SEQUENCE OF EVENTS - ABBREVIATIONS

ACS	Attitude Control System
Adv	advance
AMD	Asteroid/Meteoroid Detector, General Electric Co.
Ant	antenna
BW	bandwidth
Cal	calibrate
CKAH	Clock angle of Sun
Cmd	command
Conscan	Conical scan of Attitude Control System
CRT	Cosmic Ray Telescope, NASA Goddard Space Flight Center
CPD	Charged Particle Instrument, University of Chicago
ΔV	Incremental change in velocity
ELA	Earth look angle
Ex	exclusion
Format	Ground-selectable arrangement of telemetry data from S/C: A, B: 22% S/C data, 78% instrument data AD, BD: 11% S/C data, 89% instrument data C1, C2, C3, C4, C5: 97% S/C data, 3% instrument data
Gr. Confirm Time	Ground Time in GMT at which event could conceptually be confirmed
GTT	Geiger Tube Telescope, University of Iowa
H.V.	high voltage
HV/CCM	High Voltage/Continuous Channel Multiplier (Plasma Analyzer)
HVM	Helium Vector Magnetometer, Jet Propulsion Laboratory
Integ	integration
IPP	Imaging Photopolarimeter, University of Arizona
IRR	Infrared Radiometer, California Institute of Technology
Lat, Lon	Latitude and longitude expressed in a coordinate system, spacecraft centered and relative to Ecliptic and Aries
MD	Meteoroid Detector, Langley Research Center
Med	medium
PA	Plasma Analyzer, NASA Ames Research Center
Pre	precession
RTLT	round trip light time
S/C	spacecraft
SLA	Sun look angle
SPGR	spin-period-sector-generator roll reference
SRA	Stellar Reference Assembly of Attitude Control System
Supress	suppression
Thresh	threshold
TLM	telemetry
TRD	Trapped Radiation Detector, University of Calif. at San Diego
UVP	Ultraviolet Photometer, University of Southern California

PIONEER 10 SEQUENCE OF EVENTS

1972

ITEM NO.	GR. CONFIRM TIME DATE	HR	MN	SEC	EVENT DESCRIPTION	SPACECRAFT POSITION DISTANCE, 10^6 KM SUN	EARTH	JUPITER	SUN LON	SUN LAT	EARTH LON	EARTH LAT	JUPITER LON	JUPITER LAT	SPIN-AXIS ATTITUDE LON	LAT	SLA	ELA	CKAH + SPGR	RTLT MIN	SEC
1.					POWERED FLIGHT																
1.1	Mar 3	1	49	3.6	Lift-Off															0	0
1.2		1	51	32.8	Atlas Booster Engine Cutoff																
1.3		1	51	34.8	Booster Package Jettison																
1.4		1	52	17.8	Insulation Panels Jettison																
1.5		1	53	6.5	Atlas Sustainer Engine Cutoff																
1.6		1	53	9.8	Atlas/Centaur Separation																
1.7		1	53	20.1	Centaur Main Engine Start																
1.8		1	53	32.5	Nose Fairing Jettison																
1.9		2	0	48.9	Centaur Main Engine Cutoff																
1.10		2	1	59.6	TEM-364-4 Spinup																
1.11		2	2	0.8	TEM-364-4 Separation																
1.12		2	2	2	Centaur Retrothrust																
1.13		2	2	14.7	TEM-364-4 Ignition																
1.14		2	2	28.7	Centaur Power Changeover																
1.15		2	2	59.4	TEM-364-4 Burnout										230.9	-9.7	111.1	96.1			
1.16		2	3	0	Indication of S/C Sequencer Start																
1.17		2	4	39.0	S/C Separation																
1.18		2	4	41.5	TEM-364-4 Yo Deployment																
2.					INSTRUMENT TURN ON																
2.1		2	16	33	TRD Turn On, Format B, TLM Store																
2.2		2	18	56	Format C5	148.33	0.013	831.85	342.6	0	29.4	7.9	274.2	+0.3							
3.					APPENDAGE DEPLOYMENT																
3.1		2	20	4.8	Despin Start																
3.2		2	21	10.8	Despin Stop																
3.3		2	26	3.9	RTG Deploy Start																
3.4		2	26	45.5	RTG Deploy Complete																
3.5		2	37	13.7	Mag. Boom Deploy Complete																
4.					INSTRUMENTS TURN ON																
4.1		2	33	0	Format B	148.33	0.023	831.82	342.6	0	45.6	8.8	274.2	0.3							
4.2		2	36	28.0	GTT Turn On																
4.3		2	36	50.0	CPD Turn On																
4.4		2	42	20.0	Format C5																
4.5		2	56	10.2	Format B																
4.6		2	57	22.2	HVM Turn On																
5.					PRECESSION																
5.1		4	48	20.3	Format C-4	148.33	0.102	831.53	342.8	0	64.6	9.0	274.3	0.3							
5.2		4	59	17.1	Precession Start										230.9	-9.7	111.2	163.7		0	1.0
5.3		7	3	5.0	Precession Complete										70.2	3.3	87.6	4.2	0.1		
6.					SRA DIAGNOSTIC																
6.1		8	4	7	Start	148.34	0.212	831.13	342.9	0.1	67.6	8.9	274.3	0.4							
6.2		8	15	0	End																

