CASSINI TOST T111 SEGMENT

Rev 215 Handoff Package

Segment Boundary 2015-127T04:15:00 – 2015-129T08:15:00

20 Aug 2014

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Science Highlights

Notes & Liens

Science Highlights

May 7 (DOY 127): Inbound, CIRS obtains information on the thermal structure and composition of Titan's stratosphere. VIMS observes the evolution of the South Polar Vortex and monitors the evolution of the cloud coverage at mid northern latitudes. VIMS will construct a mosaic of Xanadu at 10 km resolution, taking advantage of the low phase angle (< 30 degrees). High resolution images of Mnerva will be acquired at closest approach. On the outbound, CIRS will conduct limb sounding in the far-IR at 60S will provide insight in the formation of the southern winter polar vortex. VIMS will ride along with CIRS and will continue monitoring of the cloud activities. It will also acquire images of the North Polar seas if CIRS' observation geometry is compatible with this attitude. ISS will ride along with CIRS and VIMS to image Titan's surface and atmosphere, including eastern Shangri-La and western Xanadu.
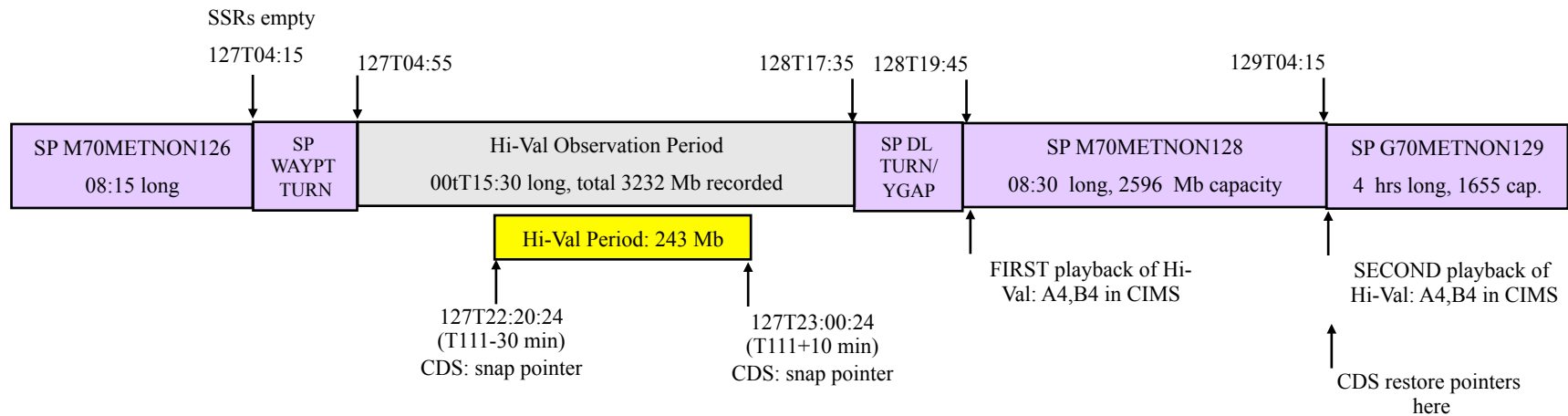
May 8 (DOY 128): T111 is a high altitude dayside equatorial flyby across Titan's magnetic tail occurring in the dawn sector of Saturn's magnetosphere. With geometry at closest approach similar to T5, MAG will study the downstream counterpart the induced magnetosphere when the flow from Saturn impinges on the nightside. CIRS limb sounding in the far-IR at 60S will provide insight in the formation of the southern winter polar vortex. . VIMS will ride along with CIRS and will continue monitoring of the cloud activities. It will also acquire images of the North Polar seas if CIRS' observation geometry is compatible with this attitude. ISS will ride along with CIRS and VIMS to image Titan's surface and atmosphere, including eastern Shangri-La and western Xanadu.

