EVN Session Overview — NOV04

Prepared by Zsolt Paragi

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The following information is mainly drawn from station feedback. Please refer to the EVN feedback pages for more details (*http://www.evlbi.org/session/feedback.html*). Stations scheduled and observed successfully (sometimes with minor failures) are indicated by $\surd$. Stations scheduled but failed to observe, or produced no fringes for some reasons are indicated by a dash (–), no feedback from a station by the date of this report is indicated by a black dot (•). Abbreviations for the most common failures are listed below. Please send suggestions or additional info to Zsolt Paragi (*zparagi@jive.nl*).

A list of abbreviations:

FS – Field System errors/crash
HA-E – some scans missed due to to HA or elevation limit
HIGH – $T_{\rm sys}$ higher than usual (e.g. because of weather)
LATE – late start of observation
LO – incorrect LO frequency
LOCK – VCs/BBCs unlocked to maser
LINK – problems with the microwave link between Cm and Jb
LT – Lovell Telescope was used in Jb
MkII – MkII was used in Jb
PCAL – various problems with phasecal (unstable, high, missing)
PHAS – problems with phasing up some of the telescopes at Wb, mostly RTC and RTD (longest baselines)
POIN – pointing problems, some data may be affected or lost
RECE – receiver fault
RECO – problems with recorder, some data may be lost
RFI – RFI reported
SD – a single dish was used in Wb
SLEW – data loss due to limitations in slewing the telescope
TSYS – $T_{\rm sys}$ data are corrupted or missing in one or more channels
WIND – part of the experiment missed due to severe weather conditions (e.g. gusting winds, snowstorm etc.)

90cm	Wb	Jb1	Nt	Ur	Ar
F04P1	$\surd^{(1)}$	$-_{\mathrm{WIND}}$	$\surd$	$\surd_{\mathrm{PCAL}}$	$\surd$
GG058A	$\surd^{(2)}_{\mathrm{RFI}}$	$\surd^{(3)}_{\mathrm{WIND}}$			
GR024A	$\surd^{(4)}_{\mathrm{RFI}}$	$\surd^{(5)}_{\mathrm{RECE}}$			$\surd$
GR024B	$\surd^{(6)}_{\mathrm{RECO}}$	$\surd^{(7)}_{\mathrm{RECE}}$			$\bullet$
GG056	$\surd^{(8)}_{\mathrm{RECO}}$	$\surd^{(9)}_{\mathrm{RECE}}$			$\bullet$
GI002	$\surd^{(10)}_{\mathrm{RECO}}$	$\surd$		$\surd^{(11)}_{\mathrm{PCAL}}$	
GG058B	$\surd^{(12)}_{\mathrm{RFI}}$	$\surd$			$\bullet$
GG060	$\surd^{(13)}$	$\surd^{(14)}_{\mathrm{RECO}}$	$\surd^{(15)}_{\mathrm{LATE}}$		
GG058C	$\surd^{(16)}_{\mathrm{RFI}}$	$\surd^{(17)}$			$\surd$
N04P1	$\surd^{(18)}$	$\surd$	$\surd$	$\surd^{(19)}_{\mathrm{HIGH}}$	
GK028	$\surd^{(20)}_{\mathrm{RFI}}$	$\surd^{(21)}$		$\surd^{\mathrm{PCAL}}$	
GR024C	$\surd^{(22)}_{\mathrm{RECO}}$	$\surd$			$\bullet$
CL04P1		$-^{(23)}$		$\surd^{(24)}$	

Comments on the 90cm session:

1. Wb in F04P1: Wb used in phased array mode. Done with pigwire setup. Missing RTD from the array (13 telescopes used). Bad calibration for RT6. Polarization setup was OK in ftp test.
2. Wb in GG058A: 12 telescopes used in the array.
3. Jb in GG058A: Telescope offline due to high winds at start of experiment. On-source from 1st reverse pass at 12:49 UT.
4. Wb in GR024A: Missing RTD from array, so only 13 telescopes.
5. Jb in GR024A: Sometime prior to 17:24 UT, the RCP channel (IF2) failed and was not recovered before the end of this experiment. Expect no RCP fringes.
6. Wb in GR024B: Final rewind lost vacuum – had to manually restart it; 13 telescopes in array.
7. Jb in GR024B: RCP (IF2) had failed prior to this experiment and not yet recovered. Expect no RCP fringes.

