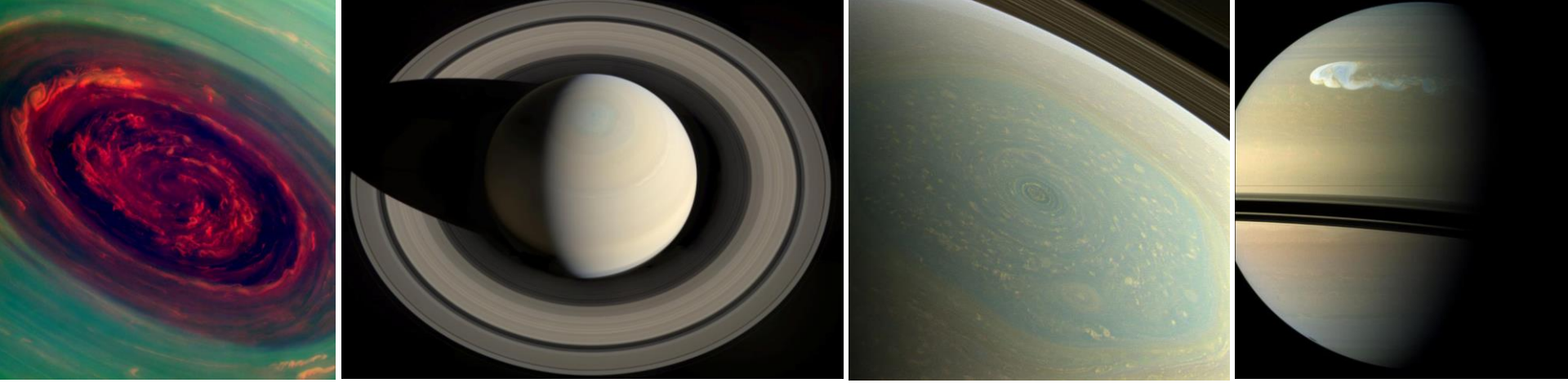

Science Planning & Sequence Team
CASSINI

# SATURN TARGET WORKING TEAM

**Rev 125_127 Segment Legacy Package**

**Segment Boundary: January 31, 2010 – March 1, 2010**
**2010-031T07:01:00 – 2010-060T19:04:00 (SCET)**

**Integration Began 03/29/2009**
**Segment Delivered to S57 Sequence 07/15/2009**
**Lead Integrator was Anna Marie Aguinaldo**

**Legacy Package Assembled by Shawn Boll**

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# Segment Overview and Final Products

# Segment Summary

- This was a 29.5 day long segment in the Equinox Mission, during an equatorial orbit. It covered more than an entire orbit, beginning outbound from Rev 125 periapse, continuing through Rev 126 periapse, and not ending until after Rev 127 apoapse.

- The first apoapse period didn't include a lot of Saturn discipline activities other than some CIRS composition. It included UVIS system scans of Saturn's magnetosphere, CDA interstellar dust, CAPS aurora, and ISS observations of several small rocks and outer satellites.

- Near periapse, Saturn science included VIMS global maps and a stellar occultation, CIRS limb integrations, a UVIS solar occultation, and ISS solar eclipse limb imaging. Out of discipline science included observations of Calypso and Epimetheus, as well as several of Mimas.

- Just prior to periapse the High Gain Antenna was turned into the dust ram direction to protect the instruments from potential impacts.

- As the spacecraft moved outbound toward the second apoapse of the segment, VIMS performed global dynamics observations, and CIRS mid-IR mapping and temperature mapping. Observations of Titan, Iapetus, and the rings were also conducted.

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

- The waypoint strategy was complicated with accommodations needed for solar viewing constraints, dust hazard, and icy satellite observations.

# Final Sequenced SPASS (1 of 4)



| Request | Riders | Start (SCET) | Start (Epoch) | Duration | End (SCET) | Primary | Secondary | Comments |
|---|---|---|---|---|---|---|---|---|
| Sequence S57, length = 37 days | | 2010-023T15:00:00 | | 037T04:04:00 | 2010-060T19:04:00 | | | |
| SATURN_125_127 Segment | | 2010-031T07:01:00 | | 029T12:03:00 | 2010-060T19:04:00 | | | |
| SP_125SA_WAYPTTURN031_PRIME | M | 2010-031T07:01:00 | | 000T00:40:00 | 2010-031T07:41:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| **NEW WAYPOINT** | | **2010-031T07:41:00** | | **011T23:17:00** | **2010-043T06:58:00** | **ISS_NAC to Saturn** | **NEG_Z to NSP** | |
| ISS_125TI_M60R2CLD031_PRIME | C, M, U | 2010-031T07:41:00 | E125_M60R2CLD031+000T00:00:00 | 000T01:15:00 | 2010-031T08:56:00 | ISS_NAC to Titan | NEG_Z to 23.5/82.3 | |
| CAPS_125SA_MAGBNDPTG005_PRIME | M | 2010-031T08:56:00 | | 000T05:44:00 | 2010-031T14:40:00 | NEG_Z to Saturn (0.0,0.0,40.0 deg. offset) | POS_Y to COROT | |
| ISS_125PM_MUTUALEVE002_PRIME | M | 2010-031T14:40:00 | | 000T01:16:00 | 2010-031T15:56:00 | ISS_NAC to Prometheus | NEG_Z to NSP | ISS_NAC to Prometheus control of secondary axis not required |
| ISS_125OT_SATELLORB010_PRIME | M | 2010-031T15:56:00 | | 000T01:25:00 | 2010-031T17:21:00 | ISS_NAC to Rocks | NEG_Z to NSP | |
| UVIS_125EN_ICYATM002_PRIME | M | 2010-031T17:21:00 | | 000T04:00:00 | 2010-031T21:21:00 | UVIS_FUV to Enceladus | NEG_Z to 30.8/80.8 | See observation description. Duration of 4 hours allows for 30 min slew to and from Enceladus, and 3 integration sites. |
| SP_125EA_DLTURN031_PRIME | M | 2010-031T21:21:00 | | 000T00:40:00 | 2010-031T22:01:00 | XBAND to Earth | NEG_Y to 274.65/-5.65 | |
| SP_125EA_M70METOTP031_PRIME | C, E, M, N | 2010-031T22:01:00 | | 000T09:00:00 | 2010-032T07:01:00 | XBAND to Earth | 4_Hr_Rolling | NEG_Y to 274.65/-5.65 (Saturn, (0,0,-9.5)); MIMI,CAPS,CDA MIMI ENA Imaging Series Candidate |
| SP_125SA_WAYPTTURN032_PRIME | M | 2010-032T07:01:00 | | 000T00:40:00 | 2010-032T07:41:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| ISS_125TI_M60R2CLD032_PRIME | C, M, U | 2010-032T07:41:00 | E125_M60R2CLD032+000T00:00:00 | 000T01:15:00 | 2010-032T08:56:00 | ISS_NAC to Titan | NEG_X to 31.8/82.9 | |
| ISS_125OT_SATELLORB013_PRIME | M | 2010-032T08:56:00 | | 000T00:58:00 | 2010-032T09:54:00 | ISS_NAC to Rocks | NEG_Z to NSP | |
| ISS_125EP_MUTUALEVE005_PRIME | M | 2010-032T09:54:00 | | 000T00:45:00 | 2010-032T10:39:00 | ISS_NAC to Epimetheus | NEG_Z to NSP | ISS_NAC to Epimetheus control of secondary axis not required |
| CAPS_125SW_SWAURPTG004_PRIME | M | 2010-032T10:39:00 | | 000T06:27:00 | 2010-032T17:06:00 | NEG_X to Sun (0.0,0.0,-30.0 deg. offset) | Rolling | |
| ISS_125JA_MUTUALEVE003_PRIME | M | 2010-032T17:06:00 | | 000T00:40:00 | 2010-032T17:46:00 | ISS_NAC to Janus | NEG_Z to NSP | ISS_NAC to Janus control of secondary axis not required |
| ISS_125OT_SATELLORB014_PRIME | M | 2010-032T17:46:00 | | 000T00:30:00 | 2010-032T18:16:00 | ISS_NAC to Rocks | NEG_Z to NSP | |
| CDA_125DR_ISD000001_PRIME | M | 2010-032T18:16:00 | | 000T03:05:00 | 2010-032T21:21:00 | NEG_X to Saturn | NEG_Z to 8.2/21.6 | |
| SP_125EA_DLTURN032_PRIME | M | 2010-032T21:21:00 | | 000T00:40:00 | 2010-032T22:01:00 | XBAND to Earth | NEG_Y to 274.65/-5.65 | |
| SP_125EA_M34BWGOTB032_PRIME | C, M, N | 2010-032T22:01:00 | | 000T09:00:00 | 2010-033T07:01:00 | XBAND to Earth | NEG_Y to 274.65/-5.65 | NEG_Y to 274.65/-5.65 |
| SP_125SA_WAYPTTURN033_PRIME | M | 2010-033T07:01:00 | | 000T00:40:00 | 2010-033T07:41:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| ISS_125TI_M90R3CLD033_PRIME | C, M, U | 2010-033T07:41:00 | E125_M90R3CLD033+000T00:00:00 | 000T01:15:00 | 2010-033T08:56:00 | ISS_NAC to Titan | NEG_Z to 35.0/83.1 | |
| ISS_125OT_SATELLORB016_PRIME | M | 2010-033T08:56:00 | | 000T00:30:00 | 2010-033T09:26:00 | ISS_NAC to Rocks | NEG_Z to NSP | |
| ISS_125OT_ERRIAPUS001_PRIME | M | 2010-033T09:26:00 | | 000T13:11:00 | 2010-033T22:37:00 | UVIS_FUV to Rocks | NEG_X to Sun | TelMode S_N_ER_5 |
| CAPS_125SW_SWAURPTG005_PRIME | M | 2010-033T22:37:00 | | 000T06:00:00 | 2010-034T04:37:00 | NEG_X to Sun (0.0,0.0,-22.0 deg. offset) | NEG_Z to NSP | |
| SP_125EA_DLTURN034_PRIME | M | 2010-034T04:37:00 | | 000T00:40:00 | 2010-034T05:17:00 | XBAND to Earth | POS_X to NEP | |
| SP_125EA_G34BWGNON034_PRIME | C, M | 2010-034T05:17:00 | | 000T09:00:00 | 2010-034T14:17:00 | XBAND to Earth | 5_Hr_Rolling | |
| SP_125SA_WAYPTTURN034_PRIME | M | 2010-034T14:17:00 | | 000T00:40:00 | 2010-034T14:57:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| ISS_125TI_M90R3CLD034_PRIME | C, M, U | 2010-034T14:57:00 | E125_M90R3CLD034+000T00:00:00 | 000T01:15:00 | 2010-034T16:12:00 | ISS_NAC to Titan | NEG_Z to 37.3/83.3 | |
| UVIS_125SA_MOS125APO005_PRIME | M | 2010-034T16:12:00 | | 000T09:00:00 | 2010-035T01:12:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| CIRS_125OT_1STAROBS002_PRIME | M | 2010-035T01:12:00 | | 000T05:55:00 | 2010-035T07:07:00 | CIRS_FP3 to Star | PIC | |
| ISS_125OT_OUTERSATS002_PRIME | M, U | 2010-035T07:07:00 | | 000T04:00:00 | 2010-035T11:07:00 | UVIS_FUV to Rocks | NEG_X to Sun | TelMode S_N_ER_5 |
| SP_125EA_DLTURN035_PRIME | M | 2010-035T11:07:00 | | 000T00:40:00 | 2010-035T11:47:00 | XBAND to Earth | NEG_Y to 274.65/-6.61 | |
| SP_125EA_C70METNON035_PRIME | C, E, M | 2010-035T11:47:00 | | 000T09:00:00 | 2010-035T20:47:00 | XBAND to Earth | NEG_Y to 274.65/-6.61 | |
| SP_125SA_WAYPTTURN035_PRIME | M | 2010-035T20:47:00 | | 000T00:40:00 | 2010-035T21:27:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| ISS_125TI_M90R3CLD035_PRIME | C, M, U | 2010-035T21:27:00 | E125_M90R3CLD035+000T00:00:00 | 000T01:15:00 | 2010-035T22:42:00 | ISS_NAC to Titan | NEG_Z to 38.2/83.4 | |
| Apoapse Per = 17.5 d, inc ... | | 2010-035T22:18:57 | | 000T00:00:01 | 2010-035T22:18:58 | | | |
| UVIS_126SA_MOS125APO006_PRIME | M | 2010-035T22:42:00 | | 000T08:00:00 | 2010-036T06:42:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| CIRS_126SA_COMPSIT004_PRIME | M, U | 2010-036T06:42:00 | | 000T14:25:00 | 2010-036T21:07:00 | CIRS_FP1 to Saturn | NEG_Z to NSP | |
| SP_126EA_DLTURN036_PRIME | M | 2010-036T21:07:00 | | 000T00:40:00 | 2010-036T21:47:00 | XBAND to Earth | POS_X to NEP | |
| SP_126EA_M34BWGNON036_PRIME | C, M | 2010-036T21:47:00 | | 000T09:00:00 | 2010-037T06:47:00 | XBAND to Earth | POS_X to NEP | |
| SP_126SA_WAYPTTURN037_PRIME | M | 2010-037T06:47:00 | | 000T00:40:00 | 2010-037T07:27:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| UVIS_126IC_ALPVIR001_PRIME | I, M | 2010-037T07:27:00 | | 000T03:00:00 | 2010-037T10:27:00 | UVIS_FUV to Star | NEG_Z to NSP | |
| CAPS_126SW_SWAURPTG002_PRIME | M | 2010-037T10:27:00 | | 000T05:55:00 | 2010-037T16:22:00 | NEG_X to Sun (0.0,0.0,-30.0 deg. offset) | Rolling | |
| UVIS_126SA_MOS125APO008_PRIME | M | 2010-037T16:22:00 | | 000T12:00:00 | 2010-038T04:22:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| SP_126EA_DLTURN038_PRIME | M | 2010-038T04:22:00 | | 000T00:40:00 | 2010-038T05:02:00 | XBAND to Earth | POS_X to NEP | |
| SP_126EA_G70METNON038_PRIME | C, E, M | 2010-038T05:02:00 | | 000T09:00:00 | 2010-038T14:02:00 | XBAND to Earth | Rolling/SRU | |
| NAV_126SK_OPNAVK001_PRIME | M | 2010-038T14:02:00 | | 000T00:59:00 | 2010-038T15:01:00 | ISS_WAC to 292.416/1.925 | POS_X to NEP | |
| NAV_126SA_WAYPTTURN381_PRIME | M | 2010-038T15:01:00 | | 000T00:01:00 | 2010-038T15:02:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| CIRS_126OT_STRALTCAL001_PRIME | M | 2010-038T15:02:00 | | 000T05:00:00 | 2010-038T20:02:00 | CIRS_FPB to Retargetable | NEG_Z to NEP | |
| ISS_126OT_OUTERSATS001_PRIME | M, U | 2010-038T20:02:00 | | 000T03:00:00 | 2010-038T23:02:00 | UVIS_FUV to Rocks | NEG_X to Sun | TelMode S_N_ER_5 |
| UVIS_126SA_MOS125APO009_PRIME | M | 2010-038T23:02:00 | | 000T12:00:00 | 2010-039T11:02:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| SP_126EA_DLTURN039_PRIME | M | 2010-039T11:02:00 | | 000T00:30:00 | 2010-039T11:32:00 | XBAND to Earth | POS_X to NEP | |
| SP_126EA_C34HEFNON039_PRIME | C, E, M | 2010-039T11:32:00 | | 000T09:00:00 | 2010-039T20:32:00 | XBAND to Earth | Rolling/SRU | |
| SP_126SA_WAYPTTURN039_PRIME | M | 2010-039T20:32:00 | | 000T00:30:00 | 2010-039T21:02:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| CAPS_126SW_MAGBNDPTG004_PRIME | M | 2010-039T21:02:00 | | 000T06:00:00 | 2010-040T03:02:00 | NEG_X to Sun (0.0,0.0,-30.0 deg. offset) | Rolling | |
| UVIS_126SA_MOS125APO010_PRIME | M | 2010-040T03:02:00 | | 000T12:00:00 | 2010-040T15:02:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| CAPS_126SA_MAGBNDPTG001_PRIME | M | 2010-040T15:02:00 | | 000T05:45:00 | 2010-040T20:47:00 | POS_Y to COROT (0.0,0.0,40.0 deg. offset) | NEG_X to NSP | |
| SP_126EA_DLTURN040_PRIME | M | 2010-040T20:47:00 | | 000T00:30:00 | 2010-040T21:17:00 | XBAND to Earth | POS_X to NEP | |

# Final Sequenced SPASS (2 of 4)



| Request | Riders | Start (SCET) | Start (Epoch) | Duration | End (SCET) | Primary | Secondary | Comments |
|---|---|---|---|---|---|---|---|---|
| SP_126EA_M34BWGNON040_PRIME | C, M | 2010-040T21:17:00 | | 000T08:40:00 | 2010-041T05:57:00 | XBAND to Earth | Rolling/SRU | |
| SP_126SA_WAYPTTURN041_PRIME | M | 2010-041T06:17:00 | | 000T00:30:00 | 2010-041T06:47:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| UVIS_126SA_MOS125APO011_PRIME | M | 2010-041T06:47:00 | | 000T09:50:00 | 2010-041T16:37:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| UVIS_126EN_ICYATM001_PRIME | M | 2010-041T16:37:00 | | 000T04:00:00 | 2010-041T20:37:00 | UVIS_FUV to Enceladus | POS_Z to 218.9/-83.8 | See observation description. Duration of 4 hours allows for 30 min slew to and from Enceladus, and 3 integration sites. |
| SP_126EA_DLTURN041_PRIME | M | 2010-041T20:37:00 | | 000T00:40:00 | 2010-041T21:17:00 | XBAND to Earth | POS_X to NEP | |
| SP_126EA_M34BWGNON041_PRIME | C, M | 2010-041T21:17:00 | | 000T09:00:00 | 2010-042T06:17:00 | XBAND to Earth | Rolling | |
| SP_126SA_WAYPTTURN042_PRIME | M | 2010-042T06:17:00 | | 000T00:25:00 | 2010-042T06:42:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| CIRS_126SA_COMPSIT001_PRIME | M, U | 2010-042T06:42:00 | | 000T06:56:00 | 2010-042T13:38:00 | CIRS_FP1 to Saturn | NEG_Z to NSP | |
| CAPS_126SA_DUSKPTG001_PRIME | M | 2010-042T13:38:00 | | 000T04:45:00 | 2010-042T18:23:00 | POS_Y to COROT (0.0,0.0,38.0 deg. offset) | NEG_X to NSP | |
| ISS_126EN_PLMPHSB001_PRIME | U | 2010-042T18:23:00 | | 000T02:30:00 | 2010-042T20:53:00 | ISS_NAC to Enceladus | NEG_Z to NSP | |
| SP_126EA_DLTURN042_PRIME | | 2010-042T20:53:00 | | 000T00:25:00 | 2010-042T21:18:00 | XBAND to Earth | POS_X to NEP | |
| SP_126EA_M70METNON042_PRIME | C, E | 2010-042T21:18:00 | | 000T09:00:00 | 2010-043T06:18:00 | XBAND to Earth | Rolling | |
| SP_126SA_WAYPTTURN043_PRIME | | 2010-043T06:18:00 | | 000T00:40:00 | 2010-043T06:58:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| **NEW WAYPOINT** | | **2010-043T06:58:00** | | **000T19:48:00** | **2010-044T02:46:00** | **ISS_NAC to Saturn** | **NEG_X to NSP** | |
| VIMS_126SA_GLOBDYN001_PRIME | I, M | 2010-043T06:58:00 | | 000T13:28:00 | 2010-043T20:26:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| SP_126EA_DLTURN043_PRIME | M | 2010-043T20:26:00 | | 000T00:40:00 | 2010-043T21:06:00 | XBAND to Earth | POS_X to 275.125/41.604 | |
| SP_126EA_M70METNON044_PRIME | E, M | 2010-043T21:06:00 | | 000T05:00:00 | 2010-044T02:06:00 | XBAND to Earth | POS_X to 275.125/41.604 | |
| SP_126SA_WAYPTTURN044_PRIME | M | 2010-044T02:06:00 | | 000T00:40:00 | 2010-044T02:46:00 | UVIS_SOL_OFF to Sun | NEG_X to NSP | |
| **NEW WAYPOINT** | | **2010-044T02:46:00** | | **000T08:44:00** | **2010-044T11:30:00** | **UVIS_SOL_OFF to Sun** | **NEG_X to NSP** | |
| UVIS_126SA_USUNOCC001_PRIME | M, V | 2010-044T02:46:00 | | 000T03:12:00 | 2010-044T05:58:00 | UVIS_SOL_OFF to Sun | NEG_X to NSP | |
| ISS_126SA_SOLNGRESS001_PRIME | C, M, V | 2010-044T05:58:00 | | 000T03:59:00 | 2010-044T09:57:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| CIRS_126SA_LIMBINT001_PRIME | C, M | 2010-044T09:57:00 | | 000T01:19:00 | 2010-044T11:16:00 | CIRS_FPB to Saturn | NEG_X to NSP | |
| SP_126SA_WAYPTTURN444_PRIME | M, R | 2010-044T11:16:00 | | 000T00:14:00 | 2010-044T11:30:00 | ISS_NAC to Calypso | NEG_X to NSP | |
| **NEW WAYPOINT** | | **2010-044T11:30:00** | | **000T01:11:00** | **2010-044T12:41:00** | **ISS_NAC to Calypso** | **NEG_X to NSP** | |
| ISS_126CP_ROTCOLR001_PRIME | C, M, R, U, V | 2010-044T11:30:00 | | 000T00:45:00 | 2010-044T12:15:00 | ISS_NAC to Calypso | NEG_X to NSP | NAC to Calypso, NEG_X to NSP |
| SP_126SA_WAYPTTURN544_PRIME | M, R | 2010-044T12:15:00 | | 000T00:26:00 | 2010-044T12:41:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| **NEW WAYPOINT** | | **2010-044T12:41:00** | | **000T01:59:00** | **2010-044T14:40:00** | **ISS_NAC to Saturn** | **NEG_X to NSP** | |
| CIRS_126SA_LIMBINTB001_PRIME | C, M, R | 2010-044T12:41:00 | | 000T01:42:00 | 2010-044T14:23:00 | CIRS_FPB to Saturn | NEG_X to NSP | |
| SP_126SA_WAYPTTURN644_PRIME | M, R | 2010-044T14:23:00 | | 000T00:17:00 | 2010-044T14:40:00 | NEG_Z to Dust_RAM | NEG_X to NSP | |
| **NEW WAYPOINT** | | **2010-044T14:40:00** | | **000T03:15:00** | **2010-044T17:55:00** | **NEG_Z to Dust_RAM** | **NEG_X to NSP** | |
| RADAR_126MI_SCATTRAD001_PRIME | M | 2010-044T14:40:00 | | 000T01:14:00 | 2010-044T15:54:00 | NEG_Z to Mimas | NEG_X to NSP | RADAR must control both axis. Secondary axis choice pending PDT design. |
| SP_126DR_RAMAVOID044_PRIME | M | 2010-044T15:54:00 | | 000T00:00:36 | 2010-044T15:54:36 | NEG_Z to Dust_RAM | NEG_X to NSP | Turn to Stars/Dust_RAM |
| MP_126DR_DUSTHAZRD003_PRIME | M | 2010-044T15:54:36 | | 000T00:16:24 | 2010-044T16:11:00 | | | |
| VIMS_126SA_ALPCMIOCC001_PRIME | C, M | 2010-044T16:11:00 | | 000T00:29:00 | 2010-044T16:40:00 | CIRS_FPB to 114.825/5.225 | NEG_Z to 23.214/-7.138 | |
| MP_126DR_DUSTHAZRD002_PRIME | M | 2010-044T16:40:00 | | 000T00:37:00 | 2010-044T17:17:00 | NEG_Z to Dust_RAM | | |
| Periapse R = 2.908 Rs, lat ... | | 2010-044T16:54:46 | | 000T00:00:01 | 2010-044T16:54:47 | | | |
| SP_126SA_WAYPTTURN744_PRIME | M | 2010-044T17:17:00 | | 000T00:19:00 | 2010-044T17:36:00 | POS_Y to Sun | NEG_X to NSP | First of two part turn. Fast turn rates - waiver will be needed. |
| SP_126SA_WAYPTTURN944_PRIME | M | 2010-044T17:36:00 | | 000T00:19:00 | 2010-044T17:55:00 | ISS_NAC to Mimas (0.0,-15.0,0.0 deg. offset) | NEG_X to NSP | Second of two part turn. Fast turn rates - waiver will be needed. |
| **NEW WAYPOINT** | | **2010-044T17:55:00** | | **000T03:05:00** | **2010-044T21:00:00** | **ISS_NAC to Mimas (0.0,-15.0,0.0 deg. offset)** | **NEG_X to NSP** | |
| ISS_126MI_GEOLOG001_PRIME | C, M, U, V | 2010-044T17:55:00 | | 000T00:25:00 | 2010-044T18:20:00 | ISS_NAC to Mimas (0.0,-15.0,0.0 deg. offset) | NEG_X to NSP | 65s dwell for first half of request (mosaic); sit'n'stare over Herschel at 2nd half |
| CIRS_126MI_FP1DAYMAP001_PRIME | M, V | 2010-044T18:20:00 | | 000T00:25:00 | 2010-044T18:45:00 | CIRS_FP1 to Mimas (0.0,-15.0,0.0 deg. offset) | NEG_X to NSP | |
| ISS_126MI_GEOLOG002_PRIME | C, M, U, V | 2010-044T18:45:00 | | 000T00:25:00 | 2010-044T19:10:00 | ISS_NAC to Mimas (0.0,-15.0,0.0 deg. offset) | NEG_X to NSP | 3x3 mosaic; 65s dwell |
| CIRS_126MI_FP3DAYMAP001_PRIME | I, M, U, V | 2010-044T19:10:00 | | 000T01:25:00 | 2010-044T20:35:00 | CIRS_FP3 to Mimas (0.0,-15.0,0.0 deg. offset) | NEG_X to NSP | |
| ISS_126MI_GLOCOL001_PRIME | C, M, U, V | 2010-044T20:35:00 | | 000T00:15:00 | 2010-044T20:50:00 | ISS_NAC to Mimas (0.0,-15.0,0.0 deg. offset) | NEG_X to NSP | |
| SP_126SA_WAYPTTURN844_PRIME | M | 2010-044T20:50:00 | | 000T00:10:00 | 2010-044T21:00:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| **NEW WAYPOINT** | | **2010-044T21:00:00** | | **001T09:43:00** | **2010-046T06:43:00** | **ISS_NAC to Saturn** | **NEG_X to NSP** | |
| CIRS_126SA_LIMBINTC001_PRIME | C, M | 2010-044T21:00:00 | | 000T02:55:00 | 2010-044T23:55:00 | CIRS_FPB to Saturn | NEG_X to NSP | |
| ISS_126TE_GEOLOG002_PRIME | C, M, U, V | 2010-044T23:55:00 | | 000T01:10:00 | 2010-045T01:05:00 | ISS_NAC to Tethys | POS_X to 200.3/-81.0 | ISS_NAC to Tethys, POS_X to 200.3/-81.0 |
| SP_126EA_DLTURN445_PRIME | M | 2010-045T01:05:00 | | 000T00:34:00 | 2010-045T01:39:00 | XBAND to Earth | NEG_X to NSP | |
| SP_126EA_M70METNON445_PRIME | M | 2010-045T01:39:00 | | 000T02:20:00 | 2010-045T03:59:00 | XBAND to Earth | NEG_X to NSP | |
| SP_126SA_WAYPTTURN445_PRIME | M | 2010-045T03:59:00 | | 000T00:35:00 | 2010-045T04:34:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| VIMS_126SA_GLOBDYN004_PRIME | I, M | 2010-045T04:34:00 | | 000T09:00:00 | 2010-045T13:34:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| ISS_126EP_MUTUALEVE001_PRIME | M | 2010-045T13:34:00 | | 000T00:43:00 | 2010-045T14:17:00 | ISS_NAC to Epimetheus | NEG_X to NSP | ISS_NAC to Epimetheus control of secondary axis not required |
| UVIS_126SA_EUVFUV001_PRIME | M | 2010-045T14:17:00 | | 000T06:06:00 | 2010-045T20:23:00 | UVIS_FUV to Saturn | NEG_X to NSP | |
| SP_126EA_DLTURN045_PRIME | M | 2010-045T20:23:00 | | 000T00:40:00 | 2010-045T21:03:00 | XBAND to Earth | POS_X to NSP | |
| SP_126EA_M70METNON045_PRIME | C, E, M | 2010-045T21:03:00 | | 000T09:00:00 | 2010-046T06:03:00 | XBAND to Earth | Rolling/SRU | POS_X to NSP; CRPC; rolling required for AACS |
| SP_126SA_WAYPTTURN046_PRIME | M | 2010-046T06:03:00 | | 000T00:40:00 | 2010-046T06:43:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| **NEW WAYPOINT** | | **2010-046T06:43:00** | | **006T21:20:00** | **2010-053T04:03:00** | **ISS_NAC to Saturn** | **NEG_Z to NSP** | |
| CIRS_126SA_COMPSIT002_PRIME | M | 2010-046T06:43:00 | | 000T03:30:00 | 2010-046T10:13:00 | CIRS_FP1 to Saturn | NEG_X to NSP | |

