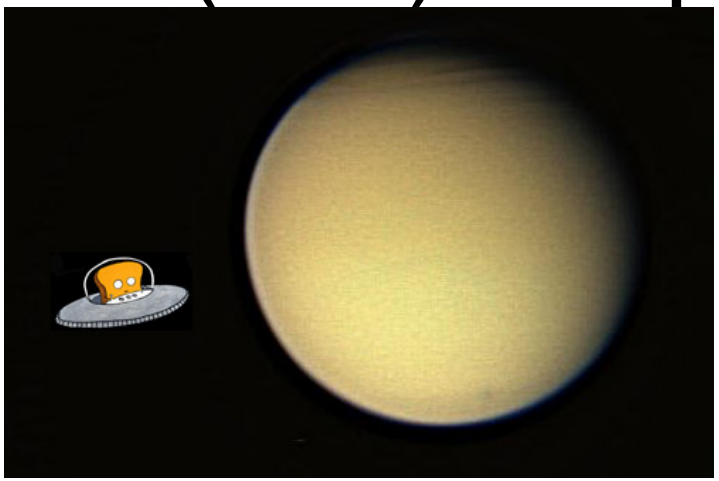
TOST: Integration
134TI (T71) Wrapup



December 8, 2009

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Segment Basics

Segment times:

BEG: 2010-187T10:09:00
END: 2010-190T10:09:00

Altitude: 1005 km

Time of C/A: 2010-188T00:22:45

Epoch: GMB_E134_Titan71

Sequence: S61

At least 2 weeks prior to the Kickoff Meeting make sure that all requests are in CIMS	**Kickoff Meeting** **Present** Master Timeline Draft Op Modes Draft Telem Modes Draft RCS Deadband Draft Y-bias strategy **Discuss** Timeline Op Modes Telem Modes Deadbands for RCS Dual Playback Science **Homework** Custom Handoff Attitudes ~~Unique Op Mode Requirements (SCO)~~ ~~Turn Assignments~~ CCRs High Level Science Objectives Data Volume cuts (by Email)	**Detailed Meeting** **Present** Master Timeline SMT Report Timeline Graphic TOL SPASS DSN Reports ~~Dual Playback Science~~ ~~Draft~~ Data Volume Cuts High Level Science Objectives **Discuss** Data Volume Cuts (if necessary) **Homework** ~~CCRs~~ ~~High Level Science Objectives~~ N/A	Interregnum between detailed meeting and segment delivery	2 weeks before segment due **Wrap-up Package** **~~Present~~ Additional Content** Wrap-up Package Checklist ~~High Level Science Objectives~~ Any post-detailed meeting CIMS changes **~~Discuss~~** ~~N/A~~ **~~Homework~~** ~~N/A~~

High-level Science Objectives (1)

INMS – Rising solar activity; southern latitude; dayside near terminator *(DOY 188)*

CAPS – MAPS campaign *(DOY 188)*

RADAR– Southwestern quadrant ridealong SAR, a poorly covered region in PM/XM, and valuable for global shape via SARtopo *(DOY 188)*

ISS – ISS will ride along with VIMS outbound from closest-approach to observe Titan's anti-Saturnian hemisphere and track any clouds that may be present *(DOY 188)* and with CIRS on the day following C/A to continue to monitor clouds and the evolution thereof. *(DOY 189)*

VIMS – global mapping of Titan will allow the VIMS to detect the presence of clouds and monitor the changes in the cloud formation after the equinox. *(DOY 188)*

CIRS – On T71 CIRS will obtain a vertical profile for trace species in the stratosphere via mid-IR limb sounding, and continue a long-term campaign of global mapping in the far-IR *(DOY 187)*.

High-level Science Objectives (2)

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. *(DOY 187)*

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. *(DOY 187-189)*

MAG – T71 is a low altitude, pre-dusk flyby over the south pole. Its geometry is similar to T70. This will allow a comparison of the field line geometry in the induced magnetosphere.We assign grade one priority. *(DOY 188)*

