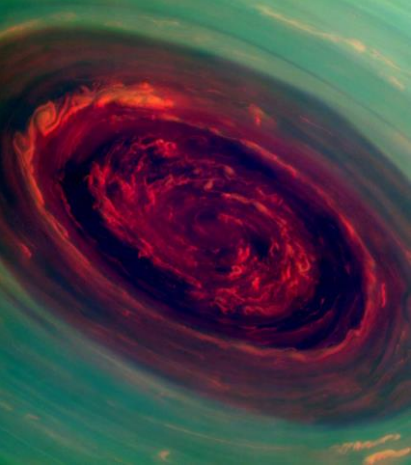
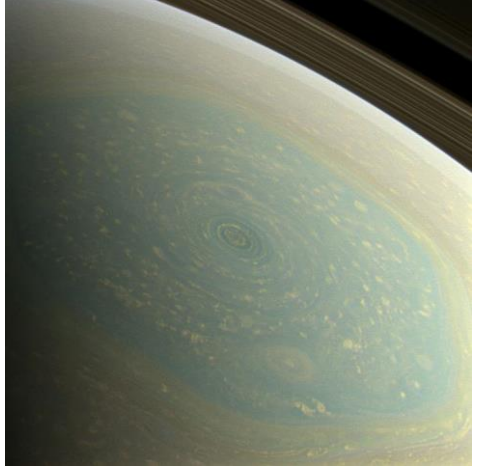
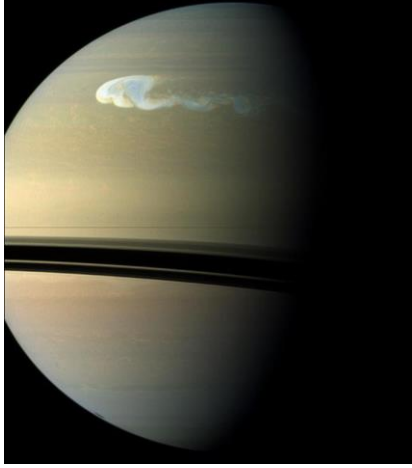


Science Planning & Sequence Team
CASSINI

SATURN TARGET WORKING TEAM

Rev 151-152 Segment Legacy Package

Segment Boundary: July 30, 2011 – August 25, 2011
Segment Boundary 2011-211T03:07:00 – 2011-237T01:34:00

Integration Began 10/28/2010
Segment Delivered to S69 Sequence 01/10/2011
Lead Integrator was Kathleen Kelleher

Legacy Package Assembled by Kathleen Kelleher

Table of Contents

Segment Overview and Final Products

Segment Summary

- Saturn 151-152 was a ~26-day segment that encompassed two periapses with a “CAKE” (Cassini Apoapse for Kronian Exploration) between them. It executed in the first equatorial phase (EQ-1) of the Solstice Mission.

- The bulk of the timeline between periapses was filled primarily with typical CAKE template activities, such as wind studies, UVIS EUV/FUVs, and CIRS-led composition and mapping. Other Saturn observations included ISS Saturn global movie and storm watch monitoring campaign.

- Noteworthy out-of-discipline activities included Titan Cloud Monitoring campaign, an RSS atmospheric occultation of Saturn and MAG calibration rolling. An ISS observation of a small irregular satellite (Tarqeq) was also performed.

- RSS performed an atmosphere ingress occultation prior to Rev 151 periapse. Other periapse observations included multiple VIMS observations including Saturn Hi-Res equatorial Plume Imaging, star occultations and a relatively high-resolution 19-hour movie focussed on the “String of Pearls” latitude, beginning 10 hours after periapse. CIRS also performed a Saturn Limb observation to obtain stratospheric thermal structure by means of limb sounding in the mid-IR, longitude coverage.

- There were ORS solar constraint issues during each periapse (similar geometry, see pg. 13) which were handled by observing the southern hemisphere as the Sun briefly crossed behind the north polar limb of Saturn. Constraint management was not requested.

- A single waypoint was used for the entire segment until heating forced a change at 152 periapse.

- Significant data cuts and a station upgrade were necessary to fit the data volume into the available resources.

Final Sequenced SPASS (1 of 3)

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End	Primary	Secondary	Comments
Sequence 569, length = 66 days		2011-184T11:10:00		065T13:38:00	2011-250T00:48:00			
SATURN_151_152 Segment		2011-211T03:07:00		025T22:27:00	2011-237T01:34:00			
SP_151SA_WAYPTTURN211_PRIME		2011-211T03:07:00		000T00:40:00	2011-211T03:47:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-211T03:47:00		001T13:19:00	2011-212T17:06:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
CIRS_151SA_MIRTMAP001_PRIME		2011-211T03:47:00		000T16:30:00	2011-211T20:17:00	CIRS_FP3 to Saturn	NEG_Z to NSP	
UVIS_151SA_EUVFUV001_PRIME		2011-211T20:17:00		000T16:00:00	2011-212T12:17:00	UVIS_FUV to Saturn	NEG_Z to 37.5/83.7	
CIRS_151SA_NADIROCC001_PIE		2011-212T12:26:00		000T04:00:00	2011-212T16:26:00	CIRS_FP1 to Saturn	NEG_Z to 37.5/83.7	PIE
SP_151EA_DLTURN212_PRIME		2011-212T16:26:00		000T00:40:00	2011-212T17:06:00	XBAND to Earth	NEG_X to NSP	
NEW WAYPOINT		2011-212T17:06:00		000T13:45:00	2011-213T06:51:00	XBAND to Earth	NEG_X to NSP	
SP_151EA_YBIAS212_PRIME		2011-212T17:06:00		000T01:00:00	2011-212T18:06:00	XBAND to Earth	NEG_X to NSP	RSS prefers keep-out zone prior to Occ on DOY213. If used, shorten 212 D/L 30 minutes. If not used, leave as gap.
SP_151EA_G70METNON212_PRIME	C, R	2011-212T18:06:00		000T09:00:00	2011-213T03:06:00	XBAND to Earth	NEG_X to NSP	NEG_X to NEP or NSP, CAPS
SP_151EA_DEADTIME213_PRIME		2011-213T03:06:00		000T00:20:00	2011-213T03:26:00	XBAND to Earth	NEG_X to NSP	
RSS_151SA_OCCSIANDE001_PIE	M	2011-213T03:26:00	LMB_E151_Saturn_RSS_Occ_Ing-000T00:14:08	000T02:25:00	2011-213T05:51:00	XBAND to Earth	NEG_X to NSP	PIE
SP_151EA_DEADTIME413_PRIME	M	2011-213T05:51:00	LMB_E151_Saturn_RSS_Occ_Ing+000T02:10:52	000T00:20:00	2011-213T06:11:00	XBAND to Earth	NEG_X to NSP	
SP_151SA_WAYPTTURN213_PRIME		2011-213T06:11:00		000T00:40:00	2011-213T06:51:00	ISS_NAC to Saturn	POS_Z to 37.5/83.7	
NEW WAYPOINT		2011-213T06:51:00		001T09:30:00	2011-214T16:21:00	ISS_NAC to Saturn	POS_Z to 37.5/83.7	
VIMS_151SA_HRESPLUME001_PRIME	C	2011-213T06:51:00		000T02:20:00	2011-213T09:11:00	ISS_NAC to Saturn	POS_Z to 37.5/83.7	
Periapse R = 4.045 Rs, lat ..		2011-213T08:12:28		000T00:00:01	2011-213T08:12:29			
VIMS_151SA_ALPORIOCC001_PRIME	C	2011-213T09:11:00		000T02:09:00	2011-213T11:20:00	CIRS_FP8 to 88.793/7.407	PIC	Collaborative Rider(s): CIRS
VIMS_151SA_ALPCMIOCC001_PIE	C	2011-213T11:20:00		000T02:10:00	2011-213T13:30:00	CIRS_FP8 to	PIC	Collaborative Rider(s): CIRS
VIMS_151SA_HRESPLUME002_PRIME	C	2011-213T13:30:00		000T07:04:00	2011-213T20:34:00	ISS_NAC to Saturn	POS_Z to 37.5/83.7	
UVIS_151RH_ICYEXO001_PIE	C, I, V	2011-213T20:34:00		000T01:04:00	2011-213T21:38:00	UVIS_FUV to 84.053/-1.201	NEG_Z to 174.9/-33.0	Duration requested includes possible turn time. Actual occs are from 21:04 to 21:08.
VIMS_151SA_HRESPEARL001_PRIME	C	2011-213T21:38:00		000T18:00:00	2011-214T15:38:00	ISS_NAC to Saturn	POS_Z to 37.5/83.7	
SP_151EA_DLTURN214_PRIME		2011-214T15:41:00		000T00:28:00	2011-214T16:09:00	XBAND to Earth (0.0,0.0,-25.0 deg. offset)	POS_X to NEP	
SP_151EA_DLTURN414_PRIME		2011-214T16:09:00		000T00:12:00	2011-214T16:21:00	XBAND to Earth	POS_X to NEP	
NEW WAYPOINT		2011-214T16:21:00		000T11:10:00	2011-215T03:31:00	XBAND to Earth	POS_X to NEP	
ENGR_151SC_KPTYBIAS214_PRIME		2011-214T16:21:00		000T01:30:00	2011-214T17:51:00	NEG_Z to DELTA_H	NEG_X to Sun	
SP_151EA_G70METNON214_PRIME	C, R	2011-214T17:51:00		000T09:00:00	2011-215T02:51:00	XBAND to Earth	Rolling	POS_X to NEP or NSP, CAPS
SP_151SA_WAYPTTURN215_PRIME		2011-215T02:51:00		000T00:40:00	2011-215T03:31:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-215T03:31:00		001T19:05:00	2011-216T22:36:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
UVIS_151SA_EUVFUV002_PRIME		2011-215T03:31:00		000T17:30:00	2011-215T21:01:00	UVIS_FUV to Saturn	NEG_Z to 37.5/83.7	
MAG_151SU_CALROLL001_PRIME		2011-215T21:01:00		000T09:59:00	2011-216T07:00:00	NEG_X to Earth (0.0,0.0,-30.0 deg. offset)	Rolling	
CIRS_151SA_MIRTMAP002_PRIME		2011-216T08:30:00		000T13:26:00	2011-216T21:56:00	CIRS_FP3 to Saturn	NEG_Z to NSP	
SP_151EA_DLTURN216_PRIME		2011-216T21:56:00		000T00:30:00	2011-216T22:26:00	XBAND to Earth (0.0,0.0,-25.0 deg. offset)	NEG_X to 260.0/81.0	
SP_151EA_DLTURN416_PRIME		2011-216T22:26:00		000T00:10:00	2011-216T22:36:00	XBAND to Earth	NEG_X to 260.0/81.0	
NEW WAYPOINT		2011-216T22:36:00		000T11:10:00	2011-217T09:46:00	XBAND to Earth	NEG_X to 260.0/81.0	
ENGR_151SC_KPTYBIAS216_PRIME		2011-216T22:36:00		000T01:30:00	2011-217T00:06:00	NEG_Z to DELTA_H	NEG_X to Sun	
SP_151EA_C34BWGNON216_PRIME	C	2011-217T00:06:00		000T09:00:00	2011-217T09:06:00	XBAND to Earth	NEG_X to 260.0/81.0	NEG_X to (260,81), CDA
SP_151SA_WAYPTTURN217_PRIME		2011-217T09:06:00		000T00:29:00	2011-217T09:35:00	ISS_NAC to Saturn (0.0,0.0,-15.0 deg. offset)	NEG_Z to 37.5/83.7	
SP_151SA_WAYPTTURN417_PRIME		2011-217T09:35:00		000T00:11:00	2011-217T09:46:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-217T09:46:00		001T12:50:00	2011-218T22:36:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
ISS_151SA_WIND2HR001_PRIME		2011-217T09:46:00		000T02:00:00	2011-217T11:46:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
CIRS_151SA_COMPSIT002_PRIME		2011-217T11:46:00		000T09:00:00	2011-217T20:46:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
ISS_151SA_WIND2HR002_PRIME		2011-217T20:46:00		000T02:00:00	2011-217T22:46:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
CIRS_151SA_MIRMAP002_PRIME	I	2011-217T22:46:00		000T23:10:00	2011-218T21:56:00	CIRS_FP3 to Saturn	NEG_Z to NSP	
SP_151EA_DLTURN218_PRIME		2011-218T21:56:00		000T00:40:00	2011-218T22:36:00	XBAND to Earth	NEG_X to 260.0/81.0	
NEW WAYPOINT		2011-218T22:36:00		000T11:10:00	2011-219T09:46:00	XBAND to Earth	NEG_X to 260.0/81.0	
SP_151EA_YBIAS218_PRIME		2011-218T22:36:00		000T01:30:00	2011-219T00:06:00	XBAND to Earth	NEG_X to 260.0/81.0	
SP_151EA_C70METNON218_PRIME	C	2011-219T00:06:00		000T09:00:00	2011-219T09:06:00	XBAND to Earth	NEG_X to 260.0/81.0	NEG_X to (260,81), CDA
SP_151SA_WAYPTTURN219_PRIME		2011-219T09:06:00		000T00:40:00	2011-219T09:46:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-219T09:46:00		001T06:20:00	2011-220T16:06:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
ISS_151TI_M60R2CLD219_PRIME	V	2011-219T09:46:00	E151_M60R2CLD219+000T00:00:00	000T01:30:00	2011-219T11:16:00	ISS_NAC to Titan	NEG_Z to 37.5/83.7	
ISS_151SA_WIND3HR001_PRIME	V	2011-219T11:16:00		000T03:00:00	2011-219T14:16:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	collaborative with VIMS
CIRS_151SA_COMPSIT003_PRIME		2011-219T14:16:00		000T08:00:00	2011-219T22:16:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
ISS_151SA_WIND3HR002_PRIME	V	2011-219T22:16:00		000T03:00:00	2011-220T01:16:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	collaborative with VIMS
ISS_151SA_WIND3HR003_PRIME	V	2011-220T01:16:00		000T03:00:00	2011-220T04:16:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	collaborative with VIMS
CIRS_151SA_COMPSIT004_PRIME		2011-220T04:16:00		000T08:00:00	2011-220T12:16:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
ISS_151SA_WIND3HR004_PRIME	V	2011-220T12:16:00		000T03:00:00	2011-220T15:16:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	collaborative with VIMS
SP_151EA_DLTURN220_PRIME		2011-220T15:26:00		000T00:40:00	2011-220T16:06:00	XBAND to Earth	NEG_X to 260.0/81.0	

