

**TOST: Handoff Package
022TI (T12)**

Segment Boundary 2006-077T07:49:00 – 2006-079T00:04:00

Titan C/A= 2006-078T00:05:57, Altitude = 1951 km

Epoch = GMB_E022_Titan12

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T12 Science Objectives

RSS - T12 provides the first Cassini tour opportunity for Radio Science (RSS) to observe Titan's ionosphere and neutral atmosphere using radio occultation, and Titan's surface using bistatic scattering. The radio occultation is the second ever of Titan, the first being a sole Voyager occultation in 1980. The three Cassini radio signals (Ka/X/S) are planned to probe the ionosphere and atmosphere of Titan on both the ingress and egress sides. A critical spacecraft maneuver is implemented to steer the Cassini high-gain antenna (HGA) boresight so that the radio signals refracted in the atmosphere are still received on the Earth down to Titan's surface. The measurements provide important high-spatial-resolution information about the large-scale structure of the ionosphere and atmosphere of Titan, including the electron number density profile, the temperature-pressure profile, and profiles of any microwave absorbing species. They also provide information about atmospheric small-scale structure such as gravity waves, turbulence, and sharp layers. During approach to Titan, the Cassini HGA boresight will be pointed to illuminate regions of Titan's surface for which mirror-like (quasi-specular) reflections of the incident radio signals can be observed at the the DSN ground receiving stations (bistatic scattering). The strength and polarization properties of the reflected signals, if detectable, provide important information about the dielectric constant of the surface region probed (physical nature) as well as the surface roughness.

ISS - 32-frame global-scale mosaic extending over Shangri-La, Tui Regio, and western Xanadu, including a frame over Ontario Lacus to look for possible cloud activity and potential stereo with T44.

VIMS - Search for and characterize midlatitude clouds, aurorae, hotspots, and changes in surface properties.

VIMS will also characterize the geologic features, haze and composition of Titan's equatorial region.

CIRS - Continue its global mapping of trace species (CO, H₂O, HCN) via rotational lines in the far-infrared by conducting inbound and outbound composition integrations.

RADAR - Fill-in radiometry and scatterometry coverage.

