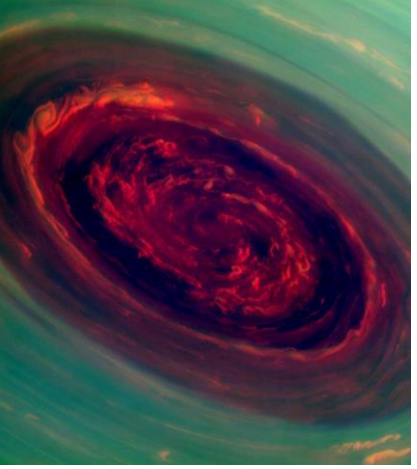

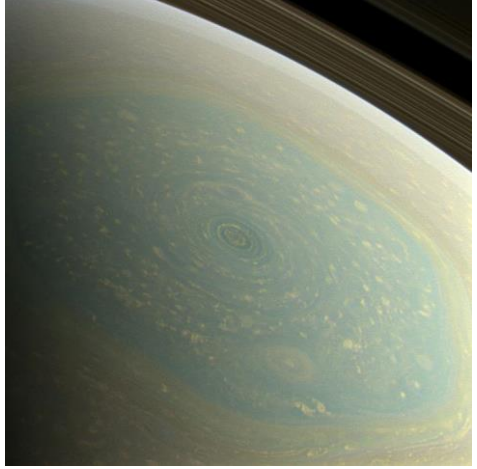
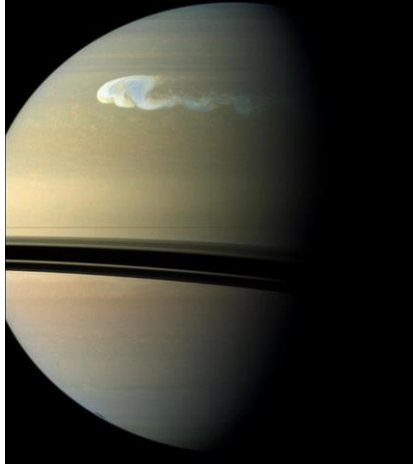

Science Planning & Sequence Team
CASSINI

SATURN TARGET WORKING TEAM

Rev 212 Segment Legacy Package

Segment Boundary: February 9, 2015 – February 11, 2015
2015-040T00:06:00 – 2015-042T23:51:00 (SCET)

Integration Began 05/12/2014
Segment Delivered to S87 Sequence 06/26/2014
Lead Integrator was Kathleen Kelleher

Legacy Package Assembled by Kathleen Kelleher

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Segment Overview and Final Products

Segment Summary

- Saturn 212 was a nearly 3 days long periapse segment in S87 near the end of the first inclined phase (IN-1) of the Solstice Mission.
- The timeline was filled primarily with typical periapse activities, such as VIMS Saturn Global mapping, a VIMS ring occultation, and CIRS-led composition and mapping.
- Other special periapse observations included UVIS Saturn thermosphere imaging and an ISS Regional map of Rhea. ISS also performed a close-in observation of the D-Ring.
- In addition, ISS performed a Titan Cloud Monitoring observation
- Three separate waypoints were chosen for the brief segment to avoid flight rule violations and the use of the RBOT (reaction wheel) friendly attitude was compatible with science.

