

FR606@Nançay



J.-M. Griessmeier

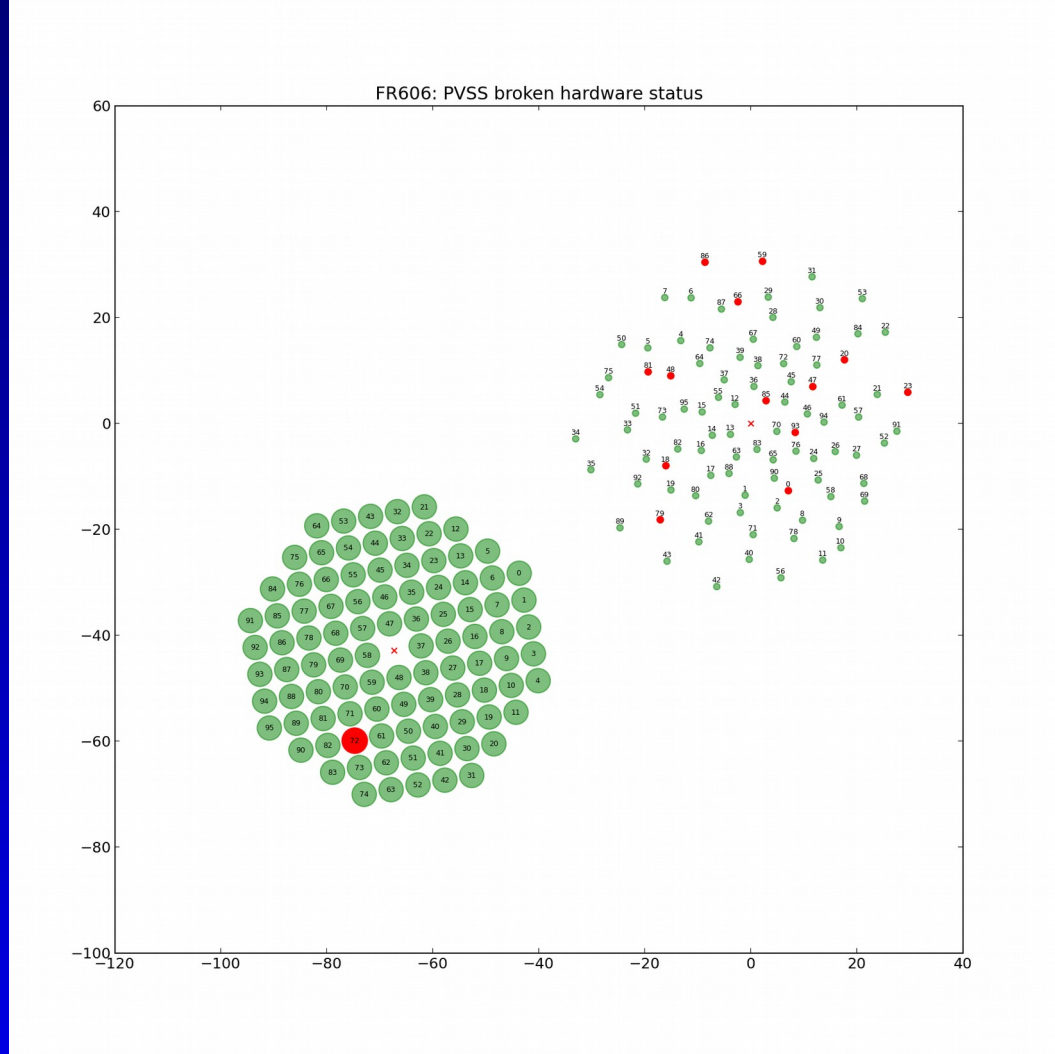
LPC2E & OSUC Orléans

jean-mathias.griessmeier@cns-orleans.fr

Activities

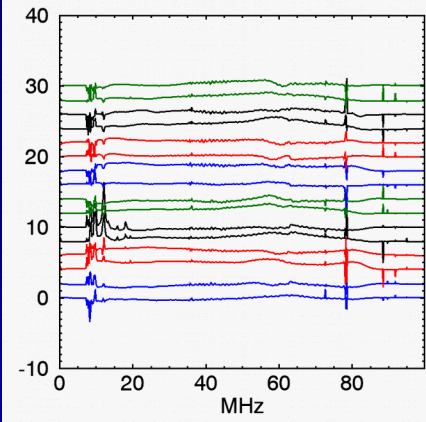
- antennas
- computing: HW+SW
- operations & observing modes
- NenuFAR tests