Attitude Strategy

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
Sequence S019, length = 42 ...		2006-070T00:35:00	E022_SEQUENCE_019+000T0	042T04:40:00	2006-112T05:15:00			
TOST rev 22 Segment		2006-077T07:49:00		001T16:15:00	2006-079T00:04:00			
SP_Q22TI_WAYPTTURN077_PRIME		2006-077T07:49:00		000T00:30:00	2006-077T08:19:00	ISS_NAC to Titan	NEG_X to Sun	
NEW WAYPOINT		2006-077T08:19:00		001T15:45:00	2006-079T00:04:00	ISS_NAC to Titan	NEG_X to Sun	
SP_Q22NA_DEADTIME077_PRIME		2006-077T08:19:00		000T00:22:57	2006-077T08:41:57	ISS_NAC to Titan	NEG_X to Sun	
VIMS_Q22TI_GLOBMAP002_PRIME	C, I	2006-077T08:41:57	GMB_E022_Titan12-000T15:24:00	000T01:24:00	2006-077T10:05:57	VIMS_IR to Titan	NEG_X to Sun	
CIRS_Q22TI_FIRNADCOMP003_PRIME	C, I, V	2006-077T10:05:57	GMB_E022_Titan12-000T14:00:00	000T07:00:00	2006-077T17:05:57	CIRS_FP1 to Titan	PIC	
ISS_Q22TI_GLOBMAPNA001_PRIME	C, R, V	2006-077T17:05:57	GMB_E022_Titan12-000T07:00:00	000T03:50:00	2006-077T20:55:57	ISS_NAC to Titan	NEG_X to Sun	
ENGR_Q22SC_URSS3RCS077_PPS	C, I, R, V	2006-077T20:55:57	GMB_E022_Titan12-000T03:10:00	000T00:20:48	2006-077T21:16:45			(0.5, 2.0, 0.5) deadband
VIMS_Q22TI_REGMAP004_PRIME	C, I, M, R, V, X	2006-077T21:16:57	GMB_E022_Titan12-000T02:49:00	000T01:43:00	2006-077T22:40:57	VIMS_IR to Titan	NEG_X to Sun	
RSS_Q22TI_BISTATIN001_PRIME	M, R, X	2006-077T22:40:57	GMB_E022_Titan12-000T01:25:00	000T01:19:00	2006-077T23:59:57	XBAND to Earth	POS_X to 145.0/-45.0	
RSS_Q22TI_OCC001_PRIME	M, R	2006-077T23:59:57	GMB_E022_Titan12-000T00:06:00	000T01:03:00	2006-078T01:02:57	XBAND to Earth	POS_X to 145.0/-45.0	
ENGR_Q22SC_RADWUBIAS077_PPS	M, R	2006-078T01:02:57	GMB_E022_Titan12+000T00:57:00	000T00:21:10	2006-078T01:24:07	NEG_Z to Titan	POS_X to North_Pole_Dir	
RADAR_Q22TI_T12OUTRAD001_PRIME	M	2006-078T01:24:57	GMB_E022_Titan12+000T01:19:00	000T04:11:00	2006-078T05:35:57	NEG_Z to Titan	POS_X to North_Pole_Dir	Use +Y_NTP for the 2nd polarization; leave at -Y to Titan, -X to Sun.
VIMS_Q22TI_AURORA002_PRIME	C, I	2006-078T05:35:57	GMB_E022_Titan12+000T05:30:00	000T06:50:00	2006-078T12:25:57	VIMS_IR to Titan	NEG_X to Sun	
CIRS_Q22TI_FIRNADCOMP008_PRIME	C, I, R, V	2006-078T12:25:57	GMB_E022_Titan12+000T12:20:00	000T01:41:00	2006-078T14:06:57	CIRS_FP1 to Titan	PIC	
SP_Q22NA_DEADTIME078_PRIME	R, V	2006-078T14:06:57	GMB_E022_Titan12+000T14:01:00	000T00:14:43	2006-078T14:21:40	ISS_NAC to Titan	NEG_X to Sun	
SP_Q22EA_DLTURNO78_PRIME	R, V	2006-078T14:22:00		000T00:22:00	2006-078T14:44:00	XBAND to Earth	POS_X to NEP	
SP_Q22EA_M70METNON078_PRIME	C, M, R	2006-078T14:44:00		000T09:20:00	2006-079T00:04:00	XBAND to Earth	Rolling/SRU	



