TOST Handoff Package
00BTI (TB)
Segment Boundary 2004-345T06:06 – 2004-349T07:52
Titan C/A=2004-348T11:38:13, 1200km
Epoch = GMB_E00B_TitanB

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TB High-Level Science Objectives

VIMS - Observation of the surface of Titan at small solar phase angles; investigation of the formation and evolution of clouds on Titan. Search for lightning and hot spots and characterization of airglow.

CIRS - The high point for CIRS is a 2 hr limb integration using our mid-IR detectors to search for new molecules in the stratosphere. We also continue our campaign of far-IR integrations (begun on T0) to search for species at longer wavelengths, and obtain a thermal map of the stratosphere, lending insight into the dynamics of Titan's atmosphere.

UVIS - In Tb UVIS observes two stellar occultations which will tell us about the vertical profile of methane gas in Titan's high atmosphere. This will provide constraints on the density of the atmosphere. This is valuable for science and also for establishing the safety issues for low passes later in the tour.

TB High-Level Science Objectives (cont')

ISS - TB provides opportunities for imaging at high-resolution (pixel scales as small as a few 10s of m) and low-phase angles (as low as 16 degrees). ISS observations include the Huygens' landing site (designed to allow stereo coverage with T10) and the locations of the specular points during both TA and TB. Outbound ride-along observations with VIMS may provide a views of Titan's north polar region illuminated by Saturn-shine.

00BTI(TB) Timeline - C/A 2004-348T11:38:13

Start Time	End Time	Prime Activity	OpMode	Telem Mode	Comments
345T06:06	345T08:03	OpNav + turn to waypoint	DFPW_Normal	S_N_ER_5	Old seg start was 07:51
345T08:03	345T20:10	ISS Titan movie	DFPW_Normal	S_N_ER_3	
345T20:10	345T21:05	SP turn to Earth	DFPW_Normal	S_N_ER_3	
345T21:05	346T06:35	Downlink (Mad 34HEF)	DFPW_TCM	RTE_N_SPB	OTM 7 backup; pass extended to 9.5 hrs to help d.v. problem
346T06:35	346T08:03	OpNav + turn to waypoint	DFPW_Normal	S_N_ER_5	Shortened 30 min.
346T08:03	347T00:00	ISS Titan movie	DFPW_Normal	S_N_ER_3	
347T00:00	347T01:30	ISS Ring Rad color	DFPW_Normal	S_N_ER_3	
347T01:30	347T04:36	OpNav + turn to earth	DFPW_Normal	S_N_ER_5	
347T04:36	347T13:36	Downlink (Gold 70m)	DFPW_Normal	RTE_N_SPB	
347T13:36	347T14:57	SP turn to waypoint	DFPW_Normal	S_N_ER_3	
347T14:57	347T15:12	Moveable block dead time	DFPW_Normal	S_N_ER_3	
-20:25	-12:00	CIRS Mid-IR Temp Map	DFPW_Normal	S_N_ER_3	
-12:00	-08:00	CIRS Far-IR Nadir Comp	DFPW_Normal	S_N_ER_3	
-08:00	-04:00	UVIS EUVFUV	DFPW_Normal	S_N_ER_3	
-04:00	-02:00	REG MAP	DFPW_Normal	S_N_ER_3	
-02:00		Start Custom Period			
-02:00	-00:30	HI RES	DFPW_Normal	S_N_ER_3	
-00:30	-00:09	Transition to RCS	DFPW_Normal	S_N_ER_3	(.5,2,.5) - ISS observe thru trans
-00:09	-00:01	Turn to UVIS occs	DFPW_Normal	S_N_ER_3	Pick up at NAC to latlon(27,141), -X to Sun
-00:01	+00:27	UVIS Occs	DFPW_Normal	S_N_ER_3	FUV to 201.3,-11.2 - Turn to 2nd occ by +27min
+00:27	+00:50	Transition to RWA	DFPW_Normal	S_N_ER_3	UVIS observe thru transition
+00:50	+02:30	VIMS Darkside	DFPW_Normal	S_N_ER_3	Pickup at star 263.402/-37.104, NEG_X to SUN - offset (.1868,30,0)
+02:30	+05:00	UVIS EUVFUV	DFPW_Normal	S_N_ER_3	
+05:00		End Custom Period			
+05:00	+07:00	CIRS Mid-IR Limb Int	DFPW_Normal	S_N_ER_3	
+07:00	+10:30	VIMS darkside	DFPW_Normal	S_N_ER_3	
348T22:08	348T22:23	Moveable block dead time	DFPW_Normal	S_N_ER_3	
348T22:23	348T22:52	SP turn to Earth	DFPW_Normal	S_N_ER_3	
348T22:52	349T07:52	Downlink (Mad 70m)	DFPW_Normal	RTE_N_SPB	

