

EVN Performance and Reliability

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EVN TOG Meeting, Shanghai 2018



JIVE

Joint Institute for VLBI
ERIC

EUROPEAN



NETWORK

2017 Session 1 Feb NME Results

- **N17L1:**

- Ir did not observe due to receiver installation.
- Ar sampler stats were flat.
- Tr disk data were overwritten but ftp data good.
- Ro no FTP but disk data good.

- **N17C1:**

- Wb swapped to spare telescope due to warm receiver.
- Nt DBBC/MK5 setup error - no recording.
- Subband 7 RCP dip in band for Mc Ys Ir.
- Ir: 105e_1 Ys: 105e_1 Mc: 105e_2.
- First fringes to Nk.

N17C1

real versus channel

unique: sess117.C512nme/15:14:30.00/J0319+4130

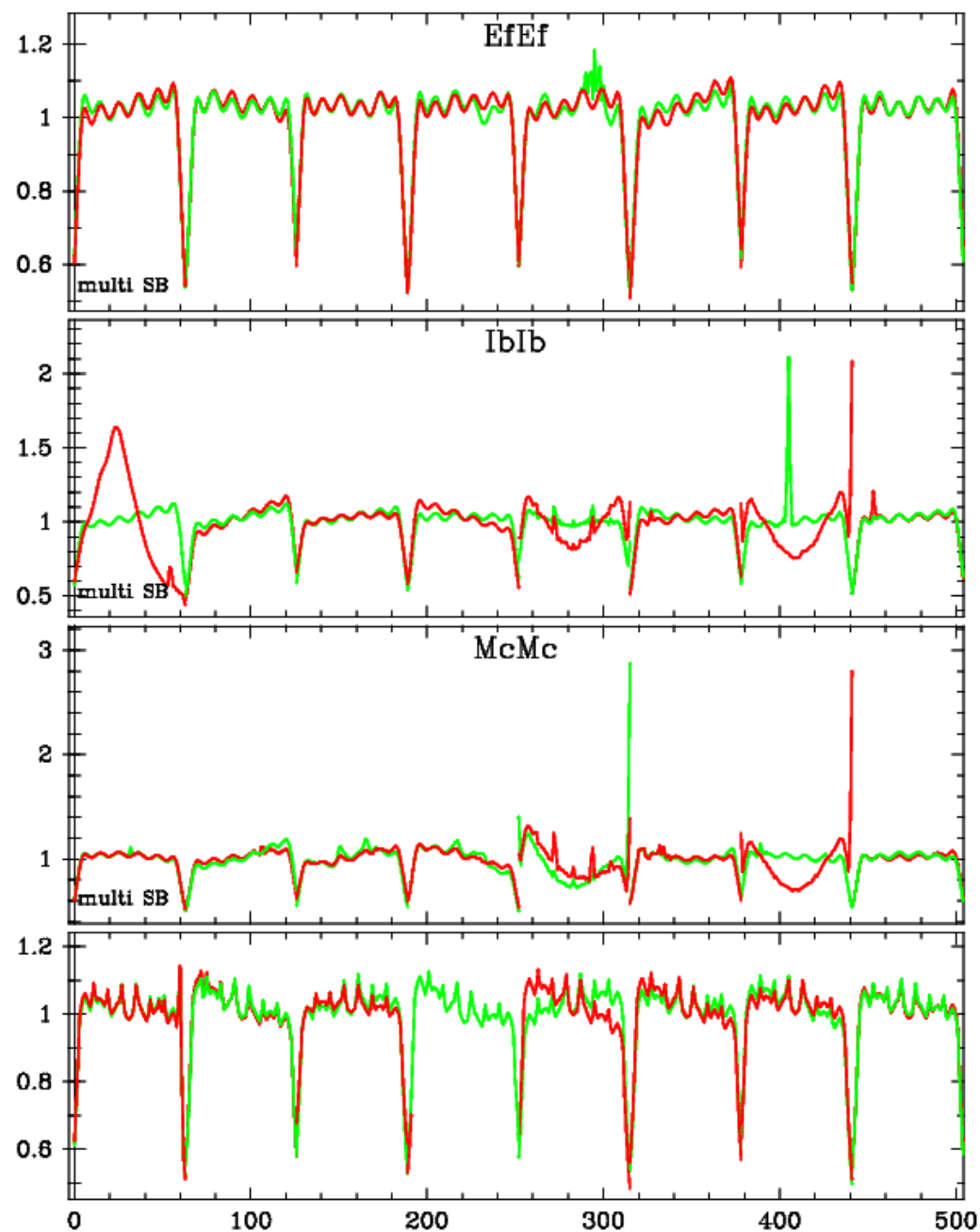
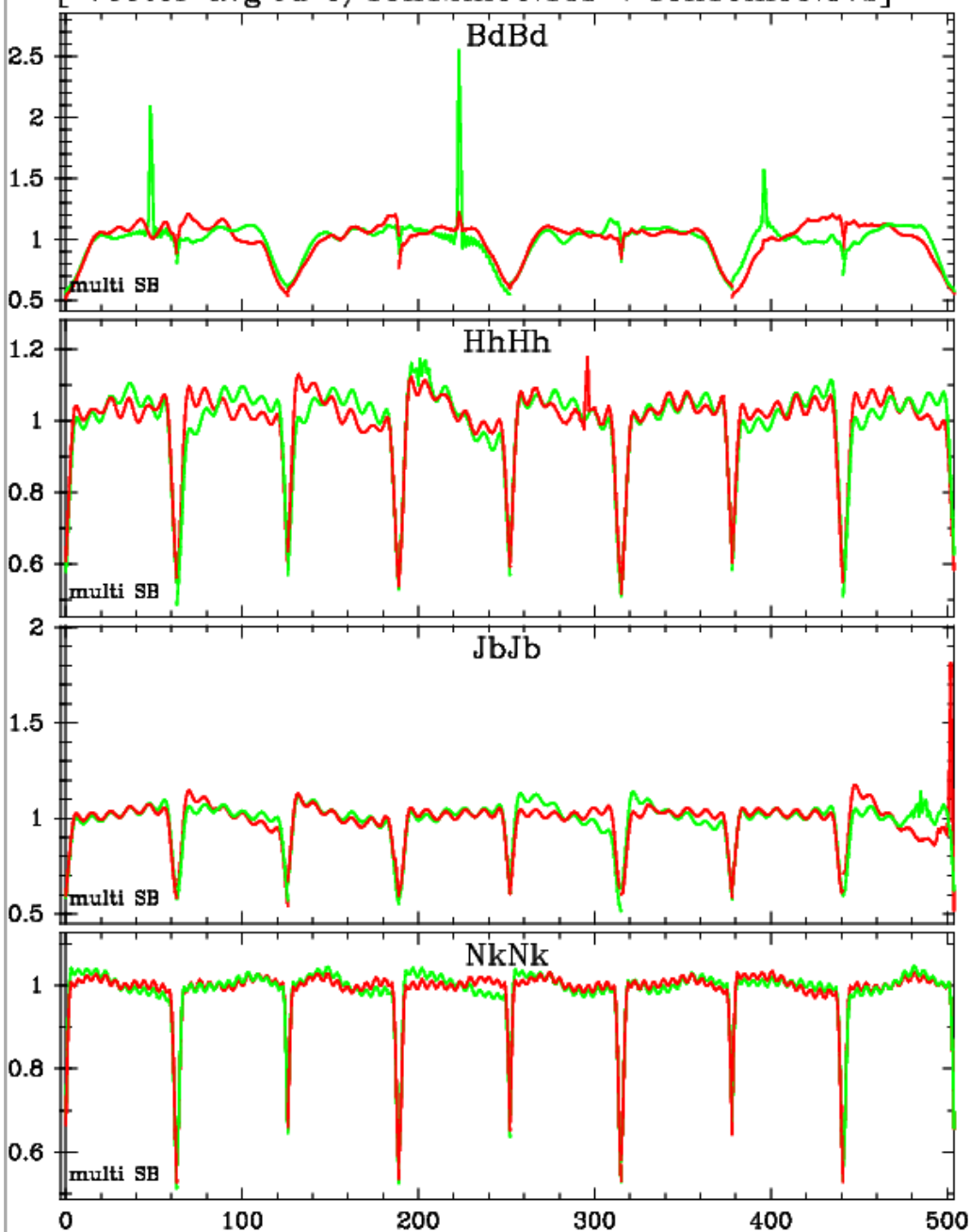
Pol=LL,RR;Nsub=8;;

[Vector avg'ed 0/15h12m00.13s->15h16m59.87s]

data: n17c1.ms [DATA

jops@eee 2017-07-13T11:09:1

page: 1/



2017 Session 1 Feb NME Results

- **N17P1:**
 - No issues.
- **N17K1:**
 - Ef could not observe due to wind.
 - Nt sent VDIF data also but samples were swapped.
 - Ys swapped dbbc.
- **N17Q1:**
 - Ef broken phase rotater meant very low LCP amplitudes.
 - Ku could not send data due to firewall issue.
 - Mh no fringes on ftp as sources were not bright enough to this baseline. Fine on disk.
 - Nt receiver warmed up - did not participate.