Request	Start Time	Epoch	Duration	End Time	Rate	Mb	SPASS Type	Primary Pointing	Secondary Pointing	Pointing Agreement
CAPS_022IC_CALIBRATE001_PRIME	2006-079T00:00:00		000T09:10:00	2006-079T09:10:00	5700.0	188.1	SPASS Rider			
CAPS_022SA_SURVEY004_RIDER	2006-078T02:05:57	GMB_E022_Titan12+000T02:00:00	004T05:26:47	2006-082T07:32:44	1000.0	365.2	Non-SPASS			
CAPS_022SA_SURVEY006_RIDER	2006-077T07:50:00		000T14:15:57	2006-077T22:05:57	1000.0	51.8	Non-SPASS			
CAPS_022TI_T12CLOSE001_PRIME	2006-077T23:05:57	GMB_E022_Titan12-000T01:00:00	000T02:00:00	2006-078T01:05:57	16000.0	115.2	SPASS Rider			
CAPS_022TI_T12INBND001_PRIME	2006-077T21:58:17		000T01:07:40	2006-077T23:05:57	4000.0	17.9	SPASS Rider			
CAPS_022TI_T12OUTBND001_PRIME	2006-078T01:05:57	GMB_E022_Titan12+000T01:00:00	000T01:00:00	2006-078T02:05:57	4000.0	14.4	SPASS Rider			
CDA_022DR_1100DUST157_RIDER	2006-078T23:33:53		000T03:37:32	2006-079T03:11:25	524.0	6.8	Non-SPASS			
CDA_022DR_1300DUST156_RIDER	2006-078T18:21:21		000T03:10:32	2006-078T21:31:53	524.0	6.0	Non-SPASS			
CDA_022DR_1500DUST155_RIDER	2006-078T12:50:53		000T03:28:28	2006-078T16:19:21	524.0	6.6	Non-SPASS			
CDA_022DR_1700DUST121_RIDER	2006-077T11:07:58		000T23:40:54	2006-078T10:48:52	149.9	12.8	Non-SPASS			
CDA_022DR_2500DUST125_RIDER	2006-077T07:49:00		000T01:17:58	2006-077T09:06:58	149.9	0.7	Non-SPASS			
CDA_022HY_2400HYORXD20_RIDER	2006-077T09:06:58		000T01:59:59	2006-077T11:06:57	524.0	3.8	Non-SPASS			
CDA_022RI_1200RINGM021_RIDER	2006-078T21:32:54		000T01:59:59	2006-078T23:32:53	524.0	3.8	Non-SPASS			
CDA_022RI_1400RINGM021_RIDER	2006-078T16:20:22		000T01:59:59	2006-078T18:20:21	524.0	3.8	Non-SPASS			
CDA_022RI_1600RINGM023_RIDER	2006-078T10:49:54		000T01:59:59	2006-078T12:49:53	524.0	3.8	Non-SPASS			
CIRS_022IC_DSCAL1333_RIDER	2006-078T16:30:00		000T06:00:00	2006-078T22:30:00	4000.0	86.4	SPASS Rider			
CIRS_022TI_FIRNADCMP002_ISS	2006-077T17:05:57	GMB_E022_Titan12-000T07:00:00	000T04:00:00	2006-077T21:05:57	4000.0	57.6	SPASS Rider			
CIRS_022TI_FIRNADCMP002_VIMS	2006-077T21:05:57	GMB_E022_Titan12-000T03:00:00	000T01:32:00	2006-077T22:37:57	4000.0	22.1	SPASS Rider			
CIRS_022TI_FIRNADCMP003_PRIME	2006-077T10:05:57		000T07:00:00	2006-077T17:05:57	4000.0	100.8	Prime	CIRS_FP1 to Titan	PIC	
CIRS_022TI_FIRNADCMP003_SI	2006-077T10:05:57	GMB_E022_Titan12-000T14:00:00	000T07:00:00	2006-077T17:05:57	0.0	5.0	SPASS Rider			
CIRS_022TI_FIRNADCMP008_PRIME	2006-078T12:25:57	GMB_E022_Titan12+000T12:20:00	000T01:41:00	2006-078T14:06:57	4000.0	24.2	Prime	CIRS_FP1 to Titan	PIC	
CIRS_022TI_FIRNADCMP008_SI	2006-078T12:25:57	GMB_E022_Titan12+000T12:20:00	000T01:41:00	2006-078T14:06:57	0.0	5.0	SPASS Rider			
CIRS_022TI_FIRNADMAP003_VIMS	2006-078T05:35:57	GMB_E022_Titan12+000T05:30:00	000T06:50:00	2006-078T12:25:57	2000.0	49.2	SPASS Rider			
CIRS_022TI_FIRNADMAP004_VIMS	2006-077T08:41:57	GMB_E022_Titan12-000T15:24:00	000T01:24:00	2006-077T10:05:57	4000.0	20.2	SPASS Rider			
ENGR_022SC_DEADBAND001_AACS	2006-077T22:40:57	GMB_E022_Titan12-000T01:25:00	000T00:00:05	2006-077T22:41:02	0.0	0.0	SPASS Rider			
