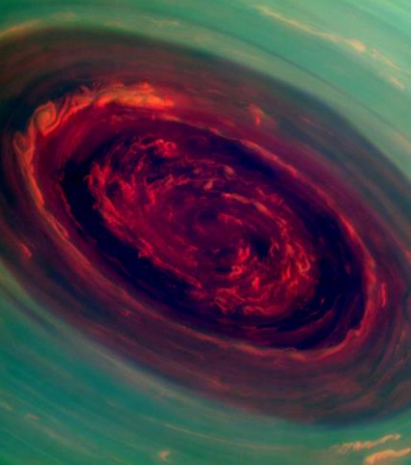

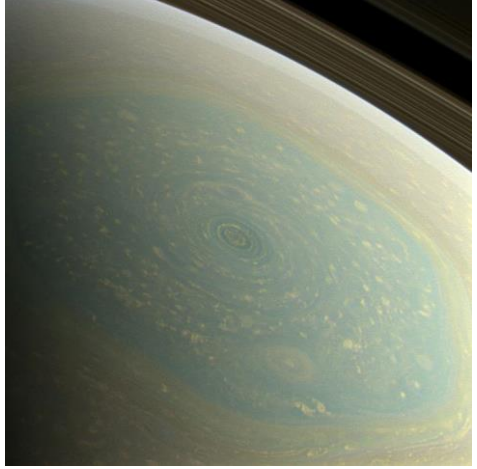
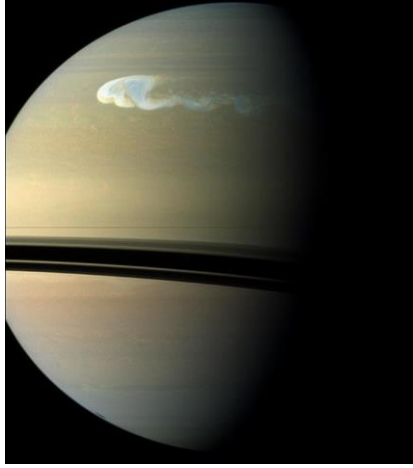

Science Planning & Sequence Team
CASSINI

SATURN TARGET WORKING TEAM

Rev 137_138 Segment Legacy Package

Segment Boundary: September 6, 2010 – September 24, 2010
2010-249T06:33:00 – 2010-267T05:17:00 (SCET)

Integration Began 01/11/2010
Segment Delivered to S63 Sequence 03/08/2010
Lead Integrator was Leo Cheng

Legacy Package Assembled by Shawn Boll

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

Segment Overview and Final Products

Segment Summary

- This was a nearly 18 day long segment at the end of the Equinox Mission, during an equatorial orbit. This period of time was referred to as the “Bridge” between the first and second extended missions. It began outbound from Rev 137 periapse and continued through Rev 138 periapse, nearly covering an entire orbit.

- Saturn science at apoapse was comprised of CAKE (Cassini Apoapse for Kronian Exploration) template activities such as ORS wind studies, CIRS composition and mapping, and UVIS EUV/FUVs.

- Out-of-discipline activities at apoapse included several observations of small satellites to better determine their orbital characteristics, looks at irregular rocks by ISS, Titan cloud monitoring, and MAG calibration rolls.

- At Periapse, Saturn observations included VIMS regional mapping, UVIS EUV/FUVs, UVIS solar and stellar occultations, a VIMS stellar occultation, and CIRS limb integration. Enceladus was also observed, including a look at it’s plumes. VIMS performed a hi-phase observation of the rings.

- This segment included a GMB (Ground Movable Block) for the solar occultation to protect it from potential shifts in the reference trajectory, and a rare custom period (teams handing off pointing control to each other rather than returning to a waypoint).

- ORS boresight solar viewing issues were encountered, impacting observation planning. The flight software constraints were managed during the hi-phase rings measurement, which occurred when the Sun was blocked by Saturn.

Final Sequenced SPASS (1 of 2)

Saturn 137_138 Legacy

	Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
	Sequence S63, length = 35 days		2010-249T06:33:00		034T21:44:00	2010-284T04:17:00			
	SATURN REV_137_138 Segment		2010-249T06:33:00		017T22:44:00	2010-267T05:17:00			
	SP_137EA_S63IVP249_PRIME	M	2010-249T06:33:00		000T00:06:00	2010-249T06:39:00	XBAND to Earth	POS_X to NEP	S63 IVP Gap
	SP_137SA_WAYPTTURN249_PRIME	M	2010-249T06:39:00		000T00:40:00	2010-249T07:19:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	
	NEW WAYPOINT		**2010-249T07:19:00**		**006T13:43:00**	**2010-255T21:02:00**	**ISS_NAC to Saturn**	**NEG_Z to 84.5/84.1**	
Gap 1	CIRS_137SA_MIRMAP002_PRIME	M	2010-249T07:19:00		000T23:04:00	2010-250T06:23:00	CIRS_FP3 to Saturn	NEG_Z to 84.5/84.1	
	ISS_137OT_SATELLORB005_PRIME	M	2010-250T06:23:00		000T00:30:00	2010-250T06:53:00	ISS_NAC to Satellites	NEG_Z to 84.5/84.1	
	SP_137EA_DLTURN250_PRIME	M	2010-250T06:53:00		000T00:40:00	2010-250T07:33:00	XBAND to Earth	NEG_Y to 275.1/-3.42	
	SP_137EA_M34BWGNON250_PRIME	C, M	2010-250T07:33:00		000T09:00:00	2010-250T16:33:00	XBAND to Earth	NEG_Y to 275.1/-3.42	NEG_Y to 275.10/-3.42, (NEG_Y to Saturn (0,0,-9.5)), MIMI
	SP_137SA_WAYPTTURN250_PRIME	M	2010-250T16:33:00		000T00:40:00	2010-250T17:13:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	
	ISS_137SA_WIND5HR001_PRIME	M	2010-250T17:13:00		000T05:00:00	2010-250T22:13:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	collaborative with VIMS
	CIRS_137SA_COMPSIT001_PRIME	M	2010-250T22:13:00		000T06:00:00	2010-251T04:13:00	CIRS_FP1 to Saturn	NEG_Z to 84.5/84.1	
	ISS_137SA_WIND5HR002_PRIME	M	2010-251T04:13:00		000T05:00:00	2010-251T09:13:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	collaborative with VIMS
Gap 2	UVIS_137SA_EUVFUV002_PRIME	M	2010-251T09:13:00		000T09:55:00	2010-251T19:08:00	UVIS_FUV to Saturn	NEG_Z to 84.5/84.1	
	ISS_137TI_M120R2HZ250_PRIME	C, M, V	2010-251T19:08:00	E137_M120R2HZ250+000T00:00:00	000T01:30:00	2010-251T20:38:00	CIRS_FPB to Titan	NEG_Z to 84.5/84.1	
	SP_137EA_DLTURN251_PRIME	M	2010-251T20:38:00		000T00:40:00	2010-251T21:18:00	XBAND to Earth	NEG_X to 275.216/-52.68	
	ENGR_137SC_KPTYBIAS251_PRIME	M	2010-251T21:18:00		000T01:00:00	2010-251T22:18:00	XBAND to Earth		
	SP_137EA_C70METNON251_PRIME	C, M	2010-251T22:18:00		000T07:25:00	2010-252T05:43:00	XBAND to Earth	NEG_X to 275.216/-52.68	NEG_X to 302 /87, CDA
	SP_137SA_WAYPTTURN252_PRIME	M	2010-252T06:18:00		000T00:40:00	2010-252T06:58:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	
	MAG_137SU_CALROLL001_PRIME	M	2010-252T06:58:00		000T06:45:00	2010-252T13:43:00	NEG_X to Earth (0.0,0.0,-30.0 deg. offset)	Rolling	
	ISS_137SA_WIND5HR003_PRIME	M	2010-252T13:43:00		000T05:00:00	2010-252T18:43:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	collaborative with VIMS
	CIRS_137SA_COMPSIT002_PRIME	M	2010-252T18:43:00		000T06:00:00	2010-253T00:43:00	CIRS_FP1 to Saturn	NEG_Z to 84.5/84.1	