Final Sequenced SPASS

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End	Primary	Secondary	Comments
Sequence S87, length = 67 days		2014-351T03:15:00		066T13:37:00	2015-052T16:52:00			
SATURN_212 Segment		2015-040T00:06:00		002T23:45:00	2015-042T23:51:00			
SP_212SA_WAYPTTURN040_PRIME		2015-040T00:06:00		000T00:40:00	2015-040T00:46:00	ISS_NAC to Saturn	POS_Z to NSP	coming from XBand to Earth, NEG_Y to SA (0,0, -9.5)
NEW WAYPOINT		2015-040T00:46:00		000T14:20:00	2015-040T15:06:00	ISS_NAC to Saturn	POS_Z to NSP	
VIMS_212SA_NHEMMAP001_PRIME	C, I, U	2015-040T00:46:00		000T10:30:00	2015-040T11:16:00	ISS_NAC to Saturn	POS_Z to NSP	
UVIS_212SA_THERMOSPH001_PRIME		2015-040T11:16:00		000T03:00:00	2015-040T14:16:00	ISS_NAC to Saturn	POS_Z to NSP	
SP_212EA_DLTURN040_PRIME		2015-040T14:26:00		000T00:40:00	2015-040T15:06:00	XBAND to Earth	NEG_X to 31.7/-8.1	OTP. ptg from DLWG for MIMI. CIRS heating
NEW WAYPOINT		2015-040T15:06:00		000T09:40:00	2015-041T00:46:00	XBAND to Earth	NEG_X to 31.7/-8.1	
SP_212EA_C34HEFOTP040_PRIME	C, E, N	2015-040T15:06:00		000T09:00:00	2015-041T00:06:00	XBAND to Earth	4_Hr_Rolling	MIMI. OTP. CIRS heating
SP_212SA_WAYPTTURN041_PRIME		2015-041T00:06:00		000T00:40:00	2015-041T00:46:00	ISS_NAC to Saturn	NEG_X to NSP	
NEW WAYPOINT		2015-041T00:46:00		000T14:20:00	2015-041T15:06:00	ISS_NAC to Saturn	NEG_X to NSP	
ISS_212TI_M60R2CLD041_PRIME	C, V	2015-041T00:46:00	E212_M60R2CLD041+000T00:00:00	000T01:30:00	2015-041T02:16:00	ISS_NAC to Titan	NEG_X to NSP	No Preference to secondary pointing
ISS_212RH_REGMAP001_PIE	C, M, U, V	2015-041T03:00:00		000T05:30:00	2015-041T08:30:00	ISS_NAC to Rhea	NEG_X to NSP	Collaborative Rider(s): CIRS, UVIS
VIMS_212SA_SHEMMAP001_PRIME	C, I, U	2015-041T08:30:00		000T02:00:00	2015-041T10:30:00	ISS_NAC to Saturn	NEG_X to NSP	
VIMS_212RI_ALPHEROCC002_PRIME	C	2015-041T10:30:00		000T01:10:00	2015-041T11:40:00	VIMS_IR to 258.662/14.39	NEG_X to NSP	No Preference to secondary pointing
VIMS_212SA_SHEMMAP002_PRIME	C, I, U	2015-041T11:40:00		000T02:45:00	2015-041T14:25:00	ISS_NAC to Saturn	NEG_X to NSP	
SP_212EA_DLTURN041_PRIME		2015-041T14:26:00		000T00:40:00	2015-041T15:06:00	XBAND to Earth	NEG_X to 31.7/-8.1	OTB. Ptg from DLWG for MIMI. CIRS heating, SID suspend.
NEW WAYPOINT		2015-041T15:06:00		000T09:40:00	2015-042T00:46:00	XBAND to Earth	NEG_X to 31.7/-8.1	
SP_212EA_C70METOTB041_PRIME	C, N	2015-041T15:06:00		000T09:00:00	2015-042T00:06:00	XBAND to Earth	NEG_X to 31.7/-8.1	MIMI. same as OTP pass. OTB. SID suspend. CIRS heating
Periapse R = 6.887 Rs, lat ...		2015-041T17:16:45		000T00:00:01	2015-041T17:16:46			
SP_212SA_WAYPTTURN042_PRIME		2015-042T00:06:00		000T00:40:00	2015-042T00:46:00	ISS_NAC to Saturn	NEG_Z to NSP	
NEW WAYPOINT		2015-042T00:46:00		000T12:35:00	2015-042T13:21:00	ISS_NAC to Saturn	NEG_Z to NSP	
CIRS_212SA_COMPSIT008_PRIME	U, V	2015-042T00:46:00		000T09:54:00	2015-042T10:40:00	CIRS_FP3 to Saturn	NEG_Z to NSP	Collaborative Rider(s): UVIS. sit on left illuminated limb on Equator. Collab with UVIS.
ISS_212RI_DRCLOSE001_PIE	C, U, V	2015-042T10:40:00		000T02:00:00	2015-042T12:40:00	ISS_NAC to Rings	NEG_Z to NSP	Collaborative Rider(s): UVIS. No Preference to secondary pointing
SP_212EA_DLTURN042_PRIME		2015-042T12:41:00		000T00:40:00	2015-042T13:21:00	XBAND to Earth	NEG_Y to 118.0/-0.8	ptg from DLWG for MIMI. Pre-TOST flyby. CIRS heating
NEW WAYPOINT		2015-042T13:21:00		000T11:10:00	2015-043T00:31:00	XBAND to Earth	NEG_Y to 118.0/-0.8	
SP_212EA_YGAP042_PRIME		2015-042T13:21:00		000T01:30:00	2015-042T14:51:00	XBAND to Earth	NEG_Y to 118.0/-0.8	
SP_212EA_C70METSEQ042_PRIME	C	2015-042T14:51:00		000T09:00:00	2015-042T23:51:00	XBAND to Earth	NEG_Y to 118.0/-0.8	MIMI. pre-TOST flyby. CIRS heating

