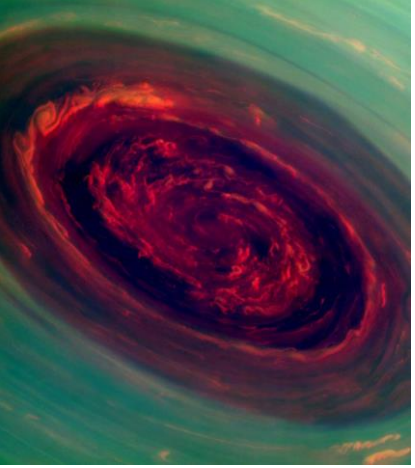

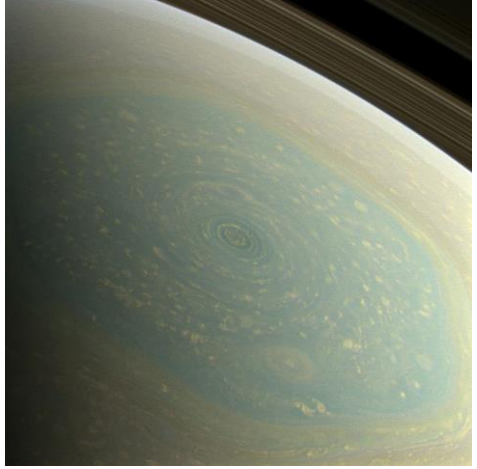
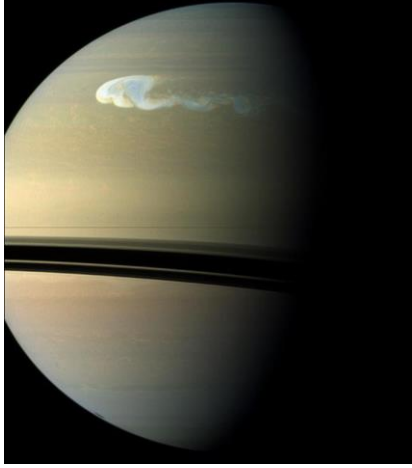

Science Planning & Sequence Team
CASSINI

SATURN TARGET WORKING TEAM

Rev 130_131 Segment Legacy Package

Segment Boundary: Apr 29, 2010 – May 17, 2010
2010-119T01:03:00– 2010-137T13:31:00 (SCET)

Integration Began 08/03/2009
Segment Delivered to S59 Sequence 09/22/2010
Lead Integrator was Leo Cheng

Legacy Package Assembled by Keven Uchida

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

Segment Overview and Final Products

Segment Summary

- This was an ~18.5 day long Equinox Mission periapse segment. The S/C was in an equatorial orbit. The min/max Saturn distances were 12 and 45 R_S, respectively. Phase angles ranged between 51 and 158 degrees.
- CIRS conducted a number of compositional and mid-IR mapping observations. VIMS performed global dynamical map observations, two near the start of the segment, and two near the end. ISS also conducted a photopolarimetric mapping observation, and UVIS an EUV/FUV observation.
- The out of discipline activities in this segment included VIMS observations of Saturn's rings, ISS observations of Iapetus, Titan and Bebhionn, and a UVIS observation of Enceladus. CIRS performed a mid-IR spectroscopy stellar observation, and a scattered light characterization activity. RADAR conducted a combined Titan radiometry observation and calibration. CAPS performed Saturn plasma/magnetospheric observations throughout the segment. Four OPNAV activities were allocated to this segment.
- There were no ORS boresight constraints/issues in this segment.
- Two OTMs (Orbital Trim Maneuvers #245 and #246) were in this segment.

Final Sequenced SPASS (1 of 2)

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
SATURN_130_131 Segment		2010-119T01:03:00		018T12:28:00	2010-137T13:31:00			
NAV_130SK_OPNAV191_PRIME	M	2010-119T01:03:05		000T01:13:55	2010-119T02:17:00	ISS_NAC to Satellites	NEG_Z to 39.0/83.8	
NAV_130EA_WAYPTTURN191_PRIME	M	2010-119T02:17:00		000T00:01:00	2010-119T02:18:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
NEW WAYPOINT		**2010-119T02:18:00**		**000T13:09:00**	**2010-119T15:27:00**	**ISS_NAC to Saturn**	**NEG_Z to 39.0/83.8**	
VIMS_130SA_GLOBDYN001_PRIME	I, M	2010-119T02:18:00		000T02:49:00	2010-119T05:07:00	ISS_NAC to Saturn	NEG_X to NSP	
SP_130EA_DLTURN119_PRIME	M	2010-119T05:07:00		000T00:40:00	2010-119T05:47:00	XBAND to Earth	NEG_Y to 269.35/-4.58	
SP_130EA_C34BWGOTP119_PRIME	C, E, M, N	2010-119T05:47:00		000T09:00:00	2010-119T14:47:00	XBAND to Earth	4_Hr_Rolling	NEG_Y to 269.35/-4.58 (Saturn, (0,0,-9.5)); MIMI,CAPS,CDA; MIMI ENA Imaging Series Candidate
SP_130SA_WAYPTTURN119_PRIME	M	2010-119T14:47:00		000T00:40:00	2010-119T15:27:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
NEW WAYPOINT		**2010-119T15:27:00**		**001T00:00:00**	**2010-120T15:27:00**	**ISS_NAC to Saturn**	**NEG_Z to 39.0/83.8**	
VIMS_130SA_GLOBDYN002_PRIME	I, M, R	2010-119T15:27:00		000T11:00:00	2010-120T02:27:00	ISS_NAC to Saturn	NEG_X to NSP	
ISS_130SA_1X2WPH20001_PRIME	M, R	2010-120T02:27:00		000T01:00:00	2010-120T03:27:00	ISS_NAC to Saturn	NEG_X to Sun	
RADAR_130TI_NEQUACAL009_PRIME	M	2010-120T03:27:00		000T01:40:00	2010-120T05:07:00	NEG_Z to Titan	PIC	
SP_130EA_DLTURN120_PRIME	M	2010-120T05:07:00		000T00:40:00	2010-120T05:47:00	XBAND to Earth	NEG_Y to 269.35/-4.58	
SP_130EA_C70METOTB120_PRIME	C, M, N	2010-120T05:47:00		000T09:00:00	2010-120T14:47:00	XBAND to Earth	NEG_Y to 269.35/-4.58	
SP_130SA_WAYPTTURN120_PRIME	M	2010-120T14:47:00		000T00:40:00	2010-120T15:27:00	NEG_X to Sun (0.0,0.0,-30.0 deg. offset)	NEG_Z to 39.0/83.8	
NEW WAYPOINT		**2010-120T15:27:00**		**000T17:45:00**	**2010-121T09:12:00**	**NEG_X to Sun (0.0,0.0,-30.0 deg. offset)**	**NEG_Z to 39.0/83.8**	
CAPS_130SA_MAGBNDPTG003_PRIME	M	2010-120T15:27:00		000T07:25:00	2010-120T22:52:00	NEG_X to Sun (0.0,0.0,-30.0 deg. offset)	Rolling	
SP_130EA_DLTURN520_PRIME	M	2010-120T22:52:00		000T00:40:00	2010-120T23:32:00	XBAND to Earth	POS_X to 100.4/-74.8	
SP_130EA_G34BWGNON120_PRIME	C, M	2010-120T23:32:00		000T09:00:00	2010-121T08:32:00	XBAND to Earth	POS_X to 100.4/-74.8	
SP_130SA_WAYPTTURN121_PRIME	M	2010-121T08:32:00		000T00:40:00	2010-121T09:12:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
NEW WAYPOINT		**2010-121T09:12:00**		**001T23:45:00**	**2010-123T08:57:00**	**ISS_NAC to Saturn**	**NEG_Z to 39.0/83.8**	
CIRS_130SA_COMPSIT003_PRIME	M, V	2010-121T09:12:00		000T10:00:00	2010-121T19:12:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
VIMS_130RI_EG80PHASE001_PRIME	I, M	2010-121T19:12:00		000T03:25:00	2010-121T22:37:00	VIMS_IR to Rings	NEG_Z to 39.0/83.8	
SP_130EA_DLTURN121_PRIME	M	2010-121T22:37:00		000T00:40:00	2010-121T23:17:00	XBAND to Earth	POS_X to 99.9/-74.1	
SP_130EA_G34BWGNON121_PRIME	C, M	2010-121T23:17:00		000T09:00:00	2010-122T08:17:00	XBAND to Earth	POS_X to 99.9/-74.1	
SP_130SA_WAYPTTURN122_PRIME	M	2010-122T08:17:00		000T00:40:00	2010-122T08:57:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
VIMS_130RI_EG80PHASE002_PRIME	I, M	2010-122T08:57:00		000T04:50:00	2010-122T13:47:00	VIMS_IR to Rings	NEG_Z to 38.9/83.8	
CAPS_130SA_MAGBNDPTG005_PRIME	M	2010-122T13:47:00		000T06:00:00	2010-122T19:47:00	POS_Y to COROT (0.0,0.0,34.0 deg. offset)	NEG_X to NSP	
UVIS_130EN_ICYATM002_PRIME	M	2010-122T19:47:00		000T02:50:00	2010-122T22:37:00	UVIS_FUV to Enceladus	POS_X to 168.9/19.5	See observation description. Duration of 4 hours allows for 30 min slew to and from Enceladus, and 3 integration sites.
SP_130EA_DLTURN122_PRIME	M	2010-122T22:37:00		000T00:40:00	2010-122T23:17:00	XBAND to Earth	POS_X to 99.3/-73.2	
SP_130EA_G34BWGNON122_PRIME	C, M	2010-122T23:17:00		000T09:00:00	2010-123T08:17:00	XBAND to Earth	POS_X to 99.3/-73.2	
SP_130SA_WAYPTTURN123_PRIME	M	2010-123T08:17:00		000T00:40:00	2010-123T08:57:00	NEG_X to Sun (0.0,0.0,-30.0 deg. offset)	NEG_Z to 39.0/83.8	
NEW WAYPOINT		**2010-123T08:57:00**		**000T16:30:00**	**2010-124T01:27:00**	**NEG_X to Sun (0.0,0.0,-30.0 deg. offset)**	**NEG_Z to 39.0/83.8**	
MAG_130SU_CALROLL001_PRIME	M	2010-123T08:57:00		000T06:10:00	2010-123T15:07:00	NEG_X to Sun (0.0,0.0,-30.0 deg. offset)	Rolling	
SP_130EA_DLTURN123_PRIME	M	2010-123T15:07:00		000T00:40:00	2010-123T15:47:00	XBAND to Earth	POS_X to 168.64/18.01	For CDA
SP_130EA_M70METNON123_PRIME	C, M	2010-123T15:47:00		000T09:00:00	2010-124T00:47:00	XBAND to Earth	POS_X to 168.64/18.01	
SP_130SA_WAYPTTURN124_PRIME	M	2010-124T00:47:00		000T00:40:00	2010-124T01:27:00	XBAND to Earth (0.0,0.0,-10.0 deg. offset)	NEG_X to NSP	
NEW WAYPOINT		**2010-124T01:27:00**		**001T00:00:00**	**2010-125T01:27:00**	**XBAND to Earth (0.0,0.0,-10.0 deg. offset)**	**NEG_X to NSP**	
CDA_130DR_ISD001_PRIME	M	2010-124T01:27:00		000T12:00:00	2010-124T13:27:00	XBAND to Earth (0.0,0.0,-10.0 deg. offset)	NEG_X to NSP	
ISS_130IA_IAPETUS124_PRIME	M, U	2010-124T13:27:00		000T02:20:00	2010-124T15:47:00	UVIS_FUV to Iapetus	NEG_X to 319.068/-3.33	
SP_130EA_M34BWGNON124_PRIME	C, E, M	2010-124T15:47:00		000T09:00:00	2010-125T00:47:00	XBAND to Earth	NEG_X to NSP	
SP_130SA_WAYPTTURN125_PRIME	M	2010-125T00:47:00		000T00:40:00	2010-125T01:27:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
NEW WAYPOINT		**2010-125T01:27:00**		**012T12:04:00**	**2010-137T13:31:00**	**ISS_NAC to Saturn**	**NEG_Z to 39.0/83.8**	
CIRS_130SA_MIRMAP001_PRIME	M	2010-125T01:27:00		000T20:55:00	2010-125T22:22:00	CIRS_FP3 to Saturn	NEG_Z to NSP	
SP_130EA_DLTURN125_PRIME	M	2010-125T22:22:00		000T00:40:00	2010-125T23:02:00	XBAND to Earth	POS_X to 98.1/-71.2	
SP_130EA_G34BWGNON125_PRIME	C, M, R	2010-125T23:02:00		000T09:00:00	2010-126T08:02:00	XBAND to Earth	POS_X to 98.1/-71.2	
SP_130SA_WAYPTTURN126_PRIME	M	2010-126T08:02:00		000T00:40:00	2010-126T08:42:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
ISS_130TI_M90R2CLD126_PRIME	C, M, U	2010-126T08:42:00	E130_M90R2CLD126+0(	000T01:15:00	2010-126T09:57:00	ISS_NAC to Titan	POS_Z to 218.4/-83.6	
ISS_130OT_BEBHIONN126_PRIME	M, U	2010-126T09:57:00		000T11:15:00	2010-126T21:12:00	UVIS_FUV to Rocks	NEG_X to Sun	TelMode S_N_ER_5
CAPS_130SW_SWAURPTG009_PRIME	M	2010-126T21:12:00		000T06:00:00	2010-127T03:12:00	NEG_X to Sun (0.0,0.0,-15.0 deg. offset)	POS_Z to 325.0/80.1	sharing with CDA
ISS_130IA_IAPETUS127_PRIME	M, U	2010-127T03:12:00		000T01:25:00	2010-127T04:37:00	UVIS_FUV to Iapetus	NEG_X to Sun	
SP_130EA_DLTURN127_PRIME	M	2010-127T04:37:00		000T00:40:00	2010-127T05:17:00	XBAND to Earth	POS_X to 97.7/-70.3	
SP_130EA_C70METNON127_PRIME	C, M, R	2010-127T05:17:00		000T09:00:00	2010-127T14:17:00	XBAND to Earth	POS_X to 97.7/-70.3	
SP_130SA_WAYPTTURN127_PRIME	M	2010-127T14:17:00		000T00:40:00	2010-127T14:57:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
CIRS_130SA_COMPSIT004_PRIME	M, V	2010-127T14:57:00		000T23:19:00	2010-128T14:16:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
Apoapse Per = 20.5 d, inc ...		2010-128T03:04:17		000T00:00:01	2010-128T03:04:18			

