

LOFAR Imaging Busy Week: Pipeline Progress

*LOFAR Status Meeting
September 16, 2009*

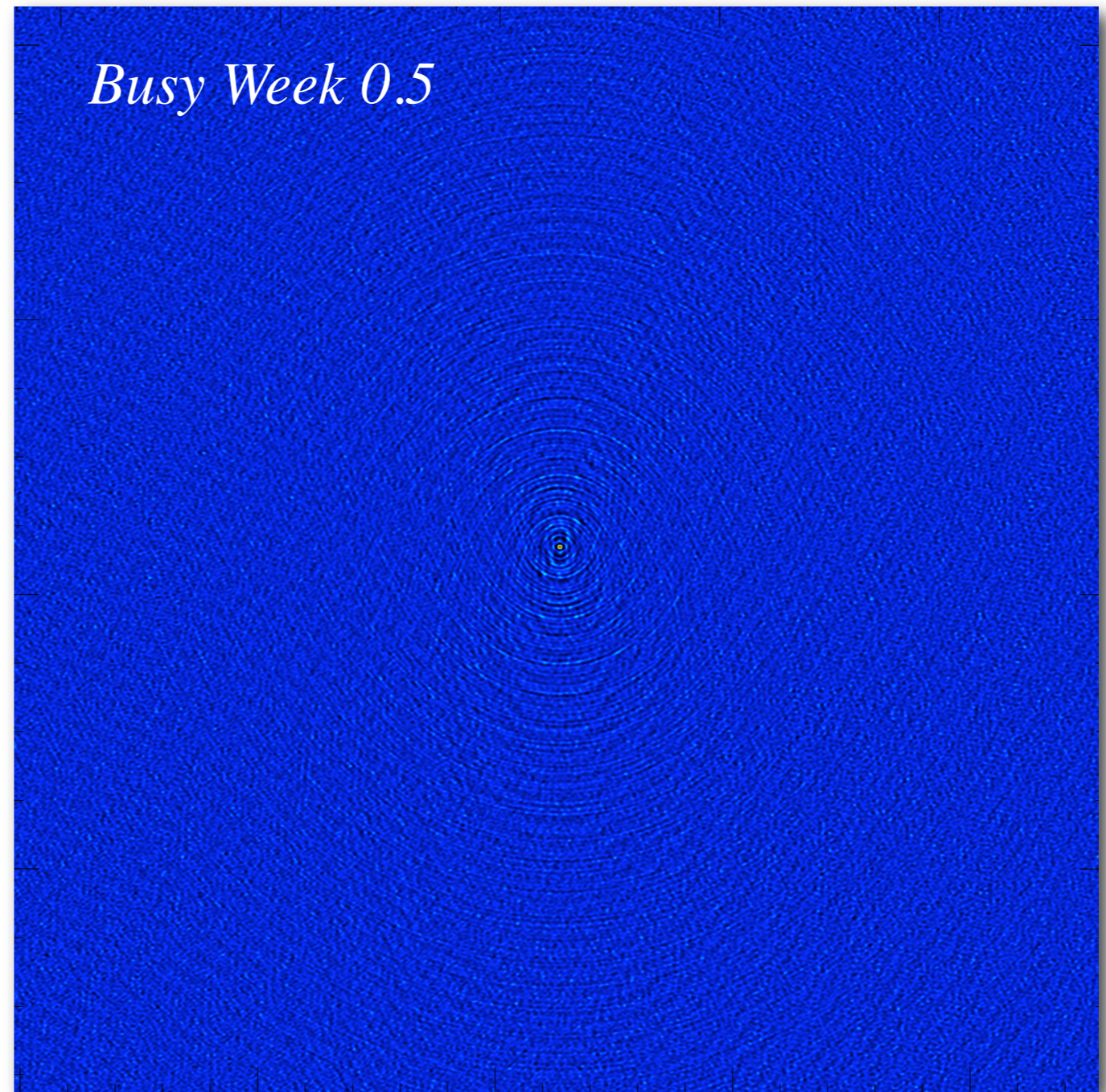
**Michael Wise, George Heald, John Swinbank,
Joris van Zwieten, Niruj Mohan, David Rafferty,
& Cast and Crew of Busy Week 1**

The Data

- Observation of 3C196
- 60 hrs, 30-75 MHz
- 72 subbands, 5 sec integrations
- 5 stations (CS302, RS106, RS208, RS307, RS503)
- Originally included Effelsberg

The Issues

- Position errors with Effelsberg
- Strong RFI on Effelsberg baselines
- Quality and performance issues with MAD flagger
- UVW issue in DPPP
- Required manual flagging
- Needed to augment pipeline



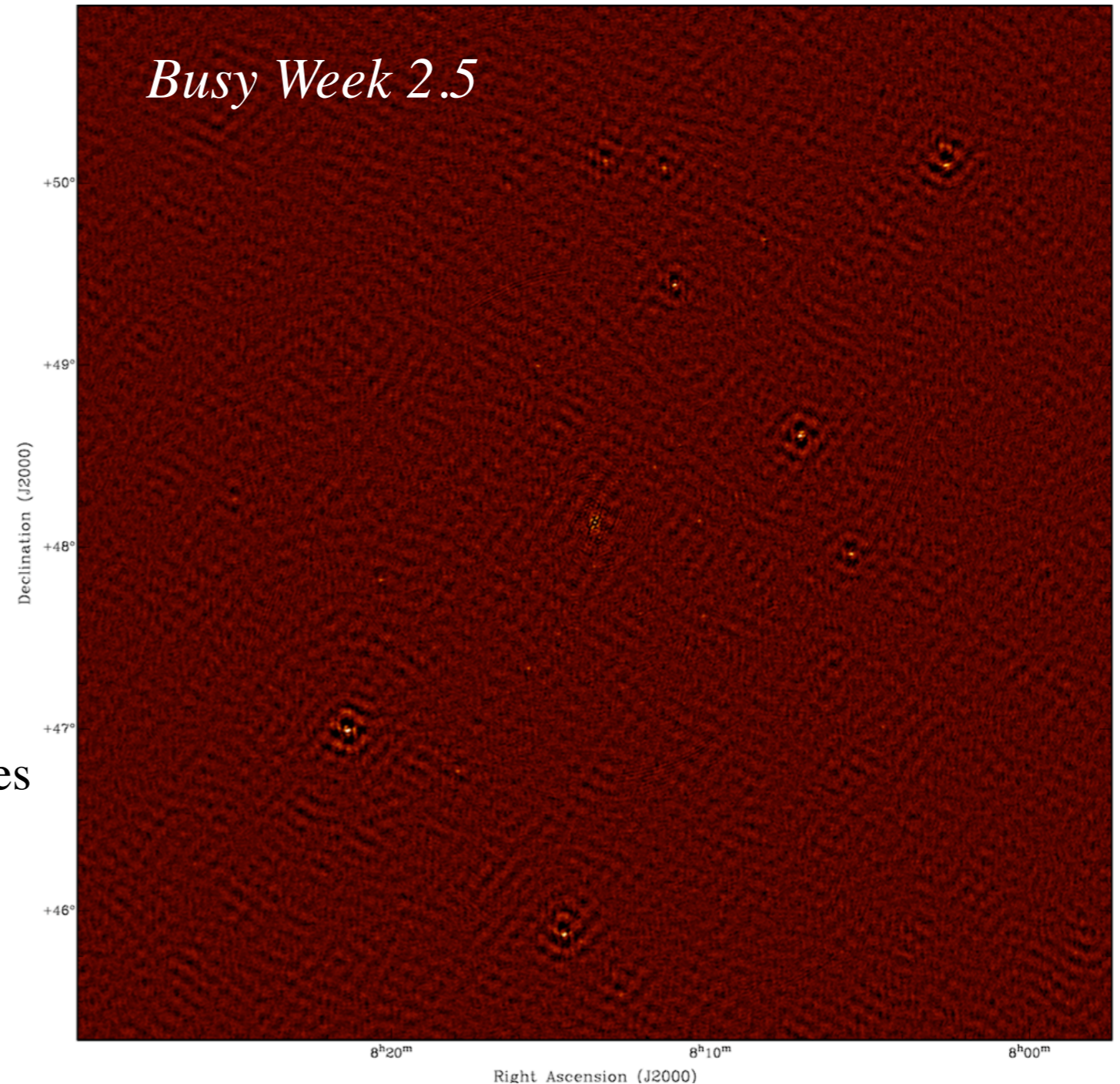
*Averaged 17 subband image, 30-75 MHz
Manually flagged, calibrated, and imaged*