Telemetry Modes

SCET	TELEMETRY MODE	REQUEST
2004-345T06:06:00.000	S_N_ER_5	SP_00BNA_M34OBSOTB345_NA
2004-345T08:03:00.000	S_N_ER_3	SP_00BNA_M34OBSOTB345_NA
2004-345T21:05:00.000	RTE_N_SPB_41475	SP_00BEA_M34HEFOTB345_PRIME
2004-345T22:51:00.000	RTE_N_SPB_47400	SP_00BEA_M34HEFOTB345_PRIME
2004-346T04:36:00.000	RTE_N_SPB_41475	SP_00BEA_M34HEFOTB345_PRIME
2004-346T06:20:00.000	RTE_N_SPB_35550	SP_00BEA_M34HEFOTB345_PRIME
2004-346T06:35:00.000	S_N_ER_5	SP_00BNA_G70OBSSEQ347_NA
2004-346T08:03:00.000	S_N_ER_3	SP_00BNA_G70OBSSEQ347_NA
2004-347T01:30:00.000	S_N_ER_5	SP_00BNA_G70OBSSEQ347_NA
2004-347T04:36:00.000	RTE_N_SPB_165900	SP_00BEA_M70METSEQ347_PRIME
2004-347T06:02:00.000	RTE_N_SPB_142200	SP_00BEA_M70METSEQ347_PRIME
2004-347T06:17:00.000	RTE_N_SPB_165900	SP_00BEA_G70METSEQ347_PRIME
2004-347T13:21:00.000	RTE_N_SPB_142200	SP_00BEA_G70METSEQ347_PRIME
2004-347T13:36:00.000	S_N_ER_3	SP_00BNA_M70OBSSEQ348_NA
2004-348T22:52:00.000	RTE_N_SPB_165900	SP_00BEA_M70METSEQ348_PRIME
2004-349T05:07:00.000	RTE_N_SPB_142200	SP_00BEA_M70METSEQ348_PRIME
2004-349T06:37:00.000	RTE_N_SPB_124425	SP_00BEA_M70METSEQ348_PRIME
2004-349T07:07:00.000	RTE_N_SPB_99540	SP_00BEA_M70METSEQ348_PRIME
2004-349T07:37:00.000	RTE_N_SPB_82950	SP_00BEA_M70METSEQ348_PRIME

