EVN Session Overview — NOV02

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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
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
HA-E – some scans missed due to to HA or elevation limit
PARI – high parity errors
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
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.)
MISS – small parts of the experiment were missed due to any other reasons not included above (e.g. operator error)

6cm	Cm	Ef	Jb	Mc	On	Sh	Tr	Wb[1]	Ur[2]	Hh
F02C2	$\surd^{\rm PARI}$	$-^{(3)}$	$\surd$	$\surd^{\rm LATE}$	$\surd$	$\surd^{\rm HA-E}$	$-^{(4)}_{\rm LOCK}$	$\surd$	$\surd^{\rm PARI}_{\rm HA-E}$	$\surd$
GM048A		$\surd^{\rm WIND}$	$\surd$	$\surd$	$\surd$					
EB023A	$\surd^{\rm PARI}$	$\surd^{(5)}_{\rm RECE}$	$\surd$	$\surd$	$\surd$	$\surd^{\rm HA-E}$	$-^{(4)}_{\rm LOCK}$	$\surd$	$-^{(6)}$	$\surd$
CL02C1	$-^{(7)}$	$\surd^{(7)}$	$\surd^{(7)}$	$\surd$	$\surd$	$\surd^{(7)}$	$\surd$	•	$\surd$	$\surd$
GG048A		$\surd^{(8)}_{\rm WIND}$	$\surd$	$\surd$			$\surd^{(9)}_{\rm HA-E}$	$\surd^{(10)}_{\rm PHAS}$		$\surd$
ES046		$\surd^{(11)}$	$\surd$	$\surd$	$\surd$	$\surd$	$\surd^{(12)}_{\rm MISS}$	$\surd^{(13)}_{\rm HA-E}$	$-^{(14)}$	
GB045		$\surd^{(15)}_{\rm HA-E}$	$\surd^{(16)}$	$\surd$	$\surd$		$\surd^{(17)}_{\rm LATE}$	$\surd^{(18)}_{\rm PHAS}$		

Comments on the 6cm session:

1. **Wb in November session**: used new tied array, this results in an extra delay of 1ms; some BBCs have swapped polarizations!
2. **Ur in November session**: following the successful fringe test there were LO problems in all bands
3. Ef in F02C2: could not participate due to urgent technical work
4. Tr in F02C2 & EB023A: Serious problem with the receiver – temporarily used 5cm system (F02C2). After no fringes were reported from JIVE correlator, it was discovered that the LO signal was not locked to the maser due to a bad 10 MHz amplifier. This amplifier was replaced following EB023A
5. Ef in EB023A: no data between UT0753-0809 (receiver frontend trouble)
6. Ur in EB023A: control computer date was wrong; fixed at 9:40 UT
7. CL02C1: Cm – no TSYS information available through the MERLIN microwave link; Ef – used 3C286 and 3C295; doubtful results using ONOFF: additional checks were performed; Jb – did not use ONOFF due to conflicting logic with the local control software; Sh – used ONOFF with sources 3C405 and 3C123; Hh – sygnus-a/cygnusa typo (corrected later in the vlbeer log)
8. Ef in GG048A: start delayed until UT2315 because of strong wind; after UT0635 sources were below the horizon
9. Tr in GG048A: after UT0626 sources were below the horizon
10. Wb in GG048A: IF stuck 21:15 to 21:35UT

11. Ef in ES046: inconsistent schedule files supplied by PI; run sched on .key file and installed correct schedule at UT1652
12. Tr in ES046: lost two scans (at 14:46 and 15:43) because of too long slewing and lost all observations after 22:40 (till midnight) because of antenna control problems (old sensors in azimuth sometimes generate false signals causing a havoc)
13. Wb in ES046: IF stuck 15:38 to 16:05UT, IF for telescope D stuck 22:38 to 22:46UT
14. Ur in ES046: no fringes reported from JIVE
15. Ef in GB045: after UT0820, all sources were below the horizon
16. Jb in GB045: some time after 06:00 UT the antenna command failed and source changes were not performed
17. Tr in GB045: shortly before the experiment we experienced another devastating false alarm from the azimuth positional sensors (these sensors will be replaced on Tuesday) causing 35 minutes late on source state (at 21:25)
18. Wb in GB045: VC3/VC4 polarization swap; scans after 04:36UT out of HA range

