ASTRON

Netherlands Institute for Radio Astronomy

MSSS Update

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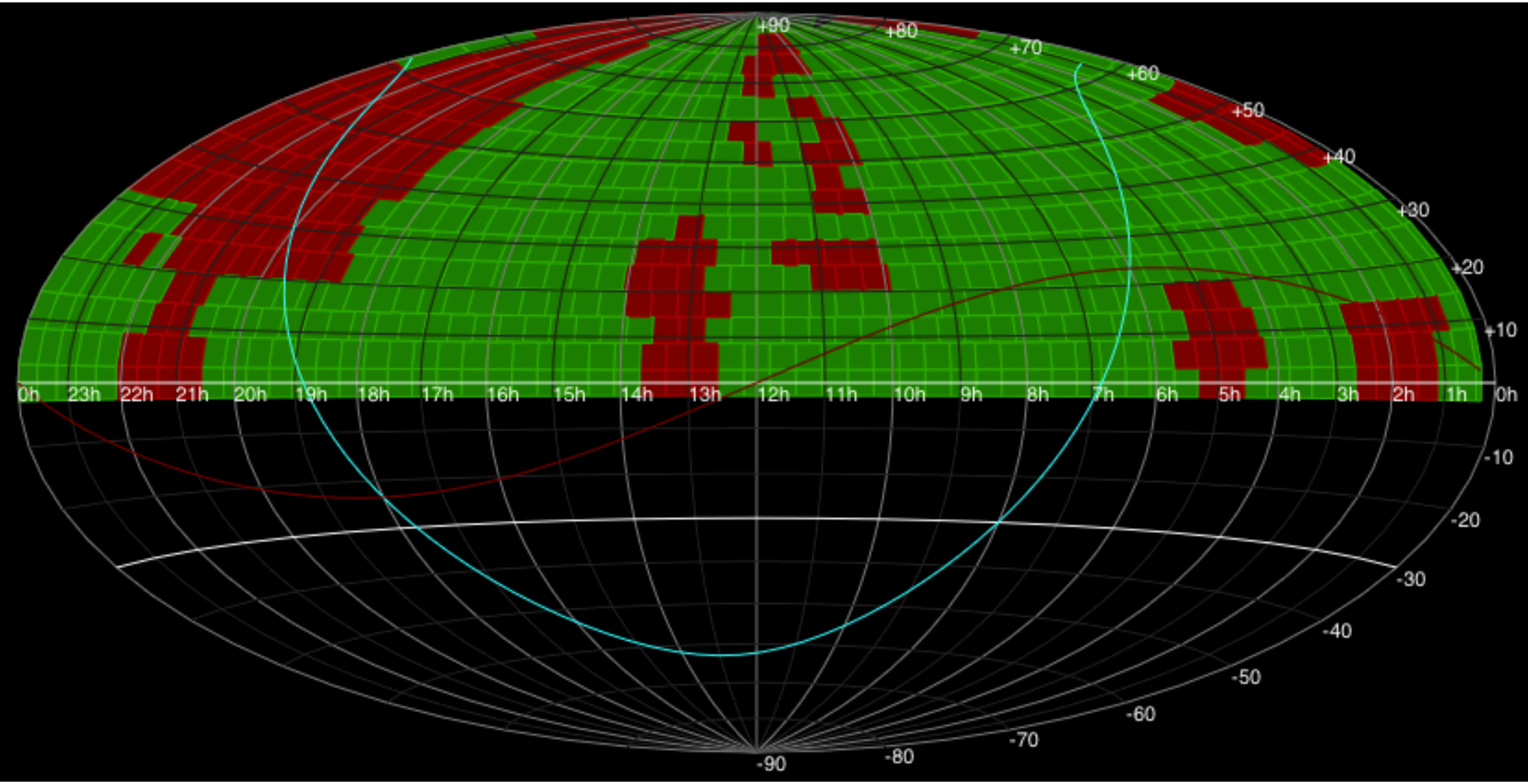
(on behalf of the MSSS Team)
LSM, 4 April 2012

