

EVN Session Overview — FEB06

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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 \checkmark . 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:

ANT	– antenna control or mechanical failures
FORM	– formatter failure
FS	– Field System errors/crash
HIGH	– T_{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
POLS	– wrong polarization setup: polarizations swapped, or leakage high
RECE	– receiver fault
RECO	– problems with recorder, some data may be lost
RFI	– RFI reported
SCHE	– scheduling related problems (inadequate slewing time, HA-EL limitations etc.)
SD	– a single dish was used in Wb
TSYS	– T_{sys} data are corrupted or missing in one or more channels
WIND,	– part of the experiment missed due to severe weather
SNOW ...	conditions (e.g. gusting winds, snowstorm etc.)

6cm	Cm	Ef	Wb	Jb2	On25	Mc	Nt	Tr ⁽¹⁾	Ur	Sh	Hh
F06C1		– ⁽²⁾	✓	✓ ⁽³⁾		✓	✓	– ⁽⁴⁾	✓	✓	✓
CL06C1		✓ ^{RAIN} HIGH	✓	✓	✓ ^{SNOW}	✓	✓	✓ ^{FOG}	✓	✓	
N06C1		✓ ^{RAIN}	✓	✓ ⁽⁶⁾	✓ ^{SNOW}	✓	✓	✓ ⁽⁷⁾	✓ ⁽⁸⁾	✓ ^{RAIN}	✓ ⁽⁹⁾ RFI
EL033B		✓ ⁽¹⁰⁾ RAIN	✓ ⁽¹¹⁾ PHAS	✓ ⁽¹²⁾ ANT	✓ ^{SNOW}	✓	– ⁽¹³⁾ FORM	✓ ⁽¹⁴⁾ RECO	✓ ⁽¹⁵⁾	– ⁽¹⁶⁾ FORM	✓
GM060		✓ ⁽¹⁷⁾ RAIN	✓ ⁽¹⁸⁾	✓ ⁽¹⁹⁾ RECO		✓	✓ ⁽²⁰⁾ FORM	✓			
...											
RO001B ⁽²¹⁾	✓ ⁽²²⁾	✓	✓ ⁽²³⁾ SNOW	✓ ⁽²⁴⁾ RECO		✓ ^{WIND}	✓ ⁽²⁵⁾ WIND	✓	✓		✓

Comments on the 6cm session:

1. Tr in the C-band: There were no phasecals during these experiments.
2. Ef in F06C1: Effelsberg could not join due to a hardware problem.
3. Jb in F06C1: No fringes from BBC#6 in the ftp test.
4. Tr in F06C1: No fringes in the ftp test. No phasecals either.
5. Ur in F06C1: Clean skies, but there was a little snow and ice on the dish. Ftp fringes were weaker in VC#5. No phasecals.
6. Jb in N06C1: VC#06 had an LO problem and was swapped for VC#13 at about 14:56 UT.
7. Tr in N06C1: No ftp fringes from BBC#8.
8. Ur in N06C1: Ftp fringes weaker in VC#7.
9. Hh in N06C1: Very strong RFI (flat passband from 121.5 to 128.5 MHz in the IF) outside the recorded IF from 15:45 to 15:52 UT.
10. Ef in EL033B: First two scans lost due to a thunderstorm. Heavy rain, particularly between 22–24 UT. A few scans lost because of inadequate slewing time.
11. Wb in EL033B: Tied array IF system had a problem in the 5th band with system ticks from 20:54–21:20 UT. The system was rebooted in a gap at about 21:20 and phases re-zeroed at 21:40 UT.
12. Jb in EL033B: Telescope communication problems at about 06:00 UT. Required interface reset.

