CS-1 developments: 3-17 Oct 2007

- **General**

- LOFAR calibratibility workshop

2) **Hardware-Rollout** :

- additional LCU's in CS010 to go from 16 to 24 microstations (this week)

- tile/dipole HBA switch operation   (late October)

Outstanding / new / solved 'technical' issues:

3) Stations

- 200 MHz mode problems: gone away

- 'autocorrelation' dips in LBA/160 data: quantization problems in beamformer

- Y-polarization RFI problem at very low frequencies (May 9 meeting) : no progress

- 8ch-periodicity in RFI signals at low frequencies (intermodulation or part of RFI spectrum?): no progress

- LBA S/N problems in 48h observation in 3/4 Aug weekend ? Gone away

- HBA 'switch' issues (solution being worked on)

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4) CEP (SAS/MAC/OLAP)

- simultaneous LBA+HBA observations possible

   (i.e 36 subbands spread from 30-190 MHz)

Progress reports on observations and data analysis (1)

- **New observations still to be inserted in catalog ('Lofar operations wiki')**

- Lots of new data between 3 Oct and 16 Oct.

- Mostly LBA on CasA (beamformer 48 dip) ; 36 subbands 38-62 MHz

- About 150 hours total !

6) Calibration of CS-1 data in MeqTrees and BBS

Good progress in beam etc.

- fluxes in 38 MHz subbands compared with Rees -38 MHz (8C cat) (talk Niruj)

- next step to include spectral indices (sizes) , extend to HBA frequencies as well

Preprocessing pipeline (Adriaan, Stefan (de Koning), Pandey)

Joris/Pandey: BBS about ready to run batches, parallelized

Progress reports on observations and data analysis (2)

7) Imaging issues

- Deep NCP field on NCP with LBA: difference image 0.4 Jy noise

- HBA station positions solved. Upcoming, new slight updates of positions (Arie Huijgen)

- 5 source peeled off LBA images (Sarod talk?)

- 'Understanding' polarisation images (Johan/Sarod)

8) Noise / RFI analysis

Ongoing:

- analysis HBA 1s-1kHz data : still waiting for Stefan de Koning report

-**Outstanding / still to be done**

- peculiar very low frequency (<20 MHz) RFI patterns (8ch periodicity and Y-polarization)

- S/N analysis and Tsys/Aeff for HBA dipoles to be done

- S/N in 10-30 MHz subband data

- future impact of DAB channels 5-12ABCD (174-230 MHz, 8x7 MHz, in 4x1.75 MHz)

  (Albert-Jan Boonstra to report at future meeting)

Progress reports on modeling/simulation activities (1)

§ **Beam modeling:**

Sarods beams in MeqTrees and BBS

Johan/Michel beam in BBS?

§ **Ionospheric modeling:**

GPS TEC fitting: Maaijke, Jim, Jan (last weeks talk)

LIONS: LOFAR IONos Simul) MeqTrees efforts led by van Bemmel
    (Leiden)

- **Source models (LSM, GSM, fluxscale):**

- 38-58 MHz spectra needed for CygA !! We derive them ourselves ?

- HerculesA absolute scale (no progress)

Progress reports on modeling/simulation activities (2)

- **Processing issues (convergence, speed):**

 - no progress to report

13) Data quality & image DR:

- analysis of stability using large series of LBA observations

- analysis of redundant baselines after relative calibration

Requires a corrected MS, conversion to HDF5 and further analysis.

Started this week.

Observing schedule and planning (17 - 24 October 2007)

Activities coming up:

o   LBA/HBA with 24 microstations

o   New HBA switches soon available (on CS010: 6 tiles +30 dipoles)

o   New 10-30 MHz data, imaging and S/N estimation

o   experiments to investigate issues resulting from descope simultaneous LBA-HBA

o   any other ?

