

TOST: Integration

117TI (T61) Wrap-up

January 9, 2009

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T61 Segment Basics

Segment times:

BEG: 2009-237T00:04:00

END: 2009-239T02:04:00

Altitude: 970 km

Time of C/A: 2009-237T12:51:38 (080806 ref. traj.)

Epoch: GMB_E117_Titan61

Sequence: S53

<p>At least 2 weeks prior to the Kickoff Meeting make sure that all requests are in CIMS</p>	<p>Kickoff Meeting</p> <p><u>Present</u> Master Timeline Draft Op Modes Draft Telem Modes Draft RCS Deadband</p> <p><u>Discuss</u> Timeline Op Modes Telem Modes Deadbands for RCS</p> <p><u>Homework</u> Custom Handoff Attitudes Unique Op Mode Requirements (SCO) Turn Assignments CCRs High Level Science</p>	<p>Detailed Meeting</p> <p><u>Present</u> Master Timeline SMT Report Timeline Graphic TOL SPASS DSN Reports Dual Playback Science Draft Data Volume Cuts</p> <p><u>Discuss</u> Data Volume Cuts</p> <p><u>Homework</u> CCRs High Level Science Objectives</p>	<p>Wrap-up Meeting</p> <p><u>Present</u> Wrap-up Package Checklist High Level Science Objectives</p> <p><u>Discuss</u> N/A</p> <p><u>Homework</u> N/A</p>
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T61 High-level Science Objectives

CIRS – Mid-infrared vertical temperature mapping.

ISS – ISS will ride along with VIMS from C/A + ~1 hour onward to image western Senkyo at low phase angles and a variety of resolutions as well as to monitor clouds. (0.5-hour illuminated prime observation primarily for photometry.)

UVIS – UVIS will obtain an image cube of Titan's atmosphere at EUV and FUV wavelengths by sweeping its slit across the disk. These cubes provide spectral and spatial information on nitrogen emissions, H emission and absorption, absorption by simple hydrocarbons, and the scattering properties of haze aerosols. This is one of many such cubes gathered over the course of the mission to provide latitude and seasonal coverage of Titan's middle atmosphere and stratosphere.

VIMS – T61 outbound is a very good opportunity for optical instruments because the phase angle is about 10 degrees. VIMS will observe the southern hemisphere at longitudes similar to those observed at T57, T58, T59 and T60. The resolution can be as good as 5 km/pixel at the beginning of the observation. From T57 to T61, VIMS will observe the same area with different phase angles, which should provide a phase curve. This area was not observed during the prime mission.

RADAR - Scatterometry, altimetry, SAR. SAR is near-equatorial, covering Dilmun, Adiri and Belet. SAR parallels and overlaps T8 - should provide good stereo opportunity over Belet sand dunes.

INMS - INMS riding with RADAR on the night-side wake at low/equatorial Southern latitudes. *This is the only Southern equatorial wake observation in the mission.*

MAG – T61 is an upstream, post-dusk flyby, with a minimum altitude of 970 km. MAG measurements will provide a description of the draping and the pileup of the external magnetic field around Titan near the terminator. It will be also a good complement to T52, T53, T54, T55, T56, T57, T58, T59 and T60 in order to characterize the background field for a similar local time with respect to Saturn and different SKR longitudes.

MIMI – Energetic ion and electron energy input to atmosphere. ****High value****

RPWS - Measure thermal plasmas in Titan's ionosphere and surrounding environment; search for lightning in Titan's atmosphere; investigate the interaction of Titan with Saturn's magnetosphere.

Master Timeline for T61

T61		970					
Start Time	End Time	Prime Activity	Obs. Detail	Op Mode	TLM Mode	Comments	
2009-237T00:04:00	2009-237T00:10:00	S53 IVP	XBAND to Earth; POS_X to NEP	DFPW Normal	S_N_ER_3		
2009-237T00:10:00	2009-237T00:44:00	SP Turn to WP	No FR violations. 24.0 min	DFPW Normal	S_N_ER_3	NEG_Y to Titan (-10.5, 0, 0), NEG_X to Sun.	
2009-237T00:44:00	C/A - 11:51:48	OD Uncertainty Dead Time		DFPW Normal	S_N_ER_3		
C/A - 11:51:48	-09:00	ISS	Replaced VIMS (found a safe observation)	DFPW Normal	S_N_ER_3		
-09:00	-05:10	CIRS	Template R	DFPW Normal > RADWU @ -05:25	S_N_ER_3, then S_N_ER_5a for last 15 min. (@ -05:25)	Last 15 min. for RADAR w arm-up	
-05:10	-02:20	VIMS	Template Y	RADWU	S_N_ER_3		
-02:20	-01:12	RADAR	Scatterometry/Radiometry	RADWU > RADRWA @ -02:20	S_N_ER_8	Includes turn from waypoint	
-01:12	-01:11	RWA to RCS Transition		RADRWA > RADRCS @ -01:12	S_N_ER_8	deadband (2,2,2)	
-01:11	-00:30	RADAR	Hi-SAR	RADRCS	S_N_ER_8		
-00:30	-00:18	RADAR		RADRCS	S_N_ER_8		
-00:18	0	RADAR	SAR over landing site/Stereo on Dunes	RADRCS	S_N_ER_8		
2009-237T12:51:38	(080806 ref traj.)	CLOSEST APPROACH		NEG_Z to Titan, NEG_X to Titan_SC_RAM	RADRCS		
0	+00:15	RADAR	SAR	RADRCS	S_N_ER_8		
+00:15	+00:23	Turn back to WP	Check turn times Neg_Y to Titan (-10.5, 0, 0), NEG_X to Sun	RADRCS	S_N_ER_8		
+00:23	+00:44:05	RCS to RWA Transition		RADRCS > ORSRCS end by +00:23 ORSRCS > DFPW Normal @ +00:23	S_N_ER_3	deadband (2,2,2) during transition (necessary as per L.Burke, 12/23)	
+00:44:05	+02:00	VIMS		DFPW Normal	S_N_ER_3		
+02:00	+05:00	VIMS	Template Y	DFPW Normal	S_N_ER_3		
+05:00	+08:30	VIMS	Template I	DFPW Normal	S_N_ER_3		
+08:30	+09:00	ISS	Template I	DFPW Normal	S_N_ER_3		
+09:00	+14:00	VIMS	Template V	DFPW Normal	S_N_ER_3		
+14:00	C/A + 25	VIMS	Template B	DFPW Normal	S_N_ER_3		
C/A + 25	2009-238T14:24:00	OD Uncertainty Dead Time		DFPW Normal	S_N_ER_3		
2009-238T14:24:00	2009-238T15:04:00	SP Turn to Earth for downlink	XBAND to Earth; NEG_X to NEP (Safe, 26.2 min)	DFPW Normal	S_N_ER_3		
2009-238T15:04:00	2009-239T00:04:00	70-mArray	Rolling	DFPW Normal	RTE_N_SPB	G70	
2009-239T00:04:00	2009-239T02:04:00		Rolling	DFPW Normal	RTE_N_SPB	C70	