PIONEER 10 SEQUENCE OF EVENTS

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ITEM NO.	GR. CONFIRM TIME DATE	HR	MN	SEC	EVENT DESCRIPTION	SPACECRAFT POSITION DISTANCE, 10^6 KM SUN	EARTH	JUPITER	SUN LON	SUN LAT	EARTH LON	EARTH LAT	JUPITER LON	JUPITER LAT	SPIN-AXIS ATTITUDE LON	LAT	SLA	ELA	CKAH + SPGR	RTLT MIN	SEC
7.					INSTRUMENT TURN ON																
7.1	Mar 3	8	24	35.4	Format B																
7.2		8	27	41.4	MD Turn On																
8.					BATTERY DIAGNOSTIC																
8.1		8	30	7.4	Battery Heater Off																
8.2		8	59	38.5	Battery to Float Charge	148.35	0.246	831.00	343.0	0	68.0	8.9	274.3	0.3						0	1.5
8.3		16	34	47.2	Battery Heater On															0	3.2
8.4		16	36	17.2	Battery Heater Off																
9.					INSTRUMENT MODE CHANGES																
9.1		20	49	26.1	CPD Calibrate															0	4.1
9.2		21	9	26.1	CPD Reset	148.39	0.646	829.51	343.6	0	69.5	8.9	274.4	0.3							
10.					BATTERY DIAGNOSTIC																
10.1	Mar 4	2	40	31.5	Format C5															0	5.5
10.2		3	24	9.7	Battery Heater On																
10.3		3	44	47.8	Battery Heater Off																
10.4		4	6	31.8	Format B	148.42	0.879	828.64	344.0	0.1	69.7	8.8	274.4	0.4							
11.					SRA DIAGNOSTIC																
11.1	Mar 5	4	32	37.2	Format C5															0	11.2
11.2		4	45	0	Start																
11.3		5	0	0	End																
12.					THRUSTER CALIBRATION																
12.1		5	50	3.5	Conscan On Med. Gain Ant. Start										70.2	3.7	85.1	5.2	0.2	0	11.5
12.2		6	0	43.5	Conscan On Med. Gain Ant. Complete	148.55	1.740	825.40	345.4	0.1	70.0	8.8	274.6	0.4							
12.3		6	34	38.7	Conscan On High Gain Ant. Start																
12.4		6	45	18.7	Conscan On High Gain Ant. Complete										69.8	9.3	84.8	0.5	0.8		
12.5		13	17	39.2	ΔV Pair 1 Calibration Start																
12.6		13	18	9.2	ΔV Pair 1 Calibration Complete																
12.7		13	48	39.3	ΔV Pair 2 Calibration Start																
12.8		13	49	9.3	ΔV Pair 2 Calibration Complete																
12.9		15	47	35.7	Pre Pair 1 Cal., Pre 1 Start																
12.10		16	11	23.8	Pre Pair 1 Cal., Pre 2 Complete	148.61	2.070	824.16	345.0	0.1	70.1	8.8	274.7	0.4							
13.					INSTRUMENT TURN ON AND MODE CHANGES																
13.1		18	35	36.3	Format A															0	14.3
13.2		18	37	36.3	CRT Turn On																
13.3		18	49	36.3	CRT Mode/Cal Start																
13.4		19	13	36.4	CRT Mode/Cal End																
13.5	Mar 6	21	20	42.2	UVP Turn On															0	20.2
13.6		22	3	42.4	CRT Turn Off	148.83	3.060	820.40	347.6	0.2	70.2	8.8	274.9	0.4							
13.7		22	4	42.4	CRT Turn On																
13.8		22	5	42.4	CRT Mode/Cal Start																
13.9		22	11	42.4	CRT Mode/Cal End																
13.10	Mar 7	0	50	43.0	UVP Turn Off																
13.11		3	10	47.5	CRT Turn Off																