Antennas

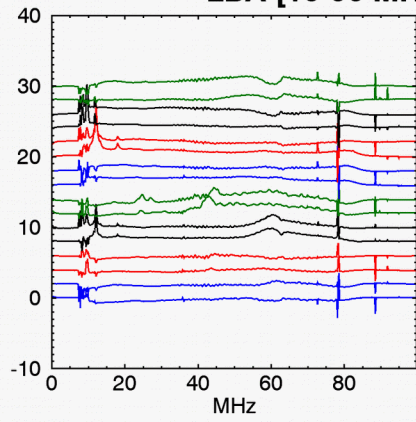


- ok for HBA
- not so good for LBA (13/96 antennas flagged)

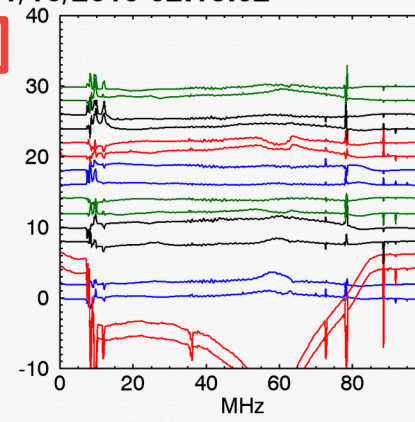
LBA [10-90 MHz] 01/10/2019 02:15:02



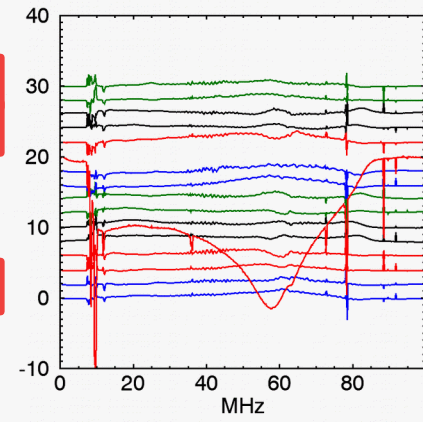
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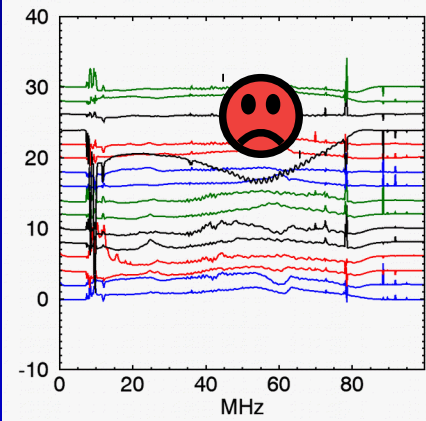
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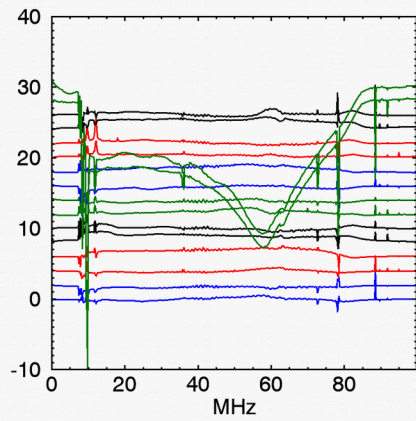
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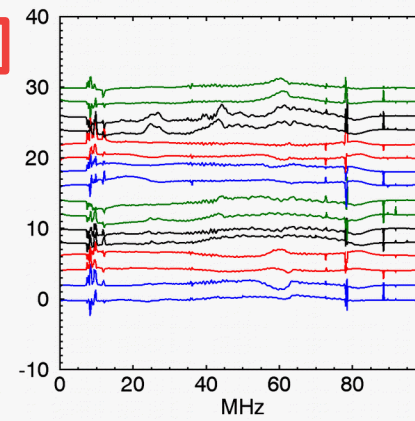
