S74 Rev 168 Rings Occ
2012/180

June 27-28, 2012

ACE: ~~Herter~~ Reed NOPE: Lu

Ops Room: Iaseel, Elias, Danny, Don Cruz, Essam. Summer students, Sami

David R will be supporting from home

0610 RS Pass. 2-way Ring Occ DSS-43 Briefing

No TLM

D/L only X&S & 085004

X available @ BOT

Uplink time 080000 18 kW X LCP

EOT 180/143500

Weather overcast. Ø wind

Equipment green

~0625 Lu called. Scheduled WVSR playbacks for 8 hrs after EOT

RSRs subchannels: 1, 16, 50, 100 kHz

WVSR Ka: 1, 2, 16, 50 kHz

1-way

Fgain

43 X	~~60~~	34 X	~~55~~
43 S	~~50~~	34 Ka	55

~0705 Weak S-band signal from ground.

Check into that

~18 dB

0726 Station asking if signal is intermittent & S-band 1-way

→ yes intermittent. Seems ground

Sky freq. flat, so it's ground.

→ not much they can do. They are in C:

0730 Nope telling station that they too see a spike. Is it possible that they have S-band translator on.
→ Not according to their displays.. & if 43 translator, it

0734 Told 43 spur signal is getting stronger & it will be a problem when we start recording data. Is engineering staff available to investigate?
→ Engineering staff left about an hour ago. Will check. Manager is still on-site

0739 Station asked if we're seeing on both LNAs
→ not sure what you mean. We have BSR & WVSR looking @ it.
→ they have Maser & Hewpt.. not sure how we are configured. Can we look @ Hewpt
→ sure we can do that. Standby

0740 Danny switched to LCP. No signal

0743 Told station don't see it in LCP. Just RCP.

0744 NOPE asking to switch from Maser to Hewpt. Discuss over black phone.. Maser is better. What's difference?
→ 8 K difference between the two, which translates to 1.8 dB off. (difference between two)

0752 Told NOPE that if it doesn't take too long, we'll switch after the start of the 2-way baseline to see if 43 spur is gone. Can you check w/ station how long? LU → switch 2 & switch 11?
we'll want:
RCP low noise going to 01 output

0755 ~15 days ago the SMaser was red @ 43 & they fixed it but maybe problem

0800 Xmtr on 16.8 kW

0804 Lu said that Mitch said these 4 switches from LNA1 to IF output 10, 11, 12, 13. Toggle & see if it does anyway.
→ No impact to U/L
→ No. S-band only

0805 Nope asking station to toggle switches. OC suggested. Tried during test & it worked

0807 Station toggled switches & still see signal

0808 43: Another suggestion:
move polarizer to see if signal follows polarization

0809 Told NOPE we now see spur in both RCP & LCP.

0810/50 NOPE told station to put back in original configuration

0812 Told NOPE spur is back to RCP only

0815 Lu on blk phone: suggest we switch now & not mess up during expt.
→ we'll try & switch back if

0815 NOPE told to switch SRCP:
RCP low noise to LNA2 to 01 output

0816 NOPE said station completed switch
→ we'll monitor for a couple of minutes & let him know

0818 Told NOPE we still see it.

081840 Switched back to Maser

0820 Lu said station back in Maser config.

0827 Station said they want to switch RCP to LCP
→ signal switched from RCP to LCP
Danny WVSR

0832 Station said one more thing
they want to try .. switch LNA
→ No spur in RCP.
LCP rcvr not seeing anything
→ correct. Then had to disconnect LCP.

0836 Told station don't see spur in RCP
→ yes, won't see if it's in the load. Is S/C out of eclipse?
me → yes. Not earth pointed & S-band not on.
43 → makes sense

0837 will take it out of the load
→ signal back

083755 43: Signal path back to normal @ this time.

0836 Told 43 spur is in both RCP & LCP (~18-20 dB-Hz)

0855 34 Briefing
RS support. Lucky ring acc.
tracking X & Ka
No signal
S/C Earth pointed 090923
BOT 095500. EOT 141500
NO TLM
Equipment: Green
Weather: Overcast

0858 Ace making sure that 34 support is DL only (after I asked him if they are aware of that & that we have shorter pre-cal than usual).

0901 NOPG asking what team
→ Team △
Previous team is Bravo

0904 Spur switching between RCP & LCP

0907 Told 43 we are ~~doing something~~ changing configurations.
⇒ assume they are changing configurations.
43 → that's a negative! Not changing anything

0935 Att auto

0938 Start mario

0940 Start rec

0940 Spur is @ −3662

PR# 108835
for S-band spur

0955 Asked Canberra (43 & 34) to enable SNT on all DL channels

43X	22.242
43S	19.580
34X	21.9
34Ka	42.5

0957 Told 43 & 34 to disable all except X @ 34

1000 Asked 34 for weather update
Overcast & 0 wind

1003 Lu asking 34 to change RX to −135 @ DOY
& Ka-band RCP put switch 43 in Alpha position for monopulse operations

1006 Started seeing X-band
100630 Ka-band signal
100940 S-band
43 I/L
1011 34 I/L Ka
101140 34 I/L X

101530 Asked 34 to enable monopulse
Signal dropped! Got to 8 & asked station to disable
Asked 34 to disable mono ~~& clear~~
& clear offsets
Signal went back.