# Final Sequenced SPASS (3 of 4)



| Request | Riders | Start (SCET) | Start (Epoch) | Duration | End (SCET) | Primary | Secondary | Comments |
|---|---|---|---|---|---|---|---|---|
| ISS_126TI_LOPHASE001_PRIME | M | 2010-046T10:13:00 | | 000T02:00:00 | 2010-046T12:13:00 | ISS_NAC to Titan | NEG_X to 33.6/83.2 | Secondary orientation: NEG_X to Sun preferred, but flexible |
| CIRS_126SA_COMPSIT003_PRIME | M | 2010-046T12:13:00 | | 000T08:10:00 | 2010-046T20:23:00 | CIRS_FP1 to Saturn | NEG_Z to NSP | |
| SP_126EA_DLTURN046_PRIME | M | 2010-046T20:23:00 | | 000T00:40:00 | 2010-046T21:03:00 | XBAND to Earth (0.0,0.0,10.0 deg. offset) | POS_X to NEP | |
| SP_126EA_M34BWGNON046_PRIME | C, E, M | 2010-046T21:03:00 | | 000T09:00:00 | 2010-047T06:03:00 | XBAND to Earth (0.0,0.0,10.0 deg. offset) | POS_X to NEP | |
| SP_126SA_WAYPTTURN047_PRIME | M | 2010-047T06:03:00 | | 000T00:40:00 | 2010-047T06:43:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| ISS_126TI_CLOUD001_PRIME | M | 2010-047T06:43:00 | | 000T08:30:00 | 2010-047T15:13:00 | ISS_NAC to Titan (0.0,101.0,0.0 deg. offset) | NEG_X to 34.0/83.2 | Secondary orientation: NEG_X to Sun preferred, but flexible |
| ISS_126IA_IAPETUS047_PRIME | M, U | 2010-047T15:13:00 | | 000T01:30:00 | 2010-047T16:43:00 | UVIS_FUV to Iapetus | NEG_X to Sun | |
| VIMS_126SA_GLOBDYN005_PRIME | M | 2010-047T16:43:00 | | 000T03:40:00 | 2010-047T20:23:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| SP_126EA_DLTURN047_PRIME | M | 2010-047T20:23:00 | | 000T00:40:00 | 2010-047T21:03:00 | XBAND to Earth | POS_X to NEP | |
| SP_126EA_M34BWGNON047_PRIME | C, M | 2010-047T21:03:00 | | 000T09:00:00 | 2010-048T06:03:00 | XBAND to Earth | Rolling/SRU | |
| SP_126SA_WAYPTTURN048_PRIME | M | 2010-048T06:03:00 | | 000T00:40:00 | 2010-048T06:43:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| ISS_126TI_M60R2CLD048_PRIME | C, M, U | 2010-048T06:43:00 | E126_M60R2CLD048+000T00:00:00 | 000T01:15:00 | 2010-048T07:58:00 | ISS_NAC to Titan | NEG_Z to 34.9/83.2 | |
| VIMS_126SA_GLOBDYN007_PRIME | M | 2010-048T07:58:00 | | 000T12:30:00 | 2010-048T20:28:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| MAG_126SU_CALROLL001_PRIME | M | 2010-048T20:28:00 | | 000T05:40:00 | 2010-049T02:08:00 | NEG_X to Sun (0.0,0.0,-30.0 deg. offset) | Rolling | |
| ISS_126IA_IAPETUS049_PRIME | M, U | 2010-049T02:08:00 | | 000T01:30:00 | 2010-049T03:38:00 | UVIS_FUV to Iapetus | NEG_X to Sun | |
| SP_126EA_DLTURN049_PRIME | M | 2010-049T03:38:00 | | 000T00:40:00 | 2010-049T04:18:00 | XBAND to Earth | NEG_Y to 273.2/-5.5 | |
| SP_126EA_G70METNON049_PRIME | C, E, M | 2010-049T04:18:00 | | 000T08:20:00 | 2010-049T12:38:00 | XBAND to Earth | NEG_Y to 273.2/-5.5 | |
| SP_126SA_WAYPTTURN049_PRIME | M | 2010-049T13:18:00 | | 000T00:25:00 | 2010-049T13:43:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| ISS_126TI_M90R3CLD049_PRIME | C, M, U | 2010-049T13:43:00 | E126_M90R3CLD049+000T00:00:00 | 000T01:15:00 | 2010-049T14:58:00 | ISS_NAC to Titan (0.0,-20.0,0.0 deg. offset) | NEG_Z to 36.1/83.2 | |
| CIRS_126SA_MIRTMAP001_PRIME | M | 2010-049T14:58:00 | | 000T13:35:00 | 2010-050T04:33:00 | CIRS_FP3 to Saturn | NEG_Z to NSP | |
| CAPS_126SW_SWAURPTG005_PRIME | M | 2010-050T04:33:00 | | 000T05:50:00 | 2010-050T10:23:00 | NEG_X to Sun (0.0,0.0,-30.0 deg. offset) | Rolling | |
| SP_126EA_DLTURN050_PRIME | M | 2010-050T10:23:00 | | 000T00:25:00 | 2010-050T10:48:00 | XBAND to Earth | POS_X to NEP | |
| SP_126EA_C70METNON050_PRIME | C, M | 2010-050T10:48:00 | | 000T09:00:00 | 2010-050T19:48:00 | XBAND to Earth | Rolling/SRU | |
| SP_126SA_WAYPTTURN050_PRIME | M | 2010-050T19:48:00 | | 000T00:25:00 | 2010-050T20:13:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| ISS_126IA_IAPETUS050_PRIME | M, U | 2010-050T20:13:00 | | 000T01:30:00 | 2010-050T21:43:00 | UVIS_FUV to Iapetus | NEG_X to Sun | |
| CIRS_126SA_MIRMAP001_PRIME | M | 2010-050T21:43:00 | | 000T22:25:00 | 2010-051T20:08:00 | CIRS_FP3 to Saturn | NEG_Z to NSP | |
| SP_126EA_DLTURN051_PRIME | M | 2010-051T20:08:00 | | 000T00:40:00 | 2010-051T20:48:00 | XBAND to Earth | POS_X to NEP | |
| SP_126EA_M70METNON051_PRIME | C, M | 2010-051T20:48:00 | | 000T09:00:00 | 2010-052T05:48:00 | XBAND to Earth | Rolling/SRU | |
| SP_126SA_WAYPTTURN052_PRIME | M | 2010-052T05:48:00 | | 000T00:25:00 | 2010-052T06:13:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| ISS_126IA_IAPETUS052_PRIME | M, U | 2010-052T06:13:00 | | 000T01:30:00 | 2010-052T07:43:00 | UVIS_FUV to Iapetus | NEG_X to Sun | |
| CAPS_126SW_SWAURPTG007_PRIME | M | 2010-052T07:43:00 | | 000T05:40:00 | 2010-052T13:23:00 | NEG_X to Sun (0.0,0.0,-30.0 deg. offset) | Rolling | |
| CIRS_126SA_COMPSIT005_PRIME | M, R | 2010-052T13:23:00 | | 000T12:45:00 | 2010-053T02:08:00 | CIRS_FP1 to Saturn | NEG_Z to NSP | |
| ISS_126IA_IAPETUS053_PRIME | M, R, U | 2010-053T02:08:00 | | 000T01:30:00 | 2010-053T03:38:00 | UVIS_FUV to Iapetus | NEG_X to Sun | |
| SP_126EA_DLTURN053_PRIME | M, R | 2010-053T03:38:00 | | 000T00:25:00 | 2010-053T04:03:00 | XBAND to Earth | NEG_Y to 273.7/-6.6 | |
| **NEW WAYPOINT** | | **2010-053T04:03:00** | | **000T09:40:00** | **2010-053T13:43:00** | **XBAND to Earth** | **NEG_Y to 273.7/-6.6** | |
| SP_126EA_G34BWGNON053_PRIME | C, M, R | 2010-053T04:03:00 | | 000T02:00:00 | 2010-053T06:03:00 | XBAND to Earth | NEG_Y to 273.7/-6.6 | |
| RSS_126EA_BORESIGHT002_PRIME | C, M, R | 2010-053T06:03:00 | | 000T01:00:00 | 2010-053T07:03:00 | XBAND to Earth | PIC | |
| SP_126EA_G34BWG2ND053_PRIME | C, M | 2010-053T07:03:00 | | 000T06:00:00 | 2010-053T13:03:00 | XBAND to Earth | NEG_Y to 273.7/-6.6 | |
| Apoapse Per = 17.5 d, inc ... | | 2010-053T11:27:31 | | 000T00:00:01 | 2010-053T11:27:32 | | | |
| SP_127SA_WAYPTTURN053_PRIME | M | 2010-053T13:03:00 | | 000T00:40:00 | 2010-053T13:43:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| **NEW WAYPOINT** | | **2010-053T13:43:00** | | **007T05:21:00** | **2010-060T19:04:00** | **ISS_NAC to Saturn** | **NEG_Z to NSP** | |
| CIRS_127SA_COMPSIT001_PRIME | M | 2010-053T13:43:00 | | 000T18:40:00 | 2010-054T08:23:00 | CIRS_FP1 to Saturn | NEG_Z to NSP | |
| ISS_127IA_IAPETUS0541_PRIME | M, U | 2010-054T08:23:00 | | 000T01:30:00 | 2010-054T09:53:00 | UVIS_FUV to Iapetus | NEG_X to Sun | |
| SP_127EA_DLTURN054_PRIME | M | 2010-054T09:53:00 | | 000T00:40:00 | 2010-054T10:33:00 | XBAND to Earth | NEG_Y to 273.57/-6.91 | |
| SP_127EA_C34HEFOTP054_PRIME | C, E, M, N | 2010-054T10:33:00 | | 000T09:00:00 | 2010-054T19:33:00 | XBAND to Earth | 4_Hr_Rolling | NEG_Y to 273.57/-6.91 (Saturn, (0,0,-9.5)); MIMI,CAPS,CDA |
| SP_127SA_WAYPTTURN054_PRIME | M | 2010-054T19:33:00 | | 000T00:40:00 | 2010-054T20:13:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| ISS_127IA_IAPETUS0542_PRIME | M | 2010-054T20:13:00 | | 000T01:30:00 | 2010-054T21:43:00 | UVIS_FUV to Iapetus | NEG_X to Sun | |
| CAPS_127SW_SWAURPTG002_PRIME | M, U | 2010-054T21:43:00 | | 000T06:05:00 | 2010-055T03:48:00 | NEG_X to Sun (0.0,0.0,-30.0 deg. offset) | Rolling | |
| ISS_127OT_OUTERSATS001_PRIME | M, U | 2010-055T03:48:00 | | 000T03:00:00 | 2010-055T06:48:00 | UVIS_FUV to Rocks | NEG_X to Sun | TelMode S_N_ER_5. |
| ISS_127DI_MUTUALEVE002_PRIME | M | 2010-055T06:48:00 | | 000T00:47:00 | 2010-055T07:35:00 | ISS_NAC to Dione | NEG_Z to NSP | ISS_NAC to Dione control of secondary axis not required |
| ISS_127OT_SATELLORB001_PRIME | M | 2010-055T07:35:00 | | 000T00:33:00 | 2010-055T08:08:00 | ISS_NAC to Rocks | NEG_Z to NSP | |
| ISS_127IA_IAPETUS055_PRIME | M | 2010-055T08:08:00 | | 000T01:30:00 | 2010-055T09:38:00 | UVIS_FUV to Iapetus | NEG_X to Sun | |
| SP_127EA_DLTURN055_PRIME | M | 2010-055T09:38:00 | | 000T00:40:00 | 2010-055T10:18:00 | XBAND to Earth | NEG_Y to 273.57/-6.91 | |
| SP_127EA_C70METOTB055_PRIME | C, M, N | 2010-055T10:18:00 | | 000T09:00:00 | 2010-055T19:18:00 | XBAND to Earth | 4_Hr_Rolling | NEG_Y to 273.5/-7.16 (Saturn, (0,0,-9.5)); MIMI,CAPS,CDA |
| SP_127SA_WAYPTTURN055_PRIME | M | 2010-055T19:18:00 | | 000T00:30:00 | 2010-055T19:48:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| CIRS_127SA_MIRTMAP001_PRIME | M | 2010-055T19:48:00 | | 000T14:00:00 | 2010-056T09:48:00 | CIRS_FP3 to Saturn | NEG_Z to NSP | |
| SP_127EA_DLTURN056_PRIME | M | 2010-056T09:48:00 | | 000T00:30:00 | 2010-056T10:18:00 | XBAND to Earth | POS_X to NEP | |
| SP_127EA_C34HEFSEQ056_PRIME | C, E, M | 2010-056T10:18:00 | | 000T09:00:00 | 2010-056T19:18:00 | XBAND to Earth | Rolling/SRU | |
| ENGR_127SC_GYROCALB001_AACS | M, U | 2010-056T19:18:00 | | 000T03:10:00 | 2010-056T22:28:00 | | | |
| SP_127SA_WAYPTTURN056_PRIME | M | 2010-056T22:28:00 | | 000T00:40:00 | 2010-056T23:08:00 | ISS_NAC to Saturn | NEG_Z to NSP | |

# Final Sequenced SPASS (4 of 4)



| Request | Riders | Start (SCET) | Start (Epoch) | Duration | End (SCET) | Primary | Secondary | Comments |
|---|---|---|---|---|---|---|---|---|
| ISS_127IA_IAPETUS056_PRIME | M, U | 2010-056T23:08:00 | | 000T01:30:00 | 2010-057T00:38:00 | UVIS_FUV to Iapetus | NEG_X to Sun | Hand-off at target of next request (outer moon) instead of WP (team internal hand-off). |
| ISS_127OT_OUTERSATS003_PRIME | M, U | 2010-057T00:38:00 | | 000T02:52:00 | 2010-057T03:30:00 | UVIS_FUV to Rocks | NEG_X to Sun | Pick-up at end-attitude of previous request (team internal hand-off). TelMode S_N_ER_5. |
| CAPS_127SW_SWAURPTG004_PRIME | M | 2010-057T03:30:00 | | 000T06:08:00 | 2010-057T09:38:00 | NEG_X to Sun (0.0,0.0,-30.0 deg. offset) | Rolling | |
| SP_127EA_DLTURN057_PRIME | M | 2010-057T09:38:00 | | 000T00:40:00 | 2010-057T10:18:00 | XBAND to Earth | POS_X to NEP | |
| SP_127EA_C34HEFSEQ057_PRIME | C, E, M | 2010-057T10:18:00 | | 000T08:50:00 | 2010-057T19:08:00 | XBAND to Earth | Rolling/SRU | |
| SP_127SA_WAYPTTURN057_PRIME | M | 2010-057T19:18:00 | | 000T00:40:00 | 2010-057T19:58:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| CAPS_127SA_MAGBNDPTG001_PRIME | M | 2010-057T19:58:00 | | 000T06:02:00 | 2010-058T02:00:00 | POS_Y to COROT (0.0,0.0,38.0 deg. offset) | NEG_X to NSP | |
| ISS_127IA_IAPETUS058_PRIME | M, U | 2010-058T02:00:00 | | 000T01:30:00 | 2010-058T03:30:00 | UVIS_FUV to Iapetus | NEG_X to Sun | |
| VIMS_127RI_EG130PHAS001_PRIME | M | 2010-058T03:30:00 | | 000T06:09:00 | 2010-058T09:39:00 | VIMS_IR to Rings | NEG_Z to NSP | |
| SP_127EA_DLTURN058_PRIME | M | 2010-058T09:39:00 | | 000T00:40:00 | 2010-058T10:19:00 | XBAND to Earth | NEG_Y to 273.35/-8.0 | |
| SP_127EA_C34HEFOTP058_PRIME | C, M, N | 2010-058T10:19:00 | | 000T09:00:00 | 2010-058T19:19:00 | XBAND to Earth | 4_Hr_Rolling | NEG_Y to 273.35/-8.0 (Saturn, (0,0,-9.5)); MIMI,CAPS,CDA |
| SP_127SA_WAYPTTURN058_PRIME | M | 2010-058T19:19:00 | | 000T00:40:00 | 2010-058T19:59:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| UVIS_127EN_ICYATM001_PRIME | M | 2010-058T19:59:00 | | 000T04:00:00 | 2010-058T23:59:00 | UVIS_FUV to Enceladus | NEG_Z to 39.5/83.6 | See observation description. Duration of 4 hours allows for 30 min slew to and from Enceladus, and 3 integration sites. |
| VIMS_127RI_EG130PHAS002_PRIME | M | 2010-058T23:59:00 | | 000T03:25:00 | 2010-059T03:24:00 | VIMS_IR to Rings | NEG_Z to NSP | |
| CAPS_127SA_MAGBNDPTG003_PRIME | M | 2010-059T03:24:00 | | 000T06:00:00 | 2010-059T09:24:00 | POS_Y to COROT (0.0,0.0,40.0 deg. offset) | NEG_X to NSP | |
| SP_127EA_DLTURN059_PRIME | M | 2010-059T09:24:00 | | 000T00:40:00 | 2010-059T10:04:00 | XBAND to Earth | NEG_Y to 273.35/-8.0 | |
| SP_127EA_C34HEFOTB059_PRIME | C, M, N | 2010-059T10:04:00 | | 000T08:40:00 | 2010-059T18:44:00 | XBAND to Earth | Rolling | NEG_Y to 273.26/-8.84 (Saturn, (0,0,-9.5)); MIMI,CAPS,CDA |
| SP_127SA_WAYPTTURN059_PRIME | M | 2010-059T19:04:00 | | 000T00:25:00 | 2010-059T19:29:00 | ISS_NAC to Saturn | NEG_Z to NSP | |
| CIRS_127SA_COMPSIT002_PRIME | M | 2010-059T19:29:00 | | 000T13:05:00 | 2010-060T08:34:00 | CIRS_FP1 to Saturn | NEG_Z to NSP | |
| NAV_127SK_OPNAV601_PRIME | M | 2010-060T08:34:00 | | 000T01:29:00 | 2010-060T10:03:00 | ISS_NAC to Satellites | NEG_Z to NSP | |
| NAV_127EA_DLTURN601_PRIME | M | 2010-060T10:03:00 | | 000T00:01:00 | 2010-060T10:04:00 | XBAND to Earth | NEG_Y to 320.6/-10.8 | |
| SP_127EA_C70METSEQ060_PRIME | C, E, M | 2010-060T10:04:00 | | 000T09:00:00 | 2010-060T19:04:00 | XBAND to Earth | NEG_Y to 320.6/-10.8 | |

