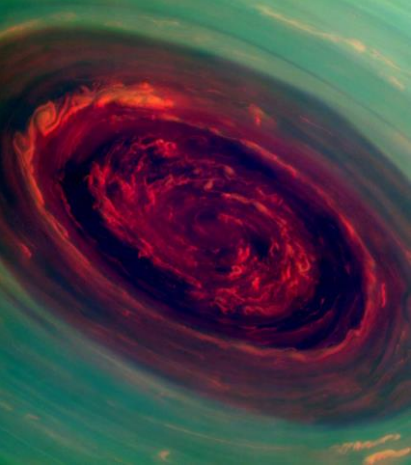
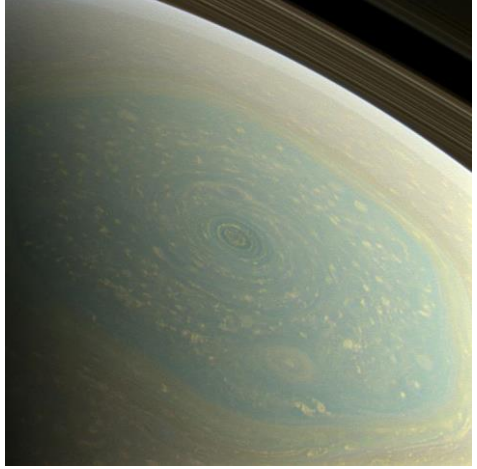
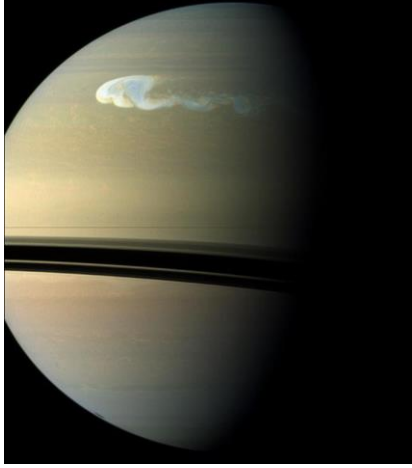


Science Planning & Sequence Team
CASSINI

SATURN TARGET WORKING TEAM

Rev 6 Segment Legacy Package

Segment Boundary: April 14, 2005 – April 16, 2005
2005-104T05:55:00 – 2005-106T06:25:00 (SCET)

Integration Began 08/27/2001
Segment Delivered to S10 Sequence 01/16/2002
Lead Integrator was Jerod Gross

Legacy Package Assembled by Shawn Boll

Table of Contents

*** N.A. = Slide present but content not available.**

Segment Overview and Final Products

Segment Summary

- This Rev 6 segment was the first one integrated by the Saturn Target Working Team. It was a short 2 day long periapse segment in the early part of the Prime Mission, during a mildly inclined orbit. The spacecraft approached Saturn from the day-lit side.

- Saturn science included a VIMS stellar-atmosphere occultation, ISS and VIMS limb viewing, and CIRS-led ORS feature tracking.

- Other science included CIRS and VIMS ring observations and VIMS-led ORS studies of Rhea and Mimas.

- During the ring plane crossing prior to periapse, it was required that the spacecraft point the High Gain Antenna (HGA) into the Dust-ram direction for a brief time. This precaution was taken several times in the mission to protect the spacecraft and instruments from damaging dust impacts when it was predicted to be an unacceptable risk.

- Some waypoints required rotations about the Y-axis to point the CIRS and VIMS radiators (on the +X side of the s/c) away from the sun, to reduce heating.