13. Nt in EL033B: The formatter was not synchronized from 23:21 UT to the end of the experiment.
14. Tr in EL033B: Scans between 4:00 and 5:06 UT were lost due to problems with Mk5 recording. The probably cause of this was the power supply, that apparently could not feed two disk packs together.
15. Ur in EL033B: Started late (at 18:35 UT) because of trouble with the terminal. Bank B stopped working from 23:10 to 23:46 UT (OSOD-050). The problem could be solved only by replacing this disk pack with another one.
16. Sh in EL033B: The formatter had a sync problem in EL033B. This was not due to a power supply problem because the voltages were normal.
17. Ef in GM060: Missed scan on J2106+21 (1133-1135) due to pointing measurement. Occasional drizzle.
18. Wb in GM060: RTC and RTD removed from array as requested, so only 12 telescopes in the array.
19. Jb in GM060: Connection to Mk5 was lost at about 10:05 UT. Field System was restarted, Mk5 rebooted and the data were good from about 11:03 UT.
20. Nt in GM060: From the beginning to 08:23 UT the formatter was not synchronized.
21. RO001B was a C-band ToO project, observed at the end of the L-band session.
22. Cm in RO001B: Recorded both Cambridge and Darnhall data on the same disk pack. Cm signal appears in channels related to BBCs 3-4, and Da appears in BBCs 1-2.
23. Wb in RO001B: Data lost from 08:33 to 08:49 UT due to tied-array problems. The last disk pack reported StreamStor1 when it was in fact WSRT-058 (fixed). There was some snow (but melted immediately).
24. Jb in RO001B: Disk pack OSOD-0058 apparently failed disks (3/4?) but data recording was fine with reduced capacity.
25. Nt in RO001B: From 08:30 UT stopped observation due to high winds.

3.6/13cm	Ef	Wb	On20	Mc	Nt	Ur	Sh	Hh	Ar	Ro
F06X1	✓ ^{WIND}	✓	✓ ^{SNOW}	✓ ⁽¹⁾	✓			✓	✓ ⁽²⁾	
ED026	✓ ⁽³⁾ _{RAIN}	✓ ^(4,5)		✓ ⁽⁶⁾ _{WIND}	✓ ⁽⁷⁾ _{FORM}			✓	✓	
GC025A	✓	✓ ^(5,8) _{FS}	✓	✓				✓		
N06X1	✓	✓ ⁽⁵⁾	✓ ⁽⁹⁾	✓ ⁽¹⁰⁾	✓			✓		
CL06X1	✓	✓	✓	✓	✓			•		
GK034	✓ ⁽¹¹⁾ _{SNOW}	✓ ⁽¹²⁾	✓	✓	✓			✓	✓	✓

Comments on the 3.6/13cm session:

1. Mc in F06X1: No ftp fringes from VCs 5–6.
2. Ar in F06X1: Had very large residual clock ($-28.8\mu\text{s}$), otherwise OK.
3. Ef in ED026: Raining at times. Missed two scans on J0028+20 (12:48–12:50 and 17:49–17:50 UT) for pointing measurements.
4. Wb in ED026: Array needed a reboot just before observations because of errors in the 5th IVC band. The internal labeling of one of disk packs was wrong (it was StreamStor1 instead of WSRT–057) –fixed after the observations.
5. Wb false disk pack label: The internal labeling of a disk pack was wrong (it was StreamStor1 instead of WSRT–057) –fixed after the observations (ED026, GC025A, N06X1).
6. Mc in ED026: There is some antenna tracking problem for high wind speed. Partially cloudy.
7. Nt in ED026: The formatter gave synch errors all the time, but there was no trace in the log file. It was impossible to fix it, at the beginning of each scan the error returned. Probably it was a false error message. From about 17:40 UT to the end the antenna apparently worked correctly, but in the log a 'slewing' error is reported. The data must be checked before applying the FS log based flag file.
8. Wb in GC025A: Typo error in IFD left it with NOR,NOR instead of ALT,NOR from 22:32 to 09:38 UT. This left the system as dual polarization (not single pol), i.e. half the polarizations were wrong. Array re-phased at 15:15 and 17:23 UT.
9. On in N06X1: Antenna problem around 23:34 UT.
10. Mc in N06X1: Ftp fringes show that the VC#5–6 problem had been fixed before the NME.

11. Ef in GK034: Lost first scan (3C15, 10:00–10:38 UT) due to snow. Skipped first scan on 3C88 (11:38–11:56) because of low elevation. Rain throughout the experiment.
12. Wb in GK034: Removed one telescope (RT7) to setup the 5 cm (single-dish) receiver. Othewise looks OK.