- Dual Playback: -18 min to +15 min (506 Mb)
- Deadband (2, 2, 20) for RADAR

T61 Telemetry Mode Report

TELEMETRY MODE REPORT

EPOCH RELATIVE	UTC	DURATION	TELEMETRY MODE	REQUEST
	2009-237T00:04:00.000	07:22:38	S_N_ER_3	SP_117NA_G70OBSNON238_NA
GMB_E117_Titan61-000T05:25:00	2009-237T07:26:38.000	00:15:00	S_N_ER_5A	SP_117NA_G70OBSNON238_NA
GMB_E117_Titan61-000T05:10:00	2009-237T07:41:38.000	02:50:00	S_N_ER_3	SP_117NA_G70OBSNON238_NA
GMB_E117_Titan61-000T02:20:00	2009-237T10:31:38.000	02:43:00	S_N_ER_8	SP_117NA_G70OBSNON238_NA
GMB_E117_Titan61+000T00:23:00	2009-237T13:14:38.000	001T01:49:22	S_N_ER_3	SP_117NA_G70OBSNON238_NA
	2009-238T15:04:00.000	00:45:00	RTE_N_SPB_99540	SP_117EA_G70METNON238_PRIME
	2009-238T15:49:00.000	01:15:00	RTE_N_SPB_110600	SP_117EA_G70METNON238_PRIME
	2009-238T17:04:00.000	05:00:00	RTE_N_SPB_124425	SP_117EA_G70METNON238_PRIME
	2009-238T22:04:00.000	01:30:00	RTE_N_SPB_110600	SP_117EA_G70METNON238_PRIME
	2009-238T23:34:00.000	00:30:00	RTE_N_SPB_99540	SP_117EA_G70METNON238_PRIME
	2009-239T00:04:00.000	02:00:00	RTE_N_SPB_110600	SP_117EA_C70METNON238_PRIME

[Current warnings \(ok, portion of RADAR warm-up in the blind\):](#)

RADAR_117TI_T61WARMUP001_RIDER

Found an activity whose data are NOT recorded in this telemetry mode "S_N_ER_3" commanded at 2009-237T07:41:38. Volume of 4.837248 Mb not given data policing space.

T61 SMT Report

12/22/08 SMT report:

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

DOWNLINK PASS NAME	Start doy hh:mm	End doy hh:mm	OBSERVATION_PERIOD							DOWNLINK_PASS							
			P4			P5	RECORDED			PLAYBACK							
			START (Mb)	SCI (Mb)	HK+E (Mb)	TOTAL (Mb)	CPACTY (Mb)	MGRN (Mb)	OPNAV (Mb)	SCI (Mb)	ENGR (Mb)	TOTAL (Mb)	CPACTY (Mb)	MARGN (Mb)	NET_MARGN (Mb)	(%)	CAROVR (Mb)
SP_117EA_G70METNON238_PRIME	238 15:04	239 00:04	0	2784	177	2961	3552	591	0	241	53	3255	3183	-73	2	0%	72
SP_117EA_C70METNON238_PRIME	239 00:04	239 02:04	72	0	506	579	3552	2974	0	81	12	671	674	2	2	0%	0

All good!

