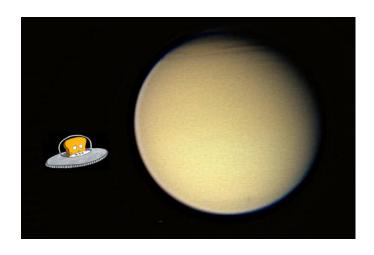# TOST: Integration 114TI (T58) Wrap-Up

Sept. 19, 2008

Nora Kelly, Kim Steadman, Jo Pitesky, Trina Ray

Segment times:

BEG: 2009-189T04:00:00
END: 2009-191T04:53:00

Altitude: 965 km

Time of C/A: 2009-189T17:04:03 (080806)

(epoch not updated in CIMS yet)

Epoch: GMB_E114_Titan58

Sequence: S51

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

Discuss
Timeline
Op Modes
Telem Modes
Deadbands for RCS

Homework
Custom Handoff Attitudes
Unique Op Mode
   Requirements (SCO)
Turn Assignments
CCRs
High Level Science

Detailed Meeting

Present
Master Timeline
SMT Report
Timeline Graphic
TOL
SPASS
DSN Reports
Dual Playback Science
Draft Data Volume Cuts

Discuss
Data Volume Cuts

Homework
CCRs
High Level Science
   Objectives

Wrap-up Meeting

Present
Wrap-up Package
   Checklist
High Level Science
   Objectives

Discuss
N/A

Homework
N/A

CIRS – Surface temperature scan and disk integration to search for new gases in far-IR.

ISS – ISS will acquire full-disk, global-mapping, and regional-mapping mosaics of the region southwest of Senkyo and northeast of Tsegihi at low phase angles and will ride along with VIMS for high-resolution imaging as well as cloud monitoring.

VIMS – On the inbound, the phase angle is much larger than 90 degrees and VIMS ridealong observations will provide information on the composition of Titan's atmosphere. After radar observations, VIMS will be ridealong with UVIS for a stellar occultation that will provide information on the composition of Titan's atmosphere. Then the new area mapped during T57 will be observed at a better resolution of 20 km/pixel.

UVIS – Solar and stellar occultations by Titan are the most valuable Titan observations for UVIS because they provide detailed vertical profiles of nitrogen (in the EUV channel during solar occultation) and hydrocarbons, HCN, and aerosols (in the FUV channel during stellar occultations). The experiment is self-calibrating (the information comes from a ratio of signal during occultation to signal of the unocculted sun or star just before or after occultation). These profiles probe altitudes between 300 km and 2400 km which fill the gap between CIRS and INMS measurements. Much of the chemistry and aerosol formation occurs in this vertical region. Observations taken over the course of the mission will collectively provide coverage at many latitudes and local times and these will be used to study meridional and local time gradients in the upper atmosphere. Knowledge of these gradients is important for understanding the meridional circulation and other dynamical and chemical processes.

RADAR - SAR runs along the western edge of Xanadu to study boundary with Shangri-La. Swath runs parallel to T55/56/57 mapping sequence and covers Ontario Lacus. SAR swath will be altimetered on T60.

MIMI – Energetic ion and electron energy input to atmosphere

MAG – T58 is the fourth consecutive flank-out, post-dusk flyby with a relatively low altitude at closest approach (965 km). As in T55, T56 and T57, MAG measurements will provide a description of the draping and the pileup of the external magnetic field around Titan on the nightside hemisphere. It will be also a good complement to T52, T53, T54, T55, T56 and T57 in order to characterize the background field for a similar local time with respect to Saturn and different SKR longitudes.

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 T58

T58	965					
Start Time	**End Time**	**Prime Activity**	**Obs. Detail**	**Op Mode**	**TLM Mode**	**Comments**
2009-189T04:00:00	2009-189T04:30:00	SP Turn to WP	NEG_Y to Titan; NEG_X to Sun	DFPW Normal	S_N_ER_3	
2009-189T04:30:00	C/A - 12:19:04	OD Uncertainty Dead Time	duration 15 min.	DFPW Normal	S_N_ER_3	
				DFPW Normal	S_N_ER_3	
-12:19:04	-09:00	VIMS	Template O	DFPW Normal	S_N_ER_3	
-09:00	-05:10	UVIS	Template X	DFPW Normal	S_N_ER_3	
-05:10	-02:20	UVIS	Template X	RADWU	S_N_ER_5a for 15 min., then S_N_ER_3	
-02:20	-01:32	VIMS		RADWU	S_N_ER_3	
begin custom period						
-01:32	-00:27	UVIS Solar Occ	on wheels, includes turn to occ attitude	RADWU	S_N_ER_3	Turn from WP. NEG_Y to Titan; NEG_X to Sun (start at -1:32 hr, includes turn)
-00:27	-00:14:30	Turn to RADAR	Transition to RCS @ -00:27 (1 min.)	RADWU > RADRCS @ -00:27	S_N_ER_8	deadband (0.5, 0.5, 0.5) for UVIS
-00:14:30	0	RADAR SAR		RADRCS	S_N_ER_8	
2009-189T17:04:03		CLOSEST APPROACH	NEG_Z to Titan, NEG_X to Titan_SC_RAM	RADRCS	S_N_ER_8	
0	+00:18	RADAR SAR		RADRCS	S_N_ER_8	
+00:18	+00:26	Turn to UVIS attitude		RADRCS	S_N_ER_8	
+00:26	+00:48	Transition to RWA at +00:26	UVIS occ during transition (UVIS rider)	RADRCS > ORSRCS end by +00:26; ORSRCS > DFPW Normal @ +00:26	S_N_ER_3	deadband (0.5, 0.5, 0.5) for UVIS during transition
+00:48	+01:25	UVIS Stellar Occ	prime request starting at +00:48	DFPW Normal	S_N_ER_3	return to WP. NEG_Y to Titan; NEG_X to Sun (20 min. added to end for turn)
end custom period						
+01:25	+02:00	VIMS		DFPW Normal	S_N_ER_3	
+02:00	+3:30	CIRS	Template S2	DFPW Normal	S_N_ER_3	
+3:30	+5:00	ISS	Template S2	DFPW Normal	S_N_ER_3	
+5:00	+09:00	ISS	Template H	DFPW Normal	S_N_ER_3	
+09:00	+12:00	CIRS	Template D2	DFPW Normal	S_N_ER_3	
+12:00	+14:00	ISS	Template D2	DFPW Normal	S_N_ER_3	
+14:00	C/A + 23	VIMS	Template B	DFPW Normal	S_N_ER_3	
C/A + 23	2009-190T16:13:00	OD Uncertainty Dead Time		DFPW Normal	S_N_ER_3	
2009-190T16:13:00	2009-190T16:53:00	SP Turn to Earth for downlink	XBAND to Earth; NEG_X to NEP	DFPW Normal	S_N_ER_3	
2009-190T16:53:00	2009-191T02:53:00	70-mArray	G70	DFPW Normal	RTE_N_SPB	
2009-191T02:53:00	2009-191T04:53:00		C70	DFPW Normal	RTE_N_SPB	