Final Sequenced SPASS (2 of 2)

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
NAV_131SK_OPNAVK008_PRIME	M	2010-128T14:16:00		000T00:59:00	2010-128T15:15:00	ISS_NAC to 284.927/2.471	NEG_Z to 39.0/83.8	
NAV_131EA_DLTURN281_PRIME	M	2010-128T15:15:00		000T00:01:00	2010-128T15:16:00	XBAND to Earth	POS_X to 97.2/-68.1	
SP_131EA_M70METNON128_PRIME	C, M, R	2010-128T15:16:00		000T09:00:00	2010-129T00:16:00	XBAND to Earth	POS_X to 97.2/-68.1	
SP_131SA_WAYPTTURN129_PRIME	M	2010-129T00:16:00		000T00:40:00	2010-129T00:56:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
CIRS_131SA_COMPSIT001_PRIME	M, V	2010-129T00:56:00		000T20:50:00	2010-129T21:46:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
NAV_131SK_OPNAV291_PRIME	M	2010-129T21:46:00		000T00:59:00	2010-129T22:45:00	ISS_NAC to Satellites	POS_X to 96.6/-67.7	
NAV_131EA_DLTURN291_PRIME	M	2010-129T22:45:00		000T00:01:00	2010-129T22:46:00	XBAND to Earth	POS_X to 96.6/-67.7	
SP_131EA_G34BWGNON129_PRIME	C, M, R	2010-129T22:46:00		000T09:00:00	2010-130T07:46:00	XBAND to Earth	POS_X to 96.6/-67.7	
SP_131SA_WAYPTTURN130_PRIME	M	2010-130T07:46:00		000T00:40:00	2010-130T08:26:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
ISS_131TI_M90R3CLD130_PRIME	C, M, U	2010-130T08:26:00	E131_M90R3CLD130+0(	000T01:15:00	2010-130T09:41:00	ISS_NAC to Titan	NEG_Z to 38.2/83.6	
CAPS_131SW_SWAURPTG003_PRIME	M	2010-130T09:41:00		000T09:20:00	2010-130T19:01:00	NEG_X to Sun (0.0,0.0,-15.0 deg. offset)	POS_Z to 325.0/80.1	share with CDA
CIRS_131OT_1STAROBS001_PRIME	M	2010-130T19:01:00		000T06:00:00	2010-131T01:01:00	CIRS_FP3 to Star	PIC	
UVIS_131IC_ALPVIR001_PRIME	I, M	2010-131T01:01:00		000T03:00:00	2010-131T04:01:00	UVIS_FUV to Star	NEG_Z to 251.406/72.909	
NAV_131SK_OPNAVK009_PRIME	M	2010-131T04:01:00		000T00:59:00	2010-131T05:00:00	ISS_NAC to 293.739/1.622	NEG_Z to 39.0/83.8	
NAV_131EA_DLTURN311_PRIME	M	2010-131T05:00:00		000T00:01:00	2010-131T05:01:00	XBAND to Earth	NEG_Y to 268.72/-6.22	
SP_131EA_C70METOTP131_PRIME	C, E, M, N	2010-131T05:01:00		000T09:00:00	2010-131T14:01:00	XBAND to Earth	NEG_Y to 268.72/-6.22	
SP_131SA_WAYPTTURN131_PRIME	M	2010-131T14:01:00		000T00:40:00	2010-131T14:41:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
CIRS_131SA_MIRTMAP001_PRIME	M	2010-131T14:41:00		000T13:40:00	2010-132T04:21:00	CIRS_FP3 to Saturn	NEG_Z to NSP	
SP_131EA_DLTURN132_PRIME	M	2010-132T04:21:00		000T00:40:00	2010-132T05:01:00	XBAND to Earth	NEG_Y to 268.72/-6.22	
SP_131EA_C70METOTB132_PRIME	C, M, N	2010-132T05:01:00		000T09:00:00	2010-132T14:01:00	XBAND to Earth	4_Hr_Rolling	NEG_Y to 268.69/-6.34 (Saturn, (0,0,-9.5)); MIMI,CAPS,CDA
SP_131SA_WAYPTTURN132_PRIME	M	2010-132T14:01:00		000T00:40:00	2010-132T14:41:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
CAPS_131SW_SWAURPTG005_PRIME	M	2010-132T14:41:00		000T06:55:00	2010-132T21:36:00	POS_Y to 230.49/27.08	POS_X to 160.6/-33.92	share with CDA (Dec8: RBOT precluded sharing)
ISS_131IA_IAPETUS132_PRIME	M, U	2010-132T21:36:00		000T01:30:00	2010-132T23:06:00	UVIS_FUV to Iapetus	POS_X to 244.1/41.1	
CIRS_131OT_STRALTCAL001_PRIME	M	2010-132T23:06:00		000T05:00:00	2010-133T04:06:00	CIRS_FPB to Retargetable	NEG_Z to NEP	
SP_131EA_DLTURN133_PRIME	M	2010-133T04:06:00		000T00:40:00	2010-133T04:46:00	XBAND to Earth	POS_X to 94.6/-60.8	
SP_131EA_C70METSEQ133_PRIME	C, M	2010-133T04:46:00		000T09:00:00	2010-133T13:46:00	XBAND to Earth	Rolling/SRU	
SP_131SA_WAYPTTURN133_PRIME	M	2010-133T13:46:00		000T00:40:00	2010-133T14:26:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
CAPS_131SW_SWAURPTG006_PRIME	M	2010-133T14:26:00		000T06:00:00	2010-133T20:26:00	POS_Y to 230.49/27.08	POS_X to 160.6/-33.92	share with CDA
ISS_131IA_IAPETUS133_PRIME	M, U	2010-133T20:26:00		000T01:25:00	2010-133T21:51:00	UVIS_FUV to Iapetus	POS_X to 238.3/37.1	
SP_131EA_DLTURN433_PRIME	M	2010-133T21:51:00		000T00:22:00	2010-133T22:13:00	ISS_NAC to 200.0/70.0	POS_X to 94.6/-60.8	
SP_131EA_DLTURN533_PRIME	M	2010-133T22:13:00		000T00:18:00	2010-133T22:31:00	XBAND to Earth	POS_X to 94.6/-60.8	
SP_131EA_G34BWGSEQ133_PRIME	C, E, M	2010-133T22:31:00		000T09:00:00	2010-134T07:31:00	XBAND to Earth	3_Hr_Rolling	
SP_131SA_WAYPTTURN134_PRIME	M	2010-134T07:31:00		000T00:18:00	2010-134T07:49:00	ISS_NAC to 200.0/70.0	POS_X to 94.6/-60.8	
SP_131SA_WAYPTTURN434_PRIME	M	2010-134T07:49:00		000T00:22:00	2010-134T08:11:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
CIRS_131SA_COMPSIT002_PRIME	M	2010-134T08:11:00		000T10:10:00	2010-134T18:21:00	CIRS_FP1 to Saturn	NEG_Z to NSP	
CAPS_131SA_MAGBNDPTG007_PRIME	M	2010-134T18:21:00		000T02:00:00	2010-134T20:21:00	POS_Y to COROT (0.0,0.0,34.0 deg. offset)	NEG_X to NSP	
ISS_131IA_IAPETUS134_PRIME	M, U	2010-134T20:21:00		000T01:30:00	2010-134T21:51:00	UVIS_FUV to Iapetus	POS_X to 233.4/32.1	
SP_131EA_DLTURN134_PRIME	M	2010-134T21:51:00		000T00:40:00	2010-134T22:31:00	XBAND to Earth	POS_X to 92.7/-49.6	
SP_131EA_G34BWGSEQ134_PRIME	C, M	2010-134T22:31:00		000T09:00:00	2010-135T07:31:00	XBAND to Earth	Rolling	
SP_131SA_WAYPTTURN135_PRIME	M	2010-135T07:31:00		000T00:40:00	2010-135T08:11:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
VIMS_131SA_GLOBDYN003_PRIME	M	2010-135T08:11:00		000T10:00:00	2010-135T18:11:00	ISS_NAC to Saturn	NEG_Z to 38.4/83.5	
CAPS_131SA_MAGBNDPTG001_PRIME	M	2010-135T18:11:00		000T03:40:00	2010-135T21:51:00	POS_Y to COROT (0.0,0.0,34.0 deg. offset)	NEG_X to NSP	
SP_131EA_DLTURN135_PRIME	M	2010-135T21:51:00		000T00:40:00	2010-135T22:31:00	XBAND to Earth	NEG_Y to 268.58/-7.36	
SP_131EA_G34BWGOTP135_PRIME	C, M, N	2010-135T22:31:00		000T09:00:00	2010-136T07:31:00	XBAND to Earth	4_Hr_Rolling	NEG_Y to 268.58/-7.36 (Saturn, (0,0,-9.5)); MIMI,CAPS,CDA
SP_131SA_WAYPTTURN136_PRIME	M	2010-136T07:31:00		000T00:40:00	2010-136T08:11:00	ISS_NAC to Saturn	NEG_Z to 39.0/83.8	
UVIS_131SA_EUVFUV001_PRIME	M	2010-136T08:11:00		000T06:40:00	2010-136T14:51:00	UVIS_FUV to Saturn	NEG_Z to 38.4/83.5	
VIMS_131SA_GLOBDYN004_PRIME	M	2010-136T14:51:00		000T11:00:00	2010-137T01:51:00	ISS_NAC to Saturn	NEG_Z to 38.4/83.5	
SP_131EA_DLTURN137_PRIME	M	2010-137T01:51:00		000T02:40:00	2010-137T04:31:00	XBAND to Earth	NEG_Y to 268.58/-7.36	
SP_131EA_C70METOTB137_PRIME	C, E, M, N	2010-137T04:31:00		000T09:00:00	2010-137T13:31:00	XBAND to Earth	NEG_Y to 268.58/-7.36	pre-SOST CIRS non-roll; NEG_Y to (Saturn, (0,0,-9.5)); MIMI,CAPS,CDA