8. Wb in GG056: Had to restart correlator at 08:05 UT. Up to 08:05 had 13 telescopes and from 08:05 to 10:04 only 12 (missing RT6 and RTD). From 10:04 to the end back to 13 telescopes. Some RFI in the daytime. About 20:00UT the vacuum motor of the tape unit failed. This was replaced at 22:30 with an old spare. Some of the tape of EVNT0616 was lost. There was also an error in the formatter after this so no data after 20:00 will be usable.

9. Jb in GG056: RCP (IF2) failed prior to this experiment. Telescope was parked at 09:05 UT to correct fault. Back on source for start of reverse pass at 10:49 UT. Expect no RCP fringes until 10:49 UT.

10. Wb in GI002: From 20:00 to 22:30 the vacuum motor was dead. When this was replaced, there was an error in the formatter clock. This was only spotted at 06:15 UT when it was manually reset **BUT 1 second AHEAD OF UT**. The formatter was reset correctly at 18:04 UT during GG058A.

11. Ur in GI002: No phasecal. Trouble with the control computer from 06:30 to 06:50 and from 10:22 to 10:35 (UT).

12. Wb in GG058B: **Formatter was 1 sec ahead of UT from the start until 18:04 UT.** Some very bad RFI. 13 telescopes in the array.

13. Wb in GG060: Only 1 telescope used in the tied array so a major adjustment to the attenuator settings was needed. This was done at 02:16UT. Open day started at 10:00UT.

14. Jb in GG060: Attempted to run experiment on disk but had severe problems at the start (turned out to be faulty cables). Switched to TAPE as quickly as possible. Finally got going on scan at 03:32 UT.

15. Nt in GG060: Due to a human error the observation started only from 03:32 UT.

16. Wb in GG058C: RTD missing from the ties array all the time (receiver problem). RT6 out from the start until 17:45. Open day ran from 10:00 to 15:00 UT. Very bad RFI at the low end of the band – apparently unrelated to the Open Day.

17. Jb in GG058C: Error reading procedures at start of experiment. Data good from about 12:17 UT.

18. Wb in N04P1: Little RFI during the night. Observed with the Mark5A in Pigwire mode. Missing RTD from the tied array so only 13 telescopes.

19. Ur in N04P1: $T_{\rm sys}$ is higher than expected, because of weather and/or interference.

20. Wb in GK028: Using 12 telescopes from 09:00 to 11:37. After that 13 telescopes. Some bad RFI.

21. Jb in GK028: Telescope was offline between 10:37 and 10:59 UT to repair fault on azimuth drive.

22. Wb in GR024C: Only recorded 47 minutes before the vacuum motor (replacement after GG056) died! Two in one session!

23. Jb in CL04P1: Receiver noise diode was too weak to give good calibration and could not be changed. Hence, no useful calibration data was observed. The receiver was uncooled and should have a $T_{\rm sys}$ of about 300K in both LCP and RCP.

24. Ur in CL04P1: Did noise-diode calibration with liquid-nitrogen, got Tcal=29K in the 92cm band. Also did onoff measurement, but it gave wrong value of Tcal etc. The reason may be interference and a little bit high $T_{\rm sys}$.

