

575 Rev 171 Atmospheric Occ
Ingress Only
2012-246

DOY 246 ①
Rev 171

RS Ops: Dan 1:30am - 6:15am
Aseel, Elias, Danny 5:15am -

NOPE: Lu then Sandy

ACE: Grant

David Rochbkutt: supporting remotely.

Fgain 70-m X 59
S 49
34-m X 54
Ka 54

Start Madrid X w/
37@55 & 42@63
Ka → 55 Changed lat/lon
S → 50 Changed lat/lon
Change X @ turn off.

Prdx 2-way (modified by Paul) & 1-way w/ atmosphere

Prdx offsets (1-way to 2-way/3-way)

S +745070 H3

X +2731930 H3

Ka +10381340 H3

Pointing models @ 55 & 26 were updated

55 (from talk w/ David later) anomaly: Endeg
shift in pointing. Compromised pointing in
between.

WVSRI @ Madrid & Goldstone being used by
JUNO DDOR. Use Madrid WVSRI after 1515.
Can't use @ Goldstone. Use VSR & RSR3 instead

DSS-55

Weather clear sky. 4 km/hr wind.

Ka-band off by -1900. SFRO.

X-band off. SFRO -580

Problems enabling SNT. Should be corrected when go 1-way.

Problem w/ monopulse. Have to reset APC, but would interrupt uplink. Wait until XMT off

@ 124840 & reset after.

Record only 1K until 1530

DSS-63

Did antenna controller reset (check w/ NARC-later).

Conscom @ 1213

Kept on, disabled @ switch from 1-way
~~1-way~~ to 3-way w/ SS then on again.

Record only 1K until 1530

Shift change: Don to
 Aseel / Danny / Elias

- 124840 55 resetting APC rcvr connection
 (waited until their xmtr off)
- 131142 DSS-55 back on point
- 1317 David Reinblatt called. Told him had problems
 w/ monopulse
- 1318 55 says all problems clear
 Ka-band I/L. Monopulse re-configure &
 working. Performed very slight on-point phase
 ad. Ready to enable monopulse
- 1319 63 xmtr on 17.6 kW
- 131945 Asked 55 to enable monopulse
- 131949 Monopulse enabled
 David said on his side saw ~0.25-0.5dB
 improvement.
 On our side, Elias couldn't see anything
 Don noted that they enabled mono for
 a few secs before official enable.
 Can't tell if there was improvement
- 132850 Switch to 2-way @ 55, 3-way @ 63
 Cleared SFRU @ 55 Ka-band & X-band
 & 63 X-band
- 1330 Att auto
- 1342 Change 63 s-band fgain to 49 (from 50)
- 1344 Change 55 Ka-band fgain to 54 (from 55)

1344 63 reporting times
Ca O/L 132928
Ca I/L 133057
TUN 133103

On phone w/ David then talked to Lu

David wants me to ask 63 about tracking error...
to monitor it & if it seems to be tracking (me).
Anomaly @ 63 in actual position of antenna
& commanded position. Could introduce 3mdeg
error. If combine that w/ 1 sec delay, it may
add up to 8 mdeg error.

To Ask 63 to observe tracking error @ 63. If close
to zero.

Asked ACE (~~Grant~~) if knows if 63 reset controller
during Pre-cool. → Doesn't know. Is Lu online → I'll call him
Called Lu.

Yes, they did reset.

He is monitoring pointing error. No anomaly so far.
Whenever they reset AMC-2, there's an anomaly
(actual position & commanded position). If see
these are instructions in BM to enter Manual
offsets.

Station conscounting (since BOT. Stopped @ switch,
& then continued in 3-way).

RF Corrections

A3 6.0 mdeg EL -4.0 mdeg XEL -5.2 mdeg.

Reported to David → Pretty significant!!

New model was developed @ 63 & they reset AMC-2
before that, but something else may be going on
me → so keep conscount offsets

David yes.
Told him Lu is monitoring pointing & no anomaly → good ^{David}

WVSR 2 @ Goldstone being used by Sue Finley. Session is 2 days old. No recording. Nothing in Queue. Decided to end her session. Sent her email. Danny started configuring

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1520 see a @ Madrid

1521 SNT Measurement (asked 63 & 55 to enable)

63X 21.339

63S 20.70

55X 25.477

55Ka 46.890

EL 41.35° @ 55

152350 Disable SNT on Bath @ 63

1525 Disable SNT @ Ka-band @ 55

152730 Talked to Lu over net.

We need WVSR1 @ Madrid & DDOR group said we can use @ 1520, but shows still being used

→ will check w/ Ops Chief

1529 Lu: U can use

me → But when we do a scan, it shows that it's still being used. Do they have to remove from the link?