Final Sequenced SMT and Data Volume (1 of 2)

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_130EA_C34BWGOTP119_PRIME	119 05:47	119 14:47	0	676	20	696	3540	2844	0	679	53	1428	740	-689	-3	0%	689
SP_130EA_C70METOTB120_PRIME	120 05:47	120 14:47	689	2524	64	3276	3540	264	0	665	53	3994	3954	-41	-3	0%	41
SP_130EA_G34BWGNON120_PRIME	120 23:32	121 08:32	41	540	37	618	3540	2922	0	648	53	1319	896	-424	-3	0%	424
SP_130EA_G34BWGNON121_PRIME	121 23:17	122 08:17	424	1873	62	2358	3540	1182	0	648	53	3059	894	-2166	-3	0%	2166
SP_130EA_G34BWGNON122_PRIME	122 23:17	123 08:17	2166	1122	63	3351	3540	189	0	586	53	3990	890	-3101	-3	0%	3101
SP_130EA_M70METNON123_PRIME	123 15:47	124 00:47	3101	412	32	3544	3540	-3	0	586	53	4179	4115	-65	5	0%	65
SP_130EA_M34BWGNON124_PRIME	124 15:47	125 00:47	65	900	63	1028	3540	2512	0	468	53	1550	859	-691	5	0%	690
SP_130EA_G34BWGNON125_PRIME	125 23:02	126 08:02	690	1234	94	2018	3540	1522	0	468	53	2539	888	-1652	5	0%	1652
SP_130EA_C70METNON127_PRIME	127 05:17	127 14:17	1652	1784	90	3526	3540	14	0	586	53	4165	3879	-286	5	0%	286
SP_131EA_M70METNON128_PRIME	128 15:16	129 00:16	286	3144	106	3535	3540	5	0	586	53	4175	4103	-72	16	0%	71
SP_131EA_G34BWGNON129_PRIME	129 22:46	130 07:46	71	2575	95	2742	3540	798	0	361	53	3156	878	-2279	16	0%	2278
SP_131EA_C70METOTP131_PRIME	131 05:01	131 14:01	2278	1156	90	3524	3540	16	0	690	53	4267	3085	-1182	128	1%	1182
SP_131EA_C70METOTB132_PRIME	132 05:01	132 14:01	1182	1711	63	2956	3540	584	0	690	53	3700	3710	9	128	1%	0
SP_131EA_C70METSEQ133_PRIME	133 04:46	133 13:46	0	1941	62	2003	3540	1537	0	1123	53	3179	3277	98	118	1%	0
SP_131EA_G34BWGSEQ133_PRIME	133 22:31	134 07:31	0	608	37	645	3540	2895	0	358	53	1056	870	-186	20	0%	186
SP_131EA_G34BWGSEQ134_PRIME	134 22:31	135 07:31	186	664	63	913	3540	2627	0	445	53	1412	866	-546	20	0%	546
SP_131EA_G34BWGOTP135_PRIME	135 22:31	136 07:31	546	975	63	1584	3540	1956	0	390	53	2027	713	-1315	20	0%	1314
SP_131EA_C70METOTB137_PRIME	137 04:31	137 13:31	1314	1396	89	2799	3540	741	0	742	53	3595	3614	19	20	1%	0

