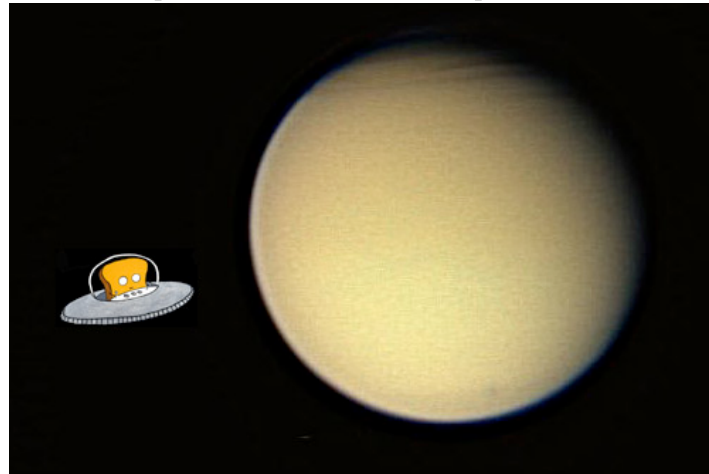


TOST: Integration 109TI (T53 ½) Wrapup



September 17, 2008

Jo Pitesky, Nora Kelly, Trina Ray, Kim Steadman

Segment Basics

Segment times:

BEG: 2009-116T00:33:00

END: 2009-118T14:02:00

Range

Start - 870,000km

C/A - 714,119 km

End - 960,000 km

Phase ranges from 42 (64 at C/A) to 101.

Time of C/A: 2009-117T03:22:18

Epoch: *No Epoch*

<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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High-level Science Objectives (1)

- ISS - ISS will observe Titan's leading hemisphere at low and high northern latitudes, targeting the impact structure Menrva and the high latitude lakes, respectively. We also have a series of observations to perform cloud tracking on Titan as well as a low-phase-angle observation of Rhea. This is our sixth and final planned attempt to image any material that might be in orbit around Rhea. We will be pointing off the edge of the moon while looking edge-on at Rhea's equatorial plane. We will take multiple exposures and add them together, to avoid saturating the camera on the bright moon (which is off the edge of the field of view, but which will still scatter a significant amount of light into the camera) while hopefully still seeing the faint signatures we are looking for. Because the viewing geometry is low-phase (Sun more or less behind us), this observation will be sensitive mostly to macroscopic (sand-size and larger) particles. A signature interpreted as "Rhea rings", which would be the first rings around a moon if confirmed, was reported by Geraint Jones (of University College London) and Cassini's MIMI instrument, which detects charged particles that whiz around as part of Saturn's magnetospheric environment. Up to now, the Imaging Team has been unable to confirm this report, which is the reason for this series of observations.

