

ATUC Report (Nov 2017)

1. ATUC members in attendance:

James Miller-Jones (chair), Stefan Ostrowski, Shari Breen, Cormac Reynolds (secretary), Stuart Ryder, Tieghe McCarthy, Maria Rioja, Julie Banfield, Shivani Bhandari, Jo Dawson

2. Commendations for CASS

ATUC commends CASS on:

- Keith Bannister being awarded the Louise Webster Prize by the ASA, and Emily Petroff's commendation (as a CASS co-supervised student) in the ASA's Charlene Heisler Prize.
- The success of the 2017 Radio Astronomy School at Narrabri.
- ATNF's role in following up the neutron star merger GW170817.
- PMON replacement at Narrabri.
- Rollout of the new Parkes Portal and FROG.

3. Sale of Telescope Time

ATUC congratulates CASS on the progress that has been made on agreements for the sale of telescope time. The top priority for the community is to keep all the ATNF telescopes running, and the additional funds provided via the sale of time are a key component in achieving this goal, subject to the constraint that no more than 50% of the available observing time on any given telescope be sold.

While ATUC recognises that these efforts are more likely to be successful if restrictions are not placed on the time being sold, the possibility of selling NAPA time over the coming semester brings new complications. ATUC recommends that CASS clarify their policy regarding how overrides would be handled; the priority to be given to "purchased" overrides as compared to TAC-approved overrides if triggered on the same event; and what would happen to observers whose time would be overridden by purchased NAPA triggers. While ATUC agrees that the purchase of time should not have any effect on the science that is approved by the TAC, the possibility of (Legacy) observers being overridden by two separate proposals (one purchased, one TAC-approved) for the same object could lead to a higher impact on the originally-scheduled observers, and ATUC would like to see consideration given to how such a case would be handled. Developing a policy (on exclusivity, priority, and compensatory time for displaced observers) before any deal to sell time is finalised would help avoid difficult situations arising at the time the NAPA proposals are triggered.

Recommendation: CASS should develop (and publish) a policy regarding how purchased NAPA triggers would be handled. This should clarify to both buyers and existing users how

triggers would be prioritised, whether triggers could be exclusive, and how displaced observers would be managed.

4. ATCA

Duty Astronomers

The issues with the current DA system arise partially from lack of participation in the DA roster. ATUC has been provided for the number of CASS staff who participated in the DA program for the past two observing semesters. The current numbers of 17 staff (2016OCT semester), 16 staff (2017APR semester) and 10 staff (2017OCT semester) highlights the shortfall of DA participation from CASS staff. Possible solutions to this problem that have been suggested by CASS are: (1) increase the number of DA weeks for CASS co-supervised students to 4 weeks a year while relaxing the requirement for CASS staff; or (2) move to a project expert model where project participants can be trained as the experts to support the project. In addition to a DA, and to lower the demands on the DA, an "ATCAbot" has been developed by Jamie Stevens. The ATCAbot would be able to handle the simple tasks and interact with the observer to provide step-by-step instructions to solve the problem. If fully implemented, this would help to lighten the load on the DA.

Large and Legacy project team members made a significant commitment at the proposal stage to fully support their allocated time with competent observers, and they are expected to meet this commitment. That said, ATUC do recognise that larger time awards come with significant observing responsibilities, and suggests that CASS could take steps to enable such projects to more easily meet those commitments. These could include permitting the CSIRO node in Kensington to train observers, and enabling sufficiently experienced observers in a Large/Legacy project team to act as Project Experts, similar to the scheme adopted for Parkes observing projects. That would enable large teams to train their own observers, helping them to meet their commitments more easily.

Members of the community can request to participate in the DA system as a remote DA. Concern has been raised about the added pressure placed on staff located at Marsfield when observers are present there and the DA is remote. ATUC understands that some weeks are full of remote observers, and whether the DA is on-site at Marsfield or remote should not matter. However, if there are observers at Marsfield, then ATUC feels that the DA should be on-site. Realistically therefore, the DA will almost always need to be on site, since many observers do not book their observing slots until a few days in advance (particularly in the case of NAPA triggers), before which it will be impossible to tell whether or not there will be an observer at Marsfield.