Gap 1

Gap 2

Final Sequenced SPASS (2 of 3)

Gap 3

Gap 1

Gap 2

NEW WAYPOINT		2011-220T16:06:00		000T11:10:00	2011-221T03:16:00	XBAND to Earth	NEG_X to 260.0/81.0	
SP_151EA_YBIAS220_PRIME		2011-220T16:06:00		000T01:30:00	2011-220T17:36:00	XBAND to Earth	NEG_X to 260.0/81.0	
SP_151EA_G34HEFNON220_PRIME	C	2011-220T17:36:00		000T09:00:00	2011-221T02:36:00	XBAND to Earth	NEG_X to 260.0/81.0	NEG_X to 260.0/81.0, DDA
SP_151SA_WAYPTTURN221_PRIME		2011-221T02:36:00		000T00:40:00	2011-221T03:16:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-221T03:16:00		001T12:34:00	2011-222T15:50:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
ISS_151TI_M60R2CLD221_PRIME	V	2011-221T03:16:00	E151_M60R2CLD221+000T00:00:00	000T01:30:00	2011-221T04:46:00	ISS_NAC to Titan	NEG_Z to 37.5/83.7	
UVIS_151SA_EUVFUV003_PRIME	M	2011-221T04:46:00		000T16:54:00	2011-221T21:40:00	UVIS_FUV to Saturn	NEG_Z to 37.5/83.7	
ISS_151SA_WIND5HR001_PRIME	C,M,V	2011-221T21:40:00		000T05:00:00	2011-222T02:40:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	Collaborative Rider(s): CIRS. Collaborative with VIMS
CIRS_151SA_COMPSIT005_PRIME		2011-222T02:40:00		000T06:00:00	2011-222T08:40:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
ISS_151SA_WIND5HR002_PRIME	C,V	2011-222T08:40:00		000T05:00:00	2011-222T13:40:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	Collaborative Rider(s): CIRS. Collaborative with VIMS
ISS_151TI_M30R2CLD223_PRIME	V	2011-222T13:40:00	E151_M30R2CLD222+000T00:00:00	000T01:30:00	2011-222T15:10:00	ISS_NAC to Titan	NEG_Z to 37.5/83.7	
SP_151EA_DLTURN222_PRIME		2011-222T15:10:00		000T00:40:00	2011-222T15:50:00	XBAND to Earth	NEG_X to 260.0/81.0	
NEW WAYPOINT		2011-222T15:50:00		000T11:10:00	2011-223T03:00:00	XBAND to Earth	NEG_X to 260.0/81.0	
SP_151EA_YBIAS222_PRIME		2011-222T15:50:00		000T01:30:00	2011-222T17:20:00	XBAND to Earth	NEG_X to 260.0/81.0	
SP_151EA_G70METNON222_PRIME	C	2011-222T17:20:00		000T05:15:00	2011-222T22:35:00	XBAND to Earth	NEG_X to 260.0/81.0	NEG_X to 260.0/81.0, DDA
SP_151EA_G34HEFNON222_PRIME	C,M	2011-222T22:35:00		000T03:45:00	2011-223T02:20:00	XBAND to Earth	NEG_X to 260.0/81.0	NEG_X to 260.0/81.0, DDA
SP_151SA_WAYPTTURN223_PRIME	M	2011-223T02:20:00		000T00:40:00	2011-223T03:00:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-223T03:00:00		001T12:50:00	2011-224T15:50:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
ISS_151SA_MOVIE001_PRIME	C,M	2011-223T03:00:00		000T11:00:00	2011-223T14:00:00	ISS_NAC to Saturn	NEG_Z to NSP	Collaborative Rider(s): CIRS. Collaborative with CIRS. NAC to either 10N in order to avoid the rings.
ISS_151OT_TAQROT043_PRIME	M	2011-223T14:00:00		000T14:10:00	2011-224T04:10:00	UVIS_FUV to Rocks	NEG_Z to 37.5/83.7	
ISS_151SA_MOVIE002_PRIME	C	2011-224T04:10:00		000T11:00:00	2011-224T15:10:00	ISS_NAC to Saturn	NEG_Z to NSP	Collaborative Rider(s): CIRS. Collaborative with CIRS. NAC to either 10S in order to avoid the rings.
Apoapse Peri 21.8 d, Inc ..		2011-224T06:01:37		000T00:00:01	2011-224T06:01:38			
SP_152EA_DLTURN224_PRIME		2011-224T15:10:00		000T00:40:00	2011-224T15:50:00	XBAND to Earth	NEG_X to 100.0/-20.0	
NEW WAYPOINT		2011-224T15:50:00		000T11:10:00	2011-225T03:00:00	XBAND to Earth	NEG_X to 100.0/-20.0	
SP_152EA_YBIAS224_PRIME	M	2011-224T15:50:00		000T01:30:00	2011-224T17:20:00	XBAND to Earth	NEG_X to 100.0/-20.0	
SP_152EA_G70METNON224_PRIME	C,M	2011-224T17:20:00		000T09:00:00	2011-225T02:20:00	XBAND to Earth	NEG_X to 100.0/-20.0	NEG_X to 100.0/-20.0
SP_152SA_WAYPTTURN225_PRIME	M	2011-225T02:20:00		000T00:40:00	2011-225T03:00:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-225T03:00:00		001T12:35:00	2011-226T15:35:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
ISS_152TI_M30R3CLD225_PRIME	M,V	2011-225T03:00:00	E152_M30R3CLD225+000T00:00:00	000T01:30:00	2011-225T04:30:00	ISS_NAC to Titan	NEG_Z to 37.5/83.7	
ISS_152SA_WIND5HR001_PRIME	C,M	2011-225T04:30:00		000T05:00:00	2011-225T09:30:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	Collaborative Rider(s): CIRS. Collaborative with CIRS
CIRS_152SA_COMPSIT001_PRIME	M	2011-225T09:30:00		000T06:00:00	2011-225T15:30:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
ISS_152SA_WIND5HR002_PRIME	C,V	2011-225T15:30:00		000T05:00:00	2011-225T20:30:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	Collaborative Rider(s): CIRS. Collaborative with VIMS
ISS_152SA_WIND5HR003_PRIME	C,V	2011-225T20:30:00		000T05:00:00	2011-226T01:30:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	Collaborative Rider(s): CIRS. Collaborative with VIMS
CIRS_152SA_COMPSIT002_PRIME		2011-226T01:30:00		000T06:00:00	2011-226T07:30:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
ISS_152SA_WIND5HR004_PRIME	C,M	2011-226T07:30:00		000T05:00:00	2011-226T12:30:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	Collaborative Rider(s): CIRS. Collaborative with CIRS
ISS_152SA_MONITOR001_PRIME	M	2011-226T12:30:00		000T02:25:00	2011-226T14:55:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
SP_152EA_DLTURN226_PRIME	M	2011-226T14:55:00		000T00:40:00	2011-226T15:35:00	XBAND to Earth	NEG_X to 100.0/-41.0	
NEW WAYPOINT		2011-226T15:35:00		000T11:10:00	2011-227T02:45:00	XBAND to Earth	NEG_X to 100.0/-41.0	
ENGR_152SC_KPTYBIAS226_PRIME	M	2011-226T15:35:00		000T01:30:00	2011-226T17:05:00	NEG_Z to DELTA_H	NEG_X to Sun	
SP_152EA_G70METNON226_PRIME	C,M	2011-226T17:05:00		000T09:00:00	2011-227T02:05:00	XBAND to Earth	Rolling	NEG_X to 100.0/-41.0
SP_152SA_WAYPTTURN227_PRIME	M	2011-227T02:05:00		000T00:40:00	2011-227T02:45:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-227T02:45:00		001T12:50:00	2011-228T15:35:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
UVIS_152SA_EUVFUV001_PRIME	M	2011-227T02:45:00		000T16:00:00	2011-227T18:45:00	UVIS_FUV to Saturn	NEG_Z to 37.5/83.7	
CIRS_152SA_COMPSIT003_PRIME		2011-227T18:45:00		000T09:10:00	2011-228T03:55:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
CIRS_152SA_MIRMAP001_PRIME		2011-228T03:55:00		000T11:00:00	2011-228T14:55:00	CIRS_FP3 to Saturn	NEG_Z to NSP	
SP_152EA_DLTURN228_PRIME		2011-228T14:55:00		000T00:40:00	2011-228T15:35:00	XBAND to Earth	NEG_X to 234.0/84.0	
NEW WAYPOINT		2011-228T15:35:00		000T11:07:00	2011-229T02:42:00	XBAND to Earth	NEG_X to 234.0/84.0	
SP_152EA_YBIAS228_PRIME		2011-228T15:35:00		000T01:30:00	2011-228T17:05:00	XBAND to Earth	NEG_X to 234.0/84.0	
SP_152EA_G34HEFNON228_PRIME	C	2011-228T17:05:00		000T09:00:00	2011-229T02:05:00	XBAND to Earth	Rolling/SRU	NEG_X to 234.0/84.0
SP_152SA_WAYPTTURN229_PRIME		2011-229T02:05:00		000T00:37:00	2011-229T02:42:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-229T02:42:00		001T19:07:00	2011-230T21:49:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
ISS_152TI_M60R3CLD229_PRIME	V	2011-229T02:42:00	E152_M60R3CLD229+000T00:00:00	000T01:30:00	2011-229T04:12:00	ISS_NAC to Titan	NEG_Z to 37.5/83.7	
ISS_152SA_WIND4HR001_PRIME	V	2011-229T04:12:00		000T04:00:00	2011-229T08:12:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	collaborative with VIMS
CIRS_152SA_COMPSIT004_PRIME		2011-229T08:12:00		000T07:00:00	2011-229T15:12:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
ISS_152SA_WIND4HR002_PRIME	V	2011-229T15:12:00		000T04:00:00	2011-229T19:12:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	collaborative with VIMS
ISS_152SA_WIND4HR003_PRIME	V	2011-229T19:12:00		000T04:00:00	2011-229T23:12:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	collaborative with VIMS
CIRS_152SA_COMPSIT005_PRIME		2011-229T23:12:00		000T07:00:00	2011-230T06:12:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
ISS_152SA_WIND4HR004_PRIME	V	2011-230T06:12:00		000T04:00:00	2011-230T10:12:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	collaborative with VIMS
CIRS_152SA_MIRMAP002_PRIME		2011-230T10:12:00		000T11:00:00	2011-230T21:12:00	CIRS_FP3 to Saturn	NEG_Z to NSP	
SP_152EA_DLTURN230_PRIME		2011-230T21:12:00		000T00:37:00	2011-230T21:49:00	XBAND to Earth	NEG_X to 210.0/86.0	

Final Sequenced SPASS (3 of 3)