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

DATA VOLUME REPORT --- TRANSFER FRAME OVERHEAD NOT INCLUDED

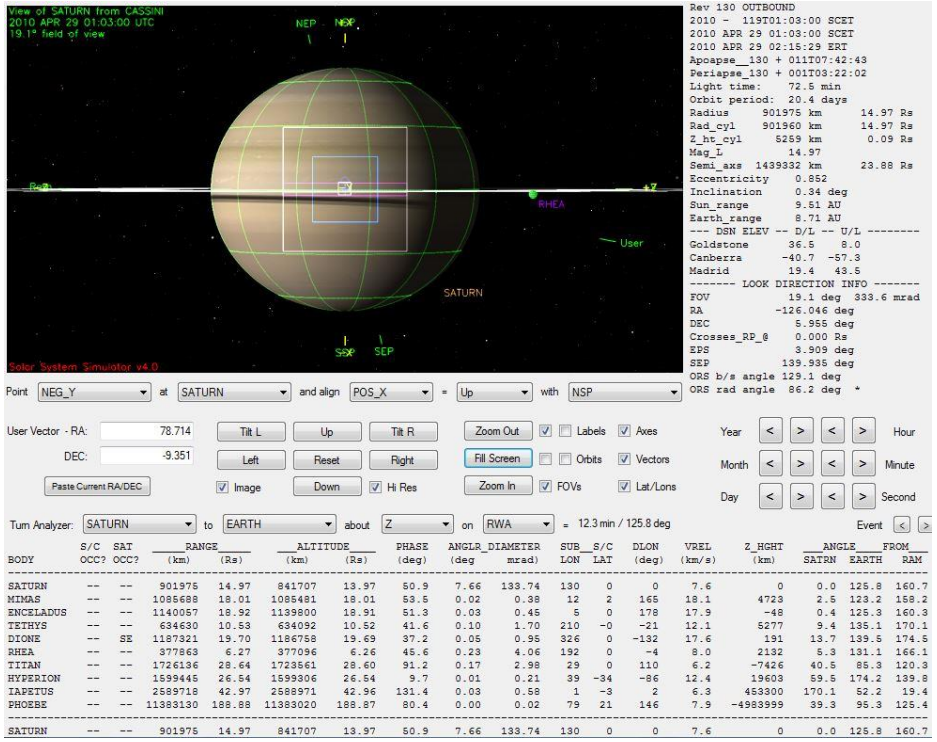
Event	Start doy hh:mm	End doy hh:mm	CAPS (Mb)	CDA (Mb)	CIRS (Mb)	INMS (Mb)	ISS (Mb)	MAG (Mb)	MIMI (Mb)	RADAR (Mb)	RPWS (Mb)	UVIS (Mb)	VIMS (Mb)	PROBE (Mb)	ENGR (Mb)	TOTAL (Mb)
OBSERVATION_NOR	119 01:03	119 05:47	68.2	30.0	0.0	1.7	148.2	33.7	20.4	0.0	171.9	0.5	160.0	0.0	19.8	654.4
OBSERVATION_SI	119 01:03	119 05:47	0.0	0.0	0.0	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0
SP_130EA_C34BWGOTP119_PRIME	119 05:47	119 14:47	129.6	17.0	86.4	3.2	0.0	64.0	38.9	0.0	334.0	0.0	0.0	0.0	0.0	673.2
DAILY TOTAL SCIENCE	119 01:03	119 14:47	197.8	47.0	86.4	4.9	183.2	97.7	59.3	0.0	505.9	0.5	160.0	0.0	19.8	
OBSERVATION_NOR	119 14:47	120 05:47	246.6	28.3	0.0	5.4	819.4	106.7	64.8	12.8	556.7	0.0	660.0	0.0	62.7	2563.5
SP_130EA_C70METOTB120_PRIME	120 05:47	120 14:47	129.6	17.0	86.4	3.2	0.0	64.0	38.9	0.0	315.3	4.9	0.0	0.0	0.0	659.3
DAILY TOTAL SCIENCE	119 14:47	120 14:47	376.2	45.3	86.4	8.6	819.4	170.7	103.7	12.8	872.0	4.9	660.0	0.0	62.7	
OBSERVATION_NOR	120 14:47	120 23:32	126.0	16.5	0.0	3.2	0.0	62.2	37.8	0.0	289.8	0.0	0.0	0.0	36.6	572.1
SP_130EA_G34BWGNON120_PRIME	120 23:32	121 08:32	129.6	17.0	86.4	3.2	0.0	64.0	38.9	0.0	298.1	4.9	0.0	0.0	0.0	642.1
DAILY TOTAL SCIENCE	120 14:47	121 08:32	255.6	33.5	86.4	6.4	0.0	126.3	76.7	0.0	587.9	4.9	0.0	0.0	36.6	
OBSERVATION_NOR	121 08:32	121 23:17	212.4	27.8	144.0	5.3	150.0	104.9	63.7	0.0	488.5	0.0	658.8	0.0	61.6	1917.2
SP_130EA_G34BWGNON121_PRIME	121 23:17	122 08:17	129.6	17.0	86.4	3.2	0.0	64.0	38.9	0.0	298.1	4.9	0.0	0.0	0.0	642.1
DAILY TOTAL SCIENCE	121 08:32	122 08:17	342.0	44.8	230.4	8.6	150.0	168.9	102.6	0.0	786.6	4.9	658.8	0.0	61.6	
OBSERVATION_NOR	122 08:17	122 23:17	110.3	28.3	0.0	5.4	150.0	106.7	64.8	0.0	535.9	51.3	58.8	0.0	62.7	1174.3
SP_130EA_G34BWGNON122_PRIME	122 23:17	123 08:17	32.4	17.0	86.4	3.2	0.0	64.0	38.9	0.0	334.0	4.9	0.0	0.0	0.0	580.9
DAILY TOTAL SCIENCE	122 08:17	123 08:17	142.7	45.3	86.4	8.6	150.0	170.7	103.7	0.0	869.9	56.3	58.8	0.0	62.7	
OBSERVATION_NOR	123 08:17	123 15:47	27.0	14.1	0.0	2.7	0.0	53.4	32.4	0.0	278.4	0.0	0.0	0.0	31.3	439.3
SP_130EA_M70METNON123_PRIME	123 15:47	124 00:47	32.4	17.0	86.4	3.2	0.0	64.0	38.9	0.0	334.0	4.9	0.0	0.0	0.0	580.9
DAILY TOTAL SCIENCE	123 08:17	124 00:47	59.4	31.1	86.4	5.9	0.0	117.4	71.3	0.0	612.4	4.9	0.0	0.0	31.3	

Final Sequenced SMT and Data Volume (2 of 2)

Continued

OBSERVATION_NOR	124 00:47	124 15:47	54.0	28.3	0.0	5.4	40.0	106.7	64.8	0.0	556.7	35.9	0.0	0.0	62.7	954.6
SP_130EA_M34BWGNON124_PRIME	124 15:47	125 00:47	32.4	17.0	86.4	3.2	0.0	64.0	38.9	0.0	217.1	4.9	0.0	0.0	0.0	464.0
DAILY TOTAL SCIENCE	124 00:47	125 00:47	86.4	45.3	86.4	8.6	40.0	170.7	103.7	0.0	773.9	40.9	0.0	0.0	62.7	
OBSERVATION_NOR	125 00:47	125 23:02	80.1	42.0	301.2	8.0	0.0	158.3	96.1	0.0	536.8	0.0	0.0	0.0	93.0	1315.5
SP_130EA_G34BWGNON125_PRIME	125 23:02	126 08:02	32.4	17.0	86.4	3.2	0.0	64.0	38.9	0.0	217.1	4.9	0.0	0.0	0.0	464.0
DAILY TOTAL SCIENCE	125 00:47	126 08:02	112.5	59.0	387.6	11.3	0.0	222.3	135.0	0.0	754.0	4.9	0.0	0.0	93.0	
OBSERVATION_NOR	126 08:02	127 05:17	141.3	40.1	18.0	7.7	575.0	151.2	91.8	0.0	512.7	230.1	0.0	0.0	88.8	1856.7
SP_130EA_C70METNON127_PRIME	127 05:17	127 14:17	32.4	17.0	86.4	3.2	0.0	64.0	38.9	0.0	334.0	4.9	0.0	0.0	0.0	580.9
DAILY TOTAL SCIENCE	126 08:02	127 14:17	173.7	57.1	104.4	10.9	575.0	215.2	130.7	0.0	846.8	235.1	0.0	0.0	88.8	
OBSERVATION_NOR	127 14:17	128 15:16	89.9	47.1	335.8	19.1	0.0	177.7	107.9	0.0	927.3	0.0	1400.0	0.0	104.4	3209.2
OBSERVATION_SI	127 14:17	128 15:16	0.0	0.0	0.0	0.0	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8
SP_131EA_M70METNON128_PRIME	128 15:16	129 00:16	32.4	17.0	86.4	3.2	0.0	64.0	38.9	0.0	334.0	4.9	0.0	0.0	0.0	580.9
DAILY TOTAL SCIENCE	127 14:17	129 00:16	122.3	64.1	422.2	22.3	10.8	241.7	146.8	0.0	1261.3	4.9	1400.0	0.0	104.4	
OBSERVATION_NOR	129 00:16	129 22:46	81.0	42.4	300.0	8.1	0.0	160.1	97.2	0.0	835.1	0.0	1000.0	0.0	94.0	2617.9
OBSERVATION_SI	129 00:16	129 22:46	0.0	0.0	0.0	0.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0
SP_131EA_G34BWGNON129_PRIME	129 22:46	130 07:46	32.4	17.0	86.4	13.3	0.0	64.0	38.9	0.0	100.7	4.9	0.0	0.0	0.0	357.6
DAILY TOTAL SCIENCE	129 00:16	130 07:46	113.4	59.4	386.4	21.4	28.0	224.1	136.1	0.0	935.8	4.9	1000.0	0.0	94.0	
OBSERVATION_NOR	130 07:46	131 05:01	177.3	40.1	61.2	7.7	243.3	151.2	91.8	0.0	237.7	124.5	0.0	0.0	88.8	1223.5
OBSERVATION_SI	130 07:46	131 05:01	0.0	0.0	0.0	0.0	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8
SP_131EA_C70METOTP131_PRIME	131 05:01	131 14:01	32.4	17.0	86.4	3.2	0.0	64.0	38.9	0.0	437.3	4.9	0.0	0.0	0.0	684.1
DAILY TOTAL SCIENCE	130 07:46	131 14:01	209.7	57.1	147.6	10.9	254.1	215.2	130.7	0.0	675.0	129.4	0.0	0.0	88.8	
OBSERVATION_NOR	131 14:01	132 05:01	564.7	28.3	196.8	5.4	0.0	106.7	64.8	0.0	728.8	0.0	0.0	0.0	62.7	1758.2
SP_131EA_C70METOTB132_PRIME	132 05:01	132 14:01	32.4	17.0	86.4	3.2	0.0	64.0	38.9	0.0	437.3	4.9	0.0	0.0	0.0	684.1
DAILY TOTAL SCIENCE	131 14:01	132 14:01	597.1	45.3	283.2	8.6	0.0	170.7	103.7	0.0	1166.0	4.9	0.0	0.0	62.7	
OBSERVATION_NOR	132 14:01	133 04:46	552.0	27.8	72.0	5.3	70.0	104.9	63.7	0.0	1004.1	23.1	0.0	0.0	61.6	1984.6
SP_131EA_C70METSEQ133_PRIME	133 04:46	133 13:46	285.8	17.0	86.4	3.2	0.0	64.0	38.9	0.0	612.7	4.9	0.0	0.0	0.0	1113.0
DAILY TOTAL SCIENCE	132 14:01	133 13:46	837.8	44.8	158.4	8.6	70.0	168.9	102.6	0.0	1616.8	28.0	0.0	0.0	61.6	
OBSERVATION_NOR	133 13:46	133 22:31	159.5	16.5	0.0	3.2	50.0	41.4	37.8	0.0	272.1	21.8	0.0	0.0	36.6	638.8
SP_131EA_G34BWGSEQ133_PRIME	133 22:31	134 07:31	129.6	17.0	86.4	3.2	0.0	32.0	38.9	0.0	42.4	4.9	0.0	0.0	0.0	354.5
DAILY TOTAL SCIENCE	133 13:46	134 07:31	289.1	33.5	86.4	6.4	50.0	73.4	76.7	0.0	314.5	26.8	0.0	0.0	36.6	
OBSERVATION_NOR	134 07:31	134 22:31	216.0	28.3	146.4	5.4	50.0	53.4	64.8	0.0	70.7	23.1	0.0	0.0	62.7	720.8
SP_131EA_G34BWGSEQ134_PRIME	134 22:31	135 07:31	216.2	17.0	86.4	3.2	0.0	32.0	38.9	0.0	42.4	4.9	0.0	0.0	0.0	441.1
DAILY TOTAL SCIENCE	134 07:31	135 07:31	432.2	45.3	232.8	8.6	50.0	85.4	103.7	0.0	113.2	28.0	0.0	0.0	62.7	
OBSERVATION_NOR	135 07:31	135 22:31	235.0	28.3	0.0	5.4	0.0	62.0	64.8	0.0	70.7	0.0	500.0	0.0	62.7	1028.9
SP_131EA_G34BWGOTP135_PRIME	135 22:31	136 07:31	129.6	17.0	86.4	3.2	0.0	64.0	38.9	0.0	42.4	4.9	0.0	0.0	0.0	386.5
DAILY TOTAL SCIENCE	135 07:31	136 07:31	364.6	45.3	86.4	8.6	0.0	126.0	103.7	0.0	113.2	4.9	500.0	0.0	62.7	
OBSERVATION_NOR	136 07:31	137 04:31	302.4	67.8	0.0	17.6	0.0	85.3	90.7	0.0	99.0	120.8	600.0	0.0	87.8	1471.5
SP_131EA_C70METOTB137_PRIME	137 04:31	137 13:31	129.6	135.8	86.4	3.2	0.0	61.6	57.3	0.0	256.8	4.9	0.0	0.0	0.0	735.7
DAILY TOTAL SCIENCE	136 07:31	137 13:31	432.0	203.7	86.4	20.9	0.0	146.9	148.0	0.0	355.8	125.7	600.0	0.0	87.8	

