

EVN Session Overview — FEB05

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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:

FS	– Field System errors/crash
HA-E	– some scans missed due to HA or elevation limit
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
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_{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.)

1.3cm	Cm	Ef	Jb2	On20	Mc	Nt	Ur	Sh	Mh	Ro
N05K1 ⁽¹⁾	✓	✓ ⁽²⁾ _{SLEW}	✓	✓	✓ ⁽³⁾	✓	✓ ⁽⁴⁾	✓	✓ ⁽⁵⁾	
CL05K1		–	–	✓	✓	✓	✓		✓	
EI006B	✓	✓ ⁽⁶⁾ _{SNOW}	✓ ⁽⁸⁾ _{RECO}	✓	✓	✓			✓	✓ ⁽⁷⁾
EC019B	✓	✓ ⁽⁹⁾ _{SNOW}	✓ ⁽¹⁰⁾	✓	✓	✓	✓	✓	✓	

Comments on the 1.3cm session:

1. Ftp test in N05K1: first real use of automated ftp files. The files still had to be made manually at three stations (Mh had not upgraded the FS; Ur and Nt failed for unknown reasons). All stations produced fringes except Medicina, that had to fix a broken formatter just before the session. Stations with good internet connection received feedback on fringes during the observations, hours before the experiment had finished.
2. Ef in N05K1: Some problems at the beginning: no phasecal, no proper T_{sys} . FS rebooted at 10:40 UT, back on source at 11:52 UT. Too little time left for slewing - fixed antenna on 0133+476 from 15:08 UT.
3. Mc in N05K1: light rain during the first 2 hours of the observation. There were no Mc fringes in the ftp test.
4. Ur in N05K1: Clear skies, but the antenna is partly covered by snow. Antenna PC problem from 8:00–8:14 UT.
5. Mh in N05K1: First four minutes lost because a large azeloff was left in antenna control after pointing observations. New phase cal system on, injected to IF in receiver in antenna.
6. Ef in EI006B: Observation was stopped because of snowfall between 17:10–17:42 UT, 17:53–18:24 UT, and 19:51 UT till the end.
7. Ro in EI006B: At 17:49:40 low tape sensor stopped the tape unexpectedly. Tape was positioned manually for following source. Not enough time was provided to swap tapes (only 15 minutes, 13 minutes were needed to rewind the tape).
8. Jb in EI006B: Lost communication with Mk5 unit at about 07:58 UT (day 49). Required reboots; back on scan beginning 09:23 UT. Also seems to have stopped recording at 22:15 UT (scan 302) due to unknown Mk5 problem. No other known problems. Rain through much of the experiment.
9. Ef in EC019B: Various stops due to snowfall: 11:12–11:52 UT, 14:45–15:40 UT, 16:20–19:01 UT, and 19:20–01:34 UT.
10. Jb in EC019B: Few minutes off source at about 10:29 UT due to elevation drive fault.

3.6/13cm	Ef	On20	Mc	Nt	Ur	Sh	Hh	Wz	Ro	Other
GM059A	$\checkmark_{\text{SNOW}}^{(1)}$		$\checkmark_{\text{SNOW}}^{(2)}$						$\checkmark^{(3)}$	
EC024	$-\checkmark_{\text{SNOW}}^{(4)}$	$\checkmark^{(5)}$	$\checkmark_{\text{SNOW}}^{(2)}$	\checkmark	\checkmark	$\checkmark^{(6)}$	$\checkmark_{\text{HAIL}}^{(7)}$	•		$\checkmark^{(8)}$

Comments on the 3.6/13cm session:

1. Ef in GM059A: Stopped due to snowfall: 14:30–15:30 UT, 17:00–19:45 UT.
2. Mc in 5cm session: It was snowing from 22:30 UT in GM059A, and all the time during EC024.
3. Ro in GM059A: During pre-cals formatter was failing the sync test, command form4=/syn was sent at 13:26UT, additionally fmset was run to synchronized formatter with station time. Small delays in schedule execution (and too short scans) caused tape position errors at beginning of reverse passes of about 1000 feet.
4. Ef in EC024: Most of the time we were stopped due to snow: 18:10–12:08 UT, 12:47–13:45 UT, 14:42–16:24 UT, 17:39 UT–end.
5. On in EC024: Mk5 "hanged" between 01:30–02:04 UT; schedule and mk5 unit restarted.
6. Sh in EC024: Lost first 3 scans due to a Mk5 problem. Lost some data (scans 054-1141,054-1148 around 12:18 UT and two minutes in scan at 17:12–17:20 UT) because of trouble with the antenna control.
7. Hh in EC024: Some heavy rain/hail during experiment. No other problems detected.
8. Geo stations in EC024: Ny. Alesund – success; Algonquin – had some problems with azimuth limit switch control. This intern caused drive motors to trip out, resulting in 4 missed sources. Also had a few late on sources; Goldstone – Field system quit twice and interface between the FS and the disk drives failed once (un-noticed), lost ~7 hours of data. It rained for the whole experiment. CD burned with Radiometer, Weather and FS logs/schedules and included in box with disk drives.