KEY:	
	begin custom period
	end custom period
	RWA to RCS Transition
	RCS to RWA Transition
	SP turn to WP
	CLOSEST APPROACH

• Dual playback: C/A - 57 min. to +6 min. (541 Mb) currently
• Deadband (0.5,0.5,0.5)

```
TELEMETRY MODE REPORT
-----------------------------------------------------------------------------------------------------------
   EPOCH RELATIVE                        UTC            DURATION    TELEMETRY MODE              REQUEST
-----------------------------------------------------------------------------------------------------------
                                2009-189T04:00:00.000   07:54:04   S_N_ER_3          SP_114NA_G70OBSNON190_NA
GMB_E114_Titan58-000T05:10:00   2009-189T11:54:04.000   00:15:00   S_N_ER_5A         SP_114NA_G70OBSNON190_NA
GMB_E114_Titan58-000T04:55:00   2009-189T12:09:04.000   04:28:00   S_N_ER_3          SP_114NA_G70OBSNON190_NA
GMB_E114_Titan58-000T00:27:00   2009-189T16:37:04.000   00:53:00   S_N_ER_8          SP_114NA_G70OBSNON190_NA
GMB_E114_Titan58+000T00:26:00   2009-189T17:30:04.000   23:22:56   S_N_ER_3          SP_114NA_G70OBSNON190_NA
                                2009-190T16:53:00.000   00:15:00   RTE_N_SPB_66360   SP_114EA_G70METNON190_PRIME
                                2009-190T17:08:00.000   00:30:00   RTE_N_SPB_82950   SP_114EA_G70METNON190_PRIME
                                2009-190T17:38:00.000   01:00:00   RTE_N_SPB_99540   SP_114EA_G70METNON190_PRIME
                                2009-190T18:38:00.000   07:45:00   RTE_N_SPB_124425  SP_114EA_G70METNON190_PRIME
                                2009-191T02:23:00.000   00:30:00   RTE_N_SPB_110600  SP_114EA_G70METNON190_PRIME
                                2009-191T02:53:00.000   02:00:00   RTE_N_SPB_124425  SP_114EA_C70METNON190_PRIME
-----------------------------------------------------------------------------------------------------------
```

Current warnings (ok- agreed to):

ISS_114TI_EUVFUV002_UVIS
Telemetry mode change during ISS rider activity starting at 2009-189T11:54:04
(S&ER-5A for the first 15 min. for RADAR warm-up, then we are back in S&ER-3)

RADAR_114TI_T58WARMUP001_RIDER
Found an activity whose data are NOT recorded in this telemetry mode "S_N_ER_3" commanded at 2009-189T12:09:04.000. Volume of 7.625779 Mb not given data policing space.

T58 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)

DOWNLINK PASS NAME	Start	End	START	SCI	HK+E	TOTAL	CPACTY	MRGN	OPNAV	SCI	ENGR	TOTAL	CPACTY	MARGN	NET_MARGN	CAROVR
SP_114EA_G70METNON190_PRIME	190 16:53	191 02:53	0	3278	169	3446	3552	106	0	238	59	3743	3583	-161	2 0%	160
SP_114EA_C70METNON190_PRIME	191 02:53	191 04:53	160	0	541	701	3552	2851	0	45	12	758	760	2	2 0%	0

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	189 04:00	190 16:53	200.1	52.3	269.5	23.3	802.0	90.8	129.6	480.4	386.2	313.5	494.0	0.0	42.9	3284.7
OBSERVATION_SI	189 04:00	190 16:53	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
SP_114EA_G70METNON190_PRIME	190 16:53	191 02:53	25.2	14.2	86.4	3.6	0.0	21.6	32.4	0.0	46.8	5.5	0.0	0.0	0.0	235.7
OBSERVATION_NOR	189 04:00	191 02:53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	541.2	541.2
SP_114EA_C70METNON190_PRIME	191 02:53	191 04:53	5.0	2.8	14.4	0.7	0.0	4.3	6.5	0.0	9.4	1.1	0.0	0.0	0.0	44.3
DAILY TOTAL SCIENCE	189 04:00	191 04:53	230.4	69.3	376.3	27.7	802.0	116.8	168.5	480.4	442.4	320.1	494.0	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)	230.4	69.3	376.3	27.7	802.0	116.8	168.5	480.4	442.4	320.1	494.0	0.0