Segment Geometry (1 of 2)

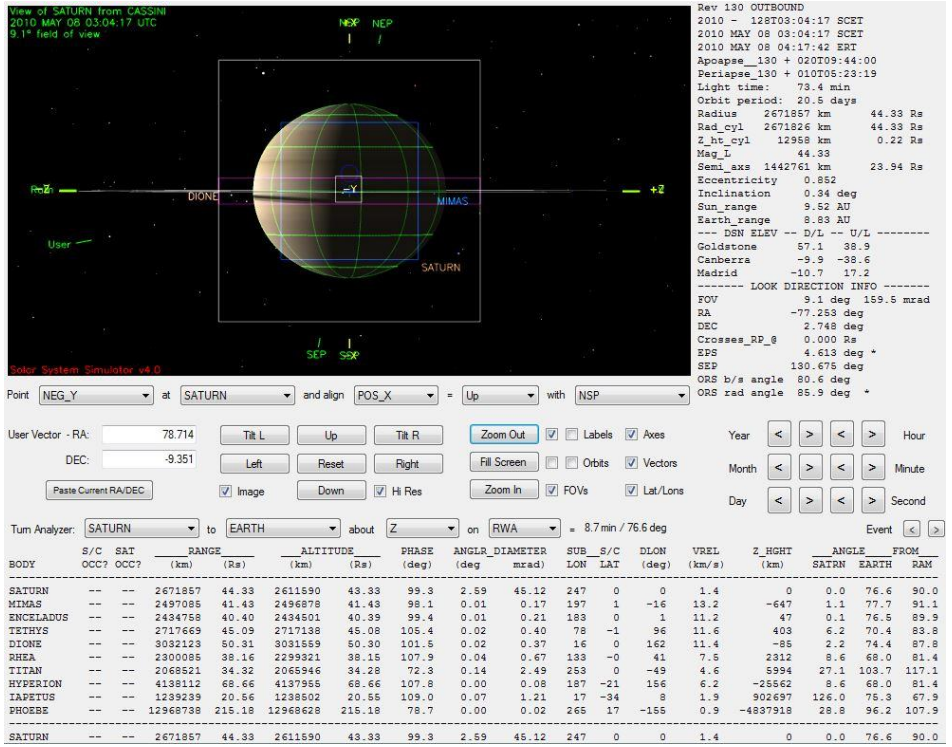


BODY	S/C OCC?	SAT OCC?	RANGE (km)	RANGE (Rs)	ALTITUDE (km)	ALTITUDE (Rs)	PHASE (deg)	ANGLR_DIAMETER (deg)	ANGLR_DIAMETER mrad)	SUB_S/C LON	SUB_S/C LAT	DLON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE FROM SATRN	ANGLE FROM EARTH	ANGLE FROM RAM
SATURN	--	--	901975	14.97	841707	13.97	50.9	7.66	133.74	130	0	0	7.6	0	0.0	125.8	160.7
MIMAS	--	--	1085688	18.01	1085481	18.01	53.5	0.02	0.38	12	2	165	18.1	4723	2.5	123.2	158.2
ENCELADUS	--	--	1140057	18.92	1139800	18.91	51.3	0.03	0.45	5	0	178	17.9	-48	0.4	125.3	160.3
TETHYS	--	--	634630	10.53	634092	10.52	41.6	0.10	1.70	210	-0	-21	12.1	5277	9.4	135.1	170.1
DIONE	--	SE	1187321	19.70	1186758	19.69	37.2	0.05	0.95	326	0	-132	17.6	191	13.7	139.5	174.5
RHEA	--	--	377863	6.27	377096	6.26	45.6	0.23	4.06	192	0	-4	8.0	2132	5.3	131.1	166.1
TITAN	--	--	1726136	28.64	1723561	28.60	91.2	0.17	2.98	29	0	110	6.2	-7426	40.5	85.3	120.3
HYPERION	--	--	1599445	26.54	1599306	26.54	9.7	0.01	0.21	39	-34	-86	12.4	19603	59.5	174.2	139.8
IAPETUS	--	--	2589718	42.97	2588971	42.96	131.4	0.03	0.58	1	-3	2	6.3	453300	170.1	52.2	19.4
PHOEBE	--	--	11383130	188.88	11383020	188.87	80.4	0.00	0.02	79	21	146	7.9	-4983999	39.3	95.3	125.4
SATURN	--	--	901975	14.97	841707	13.97	50.9	7.66	133.74	130	0	0	7.6	0	0.0	125.8	160.7

	Saturn Range	Phase Angle	Sub-S/C Lat.
Segment Start	14.97	50.9	0
Apoapse	44.33	99.3	0
Segment End	11.63	157.7	0

Seg Start (Left)

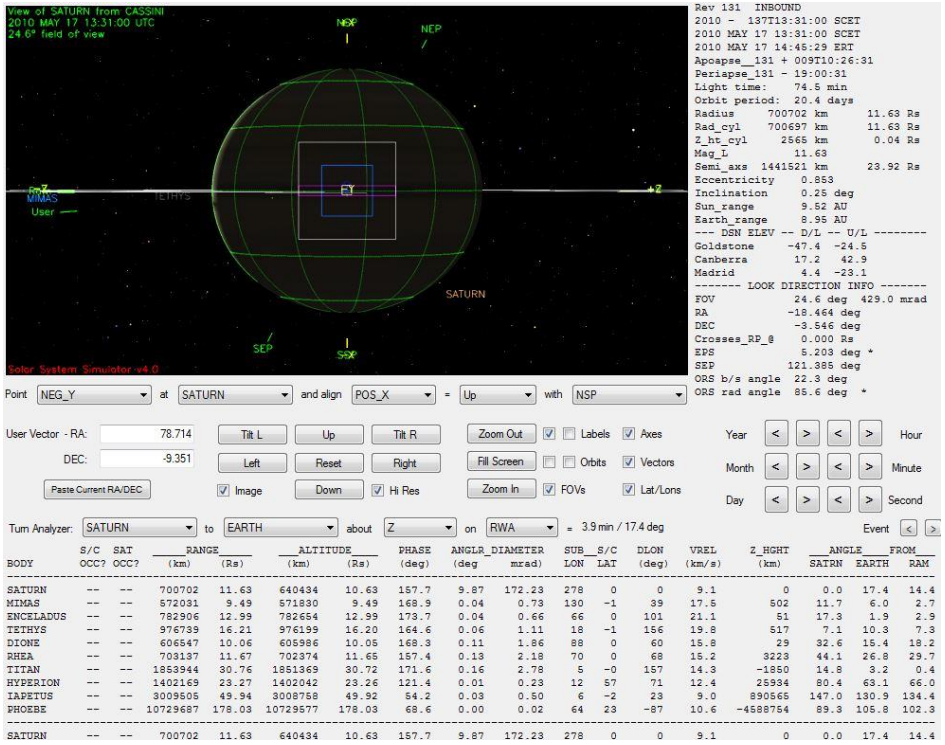
Apoapse (below)