Gap 3

Gap 4

Gap 5

Gap 6

NEW WAYPOINT		2011-230T21:49:00		000T11:10:00	2011-231T08:59:00	XBAND to Earth	NEG_X to 210.0/86.0	
SP_152EA_YBIAS230_PRIME		2011-230T21:49:00		000T01:30:00	2011-230T23:19:00	XBAND to Earth	NEG_X to 210.0/86.0	
SP_152EA_C70METNON230_PRIME	C,E	2011-230T23:19:00		000T09:00:00	2011-231T08:19:00	XBAND to Earth	Rolling/SRU	NEG_X to 210.0/86.0
SP_152SA_WAYPTTURN231_PRIME		2011-231T08:19:00		000T00:40:00	2011-231T08:59:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-231T08:59:00		000T22:50:00	2011-232T07:49:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
ISS_152TI_M90R3CLD231_PRIME	C,V	2011-231T08:59:00	E152_M90R3CLD231+000T00:00:00	000T01:30:00	2011-231T10:29:00	ISS_NAC to Titan	NEG_Z to 37.5/83.7	
UVIS_152SA_EUVFUV002_PRIME		2011-231T10:29:00		000T20:40:00	2011-232T07:09:00	UVIS_FUV to Saturn	NEG_Z to 37.5/83.7	
SP_152EA_DLTURN232_PRIME		2011-232T07:09:00		000T00:40:00	2011-232T07:49:00	XBAND to Earth	POS_X to 249.9/84.0	
NEW WAYPOINT		2011-232T07:49:00		000T11:10:00	2011-232T18:59:00	XBAND to Earth	POS_X to 249.9/84.0	
SP_152EA_YBIAS232_PRIME		2011-232T07:49:00		000T01:30:00	2011-232T09:19:00	XBAND to Earth	NEG_X to 249.9/84.0	
SP_152EA_M34HEFNON232_PRIME	C	2011-232T09:19:00		000T09:00:00	2011-232T18:19:00	XBAND to Earth	Rolling/SRU	NEG_Y to Saturn (0,0,-9.5), MIMI
SP_152SA_WAYPTTURN232_PRIME		2011-232T18:19:00		000T00:40:00	2011-232T18:59:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-232T18:59:00		000T12:50:00	2011-233T07:49:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
CIRS_152SA_MIRMAP003_PRIME		2011-232T18:59:00		000T11:00:00	2011-233T05:59:00	CIRS_FP3 to Saturn	NEG_Z to NSP	
ISS_152SA_MONITOR002_PRIME		2011-233T05:59:00		000T01:10:00	2011-233T07:09:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
SP_152EA_DLTURN233_PRIME		2011-233T07:09:00		000T00:40:00	2011-233T07:49:00	XBAND to Earth	NEG_X to NEP	
NEW WAYPOINT		2011-233T07:49:00		000T11:10:00	2011-233T18:59:00	XBAND to Earth	NEG_X to NEP	
SP_152EA_YBIAS233_PRIME		2011-233T07:49:00		000T01:30:00	2011-233T09:19:00	XBAND to Earth	NEG_X to NEP	
SP_152EA_M34HEFNON233_PRIME	C	2011-233T09:19:00		000T09:00:00	2011-233T18:19:00	XBAND to Earth	Rolling/SRU	NEG_X to NEP or NSP, CAPS
SP_152SA_WAYPTTURN233_PRIME		2011-233T18:19:00		000T00:40:00	2011-233T18:59:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
NEW WAYPOINT		2011-233T18:59:00		000T14:05:00	2011-234T09:04:00	ISS_NAC to Saturn	NEG_Z to 37.5/83.7	
CIRS_152SA_FIRMAP001_PRIME		2011-233T18:59:00		000T13:25:00	2011-234T08:24:00	CIRS_FP1 to Saturn	NEG_X to NSP	
SP_152EA_DLTURN234_PRIME		2011-234T08:24:00		000T00:40:00	2011-234T09:04:00	XBAND to Earth	NEG_X to NSP	
NEW WAYPOINT		2011-234T09:04:00		000T09:40:00	2011-234T18:44:00	XBAND to Earth	NEG_X to NSP	
SP_152EA_M34HEFOTP234_PRIME	C,E,N	2011-234T09:04:00		000T09:00:00	2011-234T18:04:00	XBAND to Earth	4_Hr_Rolling	NEG_X to NEP or NSP (changed to RA/DEC equiv), CAPS
SP_152SA_WAYPTTURN234_PRIME		2011-234T18:04:00		000T00:40:00	2011-234T18:44:00	ISS_NAC to Saturn (0.0,0.0,10.0 deg. offset)	NEG_X to NSP	
NEW WAYPOINT		2011-234T18:44:00		000T14:46:00	2011-235T09:30:00	ISS_NAC to Saturn (0.0,0.0,10.0 deg. offset)	NEG_X to NSP	
UVIS_152SA_EUVFUV003_PRIME	M	2011-234T18:44:00		000T05:36:00	2011-235T00:20:00	UVIS_FUV to Saturn	NEG_X to NSP	
VIMS_152SA_OMICETOCC001_PIE	C,M	2011-235T00:20:00		000T02:30:00	2011-235T02:50:00	CIRS_FPB to 34.836/-	NEG_X to NSP	Collaborative Rider(s): CIRS
CIRS_152SA_LIMBINT001_PIE	V	2011-235T02:50:00		000T06:20:00	2011-235T09:10:00	CIRS_FPB to Saturn	NEG_X to NSP	Collaborative Rider(s): VIMS. Point to alphaDir from 5:16-5:56 UT to cover ingress at 60N at 5:36UT. Include 60N as part of LIMBINT. obs extended 20 minutes at end. alphaDir=+88.793/+7.407
Periapse R=4.044Rs, lat=..		2011-235T03:58:14		000T00:00:01	2011-235T03:58:15			
SP_152EA_DLTURN235_PRIME		2011-235T09:10:00		000T00:20:00	2011-235T09:30:00	XBAND to Earth	NEG_X to NSP	
NEW WAYPOINT		2011-235T09:30:00		000T09:40:00	2011-235T19:10:00	XBAND to Earth	NEG_X to NSP	
SP_152EA_M70METOTB235_PRIME	C,E,N	2011-235T09:30:00		000T09:00:00	2011-235T18:30:00	XBAND to Earth	NEG_X to NSP	same as OTP pass, CAPS
SP_152SA_WAYPTTURN235_PRIME		2011-235T18:30:00		000T00:40:00	2011-235T19:10:00	ISS_NAC to Saturn	POS_Z to 37.5/83.7	
NEW WAYPOINT		2011-235T19:10:00		000T19:54:00	2011-236T15:04:00	ISS_NAC to Saturn	POS_Z to 37.5/83.7	
VIMS_152SA_PEARLMOV001_PRIME	C	2011-235T19:10:00		000T19:14:00	2011-236T14:24:00	ISS_NAC to Saturn	POS_Z to 37.5/83.7	
SP_152EA_DLTURN236_PRIME		2011-236T14:24:00		000T00:28:00	2011-236T14:52:00	XBAND to Earth (0.0,0.0,-5.0 deg. offset)	POS_X to 250.0/20.0	
SP_152EA_DLTURN536_PRIME		2011-236T14:52:00		000T00:12:00	2011-236T15:04:00	XBAND to Earth	POS_X to 224.7/86.0	
NEW WAYPOINT		2011-236T15:04:00		000T11:11:00	2011-237T02:15:00	XBAND to Earth	POS_X to 224.7/86.0	
SP_152EA_YBIAS236_PRIME		2011-236T15:04:00		000T01:30:00	2011-236T16:34:00	XBAND to Earth	POS_X to 224.7/86.0	
SP_152EA_G70METNON236_PRIME	C	2011-236T16:34:00		000T09:00:00	2011-237T01:34:00	XBAND to Earth	Rolling/SRU	POS_X to NEP or NSP, CAPS

Final Sequenced SMT and Data Volume (1 of 3)

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_151EA_G70METNON212_PRIME	212 18:06	213 03:06	0	1593	165	1758	3322	1564	0	1222	53	3033	3135	101	191	1%	0
SP_151EA_G70METNON214_PRIME	214 17:51	215 02:51	0	2871	164	3035	3322	287	0	220	53	3308	3091	-218	146	1%	217
SP_151EA_C34BWGNON216_PRIME	217 00:06	217 09:06	217	1353	191	1761	3322	1561	0	219	53	2033	668	-1365	146	1%	1365
SP_151EA_C70METNON218_PRIME	219 00:06	219 09:06	1365	1287	165	2817	3322	505	0	219	53	3088	3178	89	236	1%	0
SP_151EA_G34HEFNON220_PRIME	220 17:36	221 02:36	0	1409	137	1546	3322	1776	0	201	53	1800	752	-1048	147	1%	1048
SP_151EA_G70METNON222_PRIME	222 17:20	222 22:35	1048	1645	164	2856	3322	466	0	113	31	3000	1869	-1131	147	1%	1131
SP_151EA_G34HEFNON222_PRIME	222 22:35	223 02:20	1131	0	0	1131	3322	2192	0	88	22	1241	304	-937	147	1%	936
SP_152EA_G70METNON224_PRIME	224 17:20	225 02:20	936	2074	165	3175	3322	147	0	235	53	3463	3146	-317	169	1%	317
SP_152EA_G70METNON226_PRIME	226 17:05	227 02:05	317	2390	164	2870	3322	452	0	201	53	3124	3181	56	169	1%	0
SP_152EA_G34HEFNON228_PRIME	228 17:05	229 02:05	0	991	165	1156	3322	2166	0	201	53	1409	709	-701	112	1%	701
SP_152EA_C70METNON230_PRIME	230 23:19	231 08:19	701	1855	191	2747	3322	575	0	201	53	3001	3113	111	190	1%	0
SP_152EA_M34HEFNON232_PRIME	232 09:19	232 18:19	0	995	106	1101	3322	2222	0	219	53	1372	648	-725	79	1%	725
SP_152EA_M34HEFNON233_PRIME	233 09:19	233 18:19	725	380	63	1168	3322	2154	0	214	53	1434	648	-787	141	1%	787
SP_152EA_M34HEFOTP234_PRIME	234 09:04	234 18:04	787	416	62	1265	3322	2057	0	232	53	1549	528	-1022	141	1%	1021
SP_152EA_M70METOTB235_PRIME	235 09:30	235 18:30	1021	1724	65	2811	3322	511	0	412	53	3276	2676	-600	141	1%	600
SP_152EA_G70METNON236_PRIME	236 16:34	237 01:34	600	2488	93	3181	3322	141	0	369	53	3603	2983	-621	400	2%	620

Final Sequenced SMT and Data Volume (2 of 3)