PIONEER 10 SEQUENCE OF EVENTS

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ITEM NO.	GR. CONFIRM TIME DATE	HR	MN	SEC	EVENT DESCRIPTION	SPACECRAFT POSITION DISTANCE, 10^6 KM SUN	EARTH	JUPITER	SUN LON	SUN LAT	EARTH LON	EARTH LAT	JUPITER LON	JUPITER LAT	SPIN-AXIS ATTITUDE LON	LAT	SLA	ELA	CKAH + SPGR	RTLT MIN	SEC
14.					FIRST MIDCOURSE																
14.1	Mar 7	8	43	12.7	Format C5															0	22.7
14.2		10	42	49.0	Precession 1 Start										69.8	9.7	82.0	0.9	1.2		
14.3		11	15	37.0	Precession 1 Complete										91.8	49.9	98.7	44.9	349.5		
14.4		12	19	37.0	ΔV Start	148.94	3.522	818.65	348.4	0.2	70.2	8.8	275.0	0.4							
14.5		12	27	44.0	ΔV Complete																
14.6		13	1	38.7	ΔV Trim Start																
14.7		13	29	33.8	ΔV Trim End																
14.8		13	31	44.0	Precession 2 Start										91.8	49.9	98.6	44.9	349.5	0	23.8
14.9		14	9	12.0	Precession 2 Complete	148.96	3.587	818.39	348.5	0.2	70.2	8.8	275.0	0.4							
14.10		14	22	26.9	Conscan On Med. Gain Ant. Start																
14.11		14	24	0	Conscan On Med. Gain Ant. Complete																
14.12		16	22	46.4	Spin Rate Decrease Start																
14.13		17	20	35.6	Spin Rate Decrease End																
14.14		18	18	27.8	Conscan On High Gain Ant. Start	149.00	3.719	817.89	348.7	0.2	70.2	8.8	275.0	0.4							
14.15		18	38	0	Conscan On High Gain Ant. Complete										69.8	9.0	81.7	0.2	1.1		
14.16		19	30	12.3	ΔV Start																
14.17		19	34	28.3	ΔV Complete																
15.					INSTRUMENTS TURN ON																
15.1		20	51	42.4	Format A															0	25.4
15.2		20	56	51.4	UVP Turn On																
15.3		20	57	52.4	CRT Turn On																
15.4	Mar 8	0	15	48.1	CRT Turn Off																
16.					SRA DIAGNOSTIC																
16.1	Mar 9	0	20	55.4	Format C5															0	31.4
16.2		1	0	0	Start	149.30	4.725	813.99	350.2	0.3	70.2	8.8	275.2	0.4							
16.3		1	10	0	End																
17.					PRECESSION																
17.1		3	0	36.0	Precession Start	149.32	4.803	813.75	350.2	0.3	70.2	8.8	275.2	0.4	69.8	9.3	79.8	0.5	1.5	0	32.0
17.2		3	21	16.0	Precession End										46.0	7.7	56.2	23.7	4.9		
18.					INSTRUMENT TURN ON																
18.1		4	56	42.4	Format A															0	32.4
18.2		5	14	36.5	AMD Turn On																
18.3		19	0	12.2	UVP Release Cover	149.50	5.329	811.72	351.3	0.3	70.2	8.8	275.3	0.4	46.0	7.8	55.4	23.7	4.9		
19.					SRA DIAGNOSTIC																
19.1		20	34	16.5	Format C4															0	35.8
19.2		20	51	41.4	Star Gate Enable 45° Sector																
19.3		20	58	42.5	Roll Reference 0°																
19.4		21	9	3.7	Star Gate Enable 360° Sector																
19.5		21	17	56.7	Roll Reference 180°																
19.6		22	45	7.3	Star Gate Enable 45° Sector																
19.7		23	41	0.5	Sensor Select Star																
19.8		23	43	0.5	Sensor Select Sun B																
19.9	Mar 10	1	32	7.5	Star Gate Enable 360° Sector																