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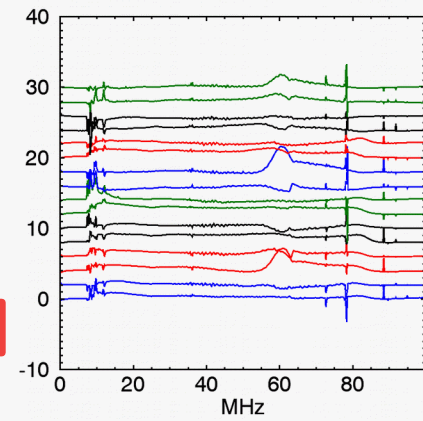
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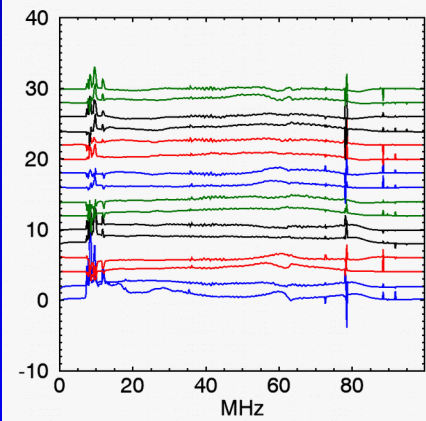
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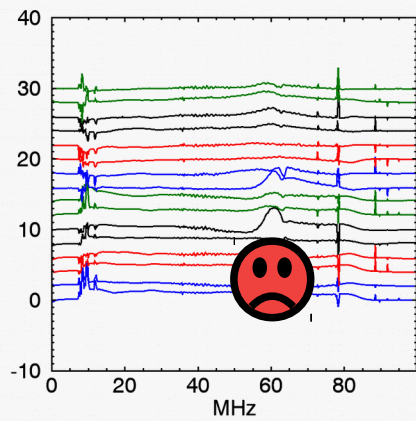
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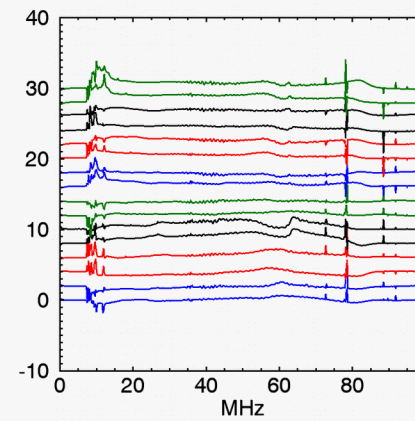
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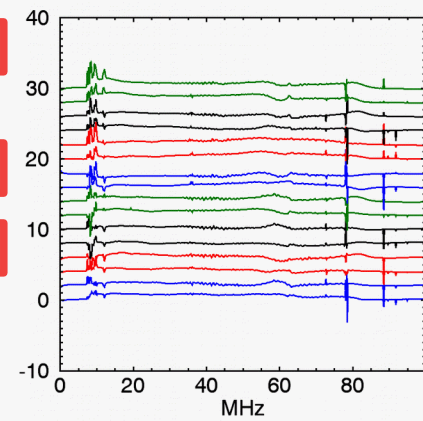
