

## S86 Rev 210 Timeline for NAV T107 Titan Atmospheric Density Experiment

2014/344-345 Wed, December 10, 2014 PST

Titan Closest Approach: 2014/344-23:57 ERT

OWLT: 01:30:28

RTLTL: 03:00:56

	Goldstone DSS-25 related activities
	Canberra DSS-34 related activities
	Multiple stations related activities

RSR = Radio Science Receiver (open-loop receiver)    RSSG = Radio Science Systems Group  
 RSSG: Note telemetry bit rate changes. Set RSR fgain accordingly and do not change during observation

Time ERT	Time PST	Event	Comments
		X-TWTA ON	Has been ON since DOY 296
<b>DOY 344, Wed Dec 10 PST</b>			
14:00:00	6:00 AM	DSS-25 Pre-Cal	Pass# 0344. Cassini specific 4th-order pointing model
15:30:00	7:30 AM	DSS-25 BOT	Spacecraft off Earth-point. No signal until 19:37:02 ERT
16:36:07	8:36 AM	DSS-25 Transmitter ON	18 kW, Sweep, Ramped uplink predicts
16:50:00	8:50 AM	DSS-34 Pre-Cal	Pass# 0344. Cassini specific 4th-order pointing model
16:57:06	8:57 AM	Ka-band ON	Onboard spacecraft
18:25:00	10:25 AM	DSS-34 BOT	
18:35:00	10:35 AM	DSS-25/DSS-34 Uplink Transfer from 25 to 34	18 kW, Ramped uplink predicts
18:57:02	10:57 AM	Start spacecraft turn to Earth-point	40-min turn by SP
19:15:00	11:15 AM	<i>RSSG: Begin DSS-25 RSR recordings (X &amp; Ka)</i>	
19:15:00	11:15 AM	<i>RSSG: Begin DSS-34 RSR recordings (X &amp; Ka)</i>	
19:37:02	11:37 AM	Spacecraft Earth pointed	
19:37:02	11:37 AM	DSS-25 Acquire X and Ka 2-way signal	
19:37:02	11:37 AM	DSS-34 Acquire X and Ka 3-way signal (3-way w/ 25)	
19:37:03	11:37 AM	<i>RSSG: Note telemetry B/R change to 14220</i>	Expect decrease in X-band signal level by ~6.45 dB
19:38:00	11:38 AM	DSS-25 Enable Monopulse	Elevation ~33.3 degrees
19:38:00	11:38 AM	DSS-34 Enable Monopulse	Elevation ~23.2 degrees
20:00:29	12:00 PM	<i>RSSG: Note telemetry B/R change to 22120</i>	
21:35:54	1:35 PM	DSS-25 Tracking mode change to 3-way	
21:35:54	1:35 PM	DSS-34 Tracking mode change to 2-way	
22:50:00	2:50 PM	DSS-25 EOT	
		DSS-25 Disable Monopulse	At loss of Ka-band signal
22:57:13	2:57 PM	Start spacecraft transition from RWA to RCS	Deadband (0.5, 0.5, 2). Expect small signal power variations
23:00:00	3:00 PM	<i>RSSG: End DSS-25 RSR recordings (X &amp; Ka)</i>	
23:05:00	3:05 PM	DSS-25 End of Post-Cal	
23:17:54	3:17 PM	End spacecraft transition to RCS	
23:57:03	3:57 PM	<b>T107 Titan Closest Approach</b>	Altitude 980 km

Time ERT	Time PST	Event	Comments
<b>DOY 345</b>			
00:35:03	4:35 PM	Start spacecraft transition back to RWA	Deadband (2, 2, 2). Expect larger signal power variations
00:56:02	4:56 PM	End spacecraft transition back to RWA	
01:26:08	5:26 PM	DSS-34 Transmitter OFF	
04:26:55	8:26 PM	Ka-band OFF	
04:26:55	8:26 PM	DSS-34 Loss of Ka-band signal	
		DSS-34 Disable Monopulse	At loss of Ka-band signal
04:27:01	8:27 PM	DSS-34 Loss of X-band signal	
04:27:01	8:27 PM	<i>RSSG: Note telemetry B/R change to 1896</i>	
04:27:01	8:27 PM	Begin spacecraft turn away from Earth-point	
04:40:00	8:40 PM	<i>RSSG: End DSS-34 RSR recordings (X &amp; Ka)</i>	
05:20:00	9:20 PM	DSS-34 EOT	
05:35:00	9:35 PM	DSS-34 End of Post-Cal	