DATA VOLUME REPORT --- TRANSFER FRAME OVERHEAD NOT INCLUDED

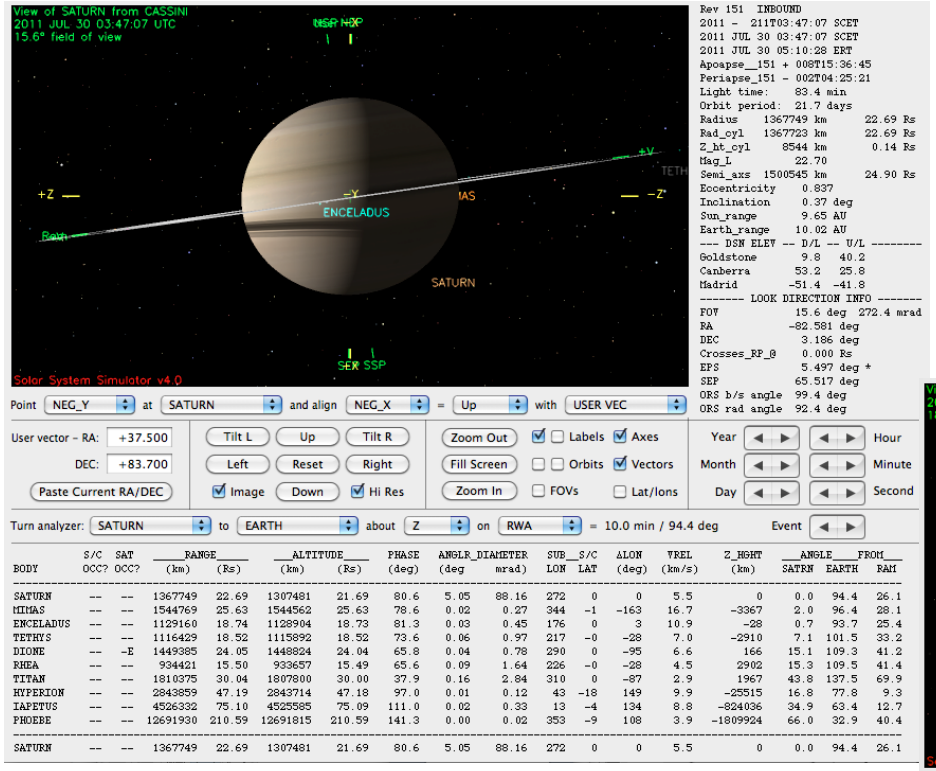
Event	Start doy hh:mm	End doy hh:mm	CAPS (Mb)	CDA (Mb)	CIRS (Mb)	INMS (Mb)	ISS (Mb)	MAG (Mb)	MIMI (Mb)	RADAR (Mb)	RPWS (Mb)	UVIS (Mb)	VIMS (Mb)	PROBE (Mb)	ENGR (Mb)	TOTAL (Mb)
OBSERVATION_NOR	211 03:07	212 18:06	140.3	73.5	410.4	14.0	48.0	69.3	119.3	0.0	413.6	289.8	0.0	0.0	162.9	1741.3
SP_151EA_G70METNON212_PRIME	212 18:06	213 03:06	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	1023.6	4.9	0.0	0.0	0.0	1211.1
DAILY TOTAL SCIENCE	211 03:07	213 03:06	172.7	90.5	496.8	17.3	48.0	85.3	146.8	0.0	1437.2	294.8	0.0	0.0	162.9	
OBSERVATION_NOR	213 03:06	214 17:51	139.5	73.1	274.8	24.0	470.0	77.2	118.6	0.0	205.4	12.3	1450.0	0.0	162.0	3006.9
SP_151EA_G70METNON214_PRIME	214 17:51	215 02:51	32.4	17.0	86.4	5.0	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	218.4
DAILY TOTAL SCIENCE	213 03:06	215 02:51	171.9	90.1	361.2	29.0	470.0	93.2	146.1	0.0	234.6	17.3	1450.0	0.0	162.0	
OBSERVATION_NOR	215 02:51	217 00:06	162.9	85.4	319.4	24.6	48.0	98.2	138.5	0.0	146.6	317.0	0.0	0.0	189.1	1529.7
SP_151EA_C34BWGNON216_PRIME	217 00:06	217 09:06	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	215 02:51	217 09:06	195.3	102.3	405.8	27.8	48.0	114.2	166.0	0.0	175.8	322.0	0.0	0.0	189.1	
OBSERVATION_NOR	217 09:06	219 00:06	169.0	73.6	398.4	14.0	291.0	69.4	119.3	0.0	126.3	14.5	0.0	0.0	163.0	1438.5
SP_151EA_C70METNON218_PRIME	219 00:06	219 09:06	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	217 09:06	219 09:06	201.4	90.5	484.8	17.3	291.0	85.4	146.9	0.0	155.5	19.4	0.0	0.0	163.0	
OBSERVATION_NOR	219 09:06	220 17:36	81.9	61.3	115.2	11.7	650.0	57.8	70.2	0.0	105.3	72.5	170.0	0.0	135.8	1531.7
SP_151EA_G34HEFNON220_PRIME	220 17:36	221 02:36	22.7	17.0	86.4	3.2	0.0	16.0	19.4	0.0	29.2	4.9	0.0	0.0	0.0	198.8
DAILY TOTAL SCIENCE	219 09:06	221 02:36	104.6	78.3	201.6	14.9	650.0	73.8	89.6	0.0	134.4	77.4	170.0	0.0	135.8	
OBSERVATION_NOR	221 02:36	222 17:20	97.6	73.1	115.2	13.9	568.0	68.9	83.7	0.0	125.5	364.1	120.0	0.0	161.9	1791.8
SP_151EA_G70METNON222_PRIME	222 17:20	222 22:35	13.2	9.9	45.9	1.9	0.0	9.3	11.3	0.0	17.0	2.9	0.0	0.0	0.0	111.5
SP_151EA_G34HEFNON222_PRIME	222 22:35	223 02:20	9.4	7.1	40.5	1.4	0.0	6.7	8.1	0.0	12.1	2.1	0.0	0.0	0.0	87.4
DAILY TOTAL SCIENCE	221 02:36	223 02:20	120.3	90.0	201.6	17.2	568.0	84.9	103.1	0.0	154.6	369.1	120.0	0.0	161.9	
OBSERVATION_NOR	223 02:20	224 17:20	263.3	73.6	158.4	24.1	560.0	138.7	119.3	0.0	638.1	79.7	0.0	0.0	163.0	2218.2
SP_152EA_G70METNON224_PRIME	224 17:20	225 02:20	32.4	17.0	86.4	3.2	0.0	32.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	232.7
DAILY TOTAL SCIENCE	223 02:20	225 02:20	295.7	90.5	244.8	27.3	560.0	170.7	146.9	0.0	667.2	84.6	0.0	0.0	163.0	
OBSERVATION_NOR	225 02:20	226 17:05	262.4	73.1	316.8	14.0	944.0	137.8	118.6	0.0	125.5	115.9	260.0	0.0	162.0	2530.1
SP_152EA_G70METNON226_PRIME	226 17:05	227 02:05	22.7	17.0	86.4	3.2	0.0	16.0	19.4	0.0	29.2	4.9	0.0	0.0	0.0	198.8
DAILY TOTAL SCIENCE	225 02:20	227 02:05	285.1	90.1	403.2	17.2	944.0	153.8	138.0	0.0	154.7	120.9	260.0	0.0	162.0	
OBSERVATION_NOR	227 02:05	228 17:05	98.3	73.6	145.2	14.0	48.0	69.4	84.2	0.0	126.3	322.9	0.0	0.0	163.0	1144.9
SP_152EA_G34HEFNON228_PRIME	228 17:05	229 02:05	22.7	17.0	86.4	3.2	0.0	16.0	19.4	0.0	29.2	4.9	0.0	0.0	0.0	198.8
DAILY TOTAL SCIENCE	227 02:05	229 02:05	121.0	90.5	231.6	17.3	48.0	85.4	103.7	0.0	155.5	327.8	0.0	0.0	163.0	
OBSERVATION_NOR	229 02:05	230 23:19	114.0	85.3	180.0	16.3	650.0	80.4	97.7	0.0	146.5	58.0	410.0	0.0	189.0	2027.3
SP_152EA_C70METNON230_PRIME	230 23:19	231 08:19	22.7	17.0	86.4	3.2	0.0	16.0	19.4	0.0	29.2	4.9	0.0	0.0	0.0	198.8
DAILY TOTAL SCIENCE	229 02:05	231 08:19	136.7	102.3	266.4	19.5	650.0	96.4	117.1	0.0	175.7	62.9	410.0	0.0	189.0	
OBSERVATION_NOR	231 08:19	232 09:19	90.0	47.2	170.4	9.0	83.0	44.5	76.5	0.0	81.0	374.4	10.0	0.0	104.5	1090.4
SP_152EA_M34HEFNON232_PRIME	232 09:19	232 18:19	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	231 08:19	232 18:19	122.4	64.1	256.8	12.2	83.0	60.5	104.0	0.0	110.1	379.3	10.0	0.0	104.5	
OBSERVATION_NOR	232 18:19	233 09:19	54.0	28.3	158.4	5.4	9.0	26.7	45.9	0.0	48.6	0.0	0.0	0.0	62.7	439.0
SP_152EA_M34HEFNON233_PRIME	233 09:19	233 18:19	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	0.0	0.0	0.0	0.0	211.7
DAILY TOTAL SCIENCE	232 18:19	233 18:19	86.4	45.3	244.8	8.6	9.0	42.7	73.4	0.0	77.8	0.0	0.0	0.0	62.7	

Final Sequenced SMT and Data Volume (3 of 3)

DATA VOLUME REPORT --- TRANSFER FRAME OVERHEAD NOT INCLUDED

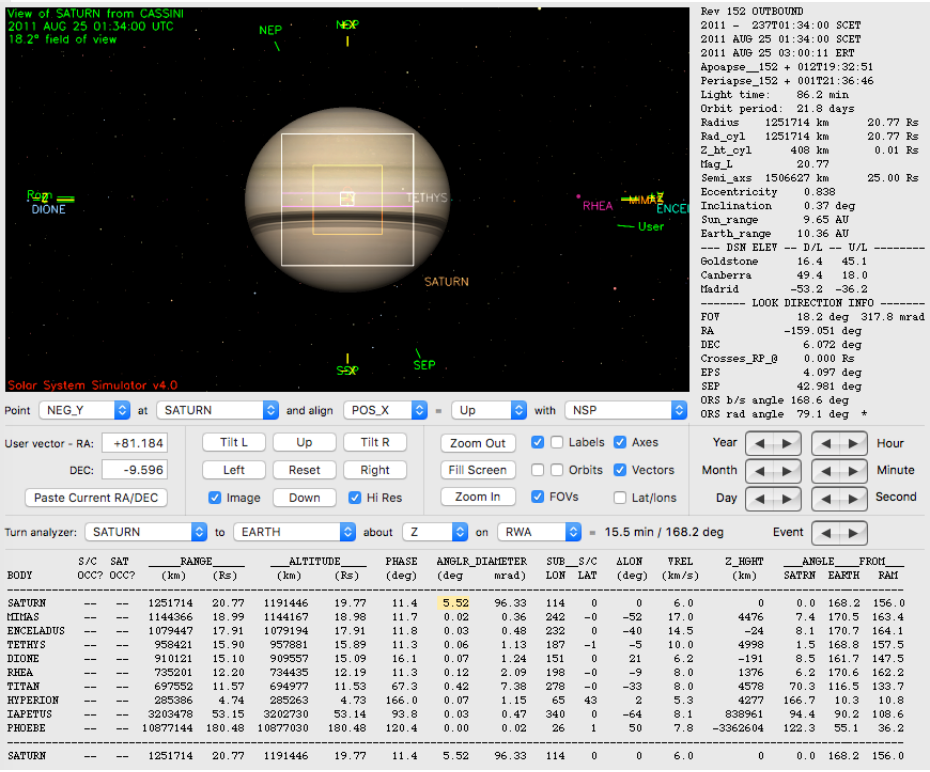
Event	Start doy hh:mm	End doy hh:mm	CAPS (Mb)	CDA (Mb)	CIRS (Mb)	INMS (Mb)	ISS (Mb)	MAG (Mb)	MIMI (Mb)	RADAR (Mb)	RPWS (Mb)	UVIS (Mb)	VIMS (Mb)	PROBE (Mb)	ENGR (Mb)	TOTAL (Mb)
OBSERVATION_NOR	232 18:19	233 09:19	54.0	28.3	158.4	5.4	9.0	26.7	45.9	0.0	48.6	0.0	0.0	0.0	62.7	439.0
SP_152EA_M34HEFNON233_PRIME	233 09:19	233 18:19	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	0.0	0.0	0.0	0.0	211.7
DAILY TOTAL SCIENCE	232 18:19	233 18:19	86.4	45.3	244.8	8.6	9.0	42.7	73.4	0.0	77.8	0.0	0.0	0.0	62.7	
OBSERVATION_NOR	233 18:19	234 09:04	53.1	27.8	193.2	5.3	0.0	26.2	45.1	0.0	61.0	0.0	0.0	0.0	61.6	473.5
SP_152EA_M34HEFOTP234_PRIME	234 09:04	234 18:04	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	42.1	4.9	0.0	0.0	0.0	229.6
DAILY TOTAL SCIENCE	233 18:19	234 18:04	85.5	44.8	279.6	8.6	0.0	42.2	72.7	0.0	103.2	4.9	0.0	0.0	61.6	
OBSERVATION_NOR	234 18:04	235 09:30	84.1	29.1	167.5	15.6	48.0	52.3	47.2	0.0	1043.4	101.4	120.0	0.0	64.5	1773.3
SP_152EA_M70METOTB235_PRIME	235 09:30	235 18:30	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	220.3	4.9	0.0	0.0	0.0	407.8
DAILY TOTAL SCIENCE	234 18:04	235 18:30	116.5	46.1	253.9	18.9	48.0	68.3	74.8	0.0	1263.7	106.4	120.0	0.0	64.5	
OBSERVATION_NOR	235 18:30	236 16:34	79.4	153.9	277.0	7.9	360.0	78.5	67.5	0.0	390.8	0.0	1050.0	0.0	92.2	2557.2
SP_152EA_G70METNON236_PRIME	236 16:34	237 01:34	155.3	17.0	86.4	13.3	0.0	32.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	365.6
DAILY TOTAL SCIENCE	235 18:30	237 01:34	234.7	170.8	363.4	21.3	360.0	110.5	95.1	0.0	420.0	4.9	1050.0	0.0	92.2	
OBSERVATION_NOR	237 01:34	237 22:49	76.5	40.1	72.0	7.7	467.6	75.6	65.0	0.0	532.8	608.1	247.0	0.0	88.8	2281.1
SP_152EA_C70METNON237_PRIME	237 22:49	238 07:49	401.0	17.0	86.4	3.2	0.0	32.0	27.5	0.0	98.7	4.9	0.0	0.0	0.0	670.9
DAILY TOTAL SCIENCE	237 01:34	238 07:49	477.5	57.1	158.4	10.9	467.6	107.6	92.6	0.0	631.5	613.0	247.0	0.0	88.8	

Segment Geometry (1 of 2)



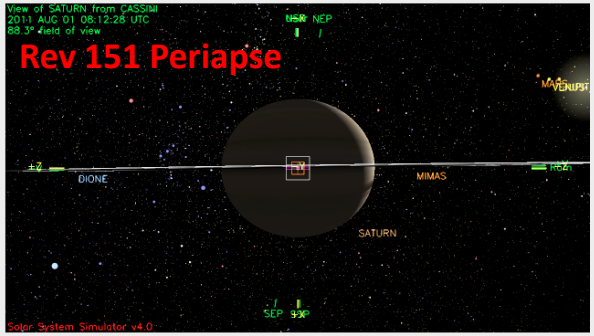
Seg Start (Left)

Seg End (below)



	Saturn Range	Phase Angle	Sub-S/C Lat.
Segment Start	22.69 Rs	80.6	0
Periapse 151	4.05 Rs	135.2	0
Apoapse	45.93 Rs	44.7	0
Periapse 152	4.05 Rs	135.3	0
Segment End	20.77 Rs	11.4	0

Segment Geometry (2 of 2)



Rev 151 INBOUND
2011 - 213T08:12:28 SCET
2011 AUG 01 08:12:28 SCET
2011 AUG 01 09:36:07 ERT
Apoapse__151 + 010T20:02:06
Periapse_151 + -00:00:00
Light time: 83.6 min
Orbit period: 21.9 days

Radius	244027 km	4.05 Rs
Rad_cyl	244024 km	4.05 Rs
Z_ht_cyl	-1043 km	-0.02 Rs
Mag_L	4.05	
Semi_axs	1509894 km	25.05 Rs
Eccentricity	0.838	
Inclination	0.37 deg	
Sun_range	9.65 AU	
Earth_range	10.06 AU	

--- DSN ELEV -- D/L -- U/L --------

Goldstone	-43.6	-11.7
Canberra	33.2	56.4
Madrid	-11.6	-40.7

------- LOOK DIRECTION INFO -------

FOV	88.3 deg 1540.9 mrad
RA	60.855 deg
DEC	-5.820 deg
Crosses_RP_0	0.000 Rs
EPS	5.409 deg *
SEP	63.643 deg
ORS b/s angle	44.8 deg
ORS rad angle	100.9 deg

