



Science Planning & Sequence Team
CASSINI

CASSINI TOST SEGMENT

Rev 218-T112 Handoff Package

Segment Boundary 2015-187T11:32:00 – 2015-189T11:24:00

7 November 2014

Jan Berkeley

SMT report and Master Timeline

Science Highlights

Notes & Liens

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

SMT report

TOST T112

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)	MRGN (Mb)	OPNAV (Mb)	SCI (Mb)	ENGR (Mb)	TOTAL (Mb)	CPACTY (Mb)	MARGN (Mb)	NET_MARGN (Mb)	(%)	CAROVR (Mb)
SP_218EA_C70METSEQ189_PRIME	189 03:28	189 11:24	0	2862	169	3031	3322	291	0	172	47	3249	3180	-70	0	0%	70

SSR PARTITION SIZE SUMMARY - SELECTED SSR CONFIGURATION: DOUBLE

OBSERVATION PERIOD	SSR A/B		
	P4 Size (Frames)	P5 Size (Frames)	P6 Size (Frames)
SP_218NA_OBSERV187_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	187 11:32	189 03:28	0.0	98.0	477.9	24.4	735.0	85.2	126.8	0.0	736.5	132.2	420.0	0.0	166.9	3003.0
SP_218EA_C70METSEQ189_PRIME	189 03:28	189 11:24	0.0	15.0	74.9	2.9	0.0	14.1	21.4	0.0	37.4	4.4	0.0	0.0	0.0	170.0
DAILY TOTAL SCIENCE	187 11:32	189 11:24	0.0	112.9	552.8	27.3	735.0	99.4	148.2	0.0	774.0	136.6	420.0	0.0	166.9	

T112 TOST Master timeline

TOST T112

Start Time	End Time	Prime Activity	Obs. Detail	Op Mode	TLM Mode	Comments	
2015-187T11:32:00	2015-187T12:12:00	SP Turn to WP	NEG_Y to Titan / NEG_X to NTP	DFPW Normal	S_N_ER_3		
2015-187T12:12:00	C/A-19:42:51	OD Uncertainty Dead Time					
C/A-19:42:51	-14:00	CIRS	A3 (Tc1b)	DFPW Normal	S_N_ER_3	Collaborative Rider(s): ISS	
-14:00	-09:00	CIRS	C (TN1c)	DFPW Normal	S_N_ER_3	VIMS rider	
-09:00	-05:00	ISS	H (TC1a, TN1a, TN2c (Could also be TC1b and/or TN1c, depending on geometry, or TN2d, depending on	DFPW Normal	S_N_ER_3		
-05:00	-02:15	ISS	J1 (TC1a, TN1a (Could also be TC1b and/or TN1c, depending on geometry, or TN2c and TN2d,	DFPW Normal	S_N_ER_3		
-02:15	0	CIRS	TN1c	DFPW Normal	S_N_ER_3		
2015-188T08:09:51		CLOSEST APPROACH	NEG_Y to Titan (Tc2a)				
0	+02:15	CIRS	TN1c	DFPW Normal	S_N_ER_3		
+02:15	+05:00	CIRS	T (TN2c (surface temperature))	DFPW Normal	S_N_ER_3		
+05:00	+09:00	VIMS	Q (TN1a (Specular reflection of lakes- depending on geometry))	DFPW Normal	S_N_ER_3	Collaborative Rider(s): ISS.	
+09:00	+13:00	CIRS	N1 (Tc1b, TN1c aerosol)	DFPW Normal	S_N_ER_3		
+13:00	C/A+16:53:09	CIRS	M4 (Tc1b (TN1c on outbound))	DFPW Normal	S_N_ER_3		
C/A+16:53:09	2015-189T01:18:00	OD Uncertainty Dead Time					
2015-189T01:18:00	2015-189T01:58:00	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		
2015-189T01:58:00	2015-189T03:28:00	Y-Bias window	XBAND to Earth/Neg Y to Saturn (0.0,0.0,-9.5)	DFPW Normal	S_N_ER_3		
2015-189T03:28:00	2015-189T11:24:00	Canberra 70M	XBAND to Earth/Rolling (0.0,0.0,-9.5)	DFPW Normal	S_N_ER_3		

DOY 187: T112 begins with CIRS mid IR map observations/ISS riding to obtain information on the thermal structure of Titan's stratosphere. This is followed by CIRS far infrared observations with VIMS riding. ISS global and regional mapping to mosaic Senkyo occur as MAG characterizes the magnetic field in which the moon sits in that magnetospheric sector. VIMS and CIRS are riders for this activity. VIMS will acquire a mosaic of the sub-Saturn tropical zone that includes the dune fields of Fensal and Aztlan and the Qilvira plateau.

DOY 188: CIRS performs back-to-back sets of limb sounding at closest approach (a high altitude (10953 km) upstream equatorial flyby occurring in the midnight sector of Saturn's magnetosphere), reaching high northern and southern latitudes to contrast the temperatures and gas abundances at the summer and winter poles unique to +80N observation. VIMS global mapping of Titan at medium resolution with ISS and CIRS riding is next to observe specular reflection on the Northern Seas. CIRS thermal and chemical atmospheric mapping follows.

DOY 189: Data playback/start of XD 218 segment.

- Pointing:
 - No issues
- Data Volume:
 - 70 Mb carryover into XD_218 – handled by compression
- DSN:
 - NHPC proposal has 1:10 overlap with DSS 43 – not yet negotiated
 - SEG warnings about SEQ passes – not applicable to segments
 - 70m usage warning – not applicable to segments
- Resource checker:
 - SP_218EA_C70METSEQ189_PRIME -- Downlink Pass for sequence request has a duration of 000T07:56:00 (okay)
- Opmodes:
 - No issues.
- Special Activities:
 - None

Sequence Liens (should all be SPLAT items):

- SEQ pass duration only 7:56 –acceptable
- 70 Mb carryover into XD_218 – handled by compression
- NHPC proposal overlap 1:10 with DSS 43 – would result in 479 Mb carryover