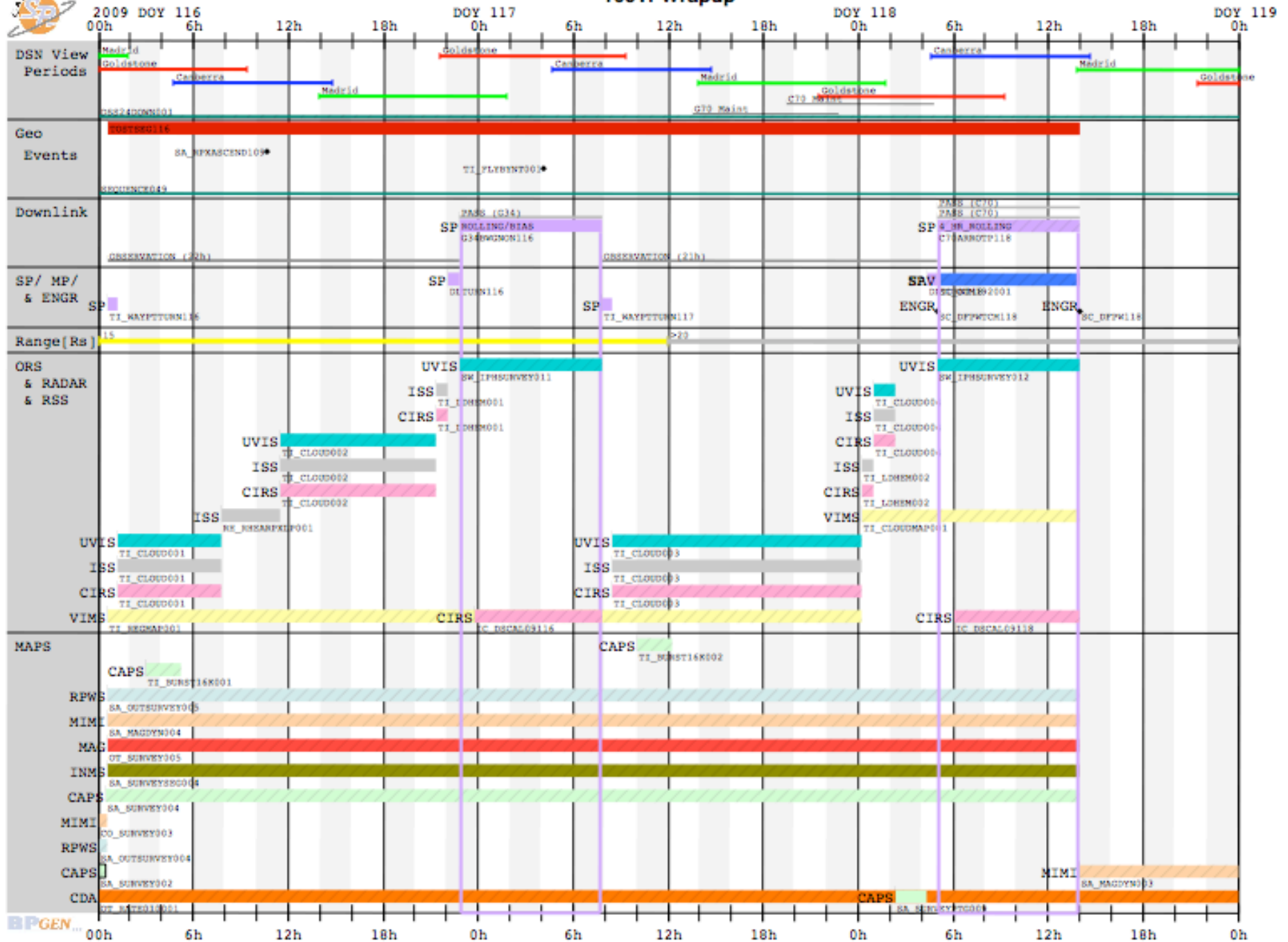
Master Timeline for 109Ti

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	OpMode	Telem Mode	Comments
Titan Non-Targeted Flyby Se...		2009-116T00:33:00		002T13:29:00	2009-116T00:33:00					
SP WAYPTTURN		2009-116T00:33:00		000T00:40:00	2009-116T01:13:00	ISS_NAC to Titan	NEG_X to Sun	DFPW_Normal	S_N_ER_3	
ISS CLOUD	?	2009-116T01:13:00		000T06:32:00	2009-116T07:45:00	ISS_NAC to Titan	NEG_X to Sun	DFPW_Normal	S_N_ER_3	
ISS_109RH_RHEARPLP001_PRIME		2009-116T07:45:00		000T03:45:00	2009-116T11:30:00	ISS_NAC to Rhea	PIC	DFPW_Normal	S_N_ER_3	
ISS CLOUD	?	2009-116T11:30:00		000T09:52:00	2009-116T21:22:00	ISS_NAC to Titan	NEG_X to Sun	DFPW_Normal	S_N_ER_3	
ISS LDHEM		2009-116T21:22:00		000T00:45:00	2009-116T22:07:00	ISS_NAC to Titan	NEG_X to Sun	DFPW_Normal	S_N_ER_3	
SP DLTURN		2009-116T22:07:00		000T00:40:00	2009-116T22:47:00	XBAND to Earth	POS_X to NEP	DFPW_Normal	S_N_ER_3	
SP_109EA_G34BWGNON116_PRIME		2009-116T22:47:00		000T09:00:00	2009-117T07:47:00	XBAND to Earth	Rolling	DFPW_Normal	RTE_N_SPB	POS_X to NEP
109TI Closest Approach		2009-117T03:22:00								
SP WAYPTTURN		2009-117T07:47:00		000T00:40:00	2009-117T08:27:00	ISS_NAC to Titan	NEG_X to Sun	DFPW_Normal	S_N_ER_3	
ISS CLOUD (with CIRS Comp Map rider) C		2009-117T08:27:00		000T15:46:00	2009-118T00:13:00	ISS_NAC to Titan	NEG_X to Sun	DFPW_Normal	S_N_ER_3	CIRS Comp MAP Rider
ISS_109TI_LDHEM002_PRIME		2009-118T00:13:00		000T00:45:00	2009-118T00:58:00	ISS_NAC to Titan	NEG_X to Sun	DFPW_Normal	S_N_ER_3	Secondary orientation: NEG_X to Sun preferred, but flexit
ISS CLOUD		2009-118T00:58:00		000T01:24:00	2009-118T02:22:00	ISS_NAC to Titan	NEG_X to Sun	DFPW_Normal	S_N_ER_3	
CAPS_109SA_SURVEYPTG009_PRIME		2009-118T02:22:00		000T02:00:00	2009-118T04:22:00	?	?	DFPW_Normal	S_N_ER_3	