MSSS Status

- MSSS-LBA: 492/660 fields observed = 75% complete

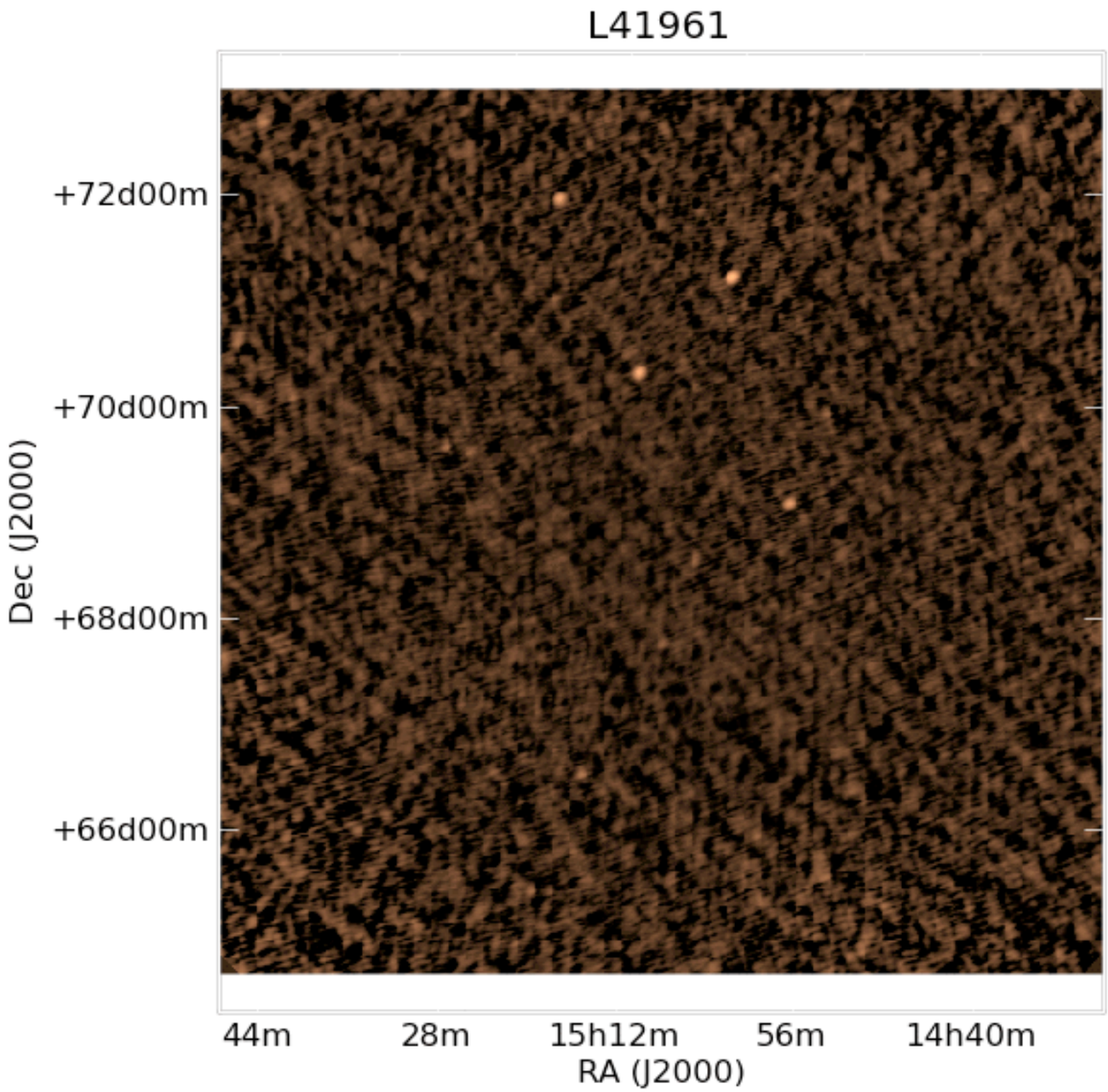


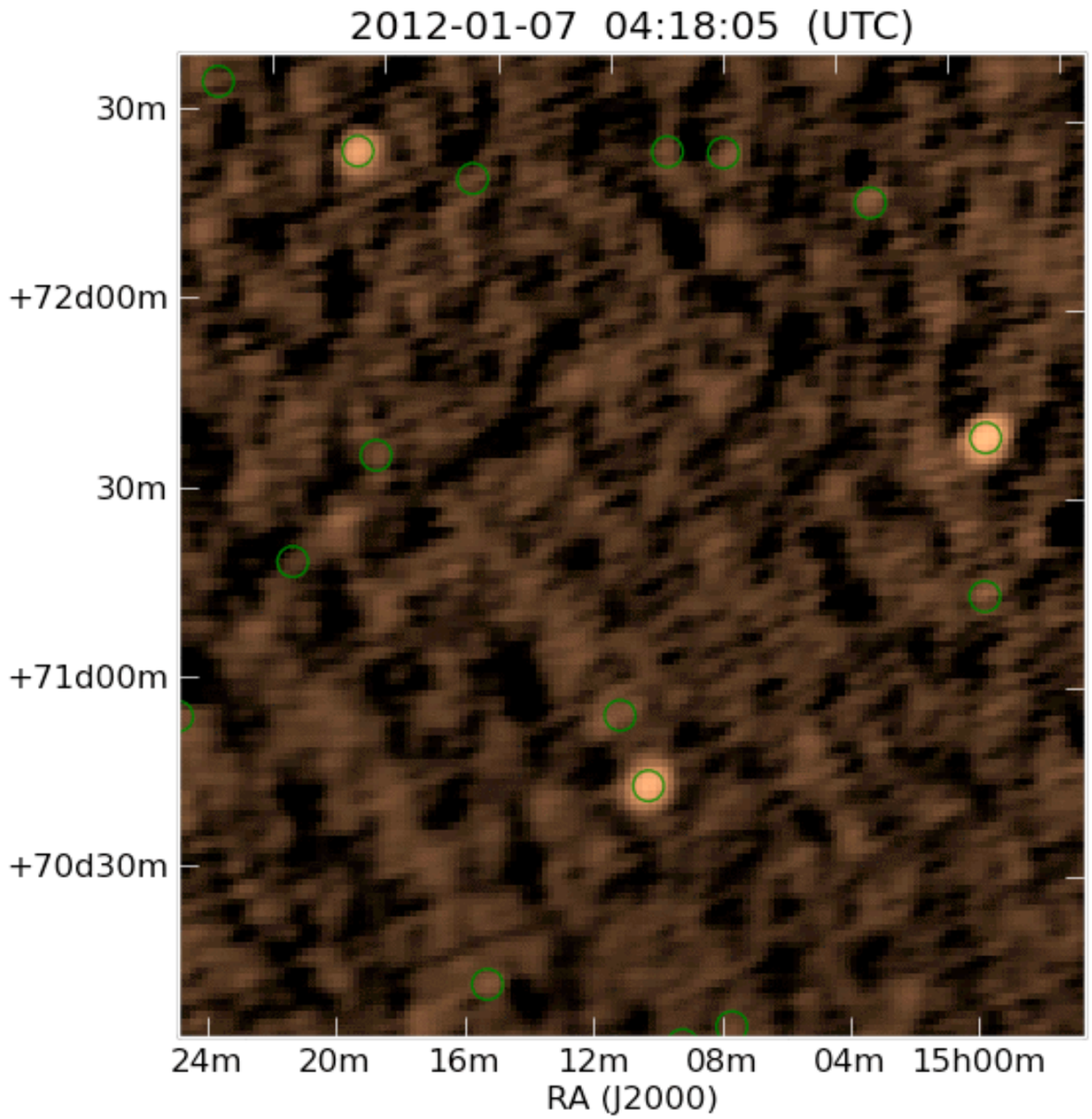
Processing status

- Recall:
  - Images can be regularly produced in an automated fashion (much faster now thanks to work by John Swinbank)
    - These steps now being implemented in SIP for v1.0
  - Results in images which are typically ~VLSS sensitivity and resolution (in 8 simultaneous LBA bands between 30-74 MHz)
  - Beam issues seem to be under control to first order
  - Use of beam models in BBS and awimager is being regularly exercised now in MSSS processing

Recent progress

- Recent efforts have tried various methods to push the sensitivity lower toward optimistic expectations





