S45 T46 Rev91 Titan Bistatic and Occultation Experiment
2008/308, November 3, 2008

Stations

Goldstone	DSS-14, DSS-25, DSS-26
Canberra	DSS-43, DSS-34
Narrabri	DSS-47

NOPEs
Scott (DSS-34), Lu (DSS-14 and DSS-43), Jack (DSS-25 and DSS-26)

RS Ops Room
Aseel (VOCA), Danny (DSS-43, DSS-34 and DSS-47), Elias (DSS-14 and DSS-25), John (DSS-26), (John's first Cassini experiment! Don is out)
Essam, David Rochblatt, Jeff Boyer

Fgains for open-loop receivers

14 & 43	XR 60	
	XL 37	
	SR 49	
	SL 32	
25, 26, 34	XR 54	
	XL 30	(station 26 only)
	KR 54	
	KL 30	(station 26 only)
47	KR 57	

1300 ACE Briefing
Pass# 4048
Downlink only pass
25 pointing model cas25
26 pointing model cas26
Weather and equipment status?
→ Weather clear. 17 mph wind from South. All equipment green

1314 NOPE (Scott) telling stations that it's very important to follow Briefing Message.
Not to clear monopulse or change IF configurations without consulting with RS
When done with pre-cal, to contact RS

14 reporting that they are using DC3 for X and DC2 for S

1354 14 reported they are ready.
I asked NOPE to verify configuration

1405 14 ready for calibrations

1413 Told 14 we need receivers configured for XR and XL for calibrations
→ Configure DC2 to XLCP

1417 NOPE asking 14 to re-check microwave configuration. Steps 3&4 in BM (SRCP to 01 and SLCP to 02 output)

1421 14 said they are ready
I asked NPOE to confirm → NOPE checking

1423 NOPE said X-band was right and now wrong
→ Station corrected
→ NOPE asking station to correct S-band
→ 142530 NOPE says now S-band looks good

142650 NOPE confirms 14 microwave configuration is correct. Told the station that it's very important that they don't make microwave configuration changes

1432 26 said they are ready

1443 25 ready for bistatic calibrations

1448 NOPE asked station on DC6 to disable TLM prdx that made ….?

1454 43 said they are ready for bistatic calibrations

1457 NOPE asked 43 to disable TLM channel and disable SNT

145730 NOPE asked 43 to start tracking a few minutes earlier (per our request)

1509 NOPE confirmed 43 is ready

154930 Told 26 that we are done with calibrations and values look good. They can go to point

1552 **26 on-point. Said they need to reset antenna. TLC stuck. Will not lose configuration**

161445 **26 done resetting antenna**

1617 Told 34 that we are done with calibrations and they can go to point

164535 Told 14 to go to point

1700 Station 47 online. Asked NOPE to give me a minute to complete calibrations before I talk to 47
→ ok

1703 Told 25 that they should be using default pointing model instead

170630 NOPE told 43 and 14 to configure on downlink channel to XRCP and the other to SRCP

1713 26 ready for SNT measurement

1716 Done with 26 SNT measurement

1718 **14 Rebooting X-band downlink channel**

172745 Asked 26 to pit switch 43 in A position

173230 Told stations we are starting to see signals in open-loop receivers

1733 26 in-lock
→ Asked **26 to enable monopulse**

173440 14 in-lock

1735 25 in-lock Ka-band. Having difficulty locking up X-band

1735 43 in-lock on both X&S

174129 Asked **25 and 26 to disable monopulse and keep offsets**
Asked 26 to put switch 43 in B position (KLCP)

183920 Asked 26 to put switch 43 in A position

1843 Station in-lock

1844 Asked 25, 26 and 34 to enable monopulse

1848 SNR Reading

1853 David saying offsets not large for ingress. **34 & 26 disable monopulse and clear offsets. 25 keep offsets**

185640 Asked 26 to put switch 43 in B position

1912 **Told NOPE that we are seeing fluctuations at 14 XRCP**. Not looking right
→ NOPE said that hey think configuration is correct, but 3 dB down. Don't know why

1917 LOS

1918 SNT enabled (43, 34 & 26 done quickly)

192105 14 & 25 disable SNT

192157 14 & 25 done re-configuring after SNT measurement

Station 47 in-lock times: 190841 to 191707

1954 NOPE thinks they **found problem with 14. Station is in tracking encoder mode not computer or precision point**. Asked if we want them to reconfigure
→ No. Five minutes baseline left. Keep as is
See DR on last page

2003 Asked 26 to put swtch 43 in A position
→ Station said they are already back in A position
→ Asked them when they changed it back
→ Said they changed it back ~1905 and wouldn't have done it without direction from me
→(I didn't ask him to switch it! Guess he did it when they reconfigured at end of SNT meas.)
See DR on last page

2008 Signals back. Stations in-lock

201220 **25, 26, & 34 monopulse enabled**
25 jump in power of ~0.8 dB
26 jump in power of ~0.5 dB
34 jump in power of ~0.5 dB

2014 LOS Ka-band

201530 25, 26 and 47 out-of-lock

2016 43 X LOS

2017 14 LOS

2030 End record OCC

203121 Asked 26 to put switch 43 in B position

2034 Minical

2048 SNT measurement

2050 Asked NOPE about 26 Ka SNT value. Lower than what we usually see
→ NOPE said that in past diodes weren't calibrated. Now they are right on, so have correct Values

2056 Told station next are bistatic cals. Need to be at stow position. Take antennas to stow and let us know when ready

2101 34, 26, 25 and 43 at stow
→ NOPE asked stations to follow steps on page 19 to optimize

2112 **G108975 from 26**. Explained why switch 43 was in A position instead of B when I asked them to switch it at 2003. Turns out it was operator error

211425 14 ready for cals

END OF NOTES

DRs

G108975 26 UWV switch 43 in position “A” vice “B” from 19:05 to 20:00z.
G108976 14 antenna tracking in encoder mode vice autocollimatore 2 for pointing

SNR Measurements

	1848 (ingress)	1914 (egress)	
14XR	50.8	50.44	
14XL	30.12	30.53	
14SR	41.55	41.50	
14SL	24.62	19.38	
25XR	48.35	48.43	
25KR	48.58	48.36	
26XR	49.01	48.95	
26XL	18.12	19.4	
26KR	49.36	49.08	
26KL	18.8	30.37	(not right. Switch was in wrong position)
43XR	54.3	54.7	
43XL	24.24	24.1	
43SR	41.14	41.6	
43SL	24.04	20.6	
34XR	48.3	48.4	
34KR	49.0	49.3	
47KR	48.44	49.09	