Point NEG_Y at SATURN and align NEG_X = Up with USER VEC

User vector - RA: +37.500 DEC: +83.700 Paste Current RA/DEC

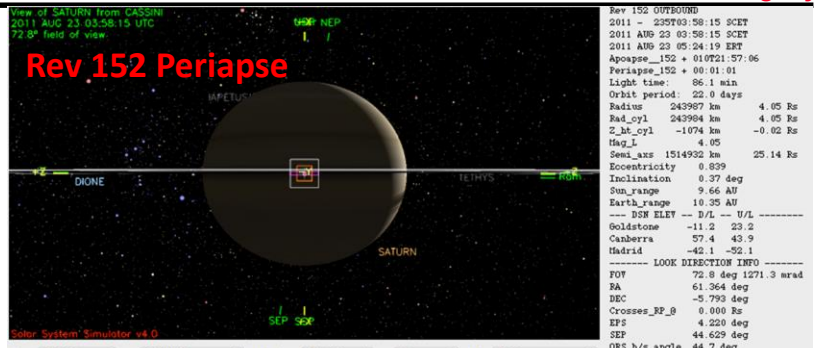
Tilt L | Up | Tilt R | Left | Reset | Right | Image | Down | Hi Res

Zoom Out | Fill Screen | Zoom In | Labels | Axes | Orbits | Vectors | FOVs | Lat/lons

Year | Month | Day | Hour | Minute | Second

Turn analyzer: SATURN to EARTH about Z on RWA = 6.6 min / 49.4 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	ALON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE_FROM SATRN	ANGLE_FROM EARTH	ANGLE_FROM RAM
SATURN	--	--	244027	4.05	183759	3.05	135.2	28.60	499.11	99	-0	0	16.9	0	0.0	49.4	90.0
MIMAS	--	--	395488	6.56	395282	6.56	154.9	0.06	1.05	334	0	-131	28.2	-2077	21.0	29.0	69.0
ENCELADUS	--	--	265435	4.40	265182	4.40	164.7	0.11	1.93	303	-0	-67					
TETHYS	--	--	268290	4.45	267756	4.44	66.3	0.23	4.03	53	1	59					
DIONE	--	--	545472	9.05	544909	9.04	99.5	0.12	2.07	23	-0	121					
RHEA	--	--	449443	7.46	448677	7.44	128.8	0.20	3.41	335	0	-58					
TITAN	--	--	991663	16.45	989888	16.41	34.4	0.30	5.19	3	0	9					
HYPERION	--	--	1645746	27.31	1645594	27.30	150.1	0.01	0.20	172	29	-100					
IAPETUS	--	--	3503720	58.14	3502973	58.12	135.5	0.02	0.43	357	1	-93					
PHOEBE	--	--	12218382	202.73	12218269	202.73	145.4	0.00	0.02	222	-8	-107					
SATURN	--	--	244027	4.05	183759	3.05	135.2	28.60	499.11	99	-0	0					



Rev 152 OUTBOUND
2011 - 235T03:58:15 SCET
2011 AUG 23 03:58:15 SCET
2011 AUG 23 05:24:19 ERT
Apoapse__152 + 010T21:57:06
Periapse_152 + 00:01:01
Light time: 86.1 min
Orbit period: 22.0 days

Radius	243987 km	4.05 Rs
Rad_cyl	243984 km	4.05 Rs
Z_ht_cyl	-1074 km	-0.02 Rs
Mag_L	4.05	
Semi_axs	1514932 km	25.14 Rs
Eccentricity	0.839	
Inclination	0.37 deg	
Sun_range	9.66 AU	
Earth_range	10.35 AU	

--- DSN ELEV -- D/L -- U/L --------

Goldstone	-11.2	23.2
Canberra	57.4	43.9
Madrid	-42.1	-52.1

------- LOOK DIRECTION INFO -------

FOV	72.8 deg 1271.3 mrad
RA	61.364 deg
DEC	-5.793 deg
Crosses_RP_0	0.000 Rs
EPS	4.220 deg
SEP	44.629 deg
ORS b/s angle	44.7 deg
ORS rad angle	100.7 deg

Point NEG_Y at SATURN and align NEG_X = Up with NSP

User vector - RA: +37.500 DEC: +83.700 Paste Current RA/DEC

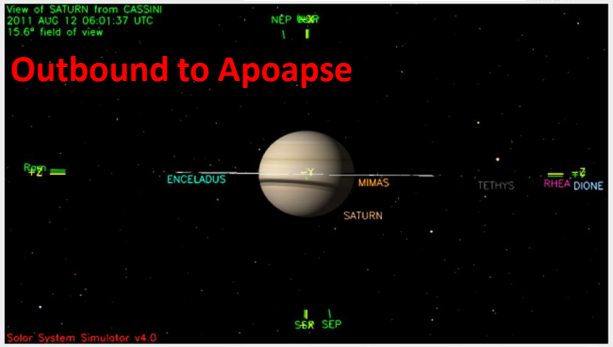
Tilt L | Up | Tilt R | Left | Reset | Right | Image | Down | Hi Res

Zoom Out | Fill Screen | Zoom In | Labels | Axes | Orbits | Vectors | FOVs | Lat/lons

Year | Month | Day | Hour | Minute | Second

Turn analyzer: SATURN to EARTH about Z on RWA = 6.6 min / 48.3 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	ALON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE_FROM SATRN	ANGLE_FROM EARTH	ANGLE_FROM RAM
SATURN	--	--	243987	4.05	183719	3.05	135.3	28.60	499.19	153	-0	0	16.9	0	0.0	48.3	90.4
MIMAS	--	--	431904	7.17	431697	7.16	132.9	0.06	0.96	6	0	174	30.9	4111	2.6	50.7	93.0
ENCELADUS	--	--	224T06:01:37 SCET				72	153.9	0.18	3.13	292	-0	-40	10.9	24	67.8	21.9	22.7
TETHYS	--	--	2011 AUG 12 06:01:37 SCET				46	154.9	0.12	2.12	343	0	-142	26.8	5111	20.7	28.2	69.8
DIONE	--	--	2011 AUG 12 07:26:26 ERT				42	105.8	0.11	1.98	19	-0	131	24.7	196	30.1	78.0	120.6
RHEA	--	--	Apoapse__151 + 021T17:51:15				70	39.2	0.31	5.41	6	0	3	8.4	-2650	174.2	137.3	95.3
TITAN	--	--	Periapse_151 + 010T21:49:09				45	169.1	0.22	3.80	348	-0	-128	20.9	-1208	43.7	10.0	46.8
HYPERION	--	--	Light time: 84.8 min				63	157.2	0.01	0.20	298	36	-108	19.1	-10021	63.7	18.6	26.7
IAPETUS	--	--	Orbit period: 21.8 days				13	123.4	0.02	0.40	1	1	165	20.1	757671	17.9	60.5	104.3
PHOEBE	--	--	Radius 2768167 km	45.93 Rs			15	128.2	0.00	0.02	49	-1	-91	17.4	-3259987	88.1	47.3	15.4
			Rad_cyl 2768140 km	45.93 Rs														
			Z_ht_cyl 12111 km	0.20 Rs														
			Mag_L 45.93															
			Semi_axs 1506447 km	25.00 Rs														
			Eccentricity 0.838															
			Inclination 0.37 deg															
			Sun_range 9.64 AU															
			Earth_range 10.20 AU															
			--- DSN ELEV -- D/L -- U/L --------															
			Goldstone -27.6 6.7															
			Canberra 48.6 55.0															
			Madrid -28.3 -51.1															
			------- LOOK DIRECTION INFO -------															
			FOV 15.6 deg 272.4 mrad															
			RA -118.971 deg															
			DEC 5.808 deg															
			Crosses_RP_0 0.000 Rs															
			EPS 4.881 deg *															
			SEP 54.019 deg															
			ORS b/s angle 135.2 deg															
			ORS rad angle 101.1 deg															
SATURN	--	--	244027	4.05	183759	3.05	135.2	28.60	499.11	99	-0	0	16.9	0	0.0	48.3	90.4



Point NEG_Y at SATURN and align NEG_X = Up with USER VEC

User vector - RA: +37.500 DEC: +83.700 Paste Current RA/DEC

Tilt L | Up | Tilt R | Left | Reset | Right | Image | Down | Hi Res

Zoom Out | Fill Screen | Zoom In | Labels | Axes | Orbits | Vectors | FOVs | Lat/lons

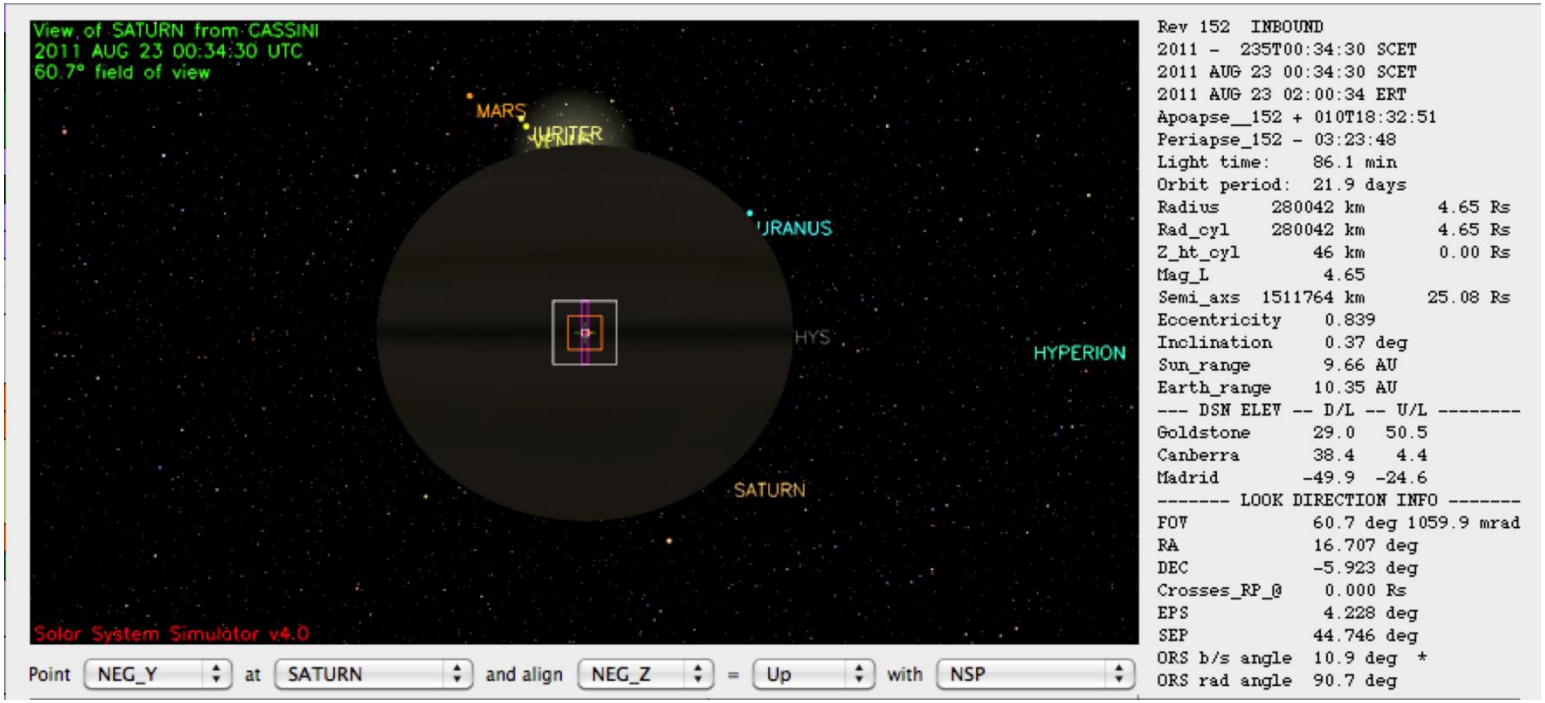
Year | Month | Day | Hour | Minute | Second

Turn analyzer: SATURN to EARTH about Z on RWA = 12.7 min / 131.1 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	ALON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE_FROM SATRN	ANGLE_FROM EARTH	ANGLE_FROM RAM
SATURN	--	--	2768167	45.93	2707899	44.93	44.7	2.50	43.55	124	0	0	1.5	0	0.0	131.1	90.0
MIMAS	--	--	2939042	48.77	2938835	48.76	43.5	0.01	0.14	341	-1	-159	16.0	-1292	1.3	132.4	91.3
ENCELADUS	--	--	2917458	48.41	2917204	48.40	48.3	0.01	0.18	50	0	127	13.6	23	3.7	127.5	86.3
TETHYS	--	--	2554302	42.38	2553767	42.37	40.5	0.02	0.42	228	-1	-41	10.3	-1046	4.4	135.4	94.4
DIONE	--	--	2562957	42.53	2562395	42.52	38.1	0.03	0.44	241	0	-54	9.2	206	6.8	137.8	96.8
RHEA	--	--	2314136	38.40	2313371	38.38	38.9	0.04	0.66	216	-0	-28	7.2	3297	6.1	137.0	96.1
TITAN	--	--	2457597	40.78	2455022	40.74	19.9	0.12	2.10	265	0	-63	4.9	7849	26.8	156.9	116.8
HYPERION	--	--	3495689	58.00	3495566	58.00	24.4	0.01	0.09	358	-61	-110	6.1	8077	21.6	152.0	111.6
IAPETUS	--	--	2011854	33.38	2011108	33.37	134.2	0.04	0.74	50	-13	36	2.4	23289	91.4	41.0	1.4
PHOEBE	--	--	11778188	195.43	11778074	195.43	123.9	0.00	0.02	328	-4	81	2.3	-2632070	85.5	50.8	13.9
SATURN	--	--	2768167	45.93	2707899	44.93	44.7	2.50	43.55	124	0	0	1.5	0	0.0	131.1	90.0

Solar Geometry – ORS Boresight Concerns

Rev 152 CMT Violation Geometry



- **Pointing to NEG_Y to Saturn (center) would lead to a CMT violation.**
- **< 15° ORS to Sun between ~2011-234T23:36:46 and ~2011-235T01:32:43**
- **< 12° ORS to Sun between ~2011-235T00:08:40 and ~2011-235T01:06:32**
- **Minimum NEG_Y to Sun angle is ~10.9° at ~2010-235T00:36:00.**
- **Saturn"s diameter ranges from 23.14° to 26.45° .**
- **Pointing in the anti-Sun southern hemisphere can help avoid this FR.**

Daily Science Highlights

DOY 211: The Saturn 151_152 segment started with a CIRS Saturn Mid-IR Map, which helps determine Saturn's upper troposphere and tropopause temperature with spatial resolution of about two degrees of latitude and longitude. Afterwards, UVIS occupied most of the rest of the day and half of DOY212 with an EUV/FUV, which involved slow scans across Saturn's visible hemisphere to form spectral images. MAPS was occupied with a magnetospheric survey campaign.