Gap 1

Gap 2

Gap 3

Gap 4

Final Sequenced SMT and Data Volume

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

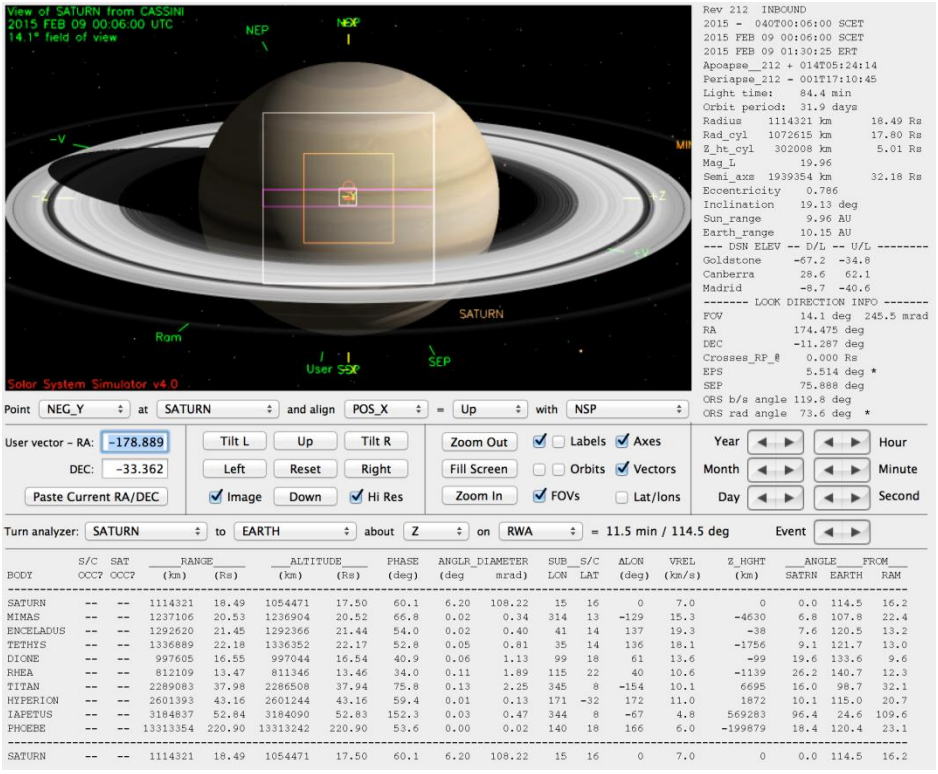
			OBSERVATION_PERIOD							DOWNLINK_PASS							
			P4						P5	RECORDED		PLAYBACK					
DOWNLINK PASS NAME	Start doy hh:mm	End doy hh:mm	START (Mb)	SCI (Mb)	HK+E (Mb)	TOTAL (Mb)	CPACTY (Mb)	MRGN (Mb)	OPNAV (Mb)	SCI (Mb)	ENGR (Mb)	TOTAL (Mb)	CPACTY (Mb)	MARGN (Mb)	NET_MARGN (Mb)	(%)	CAROVR (Mb)
SP_212EA_C34BWGOTP040_PRIME	040 15:06	041 00:06	0	1067	63	1131	3322	2191	0	199	53	1383	585	-798	66	1%	798
SP_212EA_C70METOTB041_PRIME	041 15:06	041 23:56	798	2391	63	3252	3322	70	0	205	52	3509	3240	-270	66	0%	269
SP_212EA_C70METSEQ042_PRIME	042 14:51	042 21:46	269	2068	63	2400	3322	922	0	150	41	2591	2572	-20	66	1%	19

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	040 00:06	040 15:06	0.0	28.3	75.6	5.4	300.0	26.7	45.9	0.0	70.6	105.3	400.0	0.0	62.7	1120.5
SP_212EA_C34BWGOTP040_PRIME	040 15:06	041 00:06	0.0	17.0	86.4	3.2	0.0	16.0	27.5	0.0	42.1	4.9	0.0	0.0	0.0	197.2
DAILY TOTAL SCIENCE	040 00:06	041 00:06	0.0	45.3	162.0	8.6	300.0	42.7	73.4	0.0	112.7	110.2	400.0	0.0	62.7	
OBSERVATION_NOR	041 00:06	041 15:06	0.0	118.5	151.8	5.4	713.5	26.7	45.9	0.0	415.8	271.4	620.0	0.0	62.7	2431.7
SP_212EA_C70METOTB041_PRIME	041 15:06	041 23:56	0.0	16.7	84.6	13.2	0.0	15.7	27.0	0.0	41.3	4.8	0.0	0.0	0.0	203.4
DAILY TOTAL SCIENCE	041 00:06	041 23:56	0.0	135.2	236.4	18.6	713.5	42.4	72.9	0.0	457.1	276.3	620.0	0.0	62.7	
OBSERVATION_NOR	041 23:56	042 14:51	0.0	28.1	160.2	5.4	300.0	26.5	45.6	0.0	1166.5	36.3	280.0	0.0	62.3	2111.1
SP_212EA_C70METSEQ042_PRIME	042 14:51	042 21:46	0.0	13.0	63.9	2.5	0.0	12.3	21.2	0.0	32.4	3.8	0.0	0.0	0.0	149.1
DAILY TOTAL SCIENCE	041 23:56	042 21:46	0.0	41.2	224.1	7.9	300.0	38.8	66.8	0.0	1198.9	40.1	280.0	0.0	62.3	

