

# CS-1 developments: 18 - 25 July 2007

- **General**

LOFAR descoping discussions going on over the summer. These do not impact CS-1 but may influence the priority and type of commissioning experiments.

## **2) Rollout**

Upcoming 're-configurations':

- a) rotation of the 3 'unused' LBA dipoles on the 12 microstations
- b) moving HBA dipoles out to stations CS001, CS008 and CS016 sooner (after refurbishment)

Additional LCU's in CS010 to go from 16 to 24 microstations by September

## 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 low frequencies (see May 9 meeting) : **no progress**
- 8ch-periodicity in RFI signals at low frequencies (intermodulation?): **no progress**
  
- HBA 'switch' issues
- LBA S/N problems in 48h observation last weekend ?

### 4) CEP (SAS/MAC/OLAP)

Successful observations with new CEP software (bypassing input cluster)

No hardware failures last weekend ...

# Progress reports on observations and data analysis (1)

## 5) New observations

- Fri-Sun 20/22 July 1x48h 38- 59 MHz 16-dipoles NCP L3388
- Sun-Mon 22/23 July 1x12h 38-59 MHz 16 dipoles NCP L3389 new software

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

- Sarod: work continues on incorporating dipole/station beams and full polarization reduction into MeqTrees data reduction
- Leiden group (Amitesh, Sander, Mamta) efforts using MeqTrees pipeline
- Joris/Pandey: BBS: significant speed improvements are nearly there

# Progress reports on observations and data analysis (2)

## 7) Imaging issues

- new 'deep' field on NCP with LBA (36 subbands, 38-59 MHz), multiple 24h  
Fluxes to be compared with Nick Rees' 38 MHz (8C-) survey --> Leiden team effort ...

## 8) Noise / RFI analysis

### Ongoing:

- analysis HBA 1s-1kHz data (summer student Stefan de Koning + AGdB, MAB, AJB).
- S/N ratio in HBA data (pulsar signal above 200 MHz dropping rapidly...)

### Outstanding:

- peculiar RFI patterns (8ch periodicity and Y-polarization)

# Progress reports on modeling/simulation activities (1)

§ **Beam modeling:** Sarod, Johan

**10) Ionospheric modeling:** Maaijke, Jim, Jan

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

Fluxscale in L2339+L2412 image: factor 4-6 missing.

We are still waiting for proof of Sarod's claim that this is solved.....

