ATCA Operations Report

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ASTRONOMY AND SPACE SCIENCE
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ATCA Operations Report

Since last time…

- New and exciting RFI
- Hot hot summer
- Legacy observations

Observatory operations

- The changing of the scheduler
- ATCA gets quick reflexes

For discussion

- Tell us how you feel
- Duty astronomers
- Training

Since last time

Team ATCA + LBA

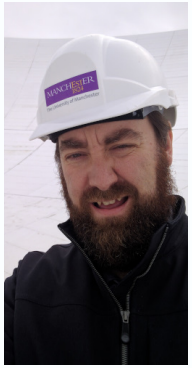
Hayley Bignall

Helga Denes

Chris Phillips

Cormac Reynolds

Jamie Stevens

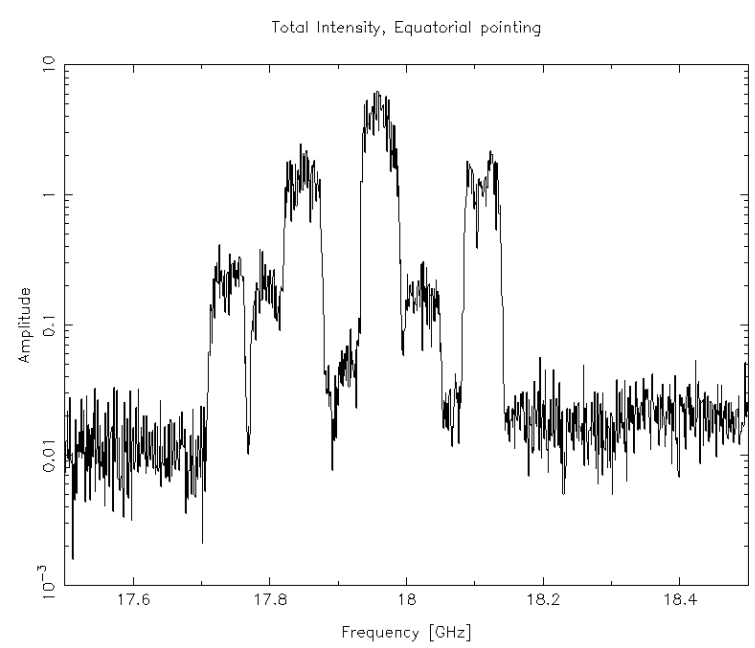


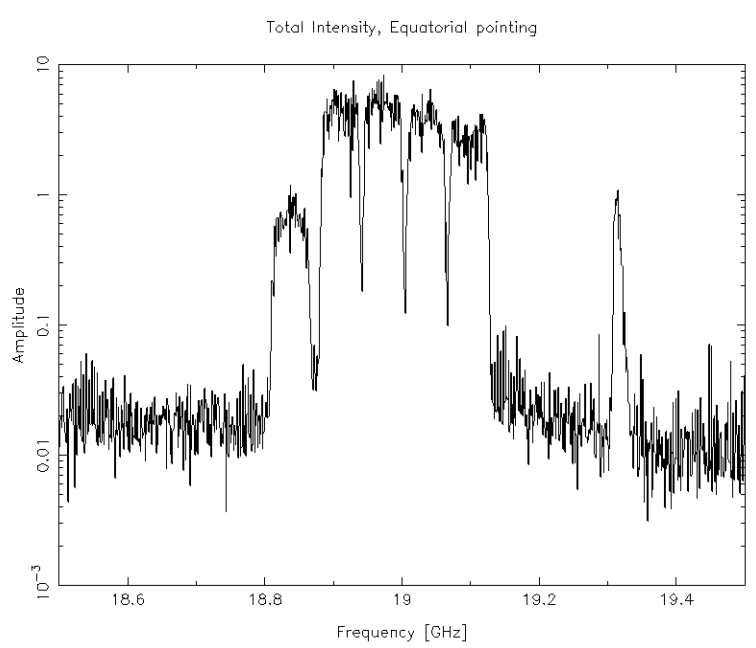
Robin Wark

RFI from Sky Muster

The Sky Muster satellites owned by NBN transmit internet in our 15mm band. RFI is mostly apparent when pointing towards equator.