The Data

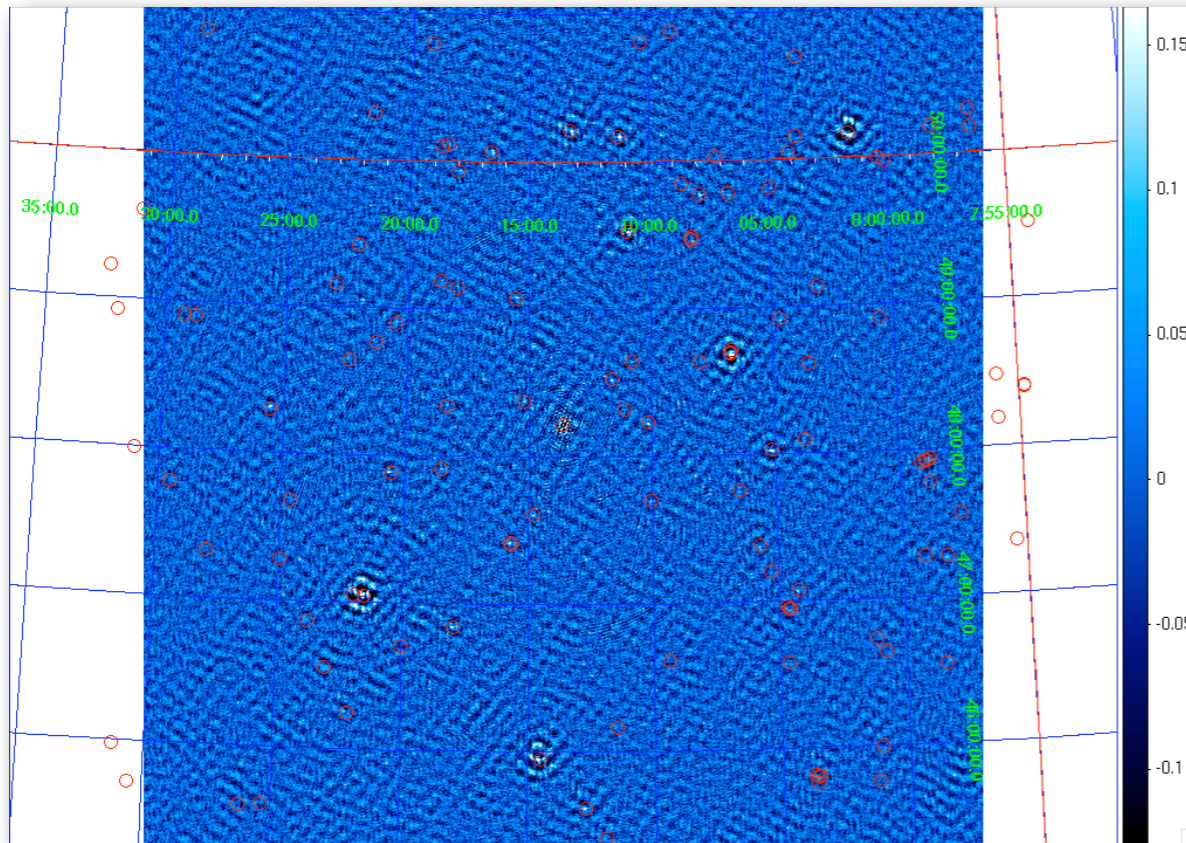
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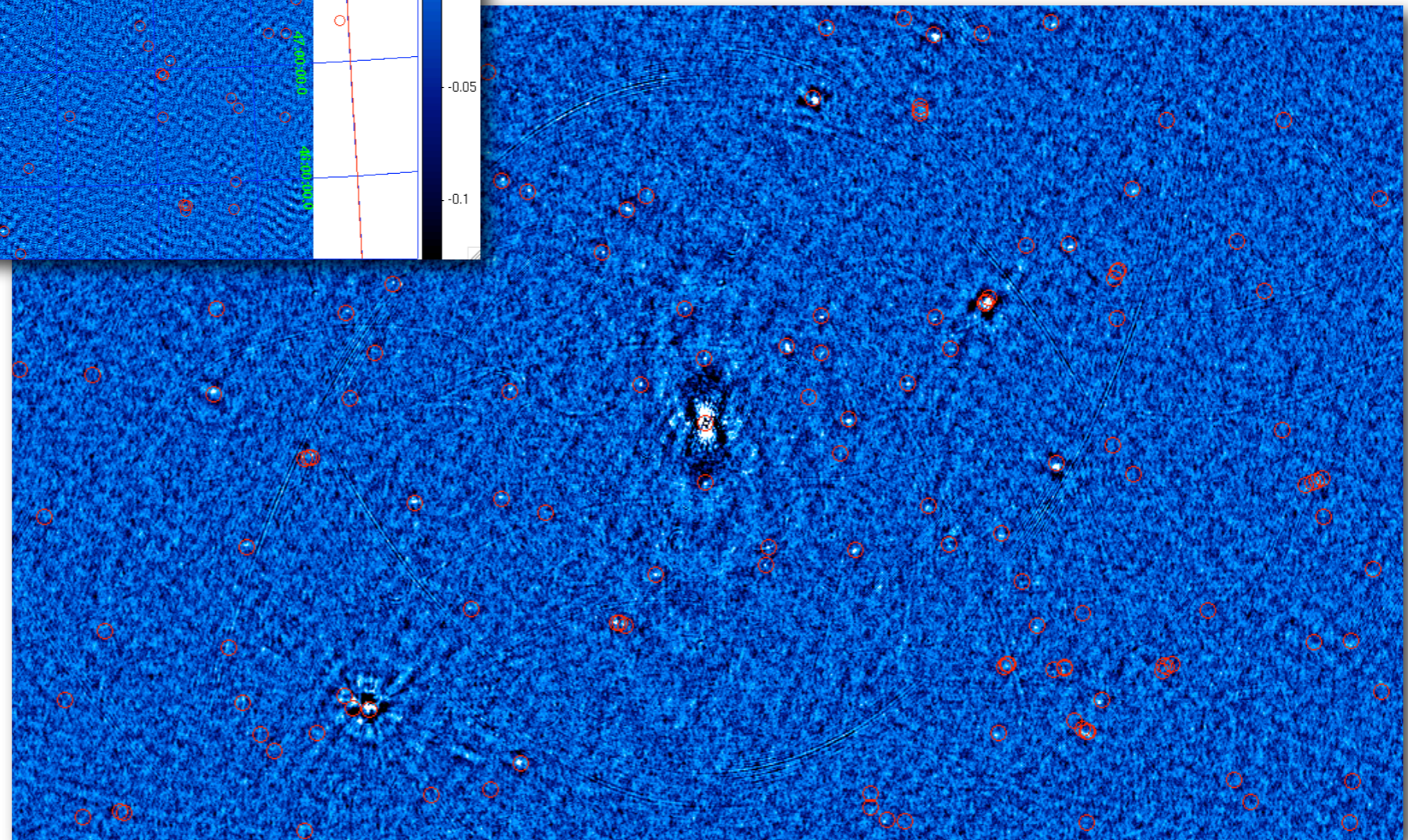
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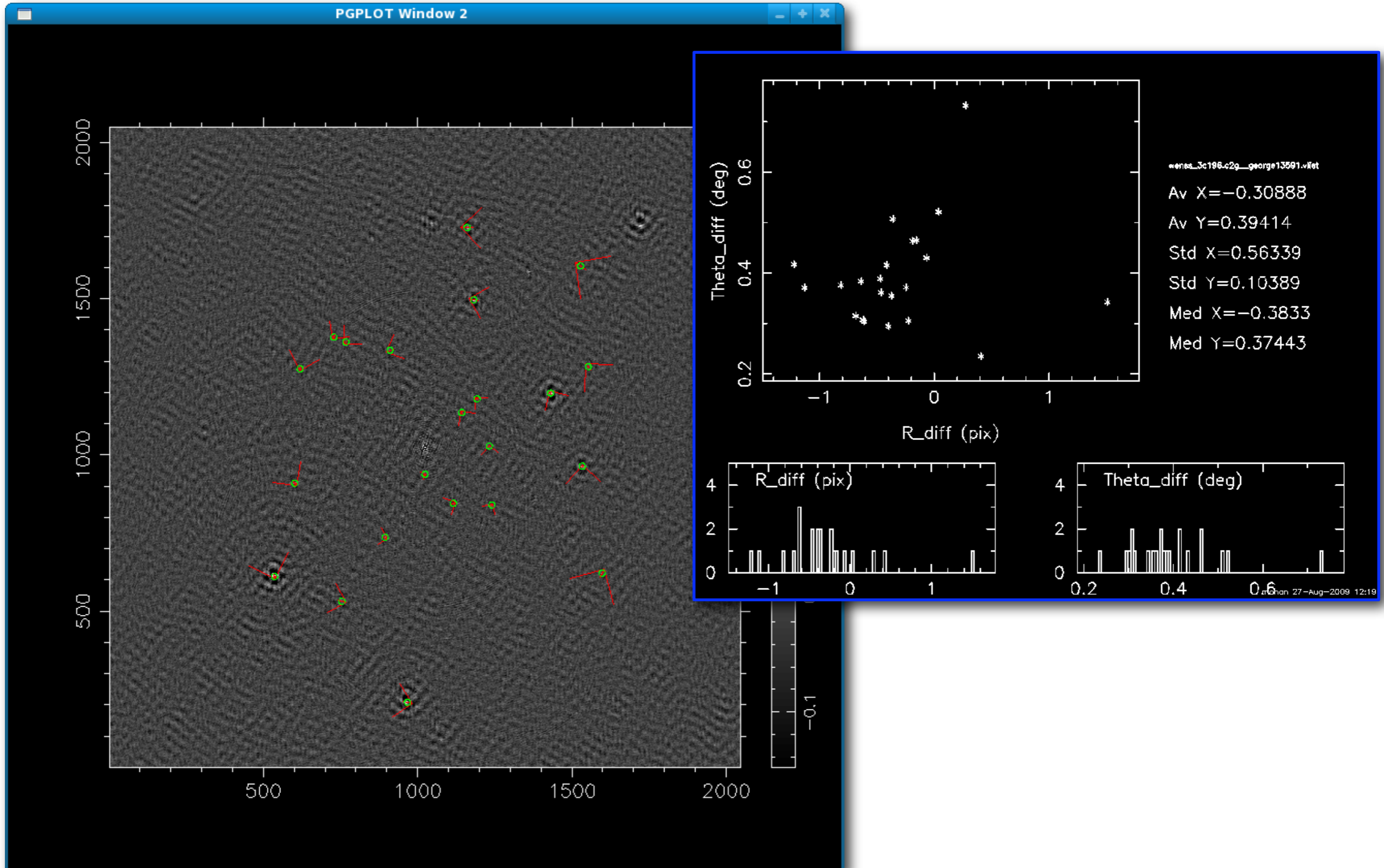