ENGR_022SC_DFPW077_PPS	2006-077T07:50:00		000T00:00:30	2006-077T07:50:30	0.0	0.0	Non-SPASS			
ENGR_022SC_DFPW078_PPS	2006-078T05:35:20	GMB_E022_Titan12+000T05:29:23	000T00:00:37	2006-078T05:35:57	0.0	0.0	Non-SPASS			
ENGR_022SC_RADLOW077_PPS	2006-077T22:50:57	GMB_E022_Titan12-000T01:15:00	000T00:00:04	2006-077T22:51:01	0.0	0.0	Non-SPASS			
ENGR_022SC_RADRWAD077_PPS	2006-078T01:24:57	GMB_E022_Titan12+000T01:19:00	000T00:00:44	2006-078T01:25:41	0.0	0.0	Non-SPASS			
ENGR_022SC_RADWUBIAS077_PPS	2006-078T01:02:57	GMB_E022_Titan12+000T00:57:00	000T00:21:10	2006-078T01:24:07	0.0	0.0	Prime	NEG_Z to Titan	POS_X to North_Pole_Dir	
ENGR_022SC_ROUTEREU001_CDS	2006-077T22:35:57	GMB_E022_Titan12-000T01:30:00	000T00:15:00	2006-077T22:50:57	0.0	0.0	Non-SPASS			
ENGR_022SC_ROUTEREU002_CDS	2006-077T23:05:57	GMB_E022_Titan12-000T01:00:00	000T01:57:00	2006-078T01:02:57	0.0	0.0	Non-SPASS			
ENGR_022SC_RSS3ARWAF077_PPS	2006-077T20:45:57	GMB_E022_Titan12-000T03:20:00	000T00:05:04	2006-077T20:51:01	0.0	0.0	Non-SPASS			
ENGR_022SC_URSS3RCS077_PPS	2006-077T20:55:57	GMB_E022_Titan12-000T03:10:00	000T00:20:48	2006-077T21:16:45	0.0	0.0	Prime			(0.5, 2.0, 0.5) deadband
INMS_022SA_SURVEY002_RIDER	2006-076T07:50:00		001T04:28:58	2006-077T12:18:58	50.0	5.1	Non-SPASS			
INMS_022SA_SURVEY003_RIDER	2006-078T12:05:57	GMB_E022_Titan12+000T12:00:00	000T12:00:02	2006-079T00:05:59	50.0	2.2	Non-SPASS			
INMS_022SA_SURVEY004_RIDER	2006-079T00:05:59		000T09:37:41	2006-079T09:43:40	50.0	1.7	Non-SPASS			
INMS_022TI_T12CLOSE001_RSS	2006-077T23:05:57	GMB_E022_Titan12-000T01:00:00	000T02:00:00	2006-078T01:05:57	1498.0	10.8	Non-SPASS			
INMS_022TI_T12INBD001_RSS	2006-077T12:18:58		000T10:46:59	2006-077T23:05:57	100.0	3.9	Non-SPASS			
INMS_022TI_T12OUTBD001_RSS	2006-078T01:05:57	GMB_E022_Titan12+000T01:00:00	000T11:00:00	2006-078T12:05:57	100.0	4.0	Non-SPASS			
ISS_022TI_AURORA002_VIMS	2006-078T05:35:57	GMB_E022_Titan12+000T05:30:00	000T06:50:00	2006-078T12:25:57	0.0	50.0	SPASS Rider			
ISS_022TI_FIRNADCMP003_CIRS	2006-077T10:05:57	GMB_E022_Titan12-000T14:00:00	000T07:00:00	2006-077T17:05:57	0.0	50.0	SPASS Rider			
ISS_022TI_FIRNADCMP008_CIRS	2006-078T12:25:57	GMB_E022_Titan12+000T12:20:00	000T01:41:00	2006-078T14:06:57	0.0	20.0	SPASS Rider			
ISS_022TI_GLOBMAP002_VIMS	2006-077T08:41:57	GMB_E022_Titan12-000T15:24:00	000T01:24:00	2006-077T10:05:57	0.0	20.0	SPASS Rider			
ISS_022TI_GLOBMAPNA001_PRIME	2006-077T17:05:57	GMB_E022_Titan12-000T07:00:00	000T03:50:00	2006-077T20:55:57	0.0	924.0	Prime	ISS_NAC to Titan	NEG_X to Sun	
ISS_022TI_REGMAP004_VIMS	2006-077T21:05:57	GMB_E022_Titan12-000T03:00:00	000T01:32:00	2006-077T22:37:57	0.0	20.0	SPASS Rider			
MAG_022OT_SURVEY001_PRIME	2006-077T07:49:00		000T14:16:57	2006-077T22:05:57	600.0	31.1	Non-SPASS			
MAG_022OT_SURVEY009_PRIME	2006-078T02:05:57	GMB_E022_Titan12+000T02:00:00	000T21:58:03	2006-079T00:04:00	600.0	47.5	Non-SPASS			
MAG_022TI_MAGTITAN001_PRIME	2006-077T22:05:57	GMB_E022_Titan12-000T02:00:00	000T04:00:00	2006-078T02:05:57	1976.0	28.5	Non-SPASS			