Master Timeline for T71

T71	1005	Lit Outbound	Caboose Day

Start Time	End Time	Prime Activity	Obs. Detail	Op Mode	TLM Mode	Comments
2010-187T10:09:00	2010-187T10:49:00	SP Turn to WP	NEG_Y to Titan/NEG_X to Sun	DFPW Normal	S_N_ER_3	
2010-187T10:49:00	C/A - 13:15:00	OD Uncertainty Dead Time		DFPW Normal	S_N_ER_3	
C/A - 13:15:00	-9:00	CIRS	N, M4	DFPW Normal	S_N_ER_3	
-09:00	-06:00	CIRS	R1	RADWU	S_N_ER_5a for 15 minutes, then S_N_ER_3	
-06:00	-02:15	RADAR	L	RADRWA	S_N_ER_8	
-02:15	**-00:49**	**CAPS**		RADRWA	S_N_ER_3	RADAR designs pointing
-00:49	**-00:48**	RWA to RCS Transition		RADRCS	S_N_ER_3	transition occurs sitting at CAPS attitude
-00:48	**-00:18**	**CAPS**		RADRCS	S_N_ER_3	Desire CAPS to go to WP
-00:18	**0**	**INMS**	**RADAR ridealong**	RADRCS	S_N_ER_8	RADAR doing pointing design.
2010-188T00:22:45		**CLOSEST APPROACH**	**Neg_X to RAM, Neg_Z to Titan**			Rising solar activity; southern latitude; dayside near terminator
0	**+00:18**	**INMS**	**RADAR ridealong**	RADRCS	S_N_ER_8	RADAR doing pointing design. Desire INMS to turn to WP
+00:18	**+00:28**	**CAPS**		RADRCS	S_N_ER_3	
+00:28	**+00:50**	RCS to RWA Transition		RADRWA	S_N_ER_3	transition occurs sitting at caps attitude
+00:50	**+02:15**	**CAPS**		RADRWA	S_N_ER_3	
+02:15	+06:00	RADAR	L	RADRWA	S_N_ER_8	
+06:00	+09:00	VIMS	I1	DFPW Normal	S_N_ER_3	
+09:00	+14:00	VIMS	V ISS ridealong	DFPW Normal	S_N_ER_3	
+14:00	+17:35	VIMS	B ISS ridealong	DFPW Normal	S_N_ER_3	
C/A + 17:35:00	2010-188T18:14:00	OD Uncertainty Dead Time		DFPW Normal	S_N_ER_3	
2010-188T18:14:00	**2010-188T18:54:00**	SP Turn to Earth for downlink		DFPW Normal	S_N_ER_3	
2010-188T18:54:00	**2010-189T01:09:00**	Goldstone 34M		RSSK	RTE_N_SPB	RSS ORT
2010-189T01:09:00	**2010-189T10:09:00**	Canberra 70M		DFPW Normal	RTE_N_SPB	
2010-189T10:09:00	**2010-189T10:49:00**	SP Turn to WP		DFPW Normal	S_N_ER_3	
2010-189T10:49:00	**2010-189T12:49:00**	CAPS		DFPW Normal	S_N_ER_3	
2010-189T12:49:00	**2010-189T22:59:00**	CIRS	ISS riding along	DFPW Normal	S_N_ER_3	
2010-189T22:59:00	**2010-189T23:39:00**	SP Turn to Earth for downlink		DFPW Normal	S_N_ER_3	
2010-189T23:39:00	**2010-190T01:09:00**	Y-Bias window				
2010-190T01:09:00	**2010-190T10:09:00**	Canberra 34M		DFPW Normal	RTE_N_SPB	

Deadband: (2,2,20) for RADAR/INMS

No Walking Deadband

Y-Bias Window precedes downlink

Dual Playback -/+ 00:05

T71 Wrap-Up Telemetry Mode Report

TELEMETRY MODE REPORT

EPOCH RELATIVE	UTC	DURATION	TELEMETRY MODE	REQUEST
	2010-187T10:09:00.000	05:13:45	S_N_ER_3	SP_134NA_G34OBSNON186_NA
GMB_E134_Titan71-000T09:00:00	2010-187T15:22:45.000	00:15:00	S_N_ER_5A	SP_134NA_G34OBSNON186_NA
GMB_E134_Titan71-000T08:45:00	2010-187T15:37:45.000	02:45:00	S_N_ER_3	SP_134NA_G34OBSNON186_NA
GMB_E134_Titan71-000T06:00:00	2010-187T18:22:45.000	03:45:00	S_N_ER_8	SP_134NA_G34OBSNON186_NA
GMB_E134_Titan71-000T02:15:00	2010-187T22:07:45.000	01:57:00	S_N_ER_3	SP_134NA_G34OBSNON186_NA
GMB_E134_Titan71-000T00:18:00	2010-188T00:04:45.000	00:36:00	S_N_ER_8	SP_134NA_G34OBSNON186_NA
GMB_E134_Titan71+000T00:18:00	2010-188T00:40:45.000	01:57:00	S_N_ER_3	SP_134NA_G34OBSNON186_NA
GMB_E134_Titan71+000T02:15:00	2010-188T02:37:45.000	03:45:00	S_N_ER_8	SP_134NA_G34OBSNON186_NA
GMB_E134_Titan71+000T06:00:00	2010-188T06:22:45.000	12:31:15	S_N_ER_3	SP_134NA_G34OBSNON186_NA
	2010-188T18:54:00.000	00:45:00	RTE_N_SPB_22120	SP_134EA_G34BWGNON188_PRIME
	2010-188T19:39:00.000	05:30:00	RTE_N_SPB_27650	SP_134EA_G34BWGNON188_PRIME
	2010-189T01:09:00.000	00:30:00	RTE_N_SPB_82950	SP_134EA_C70METNON189_PRIME
	2010-189T01:39:00.000	00:45:00	RTE_N_SPB_110600	SP_134EA_C70METNON189_PRIME
	2010-189T02:24:00.000	06:30:00	RTE_N_SPB_124425	SP_134EA_C70METNON189_PRIME
	2010-189T08:54:00.000	00:45:00	RTE_N_SPB_110600	SP_134EA_C70METNON189_PRIME
	2010-189T09:39:00.000	00:30:00	RTE_N_SPB_82950	SP_134EA_C70METNON189_PRIME
	2010-189T10:09:00.000	15:00:00	S_N_ER_3	SP_134NA_C34OBSNON189_NA
	2010-190T01:09:00.000	00:30:00	RTE_N_SPB_22120	SP_134EA_C34HEFNON190_PRIME
	2010-190T01:39:00.000	01:30:00	RTE_N_SPB_27650	SP_134EA_C34HEFNON190_PRIME
	2010-190T03:09:00.000	05:00:00	RTE_N_SPB_33180	SP_134EA_C34HEFNON190_PRIME
	2010-190T08:09:00.000	01:30:00	RTE_N_SPB_27650	SP_134EA_C34HEFNON190_PRIME
	2010-190T09:39:00.000	00:30:00	RTE_N_SPB_22120	SP_134EA_C34HEFNON190_PRIME