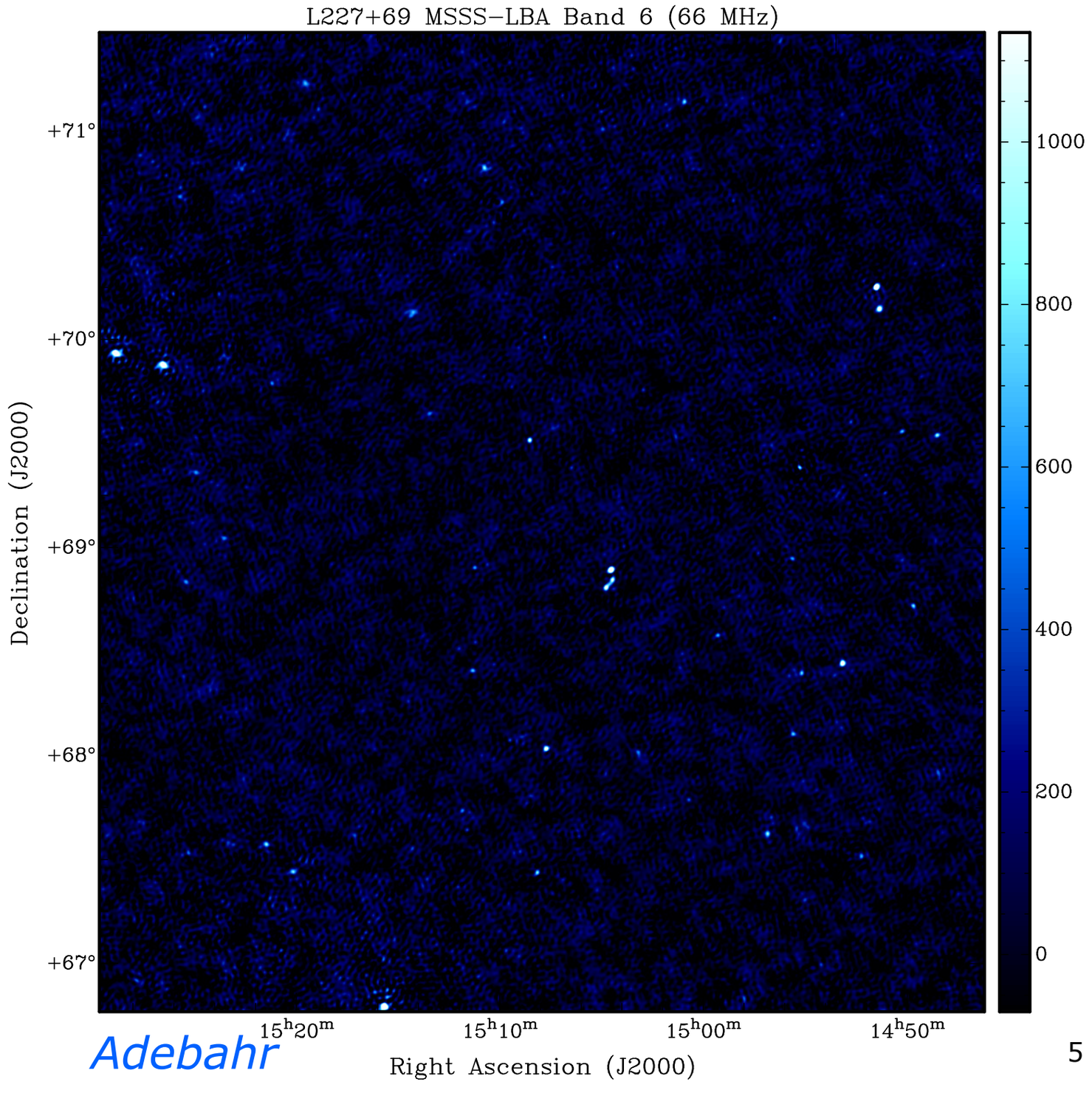
Stewart & van Velzen

Direction-dependent solutions

- Tried in both BBS and sagecal, with intriguing results
  - Need to consider both runtime and flux scale....

Image noise 85 mJy/beam

Resolution 70”



Adebahr

New demixing

- New demixing implemented in NDPPP, see wiki.
- Parallelization now in progress: expected speedup by factor of several (to be quantified in the coming ~week)