Dual Playback-VIMS

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?)
T111	T111-30 min	T111+10 min	243 Mb	Yes	Yes	Yes	Yes

Playbacks contiguous:

SSRs empty

127T04:15   127T04:55   128T17:35 128T19:45   129T04:15

| SP M70METNON126 08:15 long | SP WAYPT TURN | Hi-Val Observation Period 00tT15:30 long, total 3232 Mb recorded | SP DL TURN/ YGAP | SP M70METNON128 08:30 long, 2596 Mb capacity | SP G70METNON129 4 hrs long, 1655 cap. |

Hi-Val Period: 243 Mb

127T22:20:24
(T111-30 min)
CDS: snap pointer

127T23:00:24
(T111+10 min)
CDS: snap pointer

FIRST playback of Hi-Val: A4,B4 in CIMS

SECOND playback of Hi-Val: A4,B4 in CIMS

CDS restore pointers here

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

Notes

- Pointing:
  - Some CIRS heating during downlink, shouldn't be an issue
  - Get approval from SCO if OTP/OTB secondaries don't match
- Data Volume:
  - Dual playback.
  - SMT warnings about priority playback list are due to dual PB.
- DSN:
  - any stations requested during maintenance, UNQ passes, split pass OTMs, split downlink passes (boresight cal/Ybias cal), Level 3 requests.
  - Disposition ap_downlink report check warnings
- Resource checker:
  - Nonstandard priority playback tables due to dual playback
  - PIC secondaries for CIRS OK as team hands off to itself.
- Opmodes:
  - No issues
- Hydrazine:
  - Not applicable
- Special Activities:
  - Dual Playback

Liens

Sequence Liens (should all be SPLAT items):

- Dual playback (noted as SPLAT item)

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

215TI_T111 2722

Start Time	End Time	Prime Activity	Obs. Detail	Op Mode	TLM Mode	Comments
2015-127T04:15:00	2015-127T04:55:00	SP Turn to WP	NEG_Y to Titan, NEG_X to NTP	DFPW Normal	S_N_ER_3	
2015-127T04:55:00	C/A-17:40:25	OD Uncertainty Dead Time		DFPW Normal	S_N_ER_3	
C/A-17:40:25	-14:00	CIRS	A3 (Tc1b)	DFPW Normal	S_N_ER_3	ISS collaborative
-14:00	-09:00	CIRS	C (TN1c)	DFPW Normal	S_N_ER_3	VIMS rider (not collaborative)
Begin custom period						
-09:00	-05:00	VIMS	I (TC1a and TN2c)	DFPW Normal	S_N_ER_3	ISS rider (collaborative)
-05:00	-02:15	VIMS	Y (TC1c, TN1a (depending on pointing) and TN2c)	DFPW Normal	S_N_ER_3	ISS collaborative
-02:15	0	VIMS	(TC1a, TN1a)	DFPW Normal	S_N_ER_3	NT1 - equatorial
2015-127T22:50:25		CLOSEST APPROACH	NEG_Y to Titan (Tc2a)			
0	+00:10	VIMS	VIMS hand off at CIRS attitude (TC1a, TN1a)	DFPW Normal	S_N_ER_3	
+00:10	+02:15	CIRS	(TN1c)	DFPW Normal	S_N_ER_3	FIRLMB at 58N and 60S
+02:15	+05:00	CIRS	T (TN2c (surface temperature))	DFPW Normal	S_N_ER_3	
+05:00	+09:00	CIRS	R (TN1c or Tc1b, decided in implementation)	DFPW Normal	S_N_ER_3	
+09:00	+13:00	CIRS	N1 (Tc1b, TN1c aerosol)	DFPW Normal	S_N_ER_3	
+13:00	C/A+18:29:35	CIRS	M4 (Tc1b (TN1c on outbound))	DFPW Normal	S_N_ER_3	
End custom period						
C/A+18:29:35	2015-128T17:35:00	OD Uncertainty Dead Time			S_N_ER_3	
2015-128T17:35:00	2015-128T18:15:00	SP Turn to Earth for downlink		DFPW Normal	S_N_ER_3	
2015-128T18:15:00	2015-128T19:45:00	Y-Bias window		DFPW Normal	S_N_ER_3	
2015-128T19:45:00	2015-129T04:15:00	Madrid 70M		DFPW Normal	RTE_N_SPB	
2015-129T04:15:00	2015-129T08:15:00	Goldstone 70M		DFPW Normal	RTE_N_SPB	Dual playback for VIMS, -02:15 to +00:10