T71 Wrap-Up SMT Report

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_134EA_G34BWGNON188_PRIME	188 18:54	189 01:09	0	2999	149	3148	3552	404	0	168	37	3353	480	-2874	27	1%	2873
SP_134EA_C70METNON189_PRIME	189 01:09	189 10:09	2873	0	0	2873	3552	679	0	274	53	3200	3227	27	27	1%	0
SP_134EA_C34HEFNON190_PRIME	190 01:09	190 10:09	0	614	63	677	3552	2874	0	117	53	847	778	-70	0	0%	69

Downlink capacity is exceeded by 70 Mb

TOST agrees to accept risk of incomplete downlink of data

T71 Wrap-Up SMT Report (continued)

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 10:09	188 18:54	333.9	61.8	271.2	21.9	650.0	110.4	172.2	360.4	636.4	131.3	222.5	0.0	146.6	3118.6
SP_134EA_G34BWGNON188_PRIME	188 18:54	189 01:09	22.5	11.8	56.7	2.3	0.0	13.5	27.0	0.0	29.5	3.4	0.0	0.0	0.0	166.6
SP_134EA_C70METNON189_PRIME	189 01:09	189 10:09	32.4	17.0	0.0	3.2	0.0	19.4	38.9	0.0	42.4	4.9	0.0	0.0	113.0	271.3
DAILY TOTAL SCIENCE	187 10:09	189 10:09	388.8	90.5	327.9	27.3	650.0	143.3	238.1	360.4	708.3	139.7	222.5	0.0	259.5	
OBSERVATION_NOR	189 10:09	190 01:09	54.0	20.1	124.4	2.7	275.0	26.7	40.5	0.0	48.6	0.0	16.5	0.0	62.7	671.2
SP_134EA_C34HEFNON190_PRIME	190 01:09	190 10:09	32.4	12.1	0.0	1.6	0.0	16.0	24.3	0.0	29.2	0.0	0.0	0.0	0.0	115.5
DAILY TOTAL SCIENCE	189 10:09	190 10:09	86.4	32.1	124.4	4.3	275.0	42.7	64.8	0.0	77.8	0.0	16.5	0.0	62.7	

	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)	475.2	122.7	452.3	31.7	925.0	186.0	302.9	360.4	786.1	139.7	239.0	0.0

T71 Wrap-Up DSN Report

CASSINI DOWNLINK/DSN COVERAGE SUMMARY for T71_091214.apf on 2009-Dec-14 14:53:23
(+ = 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
G34BWGNON188	188T18:54-01:09	188T20:15-02:30	06:15	22,27	26	188T18:54-01:09	188T20:15-02:30	06:15	90 /15	TP RSS O	N750
M34BWGNON188	---------------	---------------	-----	(no downlink)	55	188T18:54-21:09	188T20:15-22:30	02:15	90 /15	RSS ORT	N750
+C70METNON189	189T01:09-10:09	189T02:30-11:30	09:00	82,110,124,110,82	43	189T00:49-10:09	189T02:10-11:30	09:20	60 /15	TP	N003
C34HEFNON190	190T01:09-10:09	190T02:30-11:30	09:00	22,27,33,27,22	45	190T01:09-10:09	190T02:30-11:30	09:00	60 /15	TP	N006

TOL for T71 (1 of 2)