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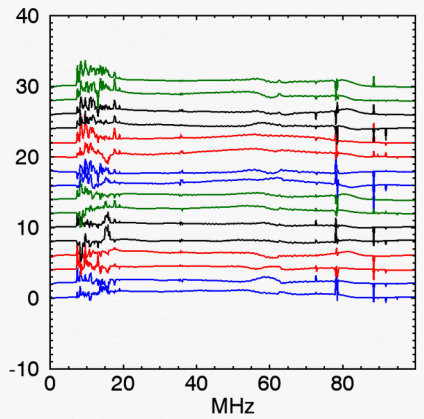
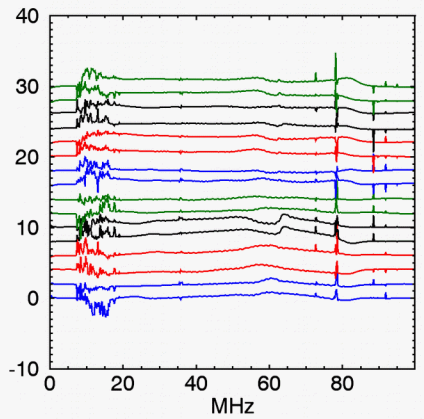
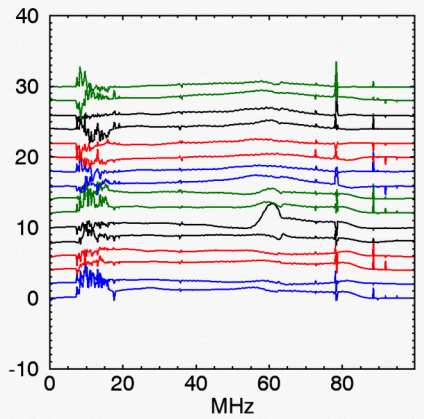
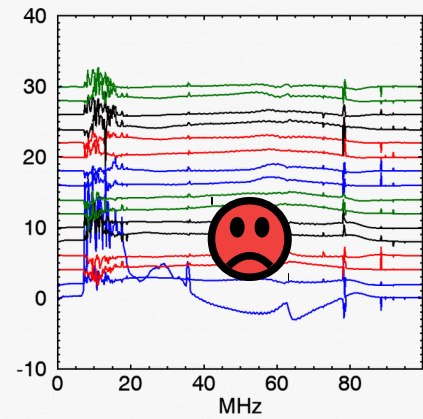
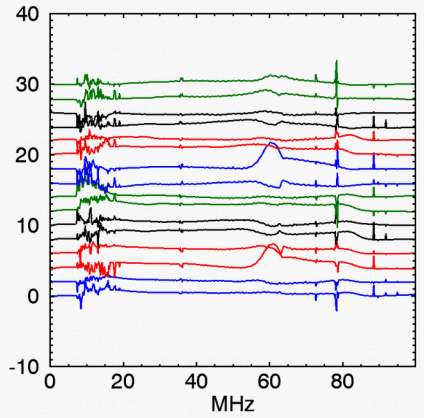
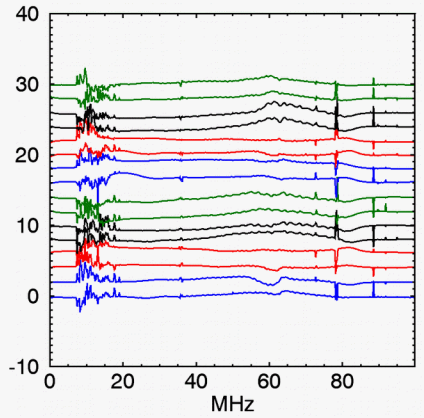
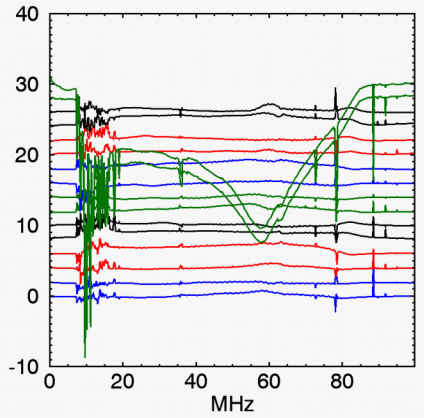
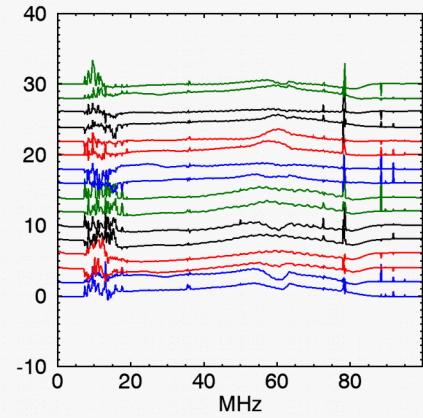
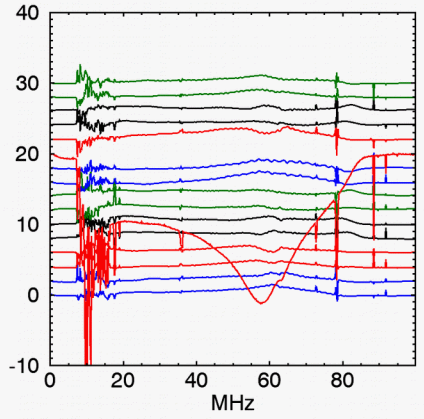
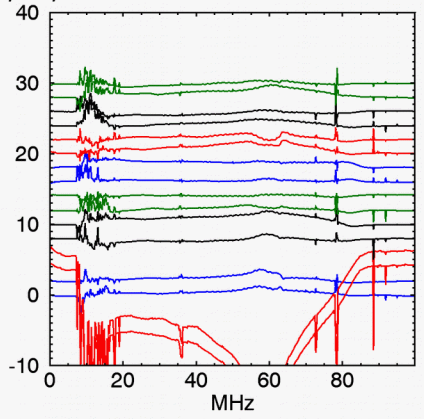
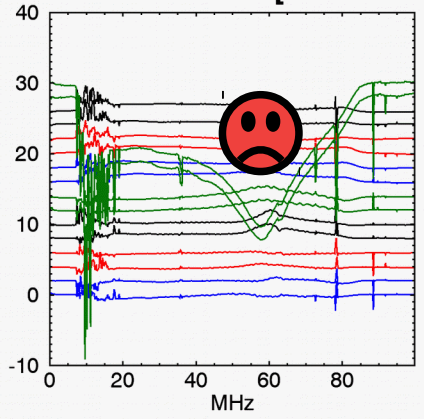
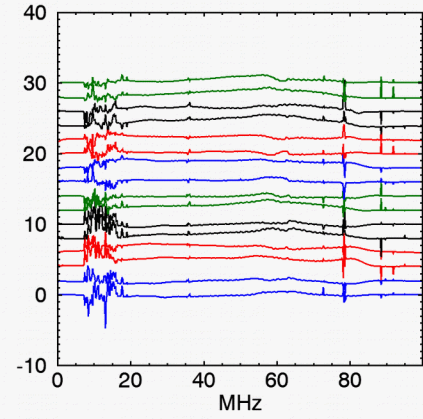