DOY 212: Half the day was devoted to completing the UVIS EUV/FUV, while the balance was devoted to the first PIE of the segment, a CIRS Nadir Occultation of Saturn, which measured helium abundance at the RSS egress occultation point in advance of the upcoming RSS observation. MAPS continued with a magnetospheric boundaries campaign.

DOY 213-214: The first part of the day was occupied by the RSS Atmospheric Occultation PIE of Saturn's ionosphere and atmosphere, to measure vertical profiles of electron density in the ionosphere, and of density, pressure, and temperature in the neutral atmosphere. X, S, and Ka bands were used. The balance of the day was used mostly by VIMS for a periapse high resolution equatorial plume image of Saturn, then a collaborative VIMS and CIRS PIE observed Saturn's atmosphere in stellar occultation mode (as the star Alpha Ori, commonly known as Betelgeuse, was occulted) to gather data to determine the H/He ratio in the atmosphere. This was followed by another collaborative observation between these instruments to continue these observations as the star Alpha CMI was occulted by Saturn. This VIMS-CIRS occultation observations were a repeat of a set in Rev 150 at the same latitude for independent verification of data. Following this, VIMS repeated their high resolution equatorial plume image of Saturn, which occupied most of 214 also. MAPS continued with a magnetospheric boundaries campaign.

DOY 215: UVIS occupied most of the day with another EUV/FUV, which involved slow scans across Saturn's visible hemisphere to form spectral images. After that, MAG performed a periodic calibration that entailed a roll about an axis other than Z for determination of sensor offsets. MAPS was occupied with a magnetospheric survey campaign.

DOY 216: After an Opnav opportunity, CIRS had another Saturn Mid-IR Map, which helps determine Saturn's upper troposphere and tropopause temperature with spatial resolution of about two degrees of latitude and longitude. MAPS continued with a magnetospheric boundaries campaign.

DOY 217: ISS and VIMS spent time following their Saturn wind speed template, staring and shooting every 10 minutes to mosaic in longitude and latitude. CIRS measured oxygen compounds (H_2O, CO_2) in Saturn's stratosphere as a function of latitude, while VIMS rode along.

DOY 218: CIRS spent the day with another Saturn Mid-IR Map, which helps determine Saturn's upper troposphere and tropopause temperature with spatial resolution of about two degrees of latitude and longitude. MAPS continued with a magnetospheric boundaries campaign.

DOY 219-220: The day started with ORS teams taking another look at Titan as part of the cloud monitoring campaign. During the rest of the day and through DOY 220, ISS and VIMS spent time following their Saturn wind speed template, staring and shooting every 10 minutes to mosaic in latitude and longitude. CIRS measured oxygen compounds (H_2O, CO_2) in Saturn's stratosphere as a function of latitude, while VIMS rode along. MAPS continued with a magnetospheric boundaries campaign.

DOY 221: The day started with ORS teams taking another look at Titan as part of the cloud monitoring campaign. After this, UVIS occupied most of the remainder of the day with another EUV/FUV.

DOY 222: The day was largely taken with ISS and VIMS following their Saturn wind speed template, staring and shooting every 10 minutes to mosaic in latitude and longitude. CIRS measured oxygen compounds (H_2O, CO_2) in Saturn's stratosphere as a function of latitude, while VIMS rode along. At the end of the day, the ORS teams took another look at Titan as part of the cloud monitoring campaign as MAPS continued with a magnetospheric boundaries campaign.

DOY 223: Half of the day was occupied with ISS making a movie of Saturn as they stared and shot to mosaic in longitude, part of the 2-time-step movie. The latter half of the day was spent observing the rock Tarqeq as part of the ISS "Irregular Moons of Saturn" campaign.

Daily Science Highlights

DOY 224: After the 14-hour rock intermission, ISS conducted the second half of the Saturn movie just as we hit apoapse. MAPS continued their magnetospheric survey campaign.

DOY 225-226: The day started with ORS teams takimg another look at Titan as part of the cloud monitoring campaign. CIRS measured oxygen compounds (H_2O, CO_2) in Saturn's stratosphere as a function of latitude, while VIMS rode along. ISS and VIMS then continued to followtheir Saturn wind speed template, staring and shooting every 10 minutes to mosaic in latitude and longitude. ISS then did another episode of their Saturn Appearance Monitoring, taking images of Saturn. MAPS was occupied with a magnetospheric survey campaign.

DOY 227: UVIS occupied most of the day with another EUV/FUV, which involved slow scans across Saturn's visible hemisphere to form spectral images. CIRS looked again to measure oxygen compounds (H_2O, CO_2) in Saturn's stratosphere as a function of latitude in an observation that extended into the following day. MAPS was occupied with a magnetospheric survey campaign.

DOY 228: CIRS followed with a Saturn Mid-IR Map, which helps determine Saturn's upper troposphere and tropopause temperature with spatial resolution of about two degrees of latitude and longitude. MAPS was occupied with a magnetospheric survey campaign.

DOY 229: The day started with the last Titan cloud monitoring observation for the ORS teams in this segment as part of the cloud monitoring campaign. This was followed by another series during which CIRS measured oxygen compounds (H_2O, CO_2) in Saturn's stratosphere as a function of latitude, while VIMS rode along. ISS and VIMS then continued to follow their Saturn wind speed template, staring and shooting every 10 minutes to mosaic in longitude. MAPS continued with a magnetospheric boundaries campaign.

DOY 230: CIRS completed another Saturn Mid-IR Map, which helps determine Saturn's upper troposphere and tropopause temperature with spatial resolution of about two degrees of latitude and longitude. MAPS continued with a magnetospheric boundaries campaign.

DOY 231: The day started with the last Titan cloud monitoring observation for the ORS teams in this segment as part of the cloud monitoring campaign. This was followed by UVIS closing the day and continuing into the next with another EUV/FUV, which involved slow scans across Saturn's visible hemisphere to form spectral images.

DOY 232: CIRS completed their last Saturn Mid-IR Map for this segment, which helps determine Saturn's upper troposphere and tropopause temperature with spatial resolution of about two degrees of latitude and longitude. ISS then did another episode of their Saturn Monitoring, taking images of Saturn. MAPS continued with a magnetospheric boundaries campaign.

DOY 233: The day was largely occupied by CIRS Saturn Far-IR map, which determines upper troposphere and tropopause temperature with spatial resolution of about two degrees of latitude and longitude in the northern hemisphere in this observation, as MAPS continued with their magnetospheric boundaries campaign.

DOY 234: UVIS had a last EUV/FUV for the segment, which involved slow scans across Saturn's visible hemisphere to form spectral images. After this, VIMS had an omiCet Saturn occultation PIE, followed by a CIRS Saturn Limb Scan to obtain stratospheric thermal structure by means of limb sounding in the mid-IR, longitude coverage. Since this 6+ hour observation tracked Saturn for more than 60 degrees, CIRS followed the AACS constraints to turn to an inertial attitude for break in the middle. And what better attitude than VIMS's favorite alpha Ori star, in time to catch the ingress occultation with Saturn.

DOY 235: VIMS mapped Saturn's northern hemisphere continuously over 20 hours to observe time variability of winds, and study temporal variations of features comprising the String of Pearls (clearings in the clouds), the Saturn Ribbon feature, and the "smoke rings". Observations over two rotations provided valuable information on the oscillatory nature of the pearls.

DOY 236: We wrapped up this rev-long segment with one last downlink.

Segment Integration Planning

Timeline Gaps and Suggested Observations

- GAP 1 (2011-216T19:30:00 to 216T21:56:00 – Duration 2h26m)
- GAP 2 (2011-220T14:16:00 to 220T15:26:00 – Duration 1h10m)
- GAP 3 (2011-222T12:46:00 to 222T15:10:00 – Duration 2h24m)

Gap	Start	End	Duration	Phase	Suggested Activities
1	2011-223T03:00:00	2011-224T04:10:00	001T01:10:00	41.8° – 44.5°	ISS_151OT_TAQROT045_PRIME
2	2011-226T12:30:00	2011-226T14:55:00	000T02:25:00	50.6° – 50.9°	
3	2011-232T02:29:00	2011-232T07:09:00	000T04:40:00	72.7° – 74.1°	
4	2011-233T05:59:00	2011-233T07:09:00	000T01:10:00	83.4° – 84.0°	
5	2011-233T18:59:00	2011-233T21:24:00	000T02:25:00	91.8° – 93.9°	
6	2011-234T18:44:00	2011-235T00:20:00	000T05:36:00	137.5° – 168.7°	VIMS
7	2011-235T19:10:00	2011-236T14:24:00	000T19:14:00	31.6° – 11.5°	VIMS high-res imaging (Thunderstorm Alley)

Initial SMT and Data Volume (1 of 3)

Beginning of Integration:

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_151EA_G70METNON212_PRIME	212 18:06	213 03:06	0	1531	165	1696	3322	1626	0	916	53	2665	3200	535	-547	-2% 0
SP_151EA_G70METNON214_PRIME	214 17:51	215 02:51	0	3112	164	3275	3322	47	0	220	53	3549	3181	-368	-1083	-6% 368
SP_151EA_C34BWGNON216_PRIME	217 00:06	217 09:06	368	1443	191	2002	3322	1320	0	219	53	2274	668	-1606	-1083	-6% 1605
SP_151EA_C70METNON218_PRIME	219 00:06	219 09:06	1605	1321	165	3091	3322	231	0	219	53	3363	3200	-164	-1083	-6% 163
SP_151EA_G34HEFNON220_PRIME	220 17:36	221 02:36	163	1690	137	1990	3322	1332	0	219	53	2262	769	-1493	-1083	-7% 1493
SP_151EA_G70METNON222_PRIME	222 17:20	223 02:20	1493	1802	164	3458	3322	-135	0	219	53	3594	3203	-391	-1083	-7% 390
SP_152EA_G34HEFNON224_PRIME	224 17:20	225 02:20	390	1475	165	2030	3322	1292	0	219	53	2302	761	-1541	-1083	-8% 1541
SP_152EA_G70METNON226_PRIME	226 17:05	227 02:05	1541	2701	164	4406	3322	-1083	0	219	53	3594	3203	-391	-1015	-6% 390
SP_152EA_G34HEFNON228_PRIME	228 17:05	229 02:05	390	1177	165	1733	3322	1589	0	219	53	2004	743	-1262	-1015	-8% 1261
SP_152EA_C70METNON230_PRIME	230 23:19	231 08:19	1261	2886	191	4338	3322	-1015	0	219	53	3594	3158	-436	285	3% 436
SP_152EA_M34HEFNON232_PRIME	232 09:19	232 18:19	436	995	106	1536	3322	1786	0	219	53	1808	652	-1156	285	4% 1156
SP_152EA_M34HEFNON233_PRIME	233 09:19	233 18:19	1156	380	63	1599	3322	1723	0	214	53	1866	648	-1219	285	4% 1218
SP_152EA_M34HEFOTP234_PRIME	234 09:04	234 18:04	1218	416	62	1696	3322	1626	0	232	53	1981	532	-1449	285	5% 1448
SP_152EA_M70METOTB235_PRIME	235 09:30	235 18:30	1448	1269	65	2783	3322	539	0	313	53	3149	2676	-474	285	5% 473
SP_152EA_G70METNON236_PRIME	236 16:34	237 01:34	473	1892	93	2459	3322	863	0	229	53	2741	3026	285	285	9% 0

DOY 235 upgraded to a 70m station to zero out at end but SSR continually overrun.

MAPS are all at or below nominal rates during apoapse (214T17:51 – 234T18:04).

ORS instruments need to cut.

MORE CUTS ARE NEEDED.

