CASSINI TOST T117 SEGMENT

Rev 232 Handoff Package

Segment Boundary 2016-047T10:04:00 – 2016-050T00:05:00

14 August 2015

Rudy Boehmer

SMT Report, Timeline, & SPASS

Science Highlights

Notes & Liens

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

| | | | OBSERVATION_PERIOD | | | | | | DOWNLINK_PASS | | | | | | |
| | | | P4 | | | | | P5 | RECORDED | | PLAYBACK | | | | |
DOWNLINK PASS NAME	Start doy hh:mm	End doy hh:mm	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_232EA_C70METNON048_PRIME	048 15:05	049 01:05	0	3142	159	3300	3322	22	0	223	59	3582	3592	9	11 0%	0
SP_232EA_C34HEFNON049_PRIME	049 15:05	050 00:05	0	482	59	542	3322	2781	0	113	53	707	708	1	1 0%	0

SSR PARTITION SIZE SUMMARY - SELECTED SSR CONFIGURATION: DOUBLE

| | SSR A/B | | |
OBSERVATION PERIOD	P4 Size (Frames)	P5 Size (Frames)	P6 Size (Frames)
SP_232NA_OBSERV048_NA	188954	10	38863
SP_232NA_OBSERV049_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	047 10:04	048 15:05	0.0	54.7	293.4	20.5	360.0	94.3	103.9	0.0	1891.1	90.2	205.0	0.0	157.4	3270.5
SP_232EA_C70METNON048_PRIME	048 15:05	049 01:05	0.0	18.9	97.2	3.6	0.0	17.8	30.6	0.0	47.2	5.5	0.0	0.0	0.0	220.7
DAILY TOTAL SCIENCE	047 10:04	049 01:05	0.0	73.6	390.6	24.1	360.0	112.1	134.5	0.0	1938.3	95.6	205.0	0.0	157.4	
OBSERVATION_NOR	049 01:05	049 15:05	0.0	26.4	66.0	5.0	260.0	12.4	30.8	7.6	45.9	3.6	20.0	0.0	58.5	536.4
SP_232EA_C34HEFNON049_PRIME	049 15:05	050 00:05	0.0	17.0	21.6	3.2	0.0	16.0	19.4	0.0	29.5	4.9	0.0	0.0	0.0	111.7
DAILY TOTAL SCIENCE	049 01:05	050 00:05	0.0	43.4	87.6	8.3	260.0	28.5	50.3	7.6	75.3	8.6	20.0	0.0	58.5	

	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	117.0	478.2	32.4	620.0	140.5	184.8	7.6	2013.6	104.2	225.0	0.0

