

EVN Session Overview — MAY03

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 \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
- 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
- HA-E** – some scans missed due 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_{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)

18/21cm	Cm	Ef	Wb	Jb1	On25	Mc	Nt	Tr	Ur	Sh	Hh	Other
F03L2	√ ⁽¹⁾	– ⁽³⁾	√	√	√	√	√	√ ^{PCAL}	√ ^{PARI}	√	√ ^{RFI}	
eF03L2		– ⁽³⁾	√	√ ⁽⁴⁾		√	√					
EM051	√ ^(1,5)	√ ⁽⁶⁾ _{FS}	√ ⁽⁷⁾ _{PHAS}	√	√	√ ⁽⁸⁾ _{FS}	√	√ ⁽⁹⁾	√ ⁽²⁾ _{TSYS}	√ ⁽¹⁰⁾ _{RFI}		
EB024D		√ ⁽¹¹⁾ _{FS}	√ ⁽⁷⁾ _{PHAS}	√ ⁽¹²⁾ _{WIND}	√	√ ^{RFI}		√ ⁽¹³⁾				
EB023C	√ ⁽¹⁾	√	√ ⁽⁷⁾ _{PHAS}	√	√	√	√	√	√ ⁽²⁾ _{TSYS}	√ ⁽¹⁴⁾ _{HA-E}	√ ^{RFI}	
EB024E		√ ^{HA-E}	– ⁽¹⁵⁾	√	√	√		– ⁽¹⁵⁾				
EB022C	√ ⁽¹⁾	√ ⁽¹⁶⁾ _{WIND}	√ ⁽⁷⁾ _{PHAS}	√	√	√ ^{LATE}	√ ⁽¹⁷⁾ _{RFI}	√	√ ⁽²⁾ _{TSYS}	√	√	√ ⁽¹⁸⁾
EL029C	√ ⁽¹⁾	√ ⁽¹⁹⁾ _{FS}	√ ⁽⁷⁾ _{PHAS}	√	√	√ ⁽²⁰⁾	√ ⁽²¹⁾ _{RECO}	√	√ ^(2,22) _{TSYS}	√ ⁽²³⁾	√ ⁽²⁴⁾ _{RECE}	√ ⁽¹⁸⁾
EF009C		√	√ ⁽⁷⁾ _{PHAS}	√ ⁽²⁵⁾ _{HA-E}	√	√ ⁽²⁶⁾ _{FS}	√ ⁽²⁷⁾ _{RECO}	√				√ ⁽¹⁸⁾
EP042E	√ ⁽¹⁾	√	√ ⁽⁷⁾ _{PHAS}	√	√	√	√	√ ⁽²⁸⁾ _{WIND}				
EB024F		√	– ⁽²⁹⁾	√	√	√		– ⁽³⁰⁾				
EC020B	√ ⁽¹⁾	√ ^{RFI}	√ ⁽³¹⁾ _{RECO}	√ ⁽³²⁾	√	√ ⁽³³⁾ _{RECO}	√ ⁽³⁴⁾ _{RECO}	√				
N03L2	√ ^(1,35)	√	√ ⁽⁷⁾ _{PHAS}		√	√	√	√	√ ⁽²⁾ _{TSYS}	– ⁽³⁶⁾	√ ⁽³⁷⁾ _{TSYS}	
CL03L2		√		√	√	√	√	√	√	√	√	
ER016B	√ ^(1,38)	√ ^{RFI}	√	√ ⁽³⁹⁾	√	√	√ ^{RFI}	√	√ ^(2,40) _{TSYS}	– ⁽³⁶⁾		
GP036B	– ⁽⁴¹⁾	√ ^{RFI}	√ ⁽⁴²⁾ _{FS}	– ⁽⁴¹⁾	√	√	√ ⁽⁴³⁾ _{RECO}	√ ⁽⁴²⁾ _{FS}			√ ⁽⁴⁴⁾ _{RECO}	√ ⁽⁴⁵⁾ _{LATE}

Comments on the 18/21cm session:

1. Cm in the 18/21cm session: phase CAL was switched off throughout the session since the amplitude was high enough to cause correlation on MERLIN baselines
2. Ur in the 18/21cm session: erroneous T_{sys} data in logfile, due to an FS problem
3. Ef in F03L2: could not take part in the fringe test because an elevation drive had to be exchanged
4. Jb in eF03L2: used a PC EVN unit
5. Cm in EM051: reduced signal level in BBCs 1,2,7,8 due to MERLIN link restrictions

