

About the Occultation

- S37 Rev 57 Rings occultation
 - Rings Occ: Chord Ingress
 - Telemetry OFF, 1-way mode
 - Covered by Canberra
- From Essam Marouf:

An RSS [chord ring occultation](#) will be conducted on Cassini Rev 57 (S37). The [ring opening angle](#) is 7.4 degrees. The [occultation probes all major ring features \(A, Cassini Division, B, and C\) on the way in and out](#), hence will provide valuable profiling of the dependence of detectable ring structure on observation longitude. This is important for characterization of the rings microstructure (the spatial distribution of aggregates of ring particles). [Like its sister occultation on Rev 56, the Rev 57 occultation geometry was optimized to allow capturing favorable Doppler contours alignment over Ring A near the end of the observation period](#), hence facilitate determination of physical ring properties from the near-forward scattered signal observations.

DSN Antennas

- DSN Coverage

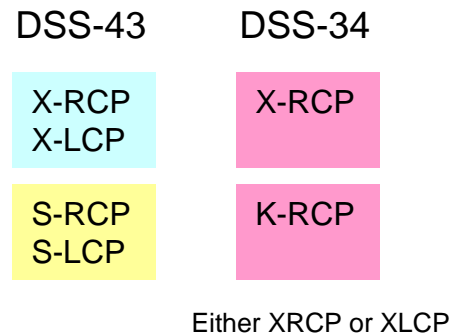
Station	Pre-cal	BOT	EOT	Post-Cal
DSS-34	027/1600*	027/1730	027/2115	027/2130
DSS-43	027/1630	027/1730	027/2115	027/2130

*Note: 1hr30min pre-cal for BWG starts in S37 (old pre-cal 1hr45min)

- Receivers scheduled

- 2 closed-loop receivers per antenna
- Four RSRs, One VSR (A&B) and One WVSR (A&B) at Canberra are scheduled
 - Total: 8 open-loop receivers
- Open-loop data are prime. Closed-loop data are backup

- Antennas Band and Polarization Capabilities



- LCP data are enhancement. Prime are RCP

RSR/VSR/WVSR Assignment

Aseel: VOCA
Roberto: Displays

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

RSSG will be in RS Ops Room at 7:30 am on Sunday 1/27/2008 (027/1530)

ORTs

Since last experiment over Canberra was Jan 15th, only two ORTs were planned prior to Jan 27th occ

ORT on DOY 019 (January 19) over DSS-34, X- and Ka-band **completed**

08 019 0500 0600 1500 1515 DSS-14 CAS TKG PASS SEQ 3758 N003 1A1

08 019 1040 1225 1500 1515 DSS-34 CAS TP RSR56-OCCORT1 3759 N750 1A1

- DSS-14 is prime
- DSS-34 collected pointing data (monopulse) to update the 4th-order blind pointing model
- High monopulse offsets
- High SNT

ORT on DOY 023 (January 23) over DSS-34, X- and Ka-band

08 023 0445 0545 1445 1500 DSS-15 CAS TKG PASS 3762 N006 1A1

08 023 1040 1210 1445 1500 DSS-34 CAS TP RSR57-OCCORT2 3763 N750 1A1

- DSS-15 is prime
- DSS-34 to collecte pointing data (monopulse) to update the 4th-order blind pointing model

Misc

DSS-34 Cassini Specific 4th Order Pointing Models

- Model during Jan 15th experiment appeared to have problems
- Plan prior to Jan 27th occ?

SNT

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

DSS-43 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

Open-loop receivers at Canberra

- Status