

CS-1 developments: 6 - 19 Sep 2007

- **General**

LOFAR descoping discussions ended --> advice to ASTRON Board (21 sep 07)

2) Hardware-Rollout :

a) rotation of the 3 'unused' LBA dipoles on the 12 microstations completed

- additional LCU's in CS010 to go from 16 to 24 microstations by mid-September

- Tile/dipole HBA switch operation sep/oct

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)
-

4) CEP (SAS/MAC/OLAP)

- back up !

Progress reports on observations and data analysis (1)

- **New observations (see 'Lofar operations wiki' for Catalog)**

None were taken in last two weeks

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

- Sarod: incorporating beam--> fluxes good to 5 % ?
- fluxes in 38 MHz subbands to be compared with Rees -38 MHz (8C cat) (Leiden??)
- (next step to include spectral indices ?)

- Joris/Pandey: BBS ready to run batches, parallelized
Effects of bad raw data and bad solutions (corrected data) !
Flagging on both types needed

Progress reports on observations and data analysis (2)

7) Imaging issues

Deep NCP field on NCP with LBA (36 subbands, 38-59 MHz, 3x24h)

HBA station positions to be improved

Understanding polarisation images

8) Noise / RFI analysis

Ongoing:

- analysis HBA 1s-1kHz data : 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 $T_{\text{sys}}/A_{\text{eff}}$ for HBA dipoles to be done

- S/N in 10-30 MHz sbband data

- future impact of DAB cahnnels 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

Johans beam in BBS?

§ **Ionospheric modeling:**

GPS TEC fitting: Maaijke, Jim, Jan

Ongoing MeqTrees efforts in Leiden: van Bommel, Intema, Rottgering

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

Flux scale issues still pending

38-58 MHz spectra needed

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.

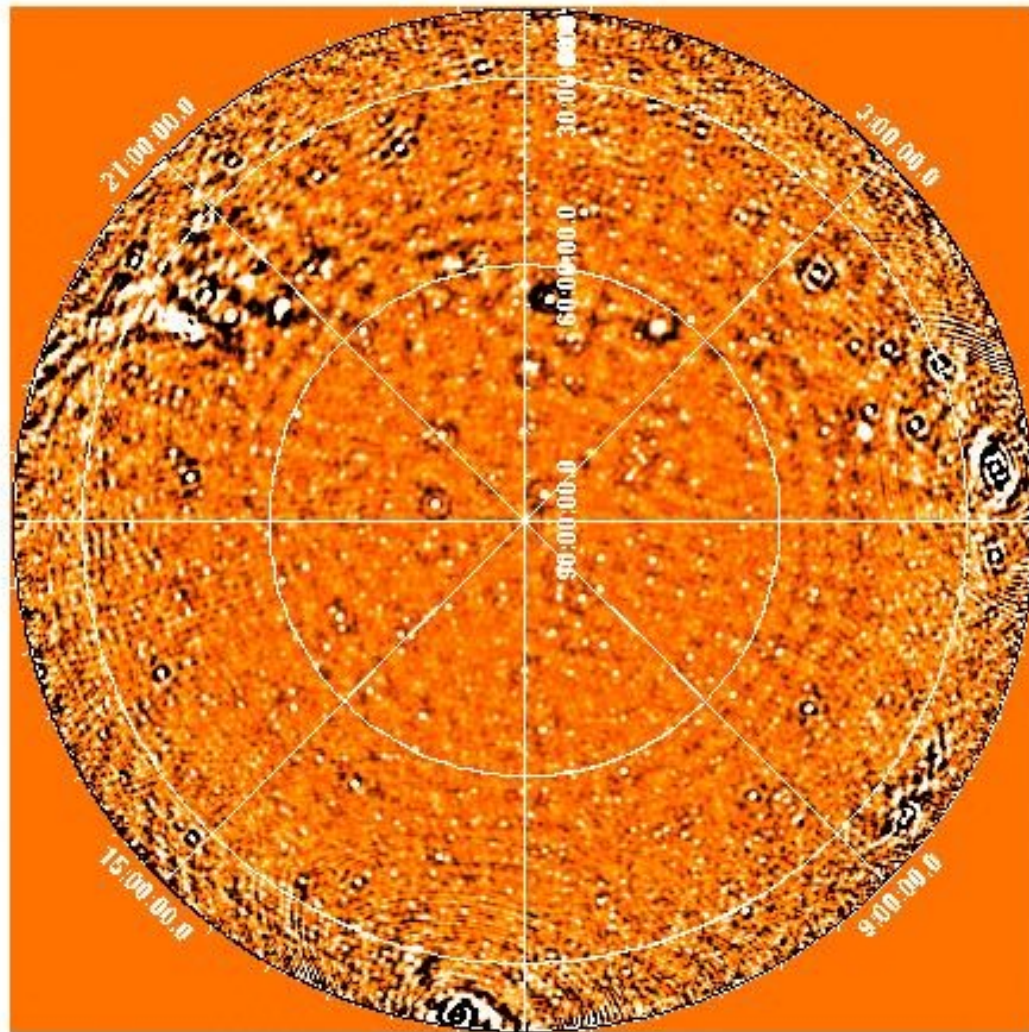
Observing schedule and planning (19 -26 Sep 2007)