18cm	Cm	Ef	Jb	Mc	On	Sh	Tr	Wb[1]	Ur[2]	Hh	Other
EB024A		$\surd^{(4,5)}$	$-^{(6)}_{\rm LO}$	$\surd^{\rm RFI}$	$\surd$		$-^{(3,7)}_{\rm HA-E}$	$\surd^{(8)}_{\rm HA-E}$			
EB024B		$\surd^{(5)}$	$-^{(6)}_{\rm LO}$	$\surd$	$\surd$		$\surd^{(3,9)}_{\rm HA-E}$	$\surd^{(10)}_{\rm PHAS}$			
EK015A		$\surd^{(11)}$	$-^{(6)}_{\rm LO}$	$\surd^{(12)}_{\rm MISS}$	$\surd$	$\surd^{(15)}_{\rm HA-E}$	$\surd^{(3)}$	$\surd^{(13)}_{\rm PHAS}$	$-^{(16)}_{\rm HA-E}$		
EF009B		$\surd^{\rm RFI}$	$-^{(6)}_{\rm LO}$	$\surd$	$\surd$		$\surd^{(3)}$	$\surd^{(14)}_{\rm RFI}$			
EB024C		$\surd^{(17)}_{\rm HA-E}$	$-^{(6)}_{\rm LO}$	$\surd$	$\surd$		$\surd^{(3,18)}_{\rm HA-E}$	$\surd^{(19)}_{\rm PHAS}$			
GL026B		$\surd$	$-^{(6)}_{\rm LO}$	$\surd$			$\surd^{(3)}$	$\surd^{(20)}_{\rm PHAS}$			$\surd^{(21)}$
N02L3	$\surd^{(22)}_{\rm TSYS}$	$\surd$	$-^{(6)}_{\rm LO}$	$-^{(23)}_{\rm TSYS}$	$\surd^{(24)}_{\rm RECO}$	$\surd^{(25)}_{\rm RECE}$	$-^{(3)}$	$\surd^{(26)}_{\rm PHAS}$	$-^{(27)}_{\rm HIGH}$	$\surd$	$\surd^{(28)}_{\rm RECO}$
GM048B		$\surd$	$-^{(6)}_{\rm LO}$	$\surd$	$\surd$						$\surd^{(29)}_{\rm MISS}$
GM047		$\surd$	$-^{(6)}_{\rm LO}$					$\surd^{(30)}_{\rm PHAS}$			$\surd^{(31)}_{\rm MISS}\surd^{(32)}_{\rm RFI}$
GV016	$\surd^{\rm PARI}$	$\surd$	$-^{(6)}_{\rm LO}$				$\surd^{(3)}$	$\surd^{(33)}_{\rm PHAS}$			
CL02L1	$-^{(34)}$	$\surd$	$\surd^{(34)}$	$\surd$	$-^{(34)}$	$\surd^{(34)}$	$\surd^{(34)}$	$\bullet$	$\surd^{(34)}$	$\surd^{(34)}$	

Comments on the 18/21cm session:

1. **Wb in November session**: used new tied array, this results in an extra delay of 1ms; some BBCs have swapped polarizations!
2. **Ur in November session**: following the successful fringe test there were LO problems in all bands
3. Tr in L-band session: there were no fringes found for EB024A and N02L3 at JIVE – the whole session may be lost
4. Ef in EB024A: chose another RX-filter at UT1445; that gives lower $T_{\rm sys}$ in channel 2
5. Ef in EB024A&B: high noise on RCP channel due to IF overload
6. Jb in 18/21cm session: the first LO was disconnected prior to the observations at L-band and the VLBI friend was not informed of this by the engineering staff. Hence, the effective LO was wrong for the ENTIRE L-band session on the Lovell telescope and all data is lost
7. Tr in EB024A: sources below telescope horizon at 23:30 (day 316) and since 1:21 UTC (day 317)

8. Wb in EB024A: scans after 01:35 out of HA range
9. Tr in EB024B: one scan (at 7:20 UTC) lost because the source was well below astronomical horizon
10. Wb in EB024B: VC1/VC2 polarizationn swap; scans after 17:42 out of HA range
11. Ef in EK015A: had to change the IF attenuation during the experiment when measured Vir A. Accidentally, the IFD setting was changed from nor,alt to nor,nor for a few scans during the first night (UT0322-0330, 0405-0415, 0601-0618, 0630-0651)
12. Mc in EK015A: scan lost at 319-01:15
13. Wb in EK015A: VC2,VC5,VC7,VC13 polarization swap; IF stuck 02:30 to 03:00; RFI most of the time
14. Wb in EF009B: VC5,VC6,VC7,VC8 polarization swap; very strong EMI, even reported TP overflow in VC08
15. Sh in EK015A: the receiver signal is off from ut:318-10:38:00 to ut:318-10:52:00 and ut:319-03:51:03 to ut:319-04:22:08. But the observing sources are just out of antenna's limit during the ut:318-10:38:00 to ut:318-10:52:00
16. Ur in EK015A: Day 318 21:34–Day 319 01:15 EL limitation; note that Urumqi did not produce fringes in the previous and the following experiments
17. Ef in EB024C: stopped at 0100UT when all following sources were below the horizon
18. Tr in EB024C: since 0:45:30 till the end sources below the telescope horizon
19. Wb in EB024C: VC1/VC2 polarizationn swap; scans after 01:00 out of HA range
20. Wb in GL026B: VC5,VC6,VC7,VC8 polarization swap; occasional RFI; scans after 17:38 out of HA range
21. Ar in GL026B: no known problems
22. Cm in N02L3: due to MERLIN link restrictions, signal only appears in BBCs 3 and 4; no valid $T_{\rm sys}$ measurements
23. Mc in N02L3: $T_{\rm sys}$ values are not defined because the calibration system is not able for this observation frequency; there were no fringes found at JIVE
24. On in N02L3: GPS-formatter difference changed from about 6 to 56.2 us; problem with tapedrive: pass command gave pass/1,101 instead of pass/1,1
25. Sh in N02L3: the RCP receiver is sometimes good and sometimes bad during this experiments; invalid before ut04:54:00
26. Wb in N02L3: VC3,VC4,VC7,VC8 polarization swap