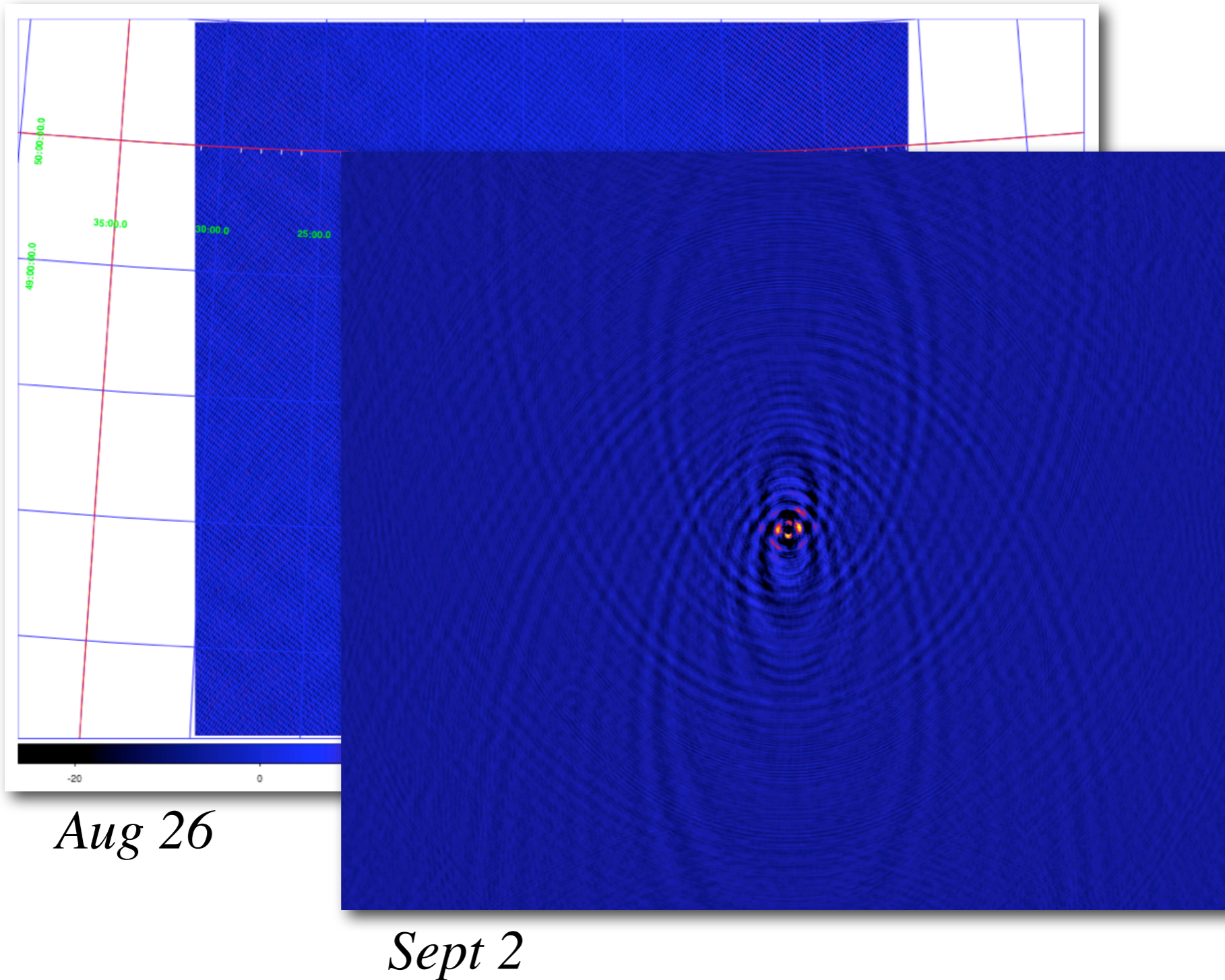
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*Correlated with WENSS data using
PyBDSM (N. Mohan)*