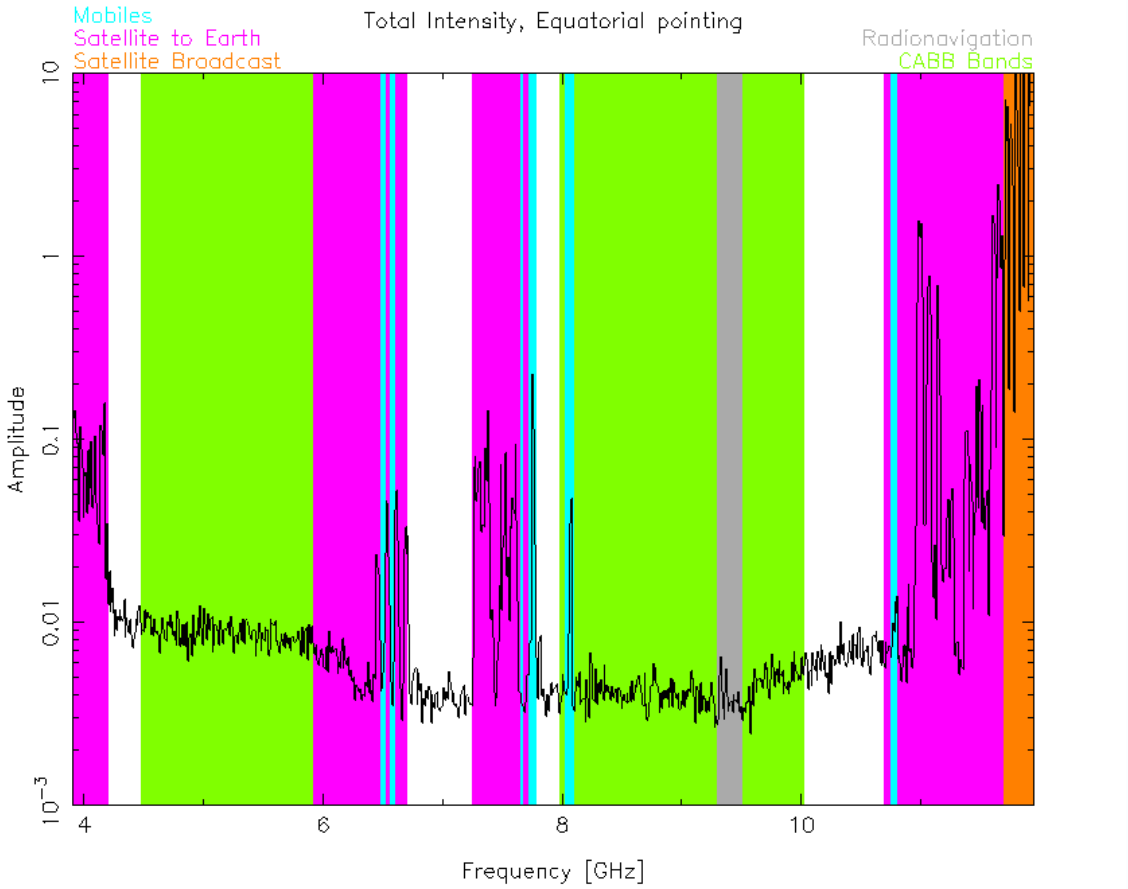
We have changed our continuum recommended central frequencies to 16700 and 21200 MHz.