Final Sequenced SPASS

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
Sequence S010, length = 35 ...		2005-099T05:15:00	E006_SEQUENCE_010+000T00:00:00	034T21:35:00	2005-134T02:50:00			
SATURN rev 6 Segment		2005-104T05:55:00		002T00:30:00	2005-106T06:25:00			
SP_006SA_WAYPTTURN104_PRIME		2005-104T05:55:00		000T00:30:00	2005-104T06:25:00	ISS_NAC to Saturn (0.0,20.0,0.0 deg. offset)	POS_X to NSP	SP Turn to Waypoint
NEW WAYPOINT		**2005-104T06:25:00**		**000T15:36:00**	**2005-104T22:01:00**	**ISS_NAC to Saturn (0.0,20.0,0.0 deg. offset)**	**POS_X to NSP**	
CIRS_006RI_SUBML07LP001_PRIME	C, V	2005-104T06:25:00		000T03:55:00	2005-104T10:20:00	CIRS_FP1 to Rings	POS_Z to NSP	
VIMS_006SA_ALPCMIOCC001_PRIME	M	2005-104T10:20:00		000T01:30:00	2005-104T11:50:00	ISS_NAC to Star (0.0,20.0,0.0 deg. offset)	POS_X to NSP	
VIMS_006RH_RHEA003_PRIME	C, I, M, U	2005-104T11:50:00		000T02:35:00	2005-104T14:25:00	ISS_NAC to Rhea (0.0,-15.0,0.0 deg. offset)	POS_X to NSP	
CIRS_006SA_FTRACK002_PRIME	I, M, U, V	2005-104T14:25:00		000T06:00:00	2005-104T20:25:00	CIRS_FPB to Saturn (0.0,10.0,0.0 deg. offset)	POS_X to NSP	Mag field from 104T19:45 to 105T03:05
ISS_006SA_LIMBRING001_PRIME	C, M	2005-104T20:30:00		000T00:50:00	2005-104T21:20:00	ISS_NAC to Saturn	NEG_X to 185.7/-73.2	2nd axis for Mag; Mag field from 104T19:45 to 105T03:05
SP_006DR_RAMAVOID104_PRIME	M	2005-104T21:20:00		000T00:41:00	2005-104T22:01:00	NEG_Z to Dust_RAM	POS_X to NSP	Ring plane crossing; 2nd axis for Mag
NEW WAYPOINT		**2005-104T22:01:00**		**000T00:59:00**	**2005-104T23:00:00**	**NEG_Z to Dust_RAM**	**POS_X to NSP**	
MP_006DR_DUSTHAZRD001_PRIME	M	2005-104T22:06:00		000T00:15:00	2005-104T22:21:00	NEG_Z to Dust_RAM	POS_X to NSP	
SP_006MI_WAYPTTURN404_PRIME	M	2005-104T22:21:00		000T00:39:00	2005-104T23:00:00	ISS_NAC to Mimas (0.0,-20.0,0.0 deg. offset)	POS_X to NSP	SP Turn to Waypoint
NEW WAYPOINT		**2005-104T23:00:00**		**000T12:25:00**	**2005-105T11:25:00**	**ISS_NAC to Mimas (0.0,-20.0,0.0 deg. offset)**	**POS_X to NSP**	
VIMS_006MI_MIMAS001_PRIME	C, I, M, U	2005-104T23:00:00		000T03:02:00	2005-105T02:02:00	ISS_NAC to Mimas (0.0,-20.0,0.0 deg. offset)	POS_X to NSP	Mag field from 104T19:45 to 105T03:05
Saturn periapse 006, r = 2....		2005-104T23:10:43		000T00:00:01	2005-104T23:10:44			
SP_006EA_DLTURN105_PRIME	M	2005-105T02:02:00		000T00:12:00	2005-105T02:14:00	XBAND to Earth	POS_X to NSP	SP Turn to Earth
SP_006EA_G70OTBUNQ105_PRIME	M, N	2005-105T02:14:00		000T08:36:00	2005-105T10:50:00	XBAND to Earth	POS_X to NSP	OTM-22 Back-Up; Mag field from 104T19:45 to 105T03:05
SP_006SA_WAYPTTURN105_PRIME	M	2005-105T11:00:00		000T00:25:00	2005-105T11:25:00	ISS_NAC to Saturn	POS_Z to NEP	SP Turn to Waypoint
NEW WAYPOINT		**2005-105T11:25:00**		**000T19:30:00**	**2005-106T06:55:00**	**ISS_NAC to Saturn**	**POS_Z to NEP**	
CIRS_006RI_SUBMU04HP001_PRIME	C, M, V	2005-105T11:25:00		000T02:30:00	2005-105T13:55:00	CIRS_FP1 to Rings	POS_Z to NEP	
VIMS_006SA_HIPHZLIMB003_PRIME	M	2005-105T13:55:00		000T07:00:00	2005-105T20:55:00	ISS_NAC to Saturn	POS_Z to NEP	
SP_006EA_DLTURN505_PRIME	M	2005-105T20:55:00		000T00:30:00	2005-105T21:25:00	XBAND to Earth	POS_X to NSP	SP Turn to Earth
SP_006EA_G70METNON105_PRIME	C, M	2005-105T21:25:00		000T09:00:00	2005-106T06:25:00	XBAND to Earth	5_Hr_Rolling	stop roll by 106T02:55 (CDA loss: 39%)