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

232TI_T117 | 1018

Start Time	End Time	Prime Activity	Obs. Detail	Op Mode	TLM Mode	Comments
2016-047T10:04:00	2016-047T10:44:00	SP Turn to WP	NEG_Y to Titan / NEG_X to NEP	DFPW Normal	S_N_ER_3	
2016-047T10:44:00	C/A-12:53:04	OD Uncertainty Dead Time		DFPW Normal	S_N_ER_3	
C/A-12:53:04	-09:00	CIRS	C truncated (TN1c)	DFPW Normal	S_N_ER_3	VIMS rider
-09:00	-05:00	CIRS	F (TC1b OR TN1c)	DFPW Normal	S_N_ER_3	
-05:00	-03:26	VIMS	Y truncated (TC1a, TN1a (depending on pointing) and TN2c)	DFPW Normal	S_N_ER_3	
-03:26	-03:25	RWA to RCS Transition		ORSRCS	S_N_ER_3	0.5, 2.0, 0.5 deadband
-03:25	-02:35	VIMS	Y truncated (TC1a, TN1a (depending on pointing) and TN2c)	ORSRCS, begin RSS3RCS at -03:05:08	S_N_ER_3	on thrusters
-02:35	-02:25	SP Turn to WP	NEG_Z to Earth / NEG_Y to Saturn (0.0, 0.0, -9.5 deg offset)	RSS3RCS	S_N_ER_3	on thrusters, 00:07:55 RCS turn duration 2.0, 2.0, 2.0 deadband, then 0.5, 0.5, 2.0 deadband at -02:25:00
-02:25	-01:00	RSS Earth-point/warm up		RSS3RCS	S_N_ER_3	
-01:00	0	RSS occ	(TN2c, TN2d)	RSS3RCS	S_N_ER_3	
2016-047T23:49:41		CLOSEST APPROACH	XBAND to EARTH, LUB (Tc2a)			Low and Mid-Lat Occ., LatN=14S,LatX=33N (Seasonal change, tropospheric winds, Surface temps); Good Bistatic Opportunity over Lakes (Exit)
0	+00:34	RSS occ	(TN2c, TN2d)	RSS3RCS	S_N_ER_3	
+00:34	+02:10	RSS Bistat	(TN1a)	RSS3RCS	S_N_ER_3	
Begin custom period				RSS3RCS	S_N_ER_3	
+02:10	+02:17	VIMS	Turn to Target Lat-Long (72.7, 153.6) during RCS to RWA Transition for VIMS Specular Reflection (TC1a, TN1a, TN2c)	RSS3RCS	S_N_ER_3	0.5, 2.0, 0.5 deadband
+02:17	+02:39	RCS to RWA Transition		DFPW Normal	S_N_ER_3	
+02:39	+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	+11:00	CIRS	N1 (Tc1b, TN1c aerosol)	DFPW Normal	S_N_ER_3	
+11:00	C/A+15:00:19	CIRS	M4 (Tc1b (TN1c on outbound))	DFPW Normal	S_N_ER_3	
End custom period				DFPW Normal	S_N_ER_3	
C/A+15:00:19	2016-048T15:05:00	OD Uncertainty Dead Time				
2016-048T15:05:00	2016-049T01:05:00	Canberra 70M	NEG_Z to Earth / NEG_Y to Saturn (0.0, 0.0, -9.5 deg offset)	DFPW Normal	RTE_N_SPB	
2016-049T01:05:00	2016-049T01:45:00	SP Turn to WP	NEG_Y to Titan / NEG_X to NTP	DFPW Normal	S_N_ER_3	
2016-049T01:45:00	2016-049T05:45:00	ISS	ISS Cloud Monitoring (TC1a, TC1b, TN1a, TN2c, TN2d)	DFPW Normal	S_N_ER_3	
2016-049T05:45:00	2016-049T08:55:00	ISS	ISS Cloud Monitoring (TC1a, TC1b, TN1a, TN2c, TN2d)	RADWU	S_N_ER_5a for 1st 15 minutes, S_N_ER_3 afterwards	
2016-049T08:55:00	2016-049T09:55:00	ISS	30 min ISS mosaic (TC1a, TC1b, TN1a, TN2c, TN2d)	RADWU	S_N_ER_3	
2016-049T09:55:00	2016-049T11:55:00	RADAR	2 hr Radiometry Calibration (TN2c)	RADWU	S_N_ER_5a	
2016-049T11:55:00	2016-049T12:55:00	ISS	30 min ISS mosaic (TC1a, TC1b, TN1a, TN2c, TN2d)	DFPW Normal	S_N_ER_3	
2016-049T12:55:00	2016-049T13:35:00	SP Turn to Earth for downlink	NEG_Z to Earth / NEG_Y to Saturn (0.0, 0.0, -9.5 deg offset)	DFPW Normal	S_N_ER_3	
2016-049T13:35:00	2016-049T15:05:00	Ybias window	NEG_Z to Earth / NEG_Y to Saturn (0.0, 0.0, -9.5 deg offset)	DFPW Normal	S_N_ER_3	
2016-049T15:05:00	2016-050T00:05:00	Canberra 34M HEF	NEG_Z to Earth / NEG_Y to Saturn (0.0, 0.0, -9.5 deg offset)	DFPW Normal	RTE_N_SPB	