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	DLON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE FROM SATRN	ANGLE FROM EARTH	ANGLE FROM RAM
SATURN	--	--	2671857	44.33	2611590	43.33	99.3	2.59	45.12	247	0	0	1.4	0	0.0	76.6	90.0
MIMAS	--	--	2497085	41.43	2496878	41.43	98.1	0.01	0.17	197	1	-16	13.2	-647	1.1	77.7	91.1
ENCELADUS	--	--	2434758	40.40	2434501	40.39	99.4	0.01	0.21	183	0	1	11.2	47	0.1	76.5	89.9
TETHYS	--	--	2717669	45.09	2717138	45.08	105.4	0.02	0.40	78	-1	96	11.6	403	6.2	70.4	83.8
DIONE	--	--	3032123	50.31	3031559	50.30	101.5	0.02	0.37	16	0	162	11.4	-85	2.2	74.4	87.8
RHEA	--	--	2300085	38.16	2299321	38.15	107.9	0.04	0.67	133	-0	41	7.5	2312	8.6	68.0	81.4
TITAN	--	--	2068521	34.32	2065946	34.28	72.3	0.14	2.49	253	0	-49	4.6	5994	27.1	103.7	117.1
HYPERION	--	--	4138112	68.66	4137955	68.66	107.8	0.00	0.08	187	-21	156	6.2	-25562	8.6	68.0	81.4
IAPETUS	--	--	1239239	20.56	1238502	20.55	109.0	0.07	1.21	17	-34	8	1.9	902697	126.0	75.3	67.9
PHOEBE	--	--	12968738	215.18	12968628	215.18	78.7	0.00	0.02	265	17	-155	0.9	-4837918	28.8	96.2	107.9
SATURN	--	--	2671857	44.33	2611590	43.33	99.3	2.59	45.12	247	0	0	1.4	0	0.0	76.6	90.0

Segment Geometry (2 of 2)

Segment End (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	DLON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE FROM SATRN	ANGLE FROM EARTH	ANGLE FROM RAM
SATURN	--	--	700702	11.63	640434	10.63	157.7	9.87	172.23	278	0	0	9.1	0	0.0	17.4	14.4
MIMAS	--	--	572031	9.49	571830	9.49	168.9	0.04	0.73	130	-1	39	17.5	502	11.7	6.0	2.7
ENCELADUS	--	--	782906	12.99	782654	12.99	173.7	0.04	0.66	66	0	101	21.1	51	17.3	1.9	2.9
TETHYS	--	--	976739	16.21	976199	16.20	164.6	0.06	1.11	18	-1	156	19.8	517	7.1	10.3	7.3
DIONE	--	--	606547	10.06	605986	10.05	168.3	0.11	1.86	88	0	60	15.8	29	32.6	15.4	18.2
RHEA	--	--	703137	11.67	702374	11.65	157.4	0.13	2.18	70	0	68	15.2	3223	44.1	26.8	29.7
TITAN	--	--	1853944	30.76	1851369	30.72	171.6	0.16	2.78	5	-0	157	14.3	-1850	14.8	3.2	0.4
HYPERION	--	--	1402169	23.27	1402042	23.26	121.4	0.01	0.23	12	57	71	12.4	25934	80.4	63.1	66.0
IAPETUS	--	--	3009505	49.94	3008758	49.92	54.2	0.03	0.50	6	-2	23	9.0	890565	147.0	130.9	134.4
PHOEBE	--	--	10729687	178.03	10729577	178.03	68.6	0.00	0.02	64	23	-87	10.6	-4588754	89.3	105.8	102.3
SATURN	--	--	700702	11.63	640434	10.63	157.7	9.87	172.23	278	0	0	9.1	0	0.0	17.4	14.4

Solar Geometry – ORS Boresight Concerns

No ORS Boresight Solar Constraints on Science Pointing

Daily Science Highlights (1 of 3)

Thursday, April 29 (DOY 119)

A kickoff meeting was held today to begin the process of generating and approving a Live Update for Iapetus observations on DOY 123. After examining the files for the update, Science Planning recommended a NO GO for the update. When team members for the Ultraviolet Imaging Spectrograph (UVIS) and Imaging Science (ISS) concurred - the prime instruments affected - the update was cancelled.

Orbit Trim Maneuver (OTM) #245 was performed today. This was the cleanup maneuver following the Enceladus 9 encounter on April 27. The main engine burn began at 5:59 AM PDT. Telemetry immediately after the maneuver showed a burn duration of 33.25 seconds, giving a delta-V of 5.71 m/s. All subsystems reported normal performance after the maneuver.

Monday, May 3 (DOY 123)

This week the Visual and Infrared Mapping Spectrometer performed equatorial global mosaic observations of Saturn to support the study of Saturn atmospheric dynamics, and observed the E and G rings. ISS performed a Wide Angle Camera observation of Saturn, and an observation of Iapetus. RADAR observed Titan from a distance using the Radiometry mode. The Cassini Plasma Spectrometer continued a survey of the Saturn magnetosphere. CIRS measured oxygen compounds of Saturn as a function of latitude. UVIS observed Enceladus in the vicinity of the plume, studying changes in the volatile gases and searching for possible connections with plume eruptions. The Magnetometer performed a 6-hour calibration activity. Called a "cal roll," the activity put the spacecraft in a series of slow rolls about one of its axes. The Cosmic Dust Analyzer (CDA) pointed the spacecraft towards the known direction of interstellar dust sources from outside our solar system.

Daily Science Highlights (2 of 3)

Wednesday, May 5 (DOY 125)

Science activities for this week included long duration Composite Infrared Spectrometer (CIRS) mid-infrared observations of Saturn. The purpose of these observations was to profile the temperature of the upper troposphere and tropopause of Saturn in various latitude regions. In addition, CIRS measured Saturn oxygen compounds as a function of latitude and performed long term monitoring of infrared stars. Imaging Science (ISS), CIRS, and the Ultraviolet Imaging Spectrograph (UVIS) captured the long-term features of the atmosphere of Titan as part of an on-going Titan Monitoring Campaign.

ISS also performed observations of Iapetus and Bebhionn. Due to the moon's small apparent size, ISS was only able to characterize the light signature of Bebhionn as it rotated against the darkness of space by pointing to the object for more than 11 hours. Finally, the Cassini Plasma Spectrometer (CAPS) performed several observations of Saturn's magnetosphere.

Tuesday, May 11 (DOY 131)

Orbit Trim Maneuver (OTM) #246 was performed today. This was the apoapsis maneuver setting up for the Enceladus 10 and Titan 68 encounters on May 18 and 19. The main engine burn began at 5:14 AM PDT. Telemetry immediately after the maneuver showed a burn duration of 51.55 seconds, giving a delta-V of 8.88 m/s. All subsystems reported nominal performance after the maneuver.

Daily Science Highlights (3 of 3)

Wednesday, May 12 (DOY 132)

Final science observations in S59 included Cassini Plasma Spectrometer magnetospheric observations and solar wind auroral observations. The solar wind is a stream of particles emitted from the Sun which interact with the magnetosphere of Saturn to produce aurora. Imaging Science (ISS) took images of Iapetus. The Composite Infrared Spectrometer (CIRS) performed Saturn atmospheric composition measurements and a scattered light calibration. This calibration measured the amount of possible degradation of the primary mirror of the instrument after years of operation. The Visual and Infrared Mapping Spectrometer (VIMS) took data for a mosaic covering an entire hemisphere of Saturn. Centered on the equator, this 3 x 3 global dynamics mosaic will allow scientists to measure the global atmospheric changes that take place during one Saturn rotation. Scanning across Saturn, the Ultraviolet Imaging Spectrograph (UVIS) obtained ultraviolet spectral images which will help scientists understand Saturn's atmosphere.

Segment Integration Planning

Timeline Gaps and Suggested Observations (1 of 2)

Saturn Rev 130_131 Strawman Statistics

Rev 130-131 Apoapse: 2010-119T01:03:00 --> 2010-137T13:31:00

	Requested in CIMS				Allocated in Timeline						
Prime Pointing Re	Requests	Min. Duration	Max. Duration	Total Duration	Requests	Min. Duration	Max. Duration	Total Duration	% Alloc. Req.	% Alloc. Time	Notes
CAPS											
DUSKPTG	2	000T06:00:00	000T18:25:00	001T00:25:00	0	000T00:00:00	000T00:00:00	000T00:00:00	0.0%	0.0%	conflict with VIMS_GLOBALDYN
MAGBNDPTG	5	000T06:00:00	000T06:00:00	001T06:00:00	3	000T02:10:00	000T07:25:00	001T15:35:00	60.0%	51.9%	
SWAURPTG	12	000T06:00:00	000T06:00:00	002T18:00:00	3	000T05:00:00	000T08:19:00	002T19:19:00	25.0%	29.3%	
CDA											
ISD	9	000T12:00:00	000T12:00:00	004T12:00:00	3	000T04:01:00	000T12:00:00	001T00:00:01	33.3%	22.2%	
CIRS											
1STAROBS	2	000T06:00:00	000T06:00:00	000T12:00:00	1	000T06:00:00	000T06:00:00	000T06:00:00	50.0%	100.0%	two identical requests in CIMS
COMPSIT	4	000T10:00:00	000T23:33:00	002T16:43:00	4	000T10:00:00	000T23:13:00	002T16:03:00	100.0%	99.0%	
MIRTMAP	1	000T13:40:00	000T13:40:00	000T13:40:00	1	000T13:40:00	000T13:40:00	000T13:40:00	100.0%	100.0%	
MIRMAP	1	000T20:55:00	000T20:55:00	000T20:55:00	1	000T20:55:00	000T20:55:00	000T20:55:00	100.0%	100.0%	
STRALTCAL	1	000T05:00:00	000T05:00:00	000T05:00:00	1	000T05:00:00	000T05:00:00	000T05:00:00	100.0%	100.0%	
NADIROCC	1	000T03:50:00	000T03:50:00	000T03:50:00	0	000T00:00:00	000T00:00:00	000T00:00:00	0.0%	0.0%	conflict with VIMS_GLOBALDYN
ISS											
CLOUDMON	6	000T01:15:00	000T01:15:00	000T06:15:00	1	000T01:15:00	000T01:15:00	000T01:15:00	16.7%	16.7%	
LRLEMP	1	000T08:00:00	000T08:00:00	000T08:00:00	1	000T00:00:00	000T00:00:00	000T00:00:00	0.0%	0.0%	conflict with CIRS COMPSIT
1X2WPH20	1	000T06:00:00	000T06:00:00	000T06:00:00	0	000T00:00:00	000T00:00:00	000T00:00:00	0.0%	0.0%	obs period too short
IAPETUS	13	000T01:30:00	000T01:30:00	000T19:15:00	1	000T01:25:00	000T01:40:00	000T06:05:00	30.8%	31.6%	
MUTEVEN	1	000T01:10:00	000T01:10:00	001T01:10:00	0	000T00:00:00	000T00:00:00	000T00:00:00	0.0%	0.0%	conflict with CIRS MIRMAP
OUTERSATS	2	000T04:00:00	000T04:00:00	000T08:00:00	0	000T11:55:00	000T11:55:00	000T11:55:00	50.0%	149.0%	combined one OuterSat with Iapetus per Tilmann
ROTCOLR	1	000T02:00:00	000T02:00:00	000T02:00:00	4	000T00:00:00	000T00:00:00	000T00:00:00	0.0%	0.0%	conflict with VIMS_GLOBALDYN

