

Here is a summary of what we discussed during the busy Wednesday Videocon on October 13th.

Present: Roberto, Emanuela, Huub, Reinout, David, Laura, Cyril, Annalisa, Rosita, Bas

1. **Roberto, Emanuela, and Chiara** are working on the Virgo A observation (I2010_20313).

Given the considerable progresses made with the double double data reduction by flagging the HBA1 antennas and by using the AOFlagger, we are applying this flagging strategy to the Virgo A observation. Preliminary results confirm funny behaviour of the madflagger, which flags data considered good by RFIconsole.

At the moment we are busy with the calibration in BBS.

2. **Reinout** is working on peeling tests in BBS. The goal is to peel a bright 15 Jy source 4 degrees away from the phase center in the HBA A2256 field. The adopted solution interval is 5 seconds and he solved for both A & P. Two different approaches are followed to peel the problematic source.

(I) global solution, giving one gain solution towards the bright point source and another one for all other sources in the field (after that the bright source was then subtracted from the data with its own solution)

(II) iterative peeling approach

- 1 finding a global direction independent gain for the field (incl. the 15 Jy source)
- 2 subtracting the other sources in the field (using the solution from point 1, except for the 15Jy source)
- 3 solving for the gain of the bright source
- 4 subtracting the bright source using the BBS solutions from point 3
- 5 adding back the rest of the field and applying the solution found in point 1.

The iterative approach does a better job than the global solving approach. "Global peeling" removes 10 Jy of the source (5 Jy are still left on the map). "iterative peeling" removes 13.5 Jy of the source (1.5 Jy still left). It is still no clear why the two approaches gave different results. Probably (i) the global solver does not find the correct global minimum in the fixed number of iterations, while the iterative peeling gets much closer to the global minimum; (ii) in the iterative peeling approach we make use of an extra constrain, i.e. that the solution for the "peeled" source is "close" to

that of the rest of the field. This might improve the quality of the solutions.

Reinout will continue with the BBS tests, maybe adding one or two extra sources to be peeled. It is important to investigate the data weighting before BBS, a feature that is not implemented yet. We need to speak with Joris about it.

3. **Annalisa, Rosita, and Cyril** are working on the new 3C196HBA observation (L2010_20852) taken last week-end with the new beam server. The goal is to verify that the new ITRF beam server is properly working.
4. **Bas** is working on his new imager. We will probably start testing it at the next Busy Wednesday.
5. **Laura** will inspect the outputs and intermediate products of the pipeline of a few short (10 minutes) observations (see the Available_data.pdf document also in attachment). The goal is to understand which are the best parameters to use in the various steps of the pipeline to improve the quality of the final images. The parsets used by John Swinbank are in /home/swinbank/pipeline/jobs/"observationID"/parsets/ , while the pipeline strategy in /home/swinbank/pipeline/jobs/"observationID"/sip.py
6. **David** will test the new functionality of the AOFlagger, which reports in output a list of antennas bad behaving during the observation.

A few people not present at the videocon sent the following reports of their activity during the last couple of weeks:

1. **Ilse** was working on the CygA 6h dataset (L2010_20311) trying to include the long baselines in the calibration. So far she managed to produce a cleaned image of the source using a 330MHz VLA model image and the remote stations RS106 and RS307, plus all the core stations. The issue with the fine structure that appears in the dirty images seems to be related to the poor uv-coverage. Only RS208 has very long baselines, and this screws up the dirty beam. Possible solutions to get rid of it are doing a clean, using a Hogbom clean beam, with an increased number of major clean cycles (cyclefactor = 4 or 5). Also it is essential to use a model image that has comparable spatial resolution. To do on this bit: include the other remote stations, apply self-calibration, do the same analysis on a few other sub bands and concatenate to improve the uv-coverage.
2. **Francesco** was working on the Cyg A observation as well and he reported to the radio observatory a few issues with the data. He made good progresses and we will soon see an image.

3. **Giulia** checked the short (10 minutes) 3C465 and 3C80 observations (L2010_08555-08566 and L2010_08567 - 08569, 08572 – 08579) and pointed out that

- The images look a bit dirty; in particular, aliasing seems affect all the checked SBs ("ring" of sources around the central 3C465).
- 3c465 is detected at the field centre, unresolved.
- Comparison of the images of the same sub bands from /corrected and /subtracted folders: they look identical, except for small shift/distortion between each other (phase errors?)

Giulia looked at a couple of sub bands after NDPPP with casaplotms: data seems flagged, no strong RFI left; but possible bad data (ripples) due to the A-team are present.

Issues:

1. We need a log file out of RFIconsole. This should report the list of bad antennas and the percentage of flagged data. We will report this to Andre' Offringa
2. We need to weight the data before BBS (see above). We will discuss this with Joris van Zwieten.

General announcements:

- The next busy Wednesday will take place in three weeks, on November 3rd. It is not clear weather there will be a Lofar status meeting on the same day. If not, we will start at 11 o'clock, otherwise at 13:30 pm. There will be an EVO session available for people in other European Institutes. More detailed announcements will follow.
- New observations will be requested soon. They would be performed with the new beam server and station calibration. The targets will be: A-team, NGC6251, A2256, M81, M82. There is the idea of organizing an imaging busy week in December and/or January. It will be announced as soon as the decision will be made.