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ITEM NO.	GR. CONFIRM TIME DATE	HR	MN	SEC	EVENT DESCRIPTION	SPACECRAFT POSITION DISTANCE, 10^6 KM SUN	EARTH	JUPITER	SUN LON	SUN LAT	EARTH LON	EARTH LAT	JUPITER LON	JUPITER LAT	SPIN-AXIS ATTITUDE LON	LAT	SLA	ELA	CKAH + SPGR	RTLT MIN	SEC
20.					INSTRUMENTS TURN ON																
20.1	Mar 10	21	16	3.2	Format AD1	149.85	6.210	808.42	352.7	0.4	70.2	8.8	275.5	0.4	45.9	8.0	54.0	23.7	4.9	0	41.2
20.2		21	32	7.3	IPP Turn On																
21.					ZODIACAL LIGHT																
21.1		21	37	2.3	Zodiacal Light Map Start																
21.2	Mar 11	4	24	34.8	Zodiacal Light Map End																
21.3		4	33	27.8	Format A															0	42.8
21.4		21	50	23.1	Format AD1	150.17	6.996	805.27	353.9	0.4	70.2	8.9	275.6	0.4	45.8	8.2	52.7	23.7	5.0	0	46.6
21.5		22	26	53.2	Zodiacal Light Map Start																
21.6	Mar 12	2	27	58.6	Zodiacal Light Map End																
21.7		2	30	14.6	Format A															0	47.6
21.8		22	14	17.9	Format AD1	150.53	7.778	802.23	355.2	0.5	70.2	8.9	275.8	0.4	45.8	8.3	51.4	23.7	5.1	0	51.9
21.9		22	46	48.0	Zodiacal Light Map Start																
21.10	Mar 13	1	14	57.5	Zodiacal Light Map End																
21.11		1	18	18.5	Format A															0	52.5
22.					INSTRUMENT TURN ON AND MODE CHANGES																
22.1		17	12	16.0	CRT Turn On															0	56.0
22.2		17	25	23.0	CRT Mode/Cal Start																
22.3		17	58	8.2	CRT Mode/Cal End	150.86	8.427	799.69	356.4	0.5	70.2	8.9	275.9	0.4	45.7	8.5	50.5	23.7	5.3		
22.4		21	21	22.9	PA Turn On															0	56.9
22.5		21	25	7.9	PA Exercising Start																
22.6	Mar 14	1	34	0.8	PA Exercising End																
23.					ZODIACAL LIGHT																
23.1		17	51	23.3	Format AD1															1	1.3
23.2		17	59	57.4	Zodiacal Light Map Start																
23.3		20	46	7.0	Zodiacal Light Map End	151.30	9.273	799.39	357.7	0.5	70.1	8.9	276.1	0.4	45.7	8.6	49.0	23.7	5.4		
23.4		22	39	28.4	Format A															1	2.4
24.	Mar 15	12	4	-	TRAJECTORY	151.60	9.790	794.35	358.6	0.6	70.1	8.9	276.2	0.4	45.6	8.8	48.0	23.6		1	5.2
25.					INSTRUMENT MODE CHANGE																
25.1		16	54	38	HVM Manual Range Start															1	6
25.2		17	28	6	HVM Manual Range End																
26.					ZODIACAL LIGHT																
26.1		17	44	28	Format AD1																
26.2		17	53	2	Zodiacal Light Map Start																
26.3		20	11	33	Zodiacal Light Map End															1	7
26.4		20	41	29	Format A																
27.	Mar 16	12	4	-	TRAJECTORY	151.91	10.565	791.30	359.4	0.6	70.0	8.9	276.3	0.5	45.7	8.9	46.3	23.6		1	10
28.					ZODIACAL LIGHT																
28.1		16	46	33	Format AD1															1	11
28.2		16	55	44	Zodiacal Light Map Start																
28.3		19	22	5	Zodiacal Light Map End															1	12
28.4		19	26	38	Format A																

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29.					INSTRUMENT MODE CHANGE																
29.1	Mar 16	18	36	22	AMD Star Exclusion																
29.2		23	51	34	Wide Band/Star Exclusion															1	12
29.3	Mar 17	16	31	38	TRD High Voltage Mode															1	16
29.4		17	1	38	CPD Calibrate																
29.5		17	20	38	CPD Reset																
29.6		17	39	38	TRD Low Voltage Mode																
30.					SRA DIAGNOSTIC																
30.1		18	9	38	Format C4, Diagnostic Start																
30.2		18	20		End																
31.					ZODIACAL LIGHT																
31.1		18	27	38	Format AD1																
31.2		19	51	38	Map Start																
31.3		22	32	39	IPP Turn Off, Map End																
31.4		22	46	39	Format A															1	17
32.	Mar 18	12	4		TRAJECTORY	153.08	12.107	785.18	2.3	0.7	69.9	8.9	276.6	0.5	45.5	9.2	44.8	23.6		1	21
33.	Mar 20	12	4		TRAJECTORY	154.21	13.642	779.07	4.7	0.8	69.8	8.9	276.9	0.5	45.4	9.5	42.3	23.6		1	31
34.					INSTRUMENT MODE CHANGES																
34.1		17	4	54	HVM Range Increment															1	32
35.					ZODIACAL LIGHT																
35.1		17	41	54	IPP Turn On																
35.2		17	56	54	Format AD1, Map Start																
35.3		20	24	32	IPP Turn Off, Map End															1	33
35.4		21	1	55	Format A																
36.					INSTRUMENT MODE CHANGES																
36.1	Mar 21	21	22	0	AMN Thresh., BW, Star Ex., Start															1	38
36.2		23	22	0	AMD Changes, End																
37.	Mar 22	12	4		TRAJECTORY	155.45	15.168	772.96	7.1	0.9	69.6	8.9	277.1	0.5	45.3	9.8	39.7	23.6		1	41
38.					INSTRUMENT MODE CHANGES																
38.1		15	50	48	CPD Calibrate															1	42
38.2		16	18	38	CPD Reset																
39.					ZODIACAL LIGHT																
39.1		15	44	9	IPP Turn On															1	42
39.2		16	44	20	Format AD1, Map Start																
39.3		19	36	21	Format A, Map End																
39.4		19	57	12	IPP Turn Off																