6. Ef in EM051: due to problems with the VLBS FS, the last 45 minutes were lost
7. Wb: RTB unreliable, used 13 telescopes
8. Mc in EM051: lost about 20 minutes at the end of the first pass and about the same time after the tape change
9. Tr in EM051: some data were lost at 20:38, 20:21 and 20:40 UT
10. Sh in EM051: sources out of antenna limits after 20:18 UT
11. Ef in EB024D: Few minutes of data lost due to FS computer problems or pointing
12. Jb in EB024D: Telescoped parked at 10:56 UT due to high winds; PI used wrong frequencies
13. Tr in EB024D: stopped at 12:48 UT because source was below horizon
14. Sh in EB023C: lost scans 14–18, because of antenna limit. Schedule stopped at 20:05 UT, for the same reason)
15. Wb & Tr in EB024E: PI updated the schedule in the last minute – used the wrong version
16. Ef in EB022C: antenna was stopped because of a thunderstorm between UT2045-2123
17. Nt in EB022C: severe RFI in the band. Scan 10 was lost due to antenna soft prelimit
18. Ro70 in EB022C, EL029 and EF009C: success
19. Ef in EL029C: first two scans were lost due to computer problems
20. Mc in EL029C: due to technical problems, scans may be lost between 05:00–07:00 UT
21. Nt in EL029C: at 21:25 the recorder lost vacuum
22. Ur in EL029C: there was no P-cal. The experiment was stopped at 07:10 because of power off
23. Sh in EL029C: the experiment was stopped at 07:16 UT due to troubles with the antenna
24. Hh in EL029C: receiver cryogenics partially warmed up, lost data from 07:08, till recovering the system at 07:48. Telescope control computer failed from 08:17 to 10:05. Signal distribution system glitched during scan at 13:24–13:27 UT
25. Jb in EF009C: telescope reached azimuth wrap limit at 22:50 UT; back on source NGC2768 at about 22:05 UT

26. Mc in EF009C: F3 module hang due to MAT. MATCN in time out. Lost scan from 17:24 UT till recovering at 18:16 UT
27. Nt in EF009C: at 21:25 the recorder lost vacuum
28. Tr in EP042E: there was a heavy storm (sometimes also hailing) between 11–13 UT
29. Wb in EB024F: power failure in the faraday cage caused by a short circuit. This tripped the circuit breakers, but all warning systems were on the same line. All observations after 23:10 lost.
30. Tr in EB024F: did not use the updated version of the schedule
31. Wb in EC020B: observations before 07:03 lost with restarting systems after power failure. After 07:03 headstack 2 not connected until 15:59 (not noticed after power off). RTB unreliable. Used 13 telescopes in the array.
32. Jb in EC020B: LO setting may have been wrong for first 40 minutes due to a power glitch. Tape lost vacuum at 23:45, back on for 23:56 pass. Vacuum lost again at 00:45, not recovered until next tape change (37 minutes). Source 10173+0828 was not observed due to error in MERLIN schedule (also applies to Cm).
33. Mc in EC020B: from start to 16:06, the 2nd tape head was disconnected, this tape track did not record. Lost scans on 27 May from 9:50 to 10:33.
34. Nt in EC020B: the recorder lost vacuum, scans 140–151 were lost. Severe RFI in the band.
35. Cm in N03L2: changed to single-polarization setup in the last two passes (for testing)
36. Sh in N03L2 adn ER016B: could not observe, because part of the electrocircuit control board of the antenna's azimuth and elevation drive had been burnt out a few days before
37. Hh in N03L2: severe impulsive RFI across the band; a spike in one of the VCs resulted in many false T_{sys} readings
38. ER016B: part of the scheduled frequencies are out of the IF range of some telescopes (at least at Cm, Jb and Mc)
39. Jb in ER016B: logfile missing data between 07:15 and 08:11, due to full disk
40. Ur in ER016B: FS failed between 15:12–15:23 UT
41. Cm and Jb in GP036B: due to date error in the MERLIN schedule (caused by a bug in a local software), telescopes stayed on J1832+13 from 23:57 until the end of the schedule. This was not noticed by the operator. EVN Correlator reported no fringes for Jb.

42. WB & Tr in GP036B: the second tape was late because of postpassing of the first tape (bug in FS version 9.6.2) – may have affected other stations, too.
43. Nt in GP036B: the recorder lost vacuum between 0:55–1:18 UT (first tape), and from the beginning of the second tape until 4:17 UT. RFI in the band.
44. Hh in GP036B: tape reel loaded skew, may have affected first pass. No data loss due to postpassing of the first tape (manual override.)
45. Gb in GP036B: Started a little late, and were first on source at 03:59:45 UT. There was a problem with the emergency stop, which caused a loss of time from 08:45 to 10:41 UT. The last two scans, following 13:38 UT, were lost because part of the scan would have been below the horizon. Note that the "onsource" indication was erroneously showing the telescope was off-source from 10:41 to 12:06 UT, although it was on source during those times. The phase cal was not working until about 13:00 UT.