# Final Sequenced SMT and Data Volume (1 of 4)



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_125EA_M70METOTP031_PRIME | 031 22:01 | 032 07:01 | 0 | 2083 | 63 | 2146 | 3534 | 1388 | 0 | 815 | 53 | 3014 | 3301 | 287 | 243 | 2% | 0 |
| SP_125EA_M34BWGOTB032_PRIME | 032 22:01 | 033 07:01 | 0 | 892 | 63 | 956 | 3534 | 2579 | 0 | 439 | 53 | 1448 | 818 | -630 | -43 | 0% | 630 |
| SP_125EA_G34BWGNON034_PRIME | 034 05:17 | 034 14:17 | 630 | 1727 | 94 | 2451 | 3534 | 1083 | 0 | 439 | 53 | 2943 | 873 | -2070 | -43 | 0% | 2070 |
| SP_125EA_C70METNON035_PRIME | 035 11:47 | 035 20:47 | 2070 | 1418 | 91 | 3579 | 3534 | -43 | 0 | 586 | 53 | 4174 | 3960 | -214 | 199 | 1% | 214 |
| SP_126EA_M34BWGNON036_PRIME | 036 21:47 | 037 06:47 | 214 | 1673 | 106 | 1992 | 3534 | 1542 | 0 | 529 | 53 | 2574 | 845 | -1730 | 199 | 1% | 1729 |
| SP_126EA_G70METNON038_PRIME | 038 05:02 | 038 14:02 | 1729 | 1512 | 94 | 3335 | 3534 | 199 | 0 | 586 | 53 | 3974 | 4273 | 298 | 863 | 5% | 0 |
| SP_126EA_C34HEFNON039_PRIME | 039 11:32 | 039 20:32 | 0 | 1670 | 91 | 1761 | 3534 | 1773 | 0 | 491 | 53 | 2305 | 977 | -1329 | 564 | 4% | 1329 |
| SP_126EA_M34BWGNON040_PRIME | 040 21:17 | 041 05:57 | 1329 | 839 | 105 | 2272 | 3534 | 1262 | 0 | 241 | 51 | 2565 | 810 | -1755 | 564 | 4% | 1754 |
| SP_126EA_M34BWGUNQ041_PRIME | 041 21:17 | 042 06:17 | 1754 | 567 | 65 | 2386 | 3534 | 1148 | 0 | 411 | 53 | 2850 | 2044 | -807 | 564 | 3% | 806 |
| SP_126EA_M70METUNQ042_PRIME | 042 21:18 | 043 06:18 | 806 | 1448 | 63 | 2318 | 3534 | 1216 | 0 | 260 | 53 | 2631 | 3111 | 480 | 564 | 3% | 0 |
| SP_126EA_M70METNON044_PRIME | 043 21:06 | 044 02:06 | 0 | 1500 | 63 | 1562 | 3534 | 1972 | 0 | 305 | 29 | 1896 | 2043 | 146 | 83 | 0% | 0 |
| SP_126EA_M70METNON445_PRIME | 045 01:39 | 045 03:59 | 0 | 2885 | 100 | 2984 | 3534 | 550 | 0 | 134 | 14 | 3132 | 1096 | -2036 | -63 | 0% | 2035 |
| SP_126EA_M70METUNQ045_PRIME | 045 21:03 | 046 06:03 | 2035 | 1490 | 72 | 3598 | 3534 | -63 | 0 | 671 | 53 | 4258 | 3270 | -989 | 300 | 2% | 988 |
| SP_126EA_M34BWGUNQ046_PRIME | 046 21:03 | 047 06:03 | 988 | 1443 | 63 | 2494 | 3534 | 1040 | 0 | 623 | 53 | 3170 | 2051 | -1119 | 300 | 2% | 1119 |
| SP_126EA_M34BWGNON047_PRIME | 047 21:03 | 048 06:03 | 1119 | 964 | 63 | 2146 | 3534 | 1388 | 0 | 346 | 53 | 2546 | 869 | -1677 | 300 | 2% | 1677 |
| SP_126EA_G70METNON049_PRIME | 049 04:18 | 049 12:38 | 1677 | 1464 | 94 | 3234 | 3534 | 300 | 0 | 856 | 49 | 4140 | 4038 | -102 | 415 | 2% | 102 |
| SP_126EA_C70METNON050_PRIME | 050 10:48 | 050 19:48 | 102 | 2587 | 94 | 2783 | 3534 | 751 | 0 | 914 | 53 | 3750 | 4139 | 388 | 415 | 3% | 0 |
| SP_126EA_M70METNON051_PRIME | 051 20:48 | 052 05:48 | 0 | 2923 | 106 | 3028 | 3534 | 506 | 0 | 990 | 53 | 4071 | 4152 | 80 | 27 | 0% | 0 |
| SP_126EA_G34BWGNON053_PRIME | 053 04:03 | 053 06:03 | 0 | 1606 | 94 | 1700 | 3534 | 1834 | 0 | 122 | 12 | 1834 | 181 | -1653 | -53 | 0% | 1652 |
| SP_126EA_G34BWG2ND053_PRIME | 053 07:03 | 053 13:03 | 1652 | 66 | 4 | 1723 | 3534 | 1811 | 0 | 372 | 35 | 2130 | 605 | -1526 | -53 | 0% | 1525 |
| SP_127EA_C34HEFOTP054_PRIME | 054 10:33 | 054 19:33 | 1525 | 1164 | 91 | 2780 | 3534 | 754 | 0 | 439 | 53 | 3272 | 840 | -2433 | -53 | 0% | 2432 |
| SP_127EA_C70METOTB055_PRIME | 055 10:18 | 055 19:18 | 2432 | 1094 | 62 | 3588 | 3534 | -53 | 0 | 586 | 53 | 4174 | 3980 | -194 | 207 | 2% | 194 |
| SP_127EA_C34HEFSEQ056_PRIME | 056 10:18 | 056 19:18 | 194 | 1027 | 63 | 1284 | 3534 | 2250 | 0 | 593 | 53 | 1930 | 1006 | -925 | 207 | 3% | 924 |
| SP_127EA_C34HEFSEQ057_PRIME | 057 10:18 | 057 19:08 | 924 | 1271 | 63 | 2258 | 3534 | 1276 | 0 | 383 | 52 | 2693 | 997 | -1697 | 207 | 3% | 1696 |
| SP_127EA_C34HEFOTP058_PRIME | 058 10:19 | 058 19:19 | 1696 | 672 | 64 | 2433 | 3534 | 1102 | 0 | 390 | 53 | 2876 | 846 | -2030 | 207 | 3% | 2029 |
| SP_127EA_C34HEFOTB059_PRIME | 059 10:04 | 059 18:44 | 2029 | 651 | 62 | 2742 | 3534 | 792 | 0 | 418 | 51 | 3212 | 977 | -2235 | 207 | 4% | 2234 |
| SP_127EA_C70METSEQ060_PRIME | 060 10:04 | 060 19:04 | 2234 | 1028 | 65 | 3327 | 3534 | 207 | 0 | 257 | 53 | 3637 | 4139 | 501 | 502 | 12% | 0 |

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

# Final Sequenced SMT and Data Volume (2 of 4)



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 | 031 07:01 | 031 22:01 | 216.0 | 28.3 | 18.0 | 5.4 | 127.0 | 106.7 | 64.8 | 0.0 | 1420.7 | 77.0 | 0.0 | 0.0 | 62.7 | 2126.6 |
| SP_125EA_M70METOTP031_PRIME | 031 22:01 | 032 07:01 | 79.9 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 512.9 | 4.9 | 0.0 | 0.0 | 0.0 | 807.3 |
| DAILY TOTAL SCIENCE | 031 07:01 | 032 07:01 | 295.9 | 45.3 | 104.4 | 8.6 | 127.0 | 170.7 | 103.7 | 0.0 | 1933.6 | 81.9 | 0.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 032 07:01 | 032 22:01 | 123.7 | 28.3 | 18.0 | 5.4 | 219.0 | 106.7 | 64.8 | 0.0 | 313.7 | 4.5 | 0.0 | 0.0 | 62.7 | 946.8 |
| SP_125EA_M34BWGOTB032_PRIME | 032 22:01 | 033 07:01 | 32.4 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 188.2 | 4.9 | 0.0 | 0.0 | 0.0 | 435.1 |
| DAILY TOTAL SCIENCE | 032 07:01 | 033 07:01 | 156.1 | 45.3 | 104.4 | 8.6 | 219.0 | 170.7 | 103.7 | 0.0 | 501.9 | 9.5 | 0.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 033 07:01 | 034 05:17 | 101.8 | 42.0 | 18.0 | 8.0 | 817.0 | 158.4 | 96.2 | 0.0 | 465.7 | 4.5 | 0.0 | 0.0 | 93.1 | 1804.7 |
| SP_125EA_G34BWGNON034_PRIME | 034 05:17 | 034 14:17 | 32.4 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 188.2 | 4.9 | 0.0 | 0.0 | 0.0 | 435.1 |
| DAILY TOTAL SCIENCE | 033 07:01 | 034 14:17 | 134.2 | 59.0 | 104.4 | 11.3 | 817.0 | 222.4 | 135.1 | 0.0 | 653.9 | 9.5 | 0.0 | 0.0 | 93.1 | |
| OBSERVATION_NOR | 034 14:17 | 035 11:47 | 77.4 | 40.6 | 60.6 | 17.8 | 285.0 | 152.9 | 92.9 | 0.0 | 449.7 | 228.3 | 0.0 | 0.0 | 89.9 | 1495.0 |
| SP_125EA_C70METNON035_PRIME | 035 11:47 | 035 20:47 | 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 | 034 14:17 | 035 20:47 | 109.8 | 57.5 | 147.0 | 21.0 | 285.0 | 217.0 | 131.8 | 0.0 | 783.7 | 233.3 | 0.0 | 0.0 | 89.9 | |
| OBSERVATION_NOR | 035 20:47 | 036 21:47 | 90.0 | 47.2 | 225.6 | 9.0 | 35.0 | 177.8 | 108.0 | 0.0 | 779.9 | 185.1 | 0.0 | 0.0 | 104.5 | 1762.1 |
| SP_126EA_M34BWGNON036_PRIME | 036 21:47 | 037 06:47 | 32.4 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 277.3 | 4.9 | 0.0 | 0.0 | 0.0 | 524.2 |
| DAILY TOTAL SCIENCE | 035 20:47 | 037 06:47 | 122.4 | 64.1 | 312.0 | 12.2 | 35.0 | 241.9 | 146.9 | 0.0 | 1057.3 | 190.0 | 0.0 | 0.0 | 104.5 | |
| OBSERVATION_NOR | 037 06:47 | 038 05:02 | 101.4 | 42.0 | 0.0 | 8.0 | 56.7 | 158.3 | 96.1 | 0.0 | 685.6 | 350.0 | 0.0 | 0.0 | 93.0 | 1591.1 |
| SP_126EA_G70METNON038_PRIME | 038 05:02 | 038 14:02 | 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 | 037 06:47 | 038 14:02 | 133.8 | 59.0 | 86.4 | 11.3 | 56.7 | 222.3 | 135.0 | 0.0 | 1019.7 | 354.9 | 0.0 | 0.0 | 93.0 | |
| OBSERVATION_NOR | 038 14:02 | 039 11:32 | 77.4 | 40.6 | 72.0 | 7.7 | 110.8 | 152.9 | 92.9 | 0.0 | 798.0 | 302.6 | 0.0 | 0.0 | 89.9 | 1744.8 |
| SP_126EA_C34HEFNON039_PRIME | 039 11:32 | 039 20:32 | 58.0 | 17.0 | 43.2 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 257.4 | 4.9 | 0.0 | 0.0 | 0.0 | 486.6 |
| DAILY TOTAL SCIENCE | 038 14:02 | 039 20:32 | 135.4 | 57.5 | 115.2 | 11.0 | 110.8 | 217.0 | 131.8 | 0.0 | 1055.4 | 307.5 | 0.0 | 0.0 | 89.9 | |
| OBSERVATION_NOR | 039 20:32 | 040 21:17 | 262.8 | 46.7 | 0.0 | 8.9 | 0.0 | 88.0 | 106.9 | 0.0 | 116.7 | 201.7 | 0.0 | 0.0 | 103.4 | 935.2 |
| SP_126EA_M34BWGNON040_PRIME | 040 21:17 | 041 05:57 | 62.4 | 16.3 | 43.2 | 3.1 | 0.0 | 30.8 | 37.4 | 0.0 | 40.9 | 4.8 | 0.0 | 0.0 | 0.0 | 239.0 |
| DAILY TOTAL SCIENCE | 039 20:32 | 041 05:57 | 325.2 | 63.0 | 43.2 | 12.0 | 0.0 | 118.9 | 144.4 | 0.0 | 157.6 | 206.4 | 0.0 | 0.0 | 103.4 | |
| OBSERVATION_NOR | 041 05:57 | 041 21:17 | 110.4 | 28.9 | 0.0 | 5.5 | 0.0 | 54.5 | 66.2 | 0.0 | 72.3 | 223.6 | 0.0 | 0.0 | 64.1 | 625.6 |
| SP_126EA_M34BWGUNQ041_PRIME | 041 21:17 | 042 06:17 | 79.4 | 17.0 | 43.2 | 3.2 | 0.0 | 32.0 | 38.9 | 0.0 | 188.4 | 4.9 | 0.0 | 0.0 | 0.0 | 407.1 |
| DAILY TOTAL SCIENCE | 041 05:57 | 042 06:17 | 189.8 | 45.9 | 43.2 | 8.8 | 0.0 | 86.5 | 105.1 | 0.0 | 260.7 | 228.6 | 0.0 | 0.0 | 64.1 | |
| OBSERVATION_NOR | 042 06:17 | 042 21:18 | 154.5 | 28.3 | 99.8 | 5.4 | 210.0 | 71.2 | 64.9 | 0.0 | 738.3 | 62.7 | 0.0 | 0.0 | 62.8 | 1497.9 |
| SP_126EA_M70METUNQ042_PRIME | 042 21:18 | 043 06:18 | 32.4 | 17.0 | 86.4 | 3.2 | 0.0 | 32.0 | 38.9 | 0.0 | 42.4 | 4.9 | 0.0 | 0.0 | 0.0 | 257.3 |
| DAILY TOTAL SCIENCE | 042 06:17 | 043 06:18 | 186.9 | 45.3 | 186.2 | 8.6 | 210.0 | 103.2 | 103.8 | 0.0 | 780.8 | 67.6 | 0.0 | 0.0 | 62.8 | |

# Final Sequenced SMT and Data Volume (3 of 4)



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 | 043 06:18 | 043 21:06 | 232.2 | 156.3 | 0.0 | 5.3 | 200.0 | 67.1 | 55.6 | 0.0 | 69.5 | 0.0 | 700.0 | 0.0 | 61.9 | 1548.0 |
| SP_126EA_M70METNON044_PRIME | 043 21:06 | 044 02:06 | 144.0 | 75.5 | 0.0 | 1.8 | 0.0 | 35.6 | 21.6 | 0.0 | 23.4 | 0.0 | 0.0 | 0.0 | 0.0 | 301.8 |
| DAILY TOTAL SCIENCE | 043 06:18 | 044 02:06 | 376.2 | 231.7 | 0.0 | 7.1 | 200.0 | 102.7 | 77.2 | 0.0 | 92.9 | 0.0 | 700.0 | 0.0 | 61.9 | |
| OBSERVATION_NOR | 044 02:06 | 045 01:39 | 339.1 | 330.5 | 148.5 | 18.5 | 640.5 | 83.8 | 101.7 | 194.8 | 542.9 | 221.4 | 236.7 | 0.0 | 98.4 | 2956.8 |
| SP_126EA_M70METNON445_PRIME | 045 01:39 | 045 03:59 | 33.6 | 35.2 | 0.0 | 0.8 | 0.0 | 8.3 | 10.1 | 0.0 | 44.5 | 0.0 | 0.0 | 0.0 | 0.0 | 132.6 |
| DAILY TOTAL SCIENCE | 044 02:06 | 045 03:59 | 372.7 | 365.7 | 148.5 | 19.4 | 640.5 | 92.1 | 111.8 | 194.8 | 587.4 | 221.4 | 236.7 | 0.0 | 98.4 | |
| OBSERVATION_NOR | 045 03:59 | 045 21:03 | 245.8 | 257.4 | 0.0 | 6.1 | 242.4 | 60.7 | 73.7 | 0.0 | 80.2 | 110.5 | 400.0 | 0.0 | 71.3 | 1548.1 |
| SP_126EA_M70METUNQ045_PRIME | 045 21:03 | 046 06:03 | 129.6 | 35.9 | 86.4 | 3.2 | 0.0 | 32.0 | 38.9 | 0.0 | 334.0 | 4.9 | 0.0 | 0.0 | 0.0 | 665.0 |
| DAILY TOTAL SCIENCE | 045 03:59 | 046 06:03 | 375.4 | 293.2 | 86.4 | 9.4 | 242.4 | 92.7 | 112.6 | 0.0 | 414.2 | 115.4 | 400.0 | 0.0 | 71.3 | |
| OBSERVATION_NOR | 046 06:03 | 046 21:03 | 216.0 | 28.3 | 168.0 | 15.5 | 200.0 | 85.5 | 64.8 | 0.0 | 651.8 | 0.0 | 0.0 | 0.0 | 62.7 | 1492.6 |
| SP_126EA_M34BWGUNQ046_PRIME | 046 21:03 | 047 06:03 | 129.6 | 17.0 | 43.2 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 316.2 | 4.9 | 0.0 | 0.0 | 0.0 | 617.1 |
| DAILY TOTAL SCIENCE | 046 06:03 | 047 06:03 | 345.6 | 45.3 | 211.2 | 18.7 | 200.0 | 149.6 | 103.7 | 0.0 | 968.0 | 4.9 | 0.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 047 06:03 | 047 21:03 | 216.0 | 28.3 | 0.0 | 5.4 | 240.0 | 106.7 | 64.8 | 0.0 | 70.7 | 23.1 | 200.0 | 0.0 | 62.7 | 1017.7 |
| SP_126EA_M34BWGNON047_PRIME | 047 21:03 | 048 06:03 | 129.6 | 17.0 | 43.2 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 42.4 | 4.9 | 0.0 | 0.0 | 0.0 | 343.3 |
| DAILY TOTAL SCIENCE | 047 06:03 | 048 06:03 | 345.6 | 45.3 | 43.2 | 8.6 | 240.0 | 170.7 | 103.7 | 0.0 | 113.2 | 28.0 | 200.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 048 06:03 | 049 04:18 | 320.4 | 42.0 | 18.0 | 8.0 | 75.0 | 158.3 | 96.1 | 0.0 | 104.9 | 27.6 | 600.0 | 0.0 | 93.0 | 1543.3 |
| SP_126EA_G70METNON049_PRIME | 049 04:18 | 049 12:38 | 120.0 | 15.7 | 79.2 | 3.0 | 0.0 | 59.3 | 36.0 | 0.0 | 530.8 | 4.6 | 0.0 | 0.0 | 0.0 | 848.6 |
| DAILY TOTAL SCIENCE | 048 06:03 | 049 12:38 | 440.4 | 57.7 | 97.2 | 11.0 | 75.0 | 217.6 | 132.1 | 0.0 | 635.7 | 32.2 | 600.0 | 0.0 | 93.0 | |
| OBSERVATION_NOR | 049 12:38 | 050 10:48 | 587.7 | 41.8 | 220.8 | 8.0 | 35.0 | 157.7 | 95.8 | 0.0 | 1412.0 | 4.9 | 0.0 | 0.0 | 92.6 | 2656.3 |
| SP_126EA_C70METNON050_PRIME | 050 10:48 | 050 19:48 | 118.4 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 573.3 | 4.9 | 0.0 | 0.0 | 0.0 | 906.2 |
| DAILY TOTAL SCIENCE | 049 12:38 | 050 19:48 | 706.1 | 58.8 | 307.2 | 11.2 | 35.0 | 221.7 | 134.6 | 0.0 | 1985.3 | 9.8 | 0.0 | 0.0 | 92.6 | |
| OBSERVATION_NOR | 050 19:48 | 051 20:48 | 360.0 | 47.2 | 322.8 | 9.0 | 80.0 | 177.8 | 108.0 | 0.0 | 1768.3 | 23.1 | 0.0 | 0.0 | 104.5 | 3000.6 |
| SP_126EA_M70METNON051_PRIME | 051 20:48 | 052 05:48 | 129.6 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 636.6 | 4.9 | 0.0 | 0.0 | 0.0 | 980.6 |
| DAILY TOTAL SCIENCE | 050 19:48 | 052 05:48 | 489.6 | 64.1 | 409.2 | 12.2 | 80.0 | 241.9 | 146.9 | 0.0 | 2404.8 | 28.0 | 0.0 | 0.0 | 104.5 | |
| OBSERVATION_NOR | 052 05:48 | 053 04:03 | 141.3 | 42.0 | 183.6 | 18.1 | 80.0 | 158.3 | 96.1 | 0.0 | 825.8 | 46.2 | 0.0 | 0.0 | 93.0 | 1684.4 |
| SP_126EA_G34BWGNON053_PRIME | 053 04:03 | 053 06:03 | 7.2 | 3.8 | 10.8 | 0.7 | 0.0 | 14.2 | 8.6 | 0.0 | 74.2 | 1.1 | 0.0 | 0.0 | 0.0 | 120.7 |
| DAILY TOTAL SCIENCE | 052 05:48 | 053 06:03 | 148.5 | 45.7 | 194.4 | 18.8 | 80.0 | 172.5 | 104.8 | 0.0 | 900.1 | 47.3 | 0.0 | 0.0 | 93.0 | |
| OBSERVATION_NOR | 053 06:03 | 053 07:03 | 3.6 | 1.9 | 10.8 | 0.4 | 0.0 | 7.1 | 4.3 | 0.0 | 37.1 | 0.5 | 0.0 | 0.0 | 4.2 | 69.9 |
| SP_126EA_G34BWG2ND053_PRIME | 053 07:03 | 053 13:03 | 21.6 | 11.3 | 64.8 | 2.2 | 0.0 | 42.7 | 25.9 | 0.0 | 196.8 | 3.3 | 0.0 | 0.0 | 0.0 | 368.5 |
| DAILY TOTAL SCIENCE | 053 06:03 | 053 13:03 | 25.2 | 13.2 | 75.6 | 2.5 | 0.0 | 49.8 | 30.2 | 0.0 | 233.9 | 3.8 | 0.0 | 0.0 | 4.2 | |