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LBA [10-90 MHz] 18/09/2019 02:49:52



Antennes

- intermittent “flat” antennas:
 - checked cables at entrance to container → ok
 - checked cables at RCU → ok
 - RCU green light
- any ideas?

Deactivate bad antennas

```
user1@FR606C:/data/home/user2/log cat /localhome/stationtest/DISABLED/disabled-mode5.txt  
20,21,40,41,42,43,50,51,136,137,144,145
```

- observe without these antennas!
- for each observation:
 - read 'disabled' file
 - log which antennas used!
- see singlestation wiki for details

```
-----  
date=D20180924T065002  
database_updated=2018-09-21 06:00:41.078661368 +0000  
message=some antennas have to be disabled  
disabled_count=12  
disabled_list=20,21,40,41,42,43,50,51,136,137,144,145  
enabled_count=180  
enabled_list=0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,22,23,24,25,26,27,28,29,30,31,  
32,33,34,35,36,37,38,39,44,45,46,47,48,49,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,  
69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,  
100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122,1  
23,124,125,126,127,128,129,130,131,132,133,134,135,138,139,140,141,142,143,146,147,148,149,15  
0,151,152,153,154,155,156,157,158,159,160,161,162,163,164,165,166,167,168,169,170,171,172,173  
,174,175,176,177,178,179,180,181,182,183,184,185,186,187,188,189,190,191
```

Singlestation wiki

- singlestation wiki:
<https://www.astron.nl/lofarwiki/doku.php?id=singlestation:start>
- read it!
- use it!
- improve it!

Activities

- antennas
- computing: HW+SW
- operations & observing modes
- NenuFAR tests

Local backend “allegro”

- 4 units
- installed 2011-2012
- harddisk upgrade
40 → 80 TB early 2015
- harddisk replaced 01/2016
- upgraded one unit 08/2018
- getting old / have 1 spare unit



Nançay Data Center: processing



- 5 processing units: nancep1,2,3,4,5
- HW: Dell PowerEdge R720, R730, R740
- SW: using kernsuite <https://kernsuite.info/>
- → easy to install (most packages)!

Nançay Data Center: storage

- 2 raid arrays: Dell MD1200 (old) + MD3860i (new)
- currently ~600 TB disk space
- FR606 + (mostly) NenuFAR!
- system has to be replaced very few years...
- → disk space is expensive
- but tape robots are expensive, too...
- there is no perfect solution

