

S43 Rev 80 Timeline for RSS Enceladus Gravity Observation

2008/224-225, Mon-Tue August 11-12, 2008
Enceladus Closest Approach: ~2008/224-22:31 ERT

EPOCH: GMB_E080_Enceladus = 2008-224T21:06:23

OWLT = ~01:25, RTLTL = ~02:50

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 telemetry bit rate. Playback throughout. Set RSR fgain accordingly and do not change during observation

DOY	Time ERT	Date/Day PDT	Time PDT	Event	Comments
				X-TWTA ON	Has been ON since DOY 221
224	09:00	Mon, 8/11	2:00 AM	DSS-55 Pre-cal	Cassini specific 4th-order pointing model, TLC enabled
	10:30		3:30 AM	DSS-55 BOT	No downlink until ~13:58 ERT
	10:32		3:32 AM	Ka-band ON (KEX & Ka-TWTA)	On-board s/c. 2008-224T10:06:31 SCET
	11:08		4:08 AM	DSS-55 Transmitter ON	DKF time 11:07:52. Un-ramped uplink predicts
	12:15		5:15 AM	DSS-63 Pre-Cal	No downlink until ~13:58 ERT
	13:15		6:15 AM	DSS-63 BOT	
	13:31		6:31 AM	Begin Turn to Earth	
	13:35		6:35 AM	RSSG: Begin RSR recording (X & Ka)	All stations. Configure RSRs for 2-way or 3-way downlink
	13:58		6:58 AM	Begin 1st Segment - Begin coherent downlink	DKF time 13:58:45
				DSS-55 Enable Monopulse	At 2-way lock
	13:58		6:58 AM	Note: Bit Rate Change	Bit Rate 124426
	14:15		7:15 AM	DSS-55 Transmitter OFF	5 minutes after DKF time 14:10:52
	16:30		9:30 AM	Note: Bit Rate Change	Bit Rate 110601
	17:02		10:02 AM	End 1st Segment - End coherent downlink	DKF time 17:01:46
				Begin S/C Turn from Earth	
				DSS-55 Disable Monopulse	At loss of Ka-band signal
				Note: Bit Rate Change	Bit Rate 1896
	17:20		10:20 AM	RSSG: End RSR recording (X & Ka)	
	17:40		10:40 AM	DSS-55 EOT	
	17:40		10:40 AM	DSS-63 EOT	
	22:31		3:31 PM	Enceladus Closest Approach	Altitude: 50 km
	23:40		4:40 PM	DSS-45 Pre-cal	
	00:40	225	5:40 PM	DSS-45 BOT	
	01:10		6:10 PM	DSS-45 Transmitter ON	DKF time 01:10:52. Un-ramped uplink predicts
	03:30		8:30 PM	DSS-47 Pre-Cal	
	03:31		8:31 PM	Begin Turn to Earth	
	03:40		8:40 PM	RSSG: Begin RSR recording (X & Ka)	
	04:00		9:00 PM	DSS-47 BOT	
	04:01		9:01 PM	Begin 2nd Segment - Begin coherent downlink	DKF time 04:01:48
				Note: Bit Rate Change	Bit Rate 27650

DOY	Time ERT	Date/Day PDT	Time PDT	Event	Comments
	06:10		11:10 PM	DSS-55 Pre-Cal	Cassini specific 4th-order pointing model, TLC enabled
	06:14		11:14 PM	<i>Note: Bit Rate Change</i>	Bit Rate 22120
	06:16		11:16 PM	DSS-45 Transmitter OFF	5 minutes after DKF time 06:10:51
	07:29	Tue, 8/12	12:29 AM	<i>Note: Bit Rate Change</i>	Bit Rate 14220
	07:30		12:30 AM	DSS-47 EOT	
	07:40		12:40 AM	DSS-55 BOT	
				DSS-55 Enable Monopulse	Wait till 10 degrees elevation angle
	08:25		1:25 AM	DSS-45 EOT	
	09:02		2:02 AM	End 2nd Segment - End coherent downlink	DKF time 09:01:48
				Begin S/C Turn from Earth	
				DSS-55 Disable Monopulse	At loss of Ka-band signal
				<i>Note: Bit Rate Change</i>	Bit Rate 1896
	09:20		2:20 AM	RSSG: End RSR Recording (X & Ka)	
	09:40		2:40 AM	DSS-55 EOT	

Gravity Science Enhancement (GSE) Passes:

Inbound

08 223 1515 1645 0145 0200 DSS-25 CAS TP RSR80-KADWN1 3963 N748 1A1

08 223 1545 1645 0145 0200 DSS-14 CAS TKG PASS SEQ 3963 N003 1A1

Outbound

08 225 1455 1625 0130 0145 DSS-25 CAS TP RSR80-ENKDWN2 3965 N748 1A1

08 225 1525 1625 0130 0145 DSS-14 CAS TKG PASS 3965 N003 1A1