# Final Sequenced SMT and Data Volume (4 of 4)

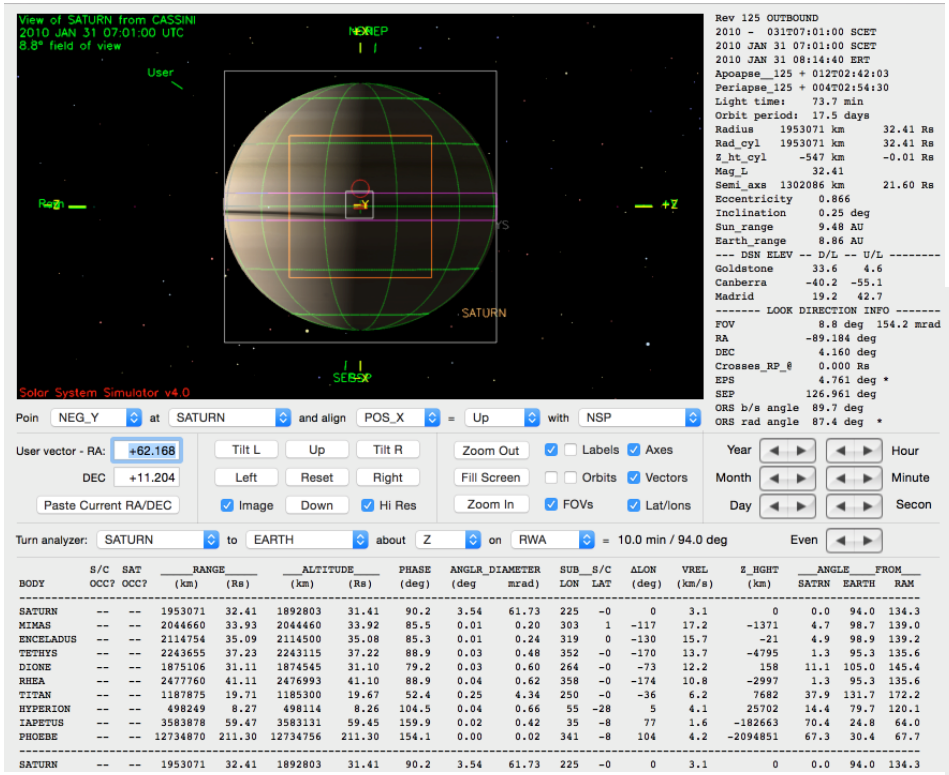


DATA VOLUME REPORT --- TRANSFER FRAME OVERHEAD NOT INCLUDED

| 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 | 053 13:03 | 054 10:33 | 77.4 | 40.6 | 268.8 | 7.7 | 40.0 | 152.9 | 92.9 | 0.0 | 449.7 | 23.1 | 0.0 | 0.0 | 89.9 | 1242.9 |
| SP_127EA_C34HEFOTP054_PRIME | 054 10:33 | 054 19:33 | 32.4 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 188.2 | 4.9 | 0.0 | 0.0 | 0.0 | 435.1 |
| DAILY TOTAL SCIENCE | 053 13:03 | 054 19:33 | 109.8 | 57.5 | 355.2 | 11.0 | 40.0 | 217.0 | 131.8 | 0.0 | 637.9 | 28.0 | 0.0 | 0.0 | 89.9 | |
| OBSERVATION_NOR | 054 19:33 | 055 10:18 | 118.8 | 27.8 | 0.0 | 5.3 | 372.0 | 104.9 | 63.7 | 0.0 | 308.5 | 82.9 | 0.0 | 0.0 | 61.6 | 1145.6 |
| SP_127EA_C70METOTB055_PRIME | 055 10:18 | 055 19:18 | 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 | 054 19:33 | 055 19:18 | 151.2 | 44.8 | 86.4 | 8.6 | 372.0 | 168.9 | 102.6 | 0.0 | 642.5 | 87.8 | 0.0 | 0.0 | 61.6 | |
| OBSERVATION_NOR | 055 19:18 | 056 10:18 | 54.0 | 28.3 | 201.6 | 5.4 | 0.0 | 106.7 | 64.8 | 0.0 | 556.7 | 0.0 | 0.0 | 0.0 | 62.7 | 1080.2 |
| SP_127EA_C34HEFSEQ056_PRIME | 056 10:18 | 056 19:18 | 32.4 | 17.0 | 86.4 | 9.8 | 0.0 | 64.0 | 38.9 | 0.0 | 334.0 | 4.9 | 0.0 | 0.0 | 0.0 | 587.4 |
| DAILY TOTAL SCIENCE | 055 19:18 | 056 19:18 | 86.4 | 45.3 | 288.0 | 15.2 | 0.0 | 170.7 | 103.7 | 0.0 | 890.8 | 4.9 | 0.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 056 19:18 | 057 10:18 | 340.4 | 28.3 | 0.0 | 8.9 | 160.0 | 106.7 | 64.8 | 0.0 | 460.6 | 89.4 | 0.0 | 0.0 | 62.7 | 1321.8 |
| SP_127EA_C34HEFSEQ057_PRIME | 057 10:18 | 057 19:08 | 127.2 | 16.7 | 84.6 | 3.2 | 0.0 | 62.8 | 38.2 | 0.0 | 41.7 | 4.8 | 0.0 | 0.0 | 0.0 | 379.1 |
| DAILY TOTAL SCIENCE | 056 19:18 | 057 19:08 | 467.6 | 45.0 | 84.6 | 12.1 | 160.0 | 169.5 | 103.0 | 0.0 | 502.3 | 94.2 | 0.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 057 19:08 | 058 10:19 | 218.6 | 28.6 | 1.8 | 5.5 | 55.0 | 108.0 | 65.6 | 0.0 | 71.6 | 23.2 | 88.4 | 0.0 | 63.5 | 729.8 |
| SP_127EA_C34HEFOTP058_PRIME | 058 10:19 | 058 19:19 | 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 | 057 19:08 | 058 19:19 | 348.2 | 45.6 | 88.2 | 8.7 | 55.0 | 172.0 | 104.5 | 0.0 | 114.0 | 28.1 | 88.4 | 0.0 | 63.5 | |
| OBSERVATION_NOR | 058 19:19 | 059 10:04 | 212.4 | 27.8 | 0.0 | 5.3 | 0.0 | 104.9 | 63.7 | 0.0 | 69.6 | 72.5 | 88.4 | 0.0 | 61.6 | 706.2 |
| SP_127EA_C34HEFOTB059_PRIME | 059 10:04 | 059 18:44 | 124.8 | 16.3 | 82.8 | 3.1 | 0.0 | 61.7 | 37.4 | 0.0 | 83.5 | 4.8 | 0.0 | 0.0 | 0.0 | 414.4 |
| DAILY TOTAL SCIENCE | 058 19:19 | 059 18:44 | 337.2 | 44.2 | 82.8 | 8.4 | 0.0 | 166.6 | 101.2 | 0.0 | 153.1 | 77.2 | 88.4 | 0.0 | 61.6 | |
| OBSERVATION_NOR | 059 18:44 | 060 10:04 | 199.4 | 28.9 | 192.0 | 5.5 | 28.0 | 85.2 | 66.2 | 0.0 | 413.1 | 0.2 | 0.0 | 0.0 | 64.1 | 1082.6 |
| SP_127EA_C70METSEQ060_PRIME | 060 10:04 | 060 19:04 | 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 | 059 18:44 | 060 19:04 | 231.8 | 45.9 | 278.4 | 18.8 | 28.0 | 104.7 | 105.1 | 0.0 | 455.5 | 5.1 | 0.0 | 0.0 | 64.1 | |

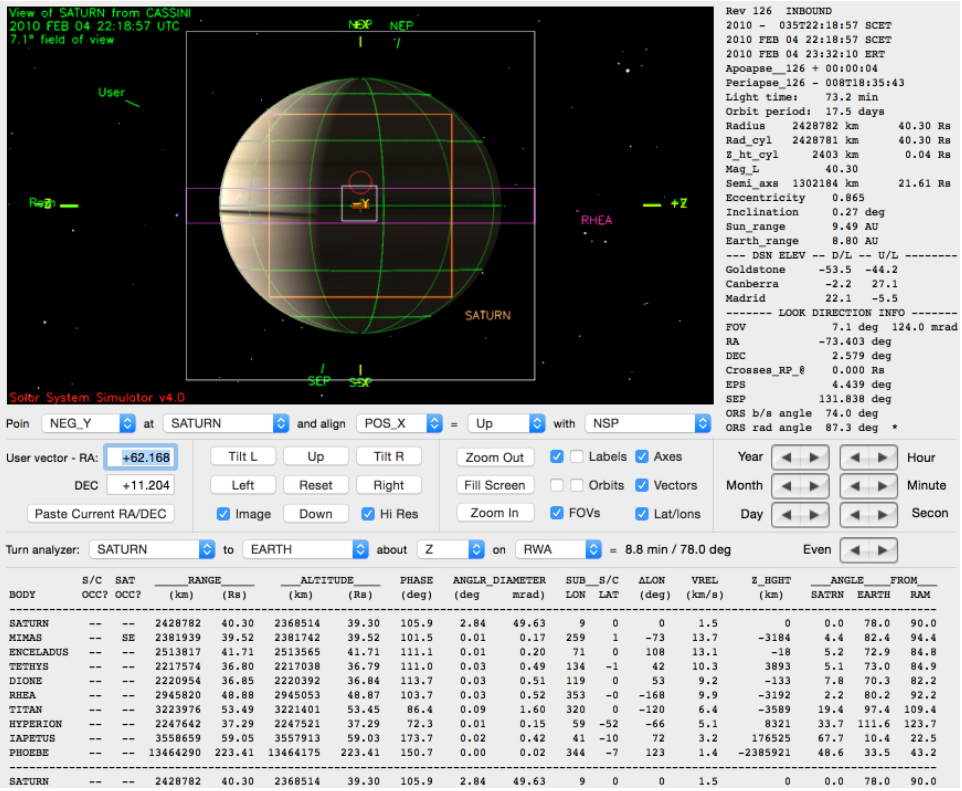
# Segment Geometry





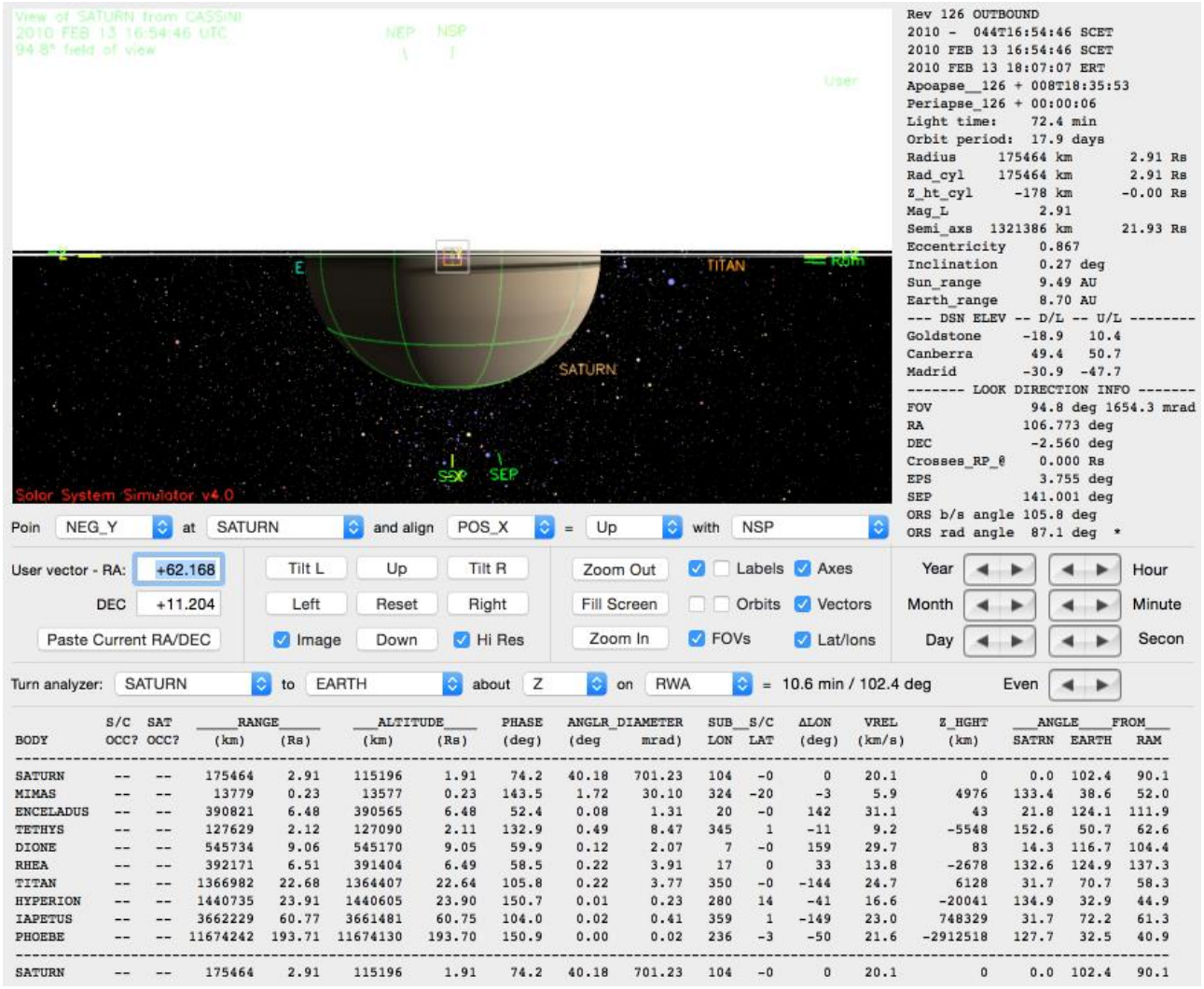

← Seg Start (Left)

↓ Rev 126 Apoapse (below)




| | Saturn Range | Phase Angle | Sub-S/C Lat. |
|---|---|---|---|
| Segment Start | 32.41 | 90.2 | 0 |
| Apoapse | 40.30 | 105.9 | 0 |
| Periapse | 2.91 | 74.2 | 0 |
| Apoapse | 40.30 | 105.7 | 0 |
| Segment End | 17.87 | 141.8 | 0 |

# Segment Geometry



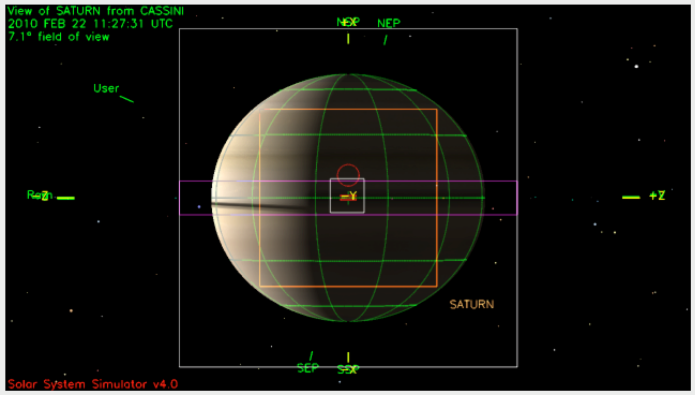

```
Rev 126 OUTBOUND
2010 -  044T16:54:46 SCET
2010 FEB 13 16:54:46 SCET
2010 FEB 13 18:07:07 ERT
Apoapse__126 + 008T18:35:53
Periapse_126 + 00:00:06
Light time:    72.4 min
Orbit period:  17.9 days
Radius      175464 km       2.91 Rs
Rad_cyl     175464 km       2.91 Rs
Z_ht_cyl      -178 km      -0.00 Rs
Mag_L           2.91
Semi_axs   1321386 km      21.93 Rs
Eccentricity    0.867
Inclination     0.27 deg
Sun_range       9.49 AU
Earth_range     8.70 AU
--- DSN ELEV -- D/L -- U/L --------
Goldstone     -18.9   10.4
Canberra       49.4   50.7
Madrid        -30.9  -47.7
------- LOOK DIRECTION INFO -------
FOV            94.8 deg 1654.3 mrad
RA            106.773 deg
DEC            -2.560 deg
Crosses_RP_@    0.000 Rs
EPS             3.755 deg
SEP           141.001 deg
ORS b/s angle 105.8 deg
ORS rad angle  87.1 deg  *
```

| 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 | -- | -- | 175464 | 2.91 | 115196 | 1.91 | 74.2 | 40.18 | 701.23 | 104 | -0 | 0 | 20.1 | 0 | 0.0 | 102.4 | 90.1 |
| MIMAS | -- | -- | 13779 | 0.23 | 13577 | 0.23 | 143.5 | 1.72 | 30.10 | 324 | -20 | -3 | 5.9 | 4976 | 133.4 | 38.6 | 52.0 |
| ENCELADUS | -- | -- | 390821 | 6.48 | 390565 | 6.48 | 52.4 | 0.08 | 1.31 | 20 | -0 | 142 | 31.1 | 43 | 21.8 | 124.1 | 111.9 |
| TETHYS | -- | -- | 127629 | 2.12 | 127090 | 2.11 | 132.9 | 0.49 | 8.47 | 345 | 1 | -11 | 9.2 | -5548 | 152.6 | 50.7 | 62.6 |
| DIONE | -- | -- | 545734 | 9.06 | 545170 | 9.05 | 59.9 | 0.12 | 2.07 | 7 | -0 | 159 | 29.7 | 83 | 14.3 | 116.7 | 104.4 |
| RHEA | -- | -- | 392171 | 6.51 | 391404 | 6.49 | 58.5 | 0.22 | 3.91 | 17 | 0 | 33 | 13.8 | -2678 | 132.6 | 124.9 | 137.3 |
| TITAN | -- | -- | 1366982 | 22.68 | 1364407 | 22.64 | 105.8 | 0.22 | 3.77 | 350 | -0 | -144 | 24.7 | 6128 | 31.7 | 70.7 | 58.3 |
| HYPERION | -- | -- | 1440735 | 23.91 | 1440605 | 23.90 | 150.7 | 0.01 | 0.23 | 280 | 14 | -41 | 16.6 | -20041 | 134.9 | 32.9 | 44.9 |
| IAPETUS | -- | -- | 3662229 | 60.77 | 3661481 | 60.75 | 104.0 | 0.02 | 0.41 | 359 | 1 | -149 | 23.0 | 748329 | 31.7 | 72.2 | 61.3 |
| PHOEBE | -- | -- | 11674242 | 193.71 | 11674130 | 193.70 | 150.9 | 0.00 | 0.02 | 236 | -3 | -50 | 21.6 | -2912518 | 127.7 | 32.5 | 40.9 |
| SATURN | -- | -- | 175464 | 2.91 | 115196 | 1.91 | 74.2 | 40.18 | 701.23 | 104 | -0 | 0 | 20.1 | 0 | 0.0 | 102.4 | 90.1 |

Rev 126 Periapse

# Segment Geometry






```
Rev 127  INBOUND
2010 -  053T11:27:31 SCET
2010 FEB 22 11:27:31 SCET
2010 FEB 22 12:39:13 ERT
Apoapse__127 + 00:00:02
Periapse_127 - 008T18:34:58
Light time:    71.7 min
Orbit period:  17.5 days
Radius      2428633 km      40.30 Rs
Rad_cyl     2428632 km      40.30 Rs
Z_ht_cyl       2537 km       0.04 Rs
Mag_L            40.30
Semi_axs    1302018 km      21.60 Rs
Eccentricity     0.865
Inclination      0.27 deg
Sun_range        9.50 AU
Earth_range      8.62 AU
--- DSN ELEV -- D/L -- U/L --------
Goldstone       38.5   55.2
Canberra        28.8    0.4
Madrid         -42.2  -20.2
------- LOOK DIRECTION INFO -------
FOV              7.1 deg  124.1 mrad
RA            -73.105 deg
DEC             2.545 deg
Crosses_RP_@    0.000 Rs
EPS             2.947 deg
SEP           150.434 deg
ORS b/s angle  74.2 deg
ORS rad angle  87.0 deg  *
```

Poin NEG_Y at SATURN and align POS_X = Up with NSP

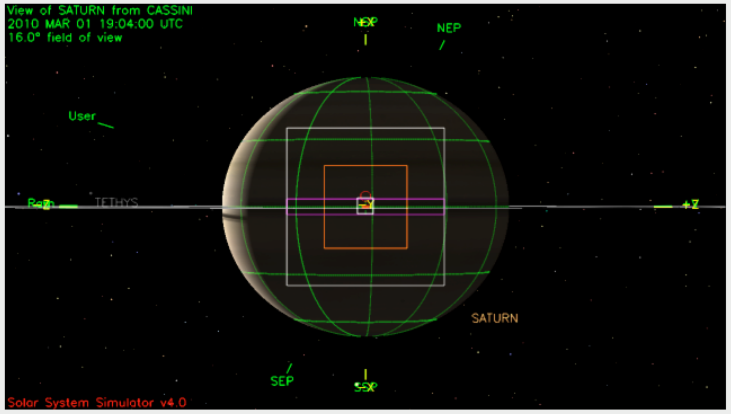
User vector - RA: +62.168 | Tilt L | Up | Tilt R | Zoom Out | Labels | Axes | Year | Hour
DEC +11.204 | Left | Reset | Right | Fill Screen | Orbits | Vectors | Month | Minute
Paste Current RA/DEC | Image | Down | Hi Res | Zoom In | FOVs | Lat/lons | Day | Secon

Turn analyzer: SATURN to EARTH about Z on RWA = 8.7 min / 77.0 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 | ΔLON (deg) | VREL (km/s) | Z_HGHT (km) | ANGLE FROM SATRN | ANGLE FROM EARTH | ANGLE FROM RAM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SATURN | -- | -- | 2428633 | 40.30 | 2368365 | 39.30 | 105.7 | 2.84 | 49.64 | 196 | 0 | 0 | 1.5 | 0 | 0.0 | 77.0 | 90.0 |
| MIMAS | -- | -- | 2352836 | 39.04 | 2352637 | 39.04 | 109.6 | 0.01 | 0.18 | 113 | 2 | 63 | 14.0 | -1929 | 4.0 | 73.0 | 86.0 |
| ENCELADUS | -- | -- | 2667641 | 44.26 | 2667384 | 44.26 | 105.9 | 0.01 | 0.19 | 6 | 0 | 178 | 14.0 | -56 | 0.2 | 76.8 | 89.8 |
| TETHYS | -- | S- | 2316188 | 38.43 | 2315656 | 38.42 | 99.1 | 0.03 | 0.47 | 251 | -1 | -64 | 10.8 | 2491 | 6.6 | 83.5 | 96.6 |
| DIONE | -- | -- | 2487011 | 41.27 | 2486450 | 41.26 | 97.0 | 0.03 | 0.45 | 284 | 0 | -95 | 10.2 | 178 | 8.7 | 85.6 | 98.7 |
| RHEA | -- | -- | 2770164 | 45.96 | 2769399 | 45.95 | 96.8 | 0.03 | 0.55 | 318 | -0 | -126 | 9.4 | -1818 | 8.9 | 85.8 | 98.9 |
| TITAN | -- | -- | 3567732 | 59.20 | 3565157 | 59.16 | 97.5 | 0.08 | 1.44 | 345 | 0 | -155 | 7.0 | -6943 | 8.2 | 85.1 | 98.1 |
| HYPERION | -- | -- | 995699 | 16.52 | 995548 | 16.52 | 111.2 | 0.02 | 0.33 | 210 | -21 | 4 | 3.7 | 26117 | 5.6 | 71.5 | 84.6 |
| IAPETUS | -- | -- | 1489595 | 24.72 | 1488854 | 24.70 | 58.0 | 0.06 | 1.00 | 342 | -26 | -10 | 1.8 | 961628 | 130.7 | 119.4 | 113.5 |
| PHOEBE | -- | -- | 13378036 | 221.98 | 13377923 | 221.97 | 137.9 | 0.00 | 0.02 | 143 | -2 | 137 | 1.1 | -3400034 | 38.5 | 44.7 | 55.4 |
| SATURN | -- | -- | 2428633 | 40.30 | 2368365 | 39.30 | 105.7 | 2.84 | 49.64 | 196 | 0 | 0 | 1.5 | 0 | 0.0 | 77.0 | 90.0 |

← Rev 127 Apoapse (Left)

↓ Seg. End (below)




```
Rev 127  INBOUND
2010 -  060T19:04:00 SCET
2010 MAR 01 19:04:00 SCET
2010 MAR 01 20:15:17 ERT
Apoapse__127 + 007T07:36:31
Periapse_127 - 001T10:58:29
Light time:    71.3 min
Orbit period:  17.6 days
Radius      1076910 km      17.87 Rs
Rad_cyl     1076903 km      17.87 Rs
Z_ht_cyl       3860 km       0.06 Rs
Mag_L            17.87
Semi_axs    1302467 km      21.61 Rs
Eccentricity     0.865
Inclination      0.27 deg
Sun_range        9.50 AU
Earth_range      8.57 AU
--- DSN ELEV -- D/L -- U/L --------
Goldstone      -50.0  -28.6
Canberra        16.5   42.2
Madrid           5.0  -21.7
------- LOOK DIRECTION INFO -------
FOV             16.0 deg  279.5 mrad
RA            -36.873 deg
DEC            -1.616 deg
Crosses_RP_@    0.000 Rs
EPS             2.224 deg
SEP           158.164 deg
ORS b/s angle  38.2 deg
ORS rad angle  86.8 deg  *
```

Poin 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 = 6.0 min / 40.3 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 | ΔLON (deg) | VREL (km/s) | Z_HGHT (km) | ANGLE FROM SATRN | ANGLE FROM EARTH | ANGLE FROM RAM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SATURN | -- | -- | 1076910 | 17.87 | 1016642 | 16.87 | 141.8 | 6.42 | 111.99 | 333 | 0 | 0 | 6.4 | 0 | 0.0 | 40.3 | 25.7 |
| MIMAS | -- | -- | 1259979 | 20.91 | 1259772 | 20.90 | 140.7 | 0.02 | 0.33 | 356 | 1 | -172 | 18.0 | 4260 | 1.2 | 41.4 | 26.8 |
| ENCELADUS | -- | -- | 1112175 | 18.45 | 1111923 | 18.45 | 154.1 | 0.03 | 0.46 | 80 | 0 | 92 | 18.6 | 37 | 12.3 | 28.1 | 13.4 |
| TETHYS | -- | -- | 799480 | 13.27 | 798941 | 13.26 | 148.0 | 0.08 | 1.35 | 157 | -1 | 17 | 11.6 | 5262 | 6.1 | 34.2 | 19.6 |
| DIONE | -- | -- | 940425 | 15.60 | 939864 | 15.59 | 161.8 | 0.07 | 1.20 | 101 | 0 | 59 | 14.2 | -46 | 20.2 | 20.3 | 5.5 |
| RHEA | -- | -- | 817907 | 13.57 | 817144 | 13.56 | 169.8 | 0.11 | 1.88 | 107 | -0 | 47 | 12.0 | 3227 | 28.3 | 12.4 | 2.6 |
| TITAN | -- | -- | 1314873 | 21.82 | 1312298 | 21.77 | 157.3 | 0.22 | 3.92 | 45 | -0 | 69 | 10.9 | 6410 | 60.6 | 20.8 | 34.9 |
| HYPERION | -- | -- | 1930016 | 32.02 | 1929871 | 32.02 | 95.5 | 0.01 | 0.17 | 28 | -33 | -100 | 3.9 | -20189 | 46.3 | 86.5 | 72.0 |
| IAPETUS | -- | -- | 2602931 | 43.19 | 2602184 | 43.18 | 34.9 | 0.03 | 0.57 | 359 | -5 | -7 | 5.4 | 801248 | 160.0 | 142.9 | 156.2 |
| PHOEBE | -- | -- | 12439443 | 206.40 | 12439332 | 206.40 | 137.7 | 0.00 | 0.02 | 118 | 1 | 179 | 6.2 | -3770398 | 17.5 | 44.1 | 29.9 |
| SATURN | -- | -- | 1076910 | 17.87 | 1016642 | 16.87 | 141.8 | 6.42 | 111.99 | 333 | 0 | 0 | 6.4 | 0 | 0.0 | 40.3 | 25.7 |

# Solar Geometry – ORS Boresight Concerns



**There were solar viewing conflicts at Rev 126 periapse on DOY 44 and constraint management was required during the occultation.**

**Please see slide 42 for more details.**

# Daily Science Highlights (1 of 4)

**January 31 (doy 031):**

ISS, CIRS and UVIS performed an observation in the Titan monitoring campaign (phase 52.6 and range 1.2 Mkm). CAPS performed a 5h MAPS Survey observation for their magnetospheric boundary campaign. ISS observed the transit of Prometheus across Enceladus for 1h16m. ISS performed another observation in their Satellite Orbit Campaign. UVIS mapped volatiles in the immediate neighborhood of Enceladus for 4h, to test connection of volatile changes to plume eruptions. Orbit Trim Maneuver (OTM) 236 was performed during the downlink. This was a “clean-up” maneuver after the Titan Fly-By from 31 January - 01 February (day 031 - 032; T66).