T61 Data Volume by Instrument

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	237 00:04	238 15:04	211.3	83.3	288.6	27.5	100.0	95.4	111.8	748.9	550.6	15.7	521.5	0.0	43.9	2798.5
OBSERVATION_SI	237 00:04	238 15:04	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
SP_117EA_G70METNON238_PRIME	238 15:04	239 00:04	22.7	17.0	86.4	3.2	0.0	19.4	24.3	0.0	61.3	4.9	0.0	0.0	0.0	239.3
OBSERVATION_NOR	237 00:04	239 00:04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	506.5	506.5
SP_117EA_C70METNON238_PRIME	239 00:04	239 02:04	5.0	3.8	14.4	0.7	0.0	4.3	5.4	0.0	45.4	1.1	0.0	0.0	0.0	80.1
DAILY TOTAL SCIENCE	237 00:04	239 02:04	239.0	104.0	393.4	31.5	100.0	119.2	141.5	748.9	657.3	21.7	521.5	0.0		

	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)	239.0	104.0	393.4	31.5	100.0	119.2	141.5	748.9	657.3	21.7	521.5	0.0

T61 DSN Report

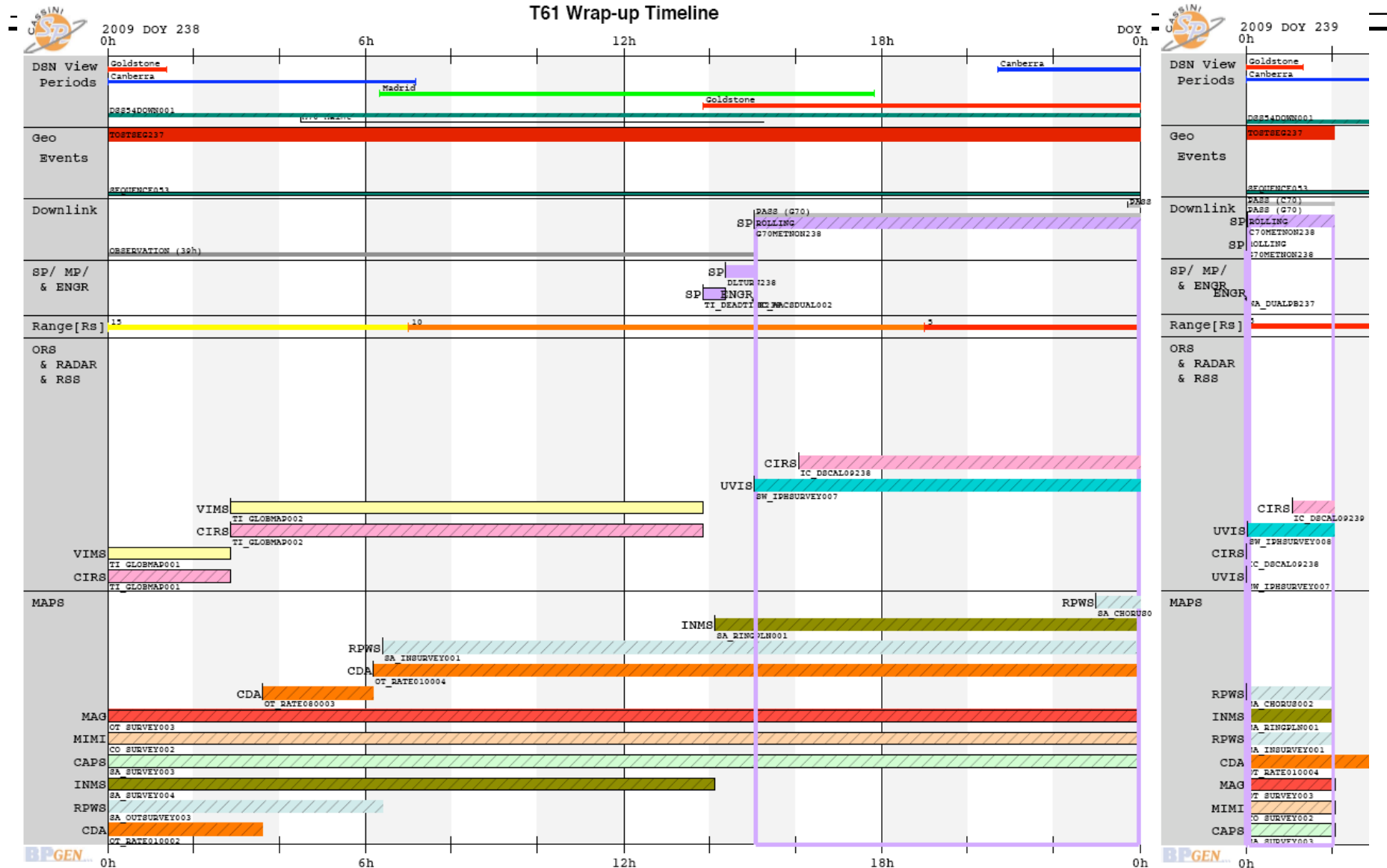
CASSINI DOWNLINK/DSN COVERAGE SUMMARY for 117TI_T61_081223.apf on 2008-Dec-22 17:39:07
(+ = pass overlaps with previous pass; * = conflicts with DSN maintenance; o = overlaps occultation)

DOWNLINK PASS					DSN PASS						
NAME	START_TO_END SCET	START_TO_END ERT	DUR hh:mm	DATA_RATES kbps	ID	START_TO_END SCET	START_TO_END ERT	DUR hh:mm	CALS min	LABEL	CNFG
G70METNON238	238T15:04-00:04	238T16:30-01:30	09:00	99,110,124,110,99	14	238T15:04-00:04	238T16:30-01:30	09:00	60 /15	TP	N003
+C70METNON238	239T00:04-02:04	239T01:30-03:30	02:00	110	43	238T23:44-02:04	239T01:10-03:30	02:20	60 /15	TP	N003

No maintenance overlaps!