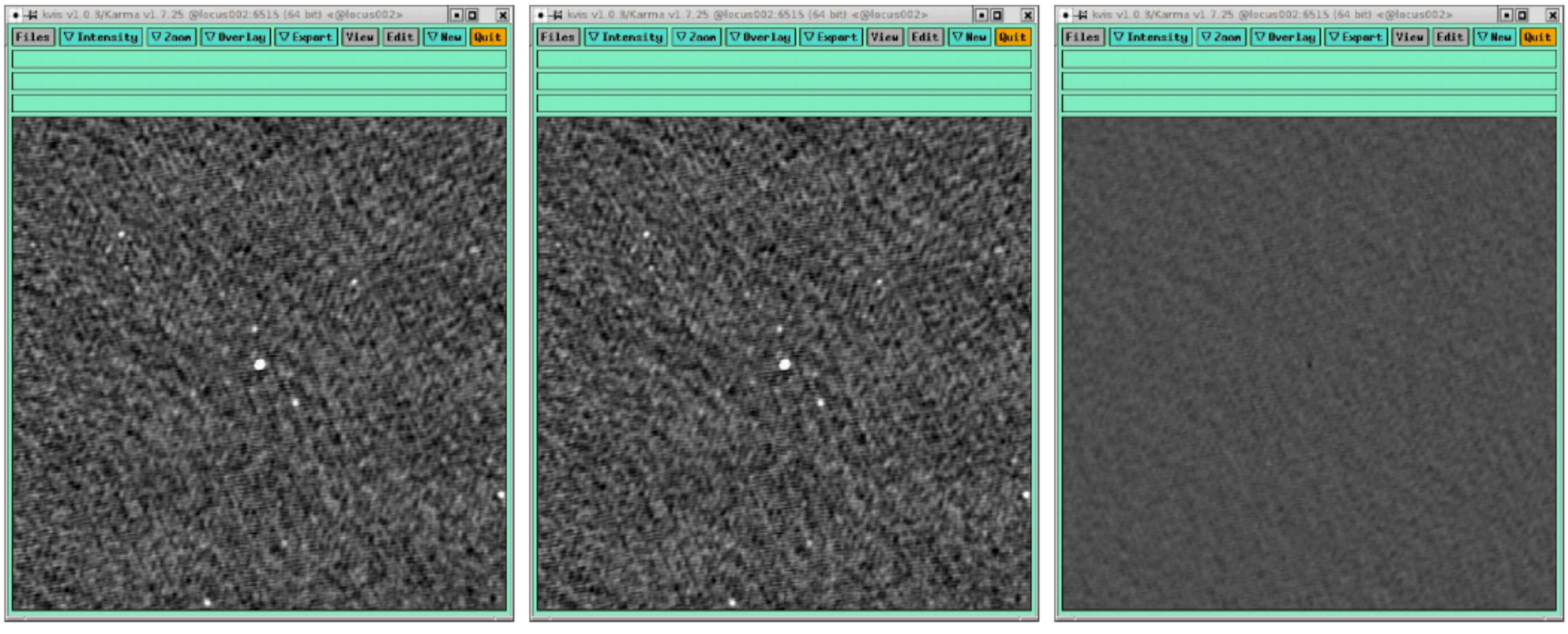
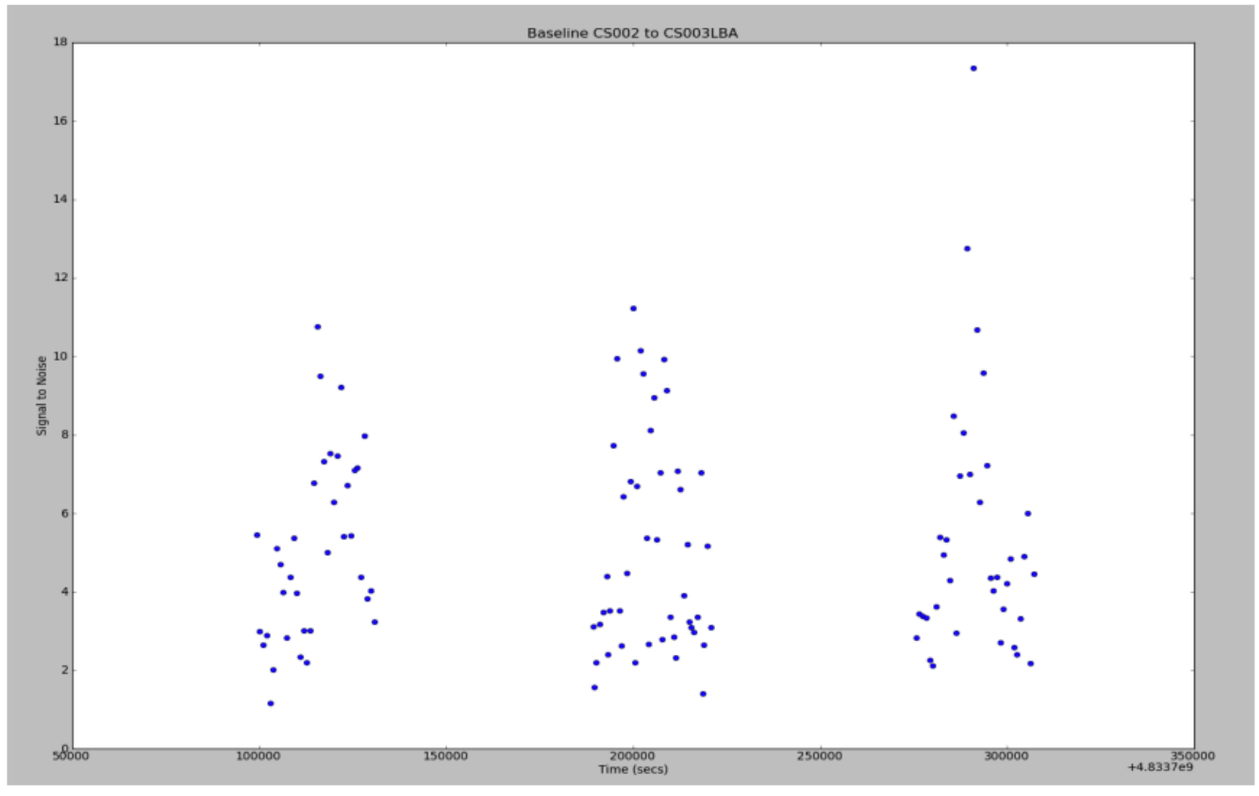


