

Subject: RSS Rev 284 Observations Completed

Date: Thursday, July 20, 2017 at 2:49:11 AM Pacific Daylight Time

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To: rss@cdsa.jpl.nasa.gov

Dear All,

This will be an easy ops report because the experiment went very smoothly! No major issues, no antenna problems, no data loss. It seemed like everybody put in extra effort to make our last observation a big success!

- Uplink was first provided by Madrid's DSS-55, then Goldstone's DSS-25, Canberra's DSS-35 and DSS-43, and finally ESA's DSS-74 (New Norcia).
- Prior to the observation, we sent a request to ESA to extend the DSS-74 track on both sides to fully cover the distant chord rings occultation. As with previous requests, ESA very kindly accommodated!
- Weather (overcast skies) caused some Ka-band signal degradations at DSS-35 and DSS-55.
- During the first DSS-55 track (DOY 199), the station had to Conscan first to improve the pointing, and then enabled Monopulse. The total improvement in Ka-band signal power was ~4.5 dBs. The DSS-55 pointing model was updated prior to the observation by David Rochblatt, but the station said they were unable to use it because it had issues.
- During the second DSS-55 track (DOY 200), and at David's recommendation, the station applied a +35 mdeg offset in cross elevation to the old pointing model. It seemed to improve the pointing because when Monopulse was first enable, no jump in signal power was observed.
- Kudos to Madrid for their efforts to repair a problem we reported with the Portable Radio Science Receiver during their pre-cal. It took a few attempts, but they were persistent and fixed the problem in time for Beginning Of Track.
- A big jump in Ka-band signal power was observed when DSS-25 first enabled Monopulse, indicating that the pointing model was degraded. No such jump was observed during the ORT on July 17, but the ORT track started at different elevation angles. The Rev 284 track was from rise to set.
- All uplink transfers were nominal.
- A small drift in frequency residuals was observed during the periapse period, but all signals remained within the 1 KHz open-loop recording bandwidths.
- The DST lost lock briefly in Ring B during the peri occ and the inbound distant chord occ, but not during the outbound chord occ.
- A reporter from the Washington Post was present in the ops room for part of the distant rings occultation.
- New Norcia was the last antenna to provide uplink during a Cassini RSS experiment!
- The Malargue track was the last Cassini support.
- The DSS-55 track was also the last scheduled in the mission.
- Happy Birthday to Essam!
- Dick owes everybody a dollar!
(for being 4 seconds off on Ring A out time)

What a great way to end our observations! I'll share some pictures and videos soon. SO many people to thank, but for now, time for some sleep.

Is it really over? :(

Regards,
Aseel