Timeline Gaps and Suggested Observations (1 of 2)

Continued

MAG											
CALROLL	1	000T06:45:00	000T06:45:00	000T06:45:00	1	000T06:10:00	000T06:10:00	000T06:10:00	100.0%	91.4%	
NAV											
OPNAV	2	000T00:59:00	000T01:14:00	000T02:13:00	2	000T00:59:00	000T01:14:00	000T02:13:00	100.0%	100.0%	
OPNAVK	2	000T00:59:00	000T00:59:00	000T01:58:00	2	000T00:59:00	000T00:59:00	000T01:58:00	100.0%	100.0%	
RADAR											
NEQUACAL	1	000T01:30:00	000T01:30:00	000T01:30:00	0	000T00:00:00	000T00:00:00	000T00:00:00	0.0%	0.0%	conflict with VIMS_GLOBALDYN
UVIS											
ALPVIR	1	000T03:00:00	000T03:00:00	000T03:00:00	1	000T01:55:00	000T01:55:00	000T01:55:00	100.0%	63.9%	
APOMOSAIC	10	000T08:00:00	000T08:00:00	003T08:00:00	0	000T00:00:00	000T00:00:00	000T00:00:00	0.0%	0.0%	scheduled in the last SaturnTWT
ICYATM	3	000T04:00:00	000T04:00:00	000T12:00:00	0	000T04:00:00	000T04:00:00	000T04:00:00	0.0%	33.3%	conflict with downlink, VIMS_GLOBALDYN
EUVFUV	1	000T15:00:00	000T15:00:00	000T15:00:00	1	000T06:40:00	000T06:40:00	000T06:40:00	100.0%	44.4%	
ICYLON	1	000T02:00:00	000T02:00:00	000T04:00:00	0	000T00:00:00	000T00:00:00	000T00:00:00	0.0%	0.0%	conflict with VIMS_GLOBALDYN
VIMS											
EG105PHASE	1	000T12:00:00	000T12:00:00	000T12:00:00	0	000T00:00:00	000T00:00:00	000T00:00:00	0.0%	0.0%	1 of 3 minimum requests already allocated in rings rev125 segment
EG80PHASE	1	000T12:00:00	000T12:00:00	000T00:00:00	2	000T08:15:00	000T08:15:00	000T08:15:00	200.0%	68.8%	split into two requests
GLOBDYN	4	000T04:44:00	000T20:00:00	002T06:44:00	4	000T02:49:00	000T13:40:00	001T17:09:00	100.0%	75.2%	

Initial SMT and Data Volume

Beginning of Integration:

No Initial SMT Report Available

Waypoint Selection (1 of 3)

Waypoint Options

These are RBOT Friendly Waypoints, unless otherwise stated (Note that NSP = 40.589/+83.537)

	Primary	Secondary
• **2010-119T15:27:00 to 2010-120T05:07:00**	ISS_NAC to Saturn	NEG_X to 39.0/83.8 (NSP OK)
OR	ISS_NAC to Saturn	NEG_Z to 39.0/83.8 (NSP OK)
• VIMS GLOBDYN (NEG_X to NSP), ISS 1X2WPH (POS_X to NSP), RADAR NEQUACAL		
• **2010-120T15:27:00 to 2010-120T22:52:00**	CAPS choice	CAPS choice
• Entire Obs. Period with CAPS_130SA_MAGBNDPTG003		
• **2010-121T09:12:00 to 2010-121T22:37:00**	ISS_NAC to Saturn	NEG_X to 39.0/83.8 (NSP OK)
OR	ISS_NAC to Saturn	NEG_Z to 39.0/83.8 (NSP OK)
• CIRS COMPSIT (NEG_Z to NSP), VIMS EG80PHASE (POS_Z to NSP)		
• **2010-122T08:57:00 to 2010-122T23:47:00**	ISS_NAC to Saturn	NEG_X to 39.0/83.8 (NSP OK)
OR	ISS_NAC to Saturn	NEG_Z to 39.0/83.8 (NSP OK)
• **2010-123T08:57:00 to 2010-123T15:07:00**	MAG choice	MAG choice
• Entire Obs. Period with MAG_130SU_CALROLL001		
• **2010-124T01:27:00 to 2010-125T01:27:00**	XBAND to Earth	NEG_X to NSP (CDA)
• CDA ISD, ISS IAPETUS		
• **2010-125T01:27:00 to 2010-125T22:22:00**	ISS_NAC to Saturn	NEG_X to 39.0/83.8 (NSP OK)
OR	ISS_NAC to Saturn	NEG_Z to 39.0/83.8 (NSP OK)
• Entire Obs. Period with CIRS_130SA_MIRMAP001 (NEG_Z to NSP)		

Waypoint Selection (2 of 3)

Waypoint Options: Continued

- **2010-126T08:42:00 to 2010-127T04:37:00** ISS_NAC to Saturn NEG_X to 39.0/83.8 (NSP OK)
  OR ISS_NAC to Saturn NEG_Z to 39.0/83.8 (NSP OK)
  - ISS M90R2CLD (NEG_X to Sun), ISS OUTERSAT (NEG_X to Sun), CAPS SWAURPT, ISS IAPETUS127 (NEG_X to Sun)
- **2010-127T14:57:00 to 2010-128T15:16:00** ISS_NAC to Saturn NEG_X to 39.0/83.8 (NSP OK)
  OR ISS_NAC to Saturn NEG_Z to 39.0/83.8 (NSP OK)
  - CIRS COMPSIT004 (NEG_Z to NSP), NAV OPNAVK (POS_Z to NSP)
- **2010-129T00:16:00 to 2010-129T22:46:00** ISS_NAC to Saturn NEG_X to 39.0/83.8 (NSP OK)
  OR ISS_NAC to Saturn NEG_Z to 39.0/83.8 (NSP OK)
  - CIRS COMPSIT004, NAV OPNAV
- **2010-130T07:46:00 to 2010-131T05:01:00** ISS_NAC to Saturn NEG_X to 39.0/83.8 (NSP OK)
  OR ISS_NAC to Saturn NEG_Z to 39.0/83.8 (NSP OK)
  - ISS M90R3CLD (NEG_X to Sun), CAPS SWAURPT, CIRS 1STAROBS, UVIS ALPVIR, NAV OPNAVK
- **2010-131T14:01:00 to 2010-132T05:01:00** ISS_NAC to Saturn NEG_X to 38.2/83.5 (NSP OK)
  ISS_NAC to Saturn NEG_Z to 38.2/83.5 (NSP OK)
  - Entire Obs. Period with CIRS MIRTMAP (NEG_Z to NSP)

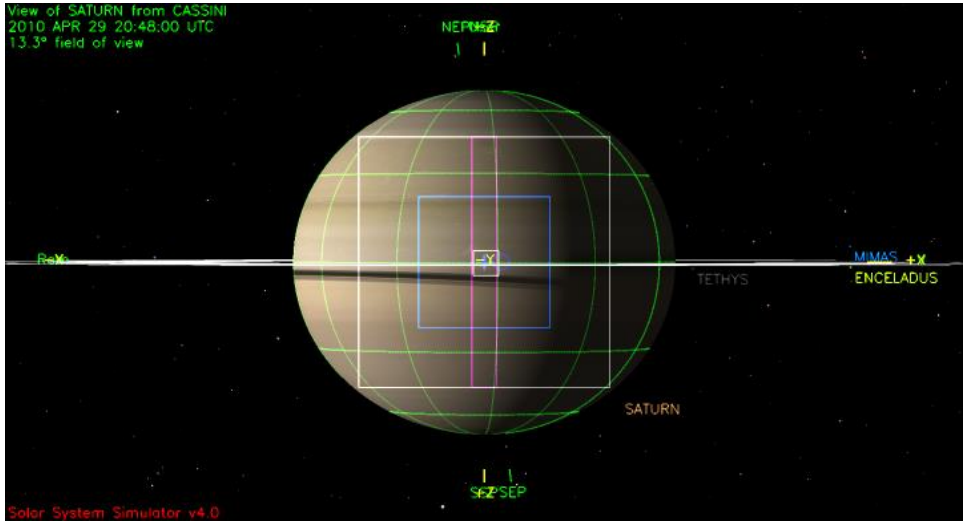
Waypoint Selection (3 of 3)