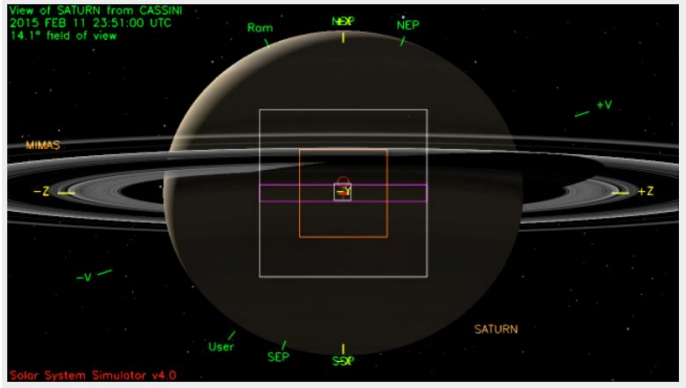
Segment Geometry (1 of 2)

Beginning Periapse



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	ALON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE FROM SATRN	ANGLE FROM EARTH	ANGLE FROM RAM
SATURN	--	--	1114321	18.49	1054471	17.50	60.1	6.20	108.22	15	16	0	7.0	0	0.0	114.5	16.2
MIMAS	--	--	1237106	20.53	1236904	20.52	66.8	0.02	0.34	314	13	-129	15.3	-4630	6.8	107.8	22.4
ENCELADUS	--	--	1292620	21.45	1292366	21.44	54.0	0.02	0.40	41	14	137	19.3	-38	7.6	120.5	13.2
TETHYS	--	--	1336889	22.18	1336352	22.17	52.8	0.05	0.81	35	14	136	18.1	-1756	9.1	121.7	13.0
DIONE	--	--	997605	16.55	997044	16.54	40.9	0.06	1.13	99	18	61	13.6	-99	19.6	133.6	9.6
RHEA	--	--	812109	13.47	811346	13.46	34.0	0.11	1.89	115	22	40	10.6	-1139	26.2	140.7	12.3
TITAN	--	--	2289083	37.98	2286508	37.94	75.8	0.13	2.25	345	8	-154	10.1	6695	16.0	98.7	32.1
HYPERION	--	--	2601393	43.16	2601244	43.16	59.4	0.01	0.13	171	-32	172	11.0	1872	10.1	115.0	20.7
IAPETUS	--	--	3184837	52.84	3184090	52.83	152.3	0.03	0.47	344	8	-67	4.8	569283	96.4	24.6	109.6
PHOEBE	--	--	13313354	220.90	13313242	220.90	53.6	0.00	0.02	140	18	166	6.0	-199879	18.4	120.4	23.1
SATURN	--	--	1114321	18.49	1054471	17.50	60.1	6.20	108.22	15	16	0	7.0	0	0.0	114.5	16.2