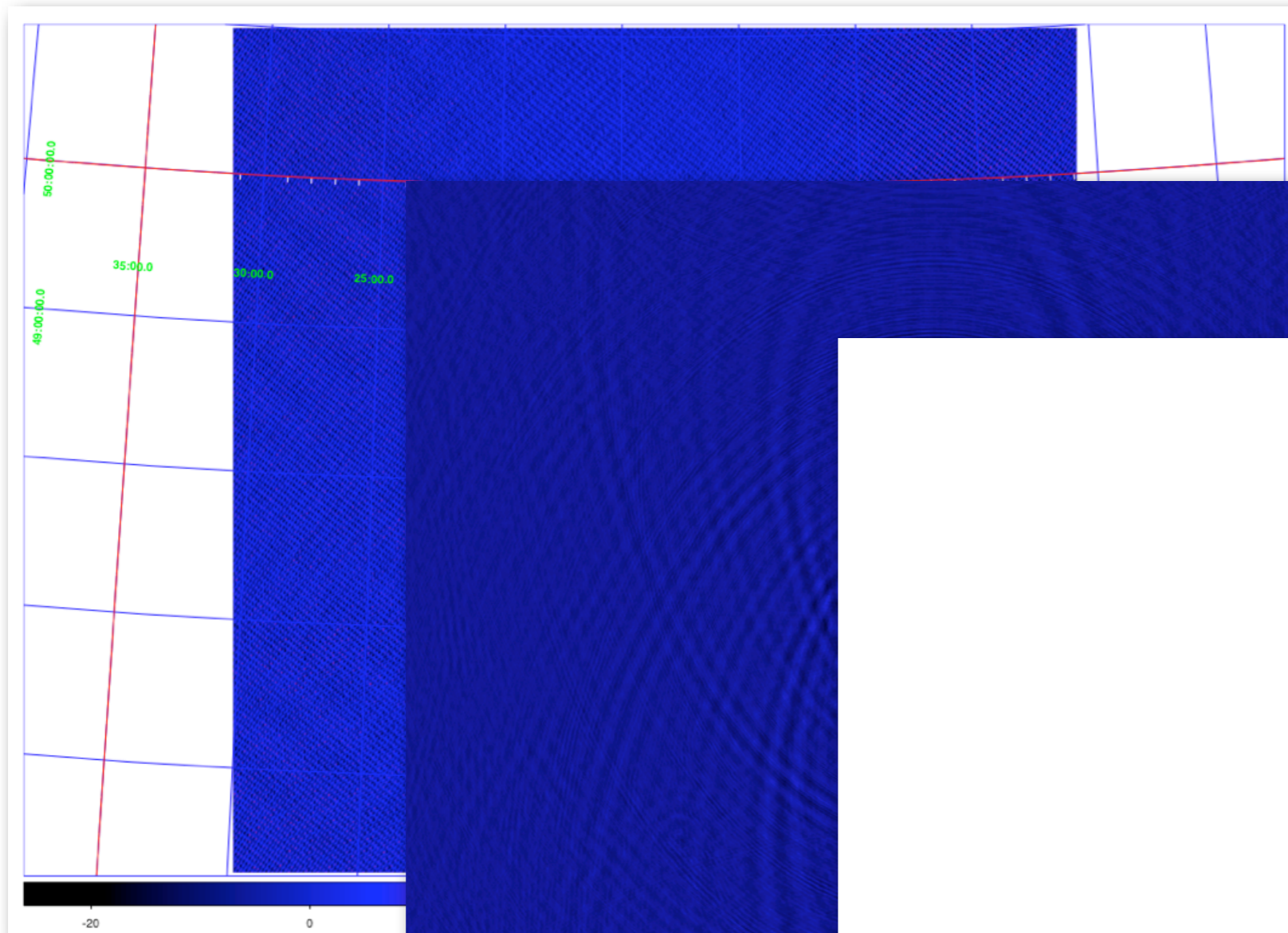






Aug 26

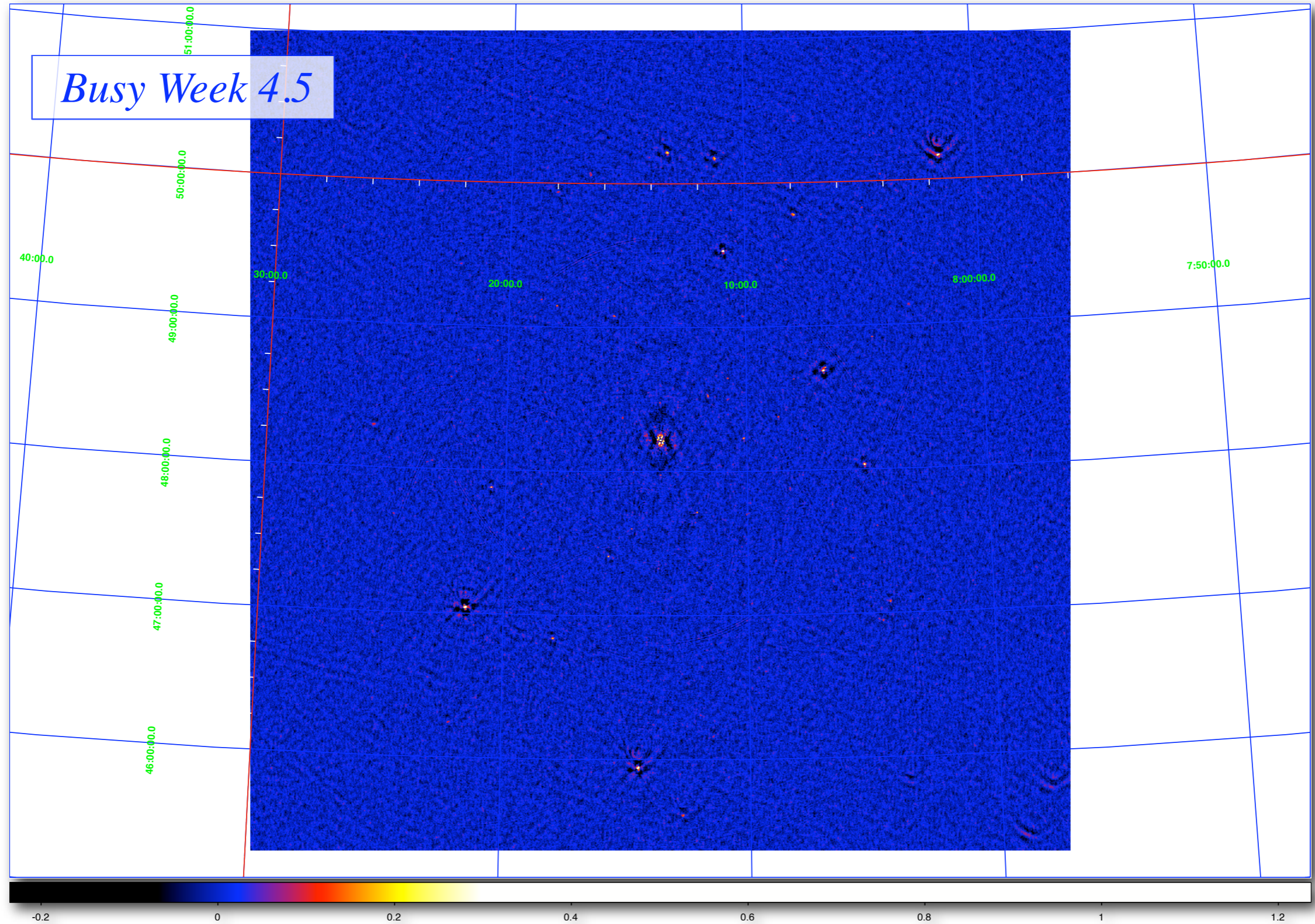
Sept 2

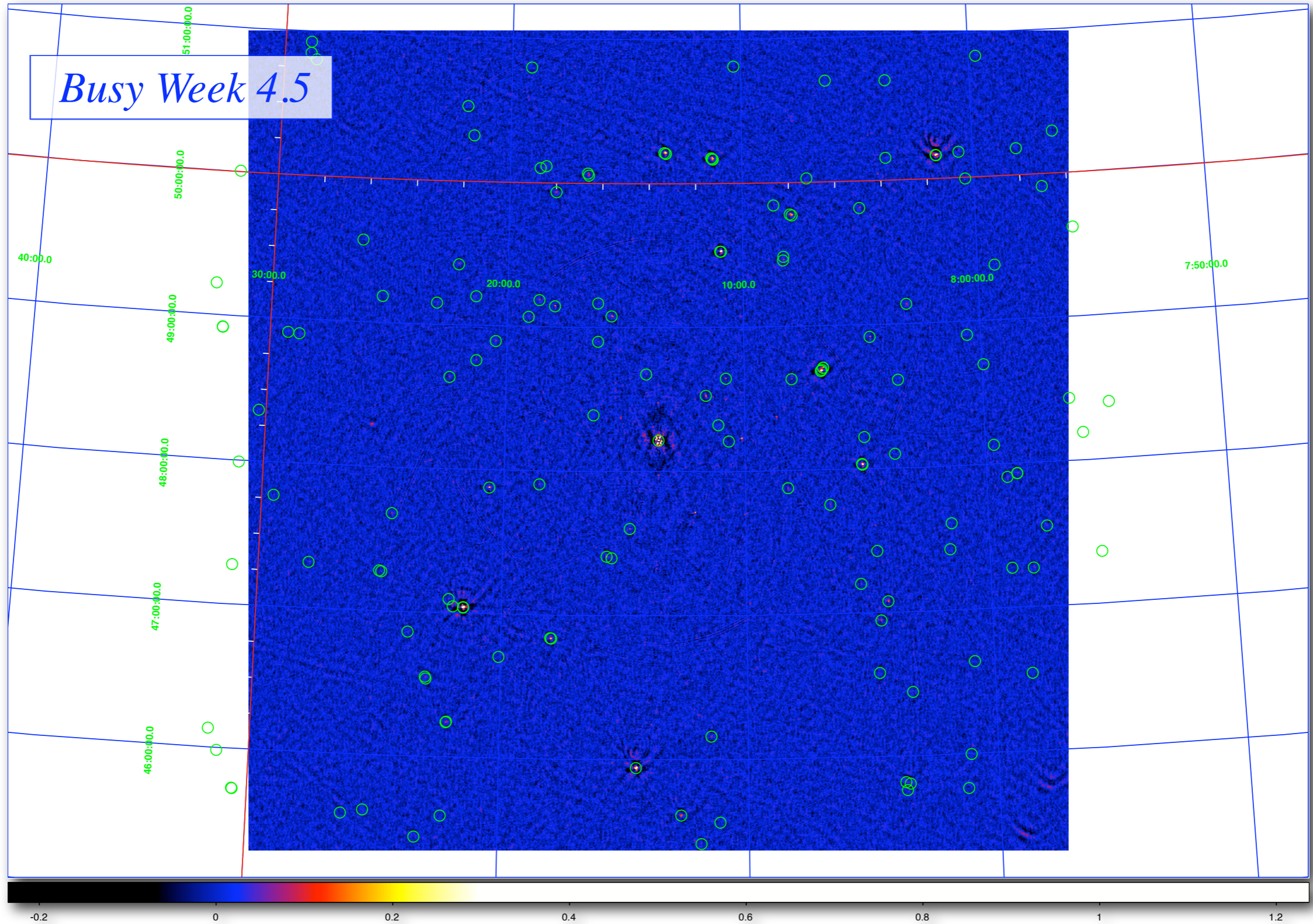


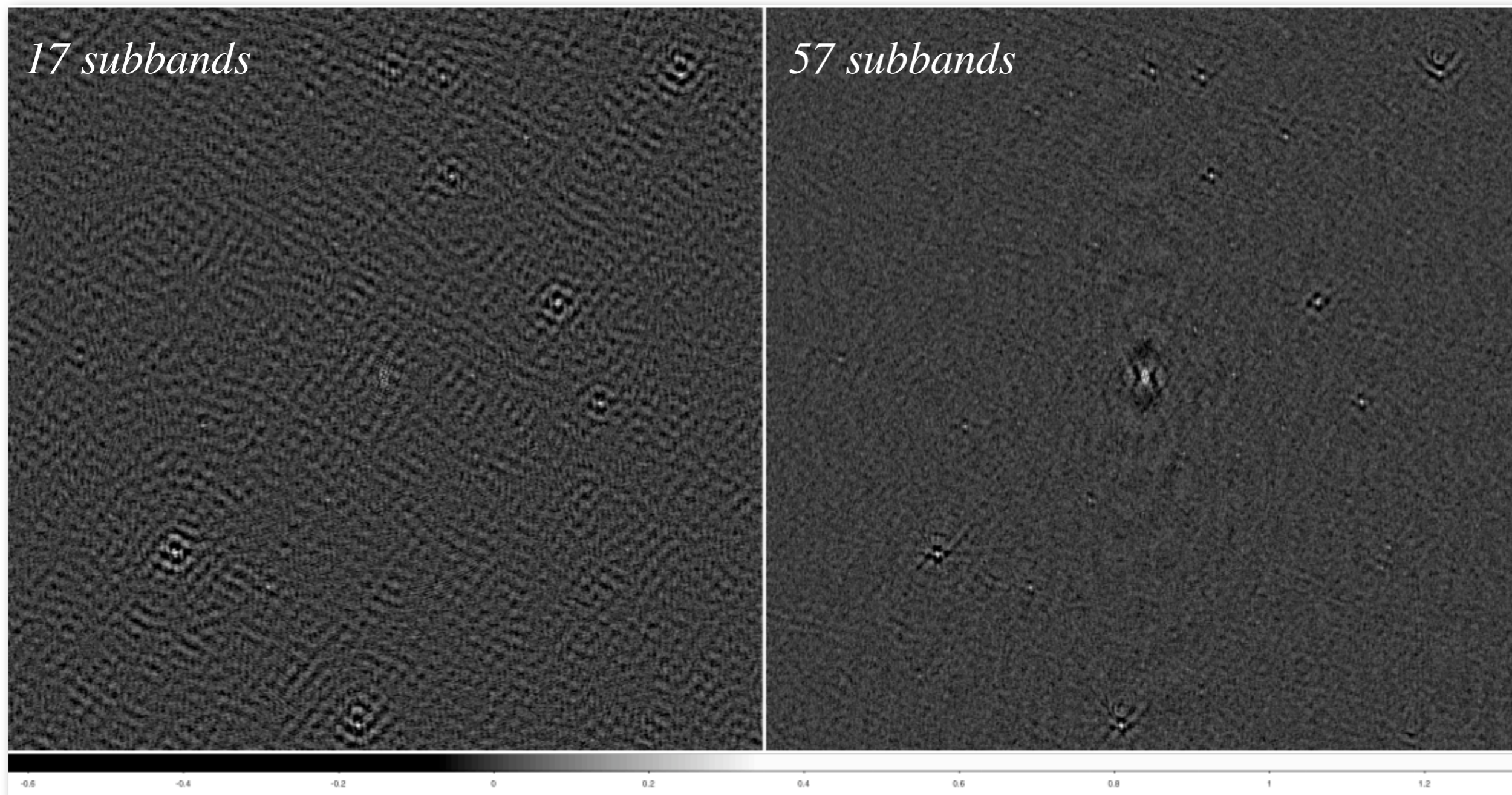
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Sept 2