6cm	Ar	Ef	Wb	Jb2	On25	Mc	Nt	Tr	Ur	Sh	Hh
N05C1 ⁽¹⁾		$\sqrt{\text{SNOW}}^{(2)}$	$\sqrt{\text{SNOW}}^{(3)}$	✓	$\sqrt{\text{SNOW}}^{(4)}$	✓		✓	$\sqrt{\text{HIGH SNOW}}$	— ⁽⁵⁾	✓
GB053	✓	✓	•	✓	✓	$\sqrt{\text{SNOW}}^{(6)}$		$\sqrt{\text{SNOW}}^{(7)}$			✓
CL05C1		✓			$\sqrt{\text{SNOW}}^{(8)}$	— _{SNOW}		✓	✓		✓
EP049B	$\sqrt{\text{SNOW}}^{(9)}$	$\sqrt{\text{SNOW}}^{(10)}$	•								

Comments on the 6cm session:

1. Ftp test in N05C1: All stations produced ftp fringes except Torun – the manual ftp files seemed to have the wrong byterange.
2. Ef in N05C1: Stopped because of snow from 18:48 UT till 20:07 UT
3. Wb in N05C1: Some snow on the dishes, so the T_{sys} is high. Used the Pigwire setup so as to avoid switching before GB053.
4. On in N05C1: Used the Pigwire setup, but only for the last two hours. The first half of the experiment was lost.
5. Sh in N05C1: Observations failed due to an antenna problem.
6. Mc in GB053: Starting from about 02:00 UT it was snowing. The dish had a light layer of snow and T_{sys} was about twice as usual.
7. Tr in GB053: First tape not very smoothly packed. Snowing during experiment (higher T_{sys}).
8. On in CL05C1: Data obtained, but had problems with the cooling system for the receiver.
9. Ar in EP049B: Had a few problems: (1) Due to a local networking problem, telescope control was frozen for the first two sources. (2) A technical fault caused the automatic platform tie-down jack adjustment system to quit. This resulted in somewhat reduced gain and bigger than usual point error at C-band even though the platform height was kept at the optimal position, and was adjusted twice manually. Will send best estimates for SEFD vs. time. (3) Disk change-over happened smoothly. However, at this highest rate recording it was found that a disk replacement during recording resulted in messages such as , ”recording throttled...” even though FS was not sending any commands at that time to the Mk5 computer. So, some data points around UT 21:10 might not be usable.
10. Ef in EP049B: Stop due to snow between 12:00-12:15 UT. MK5 problems (recording stopped during a run – probably a bad disk). Rebooted MK5, lost 15:44–16:20 UT.