Lu → will ask

1530 Lu: Will have Mitch look into it.

153340 We see that WVSR2 is available Start configuring

1534 Lu said Mitch did not have trouble accessing WVSR2

me → yes, we see that it's available now & we're configuring Lu seemed confused (no response)

me → It's not that we had trouble accessing before. We saw that it was still being used when we did a scan so we didn't even try so that we don't interrupt. But a few secs ago it became available so we logged in & now configuring

1540 Danny started recording on WSR2 @ Madrid Ericas checking

1541 Told NOPE that 63 should not conscan during 1-way, & conscan again @ 2-way.

154150 NOPE asked 63 to turn conscan off
Called NOPE to ask if 63 left offsets, but @ same time he called station

63 kept offsets?

63 → confirm cleared offsets

Lu → Negative. Do not clear

63 → Offsets zero

Lu → Should've kept zero. When we re-enable @ 2-way, keep offsets.

1545 Lu: You called

me → You answered my question. I was going to ask about the offsets

Lu → we were a minute too late

me → No problem. We'll try again @ 2-way

154640 Lu asking if can conscan

me → I prefer that we don't since this is the official 1-way baseline, but we can enable for a few minutes after switch to 2-way.

David called back

154330 Switch to 1-way.

Change X again on RSR

mono enabled ok. No jump

David reporting Accum Error in EL w/ index 63 & 55

(the anomaly he talked about)

1-way offsets SFRO

WSR	X -625	1K	55	RSR	X -630	1K @ 55 & 63
	Ka -2385	1K, 2K			Ka -2390	1K
	nothing to S				nothing to S	

63 offset @ 1557 (later)

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WVSR offsets 1-way:

X -625 Hz 1K 55 & 63
Ka -2385 Hz 1K, 2K 55

(X drifted about -125 in 5 hrs since 55 BOT. Ka drifted about -500 Hz. Wondered if should add to Ka-band offset to account for drift, but @ ~100 Hz/hr should be OK until end of observ, thought drift rate could change)

~~1603~~

1603 Pc/No 1-way

RSR 63X 53.55
63S 42.57
DC08 ← 55X 48.28
DC07 ← 55Ka 48.60

WVSR 63X 53.7
63S 42.6
55X 48.0
55Ka 48.3

1605 26 Briefing
Per SOE & BM

3-way w/ 63
No TLM. D/L only

Weather: Clear & calm

Equip: Orange xmtr, but won't be using it

1607 14 asking for briefing

3-way w/ 63
D/L only. No TLM

1607 63 xmtr off

1611 Painting looks good @ SS. Reported corrections small.

1612 Asked NOPE how long do we need to conscan @ 63 after switch to 2-way?

Lu → 4 cycles, ~8 mins

me → I think 10 mins is OK

1613 NOPE telling station 63 to conscan for 10 mins after 2-way lock & keep offsets when disable

1614 Switch to 2-way/3-way
zero offsets (SFRO \emptyset)

Danny did ATT auto @
WUSRI (SSX)

161550 Elias confirms 63 is conscanning & SS mono.

162555 NOPE asking 63 to disable conscan & keep the offsets → done

162720 Called Lu on black phone.. Conscan offsets?

A3 -9.9 mdeg

EL \emptyset

XEL -7.7 mdeg

1629 NOPE asking 14 if encountered any problem when they re-set AMC-2?

14 → Att this time ending a support. Will configure for conscan & let him know.

1630 On phone w/ David R

Time to check pointing again. Check for H_a angle (Hour angle, prob. abbreviated as H_a on display). H_a should be ϕ . But any other angle?

Called Lu on blk phone. Continuing to check pointing?

Lu \rightarrow Yes. H_a where we want to go & actual very close. Now ≈ 20.884 & changing since antenna is moving, but v close.

me \rightarrow reported to David.

Lu called. Az angle changes 1-3 mdeg David but changing not constant?

Lu \rightarrow Changing.

David \rightarrow ok.

David suggests keeping Conscan offsets (I asked if we should keep such large offsets). Anomaly & best we can do is rely on conscan & manco.

1650 Configuring 26

Noted that Danny should be using 3-way w/ 2 on WSR not 1-way. 3-way w/ 2 have atmospheric model but 1-way don't.

WSR
switch
prdx

Danny switched @ 1653 from 1-way to 3-way w/ 2. Essentially the same during baseline. Didn't have to interrupt recording bec. same prdx set don't have to change file but mode.

Enter 1-way to 3-way offsets @ 26 RSR2

X + 2731930

Ka + 10381340

\rightarrow do

Got "baseband freq. ... is outside +/- 8 MHz range"
"ddclo auto" \rightarrow OK.

