

S97 Rev 250 Rings Occ

Rev 250

DSS-43, DSS-34, DSS-63, DSS-55, DSS-74

DOY 333, Nov 28, 2011

332, 271

OPS: 2

Ops: Elias, Danny, Carlyn, Aseef

↓	↓	↓
DSS-43Q DSS-34	WVSRs DSS-63 S	DSS-63X, DSS-55

Jay on vacation

NOPE: Lu

ACE: Grant then Bill

Fgains:	43X	60	63X	59
	43S	48	63S	48
	34X	55	55X	54
	34Ka	55	55Ka	54

1-way offsets	S	744400
	X	2729470
	Ka	10372170

Notes on timeline:

Can Queue made change @ 031813 (43 to 2-way, 34 to 3-way)

Started Camberra recording earlier

Don't have to change prdx @ 115314

Add switch predicts to 3-way @ 03 & 3-way/63 @ 55 at 121547
Can queue that one

Don't have to change prdx @ 121914

DOY 332

Ongoing DSS-14 track
2305 DSS-43 Pre-Cal X: DCO2 S: DCO3

Weather Clear skies. Wind 1.5 kph

Equipment green

Antenna problem. May be late in going to point (Bot actually were on time) corrected antenna problem)

2355 Elias called Aseel

43 antenna problem. May be late to BOT (Bot fixed & on-point on time)

DOY 333

0005 DSS-43 BOT (on time!)

0015 43 Xmitr on (UL transfer from DSS-14)

0020 14 EOT

0100 Aseel & Danny arrive

0142 DSS-34 Pre-Cal briefing X:DC 04 Ka: DCO9

Weather fine
Wind 15 kph

Equipment green

0217 Lu called

Good that 43 DCP problem was resolved
(It was a problem on previous days)

DCP data delivery. All data goes through it but open-loop & monitor a different route.

Not related to antenna problem during pre-cal

Also 63 had problem
Precision mode red
Can't Conscom
Using encoder mode
Whatever blind printing model they have, have
to rely on it
Bad until a 15°

63 track didn't start yet

Asked Lu which team is supporting @ Canberra?
Lu → Team Delta then Alpha in 5 hrs

Talked w/ Lu about 43 Conscoming to check printing
Lu → not enough margin now. Will monitor
me → Also enable SNT to check then disable

0227 Lu to 43
asking if they have Conscom on
43 → yes
Lu → Enable SNT on DC02 (X-band)

0227 Lu called
43 enabled Conscom even though margin was
3 dB
They enabled Conscom @ 0131!
No improvement

022827 43 Xmtr off

0239 ACE asking 43 to confirm Xmtr back on
@ 024227
→ yes
But ...

0243 43 XMTT was not on
it was in standby mode! (operator error)

0244 ACE to me
I reminded them 3 times!
me → I don't know what else we could've done!

0246/18 43 to ACE
Drive on now.
18 kW, LCP

Lu called me. They did not sweep!
stop & re-do?
me → yes

0247 Lu to 43
You did not sweep
stop & enter

0248 43 to ACE
with your concurrence, will bring XMTT
down & re-sweep
ACE → ok

0249/54 43 XMTT on ?

Lu: Ops.
They entered it & then cancelled. Lu thinks
they maybe wanted to double check & make
sure they got it right

0252/13 43 new tone.
~~43 to A~~
(some time to get XMTT up to 18 kW)

0253 ACE to me
 Confirming OIL time
 025213, 17.949 kW
 me → Ask for DR
 10 min loss of 2-way Doppler & RS
 coherent baseline

0308 TSS to 34
 SNT should be disabled on Ka D/L channel
 → OK

0326 Lu called
 Pointing looks good @ 43
 Disable Conscan & disable SNT?
 me → Wait for S-band. Get a reading then
 disable all

0328 ACE asking if we're seeing S-band signal?
 me → Yes
~~ACE~~ station doesn't
 ACE says 43 d
 ACE to NOA: Do you see any configuration problems?