T61 SPASS

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
Sequence S53, length = 41 days		2009-237700:04:00	E117_SEQUENCE_053+000T00:00:00	041T03:59:00	2009-278T04:03:00			
Titan Flyby T61 Segment		2009-237700:04:00		002T02:00:00	2009-239T02:04:00			
SP_117EA_S531VP237_PRIME		2009-237700:04:00		000T00:06:00	2009-237700:10:00	XBAND to Earth	POS_X to NEP	S53 IVP Gap
SP_117TI_WAYPTTURN237_PRIME		2009-237700:10:00		000T00:34:00	2009-237700:44:00	NEG_Y to Titan (-10.5,0.0,0.0 deg. offset)	NEG_X to Sun	
NEW WAYPOINT		2009-237700:44:00		002T01:20:00	2009-239T02:04:00	NEG_Y to Titan (-10.5,0.0,0.0 deg. offset)	NEG_X to Sun	
SP_117TI_DEADTIME237_PRIME		2009-237700:44:00		000T00:15:50	2009-237700:59:50	NEG_Y to Titan (-10.5,0.0,0.0 deg. offset)	NEG_X to Sun	
ISS_117TI_NIGHTWAC001_PRIME	C	2009-237701:00:38	GMB_E117_Titan61-000T11:51:00	000T02:51:00	2009-237703:51:38	ISS_NAC to Titan (0.0,0.0,1.5 deg. offset)	NEG_X to Sun	
CIRS_117TI_MIRLMBINT001_PRIME	C, R, U, V	2009-237703:51:38	GMB_E117_Titan61-000T09:00:00	000T03:50:00	2009-237707:41:38	CIRS_FPB to Titan	PIC	
VIMS_117TI_REGMAP001_PRIME	C, R	2009-237707:41:38	GMB_E117_Titan61-000T05:10:00	000T02:50:00	2009-237710:31:38	VIMS_IR to Titan	NEG_X to Sun	
RADAR_117TI_T61INSCAT001_PRIME	M	2009-237710:31:38	GMB_E117_Titan61-000T02:20:00	000T01:08:00	2009-237711:39:38	NEG_Z to Titan	NEG_X to NTP	
ENGR_117SC_RADRCS237_PRIME	M	2009-237711:39:38	GMB_E117_Titan61-000T01:12:00	000T00:01:00	2009-237711:40:38	NEG_Z to Titan	NEG_X to NTP	(2,2,20) deadband
RADAR_117TI_T61IHISAR001_PRIME	M	2009-237711:40:38	GMB_E117_Titan61-000T01:11:00	000T00:41:00	2009-237712:21:38	NEG_Z to Titan	NEG_X to NTP	
RADAR_117TI_T61INALT001_PRIME	M	2009-237712:21:38	GMB_E117_Titan61-000T00:30:00	000T00:12:00	2009-237712:33:38	NEG_Z to Titan	NEG_X to Titan_SC_RAM	pick up 2ndary from -X_NTP
Begin Dual Playback Science		2009-237712:33:38	GMB_E117_Titan61-000T00:18:00	000T00:00:01	2009-237712:33:39			
RADAR_117TI_T61INOSAR001_PRIME	M	2009-237712:33:38	GMB_E117_Titan61-000T00:18:00	000T00:41:00	2009-237713:14:38	NEG_Z to Titan	NEG_X to Titan_SC_RAM	
117TI (t) T61 TITAN Inbou...		2009-237712:51:38		000T00:00:01	2009-237712:51:39			
End Dual Playback Science		2009-237713:06:38	GMB_E117_Titan61+000T00:15:00	000T00:00:01	2009-237713:06:39			
ENGR_117SC_DFPWBAS237_PPS	C, M, V	2009-237713:14:38	GMB_E117_Titan61+000T00:23:00	000T00:21:05	2009-237713:35:43	NEG_Y to Titan (-10.5,0.0,0.0 deg. offset)	NEG_X to Sun	(2,2,20) deadband
VIMS_117TI_HIRES001_PRIME	C, M	2009-237713:35:43	GMB_E117_Titan61+000T00:44:05	000T01:15:55	2009-237714:51:38	VIMS_IR to Titan	NEG_X to Sun	
VIMS_117TI_REGMAP002_PRIME	C	2009-237714:51:38	GMB_E117_Titan61+000T02:00:00	000T03:00:00	2009-237717:51:38	VIMS_IR to Titan	NEG_X to Sun	
VIMS_117TI_MEDRES001_PRIME	C	2009-237717:51:38	GMB_E117_Titan61+000T05:00:00	000T03:30:00	2009-237721:21:38	VIMS_IR to Titan	NEG_X to Sun	
ISS_117TI_PHOTOMWAC001_PRIME	C, U, V	2009-237721:21:38	GMB_E117_Titan61+000T08:30:00	000T00:30:00	2009-237721:51:38	ISS_NAC to Titan	NEG_X to Sun	
VIMS_117TI_GLOBMAP001_PRIME	C	2009-237721:51:38	GMB_E117_Titan61+000T09:00:00	000T05:00:00	2009-238T02:51:38	VIMS_IR to Titan	NEG_X to Sun	
VIMS_117TI_GLOBMAP002_PRIME	C	2009-238T02:51:38	GMB_E117_Titan61+000T14:00:00	000T11:00:00	2009-238T13:51:38	VIMS_IR to Titan	NEG_X to Sun	
SP_117TI_DEADTIME238_PRIME		2009-238T13:51:38	GMB_E117_Titan61+001T01:00:00	000T00:32:22	2009-238T14:24:00	NEG_Y to Titan (-10.5,0.0,0.0 deg. offset)	NEG_X to Sun	
SP_117EA_DLTURN238_PRIME		2009-238T14:24:00		000T00:40:00	2009-238T15:04:00	XBAND to Earth	NEG_X to NEP	
SP_117EA_G70METNON238_PRIME	C	2009-238T15:04:00		000T09:00:00	2009-239T00:04:00	XBAND to Earth	Rolling (or Rolling/bias)	NEG_X to NEP
Pointer Reset in preparatio...		2009-239T00:04:00		000T00:00:01	2009-239T00:04:01			
SP_117EA_C70METNON238_PRIME	C	2009-239T00:04:00		000T02:00:00	2009-239T02:04:00	XBAND to Earth	Rolling	NEG_X to NEP