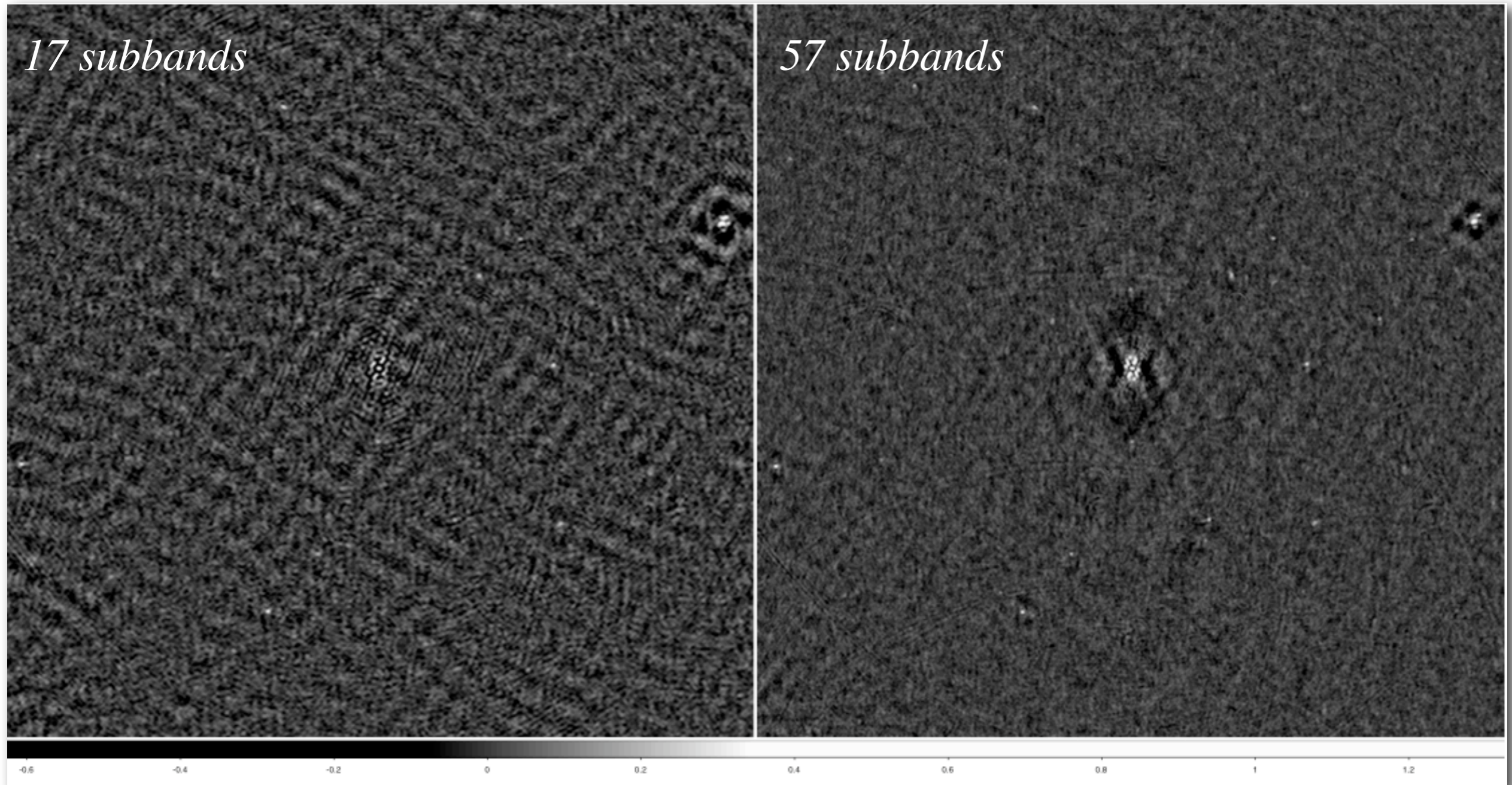
Sept 14





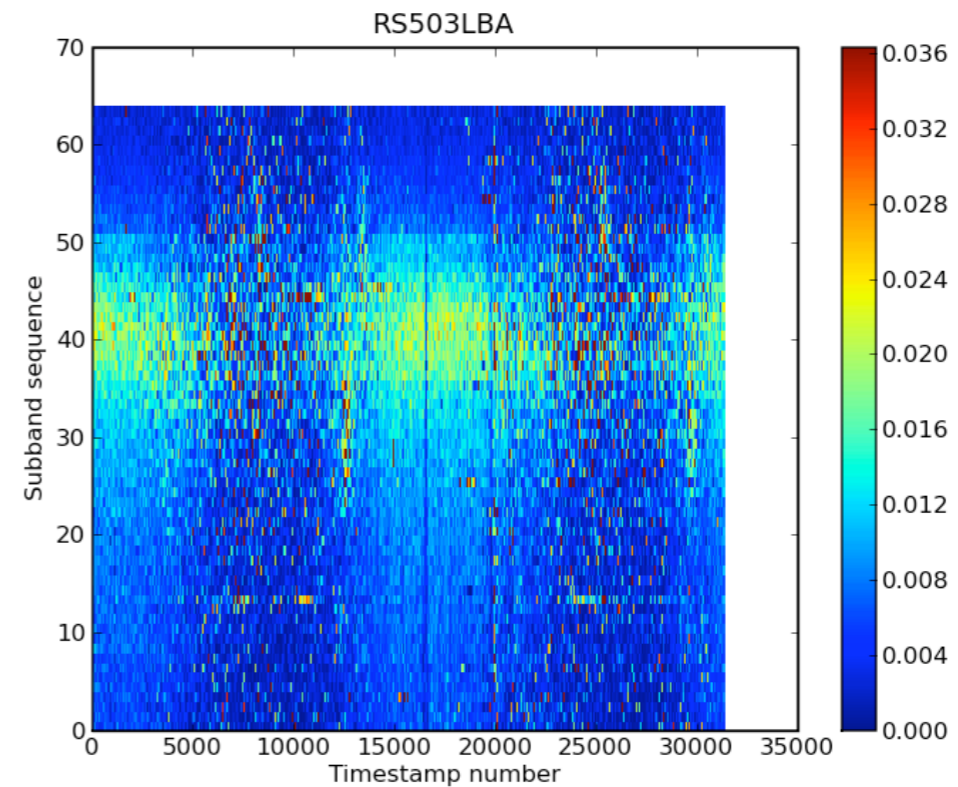
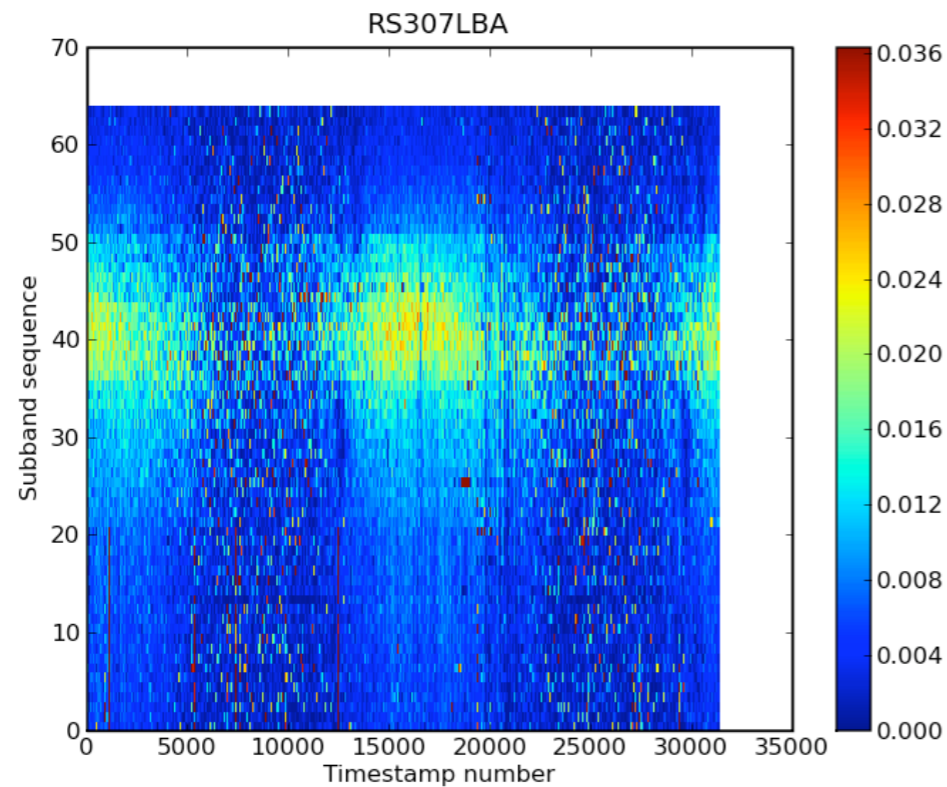
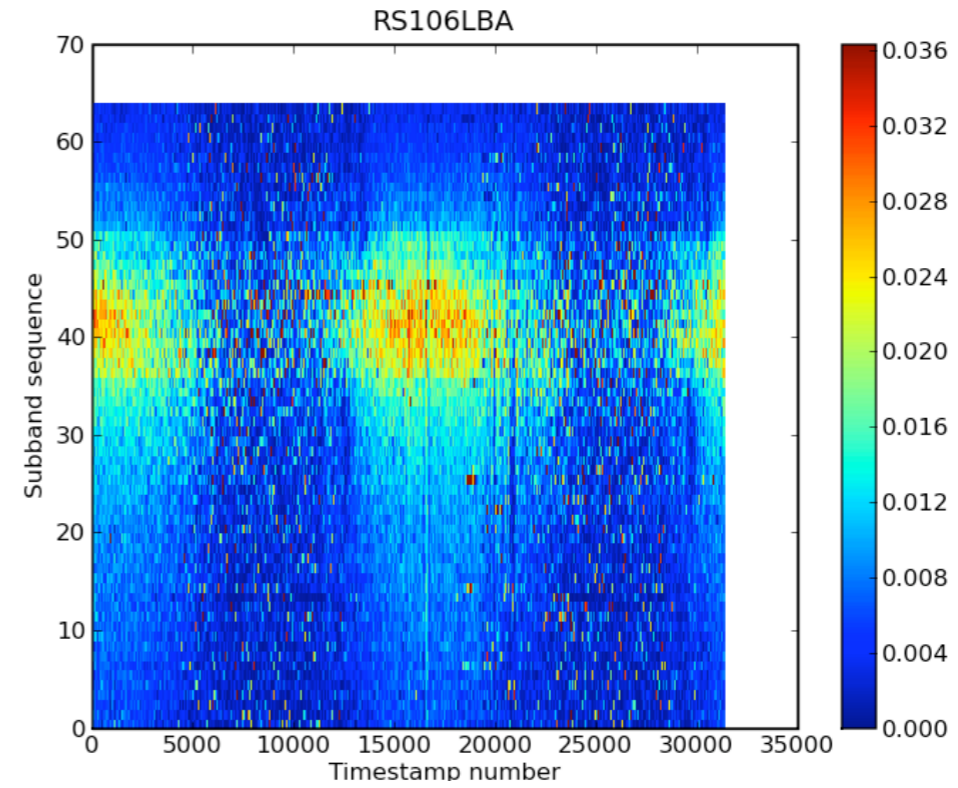
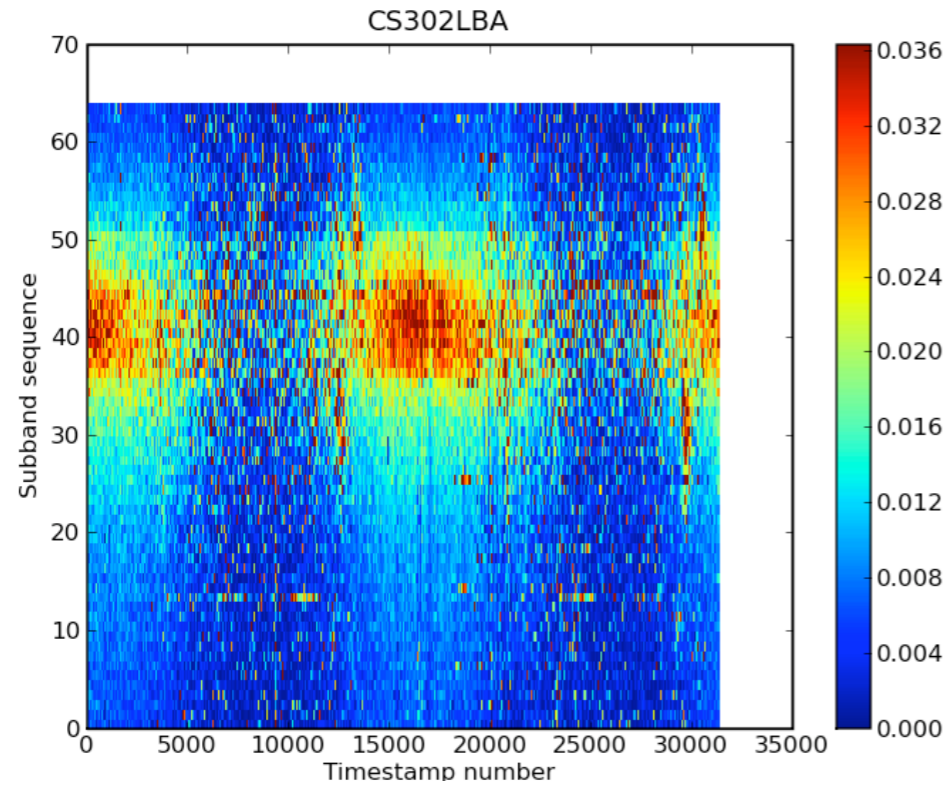