MIMI_022CO_SURVEY002_RIDER	2006-078T02:05:57	GMB_E022_Titan12+000T02:00:00	000T22:20:43	2006-079T00:26:40	900.0	72.4	Non-SPASS			
MIMI_022CO_SURVEY013_RIDER	2006-077T07:49:01		000T14:16:56	2006-077T22:05:57	900.0	46.7	Non-SPASS			
MIMI_022TI_T12CLOSE001_CAPS	2006-077T23:05:57	GMB_E022_Titan12-000T01:00:00	000T02:00:00	2006-078T01:05:57	2000.0	14.4	SPASS Rider			
MIMI_022TI_T12INBND001_CAPS	2006-077T22:05:57	GMB_E022_Titan12-000T02:00:00	000T01:00:00	2006-077T23:05:57	2000.0	7.2	SPASS Rider			
MIMI_022TI_T12OUTBND001_CAPS	2006-078T01:05:57	GMB_E022_Titan12+000T01:00:00	000T01:00:00	2006-078T02:05:57	2000.0	7.2	SPASS Rider			
MP_022EA_OCCTITAN022_NA	2006-078T00:05:52		000T00:14:15	2006-078T00:20:07	0.0	0.0	Non-SPASS			
MP_022NA_SEQUENCE019_NA	2006-070T00:35:00	E022_SEQUENCE_019+00	042T04:40:00	2006-112T05:15:00	0.0	0.0	SPASS Note			
MP_022SA_REV022_NA	2006-068T03:34:00		031T06:29:00	2006-099T10:03:00	0.0	0.0	Non-SPASS			
MP_022SU_OCCTITAN022_NA	2006-078T00:04:29		000T00:14:45	2006-078T00:19:14	0.0	0.0	Non-SPASS			
MP_022TI_FLYBY012_NA	2006-078T00:05:57		000T00:00:01	2006-078T00:05:58	0.0	0.0	Non-SPASS			
RADAR_022OT_WARM4TI12001_RIDER	2006-077T22:50:57	GMB_E022_Titan12-000T01:15:00	000T02:34:00	2006-078T01:24:57	474.2	4.4	SPASS Rider			
RADAR_022TI_T12OUTRAD001_PRIME	2006-078T01:24:57	GMB_E022_Titan12+000T01:19:00	000T04:11:00	2006-078T05:35:57	11199.4	168.7	Prime	NEG_Z to Titan	POS_X to North_Pole_Dir	Use +Y_NTP for the 2nd polarization; leave at -Y to Titan, -X to Sun.
RPWS_022SA_INSURVEY001_PRIME	2006-078T16:00:00		000T08:04:00	2006-079T00:04:00	1310.0	38.0	Non-SPASS			
RPWS_022SA_OUTSURVEY003_PRIME	2006-077T07:49:00		001T08:11:00	2006-078T16:00:00	1310.0	151.8	Non-SPASS			
RPWS_022TI_TICA001_PRIME	2006-077T23:35:57	GMB_E022_Titan12-000T00:30:00	000T01:00:00	2006-078T00:35:57	113998.7	410.4	Non-SPASS			
RPWS_022TI_TIINTRMED001_PRIME	2006-077T22:05:57	GMB_E022_Titan12-000T02:00:00	000T01:30:00	2006-077T23:35:57	12499.4	67.5	Non-SPASS			
RPWS_022TI_TIINTRMED002_PRIME	2006-078T00:35:57	GMB_E022_Titan12+000T00:30:00	000T01:30:00	2006-078T02:05:57	12499.4	67.5	Non-SPASS			
RSS_022TI_BISTATIN001_PRIME	2006-077T22:40:57	GMB_E022_Titan12-000T01:25:00	000T01:19:00	2006-077T23:59:57	0.0	0.0	Prime	XBAND to Earth	POS_X to 145.0/-45.0	
RSS_022TI_KADOWN001_RSS	2006-076T20:45:00		000T11:04:00	2006-077T07:49:00	0.0	0.0	SPASS Rider			
RSS_022TI_KADOWN002_RSS	2006-078T12:39:00		000T11:25:00	2006-079T00:04:00	0.0	0.0	SPASS Rider			
RSS_022TI_OCC001_PRIME	2006-077T23:59:57	GMB_E022_Titan12-000T00:06:00	000T01:03:00	2006-078T01:02:57	0.0	0.0	Prime	XBAND to Earth	POS_X to 145.0/-45.0	
RSS_022TI_THERMAL001_RSS	2006-077T20:45:57	GMB_E022_Titan12-000T03:20:00	000T02:05:00	2006-077T22:50:57	0.0	0.0	SPASS Rider			
SP_022EA_DLTURN078_PRIME	2006-078T14:22:00		000T00:22:00	2006-078T14:44:00	0.0	0.0	Prime	XBAND to Earth	POS_X to NEP	
SP_022EA_M70METNON078_PRIME	2006-078T14:44:00		000T09:20:00	2006-079T00:04:00	0.0	0.0	Prime	XBAND to Earth	Rolling/SRU	
SP_022NA_DEADTIME077_PRIME	2006-077T08:19:00		000T00:22:57	2006-077T08:41:57	0.0	0.0	Prime	ISS_NAC to Titan	NEG_X to Sun	