LBA observations on CasA   (SB0, 38 MHz)
6 Oct 07, L3908,   microstation 1 (48-dipoles)
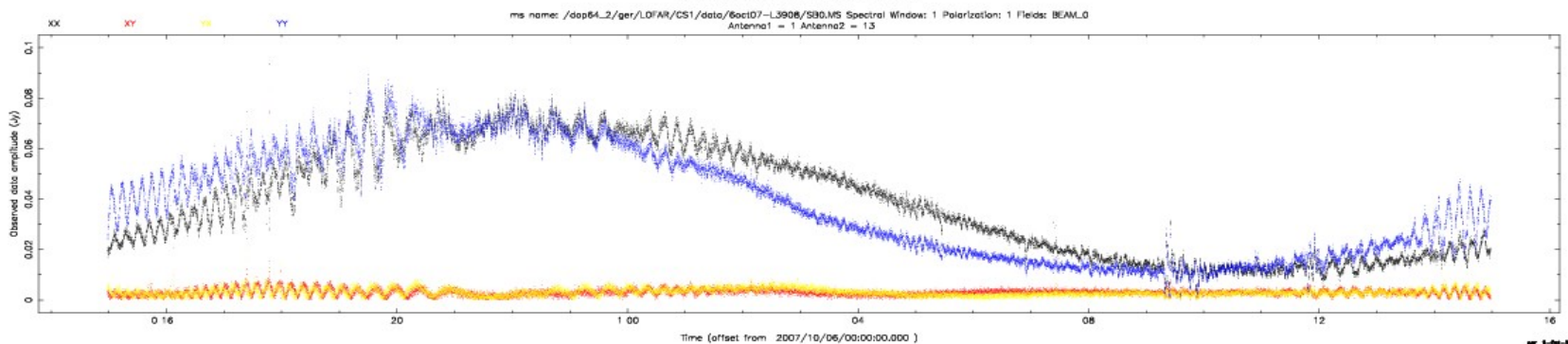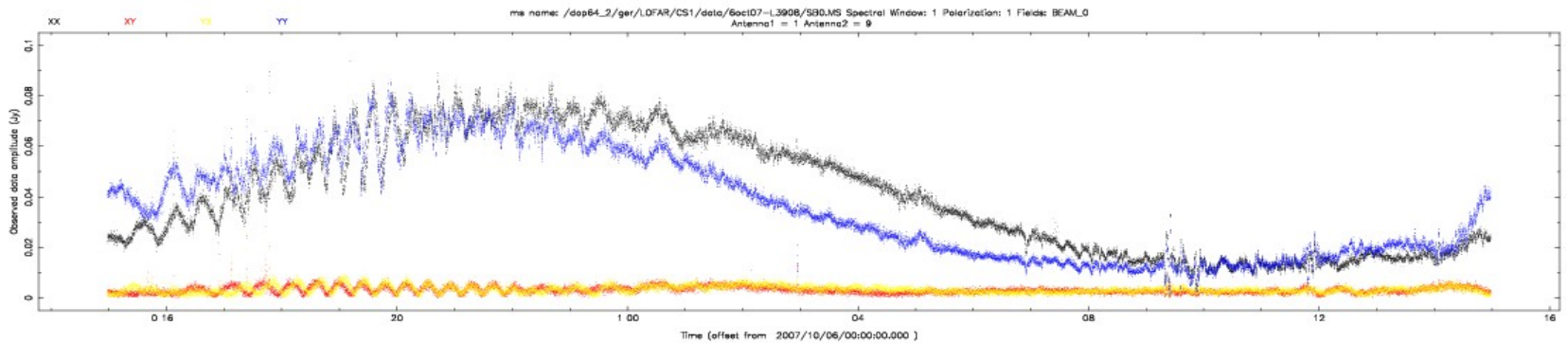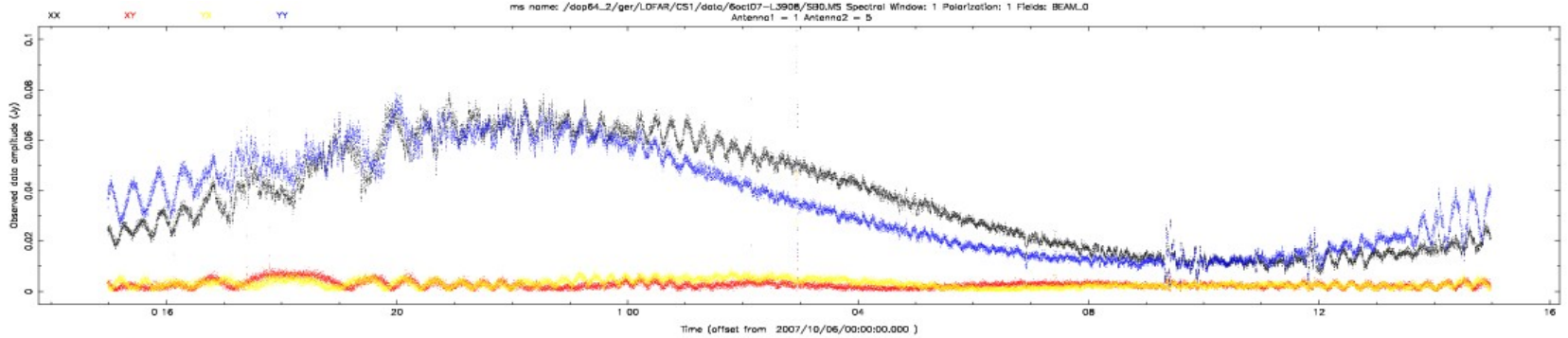
LBA observations on CasA   (SB0, 38 MHz)