**February 01 (doy 032):**

ISS, CIRS and UVIS performed another observation in the Titan monitoring campaign (phase 58.8 and range 1.7 Mkm). ISS performed another observation in their Satellite Orbit Campaign. ISS observed the transit of Epimetheus across Janus for 45m. CAPS performed a MAPS Survey for 6h27m. ISS observed the transit of Janus across Enceladus for 40m. ISS performed another observation in their Satellite Orbit Campaign. CDA performed a survey of interstellar dust for 3h5m.

**February 02 (doy 033):**

ISS, CIRS and UVIS performed another observation in the Titan monitoring campaign (phase 65.7 and range 2.2 Mkm). ISS performed another observation in their Satellite Orbit Campaign. ISS imaged the light curve of Erriapus rotation for 13h11m. CAPS performed a MAPS Survey for 6h.

**February 03 (doy 034):**

ISS, CIRS and UVIS performed another observation in the Titan monitoring campaign (phase 75.7 and range 2.8 Mkm). UVIS performed a mosaic scan of Saturn’s magnetosphere for 9h.

**February 04 (doy 035):**

CIRS performed a spectroscopic observation of 1 of 3 IR stars: CW Leonis, Eta Carinae, Alpha Orionis. ISS observed Saturn’s outer satellite Erriapus for 4h. ISS, CIRS and UVIS performed another observation in the Titan monitoring campaign (phase 86.2 and range 3.2 Mkm). Apoapse occured on this day. UVIS performed a mosaic scan of Saturn’s magnetosphere for 8h.

**February 05 (doy 036):**

CIRS measured oxygen compounds in Saturn’s stratosphere.

**February 06 (doy 037):**

CAPS performed a MAPS Survey for 5h55m. UVIS performed a calibration activity at apoapse to determine the absolute sensitivity of the extreme and far UV (EUV/FUV) by targeting a star, in this case Spica.

# Daily Science Highlights (2 of 4)

**February 07 (doy 038):**

CIRS also performed a stray light calibration. Sunlight falling on the CIRS telescope can be potentially scattered into the instrument by mirror imperfections. To quantify the effects of ring particle impacts on the mirror performance, CIRS monitored the scattered IR solar radiation relative to the offset angle from the sun. ISS observed Saturn's outer satellite Skoll. UVIS performed a mosaic scan of Saturn's magnetosphere for 12h.

**February 08 (doy 039):**

CAPS performed a MAPS Survey for 6h.

**February 09 (doy 040):**

UVIS performed a mosaic scan of Saturn's magnetosphere for q12h. CAPS performed a MAPS Survey for 5h45m.

**February 10 (doy 041):**

UVIS performed a mosaic scan of Saturn's magnetosphere for 9h50m. UVIS mapped volatiles in the immediate neighborhood of Enceladus for 4h, to test connection of volatile changes to plume eruptions.

**February 11 (doy 042):**

CIRS measured oxygen compounds in Saturn's stratosphere. CAPS performed a MAPS Survey for 4h45m. ISS observed phase function of plumes on Enceladus.

**February 12 (doy 043):**

VIMS created a Global Dynamics Mosaic of Saturn's equator.

**February 13 (doy 044):**

UVIS observed an ingress occultation of Saturn for 3h12m. ISS observed an ingress solar eclipse for 2h. CIRS obtained stratospheric thermal structure by means of limb sounding in the mid-IR. RADAR performed scatterometry and radiometry on Saturn's satellite Mimas for 1h14m. Preparation for a dust hazard took place by turning the High Gain Antenna to Dust Ram and closing the main engine cover. VIMS observed the occultation of Saturn and Alpha Centauri Minor for 29m. Periapse occurred on this day. ISS imaged Mimas for 25m. CIRS used FP1 and FP3 to map Mimas during the daytime. ISS took multiple images of Saturn's moon Calypso to create a mosaic.

**February 14 (doy 045):**

VIMS created a Global Dynamics Mosaic of Saturn's equator. ISS observed the transit of Epimetheus across Janus for 43m. UVIS performed several slow scans across Saturn's visible hemisphere for 6h6m, to form spectral images.

# Daily Science Highlights (3 of 4)

**February 15 (doy 046):**

CIRS measured oxygen compounds in Saturn's stratosphere. ISS monitored Titan's clouds for 2h.

**February 16 (doy 047):**

ISS monitored Titan's clouds for 8h30m. ISS imaged Iapetus for 1h30m. VIMS created a Global Dynamics Mosaic of Saturn's equator.

**February 17 (doy 048):**

Titan monitoring campaign (phase 45.1 and range 1.6 Mkm). VIMS created a Global Dynamics Mosaic of Saturn's equator. MAG performed a calibration activity, this was accomplished by rolling the spacecraft about the X or Y axes.

**February 18 (doy 049):**

ISS imaged Iapetus for 1h30m. ISS observed Titan's clouds for 1h15m. CIRS created a mid-IR thermal map of Saturn to determine upper troposphere and tropopause temperature.

**February 19 (doy 050):**

CAPS performed a MAPS Survey for 5h50m. ISS created a mosaic of Iapetus for 1h30m. CIRS created a mid-IR thermal map of Saturn to determine upper troposphere and tropopause temperature.

**February 20 (doy 052):**

ISS imaged Iapetus for 1h30m. CAPS performed a MAPS Survey for 5h40m. CIRS measured oxygen compounds in Saturn's stratosphere.

**February 21 (doy 053):**

ISS imaged Iapetus for 1h30m. CIRS measured oxygen compounds in Saturn's stratosphere. During the downlink RSS performed a boresight calibration.

**February 22 (doy 054):**

ISS imaged Iapetus for 1h30m. CAPS performed a MAPS Survey for 6h05m. Orbit Trim Maneuver (OTM) 237 was performed during the downlink. This was a targeting maneuver for Rings Fly-By, 22 February (day 054; R2).

**February 23 (doy 055):**

ISS observed Saturn's outer Satellite Skoll for 3h. ISS observed the transit of Dione across Enceladus for 47m. ISS performed another observation in their Satellite Orbit Campaign. ISS imaged Iapetus for 1h30m. CIRS created a mid-IR thermal map of Saturn to determine upper troposphere and tropopause temperature.

# Daily Science Highlights (4 of 4)

**February 24 (doy 056):**

Engineering performed a gyro calibration for 3h10m, whereby the spacecraft was rolled in both directions for each axis X, Y, and Z. ISS imaged Iapetus for 1h30m.

**February 25 (doy 057):**

ISS observed Saturn's outer satellite Iapetus for 2h52m. CAPS performed a MAPS survey for 6h. ISS imaged Iapetus for 1h30m.

**February 26 (doy 058):**

VIMS observed Saturn's E and G Rings for 6h. UVIS mapped volatiles in the immediate neighborhood of Enceladus for 4h, to test connection of volatile changes to plume eruptions. CAPS performed a MAPS survey for 6h. Orbit Trim Maneuver (OTM) 238 was performed during the downlink. This was an approach maneuver for the Rings Fly-By, 26 February (day 058:R2).

**February 27 (doy 059):**

CIRS measured oxygen compounds in Saturn's stratosphere.

# Segment Integration Planning

# Timeline Gaps and Suggested Observations (1 of 3)

## Rev 126 Periapse Strawman SPASS

| | | Request | Riders | Start (SCET) | Start (Epoch) | Duration | End (SCET) | Primary | Secondary | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Sequence 557, length = 37 days | | 2010-023T15:00:00 | | 037T04:04:00 | 2010-060T19:04:00 | | | |
| | | SATURN_125_127 Segment | | 2010-031T07:01:00 | | 029T12:03:00 | 2010-060T19:04:00 | | | |
| | | SP_126SA_WAYPTTURN043_PRIME | C, E, U | 2010-043T06:18:00 | | 000T00:40:00 | 2010-043T06:58:00 | | | |
| | | NEW WAYPOINT | | 2010-043T06:58:00 | | 000T00:48:00 | 2010-044T15:54:00 | ISS_NAC to Saturn | | |
| | | VIMS_126SA_GLOBDYN001_PRIME | I, M, R, V | 2010-043T06:58:00 | | 000T19:58:00 | 2010-044T02:56:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| Solar Ingress | | UVIS_126SA_USUNOCC001_PRIME | I, M | 2010-044T02:56:00 | | 000T03:01:00 | 2010-044T05:58:00 | ISS_NAC to Sun (-20.0,0.0,-0.109 deg. offset) | NEG_Z to NSP | |
| Takes place while in occultation | | ISS_126SA_SOLNGRESS001_PRIME | I, M | 2010-044T05:58:00 | | 000T03:49:00 | 2010-044T09:47:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| Minimum quanta for CIRS? Is the range suitable? | | CIRS_126SA_LIMBINT001_PRIME | I, M, V | 2010-044T09:47:00 | | 000T01:28:00 | 2010-044T11:15:00 | CIRS_FPB to Saturn | NEG_X to NSP | |
| SOST specific waypoint? Where should the turn time be carved out? | | START of SOST PERIOD | | 2010-044T11:15:00 | | 000T00:45:00 | 2010-044T12:00:00 | | | |
| | SOST* | ISS_126CP_CALYPCLOS001_PRIME | I, M, V | 2010-044T11:15:00 | | 000T00:45:00 | 2010-044T12:00:00 | ISS_NAC to Calypso | NEG_X to Sun | |
| | SOST* | ISS_126CP_ROTCOLR004_PRIME | I, M, V | 2010-044T11:15:00 | | 000T00:45:00 | 2010-044T12:00:00 | UVIS_FUV to Calypso | NEG_X to Sun | UVIS_FUV to Calypso,Neg_X to Sun |
| | SOST* | UVIS_126CP_ICYLON001_PRIME | I, M, V | 2010-044T11:15:00 | | 000T00:45:00 | 2010-044T12:00:00 | UVIS_FUV to Calypso | POS_Z to NSP | |
| | SOST* | | | | | | | | | |
| | SOST* | ISS_126RH_GEOLOG001_PRIME | I, M, V | 2010-044T11:15:00 | | 000T00:45:00 | 2010-044T12:00:00 | ISS_NAC to Rhea | NEG_X to Sun | ISS_NAC to Rhea |
| | | END of SOST PERIOD | | | | | 2010-044T12:00:00 | | | |
| Minimum quanta for CIRS? Is the range suitable? | | CIRS_126SA_LIMBINT001_PRIME | I, M, V | 2010-044T12:00:00 | | 000T03:00:00 | 2010-044T15:00:00 | CIRS_FPB to Saturn | NEG_X to NSP | |
| SOST specific waypoint? | | START of SOST PERIOD | | 2010-044T15:00:00 | | 000T06:00:00 | 2010-044T21:00:00 | | | |
| | SOST* (*overlapping requests will need to be addressed) | ISS_126EP_RNGMNSHAD001_PRIME | I, M, V | 2010-044T15:00:00 | | 000T01:35:00 | 2010-044T15:34:00 | ISS_NAC to Rings | PIC | |
| | SOST* (*overlapping requests will need to be addressed) | ISS_126EN_MUTUALEVE115_PRIME | I, M, V | 2010-044T15:00:00 | | 000T01:41:00 | 2010-044T16:21:00 | ISS_NAC to Enceladus | POS_X to NSP | ISS_NAC to Enceladus control of secondary axis not required |
| | SOST* (*overlapping requests will need to be addressed) | ISS_126EN_PHOTOOP005_PRIME | I, M, V | 2010-044T15:00:00 | | 000T01:41:00 | 2010-044T16:21:00 | ISS_WAC to Enceladus | POS_X to NSP | ISS_WAC to Enceladus control of secondary axis not required |
| | SOST* (*overlapping requests will need to be addressed) | ISS_126EN_MUTUALEVE005_PRIME | M, V | 2010-044T15:10:00 | | 000T00:43:00 | 2010-044T15:53:00 | ISS_NAC to Enceladus | POS_X to NSP | ISS_NAC to Enceladus control of secondary axis not required |
| | SOST* (*overlapping requests will need to be addressed) | ISS_126EP_ROTCOLR002_PRIME | M, V | 2010-044T15:15:00 | | 000T02:00:00 | 2010-044T17:15:00 | UVIS_FUV to Epimetheus | NEG_X to Sun | UVIS_FUV to Epimetheus,Neg_X to Sun |
| | SOST* (*overlapping requests will need to be addressed) | UVIS_126EP_ICYLON001_PRIME | M, V | 2010-044T15:15:00 | | 000T02:00:00 | 2010-044T17:15:00 | UVIS_FUV to Epimetheus | POS_Z to NSP | |
| | SOST* (*overlapping requests will need to be addressed) | ISS_126EP_EPIMECLOS001_PRIME | M, V | 2010-044T15:20:00 | | 000T02:00:00 | 2010-044T17:20:00 | ISS_NAC to Epimetheus | NEG_X to Sun | |
| | SOST* (*overlapping requests will need to be addressed) | ISS_126TE_GEOLOG001_PRIME | M, V | 2010-044T16:10:00 | | 000T04:00:00 | 2010-044T20:10:00 | ISS_NAC to Tethys | NEG_X to Sun | ISS_NAC to Tethys |
| turn time=13.37 min from -Y to Saturn, -X to NSP; 6 min from +Y to Enc, +X to NSP | SOST* (*overlapping requests will need to be addressed) | SP_126DR_RAMAVOID044_PRIME | | 2010-044T15:34:00 | | 000T00:20:00 | 2010-044T15:54:00 | NEG_Z to Dust_RAM | NEG_X to NSP | Turn to Dust_RAM |
| | SOST* (*overlapping requests will need to be addressed) | NEW WAYPOINT | | 2010-044T15:54:00 | | 000T00:48:00 | 2010-044T17:77:00 | NEG_Z to Dust_RAM | NEG_X to NSP | |
| | SOST* (*overlapping requests will need to be addressed) | MP_126DR_DUSTHAZRD003_PRIME | M, V | 2010-044T15:54:36 | | 000T00:38:23 | 2010-044T16:32:59 | NEG_Z to Dust_RAM | | |
| | SOST* (*overlapping requests will need to be addressed) | MP_126DR_DUSTHAZRD004_PRIME | M, V | 2010-044T16:33:00 | | 000T00:43:35 | 2010-044T17:16:35 | NEG_Z to Dust_RAM | | |
| turn time=33 min from +Z to Dust_RAM, -X to NSP to -Y to Tethys, -Z to NSP | SOST* (*overlapping requests will need to be addressed) | SP_046SA_WAYPTTURN762_PRIME | M | 2010-044T17:17:00 | | 000T00:35:00 | 2010-044T17:52:00 | | | Turn to Waypoint |
| SOST specific waypoint? | SOST* (*overlapping requests will need to be addressed) | NEW WAYPOINT | | 2010-044T17:52:00 | | | | | | |
| | SOST* (*overlapping requests will need to be addressed) | CIRS_123TE_FP1GLOBAL001_PRIME | M, V | 2010-044T16:37:00 | | 000T01:30:00 | 2010-044T18:07:00 | CIRS_FP1 to Mimas | NEG_Z to NSP | |
| | SOST* (*overlapping requests will need to be addressed) | CIRS_126MI_FP1GLOBAL001_PRIME | M, V | 2010-044T16:37:00 | | 000T01:30:00 | 2010-044T18:07:00 | CIRS_FP1 to Mimas | NEG_Z to NSP | |
| | SOST* (*overlapping requests will need to be addressed) | Periapse R = 2.908 Rs, lat ... | | 2010-044T16:54:47 | | 000T00:00:01 | 2010-044T16:54:48 | | | |
| | SOST* (*overlapping requests will need to be addressed) | CIRS_123TE_FP3REGION001_PRIME | M | 2010-044T18:07:00 | | 000T01:00:00 | 2010-044T19:07:00 | CIRS_FP3 to Mimas | NEG_Z to NSP | |
| | SOST* (*overlapping requests will need to be addressed) | CIRS_126MI_FP3REGION001_PRIME | M | 2010-044T18:07:00 | | 000T01:00:00 | 2010-044T19:07:00 | CIRS_FP3 to Mimas | NEG_Z to NSP | |
| Can this SOST period end at 2010-044T19:07? There seems to be ~2 hr mismatch between activities in CIMS and the agreed upon SOST period. CIRS can use the extra time for the Limb Integration. | | END of SOST PERIOD | | 2010-044T15:00:00 | | 000T06:00:00 | 2010-044T21:00:00 | | | |

# Timeline Gaps and Suggested Observations (2 of 3)

## Rev 126 Periapse Strawman SPASS (cont.)

| | Request | Riders | Start (SCET) | Start (Epoch) | Duration | End (SCET) | Primary | Secondary | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Minimum quanta for CIRS? Is the range suitable? | CIRS_1265A_LIMBINT001_PRIME | I, M, V | 2010-044T21:00:00 | | 000T02:15:00 | 2010-044T23:15:00 | CIRS_FP8 to Saturn | NEG_X to NSP | |
| | START of SOST PERIOD | | 2010-044T23:15:00 | | 000T00:30:00 | 2010-044T23:45:00 | | | |
| SOST* | UVIS_126MI_ICYLON001_PRIME | I, M, R | 2010-044T23:15:00 | | 000T00:30:00 | 2010-044T23:45:00 | UVIS_FUV to Mimas | POS_Z to NSP | |
| | END of SOST PERIOD | | | | | 2010-044T23:45:00 | | | |
| Will optimize turn time if waypoint turn is needed | SP_1265A_WAYPTTURN044_PRIME | | 2010-044T23:45:00 | | 000T00:40:00 | 2010-045T00:25:00 | | | Turn to Saturn specific waypoint |
| | NEW WAYPOINT | | 2010-045T00:25:00 | | | | ISS_NAC to Saturn | | |
| Minimum quanta for CIRS? Is the range suitable? | CIRS_1265A_LIMBINT001_PRIME | I, M, V | 2010-045T00:25:00 | | 000T02:09:00 | 2010-045T02:34:00 | CIRS_FP8 to Saturn | NEG_X to NSP | |
| | VIMS_1265A_GLOBDYN004_PRIME | I, M | 2010-045T02:34:00 | | 000T11:00:00 | 2010-045T13:34:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| | ISS_126EP_MUTUALEVE001_PRIME | M | 2010-045T13:34:00 | | 000T00:43:00 | 2010-045T14:17:00 | ISS_NAC to Epimetheus | POS_X to NSP | ISS_NAC to Epimetheus control of secondary axis not required |
| | UVIS_1265A_EUVFUV001_PRIME | I, M | 2010-045T14:17:00 | | 000T06:06:00 | 2010-045T20:23:00 | UVIS_FUV to Saturn | NEG_Z to Sun | |
| | SP_126EA_DLTURN045_PRIME | | 2010-045T20:23:00 | | 000T00:40:00 | 2010-045T21:03:00 | XBAND to Earth | POS_X to NEP | |
| | SP_126EA_M70METNON045_PRIME | C, E, M | 2010-045T21:03:00 | | 000T09:00:00 | 2010-046T06:03:00 | XBAND to Earth | Rolling/SRU | |

| Deleted observations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CAPS_1265A_SURVEYPTG001_PRIME | I, M | 2010-043T12:00:00 | | 000T06:00:00 | 2010-043T18:00:00 | | | |
| RADAR_126TI_NEQUACAL008_PRIME | I, M | 2010-043T21:00:00 | | 000T01:30:00 | 2010-043T22:30:00 | NEG_Z to Titan | PIC | |
| ISS_126RI_LOINCSTR001_PRIME | I, M, V | 2010-044T10:15:00 | | 000T02:00:00 | 2010-044T12:15:00 | ISS_NAC to Rings | PIC | |
| VIMS_1265A_GLOBDYN002_PRIME | I, M, V | 2010-044T12:00:00 | | 000T03:00:00 | 2010-044T15:00:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| VIMS_1265A_ALPORIOCC001_PRIME | I, M, V | 2010-044T14:55:00 | | 000T01:20:00 | 2010-044T16:15:00 | VIMS_IR to 88.793/7.407 | POS_X to Saturn | |
| VIMS_1265A_ALPCMAOCC001_PRIME | M, V | 2010-044T15:24:00 | | 000T01:20:00 | 2010-044T16:44:00 | VIMS_IR to 101.287/-16.716 | POS_X to Saturn | |
| CDA_126OR_RPX0030004_PRIME | M, V | 2010-044T15:25:46 | | 000T02:00:00 | 2010-044T17:25:46 | | | |
| VIMS_1265A_ALPCMIOCC001_PRIME | M, V | 2010-044T15:51:00 | | 000T01:20:00 | 2010-044T17:11:00 | VIMS_IR to 114.825/5.225 | POS_X to Saturn | |
| VIMS_1265A_GLOBDYN003_PRIME | I, M, R | 2010-044T21:00:00 | | 000T02:15:00 | 2010-044T23:15:00 | ISS_NAC to Saturn | NEG_X to NSP | |
| ISS_126RI_HPHRDFSTR001_PRIME | I, M, R, V | 2010-044T16:44:07 | | 000T15:35:00 | 2010-045T08:19:07 | ISS_NAC to Rings | PIC | |
| ISS_126MI_RNGMNSHAD001_PRIME | I, M | 2010-045T04:59:00 | | 000T02:55:00 | 2010-045T07:54:00 | ISS_NAC to Rings | PIC | |
| Can this be moved to another time period? CIRS_126TI_COMPMAP001_PRIME | M | 2010-045T12:23:00 | | 000T08:00:00 | 2010-045T20:23:00 | CIRS_FP8 to Titan | NEG_X to NSP | |
| ISS_126JA_MUTUALEVE001_PRIME | M | 2010-045T20:52:00 | | 000T00:42:00 | 2010-045T21:34:00 | ISS_NAC to Janus | POS_X to NSP | ISS_NAC to Janus control of secondary axis not required |