The small number of CASS staff participating in the DA program is concerning. Without knowing the total number of CASS staff (this number fluctuates as many CASS staff are on fixed term contracts), it is ATUC's view that CASS needs to address this issue. As a National

Facility, there is an expectation that the user support part of people's contracts should be fulfilled. This way users receive the service befitting a National Facility.

Having CASS co-supervised students be part of the DA roster remains an excellent idea. This provides the opportunity for students to get to know the telescope and the overall system, thereby benefiting the students' learning. However, requiring a student to fulfill the DA role for 4 weeks each year as part of their CASS funding is a significant imposition on a 36-month long PhD (and would hit international students particularly hard, since candidature extension generally incurs a significant financial burden). The number of weeks a student participates should not be so high as to be detrimental to the student's chances of timely completion. The standard two weeks per year for CASS co-supervised students is more reasonable. If this requirement were enforced, the combination of CASS co-supervised students along with CASS staff would significantly decrease the number of DA weeks required to be filled and lower the requests for remote DA support. However, ATUC would not support the proposal to draw from the students' overseas travel grant from CASS to subsidise the travel and accommodation required for them to undertake their DA duties. Even at the level of one two-week trip per year this would use up a substantial portion of that grant, to the point that the remainder would no longer cover the stated intention of sending the student to an overseas conference. Such a substantial impact could plausibly lead to reduced engagement with the CASS student program, which is already at a level that has been flagged at recent ATUC meetings as a source of concern.

Recommendation: ATUC supports the continuation of the DA program, and acknowledges CASS' review of how to improve the existing system. ATUC recommends that CASS explore a hybrid structure of both DAs and project experts, and that they also implement the ATCAbot to help offset the responsibility and workload of the DA. ATUC recommends that CASS co-supervised students continue to participate in the DA program, but at the current two weeks per year, including overlap, and without drawing on their overseas travel funding. ATUC strongly recommends that CASS require their own staff to participate in the program as part of the National Facility support structure, prior to enlisting volunteers from the community. ATCA Legacy and Large projects consist of expert users who can train less experienced users for their current project: these should be self-sufficient and not require DA support.

Unattended Observing

ATUC has received queries from users involved in Legacy Projects, in particular about the extent to which truly "unattended" observing is permissible with the ATCA. For instance, once the observer has carried out the handover and the setup, could they then leave their office/computer, or even go to sleep (with phone access and Twitter alerts active)? The existence of Section 3.4.7 in the ATCA Users Guide ("Alarm notification during unattended observing") would seem to imply that this is an acceptable option. ATUC strongly supports ATNF's official policy that observing should not be completely unattended. The time that has been granted to observers is National Facility time, awarded at the expense of other applicants,

which observers should use responsibly so that the maximum amount of science can be delivered from the telescope.

Such queries about unattended observing reflect the fact that for the majority of the observing time (i.e. in 2-10 GHz continuum mode), the ATCA performs so reliably, and has such robust protection mechanisms in place, that there is less need to continuously monitor the observations. While recognising that not all modes are so stable (e.g. zooms), some members of ATUC speculated on whether this might be an opportune time to consider whether fully unattended operation could ever become the norm after setting up and commencing an observing schedule. Could some straightforward types of observation be conducted in service mode, without involvement of the PI beyond preparing a schedule file? The answers to these and related questions may well influence the need and models for DAs into the future. Should any of these be deemed feasible, CASS could then consider polling the user community on their preferences with regard to future operational models.

Recommendation: CASS should spell out more clearly what is, and is not permissible during “unattended” observing. ATUC suggests that CASS consider whether different observing models, including unattended and service mode, might be feasible, and if so, to consider polling the ATCA user community about their preferences.

NAPA and ToO overrides

The community have raised concerns regarding the relative prioritisation of NAPA and Target-of-Opportunity requests. The formal ATNF policy (https://www.atnf.csiro.au/observers/apply/too_apply.html) states that “To avoid conflicts of interest, ToO requests are cross-checked against existing observations and proposals.” In cases where there are existing NAPA programs that could potentially be triggered on a new event (according to the trigger criteria and response windows given in the original proposal), this policy would suggest that the existing NAPA program should have priority. To that end, CASS might consider whether the PI of an existing, TAC-accepted program should, when possible, be consulted as to whether they intend to trigger, before a decision is made as to whether to grant a new Target-of-Opportunity request on the same class of object. This would ensure the integrity of the TAC process and discourage the ToO process being used to bypass the TAC rankings. Similar policies are already in place at other observatories, and ATUC suggests that CASS consider the pros and cons of adopting a similar policy. Either way, to provide more clarity on NAPA triggers, ATUC also suggests that detailed triggering criteria and response windows be added to the cover sheets of NAPA proposals within the OPAL system.