Tough cuts! Thanks to everyone for contributions. Data volume
looks good. (and special thanks for additional last 48 Mb from ISS)

```
CASSINI DOWNLINK/DSN COVERAGE SUMMARY for 114TI_T58_080902.apf on 2008-Sep-02 15:22:22
(+ = pass overlaps with previous pass; * = conflicts with DSN maintenance; o = overlaps occultation)
-------------------------------------------------------|-------------------------------------------------------
                      DOWNLINK PASS                     |                        DSN PASS
-------------------------------------------------------|-------------------------------------------------------
NAME         START_TO_END    START_TO_END    DUR  DATA_RATES | ID  START_TO_END    START_TO_END    DUR  CALS  LABEL   CNFG
             SCET            ERT             hh:mm kbps       |     SCET            ERT             hh:mm min
-------------------------------------------------------|-------------------------------------------------------
 G70METNON190 190T16:53-02:53 190T18:15-04:15 10:00 66,82,99,124,110 | 14* 190T16:53-02:53 190T18:15-04:15 10:00 60 /15 TP      N003
+C70METNON190 191T02:53-04:53 191T04:15-06:15 02:00 124            | 43  191T02:33-04:53 191T03:55-06:15 02:20 60 /15 TP      N003
-------------------------------------------------------|-------------------------------------------------------
```
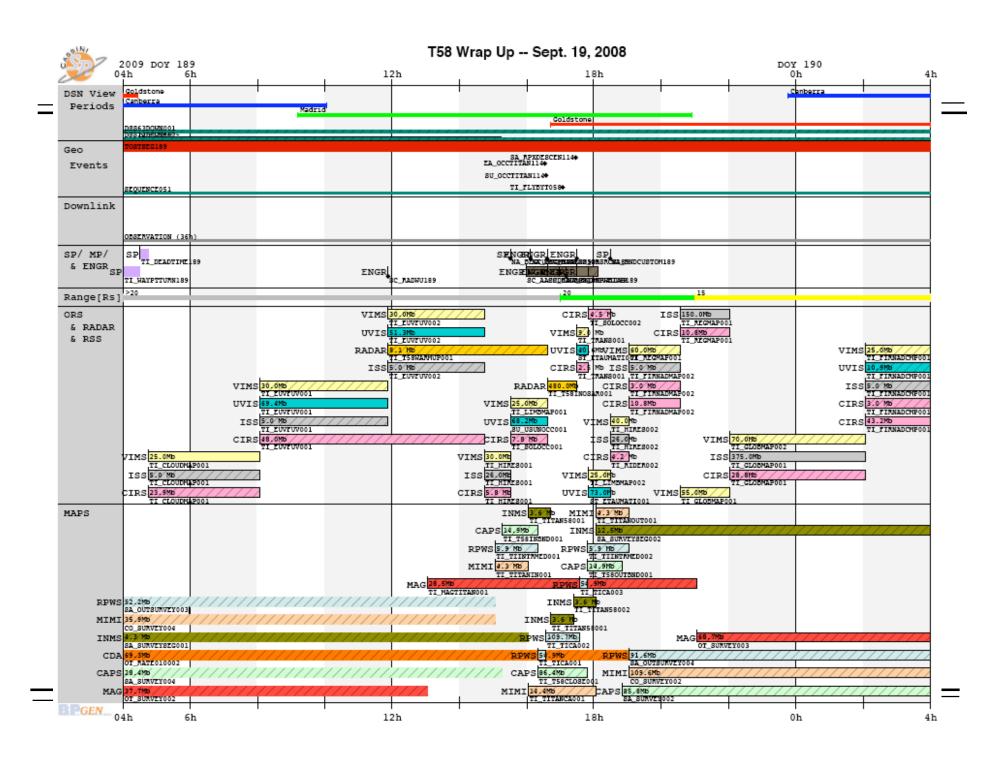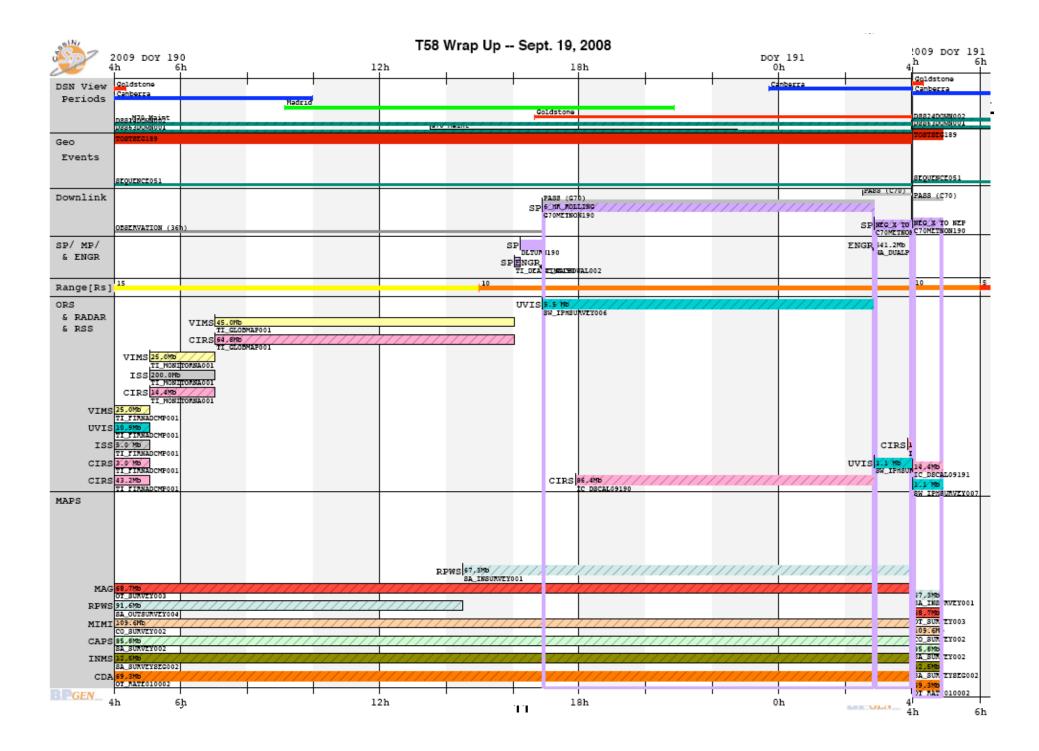
SP_114EA_G70METNON190_PRIME (DSS-14) overlaps weekly maintenance by 5.7 hours (request to get maintenance moved)