End Periapse

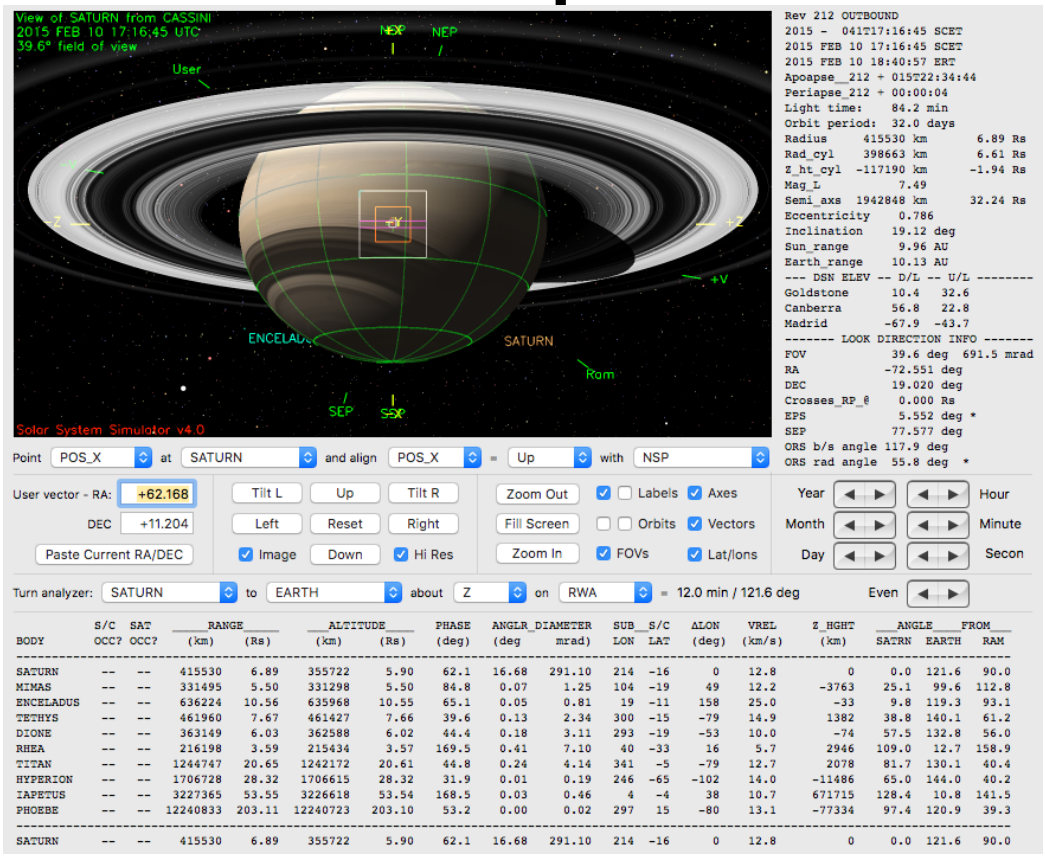


BODY	S/C OCC?	SAT OCC?	RANGE (km)	RANGE (Rs)	ALTITUDE (km)	ALTITUDE (Rs)	PHASE (deg)	ANGLR_DIAMETER (deg	mrad)	SUB_S/C LON	SUB_S/C LAT	ALON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE FROM SATRN	ANGLE FROM EARTH	ANGLE FROM RAM
SATURN	--	--	912933	15.15	852716	14.15	149.1	7.57	132.13	61	-5	0	8.0	0	0.0	36.1	159.4
MIMAS	--	--	752441	12.48	752237	12.48	154.9	0.03	0.55	144	-7	28	7.0	-193	6.8	30.1	154.7
ENCELADUS	--	--	862932	14.32	862681	14.31	136.8	0.03	0.59	270	-6	-70	17.6	-47	15.1	48.7	160.5
TETHYS	--	--	1165124	19.33	1164585	19.32	154.4	0.05	0.93	27	-5	145	14.8	4233	8.5	30.3	155.1
DIONE	--	--	1118129	18.55	1117567	18.54	133.6	0.06	1.01	312	-4	-114	17.6	25	18.1	51.9	160.6
RHEA	--	--	461764	7.66	460999	7.65	166.4	0.19	3.32	138	-10	20	3.8	-2034	24.3	16.1	139.4
TITAN	--	--	345724	5.74	343149	5.69	45.5	0.85	14.90	0	-14	-0	5.9	-2023	160.5	130.3	9.3
HYPERION	--	--	761289	12.63	761176	12.63	29.5	0.02	0.43	288	-61	-14	6.8	-19993	147.2	150.1	40.8
IAPETUS	--	--	4229871	70.18	4229124	70.17	165.0	0.02	0.35	9	-1	138	8.6	739433	33.9	13.8	130.8
PHOEBE	--	--	11524483	191.22	11524371	191.22	57.5	0.00	0.02	48	15	26	9.3	13625	150.9	116.6	22.6
SATURN	--	--	912933	15.15	852716	14.15	149.1	7.57	132.13	61	-5	0	8.0	0	0.0	36.1	159.4

	Saturn Range	Phase Angle	Sub-S/C Lat.
Segment Start	18.5 R_{Sat}	60.1°	16° N
Periapse	6.89 R_{Sat}	62.1°	16° S
Segment End	15.15 R_{Sat}	149.1°	5° S

Segment Geometry (2 of 2)

Periapse



BODY	S/C OCC?	SAT OCC?	RANGE (km)	RANGE (Rs)	ALTITUDE (km)	ALTITUDE (Rs)	PHASE (deg)	ANGLR_DIAMETER (deg	ANGLR_DIAMETER mrad)	SUB_S/C LON	SUB_S/C LAT	ΔLON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE FROM SATRN	ANGLE FROM EARTH	ANGLE FROM RAM
SATURN	--	--	415530	6.89	355722	5.90	62.1	16.68	291.10	214	-16	0	12.8	0	0.0	121.6	90.0
MIMAS	--	--	331495	5.50	331298	5.50	84.8	0.07	1.25	104	-19	49	12.2	-3763	25.1	99.6	112.8
ENCELADUS	--	--	636224	10.56	635968	10.55	65.1	0.05	0.81	19	-11	158	25.0	-33	9.8	119.3	93.1
TETHYS	--	--	461960	7.67	461427	7.66	39.6	0.13	2.34	300	-15	-79	14.9	1382	38.8	140.1	61.2
DIONE	--	--	363149	6.03	362588	6.02	44.4	0.18	3.11	293	-19	-53	10.0	-74	57.5	132.8	56.0
RHEA	--	--	216198	3.59	215434	3.57	169.5	0.41	7.10	40	-33	16	5.7	2946	109.0	12.7	158.9
TITAN	--	--	1244747	20.65	1242172	20.61	44.8	0.24	4.14	341	-5	-79	12.7	2078	81.7	130.1	40.4
HYPERION	--	--	1706728	28.32	1706615	28.32	31.9	0.01	0.19	246	-65	-102	14.0	-11486	65.0	144.0	40.2
IAPETUS	--	--	3227365	53.55	3226618	53.54	168.5	0.03	0.46	4	-4	38	10.7	671715	128.4	10.8	141.5
PHOEBE	--	--	12240833	203.11	12240723	203.10	53.2	0.00	0.02	297	15	-80	13.1	-77334	97.4	120.9	39.3
SATURN	--	--	415530	6.89	355722	5.90	62.1	16.68	291.10	214	-16	0	12.8	0	0.0	121.6	90.0