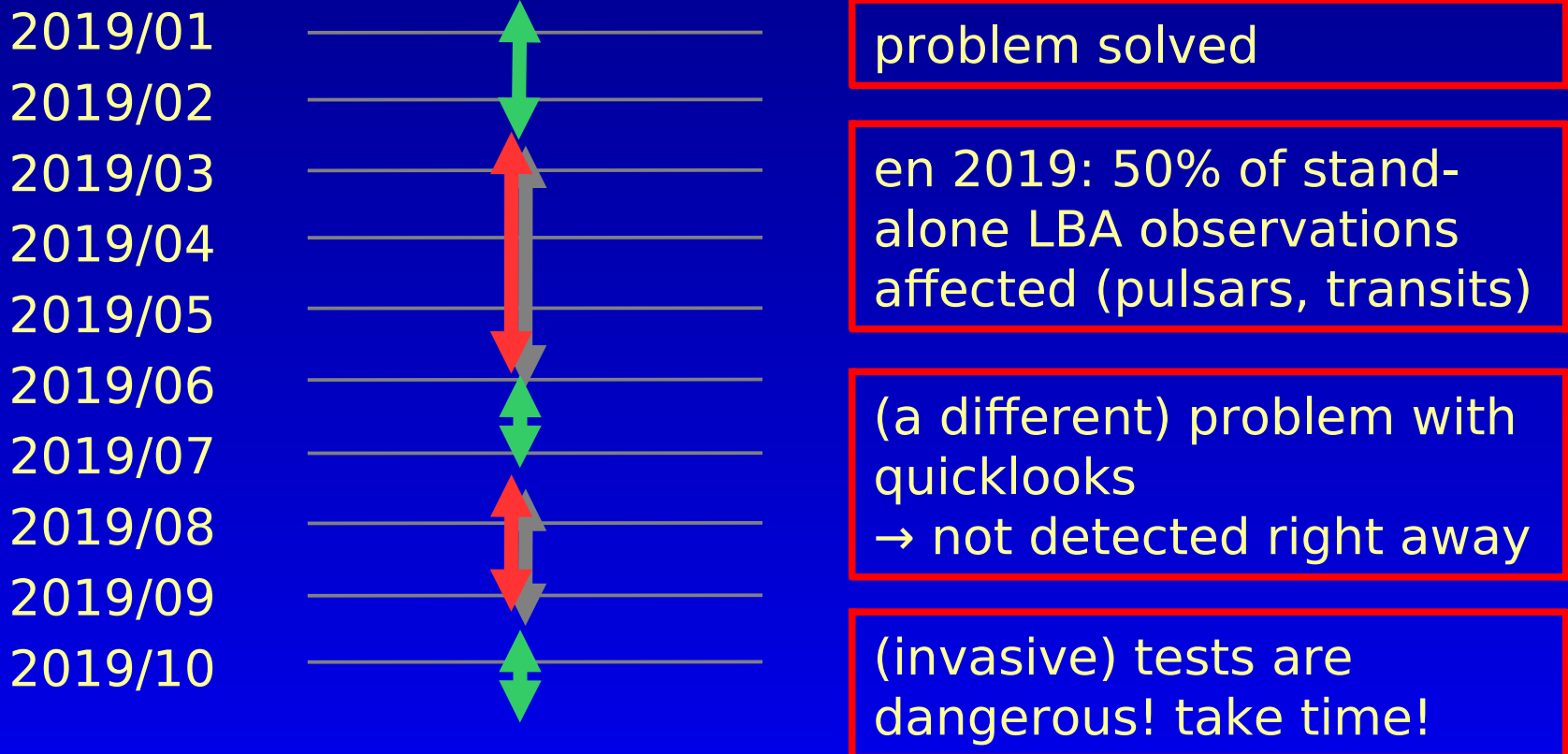


Activities

- antennas
- computing: HW+SW
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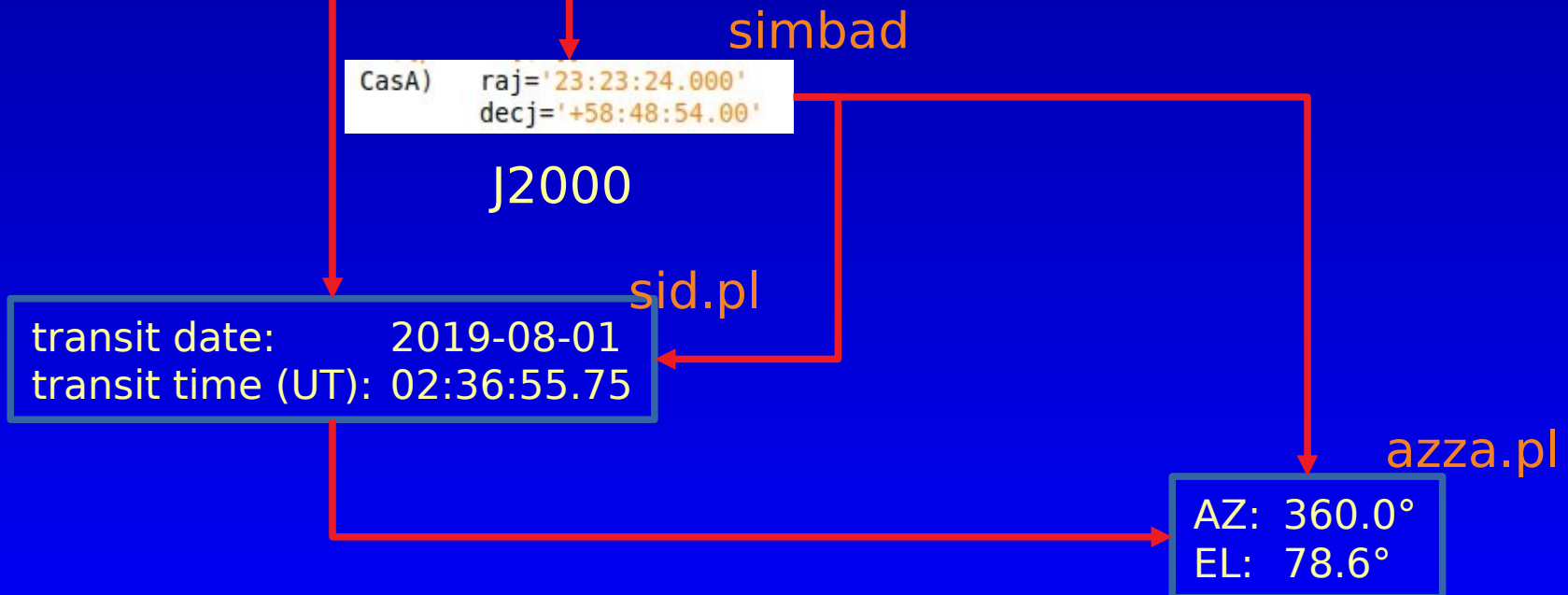
Operations

- NenuFAR tests: lost calibration tables (human error)
 - a) manually removed, forgot to reinstall
 - b) later reverted back to bad version