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
Sequence S51, length = 41 days		2009-164T04:41:00		040T17:10:00	2009-204T21:51:00			
Titan Flyby T58 Segment		2009-189T04:00:00		002T00:53:00	2009-191T04:53:00			
SP_114TI_WAYPTTURN189_PRIME		2009-189T04:00:00		000T00:30:00	2009-189T04:30:00	NEG_Y to Titan	NEG_X to Sun	
NEW WAYPOINT		2009-189T04:30:00		002T00:23:00	2009-191T04:53:00	NEG_Y to Titan	NEG_X to Sun	
SP_114TI_DEADTIME189_PRIME		2009-189T04:30:00		000T00:15:00	2009-189T04:45:00	NEG_Y to Titan	NEG_X to Sun	
VIMS_114TI_CLOUDMAP001_PRIME	C, I	2009-189T04:45:00	GMB_E114_Titan58-000T12:19:04	000T03:19:04	2009-189T08:04:04	VIMS_IR to Titan	NEG_X to Sun	
UVIS_114TI_EUVFUV001_PRIME	C, I, V	2009-189T08:04:04	GMB_E114_Titan58-000T09:00:00	000T03:50:00	2009-189T11:54:04	UVIS_FUV to Titan	NEG_X to Sun	
UVIS_114TI_EUVFUV002_PRIME	C, I, R, V	2009-189T11:54:04	GMB_E114_Titan58-000T05:10:00	000T02:50:00	2009-189T14:44:04	UVIS_FUV to Titan	NEG_X to Sun	
VIMS_114TI_HIRES001_PRIME	C, I, M, R	2009-189T14:44:04	GMB_E114_Titan58-000T02:20:00	000T00:48:00	2009-189T15:32:04	VIMS_IR to Titan	NEG_X to Sun	
Begin Custom Period		2009-189T15:32:04	GMB_E114_Titan58-000T01:32:00	000T00:00:01	2009-189T15:32:05			
UVIS_114SU_USUNOCC001_PRIME	C, M, R, V	2009-189T15:32:04	GMB_E114_Titan58-000T01:32:00	000T01:05:00	2009-189T16:37:04	ISS_NAC to Sun (-20.0,0.0,0.0 deg. POS_X to Titan	NEG_X to Sun	Pick up at NEG_Y to Titan, NEG_X to Sun; Hand off at ISS_NAC to Sun (-20.0,0.0,0.0 deg. offset), POS_X to Titan.
Begin Dual Playback Science		2009-189T16:07:04	GMB_E114_Titan58-000T00:57:00	000T00:00:01	2009-189T16:07:05			
ENGR_114SC_RADRCS189_PRIME	M	2009-189T16:37:04	GMB_E114_Titan58-000T00:27:00	000T00:01:00	2009-189T16:38:04	ISS_NAC to Sun (-20.0,0.0,0.0 deg. POS_X to Titan		Pick up at ISS_NAC to Sun (-20.0,0.0,0.0 deg. offset), POS_X to Titan; Hand off at ISS_NAC to Sun (-20.0,0.0,0.0 deg. offset), POS_X to Titan. Deadband (.5,.5,.5) throughout the flyby
RADAR_114TI_T58INOSAR001_PRIME	M	2009-189T16:38:04	GMB_E114_Titan58-000T00:26:00	000T00:52:00	2009-189T17:30:04	NEG_Z to Titan	NEG_X to Titan_SC_RAM	Pick up at ISS_NAC to Sun (-20.0,0.0,0.0 deg. offset), POS_X to Titan; Hand off at UVIS_FUV to 206.885/49.313 (0.082,0.0,0.0 deg. offset), NEG_Z to NTP.
114TI (t) T58 TITAN Inbou...		2009-189T17:04:04		000T00:00:01	2009-189T17:04:05			
End Dual Playback Science		2009-189T17:10:04	GMB_E114_Titan58+000T00:06:00	000T00:00:01	2009-189T17:10:05			
ENGR_114SC_DFPWBIAS189_PPS	C, M, U, V	2009-189T17:30:04	GMB_E114_Titan58+000T00:26:00	000T00:21:05	2009-189T17:51:09	UVIS_FUV to 206.885/49.313 (0.08	NEG_Z to NTP	Pick up at UVIS_FUV to 206.885/49.313 (0.082,0.0,0.0 deg. offset), NEG_Z to NTP; Hand off at UVIS_FUV to 206.885/49.313 (0.082,0.0,0.0 deg. offset), NEG_Z to NTP. Deadband (.5,.5,.5) through transition
UVIS_114ST_ETAUMATI001_PRIME	C, M, V	2009-189T17:51:09	GMB_E114_Titan58+000T00:47:05	000T00:37:55	2009-189T18:29:04	UVIS_FUV to 206.885/49.313 (0.08	NEG_Z to NTP	Pick up at UVIS_FUV to 206.885/49.313 (0.082,0.0,0.0 deg. offset), NEG_Z to NTP; Hand off at NEG_Y to Titan, NEG_X to Sun.
End Custom Period		2009-189T18:29:04	GMB_E114_Titan58+000T01:25:00	000T00:00:01	2009-189T18:29:05			
VIMS_114TI_HIRES002_PRIME	C, I, M	2009-189T18:29:04	GMB_E114_Titan58+000T01:25:00	000T00:35:00	2009-189T19:04:04	VIMS_IR to Titan	NEG_X to Sun	
CIRS_114TI_FIRNADMAP002_PRIME	C, I, V	2009-189T19:04:04	GMB_E114_Titan58+000T02:00:00	000T01:30:00	2009-189T20:34:04	CIRS_FP1 to Titan	POS_X to North_Pole_Dir	
ISS_114TI_REGMAP001_PRIME	C, V	2009-189T20:34:04	GMB_E114_Titan58+000T03:30:00	000T01:30:00	2009-189T22:04:04	ISS_NAC to Titan	NEG_X to Sun	
ISS_114TI_GLOBMAP001_PRIME	C, V	2009-189T22:04:04	GMB_E114_Titan58+000T05:00:00	000T04:00:00	2009-190T02:04:04	ISS_NAC to Titan	NEG_X to Sun	
CIRS_114TI_FIRNADCMP001_PRIME	C, I, U, V	2009-190T02:04:04	GMB_E114_Titan58+000T09:00:00	000T03:00:00	2009-190T05:04:04	CIRS_FP1 to Titan	PIC	
ISS_114TI_MONITORNA001_PRIME	C, V	2009-190T05:04:04	GMB_E114_Titan58+000T12:00:00	000T02:00:00	2009-190T07:04:04	ISS_NAC to Titan	NEG_X to Sun	
VIMS_114TI_GLOBMAP001_PRIME	C	2009-190T07:04:04	GMB_E114_Titan58+000T14:00:00	000T09:00:00	2009-190T16:04:04	VIMS_IR to Titan	NEG_X to Sun	
SP_114TI_DEADTIME190_PRIME		2009-190T16:04:04	GMB_E114_Titan58+000T23:00:00	000T00:08:56	2009-190T16:13:00	NEG_Y to Titan	NEG_X to Sun	
SP_114EA_DLTURN190_PRIME		2009-190T16:13:00		000T00:40:00	2009-190T16:53:00	XBAND to Earth	NEG_X to NEP	
SP_114EA_G70METNON190_PRIME	C	2009-190T16:53:00		000T10:00:00	2009-191T02:53:00	XBAND to Earth	6_Hr_Rolling	NEG_X to NEP
Pointer Reset in preparatio...		2009-191T02:53:00		000T00:00:01	2009-191T02:53:01			
SP_114EA_C70METNON190_PRIME	C	2009-191T02:53:00		000T02:00:00	2009-191T04:53:00	XBAND to Earth	NEG_X to NEP	