	ISS_137SA_WIND5HR004_PRIME	M	2010-253T00:43:00		000T05:00:00	2010-253T05:43:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	collaborative with VIMS
Gap 3	CIRS_137SA_COMPSIT003_PRIME	M	2010-253T05:43:00		000T06:00:00	2010-253T11:43:00	CIRS_FP1 to Saturn	NEG_Z to 84.5/84.1	
	ISS_137SA_WIND5HR005_PRIME	M	2010-253T11:43:00		000T05:00:00	2010-253T16:43:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	collaborative with VIMS
	ISS_137OT_SATELLORB006_PRIME	M	2010-253T17:43:00		000T00:30:00	2010-253T18:13:00	ISS_NAC to Satellites	NEG_Z to 84.5/84.1	
	ISS_137TI_M90R2CLD254_PRIME	C, M, V	2010-253T18:13:00	E137_M90R2CLD254+000T00:00:00	000T01:30:00	2010-253T19:43:00	CIRS_FPB to Titan	NEG_Z to 36.764/76.478	
	SP_137EA_DLTURN253_PRIME	M	2010-253T20:23:00		000T00:40:00	2010-253T21:03:00	XBAND to Earth	NEG_Y to 275.403/36.34	
	SP_137EA_C70METNON253_PRIME	C, M	2010-253T21:03:00		000T09:00:00	2010-254T06:03:00	XBAND to Earth	Rolling/SRU	NEG_Y to 275.48/-3.66, (NEG_Y to Saturn (0,0,-9.5)), MIMI
	SP_137SA_WAYPTTURN254_PRIME	M	2010-254T06:03:00		000T00:40:00	2010-254T06:43:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	
Gap 4	CIRS_137SA_COMPSIT004_PRIME	M	2010-254T06:43:00		001T02:39:00	2010-255T09:22:00	CIRS_FP1 to Saturn	NEG_Z to 84.5/84.1	
	ISS_137OT_HYRPHA047_PRIME	M	2010-255T13:12:00		000T04:10:00	2010-255T17:22:00	UVIS_FUV to Rocks	NEG_Z to Sun	
	NAV_137SK_OPNAV551_PRIME	M	2010-255T17:22:00		000T01:30:00	2010-255T18:52:00	ISS_NAC to Satellites	NEG_Z to 84.5/84.1	Starts at waypoint, ends at same waypoint
	SP_137EA_DLTURN255_PRIME	M	2010-255T18:52:00		000T00:40:00	2010-255T19:32:00	XBAND to Earth	NEG_X to 275.886/-57.69	
	SP_137EA_YBIAS255_PRIME	M	2010-255T19:32:00		000T01:30:00	2010-255T21:02:00	XBAND to Earth	NEG_X to 302.0/87.0	
	NEW WAYPOINT		**2010-255T21:02:00**		**000T09:40:00**	**2010-256T06:42:00**	**XBAND to Earth**	**NEG_X to 302.0/87.0**	
	SP_137EA_C34HEFNON255_PRIME	C, E, M	2010-255T21:02:00		000T09:00:00	2010-256T06:02:00	XBAND to Earth	4_Hr_Rolling	Export from ap_downlink
	Apoapse Per = 19.9 d, inc ...		2010-256T00:46:05		000T00:00:01	2010-256T00:46:06			
	SP_138SA_WAYPTTURN256_PRIME	M	2010-256T06:02:00		000T00:03:00	2010-256T06:05:00	NEG_Y to 193.33/51.61	NEG_Z to 62.9/27.2	
	SP_138SA_WAYPTTURN556_PRIME	M	2010-256T06:05:00		000T00:37:00	2010-256T06:42:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	second turn of a 2-part turn
	NEW WAYPOINT		**2010-256T06:42:00**		**000T14:20:00**	**2010-256T21:02:00**	**ISS_NAC to Saturn**	**NEG_Z to 84.5/84.1**	
	CIRS_138SA_COMPSIT001_PRIME	M	2010-256T06:42:00		000T10:10:00	2010-256T16:52:00	CIRS_FP1 to Saturn	NEG_Z to 84.5/84.1	
	ISS_138OT_SATELLORB001_PRIME	M	2010-256T16:52:00		000T00:30:00	2010-256T17:22:00	ISS_NAC to Satellites	NEG_Z to 84.5/84.1	
Gap 5	ISS_138TI_M90R3CLD256_PRIME	C, M, V	2010-256T17:22:00	E138_M90R3CLD256+000T00:00:00	000T01:30:00	2010-256T18:52:00	CIRS_FPB to Titan	NEG_Z to 84.5/84.1	
	SP_138EA_DLTURN256_PRIME	M	2010-256T18:52:00		000T00:40:00	2010-256T19:32:00	XBAND to Earth	NEG_Y to 275.82/-3.87	
	SP_138EA_YBIAS256_PRIME	M	2010-256T19:32:00		000T01:30:00	2010-256T21:02:00	XBAND to Earth	NEG_Y to 275.82/-3.87	
	NEW WAYPOINT		**2010-256T21:02:00**		**000T09:40:00**	**2010-257T06:42:00**	**XBAND to Earth**	**NEG_Y to 275.82/-3.87**	
	SP_138EA_C34HEFNON256_PRIME	C, M	2010-256T21:02:00		000T07:55:00	2010-257T04:57:00	XBAND to Earth	NEG_Y to 275.82/-3.87	NEG_Y to 275.82/-3.87, (NEG_Y to Saturn (0,0,-9.5)), MIMI
	SP_138SA_WAYPTTURN257_PRIME	M	2010-257T06:02:00		000T00:40:00	2010-257T06:42:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	
	NEW WAYPOINT		**2010-257T06:42:00**		**000T23:45:00**	**2010-258T06:27:00**	**ISS_NAC to Saturn**	**NEG_Z to 84.5/84.1**	
	UVIS_138SA_EUVFUV002_PRIME	M	2010-257T06:42:00		000T13:25:00	2010-257T20:07:00	UVIS_FUV to Saturn	NEG_Z to 84.5/84.1	
	SP_138EA_DLTURN257_PRIME	M	2010-257T20:07:00		000T00:40:00	2010-257T20:47:00	XBAND to Earth	NEG_X to 280.0/87.0	
	SP_138EA_C34HEFNON257_PRIME	C, M	2010-257T20:47:00		000T09:00:00	2010-258T05:47:00	XBAND to Earth	NEG_X to 280.0/87.0	NEG_X to 280 /87, CDA
	SP_138SA_WAYPTTURN258_PRIME	M	2010-258T05:47:00		000T00:40:00	2010-258T06:27:00	UVIS_SOL_OFF to Sun	NEG_X to 84.5/84.1	
	NEW WAYPOINT		**2010-258T06:27:00**		**001T00:00:00**	**2010-259T06:27:00**	**UVIS_SOL_OFF to Sun**	**NEG_X to 84.5/84.1**	
	ISS_138SA_WIND2HR001_PRIME	M	2010-258T06:27:00		000T02:00:00	2010-258T08:27:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	collaborative with VIMS
	CIRS_138SA_COMPSIT002_PRIME	M	2010-258T08:27:00		000T09:00:00	2010-258T17:27:00	CIRS_FP1 to Saturn	NEG_Z to 84.5/84.1	
	ISS_138SA_WIND2HR002_PRIME	M	2010-258T17:27:00		000T02:00:00	2010-258T19:27:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	collaborative with VIMS
	SP_138EA_DLTURN258_PRIME	M	2010-258T20:07:00		000T00:40:00	2010-258T20:47:00	XBAND to Earth	NEG_Y to 276.06/-4.04	
	SP_138EA_C34BWGOTP258_PRIME	C, M, N	2010-258T20:47:00		000T09:00:00	2010-259T05:47:00	XBAND to Earth	NEG_Y to 276.06/-4.04	NEG_Y to 276.06/-4.04, (NEG_Y to Saturn (0,0,-9.5)), MIMI

