Subject: Rev 278 Status Report
Date: Saturday, June 10, 2017 at 10:14:52 AM Pacific Daylight Time
From: Anabtawi, Aseel (332K)
To: Rss@cdsa.jpl.nasa.gov
Attachments: 2017_161_25K.png, 2017_161_CDSCC_Residuals.png

Dear All,

Hello from the European Space Operations Center (ESCO) in Darmstadt, Germany!

As most of you know, I went to ESOC after the PSG to support the Rev 278 RSS observations. I arrived shortly before the first of three ESA tracks. Everyone here has been very nice and welcoming.

We started the observation with a Madrid support over DSS-55, then ESA's Malargue station (DSS-84), followed by Goldstone's DSS-25, and currently Canberra's DSS-35 and DSS-43 are tracking. In a few hours, ESA's New Norcia station (DSS-74) will be supporting, followed by Madrid's DSS-63 and DSS-55, and ending with another Malargue track.

Up until this point, DSN stations have been providing the uplink. ESA's DSS-74 will be providing the uplink later during the observation to close the uplink gap between Canberra and Madrid.

The only issue encountered so far is high winds at Goldstone (20-30 mph). The DSS-25 Ka-band signal levels were fluctuating as a result. We did not enable Monopulse until 6 hours into the track after the winds calmed down. DR# G118203 was opened. Please see attached Ka-band post-pass power plot (2017_161_25K.png).

DSS-35 was the prime (2-way) antenna during periapse. We observed high signal dynamics around the periapse period. The signals started to drift slowly about 4 hours before peripase, but the drift rate increased 2 hours later. The X- and Ka-band signals eventually drifted outside the 1 KHz recording bandwidths, but were captured in the 16 KHz and 50 KHz recordings. No such dynamics were observed during Rev 274, which was the other RSS proximal orbit so far when a DSN station was prime during perispase (ESA's Malargue station was prime during Rev 273 and 275). We asked the station to ensure that the uplink was good and that they were ramping, and they confirmed that all was nominal. It is now three hours after periapse and the signals continue to drift. Please see attached screenshot of RSR residual frequency history plots (2017_161_CDSCC_Residuals.png). Periapse was at 140830 ERT.

The peri rings occultation completed successfully. As expected, the DST was in and out of lock during Ring B. The out of lock periods were short and lasted only a few seconds.

We will be starting the distant chord rings occultation in about 45 minutes.

Regards,
Aseel