Final Sequenced SMT and Data Volume

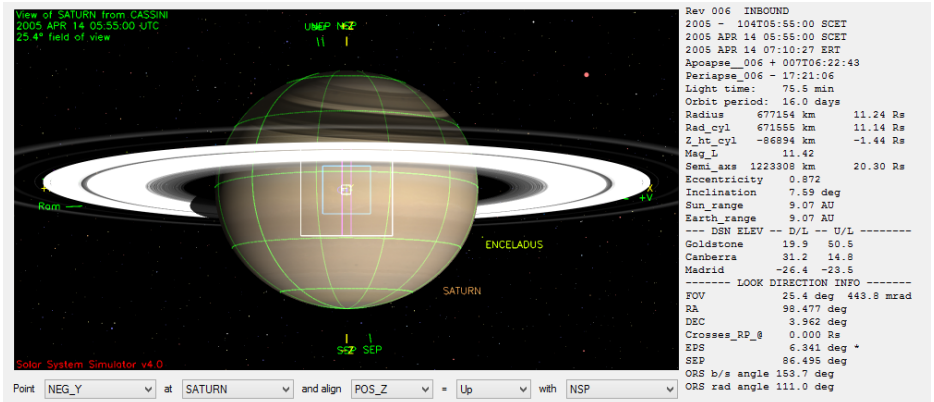
DATA VOLUME SUMMARY --- TRANSFER FRAME OVERHEAD INCLUDED (80 BITS PER 8800-BIT FRAME)

			OBSERVATION_PERIOD							DOWNLINK_PASS							
			P4						P5	RECORDED		PLAYBACK					
DOWNLINK PASS NAME	Start doy hh:mm	End doy hh:mm	START (Mb)	SCI (Mb)	HK+E (Mb)	TOTAL (Mb)	CPACTY (Mb)	MRGN (Mb)	OPNAV (Mb)	SCI (Mb)	ENGR (Mb)	TOTAL (Mb)	CPACTY (Mb)	MARGN (Mb)	NET_MARGN (Mb)	(%)	CAROVR (Mb)
SP_006EA_G70OTBUNQ105_PRIME	105 02:14	105 10:50	0	3211	69	3280	3423	143	0	746	51	4076	2863	-1212	165	1%	1213
SP_006EA_G70METNON105_PRIME	105 21:25	106 06:25	1213	1842	36	3091	3423	332	0	425	53	3569	3727	158	165	1%	0

DATA VOLUME REPORT --- TRANSFER FRAME OVERHEAD NOT INCLUDED

Event	Start doy hh:mm	End doy hh:mm	CAPS (Mb)	CDA (Mb)	CIRS (Mb)	INMS (Mb)	ISS (Mb)	MAG (Mb)	MIMI (Mb)	RADAR (Mb)	RPWS (Mb)	UVIS (Mb)	VIMS (Mb)	PROBE (Mb)	ENGR (Mb)	TOTAL (Mb)
OBSERVATION_NOR	104 05:55	105 02:14	466.2	33.8	235.7	6.4	414.6	119.3	102.5	0.0	1008.4	67.1	724.3	0.0	0.0	3178.4
OBSERVATION_SI	104 05:55	105 02:14	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
SP_006EA_G70OTBUNQ105_PRIME	105 02:14	105 10:50	247.7	33.7	0.0	3.1	0.0	61.2	27.9	0.0	363.0	2.4	0.0	0.0	0.0	738.9
DAILY TOTAL SCIENCE	104 05:55	105 10:50	713.9	67.5	238.7	9.5	414.6	180.5	130.4	0.0	1371.4	69.5	724.3	0.0		
OBSERVATION_NOR	105 10:50	105 21:25	147.0	16.1	36.0	3.4	0.0	49.7	41.8	0.0	132.0	0.0	1395.0	0.0	0.0	1821.1
OBSERVATION_SI	105 10:50	105 21:25	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
SP_006EA_G70METNON105_PRIME	105 21:25	106 06:25	129.6	17.0	86.4	3.2	0.0	19.4	51.8	0.0	113.4	0.0	0.0	0.0	0.0	420.9
DAILY TOTAL SCIENCE	105 10:50	106 06:25	276.6	33.0	126.9	6.7	0.0	69.1	93.7	0.0	245.4	0.0	1395.0	0.0		

Segment Geometry




```
Rev 006  INBOUND
2005 -  104T05:55:00 SCET
2005 APR 14 05:55:00 SCET
2005 APR 14 07:10:27 ERT
Apoapse__006 + 007T06:22:43
Periapse_006 - 17:21:06
Light time:    75.5 min
Orbit period:  16.0 days
Radius      677154 km      11.24 Rs
Rad_cyl     671555 km      11.14 Rs
Z_ht_cyl    -86894 km      -1.44 Rs
Mag_L          11.42
Semi_axs   1223308 km      20.30 Rs
Eccentricity    0.872
Inclination     7.59 deg
Sun_range       9.07 AU
Earth_range     9.07 AU
--- DSN ELEV -- D/L -- U/L --------
Goldstone      19.9   50.5
Canberra       31.2   14.8
Madrid        -26.4  -23.5
------- LOOK DIRECTION INFO -------
FOV            25.4 deg  443.8 mrad
RA             98.477 deg
DEC             3.962 deg
Crosses_RP_@    0.000 Rs
EPS             6.341 deg *
SEP            86.495 deg
ORS b/s angle 153.7 deg
ORS rad angle 111.0 deg
```