RFI at 4cm

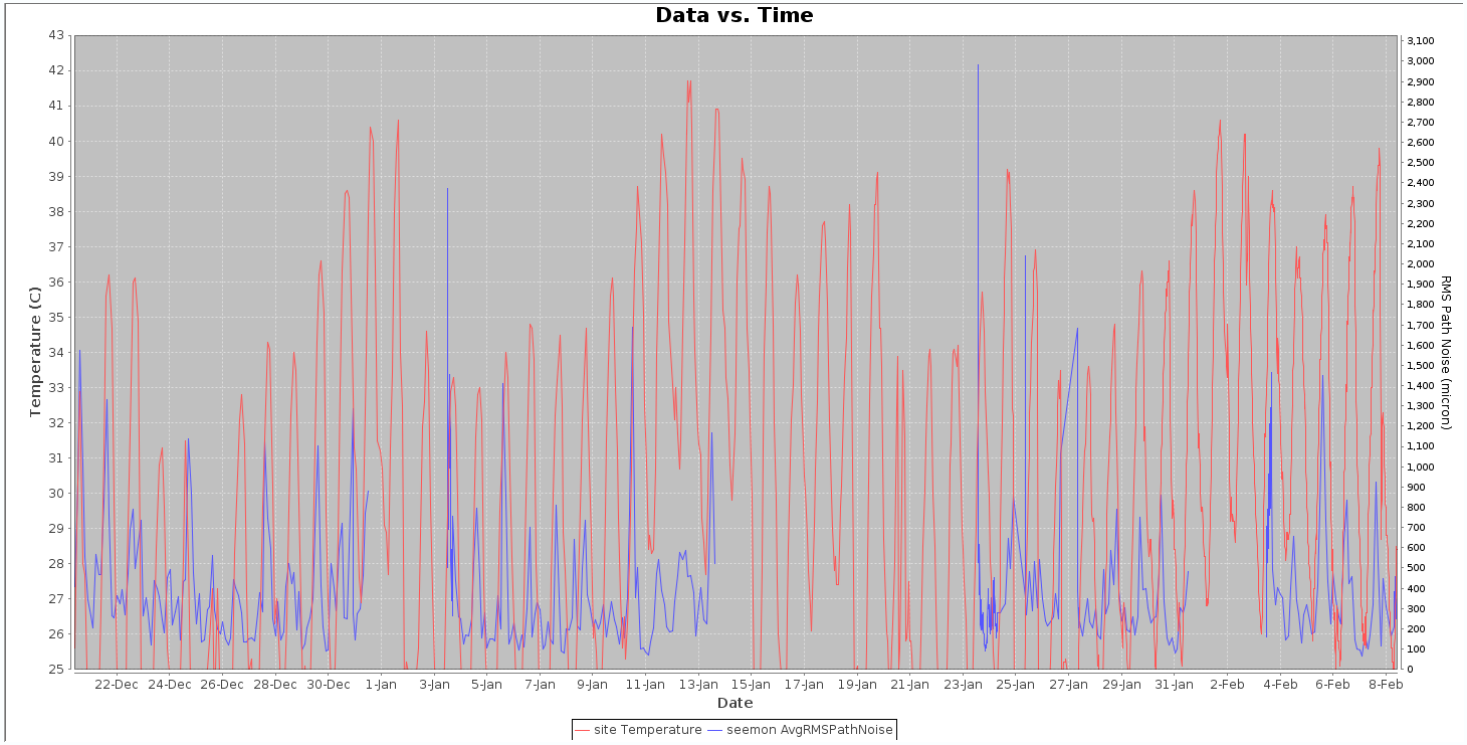
The 4cm band is also affected by satellite RFI when pointing at the equator.



Summer Heat

The high temperatures in summer caused us some concerns.

The seeing monitor cabinets were becoming very hot, and they were switched off to prevent damaging the electronics.



Summer Heat

We remembered that heat stows had not yet been made automatic, and required the user to keep an eye on it and type the “heat” command.

New behaviour was installed in caobs as a response.

- If any antenna enters a heat stow condition, the entire array will be pointed into the wind, and the drives stopped.
- Heat stow locks user out for 15 minutes, at which point the conditions are checked again, and the heat stow is re-issued if necessary.
- Heat conditions need to be heading in the right direction for the stow to end, at which point the antennas are put back to normal stow position and the user can recommence.

Legacy Projects

Legacy projects started in 2016OCT semester.

Two projects (GLASS and IMAGINE) were scheduled in 2016OCT, and two more ("Full Strength" MALT45 & CACHMC) are being scheduled in 2017APRS.

Time allocations so far (total semester time does not include VLBI and maintenance/reconfig time).