Final Sequenced SPASS (2 of 2)

	Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
	SP_138SA_WAYPTTURN259_PRIME	M	2010-259T05:47:00		000T00:40:00	2010-259T06:27:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	
	NEW WAYPOINT		**2010-259T06:27:00**		**005T23:45:00**	**2010-265T06:12:00**	**ISS_NAC to Saturn**	**NEG_Z to 84.5/84.1**	
	CIRS_138SA_MIRMAP001_PRIME	M	2010-259T06:27:00		000T13:40:00	2010-259T20:07:00	CIRS_FP3 to Saturn	NEG_Z to 84.5/84.1	
	SP_138EA_DLTURN259_PRIME	M	2010-259T20:07:00		000T00:40:00	2010-259T20:47:00	XBAND to Earth	NEG_Y to 276.06/-4.04	
	SP_138EA_C70METOTB259_PRIME	C, E, M, N	2010-259T20:47:00		000T09:00:00	2010-260T05:47:00	XBAND to Earth	NEG_Y to 276.06/-4.04	NEG_Y to 276.06/-4.04, same as OTP
	SP_138SA_WAYPTTURN260_PRIME	M	2010-260T05:47:00		000T00:40:00	2010-260T06:27:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	
	UVIS_138SA_EUVFUV003_PRIME	M	2010-260T06:27:00		000T16:00:00	2010-260T22:27:00	UVIS_FUV to Saturn	NEG_Z to 84.5/84.1	
Gap 6	ISS_138OT_SATELLORB003_PRIME	M	2010-260T22:27:00		000T00:30:00	2010-260T22:57:00	ISS_NAC to Satellites	NEG_Z to 84.5/84.1	
	ISS_138OT_KIVSUP013_PRIME	M	2010-260T22:57:00		000T07:10:00	2010-261T06:07:00	UVIS_FUV to Rocks	NEG_Z to Sun	
	SP_138EA_DLTURN261_PRIME	M	2010-261T06:07:00		000T00:40:00	2010-261T06:47:00	XBAND to Earth (0.0,0.0,10.0 deg. offset)	NEG_X to 280.0/87.0	
	SP_138EA_M34BWGNON261_PRIME	C, M	2010-261T06:47:00		000T09:00:00	2010-261T15:47:00	XBAND to Earth (0.0,0.0,10.0 deg. offset)	Rolling/SRU	NEG_X to 280 /87, CDA
	SP_138SA_WAYPTTURN261_PRIME	M	2010-261T15:47:00		000T00:40:00	2010-261T16:27:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	
	ISS_138SA_WIND2HR003_PRIME	M	2010-261T16:27:00		000T02:00:00	2010-261T18:27:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	collaborative with VIMS
	CIRS_138SA_COMPSIT003_PRIME	M	2010-261T18:27:00		000T09:00:00	2010-262T03:27:00	CIRS_FP1 to Saturn	NEG_Z to 84.5/84.1	
	ISS_138SA_WIND2HR004_PRIME	M	2010-262T03:27:00		000T02:00:00	2010-262T05:27:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	collaborative with VIMS
	SP_138EA_DLTURN262_PRIME	M	2010-262T06:07:00		000T00:40:00	2010-262T06:47:00	XBAND to Earth	NEG_X to 280.0/87.0	
	SP_138EA_M34BWGNON262_PRIME	C, M	2010-262T06:47:00		000T09:00:00	2010-262T15:47:00	XBAND to Earth	Rolling/SRU	NEG_X to 280 /87, CDA
	SP_138SA_WAYPTTURN262_PRIME	M	2010-262T15:47:00		000T00:40:00	2010-262T16:27:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	
	CIRS_138SA_MIRMAP002_PRIME	M	2010-262T16:27:00		000T13:40:00	2010-263T06:07:00	CIRS_FP3 to Saturn	NEG_Z to 84.5/84.1	
	SP_138EA_DLTURN263_PRIME	M	2010-263T06:07:00		000T00:40:00	2010-263T06:47:00	XBAND to Earth	NEG_Y to 276.61/-4.86	
	SP_138EA_M34BWGNON263_PRIME	C, M	2010-263T06:47:00		000T07:25:00	2010-263T14:12:00	XBAND to Earth	Rolling/SRU	NEG_Y to 276.61/-4.86, (NEG_Y to Saturn (0,0,-9.5)), MIMI
	SP_138EA_WAYPTTURN263_PRIME	M	2010-263T15:47:00		000T00:40:00	2010-263T16:27:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	
	UVIS_138SA_EUVFUV004_PRIME	M	2010-263T16:27:00		000T13:40:00	2010-264T06:07:00	UVIS_FUV to Saturn	NEG_Z to 84.5/84.1	
	SP_138EA_DLTURN264_PRIME	M	2010-264T06:07:00		000T00:40:00	2010-264T06:47:00	XBAND to Earth	NEG_X to NSP	
	SP_138EA_M70METOTP264_PRIME	C, M, N	2010-264T06:47:00		000T09:00:00	2010-264T15:47:00	XBAND to Earth	4_Hr_Rolling	NEG_X to NSP
	SP_138SA_WAYPTTURN264_PRIME	M	2010-264T15:47:00		000T00:40:00	2010-264T16:27:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	
Gap 7	ISS_138TI_M180R2HZ264_PRIME	C, M	2010-264T16:27:00	E138_M180R2HZ264+000T00:00:00	000T01:30:00	2010-264T17:57:00	ISS_NAC to Titan	NEG_Z to 84.5/84.1	
	VIMS_138SA_REGMAP001_PRIME	M	2010-264T17:57:00		000T01:55:00	2010-264T19:52:00	ISS_NAC to Saturn	NEG_Z to 84.5/84.1	Secondary: Neg Z to 84.5/84.1
	SP_138EA_DLTURN464_PRIME	M	2010-264T19:52:00		000T00:40:00	2010-264T20:32:00	XBAND to Earth	NEG_X to NSP	
	SP_138EA_C70METOTB264_PRIME	C, E, M, N	2010-264T20:32:00		000T09:00:00	2010-265T05:32:00	XBAND to Earth	4_Hr_Rolling	NEG_X to NSP, same as OTP
	SP_138SA_WAYPTTURN265_PRIME	M	2010-265T05:32:00		000T00:40:00	2010-265T06:12:00	UVIS_SOL_OFF to Sun	NEG_X to 84.5/84.1	Occ waypoint.
Gap 8	**NEW WAYPOINT**		**2010-265T06:12:00**		**000T15:53:00**	**2010-265T22:05:00**	**UVIS_SOL_OFF to Sun**	**NEG_X to 84.5/84.1**	
	UVIS_138SA_EUVFUV005_PRIME	M	2010-265T06:12:00		000T06:32:00	2010-265T12:44:00	UVIS_FUV to Saturn	NEG_X to 84.5/84.1	
	SP_138SA_DEADTIME265_PRIME	**M**	**2010-265T12:44:00**		**000T00:20:00**	**2010-265T13:04:00**	**UVIS_SOL_OFF to Sun**	**NEG_X to 84.5/84.1**	
	VIMS_138RI_HIPHASE001_PRIME	M	2010-265T13:04:00	GMB_E138_Solar_Occ_Egress-000T03:35:00	000T03:03:00	2010-265T16:07:00	VIMS_IR to Rings	PIC	
	UVIS_138SA_USUNOCC001_PRIME	M, V	2010-265T16:07:00	GMB_E138_Solar_Occ_Egress-000T00:32:00	000T02:49:00	2010-265T18:56:00	UVIS_SOL_OFF to Sun	NEG_X to 16.5/-2.2	THis is a PIE
	SP_138SA_DEADTIME465_PRIME	**M**	**2010-265T18:56:00**		**000T00:20:00**	**2010-265T19:16:00**	**UVIS_SOL_OFF to Sun**	**NEG_X to 84.5/84.1**	
	ISS_138EN_PLMHRHP001_PRIME	C, M, U, V	2010-265T19:16:00		000T02:09:00	2010-265T21:25:00	ISS_NAC to Enceladus	NEG_Z to NSP	
Gap 9	SP_138SA_WAYPTTURN465_PRIME	E, M	2010-265T21:25:00		000T00:40:00	2010-265T22:05:00	ISS_NAC to Saturn	NEG_X to 84.5/84.1	
	NEW WAYPOINT		**2010-265T22:05:00**		**001T07:52:00**	**2010-267T05:57:00**	**ISS_NAC to Saturn**	**NEG_X to 84.5/84.1**	
	VIMS_138SA_ALPORIOCC001_PRIME	C, M	2010-265T22:05:00		000T01:05:00	2010-265T23:10:00	CIRS_FPB to 88.793/7.407	NEG_X to 84.5/84.1	COLLABORATIVE
	UVIS_138ST_URBETORI001_PRIME	M, U	2010-265T23:10:00		000T02:07:00	2010-266T01:17:00	UVIS_HSP to 78.634/-8.202	NEG_X to 96.445/81.463	PIE
	Periapse R = 3.456 Rs, lat ...		2010-265T23:58:56		000T00:00:01	2010-265T23:58:57			
	CIRS_138SA_LIMBINT001_PRIME	M	2010-266T01:17:00		000T06:00:00	2010-266T07:17:00	CIRS_FPB to Saturn	NEG_X to 84.5/84.1	
	Begin custom period		**2010-266T07:17:00**		**000T00:00:01**	**2010-266T07:17:01**			
Gap 10	UVIS_138SA_EUVFUV006_PRIME	M	2010-266T07:17:00		000T05:28:00	2010-266T12:45:00	UVIS_FUV to Saturn	NEG_Z to 84.5/84.1	Pick up at ISS_NAC to Saturn, NEG_X to 84.5/84.1; Hand off at ISS_NAC to Saturn, NEG_X to 302.314/3.946.
	ISS_138EN_GLOCOLR001_PRIME	C, M, U, V	2010-266T12:45:00		000T02:00:00	2010-266T14:45:00	ISS_NAC to Enceladus (-0.049,90.0,0.017 deg. offset)	NEG_X to 77.0/82.3	Pick up at ISS_NAC to Saturn, NEG_X to 302.314/3.946; Hand off at ISS_NAC to Saturn, NEG_X to 312.552/53.145.
Gap 11	UVIS_138SA_EUVFUV007_PRIME	M	2010-266T14:45:00		000T04:52:00	2010-266T19:37:00	UVIS_FUV to Saturn	NEG_Z to 84.5/84.1	Pick up at ISS_NAC to Saturn, NEG_X to 312.552/53.145; Hand off at ISS_NAC to Saturn, NEG_X to 84.5/84.1.
	End custom period		**2010-266T19:37:00**		**000T00:00:01**	**2010-266T19:37:01**			
	SP_138EA_DLTURN266_PRIME	M	2010-266T19:37:00		000T00:05:00	2010-266T19:42:00	ISS_NAC to Saturn	NEG_X to NSP	
	SP_138EA_DLTURN366_PRIME	M	2010-266T19:42:00		000T00:35:00	2010-266T20:17:00	XBAND to Earth	NEG_X to NSP	
	ENGR_138SC_KPTYBIAS266_PRIME	M	2010-266T20:17:00		000T01:00:00	2010-266T21:17:00	XBAND to Earth		
	SP_138EA_C70METNON266_PRIME	C, M	2010-266T21:17:00		000T08:00:00	2010-267T05:17:00	XBAND to Earth	NEG_X to NSP	NEG_X to NSP

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_137EA_M34BWGNON250_PRIME	250 07:33	250 16:33	0	763	106	869	3316	2447	0	230	53	1152	521	-631	0	0%	631
SP_137EA_C70METNON251_PRIME	251 22:18	252 05:43	631	2014	126	2770	3316	546	0	219	44	3033	2603	-430	0	0%	430
SP_137EA_C70METNON253_PRIME	253 21:03	254 06:03	430	2610	166	3206	3316	110	0	220	53	3480	2983	-497	0	0%	497
SP_137EA_C34HEFNON255_PRIME	255 21:02	256 06:02	497	1041	165	1703	3316	1613	0	230	53	1986	668	-1319	0	0%	1318
SP_138EA_C34HEFNON256_PRIME	256 21:02	257 04:57	1318	432	63	1814	3316	1502	0	192	47	2053	596	-1457	-211	-1%	1456
SP_138EA_C34HEFNON257_PRIME	257 20:47	258 05:47	1456	572	67	2095	3316	1221	0	220	53	2369	659	-1710	-211	-1%	1710
SP_138EA_C34BWGOTP258_PRIME	258 20:47	259 05:47	1710	856	63	2629	3316	687	0	220	53	2903	489	-2414	-211	-1%	2414
SP_138EA_C70METOTB259_PRIME	259 20:47	260 05:47	2414	412	63	2889	3316	427	0	220	53	3163	2950	-213	-211	0%	212
SP_138EA_M34BWGNON261_PRIME	261 06:47	261 15:47	212	1000	106	1318	3316	1998	0	220	53	1591	515	-1076	-211	-1%	1076
SP_138EA_M34BWGNON262_PRIME	262 06:47	262 15:47	1076	1199	63	2338	3316	978	0	220	53	2612	515	-2097	-211	-1%	2097
SP_138EA_M34BWGNON263_PRIME	263 06:47	263 14:12	2097	917	63	3077	3316	239	0	180	44	3300	435	-2865	-211	0%	2865
SP_138EA_M70METOTP264_PRIME	264 06:47	264 15:47	2865	593	70	3528	3316	-211	0	220	53	3589	2374	-1216	309	2%	1215
SP_138EA_C70METOTB264_PRIME	264 20:32	265 05:32	1215	271	20	1507	3316	1809	0	979	53	2539	2848	309	309	2%	0
SP_138EA_C70METNON266_PRIME	266 21:17	267 05:17	0	2377	168	2545	3316	771	0	206	47	2798	2654	-145	0	0%	144

* NOTE: Negative SSR (P4) Margins did not result in data loss due to compression/under-utilization.

Final Sequenced SMT and Data Volume (2 of 3)