2017 Session 1 Feb Feedback

- General:
 - KVN Ulsan has consistently had issues transferring data for FTP tests.
 - Ys broken maser, resulting amplitude across band 'problem' seen in FTP tests was likely just a higher rate and time averaging.
- 18/21 cm:
 - Mc, Ur, diskpack issues.
 - Lots of wind at Ef, Jb.
 - Ur maser failed but replaced quickly.
 - Ir missed nme due to receiver installation.

2017 Session 1 Feb Feedback

- 6cm:
 - Ys swapped maser.
 - T6 Mk5 problem.
 - On heavy winds.
- 1.3 cm:
 - Ef winded out.
 - Sv Mk5 problem.
 - Ys ifb and ifd not working in dbbc.
 - Nt problems with Mk5.
- 0.7 cm:
 - Nt receiver problems.
 - Ef missed ep101e due to network issues.

2017 Session 2 Jun NME Results

- **N17L2:**

- T6 issue first seen, polarisation is linear, one pol only (sent as RR/LL).
- Ir fringes weak, maser still settling.

- **N17M1:**

- Nt power in RCP half that in LCP.
- Small phasejumps in Wb seen quite often (we'll get back to that).

- **N17C2:**

- Ef broken RCP.
- Ur ABBC and DBBC2 fringes.
- Ir ACU problems - could not participate.

2017 Session 2 Jun Feedback

- General:
 - T6 receiver problem missed some exp, then initially sent single linear as LL/RR then both linears. Fixable using new program from Martí-Vidal.
 - No fringes to MERLIN stations.
 - Tr record pointer jumped back to 0 → overwriting experiments.
 - Zc odd TSYS, lots of 999s. Unusable.
- 18/21 cm:
 - Ur bad subband 2 LCP.

EG098A

amplitude+phase versus channel

unique: sess217.L1024/06:27:40.00/J0319+4130

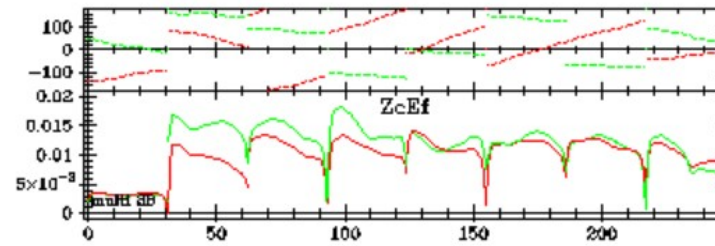
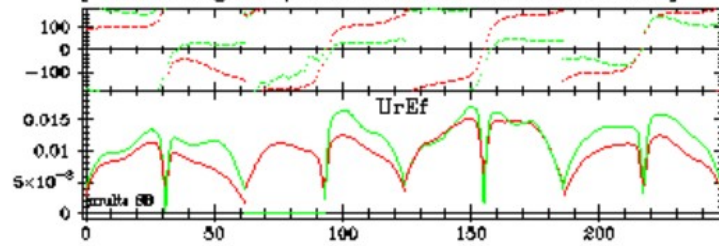
Pol=LL,RR,Nsub=8,;

[Vector avg'd 0/06h25m41.00s->06h29m38.00s]

data: eg098a.ms_G1 [DATA]