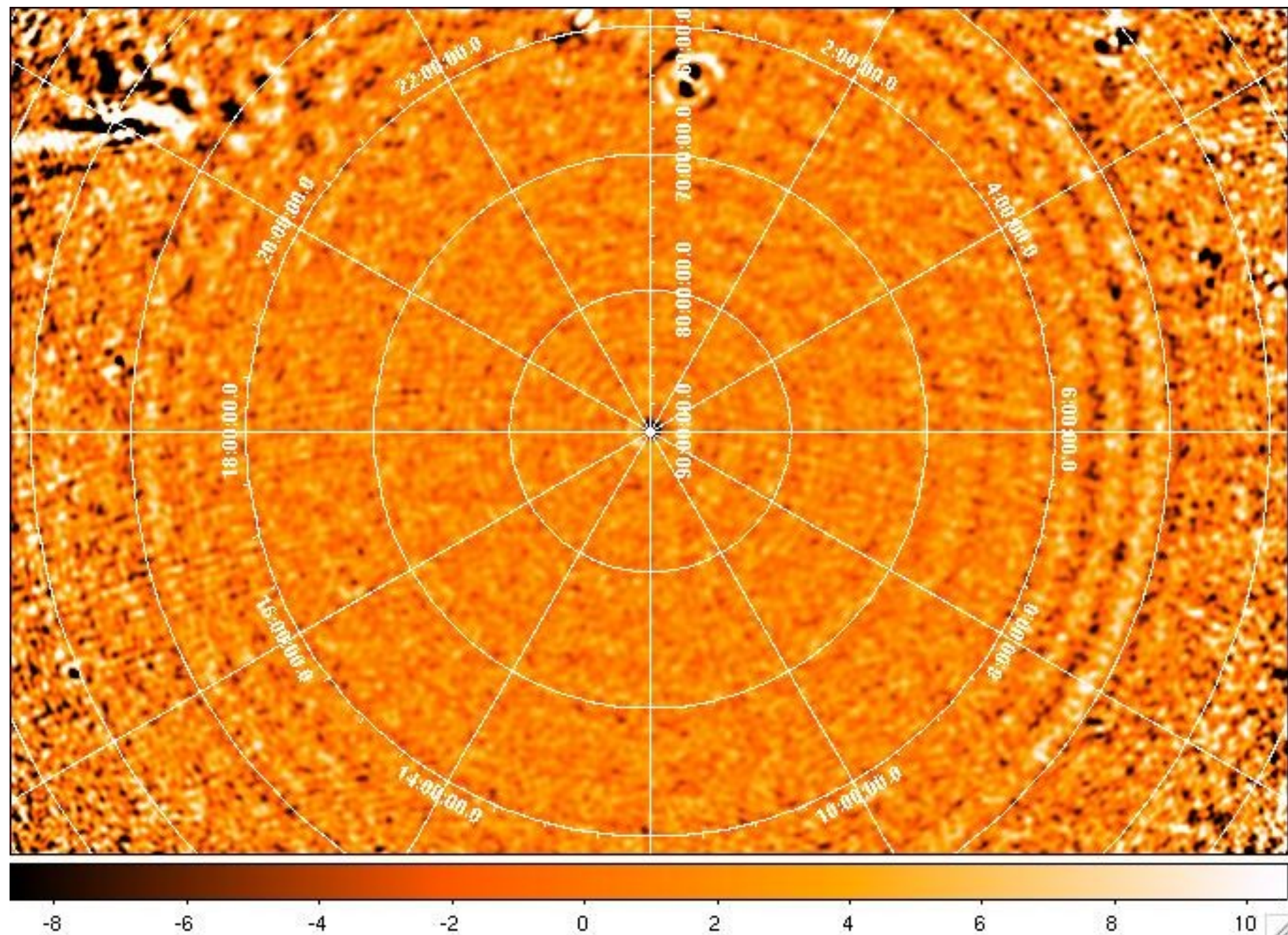
Activities coming up:

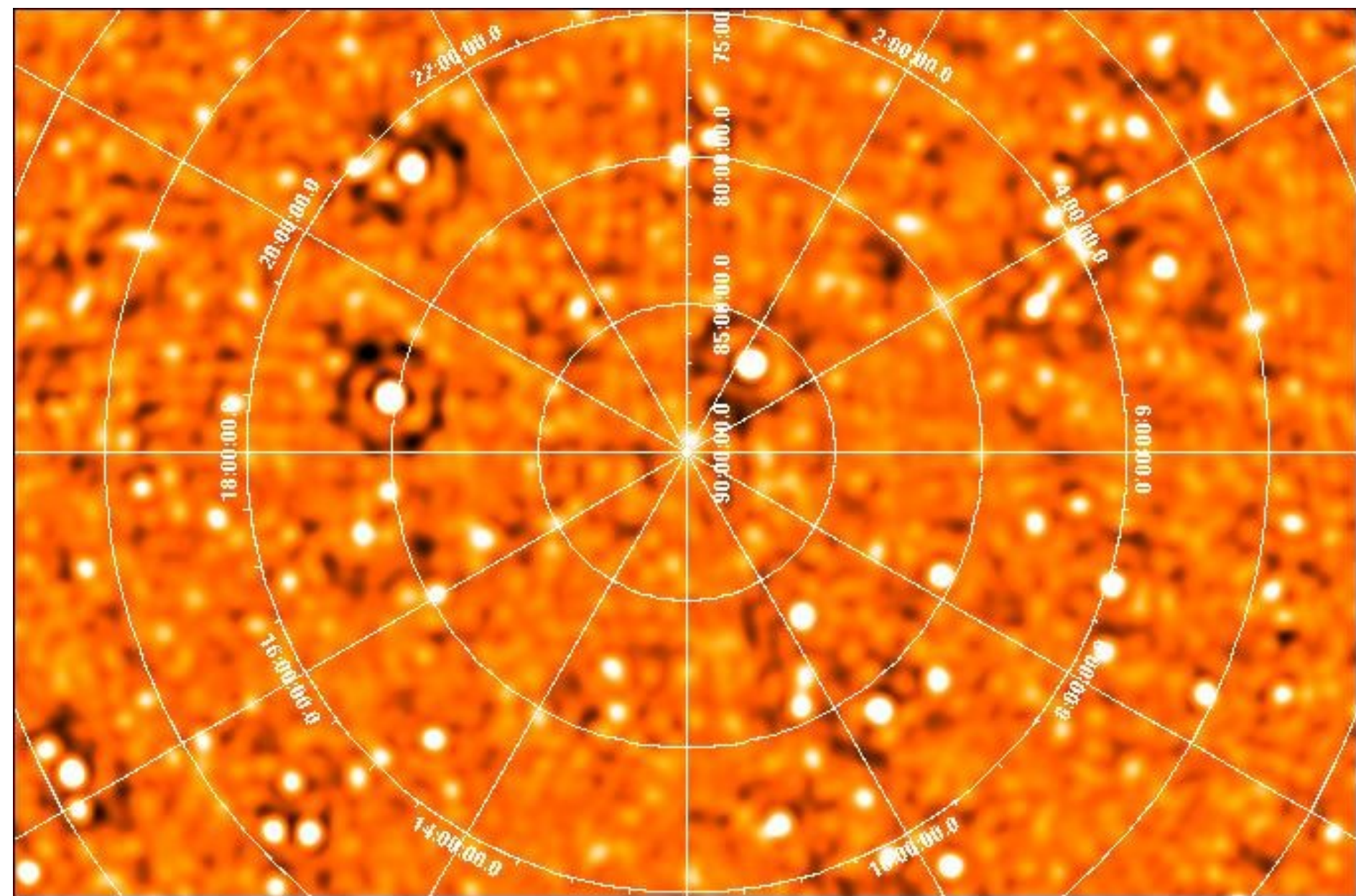
- o HBA experiments
- o > CS-1 experiments with heterogeneous LBA dipole arrays
- o > ? Sep: better uv-coverages (16 --> 24 microstations (12+4+4+4) --> deeper images
- o > Oct: New HBA switches available (on CS010: 6 tiles +30 dipoles)