1019 Station asking if can do on-point phase cal
→ Do they need cal in 1-way & 3 way or 1-way sufficient?
→ Just 1 way. How long? → 5-7 mins
Gave
102050 Station ok to do on-point phase cal.

1021 Lu thinks they had wrong switch config.
43 in B position when they did cal
→ told Lu can they use offsets from 169 last ORT

102740 Station said expect to finish cal @ 1031. Enable mon. @ that time
→ give me new Tau value & then decide on mono

1031 Lu said they were in 43 in B position when they did cal.
Tau value from 169 ORT was 140.
Average between 1-way & 2-way

1034 Told station 2 mins from switching to 2-way Cal not completed?
→ completed. looking for Tau value
~~34~~ found it: 140 .. stand by on mono enable
NOPE said they have Gain & phase in system from switch 43 in B position. Tau is correct but phase & Gain not.

103735 Switch to coherent mode
3-hour spur

103955 Lu found phase & gain value from CRT on 164

10430 Lu giving station new phase & gain from log: told them problem was that cal was w/ switch 43 in B position
Phase ~~44.912~~
Gain 0.335
Enter

10424S 34 enabled mono w/ ~~same~~ phase & ~0.6 improvement. & more stable (from ~49.6 to ~50.1)
~~34~~ said error in SM
6.3.1 section 5.
caused this problem
→ Lu: said this directive has been there for year not only Canberra but also Goldstone & Madrid
Discussion bet. 34 & Lu .. 34 thinks that section needs clarification & it was direct cause of problem for driving monopulse off

1050 Pc/No

43 X	55.53
435	44.22
34 X	49.5
34 Ka	50.0

1055 Lu said will put a comment to make Item #5 clearer. Add more comments.

34 → it's very prudent that they do open a DR?

Lu → asked me. ~~Thought~~

me → Thought DSN wants to document every problem

Lu → yes. They'll take this one.

Even though they've been using same for years, prob. shift change @ pre-cal & didn't handover. & NOPEs were busy w/ 43 spur problem.

DR# C108836

1005 Asked ACE if he heard 43 say xmtr off.

→ Pretty sure he did

When ACE said his displays show xmtr is still on he thinks xmtr off is 113500

→ Told him it's 1050 per timeline but no harm in keeping it on

During this Lu asked if 43 xmtr should be off

→ Heiden said at ACE 1138.

Talk more w/ Heiden. He asked how we determine uplink time. Explained it to him. He realized he only has 1 piece of timeline!

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1137 45 43 reports Xmtr off
1143 Told 43 & 34 we started going through
1145 Told 34 if mono pulse gets disabled anytime during the expt bec. signal gets weaker, pls let us know & we'll decide whether we want to re-enable or keep disabled

1146 34 reported they had momentary LOS rings. There maybe some intermittent drops, but once we get to ring B in 120439, they likely lose the signal until we exit ring B.

120141 Told 34 we believe mono was disabled so can they re-enable

corrections very small: ~1 ! for both. EL a little higher. was on average

120630 Mono disabled
Told station will keep mono disabled & let them know when to reenable

1208 Lu asked 34: On DCOS, configure to open-loop mode

123125 34 reporting LL
1232 34 ka OL
1234 Told 34 signal back to full strength. Enable mono (noticed rcvr was OL) .. when you lockup on signal
123425 Mono enabled

~1302 X O/L

131050 43 S-band O/L

1315 TOD 43 & 34 that we'll record ~20 mins of noise baseline & then do quick SNT & then be done. So it should be done in ~25 min

43 asking if they should configure open-loop

→ not needed. Only 34 & I will check w/ NOPE if they already did that

→ yes they did

1334 SNT measurement

43 X 27.616
43 S 24.946
34 X 26.8
34 Ka 61.9

Playback
180/0940 – 1335

1336 Stopped recording & we are done w/ experiment. Overall, things went v. well & data looked good. The DSS-43 S-band spur continued to appear in 1-way recordings, but since coherent data are prime, that should hopefully be of no impact to data. Also, the initial DSS-34 problem was resolved quickly & before the official start of the baseline, so that was of no impact. Thanks you for a great support! Plz wait for ACE to release you.

We did not see the DSS-43 S-band spur in the 2-way data, so our prime data will hopefully should not be impacted.

The experiment was a success.

133745 Stations released