0329 NOA to 43
 Select 2-way prdx on DCO3 (S-band)
 43 → see the downlink

0331 NOA to 43
 RS wants to measure SNT
 Enable SNT on DCO3
 NOA to RS: SNT on. Leave for 10 min?
 RS → That should be good enough

0332 N/A to 43

@ 034200 turn SNT on both DC02 & DC03 & disable conscan & clear offsets

033209 34 Ka-band Inlock

0333 ACE to 34

Enable Mono @ 033400

033400 34 Monopulse enabled

0335 RS to 34

Name of 4th order pointing model

→ 34Ka.sem

RS → We'd like to get quick SNT readings. Enable on Ka-band

0338 SNT readings

43 X 21.042

43 S 23.769

34 X 24.011

34 Ka 36.841

0339 Told 34 to disable Ka SNT @ 034200

0342 43 SNT disabled on both

Conscan offsets cleared & disabled

0342 34 Ka SNT disabled

0430 ACE to RS

Combera DR (for 43 uplink)

C 112447

0522 34 to RS

Got Graham Baines there
Suggests clearing Mono offsets & entering
manual offsets

+2 mdeg in elevation

+1 mdeg in cross-elevation

Asked 34 what time they'd do that then
lost connection

Asked ACE if we lost 34

ACE to Ops Chief

Re-connected

0525 34 to RS

asking what time to enter offsets

we → 0529 is when we disable Mono

But then we re-enable after 1-way
period. Do manual offsets get
deleted when re-enable Manpulse?

34 → Manual offsets will stay in system

053141 1-way

offsets X - 900

S - 400

Ka - 2750

05336 Asked 34 if they entered Mono Manual offsets

34 → Only +1 in cross-elevation

me → What about +2 in elevation?

34 → Graham wants to wait & monitor

me → Can we enable Manopulse or does Graham prefer to Monitor w/o Mono?

34 → Can enable if wait

053700 ³⁴ Manopulse enabled

→ no jump in power observed

Offsets now Az -0.5, EL +0.7
elevation 48.82°

(Offsets were higher earlier. Up to +15 mdeg in Az!)

054920 LOS.

2-way in ~~RSR~~ WRSR

Didn't switch RSRs

This is RTLT after 43 first turned XMTR on. Uplink would've been ok without sweep, but it was safer to sweep

055140 1-way
for 25 min

(until 43 corrected their uplink & added sweep)

055400 Ka-band 1-way signal
drifting fast
Update the stro

34 stro ka -3000
(shouldn't have done that on RSR!
Only WRSR)

055615 LOS. Going Coherent

055845 34 Mono re-enabled
Now have both manual offsets
+2 mdeg in elevation
+1 mdeg in cross-elevation

me → So clear the other offsets?

34 → Copy

me → I was asking if Graham suggests that
we clear them

34 → Graham has left for the day

me → I think his intention was to clear them.
We'll monitor the offsets until the time
comes to disable mono & we'll make
the decision based on that

0600 43 not I/L on S-band yet!

0600 ACE to 43

Had 1-way on S. Change to 2-way

43 → OK. Had difficulty locking up TLM

ACE → TLM is off

060145 43 I/L S-band

0602 P_c/N₀ readings

	RSR	WVSR
43X	53.51	53.7
43S	40.27	41.3
34X	48.06	48.0
34Ka	48.26	48.5

0627 Asked 3A to let me know if they lose lock on Ka-band in next 30 min or so or menu gets disabled before re-enabling

0632 3A to RS

Seen periods of very noisy data
Drop to -170 to -180

me → Expected. We are going through ring A

0655 ^{Madrid} RSRIB critical error IF switch
Something happened between DOY 317 & 321

Steve Olson (RS OE) used H & got same error but didn't report it

VSR is red

PRSR is red (found out during weekend)

Not listed as red in DSN equipment status

No backup receiver

Change WVSR plan

changed
w/0755
after
Madrid's
attempts
to repair
ESRIB
failed

Put prime 435 on WWSR
Delete 1-way 50 & 100k subchannels
Delete "1-way w/ offset" 50 & 100k subchannels
Add S-band Coherent 1, 16, 50, 100k
Rev 250

070125 Ka-band out of lock
Monopulse offsets A3 1.71, EL 1.51
In addition to manual offsets

0703 Told 34 I see your Ka-band rcvr is out of lock & I assume Mono is disabled
34 → Yes

0721 55 Pre-Cad
BOT 0850 EOT 1330
Weather partially cloudy
Equipment green
Wind 4.3 kph

0723 Lu asking ^{Madrid} what crew
Madrid → Crew B
@ 0900 Crew A
What 4th order pointing model
55 → cas55

0726 Told 55 about ESRIB problem. If signal may be missing
55 → Will check with maintenance

073350 55 to RS

Just contacted maintenance & they want to know more details about error message

me → Band 2 Amp of -41.7 indicates the IF signal may be missing



073604 1-way back. Very brief drop to 1-way

Rev 250

0745 SS called
Don't see any problem w/ RSR. Anything
can do on your side?

Danny
→ no

SS → will reboot.