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40.					INSTRUMENT TURN OFF																
40.1	Mar 23	16	18	9	UVP Turn Off																
40.2		16	20	9	AMD Turn Off															1	47
41.					SRA DIAGNOSTIC																
41.1		17	12	9	Format C-4, Start																
41.2		17	30	9	Format C-5 End															1	47
42.					SECOND MIDCOURSE, PART 1																
42.1		18	2	49	Precession to Earth Line. Start										45.2	10.1	37.8	23.6	11.9		
42.2		18	24	41	Precession to Earth Line Complete										71.9	7.3	63.7	3.1	2.7		
42.3		19	47	30	Conscan On Med. Gain Ant., Start										71.9	7.3	63.6	3.2	2.7	1	48
42.4		19	54		Conscan On Med. Gain Ant., Complete																
42.5		20	28	28	Conscan On High Gain Ant., Start																
42.6		20	40		Conscan on High Gain Ant., Complete																
42.7		22	2	30	ΔV Start										69.4	8.8	61.2	0.3	3.9		
42.8		22	3	4	ΔV Complete																
42.9		22	24	25	ΔV Trim																
43.					ZODIACAL LIGHT																
43.1		23	7	10	Format AD1																
43.2		23	14	35	IPP Turn On, Map Start																
43.3	Mar 24	2	33	11	Format A, Map End																
43.4		2	42	11	IPP Turn Off															1	49
44.					SECOND MIDCOURSE, PART 2																
44.1	Mar 24	7	37	22	Format C5																
44.2		10	36	8	Precession 1 Start										69.4	8.8	60.6	0.3	4.0	1	50
44.3		10	57	12	Precession 2 Complete										45.3	6.2	36.6	23.7	6.9		
44.4		12	2	23	ΔV Start															1	51
44.5		12	3	27	ΔV Complete																
44.6		12	30	23	ΔV Trim Start																
44.7		12	48	32	ΔV Trim End																
44.8		13	7	23	Precession 2 Start										45.3	6.0	36.4	23.7	6.7		
44.9		13	28	31	Precession 2 Complete										69.0	8.9	60.0	0.1	4.1		
44.10		14	4	23	Spin Rate Decrease Start																
44.11		14	32	56	Spin Rate Decrease End																
45.		12	4	-	TRAJECTORY	156.79	16.688	766.86	9.4	0.9	69.4	8.9	277.4	0.5						1	51
46.					PRECESSION																
46.1		15	52	37	Start										69.0	8.9	59.8	0.1	4.1		
46.2		15	52	37	Complete										59.0	5.0	49.7	10.7	3.0		
47.					SRA DIAGNOSTIC																
47.1		16	32	24	Format C-4, Start																
47.2		16	47	24	Format A, End															1	52