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Request	Start Time	Epoch	Duration	End Time	Rate	Data Volume	SPASS Type	Primary Pointing	Secondary Pointing	Pointing Agreement
MP 112SA DSS54DOWN001 NA	2009-158T22:41:49		090T23:50:23	2009-249T22:32:12	0	0	Non-SPASS			
CAPS 117SA SURVEY002_PRIME	2009-237T00:04:00	E117_SEQUENCE_053+000T00:00:00	000T10:47:38	2009-237T10:51:38	700	27.201	Non-SPASS			
CDA 117OT RATE010002 RIDER	2009-237T00:04:00		001T03:33:58	2009-238T03:37:58	524	52.001	Non-SPASS			
INMS 117SA SURVEYSEQ001_INMS	2009-237T00:04:00	E117_SEQUENCE_053+000T00:00:00	000T00:43:00	2009-237T00:47:00	100	0.258	Non-SPASS			
MAG 117OT SURVEY002_PRIME	2009-237T00:04:00		000T08:47:38	2009-237T08:51:38	600	18.995	Non-SPASS			
MIMI 117CO SURVEY003 RIDER	2009-237T00:04:00		000T10:47:38	2009-237T10:51:38	750	29.143	Non-SPASS			
MP 117NA SEQUENCE053 NA	2009-237T00:04:00	E117_SEQUENCE_053+000T00:00:00	041T03:59:00	2009-278T04:03:00	0	0	SPASS Note			
RPWS 117SA OUTSURVEY003_PRIME	2009-237T00:04:00		001T06:20:00	2009-238T06:24:00	1310	143.053	Non-SPASS			
SP 117EA S531VP237_PRIME	2009-237T00:04:00		000T00:06:00	2009-237T00:10:00	0	0	Prime	XBAND to Earth	POS X to NEP	S53 1VP Gap
SP 117NA G700BSNON238 NA	2009-237T00:04:00		001T15:00:00	2009-238T15:04:00	0	0	Non-SPASS			
SP 117NA TOSTSEG237 NA	2009-237T00:04:00		002T02:00:00	2009-239T02:04:00	0	0	SPASS Note			
CIRS 117OT SEQSETUP053_PRIME	2009-237T00:09:00	E117_SEQUENCE_053+000T00:05:00	000T00:02:00	2009-237T00:11:00	0	0	Non-SPASS			
SP 117TI WAYPTTURN237_PRIME	2009-237T00:10:00		000T00:34:00	2009-237T00:44:00	0	0	New Waypoint	NEG Y to Titan (-10.5,0.0,0.0 deg. offset)	NEG X to Sun	
SP 117TI DEADTIME237_PRIME	2009-237T00:44:00		000T00:15:50	2009-237T00:59:50	0	0	Prime	NEG Y to Titan (-10.5,0.0,0.0 deg. offset)	NEG X to Sun	
INMS 117SA RESELOAD001_INMS	2009-237T00:47:00	E117_SEQUENCE_053+000T00:43:00	000T00:07:00	2009-237T00:54:00	1	0	Non-SPASS			
INMS 117SA IEBLOAD001_INMS	2009-237T00:54:00	E117_SEQUENCE_053+000T00:50:00	000T00:05:00	2009-237T00:59:00	1	0	Non-SPASS			
INMS 117SA MRQ001_INMS	2009-237T00:59:00	E117_SEQUENCE_053+000T00:55:00	000T00:33:00	2009-237T01:32:00	1044	2.067	Non-SPASS			
CIRS 117TI NIGHTWAC001_ISS	2009-237T01:00:38	GMB E117 Titan61-000T11:51:00	000T02:51:00	2009-237T03:51:38	2000	20.52	SPASS Rider			
ISS 117TI NIGHTWAC001_PRIME	2009-237T01:00:38	GMB E117 Titan61-000T11:51:00	000T02:51:00	2009-237T03:51:38	0	50	Prime	ISS NAC to Titan (0.0,0.0,1.5 deg. offset)	NEG X to Sun	
INMS 117SA FLRATESCN001_INMS	2009-237T01:32:00	E117_SEQUENCE_053+000T01:28:00	000T00:22:59	2009-237T01:54:59	1498	2.066	Non-SPASS			
INMS 117SA SURVEY001_INMS	2009-237T02:50:59		000T09:00:39	2009-237T11:51:38	100	3.244	Non-SPASS			
CIRS 117TI MIRLMBINT001_PRIME	2009-237T03:51:38	GMB E117 Titan61-000T09:00:00	000T03:50:00	2009-237T07:41:38	4000	55.2	Prime	CIRS FPB to Titan	PIC	
CIRS 117TI MIRLMBINT001_SI	2009-237T03:51:38	GMB E117 Titan61-000T09:00:00	000T03:50:00	2009-237T07:41:38	0	4	SPASS Rider			
UVIS 117TI MIRLMBINT001_CIRS	2009-237T03:51:38	GMB E117 Titan61-000T09:00:00	000T03:50:00	2009-237T07:41:38	1006.4	13.888	SPASS Rider			
VIMS 117TI MIRLMBMAP001_CIRS	2009-237T03:51:38	GMB E117 Titan61-000T09:00:00	000T03:50:00	2009-237T07:41:38	2536.2	35	SPASS Rider			