5 Oct 07, L3907,   microstation 1 (48-dipoles)
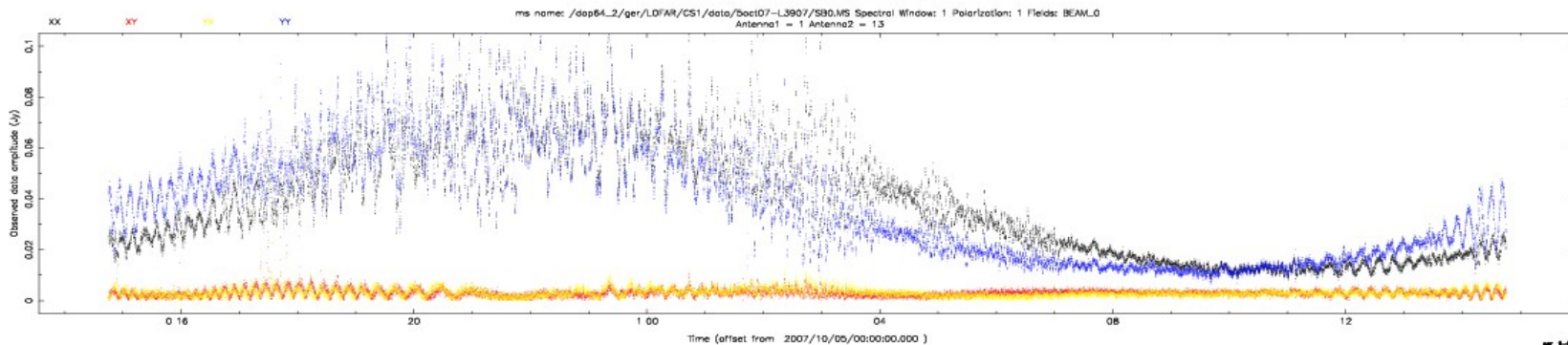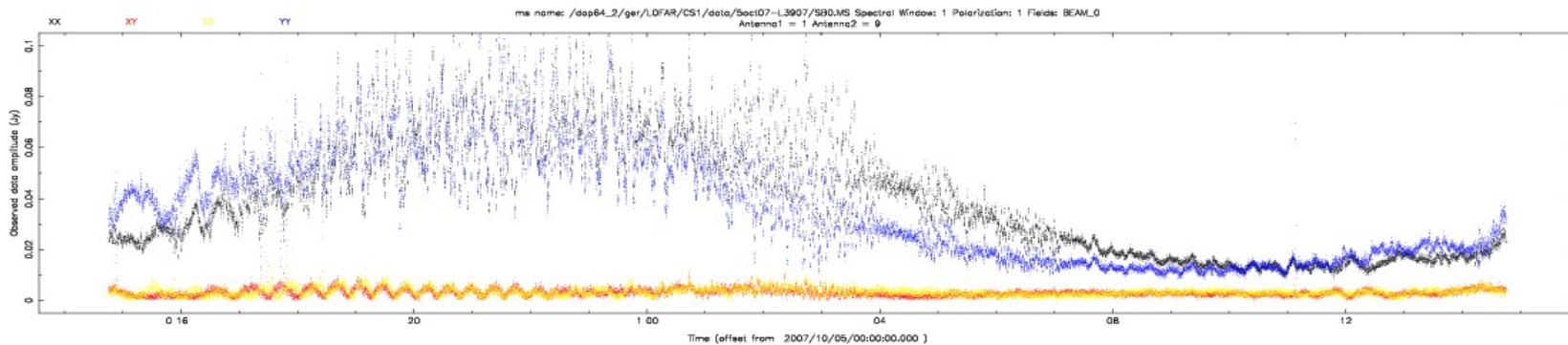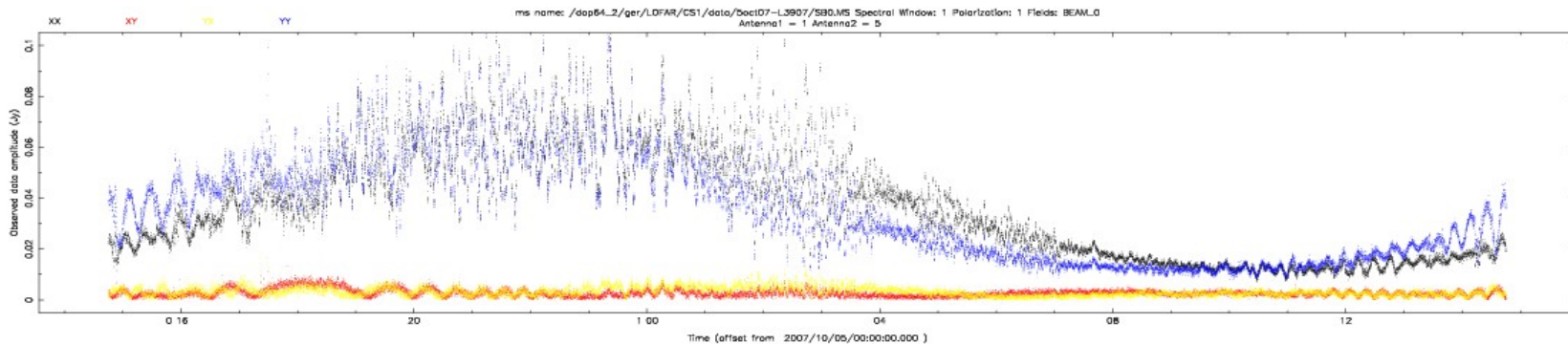
LBA observations on CasA (SB35, 62 MHz)
6 Oct 07, L3908, microstation 1 (48-dipoles)