SP_022NA_DEADTIME078_PRIME	2006-078T14:06:57	GMB_E022_Titan12+000T14:01:00	000T00:14:43	2006-078T14:21:40	0.0	0.0	Prime	ISS_NAC to Titan	NEG_X to Sun	
SP_022NA_G34BWGNON077_SP	2006-077T21:49:00		000T04:00:00	2006-078T01:49:00	0.0	0.0	Non-SPASS			
SP_022NA_G34BWGNON090_SP	2006-077T21:49:00		000T04:00:00	2006-078T01:49:00	0.0	0.0	Non-SPASS			
SP_022NA_G70METNON077_SP	2006-077T22:04:00		000T03:45:00	2006-078T01:49:00	0.0	0.0	Non-SPASS			
SP_022NA_M34BWGNON077_SP	2006-077T21:49:00		000T04:00:00	2006-078T01:49:00	0.0	0.0	Non-SPASS			
SP_022NA_M34BWGNON078_SP	2006-078T14:44:00		000T09:20:00	2006-079T00:04:00	0.0	0.0	Non-SPASS			
SP_022NA_M70METNON077_SP	2006-077T21:49:00		000T04:00:00	2006-078T01:49:00	0.0	0.0	Non-SPASS			
SP_022NA_M70METNON078_SP	2006-078T14:44:00		000T09:20:00	2006-079T00:04:00	0.0	0.0	Non-SPASS			
SP_022NA_M70OBSNON078_NA	2006-077T07:49:00		001T06:55:00	2006-078T14:44:00	0.0	0.0	Non-SPASS			
SP_022NA_TOSTSEG077_NA	2006-077T07:49:00		001T16:15:00	2006-079T00:04:00	0.0	0.0	SPASS Note			
SP_022TI_WAYPTTURN077_PRIME	2006-077T07:49:00		000T00:30:00	2006-077T08:19:00	0.0	0.0	New Waypoint	ISS_NAC to Titan	NEG_X to Sun	
UVIS_022SW_IPHSURVEY028_RIDER	2006-078T15:04:00		000T09:00:00	2006-079T00:04:00	76.0	2.5	Non-SPASS			
UVIS_022TI_AURORA002_VIMS	2006-078T05:35:57	GMB_E022_Titan12+000T05:30:00	000T06:50:00	2006-078T12:25:57	4252.0	104.6	SPASS Rider			
UVIS_022TI_FIRNADCMP003_CIRS	2006-077T10:05:57	GMB_E022_Titan12-000T14:00:00	000T07:00:00	2006-077T17:05:57	1006.4	25.4	SPASS Rider			
UVIS_022TI_FIRNADCMP008_CIRS	2006-078T12:25:57	GMB_E022_Titan12+000T12:20:00	000T01:41:00	2006-078T14:06:57	2516.0	15.2	SPASS Rider			
UVIS_022TI_GLOBMAPNA001_ISS	2006-077T17:05:57	GMB_E022_Titan12-000T07:00:00	000T03:50:00	2006-077T20:55:57	5032.0	69.4	SPASS Rider			
UVIS_022TI_REGMAP004_VIMS	2006-077T21:16:57	GMB_E022_Titan12-000T02:49:00	000T01:24:00	2006-077T22:40:57	5032.0	25.4	SPASS Rider			
VIMS_022TI_AURORA002_PRIME	2006-078T05:35:57	GMB_E022_Titan12+000T05:30:00	000T06:50:00	2006-078T12:25:57	3252.0	80.0	Prime	VIMS_IR to Titan	NEG_X to Sun	
VIMS_022TI_COMPMAP003_CIRS	2006-077T10:05:57	GMB_E022_Titan12-000T14:00:00	000T07:00:00	2006-077T17:05:57	3174.6	80.0	SPASS Rider			
VIMS_022TI_DARKSIDE002_CIRS	2006-078T12:25:57	GMB_E022_Titan12+000T12:20:00	000T02:01:00	2006-078T14:26:57	1170.8	8.5	SPASS Rider			
VIMS_022TI_GLOBMAP002_PRIME	2006-077T08:41:57	GMB_E022_Titan12-000T15:24:00	000T01:24:00	2006-077T10:05:57	6944.4	35.0	Prime	VIMS_IR to Titan	NEG_X to Sun	
VIMS_022TI_GLOBMAP003_ISS	2006-077T17:05:57	GMB_E022_Titan12-000T07:00:00	000T03:00:00	2006-077T20:05:57	2777.8	30.0	SPASS Rider			
VIMS_022TI_REGMAP003_ISS	2006-077T20:05:57	GMB_E022_Titan12-000T04:00:00	000T01:00:00	2006-077T21:05:57	6944.4	25.0	SPASS Rider			
VIMS_022TI_REGMAP004_PRIME	2006-077T21:16:57	GMB_E022_Titan12-000T02:49:00	000T01:24:00	2006-077T22:40:57	7928.8	40.0	Prime	VIMS_IR to Titan	NEG_X to Sun	
VIMS_022TI_REGMAP005_ENGR	2006-077T21:05:57	GMB_E022_Titan12-000T03:00:00	000T00:21:00	2006-077T21:26:57	14285.7	18.0	SPASS Rider			