Users have requested clarification of how a conflict between Rapid Response Mode observations and other NAPA triggers (or indeed other Rapid Response triggers) would be handled. Significant effort has been invested into enabling the Rapid Response Mode, and ATUC looks forward to seeing the scientific results arising from this new capability, but in cases where a single event could lead to Rapid Response triggers from more than one facility (for instance gamma-ray bursts detected by gamma/X-ray satellites and gravitational wave

detections), ATUC recommends that ATNF develop a policy clarifying how competing rapid response observations would be treated; whether the earlier trigger or the higher-ranked observation would take priority.

A related matter would be the prioritisation of apparently separate proposals (once again, the perfect example being short gamma ray bursts and gravitational wave events) that asked to follow up the same event, potentially with different observing frequencies, cadences and science goals. Would both programs be observed as long as their trigger criteria were met, or would the higher-ranked proposal take priority? ATUC recommends that ATNF clarify the policy for resolving conflicting triggers.

Finally, ATUC notes the impact of the new Rapid Response Mode, as well as high-priority NAPA or ToO triggers, on scheduled observers whose time is overridden. As a matter of courtesy, when an observation is displaced from its originally-scheduled time, ATUC recommends that both the PI of the displaced program and the registered observer for that program in the Portal be notified by email. Where possible, an attempt should be made to make up any time that is overridden.

Recommendation: CASS should clarify how competing NAPA and ToO triggers will be handled, particularly in the case of Rapid Response Mode observations. Further, ATUC request that both the PI and the registered observer for any displaced observations be notified as soon as possible after an interrupt is approved.

Legacy Projects

ATUC is delighted to see the first two semesters of Legacy Project observing having been successfully concluded. However, ATUC requests some clarification on what the expectations are regarding data release, hosting of data products, and progress reports/proposal resubmission. If the data products are to have a lasting legacy value to the broader community, they need to be easily and permanently accessible, preferably through CASS. ATUC therefore recommends a clarification of the division of responsibilities between Legacy teams and CASS. On a related note, ATUC notes that the ATNF Legacy Projects page suggests that links to the websites of the approved Legacy projects would be added as they are established, yet no such links currently appear. If this is a requirement from CASS, it should be made clear to the project teams.

ATUC supports the current efforts to make of order 35% of observing time available to the Legacy Projects each semester. While it would assist the planning of Legacy Projects to receive earlier notification of their allocations each semester, ATUC acknowledges that exact time awards are impossible to predict ahead of time until the TAC outcomes are known for a given semester. However, ATUC does recommend close coordination between CASS and the Legacy Project teams to enable the timely and successful completion of these high-profile projects.

Recommendation: CASS should clarify both the expectations and responsibilities of the Legacy Project teams, and the support that CASS is willing to provide, to enable timely and lasting accessibility of Legacy Project data.

5. Parkes

Similar to their ATCA colleagues, some members of the community would like to lessen the load on observers by allowing unattended observing. The idea would be to start the observations and go to sleep and only be woken up when a problem occurs, for example a wind stow. It was noted that Parkes observing is typically more reliable than is the case for ATCA and perhaps this is less of an issue from a technical point of view. Data quality assurance still remains an issue. However, just as in the case of unattended observing for ATCA, it is ATUC's position that observing should not be completely unattended, to ensure the most productive use of telescope time.

ATUC has some technical feedback on the new FROG and will send it directly to the developers.

Recommendation: ATUC believes that teams asking for Parkes observing time are responsible for ensuring the observing time is used responsibly and that sufficient team members are available for observing.

6. ASKAP

ATUC recognises the need for a SSP review process prior to full ASKAP operations, but is concerned about the timescale over which this needs to occur. SSP teams will need significant time to consider changes to the ASKAP system parameters together with Terms of Reference (ToR) for such an allocation process. Current expectations indicate that the review will take place in mid-2018 and that the ToR can be expected to be available to the community 2-3 months ahead of the deadline. However, this timescale may be too short, particularly for those SSPs most significantly affected by the updated specifications of the telescope.

