.451	-0.9013055	-1.1451369	-0.6322510						