	2016OCTS	2017APRS
Semester time (hours)	3097	3339.5
GLASS (Huynh)	555.5h (17.9%)	297h (8.9%)
IMAGINE (Popping)	453.5h (14.6%)	312.5h (9.4%)
FSMALT45 (Breen)		302h (9.0%)
CACHMC (Jackson)		297.5 (8.9%)
Total LP time	1009h (32.5%)	1209h (36.2%)

Observing operations

Scheduling and Green Time

ATCA scheduling duties are now with Jamie Stevens.

Huge thanks to Phil Edwards!

Green time approvals are Lisa Harvey-Smith's responsibility currently, but will pass to Jamie Stevens at the beginning of 2017OCTS.

Green time rules:

- Duty astronomers are given priority, but otherwise first in takes the time.
- Observers are expected to be competent, as support is lesser for green time.
- Send an email to the scheduler with science case, and request the time in the Portal.

Unattended Observing

New tools to support unattended observing not ready yet, but watch this space.

The telescope equipment is protected by automation already, but data quality isn't.

The tools are there to proactively alert you to potential problems with data quality, but you still need to be alert to them.

Rapid response mode

ATCA has always been a good instrument for getting a look at an interesting transient on reasonably short notice.

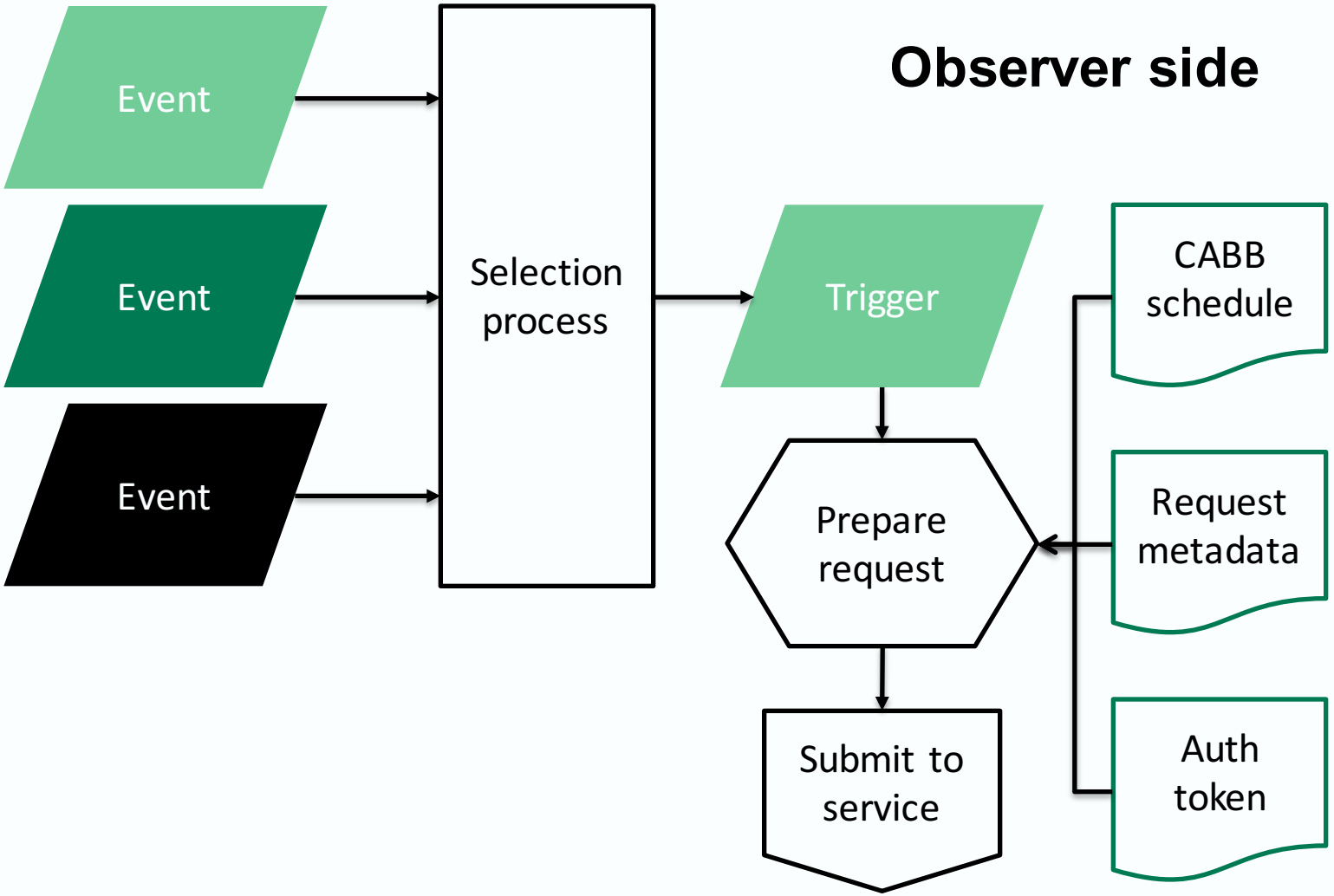
There has been interest for very rapid response modes, in which the time taken to get on-source is dominated by slew time.