## Progress reports on modeling/simulation activities (2)

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

- no progress to report

### **13) Data quality & image DR:**

- analysis of redundant baselines after relative calibration

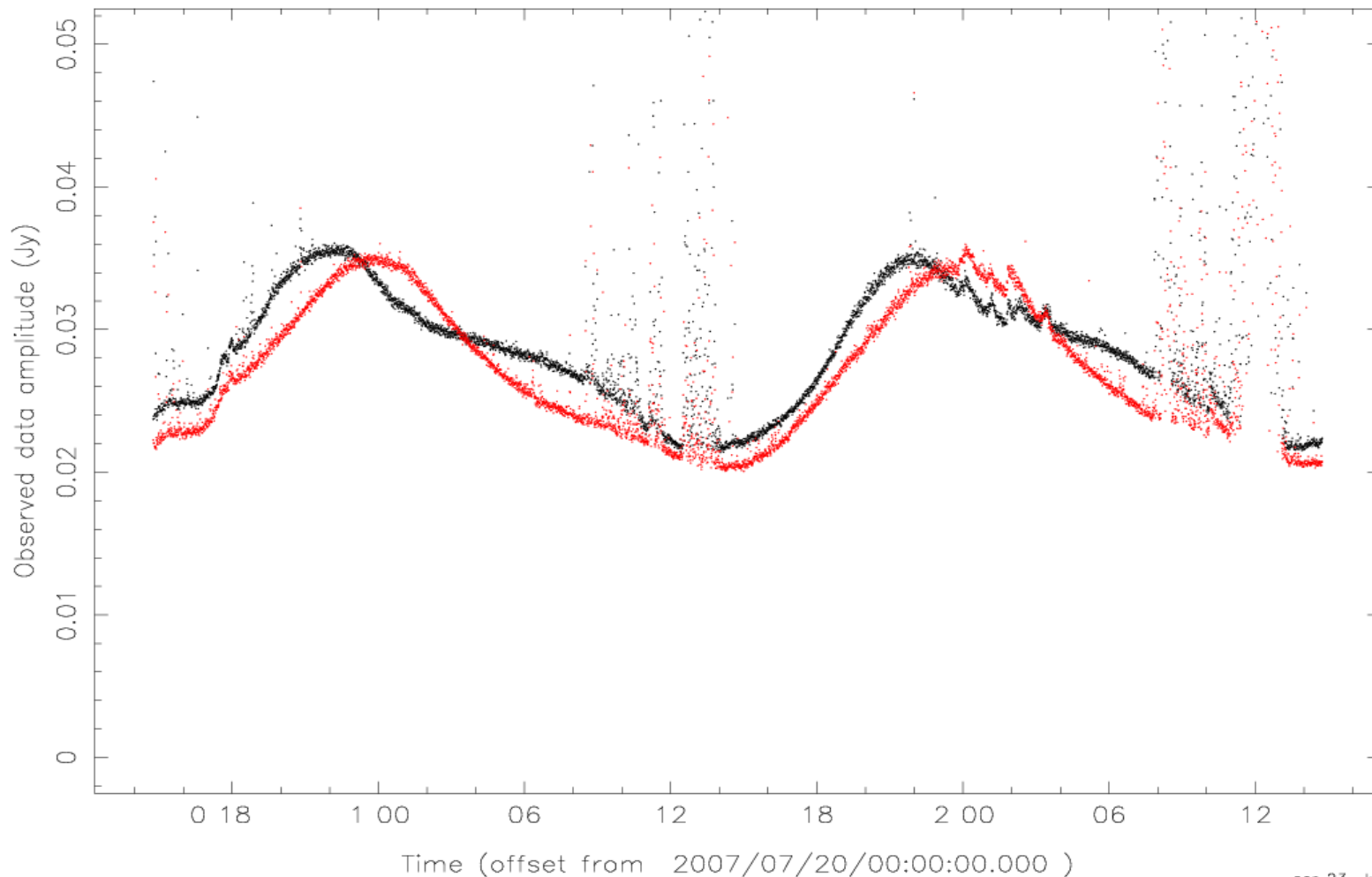
Requires a corrected MS, conversion to HDF5 and further analysis. Still to be started.

### **14) RFI issues:**

- Overviews from the 1s-1 kHz monitoring being prepared by Stefan de Koning (HBA data monitoring campaign)
- Monitoring Meteors with CS-1 (see plots --> Michiel Brentjens...)