Solar Geometry – ORS Boresight Concerns

No ORS Boresight Solar Constraints on Science Pointing Noted.

Daily Science Highlights

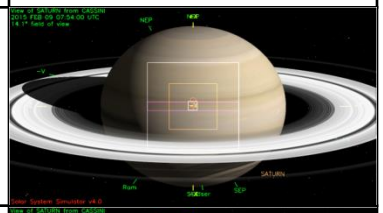
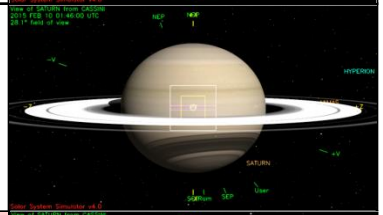
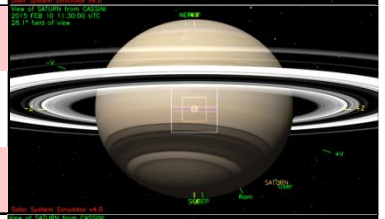
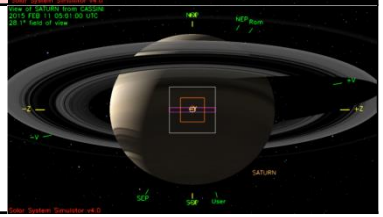
Feb 9 (DOY 040): VIMS performed regional mapping mosaics of Saturn's northern hemisphere. CIRS, ISS and UVIS rode along. UVIS then did a rare thermosphere scan over the sunlit hemisphere, to determine the spacecraft's tumble density altitude to aid in proximal orbit planning.

Feb 10 (DOY 041): ORS team members conducted a joint observation set of Titan as part of the ongoing Titan Monitoring Campaign. After that, a SOST PIE was performed, led by ISS observing Rhea with CIRS, UVIS and VIMS riding along, as Cassini passed through the ring plane. VIMS then acquired regional mapping mosaics of Saturn's southern hemisphere with CIRS and UVIS riding along. VIMS then performed a stellar (ring) occultation for a short time, with CIRS riding along before going back to a second set of mosaics as they continued mapping the southern hemisphere.

Feb 11 (DOY 042): Now on the unlit side of Saturn, CIRS performed a COMPSIT, where they would sit and stare at one location to derive composition. UVIS and VIMS rode along. ISS then conducted another PIE, this one a D-Ring Close-in observation. All the ORS instruments rode along.

Segment Integration Planning

Timeline Gaps and Suggested Observations

Obs	Start - End	End	Duration	Range (R_S)	Phase Angle	SSC latitude	Snapshot (mid-period)
1	ISS N. Hemisphere Obs 040T00:46:00	040T14:26:00	000T13:40:00	18.3-14.2	59.7-46.2	16N - 12N	
2	UVIS Thermosphere Scan, ISS PIE, VIMS S. Hemisphere map, Ring Occ, S. Hemi map 2 041T00:46:00	041T03:00:00	000T02:14:00	10.5-9.7	31.3-28.1	6N - 4N	
3	VIMS S. Hemi map, Ring Occ, S. Hemi map #2 041T08:30:00	041T14:26:00	000T05:56:00	8.2-7	27.2-47.1	3S - 13S	
4	CIRS Mid-IR Map 042T00:46:00	042T09:30:00	000T08:44:00	7.8-10.4	100.9-129.5	19S - 13S	

RPX 8.783 Rs @ 041T06:09:53

Periapse 6.887 Rs @ 041T17:16:45

Initial 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_212EA_C34HEFOTP040_PRIME	040 15:06	041 00:06	0	178	63	242	3322	3080	0	199	53	494	603	109	1845	26%	0
SP_212EA_C70METOTB041_PRIME	041 15:06	042 00:06	0	1523	63	1586	3322	1736	0	209	53	1848	3296	1448	4078	62%	0
SP_212EA_C70METSEQ042_PRIME	042 14:51	042 23:51	0	387	62	449	3322	2873	0	199	53	701	3332	2630	2630	79%	0

AVERAGE DATA RATE REPORT (calculated over observation periods and downlink passes)