ENGR 117SC RADWU237_PPS	2009-237T07:26:38	GMB E117 Titan61-000T05:25:00	000T00:00:07	2009-237T07:26:45	0	0	Non-SPASS			
RADAR 117TI T61WARMUP001 RIDER	2009-237T07:26:38	GMB E117 Titan61-000T05:25:00	000T03:05:00	2009-237T10:31:38	474.2	5.264	SPASS Rider			
CIRS 117TI REGMAP001_VIMS	2009-237T07:41:38	GMB E117 Titan61-000T05:10:00	000T02:50:00	2009-237T10:31:38	2000	20.4	SPASS Rider			
VIMS 117TI REGMAP001_PRIME	2009-237T07:41:38	GMB E117 Titan61-000T05:10:00	000T02:50:00	2009-237T10:31:38	3431.4	35	Prime	VIMS IR to Titan	NEG X to Sun	
MAG 117TI MAGTITAN001_PRIME	2009-237T08:51:38	GMB E117 Titan61-000T04:00:00	000T08:00:00	2009-237T16:51:38	988	28.454	Non-SPASS			
ENGR 117SC RADRWA237_PPS	2009-237T10:31:38	GMB E117 Titan61-000T02:20:00	000T00:00:44	2009-237T10:32:22	0	0	Non-SPASS			
RADAR 117TI T61INSCAT001_PRIME	2009-237T10:31:38	GMB E117 Titan61-000T02:20:00	000T01:08:00	2009-237T11:39:38	21176.6	86.401	Prime	NEG Z to Titan	NEG X to NTP	
CAPS 117TI T61INBND001_PRIME	2009-237T10:51:38	GMB E117 Titan61-000T02:00:00	000T01:14:00	2009-237T12:05:38	4000	17.76	SPASS Rider			
MIMI 117TI TITANIN001 RIDER	2009-237T10:51:38	GMB E117 Titan61-000T02:00:00	000T01:00:00	2009-237T11:51:38	900	3.24	SPASS Rider			
RPWS 117TI TIINTRMED001_PRIME	2009-237T10:51:38	GMB E117 Titan61-000T02:00:00	000T01:00:00	2009-237T11:51:38	15232	54.835	Non-SPASS			
ENGR 117SC AACSDUAL001_CDS	2009-237T11:36:38	GMB E117 Titan61-000T01:15:00	000T02:02:00	2009-237T13:38:38	1638	11.99	Non-SPASS			
ENGR 117SC RADRCS237_PPS	2009-237T11:39:38	GMB E117 Titan61-000T01:12:00	000T00:21:15	2009-237T12:00:53	0	0	Non-SPASS			
ENGR 117SC RADRCS237_PRIME	2009-237T11:39:38	GMB E117 Titan61-000T01:12:00	000T00:01:00	2009-237T11:40:38	0	0	Prime	NEG Z to Titan	NEG X to NTP	(2.2,20) deadband
RADAR 117TI T61IHISAR001_PRIME	2009-237T11:40:38	GMB E117 Titan61-000T01:11:00	000T00:41:00	2009-237T12:21:38	59145	145.497	Prime	NEG Z to Titan	NEG X to NTP	
INMS 117TI TITAN61001_INMS	2009-237T11:51:38	GMB E117 Titan61-000T01:00:00	000T00:40:00	2009-237T12:31:38	1498	3.595	Non-SPASS			
MIMI 117TI TITANCA001 RIDER	2009-237T11:51:38	GMB E117 Titan61-000T01:00:00	000T02:00:00	2009-237T13:51:38	1500	10.8	SPASS Rider			
RPWS 117TI TICAO01_PRIME	2009-237T11:51:38	GMB E117 Titan61-000T01:00:00	000T01:23:00	2009-237T13:14:38	29994.9	149.374	Non-SPASS			
CAPS 117TI T61CLOSE001_PRIME	2009-237T12:05:38	GMB E117 Titan61-000T00:46:00	000T01:31:00	2009-237T13:36:38	16000	87.36	SPASS Rider			
RADAR 117TI T61INALT001_PRIME	2009-237T12:21:38	GMB E117 Titan61-000T00:30:00	000T00:12:00	2009-237T12:33:38	30001.2	21.601	Prime	NEG Z to Titan	NEG X to Titan_SC_RAM	pick up 2ndary from -X NTP
INMS 117TI TITAN61001 RIDER	2009-237T12:31:38	GMB E117 Titan61-000T00:20:00	000T00:40:00	2009-237T13:11:38	1498	3.595	Non-SPASS			
ENGR 117NA BEGHIVAL237_CDS	2009-237T12:33:38	GMB E117 Titan61-000T00:18:00	000T00:00:01	2009-237T12:33:39	0	0	SPASS Note			
RADAR 117TI T61INOSAR001_PRIME	2009-237T12:33:38	GMB E117 Titan61-000T00:18:00	000T00:41:00	2009-237T13:14:38	201220	495.001	Prime	NEG Z to Titan	NEG X to Titan_SC_RAM	
MP 117TI FLYBYT061 NA	2009-237T12:51:38		000T00:00:01	2009-237T12:51:39	0	0	SPASS Note			