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Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
Sequence S93, length = 72 days		2016-038T00:48:00		071T17:55:00	2016-109T18:43:00			
Titan Flyby T117 Segment		2016-047T10:04:00		002T14:01:00	2016-050T00:05:00			
SP_232TI_WAYPTTURN047_PRIME		2016-047T10:04:00		000T00:40:00	2016-047T10:44:00	NEG_Y to Titan	NEG_X to NEP	
NEW WAYPOINT		2016-047T10:04:00		000T10:40:41	2016-047T21:24:41	NEG_Y to Titan	NEG_X to NEP	
SP_232TI_DEADTIME047_PRIME		2016-047T10:44:00		000T00:12:37	2016-047T10:56:37	NEG_Y to Titan	NEG_X to NEP	
CIRS_232TI_FIRNADCMP001_PRIME	I, U, V	2016-047T10:56:37	GMB_E232_TITAN_T117-000T12:53:04	000T03:53:04	2016-047T14:49:41	CIRS_FP1 to Titan	PIC	
CIRS_232TI_MIRLMBINT001_PRIME	I, V	2016-047T14:49:41	GMB_E232_TITAN_T117-000T09:00:00	000T04:00:00	2016-047T18:49:41	CIRS_FPB to Titan	PIC	
VIMS_232TI_REGMAP001_PRIME	C, I	2016-047T18:49:41	GMB_E232_TITAN_T117-000T05:00:00	000T01:34:00	2016-047T20:23:41	VIMS_IR to Titan	NEG_X to NEP	No Preference to secondary pointing
ENGR_232SC_ORSRCS047_PRIME	R	2016-047T20:23:41	GMB_E232_TITAN_T117-000T03:26:00	000T00:01:00	2016-047T20:24:41			deadband =(0.5,2.0,0.5)
VIMS_232TI_REGMAP002_PRIME	C, I, R	2016-047T20:24:41	GMB_E232_TITAN_T117-000T03:25:00	000T00:50:00	2016-047T21:14:41	VIMS_IR to Titan	NEG_X to NEP	No Preference to secondary pointing
Set deadband to (2,2,2)		2016-047T21:14:41	GMB_E232_TITAN_T117-000T02:35:00	000T00:01:00	2016-047T21:15:41			Deadband = (2.0, 2.0, 2.0)
SP_232EA_WAYPTTURN047_PRIME	R	2016-047T21:14:41	GMB_E232_TITAN_T117-000T02:35:00	000T00:10:00	2016-047T21:24:41	XBAND to Earth (0.0,0.0,-9.5 deg. offset)	NEG_Y to Saturn	On thrusters.
NEW WAYPOINT		2016-047T21:24:41		001T04:20:19	2016-049T01:45:00	XBAND to Earth (0.0,0.0,-9.5 deg. offset)	NEG_Y to Saturn	
Set deadband to (0.5,0.5,2)		2016-047T21:24:41	GMB_E232_TITAN_T117-000T02:25:00	000T00:01:00	2016-047T21:25:41			Deadband = (0.5, 0.5, 2.0)
RSS_232TI_OCC001_PRIME	M	2016-047T22:49:41	LUB_E232_TITAN_T117-000T01:00:00	000T01:34:00	2016-048T00:23:41	XBAND to Earth	NEG_Y to Saturn	
232TI (t) T117 TITAN Outbound		2016-047T23:49:41		000T00:00:01	2016-047T23:49:42			
RSS_232TI_BISTATOUT001_PRIME	M	2016-048T00:23:41	LUB_E232_TITAN_T117+000T00:34:00	000T01:36:00	2016-048T01:59:41	XBAND to Titan	NEG_Y to Saturn	
Set deadband to (0.5,2,0.5)		2016-048T01:59:41	GMB_E232_TITAN_T117+000T02:10:00	000T00:01:00	2016-048T02:00:41			Deadband = (0.5, 2.0, 0.5)
Begin Custom Period		2016-048T01:59:41	GMB_E232_TITAN_T117+000T02:10:00	000T00:00:01	2016-048T01:59:42			
VIMS_232TI_REGMAP003_PRIME		2016-048T01:59:41	GMB_E232_TITAN_T117+000T02:10:00	000T00:07:00	2016-048T02:06:41	VIMS_IR to Titan	NEG_Y to Saturn	No Preference to secondary pointing. Pick up at XBAND to Earth (0.0,0.0,-9.5 deg. offset), NEG_Y to Saturn; Hand off at VIMS_IR to Titan, NEG_X to NTP. No Preference to secondary pointing. VIMS will target and hand off at a Titan Lat/Long of 72.7 153.6.
ENGR_232SC_DFPWBIAS048_PPS	V	2016-048T02:06:41	GMB_E232_TITAN_T117+000T02:17:00	000T00:21:07	2016-048T02:27:48	VIMS_IR to Titan	NEG_X to NTP	Pick up at VIMS_IR to Titan, NEG_X to NTP; Hand off at VIMS_IR to Titan, NEG_X to NTP. Deadband: (0.5,2.0,0.5); Primary Target Lat-Long of 72.7, 153.6
CIRS_232TI_FIRNADMAP002_PRIME	V	2016-048T02:28:41	GMB_E232_TITAN_T117+000T02:39:00	000T02:21:00	2016-048T04:49:41	CIRS_FP1 to Titan	PIC	Pick up at VIMS_IR to Titan, NEG_X to NTP; Hand off at CIRS_FP1 to Titan, PIC. Pickup at VIMS_IR to Titan, 72.7N 153.6W, NEG_X to NTP.
CIRS_232TI_MIRLMBMAP002_PRIME	V	2016-048T04:49:41	GMB_E232_TITAN_T117+000T05:00:00	000T04:00:00	2016-048T08:49:41	CIRS_FPB to Titan	PIC	Pick up at CIRS_FP1 to Titan, PIC; Hand off at CIRS_FP1 to Titan, PIC.
CIRS_232TI_FIRNADCMP002_PRIME	I, U, V	2016-048T08:49:41	GMB_E232_TITAN_T117+000T09:00:00	000T02:00:00	2016-048T10:49:41	CIRS_FP1 to Titan	PIC	Pick up at CIRS_FP1 to Titan, PIC; Hand off at CIRS_FP1 to Titan, PIC.
CIRS_232TI_MIDIRTMAP002_PRIME	I, V	2016-048T10:49:41	GMB_E232_TITAN_T117+000T11:00:00	000T04:00:19	2016-048T14:50:00	CIRS_FPB to Titan	PIC	Pick up at CIRS_FP1 to Titan, PIC; Hand off at XBAND to Earth (0.0,0.0,-9.5 deg. offset), NEG_Y to Saturn. Template A3: ISS Rider
End Custom Period		2016-048T14:50:00	GMB_E232_TITAN_T117+000T15:00:19	000T00:00:01	2016-048T14:50:01			
SP_232TI_DEADTIME048_PRIME		2016-048T14:50:00	GMB_E232_TITAN_T117+000T15:00:19	000T00:15:00	2016-048T15:05:00	XBAND to Earth (0.0,0.0,-9.5 deg. offset)	NEG_Y to Saturn	