# Timeline Gaps and Suggested Observations (3 of 3)

## Rev 125-127 Apoapse Periods

### Saturn Rev 125_127 Apoapse Strawman Statistics

Rev 125-126 Apoapse: 2010-031T07:01:00 --> 2010-044T02:06:00
Rev 126-127 Apoapse: 2010-046T06:03:00 --> 2010-060T19:04:00

| | | Requested in CIMS | | | | Allocated in Timeline | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prime Pointing Request Type | Requests | Min. Duration | Max. Duration | Total Duration | Requests | Min. Duration | Max. Duration | Total Duration | % Alloc. Req. | % Alloc. Time | Notes |
| | CAPS | | | | | | | | | | | |
| | DUSKPTG | 3 | 000T06:00:00 | 000T21:55:00 | 001T09:55:00 | 2 | 000T03:40:00 | 000T04:59:00 | 000T08:39:00 | 66.7% | 25.5% | 21hr55min long request goes through DL to next segment |
| | MAGBNDPTG | 6 | 000T06:00:00 | 000T06:00:00 | 001T12:00:00 | 4 | 000T05:44:00 | 000T06:02:00 | 000T23:46:00 | 66.7% | 66.0% | |
| | SURVEYPTG | 3 | 000T06:00:00 | 000T06:00:00 | 000T18:00:00 | 1 | 000T05:40:00 | 000T05:40:00 | 000T05:40:00 | 33.3% | 31.5% | |
| | SWAURPTG | 15 | 000T06:00:00 | 000T06:00:00 | 003T18:00:00 | 8 | 000T05:40:00 | 000T06:27:00 | 001T23:57:00 | 53.3% | 53.3% | |
| | CIRS | | | | | | | | | | | |
| | 1STAROBSD | 1 | 000T06:00:00 | 000T06:00:00 | 000T06:00:00 | 1 | 000T05:55:00 | 000T05:55:00 | 000T05:55:00 | 100.0% | 98.6% | |
| | COMPSIT | 6 | 000T10:00:00 | 000T23:30:00 | 003T22:35:00 | 6 | 000T09:00:00 | 000T20:10:00 | 003T08:25:00 | 100.0% | 85.0% | |
| | MIRTMAP | 3 | 000T13:40:00 | 000T23:00:00 | 002T03:40:00 | 3 | 000T13:35:00 | 000T22:25:00 | 002T02:40:00 | 100.0% | 98.1% | |
| | STRAITCAL | 1 | 000T05:00:00 | 000T05:00:00 | 000T05:00:00 | 1 | 000T05:00:00 | 000T05:00:00 | 000T05:00:00 | 100.0% | 100.0% | |
| | ISS | | | | | | | | | | | |
| | CLOUDMON | 10 | 000T01:15:00 | 000T01:15:00 | 000T12:30:00 | 10 | 000T01:15:00 | 000T01:15:00 | 000T12:30:00 | 100.0% | 100.0% | |
| | EN_PLMPHS | 1 | 000T02:30:00 | 000T02:30:00 | 000T02:30:00 | 1 | 000T02:30:00 | 000T02:30:00 | 000T02:30:00 | 100.0% | 100.0% | |
| Request reduced from 22 hrs to 13 hrs. Is this acceptable? | ERRIAPO | 1 | 000T22:16:00 | 000T22:16:00 | 000T22:16:00 | 1 | 000T13:11:00 | 000T13:11:00 | 000T13:11:00 | 100.0% | 59.2% | |
| | IAPETUS | 12 | 000T01:30:00 | 000T01:30:00 | 000T14:53:00 | 3 | 000T01:30:00 | 000T01:30:00 | 000T04:30:00 | 25.0% | 25.0% | how many are needed? |
| | MUTUALEVE | 51 | 000T00:40:00 | 000T01:31:00 | 001T14:15:00 | 6 | 000T00:38:00 | 000T00:47:00 | 000T04:13:00 | 11.8% | 11.0% | |
| | OUTERSAT | 4 | 000T03:00:00 | 000T04:00:00 | 000T13:00:00 | 4 | 000T02:54:00 | 000T04:00:00 | 000T13:12:00 | 100.0% | 101.5% | |
| 2hr23 min gap at 2010-056T23:37 - can several be combined into this gap period? | SATELLORB | 25 | 000T00:30:00 | 000T00:30:00 | 000T12:30:00 | 4 | 000T00:30:00 | 000T01:25:00 | 000T03:23:00 | 16.0% | 27.1% | how many are needed? |
| Can this request be reduced in duration and combined with CLOUDMON? | TI_CLOUD | 1 | 000T10:00:00 | 000T10:00:00 | 000T00:00:00 | 0 | 000T00:00:00 | 000T00:00:00 | 000T00:00:00 | 0.0% | 0.0% | partially during DL (can time be shortened to 2 hrs and an extra 1/2 hour added to cloud monitor?); conflicts with GLOBDYN and CLOUDMON |
| How important is this request? Can conflicting COMPSIT request be removed and TI_CLOUD be put in and DUSKPTG request duration be increased? | TI_LOPHASE | 1 | 000T02:00:00 | 000T02:00:00 | 000T00:00:00 | 0 | 000T00:00:00 | 000T00:00:00 | 000T00:00:00 | 0.0% | 0.0% | conflicts with COMPSIT |
| | NAV | | | | | | | | | | | |
| | OPNAV | 2 | 000T00:59:00 | 000T01:29:00 | 000T02:28:00 | 2 | 000T00:59:00 | 000T01:29:00 | 000T02:28:00 | 100.0% | 100.0% | |
| | RADAR | | | | | | | | | | | |
| | GLOBALMAP | 1 | 000T10:00:00 | 000T10:00:00 | 000T00:00:00 | 0 | 000T00:00:00 | 000T00:00:00 | 000T00:00:00 | 0.0% | 0.0% | scheduled over DL after periapse |
| | RSS | | | | | | | | | | | |
| | BORESIGHT | 1 | 000T01:00:00 | 000T01:00:00 | 000T01:00:00 | 1 | 000T01:00:00 | 000T01:00:00 | 000T01:00:00 | 100.0% | 100.0% | |
| | UVIS | | | | | | | | | | | |
| | ALPVIR001 | 1 | 000T03:00:00 | 000T03:00:00 | 000T03:00:00 | 1 | 000T03:00:00 | 000T03:00:00 | 000T03:00:00 | 100.0% | 100.0% | |
| | APOMOSAIC | 19 | 000T08:00:00 | 000T08:00:00 | 006T08:00:00 | 6 | 000T08:00:00 | 000T12:00:00 | 002T15:50:00 | 31.6% | 42.0% | 63hrs50min in rev 125-126 apo; no activities in rev 126-127 apo |
| | ICYATM | 3 | 000T04:00:00 | 000T04:00:00 | 000T12:00:00 | 3 | 000T04:00:00 | 000T04:00:00 | 000T12:00:00 | 100.0% | 100.0% | |
| | VIMS | | | | | | | | | | | |
| 1 request split by a DL into 2 separate requests. Is this acceptable? | EG130PHASE | 2 | 000T18:00:00 | 000T18:00:00 | 001T12:00:00 | 1 | 000T03:25:00 | 000T06:09:00 | 000T09:34:00 | 50.0% | 26.6% | 3 of 9 requests already allocated in SAT 119_120, 121, 121_122 |
| | EG80PHASE | 2 | 000T12:00:00 | 000T12:00:00 | 001T00:00:00 | 0 | 000T00:00:00 | 000T00:00:00 | 000T00:00:00 | 0.0% | 0.0% | 3 of 11 requests already allocated in SAT 119_120, 121_122, MAG 122-123 |
| | GLOBDYN | 3 | 000T15:00:00 | 000T21:00:00 | 002T09:00:00 | 2 | 000T12:25:00 | 000T14:00:00 | 001T02:25:00 | 66.7% | 46.4% | |

# Initial SMT and Data Volume (1 of 4)



## First Look During 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_125EA_M70METOTP031_PRIME | 031 22:01 | 032 07:01 | 0 | 2083 | 63 | 2146 | 3534 | 1388 | 0 | 815 | 53 | 3014 | 3301 | 287 | 199 | 1% | 0 |
| SP_125EA_M34BWGOTB032_PRIME | 032 22:01 | 033 07:01 | 0 | 892 | 63 | 956 | 3534 | 2579 | 0 | 439 | 53 | 1448 | 818 | -630 | -87 | 0% | 630 |
| SP_125EA_G34BWGNON034_PRIME | 034 05:17 | 034 14:17 | 630 | 1771 | 94 | 2495 | 3534 | 1040 | 0 | 439 | 53 | 2987 | 873 | -2114 | -473 | -2% | 2113 |
| SP_125EA_C70METNON035_PRIME | 035 11:47 | 035 20:47 | 2113 | 1418 | 91 | 3622 | 3534 | -87 | 0 | 586 | 53 | 4174 | 3960 | -214 | -473 | -2% | 214 |
| SP_126EA_M34BWGNON036_PRIME | 036 21:47 | 037 06:47 | 214 | 1673 | 106 | 1992 | 3534 | 1542 | 0 | 529 | 53 | 2574 | 845 | -1730 | -6134 | -36% | 1729 |
| SP_126EA_G70METNON038_PRIME | 038 05:02 | 038 14:02 | 1729 | 1708 | 94 | 3531 | 3534 | 3 | 0 | 586 | 53 | 4170 | 4273 | 102 | -6134 | -36% | 0 |
| SP_126EA_C34BWGNON039_PRIME | 039 11:32 | 039 20:32 | 0 | 1771 | 91 | 1862 | 3534 | 1672 | 0 | 535 | 53 | 2450 | 887 | -1563 | -6236 | -46% | 1563 |
| SP_126EA_M34BWGNON040_PRIME | 040 21:17 | 041 06:17 | 1563 | 1156 | 105 | 2823 | 3534 | 711 | 0 | 390 | 53 | 3266 | 837 | -2430 | -6236 | -36% | 2429 |
| SP_126EA_M34BWGNON041_PRIME | 041 21:17 | 042 06:17 | 2429 | 773 | 63 | 3265 | 3534 | 269 | 0 | 457 | 53 | 3775 | 833 | -2942 | -6236 | -36% | 2942 |
| SP_126EA_M70METNON042_PRIME | 042 21:18 | 043 06:18 | 2942 | 1105 | 63 | 4110 | 3534 | -575 | 0 | 237 | 53 | 3824 | 4071 | 246 | -6236 | -30% | 0 |
| SP_126EA_M70METNON044_PRIME | 044 00:06 | 044 02:06 | 0 | 2502 | 75 | 2577 | 3534 | 957 | 0 | 126 | 12 | 2715 | 841 | -1875 | -6483 | -39% | 1874 |
| SP_126EA_M70METNON045_PRIME | 045 21:03 | 046 06:03 | 1874 | 7963 | 182 | 10019 | 3534 | -6483 | 0 | 671 | 53 | 4258 | 4154 | -105 | -91 | 0% | 104 |
| SP_126EA_M34BWGNON046_PRIME | 046 21:03 | 047 06:03 | 104 | 1448 | 63 | 1616 | 3534 | 1919 | 0 | 666 | 53 | 2335 | 867 | -1468 | -91 | 0% | 1468 |
| SP_126EA_M34BWGNON047_PRIME | 047 21:03 | 048 06:03 | 1468 | 964 | 63 | 2495 | 3534 | 1039 | 0 | 390 | 53 | 2938 | 869 | -2069 | -91 | 0% | 2069 |
| SP_126EA_G70METNON049_PRIME | 049 04:18 | 049 13:18 | 2069 | 1464 | 94 | 3627 | 3534 | -91 | 0 | 684 | 53 | 4272 | 4330 | 58 | 301 | 2% | 0 |
| SP_126EA_C34BWGNON050_PRIME | 050 10:48 | 050 19:48 | 0 | 1523 | 91 | 1614 | 3534 | 1920 | 0 | 586 | 53 | 2253 | 899 | -1354 | 243 | 2% | 1354 |
| SP_126EA_M70METNON051_PRIME | 051 20:48 | 052 05:48 | 1354 | 1762 | 106 | 3221 | 3534 | 313 | 0 | 586 | 53 | 3861 | 4152 | 291 | 243 | 2% | 0 |
| SP_126EA_G34BWGNON053_PRIME | 053 04:03 | 053 06:03 | 0 | 1606 | 94 | 1700 | 3534 | 1834 | 0 | 188 | 12 | 1900 | 181 | -1719 | -48 | 0% | 1719 |
| SP_126EA_G34BWG2ND053_PRIME | 053 07:03 | 053 13:03 | 1719 | 0 | 0 | 1719 | 3534 | 1816 | 0 | 372 | 35 | 2126 | 612 | -1515 | -48 | 0% | 1514 |
| SP_127EA_C34BWGOTP054_PRIME | 054 10:33 | 054 19:33 | 1514 | 1164 | 91 | 2769 | 3534 | 766 | 0 | 439 | 53 | 3261 | 758 | -2503 | -48 | 0% | 2502 |
| SP_127EA_C70METOTB055_PRIME | 055 10:18 | 055 19:18 | 2502 | 1018 | 62 | 3583 | 3534 | -48 | 0 | 586 | 53 | 4174 | 4115 | -59 | 7 | 0% | 59 |
| SP_127EA_C34BWGNON056_PRIME | 056 10:18 | 056 19:18 | 59 | 1027 | 63 | 1149 | 3534 | 2385 | 0 | 593 | 53 | 1795 | 897 | -899 | 7 | 0% | 898 |
| SP_127EA_C34BWGNON057_PRIME | 057 10:18 | 057 19:18 | 898 | 1267 | 63 | 2228 | 3534 | 1306 | 0 | 390 | 53 | 2671 | 903 | -1768 | 7 | 0% | 1768 |
| SP_127EA_C34BWGOTP058_PRIME | 058 10:19 | 058 19:19 | 1768 | 650 | 63 | 2481 | 3534 | 1053 | 0 | 390 | 53 | 2924 | 758 | -2167 | 7 | 0% | 2166 |
| SP_127EA_C34BWGOTB059_PRIME | 059 10:04 | 059 19:04 | 2166 | 651 | 62 | 2879 | 3534 | 655 | 0 | 444 | 53 | 3376 | 897 | -2480 | 7 | 0% | 2479 |
| SP_127EA_C70METNON060_PRIME | 060 10:04 | 060 19:04 | 2479 | 985 | 63 | 3527 | 3534 | 7 | 0 | 224 | 53 | 3805 | 4139 | 334 | 334 | 8% | 0 |

7.2 Gb needs to be cut to prevent SSR overfill. RPWS has already cut 7.4 Gb. MAG has cut 138 Mb around periapse.

1st box: Rev 125-126 Apoapse (need to cut 662 Mb)
- 87 Mb from 032T07:01 to 035T11:47
- 575 Mb from 039T20:32 to 042T21:18

2nd box: Rev 126 Periapse (need to cut 6.5 Gb to Cut)
- 6483 Mb from 043T06:18 to 046T06:03

3rd box: Rev 126-127 Apoapse (need to cut 2 Gb)
- 90 Mb from 046T06:03 to 049T04:18

# Initial SMT and Data Volume (2 of 4)

## First Look During Integration (Apoapse 125-126):

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 | 031 07:01 | 031 22:01 | 216.0 | 28.3 | 18.0 | 5.4 | 127.0 | 106.7 | 64.8 | 0.0 | 1420.7 | 77.0 | 0.0 | 0.0 | 62.7 | 2126.6 |
| SP_125EA_M70METOTP031_PRIME | 031 22:01 | 032 07:01 | 79.9 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 512.9 | 4.9 | 0.0 | 0.0 | 0.0 | 807.3 |
| DAILY TOTAL SCIENCE | 031 07:01 | 032 07:01 | 295.9 | 45.3 | 104.4 | 8.6 | 127.0 | 170.7 | 103.7 | 0.0 | 1933.6 | 81.9 | 0.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 032 07:01 | 032 22:01 | 123.7 | 28.3 | 18.0 | 5.4 | 219.0 | 106.7 | 64.8 | 0.0 | 313.7 | 4.5 | 0.0 | 0.0 | 62.7 | 946.8 |
| SP_125EA_M34BWGOTB032_PRIME | 032 22:01 | 033 07:01 | 32.4 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 188.2 | 4.9 | 0.0 | 0.0 | 0.0 | 435.1 |
| DAILY TOTAL SCIENCE | 032 07:01 | 033 07:01 | 156.1 | 45.3 | 104.4 | 8.6 | 219.0 | 170.7 | 103.7 | 0.0 | 501.9 | 9.5 | 0.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 033 07:01 | 034 05:17 | 145.0 | 42.0 | 18.0 | 8.0 | 817.0 | 158.4 | 96.2 | 0.0 | 465.7 | 4.5 | 0.0 | 0.0 | 93.1 | 1847.9 |
| SP_125EA_G34BWGNON034_PRIME | 034 05:17 | 034 14:17 | 32.4 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 188.2 | 4.9 | 0.0 | 0.0 | 0.0 | 435.1 |
| DAILY TOTAL SCIENCE | 033 07:01 | 034 14:17 | 177.4 | 59.0 | 104.4 | 11.3 | 817.0 | 222.4 | 135.1 | 0.0 | 653.9 | 9.5 | 0.0 | 0.0 | 93.1 | |
| OBSERVATION_NOR | 034 14:17 | 035 11:47 | 77.4 | 40.6 | 60.6 | 17.8 | 285.0 | 152.9 | 92.9 | 0.0 | 449.7 | 228.3 | 0.0 | 0.0 | 89.9 | 1495.0 |
| SP_125EA_C70METNON035_PRIME | 035 11:47 | 035 20:47 | 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 | 034 14:17 | 035 20:47 | 109.8 | 57.5 | 147.0 | 21.0 | 285.0 | 217.0 | 131.8 | 0.0 | 783.7 | 233.3 | 0.0 | 0.0 | 89.9 | |
| OBSERVATION_NOR | 035 20:47 | 036 21:47 | 90.0 | 47.2 | 225.6 | 9.0 | 35.0 | 177.8 | 108.0 | 0.0 | 779.9 | 185.1 | 0.0 | 0.0 | 104.5 | 1762.1 |
| SP_126EA_M34BWGNON036_PRIME | 036 21:47 | 037 06:47 | 32.4 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 277.3 | 4.9 | 0.0 | 0.0 | 0.0 | 524.2 |
| DAILY TOTAL SCIENCE | 035 20:47 | 037 06:47 | 122.4 | 64.1 | 312.0 | 12.2 | 35.0 | 241.9 | 146.9 | 0.0 | 1057.3 | 190.0 | 0.0 | 0.0 | 104.5 | |
| OBSERVATION_NOR | 037 06:47 | 038 05:02 | 144.0 | 42.0 | 0.0 | 8.0 | 208.3 | 158.3 | 96.1 | 0.0 | 685.6 | 350.0 | 0.0 | 0.0 | 93.0 | 1785.3 |
| SP_126EA_G70METNON038_PRIME | 038 05:02 | 038 14:02 | 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 | 037 06:47 | 038 14:02 | 176.4 | 59.0 | 86.4 | 11.3 | 208.3 | 222.3 | 135.0 | 0.0 | 1019.7 | 354.9 | 0.0 | 0.0 | 93.0 | |
| OBSERVATION_NOR | 038 14:02 | 039 11:32 | 77.4 | 40.6 | 72.0 | 7.7 | 210.8 | 152.9 | 92.9 | 0.0 | 798.0 | 302.6 | 0.0 | 0.0 | 89.9 | 1844.8 |
| SP_126EA_C34BWGNON039_PRIME | 039 11:32 | 039 20:32 | 58.0 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 257.4 | 4.9 | 0.0 | 0.0 | 0.0 | 529.8 |
| DAILY TOTAL SCIENCE | 038 14:02 | 039 20:32 | 135.4 | 57.5 | 158.4 | 11.0 | 210.8 | 217.0 | 131.8 | 0.0 | 1055.4 | 307.5 | 0.0 | 0.0 | 89.9 | |
| OBSERVATION_NOR | 039 20:32 | 040 21:17 | 421.2 | 46.7 | 0.0 | 8.9 | 0.0 | 176.1 | 106.9 | 0.0 | 116.7 | 268.9 | 0.0 | 0.0 | 103.4 | 1248.8 |
| SP_126EA_M34BWGNON040_PRIME | 040 21:17 | 041 06:17 | 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 | 039 20:32 | 041 06:17 | 550.8 | 63.7 | 86.4 | 12.2 | 0.0 | 240.1 | 145.8 | 0.0 | 159.2 | 273.8 | 0.0 | 0.0 | 103.4 | |
| OBSERVATION_NOR | 041 06:17 | 041 21:17 | 216.0 | 28.3 | 0.0 | 5.4 | 0.0 | 106.7 | 64.8 | 0.0 | 70.7 | 273.8 | 0.0 | 0.0 | 62.7 | 828.4 |
| SP_126EA_M34BWGNON041_PRIME | 041 21:17 | 042 06:17 | 129.6 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 108.3 | 4.9 | 0.0 | 0.0 | 0.0 | 452.4 |
| DAILY TOTAL SCIENCE | 041 06:17 | 042 06:17 | 345.6 | 45.3 | 86.4 | 8.6 | 0.0 | 170.7 | 103.7 | 0.0 | 179.1 | 278.7 | 0.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 042 06:17 | 042 21:18 | 154.5 | 28.3 | 99.8 | 5.4 | 210.0 | 103.3 | 58.7 | 0.0 | 372.1 | 62.7 | 0.0 | 0.0 | 62.8 | 1157.7 |
| SP_126EA_M70METNON042_PRIME | 042 21:18 | 043 06:18 | 32.4 | 17.0 | 86.4 | 3.2 | 0.0 | 19.4 | 29.2 | 0.0 | 42.4 | 4.9 | 0.0 | 0.0 | 0.0 | 235.0 |
| DAILY TOTAL SCIENCE | 042 06:17 | 043 06:18 | 186.9 | 45.3 | 186.2 | 8.6 | 210.0 | 122.7 | 87.9 | 0.0 | 414.6 | 67.6 | 0.0 | 0.0 | 62.8 | |

# Initial SMT and Data Volume (3 of 4)

## First Look During Integration (126 Periapse):

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 | 043 06:18 | 044 00:06 | 318.6 | 201.6 | 0.0 | 6.4 | 790.4 | 88.5 | 90.4 | 0.0 | 83.6 | 0.0 | 900.0 | 0.0 | 14.5 | 2494.0 |
| SP_126EA_M70METNON044_PRIME | 044 00:06 | 044 02:06 | 57.6 | 30.2 | 0.0 | 0.7 | 0.0 | 14.2 | 13.0 | 0.0 | 9.4 | 0.0 | 0.0 | 0.0 | 0.0 | 125.0 |
| DAILY TOTAL SCIENCE | 043 06:18 | 044 02:06 | 376.2 | 231.7 | 0.0 | 7.1 | 790.4 | 102.7 | 103.4 | 0.0 | 92.9 | 0.0 | 900.0 | 0.0 | | |
| OBSERVATION_NOR | 044 02:06 | 045 21:03 | 1406.3 | 1813.2 | 156.7 | 25.5 | 1156.7 | 220.2 | 275.5 | 194.8 | 1215.2 | 396.7 | 1029.5 | 0.0 | 35.1 | 7925.4 |
| SP_126EA_M70METNON045_PRIME | 045 21:03 | 046 06:03 | 129.6 | 35.9 | 86.4 | 3.2 | 0.0 | 32.0 | 38.9 | 0.0 | 334.0 | 4.9 | 0.0 | 0.0 | 0.0 | 665.0 |
| DAILY TOTAL SCIENCE | 044 02:06 | 046 06:03 | 1535.9 | 1849.1 | 243.1 | 28.8 | 1156.7 | 252.2 | 314.4 | 194.8 | 1549.2 | 401.6 | 1029.5 | 0.0 | | |