Waypoint Options: Continued

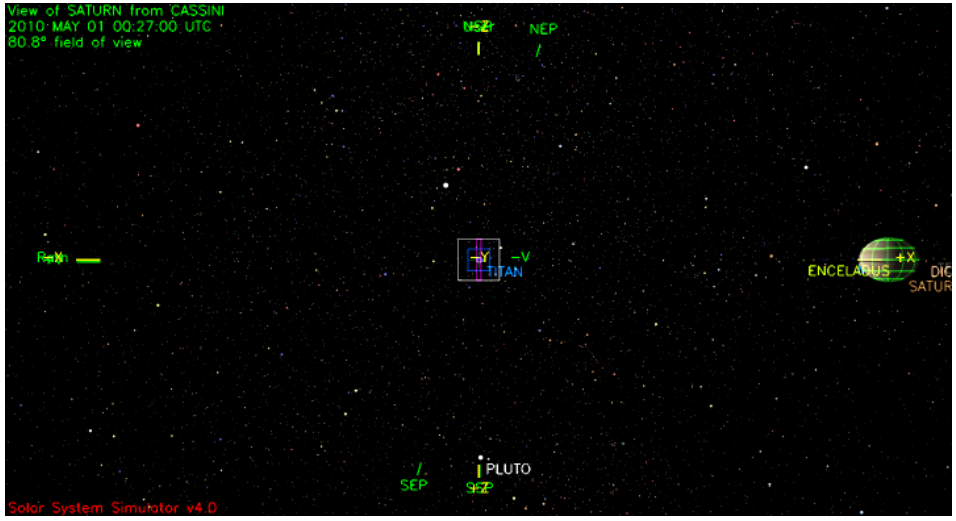
- **2010-132T14:01:00 to 2010-133T04:46:00** ISS_NAC to Saturn NEG_X to 38.2/83.5 (NSP OK)
  OR ISS_NAC to Saturn NEG_Z to 38.2/83.5 (NSP OK)
  - CAPS SWAURPTG, ISS IAPETUS (NEG_X to Sun), CIRS STRALTCAL (NEG_Z to NEP)
- **2010-133T13:46:00 to 2010-133T22:31:00** ISS_NAC to Saturn NEG_X to 38.2/83.5 (NSP OK)
  OR ISS_NAC to Saturn NEG_Z to 38.2/83.5 (NSP OK)
  - CAPS SWAURPTG, ISS IAPETUS (NEG_X to Sun)
- **2010-134T07:31:00 to 2010-134T21:51:00** ISS_NAC to Saturn NEG_X to 38.2/83.5 (NSP OK)
  OR ISS_NAC to Saturn NEG_Z to 38.2/83.5 (NSP OK)
  - CIRS COMPSIT (NEG_Z to NSP), CAPS MAGBNDPTG, ISS IAPETUS (NEG_X to Sun)
- **2010-135T07:31:00 to 2010-135T22:31:00** ISS_NAC to Saturn NEG_X to 38.4/83.5 (NSP OK)
  OR ISS_NAC to Saturn NEG_Z to 38.4/83.5 (NSP OK)
  - Entire Obs. Period with VIMS GLOBDYN (NEG_X to NSP)
- **2010-136T07:31:00 to 2010-137T04:31:00** ISS_NAC to Saturn NEG_X to 38.4/83.5 (NSP OK)
  OR ISS_NAC to Saturn NEG_Z to 38.4/83.5 (NSP OK)
  - UVIS EUVFUV (NEG_Z to SUN), VIMS GLOBDYN (NEG_X to NSP)

Waypoints Chosen (1 of 3)

Waypoint 1 & 2 (2010-119T02:18:00 – 119T15:27:00): NEG_Y to Saturn, Neg_Z to 39.0/83.8

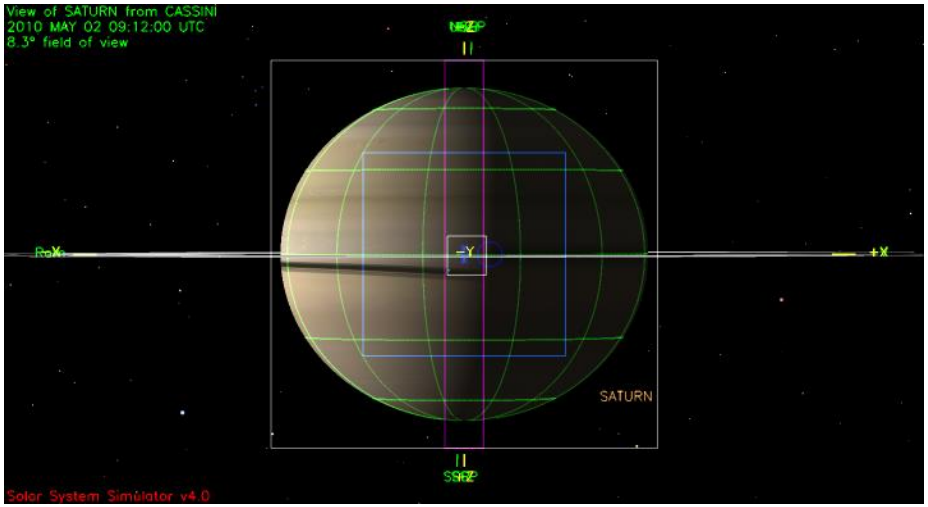


Waypoint 3 (2010-120T15:27:00 – 121T09:12:00): NEG_Y to Saturn (0,0,-30), Neg_Z to 39.0/83.8

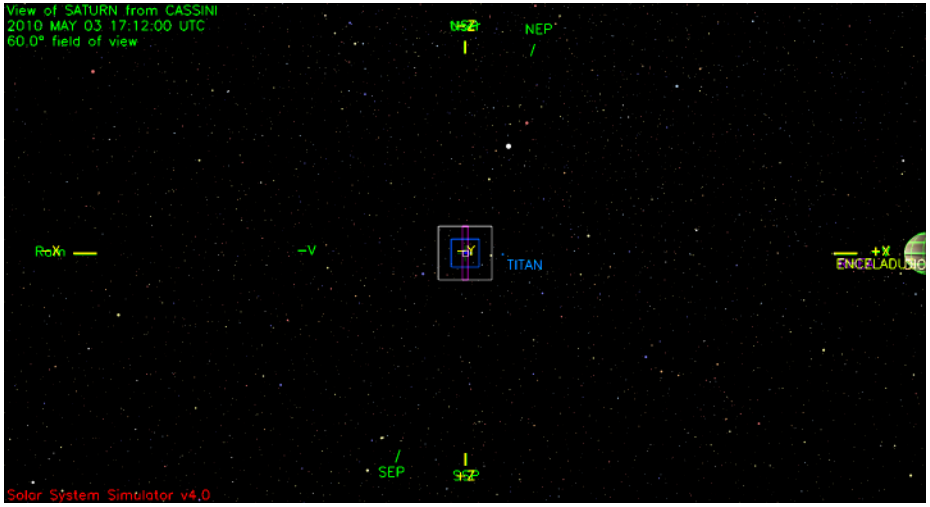


Waypoints Chosen (2 of 3)

Waypoint 4 (2010-121T09:12:00 – 123T08:57:00): NEG_Y to Saturn, Neg_Z to 39.0/83.8



Waypoint 5 (2010-123T08:57:00 – 124T01:27:00): NEG_Y to Saturn (0,0,-30), Neg_Z to 39.0/83.8

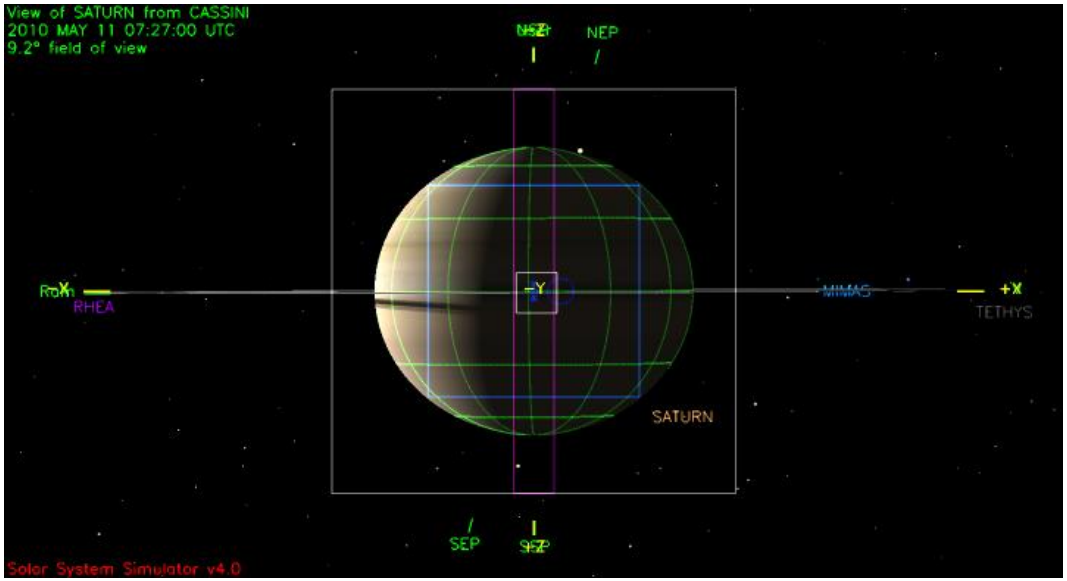


Waypoints Chosen (3 o3)

Waypoint 6 (2010-124T01:27:00 – 125T01:27:00): XBAND to Earth (0,0,-10), Neg_X to NSP

Not shown here – ORS is not pointed toward any object at this waypoint

Waypoint 7 (2010-125T01:27:00 – 137T13:31:00): NEG_Y to Saturn, Neg_Z to 39/83.8



Notes and Liens

Notes:

- Pointing:
  - RBOT Friendly Waypoints used throughout
  - Two SP Turns may need the following adjustment s to avoid PDT margin error:
    - SP_130EA_DLTURN520_PRIME 2010-120T22:52:00
      - Turn duration = 00:38:47. Use 10 sec. margin and 00:39:10 turn time allocation in PDT
    - SP_130SA_WAYPTTURN123_PRIME 2010-123T08:17:00
      - CTV issued CIRS Radiator Heating during turn. May need to break up into two part turn.
- Data Volume: None
- DSN:
  - No Level 3 Requirements in this segment
  - 70 meter usage is at 44%
- Opmodes/Telemetry Modes:
  - Telemetry mode switch to S_N_ER_5A for RADAR Warm-up occurs during ISS_130SA_GLOBDYN002_VIMS.
    - Ulyana Dyudina [ulyana@gps.caltech.edu] , owner of ISS RIDER approves this (see email on 9/19/09).