ATCA Automation

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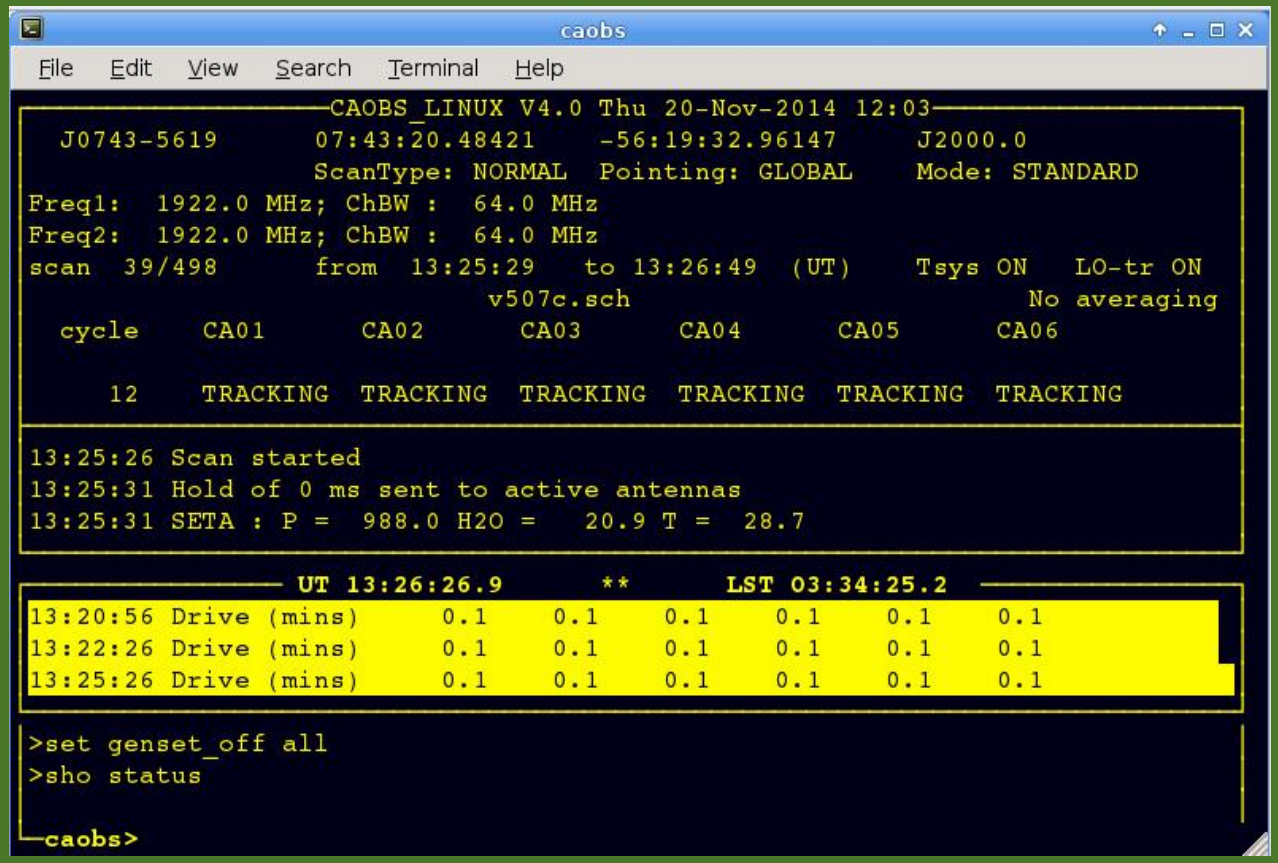
Potential for Automation

Automation of ATCA operations may be undertaken, in an effort to reduce ongoing operational costs.

Several options for this automation:

- Train observers automatically
- Help observers during their observations automatically
- Observe automatically

Observer Training



Observer Training

ATCA is operated by the observer; this is generally thought of as unusual, but useful.

ATCA is a very flexible telescope, and we have a lot of observers come through each year that have small projects. Each of these observers must be trained, or their training may need to be refreshed.

This training is expensive!