Point NEG_Y at SATURN and align POS_Z = Up with NSP

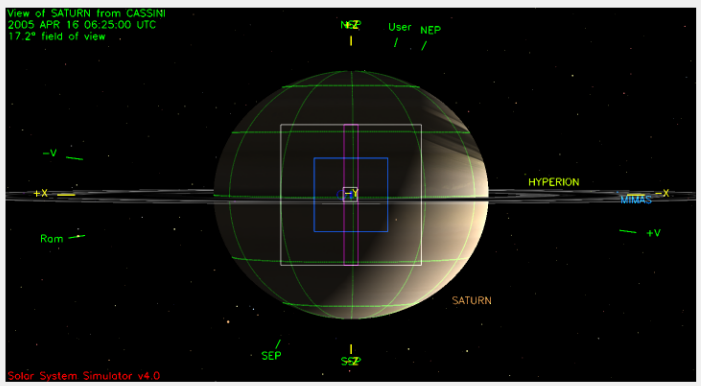
User Vector - RA: 256.95 DEC: 75.15 — Paste Current RA/DEC — Tilt L, Up, Tilt R, Left, Reset, Right, Down — Image, Hi Res — Zoom Out, Fill Screen, Zoom In — Labels, Orbits, Vectors, FOVs, Axes, Lat/Lons — Year, Month, Day, Hour, Minute, Second

Turn Analyzer: SATURN to EARTH about Z on RWA = 14.7 min / 157.4 deg — Event

BODY	S/C OCC?	SAT OCC?	RANGE (km)	RANGE (Rs)	ALTITUDE (km)	ALTITUDE (Rs)	PHASE (deg)	ANGLR_DIAMETER (deg	mrad)	SUB_S/C LON	SUB_S/C LAT	DLON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE_FROM SATRN	ANGLE_FROM EARTH	ANGLE_FROM RAM
SATURN	--	--	677154	11.24	616980	10.24	26.3	10.21	178.24	318	-7	0	9.0	0	0.0	157.4	18.8
MIMAS	--	--	743843	12.34	743643	12.34	17.3	0.03	0.56	61	-8	104	22.8	53	14.2	162.8	4.6
ENCELADUS	--	--	903782	15.00	903526	14.99	31.7	0.03	0.57	349	-6	-160	17.0	47	5.6	152.4	24.0
TETHYS	--	--	856217	14.21	855681	14.20	42.2	0.07	1.26	316	-5	-118	10.6	2690	17.7	142.9	36.4
DIONE	--	--	574136	9.53	573575	9.52	56.2	0.11	1.96	272	-9	-58	1.3	138	33.9	129.6	52.7
RHEA	--	--	393060	6.52	392297	6.51	29.0	0.22	3.90	97	-12	35	12.5	7	51.0	144.7	33.0
TITAN	--	--	1782028	29.57	1779453	29.53	20.8	0.17	2.89	13	-3	132	14.4	6555	31.6	154.4	12.8
HYPERION	--	--	1076552	17.86	1076408	17.86	118.8	0.02	0.30	155	35	-51	3.8	-19199	99.9	67.5	118.7
IAPETUS	--	--	3162049	52.47	3161301	52.45	135.1	0.03	0.47	355	2	-58	5.7	-700334	112.6	51.1	130.8
PHOEBE	--	--	14855995	246.50	14855882	246.50	73.3	0.00	0.02	24	-24	-121	9.7	4297260	55.8	112.4	74.2
SATURN	--	--	677154	11.24	616980	10.24	26.3	10.21	178.24	318	-7	0	9.0	0	0.0	157.4	18.8

Seg Start (Left)

Seg End (below)




```
Rev 006 OUTBOUND
2005 -  106T06:25:00 SCET
2005 APR 16 06:25:00 SCET
2005 APR 16 07:40:47 ERT
Apoapse__006 + 009T06:52:43
Periapse_006 + 001T07:08:54
Light time:    75.8 min
Orbit period:  16.0 days
Radius     1003992 km      16.66 Rs
Rad_cyl    1003816 km      16.66 Rs
Z_ht_cyl     18821 km       0.31 Rs
Mag_L          16.66
Semi_axs   1224414 km      20.32 Rs
Eccentricity    0.872
Inclination     7.60 deg
Sun_range       9.07 AU
Earth_range     9.11 AU
--- DSN ELEV -- D/L -- U/L --------
Goldstone      12.5   42.9
Canberra       32.5   20.2
Madrid        -24.1  -26.0
------- LOOK DIRECTION INFO -------
FOV            17.2 deg  299.8 mrad
RA             14.191 deg
DEC            -6.870 deg
Crosses_RP_@    0.000 Rs
EPS             6.324 deg *
SEP            84.639 deg
ORS b/s angle  73.4 deg
ORS rad angle 152.2 deg
```