SP DLTURN		2009-118T04:22:00		000T00:40:00	2009-118T05:02:00	XBAND to Earth	NEG_Y to 123.06/-78.9°	DFPW_Normal	S_N_ER_3	
SP_109EA_C70METOTP118_PRIME		2009-118T05:02:00		000T09:00:00	2009-118T14:02:00	XBAND to Earth	4_Hr_Rolling		RTE_N_SPB	NEG_Y to 123.06/-78.94; MIMI

No Dual Playback
 No Deadbands
 No Custom Periods



109Ti-Wrapup



109Ti Wrap-Up Telemetry Mode Report

TELEMETRY MODE REPORT

EPOCH RELATIVE	UTC	DURATION	TELEMETRY MODE	REQUEST
	2009-116T00:33:00.000	22:14:00	S_N_ER_3	SP_109NA_G34OBSNON116_NA
	2009-116T22:47:00.000	00:15:00	RTE_N_SPB_27650	SP_109EA_G34BWGNON116_PRIME
	2009-116T23:02:00.000	01:15:00	RTE_N_SPB_33180	SP_109EA_G34BWGNON116_PRIME
	2009-117T00:17:00.000	06:15:00	RTE_N_SPB_35550	SP_109EA_G34BWGNON116_PRIME
	2009-117T06:32:00.000	01:00:00	RTE_N_SPB_33180	SP_109EA_G34BWGNON116_PRIME
	2009-117T07:32:00.000	00:15:00	RTE_N_SPB_27650	SP_109EA_G34BWGNON116_PRIME
	2009-117T07:47:00.000	21:15:00	S_N_ER_3	SP_109NA_C70OBSNON118_NA
	2009-118T05:02:00.000	00:45:00	RTE_N_SPB_110600	SP_109EA_C70ARROTP118_PRIME
	2009-118T05:47:00.000	01:15:00	RTE_N_SPB_142200	SP_109EA_C70ARROTP118_PRIME
	2009-118T07:02:00.000	05:00:00	RTE_N_SPB_165900	SP_109EA_C70ARROTP118_PRIME
	2009-118T12:02:00.000	01:15:00	RTE_N_SPB_142200	SP_109EA_C70ARROTP118_PRIME
	2009-118T13:17:00.000	00:45:00	RTE_N_SPB_110600	SP_109EA_C70ARROTP118_PRIME

109Ti Wrap-Up 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)	MRGN (Mb)	OPNAV (Mb)	SCI (Mb)	ENGR (Mb)	TOTAL (Mb)	CPACTY (Mb)	MARGN (Mb)	NET_MARGN (Mb)	(%)	CAROVR (Mb)
SP_109EA_G34BWGNON116_PRIME	116 22:47	117 07:47	0	1819	94	1913	3550	1636	0	353	53	2320	900	-1420	2	0%	1420
SP_109EA_C70ARROTP118_PRIME	118 05:02	118 14:02	1420	1496	90	3005	3550	545	0	353	53	3411	3414	2	2	0%	0