jops@<??> 2017-12-07T11:11:53

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— LL — RR

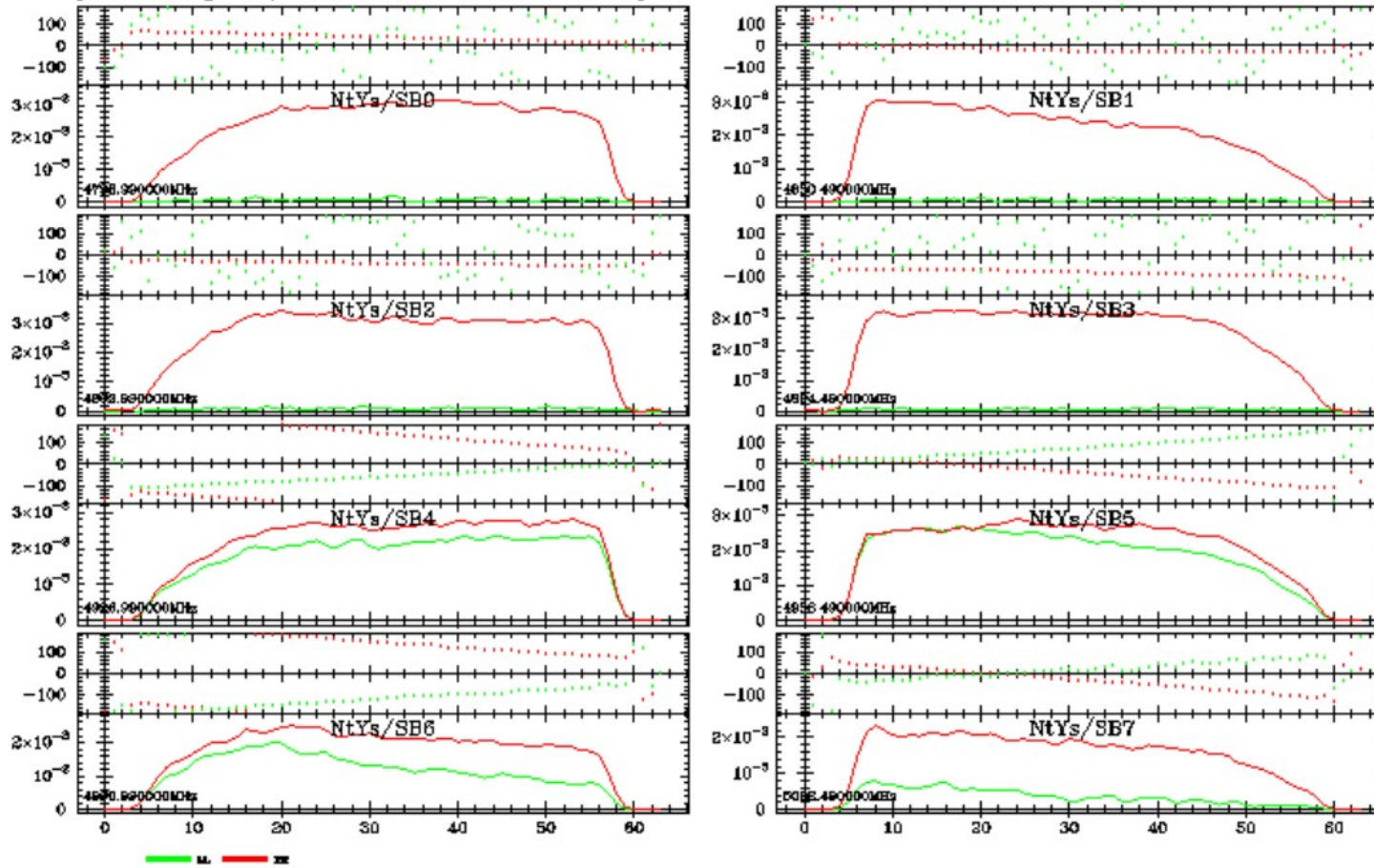
2017 Session 2 Jun Feedback

- 18/21 cm:
 - Jb lower power subband 6 RCP.
 - Ir fringes weak.
 - Sv broken disk in pack.
 - Bd no fringes, unknown reason.
- 6 cm:
 - Ef broken noise diode.
 - Ir, Zc low power in LCP.
 - Nt different clock for the first four subbands in LCP, weaker phases.
 - Wb bad disk → low weights.
 - Zc some phase jumps.
- 3.5 cm:
 - Noto had mark5 problems in EP099C.

EM129

amplitude+phase versus channel
unique: sess217.C2048/01:28:20.00/J2031+1219
Pol=LL,RR,Nsub=8,;
[Vector avg'd 1/01h20m50.50s->01h25m49.50s]