022TI (T12) Telemetry Modes

EPOCH RELATIVE	UTC	DURATION	TELEMETRY MODE	REQUEST
	2006-077T07:49:00.000	15:01:57	S_N_ER_3	SP_022NA_M70OBSNON078_NA
GMB_E022_Titan12-000T01:15:00	2006-077T22:50:57.000	00:15:00	S_N_ER_5A	SP_022NA_M70OBSNON078_NA
GMB_E022_Titan12-000T01:00:00	2006-077T23:05:57.000	01:57:00	S_N_ER_2	SP_022NA_M70OBSNON078_NA
GMB_E022_Titan12+000T00:57:00	2006-078T01:02:57.000	04:33:00	S_N_ER_8	SP_022NA_M70OBSNON078_NA
GMB_E022_Titan12+000T05:30:00	2006-078T05:35:57.000	09:08:03	S_N_ER_3	SP_022NA_M70OBSNON078_NA
	2006-078T14:44:00.000	00:15:00	RTE_N_SPB_124425	SP_022EA_M70METNON078_PRIME
	2006-078T14:59:00.000	00:50:00	RTE_N_SPB_142200	SP_022EA_M70METNON078_PRIME
	2006-078T15:49:00.000	07:30:00	RTE_N_SPB_165900	SP_022EA_M70METNON078_PRIME
	2006-078T23:19:00.000	00:45:00	RTE_N_SPB_142200	SP_022EA_M70METNON078_PRIME

022TI (T12) Data Volume

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 (%)	
SP_022EA_M70METNON078_PRIME	078 14:44	079 00:04	0	3305	110	3415	3532	118	0	240	55	3710	4583	874	874	19%	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	077 07:49	078 14:44	242.7	24.6	274.1	19.9	1084.0	86.6	116.0	169.7	691.2	240.0	316.5	0.0	3.9	3269.2
OBSERVATION_SI	077 07:49	078 14:44	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0
SP_022EA_M70METNON078_PRIME	078 14:44	079 00:04	35.0	17.5	86.4	1.7	0.0	20.2	30.2	0.0	44.0	2.5	0.0	0.0	0.0	237.4
DAILY TOTAL SCIENCE	077 07:49	079 00:04	277.6	42.1	370.5	21.6	1084.0	106.8	146.2	169.7	735.2	242.5	316.5	0.0		