- o New 10-30 MHz data, imaging and S/N estimation
- o thoughts on experiments to investigate issues resulting from descope
e.g. HBA/LBA frequency mosaicing, redundancy issues (in station HBA, or in CS-1), 2 beam correlation at CEP (CasA/CygA, 48dip microstation)

Deep NCP image at LBA ~50 MHz (3388,3463+3464)
with beam correction applied !! SBY







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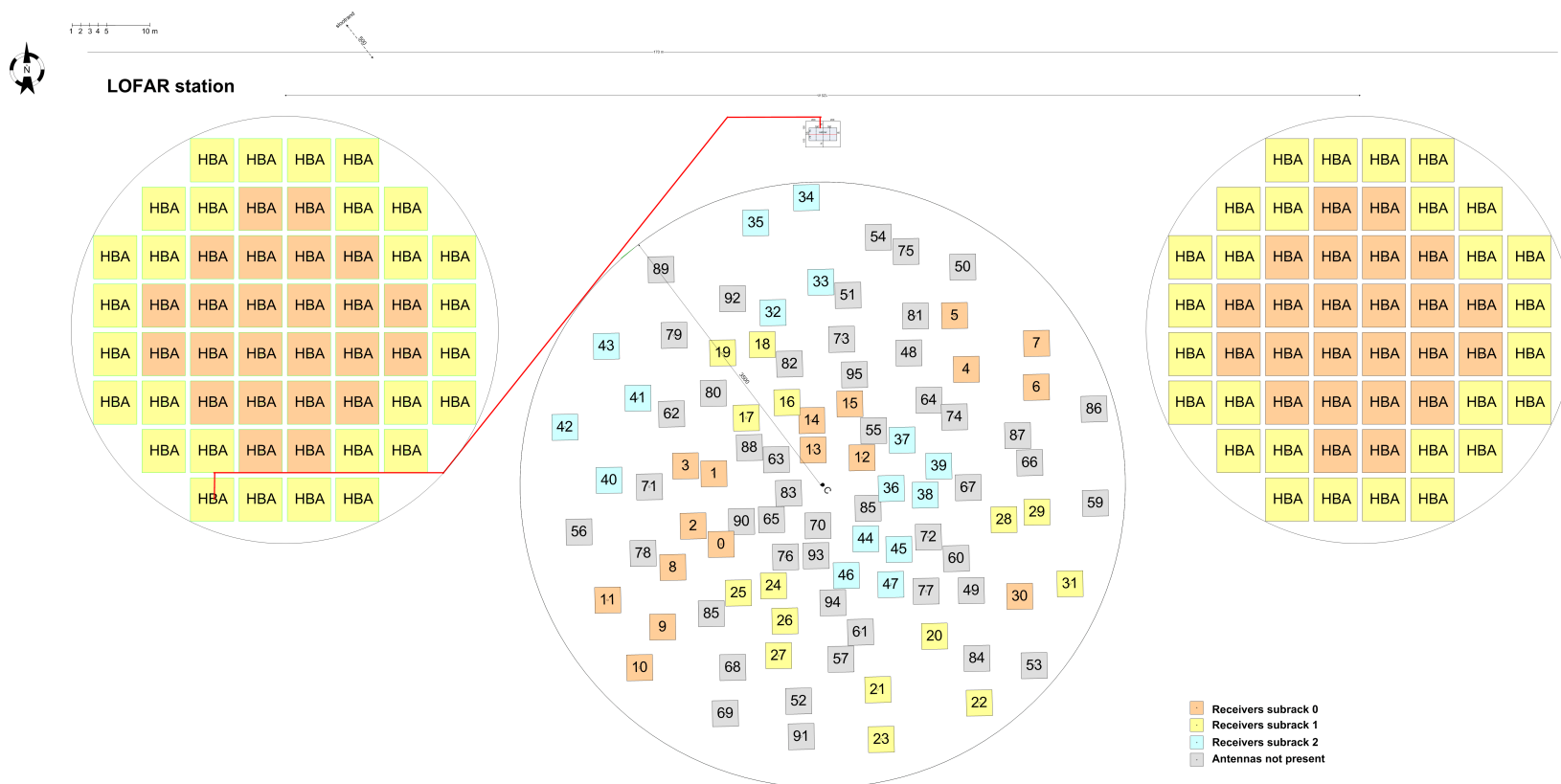
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Possible station layout after rescope

HBA LBA HBA



HBA (DAB band III, channel 12C) 228 MHz

(L3743, SB18, 28 Aug07)