Point NEG_Y at SATURN and align POS_Z = Up with NSP

User Vector - RA: 256.95 DEC: 75.15 — Paste Current RA/DEC — Tilt L, Up, Tilt R, Left, Reset, Right, Down — Image, Hi Res — Zoom Out, Fill Screen, Zoom In — Labels, Orbits, Vectors, FOVs, Axes, Lat/Lons — Year, Month, Day, Hour, Minute, Second

Turn Analyzer: SATURN to EARTH about Z on RWA = 8.9 min / 79.6 deg — Event

BODY	S/C OCC?	SAT OCC?	RANGE (km)	RANGE (Rs)	ALTITUDE (km)	ALTITUDE (Rs)	PHASE (deg)	ANGLR_DIAMETER (deg	mrad)	SUB_S/C LON	SUB_S/C LAT	DLON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE_FROM SATRN	ANGLE_FROM EARTH	ANGLE_FROM RAM
SATURN	--	--	1003992	16.66	943726	15.66	106.5	6.88	120.13	241	1	0	6.7	0	0.0	79.6	153.5
MIMAS	--	--	847989	14.07	847786	14.07	112.6	0.03	0.49	218	1	-31	15.7	4111	6.6	73.6	160.1
ENCELADUS	--	--	892085	14.80	891833	14.80	118.2	0.03	0.58	252	1	-56	16.7	-42	12.7	68.0	165.9
TETHYS	--	--	1219953	20.24	1219416	20.23	96.8	0.05	0.89	38	0	132	11.2	4568	10.4	89.3	143.3
DIONE	--	--	804172	13.34	803611	13.33	125.4	0.08	1.40	249	1	-48	13.7	-61	20.5	60.9	172.9
RHEA	--	--	1479988	24.56	1479222	24.54	96.6	0.06	1.04	23	1	149	10.7	-1046	10.6	89.4	143.0
TITAN	--	--	263457	4.37	260882	4.33	55.5	1.12	19.55	17	4	5	5.9	1229	157.3	118.1	4.1
HYPERION	--	--	2460676	40.83	2460553	40.83	110.3	0.01	0.13	295	46	-173	10.9	-4984	4.4	75.8	157.9
IAPETUS	--	--	4374893	72.59	4374146	72.58	129.1	0.02	0.34	359	-0	-152	9.7	-585917	22.7	57.0	168.3
PHOEBE	--	--	15332048	254.40	15331938	254.40	78.3	0.00	0.02	112	-24	155	6.7	4190836	28.5	107.4	129.7
SATURN	--	--	1003992	16.66	943726	15.66	106.5	6.88	120.13	241	1	0	6.7	0	0.0	79.6	153.5

	Saturn Range	Phase Angle	Sub-S/C Lat.
Segment Start	11.24	26.3	-7
Periapse	2.6	107.9	3
Segment End	16.66	106.5	1

Solar Geometry – ORS Boresight Concerns

- ORS Boresight to Sun angle w.r.t. Saturn center briefly dropped below the CIRS "operational" flight rule limit of 15 degrees, getting as low as 14.5 degrees.

- This takes place during a downlink, so there was no impact to science observations.

Daily Science Highlights

Science Highlights were not available for these days.