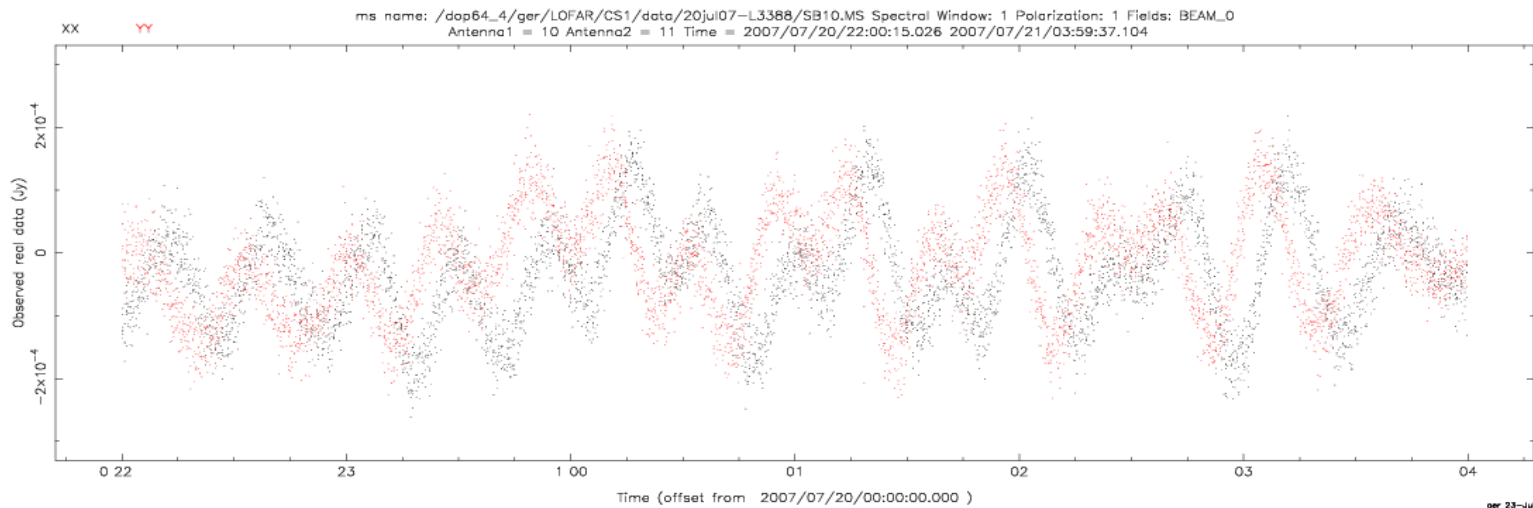
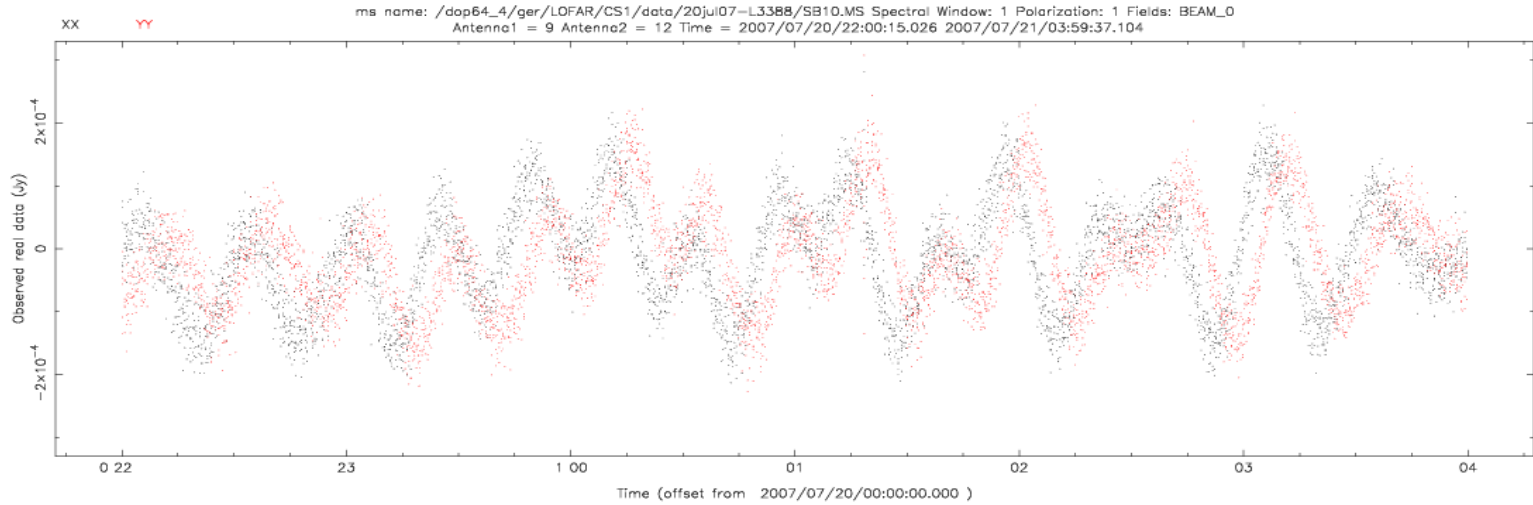
# L3389 SB30-spectrum 22July-07 ~12h

name: /dop64\_4/ger/LOFAR/CS1/data/20jul07-L3388/SB30.MS Spectral Window: 1 Polarization: 1 Fields: BE  
Antenna1 = 1 Antenna2 = 1 Time = 2007/07/20/14:45:23.099 2007/07/22/14:44:51.514