Initial SMT and Data Volume (2 of 3)

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	211 03:07	212 18:06	140.3	73.5	410.4	14.0	48.0	69.3	119.3	0.0	342.3	289.8	10.0	0.0	162.9	1680.0
SP_151EA_G70METNON212_PRIME	212 18:06	213 03:06	32.4	17.9	86.4	3.2	0.0	16.0	27.5	0.0	719.3	4.9	0.0	0.0	0.0	907.7
DAILY TOTAL SCIENCE	211 03:07	213 03:06	172.7	91.4	496.8	17.3	48.0	85.3	146.8	0.0	1061.6	294.8	10.0	0.0	162.9	
OBSERVATION_NOR	213 03:06	214 17:51	139.5	125.0	274.8	24.0	470.0	93.8	118.6	0.0	205.4	12.3	1620.0	0.0	162.0	3245.4
SP_151EA_G70METNON214_PRIME	214 17:51	215 02:51	32.4	17.0	86.4	5.0	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	218.4
DAILY TOTAL SCIENCE	213 03:06	215 02:51	171.9	142.0	361.2	29.0	470.0	109.8	146.1	0.0	234.6	17.3	1620.0	0.0	162.0	
OBSERVATION_NOR	215 02:51	217 00:06	162.9	85.4	319.4	24.6	48.0	133.7	138.5	0.0	146.6	317.0	10.0	0.0	189.1	1575.2
OBSERVATION_SI	215 02:51	217 00:06	0.0	0.0	0.0	0.0	43.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.5
SP_151EA_C34BWGNON216_PRIME	217 00:06	217 09:06	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	215 02:51	217 09:06	195.3	102.3	405.8	27.8	91.5	149.7	166.0	0.0	175.8	322.0	10.0	0.0	189.1	
OBSERVATION_NOR	217 09:06	219 00:06	140.4	73.6	398.4	14.0	343.5	69.4	119.3	0.0	126.3	14.5	10.0	0.0	163.0	1472.4
SP_151EA_C70METNON218_PRIME	219 00:06	219 09:06	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	217 09:06	219 09:06	172.8	90.5	484.8	17.3	343.5	85.4	146.9	0.0	155.5	19.4	10.0	0.0	163.0	
OBSERVATION_NOR	219 09:06	220 17:36	145.6	61.3	280.8	11.7	830.0	57.8	99.4	0.0	105.3	72.5	10.0	0.0	135.8	1810.2
SP_151EA_G34HEFNON220_PRIME	220 17:36	221 02:36	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	219 09:06	221 02:36	178.0	78.3	367.2	14.9	830.0	73.8	127.0	0.0	134.4	77.4	10.0	0.0	135.8	
OBSERVATION_NOR	221 02:36	222 17:20	139.4	73.1	136.8	13.9	725.5	68.9	118.5	0.0	125.5	364.1	20.0	0.0	161.9	1947.6
SP_151EA_G70METNON222_PRIME	222 17:20	223 02:20	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	221 02:36	223 02:20	171.8	90.0	223.2	17.2	725.5	84.9	146.1	0.0	154.6	369.1	20.0	0.0	161.9	
OBSERVATION_NOR	223 02:20	224 17:20	140.4	73.6	158.4	24.1	670.0	69.4	119.3	0.0	126.3	79.7	0.0	0.0	163.0	1624.2
SP_152EA_G34HEFNON224_PRIME	224 17:20	225 02:20	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	223 02:20	225 02:20	172.8	90.5	244.8	27.3	670.0	85.4	146.9	0.0	155.4	84.6	0.0	0.0	163.0	
OBSERVATION_NOR	225 02:20	226 17:05	139.5	73.1	252.0	14.0	1259.0	68.9	118.6	0.0	125.5	115.9	510.0	0.0	162.0	2838.5
SP_152EA_G70METNON226_PRIME	226 17:05	227 02:05	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	225 02:20	227 02:05	171.9	90.1	338.4	17.2	1259.0	84.9	146.1	0.0	154.7	120.9	510.0	0.0	162.0	
OBSERVATION_NOR	227 02:05	228 17:05	140.4	73.6	232.8	14.0	48.0	69.4	119.3	0.0	126.3	322.9	20.0	0.0	163.0	1329.7
SP_152EA_G34HEFNON228_PRIME	228 17:05	229 02:05	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	227 02:05	229 02:05	172.8	90.5	319.2	17.3	48.0	85.4	146.9	0.0	155.5	327.8	20.0	0.0	163.0	
OBSERVATION_NOR	229 02:05	230 23:19	162.8	85.3	316.8	16.3	1055.0	80.4	138.4	0.0	146.5	58.0	800.0	0.0	189.0	3048.7
SP_152EA_C70METNON230_PRIME	230 23:19	231 08:19	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	229 02:05	231 08:19	195.2	102.3	403.2	19.5	1055.0	96.4	166.0	0.0	175.7	62.9	800.0	0.0	189.0	
OBSERVATION_NOR	231 08:19	232 09:19	90.0	47.2	170.4	9.0	83.0	44.5	76.5	0.0	81.0	374.4	10.0	0.0	104.5	1090.4
SP_152EA_M34HEFNON232_PRIME	232 09:19	232 18:19	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	231 08:19	232 18:19	122.4	64.1	256.8	12.2	83.0	60.5	104.0	0.0	110.1	379.3	10.0	0.0	104.5	

Initial SMT and Data Volume (3 of 3)

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	231 08:19	232 09:19	90.0	47.2	170.4	9.0	83.0	44.5	76.5	0.0	81.0	374.4	10.0	0.0	104.5	1090.4
SP_152EA_M34HEFNON232_PRIME	232 09:19	232 18:19	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	216.7
DAILY TOTAL SCIENCE	231 08:19	232 18:19	122.4	64.1	256.8	12.2	83.0	60.5	104.0	0.0	110.1	379.3	10.0	0.0	104.5	
OBSERVATION_NOR	232 18:19	233 09:19	54.0	28.3	158.4	5.4	9.0	26.7	45.9	0.0	48.6	0.0	0.0	0.0	62.7	439.0
SP_152EA_M34HEFNON233_PRIME	233 09:19	233 18:19	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	29.2	0.0	0.0	0.0	0.0	211.7
DAILY TOTAL SCIENCE	232 18:19	233 18:19	86.4	45.3	244.8	8.6	9.0	42.7	73.4	0.0	77.8	0.0	0.0	0.0	62.7	
OBSERVATION_NOR	233 18:19	234 09:04	53.1	27.8	193.2	5.3	0.0	26.2	45.1	0.0	61.0	0.0	0.0	0.0	61.6	473.5
SP_152EA_M34HEFOTP234_PRIME	234 09:04	234 18:04	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	42.1	4.9	0.0	0.0	0.0	229.6
DAILY TOTAL SCIENCE	233 18:19	234 18:04	85.5	44.8	279.6	8.6	0.0	42.2	72.7	0.0	103.2	4.9	0.0	0.0	61.6	
OBSERVATION_NOR	234 18:04	235 09:30	84.1	81.9	167.5	15.6	48.0	52.3	47.2	0.0	529.1	101.7	130.0	0.0	64.5	1322.0
SP_152EA_M70METOTB235_PRIME	235 09:30	235 18:30	32.4	17.0	86.4	3.2	0.0	16.0	27.5	0.0	123.1	4.7	0.0	0.0	0.0	310.4
DAILY TOTAL SCIENCE	234 18:04	235 18:30	116.5	98.9	253.9	18.9	48.0	68.3	74.8	0.0	652.2	106.4	130.0	0.0	64.5	
OBSERVATION_NOR	235 18:30	236 16:34	79.4	41.6	138.5	7.9	360.0	39.2	67.5	0.0	91.0	0.0	1050.0	0.0	92.2	1967.5
SP_152EA_G70METNON236_PRIME	236 16:34	237 01:34	32.4	17.0	86.4	13.3	0.0	16.0	27.5	0.0	29.2	4.9	0.0	0.0	0.0	226.7
DAILY TOTAL SCIENCE	235 18:30	237 01:34	111.8	58.6	224.9	21.3	360.0	55.2	95.1	0.0	120.2	4.9	1050.0	0.0	92.2	

	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)	2297.9	1279.8	4904.6	274.4	6040.5	1210.0	1904.7	0.0	3621.3	2191.7	4200.0	0.0

Waypoint Selection

RBOT – Friendly (Primary is NEG_Y to Saturn Center)

SP_151NA_OBSERV211_NA	2011-211T03:07:00	2011-212T18:06:00	------	37.6/ 83.7	------	37.6/ 83.7
SP_151NA_OBSERV213_NA	2011-213T03:06:00	2011-214T17:51:00	------	------	------	------
SP_151NA_OBSERV215_NA	2011-215T02:51:00	2011-217T00:06:00	------	37.5/ 83.7	------	37.5/ 83.7
SP_151NA_OBSERV217_NA	2011-217T09:06:00	2011-219T00:06:00	------	37.5/ 83.7	------	37.5/ 83.7
SP_151NA_OBSERV219_NA	2011-219T09:06:00	2011-220T17:36:00	------	37.6/ 83.7	------	37.6/ 83.7
SP_151NA_OBSERV221_NA	2011-221T02:36:00	2011-222T17:20:00	------	37.7/ 83.7	------	37.7/ 83.7
SP_151NA_OBSERV223_NA	2011-223T02:20:00	2011-224T17:20:00	------	37.7/ 83.7	------	37.7/ 83.7
SP_152NA_OBSERV225_NA	2011-225T02:20:00	2011-226T17:05:00	------	37.7/ 83.7	------	37.7/ 83.7
SP_152NA_OBSERV227_NA	2011-227T02:05:00	2011-228T17:05:00	------	37.7/ 83.7	------	37.7/ 83.7
SP_152NA_OBSERV229_NA	2011-229T02:05:00	2011-230T23:19:00	------	37.7/ 83.7	------	37.7/ 83.7
SP_152NA_OBSERV231_NA	2011-231T08:19:00	2011-232T09:19:00	------	37.7/ 83.7	------	37.7/ 83.7
SP_152NA_OBSERV232_NA	2011-232T18:19:00	2011-233T09:19:00	------	37.6/ 83.7	------	37.6/ 83.7
SP_152NA_OBSERV233_NA	2011-233T18:19:00	2011-234T09:04:00	------	37.5/ 83.7	------	37.5/ 83.7
SP_152NA_OBSERV234_NA	2011-234T18:04:00	2011-235T09:30:00	------	------	------	------
SP_152NA_OBSERV235_NA	2011-235T18:30:00	2011-236T16:34:00	------	37.3/ 83.7	37.3/ 83.7	------
SP_152NA_OBSERV237_NA	2011-237T01:34:00	2011-237T22:49:00	------	37.3/ 83.7	------	37.3/ 83.7

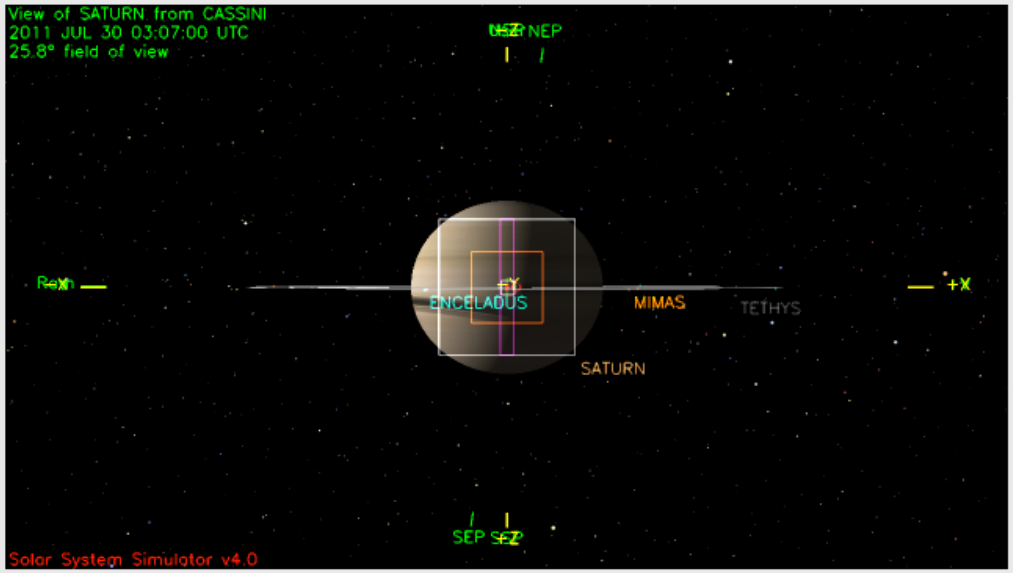
CMT management zone: 2011-213T03:47:00 - 2011-213T05:47:00

Other Waypoints (Primary is NEG_Y to Saturn Center)