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
SP_232EA_C70METNON048_PRIME	C	2016-048T15:05:00		000T10:00:00	2016-049T01:05:00	XBAND to Earth (0.0,0.0,-9.5 deg. offset)	Rolling	MIMI.NEG_Y to Saturn (0,0,-9.5).CIRS heating.
SP_232TI_WAYPTTURN049_PRIME		2016-049T01:05:00		000T00:40:00	2016-049T01:45:00	NEG_Y to Titan	NEG_X to NTP	
NEW WAYPOINT		2016-049T01:45:00		000T11:50:00	2016-049T13:35:00	NEG_Y to Titan	NEG_X to NTP	
ISS_232TI_CLOUD001_PRIME	C, V	2016-049T01:45:00		000T04:00:00	2016-049T05:45:00	ISS_NAC to Titan	NEG_X to NTP	No Preference to secondary pointing
ISS_232TI_CLOUD002_PRIME	C, V	2016-049T05:45:00		000T03:10:00	2016-049T08:55:00	ISS_NAC to Titan	NEG_X to NTP	No Preference to secondary pointing
ISS_232TI_CLOUD003_PRIME	C, U, V	2016-049T08:55:00		000T01:00:00	2016-049T09:55:00	ISS_NAC to Titan	NEG_X to NTP	No Preference to secondary pointing
RADAR_232TI_RADIOMCAL133_PRIME		2016-049T09:55:00		000T02:00:00	2016-049T11:55:00	NEG_Z to Titan	NEG_X to NTP	No Preference to secondary pointing
ISS_232TI_CLOUD004_PRIME	C, U, V	2016-049T11:55:00		000T01:00:00	2016-049T12:55:00	ISS_NAC to Titan	NEG_X to NTP	No Preference to secondary pointing
SP_232EA_DLTURN049_PRIME		2016-049T12:55:00		000T00:40:00	2016-049T13:35:00	XBAND to Earth (0.0,0.0,-9.5 deg. offset)	NEG_Y to Saturn	
NEW WAYPOINT		2016-049T13:35:00		000T10:30:00	2016-050T00:05:00	XBAND to Earth (0.0,0.0,-9.5 deg. offset)	NEG_Y to Saturn	
SP_232EA_YGAP049_PRIME	E	2016-049T13:35:00		000T01:30:00	2016-049T15:05:00	XBAND to Earth (0.0,0.0,-9.5 deg. offset)	NEG_Y to Saturn	
SP_232EA_C34HEFNON049_PRIME	C	2016-049T15:05:00		000T09:00:00	2016-050T00:05:00	XBAND to Earth (0.0,0.0,-9.5 deg. offset)	6_Hr_Rolling	MIMI.NEG_Y to Saturn (0,0,-9.5).SRU.CIRS heating.