# L3388

# low S/N lightcurves 20-22July-07

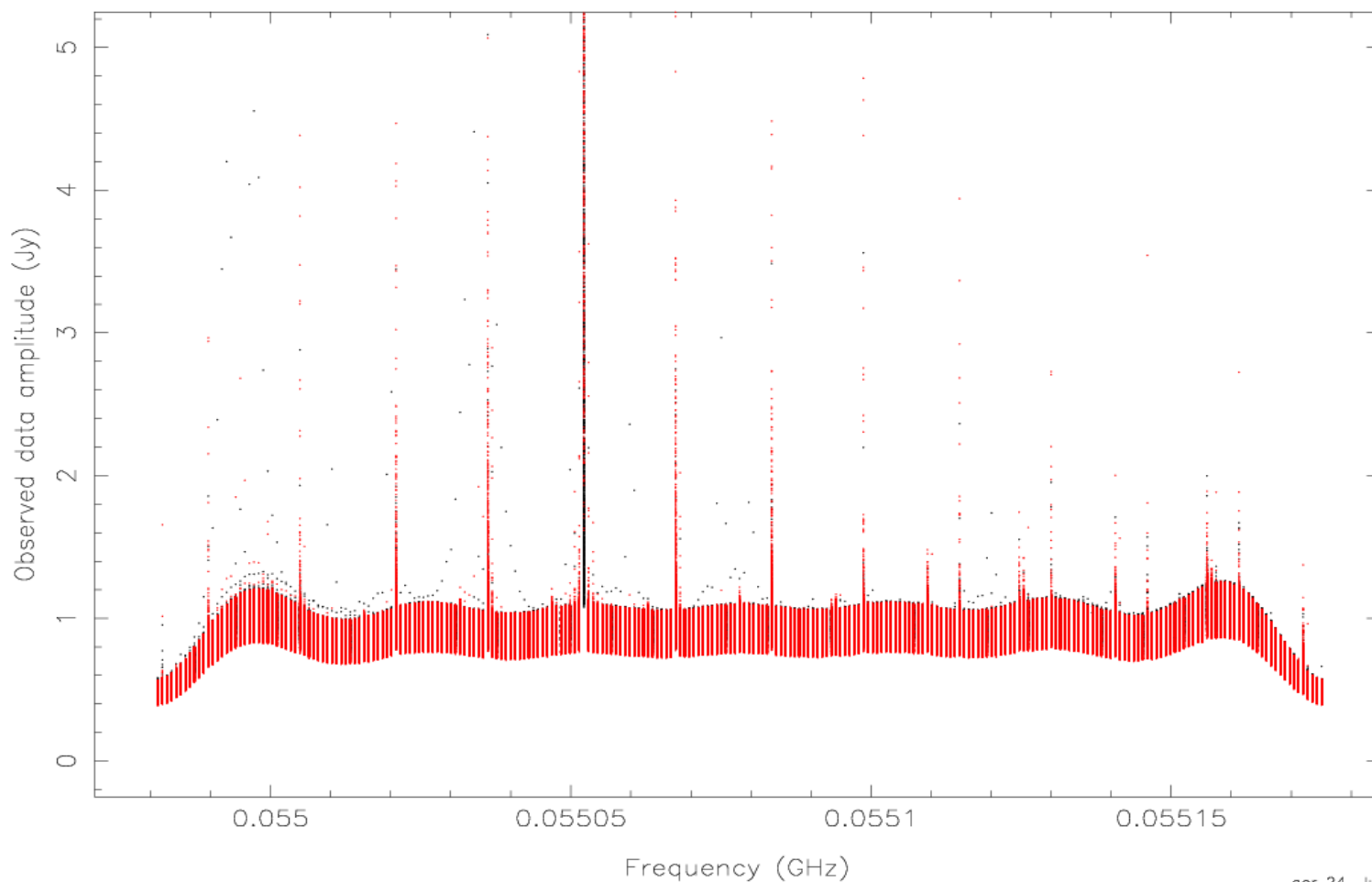




# L3389 SB30-spectrum

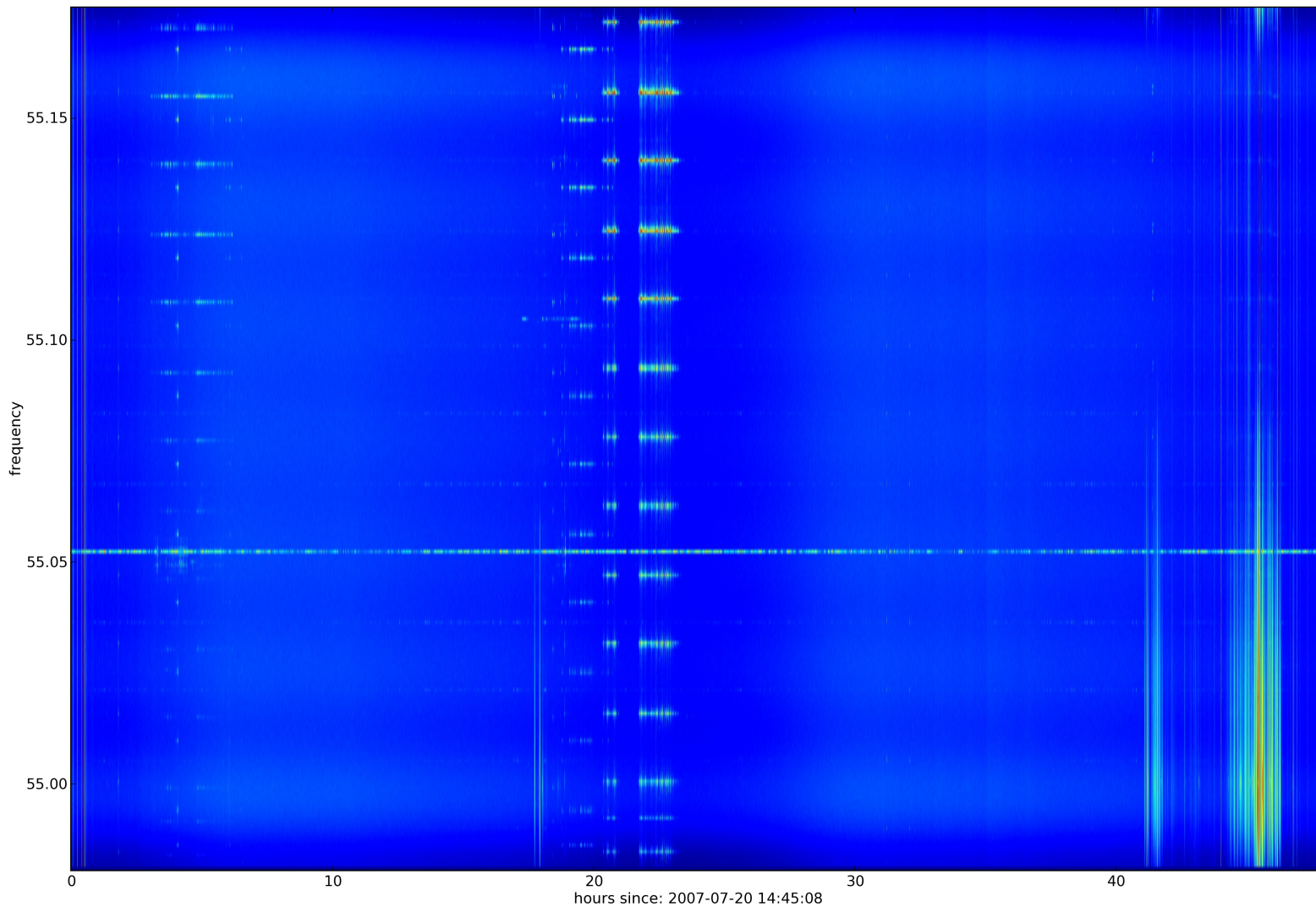
22July-07 ~12h

name: /dop64\_4/ger/LOFAR/CS1/data/22jul07-L3389/SB30.MS Spectral Window: 1 Polarization: 1 Fields: BE  
XX Antenna1 = 1 Antenna2 = 1 Time = 2007/07/22/17:58:11.099 2007/07/23/06:27:37.394