ATUC strongly supports the suggested workshops that will assist the SSPs in matching their science goals to the new ASKAP system specifications. We hope that these workshops will bring together a range of SSP members and allow a clear exchange of expectations, requirements, and issues surrounding commensality (to enable, e.g., VAST planning) to ensure the most efficient use of ASKAP and the best scientific outcomes.

ATUC was encouraged by the good feedback from the early science data. However, there are concerns raised regarding the availability of the Galaxy supercomputer at the Pawsey centre. We note that the supercomputing resources are nearing their end-of-life. ATUC recommends preparing for this in terms of both funding and planning for what resources will be needed. In

particular, hardware replacement provides an opportunity to ensure data ingest is more compatible with the way ASKAP provides its data streams.

We note that CRAFT has relied in the past on GPU resources at the Pawsey centre which officially are only useable for MWA. While most of the data analysis occurs in real-time on the MRO site, offline processing does happen at the Pawsey centre. When the Galaxy replacement is being drafted, either a small number of dedicated GPU resources or officially shared resources could be useful.

Additionally, in order to avoid future conflicts, ATUC would suggest a clarification of the Builders' List and Publication Policy from CASS.

Recommendation: CASS should release a clear set of Terms of Reference to SSPs as soon as available and allow adequate time for the revision of proposals ahead of the review process. There is a need to provide adequate opportunity for SSP team members to interact with each other and ASKAP staff through CASS-organised workshops well ahead of the submission deadline, to ensure that both the telescope parameters and Terms of Reference are thoroughly understood.

Recommendation: CASS should clarify the Builder's List and Publication Policy, for both early science data and SSP data.

7. LBA

ATUC reiterates the importance of the LBA. This instrument plays a unique and important role in the southern hemisphere. The LBA will provide the long-baseline component to SKA1-Mid. Moreover, continued support of the instrument is important due to it being highly complementary to ongoing and future ATCA Legacy and ASKAP Survey Science projects. It is important that Australia maintains its VLBI facilities as the Asian astronomy communities develop theirs; this has the benefit of fostering collaboration with regional partners whilst additionally improving the performance of the instrument.

ATUC continues to strongly support the participation of ASKAP as an LBA site. This would ideally involve tied array capabilities, although ATUC realises that this would be contingent on funding becoming available.

ATUC notes that the millimetre capabilities of the ATCA allow global collaboration with leading international millimetre instruments such as ALMA, KVN, KaVA and new instruments under construction in the Asian region. These capabilities are unique within Australia, and given that no replacement is currently planned in case of failure, careful maintenance of the 3mm system on the ATCA is essential to best ensure its longevity.

ATUC has not received any communication regarding the outcomes of potential negotiations for dedicated access to Mopra for VLBI. The committee is extremely supportive of such efforts, and requests to be kept apprised of any progress on this front.

Finally, ATUC notes that more frequent sessions would be to the benefit of many VLBI projects scheduled on the LBA. This would allow the LBA to be utilised by VLBI projects that require frequent monitoring or several epochs of observation per year (e.g. parallax measurements). Additionally, the transient community has expressed a preference for more evenly spaced observing blocks throughout the year.

Recommendation: *ATUC continues to strongly support the retention of the LBA instrument and requests that the inclusion of ASKAP as a tied-array, and funding options for this, should continue to be investigated by CASS. Additionally, ATUC recommends that care be devoted to the maintenance of the 3mm system on the ATCA, to guard against catastrophic failure and prevent the loss of this important VLBI capability.*

8. Tidbinbilla

ATUC is concerned about how little observing time is able to be used by the host country, well below the contractually agreed fraction of 5 per cent. We would like to see a clarification of why that is the case, and what steps would need to be taken to rectify this situation and maximise the benefits of hosting the Deep Space Network facilities. For example, if there are no funds to provide a backend necessary for observations then perhaps a call to the community should be made to help with that.

Recommendation: *ATUC would like CASS to explore operations models and requirements for Tidbinbilla that would allow the host country time to be used more fully and effectively.*

9. Culture Project

ATUC recognises that management has taken active steps to improve the workplace culture within CASS. In particular, we commend CASS for the leadership role they have taken in clarifying confusing statements in the CSIRO policy documentation, and in communicating the existing policy framework to CASS staff. Steps taken to reduce the stress levels in staff and improve workplace morale are also positive. However, feedback from the community indicates that there is still some uncertainty as to the current working environment at CASS.