T58 Wrap Up -- Sept. 19, 2008

T58 Wrap Up -- Sept. 19, 2008

Request	Start Time	Epoch	Duration	End Time	Rate	Data Volume	SPASS Type	Primary Pointing	Secondary Pointing
MP_110NA_DSS63DOWN001_NA	2009-123T22:46:27		090T23:47:40	2009-214T22:34:07	0	0	Non-SPASS		
MP_112NA_SEQUENCE051_NA	2009-164T04:41:00		040T17:10:00	2009-204T21:51:00	0	0	SPASS Note		
MP_114NA_DSS24DOWN002_NA	2009-186T22:38:00		076T23:53:59	2009-263T22:31:59	0	0	Non-SPASS		
MAG_114OT_SURVEY002_PRIME	2009-188T19:38:00		000T17:26:04	2009-189T13:04:04	600	37.658	Non-SPASS		
CAPS_114SA_SURVEY004_PRIME	2009-189T04:00:00		000T11:17:04	2009-189T15:17:04	700	28.437	Non-SPASS		
CDA_114OT_RATE010002_RIDER	2009-189T04:00:00		002T00:53:00	2009-191T04:53:00	393.5	69.252	Non-SPASS		
INMS_114SA_SURVEYSEG001_INMS	2009-189T04:00:00		000T12:04:00	2009-189T16:04:04	100	4.344	Non-SPASS		
MIMI_114CO_SURVEY004_RIDER	2009-189T04:00:00		000T11:04:04	2009-189T15:04:04	900	35.86	Non-SPASS		
RPWS_114SA_OUTSURVEY003_PRIME	2009-189T04:00:00		000T11:04:04	2009-189T15:04:04	1310	52.196	Non-SPASS		
SP_114NA_G70OBSNON190_NA	2009-189T04:00:00		001T12:53:00	2009-190T16:53:00	0	0	Non-SPASS		
SP_114NA_TOSTSEG189_NA	2009-189T04:00:00		002T00:53:00	2009-191T04:53:00	0	0	SPASS Note		
SP_114TI_WAYPTTURN189_PRIME	2009-189T04:00:00		000T00:30:00	2009-189T04:30:00	0	0	New Waypoint	NEG_Y to Titan	NEG_X to Sun
SP_114TI_DEADTIME189_PRIME	2009-189T04:30:00		000T00:15:00	2009-189T04:45:00	0	0	Prime	NEG_Y to Titan	NEG_X to Sun
CIRS_114TI_CLOUDMAP001_VIMS	2009-189T04:45:00	GMB_E114_Titan58-000T12:19:04	000T03:19:04	2009-189T08:04:04	2000	23.888	SPASS Rider		
ISS_114TI_CLOUDMAP001_VIMS	2009-189T04:45:00	GMB_E114_Titan58-000T12:19:04	000T03:19:04	2009-189T08:04:04	0	5	SPASS Rider		
VIMS_114TI_CLOUDMAP001_PRIME	2009-189T04:45:00	GMB_E114_Titan58-000T12:19:04	000T03:19:04	2009-189T08:04:04	2093.1	25	Prime	VIMS_IR to Titan	NEG_X to Sun
CIRS_114TI_EUVFUV001_UVIS	2009-189T08:04:04	GMB_E114_Titan58-000T09:00:00	000T06:40:00	2009-189T14:44:04	2000	48	SPASS Rider		
ISS_114TI_EUVFUV001_UVIS	2009-189T08:04:04	GMB_E114_Titan58-000T09:00:00	000T03:50:00	2009-189T11:54:04	0	5	SPASS Rider		
UVIS_114TI_EUVFUV001_PRIME	2009-189T08:04:04	GMB_E114_Titan58-000T09:00:00	000T03:50:00	2009-189T11:54:04	5032	69.442	Prime	UVIS_FUV to Titan	NEG_X to Sun
VIMS_114TI_EUVFUV001_UVIS	2009-189T08:04:04	GMB_E114_Titan58-000T09:00:00	000T03:50:00	2009-189T11:54:04	2173.9	30	SPASS Rider		
ENGR_114SC_RADWU189_PPS	2009-189T11:54:04	GMB_E114_Titan58-000T05:10:00	000T00:00:07	2009-189T11:54:11	0	0	Non-SPASS		
ISS_114TI_EUVFUV002_UVIS	2009-189T11:54:04	GMB_E114_Titan58-000T05:10:00	000T02:50:00	2009-189T14:44:04	0	5	SPASS Rider		
RADAR_114TI_T58WARMUP001_RIDER	2009-189T11:54:04	GMB_E114_Titan58-000T05:10:00	000T04:43:00	2009-189T16:37:04	474.2	8.053	SPASS Rider		
UVIS_114TI_EUVFUV002_PRIME	2009-189T11:54:04	GMB_E114_Titan58-000T05:10:00	000T02:50:00	2009-189T14:44:04	5032	51.326	Prime	UVIS_FUV to Titan	NEG_X to Sun
VIMS_114TI_EUVFUV002_UVIS	2009-189T11:54:04	GMB_E114_Titan58-000T05:10:00	000T02:50:00	2009-189T14:44:04	2941.2	30	SPASS Rider		
MAG_114TI_MAGTITAN001_PRIME	2009-189T13:04:04	GMB_E114_Titan58-000T04:00:00	000T08:00:00	2009-189T21:04:04	988	28.454	Non-SPASS		
