



CASSINI T116 SEGMENT

Rev 231 Package

Segment Boundary 2016-031T11:02:00 – 2016-033T03:03:00

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Science Highlights

Notes & Liens

This document has been reviewed and determined not to contain export controlled technical data

Science Highlights

T116 rev 231

DOY 031: CIRS conducts far-infrared limb sounding for gases and aerosols near 50S.. ISS will also ride along with CIRS inbound (equatorial latitudes over Titan's sub-Saturnian hemisphere at low phase) and with UVIS near closest-approach and CIRS outbound (high phase angle over Titan's anti-Saturnian hemisphere) to image Titan's surface (TN1a) and atmosphere (TC1a, TC1b, TN2c).

DOY 032: UVIS stellar occultation of Epsilon Orionis (ingress) and Zeta Orionis (egress). Epsilon Orionis ingress samples latitude between 30 and 40 degrees N. Zeta Ori egress samples latitude between 15 and 25 degrees N. UVIS observes solar occultations as well. Occultations are of especially high value because they provide detailed vertical profiles of composition and temperature in the high atmosphere, which cannot be measured by any other instrument. ISS will ride along with CIRS inbound (equatorial latitudes over Titan's sub-Saturnian hemisphere at low phase) and with UVIS near closest-approach and CIRS outbound (high phase angle over Titan's anti-Saturnian hemisphere) to image Titan's surface and atmosphere. VIMS will ride along with UVIS during the solar occultation observations that monitor the evolution of the haze layer. On the outbound, VIMS will ride along with ISS to monitor the evolution of the North Pole clouds. It will also ride along with CIRS for monitoring the evolution of lakes and seas on the North Pole and look for specular reflection on lakes.

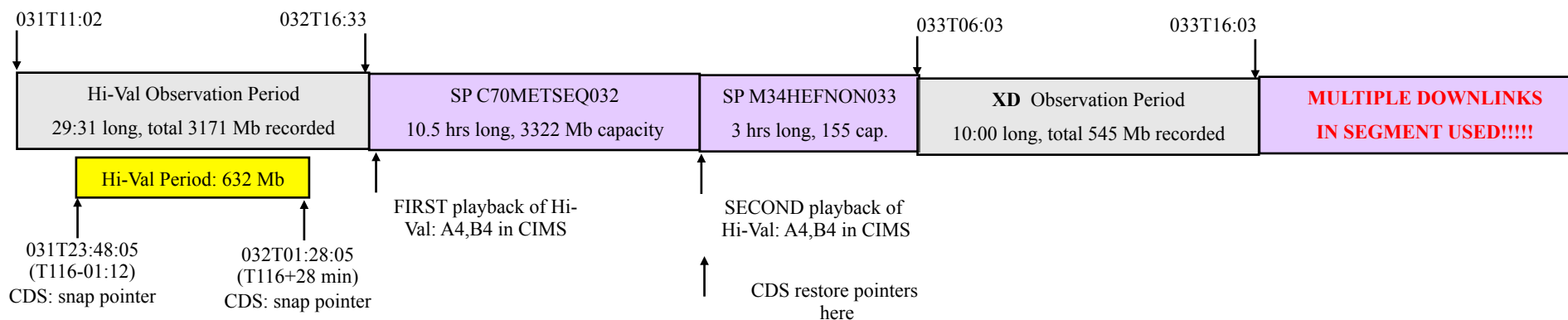
T116 is a south polar 1400 km altitude flyby occurring in the late midnight sector of Saturn's magnetosphere. With SLT similar to T9 and T114, Cassini will explore the polar sector of the induced magnetosphere of Titan explored during those flybys.

Dual Playback (Nonstandard)

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Flyby	BEGHIVAL	ENDHIVAL	P4 Dual Playback Data Volume	SSR empty before hi-val observation period? (if not verify any carryover on A fits with Hi-Val data)	SSR-A empty after first playback?	PPL set to A4,B4 for first AND second playbacks?	SSRs empty after second playback? (if not does any Hi-Val data carry over?)
T116	T116-01:12	T116+28 min	632 Mb	Yes	Yes	Yes	No/ Carryover

Playbacks contiguous but completed on noncontiguous downlinks in next segment:



Reminder - ALL instruments' data is played back twice during P4 dual playback periods

Notes

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- Pointing:
 - CIRS heating at C/A for waypoint but UVIS will be commanding pointing so no expected problems. Caution AACCS that waypoint pef may show errors at C/A.
 - YGAP window lengthened to 93 minutes because MP shortened C70 pass to “standard” 10.5 hour length.
 - Custom period from -01:12 to +03:20 added late in game; UVIS and ISS to complete CIMS entries ASAP.
- Data Volume:
 - XD_231 has agreed to take 550 Mb carryover. Carryover currently stands at 570, which shouldn't be a deal-breaker. Most of carryover will be for T116 dual playback data. This will be played back over the course of the XD_231 segment, so the dual PB will be completed over MULTIPLE downlinks throughout XD_231. SIP leads please note that all passes must be protected to ensure safe return of the dual PB!
- DSN:
 - SP_231NA_C70METSEQ032_SP overlaps start of DSS-43 weekly maintenance by 465 minutes. Maintenance waiver requested.
 - SP_231NA_M34HEFNON033_SP overlaps start of DSS-65 weekly maintenance by 45 minutes. Maintenance waiver requested.
- Resource checker:
 - ISS_231TI_FIRNADCMP001_CIRS timing to be adjusted by ISS
- Opmodes:
 - No issues
- Hydrazine:
 - N/A
- Special Activities:
 - Nonstandard dual playback (finishes on passes in subsequent segment)

Liens

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Sequence Liens (should all be SPLAT items):

- Nonstandard dual playback