18cm	Cm	Ef	Wb	Jb1(2)	On25	Mc	Nt	Tr	Ur	Sh	Hh	Other
N05L1 ⁽¹⁾	√ ⁽²⁾ _{RECO}	√	√ ⁽³⁾ _{SNOW}	√	√ ⁽⁴⁾ _{RECE}	√ ⁽⁵⁾ _{RECO}	√ ^{POIN} _{WIND}	√	√ ⁽⁶⁾ _{RECE}	√ ⁽⁷⁾ _{RECO}	√	√ ⁽⁸⁾
GI001C		√ ⁽⁹⁾ _{RFI}	√ ⁽¹⁰⁾ _{SNOW}	√		√	√	√ ⁽¹¹⁾ _{LOCK}				√ ⁽¹²⁾ _{RFI}
CL05L1		√		√	√ ⁽¹³⁾	√	√	√	√		√	
ES053A	√ ⁽¹⁴⁾ _{LATE}	√	√ ⁽¹⁵⁾ _{SNOW}	√	√ ⁽¹⁶⁾ _{RECE}	√		√				√ ^{RFI}
GP042	√	√ ⁽¹⁷⁾ _{SNOW}	√ ⁽¹⁸⁾ _{SD}	√ ⁽¹⁹⁾		√ ⁽²⁰⁾ _{RECO}	√					
GD018		√ ⁽²¹⁾ _{SNOW}	•	√ ⁽²²⁾ _{WIND}	√ ⁽²³⁾	√ ⁽²⁴⁾	√ ⁽²⁵⁾	√ ⁽²⁶⁾ _{LOCK}	√ ⁽²⁷⁾ _{TSYS}			•
EK020A	√	√ ⁽²⁸⁾ _{SNOW}	√ ⁽²⁹⁾ _{SNOW}	√ ⁽³⁰⁾ _{WIND}	√	√	√	√	√		√ ^{RFI}	•
EZ013	√	√ ⁽³¹⁾ _{SNOW}	√ ⁽³²⁾ _{SNOW}	√ ⁽³³⁾ _{MKII}	√ ⁽³⁴⁾ _{HA-E}			√ ⁽³⁵⁾ _{LATE}	√ ⁽³⁶⁾ _{HA-E}		√ ^{RFI}	
GD017B		√ ⁽³⁷⁾ _{SNOW}	√ ⁽³⁸⁾ _{SNOW}	√ ⁽³⁹⁾ _{MKII}		√		√ ⁽⁴⁰⁾ _{LOCK}				•
ES049A	√ ⁽⁴¹⁾ _{SNOW}	√ ⁽⁴²⁾ _{SNOW}	√ ⁽⁴³⁾ _{SNOW}	√ ⁽⁴³⁾	√	√ ⁽⁴⁴⁾ _{LATE}	√	√ ⁽⁴⁵⁾ _{LOCK}				
ES049B	√	√	√ ⁽⁴⁶⁾	√ ⁽⁴⁷⁾	√	√	√ ^{POIN}	√ ⁽⁴⁸⁾ _{LOCK}				
EH010	√	√	•	√ ⁽⁴⁹⁾	√	√ ⁽⁵⁰⁾	√ ^{POIN}	√	√	√ ⁽⁵¹⁾	√ ⁽⁵²⁾	

Comments on the 18/21cm session:

1. Ftp test in N05L1: All stations produced ftp fringes (except for Robledo that recorded on tape). Tested 4s ftp scans – the ftp and processing time decreased significantly by using these very short scans.
2. Cm in N05L1: Mk5 unit doesn't seem to have recorded scan 2, reason unknown.
3. Wb in N05L1: Snow at the end of the experiment. This raised the T_{sys} as the dish was covered. Also one telescope (RT4) had oscillation in the receiver so removed from the tied array.
4. On in N05L1: Receiver problem – used uncooled HEMTs. Expected SEFD is 800–850 Jy instead of 300 Jy.
5. Mc in N05L1: Mark5 software hang up after first scan. It did not accept command from both Field System and tstMark5A console. Some scans later the problem step up again. It seems that the reason was due to the disk-pack: one pair of master/slave didn't work properly. After that the run finished without any other problems. Scans 2-13 and 23-35 were lost.

6. Ur in N05L1: Clear skies; some RFI; no phasecal. Probably there was a receiver power supply failure at the end of the experiment which caused very low total power spectrum. Had to stop the experiment at about 22:14 UT because the disk was nearly full.
7. Sh in N05L1: We lost 4 scans (48–51) due to MK5 problem. Error message: ERROR m5 -104 mk5cn: time-out on mk5 device, connection closed. The weather was clear during whole experiment.
8. Ro in N05L1: Severe RFI on VC#03. Weather condition: overcast; Station Time delay: -1.6575 microsecs; Recorder used: #1; Label(/s): VLBA1224,F23C; Calibration at zenith: L-Band; System Temp: 21.6; L-Band Y-factor: 11.33; Noise Diodes: 9.7; Ambient Load: 14.312
9. Ef in GI001C: RFI in VCs #5–8.
10. Wb in GI001C: Snow covering dishes and one got stuck. T_{sys} raised as snow covered the surface. Also one telescope out with receiver oscillating.
11. Tr in GI001C: BBC#3 unlocked all the time (problem not related to the BBC unit itself, but electronics prior to it).
12. Hh in GI001C: Intermittent RFI seen in VCs #5–6.
13. On in CL05L1: Cooling problem probably solved. Data obtained both for warm and cooled HEMTs.
14. Cm in ES053A: Controller forgot to start Cambridge schedule on time. Did not start until scan 38.
15. Wb in ES053A: Still LOTS of snow on the dishes. Calibration poor and T_{sys} very high. Some very bad RFI.
16. On in ES053A: Had to use warm HEMTs.
17. Ef in GP042: Stopped due to snowfall between 05:15–06:40 and 07:10–08:03 UT.
18. Wb in GP042: Using a 'tied array' with only one telescope (RT7). Still lots of snow in the dishes, but tried to clean some snow from RT7.
19. Jb in GP042: The Lovell telescope drive tripped between 20:21 and 20:22 UT.
20. Mc in GP042: Mark5 recording problem. Error message was recording throttle. This caused the field system to hang. Only the first 70 scans were recorded.
21. Ef in GD018: Snowstop between 10:00–10:52 UT.
22. Jb in GD018: The Lovell Telescope was parked for high winds between 11:24 and 13:12 UT. For first 1.5 hours, phasecal was intermittently on and off; problem solved during parked time.
23. On in GD018: Fixed the cooling problem, using cooled HEMTs again.