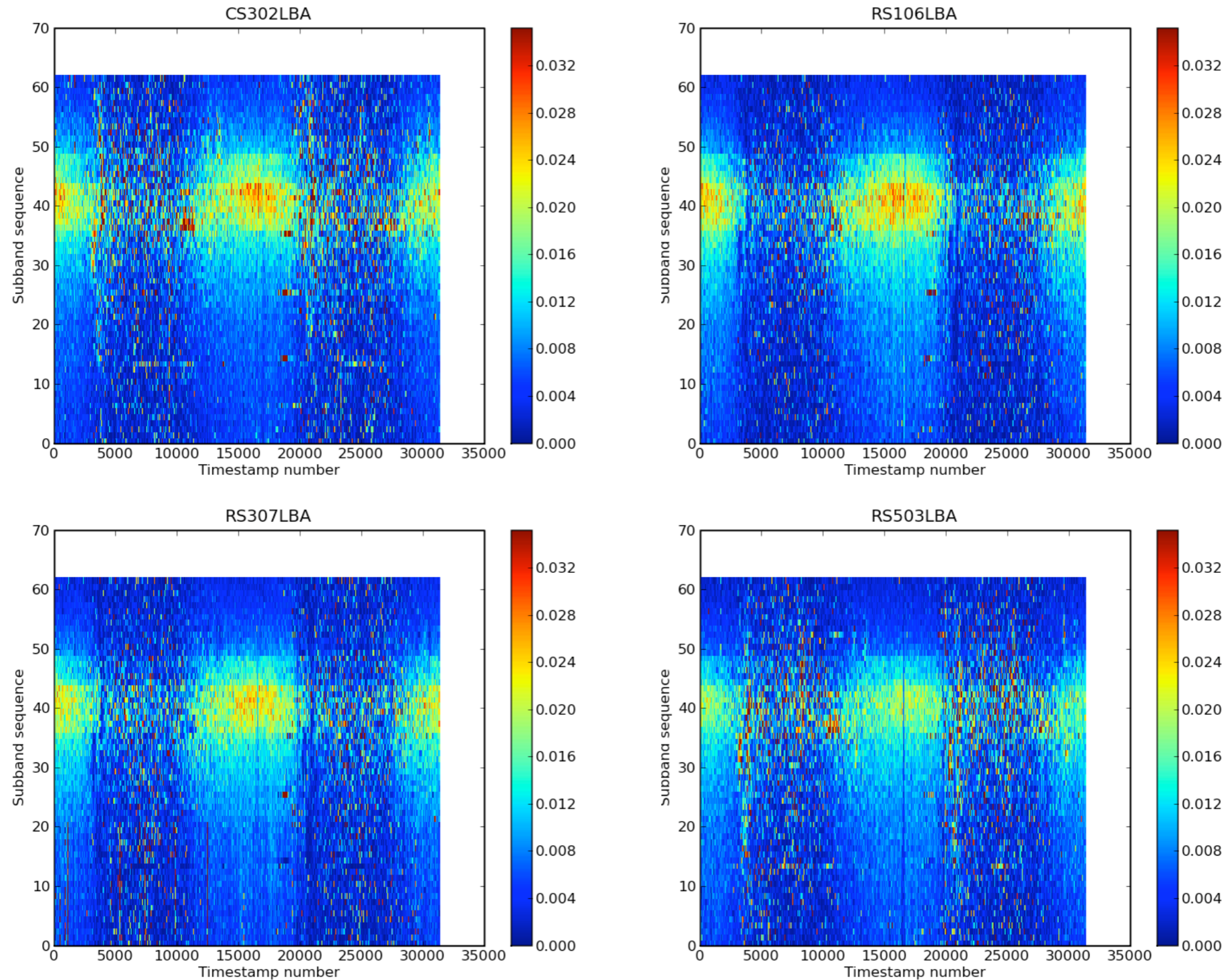
*All software installed on new LOFAR cluster hardware
 72 subbands processed, 15 failed the imaging step
 Includes DPPP, additional flagging pass, BBS, solution flagging, imaging
 Used ComplexMedian flagger rather than MAD flagger*



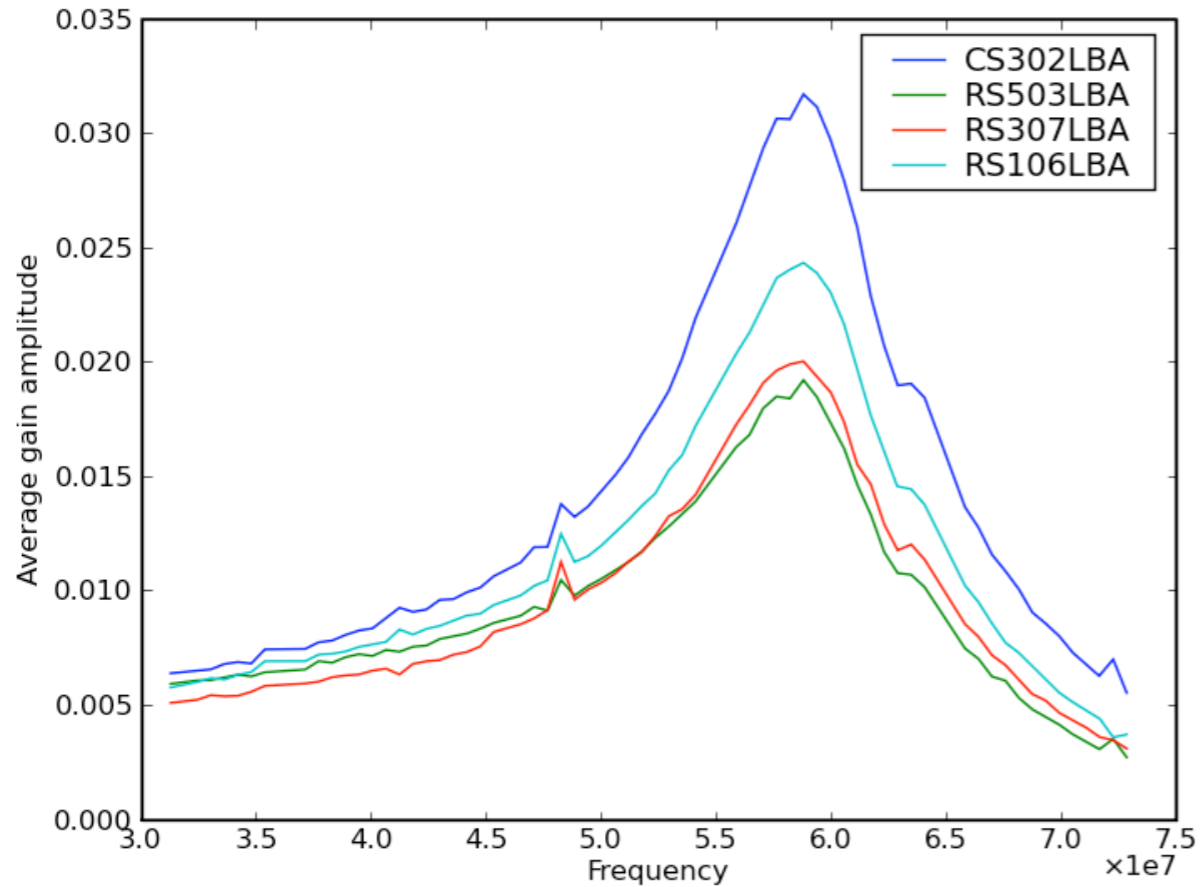
*Some numbers: DPPP \Rightarrow 7 hrs 43
 BBB \Rightarrow 9 mins!
 MWimager \Rightarrow 3 hrs 29 mins*