Event	Start doy hh:mm	End doy hh:mm	CAPS (bps)	CDA (bps)	INMS (bps)	MAG (bps)	MIMI (bps)	RPWS (bps)	UVIS (bps)
SP_212NA_OBSERV040_NA	040 00:06	040 15:06	0.0	524.0	100.0	494.0	850.0	1307.4	0.0
SP_212EA_C34HEFOTP040_PRIME	040 15:06	041 00:06	0.0	524.0	100.0	494.0	850.0	1300.0	152.5
SP_212NA_OBSERV041_NA	041 00:06	041 15:06	0.0	2195.0	100.0	494.0	850.0	11300.0	2000.7
SP_212EA_C70METOTB041_PRIME	041 15:06	042 00:06	0.0	524.0	410.7	494.0	850.0	1300.0	152.5
SP_212NA_OBSERV042_NA	042 00:06	042 14:51	0.0	524.0	100.0	494.0	850.0	1300.0	0.0
SP_212EA_C70METSEQ042_PRIME	042 14:51	042 23:51	0.0	524.0	100.0	494.0	850.0	1300.0	152.5

Included in this SMT report:

- MAPS: not all at nominal during RPX
- PIEs with riders are included (UVIS RH rider artificially reduced - see team totals)

Initial SMT and Data Volume

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	040 00:06	040 15:06	0.0	28.3	0.0	5.4	0.0	26.7	45.9	0.0	70.6	0.0	0.0	0.0	62.7	239.6
SP_212EA_C34HEFOTP040_PRIME	040 15:06	041 00:06	0.0	17.0	86.4	3.2	0.0	16.0	27.5	0.0	42.1	4.9	0.0	0.0	0.0	197.2
DAILY TOTAL SCIENCE	040 00:06	041 00:06	0.0	45.3	86.4	8.6	0.0	42.7	73.4	0.0	112.7	4.9	0.0	0.0	62.7	
OBSERVATION_NOR	041 00:06	041 15:06	0.0	118.5	79.2	5.4	400.0	26.7	45.9	0.0	610.2	108.0	115.0	0.0	62.7	1571.6
SP_212EA_C70METOTB041_PRIME	041 15:06	042 00:06	0.0	17.0	86.4	13.3	0.0	16.0	27.5	0.0	42.1	4.9	0.0	0.0	0.0	207.3
DAILY TOTAL SCIENCE	041 00:06	042 00:06	0.0	135.5	165.6	18.7	400.0	42.7	73.4	0.0	652.3	113.0	115.0	0.0	62.7	
OBSERVATION_NOR	042 00:06	042 14:51	0.0	27.8	0.0	5.3	180.0	26.2	45.1	0.0	69.0	0.0	30.0	0.0	61.6	445.2
SP_212EA_C70METSEQ042_PRIME	042 14:51	042 23:51	0.0	17.0	86.4	3.2	0.0	16.0	27.5	0.0	42.1	4.9	0.0	0.0	0.0	197.2
DAILY TOTAL SCIENCE	042 00:06	042 23:51	0.0	44.8	86.4	8.6	180.0	42.2	72.7	0.0	111.1	4.9	30.0	0.0	61.6	

	CAPS (Mb)	CDA (Mb)	CIRS (Mb)	INMS (Mb)	ISS (Mb)	MAG (Mb)	MIMI (Mb)	RADAR (Mb)	RPWS (Mb)	UVIS (Mb)	VIMS (Mb)	PROBE (Mb)
TOTAL RECORDED (OPNAV data not included)	0.0	225.6	338.4	35.9	580.0	127.6	219.6	0.0	876.2	122.9	145.0	0.0

- **UVIS** Rhea PIE rider was reduced in this mock SMT to ~20% of DV amount they requested in CIMS (typo?) to better gage the bottom line.
  - UVIS requested 508Mb for this rider. ???
- Reminder: MAPS are not required to reduce rates for periapse

Waypoint Selection

RBOT – Friendly as per CTV:

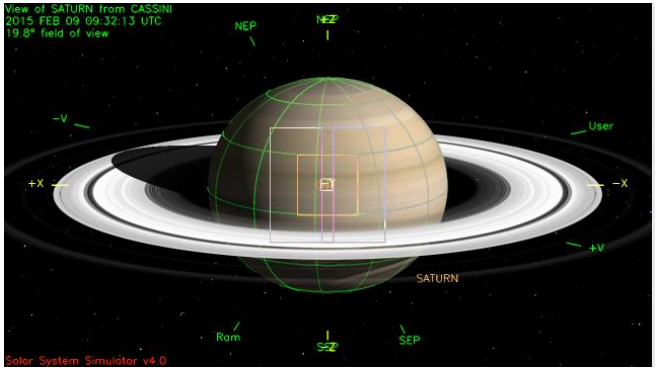
OBS_NAME	START	END	POS_X_2_NSP	POS_X_2_NEP	NEG_X_2_NSP	NEG_X_2_NEP	POS_Z_2_NSP	POS_Z_2_NEP	NEG_Z_2_NSP	NEG_Z_2_NEP	NEG_X_2_SUN	NEG_Z_2_EARTH
SP_212NA_OBSERV040_NA	2015-040T00:06:00	2015-040T15:06:00	**BAD**	OK	OK	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK
SP_212NA_OBSERV041_NA	2015-041T00:06:00	2015-041T15:06:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	**BAD**	**BAD**	OK	OK
SP_212NA_OBSERV042_NA	2015-042T00:06:00	2015-042T14:51:00	**BAD**	OK	OK	**BAD**	**BAD**	**BAD**	OK	OK	OK	OK