Segment Integration Planning

Timeline Gaps and Suggested Observations

Rev 6 Strawman TOL

Prime Request	Legend	Start Time	Dur	End Time	Comment
CIRS_006RI_SUBML07LP001_PRIME	CIRS_Rings	2005-104T06:24:45	3:55	2005-104T10:20:00	Radial scan of main rings to obtain submillimeter
					measurement of rings at a variety of geometries. -Y to
					rings, Z perp to rings
					Pointing: -Y to rings, Z perp to rings
					Duration was 8:00:0
Madrid	DSN_Other	2005-104T10:15:42	13:28:12	2005-104T23:43:54	2005 APR 14 11:31:33.70 to 2005 APR 15 00:59:40.32 (ERT):
					START TIME is in SCET : MADRID View Period
VIMS_006SA_ALPCMIOCC001_PRIME	VIMS_Atmospheres	2005-104T10:20:00	01:30:00	2005-104T11:50:00	Alp CMi Stellar Occultation of Saturn <p>Reaction Wheels
					Required
					Pointing: primary NAC to Alp CMi ,secondary z parallel to
					polar axis
VIMS_006RH_RHEA003_PRIME	VIMS_Surfaces	2005-104T12:30:00	1:55:00	2005-104T14:25:0	42i2-63v3 80ms, 640 ms (13 min/cycle) repeat 3 each hour
					<p>Reaction Wheels Required
					Pointing: VIMS boresight to Rhea
					Duration was 04:18:0
					Will be ALL ORS, not just VIMS
Rhea_245K	Distant_Flybys	2005-104T13:18:46	00:00:01	2005-104T13:18:47	range= 245096.91 km; phase= 82.0 deg.
CIRS_006SA_FTRACK002_PRIME	CIRS_Atmospheres	2005-104T14:25:00	06:00:00	2005-104T20:25:00	Limb integration, slow nadir scans at 100 microrad/s,
					interleaved with ISS and VIMS integrations. POINTING: -y
					to saturn, Z to limb for limb integrations, X to pole for
					scans
					Pointing: -y to Saturn, Z to limb for limb integrations, X
Goldstone	DSN_GOLDSTONE	2005-104T17:56:08	13:06:00	2005-105T07:02:08	2005 APR 14 19:12:00.36 to 2005 APR 15 08:18:05.11 (ERT):
					START TIME is in SCET : GOLDSTONE View Period
MAG_006OT_INTFLD001_PRIME	MAG	2005-104T19:45:00	07:20:00	2005-105T03:05:00	This request will yield unique observations of Saturns
					internal magnetic field over a unique orbit track in
					latitude and longitude space.
					Pointing: Spacecraft x-axis (+ or -) within 45 degrees of
					magnetic field direction.
ISS_006TI_1X1PT60001_ISS	ISS_Atmospheres	2005-104T20:30	00:20:00	2005-104T20:50	Titan NAC Photopol 60 Phase
					Pointing: negative Y to Titan, Z perpendicular to Sun-Titan
					line
					Start was 104T23:46
VIMS_006MI_MIMAS001_PRIME	VIMS_Surfaces	2005-104T20:50	5:05:00	2005-105T01:55:0	24i2-36v3 1st hour, 36i2-54v3 160ms, 640 ms (10 min/cycle)
					repeat 3 each hour <p>Reaction Wheels Required
					Pointing: vims boresight to mimas
					Duration was 06:30
					Will be ALL ORS, not just VIMS
					Start was 21:30; duration was 04:25
RPXING	Geometry_Events	2005-104T22:24:31	00:00:01	2005-104T22:24:32	Ring plane crossing (no duration)
Peri_6	Geometry_Events	2005-104T23:24:45	00:00:01	2005-104T23:24:46	PERIAPSIS
RING_OCC	Occultations	2005-104T23:42:02	02:12:59	2005-105T01:55:01	RSS RING OCCULTATION
Epimetheus_51K	Distant_Flybys	2005-105T00:22:42	00:00:01	2005-105T00:22:43	range= 51216.17 km; phase= 78.6 deg.
Dione_205K	Distant_Flybys	2005-105T01:21:28	00:00:01	2005-105T01:21:29	range= 204912.52 km; phase= 58.3 deg.
Mimas		2005-105T01:33			
NAV_006SC_OTM022BU001_NAV	Maneuver	2005-105T01:55:0	5:00:00	2005-105T06:55:0	Backup maneuver location. Reduce errors in the Titan 5
					encounter conditions. Duration includes Op Mode transition
					(15 minutes) to turn on propulsion heaters and switch to
					DFPW.
					Pointing: Start/End Earth point
					Start was 104T13:11; Duration was 09:15:00
Canberra	DSN_Other	2005-105T02:26:33	08:36:36	2005-105T11:03:09	2005 APR 15 03:42:24.97 to 2005 APR 15 12:18:52.57 (ERT):
					START TIME is in SCET : CANBERRA View Period
Calypso_83K	Distant_Flybys	2005-105T04:28:37	00:00:01	2005-105T04:28:38	range= 82918.11 km; phase=113.8 deg.
CIRS_006RI_SUBMU04HP001_PRIME	CIRS_Rings	2005-105T06:55:0	0:45:00	2005-105T07:40:0	Radial scan of main rings to obtain submillimeter
					measurement of rings at a variety of geometries. -Y to
					rings, Z perp to rings
					Pointing: -Y to rings, Z perp to rings
					Was 03:25 to 11:25
					Duration was 0:30
VIMS_006SA_HIPHZLIMB003_PRIME	VIMS_Atmospheres	2005-105T07:40:0	10:15	2005-105T17:55:00	Saturn Limb High Phase, including Feature-Track Feature
					<p>Reaction Wheels Required
					Pointing: primary NAC to bright limb at Feature latitude, z
					parallel to polar axis
					Start was 06:45
					Duration was 11:00; cut short for turn to Titan d/l
					Duration was 10:30; start was 07:25
Madrid	DSN_Other	2005-105T10:12:05	13:28:12	2005-105T23:40:17	2005 APR 15 11:27:56.61 to 2005 APR 16 00:56:04.99 (ERT):
					START TIME is in SCET : MADRID View Period
Goldstone	DSN_GOLDSTONE	2005-105T17:52:34	13:06:00	2005-106T06:58:34	2005 APR 15 19:08:25.91 to 2005 APR 16 08:14:28.02 (ERT):
					START TIME is in SCET : GOLDSTONE View Period