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T117 TOST High-Priority Observations

T117: Summary of PIEs and Other High Priority Observations

Discipline	CIMS Request Name	Start Time	End Time	Flexibility in secondary pointing	Comments (e.g., pointing tolerance, uniqueness; relative priority)	Science Traceability Matrix Code(s)	Pointing designer POC
Titan	CIRS_232TI_MIRLMBINT001_PRIME	2016-047T14:49:41	2016-047T18:49:41	Significant Science Impact if Secondary Changed	Significant Impact to Science	TC1b or TN1c	conor.nixon@nasa.gov
Titan	RSS_232TI_OCC001_PRIME	2016-047T22:49:41	2016-048T00:23:41	Significant Science Impact if Secondary Changed	On thrusters, so attitude should stick.	TN2c, TN2d	jeff.boyer@jpl.nasa.gov
Titan	RSS_232TI_BISTATOUT001_PRIME	2016-048T00:23:41	2016-048T01:59:41	Significant Science Impact if Secondary Changed	On thrusters, so attitude should stick.	TN1a	jeff.boyer@jpl.nasa.gov
Titan	CIRS_232TI_MIRLMBMAP002_PRIME	2016-048T04:49:41	2016-048T08:49:41	Significant Science Impact if Secondary Changed	Significant Impact to Science	TC1b or TN1c	conor.nixon@nasa.gov

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T117 TOST Science Highlights (1/3)

DOY 047 (Feb 16) – Starting on the inbound, CIRS will perform mapping of stratospheric temperatures and gas composition, to monitor seasonal change as Titan's southern hemisphere moves towards winter. VIMS will ride along with CIRS to monitor the evolution of the South Polar vortex. Next, VIMS is prime and will acquire a mosaic at 40 km footprint of the tropical region located at the subsaturn hemisphere. Long integration time will be used to help identify the composition of the dune fields of Aztlan and Fensal. VIMS will also look for clouds at high northern latitudes. ISS will ride along with both CIRS and VIMS inbound to image Titan's surface and atmosphere at low-southern latitudes over Titan's sub-Saturnian hemisphere, including Aztlan and Tsegihi.

During closest approach, RSS will target a grazing atmospheric occultation to profile the thermal structure of the atmospheric - ingress and egress latitudes of the occultation are ~7S and ~30N degrees, respectively.

T117 has MAPS objectives as well. With SLT similar to T9, T114, and T116 but at lower altitude, MAG will explore the south polar, late-midnight sector of the induced magnetosphere of Titan explored during those previous flybys. MIMI will measure energetic ion and electron energy input to Titan's atmosphere. Finally, RPWS will measure thermal plasmas in Titan's ionosphere and surrounding environment, search for lightning in Titan's atmosphere, and investigate the interaction of Titan with Saturn's atmosphere.

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DOY 048 (Feb 17) – The RSS Occultation is followed an outbound high northern latitude egress-only Bistatic scattering of ground track likely crossing small lakes. It covers the region from about (80N, 190W) to about (70N, 240W) degrees, and captures near-grazing scattering angle decreasing from about 80 to 75 degrees. Measurements of the absolute power of the polarized echo components, when detectable, yield information about surface reflectivity, dielectric constant, and roughness.

