

S26 Rev 36 Timeline for RSS Titan Gravity Observation

2006/362, Wednesday-Thursday December 27-28, 2006

Titan Closest Approach: 2006/362-11:16

EPOCH: GMB_E036_Titan22 2006-362T10:05:22 SCET

OWLT = 01:10:58, RTLT = ~02:22

Closed-loop Doppler is prime for gravity. Open-loop is backup

RSR = Radio Science Receiver (open-loop receiver) RSSG = Radio Science Systems Group

RSSG: Note same telemetry bit rate throughout the observation. No playback planned during the activity. Set RSR fgain accordingly and do not change during observation

DOY	Time ERT	Date/Day PST	Time PST	Event	Comments
354	02:30	Tue 12/19	4:30 PM	X-TWTA ON	2006-354T01:18:00 SCET
361	04:30	Tue 12/26	8:30 PM	Ka-band ON (KEX & Ka-TWTA)	On-board s/c. ON for GSE, and stays ON for grav on DOY 362
361	22:30	Wed 12/27	2:30 PM	DSS-55 Pre-cal	Cassini specific 4th-order pointing model, TLC enabled
362	00:15		4:15 PM	DSS-55 BOT	No downlink until ~03:04 ERT
	00:43		4:43 PM	DSS-55 Transmitter ON (DKF time 00:42:38)	Un-ramped uplink predicts
	02:47		6:47 PM	Begin Titan Gravity Observation	
				Begin S/C Turn to Earth	Turn by RSS. Telemetry Bit Rate: 1896 throughout observation
	02:55		6:55 PM	RSS: Begin RSR recording (X & Ka)	
	03:04		7:04 PM	1st Segment - Begin coherent downlink	
				DSS-55 Enable Monopulse	At 2-way lock
	03:07		7:07 PM	DSS-55 Transmitter OFF (DKF time 03:06:39)	
	03:30		7:30 PM	DSS-25 Pre-cal	Cassini specific 4th-order pointing model, TLC enabled
	05:15		9:15 PM	DSS-25 BOT	3-way with DSS-55
				DSS-25 Enable Monopulse	At 3-way lock
	05:28		9:28 PM	1st Segment - End coherent downlink	
				Begin S/C Turn from Earth (DKF time: 05:28:04)	
				DSS-55 and DSS-25 Disable Monopulse	At loss of Ka-band signal
	05:33		9:33 PM	RSSG: Stop RSR recording	
	05:35		9:35 PM	DSS-55 EOT	
	06:48		10:48 PM	DSS-25 Transmitter ON (DKF time 06:48:05)	Un-ramped uplink predicts
	08:47	Thu 12/28	12:47 AM	Begin S/C Turn to Earth	Turn by RSS. Telemetry Bit Rate: 1896
	09:00		1:00 AM	RSSG: Begin RSR recording (X & Ka)	
	09:09		1:09 AM	2nd Segment - Begin coherent downlink	
				DSS-25 Enable Monopulse	At 2-way lock
	10:08		2:08 AM	DSS-25 Transmitter OFF (DKF time 10:08:21)	
	11:16		3:16 AM	Titan Closest Approach	
	12:29		4:29 AM	2nd Segment - End coherent downlink	
				Begin S/C Turn from Earth (DKF time: 12:29:42)	
				DSS-25 Disable Monopulse	At loss of Ka-band signal
	12:34		4:34 AM	RSSG: Stop RSR recording	
	12:35		4:35 AM	DSS-25 EOT	
	12:35		4:35 AM	DSS-34 Pre-cal	Cassini specific 4th-order pointing model
	14:20		6:20 AM	DSS-34 BOT	No downlink until ~17:06 ERT
	14:45		6:45 AM	DSS-34 Transmitter ON (DKF time 14:44:33)	Un-ramped uplink predicts
	16:47		8:47 AM	Begin S/C Turn to Earth (DKF time 153627)	Turn by RSS. Telemetry Bit Rate: 1896

	16:55		8:55 AM	RSS: Begin RSR recording (X & Ka)	
	17:06		9:06 AM	3rd Segment - Begin coherent downlink	
				DSS-34 Enable Monopulse	At 2-way lock
	17:05		9:05 AM	DSS-34 Transmitter OFF (DKF time 17:04:49)	
	19:26		11:26 AM	3rd Segment - End coherent downlink	
				Begin S/C Turn from Earth (DKF time: 19:26:05)	
				DSS-34 Disable Monopulse	At loss of Ka-band signal
				RSSG: End RSR Recording (X & Ka)	
	19:35		11:35 AM	DSS-34 EOT	
	19:46		11:46 AM	End Titan Gravity Observation	
363	08:01		12:01 AM	Ka-band OFF	Stays ON after T22 for GSE on DOY 362-363

Gravity Science Enhancement (GSE) passes:

DOY 361, DSS-25, Pre-Cal 0330, BOT 0515, EOT 1530

DOY 362, DSS-55, Pre-Cal 1955, BOT 2140, EOT 0800