5cm	Cm	Ef	Wb1 ⁽¹⁾	Jb2	On25	Mc	Nt	Tr	Hh
F06M1 ⁽²⁾	√	√	√	− ⁽³⁾ _{POIN}	√	√	√	√	√
EB031A	√	√	√	√	√	√	√	− ⁽⁴⁾ _{ANT}	√
N06M1	√	√	√	− ⁽³⁾ _{POIN}	√	√	√	− ⁽⁵⁾ _{ANT}	√
EB031B	√	√ ⁽⁶⁾ _{SNOW}	√ ⁽⁷⁾ _{FORM}	− ⁽⁸⁾ _{RECO}	√ ⁽⁹⁾ _{SNOW}	√	√ ⁽¹⁰⁾ _{POIN}	− ⁽⁵⁾ _{ANT}	√
CL06M1		√	√	√	√	√	−	•	•
EF012	√	√ ⁽¹¹⁾ _{RECE}	√	− ^(3,8) _{POIN}	√ ⁽¹²⁾	√ _{RAIN}	√	√ ⁽¹³⁾ _{ANT}	
EP054	√	√ ⁽¹⁴⁾	√	− ⁽⁸⁾ _{RECO}	√ _{RFI}	√ ⁽¹⁵⁾ _{ANT}	√	√	
EM061A	√	√	√	− ⁽⁸⁾ _{RECO}		√	√ ⁽¹⁶⁾ _{POIN}	√	√ _{HIGH RAIN}
EM058A	√	√ ⁽¹⁷⁾ _{SNOW}	√	− ^(3,8) _{POIN}	√ ⁽¹⁸⁾ _{TSYS}	√	√	√	
EM061B	•	√ ⁽¹⁹⁾ _{SNOW}	√ ⁽²⁰⁾ _{SNOW}	− ⁽⁸⁾		√	√	√	√ _{HIGH RAIN}
EM061C	√ ⁽²¹⁾ _{RECO}	√ ⁽²²⁾ _{SNOW}	√ _{SNOW}	− ⁽⁸⁾		√	√	√	√

Comments on the 5cm session:

1. Wb in the 5 cm session: Westerbork used single dish. The data did not go through the adding box. Thus, the RT7 coordinates have to be used in correlation, and the clock has to be corrected as well. Note that the LO switch was handled automatically by a script (called from the SNAP via a procedure). The feedback from the antenna control for SINGLE-DISH observations was unreliable for 20 seconds after a source change. Check uvflg files carefully!
2. Ftp tests in F06M1 and N06M1: The maximum number of users ftp-ing to jop13 was limited to 10, and this caused problems for some stations. This was extended for 50 eligible users after F06M1. There was a problem with the cluster computer, which was solved only the day after the experiment. Then it turned out that the software correlator cannot handle the typical observing mode of the 5 cm session – the ftp files could not be processed. Will use only the tested modes in the future.
3. Jb in F06M1, N06M1 and EF012: Offsets were incorrectly set hence sources probably out of telescope beam.
4. Tr in EB031A: Due to severe snow and wind there was prolonged (some 6 hours) power down before the experiment had started. During EB031A, the telescope still could not be moved in one of the axes and the cooling systems was in a bad condition.

5. Tr frozen: See feedback for EB031A. The telescope remained frozen in altitude.
6. Ef in EB031B: Due to snow missed scans during 05:01–05:58 UT and 07:58–09:03 UT.
7. Wb in EB031B: Formatter out of sync from 08:01 to 08:36 UT. (Probably caused by static while somebody was doing work close to the back of the formatter).
8. Jb disk pack problem: Disk pack JOD–0023 subsequently developed "directory flawed or missing" error (during experiment EA035B). No data visible on disk pack but may be recoverable.
9. On in EB031B: Bad weather (rain and snow) during the night. High T_{sys} until around 9–10 UT.
10. Nt in EB031B: Pointing problems from 8:40 to 9:00 UT.
11. Ef in EF012: Stopped 03:10–04:50 UT due to snow. Receiver problem during the first half of the experiment, stopped 07:30–10:25 UT to investigate and fix. Source at very low elevation.
12. On in EF012: Lost several scans since the source had too low elevation. When restarted the FS after EF012, got the following error message: 'ERROR sc -13 setcl: formatter to FS time difference 0.5 seconds or greater'.
13. Tr in EF012: The telescope elevation drive was repaired. Started this project normally, however at 3:50 UT there was again an outage and the same problem arose with the drive. Observations resumed (on a new DP, because of a problem with Mk5) at 8:50 UT. There was another crash at 11:35 UT because of a short power failure. Also, a few times the schedule did not allow enough time for the telescope to move to new source (this concerns other telescopes as well).
14. Ef in EP054: Missed scan 11:50–12:01 UT for pointing.
15. Mc in EP054: Observation started 1h 30' late because of technical problems with the antenna.
16. Nt in EM061A: The time in the pointing computer was several seconds in late until 07:30 UT.
17. Ef in EM058A: Stopped between 16:15–17:45 UT due to snow.
18. On in EM058A: Bad calibration at 17:40 UT, maybe due to RFI. Otherwise no known problems.
19. Ef in EM061B: Stopped between 07:25–10:32 UT due to snow.
20. Wb in EM061B: A little snow at the start (melted during the morning).
21. Cm in EM061C: First two minutes lost due to Mk5 link problem.
22. Ef in EM061C: Missed scans 06:40–07:58 UT and 10:18–10:32 due to snow.