Figure 1: Image of 3C295, left: after demixing with NDPPP, middle: after demixing with the demixing script, right: difference of the two images.

Horneffer

Quality control

- Various efforts in progress to identify bad stations
  - asciistats / statsplot (Martinez & Pandey)
  - badstations (Offringa)
- Script under development to assess quality of *whole weekends*



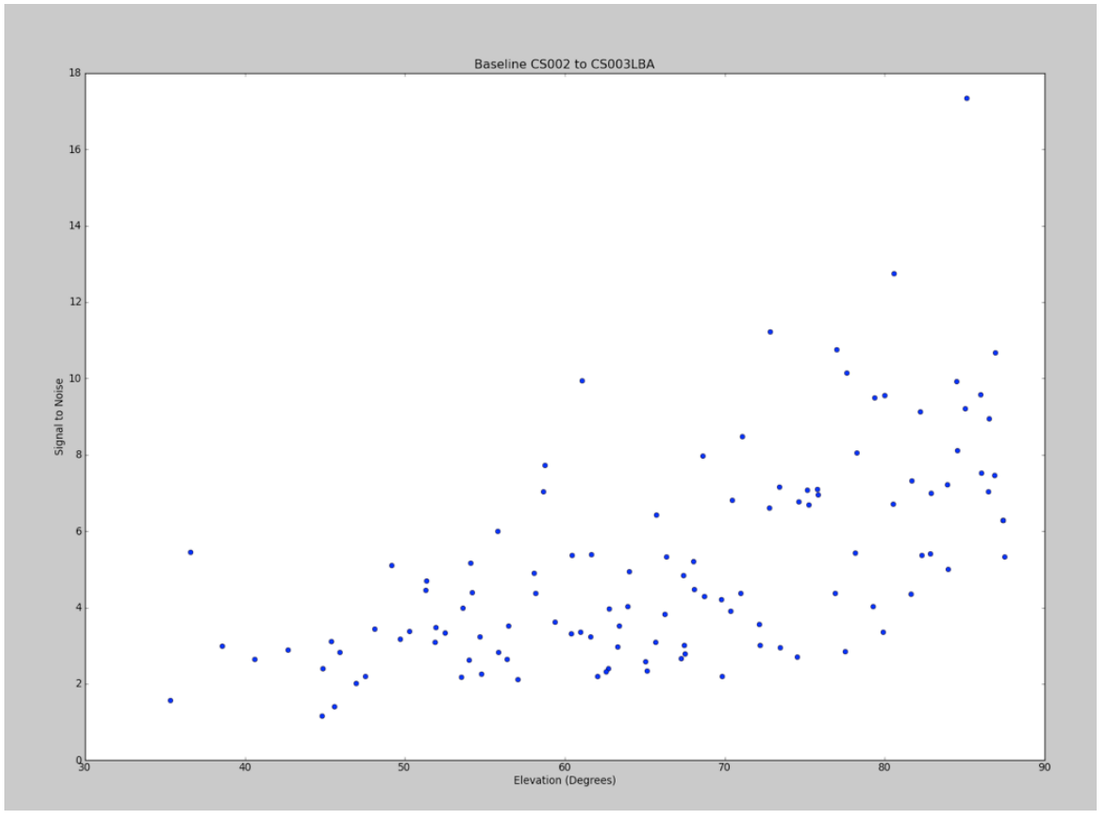


Fig 2. Signal to noise ratio of the visibilities for baseline CS002LBA to CS003LBA for the weekend

Mulcahy