There is now a rapid response service for the ATCA, beginning with 2017APRS. Two projects, C3200 and C3204, are helping commission this new service.

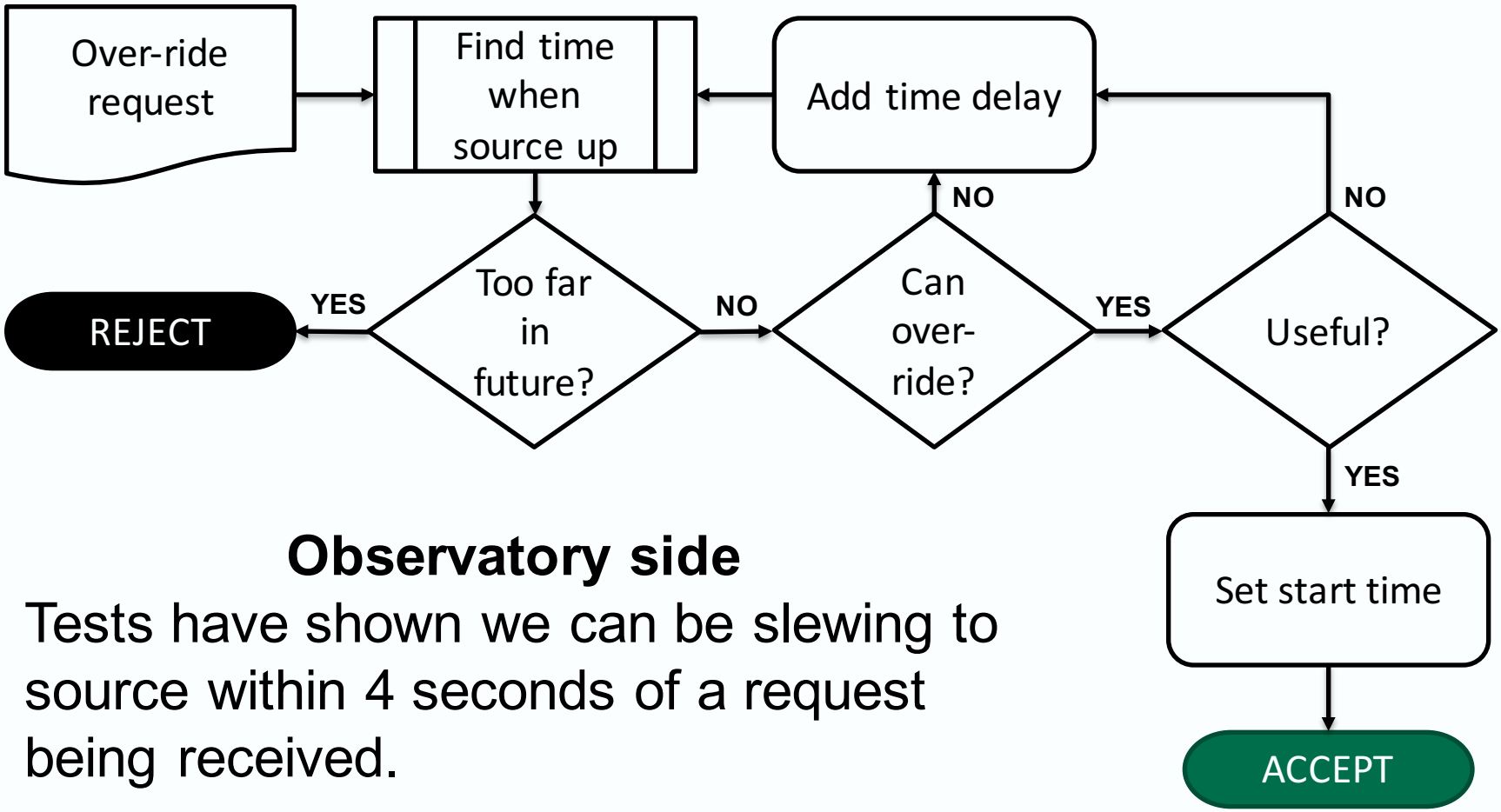
ATCA Users Guide chapter 2 has been updated to provide information about the rapid response mode.