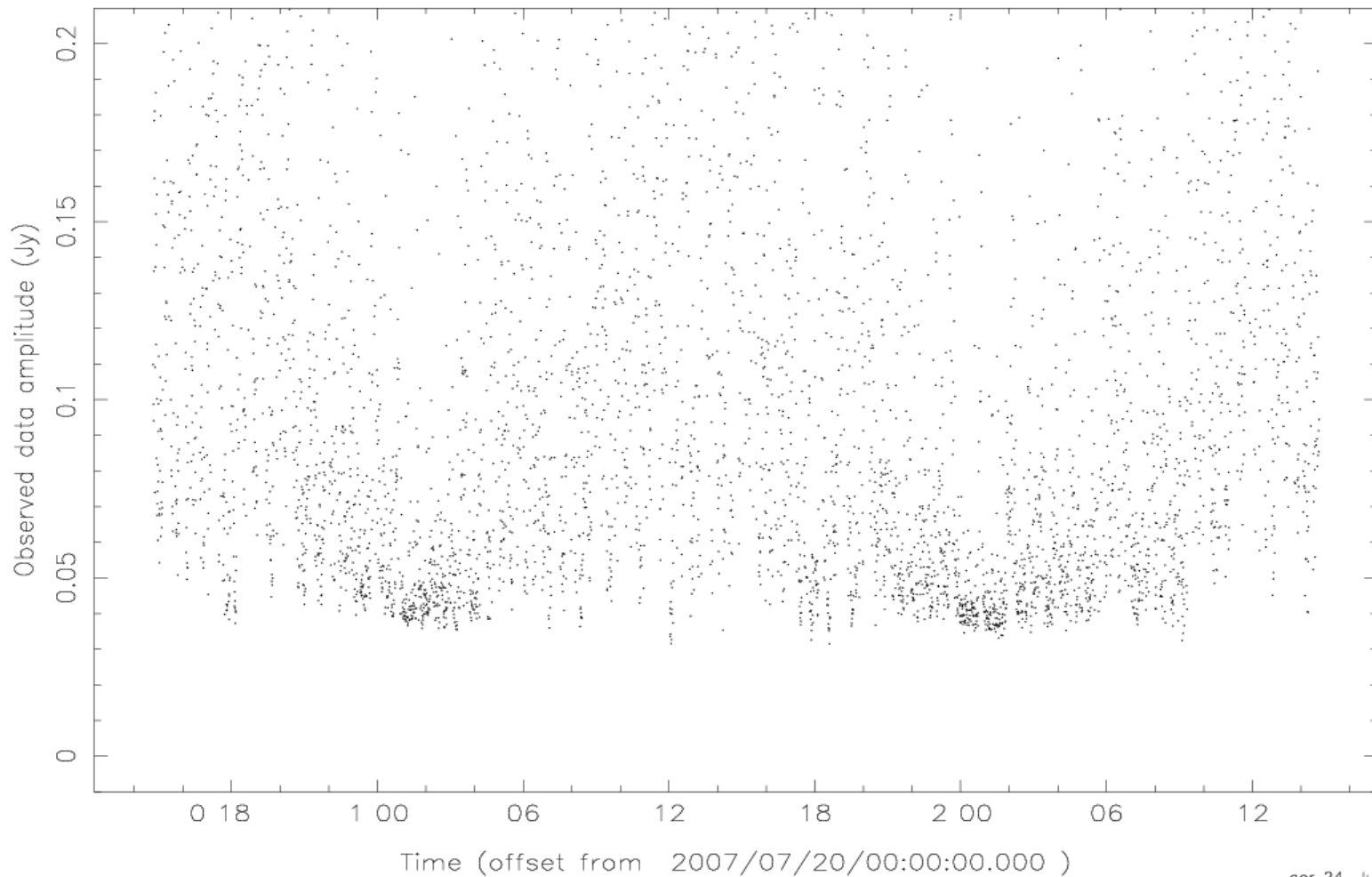
# L3388 SB30-spectrum 20-22July-07 48h

L2007\_03388.MS SB: 30 Polar: 0 Baseline: 6-6 Integration time: 30.20 s



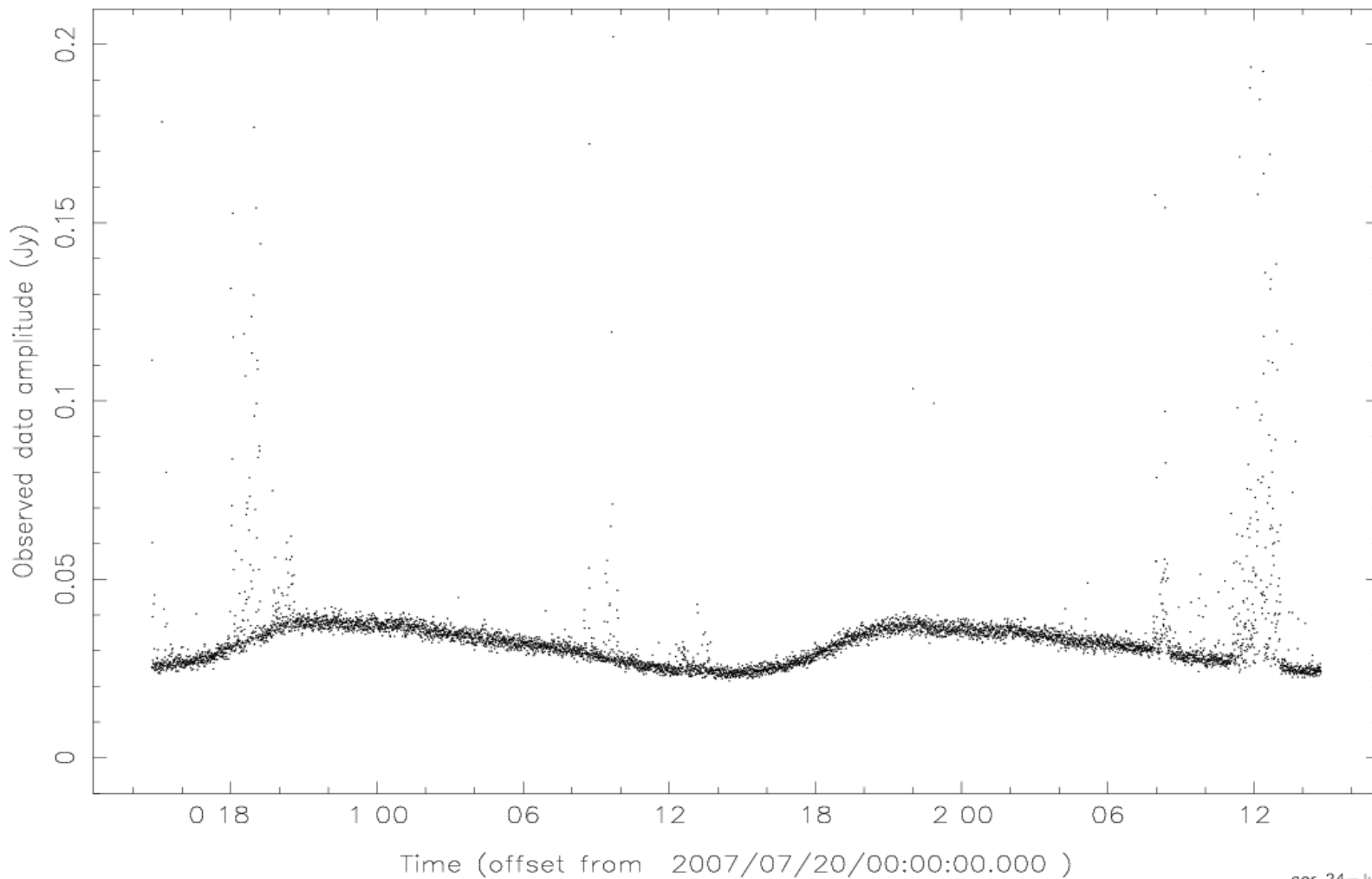
# SB30 channel 95 20-22July-07 48h

name: /dop64\_4/ger/LOFAR/CS1/data/20jul07-L3388/SB30.MS Spectral Window: 1 Polarization: 1 Fields: BE  
XX  
Antenna1 = 6 Antenna2 = 6



# SB30 channel 94 20-22July-07 48h

name: /dop64\_4/ger/LOFAR/CS1/data/20jul07-L3388/SB30.MS Spectral Window: 1 Polarization: 1 Fields: BE  
XX  
Antenna1 = 6 Antenna2 = 6



# Observing schedule and planning (25 -15 Aug 2007)

Meeting every Thursday afternoon (Holties, Foley, Norden, Romein, Brentjens, de Bruyn) to discuss status of hardware/software and weekend experiments

## Long term summer (vacation) schedule:

1) 'Technical' commissioning HBA:

- HBA using CS001-008-010-016 16 microstations
- LBA observations near NCP (repeat of 20-22 July)
- Heterogeneous-feed LBA array observations on CasA/CygA

2) 'Astronomical' commissioning:

- Pulsars with HBA / LBA (Ben/Ramesh)
- Transient area (Casey) : 5x12h done , 5 to go ?

3) Any other ?