



Science Planning & Sequence Team
CASSINI

CASSINI TOST_255 SEGMENT

Rev 255 Handoff Package

Segment Boundary 2016-365T20:51:00 – 2017-001T13:14:00

3 Jun 2016

Karl Mitchell

Science Highlights

Notes & Liens

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

SMT Report

TOST rev 255

DATA VOLUME SUMMARY --- TRANSFER FRAME OVERHEAD INCLUDED (80 BITS PER 8800-BIT FRAME)

DOWNLINK PASS NAME	OBSERVATION_PERIOD		DOWNLINK_PASS														
	Start doy hh:mm	End doy hh:mm	P4							P5	RECORDED		PLAYBACK				
			START (Mb)	SCI (Mb)	HK+E (Mb)	TOTAL (Mb)	CPACTY (Mb)	MARGN (Mb)	OPNAV (Mb)	SCI (Mb)	ENGR (Mb)	TOTAL (Mb)	CPACTY (Mb)	MARGN (Mb)	NET_MARGN (Mb)	NET_MARGN (%)	CAROVR (Mb)
SP_255EA_C70METNON001_PRIME	001 01:32	001 05:29	0	1895	121	2016	3322	1306	0	223	23	2263	1031	-1232	9	0%	1232
SP_255EA_M70METNON001_PRIME	001 05:29	001 13:14	1232	0	0	1232	3322	2090	0	375	46	1653	1661	8	9	1%	0

SSR PARTITION SIZE SUMMARY - SELECTED SSR CONFIGURATION: DOUBLE

OBSERVATION PERIOD	SSR A/B		
	P4 Size (Frames)	P5 Size (Frames)	P6 Size (Frames)
SP_255NA_OBSERV365_NA	188954	10	38863

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	365 20:51	001 01:32	0.0	54.1	335.0	0.0	1050.0	51.0	87.8	0.0	259.3	0.0	40.5	0.0	119.9	1997.6
SP_255EA_C70METNON001_PRIME	001 01:32	001 05:29	0.0	7.5	31.9	0.0	0.0	7.0	12.1	0.0	160.7	2.2	0.0	0.0	0.0	221.3
SP_255EA_M70METNON001_PRIME	001 05:29	001 13:14	0.0	14.6	0.0	0.0	0.0	13.8	23.7	0.0	315.3	4.3	0.0	0.0	0.0	371.6
DAILY TOTAL SCIENCE	365 20:51	001 13:14	0.0	76.2	366.9	0.0	1050.0	71.8	123.6	0.0	735.3	6.4	40.5	0.0	119.9	

	CAPS (Mb)	CDA (Mb)	CIRS (Mb)	INMS (Mb)	ISS (Mb)	MAG (Mb)	MIMI (Mb)	RADAR (Mb)	RPWS (Mb)	UVIS (Mb)	VIMS (Mb)	PROBE (Mb)
TOTAL RECORDED (OPNAV data not included)	0.0	76.2	366.9	0.0	1050.0	71.8	123.6	0.0	735.3	6.4	40.5	0.0

DOY 365/Dec 30, 2016 - ISS will acquire a series of global-scale images and mosaics, observing Titan's surface and atmosphere at northern mid-latitudes over the leading and sub-Saturnian hemispheres. The series of observations allows ISS to monitor Titan to track clouds and the evolution thereof, of particular scientific interest as Titan's northern summer equinox approaches. **VIMS** will ride-along with ISS, monitoring the evolution of cloud coverage at the North Pole in particular and the evolution of the South Polar Vortex. **CIRS** will ride-along (collaborative) with ISS and observe Titan's north pole in the mid-infrared (7-17 microns) to map spatial variation of temperatures and gas composition as the northern hemisphere moves towards summer solstice.

DOY 366/Dec 31, 2016 - ISS will acquire a series of global-scale images and mosaics, observing Titan's surface and atmosphere at northern mid-latitudes over the leading and sub-Saturnian hemispheres. The series of observations allows ISS to monitor Titan to track clouds and the evolution thereof, of particular scientific interest as Titan's northern summer equinox approaches. **VIMS** will ride-along with ISS, monitoring the evolution of cloud coverage at the North Pole in particular and the evolution of the South Polar Vortex. **CIRS** will ride-along (collaborative) with ISS and observe Titan's north pole in the mid-infrared (7-17 microns) to map spatial variation of temperatures and gas composition as the northern hemisphere moves towards summer solstice.