Request	Start Time	Epoch	Duration	End Time	Rate	Data Volume	SPASS Type	Primary Pointing	Secondary Pointing	Pointing A
MP_127NA_DSS14DOWN001_NA	2010-066T22:49:02		237T23:43:06	2010-304T22:32:08	0	0	Non-SPASS			
MP_133NA_SEQUENCE061_NA	2010-176T21:10:00		034T21:41:00	2010-211T18:51:00	0	0	SPASS Note			
CDA_134OT_RATE010B001_RIDER	2010-186T05:34:00		003T04:35:00	2010-189T10:09:00	524	144.467	Non-SPASS			
MAG_134OT_SURVEY002_PRIME	2010-186T09:40:00		001T10:42:45	2010-187T20:22:45	600	74.979	Non-SPASS			
CAPS_134SA_SURVEY002_PRIME	2010-187T10:09:00		000T12:13:45	2010-187T22:22:45	1000	44.025	Non-SPASS			
INMS_134SA_SURVEY002_INMS	2010-187T10:09:00		000T02:13:45	2010-187T12:22:45	100	0.803	Non-SPASS			
MIMI_134SA_RNGSAT001_RIDER	2010-187T10:09:00		000T12:13:45	2010-187T22:22:45	1800	79.245	SPASS Rider			
RPWS_134SA_OUTSURVEY003_PRIME	2010-187T10:09:00		002T00:00:00	2010-189T10:09:00	1310	226.37	Non-SPASS			
SP_134NA_G34OBSNON186_NA	2010-187T10:09:00		001T08:45:00	2010-188T18:54:00	0	0	Non-SPASS			
SP_134NA_TOSTSEG187_NA	2010-187T10:09:00		003T00:00:00	2010-190T10:09:00	0	0	SPASS Note			
SP_134TI_WAYPTTURN187_PRIME	2010-187T10:09:00		000T00:40:00	2010-187T10:49:00	0	0	New Waypoin	NEG_Y to Titan	NEG_X to Sun	
SP_134NA_DEADTIME187_PRIME	2010-187T10:49:00		000T00:18:45	2010-187T11:07:45	0	0	Prime	NEG_Y to Titan	NEG_X to Sun	
CIRS_134TI_FIRNADCMP001_PRIME	2010-187T11:07:45	GMB_E134_Titan71-000T13:15:00	000T04:15:00	2010-187T15:22:45	4000	61.2	Prime	CIRS_FP1 to Titan	PIC	
UVIS_134TI_FIRNADCMP001_CIRS	2010-187T11:07:45	GMB_E134_Titan71-000T13:15:00	000T04:15:00	2010-187T15:22:45	5032	76.99	SPASS Rider			
VIMS_134TI_MIDIRTMAP001_CIRS	2010-187T11:07:45	GMB_E134_Titan71-000T13:15:00	000T04:15:00	2010-187T15:22:45	1307.2	20	SPASS Rider			
INMS_134TI_T71INBND001_INMS	2010-187T12:22:45	GMB_E134_Titan71-000T12:00:00	000T11:00:00	2010-187T23:22:45	100	3.96	Non-SPASS			
CIRS_134TI_MIRLMBINT001_PRIME	2010-187T15:22:45	GMB_E134_Titan71-000T09:00:00	000T03:00:00	2010-187T18:22:45	4000	43.2	Prime	CIRS_FPB to Titan	PIC	
ENGR_134SC_RADWU187_PPS	2010-187T15:22:45	GMB_E134_Titan71-000T09:00:00	000T00:00:07	2010-187T15:22:52	0	0	Non-SPASS			
RADAR_134TI_T71WARMUP001_RIDE	2010-187T15:22:45	GMB_E134_Titan71-000T09:00:00	000T03:00:00	2010-187T18:22:45	474.2	5.122	Non-SPASS			
UVIS_134TI_MIRLMBINT001_CIRS	2010-187T15:22:45	GMB_E134_Titan71-000T09:00:00	000T03:00:00	2010-187T18:22:45	5032	54.346	SPASS Rider			
VIMS_134TI_MIRLMBMAP001_CIRS	2010-187T15:22:45	GMB_E134_Titan71-000T09:00:00	000T03:00:00	2010-187T18:22:45	1851.9	20	SPASS Rider			
ENGR_134SC_RADRWA187_PPS	2010-187T18:22:45	GMB_E134_Titan71-000T06:00:00	000T00:00:44	2010-187T18:23:29	0	0	Non-SPASS			
RADAR_134TI_T71INRAD001_PRIME	2010-187T18:22:45	GMB_E134_Titan71-000T06:00:00	000T03:45:00	2010-187T22:07:45	5001.4	67.519	Prime	NEG_Z to Titan	NEG_X to NTP	NTP for the polarization
MAG_134TI_MAGTITAN001_PRIME	2010-187T20:22:45	GMB_E134_Titan71-000T04:00:00	000T08:00:00	2010-188T04:22:45	1976	56.909	Non-SPASS			
CAPS_134TI_T71INPTG001_PRIME	2010-187T22:07:45	GMB_E134_Titan71-000T02:15:00	000T01:26:00	2010-187T23:33:45	0	0	SPASS Rider			