VLBA: success with minor failures; fringes could not be found to the single dish VLA at the EVN Correlator

6cm	Ef	Wb	Jb2	On25	Mc	Nt	Tr	Ur	Sh
GM049A	√ ⁽¹⁾	√ ⁽²⁾		√	√	•			
GM049B	√	√ ⁽³⁾ _{PHAS}		√ ⁽⁴⁾	√	√ ⁽⁴⁾			
GB046A	√	√ ⁽⁵⁾ _{WIND}	√ ⁽⁶⁾ _{PARI}	√	√	√ ⁽⁷⁾ _{PARI}			
D03C1	√ ⁽⁸⁾	- ⁽⁹⁾ _{RECO}	√ ⁽¹⁰⁾		√	√ ⁽¹¹⁾ _{LATE}			
EK017	√ ⁽¹²⁾ _{RECE}	√ ⁽¹³⁾ _{FS}	√ ⁽¹⁴⁾ _{RECO}	√ ⁽¹⁵⁾	√ ⁽¹³⁾ _{FS}	√ ⁽¹³⁾ _{FS}	√	√ ⁽¹⁶⁾ _{TSYS}	- ⁽¹⁷⁾
D03C2	√ ⁽¹⁸⁾	- ⁽⁹⁾ _{RECO}	- ⁽¹⁹⁾		√	√ ⁽²⁰⁾			
GJ010A	√ ⁽²¹⁾ _{WIND}	√	√	√	√	√ ⁽²²⁾ _{FS}	√ ⁽²³⁾ _{HA-E}		
CL03C1	√		√	√	√	√	√	•	

Comments on the 6cm session:

1. Ef in GM049A: not on source between UT 1934-2045.
2. Wb in GM049A: time from 20:38 to 21:00 taken out to check delay offsets in the array
3. Wb in GM049B: RT2 and RT6 removed, as they had different polarization to the rest of the array; running with 12 telescopes. Phase stability sometimes poor at 3.6cm.
4. GM049B: 3.6cm experiment. Used On20; Onsala and Noto RCP only
5. Wb in GB046A: problems with the AIRCO system, as the outside temp was ≥ 30 C and relative humidity too high (rain inside the building). Switched dry air and all nonessential items off. Band 3 A/D unit giving problems.
6. Jb in GB046A: playback on forward passes was poor, especially on tracks 19–25
7. Nt in GB046A: the following BBCs were exchanged before starting the experiment: BBC01 with BBC12, and BBC03 with BBC09. Socorro reported very poor playback, most of the channels provided no fringes. Tracks 9 and 29–33 were dead.
8. Ef in D03C1: had no signal in VC's 1 and 2 in the last two scans, because those were not equipped with 0.5 MHz filters yet (fixed!)
9. Wb in D03C*: rack ID was not changed to an even number before the experiments
10. Jb in D03C1: used PC EVN, just for the ftp fringe test

11. Nt in D03C1: some problems in starting the MK5. Lost the scans until 08:16 UT
12. Ef in EK017: data between UT1258-1324 was lost due to receiver problems. Afterwards the FS crashed 5 times (roughly every 2 hours) without clear reason (lost ~15 minutes each times).
13. Wb,Mc&Nt in EK017: second tapes started late because of ongoing postpassing of the first tapes (bug in FS version 9.6.2/3) – may have affected other stations, too.
14. Jb in EK017: formatter problem between 15:40–16:00 UT. Many problems with vacuum failure. Failed at 17:32, restarted at 18:35 UT. Also failed at 20:02 and 21:20 UT.
15. On in EK017: tape rolled off at 21.17 UT; missed some scans
16. Ur in EK017: cooling system did not work properly, T_{sys} was about 140–160K, measured with radiometer; FS gave wrong numbers of T_{sys} . No phase-cal.
17. Sh in EK017: did not observe due to troubles with the antenna
18. Ef in D03C2: probably swapped even and odd tracks
19. Jb in D03C2: did not observe – installed Mk5 unit
20. Nt in D03C2: lost scans 8 and 9 for problems with disk bank switching; schedule was restarted at line 170 (scan 10)
21. Ef in GJ010A: stopped between UT1831-1952 (first night) – thunderstorm.
22. Nt in GJ010A: lost from 09:26:00 to 10:09:17 on DOY 155, because of postpassing of the previous tape (bug in FS version 9.6.2) – may have affected other stations, too.
23. Tr in GJ010A: off source (antenna slewing) 20:58-20:59:30 (day 154), and 00:21 to 00:32:40 (day 155). Source below the telescope horizon from 11:31 to 11:40 UT (day 155).