DATA VOLUME REPORT --- TRANSFER FRAME OVERHEAD NOT INCLUDED

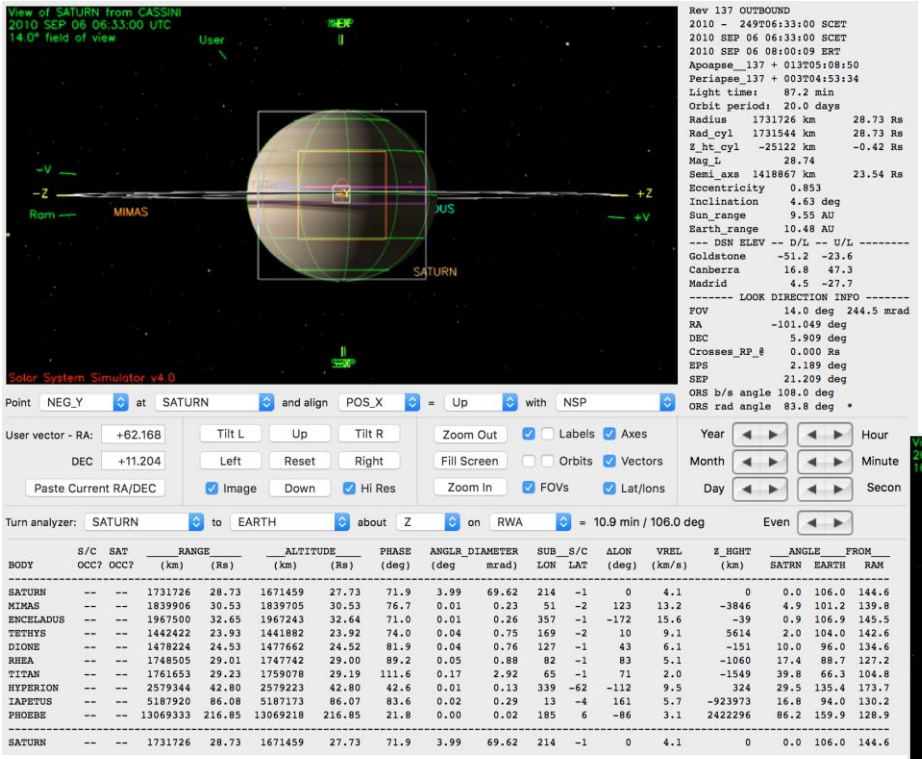
Event	Start doy hh:mm	End doy hh:mm	CAPS (Mb)	CDA (Mb)	CIRS (Mb)	INMS (Mb)	ISS (Mb)	MAG (Mb)	MIMI (Mb)	RADAR (Mb)	RPWS (Mb)	UVIS (Mb)	VIMS (Mb)	PROBE (Mb)	ENGR (Mb)	TOTAL (Mb)
OBSERVATION_NOR	249 06:33	250 07:33	90.0	47.2	332.2	13.3	40.0	44.5	108.0	0.0	81.0	0.0	0.0	0.0	104.5	860.6
SP_137EA_M34BWGNON250_PRIME	250 07:33	250 16:33	32.4	17.0	86.4	3.2	0.0	16.0	38.9	0.0	29.2	4.9	0.0	0.0	0.0	228.0
DAILY TOTAL SCIENCE	249 06:33	250 16:33	122.4	64.1	418.6	16.6	40.0	60.5	146.9	0.0	110.2	4.9	0.0	0.0	104.5	
OBSERVATION_NOR	250 16:33	251 22:18	107.1	56.1	64.8	10.7	730.5	52.9	128.5	0.0	96.4	238.2	510.0	0.0	124.3	2119.5
SP_137EA_C70METNON251_PRIME	251 22:18	252 05:43	55.3	14.0	72.0	2.7	0.0	13.2	32.0	0.0	24.0	4.1	0.0	0.0	0.0	217.3
DAILY TOTAL SCIENCE	250 16:33	252 05:43	162.4	70.1	136.8	13.4	730.5	66.1	160.6	0.0	120.4	242.2	510.0	0.0	124.	
OBSERVATION_NOR	252 05:43	253 21:03	118.4	74.2	114.3	16.1	986.3	82.0	169.9	0.0	127.4	98.1	800.0	0.0	164.4	2751.1
SP_137EA_C70METNON253_PRIME	253 21:03	254 06:03	22.7	17.0	86.4	3.2	0.0	16.0	38.9	0.0	29.2	4.9	0.0	0.0	0.0	218.3
DAILY TOTAL SCIENCE	252 05:43	254 06:03	141.1	91.2	200.7	19.3	986.3	98.0	208.8	0.0	156.6	103.1	800.0	0.0	164.4	
OBSERVATION_NOR	254 06:03	255 21:02	98.2	73.5	191.9	14.0	150.0	69.3	168.4	0.0	126.3	96.6	0.0	0.0	162.9	1151.2
OBSERVATION_SI	254 06:03	255 21:02	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_137EA_C34HEFNON255_PRIME	255 21:02	256 06:02	28.4	17.0	86.4	13.3	0.0	16.0	33.2	0.0	29.2	4.9	0.0	0.0	0.0	228.4
DAILY TOTAL SCIENCE	254 06:03	256 06:02	126.6	90.5	278.3	27.3	193.5	85.3	201.6	0.0	155.5	101.5	0.0	0.0	162.9	
OBSERVATION_NOR	256 06:02	256 21:02	54.0	28.3	94.8	5.4	75.0	26.7	48.6	0.0	48.6	36.8	10.0	0.0	62.7	490.9
SP_138EA_C34HEFNON256_PRIME	256 21:02	257 04:57	28.5	14.9	74.7	2.9	0.0	14.1	25.6	0.0	25.6	4.3	0.0	0.0	0.0	190.7
DAILY TOTAL SCIENCE	256 06:02	257 04:57	82.5	43.2	169.5	8.3	75.0	40.8	74.2	0.0	74.2	41.2	10.0	0.0	62.7	
OBSERVATION_NOR	257 04:57	257 20:47	57.0	29.9	11.7	5.7	88.0	28.2	51.3	0.0	51.3	243.6	0.0	0.0	66.2	632.8
SP_138EA_C34HEFNON257_PRIME	257 20:47	258 05:47	32.4	17.0	86.4	3.2	0.0	16.0	29.2	0.0	29.2	4.9	0.0	0.0	0.0	218.3
DAILY TOTAL SCIENCE	257 04:57	258 05:47	89.4	46.8	98.1	8.9	88.0	44.2	80.5	0.0	80.5	248.6	0.0	0.0	66.2	
OBSERVATION_NOR	258 05:47	258 20:47	54.0	28.3	64.8	5.4	285.0	26.7	48.6	0.0	48.6	47.1	240.0	0.0	62.7	911.2
SP_138EA_C34BWGOTP258_PRIME	258 20:47	259 05:47	32.4	17.0	86.4	3.2	0.0	16.0	29.2	0.0	29.2	4.9	0.0	0.0	0.0	218.3
DAILY TOTAL SCIENCE	258 05:47	259 05:47	86.4	45.3	151.2	8.6	285.0	42.7	77.8	0.0	77.8	52.0	240.0	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	259 05:47	259 20:47	54.0	28.3	196.8	5.4	0.0	26.7	48.6	0.0	48.6	0.0	0.0	0.0	62.7	471.1
SP_138EA_C70METOTB259_PRIME	259 20:47	260 05:47	32.4	17.0	86.4	3.2	0.0	16.0	29.2	0.0	29.2	4.9	0.0	0.0	0.0	218.3
DAILY TOTAL SCIENCE	259 05:47	260 05:47	86.4	45.3	283.2	8.6	0.0	42.7	77.8	0.0	77.8	4.9	0.0	0.0	62.7	
OBSERVATION_NOR	260 05:47	261 06:47	90.0	47.2	0.0	9.0	348.0	44.5	81.0	0.0	81.0	289.8	0.0	0.0	104.5	1094.9
SP_138EA_M34BWGNON261_PRIME	261 06:47	261 15:47	32.4	17.0	86.4	3.2	0.0	16.0	29.2	0.0	29.2	4.9	0.0	0.0	0.0	218.3
DAILY TOTAL SCIENCE	260 05:47	261 15:47	122.4	64.1	86.4	12.2	348.0	60.5	110.2	0.0	110.2	294.8	0.0	0.0	104.5	
OBSERVATION_NOR	261 15:47	262 06:47	54.0	28.3	129.6	5.4	285.0	26.7	48.6	0.0	48.6	47.1	515.0	0.0	62.7	1251.0
SP_138EA_M34BWGNON262_PRIME	262 06:47	262 15:47	32.4	17.0	86.4	3.2	0.0	16.0	29.2	0.0	29.2	4.9	0.0	0.0	0.0	218.3
DAILY TOTAL SCIENCE	261 15:47	262 15:47	86.4	45.3	216.0	8.6	285.0	42.7	77.8	0.0	77.8	52.0	515.0	0.0	62.7	
OBSERVATION_NOR	262 15:47	263 06:47	54.0	28.3	196.8	5.4	0.0	26.7	48.6	0.0	48.6	0.0	500.0	0.0	62.7	971.1
SP_138EA_M34BWGNON263_PRIME	263 06:47	263 14:12	26.7	14.0	69.3	2.7	0.0	13.2	24.0	0.0	24.0	4.1	0.0	0.0	0.0	178.0
DAILY TOTAL SCIENCE	262 15:47	263 14:12	80.7	42.3	266.1	8.1	0.0	39.9	72.6	0.0	72.6	4.1	500.0	0.0	62.7	
OBSERVATION_NOR	263 14:12	264 06:47	59.7	31.3	17.1	6.0	88.0	29.5	53.7	0.0	53.7	248.4	0.0	0.0	69.3	656.8
SP_138EA_M70METOTP264_PRIME	264 06:47	264 15:47	32.4	17.0	86.4	3.2	0.0	16.0	29.2	0.0	29.2	4.9	0.0	0.0	0.0	218.3
DAILY TOTAL SCIENCE	263 14:12	264 15:47	92.1	48.3	103.5	9.2	88.0	45.5	82.9	0.0	82.9	253.4	0.0	0.0	69.3	
OBSERVATION_NOR	264 15:47	264 20:32	17.1	9.0	21.6	1.7	60.0	8.4	15.4	0.0	15.4	0.0	120.0	0.0	19.9	288.5
SP_138EA_C70METOTB264_PRIME	264 20:32	265 05:32	278.2	17.0	86.4	3.2	0.0	16.0	55.1	0.0	509.2	4.9	0.0	0.0	0.0	970.0
DAILY TOTAL SCIENCE	264 15:47	265 05:32	295.3	25.9	108.0	5.0	60.0	24.5	70.5	0.0	524.6	4.9	120.0	0.0	19.9	
OBSERVATION_NOR	265 05:32	266 21:17	100.2	75.0	211.7	24.4	732.0	83.9	171.7	0.0	320.7	397.5	235.0	0.0	166.1	2518.1
OBSERVATION_SI	265 05:32	266 21:17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
SP_138EA_C70METNON266_PRIME	266 21:17	267 05:17	20.2	15.1	78.3	2.9	0.0	14.2	34.6	0.0	34.8	4.4	0.0	0.0	0.0	204.4
DAILY TOTAL SCIENCE	265 05:32	267 05:17	120.3	90.1	290.0	27.3	732.0	98.1	206.3	0.0	355.4	404.9	235.0	0.0	166.1	