CIRS_114TI_HIRES001_VIMS	2009-189T14:44:04	GMB_E114_Titan58-000T02:20:00	000T00:48:00	2009-189T15:32:04	2000	5.76	SPASS Rider		
ISS_114TI_HIRES001_VIMS	2009-189T14:44:04	GMB_E114_Titan58-000T02:20:00	000T00:48:00	2009-189T15:32:04	0	26	SPASS Rider		
VIMS_114TI_HIRES001_PRIME	2009-189T14:44:04	GMB_E114_Titan58-000T02:20:00	000T00:48:00	2009-189T15:32:04	10416.7	30	Prime	VIMS_IR to Titan	NEG_X to Sun
MIMI_114TI_TITANIN001_RIDER	2009-189T15:04:04	GMB_E114_Titan58-000T02:00:00	000T01:00:00	2009-189T16:04:04	1200	4.32	SPASS Rider		
RPWS_114TI_TIINTRMED001_PRIME	2009-189T15:04:04	GMB_E114_Titan58-000T02:00:00	000T01:15:00	2009-189T16:19:04	1310	5.895	Non-SPASS		
CAPS_114TI_T58INBND001_PRIME	2009-189T15:17:04	GMB_E114_Titan58-000T01:47:00	000T01:02:00	2009-189T16:19:04	4000	14.88	SPASS Rider		
CIRS_114TI_SOLOCC001_UVIS	2009-189T15:32:04	GMB_E114_Titan58-000T01:32:00	000T01:05:00	2009-189T16:37:04	2000	7.8	SPASS Rider		
SP_114NA_BEGCUSTOM189_NA	2009-189T15:32:04	GMB_E114_Titan58-000T01:32:00	000T00:00:01	2009-189T15:32:05	0	0	SPASS Note		
UVIS_114SU_USUNOCC001_PRIME	2009-189T15:32:04	GMB_E114_Titan58-000T01:32:00	000T01:05:00	2009-189T16:37:04	17492.3	68.22	Prime	ISS_NAC to Sun (-20.0,0.0,0.0 deg. offset)	POS_X to Titan
VIMS_114TI_LIMBMAP001_UVIS	2009-189T15:32:04	GMB_E114_Titan58-000T01:32:00	000T01:05:00	2009-189T16:37:04	6410.3	25	SPASS Rider		
ENGR_114SC_AACSDUAL001_CDS	2009-189T15:59:04	GMB_E114_Titan58-000T01:05:00	000T02:10:00	2009-189T18:09:04	1638	12.776	Non-SPASS		
INMS_114TI_TITAN58001_INMS	2009-189T16:04:04	GMB_E114_Titan58-000T01:00:00	000T00:40:00	2009-189T16:44:04	1498	3.595	Non-SPASS		
MIMI_114TI_TITANCA001_RIDER	2009-189T16:04:04	GMB_E114_Titan58-000T01:00:00	000T02:00:00	2009-189T18:04:04	2000	14.4	SPASS Rider		
ENGR_114NA_BEGHIVAL189_CDS	2009-189T16:07:04	GMB_E114_Titan58-000T00:57:00	000T00:00:01	2009-189T16:07:05	0	0	SPASS Note		
CAPS_114TI_T58CLOSE001_PRIME	2009-189T16:19:04	GMB_E114_Titan58-000T00:45:00	000T01:30:00	2009-189T17:49:04	16000	86.4	SPASS Rider		
RPWS_114TI_TICA001_PRIME	2009-189T16:19:04	GMB_E114_Titan58-000T00:45:00	000T00:15:00	2009-189T16:34:04	60995	54.896	Non-SPASS		
MP_114EA_OCCTITAN114_NA	2009-189T16:33:20		000T00:00:01	2009-189T16:33:21	0	0	Non-SPASS		
RPWS_114TI_TICA002_PRIME	2009-189T16:34:04	GMB_E114_Titan58-000T00:30:00	000T01:00:00	2009-189T17:34:04	30464.6	109.673	Non-SPASS		
MP_114SU_OCCTITAN114_NA	2009-189T16:35:32		000T00:00:01	2009-189T16:35:33	0	0	Non-SPASS		
ENGR_114SC_RADRCS189_PPS	2009-189T16:37:04	GMB_E114_Titan58-000T00:27:00	000T00:20:50	2009-189T16:57:54	0	0	Non-SPASS		
ENGR_114SC_RADRCS189_PRIME	2009-189T16:37:04	GMB_E114_Titan58-000T00:27:00	000T00:01:00	2009-189T16:38:04	0	0	Prime	ISS_NAC to Sun (-20.0,0.0,0.0 deg. offset)	POS_X to Titan
RADAR_114TI_T58INOSAR001_PRIME	2009-189T16:38:04	GMB_E114_Titan58-000T00:26:00	000T00:52:00	2009-189T17:30:04	153847.1	480.003	Prime	NEG_Z to Titan	NEG_X to Titan_SC_RAM
INMS_114TI_TITAN58001_RIDER	2009-189T16:44:04	GMB_E114_Titan58-000T00:20:00	000T00:40:00	2009-189T17:24:04	1498	3.595	Non-SPASS		
MP_114TI_FLYBYT058_NA	2009-189T17:04:04		000T00:00:01	2009-189T17:04:05	0	0	SPASS Note		