Following RSS, VIMS will look for a specular reflection on the small lakes, targeting 72.7N, 153.6W. Then, CIRS is prime and will perform mapping of stratospheric temperatures and gas composition, to monitor seasonal change as Titan's northern hemisphere moves to spring. CIRS will also perform a north-south scan to measure surface temperatures, and sensitive vertical mapping of temperatures and gas profiles in limb mapping mode, contributing to a 3-D picture of Titan's atmospheric circulation. VIMS will ride along with CIRS on the outbound and will monitor the evolution of the North Pole area. ISS will ride along as well to image Titan's surface and atmosphere at high phase angles over Titan's anti-Saturnian hemisphere.

T117 MAPS objectives continue into DOY 048.

Playback of the data will occur over the Canberra 70M downlink.

DOY 049 (Feb 18) – Closest approach data playback continues over the Canberra 70M.

Following the playback, ISS will monitor Titan to track clouds and the evolution thereof as northern summer approaches. VIMS will also ride along to monitor the evolution of the North Pole area, and look for clouds at high northern latitudes.
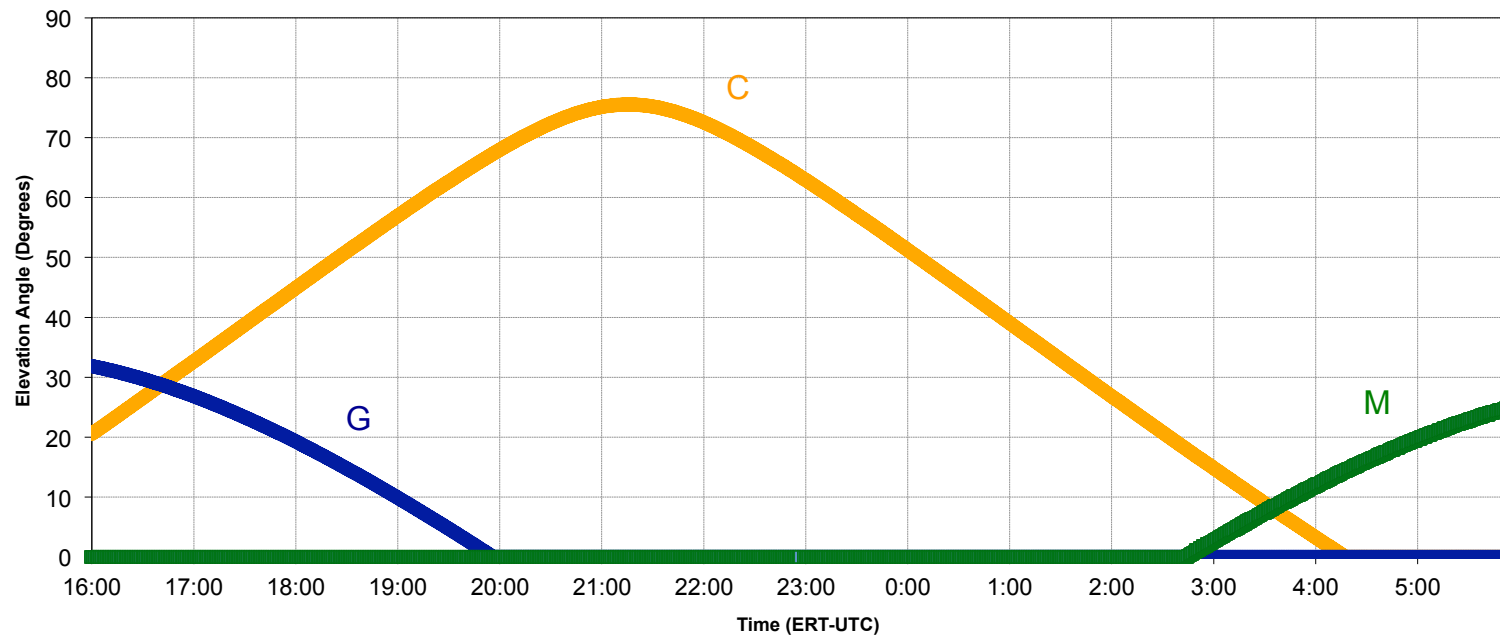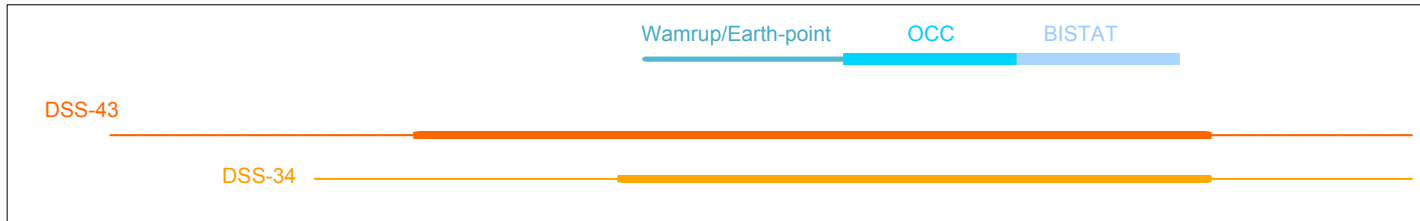
Downlink will occur over Canberra 34M HEF.

