CASSINI TOST T114 SEGMENT

Rev 225 Handoff Package

Segment Boundary 2015-316T05:59:00 – 2015-318T07:29:00

01 April 2015

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Science Highlights

Notes & Liens

Science Highlights

November 12 (DOY 316) – VIMS will monitor the formation and evolution of clouds at high latitudes and will monitor the evolution of South polar vortex. CIRS will perform very high latitude limb sounding over the south pole, monitoring the temperatures and composition in the S polar vortex as it continues to develop in southern Fall. The latitudes viewed on T114 are the most southerly latitudes possible for far-infrared limb measurements (+00:15 to +02:15) during the Cassini Solstice Mission. ISS will ride along with CIRS and VIMS inbound (equatorial latitudes over Titan's sub-Saturnian hemisphere at low phase) to image Titan's surface and atmosphere.

November 13 (DOY 317) -- Near closest-approach, ISS will acquire a medium- to- high-resolution mosaic of Titan's leading hemisphere over Xanadu, Cassini's last good view of central Xanadu. On the outbound, during the prime observation, VIMS will map the North pole area at high emission angle and will monitor the evolution of the lakes and seas. CIRS will perform very high latitude limb sounding over the south pole, monitoring the temperatures and composition in the S polar vortex as it continues to develop in southern Fall. The latitudes viewed on T114 are the most southerly latitudes possible for far-infrared limb measurements (+00:15 to +02:15) during the Cassini Solstice Mission. ISS will ride along with UVIS and VIMS outbound (high phase angle) to image Titan's surface and atmosphere . VIMS will ride along with ISS and CIRS during closest approach at about 12,000 km altitude and will acquire a mosaic of Titan's surface. T114 is a high altitude (11920 km) flyby across Titan's magnetic tail occurring in the late midnight sector of Saturn's magnetosphere. With SLT similar to T9, Cassini will study the magnetic tail of Titan and the plasma escape due to the interaction with Saturn's magnetosphere. UVIS EUVFUV observations at the limb will measure nitrogen emission features. This is one of many such observations gathered over the course of the mission to provide latitude and seasonal coverage of Titan's middle atmosphere and stratosphere.

Notes

- Pointing:
  - Initial waypoint turn in two parts, requires 44 minutes (taken out of deadtime)
- Data Volume:
  - No issues
- DSN:
  - No issues
- Resource checker:
  - No issues
- Opmodes:
  - No issues
- Hydrazine:
  - RWA flyby
- Special Activities:
  - None

Liens

Sequence Liens (should all be SPLAT items):

- None

TOST Master Timeline

225TI_T114	11920

Start Time	End Time	Prime Activity	Obs. Detail	Op Mode	TLM Mode	Comments
2015-316T05:59:00	**2015-316T06:32:00**	SP Turn to WP	NEG_Y to Titan/POS_X to 300/-50	DFPW Normal	S_N_ER_3	Part 1 of 2-part turn (update to original timeline)
2015-316T06:32:00	**2015-316T06:43:00**		NEG_Y to Titan/NEG_X to NSP	DFPW Normal	S_N_ER_3	Part 2 of 2-part turn (update to original timeline)
2015-316T06:39:00	C/A-22:52:32	OD Uncertainty Dead Time				
C/A-22:52:32	-14:00	CIRS	A2 (Tc1b)	DFPW Normal	S_N_ER_3	Collaborative rider(s): ISS
-14:00	-09:00	VIMS	V (TC1a, TC1b)	DFPW Normal	S_N_ER_3	Collaborative rider(s): ISS
-09:00	-05:00	CIRS	F (TC1b OR TN1c)	DFPW Normal	S_N_ER_3	
-05:00	-02:15	VIMS	Y (TC1a, TN1a (depending on pointing) and TN2c)	DFPW Normal	S_N_ER_3	
-02:15	**0**	**ISS**	**(TN1a)**	DFPW Normal	S_N_ER_3	leading hemisphere: Hotei, Xanadu; C/A ~12,000 km
2015-317T05:46:32		**CLOSEST APPROACH**	**NEG_Y to Titan (Tc2a)**			Waypoint CIRS secondary if possible.
0	**+00:15**	**ISS**	**ISS hand off at waypoint**	DFPW Normal	S_N_ER_3	
+00:15	**+00:45**	**CIRS**	**TN1c**	DFPW Normal	S_N_ER_3	FIRLMB at 65N, 86S; distant
+00:45	**+01:15**	**CIRS**	**TN1c**	DFPW Normal	S_N_ER_3	
+01:15	**+02:15**	**CIRS**	**TN1c**	DFPW Normal	S_N_ER_3	
+02:15	+09:00	**UVIS**	X (TN1c. ISS ridealong is photon WAC (TN1c and TC1a))	DFPW Normal	S_N_ER_3	
+09:00	C/A+10:47:28	VIMS	O (TN1a (Specular reflection of lakes-depending on geometry))	DFPW Normal	S_N_ER_3	
C/A+10:47:28	2015-317T16:49:00	OD Uncertainty Dead Time				
2015-317T16:49:00	**2015-317T17:29:00**	SP Turn to Earth for downlink	XBAND to Earth/NEG_Y to Saturn (0.0, 0.0, -9.5)	DFPW Normal	S_N_ER_3	
2015-317T17:29:00	2015-317T18:59:00	Y-Bias window	XBAND to Earth/NEG_Y to Saturn (0.0, 0.0, -9.5)	DFPW Normal	S_N_ER_3	
2015-317T18:59:00	**2015-318T07:29:00**	Canberra 70M	XBAND to Earth/Rolling	DFPW Normal	RTE_N_SPB	