# Initial SMT and Data Volume (4 of 4)



## First Look During Integration (126-127 Apoapse):

| 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 | 046 06:03 | 046 21:03 | 216.0 | 28.3 | 168.0 | 15.5 | 300.0 | 106.7 | 64.8 | 0.0 | 556.7 | 0.0 | 0.0 | 0.0 | 62.7 | 1518.7 |
| SP_126EA_M34BWGNON046_PRIME | 046 21:03 | 047 06:03 | 129.6 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 316.2 | 4.9 | 0.0 | 0.0 | 0.0 | 660.3 |
| DAILY TOTAL SCIENCE | 046 06:03 | 047 06:03 | 345.6 | 45.3 | 254.4 | 18.7 | 300.0 | 170.7 | 103.7 | 0.0 | 873.0 | 4.9 | 0.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 047 06:03 | 047 21:03 | 216.0 | 28.3 | 0.0 | 5.4 | 240.0 | 106.7 | 64.8 | 0.0 | 70.7 | 23.1 | 200.0 | 0.0 | 62.7 | 1017.7 |
| SP_126EA_M34BWGNON047_PRIME | 047 21:03 | 048 06:03 | 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 | 047 06:03 | 048 06:03 | 345.6 | 45.3 | 86.4 | 8.6 | 240.0 | 170.7 | 103.7 | 0.0 | 113.2 | 28.0 | 200.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 048 06:03 | 049 04:18 | 320.4 | 42.0 | 18.0 | 8.0 | 75.0 | 158.3 | 96.1 | 0.0 | 104.9 | 27.6 | 600.0 | 0.0 | 93.0 | 1543.3 |
| SP_126EA_G70METNON049_PRIME | 049 04:18 | 049 13:18 | 129.6 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 334.0 | 4.9 | 0.0 | 0.0 | 0.0 | 678.1 |
| DAILY TOTAL SCIENCE | 048 06:03 | 049 13:18 | 450.0 | 58.9 | 104.4 | 11.3 | 75.0 | 222.3 | 135.0 | 0.0 | 439.0 | 32.6 | 600.0 | 0.0 | 93.0 | |
| OBSERVATION_NOR | 049 13:18 | 050 10:48 | 164.2 | 40.6 | 213.6 | 7.7 | 35.0 | 152.9 | 92.9 | 0.0 | 798.0 | 4.5 | 0.0 | 0.0 | 89.9 | 1599.3 |
| SP_126EA_C34BWGNON050_PRIME | 050 10:48 | 050 19:48 | 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 | 049 13:18 | 050 19:48 | 196.6 | 57.5 | 300.0 | 11.0 | 35.0 | 217.0 | 131.8 | 0.0 | 1132.0 | 9.5 | 0.0 | 0.0 | 89.9 | |
| OBSERVATION_NOR | 050 19:48 | 051 20:48 | 90.0 | 47.2 | 322.8 | 9.0 | 40.0 | 177.8 | 108.0 | 0.0 | 927.9 | 23.1 | 0.0 | 0.0 | 104.5 | 1850.3 |
| SP_126EA_M70METNON051_PRIME | 051 20:48 | 052 05:48 | 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 | 050 19:48 | 052 05:48 | 122.4 | 64.1 | 409.2 | 12.2 | 40.0 | 241.9 | 146.9 | 0.0 | 1261.9 | 28.0 | 0.0 | 0.0 | 104.5 | |
| OBSERVATION_NOR | 052 05:48 | 053 04:03 | 141.3 | 42.0 | 183.6 | 18.1 | 80.0 | 158.3 | 96.1 | 0.0 | 825.8 | 46.2 | 0.0 | 0.0 | 93.0 | 1684.4 |
| SP_126EA_G34BWGNON053_PRIME | 053 04:03 | 053 13:03 | 32.4 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 308.1 | 4.9 | 0.0 | 0.0 | 0.0 | 555.0 |
| DAILY TOTAL SCIENCE | 052 05:48 | 053 13:03 | 173.7 | 58.9 | 270.0 | 21.3 | 80.0 | 222.3 | 135.0 | 0.0 | 1134.0 | 51.1 | 0.0 | 0.0 | 93.0 | |
| OBSERVATION_NOR | 053 13:03 | 054 10:33 | 77.4 | 40.6 | 268.8 | 7.7 | 40.0 | 152.9 | 92.9 | 0.0 | 449.7 | 23.1 | 0.0 | 0.0 | 89.9 | 1242.9 |
| SP_127EA_C34BWGOTP054_PRIME | 054 10:33 | 054 19:33 | 32.4 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 188.2 | 4.9 | 0.0 | 0.0 | 0.0 | 435.1 |
| DAILY TOTAL SCIENCE | 053 13:03 | 054 19:33 | 109.8 | 57.5 | 355.2 | 11.0 | 40.0 | 217.0 | 131.8 | 0.0 | 637.9 | 28.0 | 0.0 | 0.0 | 89.9 | |
| OBSERVATION_NOR | 054 19:33 | 055 10:18 | 115.6 | 27.8 | 0.0 | 5.3 | 300.0 | 104.9 | 63.7 | 0.0 | 308.5 | 82.9 | 0.0 | 0.0 | 61.6 | 1070.4 |
| SP_127EA_C70METOTB055_PRIME | 055 10:18 | 055 19:18 | 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 | 054 19:33 | 055 19:18 | 148.0 | 44.8 | 86.4 | 8.6 | 300.0 | 168.9 | 102.6 | 0.0 | 642.5 | 87.8 | 0.0 | 0.0 | 61.6 | |
| OBSERVATION_NOR | 055 19:18 | 056 10:18 | 54.0 | 28.3 | 201.6 | 5.4 | 0.0 | 106.7 | 64.8 | 0.0 | 556.7 | 0.0 | 0.0 | 0.0 | 62.7 | 1080.2 |
| SP_127EA_C34BWGNON056_PRIME | 056 10:18 | 056 19:18 | 32.4 | 17.0 | 86.4 | 9.8 | 0.0 | 64.0 | 38.9 | 0.0 | 334.0 | 4.9 | 0.0 | 0.0 | 0.0 | 587.4 |
| DAILY TOTAL SCIENCE | 055 19:18 | 056 19:18 | 86.4 | 45.3 | 288.0 | 15.2 | 0.0 | 170.7 | 103.7 | 0.0 | 890.8 | 4.9 | 0.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 056 19:18 | 057 10:18 | 152.3 | 28.3 | 0.0 | 8.9 | 404.0 | 106.7 | 64.8 | 0.0 | 556.7 | 89.4 | 0.0 | 0.0 | 62.7 | 1473.8 |
| SP_127EA_C34BWGNON057_PRIME | 057 10:18 | 057 19:18 | 129.6 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 334.0 | 4.9 | 0.0 | 0.0 | 0.0 | 678.1 |
| DAILY TOTAL SCIENCE | 056 19:18 | 057 19:18 | 281.9 | 45.3 | 86.4 | 12.2 | 404.0 | 170.7 | 103.7 | 0.0 | 890.8 | 94.3 | 0.0 | 0.0 | 62.7 | |
| OBSERVATION_NOR | 057 19:18 | 058 10:19 | 216.2 | 28.3 | 0.0 | 5.4 | 40.0 | 106.8 | 64.9 | 0.0 | 557.4 | 23.1 | 88.4 | 0.0 | 62.8 | 1193.3 |
| SP_127EA_C34BWGOTP058_PRIME | 058 10:19 | 058 19:19 | 129.6 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 334.0 | 4.9 | 0.0 | 0.0 | 0.0 | 678.1 |
| DAILY TOTAL SCIENCE | 057 19:18 | 058 19:19 | 345.8 | 45.3 | 86.4 | 8.6 | 40.0 | 170.8 | 103.8 | 0.0 | 891.4 | 28.0 | 88.4 | 0.0 | 62.8 | |
| OBSERVATION_NOR | 058 19:19 | 059 10:04 | 212.4 | 27.8 | 0.0 | 5.3 | 0.0 | 104.9 | 63.7 | 0.0 | 547.5 | 72.5 | 88.4 | 0.0 | 61.6 | 1184.1 |
| SP_127EA_C34BWGOTB059_PRIME | 059 10:04 | 059 19:04 | 129.6 | 17.0 | 86.4 | 3.2 | 0.0 | 64.0 | 38.9 | 0.0 | 334.5 | 4.9 | 0.0 | 0.0 | 0.0 | 678.6 |
| DAILY TOTAL SCIENCE | 058 19:19 | 059 19:04 | 342.0 | 44.8 | 86.4 | 8.6 | 0.0 | 168.9 | 102.6 | 0.0 | 882.0 | 77.4 | 88.4 | 0.0 | 61.6 | |
| OBSERVATION_NOR | 059 19:04 | 060 10:04 | 177.2 | 28.3 | 188.4 | 5.4 | 28.0 | 82.8 | 64.8 | 0.0 | 400.7 | 0.0 | 0.0 | 0.0 | 62.7 | 1038.4 |
| SP_127EA_C70METNON060_PRIME | 060 10:04 | 060 19:04 | 0.0 | 17.0 | 86.4 | 13.3 | 0.0 | 19.4 | 38.9 | 0.0 | 42.4 | 4.9 | 0.0 | 0.0 | 0.0 | 222.4 |
| DAILY TOTAL SCIENCE | 059 19:04 | 060 19:04 | 177.2 | 45.3 | 274.8 | 18.7 | 28.0 | 102.3 | 103.7 | 0.0 | 443.1 | 4.9 | 0.0 | 0.0 | 62.7 | |

# Waypoint Selection (1 of 5)

## Rev 126 Periapse Waypoint Options

### Waypoints for Solar Occultation (2010-043T06:15 to 2010-044T11:15)

- Primary: UVIS_SOL_OFF ≡ NEG_Y to Sun (-20,0,-0.1)
  - Secondary: NEG_Z to NSP
    - Possible Saturn/Ring heating from 2010-043T14:05 to 2010-044T04:35 (ΔT ≈0.59 K)
    - SRU Bright Body violations: Rhea in SRU FOV. => Will need to offset (in the form of an RA/Dec) from this orientation.
  - Secondary: NEG_X to NSP
    - Possible Saturn/Ring heating from 2010-044T08:55 to 2010-044T11:15 (ΔT ≈0.18 K)
- Turn times
  - 6.38 min: from NEG_Y to Sun (-20,0,0), Neg_Z to NSP to NEG_Y to Saturn, Neg_Z to NSP
  - 8.61 min: from NEG_Y to Sun (-20,0,0), Neg_X to NSP to NEG_Y to Saturn, Neg_Z to NSP

## Rev 126 Periapse Waypoint Options (cont.)

Waypoints for Saturn Center (2010-043T06:15 to 2010-046T06:10) with primary axis at NEG_Y to Saturn

- NEG_X, POS_X, NEG_Z, POS_Z to NSP and NEG_X or Z to Sun
  - Sun in occultation from 2010-044T06:00 to 2010-044T09:35
  - ORS to Sun FR violations from 2010-044T02:45 to 2010-044T10:35
    - NAC to Sun <12 degrees from 2010-044T04:05 to 2010-044T10:05
  - Possible Saturn/Ring heating from 2010-044T14:45 to 2010-044T19:05 (CIRS $\Delta T \approx 4.54$ K)
- NEG_X, NEG_Z to NSP
  - CIRS/VIMS radiator FR violations from 2010-044T08:05 to 2010-044T21:00
  - Mimas in SRU from 2010-044T15:25 to 2010-044T16:05
- POS_X to NSP
  - CIRS/VIMS radiator FR violations from 2010-044T06:15 to 2010-046T06:10
- POS_Z to NSP
  - CIRS/VIMS radiator FR violations from 2010-044T06:15 to 2010-044T07:25
  - CIRS/VIMS radiator FR violations from 2010-044T21:15 to 2010-046T06:10

# Waypoint Selection (3 of 5)

## Rev 126 Periapse Waypoint Options (cont.)

Waypoints for Calypso (2010-044T11:00 to 2010-044T13:00) with primary axis at NEG_Y to Calypso

- NEG_X to NSP
  - Possible Saturn/Ring heating from 2010-044T11:00 to 2010-044T11:48 (CIRS ΔT ≈ 0.160 K)
- POS_X to NSP
  - CIRS/VIMS Radiator FR violations from 2010-044T11:30 to 2010-044T13:00
  - Possible Saturn/Ring heating from 2010-044T11:48 to 2010-044T11:48 (CIRS ΔT ≈ 0.282 K)

Waypoints for Tethys (2010-044T23:30 to 2010-045T01:30) with primary axis at NEG_Y to Tethys

- NEG_X to NSP
  - No issues
- POS_X to NSP
  - CIRS Radiator FR violations from 2010-044T23:30 to 2010-044T13:00
  - Possible Saturn/Ring heating from 2010-044T23:30 to 2010-045T00:59 (CIRS ΔT ≈ 0.013 K)

# Rev 126 Periapse Waypoint Options (cont.)

Waypoints for Mimas (2010-044T17:00 to 2010-044T21:00) with primary axis at NEG_Y to Mimas

- POS_X to NSP
  - CIRS/VIMS radiator FR violations from 2010-044T17:26 to 010-044T21:00
  - Possible Saturn/Ring heating from 2010-044T14:43 to 2010-044T19:06 (CIRS $\Delta T \approx 5.22$ K)
- NEG_X to NSP
  - CIRS/VIMS radiator FR violations from 2010-044T15:06 to 010-044T17:23
  - Possible Saturn/Ring heating from 2010-044T17:43 to 2010-044T21:00 (CIRS $\Delta T \approx 4.55$ K)
- NEG_Z to Dust_RAM has severe CIRS/VIMS radiator FR violations
- NEG_Z to NSP
  - Possible Saturn/Ring heating throughout.

## Rev 125-127 Apoapse Waypoint Options

Saturn TWT

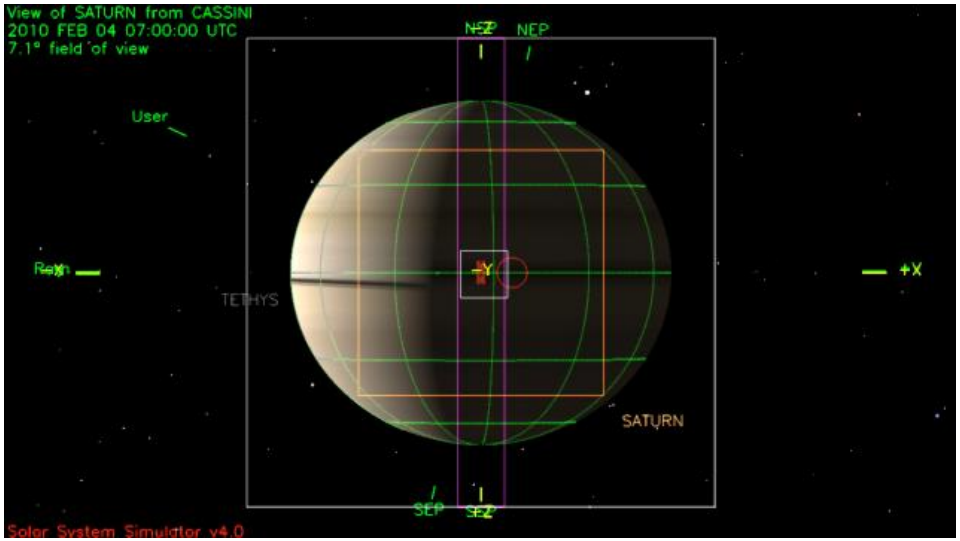
Rev 125-126 Apo (2010-031T07:01 to 2010-044T02:06)
Rev 126-127 Apo (2010-046T06:03 to 2010-060T19:04)

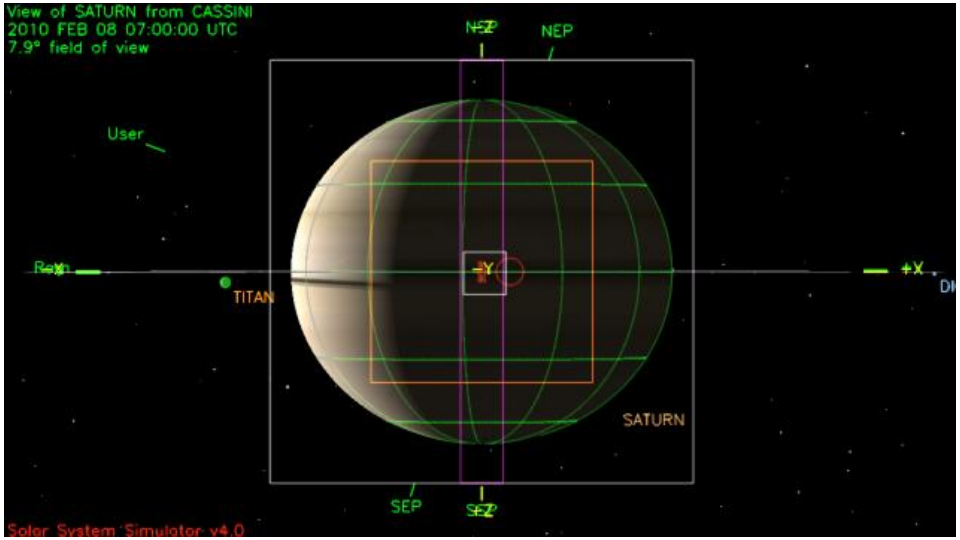
Primary axis at NEG_Y to Saturn

- NEG_Z to 39.2/83.3 (RBOT friendly secondary) – OK (similar to NEG_Z to NSP)
- NEG_X to 39.2/83.3 (RBOT friendly secondary) – OK (similar to NEG_X to NSP)
- NEG_Z to NSP – OK
- NEG_X to NSP – OK
- NEG_X to SUN – OK
- NEG_Z to SUN – OK
- POS_Z to NSP – CIRS/VIMS (POS_X to Sun) Radiator FR violations
- POS_X to NSP – CIRS (POS_X to Sun) Radiator FR violations

# Waypoints Chosen (1 of 6)

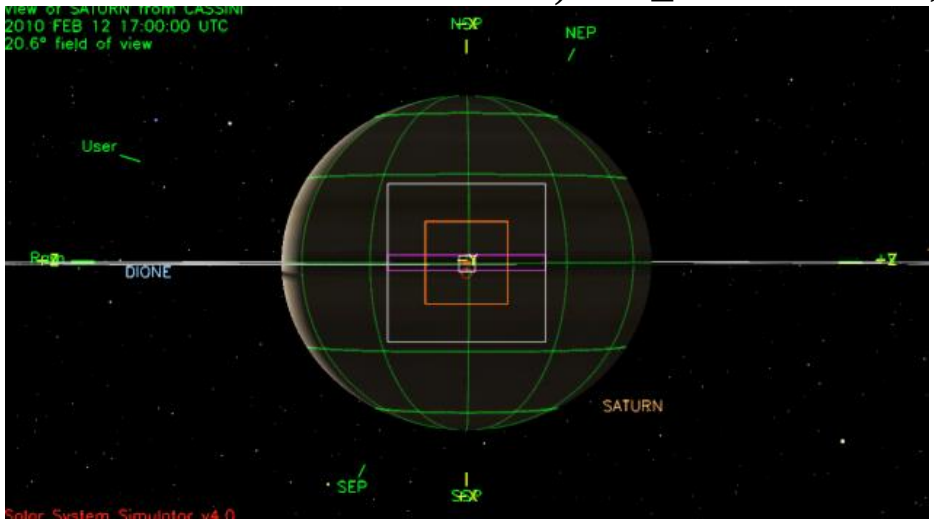
Waypoint 1 (2010-031T07:41:00 – 2010-043T06:58:00): ISS_NAC to Saturn; NEG_Z to NSP



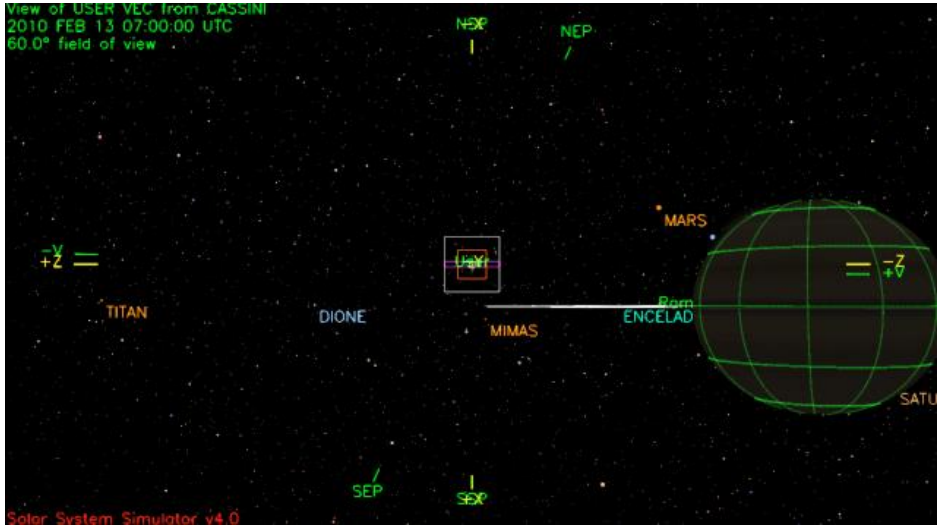



# Waypoints Chosen (2 of 6)

Waypoint 2 (2010-043T06:58:00 – 2010-044T02:46:00): ISS_NAC to Saturn; NEG_X to NSP



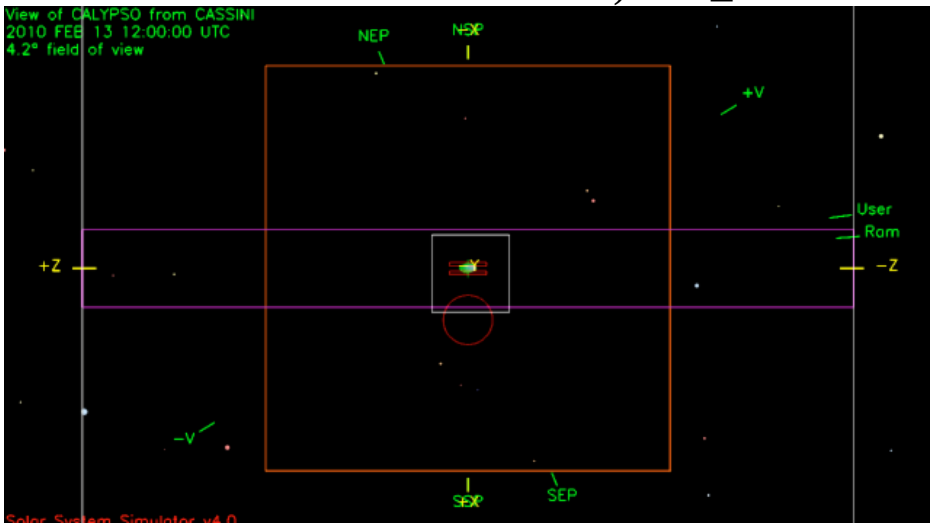

Waypoint 3 (2010-044T02:46:00 – 2010-044T11:30:00): UVIS_SOL_OFF to Sun; NEG_X to NSP



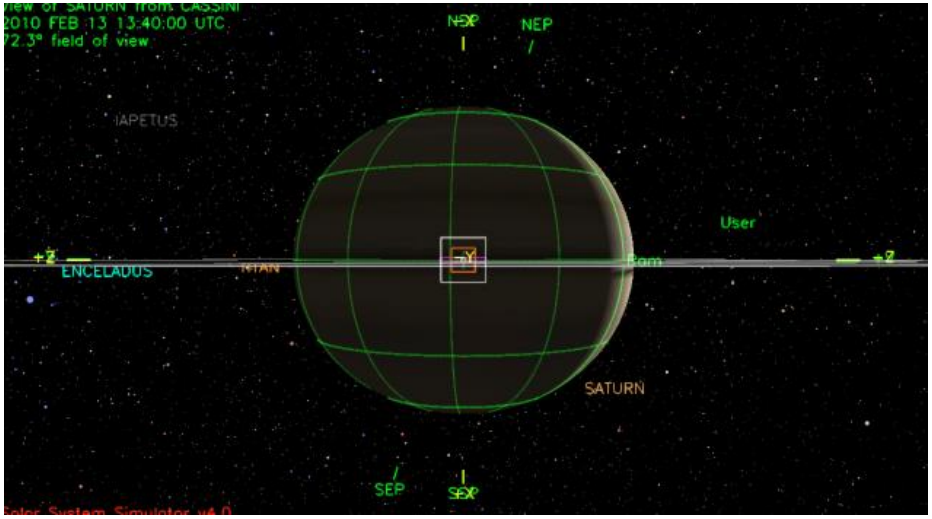
# Waypoints Chosen (3 of 6)