RADAR_134TI_T71FCAPS001_PRIME	2010-187T22:07:45	GMB_E134_Titan71-000T02:15:00	000T01:26:00	2010-187T23:33:45	0	0	Prime	Titan_SC_RAM	POS_Y to COROT	Pointing req
CAPS_134TI_T71CLOSE001_PRIME	2010-187T22:22:45	GMB_E134_Titan71-000T02:00:00	000T04:00:00	2010-188T02:22:45	16000	230.4	SPASS Rider			
MIMI_134TI_TITANIN001_RIDER	2010-187T22:22:45	GMB_E134_Titan71-000T02:00:00	000T01:00:00	2010-187T23:22:45	1200	4.32	SPASS Rider			
RPWS_134TI_TIINTRMED001_PRIME	2010-187T22:22:45	GMB_E134_Titan71-000T02:00:00	000T01:00:00	2010-187T23:22:45	15232	54.835	Non-SPASS			
INMS_134TI_TITAN71001_INMS	2010-187T23:22:45	GMB_E134_Titan71-000T01:00:00	000T00:30:00	2010-187T23:52:45	1498	2.696	Non-SPASS			
MIMI_134TI_TITANCA001_RIDER	2010-187T23:22:45	GMB_E134_Titan71-000T01:00:00	000T02:00:00	2010-188T01:22:45	1800	12.96	SPASS Rider			
RPWS_134TI_TICA001_PRIME	2010-187T23:22:45	GMB_E134_Titan71-000T01:00:00	000T00:42:00	2010-188T00:04:45	60867.1	153.385	Non-SPASS			
ENGR_134SC_AACSDUAL001_CDS	2010-187T23:33:45	GMB_E134_Titan71-000T00:49:00	000T01:38:41	2010-188T01:12:26	1638	9.699	Non-SPASS			
ENGR_134SC_RADRCS187_PPS	2010-187T23:33:45	GMB_E134_Titan71-000T00:49:00	000T00:21:15	2010-187T23:55:00	0	0	Non-SPASS			
ENGR_134SC_RADRCS187_PRIME	2010-187T23:33:45	GMB_E134_Titan71-000T00:49:00	000T00:01:00	2010-187T23:34:45	0	0	Prime	Titan_SC_RAM	POS_Y to COROT	deadband =
CAPS_134TI_T71INPTG002_PRIME	2010-187T23:34:45	GMB_E134_Titan71-000T00:48:00	000T00:30:00	2010-188T00:04:45	0	0	SPASS Rider			
RADAR_134TI_T71FCAPS004_PRIME	2010-187T23:34:45	GMB_E134_Titan71-000T00:48:00	000T00:30:00	2010-188T00:04:45	0	0	Prime	Titan_SC_RAM	POS_Y to COROT	Pointing req
INMS_134TI_TITAN71002_RIDER	2010-187T23:52:45	GMB_E134_Titan71-000T00:30:00	000T00:25:30	2010-188T00:18:15	1498	2.292	Non-SPASS			
RADAR_134TI_T71RASAR001_PRIME	2010-188T00:04:45	GMB_E134_Titan71-000T00:18:00	000T00:36:00	2010-188T00:40:45	104150.4	224.965	Prime	Titan_SC_RAM	NEG_Z to Titan	Ride-along
RPWS_134TI_TICA002_PRIME	2010-188T00:04:45	GMB_E134_Titan71-000T00:18:00	000T00:36:00	2010-188T00:40:45	30342.1	65.539	Non-SPASS			
ENGR_134NA_BEGHIVAL188_CDS	2010-188T00:17:45	GMB_E134_Titan71-000T00:05:00	000T00:00:01	2010-188T00:17:46	0	0	SPASS Note			
INMS_134TI_TITAN71003_INMS	2010-188T00:18:15	GMB_E134_Titan71-000T00:04:30	000T00:08:40	2010-188T00:26:55	1498	0.779	Non-SPASS			
MP_134TI_FLYBYT071_NA	2010-188T00:22:45		000T00:00:01	2010-188T00:22:46	0	0	SPASS Note			
INMS_134TI_TITAN71004_INMS	2010-188T00:26:55	GMB_E134_Titan71+000T00:04:1(	000T00:55:50	2010-188T01:22:45	1498	5.018	Non-SPASS			
ENGR_134NA_ENDHIVAL188_CDS	2010-188T00:27:45	GMB_E134_Titan71+000T00:05:0(	000T00:00:01	2010-188T00:27:46	0	0	SPASS Note			
CAPS_134TI_T71INPTG003_PRIME	2010-188T00:40:45	GMB_E134_Titan71+000T00:18:0(	000T00:10:00	2010-188T00:50:45	0	0	SPASS Rider			
RADAR_134TI_T71FCAPS002_PRIME	2010-188T00:40:45	GMB_E134_Titan71+000T00:18:0(	000T00:10:00	2010-188T00:50:45	0	0	Prime	Titan_SC_RAM	POS_Y to COROT	Pointing req
RPWS_134TI_TICA003_PRIME	2010-188T00:40:45	GMB_E134_Titan71+000T00:18:0(	000T00:42:00	2010-188T01:22:45	60867.1	153.385	Non-SPASS			