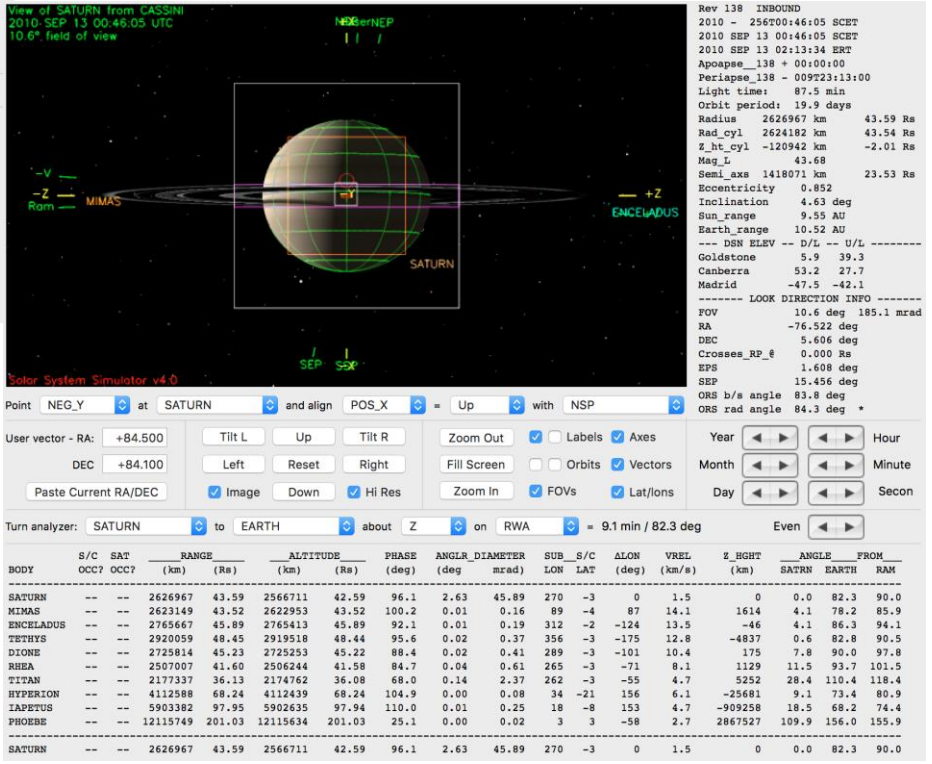
Segment Geometry (1 of 2)



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	ALON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE FROM SATRN	ANGLE FROM EARTH	ANGLE FROM RAM
SATURN	--	--	1731726	28.73	1671459	27.73	71.9	3.99	69.62	214	-1	0	4.1	0	0.0	106.0	144.6
MIMAS	--	--	1839906	30.53	1839705	30.53	76.7	0.01	0.23	51	-2	123	13.2	-3846	4.9	101.2	139.8
ENCELADUS	--	--	1967500	32.65	1967243	32.64	71.0	0.01	0.26	357	-1	-172	15.6	-39	0.9	106.9	145.5
TETHYS	--	--	1442422	23.93	1441882	23.92	74.0	0.04	0.75	169	-2	10	9.1	5614	2.0	104.0	142.6
DIONE	--	--	1478224	24.53	1477662	24.52	81.9	0.04	0.76	127	-1	43	6.1	-151	10.0	96.0	134.6
RHEA	--	--	1748505	29.01	1747742	29.00	89.2	0.05	0.88	82	-1	83	5.1	-1060	17.4	88.7	127.2
TITAN	--	--	1761653	29.23	1759078	29.19	111.6	0.17	2.92	65	-1	71	2.0	-1549	39.8	66.3	104.8
HYPERION	--	--	2579344	42.80	2579223	42.80	42.6	0.01	0.13	339	-62	-112	9.5	324	29.5	135.4	173.7
IAPETUS	--	--	5187920	86.08	5187173	86.07	83.6	0.02	0.29	13	-4	161	5.7	-923973	16.8	94.0	130.2
PHOEBE	--	--	13069333	216.85	13069218	216.85	21.8	0.00	0.02	185	6	-86	3.1	2422296	86.2	159.9	128.9
SATURN	--	--	1731726	28.73	1671459	27.73	71.9	3.99	69.62	214	-1	0	4.1	0	0.0	106.0	144.6

Seg Start (Left)

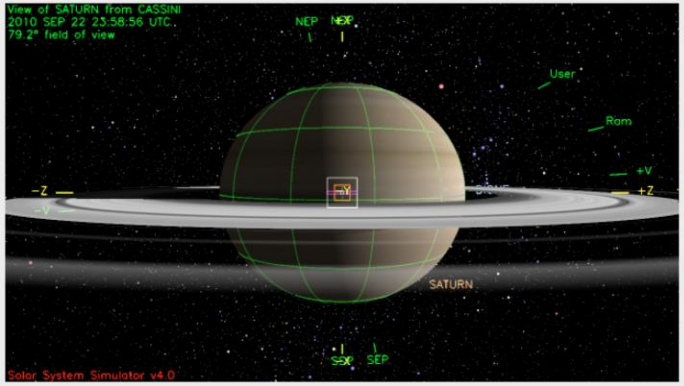
Apoapse (below)



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	ALON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE FROM SATRN	ANGLE FROM EARTH	ANGLE FROM RAM
SATURN	--	--	2626967	43.59	2566711	42.59	96.1	2.63	45.89	270	-3	0	1.5	0	0.0	82.3	90.0
MIMAS	--	--	2623149	43.52	2622953	43.52	100.2	0.01	0.16	89	-4	87	14.1	1614	4.1	78.2	85.9
ENCELADUS	--	--	2765667	45.89	2765413	45.89	92.1	0.01	0.19	312	-2	-124	13.5	-46	4.1	86.3	94.1
TETHYS	--	--	2920059	48.45	2919518	48.44	95.6	0.02	0.37	356	-3	-175	12.8	-4837	0.6	82.8	90.5
DIONE	--	--	2725814	45.23	2725253	45.22	88.4	0.02	0.41	289	-3	-101	10.4	175	7.8	90.0	97.8
RHEA	--	--	2507007	41.60	2506244	41.58	84.7	0.04	0.61	265	-3	-71	8.1	1129	11.5	93.7	101.5
TITAN	--	--	2177337	36.13	2174762	36.08	68.0	0.14	2.37	262	-3	-55	4.7	5252	28.4	110.4	118.4
HYPERION	--	--	4112588	68.24	4112439	68.24	104.9	0.00	0.08	34	-21	156	6.1	-25681	9.1	73.4	80.9
IAPETUS	--	--	5903382	97.95	5902635	97.94	110.0	0.01	0.25	18	-8	153	4.7	-909258	18.5	68.2	74.4
PHOEBE	--	--	12115749	201.03	12115634	201.03	25.1	0.00	0.02	3	3	-58	2.7	2867527	109.9	156.0	155.9
SATURN	--	--	2626967	43.59	2566711	42.59	96.1	2.63	45.89	270	-3	0	1.5	0	0.0	82.3	90.0

	Saturn Range	Phase Angle	Sub-S/C Lat.
Segment Start	28.73	71.9	-1
Apoapse	43.59	96.1	-3
Periapse	3.46	84.1	3
Segment End	15.70	50.0	1

Segment Geometry (2 of 2)

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Rev 138  INBOUND
2010 -  265T23:58:56 SCET
2010 SEP 22 23:58:56 SCET
2010 SEP 23 01:26:40 ERT
Apoapse__138 + 009T23:12:51
Periapse_138 - 00:00:08
Light time:    87.7 min
Orbit period:  20.2 days
Radius     208436 km       3.46 Rs
Rad_cyl    208213 km       3.45 Rs
Z_ht_cyl     9641 km       0.16 Rs
Mag_L           3.47
Semi_axs  1430330 km      23.73 Rs
Eccentricity    0.854
Inclination     4.64 deg
Sun_range       9.55 AU
Earth_range    10.55 AU
--- DSN ELEV -- D/L -- U/L --------
Goldstone       8.2   41.0
Canberra       52.7   25.5
Madrid        -48.8  -40.8
------- LOOK DIRECTION INFO -------
FOV            79.2 deg 1383.1 mrad
RA            103.559 deg
DEC            -5.611 deg
Crosses_RP_@    0.000 Rs
EPS             0.757 deg
SEP             7.223 deg
ORS b/s angle  95.9 deg
ORS rad angle  84.1 deg  *
```

Point NEG_Y at SATURN and align POS_X = Up with NSP

User vector - RA: +62.168 | Tilt L | Up | Tilt R | Zoom Out | Labels | Axes | Year | Hour

DEC +11.204 | Left | Reset | Right | Fill Screen | Orbits | Vectors | Month | Minute

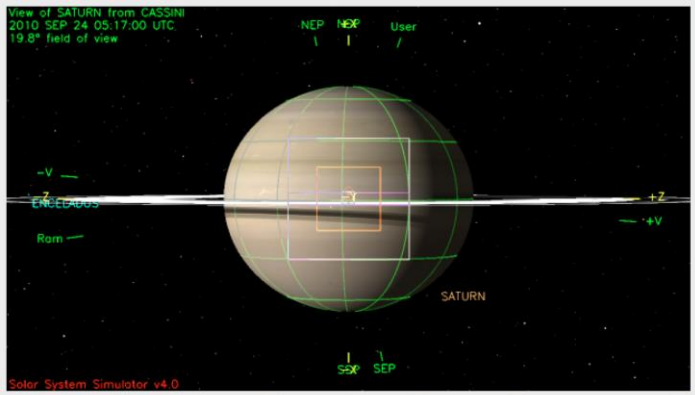
Paste Current RA/DEC | Image | Down | Hi Res | Zoom In | FOVs | Lat/lons | Day | Secon

Turn analyzer: SATURN to EARTH about Z on RWA = 10.2 min / 96.7 deg | Even

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	EARTH	RAM
SATURN	--	--	208436	3.46	148181	2.46	84.1	33.61	586.66	251	3	0	18.4	0	0.0	96.7	89.9
MIMAS	--	--	200418	3.33	200220	3.32	31.4	0.12	2.07	67	4	61	17.1	-4012	52.8	149.4	141.3
ENCELADUS	--	--	164409	2.73	164156	2.72	160.7	0.18	3.12	305	3	-42	12.4	20	78.7	19.9	20.3
TETHYS	--	--	376700	6.25	376162	6.24	135.0	0.16	2.87	327	2	-95	22.5	3844	51.1	45.7	40.6
DIONE	--	--	570972	9.47	570409	9.46	101.8	0.11	1.97	350	1	-153	27.6	-23	17.8	78.9	72.4
RHEA	--	--	375375	6.23	374608	6.22	42.6	0.23	4.09	21	2	35	12.4	-2703	126.7	136.6	142.3
TITAN	--	--	1258719	20.89	1256144	20.84	151.7	0.23	4.09	346	0	-103	20.3	921	68.1	29.0	25.5
HYPERION	--	--	1635669	27.14	1635528	27.14	86.6	0.01	0.20	220	30	-177	23.6	25865	3.9	94.1	87.0
IAPETUS	--	--	3414667	56.66	3413919	56.65	165.2	0.03	0.44	1	1	-75	17.7	-423979	101.5	14.4	24.8
PHOEBE	--	--	13615315	225.91	13615203	225.91	38.5	0.00	0.02	306	2	128	17.6	3494294	53.7	141.8	131.4
SATURN	--	--	208436	3.46	148181	2.46	84.1	33.61	586.66	251	3	0	18.4	0	0.0	96.7	89.9

Periapse (Left)

Seg End (below)