Request	Start Time	Epoch	Duration	End Time	Rate	Data Volume	SPASS Type	Primary Pointing	Secondary Pointing
MP_114TI_FLYBYT058_NA	2009-189T17:04:04		000T00:00:01	2009-189T17:04:05	0	0	SPASS Note		
ENGR_114NA_ENDHIVAL189_CDS	2009-189T17:10:04	GMB_E114_Titan58+000T00:06:00	000T00:00:01	2009-189T17:10:05	0	0	SPASS Note		
INMS_114TI_TITAN58002_INMS	2009-189T17:24:04	GMB_E114_Titan58+000T00:20:00	000T00:40:00	2009-189T18:04:04	1498	3.595	Non-SPASS		
MP_114SA_RPXDESCEN114_NA	2009-189T17:27:47		000T00:00:01	2009-189T17:27:48	0	0	Non-SPASS		
ENGR_114SC_ORSRCS189_PPS	2009-189T17:29:04	GMB_E114_Titan58+000T00:25:00	000T00:00:06	2009-189T17:29:10	0	0	Non-SPASS		
CIRS_114TI_TRANS001_SP	2009-189T17:30:04	GMB_E114_Titan58+000T00:26:00	000T00:21:05	2009-189T17:51:09	2000	2.53	SPASS Rider		
ENGR_114SC_DFPWBIAS189_PPS	2009-189T17:30:04	GMB_E114_Titan58+000T00:26:00	000T00:21:05	2009-189T17:51:09	0	0	Prime	UVIS_FUV to 206.885/49.313 (0.082,0.0,0.0 deg. offset)	NEG_Z to NTP
UVIS_114ST_ETAUMATI001_ENGR	2009-189T17:30:04	GMB_E114_Titan58+000T00:26:00	000T00:21:05	2009-189T17:51:09	32096	40.601	SPASS Rider		
VIMS_114TI_TRANS001_ENGR	2009-189T17:30:04	GMB_E114_Titan58+000T00:26:00	000T00:21:05	2009-189T17:51:09	7114.6	9	SPASS Rider		
RPWS_114TI_TICA003_PRIME	2009-189T17:34:04	GMB_E114_Titan58+000T00:30:00	000T00:15:00	2009-189T17:49:04	60995	54.896	Non-SPASS		
CAPS_114TI_T58OUTBND001_PRIME	2009-189T17:49:04	GMB_E114_Titan58+000T00:45:00	000T01:02:00	2009-189T18:51:04	4000	14.88	SPASS Rider		
RPWS_114TI_TIINTRMED002_PRIME	2009-189T17:49:04	GMB_E114_Titan58+000T00:45:00	000T01:15:00	2009-189T19:04:04	1310	5.895	Non-SPASS		
CIRS_114TI_SOLOCC002_UVIS	2009-189T17:51:09	GMB_E114_Titan58+000T00:47:05	000T00:37:55	2009-189T18:29:04	2000	4.55	SPASS Rider		
UVIS_114ST_ETAUMATI001_PRIME	2009-189T17:51:09	GMB_E114_Titan58+000T00:47:05	000T00:37:55	2009-189T18:29:04	32096	73.018	Prime	UVIS_FUV to 206.885/49.313 (0.082,0.0,0.0 deg. offset)	NEG_Z to NTP
VIMS_114TI_LIMBMAP002_UVIS	2009-189T17:51:09	GMB_E114_Titan58+000T00:47:05	000T00:37:55	2009-189T18:29:04	10989	25	SPASS Rider		
INMS_114SA_SURVEYSEG002_INMS	2009-189T18:04:04	GMB_E114_Titan58+000T01:00:00	001T10:48:56	2009-191T04:53:00	100	12.534	Non-SPASS		
MIMI_114TI_TITANOUT001_RIDER	2009-189T18:04:04	GMB_E114_Titan58+000T01:00:00	000T01:00:00	2009-189T19:04:04	1200	4.32	SPASS Rider		
CIRS_114TI_RIDER002_VIMS	2009-189T18:29:04	GMB_E114_Titan58+000T01:25:00	000T00:35:00	2009-189T19:04:04	2000	4.2	SPASS Rider		
ISS_114TI_HIRES002_VIMS	2009-189T18:29:04	GMB_E114_Titan58+000T01:25:00	000T00:35:00	2009-189T19:04:04	0	26	SPASS Rider		
SP_114NA_ENDCUSTOM189_NA	2009-189T18:29:04	GMB_E114_Titan58+000T01:25:00	000T00:00:01	2009-189T18:29:05	0	0	SPASS Note		
VIMS_114TI_HIRES002_PRIME	2009-189T18:29:04	GMB_E114_Titan58+000T01:25:00	000T00:35:00	2009-189T19:04:04	19047.6	40	Prime	VIMS_IR to Titan	NEG_X to Sun
CAPS_114SA_SURVEY002_PRIME	2009-189T18:51:04	GMB_E114_Titan58+000T01:47:00	001T10:01:56	2009-191T04:53:00	700	85.761	Non-SPASS		
CIRS_114TI_FIRNADMAP002_PRIME	2009-189T19:04:04	GMB_E114_Titan58+000T02:00:00	000T01:30:00	2009-189T20:34:04	2000	10.8	Prime	CIRS_FP1 to Titan	POS_X to North_Pole_Dir
CIRS_114TI_FIRNADMAP002_SI	2009-189T19:04:04	GMB_E114_Titan58+000T02:00:00	000T01:30:00	2009-189T20:34:04	0	3	SPASS Rider		
ISS_114TI_FIRNADMAP002_CIRS	2009-189T19:04:04	GMB_E114_Titan58+000T02:00:00	000T01:30:00	2009-189T20:34:04	0	5	SPASS Rider		
MIMI_114CO_SURVEY002_RIDER	2009-189T19:04:04	GMB_E114_Titan58+000T02:00:00	001T09:48:56	2009-191T04:53:00	900	109.562	Non-SPASS		
RPWS_114SA_OUTSURVEY004_PRIME	2009-189T19:04:04	GMB_E114_Titan58+000T02:00:00	000T19:25:56	2009-190T14:30:00	1310	91.643	Non-SPASS		
VIMS_114TI_REGMAP001_CIRS	2009-189T19:04:04	GMB_E114_Titan58+000T02:00:00	000T01:30:00	2009-189T20:34:04	11111.1	60	SPASS Rider		
CIRS_114TI_REGMAP001_ISS	2009-189T20:34:04	GMB_E114_Titan58+000T03:30:00	000T01:30:00	2009-189T22:04:04	2000	10.8	SPASS Rider		
ISS_114TI_REGMAP001_PRIME	2009-189T20:34:04	GMB_E114_Titan58+000T03:30:00	000T01:30:00	2009-189T22:04:04	0	150	Prime	ISS_NAC to Titan	NEG_X to Sun
VIMS_114TI_GLOBMAP001_ISS	2009-189T20:34:04	GMB_E114_Titan58+000T03:30:00	000T01:30:00	2009-189T22:04:04	10185.2	55	SPASS Rider		