TOL for T71 (2 of 2)

Request	Start Time	Epoch	Duration	End Time	Rate	Data Volume	SPASS Type	Primary Pointing	Secondary Pointing	Pointing A
ENGR_134SC_RADRWBIAS188_PPS	2010-188T00:50:45	GMB_E134_Titan71+000T00:28:00	000T00:21:41	2010-188T01:12:26	0	0	Prime	Titan_SC_RAM (-1.375,0.0,0.0 deg.	POS_Y to COROT	Deadband=
CAPS_134TI_T71INPTG004_PRIME	2010-188T01:12:45	GMB_E134_Titan71+000T00:50:00	000T01:25:00	2010-188T02:37:45	0	0	SPASS Rider			
RADAR_134TI_T71FCAPS003_PRIME	2010-188T01:12:45	GMB_E134_Titan71+000T00:50:00	000T01:25:00	2010-188T02:37:45	0	0	Prime	Titan_SC_RAM	POS_Y to COROT	Pointing rec
INMS_134TI_T71OUTBND001_INMS	2010-188T01:22:45	GMB_E134_Titan71+000T01:00:00	000T11:00:00	2010-188T12:22:45	100	3.96	Non-SPASS			
MIMI_134TI_TITANOUT001_RIDER	2010-188T01:22:45	GMB_E134_Titan71+000T01:00:00	000T01:00:00	2010-188T02:22:45	1200	4.32	SPASS Rider			
RPWS_134TI_TIINTRMED002_PRIME	2010-188T01:22:45	GMB_E134_Titan71+000T01:00:00	000T01:00:00	2010-188T02:22:45	15232	54.835	Non-SPASS			
CAPS_134SA_SURVEY003_PRIME	2010-188T02:22:45	GMB_E134_Titan71+000T02:00:00	002T07:46:15	2010-190T10:09:00	1000	200.775	Non-SPASS			
MIMI_134SA_MAGBOUND002_RIDER	2010-188T02:22:45	GMB_E134_Titan71+000T02:00:00	001T07:46:15	2010-189T10:09:00	1200	137.25	SPASS Rider			
RADAR_134TI_T71OUTRAD001_PRIM	2010-188T02:37:45	GMB_E134_Titan71+000T02:15:00	000T03:45:00	2010-188T06:22:45	5001.4	67.519	Prime	NEG_Z to Titan	NEG_X to NTP	NTP for the polarization
MP_134SA_RPXDESCEN134_NA	2010-188T03:17:41		000T00:00:01	2010-188T03:17:42	0	0	Non-SPASS			
MAG_134OT_SURVEY003_PRIME	2010-188T04:22:45	GMB_E134_Titan71+000T04:00:00	001T05:46:15	2010-189T10:09:00	600	64.305	Non-SPASS			
ENGR_134SC_DFPW188_PPS	2010-188T06:22:08	GMB_E134_Titan71+000T05:59:23	000T00:00:37	2010-188T06:22:45	0	0	Non-SPASS			
CIRS_134TI_RIDER001_VIMS	2010-188T06:22:45	GMB_E134_Titan71+000T06:00:00	000T11:35:00	2010-188T17:57:45	4000	166.8	SPASS Rider			
ISS_134TI_REGMAP001_VIMS	2010-188T06:22:45	GMB_E134_Titan71+000T06:00:00	000T03:00:00	2010-188T09:22:45	0	200	SPASS Rider			
VIMS_134TI_REGMAP001_PRIME	2010-188T06:22:45	GMB_E134_Titan71+000T06:00:00	000T03:00:00	2010-188T09:22:45	9259.3	100	Prime	VIMS_IR to Titan	NEG_X to Sun	
ISS_134TI_GLOBMAP001_VIMS	2010-188T09:22:45	GMB_E134_Titan71+000T09:00:00	000T05:00:00	2010-188T14:22:45	0	300	SPASS Rider			
VIMS_134TI_GLOBMAP001_PRIME	2010-188T09:22:45	GMB_E134_Titan71+000T09:00:00	000T05:00:00	2010-188T14:22:45	2361.1	42.5	Prime	VIMS_IR to Titan	NEG_X to Sun	
INMS_134SA_SURVEY003_INMS	2010-188T12:22:45	GMB_E134_Titan71+000T12:00:00	000T21:46:15	2010-189T10:09:00	100	7.838	Non-SPASS			
ISS_134TI_GLOBMAP002_VIMS	2010-188T14:22:45	GMB_E134_Titan71+000T14:00:00	000T03:35:00	2010-188T17:57:45	0	150	SPASS Rider			
VIMS_134TI_GLOBMAP002_PRIME	2010-188T14:22:45	GMB_E134_Titan71+000T14:00:00	000T03:35:00	2010-188T17:57:45	3100.8	40	Prime	VIMS_IR to Titan	NEG_X to Sun	
SP_134NA_DEADTIME188_PRIME	2010-188T17:57:45	GMB_E134_Titan71+000T17:35:00	000T00:16:15	2010-188T18:14:00	0	0	Prime	NEG_Y to Titan	NEG_X to Sun	