```
Rev 138 OUTBOUND
2010 -  267T05:17:00 SCET
2010 SEP 24 05:17:00 SCET
2010 SEP 24 06:44:43 ERT
Apoapse__138 + 011T04:30:55
Periapse_138 + 001T05:17:56
Light time:    87.7 min
Orbit period:  20.0 days
Radius     946147 km      15.70 Rs
Rad_cyl    946037 km      15.70 Rs
Z_ht_cyl    14440 km       0.24 Rs
Mag_L          15.70
Semi_axs  1419209 km      23.55 Rs
Eccentricity    0.853
Inclination     4.64 deg
Sun_range       9.55 AU
Earth_range    10.55 AU
--- DSN ELEV -- D/L -- U/L --------
Goldstone      -50.7  -21.5
Canberra        19.9   49.8
Madrid           1.6  -30.7
------- LOOK DIRECTION INFO -------
FOV            19.8 deg  345.8 mrad
RA           -122.600 deg
DEC             5.314 deg
Crosses_RP_@    0.000 Rs
EPS             0.650 deg
SEP             6.201 deg
ORS b/s angle 130.0 deg
ORS rad angle  84.4 deg  *
```

Point NEG_Y at SATURN and align POS_X = Up with NSP

User vector - RA: +62.168 | Tilt L | Up | Tilt R | Zoom Out | Labels | Axes | Year | Hour

DEC +11.204 | Left | Reset | Right | Fill Screen | Orbits | Vectors | Month | Minute

Paste Current RA/DEC | Image | Down | Hi Res | Zoom In | FOVs | Lat/lons | Day | Secon

Turn analyzer: SATURN to EARTH about Z on RWA = 12.6 min / 129.3 deg | Even

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	EARTH	RAM
SATURN	--	--	946147	15.70	885880	14.70	50.0	7.30	127.48	27	1	0	7.3	0	0.0	129.3	159.1
MIMAS	--	--	952048	15.80	951851	15.79	61.1	0.02	0.44	81	-0	86	8.9	-1376	11.2	118.2	148.0
ENCELADUS	--	--	1116627	18.53	1116373	18.52	59.2	0.03	0.46	43	1	131	12.8	-11	9.3	120.1	149.9
TETHYS	--	--	1234038	20.48	1233498	20.47	53.3	0.05	0.88	11	0	166	15.4	-5581	3.3	126.0	155.8
DIONE	--	--	1323261	21.96	1322697	21.95	49.6	0.05	0.85	359	1	-179	15.4	91	0.5	129.7	159.6
RHEA	--	--	925586	15.36	924824	15.35	82.4	0.09	1.66	79	1	72	2.4	-1556	32.7	96.9	126.6
TITAN	--	--	271884	4.51	269309	4.47	143.6	1.09	18.94	6	2	3	5.8	4507	165.4	37.1	6.3
HYPERION	--	--	1327604	22.03	1327478	22.03	24.3	0.01	0.25	275	-25	-66	11.3	23399	73.4	156.3	127.3
IAPETUS	--	--	3004425	49.85	3003678	49.84	157.2	0.03	0.50	19	-2	54	4.2	-336901	111.1	22.1	48.0
PHOEBE	--	--	13665694	226.75	13665579	226.75	35.3	0.00	0.02	359	2	-97	6.0	3568402	79.4	144.9	121.3
SATURN	--	--	946147	15.70	885880	14.70	50.0	7.30	127.48	27	1	0	7.3	0	0.0	129.3	159.1

Solar Geometry – ORS Boresight Concerns

There were solar viewing conflicts on DOY 265 and constraint management was required during the occultation for the VIMS Hi-Phase Rings observation.

Please see final slide for more details.

Weekly Science Highlights

Sept. 6 - 10 (DOY 249 - 253):
This week the Composite Infrared Spectrometer (CIRS) performed several observations measuring oxygen compounds in Saturn's stratosphere. The Ultraviolet Imaging Spectrograph (UVIS) had a nine hour observation scanning Saturn's atmosphere in Far-Ultraviolet wavelengths; its ultraviolet detectors scanned slowly to create spectral images. The Magnetometer (MAG) instrument performed a calibration of its sensors by rolling the spacecraft. These calibrations were performed every 15-20 days, and served to insure the accuracy of the magnetometer. Imaging Science (ISS) conducted an observation of tiny moons orbiting Saturn, a four hour observation of Hyrrokkin, and took images of Titan as part of the Titan Monitoring campaign. A joint observation took place between the Visual and Infrared Mapping Spectrometer (VIMS) and ISS to measure Saturn's winds.

Sept. 11 - 17 (DOY 254 - 260):
This week the Composite Infrared Spectrometer (CIRS) took several observations of Saturn's stratosphere, and conducted a mid-infrared mapping observation of Saturn's atmosphere; this observation seeks to map Saturn's upper troposphere and tropopause temperature profile, with spatial resolution of approximately 2 degrees in both longitude and latitude. Imaging Science (ISS) took images of up to 10 Saturnian satellites in order to better determine their orbits, and imaged a small irregular moon called Kiviuq. ISS performed an observation monitoring Titan's atmosphere; this is part of an on-going campaign to track the long term behavior of the atmosphere. The Visual and Infrared Mapping Spectrometer (VIMS) took a 3 by 3 map of Saturn's atmosphere.

Sept. 18 - 24 (DOY 261 - 267):
This week in science, the Ultraviolet Imaging Spectrograph (UVIS), Composite Infrared Spectrometer (CIRS) and the Visual and Infrared Mapping Spectrometer (VIMS) took advantage of two stellar occultation opportunities and performed a collaborative observation of Saturn's atmosphere. In the first occultation, UVIS, CIRS and VIMS used the star "alpha-orionis", more commonly called "Betelgeuse", to produce detailed spectral profiles of Saturn's atmosphere. Then, for the second occultation, UVIS used "Beta Orionis", more commonly called "Rigel", to study Saturn's atmosphere in ultraviolet wavelengths. Following the occultations, CIRS took a 6 hour observation tracking the limb of Saturn during periapse, the closest point of the orbit around Saturn. This will allow studies of the thermal structure of Saturn's stratosphere by means of limb sounding in the mid-infrared wavelength. UVIS performed a scan across Saturn's atmosphere and hemisphere to form spectral images.

Segment Integration Planning

Timeline Gaps and Suggested Observations (1 of 2)

GAP 1		2010-250T05:49:00		000T01:04:00	2010-250T06:53:00			CAKE
GAP 2		2010-251T09:13:00		000T11:25:00	2010-251T20:38:00			CAKE
GAP 3		2010-253T06:23:00		000T14:00:00	2010-253T20:23:00			CAKE
GAP 4		2010-255T02:43:00		000T17:39:00	2010-255T20:22:00			CAKE
GAP 5		2010-256T17:22:00		000T03:00:00	2010-256T20:22:00			CAKE
GAP 6		2010-260T22:57:00		000T07:10:00	2010-261T06:07:00			CAKE
GAP 7		2010-264T16:27:00		000T03:25:00	2010-264T19:52:00			CAKE
GAP 8		2010-265T06:12:00		000T06:52:00	2010-265T13:04:00			
GAP 9		2010-265T21:11:00		000T00:54:00	2010-265T22:05:00			