MAG_114OT_SURVEY003_PRIME	2009-189T21:04:04	GMB_E114_Titan58+000T04:00:00	001T07:48:56	2009-191T04:53:00	600	68.722	Non-SPASS		
CIRS_114TI_GLOBMAP001_ISS	2009-189T22:04:04	GMB_E114_Titan58+000T05:00:00	000T04:00:00	2009-190T02:04:04	2000	28.8	SPASS Rider		
ISS_114TI_GLOBMAP001_PRIME	2009-189T22:04:04	GMB_E114_Titan58+000T05:00:00	000T04:00:00	2009-190T02:04:04	0	375	Prime	ISS_NAC to Titan	NEG_X to Sun
VIMS_114TI_GLOBMAP002_ISS	2009-189T22:04:04	GMB_E114_Titan58+000T05:00:00	000T04:00:00	2009-190T02:04:04	4861.1	70	SPASS Rider		
CIRS_114TI_FIRNADCMP001_PRIME	2009-190T02:04:04	GMB_E114_Titan58+000T09:00:00	000T03:00:00	2009-190T05:04:04	4000	43.2	Prime	CIRS_FP1 to Titan	PIC
CIRS_114TI_FIRNADCMP001_SI	2009-190T02:04:04	GMB_E114_Titan58+000T09:00:00	000T03:00:00	2009-190T05:04:04	0	3	SPASS Rider		
ISS_114TI_FIRNADCMP001_CIRS	2009-190T02:04:04	GMB_E114_Titan58+000T09:00:00	000T03:00:00	2009-190T05:04:04	0	5	SPASS Rider		
UVIS_114TI_FIRNADCMP001_CIRS	2009-190T02:04:04	GMB_E114_Titan58+000T09:00:00	000T03:00:00	2009-190T05:04:04	1006.4	10.869	SPASS Rider		
VIMS_114TI_FIRNADCMP001_CIRS	2009-190T02:04:04	GMB_E114_Titan58+000T09:00:00	000T03:00:00	2009-190T05:04:04	2314.8	25	SPASS Rider		
CIRS_114TI_MONITORNA001_ISS	2009-190T05:04:04	GMB_E114_Titan58+000T12:00:00	000T02:00:00	2009-190T07:04:04	2000	14.4	SPASS Rider		
ISS_114TI_MONITORNA001_PRIME	2009-190T05:04:04	GMB_E114_Titan58+000T12:00:00	000T02:00:00	2009-190T07:04:04	0	200	Prime	ISS_NAC to Titan	NEG_X to Sun
VIMS_114TI_MONITORNA001_ISS	2009-190T05:04:04	GMB_E114_Titan58+000T12:00:00	000T02:00:00	2009-190T07:04:04	3472.2	25	SPASS Rider		
CIRS_114TI_GLOBMAP001_VIMS	2009-190T07:04:04	GMB_E114_Titan58+000T14:00:00	000T09:00:00	2009-190T16:04:04	2000	64.8	SPASS Rider		
VIMS_114TI_GLOBMAP001_PRIME	2009-190T07:04:04	GMB_E114_Titan58+000T14:00:00	000T09:00:00	2009-190T16:04:04	1388.9	45	Prime	VIMS_IR to Titan	NEG_X to Sun
RPWS_114SA_INSURVEY001_PRIME	2009-190T14:30:00		000T14:23:00	2009-191T04:53:00	1300	67.313	Non-SPASS		
SP_114TI_DEADTIME190_PRIME	2009-190T16:04:04	GMB_E114_Titan58+000T23:00:00	000T00:08:56	2009-190T16:13:00	0	0	Prime	NEG_Y to Titan	NEG_X to Sun
SP_114EA_DLTURN190_PRIME	2009-190T16:13:00		000T00:40:00	2009-190T16:53:00	0	0	Prime	XBAND to Earth	NEG_X to NEP
ENGR_114SC_AACSDUAL002_CDS	2009-190T16:52:47		000T00:00:02	2009-190T16:52:49	0	0	Non-SPASS		
SP_114EA_G70METNON190_PRIME	2009-190T16:53:00		000T10:00:00	2009-191T02:53:00	0	0	Prime	XBAND to Earth	6_Hr_Rolling
SP_114NA_G70METNON190_SP	2009-190T16:53:00		000T10:00:00	2009-191T02:53:00	0	0	Non-SPASS		
UVIS_114SW_IPHSURVEY006_RIDER	2009-190T16:53:00		000T10:00:00	2009-191T02:53:00	152.5	5.489	Non-SPASS		
CIRS_114IC_DSCAL09190_SP	2009-190T17:53:00		000T09:00:00	2009-191T02:53:00	2666.7	86.4	SPASS Rider		
SP_114NA_C70METNON190_SP	2009-191T02:33:00		000T02:20:00	2009-191T04:53:00	0	0	Non-SPASS		
ENGR_114NA_DUALPB189_CDS	2009-191T02:53:00		000T00:00:01	2009-191T02:53:01	541190272	541.19	SPASS Note		
SP_114EA_C70METNON190_PRIME	2009-191T02:53:00		000T02:00:00	2009-191T04:53:00	0	0	Prime	XBAND to Earth	NEG_X to NEP
UVIS_114SW_IPHSURVEY007_RIDER	2009-191T02:53:00		000T02:00:00	2009-191T04:53:00	152.5	1.098	Non-SPASS		
CIRS_114IC_DSCAL09191_SP	2009-191T03:53:00		000T01:00:00	2009-191T04:53:00	4000	14.4	SPASS Rider		

T58 Liens & Open Issues

- Warnings the Sequence Lead will see:

    - RADAR, 2009-189T11:54:04, RADAR_114TI_T58WARMUP001_RIDER
    Found an activity whose data are NOT recorded in this telemetry mode "S_N_ER_3" commanded at 2009-189T12:09:04. Volume of 7.625779 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.)   Non-issue (RADAR aware)

    - SP_114NA_G70METNON190_SP

    Overlaps end of DSS-14 weekly maintenance by 5.7 hours; move later to resolve

    Plan to negotiate move of weekly maintenance. Key UVIS solar occ and RADAR SAR observation. Goldstone has the only full viewperiod for DL.

    - ISS_114TI_EUVFUV002_UVIS

    Telemetry mode change during ISS rider activity starting at 2009-189T11:54:04   Non-issue
       (S&ER-5A for the first 15 min. for RADAR warm-up, then to S&ER-3)   (ISS agreed)

    - Waypoint is invalid for short period during Custom Period

    Ok. Project approved waiving the requirement for a safe waypoint during custom periods (08/26/08). Waypoint is safe at all times we use it.