SP_134EA_DLTURN188_PRIME	2010-188T18:14:00		000T00:40:00	2010-188T18:54:00	0	0	Prime	XBAND to Earth	4.03	
ENGR_134SC_AACSDUAL002_CDS	2010-188T18:53:47		000T00:00:02	2010-188T18:53:49	0	0	Non-SPASS			
ENGR_134SC_RSSKRWAF188_PPS	2010-188T18:54:00		000T00:05:08	2010-188T18:59:08	0	0	Non-SPASS			
RSS_134SA_OCCORT003_RSS	2010-188T18:54:00		000T06:15:00	2010-189T01:09:00	0	0	SPASS Rider			
SP_134EA_G34BWGNON188_PRIME	2010-188T18:54:00		000T06:15:00	2010-189T01:09:00	0	0	Prime	XBAND to Earth	NEG_Y to 269.65/-4.03	NEG_Y to 2 [NEG_Y to 9.5)]; MIMI
SP_134NA_G34BWGNON188_SP	2010-188T18:54:00		000T06:15:00	2010-189T01:09:00	0	0	Non-SPASS			
SP_134NA_M34BWGNON188_SP	2010-188T18:54:00		000T02:15:00	2010-188T21:09:00	0	0	Non-SPASS			
UVIS_134SW_IPHSURVEY006_RIDER	2010-188T18:54:00		000T15:15:00	2010-189T10:09:00	152.5	8.371	Non-SPASS			
CIRS_134IC_DSCAL10188_SP	2010-188T19:54:00		000T05:15:00	2010-189T01:09:00	3000	56.7	SPASS Rider			
SP_134NA_C70METNON189_SP	2010-189T00:49:00		000T09:20:00	2010-189T10:09:00	0	0	Non-SPASS			
ENGR_134SC_DFPW189_PPS	2010-189T01:08:23		000T00:00:37	2010-189T01:09:00	0	0	Non-SPASS			
ENGR_134NA_DUALPB188_CDS	2010-189T01:09:00		000T00:00:01	2010-189T01:09:01	112966192	112.966	Non-SPASS			
SP_134EA_C70METNON189_PRIME	2010-189T01:09:00		000T09:00:00	2010-189T10:09:00	0	0	Prime	XBAND to Earth	NEG_Y to 269.65/-4.03	NEG_Y to 2 [NEG_Y to 9.5)]; MIMI
CDA_134OT_RATE010002_RIDER	2010-189T10:09:00		001T00:00:00	2010-190T10:09:00	372	32.144	Non-SPASS			
INMS_134SA_SURVEYSEG003_INMS	2010-189T10:09:00		001T00:00:00	2010-190T10:09:00	50	4.32	Non-SPASS			
MAG_134OT_SURVEY005_PRIME	2010-189T10:09:00		001T00:00:00	2010-190T10:09:00	494	42.682	Non-SPASS			
MIMI_134SA_MAGBOUND004_RIDER	2010-189T10:09:00		001T00:00:00	2010-190T10:09:00	750	64.8	SPASS Rider			
RPWS_134SA_OUTSURVEY005_PRIME	2010-189T10:09:00		001T00:00:00	2010-190T10:09:00	899.9	77.752	Non-SPASS			
SP_134NA_C34OBSNON189_NA	2010-189T10:09:00		000T15:00:00	2010-190T01:09:00	0	0	Non-SPASS			
SP_134TI_WAYPTTURN189_PRIME	2010-189T10:09:00		000T00:40:00	2010-189T10:49:00	0	0	New Waypoin	NEG_Y to Titan	NEG_X to Sun	
CAPS_134SA_MAGBNDPTG001_PRIME	2010-189T10:49:00		000T02:00:00	2010-189T12:49:00	0	0	Prime	(0.0,0.0,43.0 deg. offset)	NEG_Z to NSP	
CIRS_134TI_COMPMAP001_PRIME	2010-189T12:49:00		000T10:10:00	2010-189T22:59:00	3400	124.44	Prime	CIRS_FPB to Titan	NEG_Z to NSP	
ISS_134TI_COMPMAP001_CIRS	2010-189T12:49:00		000T10:10:00	2010-189T22:59:00	0	275	SPASS Rider			
VIMS_134TI_CLOUDMAP001_CIRS	2010-189T12:49:00		000T11:40:00	2010-190T00:29:00	392.9	16.5	SPASS Rider			
SP_134NA_DLTURN190_PRIME	2010-189T22:59:00		000T00:40:00	2010-189T23:39:00	0	0	Prime	XBAND to Earth	NEG_X to 302.0/87.0	
ENGR_134SC_KPTYBIAS189_PRIME	2010-189T23:39:00		000T01:30:00	2010-190T01:09:00	0	0	SPASS Rider			
SP_134EA_YBIAS189_PRIME	2010-189T23:39:00		000T01:30:00	2010-190T01:09:00	0	0	Prime	XBAND to Earth	NEG_X to 302.0/87.0	
SP_134EA_C34HEFNON190_PRIME	2010-190T01:09:00		000T09:00:00	2010-190T10:09:00	0	0	Prime	XBAND to Earth	Rolling/SRU	NEG_X to 3
SP_134NA_C34HEFNON190_SP	2010-190T01:09:00		000T09:00:00	2010-190T10:09:00	0	0	Non-SPASS			