GAP 10		2010-266T07:16:00		000T05:29:00	2010-266T12:45:00			
GAP 11		2010-266T14:45:00		000T04:52:00	2010-266T19:37:00			

Timeline Gaps and Suggested Observations (2 of 2)

After Sending out the Draft SPASS on Wednesday, we got the following requests

- Tillman: Request to add ISS Outer Moon in gaps on DOY 256 and 260
- Bob West: Request to better spread out UVIS EUVFUV for better phase coverage
  - Add in GAP on DOY 251 (good place for first EUVFUV)
  - Add in GAP on DOY 265T06:12
  - Add in both GAPs on DOY 266
  - Question: Are these in addition to the existing 4 EUVFUVs?

- Other Open Issues
  - Conflict on DOY 265/266:
    - VIMS AlphaOri Saturn Occ (Phil Nicholson)
    - UVIS Beta Ori Saturn Occ (a PIE)
      - BTW: We moved back the observation to its original time
    - CIRS LIMB Track (a PIE)
  - No Titan Monitoring were placed because CIMS requests conflicts with CAKE/Apo Template and in one case a MAGCAL ROLL
    - How much tolerance can they be moved?

Initial SMT and Data Volume (1 of 3)

First look in 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_137EA_M34BWGNON250_PRIME	250 07:33	250 16:33	0	810	106	916	3316	2401	0	247	53	1216	521	-695	-342	-2%	694
SP_137EA_C70METNON251_PRIME	251 21:18	252 06:18	694	1706	121	2522	3316	794	0	247	53	2822	2972	149	-342	-2%	0
SP_137EA_C34HEFNON253_PRIME	253 21:03	254 06:03	0	2309	164	2473	3316	843	0	247	53	2773	659	-2114	-492	-4%	2114
SP_137EA_C70METNON255_PRIME	255 21:02	256 06:02	2114	1531	165	3809	3316	-492	0	257	53	3626	2950	-677	131	1%	676
SP_138EA_C34HEFNON256_PRIME	256 21:02	257 06:02	676	550	63	1290	3316	2026	0	247	53	1590	657	-933	131	1%	933
SP_138EA_C34HEFNON257_PRIME	257 20:47	258 05:47	933	689	62	1684	3316	1632	0	247	53	1984	659	-1325	131	1%	1325
SP_138EA_C34BWGOTP258_PRIME	258 20:47	259 05:47	1325	800	63	2188	3316	1128	0	247	53	2488	489	-2000	71	1%	1999
SP_138EA_C70METOTB259_PRIME	259 20:47	260 05:47	1999	457	63	2519	3316	797	0	247	53	2819	2950	131	71	1%	0
SP_138EA_M34HEFNON261_PRIME	261 06:47	261 15:47	0	1205	106	1310	3316	2006	0	247	53	1611	650	-961	-59	0%	960
SP_138EA_M34HEFNON262_PRIME	262 06:47	262 15:47	960	800	63	1823	3316	1493	0	247	53	2123	643	-1480	-59	0%	1480
SP_138EA_M34HEFNON263_PRIME	263 06:47	263 15:47	1480	457	63	2000	3316	1316	0	247	53	2300	643	-1657	-59	0%	1657
SP_138EA_M70METOTP264_PRIME	264 06:47	264 15:47	1657	678	63	2398	3316	918	0	247	53	2698	2374	-324	-59	0%	324
SP_138EA_C34HEFOTB264_PRIME	264 20:32	265 05:32	324	82	20	426	3316	2890	0	247	53	725	653	-73	-59	-1%	72
SP_138EA_C70METNON266_PRIME	266 20:17	267 05:17	72	3140	164	3376	3316	-59	0	367	53	3736	2885	-851	0	0%	851

Initial SMT and Data Volume (2 of 3)

First look in Integration:

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	249 06:33	250 07:33	90.0	47.2	332.2	13.3	40.0	54.0	108.0	0.0	117.9	0.0	0.0	0.0	104.5	907.0
SP_137EA_M34BWGNON250_PRIME	250 07:33	250 16:33	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	244.7
DAILY TOTAL SCIENCE	249 06:33	250 16:33	122.4	64.1	418.6	16.6	40.0	73.4	146.9	0.0	160.3	4.9	0.0	0.0	104.5	
OBSERVATION_NOR	250 16:33	251 21:18	103.5	54.2	108.0	10.4	845.0	62.1	124.2	0.0	135.6	237.6	10.0	0.0	120.2	1810.7
SP_137EA_C70METNON251_PRIME	251 21:18	252 06:18	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	244.7
DAILY TOTAL SCIENCE	250 16:33	252 06:18	135.9	71.2	194.4	13.6	845.0	81.5	163.1	0.0	178.0	242.6	10.0	0.0	120.2	
OBSERVATION_NOR	252 06:18	253 21:03	139.5	73.1	194.4	15.9	1290.0	117.1	167.4	0.0	182.7	97.8	10.0	0.0	162.0	2449.9
SP_137EA_C34HEFNON253_PRIME	253 21:03	254 06:03	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	244.7
DAILY TOTAL SCIENCE	252 06:18	254 06:03	171.9	90.1	280.8	19.1	1290.0	136.6	206.3	0.0	225.2	102.8	10.0	0.0	162.0	
OBSERVATION_NOR	254 06:03	255 21:02	168.9	73.5	383.8	14.0	300.0	84.2	168.4	0.0	183.8	96.6	0.0	0.0	162.9	1636.2
OBSERVATION_SI	254 06:03	255 21:02	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_137EA_C70METNON255_PRIME	255 21:02	256 06:02	32.4	17.0	86.4	13.3	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	254.8
DAILY TOTAL SCIENCE	254 06:03	256 06:02	201.3	90.5	470.2	27.3	343.5	103.6	207.3	0.0	226.3	101.5	0.0	0.0	162.9	
OBSERVATION_NOR	256 06:02	256 21:02	54.0	28.3	168.0	5.4	75.0	32.4	64.8	0.0	70.7	36.8	10.0	0.0	62.7	608.2
SP_138EA_C34HEFNON256_PRIME	256 21:02	257 06:02	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	244.7
DAILY TOTAL SCIENCE	256 06:02	257 06:02	86.4	45.3	254.4	8.6	75.0	51.8	103.7	0.0	113.2	41.8	10.0	0.0	62.7	
OBSERVATION_NOR	257 06:02	257 20:47	53.1	27.8	0.0	5.3	188.0	31.9	63.7	0.0	69.6	243.0	0.0	0.0	61.6	744.1
SP_138EA_C34HEFNON257_PRIME	257 20:47	258 05:47	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	244.7
DAILY TOTAL SCIENCE	257 06:02	258 05:47	85.5	44.8	86.4	8.6	188.0	51.3	102.6	0.0	112.0	248.0	0.0	0.0	61.6	
OBSERVATION_NOR	258 05:47	258 20:47	54.0	28.3	129.6	5.4	360.0	32.4	64.8	0.0	70.7	47.1	0.0	0.0	62.7	855.0
SP_138EA_C34BWGOTP258_PRIME	258 20:47	259 05:47	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	244.7
DAILY TOTAL SCIENCE	258 05:47	259 05:47	86.4	45.3	216.0	8.6	360.0	51.8	103.7	0.0	113.2	52.0	0.0	0.0	62.7	
OBSERVATION_NOR	259 05:47	259 20:47	54.0	28.3	196.8	5.4	0.0	32.4	64.8	0.0	70.7	0.0	0.0	0.0	62.7	515.1
SP_138EA_C70METOTB259_PRIME	259 20:47	260 05:47	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	244.7
DAILY TOTAL SCIENCE	259 05:47	260 05:47	86.4	45.3	283.2	8.6	0.0	51.8	103.7	0.0	113.2	4.9	0.0	0.0	62.7	

Initial SMT and Data Volume (3 of 3)

First look in Integration:

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	260 05:47	261 06:47	90.0	47.2	0.0	9.0	478.0	54.0	108.0	0.0	117.9	289.8	0.0	0.0	104.5	1298.4
SP_138EA_M34HEFNON261_PRIME	261 06:47	261 15:47	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	244.7
DAILY TOTAL SCIENCE	260 05:47	261 15:47	122.4	64.1	86.4	12.2	478.0	73.4	146.9	0.0	160.3	294.8	0.0	0.0	104.5	