ame: /dop64_2/ger/LOFAR/CS1/data/6oct07-L3908/SB35.MS Spectral Window: 1 Polarization: 1 Fields: BE
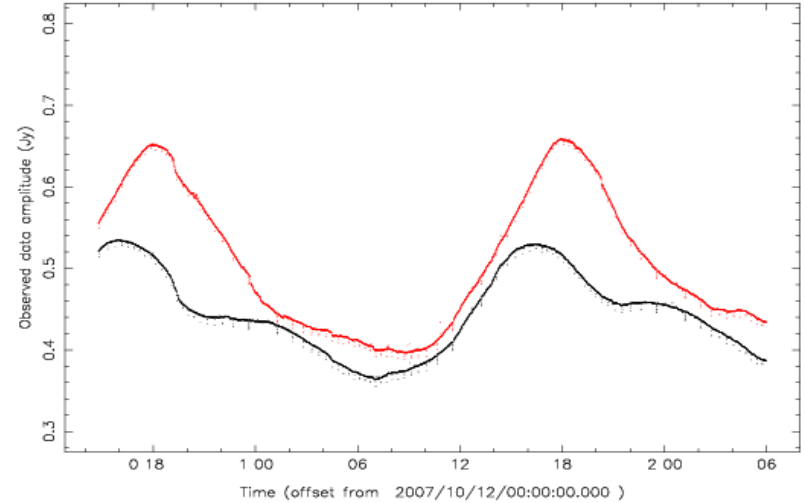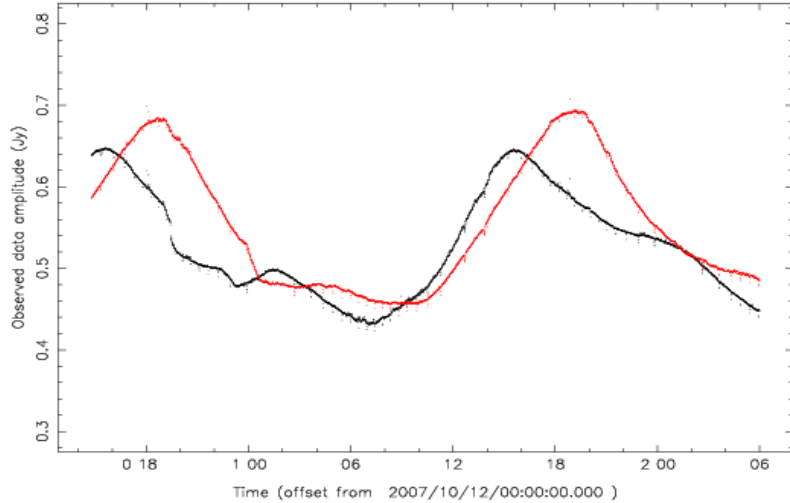XX YY Antenna1 = 1 Antenna2 = 1