T71 Wrapup SPASS

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
Sequence S61, length = 35 days		2010-176T21:10:00		034T21:41:00	2010-211T18:51:00			
Titan Flyby T71 Segment		2010-187T10:09:00		003T00:00:00	2010-190T10:09:00			
SP_134TI_WAYPTTURN187_PRIME	M	2010-187T10:09:00		000T00:40:00	2010-187T10:49:00	NEG_Y to Titan	NEG_X to Sun	
NEW WAYPOINT		**2010-187T10:49:00**		**002T00:00:0(**	**2010-189T10:49:0**	**NEG_Y to Titan**	**NEG_X to Sun**	
SP_134NA_DEADTIME187_PRIME	**M**	**2010-187T10:49:00**		**000T00:18:45**	**2010-187T11:07:4**	**NEG_Y to Titan**	**NEG_X to Sun**	
CIRS_134TI_FIRNADCMP001_PRIME	M, U, V	2010-187T11:07:45	GMB_E134_Titan71-000T13:15:00	000T04:15:00	2010-187T15:22:45	CIRS_FP1 to Titan	PIC	
CIRS_134TI_MIRLMBINT001_PRIME	M, U, V	2010-187T15:22:45	GMB_E134_Titan71-000T09:00:00	000T03:00:00	2010-187T18:22:45	CIRS_FPB to Titan	PIC	
RADAR_134TI_T71INRAD001_PRIME	M	2010-187T18:22:45	GMB_E134_Titan71-000T06:00:00	000T03:45:00	2010-187T22:07:45	NEG_Z to Titan	NEG_X to NTP	Use -X to NTP and -Y to NTP for the two
RADAR_134TI_T71FCAPS001_PRIME	M	2010-187T22:07:45	GMB_E134_Titan71-000T02:15:00	000T01:26:00	2010-187T23:33:45	NEG_X to Titan_SC_RAM	POS_Y to COROT	Pointing request for CAPS.
ENGR_134SC_RADRCS187_PRIME	M	2010-187T23:33:45	GMB_E134_Titan71-000T00:49:00	000T00:01:00	2010-187T23:34:45	NEG_X to Titan_SC_RAM	POS_Y to COROT	deadband =(2,2,20)
RADAR_134TI_T71FCAPS004_PRIME	M	2010-187T23:34:45	GMB_E134_Titan71-000T00:48:00	000T00:30:00	2010-188T00:04:45	NEG_X to Titan_SC_RAM	POS_Y to COROT	Pointing request for CAPS.
RADAR_134TI_T71RASAR001_PRIME	M	2010-188T00:04:45	GMB_E134_Titan71-000T00:18:00	000T00:36:00	2010-188T00:40:45	NEG_X to Titan_SC_RAM	NEG_Z to Titan	Ride-along at c/a.
Begin Dual Playback Science		2010-188T00:17:45	GMB_E134_Titan71-000T00:05:00	000T00:00:01	2010-188T00:17:46			
134TI (t) T71 TITAN Outbou...		2010-188T00:22:45		000T00:00:01	2010-188T00:22:46			
End Dual Playback Science		2010-188T00:27:45	GMB_E134_Titan71+000T00:05:00	000T00:00:01	2010-188T00:27:46			
RADAR_134TI_T71FCAPS002_PRIME	M	2010-188T00:40:45	GMB_E134_Titan71+000T00:18:00	000T00:10:00	2010-188T00:50:45	NEG_X to Titan_SC_RAM	POS_Y to COROT	Pointing request for CAPS.
ENGR_134SC_RADRWBIAS188_PPS	M	2010-188T00:50:45	GMB_E134_Titan71+000T00:28:00	000T00:21:41	2010-188T01:12:26	NEG_X to Titan_SC_RAM (-1.375,0.0,0.0 deg.	POS_Y to COROT	Deadband=(2, 2, 2)
RADAR_134TI_T71FCAPS003_PRIME	M	2010-188T01:12:45	GMB_E134_Titan71+000T00:50:00	000T01:25:00	2010-188T02:37:45	NEG_X to Titan_SC_RAM	POS_Y to COROT	Pointing request for CAPS.
RADAR_134TI_T71OUTRAD001_PRIM	M	2010-188T02:37:45	GMB_E134_Titan71+000T02:15:00	000T03:45:00	2010-188T06:22:45	NEG_Z to Titan	NEG_X to NTP	Use -X to NTP and +Y to NTP for the two
VIMS_134TI_REGMAP001_PRIME	C, I, M	2010-188T06:22:45	GMB_E134_Titan71+000T06:00:00	000T03:00:00	2010-188T09:22:45	VIMS_IR to Titan	NEG_X to Sun	
VIMS_134TI_GLOBMAP001_PRIME	C, I, M	2010-188T09:22:45	GMB_E134_Titan71+000T09:00:00	000T05:00:00	2010-188T14:22:45	VIMS_IR to Titan	NEG_X to Sun	
VIMS_134TI_GLOBMAP002_PRIME	C, I, M	2010-188T14:22:45	GMB_E134_Titan71+000T14:00:00	000T03:35:00	2010-188T17:57:45	VIMS_IR to Titan	NEG_X to Sun	
SP_134NA_DEADTIME188_PRIME	**M**	**2010-188T17:57:4**	**GMB_E134_Titan71+000T17:35:**	**000T00:16:15**	**2010-188T18:14:0**	**NEG_Y to Titan**	**NEG_X to Sun**	
SP_134EA_DLTURN188_PRIME	M	2010-188T18:14:00		000T00:40:00	2010-188T18:54:00	XBAND to Earth	NEG_Y to 269.65/-	
SP_134EA_G34BWGNON188_PRIME	C, M, R	2010-188T18:54:00		000T06:15:00	2010-189T01:09:00	XBAND to Earth	NEG_Y to 269.65/-4.03	NEG_Y to 269.65/-4.03; [NEG_Y to Saturn (0,0,-9.5)]; MIMI
SP_134EA_C70METNON189_PRIME	M	2010-189T01:09:00		000T09:00:00	2010-189T10:09:00	XBAND to Earth	NEG_Y to 269.65/-4.03	NEG_Y to 269.65/-4.03; [NEG_Y to Saturn (0,0,-9.5)]; MIMI
SP_134TI_WAYPTTURN189_PRIME	M	2010-189T10:09:00		000T00:40:00	2010-189T10:49:00	NEG_Y to Titan	NEG_X to Sun	
NEW WAYPOINT		**2010-189T10:49:00**		**000T23:20:0(**	**2010-190T10:09:0**	**NEG_Y to Titan**	**NEG_X to Sun**	
CAPS_134SA_MAGBNDPTG001_PRIM	M	2010-189T10:49:00		000T02:00:00	2010-189T12:49:00	POS_X to 214.1/-9.1 (0.0,0.0,43.0 deg.	NEG_Z to NSP	
CIRS_134TI_COMPMAP001_PRIME	I, M, V	2010-189T12:49:00		000T10:10:00	2010-189T22:59:00	CIRS_FPB to Titan	NEG_Z to NSP	
SP_134NA_DLTURN190_PRIME	M, V	2010-189T22:59:00		000T00:40:00	2010-189T23:39:00	XBAND to Earth	NEG_X to 302.0/87.0	
SP_134EA_YBIAS189_PRIME	E, M, V	2010-189T23:39:00		000T01:30:00	2010-190T01:09:00	XBAND to Earth	NEG_X to 302.0/87.0	
SP_134EA_C34HEFNON190_PRIME	M	2010-190T01:09:00		000T09:00:00	2010-190T10:09:00	XBAND to Earth	Rolling/SRU	NEG_X to 302 /87; CDA

Secondaries that can't be changed: RADAR, CAPS (may be OK but primary must also be changed)

T71 Open Issues

- No detailed science highlights from INMS or CAPS