PIONEER 10 SEQUENCE OF EVENTS
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ITEM NO.	GR. CONFIRM TIME DATE	HR	MN	SEC	EVENT DESCRIPTION	SPACECRAFT POSITION DISTANCE, 10^6 KM SUN	EARTH	JUPITER	SUN LON	SUN LAT	EARTH LON	EARTH LAT	JUPITER LON	JUPITER LAT	SPIN-AXIS ATTITUDE LON	LAT	SLA	ELA	CKAH + SPGR	RTLT MIN	SEC
48.					INSTRUMENT TURN ON AND MODE CHANGES																
48.1	Mar 24	17	2	24	AMD Turn On																
48.2		17	13	24	TRD High Voltage																
48.3		17	13	46	UVP Turn On																
48.4		17	14	6	HVM Range Increment																
48.5		17	14	30	AMD Star Ex, Data Readout, Wide BW																
48.6		18	20	24	TRD Low Voltage																
49.	Mar 27	12	4		TRAJECTORY	158.98	18.956	757.74	12.9	1.0	69.0	8.8	277.7	0.5	59.0	5.4	46.7	10.2	3.7	2	6
50.					INSTRUMENT MODE CHANGES																
50.1		18	59	16	PA Data Source, Integ. Period, H.V. Step; Start																
50.2		19	27	16	PA Changes End																
51.					INSTRUMENT MODE CHANGES																
51.1	Mar 28	16	37	23	CPD Calibrate																
51.2		17	2	23	CPD Reset																
51.3	Mar 29	17	43	25	HVM Range Increment										59.0	5.7	44.8	9.8	4.2	2	17
52.					ZODIACAL LIGHT																
52.1		17	42	39	IPP Turn On																
52.2		18	22	39	Format AD1, Map Start																
52.3		21	20	39	IPP Turn Off, Map End																
52.4		21	32	39	Format A																
53.	Mar 30	12	4		TRAJECTORY	161.39	21.215	748.67	16.3	1.2	68.5	8.8	278.1	0.6	59.0	5.8	43.7	9.6	4.5	2	21
54.					SRA DIAGNOSTIC																
54.1		19	22	44	Format C-4, Start										59.0	5.9	42.4	9.4	4.6	2	22
54.2		19	30		Format A, End																
55.					INSTRUMENT MODE CHANGES																
55.1	Mar 31	12	17	48	TRD High Voltage Mode																
55.2		13	32	48	TRD Low Voltage Mode															2	26
56.					ZODIACAL LIGHT																
56.1		18	37	49	Format AD1																
56.2		18	49	49	IPP Turn On, Map Start															2	27
56.3	Apr 1	0	5	25	IPP Turn Off, Map End																
56.4		0	7	51	Format A															2	29
57.					INSTRUMENT MODE CHANGES																
57.1		19	7	56	Format B																
57.2		19	16	56	TRD High Voltage Mode															2	34
57.3		19	24	56	PA Integ. Period, Data Select																
57.4		19	31	56	Format AD3, BD3																
57.5		19	59	56	PA Data Select, Integ. Period																
57.6		20	57	56	TRD Low Voltage Mode																
57.7		20	58	56	Format A																
57.8		20	59	56	PA Integ. Period, Data Select																

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ITEM NO.	GR. CONFIRM TIME DATE	HR	MN	SEC	EVENT DESCRIPTION	SPACECRAFT POSITION DISTANCE, 10^6 KM SUN	EARTH	JUPITER	SUN LON	SUN LAT	EARTH LON	EARTH LAT	JUPITER LON	JUPITER LAT	SPIN-AXIS ATTITUDE LON	LAT	SLA	ELA	CKAH + SPGR	RTLT MIN	SEC
58.	Apr 2	12	4		TRAJECTORY	164.00	23.472	739.65	19.5	1.2	68.0	8.8	278.4	0.6	59.0	6.2	40.5	9.1	5.4	2	36
59.					SRA DIAGNOSTIC																
59.1	Apr 3	16	39	4	Format C4, Start															2	42
59.2		18	17	40	Format A, End										59.0	6.3	39.2	8.8	5.9		
60.					INSTRUMENT MODE CHANGES																
60.1	Apr 4	18	21	9	HVM Range Increment																
60.2		21	8	10	TRD Turn Off																
60.3		21	22	10	TRD Turn On																
61.					ZODIACAL LIGHT																
61.1		18	26	9	IPP Turn On															2	47
61.2		18	50	9	Format AD1, Map Start																
61.3		22	18	10	IPP Turn Off, Map End															2	48
61.4		22	21	10	Format A																
62.	Apr 5	12	4		TRAJECTORY	166.77	25.737	730.71	22.7	1.3	67.3	8.7	278.7	0.6	59.0	6.5	37.4	8.4	6.5	2	52
63.					INSTRUMENT MODE CHANGES																
63.1		18	3	15	PA Integ. Period, Data Select															2	53
63.2		18	10	15	Format AD3																
63.3		18	25	15	PA Data Select (Three Times)																
63.4		20	9	15	Format A																
63.5		20	10	15	PA Integ. Period																
63.6		20	38	15	CPD Calibrate																
63.7					CPD Reset																
64.					SRA DIAGNOSTIC																
64.1	Apr 6	18	18		Format C-4, Start										59.0	6.6	36.0	8.1	6.9	2	58
64.2		18	43	25	Format A, End																
65.					INSTRUMENT MODE CHANGES																
65.1		19	3	20	PA Integ. Period, Data Select																
65.2		19	10	20	Format AD3																
65.3		19	11	20	TRD High Voltage Mode																
65.4		19	55	20	PA Data Select, Integ. Period																
65.5		20	26	20	Format A																
65.6		20	30	20	TRD Low Voltage Mode																
65.7		20	38	20	PA Integ. Period																
65.8		20	40	46	HVM Range Increment																
65.9	Apr 7	18	25	25	PA Data Select (Three Times)															3	03
66.					ZODIACAL LIGHT																
66.1		18	49	25	IPP Turn On																
66.2		19	7	25	Format AD1, Map Start																
66.3	Apr 8	0	47	36	IPP Turn Off, Map End															3	04
66.4		0	52	36	Format A																