A concern is that while steps taken are undoubtedly positive, they do not directly address what is arguably the central issue identified in the Culture Project report, regarding “levels of bullying and harassment in CASS and perceived lack of transparency”. ATUC recognises that these issues are complex and subject to a high-level of confidentiality, and that effecting culture change is a long-term process, to which CASS is clearly committed. Nevertheless the committee feels that additional active steps could be taken that might begin to assuage the

community's concerns. Possibilities might include company-wide staff training, above and beyond the generic CSIRO-wide online modules. Similarly, mention has previously been made of obtaining feedback from staff, and the community would welcome information on what that feedback has shown.

Given the low levels of trust from some parts of the community, ATUC reminds CASS of the importance of due care and diligence in both fulfilling and communicating their positive changes. For example, the Culture Report recommendation that "adequate information is provided to students and their university supervisors so that students are informed and empowered to act", has arguably not been carried out to a satisfactory level, given that none of the student or supervisor members of ATUC were aware that this information now appears on the Graduate Student Program website. Directly informing the community (particularly existing students and supervisors) of the addition of this content to the website would have demonstrated commitment and aided in building community trust. The alternative is that statements may appear unsubstantiated, fuelling community concerns regarding the level of genuine commitment to meaningful change.

Another small point of caution: while the ASA ECR mentoring programme could certainly provide an adequate level of mentorship, this programme is very much in its infancy. In order to support the ASA ECR programme and maximise its positive impact, CASS would need to ensure senior staff are signed up and contribute actively to its development.

Recommendation: *ATUC recommends that CASS continue in its efforts in the Culture Project, and that the community (and ATUC) be provided with regular updates. ATUC would welcome evidence that there is scope to broaden and deepen efforts in a way that meaningfully tackles the core concerns of the community. The committee feels that effective communication is essential in ensuring that relevant information on positive actions taken reaches its intended audience (and the community at large).*

10. User feedback

ATUC notes the continuing low response rate to user feedback, despite the inducements on offer. In its previous report ATUC recommended that the ATNF Friend assigned to each program should be responsible for soliciting this feedback. While the Friend system appears to no longer be active, it could be worth investigating whether this could contribute in any way to the ongoing discussions around the DA support system. If resurrected, this could also help with the user feedback issue.

Regardless, it could be made more explicit that observers are expected to provide feedback, and improving the ease of doing so would likely improve the uptake. One option would be to display a link on the Portal, or redirect to the feedback form when logging out of the Parkes/ATCA Portal or a similar system. Requiring tired observers to remember to navigate away to a completely different page is unlikely to result in significant feedback.

In its response to ATUC's previous report, CASS stated "Reports of ATCA and Parkes feedback will be included in future reports to ATUC", but relatively little detail was presented at this meeting, apart from 2 categories from the 10 responses received (it was not clear if these were from Parkes or ATCA observers).

Recommendation: ATUC recommends that CASS make it easier and more explicit for users to complete feedback at the end of their observations, preferably via the Portal. ATUC still wishes to see complete summaries of observer feedback (separately for Parkes and ATCA) at each ATUC meeting.

11. CASS Move to Lindfield

This was discussed during the ATUC meeting in June but not mentioned during this meeting. As the move will have an impact on the community, we would like to be kept informed as to any developments or lack thereof. In particular, the availability of on-site accommodation remains an important point of interest.

Recommendation: ATUC would like to know if there are any updates about the site change.

12. Next meeting

ATUC requests input from CASS on the possible hosting of a Science Day associated with the next ATUC meeting. The next ATUC meeting might be a good opportunity for the Legacy Projects to provide updates on their progress. This could optionally be the overarching theme (or at least be included) in a Science Day.

Given the increasing number of CSIRO staff and non-CSIRO astronomers in Western Australia, there have been requests for the ATUC meeting to start at a more WA-friendly time. During the east coast summer period the WA start time is 7 am which can be hard for people who want to attend but might have to drop their children off at school.

Recommendation: ATUC recommends shifting the start time of meetings hosted in Sydney to 11 am to facilitate remote participation by interested parties in Western Australia. We recommend that CASS considers hosting one of the future ATUC meetings in Perth.