109Ti 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	116 00:33	116 22:47	202.9	41.9	247.0	8.0	730.0	79.1	144.1	0.0	285.8	59.4	4.7	0.0	18.2	1821.0
SP_109EA_G34BWGNON116_PRIME	116 22:47	117 07:47	32.4	17.0	86.4	3.2	0.0	32.0	58.3	0.0	115.7	4.9	0.0	0.0	0.0	350.0
DAILY TOTAL SCIENCE	116 00:33	117 07:47	235.3	58.9	333.4	11.2	730.0	111.1	202.4	0.0	401.5	64.4	4.7	0.0		
OBSERVATION_NOR	117 07:47	118 05:02	221.0	40.1	258.0	7.7	400.0	75.6	137.7	0.0	273.1	62.2	6.9	0.0	17.4	1499.6
SP_109EA_C70ARROTP118_PRIME	118 05:02	118 14:02	32.4	17.0	86.4	3.2	0.0	32.0	58.3	0.0	115.7	4.9	0.0	0.0	0.0	350.0
DAILY TOTAL SCIENCE	117 07:47	118 14:02	253.4	57.1	344.4	10.9	400.0	107.6	196.0	0.0	388.8	67.1	6.9	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)			488.7	116.0	677.8	22.1	1130.0	218.7	398.4	0.0	790.3	131.5	11.6	0.0		

109Ti Wrap-Up DSN Report

CASSINI DOWNLINK/DSN COVERAGE SUMMARY for 109TI_080917.apf on 2008-Sep-17 16:42:02
 (+ = 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
G34BWGNON116	116T22:47-07:47	117T00:00-09:00	09:00	27,33,35,33,27	25	116T22:47-07:47	117T00:00-09:00	09:00	60 /15	TP	N006
C70ARROTP118	118T05:02-14:02	118T06:15-15:15	09:00	110,142,165,142,110 ^-- and also -->	45	118T05:02-14:02	118T06:15-15:15	09:00	60 /15	TP	N003
					43	118T05:02-14:02	118T06:15-15:15	09:00	60 /15	TP	N003