5cm	Cm	Ef	Jb2	On25	Mc	Tr	Hh	Ar
EM053A	✓	✓	✓	✓	✓ ⁽¹⁾	✓	✓ ⁽²⁾ _{WIND}	
ED018C	✓	✓	✓	✓	– ⁽¹⁾	✓		✓
CL03M1		✓ ⁽³⁾	✓	✓	✓	✓	✓	
N03M1	✓	✓ ⁽⁴⁾ _{RECO}	✓	✓ ⁽⁵⁾	– ⁽¹⁾	✓	✓	
EM053B	✓	✓	✓	✓	✓ ⁽¹⁾	✓	✓ ⁽⁶⁾ _{RECE}	
ED018D	✓	✓ ⁽⁷⁾ _{TSYS}	✓	✓	✓ ⁽¹⁾	✓		✓
EM048	✓	✓	✓	✓	✓ ⁽¹⁾	✓ ⁽⁸⁾ _{RECE}		
EN001	✓ ⁽⁹⁾	✓ ⁽¹⁰⁾	✓	✓ ⁽¹¹⁾ _{WIND}	✓ ^(1,12) _{FS}	✓ ⁽¹³⁾ _{LOCK}	✓ ⁽¹⁴⁾ _{LATE}	
EM049	✓	✓	✓	✓ ⁽¹⁵⁾ _{WIND}	✓ ⁽¹⁾	– ⁽¹⁶⁾ _{LOCK}		

Comments on the 5cm session:

- Mc in 5cm session: no fringes in ED018C and N03M1 at the EVN Correlator, the whole 5cm session may be lost**
- Hh in EM053A: intermittent heavy rain during the experiment
- Ef in CL03M1: Cal shows some significant variation around 6670 MHz
- Ef in N03M1: tape drive problems in the beginning led to loss of data between UT1700–1717 and UT1732–1749
- On in N03M1: observed only the 6500 MHz part of the experiment, because could not change the frequency setup. This problem would be fixed by the following session
- Hh in EM053B: intermittent problems with RCP receiver during the experiment
- Ef in ED018D: the first T_{sys} measurement was corrupt
- Tr in EM048: RCP channel showed strong oscillations from about 3 hours after the experiment had started
- Cm in EN001: ran under MERLIN control (both Cm and Jb). Sometime in the early morning of day 160 the subreflector stalled and did not recover. This most probably happened after the end of EN001, the data should be good.
- Ef in EN001: last scan lost by mistake
- On in EN001: antenna stowed 04:55 UT due to high winds

12. Mc in EN001: field system crashed at start. Lost first two scans.
13. Tr in EN001: RCP receiver was unstable intermittently since 22:20. Somewhere between 20:12 and 21:12 UT the hydrogen maser lost lock! Till midnight timing of 1pps against the GPS stayed about normal. Later could not get information because a control program failed to store the data, but by 6:20 UT on day 160 the maser clock drifted to +1470 us (to reach 2850 us at 12:30).
14. Hh in EN001: scan no0003 – late on source due to repair of antenna drive fault
15. On in EM049: high wind! Started observing at 02:27 UT.
16. Tr in EM049: the hydrogen maser had lost lock the night before.

1.3cm	Cm	Ef	Jb2	On20	Mc	Nt	Mh
CL03K2		✓	✓ ⁽¹⁾	✓	✓	✓	✓
EI005C	✓	✓ ⁽²⁾	✓ ⁽³⁾ _{RECO}	✓	✓ ⁽⁴⁾	✓	✓
EL031B	✓	✓	✓	✓	✓ ^{HIGH}	✓	✓ ⁽⁵⁾ _{WIND}

Comments on the 1.3cm session:

1. Jb in CL03K2: obtained data after the session had ended; it was raining, data did not look good
2. Ef in EI005C: computer problems. Data lost between UT1145–1201, and UT1237–1248.
3. Jb in EI005C: problems with recorder after tape change. Started new tape for scan at 08:20, but was late on source also. On source at 08:24.
4. Mc in EI005C: lost scans from 162–06:38:00 to 162–07:03:30 because of schedule problems
5. Mh in EL031B: it started raining 5 minutes after the experiment had started