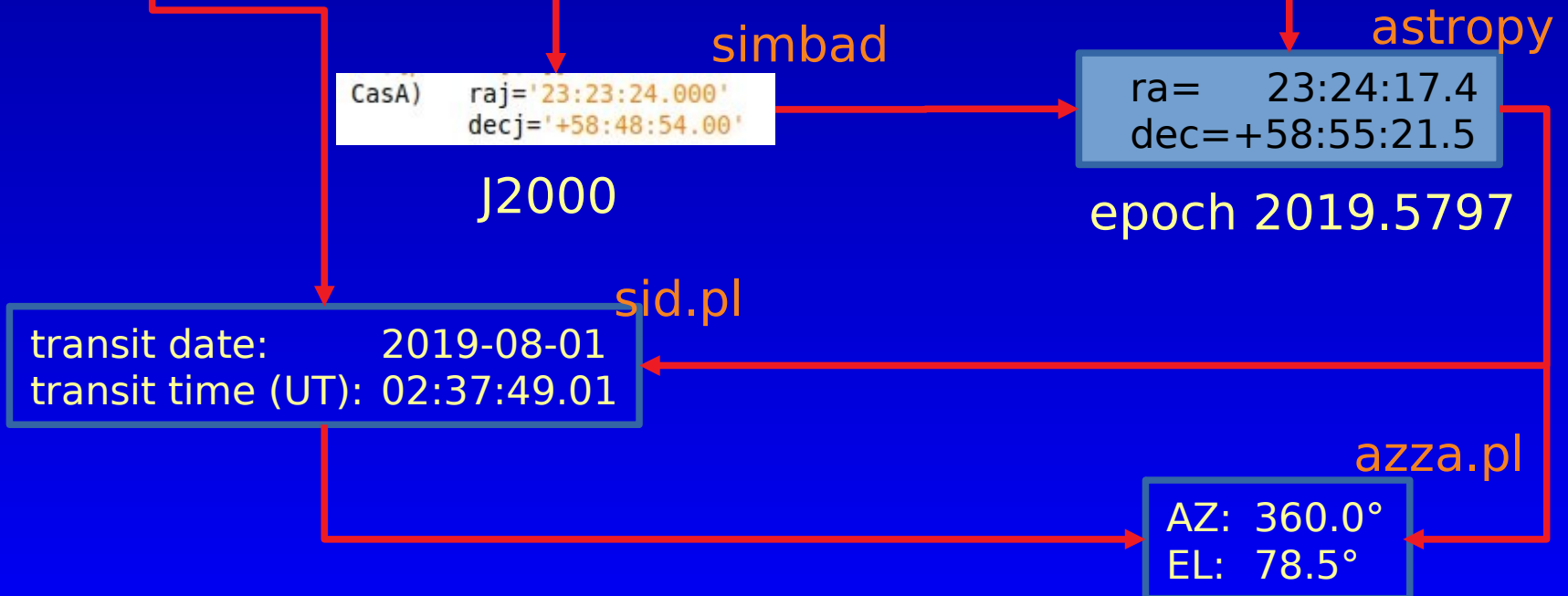
A new mode: Transit observations

31.07.2019	16:20	observe	B1508+55	psr-lump	S	HBA-select	70
31.07.2019	17:35	observe	B1540-06	psr-lump	S	HBA-select	60
31.07.2019	18:40	observe	B1642-03	psr-lump	S	HBA-select	60
31.07.2019	19:45	observe	B1737+13	psr-lump	S	HBA-select	60
31.07.2019	20:50	observe	B1508+55	psr-lump	M	LBA30-select	55
31.07.2019	21:50	control	telescope	off	none	none	5
31.07.2019	21:55	control	test	testsuite	none	none	65
31.07.2019	23:00	transit	CasA	BST	B	LBA30-select	420
01.08.2019	06:08	control	telescope	on-retry	none	none	7
01.08.2019	06:15	observe	B2217+47	psr-lump	M	LBA30-select	55
01.08.2019	07:15	observe	B0329+54	psr-lump	M	LBA30-select	35
01.08.2019	07:55	control	telescope	off	none	none	5
01.08.2019	08:00	control	telescope	handback	none	none	none
01.08.2019	08:05	process	process-suite	none	none	HBA	none
02.08.2019	09:00	process	weeklyquicklook	process	none	HBA	none