Attitude Strategy Spreadsheet

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
Sequence S006, length = 32 ...		2004-320T07:49:00	E00A_SEQUENCE_006+000T00:00	031T05:33:00	2004-351T13:22:00			
TOST rev B Segment		2004-345T06:06:00		004T01:46:00	2004-349T07:52:00			
NAV_00BSK_OPNAV451_PRIME	M	2004-345T06:06:00		000T01:56:00	2004-345T08:02:00	ISS_NAC to Satellites	NEG_X to Sun	Starts at Earth point, ends at NEW waypoint
NAV_00BTI_WAYPTTURN451_PRIME	M	2004-345T08:02:00		000T00:01:00	2004-345T08:03:00	ISS_NAC to Titan	NEG_X to Sun	
NEW WAYPOINT		**2004-345T08:03:00**		**003T23:49:00**	**2004-349T07:52:00**	**ISS_NAC to Titan**	**NEG_X to Sun**	
ISS_00BTI_MOVIEC001_PRIME	M, V	2004-345T08:03:00		000T12:07:00	2004-345T20:10:00	ISS_NAC to Titan	NEG_X to Sun	
SP_00BEA_DLTURN345_PRIME		2004-345T20:10:00		000T00:55:00	2004-345T21:05:00	XBAND to Earth	POS_X to NEP	
SP_00BEA_M34HEFOTB345_PRIME	C, N, X	2004-345T21:05:00		000T09:30:00	2004-346T06:35:00	XBAND to Earth	POS_X to NEP	
NAV_00BSK_OPNAV461_PRIME	X	2004-346T06:35:00		000T01:27:00	2004-346T08:02:00	ISS_NAC to Satellites	NEG_X to Sun	Starts at Earth point, ends at waypoint
NAV_00BTI_WAYPTTURN461_PRIME		2004-346T08:02:00		000T00:01:00	2004-346T08:03:00	ISS_NAC to Titan	NEG_X to Sun	
ISS_00BTI_MOVIED001_PRIME	C, V	2004-346T08:03:00		000T15:57:00	2004-347T00:00:00	ISS_NAC to Titan	NEG_X to Sun	
ISS_00BRI_RADCOLOR001_PRIME		2004-347T00:00:00		000T01:30:00	2004-347T01:30:00	ISS_NAC to Rings	POS_Z to NSP	
NAV_00BSK_OPNAV471_PRIME		2004-347T01:30:00		000T03:05:00	2004-347T04:35:00	ISS_NAC to Satellites	NEG_X to Sun	Starts at waypoint, ends at Earth point
NAV_00BEA_DLTURN471_PRIME		2004-347T04:35:00		000T00:01:00	2004-347T04:36:00	XBAND to Earth	POS_X to NEP	
SP_00BEA_M70METSEQ347_PRIME	C	2004-347T04:36:00		000T01:41:00	2004-347T06:17:00	XBAND to Earth	POS_X to NEP	
SP_00BEA_G70METSEQ347_PRIME	C	2004-347T06:17:00		000T07:19:00	2004-347T13:36:00	XBAND to Earth	POS_X to NEP	
SP_00BTI_WAYPTTURN347_PRIME		2004-347T13:36:00		000T01:21:00	2004-347T14:57:00	ISS_NAC to Titan	NEG_X to Sun	
SP_00BTI_DEADTIME347_PRIME		**2004-347T14:57:00**		**000T00:15:00**	**2004-347T15:12:00**	**ISS_NAC to Titan**	**NEG_X to Sun**	
CIRS_00BTI_MIDIRTMAP001_PRIME	C, I, V	2004-347T15:13:13	GMB_E00B_TitanB-000T20:25:00	000T08:25:00	2004-347T23:38:13	CIRS_FPB to Titan	POS_X to North_Pole_Dir	
CIRS_00BTI_FIRNADCMP001_PRIME	C, I, V	2004-347T23:38:13	GMB_E00B_TitanB-000T12:00:00	000T04:00:00	2004-348T03:38:13	CIRS_FP1 to Titan	PIC	
UVIS_00BTI_EUFUV002_PRIME	C, I, V	2004-348T03:38:13	GMB_E00B_TitanB-000T08:00:00	000T04:00:00	2004-348T07:38:13	ISS_NAC to Titan	NEG_X to Sun	
ISS_00BTI_REGMAP001_PRIME	C, V	2004-348T07:38:13	GMB_E00B_TitanB-000T04:00:00	000T02:00:00	2004-348T09:38:13	ISS_NAC to Titan	NEG_X to Sun	
Begin Custom Period		**2004-348T09:38:13**	**GMB_E00B_TitanB-000T02:00:00**	**000T07:00:00**	**2004-348T16:38:13**			
ISS_00BTI_HIRESNAC001_PRIME	C, M, V	2004-348T09:38:13	GMB_E00B_TitanB-000T02:00:00	000T01:30:00	2004-348T11:08:13	ISS_NAC to Titan	NEG_X to Sun	Pick up at unknown, unknown; Hand off at unknown, unknown. Stare at LAT_LON (27,141) from C/A -31 minutes onward.
