

About the Occultation

- S43 Rev 82 Saturn rings occultation
 - Telemetry OFF, 1-way mode
 - Covered by Madrid

- From Essam Marouf:

The S43 Rev 82 radio science ring occultation is [the third in a family of four fast chord occultations that probe the rings when the opening angle \$B\$ is small \(about 5 to 7 degrees\)](#). [For Rev 82, \$B = 5.6\$ deg](#). The long path of the radio signals through the rings when B is small makes these occultations [especially sensitive to ring features of small optical depth, like Ring C and the Cassini Division. More optically thick ring regions, like Ring B, become mostly noise-limited](#). The observation geometry complements in nature earlier occultations conducted at larger B angles, providing valuable information about the variability of ring structure and scattering properties with ring viewing geometry.

DSN Antennas

- DSN Coverage

Station	Pre-cal	BOT	EOT	Post-Cal
DSS-55	239/1230	239/1400	239/1715	239/1730
DSS-63	239/1300	239/1400	239/1715	239/1730

- Receivers scheduled

- 2 closed-loop receivers per antenna
- All open-loop receivers
 - Total: 8 open-loop receivers
- Open-loop data are prime. Closed-loop data are backup

- Antennas Band and Polarization Capabilities

DSS-63

X-RCP
X-LCP

S-RCP
S-LCP

DSS-55

X-RCP
X-LCP

K-RCP
K-LCP

KLCP (switch 43 in B position)
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
63	Danny	rsops1	RSR1	RSR1A -> XRCP
				RSR1B -> SRCP
55	Danny	rsops1	RSR2	RSR2A -> XRCP
				RSR2B -> KRCP
63/55 LCP	Don	rsops3	WVSR1 & VSR1	63 WVSR1A -> XLCP
				63 WVSR1B -> SLCP
				55 VSR1A -> XLCP
				55 VSR1B -> KLCP

RSSG will be in RS Ops Room at 5:30 am on Tuesday 8/26/08 (239/1230)

Misc

No ORTs prior to occultation!

- Last DSS-55 support was on DOY 225 and was nominal

Low SEP. S-band likely to be noisy

No update to the DSS-55 Cassini specific 4th order pointing model (no new ORT data)

- Pointing was good during last support

SNT

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

DSS-55 azimuth angles from ~212 to 262 degrees

- 260 at 1705 (hhmm). Experiment is over by that time
- Can use LQG coefficients if needed

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