24. Mc in GD018: Some communication problem between FS and Mk5.
25. Nt in GD018: The procedure checkmk5a was not been recognized for the whole experiment. It was not present in the experiment procedures nor in the station procedures.
26. Tr in GD018: BBC#3 unlocked all the time (problem not related to the BBC unit itself, but electronics prior to it). Intermittent strong RFI.
27. Ur in GD018: The T_{sys} of RCP is too high, reason is not clear. The experiment was stopped at UT 17:17:00 because the following source was outside antenna limits.
28. Ef in EK020A: Snow, snow, snow: stopped between 03:30–09:08, 10:37–11:23, 11:59–12:59 UT.
29. Wb in EK020A: Still snow in the dishes. Overrode the telescopes to tip some snow out when it was sunny (about 09:40-09:59 UT) but there was still plenty left. Also RFI.
30. Jb in EK020A: The Lovell Telescope was parked due to high winds from 15:19 UT until end of experiment.
31. Ef in EZ013: Stopped due to snowfall between 10:30–13:30 UT.
32. Wb in EZ013: Still snow in telescopes. Used a tied array with telescopes 012356789 (RT4 out with oscillation and pointing problems). From 08:15-09:11 UT RT0 out with pointing problems.
33. Jb in EZ013: MkII was used. Lovell telescope drive failed completely just prior to this experiment.
34. On in EZ013: Source had too low elevation during the last scans.
35. Tr in EZ013: Started late by about 15 minutes (the first 2 scans were lost).
36. Ur in EZ013: Experiment stop at 07:53 UT because source is out of antenna limits.
37. Ef in GD017B: Snowstops between 21:00–00:00, 00:26–02:15, 05:00–05:10 UT.
38. Wb in GD017B: Recabled at the start for Mk4. At the end of this observation most of the snow in the dishes was melting fast. It looks like the phasing up was bad in IVC band 2 (=BBCs 5,6,7 and 8) – but this needs confirming as calibration looks unreliable.
39. Jb in GD017B: MkII was used. Lovell telescope drive still faulty. Error at start of experiment turned out to be antenna control computer needing reboot. Several FS restarts to try and clear this problem. Schedule was finally on source with correct LOs for 23:20 UT scan. Phasescal intermittently on and off during this experiment.

40. Tr in GD017B: BBC#3 unlocked (same problem as in GD018).
41. Cm in ES049A: The microwave link failed prior to this experiment due to heavy snow. Data may be good after about 15:48 UT, but link may have been intermittent.
42. Ef in ES049A: Computer problems (frontend control) in the beginning: 11 mins late. Stopped due to snow between 19:31–20:16, 23:55–00:13, 04:28–04:40 UT.
43. Jb in ES049A: The Lovell Telescope was used. The schedule was altered to limit the number of phase calibrator source changes; some scans will not fringe.
44. Mc in ES049A: Schedule started 10 minutes late.
45. Tr in ES049A: BBC#3 unlocked (same problem as in GD018).
46. Wb in ES049B: No known problems except RT4 out (oscillating receiver).
47. Jb in ES049B: The Lovell Telescope was used. The schedule was altered to limit the number of phase calibrator source changes; some scans will not fringe.
48. Tr in ES049B: BBC#3 unlocked all the time (as in the previous experiment). The very last scan (about 20 min.) lost because data did not fit into the disk-pack loaded while the other pack was full.
49. Jb in EH010: The Lovell Telescope was used. The schedule was altered to limit the number of phase calibrator source changes; some scans will not fringe. Schedule refused to append data to disk pack at experiment start. Changed disk pack and began recording manually at 23:01:22 UT.
50. Mc in EH010: Stopped from 07:29 till 09:15 UT because of antenna problems.
51. Sh in EH010: Lost scans from No0010 to No0013 due to FS and MK5 problem.
52. Hh in EH010: Intermittent RFI throughout observation. Antenna drive interface failed at 08:00 UT, restarted 08:36 on calibrator but failed again at 08:50 with Declination axis brake failure. Source had set below local horizon by then so ended experiment early.