Total \Rightarrow 11 hrs 23 mins

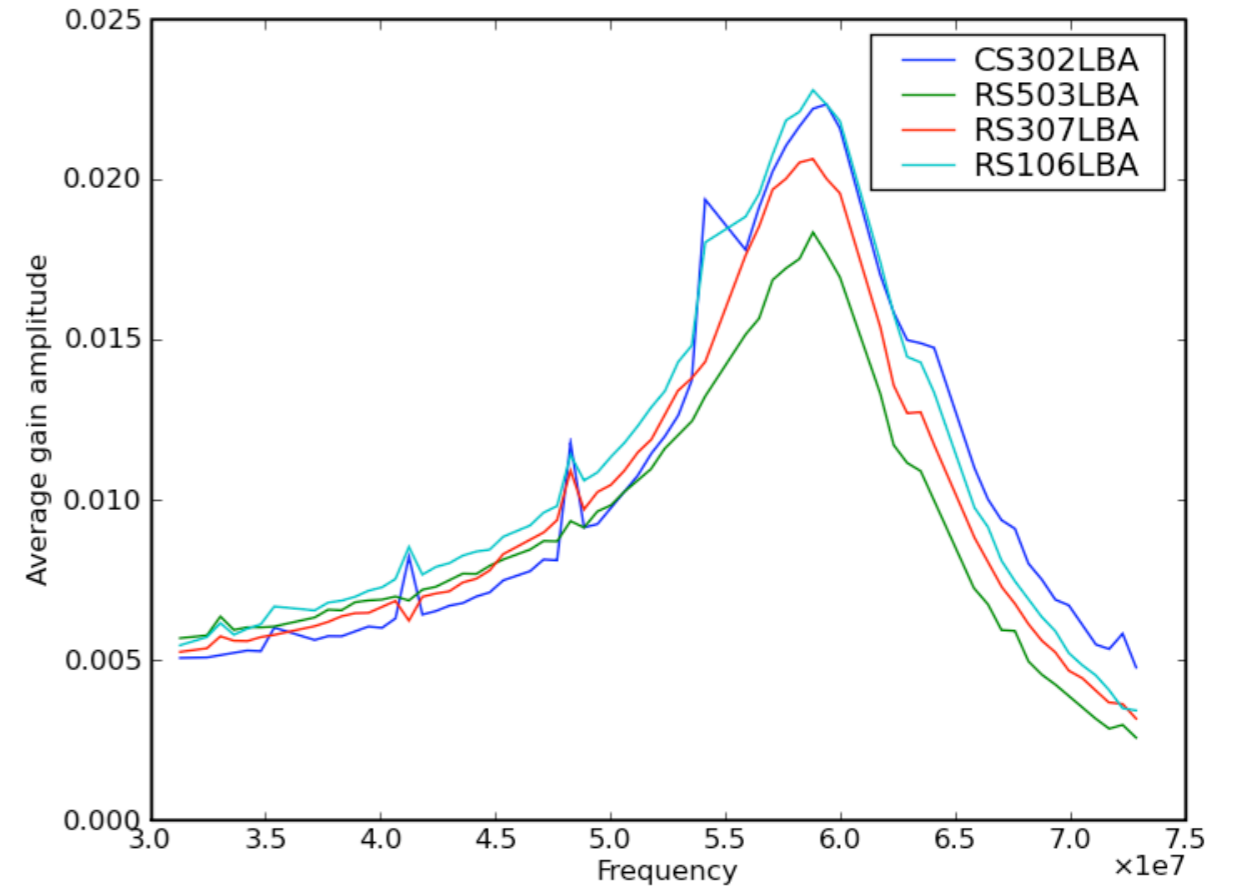


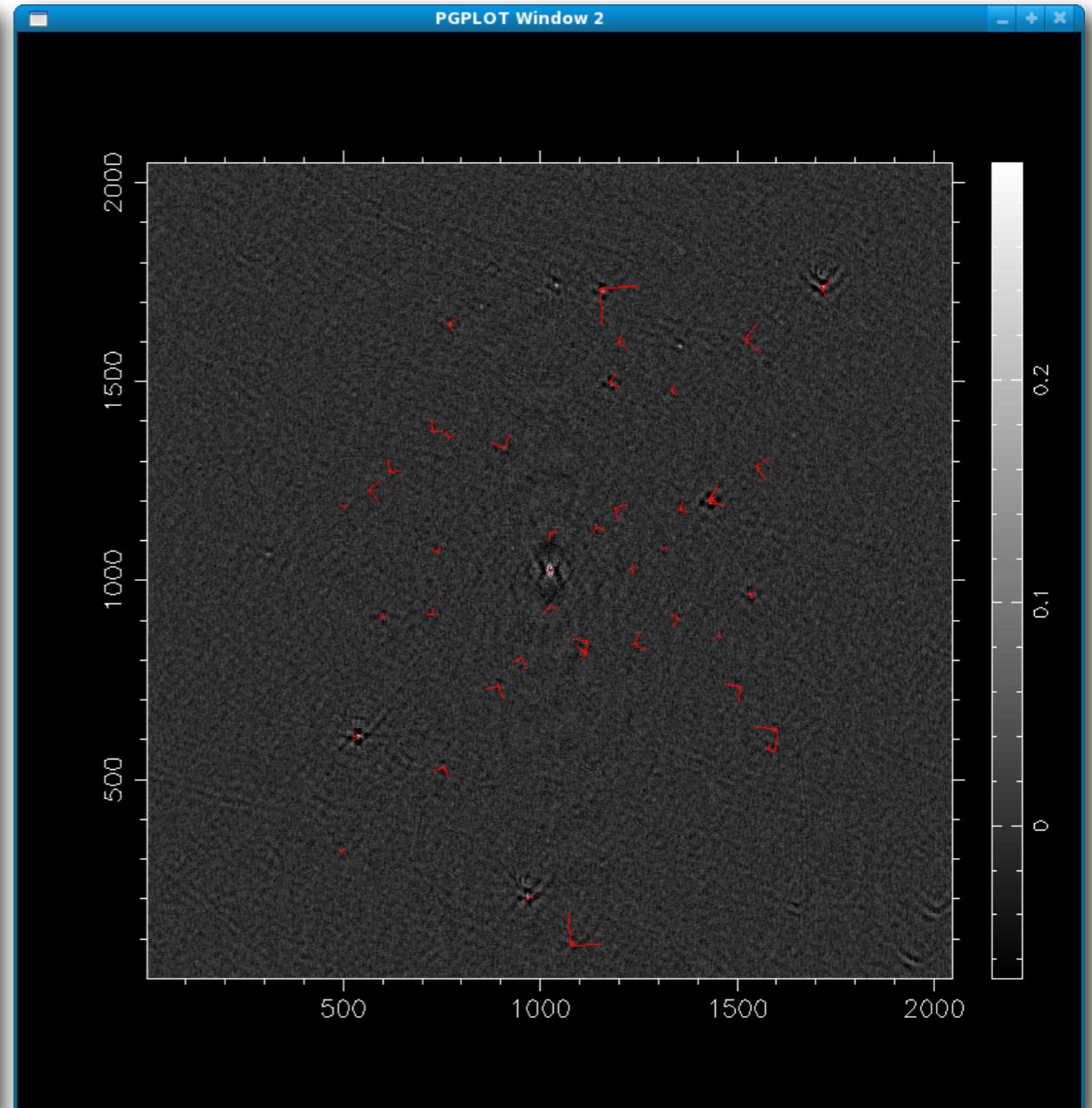
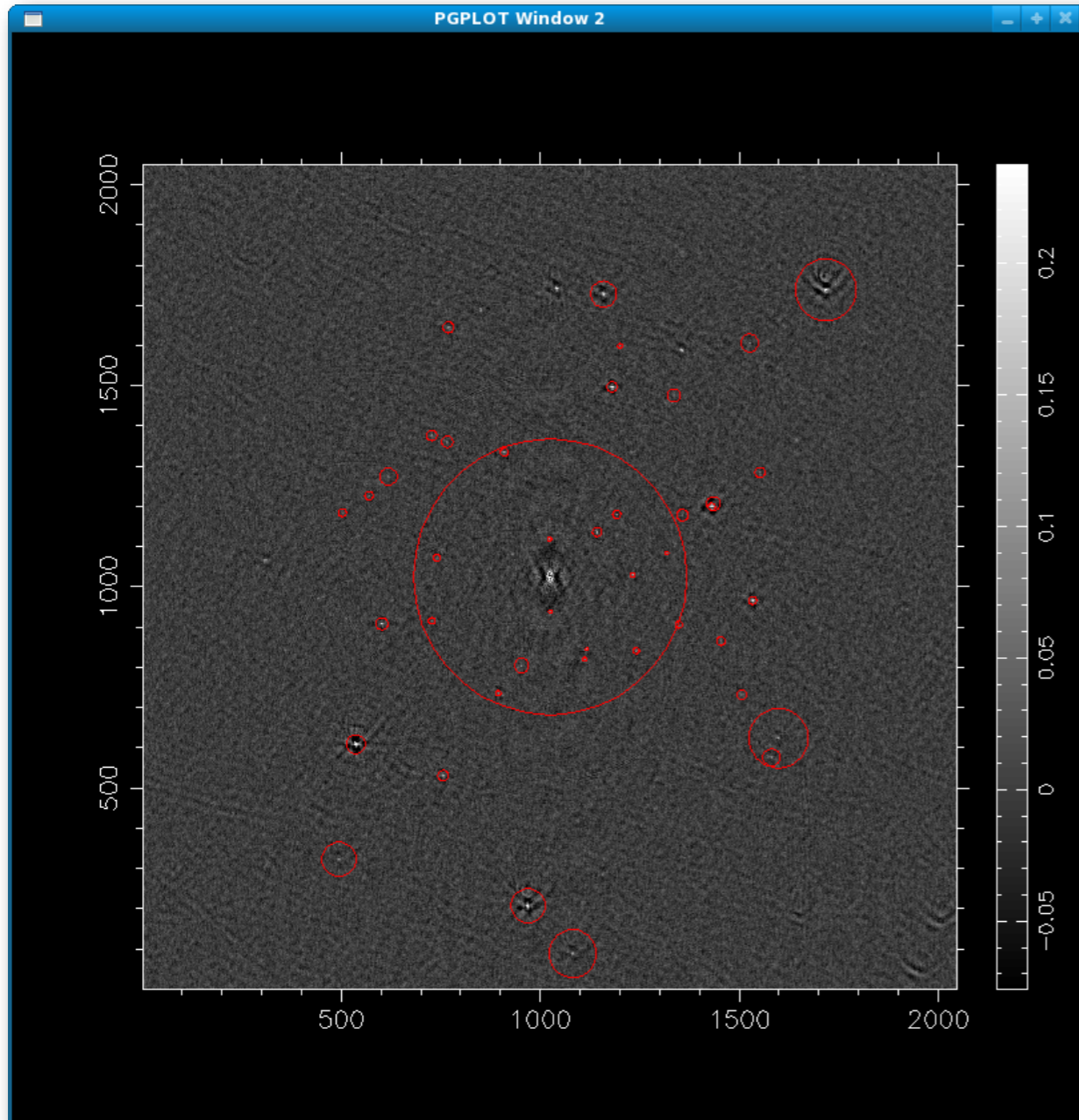