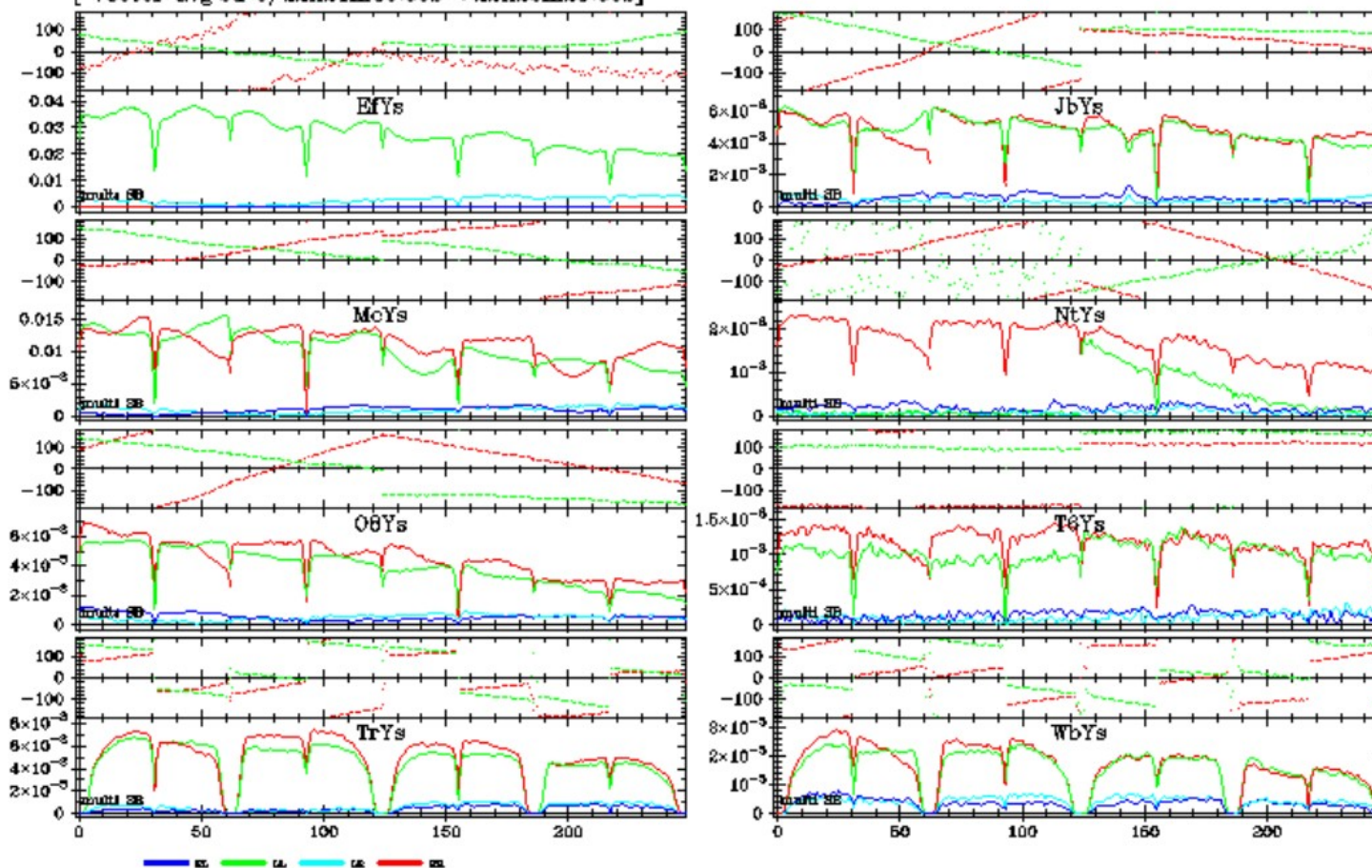
data: em129.ma_G70.7-0 [DATA]
jops@<??> 2018-01-18T11:45:59
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EB060C

amplitude+phase versus channel
 unique: sess217.C1024/22:24:00.00/2013+370
 Pol=RL,LL,LR,RR;Nsub=8;:
 [Vector avg'ed 0/22h21m30.50s->22h26m29.50s]

data: eb060c.ms [DATA]
 jops@<??> 2017-11-30T15:04:58
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General Problems

- Uvflg information
 - None for KVN, Mh, Ib, Ro, Km, Ur
- Phase jumps:
 - During data processing it was noticed that some stations exhibit sudden jumps in phase (vs time).
 - Began by looking at the data of Session I, 2017.
 - Cause remains unresolved but we begin to narrow down the parameter space.
 - Phase jumps are **NOT** exclusive to
 - Any particular frequency band,
 - Observing mode (disk/eVLBI),
 - station
 - EVN session.