27. Ur in N02L3: there's a little snow on the antenna surface, so the $T_{\rm sys}$ is high; no fringes reported from JIVE

28. Ar in N02L3: recorded only on headstack one (headstack 2 was removed to investigate track 18 – problem seems to be solved now); because one of the local control computers needed rebooting, the first 4 mins of the run could not be recorded

29. Ro in GM048B: one source was lost (schedule line 319) because the antenna continued tracking on previous source; strong RFI

30. Wb in GM047: VC3,VC7 polarization swap; scans after 13:52 out of HA range; some RFI

31. Ro in GM047: two sources were lost (schedule lines 303 and 598) because the antenna continued tracking on previous sources; strong RFI

32. Ar in GM047: the first source for Arecibo (3C274) saturated the IF levels – lots of attenuations were added. First min's data might have problems due to this reason. Severe RFI from 13:10 to 13:34 UT

33. Wb in GV016: VC3,VC4 polarization swap; some strong RFI

34. CL02L1: Cm – no TSYS information available through the MERLIN microwave link; Jb – did not use new ONOFF program due to conflicting logic with the local control software; On – telescope control failure; Tr – did not update the .rxg file due to problems with the GNPLT software; Ur – also problems with .rxg file: the updated FS cannot measure LCP and RCP simultaneously, only LCP data were included. RCP logs will be sent to JIVE; Sh – carried out on 25 Nov., measured only LCP (RCP has the same value); Hh – carried out before and after the scheduled date because of a conflicting geodetic experiment

1.3cm	Cm	Jb	Mc	On	Sh	Ur$^{(1)}$	Sm	Mh
S02K1		$-^{(2,3)}_{\rm TSYS}$	$\surd^{(3)}_{\rm TSYS}$	$\surd^{(3)}_{\rm TSYS}$			$\surd^{(3)}_{\rm TSYS}$	
N02K1	$-^{(4)}$	$-^{(5)}$	$\surd$	$\surd^{(6)}$	$-^{(5,7)}_{\rm RECE}$	$-^{(5,8)}_{\rm HIGH}$		$\surd^{(9)}_{\rm PARI}$
ED023	$\surd^{\rm PARI}$	$\surd^{(10)}_{\rm SLEW}$	$\surd$	$\surd^{(11)}$	$\surd^{(12)}_{\rm RECE}$	$-^{(13)}_{\rm HIGH}$		$\surd^{(14)}_{\rm PARI}$

Comments on the 1.3cm session:

1. **Ur in November session**: following the successful fringe test there were LO problems in all bands
2. Jb in S02K1: fringes were not found at the Bonn correlator
3. S02K1: no $T_{\rm sys}$ measurements were recorded due to missing LO information – at Simeiz $T_{\rm sys}$ data were overflown or zeros anyway
4. Cm in N02K1: could not observe due to antenna control failure
5. Jb, Ur, and Sh in N02K1: fringes were not found at JIVE
6. On in N02K1: no known problems; switched to the spare maser for the 22 GHz session
7. Sh in N02K1: the RCP receiver was broken
8. Ur in N02K1: it was snowing
9. Mh in N02K1: weather was quite bad, it was snowing constantly. Had a new H-maser, new cabling. High parity errors expected on the high-numbered tape tracks. $T_{\rm sys}$ 135K vs typical 77K expected due to weather
10. Jb in ED023: some source changes had inadequate slew times – late on source for several scans; note that fringes were not found prior to this experiment
11. On in ED023: no known problems; note that On has only LCP
12. Sh in ED023: the RCP receiver was broken; started at UT 10:30:35
13. Ur in ED023: it was snowing; between 16:40:00–16:51:00(UT) the source exceeded the threshold of the antenna
14. Mh in ED023: weather was quite bad, it was snowing constantly during the first few hours, last 4h or so are reasonable. Has a new H-maser, new cabling. High parity errors expected on the high-numbered tape tracks