Non-KSP Community

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Overview

- My interaction with LOFAR:
  - Research focus on detecting radio emission from exoplanets
  - LBA data only so far…
  - Three proposals: LC4_012 (90 hrs), LC4_018 (22 hrs), LC5_009 (20 hrs)
  - Also LC0_017 data reduction
- 4 topics:
  - Proposing
  - Observing
  - Data Access
  - Data Reduction

Proposing (Northstar)

- Proposal calls are clear and informative
  - Unclear when Envelope sheet is needed and what constitutes a 'Long term' proposal
- Northstar is not very user-friendly
  - Especially adding/editing many targets
  - Issues with saving (some work lost)
- Not always clear what 'standard' observing setup is
  - A proposal 'cheat sheet' would be helpful (LBA standard subbands, settings, HBA standard, etc.)
- A tool that plots A-team and calibrator source locations relative to target(s) would be great
  - A quick way to check max source elevation and transit time for a given date or date range would be nice too
- SNR calculator for LBA is…optimistic

Observing

- Science Support does an <u>excellent</u> job communicating about setting up observations and notifications when observations are performed
  - Calendar is great!
  - Notification when pipelines finish and data is available in LTA would be helpful too
- New dynamic spectra plots are very helpful for assessing data quality
- Inspection plots are sometimes difficult to interpret
  - Option to download all plots for an observation would be helpful so that they can be referenced later during data reduction
- Not always easy to tell immediately if ionosphere and/or RFI has ruined an observation
  - Often can't tell until working on calibration or imaging, weeks or months later

Data Access

- Scripting LTA staging requests would be very helpful!
  - Staging time estimate would also be nice if feasible
  - Access to .parmdb files from pipeline runs would be helpful for diagnosing issues in later processing (i.e. finding bad solutions)
- CEP3 is great…when available
  - Difficulty accessing when traveling (whitelist)
  - Fixed time reservations are constraining
    - With other projects and travel, it is difficult to make full use of a CEP3 reservation
    - Perhaps allocate 'active' hours instead of fixed time block?
    - Extensions are very much appreciated!
  - Can't get keys to work – lots of password entry
  - Difficulty with rsync and CEP3 (temporary fix by removing .bashrc)

Data Reduction

- <u>Steep learning curve</u> for new users!
    - Data School (November 2014) was very helpful
    - In-person visit to ASTRON to work directly with Science Support was extremely helpful and enabling
    - Delay because of different timezones slows down work (but can't be helped)
    - Extent of ionospheric calibration challenge for LBA not clear at first
- Software
    - Not clear when to use NDPPP vs. BBS (comparison chart? Speed benchmarks?)
        - Feature request: Some way to tell which NDPPP/BBS solutions did not converge
    - Cookbook is very useful, but some documentation is incomplete or difficult to find
    - Standard LBA calibration pipeline not sufficient
    - Installation on outside system was very difficult (impossible) at first, much better now with packages
        - Long delay in learning software because no CEP3 access and unable to install software locally
        - Lesson: Don't even bother with CASA for LBA data!
    - AWS or other cloud service is a good option when CEP3 is not available