1704 SS reporting DR #s

M106894 for manipulate problems
M106895 for no X-band SNT available on DC08
(ACE already gave them to me)

171540 Nope wanted to confirm w/ 14 that they didn't
encounter problems when they reset AMC-2.
14 → 14 has no problems

1714 P_c/N_o 2-way/3-way @ Madrid

RSR		WUSR	
63X	54.07	63X	54.0
63S	42.47	63S	42.2
SSX	48.14	SSX	48.0
SSKa	48.30	SSKa	48.0

172030 Lu asking 63 which crew supporting
→ Delta Crew

172250 Lu calling 26 to confirm entering work
around for 1 sec delay
AP directive ^{us} → will check
→ AP set to 1

1726 Lu called on BK phone... Ask David what mode to
use @ 26. CAD or default? think default
is latest
Called David on his cell phone
David → Default
Lu leaving. Sandy taking over

1731 Asked 63 for weather update
 63 → Clear sky. wind 1.2 km/hr

1733 14 reporting ca 1/L @ X & S

173420 26 open-loop data

1735 26 reporting ca 1/L @ X & Ka
 EL is 6.7. will wait till 10 degrees
 to enable mono.

1737 26 Ka Pc/No is ~44. EL ~7.2 degrees

173850 Asked 26 to enable mono (~7.4° EL)
 High mono offsets!

1740 Pc/No

RSR			WVSR	
63X	53.87	} EL 30.19	63X	
63S	42.31		63S	
55X	48.08		55X	
55Ka	47.95		55Ka	
14 X	31.60 only wvsr		14 X	51.0
14 S	40.39 only wvsr		14 S	40.0
26X	46.08 RSR 3A ?	} EL ~8°	26 X	---
26Ka	45.41 RSR 3B		26Ka	---

1741 Noticed 14 RSR1 was not up!!!
 Brings up Curves partly S

1749 Drop in S-band ≈ 3 dB @ 63 (12 points)

1758 Told 63 we saw a quick drop ≈ 3 dB.
Did they see it or know of something that could've caused it
→ will check

1759 63: Checked logs. Don't see any errors.
me → thanks for checking

1802 Told SS & 26 that plan is to have mono enabled until LOS ≈ 1824 , but if gets disabled before that,
26 copies
SS → but if let it disable, mono has threshold to work properly got disconnected

180130 SS suggesting to disable mono before expected LOS.
Discuss w/ David. He: Maybe if signal level v low mono computes erroneous me → standby offsets. I said we kept enabled in past. I prefer mono David → OK
Let's disable, & corrections @ SS are small.

1811 Told SS that we decided to let monopulse run until it loses lock especially that offsets are ~~very~~ small.. so we'll let it run until it loses lock
SS → copy thank u
me → thank u!

1814 SS reporting he forced mono to enable but it got disabled
copy → copy. As leave it disabled but don't check offsets
SS → won't SS offsets Az 0.44
EL - 2.07
Danny & I think that it got disabled, he enabled, then got disabled again

181645 26 reporting LOS on Ka-band.

Mono affects stopped @ Az -1.81, EL -6.64
(EL $\approx 14^\circ$) (-6.89)

David saying that it seems that mono disregards
affects when signal level drops below threshold
 \rightarrow that's good
 \rightarrow David positive anomaly!

1819 SS still 1/L on Ka-band (EL 21.53)
26 O/L (EL 15.34)

1821 David pointing out that SS & 26 CalpBW
is different. SS has 10, 26 has 13.
Just as we were discussing, 26 changed
to 10 Hz.

182340 SS O/L (SS reported 182327)

182812 26 X O/L

182813 ~~25~~ X O/L

182920 14 X&S O/L

182930 63 X O/L

183145 ~~63~~ S O/L

\approx 1832 Danny thinks he sees S 1-way

\approx 1835 LOS S 1-way !!

1853 Asked all stations to enable SNT on all DIL channels

63X	26.815	DCC01	14X	24.7	DCC03
63S	26.513	DCC05	14 S	30.1	DCC01
SSX	29.774	DCC08	26X	27.415	DCC08
SSKa	63.504	DCC07	26Ka	41.821	DCC09
	EL n18.5			EL n22	

1900 We are done early. We completed the experiment & ~~successfully~~ acquired all the data. Thank you ^{very much} for your outstanding supports. Pls standby for the ACE.

190030 ACE released stations.

Playback

Madrid 1520 - 1855

except SS/_{WVSR1} 1540 - 1855

Goldstone 1720 - 1855

except 14/_{WVSR1} X 1741 - 1855

S 174~~5~~ - 1855

551K 1010 - 1855

631K 1205 - 1855