6cm	Ef	Wb	Jb1[1]	On25	Mc	Nt[2]	Tr	Ur	Sh[1]	Hh
ES051	$\surd^{(3)}_{\mathrm{HIGH}}$	$\surd^{(4)}$	$\surd^{(5)}_{\mathrm{WIND}}$	$\surd^{(6)}_{\mathrm{TSYS}}$	$\surd$	$\surd^{(7)}_{\mathrm{TSYS}}$				
N04C3	$\surd^{(8)}$	$\surd$	$\surd$	$\surd$	$\surd$	$\surd$	$\surd$	$\surd^{(9)}_{\mathrm{HIGH}}$	$\surd^{(10)}$	$\surd$
EA030	$\surd^{(11)}_{\mathrm{TSYS}}$	$\surd^{(12)}$	$\surd^{(13)}_{\mathrm{SLEW}}$	$\surd^{(14)}_{\mathrm{TSYS}}$	$\surd$	$\surd$	$\surd$	$\surd^{(15)}_{\mathrm{HIGH}}$	$\surd^{(16)}$	
GA021	$\surd$	$\surd$	$\surd$	$\surd$		$\surd^{(17)}$	$\surd^{(18)}$			
GS023	$\surd^{(19)}_{\mathrm{RECO}}$	$\surd$	$\surd$		$\surd^{(20)}$	$\surd$	$\surd^{(21)}_{\mathrm{HA-E}}$			
EX004	$\surd^{\mathrm{SLEW}}$	$\surd$	$\surd^{(22)}_{\mathrm{SLEW}}$	$\surd$	$\surd$	$\surd^{(23)}_{\mathrm{TSYS}}$	$\surd^{(24)}_{\mathrm{SLEW}}$	$\surd^{(25)}_{\mathrm{HA-E}}$	$\surd^{(26)}$	$\surd^{\mathrm{HA-E}}$
CL04C3	$\surd$		$\surd$	$\surd$	$\surd$		$\surd$	$\surd^{(27)}$	$\surd$	$\surd^{(28)}$
GM055A	$\surd$		$\surd^{(29)}_{\mathrm{HA-E}}$	$\surd^{(30)}$	$\surd$					

Comments on the 6cm session:

1. Jb and SH in the C-band session: Swapped polarizations. Sh new 6cm receiver otherwise OK.
2. Nt in the C-band session: Because of the failure of the H-maser, the rubidium maser was used. Produced ftp fringes in N04C3.
3. Ef in ES051: Heavy rain after midnight.
4. Wb in ES051: Minor problem with the VSN of the pack being wrong (VSN says OSOD-002 but label is MED-0004). All telescopes used.
5. Jb in ES051: Seemed to lose contact with Mk5 at about 16:36 UT. Back on for scan 16 – few scans lost. Telescope parked due to high winds from 18:55 UT to 01:06 UT.
6. On in ES051: Problems with the noisecal (i.e, bad tsys-values) during some scans. It did not fire. Can be seen if one compare the tpi/tpical-values where the tsys-valus are bad.
7. Nt in ES051: BBC#8 gave crazy values of T_{sys} for the whole experiment.
8. Ef in N04C3: Looking into hills at start. High T_{ant} of 3c273 also causes problems.
9. Ur in N04C3: Snow and rain just before the experiment, and then it is wet and foggy. T_{sys} is very high, about 160K that time, and then it slowly decreased to about 30K at the end.

10. Sh in N04C3: The label number of the mark5 discs is SHAO-012. Please produce the last four codes of the label!

11. Ef in EA030: $T_{\rm sys}$ measurements poor before 14:50 as they are all made while slewing.

12. Wb in EA030: Wb used in phased array mode. Mark5A gave an error code 6 at about 16:00UT – but seems OK otherwise.

13. Jb in EA030: Had to edit this schedule by hand to comply with Lovell slewing restrictions. Remained on primary target for many of the calibrator scans. Connection to Mk5 lost between 23:31 and 23:41 UT.

14. On in EA030: After about 15 minutes of recording had problem with the disk module (JOD-0001). Mk5 was rebooted. Problems with the noisecal (i.e, bad tsys-values) during some scans. It did not fire. Can be seen if one compares the tpi/tpical-values where the tsys-values are bad.

15. Ur in EA030: It was snowing and raining at the beginning of the experiment. A few hours later it was less cloudy. UT20:36–58 control PC dead. Forgot to put 'red label' on disk-packs. These disk packs were UAO-0012 and UAO-0014.

16. Sh in EA030: The label numbers of the discs are: SHAO-015 and SHAO-007. Please produce the codes.

17. Nt in GA021: The active surface of the antenna was not activated till 07:20 UT. Possible calibration problems. From 07:20 to the end there were no problems.

18. Tr in GA021: At about 6:44 the antenna lost track due to the blind spot near the zenith. Tracking regained for scan at 7:36.