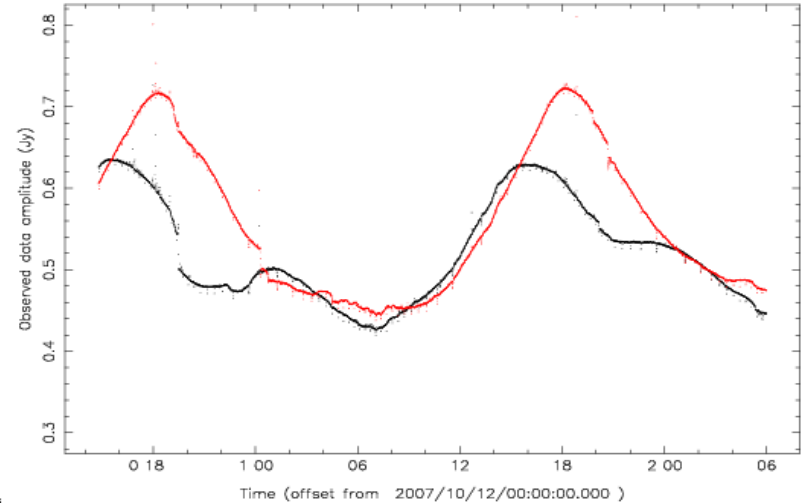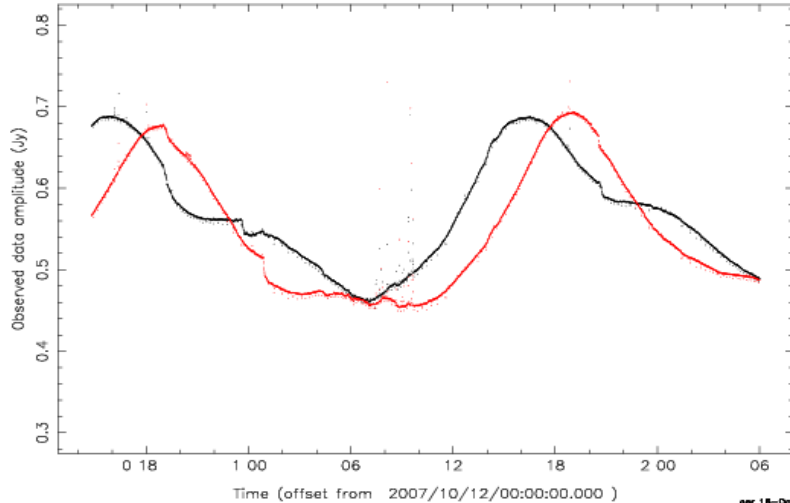
ger 9-Oct-2007 08:54
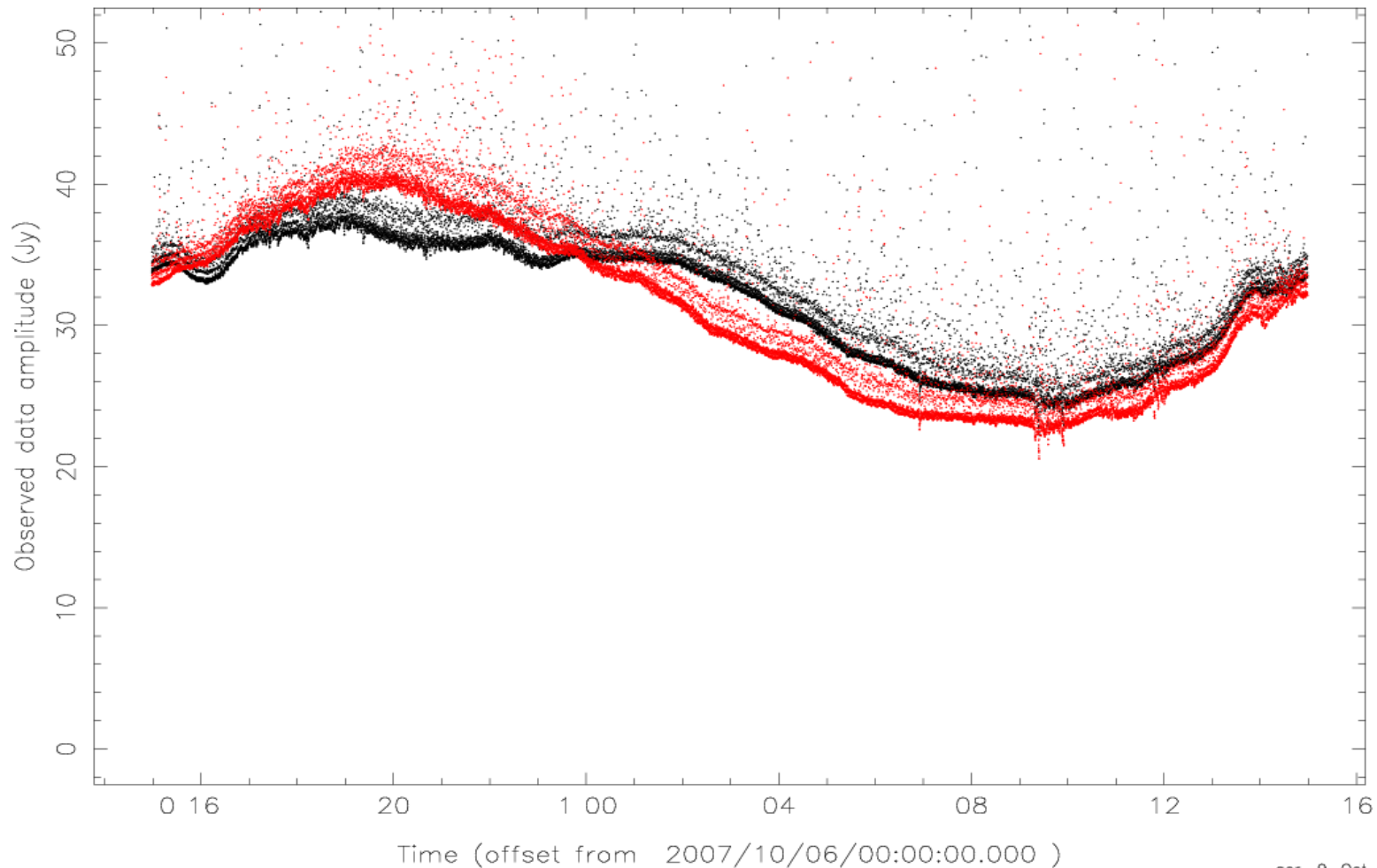
LBA observations on CasA   (SB35, 62 MHz)
5 Oct 07, L3907,   microstation 1 (48-dipoles)
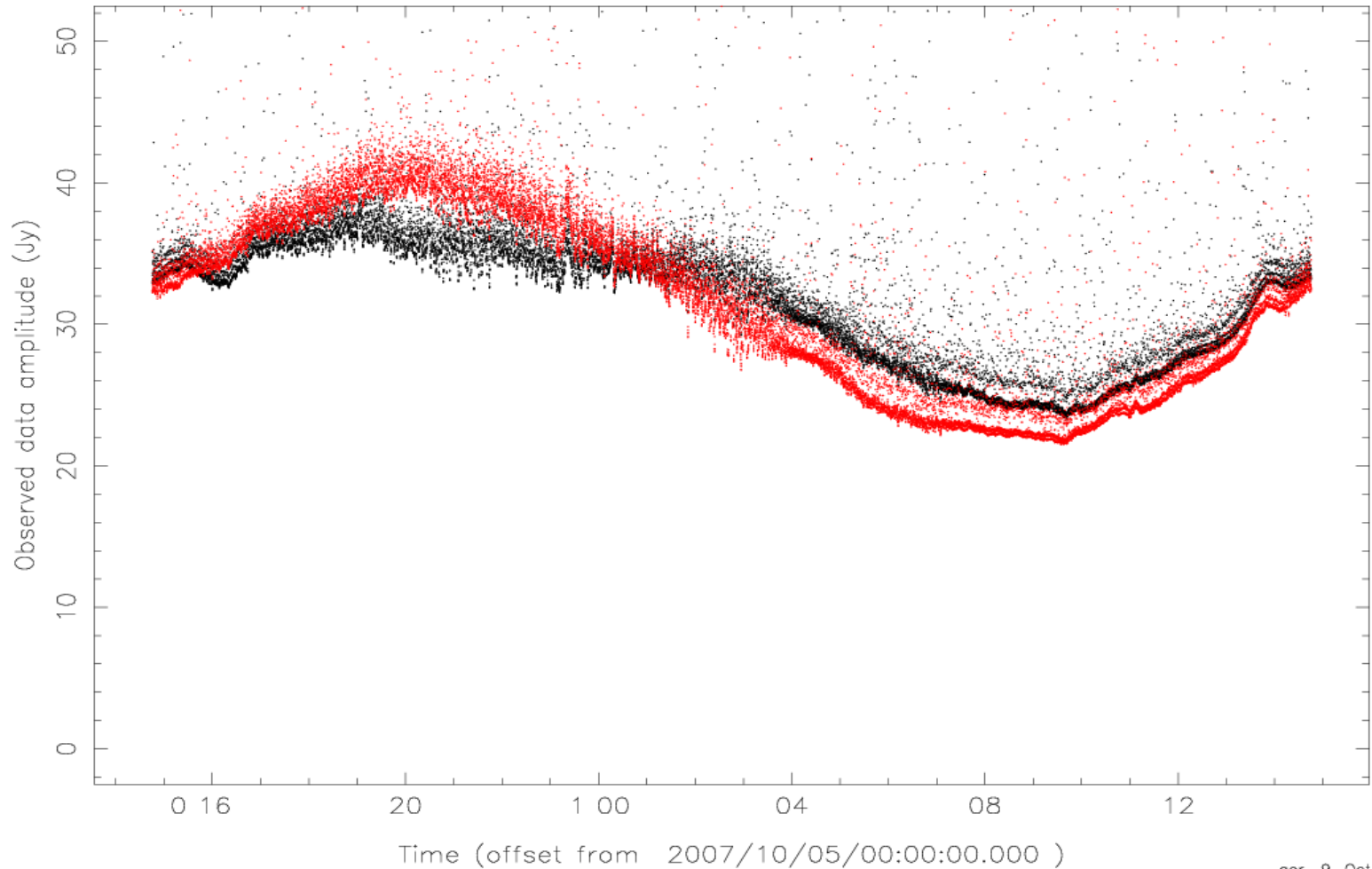