Brought down RSR1A & 1B

0748 SS to RS
Maintenance rebooted RSR1B. Want us to try it
me → will try & let you know

0752 Tried 1

0755 Told SS that that did not solve the problem
we're going to use the WWSR for now
Thanks for trying though
SS → u welcome

63 was on RSR1B S-band

Now change WWSR setup

1, 2, 3, 4 S-band 2-way 1, 16, 50, 100 KHz

5, 6 1, 16 KHz 1-way

7, 8 1, 16 KHz 1-way w/ offset

0758 Lu called.
Want them to check cable?
me → we are ok w/ WWSR. Don't want to impact RSR1A
Lu → Yeah. worry they may brake cable. Only if have extra one

0802 55 to RS
Maintenance people re-adjusted attenuators on
RSRIB. Try again
me → ok

08050 Told 55 we are still getting the same
error message
"IF switch may be missing"

0807 ESA voice check

0807 63 voice check

0807 63 Prepares Briefing
BOT 0805
EOT 1330

0916
UL transfer from station 74

63: Weather partly cloudy
wind speed 0

Equipment status green

0809 Lu to 63

Is Master equatorial now green

63 → That's affirmative

0809 74 Briefing
Have BM?

→ yes

Support per BM & timeline

BOT 0835 EOT 0935

UL xfr 0850, xfr to 63 0916, xmit off 091605

0835 43 to 74

Coordinating U/L transfer. Will have drive off @ 085005

74: will have XMTR on @ 0850.. probably a little earlier

0835 74 to RS

No signal

me → It's weak. Got a bit stronger in the past minute or so

33 dB-Hz @ X-band

74 → Got ca lock

will try open-loop

0840 74 to RS

Got X-band signal in open-loop

me → great thank u

084951 74 XMTR on. 18 kW

085005 43 XMTR off

0855 SS U/L X-band but not Ka-band
maybe signal very weak?

ACE → yes

0900 Concern w/ S-band on WVS2

Have that have to re-set attenuation

normally narrow ones clip but have seen it on wider ones

Have to acquire signal first & then set gains

→ Should've put SSX on WVS2 & 635 on RSR21A.

74: a little bit of latency on commanding so a few seconds after

ACE: Yes remember that from previous support. Around 7 secs

Looks like you'll be OK until EOT
In Ring B. 74 → has rcvs setup for 3-way weather?

74: 20°C, 20% humidity
"Wish I was there"

0812 Lu are you going to use same offset -1300?
74: will increase ^{as previous pass}

recommended ^{add} -150 Hz from previous pass

New BLF: 7175026450
(Should be 1450 from BLF)

0819 74 to NOA
On-point but should not expect signal in open-loop?

Lu → Will check w/ RS

0820 Lu to RS
See signal @ 74?

me → Can't connect to PRSR @ 74 but we see a very weak signal
Closed-loop will not be able to lock but open-loop should see it

74 copied. Will start open-loop & look for signal

Too late to make changes now!

0910 43 EOT, 34 EOT

ACE: Thank u very much for your excellent support. RS appreciates it & I appreciate it

091600 63 XMT on
091627 74 XMT off

ACE: Bill

0933 55 asking ACE when to expect to have solid lock on signal

Lu → after 103530 when we exit ring B

0935 74 to Lu
We'll brake trade shortly (EOT)

Lu: Thank you for your very good support. It was ~~very~~ short but very helpful for RS I'll let ACE release you

Bill: Thank you

74: Official supports begin in Dec

Bill: Sounds long time away but it's just next week! ☺

0935 DSS-74 EOT

1027

Talked w/ Lu about predicts plan
Asked him not to have Madrid switch until 121547 to be consistent w/ our predicts switch