OBSERVATION_NOR	261 15:47	262 06:47	54.0	28.3	129.6	5.4	360.0	32.4	64.8	0.0	70.7	47.1	0.0	0.0	62.7	855.0
SP_138EA_M34HEFNON262_PRIME	262 06:47	262 15:47	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	244.7
DAILY TOTAL SCIENCE	261 15:47	262 15:47	86.4	45.3	216.0	8.6	360.0	51.8	103.7	0.0	113.2	52.0	0.0	0.0	62.7	
OBSERVATION_NOR	262 15:47	263 06:47	54.0	28.3	196.8	5.4	0.0	32.4	64.8	0.0	70.7	0.0	0.0	0.0	62.7	515.1
SP_138EA_M34HEFNON263_PRIME	263 06:47	263 15:47	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	244.7
DAILY TOTAL SCIENCE	262 15:47	263 15:47	86.4	45.3	283.2	8.6	0.0	51.8	103.7	0.0	113.2	4.9	0.0	0.0	62.7	
OBSERVATION_NOR	263 15:47	264 06:47	54.0	28.3	0.0	5.4	168.4	32.4	64.8	0.0	70.7	247.6	0.0	0.0	62.7	734.3
SP_138EA_M70METOTP264_PRIME	264 06:47	264 15:47	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	0.0	244.7
DAILY TOTAL SCIENCE	263 15:47	264 15:47	86.4	45.3	86.4	8.6	168.4	51.8	103.7	0.0	113.2	252.5	0.0	0.0	62.7	
OBSERVATION_NOR	264 15:47	264 20:32	17.1	9.0	0.0	1.7	0.0	10.3	20.5	0.0	22.4	0.0	0.0	0.0	19.9	100.8
SP_138EA_C34HEFOTB264_PRIME	264 20:32	265 05:32	32.4	17.0	86.4	3.2	0.0	19.4	38.9	0.0	42.1	4.9	0.0	0.0	0.0	244.4
DAILY TOTAL SCIENCE	264 15:47	265 05:32	49.5	25.9	86.4	5.0	0.0	29.7	59.4	0.0	64.5	4.9	0.0	0.0	19.9	
OBSERVATION_NOR	265 05:32	266 20:17	139.5	504.2	196.1	24.0	48.0	120.4	167.4	0.0	1099.3	639.4	170.0	0.0	162.0	3270.4
OBSERVATION_SI	265 05:32	266 20:17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
SP_138EA_C70METNON266_PRIME	266 20:17	267 05:17	32.4	135.8	86.4	3.2	0.0	19.4	38.9	0.0	42.2	4.9	0.0	0.0	0.0	363.3
DAILY TOTAL SCIENCE	265 05:32	267 05:17	171.9	640.1	282.5	27.3	48.0	139.9	206.3	0.0	1141.5	647.3	170.0	0.0	162.0	

	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)	1579.2	1362.5	3244.9	181.4	4195.9	1000.6	1860.8	0.0	2947.4	2055.0	200.0	0.0

Waypoint Selection

RBOT FRIENDLY WAYPOINTS

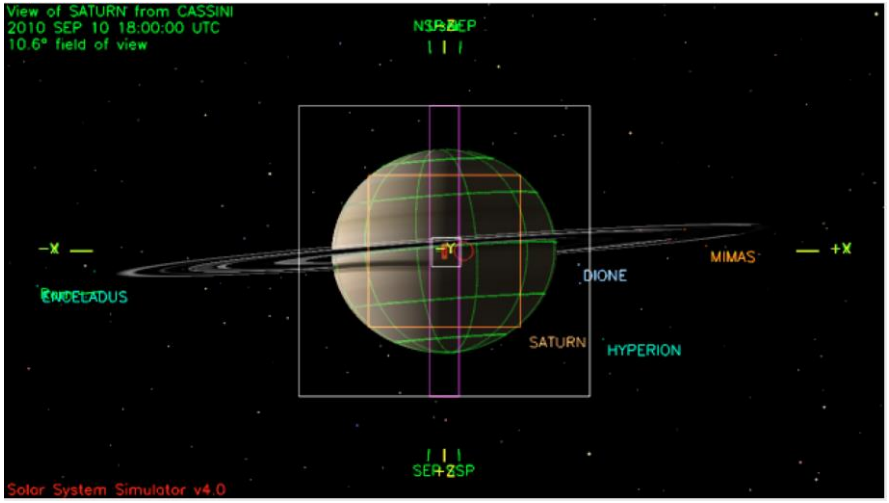
PRIMARY : NEG_Y to SATURN

OBSERVATION PERIOD	START	END	POS_X	NEG_X	POS_Z	NEG_Z
SP_137NA_M34OBSNON249_NA	2010-249T06:33:00	2010-250T07:33:00	------	84.3/ 84.1	------	84.3/ 84.1
SP_137NA_C70OBSNON250_NA	2010-250T16:33:00	2010-251T21:18:00	------	84.3/ 84.1	------	84.3/ 84.1
SP_137NA_C34OBSNON252_NA	2010-252T06:18:00	2010-253T21:03:00	------	84.5/ 84.1	------	84.5/ 84.1
SP_137NA_C70OBSNON254_NA	2010-254T06:03:00	2010-255T21:02:00	------	84.5/ 84.1	------	84.5/ 84.1
SP_138NA_C34OBSNON256_NA	2010-256T06:02:00	2010-256T21:02:00	------	84.5/ 84.1	------	84.5/ 84.1
SP_138NA_C34OBSNON257_NA	2010-257T06:02:00	2010-257T20:47:00	------	84.5/ 84.1	------	84.5/ 84.1
SP_138NA_C34OBSNON258_NA	2010-258T05:47:00	2010-258T20:47:00	------	84.5/ 84.1	------	84.5/ 84.1
SP_138NA_C70OBSNON259_NA	2010-259T05:47:00	2010-259T20:47:00	------	84.5/ 84.1	------	84.5/ 84.1
SP_138NA_M34OBSNON260_NA	2010-260T05:47:00	2010-261T06:47:00	------	84.5/ 84.1	------	84.5/ 84.1
SP_138NA_M34OBSNON261_NA	2010-261T15:47:00	2010-262T06:47:00	------	84.6/ 84.1	------	84.6/ 84.1
SP_138NA_M34OBSNON262_NA	2010-262T15:47:00	2010-263T06:47:00	------	84.6/ 84.1	------	84.6/ 84.1
SP_138NA_M70OBSNON263_NA	2010-263T15:47:00	2010-264T06:47:00	------	84.5/ 84.1	------	84.5/ 84.1
SP_138NA_C34OBSNON264_NA	2010-264T15:47:00	2010-264T20:32:00	------	84.4/ 84.1	------	84.4/ 84.1
SP_138NA_C70OBSNON265_NA	2010-265T05:32:00	2010-266T20:17:00	------	------	------	------

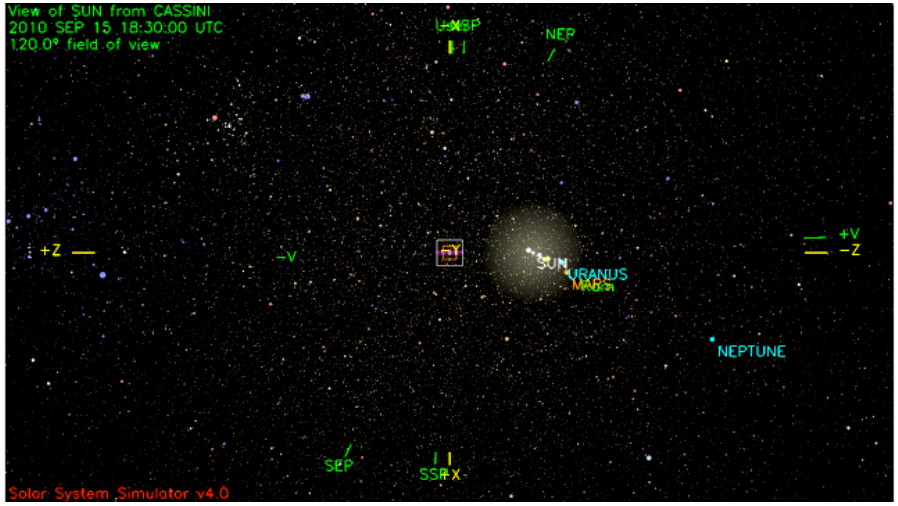
- Use 84.5 º as an average RA angle
- Options are: NEG_Y to Saturn
  - NEG_X to 84.5/84.1
  - NEG_Z to 84.5/84.1
- From 265T10:27 to 265T17:37 (the period where ORSto Sun < 15 degrees), Saturn based Waypoints will not work (based on CTV Waypoint Checker)
  - OCC Port to Sun?
  - XBAND to Earth will work as Primary
  - Secondary Options (based on Brad's "Find_Secondary" tool)
    - POS X or POS Y or to 275.6/64.1

Waypoints Chosen (1 of 3)

Waypoint 1 (2010-249T07:19:00 – 2010-258T06:27:00): ISS_NAC to Saturn; NEG_Z to 84.5/84.1



Waypoint 2 (2010-258T06:27:00 – 2010-259T06:27:00): UVIS_SOL_OFF to Sun*; NEG_X to 84.5/84.1

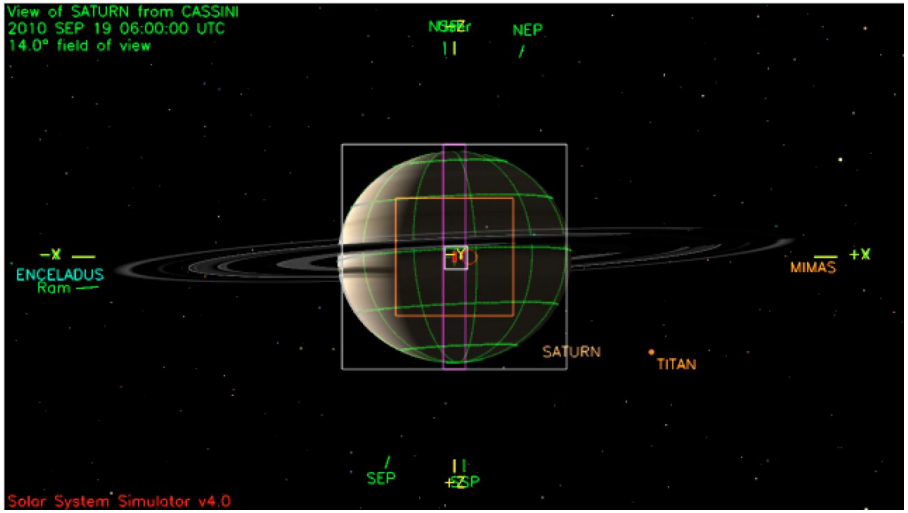


Saturn

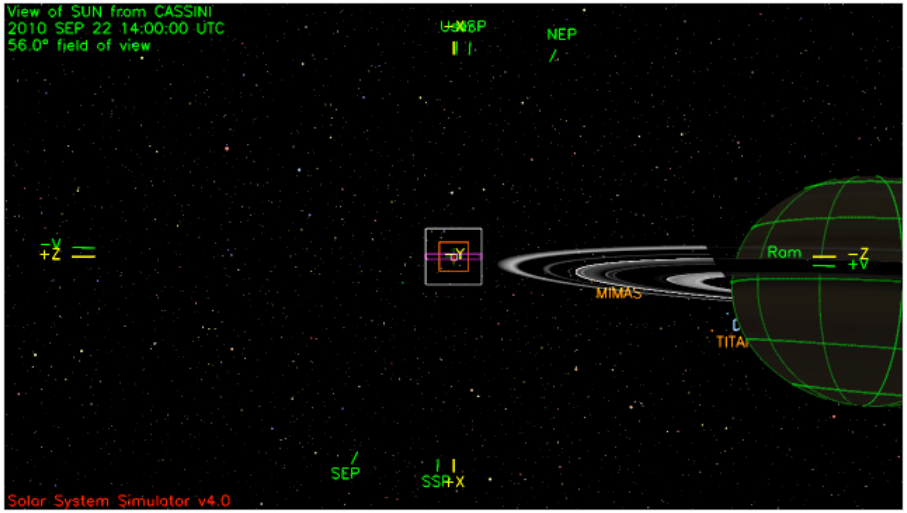
* This waypoint selection was not optimal for the science during this period – Rationale unknown.

Waypoints Chosen (2 of 3)

Waypoint 3 (2010-259T06:27:00 – 2010-265T06:12:00): ISS_NAC to Saturn; NEG_Z to 84.5/84.1

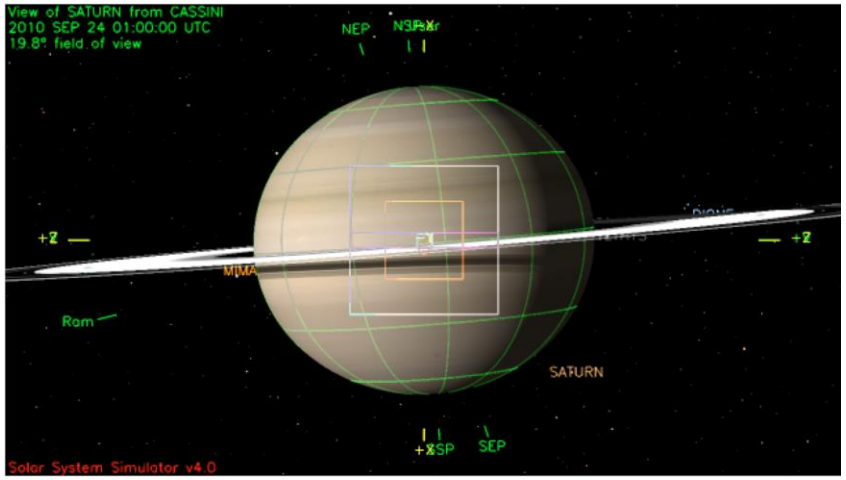


Waypoint 4 (2010-265T06:12:00 – 2010-265T22:05:00): UVIS_SOL_OFF to Sun; NEG_X to 84.5/84.1



Waypoints Chosen (3 of 3)

Waypoint 5 (2010-265T22:05:00 – 2010-267T05:17:00): ISS_NAC to Saturn; NEG_X to 84.5/84.1



Notes & Liens

- Pointing:
  - Collaborative Pointing have been identified in SPASS Agreements
  - Used one 2 part turn for last DL Turn in Segment: SP_138EA_DLTURN266_PRIME, SP_138EA_DLTURN366_PRIME
  - RBOT friendly Secondaries were use except where FR violations occur.
  - The following SPASS Gaps have been approved

Request	Request	Gap Start	Gap Duration	Gap End
ISS_137SA_WIND5HR005_PRIME	ISS_137OT_SATELLORB006_PRIME	2010-253T16:43:00	000T01:00:00	2010-253T17:43:00
ISS_137TI_M90R2CLD254_PRIME	SP_137EA_DLTURN253_PRIME	2010-253T19:43:00	000T00:40:00	2010-253T20:23:00
ISS_138SA_WIND2HR002_PRIME	SP_138EA_DLTURN258_PRIME	2010-258T19:27:00	000T00:40:00	2010-258T20:07:00
ISS_138SA_WIND2HR004_PRIME	SP_138EA_DLTURN262_PRIME	2010-262T05:27:00	000T00:40:00	2010-262T06:07:00

- Data Volume:
  - None
- DSN:
  - None
- Opmodes:
  - None
- Special Activities:
  - CMT management needed for DOY 265 Saturn Solar Occ

Sequence Liens:

- None

CMT Management: -Y to Sun violation

- CMT Management is probably needed for the RSS Saturn Occ on DOY 265
  - Time of violation came from CTV Waypoint Checker.
  - Time of Saturn Occultation is from the tour atlas.
  - Timing uncertainty was given as less than 1 second. by Brad Wallis' "ask_carnac.pro". This number was rounded to 1 second for extra conservatism.