Waypoint 4 (2010-044T11:30:00 – 2010-044T12:41:00): ISS_NAC to Calypso; NEG_X to NSP

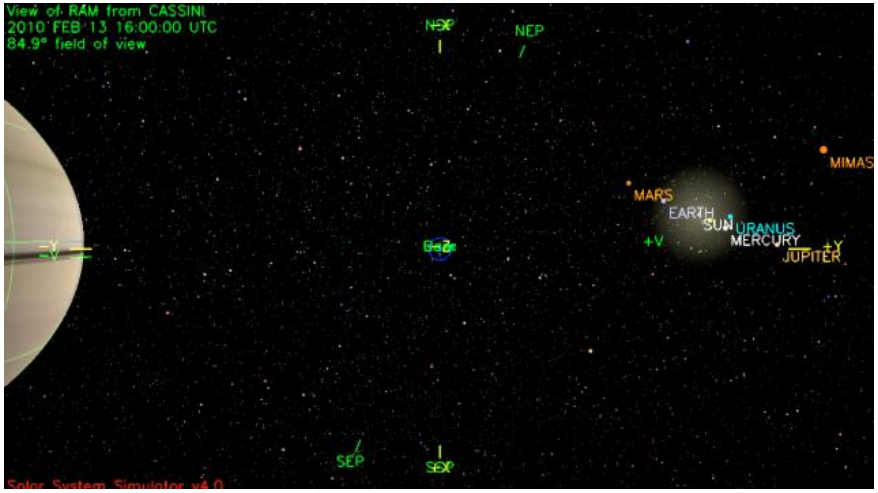



Waypoint 5 (2010-044T12:41:00 – 2010-044T14:40:00): ISS_NAC to Saturn; NEG_X to NSP

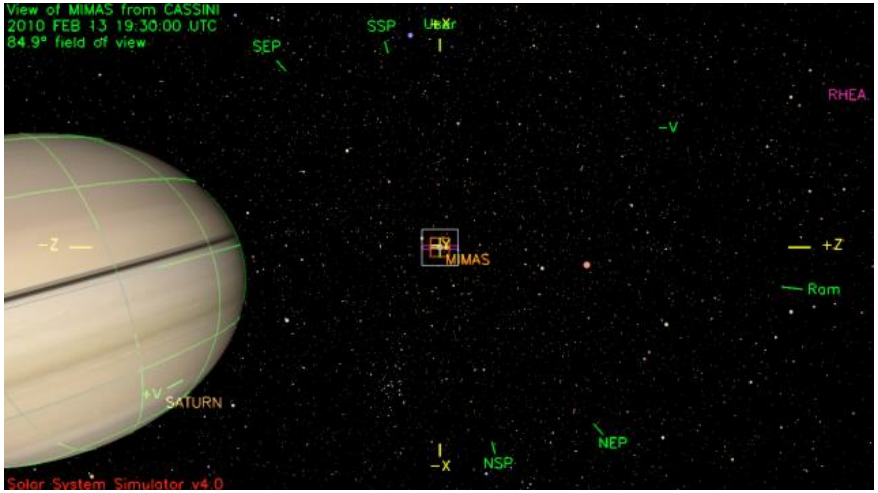


# Waypoints Chosen (4 of 6)

Waypoint 6 (2010-044T14:40:00 – 2010-044T17:55:00): NEG_Z to Dust_RAM; NEG_X to NSP

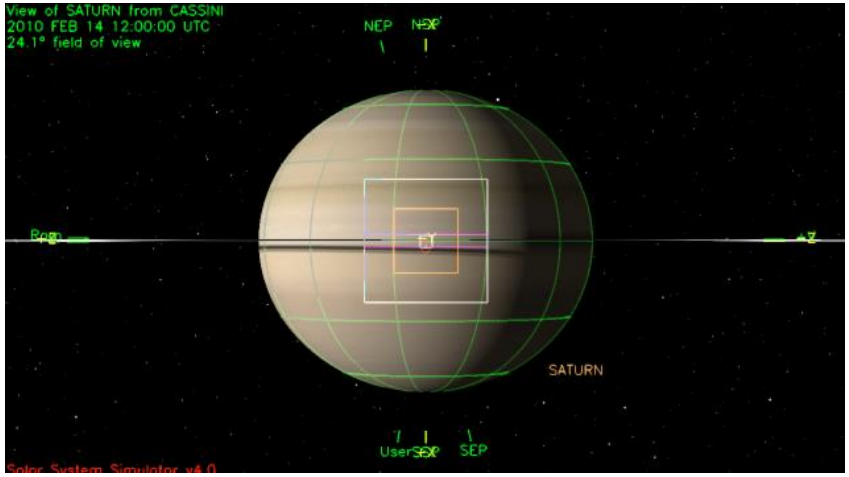



Waypoint 7 (2010-044T17:55:00 – 2010-044T21:00:00):
ISS_NAC to Mimas (0.0,-15.0,0.0 deg. offset); NEG_X to NSP

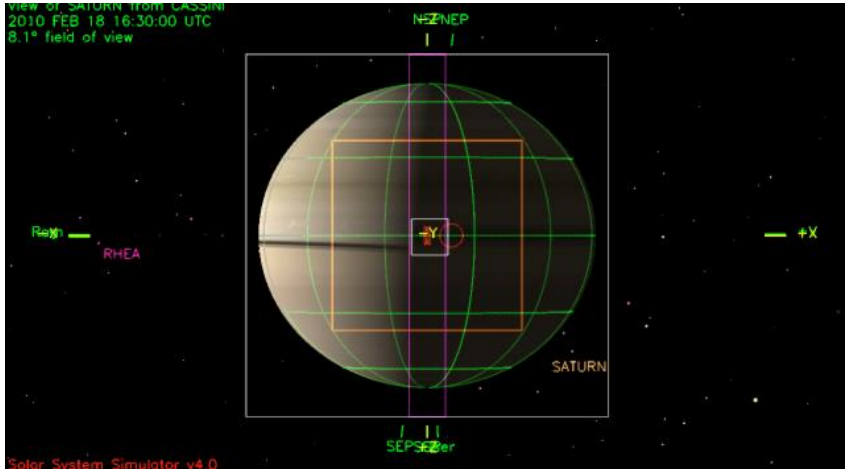


# Waypoints Chosen (5 of 6)

Waypoint 8 (2010-044T21:00:00 – 2010-046T06:43:00): ISS_NAC to Saturn NEG_X to NSP




Waypoint 9 (2010-046T06:43:00 – 2010-053T04:03:00): ISS_NAC to Saturn; NEG_Z to NSP

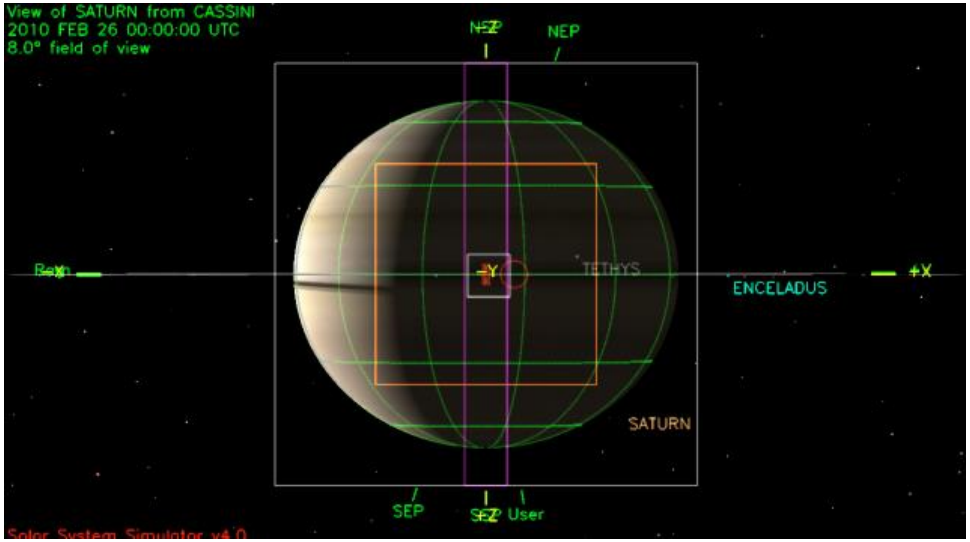


# Waypoints Chosen (6 of 6)

Waypoint 10 (2010-053T04:03:00 – 2010-053T13:43:00): XBAND to Earth; NEG_Y to 273.7/-6.6

Not Pictured – Earth Pointed for RSS Boresight Calibration

Waypoint 11 (2010-053T13:43:00 – 2010-060T19:04:00): ISS_NAC to Saturn; NEG_Z to NSP



# Notes & Liens (1 of 2)

**Notes:**

- Pointing:
  - See following slide for pointing issues to track during the DOY 44 periapse period (greater than 3 waypoints in 24 hours, fast turn rates with turns >60 deg, heating during waypoints). Many potential RBOT problems. Many issues resulting from best efforts to accommodate SOST liens agreed to at the Athens PSG and the geometrical constraints imposed by the dust hazard.
- Data Volume:
  - All negative margin greater than -90 Mb.
- DSN:
  - No issues
- Opmodes:
  - No unique opmodes
- Special Activities:
  - DOY 44 SOST liens to track Calypso, Mimas and Tethys interspersed with an HGA to Dust Ram dust hazard. There is also a DOY 44 solar occultation which requires CMT management (see slide 10).

**Sequence Liens:**

- Working to find a better waypoint for Mimas following the dust hazard on DOY 44. We have until the waypoint PEF delivery date for S57 to come up with a better solution.

# Notes & Liens (2 of 2)



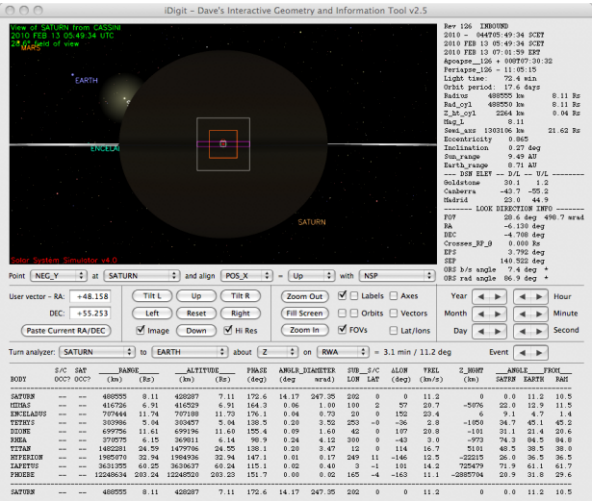
SOST Calypso lien | SOST Mimas Lien | SOST Tethys lien

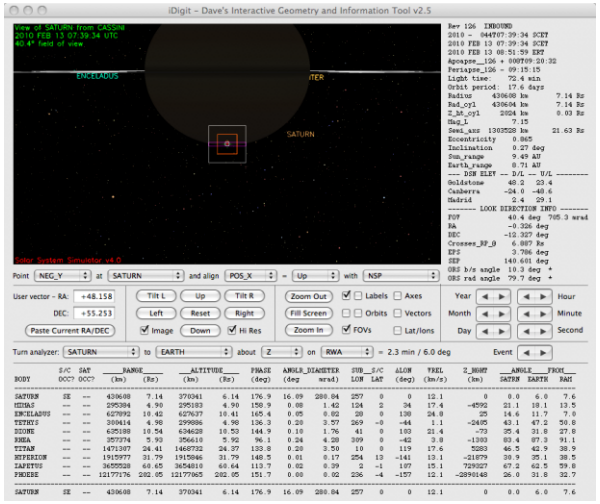
Periapse (pre-dust hazard) | Dust Hazard/ Stellar Occ | Periapse (post-dust hazard)

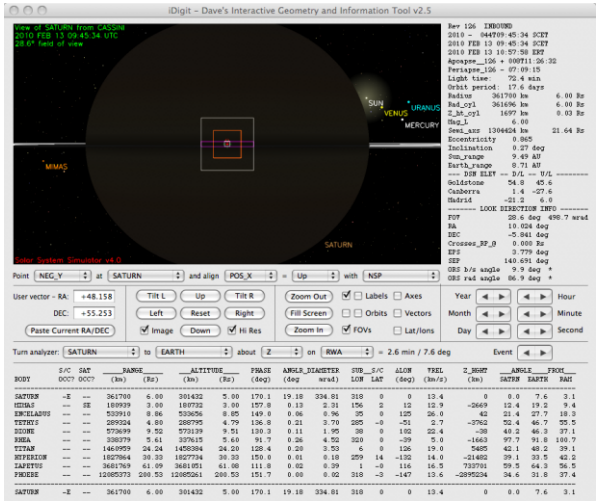
| Request | Riders | Start (SCET) | Duration | End (SCET) | Primary | Secondary | Comments | Turn Notes | Waypoint Notes |
|---|---|---|---|---|---|---|---|---|---|
| **NEW WAYPOINT** | | **2010-043T06:58:00** | **000T19:48:00** | **2010-044T02:46:00** | **ISS_NAC to Saturn** | **NEG_X to NSP** | | | |
| VIMS_126SA_GLOBDYN001_PRIME | I, M | 2010-043T06:58:00 | 000T13:28:00 | 2010-043T20:26:00 | ISS_NAC to Saturn | NEG_X to NSP | | | |
| SP_126EA_DLTURN043_PRIME | M | 2010-043T20:26:00 | 000T00:40:00 | 2010-043T21:06:00 | XBAND to Earth | POS_X to NSP | | | |
| SP_126EA_M70METNON044_PRIME | M | 2010-043T21:06:00 | 000T05:00:00 | 2010-044T02:06:00 | XBAND to Earth | POS_X to NSP | | | |
| SP_126SA_WAYPTTURN044_PRIME | M | 2010-044T02:06:00 | 000T00:40:00 | 2010-044T02:46:00 | ISS_NAC to Sun (-20.0,0.0,-0.109 deg. offset) | NEG_X to NSP | | | |
| **NEW WAYPOINT** | | **2010-044T02:46:00** | **000T08:44:00** | **2010-044T11:30:00** | **ISS_NAC to Sun (-20.0,0.0,-0.109 deg. offset)** | **NEG_X to NSP** | | | |
| UVIS_126SA_USUNOCC001_PRIME | M, V | 2010-044T02:46:00 | 000T03:12:00 | 2010-044T05:58:00 | ISS_NAC to Sun (-20.0,0.0,-0.109 deg. offset) | NEG_X to NSP | | | |
| ISS_126SA_SOLNGRESS001_PRIME | C, M, V | 2010-044T05:58:00 | 000T03:59:00 | 2010-044T09:57:00 | ISS_NAC to Saturn | NEG_X to NSP | | | 1) Waypoint has potential Saturn/ Rings Heating Violations<br>2) CIRS delta temp 0.188 |
| CIRS_126SA_LIMBINT001_PRIME | C, M | 2010-044T09:57:00 | 000T01:19:00 | 2010-044T11:16:00 | CIRS_FPB to Saturn | NEG_X to NSP | | | |
| SP_126SA_WAYPTTURN444_PRIME | M, R | 2010-044T11:16:00 | 000T00:14:00 | 2010-044T11:30:00 | ISS_NAC to Calypso | NEG_X to NSP | | Turn time has been optimized; requires fast turn rates (49 degree turn) | |
| **NEW WAYPOINT** | | **2010-044T11:30:00** | **000T01:11:00** | **2010-044T12:41:00** | **ISS_NAC to Calypso** | **NEG_X to NSP** | | | |
| ISS_126CP_ROTCOLR001_PRIME | C, M, R, U, V | 2010-044T11:30:00 | 000T00:45:00 | 2010-044T12:15:00 | ISS_NAC to Calypso | NEG_X to NSP | NAC to Calypso, NEG_X to NSP | | 1) Waypoint has potential Saturn/ Rings Heating Violations<br>2) CIRS delta temp 0.037 |
| SP_126SA_WAYPTTURN544_PRIME | M, R | 2010-044T12:15:00 | 000T00:26:00 | 2010-044T12:41:00 | ISS_NAC to Saturn | NEG_X to NSP | | Turn time has been optimized; Will need to waive turn rate FR07D145 (119.88 degree turn), otherwise more time is needed. | |
| **NEW WAYPOINT** | | **2010-044T12:41:00** | **000T01:59:00** | **2010-044T14:40:00** | **ISS_NAC to Saturn** | **NEG_X to NSP** | | | |
| CIRS_126SA_LIMBINTB001_PRIME | C, M, R | 2010-044T12:41:00 | 000T01:42:00 | 2010-044T14:23:00 | CIRS_FPB to Saturn | NEG_X to NSP | | | |
| SP_126SA_WAYPTTURN644_PRIME | M, R | 2010-044T14:23:00 | 000T00:17:00 | 2010-044T14:40:00 | NEG_Z to Dust_RAM | NEG_X to NSP | | Turn time has been optimized; Will need to waive turn rate FR07D145 (66 degree turn), otherwise more time is needed. | |
| **NEW WAYPOINT** | | **2010-044T14:40:00** | **000T03:05:00** | **2010-044T17:45:00** | **NEG_Z to Dust_RAM** | **NEG_X to NSP** | | | |
| RADAR_126MI_SCATTRAD001_PRIME | M | 2010-044T14:40:00 | 000T01:14:00 | 2010-044T15:54:00 | NEG_Z to Mimas | NEG_X to NSP | RADAR must control both axis. Secondary axis choice pending PDT design. | | |
| SP_126DR_RAMAVOID044_PRIME | M | 2010-044T15:54:00 | 000T00:00:36 | 2010-044T15:54:36 | NEG_Z to Dust_RAM | NEG_X to NSP | Turn to Stars/Dust_RAM | | |
| MP_126DR_DUSTHAZRD003_PRIME | M | 2010-044T15:54:36 | 000T00:16:24 | 2010-044T16:11:00 | | | | | |
| VIMS_126SA_ALPCMIOCC001_PRIME | C, M | 2010-044T16:11:00 | 000T00:29:00 | 2010-044T16:40:00 | CIRS_FPB to 114.825/5.225 | NEG_Z to Dust_RAM | | | 1) Waypoint has potential Saturn/ Rings Heating Violations<br>2) CIRS delta temp 3.47<br>3) Chance of Neg_Y intercept with Saturn or Rings<br>4) Chance of Neg_Y intercept with a major satellite |
| MP_126DR_DUSTHAZRD004_PRIME | M | 2010-044T16:40:00 | 000T00:37:00 | 2010-044T17:17:00 | | | | | |
| Periapse R = 2.908 Rs, lat ... | | 2010-044T16:54:47 | 000T00:00:01 | 2010-044T16:54:48 | | | | | |
| SP_126SA_WAYPTTURN744_PRIME | M | 2010-044T17:17:00 | 000T00:28:00 | 2010-044T17:45:00 | ISS_NAC to Mimas | NEG_Z to NSP | | 1) Turn time has been optimized; Will need to waive turn rate FR07D145 (133.06 degree turn), otherwise more time is needed.<br>2) Has SID suspend issues which will need a 20 minute quiescent period later (FR07B129).<br>3) Will need to waive CIRS heating (FR89B20-2.1,23-2.1) | |
| **NEW WAYPOINT** | | **2010-044T17:45:00** | **000T03:15:00** | **2010-044T21:00:00** | **ISS_NAC to Mimas** | **NEG_Z to NSP** | | | |
| ISS_126MI_GEOLOG001_PRIME | C, M, U, V | 2010-044T17:45:00 | 000T00:25:00 | 2010-044T18:10:00 | ISS_NAC to Mimas | NEG_Z to NSP | 65s dwell for first half of request (mosaic); sit'n'stare over Herschel at 2nd half | | 1) CIRS delta temp 7.75 (consumable)<br>2) VIMS delta temp 7.23 (consumable)<br>3) Saturn in SRU |
| CIRS_126MI_FP1DAYMAP001_PRIME | M, V | 2010-044T18:10:00 | 000T00:15:00 | 2010-044T18:25:00 | CIRS_FP3 to Mimas | NEG_Z to NSP | | | |
| ISS_126MI_GEOLOG002_PRIME | C, M, U, V | 2010-044T18:25:00 | 000T00:25:00 | 2010-044T18:50:00 | ISS_NAC to Mimas | NEG_Z to NSP | 3x3 mosaic; 65s dwell | | |
| CIRS_126MI_FP3DAYMAP001_PRIME | I, M, U, V | 2010-044T18:50:00 | 000T01:25:00 | 2010-044T20:15:00 | CIRS_FP3 to Mimas | NEG_Z to NSP | | | |
| ISS_126MI_GLOCOL001_PRIME | C, M, U, V | 2010-044T20:15:00 | 000T00:15:00 | 2010-044T20:30:00 | ISS_NAC to Mimas | NEG_Z to NSP | | | |
| SP_126SA_WAYPTTURN844_PRIME | M | 2010-044T20:30:00 | 000T00:30:00 | 2010-044T21:00:00 | ISS_NAC to Saturn | NEG_X to NSP | | | |
| **NEW WAYPOINT** | | **2010-044T21:00:00** | **001T09:43:00** | **2010-046T06:43:00** | **ISS_NAC to Saturn** | **NEG_X to NSP** | | | |
| CIRS_126SA_LIMBINTC001_PRIME | C, M | 2010-044T21:00:00 | 000T02:55:00 | 2010-044T23:55:00 | CIRS_FPB to Saturn | NEG_X to NSP | | | |
| ISS_126TE_GEOLOG002_PRIME | C, M, U, V | 2010-044T23:55:00 | 000T01:10:00 | 2010-045T01:05:00 | ISS_NAC to Tethys | NEG_X to NSP | ISS_NAC to Tethys, NEG_X to NSP | | |
| SP_126EA_DLTURN445_PRIME | M | 2010-045T01:05:00 | 000T00:34:00 | 2010-045T01:39:00 | XBAND to Earth | NEG_X to NSP | | | |
| SP_126EA_M70METNON445_PRIME | M | 2010-045T01:39:00 | 000T02:20:00 | 2010-045T03:59:00 | XBAND to Earth | NEG_X to NSP | | | |
| SP_126SA_WAYPTTURN445_PRIME | M | 2010-045T03:59:00 | 000T00:35:00 | 2010-045T04:34:00 | ISS_NAC to Saturn | NEG_X to NSP | | | |
| VIMS_126SA_GLOBDYN004_PRIME | I, M | 2010-045T04:34:00 | 000T09:00:00 | 2010-045T13:34:00 | ISS_NAC to Saturn | NEG_X to NSP | | | |
| ISS_126EP_MUTUALEVE001_PRIME | M | 2010-045T13:34:00 | 000T00:43:00 | 2010-045T14:17:00 | ISS_NAC to Epimetheus | NEG_X to NSP | ISS_NAC to Epimetheus control of secondary axis not required | | |
| UVIS_126SA_EUVFUV001_PRIME | M | 2010-045T14:17:00 | 000T06:06:00 | 2010-045T20:23:00 | UVIS_FUV to Saturn | NEG_Z to Sun | | | |
| SP_126EA_DLTURN045_PRIME | M | 2010-045T20:23:00 | 000T00:40:00 | 2010-045T21:03:00 | XBAND to Earth | POS_X to NSP | | | |
| SP_126EA_M70METNON045_PRIME | C, E, M | 2010-045T21:03:00 | 000T09:00:00 | 2010-046T06:03:00 | XBAND to Earth | Rolling/SRU | POS_X to NSP; CRPC; rolling required for AACS | | |

# CMT Management: -Y to Sun violation






- From personal communication with Jerry:
- Margin ~ 250 km dispersion/11 km $s^{-1}$ X 2 if OTM cancelled X 10 for conservatism = 7.7 minutes