Only projects that have requested the use of this mode through the TAC process will be able to ask for automated over-rides.

Rapid response mode – how it works



Rapid response mode – how it works



Observatory side

Tests have shown we can be slewing to source within 4 seconds of a request being received.

RRM and NAPA over-ride policy update

Current policy (2017APRS)

- Over-ride depends only on TAC score. If the score of the NAPA request beats that of the scheduled observation, the NAPA gets the time.

Several "problems" with this approach:

- Does not account for user inconvenience, eg. if an observer has flown long distance to be trained, and their only slot gets over-ridden.
- Does not account for importance to PhD / other deadlines.
- Does not account for simultaneity between observatories.
- Smaller amount of time available per semester due to legacy projects.

RRM and NAPA over-ride policy update

Future policy changes (2017OCTS)

Legacy projects will be able to be over-ridden by NAPA projects with TAC scores greater than or equal to that of the scheduled project in the semester with the lowest score.

We will grant exemptions from NAPA over-rides to specific allocations or experiments, for specific reasons. The case for being exempt must be made to the TAC in your proposal.

What should those reasons be?

We will review how this policy change works after 12 months.

For discussion

Observer Feedback

The observer feedback form is at

http://www.atnf.csiro.au/observers/feedback/index.php/417272

We haven't been getting much feedback from observers, so we're thinking about incentives.

How about a $25 voucher for the Parkes online store, for feedback surveys completed within 1 week of the end of your observations? Limit one credit per person, per semester?

Discussion about what will get you to fill in the form is encouraged, as we really want to know how your observations go!

Duty Astronomers / ATCA observing support

Support by duty astronomer is currently less than optimal.

- CASS staff are focussed on ASKAP.
- Training of DAs is time consuming and difficult if they are only doing it two weeks per year and not experiencing all the problems that may be thrown at them.
- DA assistance for observers is very difficult if both are inexperienced, and if the observing is remote.

Not new problems, but what is the solution?

Duty Astronomers / ATCA observing support

Ideas we're considering:

- Ask Legacy projects and large projects to provide a project expert who will act in place of the DA.
- Schedule DA pairs (matching an experienced DA with one with less experience) to support a longer period.
- Ask observers to be better; or less facetiously, expend our effort in training observers instead of DAs.
- Operators…

ATCA Training

Training takes up a lot of effort by few staff (mainly Robin, and sometimes Jamie).

Teaching somebody to dcal/pcal/acal at the start of one observation is important but is not nearly enough.

The ATCA is a highly reliable instrument, and training to solve problems may not be possible until 2am on a Sunday, and then you're training only a single observer and the DA, both remotely.

It is expensive to send people to the SOC every 12 months for re-training, especially if the training consists of dcal/pcal/acal.

ATCA training

Ideas we're considering:

- Scheduling training time – perhaps a few days where people can come to SOC/observatory for intensive and well-planned training activities.
- Automated training tools with online competency tests.
- Train other trainers, who can be embedded in other institutions and who may also become institutional DAs.
- Remote training: future observers can be encouraged to join in the training of others via video-link on multiple occasions, instead of needing all training while at the SOC.

Thank you

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