TOL for 109Ti

Request	Start Time	Epoch	Duration	End Time	Rate	Data Volume	SPASS Type	Primary Pointing	Secondary Pointing	Pointing Agreement
MP 106NA SEQUENCE049 NA	2009-085T10:05:00		039T21:11:00	2009-125T07:16:00	0	0	SPASS Note			
MP 107NA DSS24DOWN001 NA	2009-088T22:49:39		062T23:52:11	2009-151T22:41:50	0	0	Non-SPASS			
COA 109OT RATE10001 RIDER	2009-106T23:05:00		015T02:32:00	2009-122T01:37:00	524	683.883	Non-SPASS			
CAPS 109SA SURVEY002 PRIME	2009-110T02:20:46	GMB E109 Titan53+000T02:00:00	005T22:09:14	2009-116T00:30:00	1000	511.754	Non-SPASS			
RPWS 109SA OUTSURVEY004 PRIME	2009-111T10:18:00		004T14:15:00	2009-116T00:33:00	1310	519.944	Non-SPASS			
MIMI 109CO SURVEY003 RIDER	2009-115T05:29:18		000T19:03:42	2009-116T00:33:00	900	61.76	Non-SPASS			
CAPS 109SA SURVEY004 PRIME	2009-116T00:30:00		002T13:32:00	2009-118T14:02:00	1000	221.52	Non-SPASS			
INMS 109SA SURVEYSEG004 INMS	2009-116T00:33:00		002T13:29:00	2009-118T14:02:00	100	22.134	Non-SPASS			
MAG 109OT SURVEY005 PRIME	2009-116T00:33:00		002T13:29:00	2009-118T14:02:00	988	218.684	Non-SPASS			
MIMI 109SA MAGDYN004 RIDER	2009-116T00:33:00		002T13:29:00	2009-118T14:02:00	1800	398.412	Non-SPASS			
RPWS 109SA OUTSURVEY005 PRIME	2009-116T00:33:00		002T13:29:00	2009-118T14:02:00	3570.4	790.268	Non-SPASS			
SP 109NA G34OBSNON116 NA	2009-116T00:33:00		000T22:14:00	2009-116T22:47:00	0	0	Non-SPASS			
SP 109NA TOSTSEG116 NA	2009-116T00:33:00		000T13:29:00	2009-118T14:02:00	0	0	SPASS Note			
SP 109TI WAYPTURN116 PRIME	2009-116T00:33:00		000T00:40:00	2009-116T01:13:00	0	0	New Waypoint	NEG Y to Titan	NEG X to Sun	
VIIMS 109TI REGMAP001 ISS	2009-116T00:33:00		001T23:39:59	2009-118T00:12:59	58.3	10	SPASS Rider			
CIRS 109TI CLOUD001 ISS	2009-116T01:13:00		000T06:32:00	2009-116T07:45:00	4000	94.08	SPASS Rider			
ISS 109TI CLOUD001 PRIME	2009-116T01:13:00		000T06:32:00	2009-116T07:45:00	0	180	Prime	ISS NAC to Titan	NEG X to Sun	Secondary orientation: NEG X to Sun preferred, but flexible
UVIS 109TI CLOUD001 ISS	2009-116T01:13:00		000T06:32:00	2009-116T07:45:00	1006.4	23.671	SPASS Rider			
CAPS 109TI BURST16K001 RIDER	2009-116T03:00:00		000T02:16:32	2009-116T05:16:32	15000	122.88	Non-SPASS			
ISS 109RH RHEARPKLP001 PRIME	2009-116T07:45:00		000T03:45:00	2009-116T11:30:00	0	270	Prime	ISS NAC to Rhea	PIC	
MP 109SA RPXASCEND109 NA	2009-116T10:39:49		000T00:00:01	2009-116T10:39:50	0	0	Non-SPASS			
CIRS 109TI CLOUD002 ISS	2009-116T11:30:00		000T09:52:00	2009-116T21:22:00	4000	142.08	SPASS Rider			
ISS 109TI CLOUD002 PRIME	2009-116T11:30:00		000T09:52:00	2009-116T21:22:00	0	240	Prime	ISS NAC to Titan	NEG X to Sun	Secondary orientation: NEG X to Sun preferred, but flexible
UVIS 109TI CLOUD002 ISS	2009-116T11:30:00		000T09:52:00	2009-116T21:22:00	1006.4	35.747	SPASS Rider			
CIRS 109TI LDHEM001 ISS	2009-116T21:22:00		000T00:45:00	2009-116T22:07:00	4000	10.8	SPASS Rider			
ISS 109TI LDHEM001 PRIME	2009-116T21:22:00		000T00:45:00	2009-116T22:07:00	0	40	Prime	ISS NAC to Titan	NEG X to Sun	Secondary orientation: NEG X to Sun preferred, but flexible
SP 109EA DLTURN116 PRIME	2009-116T22:07:00		000T00:40:00	2009-116T22:47:00	0	0	Prime	XBAND to Earth	POS X to NEP	
