ECSV Discussion
14 August 2012, 10am in room 317

Attendees:

Barry Clark, Joanna Corby, Vivek Dhawan, Eric Greisen, Miller Goss, Drew Medlin, Heidi Medlin, Amy Mioduszewski, Emmanuel Momjian, Steve Myers, Kristina Nyland, Nurur Rahman, Juergen Ott, Frazer Owen, Deb Shepherd, Lorant Sjouwerman, Ken Sowinski, Ravi Subramanya, Gustaaf van Moorsel, Kathryn Weil, Wiphu, Joan Wrobel, Hsi-Wei Yen

Minutes:

Visitor: Wiphu, a postdoc in Arizona, is visiting this week.   He is working on a survey to look star formation rates in star burst galaxies in C-band.   If you would like to talk to him, he is working in Kristina's office.

News:
- Three ODP proposals have been accepted and will be funded by a development fund (not out of operations funds).   These are to:
    - Finish off the low-band receiver build (so we have P/4-band receivers on every antenna rather than just the 21 that NRL has funded)
    - Prototype a new 4-band feed.
    - Prototype a VLBA synthesizer to avoid the holes in the tuning band we now have.

Correlator and general system health (Ken & Vivek)
- We have been doing a lot of 3 bit testing, going through all the bands and seeing if there are any problems.
- Mike Revnel has decreased the number of malfunctioning samplers to about 5%.   Still needs work but this is better than the 15-20% that we had.
- Martin has been working on the Correlator Back End (CBE) that caused the data to stop being created when we used the full correlator and full BW.
- Sonja is back from travel this week and she is now working on the issues we have had with the Configuration Mapper (CM) in the correlator that maps the data paths between the internal station boards and baseline boards.   This is where some issues have come up that causes problems with baseline board stacking and recirculation (e.g., our ability to increase the channel resolution and the number of channels per sub-band window).
- The current version of the CBE is not doing sub-arrays cleanly so we went back to a previous version for a fixed-date sub-array science observation scheduled for this Friday.
- Phased array commissioning has been suspended for a few weeks. Vivek is waiting for Dave Harland to make this easier in the Observation Preparation Tool (OPT – the tool used to create scheduling blocks (SBs)) to set up.   It will likely take several iterations of updates in the OPT to make it possible to

completely automate the SB submission, that is, for a user to generate an SB in the OPT and then it is ready to go on the telescope.
- OPT work is also planned for EVLA spectral line. Right now the SBs generated by the OPT for spectral line work must be hand edited before they can be run on the telescope to fix problems in the scripts. We need to get this to be completely automated very soon so we have time to test this before the OPT goes live with this capability.

Software status (?)
- No update available.

CASA (Jeff)
- A new test version of CASA was released this week. Preliminary testing by one tester indicates that this test version is working well.
  - Jeff has set up focus testing to look at spectral plot (Adam), plotms export (Peter Napier).
- The next test version of CASA is expected to be out the end of next week.
  - George is working on the linear polarization calibration for low-band.
  - There will be a per-plane restoring beam generated in CLEAN.
    - This will need heavy user testing (this is to be coordinated by Juergen) in CLEAN and image analysis tasks that heavily depend on the shape of the restoring beam.
  - Nurur and Joanna are going to be working with James Robnet to test the cluster parallelization of CASA.
    - Nurur has started working with 'pclean' (parallel clean) and he is seeing a factor of about 3 faster.
    - Joanna will start to process a large spectral line cube (the speed-up is expected to be an order of magnitude).
    - Note: when running CASA in parallel, it is easier to do cubes than continuum images. In other words, you can't right now do spectral index corrections in continuum image processing when running the parallel version of CASA. This should be fixed but right now, if you want to clean an mfs image, it must be done with the non-parallel clean.
- Juergen has been working with Joanna, Nurur and Betsy to get the casaguides and examples in a good shape and coordinated with the information in the cookbook.
  - *Status?* – No progress.

Linear polarization commissioning and the comparison between Miriad and CASA solutions (Nurur)
- Nurur has been comparing CASA and Miriad data reduction on KAT-7, linearly polarized data of 3c286 at 1.4 GHz (L-band).
  - Miriad code is trustworthy. The idea is to see if CASA compares well to Miriad.

- The Stokes I values are within ~5% (not great), but Stokes Q and U are off by ~20% and this also means that the position angle calculation that is a ratio of Q and U is off by a significant fraction.
- In a discussion with the CASA testers this morning it appears that CASA may be forcing a flat response in setjy rather than allowing a slope that is caused by a spectral index.   There may also be other bugs in the code that George is looking into.   When Bob Sault is here next week (for a month), George, Nurur and Bob will work together on this to understand how Miriad code works and transfer this to CASA.