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ITEM NO.	GR. CONFIRM TIME DATE	HR	MN	SEC	EVENT DESCRIPTION	SPACECRAFT POSITION DISTANCE, 10^6 KM SUN	EARTH	JUPITER	SUN LON	SUN LAT	EARTH LON	EARTH LAT	JUPITER LON	JUPITER LAT	SPIN-AXIS ATTITUDE LON	LAT	SLA	ELA	CKAH + SPGR	RTLT MIN	SEC
67.					SRA DIAGNOSTIC																
67.1	Apr 8	6	51	30	Format C-4, Start																
67.2		9	33	19	Format A, End															3	06
68.		12	4		TRAJECTORY	169.72	28.021	721.86	25.7	1.4	66.6	8.6	279.0	0.7	59.0	6.8	34.1	7.6	7.6	3	07
69.					ZODIACAL LIGHT																
69.1	Apr 10	15	55	40	IPP Turn On																
69.2		16	43	40	Format AD1, Map Start																
69.3	Apr 11	0	38	42	Format A, Map End															3	18
69.4		0	40	42	IPP Turn Off															3	20
70.					SRA DIAGNOSTIC																
70.1		8	13	44	Format C-4 Start																
70.2		10	3	44	Format A End																
71.		12	4		TRAJECTORY	172.82	30.340	713.10	28.7	1.5	65.9	8.6	279.3	0.7	58.9	7.2	30.7	6.7	9.2	3	22
72.					INSTRUMENT MODE CHANGES																
72.1		16	36	45	HVM Range Increment																
72.2		16	59	45	GTT Logic A/B																
72.3		18	19	24	PA Integ. Period (First Cmd)																
72.4		18	19	46	Format AD3															3	24
72.5		18	29	8	TRD High Voltage Mode																
72.6		18	45	46	PA Data Select (First Cmd)																
72.7		19	56	46	Format A																
72.8		20	1	46	TRD Low Voltage Mode																
72.9	Apr 12	16	28	51	Format AD3																
72.10		16	29	13	PA Integ. Period (Fifth Cmd)															3	29
72.11		17	43	51	Format A																
72.12		17	58	51	PA Data Select (Sixth Cmd)																
72.13		18	13	51	PA Det A HV/CCM Bias																
72.14		18	15	51	Format B																
72.15		18	15	51	TRD High Voltage Mode																
72.16		18	43	51	CPD Calibrate																
72.17		19	3	51	CPD Logic Reset																
72.18		19	28	51	TRD Low Voltage Mode																
72.19		19	29	13	Format A																
73.					ZODIACAL LIGHT																
73.1	Apr 13	16	28	56	IPP Turn On																
73.2		16	30	56	Format AD1, Map Start															3	34
73.3		21	13	57	Format A, Map End																
74.	Apr 14	12	4		TRAJECTORY	176.06	32.711	704.43	31.5	1.6	65.0	8.5	279.6	0.7	58.8	7.6	28.0	5.8	10.8	3	38