Inbound (up to C/A)

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Request	Start Time	Epoch	Duration	End Time	Rate	Data Volume	SPASS Type	Primary Pointing	Secondary Pointing	Pointing Agreement
MP 117TI FLYBYT061_NA	2009-237T12:51:38		000T00:00:01	2009-237T12:51:39	0	0	SPASS Note			
ENGR 117NA ENDHIVAL237_CDS	2009-237T13:06:38	GMB E117 Titan61+000T00:15:00	000T00:00:01	2009-237T13:06:39	0	0	SPASS Note			
INMS 117TI TITAN61002_INMS	2009-237T13:11:38	GMB E117 Titan61+000T00:20:00	000T00:40:00	2009-237T13:51:38	1498	3.595	Non-SPASS			
ENGR 117SC ORSRCS237_PPS	2009-237T13:14:30	GMB E117 Titan61+000T00:22:52	000T00:00:06	2009-237T13:14:36	0	0	Non-SPASS			
CIRS 117TI ENGR001_ENGR	2009-237T13:14:38	GMB E117 Titan61+000T00:23:00	000T00:21:05	2009-237T13:35:43	4000	5.06	SPASS Rider			
ENGR 117SC DFPWBIAS237_PPS	2009-237T13:14:38	GMB E117 Titan61+000T00:23:00	000T00:21:05	2009-237T13:35:43	0	0	Prime	NEG Y to Titan (-10.5,0.0,0.0 deg. offset)	NEG X to Sun	(2,2,20) deadband
RPWS 117TI TICA002_PRIME	2009-237T13:14:38	GMB E117 Titan61+000T00:23:00	000T00:37:00	2009-237T13:51:38	60995	135.409	Non-SPASS			
VIMS 117TI ENGR001_ENGR	2009-237T13:14:38	GMB E117 Titan61+000T00:23:00	000T00:21:05	2009-237T13:35:43	27668	35	SPASS Rider			
CIRS 117TI HIRE001_VIMS	2009-237T13:35:43	GMB E117 Titan61+000T00:44:05	000T01:15:55	2009-237T14:51:38	4000	18.22	SPASS Rider			
CIRS 117TI HIRE001_PRIME	2009-237T13:35:43	GMB E117 Titan61+000T00:44:05	000T01:15:55	2009-237T14:51:38	22393	102	Prime	VIMS_IR to Titan	NEG X to Sun	
CAPS 117TI T61OUTBND001_PRIME	2009-237T13:36:38	GMB E117 Titan61+000T00:45:00	000T01:15:00	2009-237T14:51:38	4000	18	SPASS Rider			
INMS 117SA SURVEY004_INMS	2009-237T13:51:38	GMB E117 Titan61+000T01:00:00	001T00:17:15	2009-238T14:08:53	100	8.744	Non-SPASS			
MIMI 117TI TITANOUT001_RIDER	2009-237T13:51:38	GMB E117 Titan61+000T01:00:00	000T01:00:00	2009-237T14:51:38	900	3.24	SPASS Rider			
RPWS 117TI TIINTRMED002_PRIME	2009-237T14:21:38	GMB E117 Titan61+000T01:30:00	000T00:30:00	2009-237T14:51:38	15232	27.418	Non-SPASS			
CAPS 117SA SURVEY003_PRIME	2009-237T14:51:38	GMB E117 Titan61+000T02:00:00	001T11:12:22	2009-239T02:04:00	700	88.719	Non-SPASS			
CIRS 117TI REGMAP002_VIMS	2009-237T14:51:38	GMB E117 Titan61+000T02:00:00	000T03:00:00	2009-237T17:51:38	2000	21.6	SPASS Rider			
MIMI 117CO SURVEY002_RIDER	2009-237T14:51:38	GMB E117 Titan61+000T02:00:00	001T11:12:22	2009-239T02:04:00	750	95.056	Non-SPASS			
VIMS 117TI REGMAP002_PRIME	2009-237T14:51:38	GMB E117 Titan61+000T02:00:00	000T03:00:00	2009-237T17:51:38	11574.1	125	Prime	VIMS_IR to Titan	NEG X to Sun	
MP 117SA RFXDESCEN117_NA	2009-237T14:55:31		000T00:00:01	2009-237T14:55:32	0	0	Non-SPASS			
MAG 117OT SURVEY003_PRIME	2009-237T16:51:38	GMB E117 Titan61+000T04:00:00	001T09:12:21	2009-239T02:03:59	600	71.725	Non-SPASS			
CIRS 117TI MEDRES001_VIMS	2009-237T17:51:38	GMB E117 Titan61+000T05:00:00	000T03:30:00	2009-237T21:21:38	2000	25.2	SPASS Rider			
VIMS 117TI MEDRES001_PRIME	2009-237T17:51:38	GMB E117 Titan61+000T05:00:00	000T03:30:00	2009-237T21:21:38	4127	52	Prime	VIMS_IR to Titan	NEG X to Sun	
CIRS 117TI PHOTOMWAC001_ISS	2009-237T21:21:38	GMB E117 Titan61+000T08:30:00	000T00:30:00	2009-237T21:51:38	4000	7.2	SPASS Rider			