Initial SMT and Data Volume

Beginning of Integration:

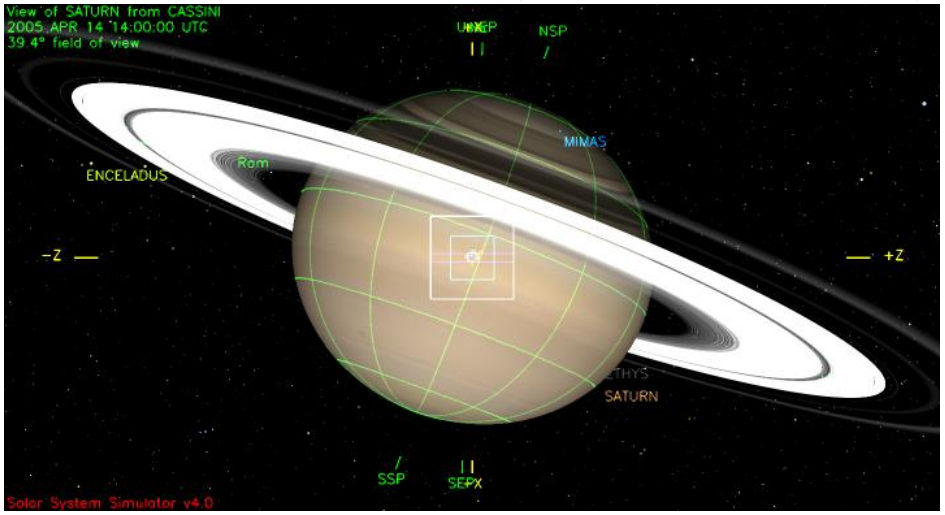
- Data-volume overview
  - Capability of 8:45 Goldstone-Canberra pass is ~2600 Mb
  - Data volume from start of seg to start of Goldstone downlink ~4300 Mb
  - Data volume during downlink ~1000 Mb
  - Data volume after downlink to start of TOST downlink ~1200 Mb

Waypoint Selection

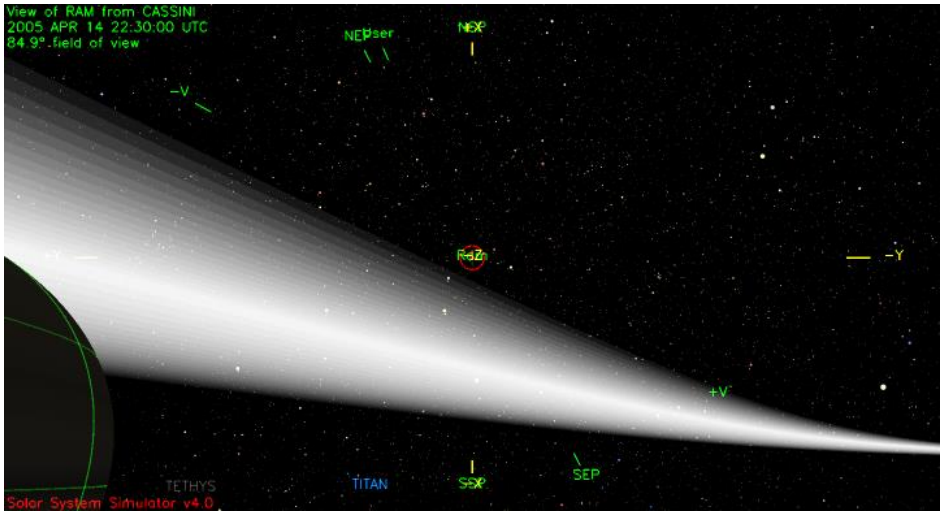
No Waypoint Selection Info Available.

Waypoints Chosen

Waypoint 1 (2005-104T06:25:00 – 2005-104T22:01:00): ISS_NAC to Saturn (0,20,0); POS_X to NSP