NEG_X to 119/70.6, **NEG_X to Sun or NSP** works through the entire segment.

+/- Z to NSP will required **four** 2-part turns to/from downlinks.

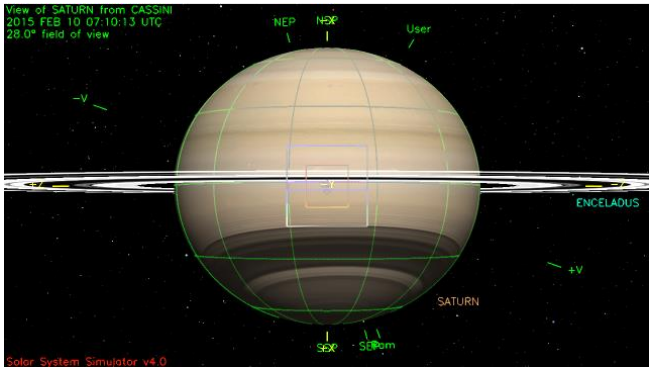
Obs. Period	X to NSP	Z to NSP	NEG_X to Sun	Z to Sun
1	NEG_X only	POS_Z only	Safe	Safe
2	NEG_X only	Not Safe	Safe	Safe
3	NEG_X only	NEG_Z only	Safe	Safe

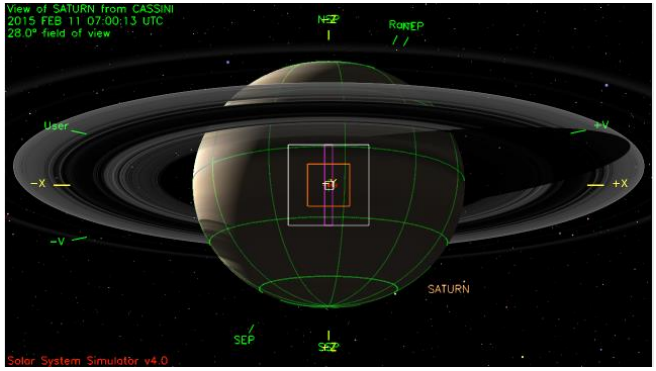
Waypoints Chosen



Waypoint 1: (2015-040T00:46:00 – 2015-040T15:06:00):
ISS_NAC to Saturn, POS_Z to NSP

Waypoint 2: (2015-041T00:46:00 – 2015-041T15:06:00):
ISS_NAC to Saturn, NEG_X to NSP





Waypoint 3: (2015-042T00:46:00 – 2015-042T13:21:00):
ISS_NAC to Saturn, NEG_Z to NSP

Notes

- Pointing:
  - Waypoints were chosen for science. “RBOT-friendly” attitudes were not compatible with the observations in the timeline.
- Data Volume:
  - No SMT warnings
- DSN:
  - No ap_downlink report check warnings (70M % and SEQ passes ignored).
  - DSN still negotiating DSS-43 downtime that may or may not affect this entire segment (initially DSN claimed DOYs 40-53 with no flexibility). A proposal is in the works to move downtime to DOYs 47-60.
    - If the downtime is moved, no impact on Saturn 212
    - If the downtime is not moved, the segment would need to be reintegrated for resulting loss of data volume. They are also an OTM and cannot be moved to another complex.
- Opmodes:
  - No RWA-slow and/or unique opmodes, No special requirements
- Hydrazine:
  - N/A
- Special Activities:
  - 2 PIEs:
    - ISS_212RH_REGMAP001_PIE with CIRS and UVIS as collaborative riders
    - ISS_212RI_DRCLOSE001_PIE with UVIS as a collaborative rider

Liens

Sequence Liens (should all be SPLAT items):

- List any Liens to be worked in SIP:
  - ISS_212RH_REGMAP001_PIE on 2015-041T03:00:00 (dur 05:30:00). This PIE targets ISS_NAC to Rhea. Target_motion shows Rhea center to move 91.5 degrees over the duration. ISS may need to put 20 minutes of quiescent time in the design.

- Resource checker:
  - The following gaps were planned:
    - 2015-040T14:16:00 – T14:26:00 (dur = 00:10)
    - 2015-041T02:16:00 – T03:00:00 (dur = 00:45)