ISS 117TI PHOTOMWAC001_PRIME	2009-237T21:21:38	GMB E117 Titan61+000T08:30:00	000T00:30:00	2009-237T21:51:38	0	50	Prime	ISS_NAC to Titan	NEG X to Sun	
UVIS 117TI PHOTOMWAC001_ISS	2009-237T21:21:38	GMB E117 Titan61+000T08:30:00	000T00:30:00	2009-237T21:51:38	1006.4	1.812	SPASS Rider			
VIMS 117TI PHOTOMWAC001_ISS	2009-237T21:21:38	GMB E117 Titan61+000T08:30:00	000T00:30:00	2009-237T21:51:38	23611.1	42.5	SPASS Rider			
CIRS 117TI GLOBMAP001_VIMS	2009-237T21:51:38	GMB E117 Titan61+000T09:00:00	000T05:00:00	2009-238T02:51:38	2000	36	SPASS Rider			
VIMS 117TI GLOBMAP001_PRIME	2009-237T21:51:38	GMB E117 Titan61+000T09:00:00	000T05:00:00	2009-238T02:51:38	2500	45	Prime	VIMS_IR to Titan	NEG X to Sun	
CIRS 117TI GLOBMAP002_VIMS	2009-238T02:51:38	GMB E117 Titan61+000T14:00:00	000T11:00:00	2009-238T13:51:38	2000	79.2	SPASS Rider			
VIMS 117TI GLOBMAP002_PRIME	2009-238T02:51:38	GMB E117 Titan61+000T14:00:00	000T11:00:00	2009-238T13:51:38	1262.6	50	Prime	VIMS_IR to Titan	NEG X to Sun	
CDA 1170T RATE080003_RIDER	2009-238T03:37:58		000T02:34:00	2009-238T06:11:58	1572	14.525	Non-SPASS			
CDA 1170T RATE010004_RIDER	2009-238T06:11:58		001T04:04:00	2009-239T10:15:58	524	52.945	Non-SPASS			
RPWS 117SA INSURVEY001_PRIME	2009-238T06:24:00		000T19:40:00	2009-239T02:04:00	1300	92.039	Non-SPASS			
SP 117TI DEADTIME238_PRIME	2009-238T13:51:38	GMB E117 Titan61+001T01:00:00	000T00:32:22	2009-238T14:24:00	0	0	Prime	NEG Y to Titan (-10.5,0.0,0.0 deg. offset)	NEG X to Sun	
INMS 117SA RINGPLN001_RIDER	2009-238T14:08:54		000T11:55:06	2009-239T02:04:00	100	4.291	Non-SPASS			
SP 117EA DLTURN238_PRIME	2009-238T14:24:00		000T00:40:00	2009-238T15:04:00	0	0	Prime	XBAND to Earth	NEG X to NEP	
ENGR 117SC AACSDUAL002_CDS	2009-238T15:03:47		000T00:00:02	2009-238T15:03:49	0	0	Non-SPASS			
SP 117EA G70METNON238_PRIME	2009-238T15:04:00		000T09:00:00	2009-239T00:04:00	0	0	Prime	XBAND to Earth	Rolling	NEG X to NEP
SP 117NA G70METNON238_SP	2009-238T15:04:00		000T09:00:00	2009-239T00:04:00	0	0	Non-SPASS			
UVIS 117SW IPHSURVEY007_RIDER	2009-238T15:04:00		000T09:00:00	2009-239T00:04:00	152.5	4.94	Non-SPASS			
CIRS 117IC DSCAL09238_SP	2009-238T16:04:00		000T08:00:00	2009-239T00:04:00	3000	86.4	SPASS Rider			
RPWS 117SA CHORUS002_CAPS	2009-238T23:00:00		000T03:04:00	2009-239T02:04:00	5000.1	55.201	Non-SPASS			
SP 117NA C70METNON238_SP	2009-238T23:44:00		000T02:20:00	2009-239T02:04:00	0	0	Non-SPASS			
ENGR 117NA DUALPB237_CDS	2009-239T00:04:00		000T00:00:01	2009-239T00:04:01	506463648	506.464	SPASS Note			
SP 117EA C70METNON238_PRIME	2009-239T00:04:00		000T02:00:00	2009-239T02:04:00	0	0	Prime	XBAND to Earth	Rolling	NEG X to NEP
UVIS 117SW IPHSURVEY008_RIDER	2009-239T00:04:00		000T02:00:00	2009-239T02:04:00	152.5	1.098	Non-SPASS			
CIRS 117IC DSCAL09239_SP	2009-239T01:04:00		000T01:00:00	2009-239T02:04:00	4000	14.4	SPASS Rider			

Outbound (starting at C/A)

T61 Open Issues

None.

Warnings (OK):

- RADAR_117TI_T61WARMUP001_RIDER

Found an activity whose data are NOT recorded in this telemetry mode "S_N_ER_3" commanded at 2009-237T07:41:28. Volume of 4.837248 Mb not given data policing space. Ensure compatibility between this activity and telemetry mode.

(S&ER-5A for 1st 15 min. of warm-up, then to S&ER-3. **OK.**)