SP 109EA G34BWGNON116 PRIME	2009-116T22:47:00		000T09:00:00	2009-117T07:47:00	0	0	Prime	XBAND to Earth	Rolling/Bias	POS X to NEP
SP 109NA G34BWGNON116 SP	2009-116T22:47:00		000T09:00:00	2009-117T07:47:00	0	0	Non-SPASS			
UVIS 109SW IPHSURVEY011 RIDER	2009-116T22:47:00		000T09:00:00	2009-117T07:47:00	152.5	4.94	Non-SPASS			
CIRS 109IC DSCAL09116 SP	2009-116T23:47:00		000T08:00:00	2009-117T07:47:00	3000	86.4	SPASS Rider			
MP 109TI FLYBYNT001 NA	2009-117T04:03:37		000T00:00:01	2009-117T04:03:38	0	0	Non-SPASS			
SP 109NA C70OBSNON118 NA	2009-117T07:47:00		000T21:15:00	2009-118T05:02:00	0	0	Non-SPASS			
SP 109TI WAYPTURN117 PRIME	2009-117T07:47:00		000T00:40:00	2009-117T08:27:00	0	0	New Waypoint	NEG Y to Titan	POS X to NSP	
CIRS 109TI CLOUD003 ISS	2009-117T08:27:00		000T15:46:00	2009-118T00:13:00	4000	227.04	SPASS Rider			
ISS 109TI CLOUD003 PRIME	2009-117T08:27:00		000T15:46:00	2009-118T00:13:00	0	320	Prime	ISS NAC to Titan	NEG X to Sun	Secondary orientation: NEG X to Sun preferred, but flexible
UVIS 109TI CLOUD003 ISS	2009-117T08:27:00		000T15:46:00	2009-118T00:13:00	1006.4	57.123	SPASS Rider			
CAPS 109TI BURST16K002 RIDER	2009-117T10:00:00		000T02:16:32	2009-117T12:16:32	15000	122.88	Non-SPASS			
VIIMS 109TI CLOUDMAP001 ISS	2009-118T00:12:59		000T13:49:01	2009-118T14:02:00	201	10	SPASS Rider			
CIRS 109TI LDHEM002 ISS	2009-118T00:13:00		000T00:45:00	2009-118T00:58:00	4000	10.8	SPASS Rider			
ISS 109TI LDHEM002 PRIME	2009-118T00:13:00		000T00:45:00	2009-118T00:58:00	0	40	Prime	ISS NAC to Titan	NEG X to Sun	Secondary orientation: NEG X to Sun preferred, but flexible
CIRS 109TI CLOUD004 ISS	2009-118T00:58:00		000T01:24:00	2009-118T02:22:00	4000	20.16	SPASS Rider			
ISS 109TI CLOUD004 PRIME	2009-118T00:58:00		000T01:24:00	2009-118T02:22:00	0	40	Prime	ISS NAC to Titan	NEG X to Sun	Secondary orientation: NEG X to Sun preferred, but flexible
UVIS 109TI CLOUD004 ISS	2009-118T00:58:00		000T01:24:00	2009-118T02:22:00	1006.4	5.072	SPASS Rider			
CAPS 109SA SURVEYPTG009 PRIME	2009-118T02:22:00		000T02:00:00	2009-118T04:22:00	3000	21.6	Prime	ISS NAC to Titan (10.0,0.0,20.0 deg. offset)	NEG X to Sun	
SP 109EA DLTURN118 PRIME	2009-118T04:22:00		000T00:40:00	2009-118T05:02:00	0	0	Prime	XBAND to Earth	NEG Y to 123.06/-78.94	
ENGR 109SC DFPWTCM118 PPS	2009-118T05:01:02		000T00:00:58	2009-118T05:02:00	0	0	Non-SPASS			
NAV 109SC OTM192001 PRIME	2009-118T05:02:00		000T09:00:00	2009-118T14:02:00	0	0	SPASS Rider			
SP 109EA C70ARKOTP118 PRIME	2009-118T05:02:00		000T09:00:00	2009-118T14:02:00	0	0	Prime	XBAND to Earth	4 Hr Rolling	NEG Y to 123.06/-78.94; MIMI
SP 109NA C702NDNON118 SP	2009-118T05:02:00		000T09:00:00	2009-118T14:02:00	0	0	Non-SPASS			
SP 109NA C70METNON118 SP	2009-118T05:02:00		000T09:00:00	2009-118T14:02:00	0	0	Non-SPASS			
UVIS 109SW IPHSURVEY012 RIDER	2009-118T05:02:00		000T09:00:00	2009-118T14:02:00	152.5	4.94	Non-SPASS			
CIRS 109IC DSCAL09118 SP	2009-118T06:02:00		000T08:00:00	2009-118T14:02:00	3000	86.4	SPASS Rider			
ENGR 109SC DFPW118 PPS	2009-118T14:00:00		000T00:00:47	2009-118T14:00:47	0	0	Non-SPASS			
MIMI 109SA MAGDYN003 RIDER	2009-118T14:02:00		001T01:55:00	2009-119T15:57:00	1200	111.96	Non-SPASS			