LBA observations on CasA   (SB0, 38 MHz)
5 Oct 07, L3917,   microstation 1 (48-dipoles)
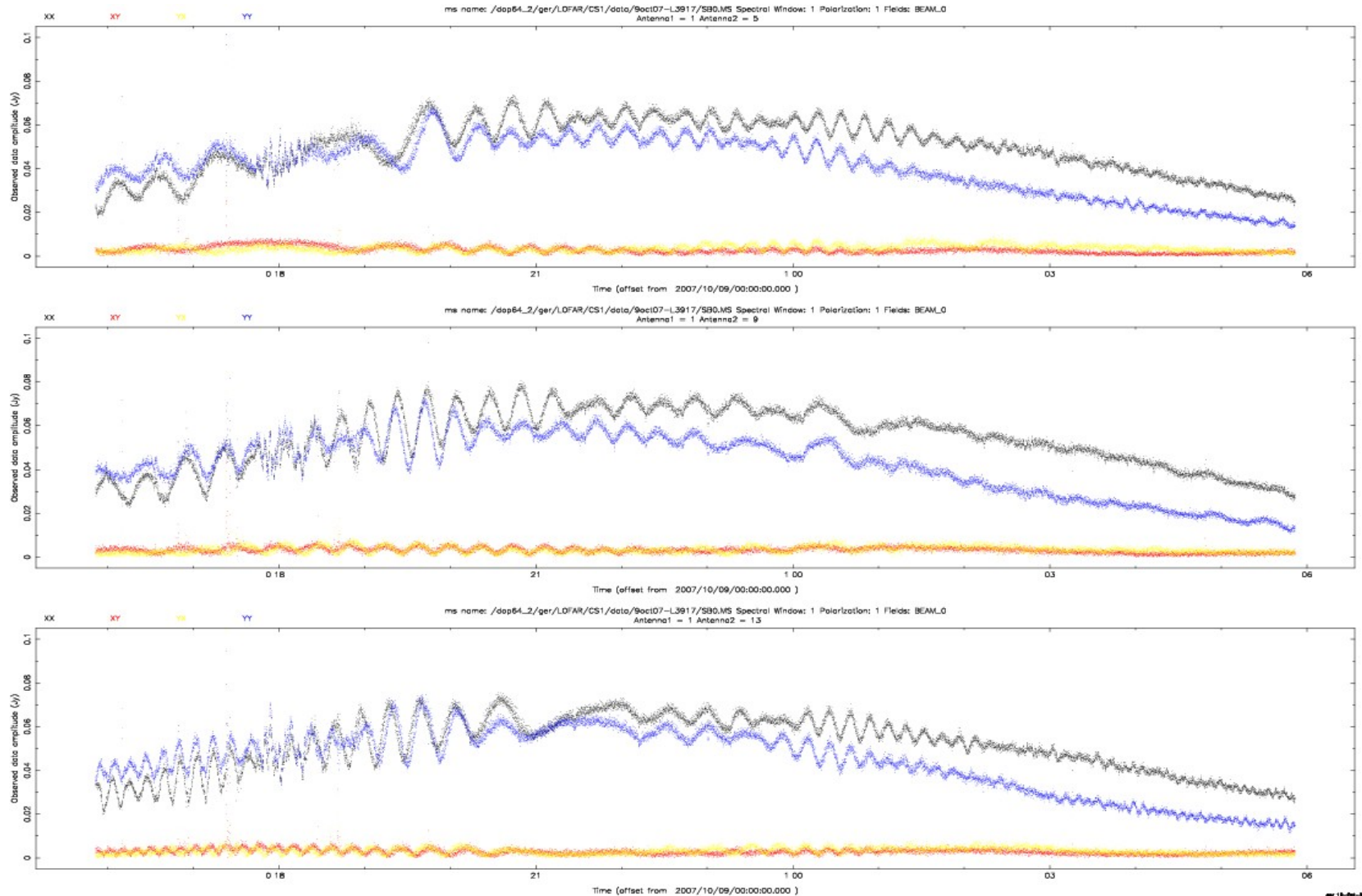
36h LBA observations on CasA   (SB35, 62 MHz)
13 Oct 07, L3983, microstation1 (48 dipoles)