ENGR_00BSC_ORSRCS348_PPS	C, M, V	2004-348T11:08:13	GMB_E00B_TitanB-000T00:30:00	000T00:20:49	2004-348T11:29:02	ISS_NAC to Titan	NEG_X to Sun	Pick up at unknown, unknown; Hand off at unknown, unknown. Deadband = (0.5,2,0.5)
UVIS_00BST_TWOSTOCCS001_PRIME	C, M, V	2004-348T11:29:13	GMB_E00B_TitanB-000T00:09:00	000T00:36:00	2004-348T12:05:13	UVIS_FUV to 201.298/-11.161 (0.187,30.0,0.0 deg. offset)	POS_X to NTP	Pick up at ISS_NAC to Titan, NEG_X to Sun; Hand off at UVIS_FUV to 263.402/-37.104 (0.187,30.0,0.0 deg. offset), NEG_X to Sun. Start NAC to Alpha VIR and end with NAC to Lambda Sco
ENGR_00BSC_DFPWBIAS348_PPS	M, U	2004-348T12:05:13	GMB_E00B_TitanB+000T00:27:00	000T00:22:42	2004-348T12:27:55	UVIS_FUV to 263.402/-37.104	NEG_X to Sun	Pick up at unknown, unknown; Hand off at unknown, unknown.
VIMS_00BTI_DARKSIDE003_PRIME	C, I, M	2004-348T12:28:13	GMB_E00B_TitanB+000T00:50:00	000T01:40:00	2004-348T14:08:13	ISS_NAC to Titan	NEG_X to Sun	Pick up at UVIS_FUV to 263.402/-37.104, NEG_X to Sun; Hand off at ISS_NAC to Titan (0.0,0.0,2.0 deg. offset), NEG_X to Sun. Pick up at NAC Lam Sco & leave at WP
UVIS_00BTI_EUVFUV001_PRIME	C, I	2004-348T14:08:13	GMB_E00B_TitanB+000T02:30:00	000T02:30:00	2004-348T16:38:13	ISS_NAC to Titan	NEG_X to Sun	Pick up at ISS_NAC to Titan (0.0,0.0,2.0 deg. offset), NEG_X to Sun; Hand off at ISS_NAC to Titan, NEG_X to Sun.
End Custom Period		**2004-348T16:38:13**	**GMB_E00B_TitanB+000T05:00:00**	**000T00:00:01**	**2004-348T16:38:14**	**ISS_NAC to Titan**	**NEG_X to Sun**	
CIRS_00BTI_MIRLMBINT002_PRIME	C, I, V	2004-348T16:38:13	GMB_E00B_TitanB+000T05:00:00	000T02:00:00	2004-348T18:38:13	CIRS_FPB to Titan	PIC	
VIMS_00BTI_DARKSIDE004_PRIME	C, I	2004-348T18:38:13	GMB_E00B_TitanB+000T07:00:00	000T03:30:00	2004-348T22:08:13	ISS_NAC to Titan	NEG_X to Sun	
SP_00BTI_DEADTIME348_PRIME	**C, I**	**2004-348T22:08:00**		**000T00:15:00**	**2004-348T22:23:00**	**ISS_NAC to Titan**	**NEG_X to Sun**	
SP_00BEA_DLTURN348_PRIME		2004-348T22:23:00		000T00:29:00	2004-348T22:52:00	XBAND to Earth	POS_X to NEP	
SP_00BEA_M70METSEQ348_PRIME	C	2004-348T22:52:00		000T09:00:00	2004-349T07:52:00	XBAND to Earth	Rolling	

DSN Requests

CASSINI DOWNLINK/DSN COVERAGE SUMMARY for T_B_new.apf generated on 2004-Jul-13 10:32:06
(+ = pass overlaps with previous pass; * = conflicts with DSN weekly 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	RADIO__CONFIG R UD D UD MAR
M34HEFOTB345	345T21:05-06:35	345T22:14-07:44	09:30	41,47,41,35	65	345T21:05-06:35	345T22:10-07:45	09:35	60/15	R XX - -- --0
M70METSEQ347	347T04:36-06:17	347T05:44-07:25	01:41	165,142	63	347T04:36-06:27	347T05:40-07:35	01:55	60/15	R XX - -- --0
+G70METSEQ347	347T06:17-13:36	347T07:25-14:44	07:19	165,142	14	347T06:07-13:36	347T07:15-14:45	07:30	60/15	R XX - -- --0
M70METSEQ348	348T22:52-07:52	349T00:00-09:00	09:00	165,142,124,99,82	63	348T22:52-07:52	349T00:00-09:00	09:00	60/15	R XX - -- --0