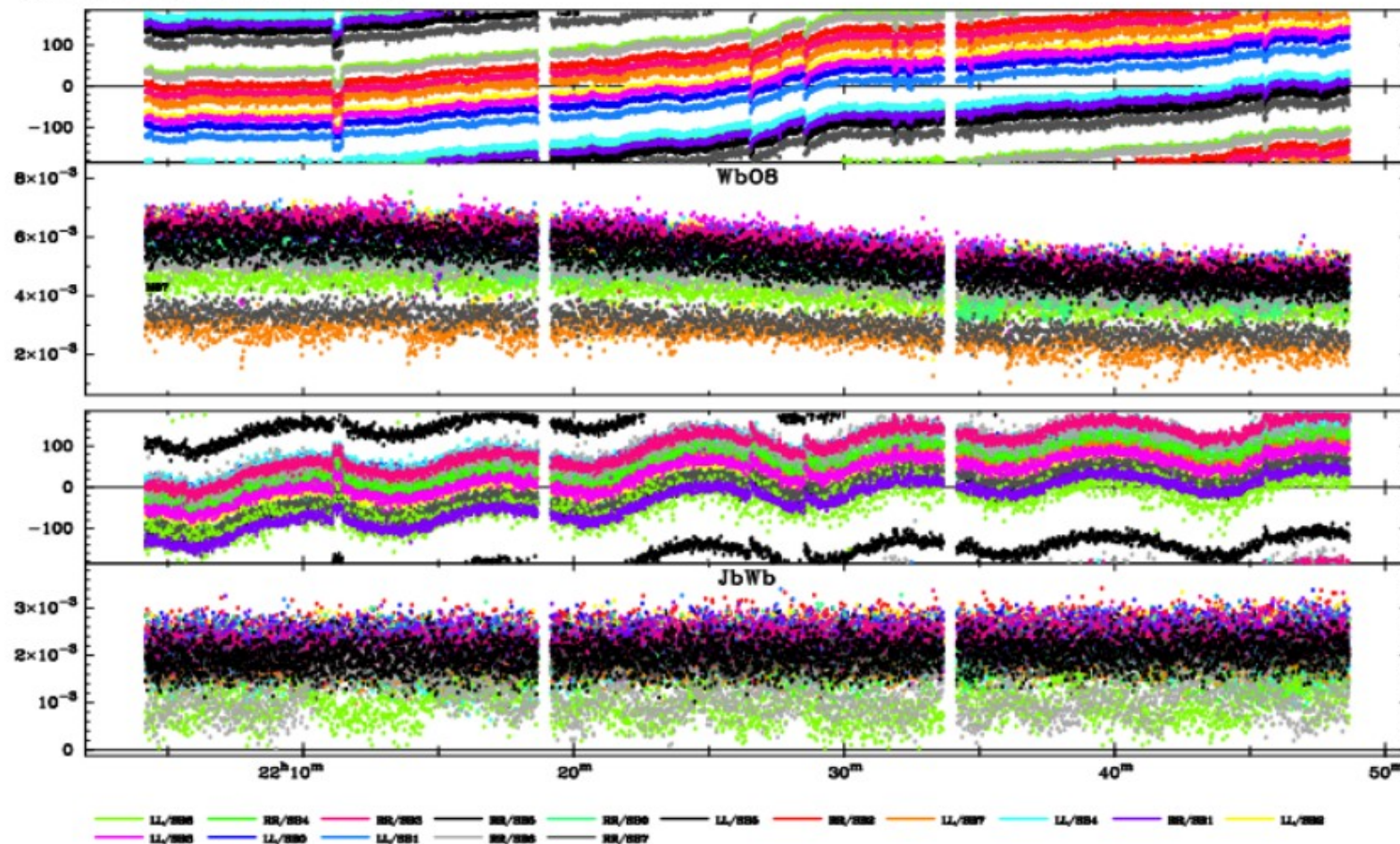
General Problems

- Common culprits are Ef, Jb, Wb, Nt - but it should be noted that finding glitches will be biased to station that have high signal to noise data in order to see phase jumps.
- Phase jump sometimes (but not always) accompany a temporary drop in amplitudes.
- Two main kinds of phase jumps: those where the phase jumps to a new value and stays at the new value - and those where the phase jump is followed by another jump back to the original trend.
- We continue to log examples of phase jumps and look for patterns. The issue does not seem to severely affect data but we have initiated dialogue with some stations to look for possible causes.

EH033

amplitude+phase versus time
 unique: sess117.L1024e/CH*/M87
 Pol=LL,RR;Nsub=8;;Ch=6:56;
 [Vectoraveraged channels 6:56]

data: /data1/burns/EH033/eh033.ms/
 jops@eee 2017-09-24T15:11:39
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Mattermost Usage

System Statistics