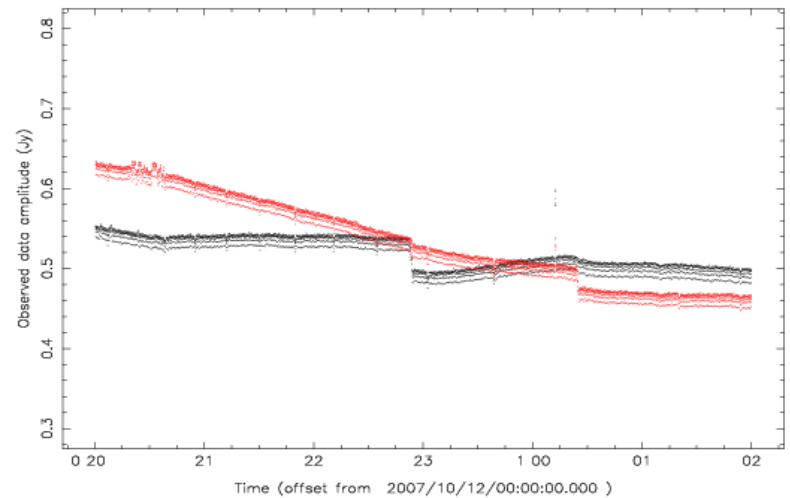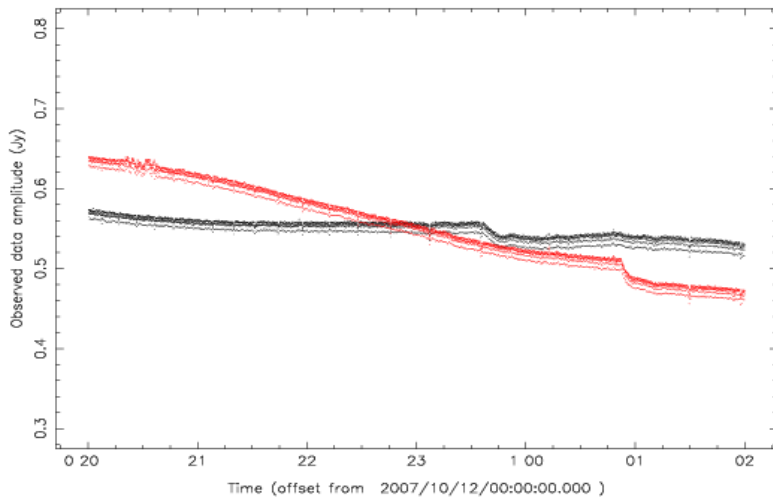
ame: /dop64_2/ger/LOFAR/CS1/data/13oct07_L3983/SB35.MS Spectral Window: 1 Polarization: 1 Fields: BB
XX YY   Antenna1 = 1 Antenna2 = 1

Observed data amplitude (Jy)

Time (offset from 2007/10/12/00:00:00.000)

ger 16-Oct-2007 20:35

36h LBA observations on CasA   (SB35, 62 MHz)
13 Oct 07, L3983   ANT 2,6,9,13 total power

LBA observations on CasA   (SB35, 62 MHz)
13 Oct 07, L3983,   ant 9,10,11,12