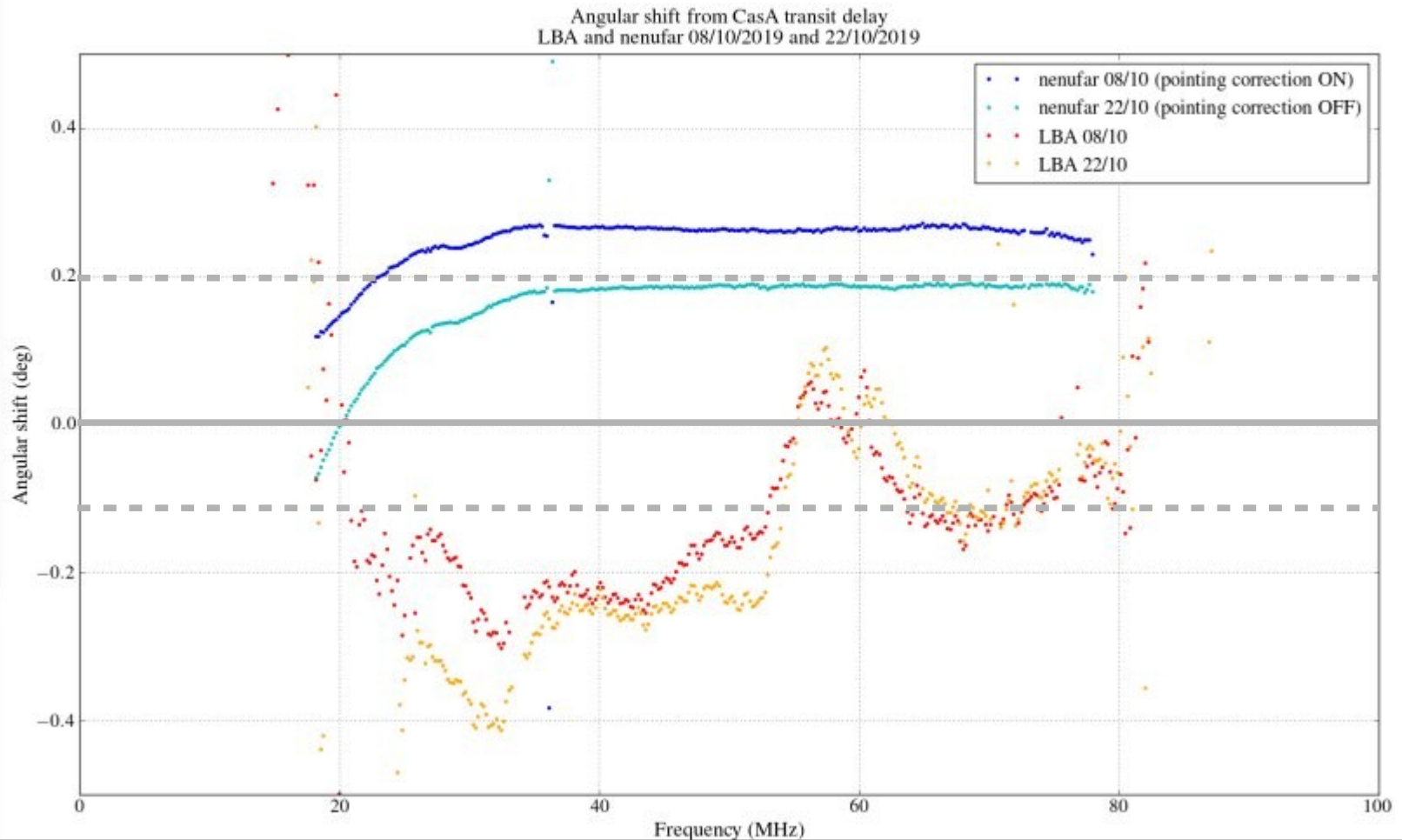
A new mode: Transit observations

31.07.2019	16:20	observe	B1508+55	psr-lump	S	HBA-select	70
31.07.2019	17:35	observe	B1540-06	psr-lump	S	HBA-select	60
31.07.2019	18:40	observe	B1642-03	psr-lump	S	HBA-select	60
31.07.2019	19:45	observe	B1737+13	psr-lump	S	HBA-select	60
31.07.2019	20:50	observe	B1508+55	psr-lump	M	LBA30-select	55
31.07.2019	21:50	control	telescope	off	none	none	5
31.07.2019	21:55	control	test	testsuite	none	none	65
31.07.2019	23:00	transit	CasA	BST	B	LBA30-select	420
01.08.2019	06:08	control	telescope	on-retry	none	none	7
01.08.2019	06:15	observe	B2217+47	psr-lump	M	LBA30-select	55
01.08.2019	07:15	observe	B0329+54	psr-lump	M	LBA30-select	35
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01.08.2019	08:00	control	telescope	handback	none	none	none
01.08.2019	08:05	process	process-suite	none	none	HBA	none
02.08.2019	09:00	process	weeklyquicklook	process	none	HBA	none



A new mode: Transit observations

Transit CasA 08-22/10/2019, nenufar/LBA, 0-100MHz



A new mode: Transit observations

- $AZ=360$, $EL=78.5$ (convert to radians)
- `beamctl [other options] --digdir=6.283185,1.370083,AZELGEO`
- question: $AZ=360^\circ$ is North... but which North?
- `North_LOFAR` \neq `North_FR606`
- same question for elevation: calculated station-by-station?
- frequency-dependent mis-pointing?
- (work in progress)

Activities

- antennas
- computing: HW+SW
- operations & observing modes
- NenuFAR tests

Tests NenuFAR ↔ FR606

- NenuFAR “super-station” mode (correlate with LOFAR core!)
- with Julien Girard: tested what we can test locally
- it does not work (not even as we did in 2016...)
- MAC software has changed!
- need support from ASTRON (A. Schoenmakers, A. Klazema?)
- dedicated telecons?
- any ideas welcome, can discuss this offline