1029 NOA to 63

@ 115330 to 121400 you'll go 3-way w/ 74
but don't have Predicts

Remain 3-way w/ 74
all the way until 121547 then switch to
2-way

1030 ~~NOA~~ to 55

remain 3-way w/ 43 until 121547 then
switch over to 2-way w/ 63

103530 Told 63 & 55 we are out of ring B &
have strong signals ~~at~~ all three bands
→ solid lock on X-band & trying to
acquire Ka band

→ 103346 63 RSR1A (X-band) ^{data} clipping error
messages!! Subchannel 1 & 2 (1 & 16 kHz)
Gain is set properly.
Don't know why!

104426 63 RSR1A gain 2 65 (16 kHz channel)
- Clipping error msgs went away. Now msg
data peak is low

104523 63 RSR1A gain 2 59
Now looks good!!

What to do w/ subchannel 1 ?!!

Decided to re-set the gain! Sorry, Essam!
Data were badly clipping. Noise floor not looking right

105025 63 RSR1A gain ↓ 65
105032 63 RSR1A gain ↓ 59 (Back to normal value)
Would just doing "gain 1 59" again have been sufficient? (10)
Rev250

I believe problem was because station re-set the attenuation after we brought up the RSR

RSR1A was brought up @ 074941

@ 0802 station said that maintenance re-adjusted the attenuation (in an attempt to fix the IF switch problem with RSR1B, which it didn't)

We should've re-set the gains after that, it seems.

On WSR

in 1040 for DSS-63, had to adjust gain (due to s/w bug)

Only subchannel 5 (1-way w/ offset ^{x-band})
then started to get error message

:"Event 4 DPC internal error"
Danny worried that making more changes may cause WSR to crash

S-band 2-way did nothing because it did not clip. (this is a prime data set)

in 1041 for DSS-55

Only subchannel 5 (x-band 1-way w/ offset)
subchannel 1 was looking @ 1-way, so no signal to clip.

Ka-band subchannel 5 also clipped, but did not have a chance to adjust gain before it went away (signal power dropped)

110530 Asked SS to enable Monopulse

110620 SS Monopulse enabled?
No jump in power

Lu telling station that they need to
enter ~~AP~~ "Mono gain 1"
SS said they already did. But weak signal.
Monopulse threshold. Noisy signal

110755 When SS mono offsets started to update
Now Monopulse enabled. No obvious jump in power

1108 Lu called
Station didn't enter "Mono gain 1" that's why he
asked them
Monopulse not enabled until a min or few secs
after I asked

115314 Madrid switch to 3-way w/ 74
looks good!

1206 Lu called
SS pointing model was good during last
experiment, but today it's a little off
Corrections up to 8 mdeg (ET corrections)
Model needs updating

121547 Predicts change (was queued)
from coherent w/ 43 to coherent w/ 63
(but actual made change to coherent w/ 63
in ~4 min)

121914 Switch to coherent w/ DSS-63
Looks good!
Successful o/L transfers to/from
ESA!

1227 Asked ACE for DR for RSRIB problem
during pre-call
55 asked ~~problem~~ for more details
ACE asked me to explain
(new shift @ Madrid & didn't know
details)

124314 LOS. Going h-way
X @ -325. Sfr0 1 - ~~350~~ -1300
Ka -4800
No s-band sfr0 needed

1250 55 asked if data were lost due to
RSRIB problem or used another rcvr
me → we used WUSR. No data loss but
maybe degraded. Won't know until we
process the data
55 → OK will open as degraded & let them
know if need to update the DR.
me → Sounds good

125337 Official end of experiment

1255 Danny reporting spur~~s~~ on WUSR @
X & S-band during 1-way period
One spur, disappeared from X-band after
S-band was off
(TUM/ENG on was almost @ same time. Could be that?!)

1256 55 M109682 DR for RSRIB

1312 X LOS
SK turning off-Earth port

Madrid DR for RSRIB problem DR # M109682

Playbacks:

43X 2335 - 0940

43S 0300 - 0940

34X 0215 - 0940

34Ka 0300 - 0940

63X & S 0820 - 1400

55X & Ka 0820 - 1400