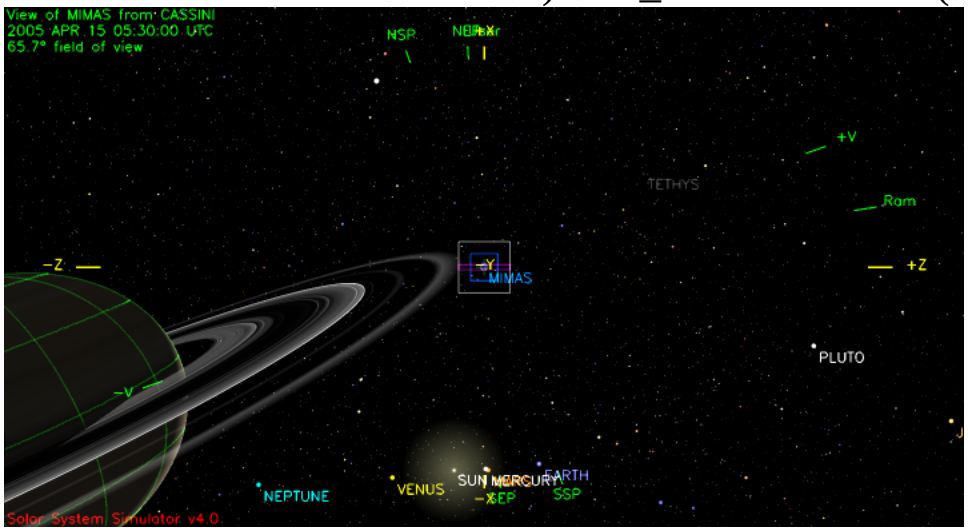


Waypoint 2 (2005-104T22:01:00 – 2005-104T23:00:00): NEG_Z to Dust_RAM; POS_X to NSP

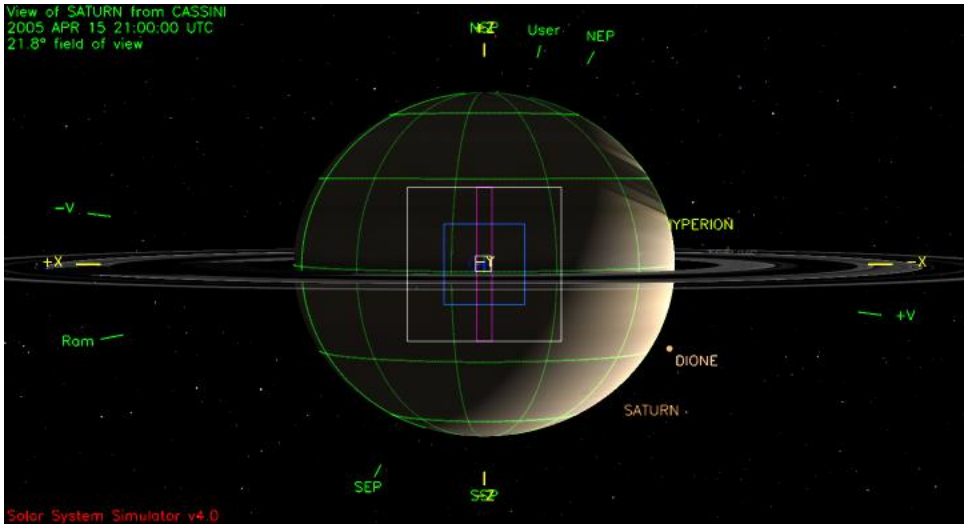


Waypoints Chosen

Waypoint 3 (2005-104T23:00:00 – 2005-105T11:25:00): ISS_NAC to Mimas (0,-20,0); POS_X to NSP



Waypoint 4 (2005-105T11:25:00 – 2005-106T06:55:00): ISS_NAC to Saturn; POS_Z to NEP



Rev 6 Saturn Segment Open Issues (as of 11/26/01)

- **Pointing Issues**
  - Waypoints:
    - 2005-104T06:25 to 2005-104T21:40: NAC to Saturn, +X to Saturn N. Pole (0,20°,0 offset)
    - 2005-104T21:40 to 2005-105T11:25: NAC to Mimas, +X to Saturn N. Pole (no offset)
    - 2005-105T11:25 to 2005-106T06:55: NAC to Saturn, +X to Saturn N. Pole (0,20°,0 offset)
  - No moveable blocks
  - No epoch-relative prime observations
  - Does MAG need to deliver a PDT design for the internal field measurement at 104T21:40? If not, the corresponding entry needs to be deleted from the Attitude Strategy spreadsheet.
- **Data Volume Issues**
  - 1460 Mb carried over from first playback
  - 1697 Mb of excess margin from second playback
  - Therefore, at end of second playback the SSRs are empty, with 237 Mb to spare (1697-1460=237)
  - No OpNavs or high value science requested; any OpNavs or h.v. science coming from Rings TWT?
  - Support Imaging requests are currently being counted as ISS bits instead of being charged to the requesting team.
- **CIMS Issues**
  - ISS and CIRS need to reduce duration of Titan observation at 104T20:30 from 60 minutes to 50 minutes to allow time for SP-designed turn to change waypoint at 104T21:40.
  - SP turns and downlink rate info are not currently represented in CIMS

Notes & Liens (2 of 2)

Rev 6 Saturn Segment Open Issues (cont.) (as of 11/26/01)

- **Power Issues**
  - None
- **Flight Rule / Mission Plan Guidelines and Constraint Issues**
  - None
- **Other Issues**
  - None