OBSERVATION PERIOD	START	END	POS_X_NSP	POS_X_NEP	NEG_X_NSP	NEG_X_NEP	POS_Z_NSP	POS_Z_NEP	NEG_Z_NSP	NEG_Z_NEP	NEG_X_SUN	NEG_Z_EARTH
SP_151NA_OBSERV211_NA	2011-211T03:07:00	2011-212T18:06:00	**BAD**	**BAD**	OK	**BAD**	**BAD**	**BAD**	OK	OK	OK	**BAD**
SP_151NA_OBSERV213_NA	2011-213T03:06:00	2011-214T17:51:00	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**
SP_151NA_OBSERV215_NA	2011-215T02:51:00	2011-217T00:06:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**	OK	**BAD**
SP_151NA_OBSERV217_NA	2011-217T09:06:00	2011-219T00:06:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK	OK	**BAD**
SP_151NA_OBSERV219_NA	2011-219T09:06:00	2011-220T17:36:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK	OK	**BAD**
SP_151NA_OBSERV221_NA	2011-221T02:36:00	2011-222T17:20:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK	OK	**BAD**
SP_151NA_OBSERV223_NA	2011-223T02:20:00	2011-224T17:20:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK	OK	**BAD**
SP_152NA_OBSERV225_NA	2011-225T02:20:00	2011-226T17:05:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK	OK	**BAD**
SP_152NA_OBSERV227_NA	2011-227T02:05:00	2011-228T17:05:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK	OK	**BAD**
SP_152NA_OBSERV229_NA	2011-229T02:05:00	2011-230T23:19:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK	OK	**BAD**
SP_152NA_OBSERV231_NA	2011-231T08:19:00	2011-232T09:19:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK	OK	**BAD**
SP_152NA_OBSERV232_NA	2011-232T18:19:00	2011-233T09:19:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK	OK	**BAD**
SP_152NA_OBSERV233_NA	2011-233T18:19:00	2011-234T09:04:00	**BAD**	OK	OK	**BAD**	**BAD**	**BAD**	OK	OK	OK	**BAD**
SP_152NA_OBSERV234_NA	2011-234T18:04:00	2011-235T09:30:00	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**
SP_152NA_OBSERV235_NA	2011-235T18:30:00	2011-236T16:34:00	**BAD**	**BAD**	OK	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_152NA_OBSERV237_NA	2011-237T01:34:00	2011-237T22:49:00	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK	OK	**BAD**

Waypoints Chosen (1 of 2)

Beginning of Segment to 152 Periapse

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Rev 151  INBOUND
2011 -  211T03:07:00 SCET
2011 JUL 30 03:07:00 SCET
2011 JUL 30 04:30:21 ERT
Apoapse__151 + 008T14:56:40
Periapse_151 - 002T05:05:32
Light time:    83.4 min
Orbit period:  21.7 days
Radius     1378775 km      22.88 Rs
Rad_cyl    1378748 km      22.88 Rs
Z_ht_cyl      8601 km       0.14 Rs
Mag_L          22.88
Semi_axs   1500548 km      24.90 Rs
Eccentricity     0.837
Inclination      0.36 deg
Sun_range        9.65 AU
Earth_range     10.02 AU
--- DSN ELEV -- D/L -- U/L --------
Goldstone       17.7   45.7
Canberra        48.1   17.8
Madrid         -52.2  -35.8
------- LOOK DIRECTION INFO -------
FOV             25.8 deg  449.5 mrad
RA             -82.882 deg
DEC              3.215 deg
Crosses_RP_@     0.000 Rs
EPS              5.498 deg *
SEP             65.541 deg
ORS b/s angle   99.7 deg
ORS rad angle  165.7 deg
```

Point NEG_Y at SATURN and align NEG_Z = Up with USER VEC

User vector - RA: +37.500 DEC: +83.700 Paste Current RA/DEC

Tilt L | Up | Tilt R | Left | Reset | Right | Image | Down | Hi Res

Zoom Out | Fill Screen | Zoom In | Labels | Axes | Orbits | Vectors | FOVs | Lat/lons

Year | Month | Day | Hour | Minute | Second

Turn analyzer: SATURN to EARTH about Z on RWA = 10.0 min / 94.7 deg Event

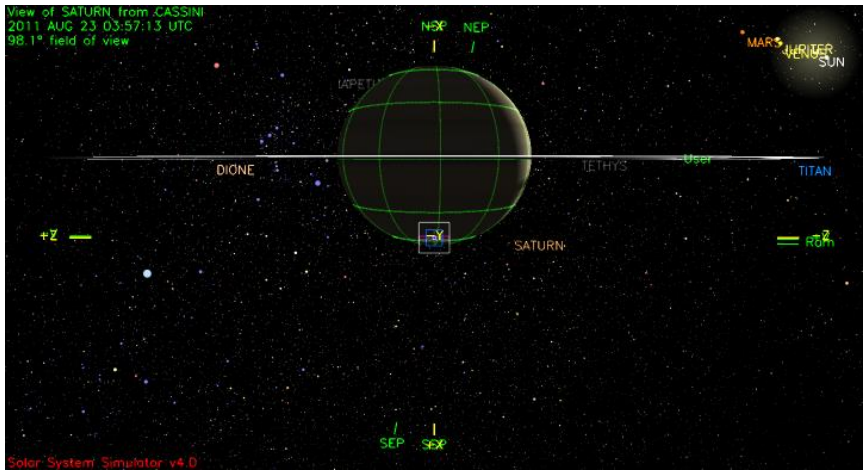
BODY	S/C OCC?	SAT OCC?	RANGE (km)	RANGE (Rs)	ALTITUDE (km)	ALTITUDE (Rs)	PHASE (deg)	ANGLR_DIAMETER (deg	mrad)	SUB_S/C LON	SUB_S/C LAT	ΔLON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE_FROM SATRN	ANGLE_FROM EARTH	ANGLE_FROM RAM
SATURN	--	--	1378775	22.88	1318507	21.88	80.3	5.01	87.45	250	0	0	5.5	0	0.0	94.7	26.3
MIMAS	--	--	1543734	25.61	1543528	25.61	77.2	0.02	0.27	335	-1	-152	15.8	-2593	3.2	97.8	29.5
ENCELADUS	--	--	1144436	18.99	1144180	18.98	82.4	0.03	0.45	171	0	10	11.6	-27	2.2	92.6	24.1
TETHYS	--	--	1113686	18.48	1113148	18.47	74.4	0.06	0.97	209	-0	-23	7.5	-2453	5.9	100.6	32.2
DIONE	--	--	1439066	23.88	1438504	23.87	65.3	0.04	0.78	287	0	-91	6.3	174	15.2	109.8	41.5
RHEA	--	--	933367	15.49	932602	15.47	66.3	0.09	1.64	223	-0	-26	4.7	2960	14.3	108.8	40.6
TITAN	--	--	1813561	30.09	1810986	30.05	37.8	0.16	2.84	310	0	-87	2.9	2045	43.7	137.7	70.0
HYPERION	--	--	2854883	47.37	2854737	47.37	96.6	0.01	0.11	42	-19	149	9.9	-25610	16.7	78.2	9.6
IAPETUS	--	--	4533292	75.22	4532545	75.21	110.8	0.02	0.33	18	-4	133	8.7	-825109	35.0	63.6	12.6
PHOEBE	--	--	12690138	210.56	12690025	210.56	141.3	0.00	0.02	327	-9	108	3.9	-1808077	66.3	32.9	40.4
SATURN	--	--	1378775	22.88	1318507	21.88	80.3	5.01	87.45	250	0	0	5.5	0	0.0	94.7	26.3

NEG_Z to 37.6/83.7

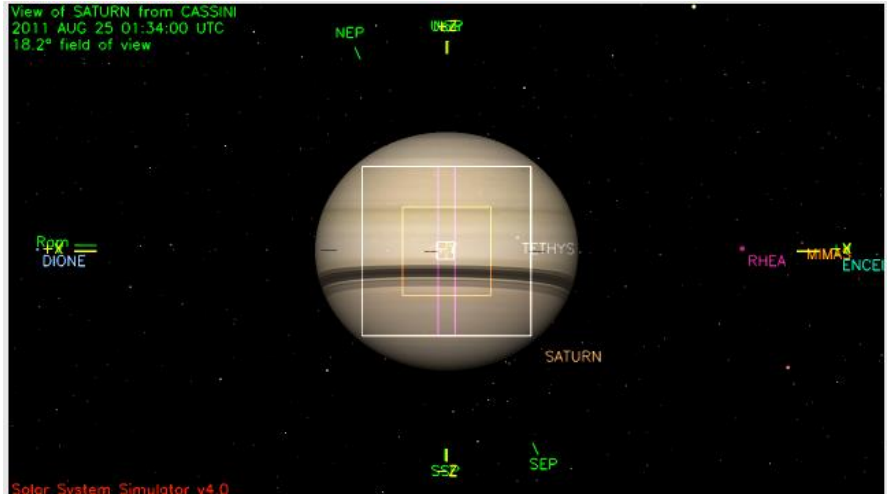
Flipped to POS_Z around 151 Periapse

Waypoints Chosen (2 of 2)

ISS_NAC to Saturn (0,0,10); NEG_X to NSP — 152 Periapse



ISS_NAC to Saturn; POS_Z to 37.6/83.7 — Periapse Outbound to End of Segment



Y bias and RSS

No Biases during (overlapping) the RSS science observations: Occultation experiments (rings, Saturn atmospheric, Titan, Satellite), Bistatic observations and prime gravity observations.

•RSS prefers no biases between the time NAV delivers a predicted OD for LMB_E151_Saturn_RSS_Occ_Ing and the end of the occultation experiment (211-213T06:11:00). This may affect the 1-hour bias window currently scheduled 2011-212T17:06:00 – 2011-212T18:06:00.

For gravity observations, the requirement is no biases (thruster firing) in arcs devoted to gravity observations. A gravity arc is defined as the time between the start of the first tracking pass and the end of the last pass, so if there's a gap in between the tracking passes, there should be no biases there as well. Any firing in this arc would destroy the coherence of the trajectory and would lead to an unpredictable result. **TWT/OST to provide exact times of this no_bias arc**

Gravity Science Enhancements. Placing the Y-Bias during the first 90 minutes of the downlink is OK for inbound GSEs. Impact to outbound GSEs should be looked at on a case-by-case basis (contact Aseel), and the ones following a prime gravity observation would likely be more impacted by a Y-Bias than the ones following an occultation.

•2011-212T18:06:00 DSS-25
•2011-214T17:51:00 DSS-25

Notes & Liens (2 of 3)

- Pointing:
  - Collaborative primes
    - VIMS_151SA_ALPORIOCC001_PIE (with CIRS_151SA_ALPORIOCC001_VIMS)
    - VIMS_151SA_ALPCMIOCC001_PRIME (with CIRS_151SA_ALPCMIOCC001_VIMS)
    - ISS_151SA_WIND3HR00X (4 in series): collaborative with VIMS
    - ISS_151SA_WIND5HR00X (2 in series): collaborative with CIRS and VIMS
    - ISS_151SA_MOVIE00X (2 in series): collaborative with CIRS
    - ISS_152SA_WIND5HR00X (4 in series): collaborative with CIRS, 002 & 003 in this series also collaborative with VIMS.
    - ISS_152SA_WIND4HR00X (4 in series): collaborative with VIMS
    - VIMS_152SA_OMICETOCC001_PIE (with CIRS_152SA_OMICETOCC001_VIMS)
    - CIRS_152SA_LIMBINT001_PIE (with VIMS_152SA_ALPORIOCC001_CIRS)
  - RBOT friendly secondaries used throughout the segment where they were safe.
  - Most observations using waypoint secondary; if they differ it is **intended and should not** be changed without TWT approval.
  - The following SPASS Gaps have been approved:

Request	Request	Gap Start	Gap Duration	Gap End
UVIS_151SA_EUVFUV001_PRIME	CIRS_151SA_NADIROCC001_PIE	2011-212T12:17:00	000T00:09:00	2011-212T12:26:00
VIMS_151SA_HRESPEARL001_PRIME	SP_151EA_DLTURN214_PRIME	2011-214T15:38:00	000T00:03:00	2011-214T15:41:00
ISS_151SA_WIND3HR004_PRIME	SP_151EA_DLTURN220_PRIME	2011-220T15:16:00	000T00:10:00	2011-220T15:26:00

Notes & Liens (3 of 3)

- One observation > 3 hours tracking a body through > 60 degrees:
- CIRS_152SA_LIMBINT001_PIE 2011-235T0250:00 – 2011-235T09:10:00. Will design to move to inertial point after 3 hours for approximately 40 minutes.
- Data Volume:
  - No Data Volume issues, no carryover. No dual playbacks.
- DSN:

  Two additional DSN stations required for RSS GSE:
  - SP_151NA_G34BWGRSS212_SP (DSS-25) 2011-212T18:06:00 - 2011-213T03:06:00
  - SP_151NA_G34BWGRSS214_SP (DSS-25) 2011-214T17:51:00 - 2011-215T02:51:00
- Negotiated RSS Opmodes:
  - RSS3RWAS
  - RSSKRWAP-FULL
- Special Activities:
  - RSS Saturn Atmospheric Occultation 2011-213T03:26:00 – 2011-213T05:51:00
  - No Kodak Moments
  - No support images
  - Opnavs; one (NAV_151SK_OPNAV161_PRIME – 2011-216T07:30:00)
  - Sequence Liens:
  - RSS Keep-Out Zone for their Occultation activity on DOY213:

    RSS prefers no biases between the time NAV delivers a predicted OD for LMB_E151_Saturn_RSS_Occ_Ing and the end of the occultation experiment (211-213T06:11:00). This may affect the 1-hour bias window currently scheduled 2011-212T17:06:00 – 2011-212T18:06:00.
  - Juno Launch window DOY217-237