18cm	Cm	Ef	Wb	Jb1	On25	Mc	Nt	Tr	Ur	Sh	Hh
F06L1	✓	✓	✓	✓ ⁽¹⁾ _{RECO}	✓	✓	✓	✓	✓	✓	✓ ⁽²⁾ _{RFI}
EA035B		✓	✓ ^{SNOW}	✓ ⁽³⁾ _{RECO}	✓	✓	✓	✓	✓		
N06L1	✓	✓	✓ ^{SNOW}	✓ ⁽⁴⁾ _{RECO}	✓	✓	✓	✓ ⁽⁵⁾	✓ ⁽⁶⁾ _{FORM}	✓	✓ ⁽²⁾ _{RFI}
GM062A ⁽⁷⁾		✓	✓		✓ ^{RFI} _{SNOW}						
EX006		✓ ⁽⁸⁾ _{SNOW}	✓ ^{SNOW}	✓ ⁽⁹⁾	✓ ^{RFI}	✓	✓ ⁽¹⁰⁾ _{RECO}	✓ ⁽¹¹⁾	✓ ⁽¹²⁾ _{FORM}	✓ ⁽¹³⁾ _{RECO}	✓ ^(2,14) _{WIND}
RO001A ⁽¹⁷⁾	✓	✓ ⁽¹⁵⁾	✓	✓	✓ ^{RFI}	✓ ^{POIN} _{WIND}	✓ ^{HIGH}	✓	✓ ^{RFI}		✓ ^(2,16) _{WIND}

Comments on the 18/21cm session:

1. Jb disk pack problem: Disk pack JOD–0023 subsequently developed "directory flawed or missing" error (during experiment EA035B). No data visible on disk pack but may be recoverable. Before the problem occurred, there were fringes in the ftp test.
2. Hh RFI: Persistent spike at 132.5 MHz in IF especially RCP, otherwise repeated bursts of broadband noise.
3. Jb in EA035B: Sometime between 09:02 and 09:35 UT the Mk5 stopped recording on disk pack JOD–0023. The pack reports missing or flawed directory. No data is visible on the pack. Hopefully, data is recoverable since the pack also contains most of the Mk2 5 cm data. Started recording again at 10:17 UT on disk pack MED–0027.
4. Jb in N06L1: Mk5 crashed and restarted at about 16:14 UT.
5. Tr in N06L1: Had no ftp fringes in the uppermost LCP channel, related to BBC#8.
6. Ur in N06L1: There was a formatter failure, between 16:50–17:40 UT.
7. Ar in GM052A: Success.
8. Ef in EX006: Lost scans between 12:00–16:00 UT and 20:39–00:23 UT due to snow.
9. Jb in EX006: A local network problem at JBO led to the telescope control computer resetting its clock frequently during this experiment. Problem started at about 11:06 UT and continued for most of that day, after which problem was intermittent. This resulted in frequent periods of incorrect source tracking, lasting up to half an hour, at intervals of up to one hour. Expect fringe loss during these periods.

10. Nt in EX006: No recording from 02:15 to 07:00 UT of day 63. Problems with a damaged disk pack.
11. Tr in EX006: Lost 6 minutes in scan starting at 00:14 UT because of disk-pack change.
12. Ur in EX006: Formatter problem from the start to day 62 13:54 UT, and on day 62 from 16:05 to 16:33 UT (the 5MHz problem, see EVNtech messages –fixed during the experiment).
13. Sh in EX006: Changed the bank from B to A at 12:12 UT because of a disk problem. Lost the first ten scans.
14. Hh in EX006: Wind stowed on day 62 between 22:19–22:43 UT, 22:49–22:54 UT, and 23:06–23:11 UT, and on day 63 between 05:25–05:36 UT.
15. Ef in RO001A: Ended early (at 07:56 UT) because of receiver change.
16. Hh in RO001A: Wind stowed on day 64 from 04:23–04:28 UT.
17. Ro in RO001A: Very bad weather (rain+wind+snow) but not much impact on L-Band. Gps-fmout value at start=+4.326, 10-7. VC#05 output degraded by L-band RFI. Recording started at 02:59 UT (official starting time for Ro was 03:30 UT). Labels: JIVE–041, OSOD–019.