109Ti Wrapup SPASS

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
Sequence S49, length = 40 days		2009-085T10:05:00		039T21:11:00	2009-125T07:16:00			
Titan Non-Targeted Flyby Se...		2009-116T00:33:00		002T13:29:00	2009-118T14:02:00			
SP_109TI_WAYPTTURN116_PRIME	V	2009-116T00:33:00		000T00:40:00	2009-116T01:13:00	NEG_Y to Titan	NEG_X to Sun	
NEW WAYPOINT		2009-116T01:13:00		001T07:14:00	2009-117T08:27:00	NEG_Y to Titan	NEG_X to Sun	
ISS_109TI_CLOUD001_PRIME	C, U, V	2009-116T01:13:00		000T06:32:00	2009-116T07:45:00	ISS_NAC to Titan	NEG_X to Sun	Secondary orientation: NEG_X to Sun preferred, but flexible
ISS_109RH_RHEARXLP001_PRIME	V	2009-116T07:45:00		000T03:45:00	2009-116T11:30:00	ISS_NAC to Rhea	PIC	
ISS_109TI_CLOUD002_PRIME	C, U, V	2009-116T11:30:00		000T09:52:00	2009-116T21:22:00	ISS_NAC to Titan	NEG_X to Sun	Secondary orientation: NEG_X to Sun preferred, but flexible
ISS_109TI_LDHEM001_PRIME	C, V	2009-116T21:22:00		000T00:45:00	2009-116T22:07:00	ISS_NAC to Titan	NEG_X to Sun	Secondary orientation: NEG_X to Sun preferred, but flexible
SP_109EA_DLTURN116_PRIME	V	2009-116T22:07:00		000T00:40:00	2009-116T22:47:00	XBAND to Earth	POS_X to NEP	
SP_109EA_G34BWGNON116_PRIME	C, V	2009-116T22:47:00		000T09:00:00	2009-117T07:47:00	XBAND to Earth	Rolling/Bias	POS_X to NEP
SP_109TI_WAYPTTURN117_PRIME	V	2009-117T07:47:00		000T00:40:00	2009-117T08:27:00	NEG_Y to Titan	POS_X to NSP	
NEW WAYPOINT		2009-117T08:27:00		001T05:35:00	2009-118T14:02:00	NEG_Y to Titan	POS_X to NSP	
ISS_109TI_CLOUD003_PRIME	C, U, V	2009-117T08:27:00		000T15:46:00	2009-118T00:13:00	ISS_NAC to Titan	NEG_X to Sun	Secondary orientation: NEG_X to Sun preferred, but flexible
ISS_109TI_LDHEM002_PRIME	C, V	2009-118T00:13:00		000T00:45:00	2009-118T00:58:00	ISS_NAC to Titan	NEG_X to Sun	Secondary orientation: NEG_X to Sun preferred, but flexible
ISS_109TI_CLOUD004_PRIME	C, U, V	2009-118T00:58:00		000T01:24:00	2009-118T02:22:00	ISS_NAC to Titan	NEG_X to Sun	Secondary orientation: NEG_X to Sun preferred, but flexible
CAPS_109SA_SURVEYPTG009_PRIME	V	2009-118T02:22:00		000T02:00:00	2009-118T04:22:00	ISS_NAC to Titan (10.0,0.0,20.0 deg. r	NEG_X to Sun	
SP_109EA_DLTURN118_PRIME	V	2009-118T04:22:00		000T00:40:00	2009-118T05:02:00	XBAND to Earth	NEG_Y to 123.06/-78.94	
SP_109EA_C70AROTP118_PRIME	C, N, V	2009-118T05:02:00		000T09:00:00	2009-118T14:02:00	XBAND to Earth	4_Hr_Rolling	NEG_Y to 123.06/-78.94; MIMI

109Ti Wrapup Open Issues

- VIMS to align riders (also generates SMT warnings that data is not being recorded since riders overlap downlinks)