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S93 Rev 232 T117 Titan Occultation and Bistatic Experiment
2016 047-048 / February 16-17, 2016

OWLT ~1:25
RTLT ~ 2:50

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Notes (1/2)

- Pointing:
    - SP Turn to RSS Waypoint allocated only 10 minutes, but on RCS (PDT: turn duration 00:07:55)
    - S/C will be pointing at Titan Lat-Long during RCS/RWA Transition – OK per AACS KPT run: valid quiescent period
    - 01:25:00 gap in SPASS due to RSS Warmup

- Data Volume:
    - No carryover to next segment
    - SMT Warnings (OK and expected, RADAR Warmup in S_N_ER_5A for 1st 15 minutes):
        - RADAR_232OT_WU4RADCAL133_RIDER: Found an activity whose data are NOT recorded in this telemetry mode "S_N_ER_3" commanded at 2016-049T06:00:00.000. Volume of 6.789658 Mb not given data policing space.

- DSN:
    - DSS-14 extended maintenance from DOY 025-134 (not requested in T117)
    - No ap_downlink report check warnings
    - Level 3 Requests: C70 & C34BWG passes requested on DOY 047 in support of RSS Occultation & Bistatic observations.

- Resource checker:
    - CIRS_232TI_FIRNADMAP002_PRIME, CIRS_232TI_MIRLMBMAP002_PRIME, CIRS_232TI_FIRNADCMP002_PRIME: Custom period request is using PIC in secondary BV of handoff pointing – OK, CIRS picking up/handing off to self.
    - Gap in Prime SPASS requests between SP_232EA_WAYPTTURN047_PRIME and RSS_232TI_OCC001_PRIME. Gap of 000T01:25:00 – OK, RSS Warmup. S/C is on Earth-Point during gap.
    - RSS_232TI_OCC001_PRIME, RSS_232TI_BISTATOUT001_PRIME: Prime request inside a Movable Block not referenced to GMB_E232_TITAN_T117 – OK, RSS Observations referenced to LUB inside of GMB
    - ISS_232TI_CLOUD002_PRIME: Telemetry mode transition – to S_N_ER_5A for 15m to see RADAR Warmup. OK with ISS.

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

Notes (2/2)

- Opmodes:
  - No RWA-slow or unique opmodes.
  - RSS and RADAR power-on opmodes allow for sufficient warm-ups prior to observations.

- Hydrazine:
  - KPT Estimate: 340 g (per L. Andrade analysis)
  - FSDS Estimate: 342 g
  - Deadbands:
    - 0.5. 2.0, 0.5 mrad from RCS begin to C/A-02:35:00 (VIMS)
    - 2.0. 2.0, 2.0 mrad from C/A-02:35:00 to C/A-02:25:00 (SP)
    - 0.5. 0.5, 2.0 mrad from C/A-02:25:00 to C/A+02:15:00 (RSS)
    - 0.5. 2.0, 0.5 mrad from C/A+02:10:00 to RCS end (VIMS)
    - Steps for walking deadband = 3

- Special Activities:
  - None (no dual playback)

Liens

Sequence Liens (should all be SPLAT items):

- No Liens for T117

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