

Buccino, Dustin R (332K)

From: Buccino, Dustin R (332K) <Dustin.R.Buccino@jpl.nasa.gov>
Sent: Wednesday, November 20, 2013 11:20 AM
To: rs@list.jpl.nasa.gov
Subject: Cassini SCE10 Report: S81, 2013/324 DSS-26
Attachments: ka-band_power_drop_1714.png; monopulse_enable_1417.png; x-band_power_drop_1714.png

Cassini SCE10 Report
November 20, 2013 6:00AM PDT
2013/324-14:15:00 UTC

324 1245 1415 2315 2330 DSS-26 CAS TP RS199-SCE10 0324

Dustin provided support for this activity.

DSS-26:
X-band (RSR1A, DCC-08, fgain 38)
Ka-band (RSR2B, DCC-05, fgain 55)

Weather: Clear
Equipment: Green
Wind: Calm

14:00 – Arrival at ops room. On net. ACE informs that the station has a question about monopulse, so I call the station directly. Station had a question about monopulse operation, specifically the order of enabling (Step #9 on the directions for monopulse operations), something about needing to enable monopulse twice. I told station to follow the instructions, as they were likely set that way for a reason. Ace agreed with me in a later conversation. ACE also put in a call to the NOPE who will have a correct answer when they arrive at work.

14:05 – AOS, X.

14:06 – ops chief-> 26: Asking for antenna pointing model. Station is using the Ka-band model for monopulse.

14:15 – BOT. AOS, K. TLM on.

14:16 – In lock both DCCs, station asked if monopulse should be enabled. Told ACE yes.

14:17 – Monopulse enabled. Ka-band signal power level increase of 8 dB! Corrections are ~8mdeg Az, ~5mdeg El. (see attachments)

14:20 – Residual Ka-band 22.56 Hz, no sfro used.

14:25 – TXR ON, 19.70 kW LCP. Station informs that the power is currently fluctuating and the transmitter is not stable.

15:00 – Pc/No X-band 31.63 dB-Hz, Ka-band 44.82 dB-Hz

15:01 – SNT X-band 25.486 K, Ka-band 66.660 K

15:10 – signal fluctuations in Ka-band seen due to s/c rolling

15:21 – Monopulse corrections, Azimuth correction 12.10 mdeg, Elevation correction 7.74 mdeg, Elevation angle 20.94 deg

17:14 – Sudden drop in signal power, both bands. Temporary drop, back to full strength almost immediately. This was followed by Ka-band going out of lock (X-8dB, K-6dB, see attachments)

17:19 – Asked ACE about drop. Station reports it cannot lock and is attempting to re-acquire. Station sees the signal in FFT.

17:20 – Asked ACE to ensure monopulse is disabled. Station reports disable monopulse while keeping offsets and is back in lock in Ka-band

17:25 – LOS X, K: going 2-way

17:26 – AOS X, K in 2-way mode. DCCs back in lock
17:28 – Monopulse enabled, corrections are updating. No obvious jump in Ka-band power.
17:31 – Pc/No X-band 32.68 dB-Hz, Ka-band 47.36 dB-Hz
17:32 – SNT X-band 21.153 K, Ka-band 41.231 K
17:39 – Asked ACE for update from station on Ka-band loss of lock and power drop. Station is looking into it. Complex (10) reports they experienced an IF power level drop and is investigating.
17:41 – Monopulse corrections, Azimuth correction 9.84 mdeg, Elevation correction 9.75 mdeg, Elevation angle 38.15 deg
18:15 - Ace->26: Ask for update on power drop. Station has no explanation. DR will be opened
18:34 – 26->Ace: DR# G114419 documents the unexplained loss of lock and power drop.
18:52 – Off net. Gave phone number should anything come up.

DR# G114419

Action: **Originate DR** by [MARIO LOPEZ](#) at 2013 324 18:32

Intervention: No

Post-Pass: No

Cause: HW - Hardware

SC/User: CAS - Cassini

Antenna: DSS26

Pass Number: 324

Assembly: [FODA](#) - Fibre Optic Distribution Assembly

Outage Period: 2013 324 17:14 - 2013 324 17:28 (14 mins)

Description:

Loss of KA and X-Band data when a U26 'Exciter switch X2KANTRF_LOIFPWR is Low' alarm appeared at 17:13:33 and cleared at 17:13:33.

Note: There was some Fiber Optic checks that were in progress for another site

Corrective Action:

The station confirmed all systems were operational, then attempted reacquiring the carrier on both DC05 (KA-Band) and DC08 (X-Band).

Data to be played back to `/rssg/data/CAS/2013_314/SCE/RSR/`:

DSS-26, X-band, RCP, 1-way & 2-way

RSR2A, 1kHz, 16-bits

Start: 2013/324-14:05:00

Stop: 2013/324-23:20:00

DSS-26, Ka-band, RCP, 1-way & 2-way

RSR2B: 1kHz, 16-bits

Start: 2013/324-14:05:00

Stop: 2013/324-23:20:00

DSS-26, Ka-band, RCP, 1-way

RSR2B: 4kHz, 16-bits

Start: 2013/324-14:05:00

Stop: 2013/324-17:25:18