DSN Requests

CASSINI DOWNLINK/DSN COVERAGE SUMMARY for T12_051005.apf generated on 2005-Oct-05 11:45:25
 (+ = 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	LABEL	CNFG
G34BWGNON077	-----	-----	----	(no downlink)	25	077T21:49-01:49	077T23:00-03:00	04:00	180/60	Ranging_	X_up_on
G34BWGNON090	-----	-----	----	(no downlink)	26	077T21:49-01:49	077T23:00-03:00	04:00	180/60	Ranging_	X_up_on
M34BWGNON077	-----	-----	----	(no downlink)	55	077T21:49-01:49	077T23:00-03:00	04:00	180/60	Ranging_	X_up_on
M70METNON077	-----	-----	----	(no downlink)	63	077T21:49-01:49	077T23:00-03:00	04:00	180/60	Ranging_	X_up_on
G70METNON077	-----	-----	----	(no downlink)	14	077T22:04-01:49	077T23:15-03:00	03:45	195/60	Ranging_	X_up_on
M70METNON078	078T14:44-00:04	078T15:55-01:15	09:20	124,142,165,142	55	078T14:44-00:04	078T15:55-01:15	09:20	90/15	Ranging_	X_up_on
				^-- and also -->	63	078T14:44-00:04	078T15:55-01:15	09:20	60/15	Ranging_	X_up_on

NAV Report

CASSINI NAVIGATION SUMMARY for T12_051005.apf generated on 2005-Oct-05 11:56:21
 (+ = pass overlaps with previous pass; * = conflicts with DSN weekly maintenance; o = overlaps occultation)

ON EARTH-LINE FOR DOWNLINK				TRACKING SUPPORT									
NAME	START_TO_END SCET	DUR hh:mm		ID	BOT_TO_EOT UTC	GND_UPLINK UTC	ARRIV_SC SCET	RCV_GND ERT	2-WAY hh:mm	DOP OK?	RNG OK?		
-(missing)--	-----	----		gap	in doppler data of 35 hours							NO	NO
M70METNON078	078T14:44-00:04	09:20		55	078T15:55-01:15	16:05-01:10	17:16-00:04	18:27-01:15	06:48	Y?	Y?		
				63	078T15:55-01:15	16:05-01:04	17:16-00:04	18:27-01:15	06:48	Y?	Y?		

Open Issues

- There is a unique sequence of power commands

TWT/OST Integration Constraint and Guideline Checklist

Below are Target Working Team (TWT) and Orbiter Science Team (OST) constraints that must be followed during segment implementation. Any exceptions to constraint numbers 3, 4, 6, or 7 must be approved by the Science Planning Manager.

Constraint	C=Comply V=Violate N/A=Not Applicable	Comments	Disposition
1. A. SP has checked all waypoints turns to and from waypoints. B. All initial downlink attitudes have been checked as waypoints.	C		
2. All turns to and from waypoints checked for violations and margins. <input type="checkbox"/> CAPS <input type="checkbox"/> CDA <input type="checkbox"/> CIRS <input type="checkbox"/> INMS <input type="checkbox"/> ISS <input type="checkbox"/> MIMI <input type="checkbox"/> MAG <input type="checkbox"/> NAV <input type="checkbox"/> RADAR <input type="checkbox"/> RPWS <input type="checkbox"/> RSS <input type="checkbox"/> UVIS <input type="checkbox"/> VIMS Each Prime Instrument agrees to accept a reduction in observation time during implementation if problems arise.	C		
3. Custom handoffs limited to: A. ±3 hours from targeted Icy Satellite flyby B. ±3 hours from targeted Titan Flyby C. OpNavs preceding/following a downlink	N/A		
4. Minimum 30 min SPASS Prime request duration outside ±5 hours from targeted satellite flyby (5 min. integer duration if >30 min.)	C		
5. Live and Ground Movable Blocks include appropriate time margins.	C	K. Klaasen's margin for flyby T12 is 15 min min. according to memo dated .	
6. Waypoints changes are ≤3 per day A. All turns that accomplish the waypoint strategy are requested by SP or OpNav.	C		
7. Live Movable Blocks limited to the following orbits: 7, 8, 9, 10, 12, 28, 51, 56, 57, 60, 63, 64	N/A		

Guideline	Yes / No	Comments
1. Were repeatable/reusable templates used where possible?	Yes	
2. During Pre-Integration: Was 30 min. used for 90° RWA turns and/or 10 min. for RCS turns?	Yes	

(DOUBLE-CLICK TO MAKE CHANGES)