Master Timeline

TOST rev 255

255TI	681669
--------------	---------------

Start Time	End Time	Prime Activity	Obs. Detail	Op Mode	TLM Mode	Comments
2016-365T20:51:00	2016-365T21:31:00	SP Turn to WP	NEG_Y to Titan/NEG_X to Sun	DFPW Normal	S_N_ER_3	Secondary is preferred by MIMI
2016-365T21:31	2016-366T12:18:53	ISS	(TC1a, TC1b, TN1a, TN2c, TN2d)	DFPW Normal	S_N_ER_3	Distant flyby CIRS (collaborative 1 hour FP3 then 1 hour FP4 on north pole) and VIMS (non-collaborative) riders during this segment
2016-366T12:18:53		CLOSEST APPROACH				
2016-365T12:18:53	2016-366T23:22	ISS	(TC1a, TC1b, TN1a, TN2c, TN2d)	DFPW Normal	S_N_ER_3	As above (same request)
2016-366T23:22:00	2017-001T00:02:00	SP Turn to Earth for downlink	XBAND to Earth/NEG_X to 117,-63	DFPW Normal	S_N_ER_3	Secondary is preferred by CDA
2017-001T00:02:00	2017-001T01:32:00	Ybias Gap		DFPW Normal	S_N_ER_3	
2017-001T01:32:00	2017-001T05:29:00	Canberra 70M		DFPW Normal	RTE_N_SPB	
2017-001T05:29:00	2017-001T13:14:00	Madrid 70M		DFPW Normal	RTE_N_SPB	DL cap not confirmed; Mismatch with FRPO_seg_PIE_final_150623.xls

SPASS

TOST rev 255

Colorize		SPASS for Delivery: TOST_255				Records 1-14 (Page 1 of 1)		Observation Attitude	
Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments	
Sequence S97, length = 72 days		2016-328T05:43:00		072T01:22:00	2017-034T07:05:00				
TOST_255 Segment		2016-365T20:51:00		001T16:23:00	2017-001T13:14:00				
SP_255TI_WAYPTTURN365_PRIME		2016-365T20:51:00		000T00:40:00	2016-365T21:31:00	NEG_Y to Titan	NEG_X to Sun	MIM1.NEG_X to Sun	
NEW WAYPOINT		2016-365T21:31:00		001T02:31:00	2017-001T00:02:00	NEG_Y to Titan	NEG_X to Sun		
ISS_255TI_LRMONITOR001_PRIME	C, V	2016-365T21:31:00		000T05:00:00	2016-366T02:31:00	ISS_NAC to Titan	NEG_X to Sun	Collaborative Rider(s): CIRS. Include 1 hour stares for FP1 and FP3 at NP	
ISS_255TI_LRMONITOR002_PRIME	C, V	2016-366T02:31:00		000T05:00:00	2016-366T07:31:00	ISS_NAC to Titan	NEG_X to Sun	Collaborative Rider(s): CIRS. Include 1 hour stares for FP1 and FP3 at NP	
ISS_255TI_LRMONITOR003_PRIME	C, V	2016-366T07:31:00		000T05:00:00	2016-366T12:31:00	ISS_NAC to Titan	NEG_X to Sun	Collaborative Rider(s): CIRS. Include 1 hour stares for FP1 and FP3 at NP	
255TI (nt) TITAN Inbound...		2016-366T12:18:53		000T00:00:01	2016-366T12:18:54				
ISS_255TI_LRMONITOR004_PRIME	C, V	2016-366T12:31:00		000T05:00:00	2016-366T17:31:00	ISS_NAC to Titan	NEG_X to Sun	Collaborative Rider(s): CIRS. Include 1 hour stares for FP1 and FP3 at NP	
ISS_255TI_LRMONITOR005_PRIME	C, V	2016-366T17:31:00		000T05:00:00	2016-366T22:31:00	ISS_NAC to Titan	NEG_X to Sun	Collaborative Rider(s): CIRS. Include 1 hour stares for FP1 and FP3 at NP	
ISS_255TI_LRMONITOR006_PRIME	C, V	2016-366T22:31:00		000T00:51:00	2016-366T23:22:00	ISS_NAC to Titan	NEG_X to Sun	Collaborative Rider(s): CIRS. No Preference to secondary pointing	
SP_255EA_DLTURN366_PRIME		2016-366T23:22:00		000T00:40:00	2017-001T00:02:00	XBAND to Earth	NEG_X to 117.0/-63.0	CDA.NEG_X to 117/-63	
NEW WAYPOINT		2017-001T00:02:00		000T13:12:00	2017-001T13:14:00	XBAND to Earth	NEG_X to 117.0/-63.0		
SP_255EA_YGAP001_PRIME	E	2017-001T00:02:00		000T01:30:00	2017-001T01:32:00	XBAND to Earth	NEG_X to 117.0/-63.0		
SP_255EA_C70METNON001_PRIME	C	2017-001T01:32:00		000T03:57:00	2017-001T05:29:00	XBAND to Earth	NEG_X to 117.0/-63.0	CDA. NEG_X to 117/-63.	
SP_255EA_M70METNON001_PRIME		2017-001T05:29:00		000T07:45:00	2017-001T13:14:00	XBAND to Earth	NEG_X to 117.0/-63.0	CDA. NEG_X to 117/-63	

High Priority Observations

TOST rev 255

None. In agreement with all teams.

Notes

TOST rev 255

- Pointing:
 - N/A
- Data Volume:
 - N/A
- DSN:
 - N/A
- Resource checker:
 - N/A
- Opmodes:
 - N/A
- Hydrazine:
 - N/A
- Special Activities:
 - N/A

Sequence Liens (should all be SPLAT items):

- None.