19. Ef in GS023: First 30 mins lost due to MK5 problems.

20. Mc in GS023: The sky was cloudy. It was raining.

21. Tr in GS023: At 1:55 the source crossed the telescope horizon.

22. Jb in EX004: Some scans completely missed due to inadequate slew times given.

23. Nt in EX004: Signal overflow in some of the BBCs. Changed the attenuation at 23:30 UT.

24. Tr in EX004: Late on source in a few scans due to too long slewing.

25. Ur in EX004: The antenna control pc dead during UT 11:48-12:07, UT 17:18-17:37, and UT 23:52-00:06. The slewing time is more than 2 minutes for some sources. Elevation limitations for some sources.

26. Sh in EX004: The disk pack label is SHAO-011. Please make the full label for the pack.

27. Ur in CL04C3: Results were similar to what was obtained during the previous calibration run. The RXG file was not updated.

28. Hh in Cl04C3: DPFU has improved due to new surface setting.

29. Jb in GM055A: Source set before experiment ended.

30. On in GM055A: Lost last 5 scans. Problems with antenna tracking.

1.3cm	Cm	Ef	Jb2[1]	On20	Mc	Nt[2]	Ur	Sh	Mh	Ro70
N04K2	$\surd$	$\surd^{(3)}$		$\surd^{(4)}_{\rm HIGH}$	$\surd^{(5)}$	$\surd^{(5)}$	$\surd^{(5)}$	$\surd^{(6)}$	$\surd^{(6)}_{\rm PCAL}$	
CL04K2		–		$\surd^{(7)}$	–		$\surd^{(8)}$	$\surd$	$\surd^{(9)}_{\rm TSYS}$	
EC019	$\surd^{(10)}$	$\surd$		$\surd^{(4)}_{\rm HIGH}$	$\surd^{(11)}_{\rm POIN}$	$\surd^{(12)}_{\rm HIGH}$	$\surd^{(13)}_{\rm HIGH}$	$\surd^{(14)}$	$\surd^{\rm PCAL}$	
EI006A	$\surd$	$\surd$		$\surd^{(4)}$	$\surd^{(15)}_{\rm HIGH}$	$\surd^{(16)}_{\rm WIND}$			$\surd$	$\surd^{(17)}$

Comments on the 1.3cm session:

1. Jb MkII in the K-band session: MkII drive system replacement did not finish before the start of the session.
2. Nt in the K-band session: The H-maser is back to operational. Expect high rates though. Did not produce ftp fringe in N04K2.
3. Ef in N04K2: The first scan was lost.
4. On in the K-band session: Used a new receiver (LCP only). In N04K2 and Ec019 the weather was bad, expect high $T_{\rm sys}$.
5. N04K2 ftp fringe test: Mc, Nt and Ur did not produce ftp fringes. Other stations were OK.
6. Sh and Mh in N04K2: Produced first-time ftp fringes. For Mh this was the first EVN observation with Mk5A. No problems apparent.
7. On in CL04K2: Used a new receiver. Bad weather, high $T_{\rm sys}$. With the new system we use a hot load, not a noisecal.
8. Ur in CL04K2: Did pointing measurement and onoff, and got $T_{\rm cal}$ similar to what is in the rxg file. Did not update because failed to do a fit.
9. Mh in CL04K2: Observed, got some onoff results for IF A/LCP only (IF C TPI is broken), but gnplt quick-fit experiments didn't seem convincing.
10. Cm in EC019: Missed scans from 14:25 to 14:35 UT due to Mk5 communication problem.
11. Mc in EC019: Trouble with the communication link between the station computer and the antenna control unit. Scans from $\sim$13:00 UT to 14:30 UT were lost.
12. Nt in EC019: From 01:00 UT to the end of the experiment $T_{\rm sys}$ high due to very bad wheather.
13. Ur in EC019: Recorded on tape. No phasecal.

14. Sh in EC019: Scan 308-0634 was lost because of a power breakdown.
15. Mc in EI006A: There was fog during the experiment.
16. Nt in EI006A: From 17:06 to 19:06 UT the antenna was stowed due to high wind.
17. Ro in EI006A: There was not enough time for tape change. As a result, footage at the end of scan #1120 was 16186 feet instead of 17600 feet.