Automating Training

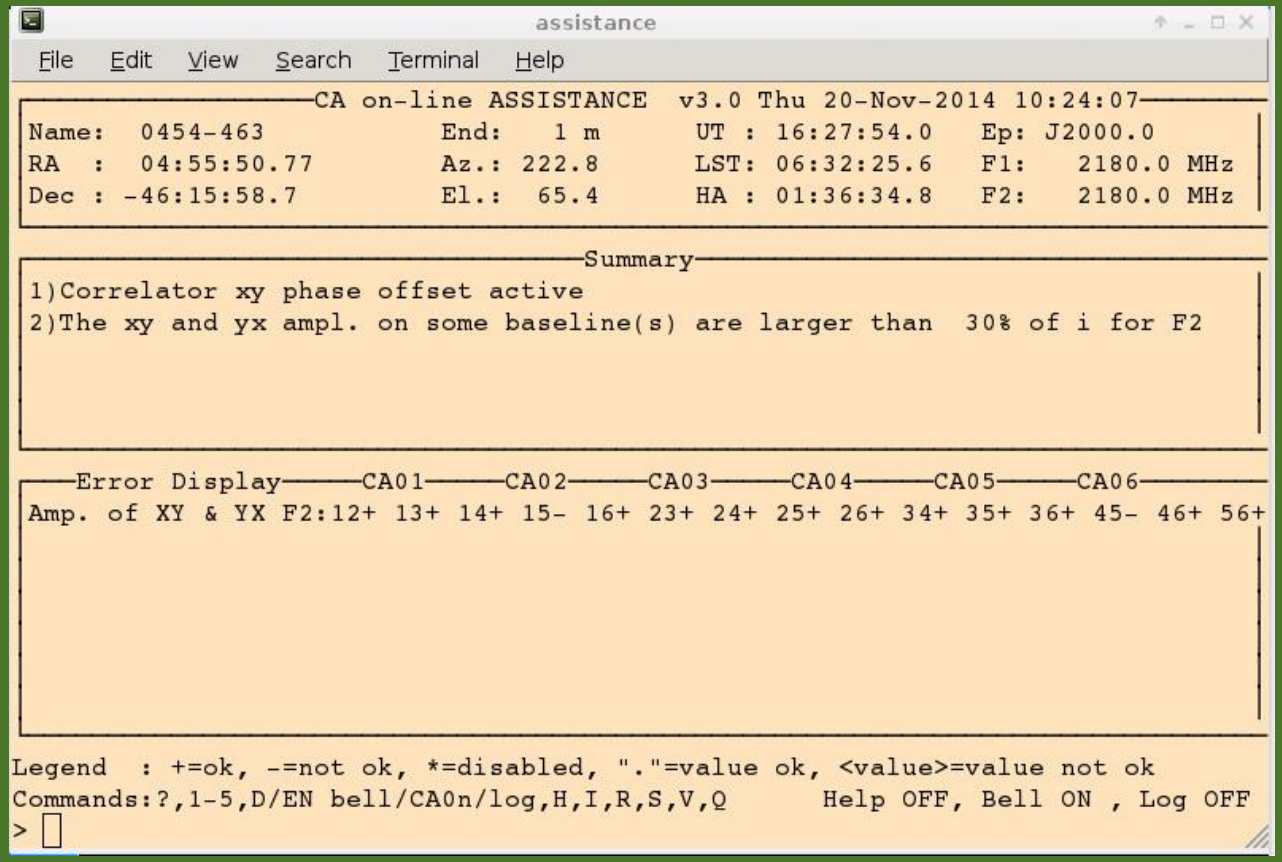
Current Model

- Observers trained by the Duty Astronomer during their observations
  - Tricky observations require training by observatory staff (JS, RW)
- Duty astronomers trained by observatory staff

Automatic Model

- Observers trained online before their observations start
  - Training videos and improved documentation
  - Project friends
  - Online tutorials

Observer Assistance



Observer Assistance

A normal ATCA observer and Duty Astronomer combination will rarely be experienced enough to have seen all possible problems.

While observing, it is important to be aware of problems so that the time on the array is not wasted. It is important for both the observer and ATNF that you get science from your data.

Again, training an observer and DA to recognise the signs of bad data is expensive!

Automating Assistance

Current Model

- We have the assistance program and MoniCA, both of which are packed with information, but require you to be “eyeballs attached”.
  - Neither will show up subtle problems without extensive training.

Automatic Model

- Improve diagnostic software to catch more subtle problems.
- Make assistance actively contact the observer so alert is seen as soon as possible.
- Improve documentation on how to fix problems without involving operations staff.

Automated Observing

Observer Automation

Training is expensive. Getting good quality data is imperative.

Using an operator and moving to queue mode or dynamic scheduling may save money, if we combine ATCA and ASKAP operators.

Automating Observing

Questions

- Should we?
- Queue mode or dynamic scheduling?
- Do we deliver raw or calibrated data?
- How would we transition?
- How do we keep astronomers informed about telescope capabilities and how to deal with the data?

Thank you

Astronomy and Space Science
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