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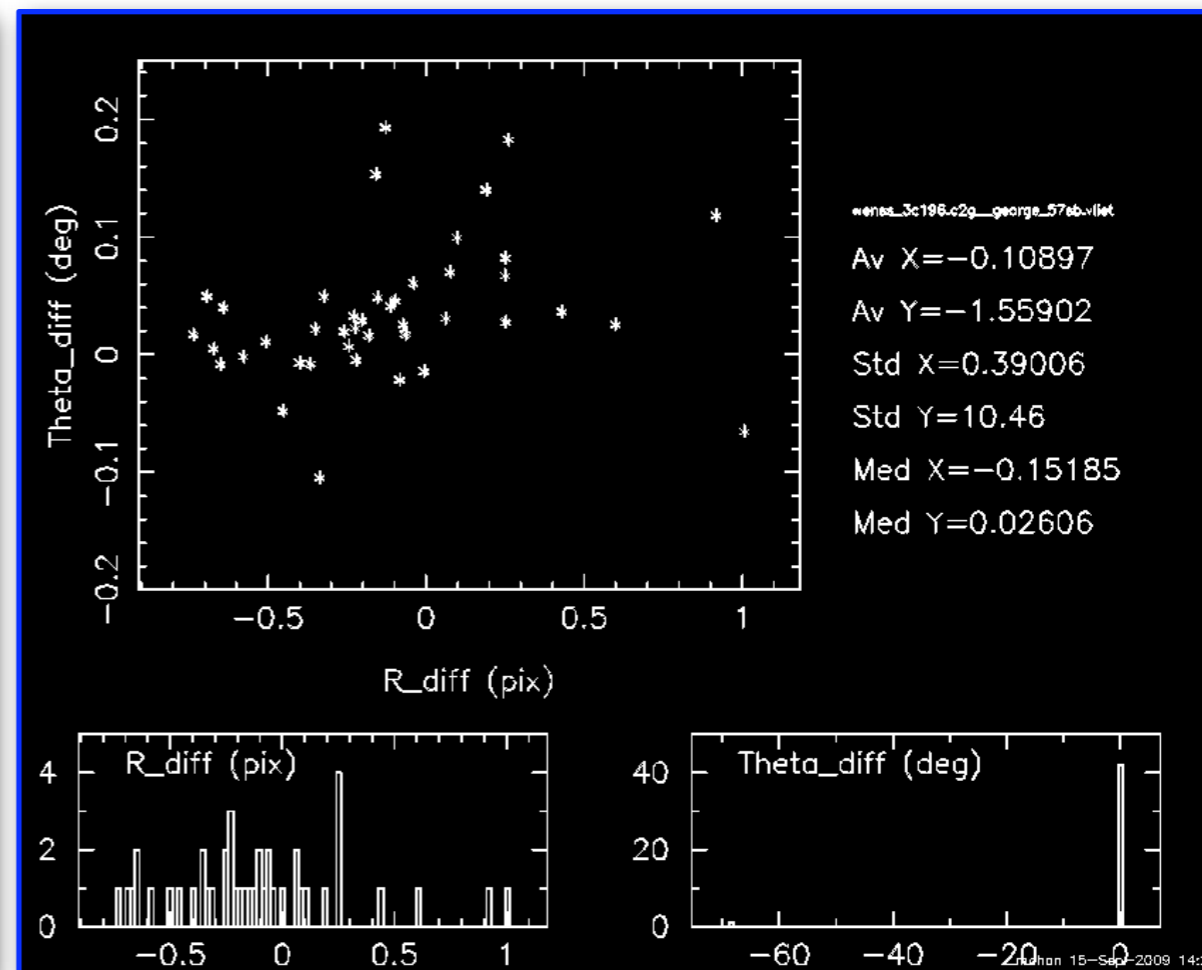
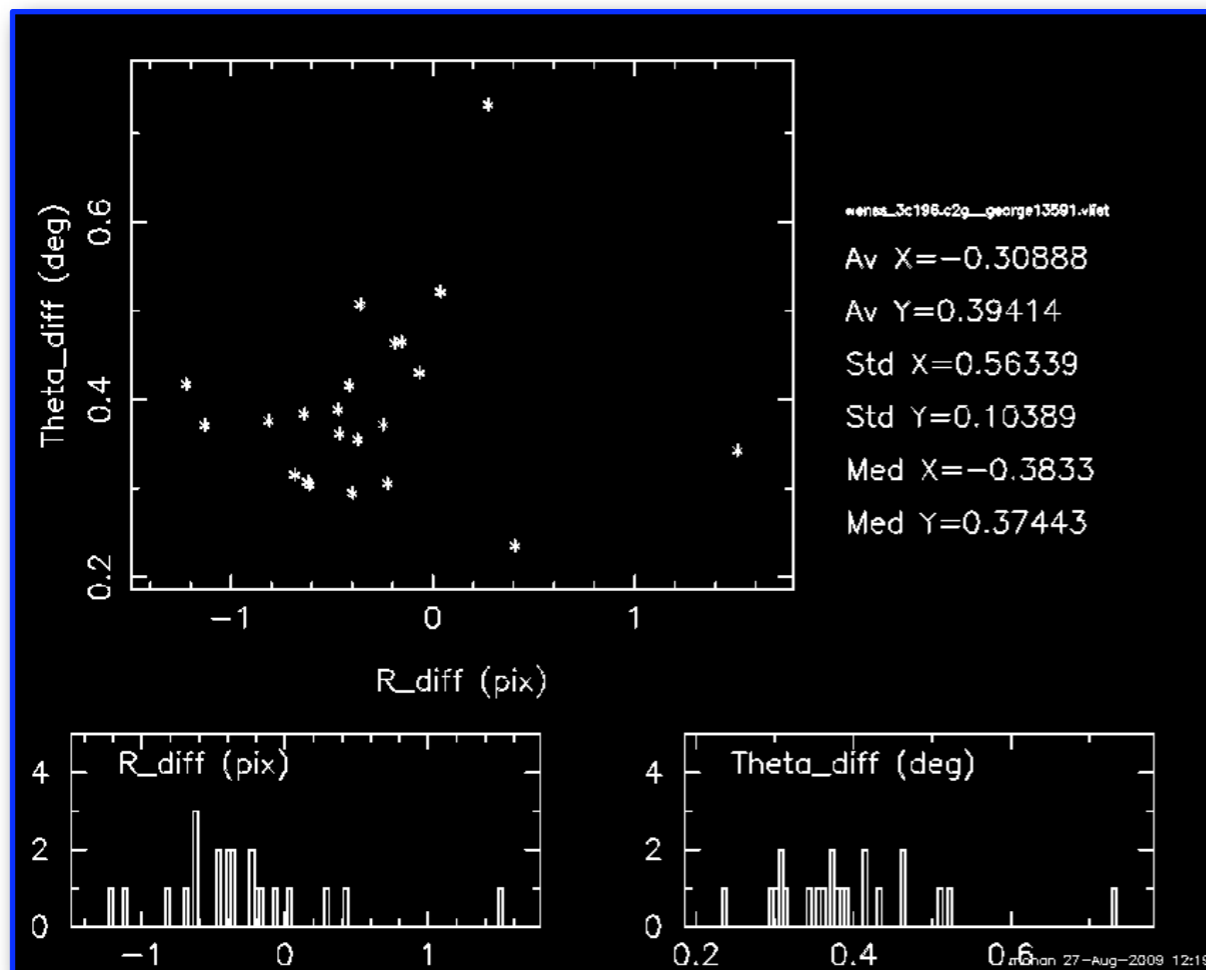
YY





17 subbands

57 subbands



Some residual rotation still apparent
Magnitude much reduced

- Investigate imaging failure for remaining 15 subbands
- Process additional datasets
- Characterize optimal flagging parameters
- Include source detection step in automated run
- Setup GSM database on new cluster and use in pipeline
- Investigate DPPP performance issues
- Add simple image data quality check script to pipeline
- Install automatic ASTRON/JIVE Daily Image[®] plugin

Process datasets for Imaging Busy Week 2 in advance!

Busy Week 4.5...and counting