5cm	Cm	Ef	W1	Da[1]	On25	Mc	Nt	Tr	Hh
F04M2	√	√	√ SD	√	√	√	— RECE	√	√
EG029	√	√	√ SD	√	√	√	√ (2)	√	
EC021	√	√ SLEW	√ SD HA−E	√ (3)	√ (4) WIND	√ (5) LATE	√	√	
EL032	√ (6)	√	√ SD HA−E	√	√	√ (7) FS	√ (8)	√	
EG031		√	√ SD	√ (9)	√ HA−E	√	√	√	√
N04M1	√	√	√ SD	√ (10)	√ TSYS	√	√	√ (11)	√
CL04M1		√			√	√		√	√ (12) RECE
EC023A	√	√	√ SD	√	√	√	√ (13) POIN	√	
EC023B	√	√ (14) TSYS	√ (15) SD	√ (16)	√ (17)	√	√	√ (18) HA−E	
EN003A	√	√ (26) WIND	√ (19) SD	√	√ (20) HA−E	√ (21)	√	√	√
EN003B	√	√	√ (22) SD	√ (23)	√ (24) HA−E	√	√	√	√ (25)
EI007		— (27) WIND			— (27) WIND				

Comments on the 5cm session:

1. Jb in the 5cm session: MkII drive system replacement work did not finish. Used the Darnhall telescope. LO may be present in VCs #1 and #2.
2. Nt in EG029: Wrong receiver setup was used during the previous fringe test. A quick ftp test in EG029 showed fringes for Noto.
3. Da in EC021: Scans 54 to 57 lost due to problem with Mk5 communication.
4. On in EC021: Antenna stowed between 14:30-19:35 UT due to high wind.
5. Mc in EC021: Lost first three scans.
6. Cm in EL032: Cambridge formatter was resynced prior to this experiment.
7. Mc in EL032: Trouble with FS; lost some scans. At 21.40UT we started regularly.
8. Nt in EL032: Formatter error from 6:30 UT. From 7:30 UT to the end no known problems.
9. Da in EG031: Lost about 1 minute due to switch of power control at about 12:41 UT.

10. Da in N04M1: LO was incorrectly set for lower part of the band until about 23:10 UT. Upper part of band was correct. Expect signal in only two VCs.

11. Tr in N04M1: BBC #3 had wrong attenuation from 18:00 till 18:22 UTC; replaced with another unit.

12. Hh in CL04M1: DPFU has improved due to new surface setting. However 4.5cm band calibration needs further investigation, especially the high SEFD/poor performance in RCP.

13. Nt in EC023A: Some problems with pointing. Few minutes off source at 12:50, 16:30, 22:45 UT.

14. Ef in EC023B: High (bad?) $T_{\rm sys}$ in channels 1 and 3 until UT1245.

15. Wb in EC023B: Changed the RXG file used (c2.rxg) immediately before this experiment.

16. Da in EC023B: Lost telescope control at 18:07 UT due to vandalism on the communication line to Darnhall. Telescope did not return to control until after the experiment ended.

17. On in EC023B: Last scan on G29 outside trackining limit.

18. Tr in EC023B: The source went below the telescope horizon at 19:46 UTC. Also, the FS reported once "2004.314.17:57:02.07?ERROR m5 -900 Check formatter serial number even" (though the number is OK).

19. Wb in EN003A: First scan had bad $T_{\rm sys}$ - not known why. During gaps checked the noise source step, which was OK and did one extra CALTSYS during the observations.

20. On in EN003A: Last scans had too low elevation (J1825-0737, G23.207).

21. Mc in EN003A: It was raining during the experiment.

22. Wb in EN003B: Some gain instability in BBC1 for a short time.

23. Da in EN003B: Communication glitch between 14:32 and 14:35 UT.

24. On in EN003B: Some of the last scans had too low elevation (J1825-0737, G23.207).

25. Hh in EN003B: RCP levels on VCs were high due to operator error.

26. Ef in EN003A: Started late due to snowfall (UT12:48).

27. EI007: Onsala could only observe a few hours because of high winds. The experiment was stopped. Reobserved later.