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75.					INSTRUMENT MODE CHANGES																
75.1	Apr 14	18	38	25	TRD High Voltage Mode																
75.2		18	44	1	Format B															3	39
75.3		20	9	2	TRD Low Voltage Mode																
75.4		20	14	2	Format A																
75.5	Apr 17	15	44	17	HVM Range Increment																
76.		12	4		TRAJECTORY	179.43	35.151	695.88	34.2	1.6	64.1	8.3	279.8	0.7	58.8	7.6	25.3	5.0	12.4	3	54
77.					ZODIACAL LIGHT																
77.1		16	14	17	Format AD1, Map Start																
77.2		20	34	18	Format A, Map End															3	55
78.					SRA DIAGNOSTIC																
78.1	Apr 18	6	39	20	Format C-4, Start																
78.2		9	54	21	Format A, End															3	59
78.3		17	36	23	Memory Readout Mode																
78.4		17	47	23	Memory Readout Mode															4	1
78.5		17	55	23	Memory Readout Mode																
79.					INSTRUMENT MODE CHANGES																
79.1		18	14	23	GTT Logic A/B																
79.2		18	41	23	Format B																
79.3		18	51	23	TRD High Voltage Mode																
79.4		20	3	23	TRD Low Voltage Mode																
79.5		20	19	23	Format A																
79.6	Apr 19	18	44	29	CPD Calibrate																
79.7		19	4	9	CPD Reset															4	7
80.	Apr 20	12	4		TRAJECTORY	182.91	37.678	687.44	36.8	1.7	63.2	8.2	280.1	0.8	58.7	7.7	22.9	4.1	14.5	4	11
81.					ZODIACAL LIGHT																
81.1		16	34	34	Format AD1, Map Start															4	12
81.2		21	9	36	Format C1, Map End															4	14
82.					S/C INVERTER PERFORMANCE MEASMTS.																
82.1		21	9	36	Format C1, Start																
82.2		21	39	36	Format A, End																
83.					INSTRUMENT TURN ON AND MODE CHANGE																
83.1	Apr 21	17	4	40	Format AD2																
83.2		18	34	41	IRR Turn On															4	18
83.3		18	59	41	IRR Spoke Adv. (First Cmd)															4	19
83.4		19	32	41	IRR Spoke Adv. (Tenth Cmd)																
83.5		19	39	41	PA Target Suppress.																
83.6		19	43	41	PA Target Suppress.																
83.7		19	49	41	IPP Turn Off																
83.8		19	50	41	IPP Turn On																
83.9		19	51	41	IRR Turn Off																
83.10		20	9	41	Format A																

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84.	Apr 23	12	4		TRAJECTORY	186.49	40.307	679.11	39.4	1.7	62.3	8.1	280.3	0.8	58.7	7.9	20.4	3.3	16.9	4	29
85.					INSTRUMENT TURN ON AND MODE CHANGES																
85.1	Apr 26	2	5	7	PA Target Suppress.																
85.2		2	5	29	TRD Turn Off																
85.3		2	7	6	TRD Turn On																
85.4		2	13	7	PA Target Suppress.																
86.		12	4		TRAJECTORY	190.17	43.054	670.91	41.8	1.8	61.3	7.9	280.5	0.8	58.6	8.0	18.1	2.3	19.7	4	47
87.					PHOTOPOLARIMETRY & INST. MODE CHANGES																
87.1		14	5	9	Format AD1, Photo. Start																
87.2		15	46	10	AMD Star Exclusion																
87.3		20	2	49	AMD Narrow Band																
87.4		21	11	11	AMD Threshold High															4	49
87.5		23	52	4	AMD Wide Bandwidth																
87.6		23	52	26	AMD Star Exclusion																
87.7	Apr 27	1	35	13	Format A, Photo. End																
88.					CONSCAN MEASUREMENTS																
88.1		3	35	13	Format C5																
88.2		3	45	13	Conscan Turn On																
88.3		3	45	35	Conscan Threshold Med.																
88.4		3	45	57	Conscan 180° Output																
88.5		3	56	50	Conscan 0° Output																
89.					SRA DIAGNOSTIC																
89.1		4	40	13	Format C4															4	51
89.2		5	45	14	TLM Store Mode																
89.3		5	50	14	Memory Readout																
89.4		6	8	14	Star Gate Enable 45° Sector																
89.5		7	3	8	Star Gate Enable 360° Sector																
89.6		7	28	27	Sensor Select Star																
89.7		7	43	18	Star Delay Up (First Cmd)																
89.8		8	14	14	Star Delay Up (Sixth Cmd)																
89.9		8	17	15	Star Delay Down																
89.10		9	2	32	Sensor Select Sun B															4	53
89.11		9	27	15	Format A																
90.					SUN SENSOR B ANOMALY																
90.1		13	12	16	ACS Mode																
90.2		13	12	38	Format C4																
90.3		13	26	13	Sensor Select Sun A																
90.4		13	41	16	Spin Aver. Mode																
91.					ZODIACAL LIGHT																
91.1		14	15	16	Format AD1, Map Start																
91.2	Apr 28	1	21	19	Format A, Map End															4	57