About the Occultation

- S44 Rev 89 Saturn rings occultation
  - Telemetry OFF, 1-way mode
  - Covered by Canberra, Madrid and Narrabri

- From Essam Marouf:

  The rev 89 ring occultation is a target-of-opportunity occultation. It is captured just before an OTM period (OTM-168) when the S/C HGA is conveniently Earth pointed. The geometric ring occultation is very fast lasting less than about 10 minutes. It has a chord geometry that covers outer ring B, the Cassini Division and Ring A, both on the way in and out. The ring opening angle B = -2.7 deg is the smallest observed so far, which makes this occultation special for probing Ring F, the Cassini Division, and material within gaps in Ring A. Unfortunately, the very high speed of the occultation renders achievable radial resolution and/or signal-to-noise ratio (SNR) much more limited compared with other slower occultations.

DSN Antennas

- DSN Coverage

Station	Pre-cal	BOT	EOT	Post-Cal
DSS-34	291/0115	291/0245	291/0445	291/0500
DSS-43	291/0145	291/0245	291/0445	291/0500
DSS-54	291/0230	291/0400	291/0715	291/0730
DSS-63	291/0300	291/0400	291/1335	291/1350
DSS-47	291/0300	291/0330	291/0445	291/0500

DSS-63 support continues for the OTM

DSS-47 Ka-band support only

- Receivers scheduled
  - 2 closed-loop receivers per antenna (except Narrabri)
  - All open-loop receivers at each complex are scheduled, RSR at Narrabri
  - Open-loop data are prime. Closed-loop data are backup

- Antennas Band and Polarization Capabilities

DSS-43	DSS-34*	DSS-63	DSS-55*
X-RCP X-LCP	X-RCP	X-RCP X-LCP	X-RCP X-LCP
S-RCP S-LCP	K-RCP K-LCP	S-RCP S-LCP	K-RCP K-LCP

*Either KLCP (switch 43 in B position) or monopulse (switch 43 in A position)

  - LCP data are enhancement. Prime are RCP

RSR/VSR/WVSR Assignment

Aseel: VOCA

DSS	Operator	Station	Open-Loop Receiver	RSR Assignment
43	Elias	rsops2	RSR1	RSR1A -> XRCP
				RSR1B -> SRCP
63	Elias	rsops2	RSR1	RSR1A -> XRCP
				RSR1B -> SRCP
34	Danny	rsops1	VSR1	VSR1A -> XRCP
				VSR1B -> KRCP
55	Danny	rsops1	RSR2	RSR2A -> XRCP
				RSR2B -> KRCP
47	Don	rsops3	RSR2	RSR2A -> KRCP
43/63 LCP	Don	rsops3	WVSR1 & WVSR1	43 WVSR1A -> XLCP
				43 WVSR1B -> SLCP
				63 WVSR1A -> XLCP
				63 WVSR1B -> SLCP

RSSG will be in RS Ops Room at 6:00 pm on Thursday 10/16/08 (291/0100)

ORTs

ORT on DOY 278 (October 4) over DSS-54, X- and Ka-band

08 278 0430 0600 1500 1515 DSS-54 CAS TP RSR87-OCCORT1 4018 N748 1A1

- Also prime pass
- Nominal. Collected pointing data (monopulse) to update the 4th-order blind pointing model

ORT/RTS Demo on DOY 282 (October 8) over DSS-34, X- and Ka-band

08 282 1145 1315 2215 2230 DSS-26 CAS TP RSR88-KADWN1 4022 N750 1A1

08 282 1215 1315 2215 2230 DSS-14 CAS TKG PASS 4022 N003 1A1

08 282 1750 1920 2215 2230 DSS-34 CAS RS RTS ENG DEMO 4023 N750 2C3 DSS-63 prime

- DSS-63 prime, DSS-26 GSE
- First DSS-34 pass in months
- DSS-34 Tested new software. Problems with monopulse. First two attempts to enable were unsuccessful. Station did on-point phase cal with new software. Monopulse worked. Verified KLCP. Collected some pointing data

ORT/RTS Demo on DOY 284 (October 10) over DSS-34, X- and Ka-band

08 284 1145 1315 2205 2220 DSS-25 CAS TP RSR88-KADWN2 4024 N748 1A1

08 284 1155 1255 2215 2230 DSS-14 CAS TKG PASS 4024 N003 1A1

08 284 1745 1915 2215 2230 DSS-34 CAS RS RTS ENG DEMO 4025 N750 2C3

- DSS-14 prime, DSS-25 GSE
- DSS-34 delay in acquiring Ka-band DR C106571 (acquired after RSS provided sky frequency). Monopulse problems. Many attempts to fix but without success DR C106570. No pointing data acquired

ORT on DOY 285 (October 11) over DSS-63 and DSS-43, X- and S-band

08 285 1200 1300 2200 2215 DSS-15 CAS TKG PASS SEQ 4025 N006 1A1

08 285 1200 1300 1545 1600 DSS-63 CAS TP RSR89-OCCORT1 4025 1639 1A1

08 285 1800 1900 2200 2215 DSS-43 CAS TP RSR89-OCCORT1 4026 1639 1A1

- DSS-15 prime
- DSS-63 and DSS-43 verify S-band and X-band (RCP and LCP)

Misc

DSS-34 Ka-band problems!
Oscillations at DSS-54

Plan for Cassini Specific 4th Order Pointing Models
- Not much data acquired at DSS-34 during ORTs
- One recent DSS-54 pass

SNT
- Enable X only at DSS-34 and DSS-55 throughout
- Conduct SNT measurements

DSS-43 and DSS-63 Microwave Configuration
- Configure SRCP low noise to the SP MASER to the 01 output
- Configure SLCP through the diplexer to the SB HEMT to the 02 output