ATUC Report – September 2026

1. ATUC members in attendance

Nick Seymour (Chair, online), Jane Kaczmarek (Acting Chair), Andrew Zic (Executive Officer), Aditi Kaushik (student member), Ashley Stock, Beth Cappellazzo (student member), Karen Lee-Waddell, Laura Driessen, Rene Breton (international, online), Tessa Vernstrom, Tiege McCarthy, Ziteng (Andy) Wang

2. Commendations

- Very positive outcomes from the Research Portfolio and Facilities & Services Reviews.
- The commitment to merit-based astronomy with ATCA until mid-2029.
- BIGCAT's first scientific publication and accompanying press-release, as well the progress through phases 0, 1 and near-completion of phase 2.
- Successful CryoPAF commissioning, early science, and millisecond pulsar discovery.
- The positive UWM-H review.
- All ASKAP SSPs now underway and completion of FLASH survey.
- Improvements in ASKAP observing efficiency and data processing (e.g. daytime observing and improved calibration).
- Implementation of FLINT algorithms into ASKAP processing, including solar mitigation with Jolly Roger, imaging and masking (eye-patch).
- Improvement in ASKAP SSP communication, particularly the assigned ATNF liaison for each SSP.
- The publication and data release from SPICE-RACS and the subsequent media attention.
- Establishment of CRACO automated data workflows.
- Establishment of the new RFI and Spectrum Management project along with the first paper on SNIFFLES and the ducting predictor tool.
- Successful developments with LAMBDA including the first sky images, capital investment, Australia-Korea Foundation, and on-going international engagement/collaboration for lambda expansion (Italy, Vietnam, etc).
- The changes made to the ATNF Newsletter which substantially addresses the previous recommendation.
- The improvement to the communication channels in the Student programme including the student Slack and regular monthly meetings. The observatory visits were very much appreciated.

3. ATNF operations

3.1. ATCA Funding

ATUC welcomes the news of support for merit-based astronomy with ATCA until at least mid-2029 as well as the aspiration that ATCA continues until the mid 2030s. We note and appreciate the on-going clear communication on this matter.

Recommendation: ATNF to include a timeline of merit-based astronomy access in Call for Proposals in order to let users adequately plan large or long term projects, i.e. that merit-based access is not currently guaranteed after mid-2029.

3.2. RFI mitigation

ATUC welcomes the establishment of the RFI and Spectrum Management project and the clear progress made since its previous recommendation that RFI mitigation be treated as a core strategic priority. The development of SNIFFLES, the ducting predictor and continued work on technical mitigation demonstrate that this programme is moving beyond RFI monitoring towards practical tools for managing the changing spectrum environment.

Recommendation: ATNF to continue to support RFI and Spectrum Management as an ongoing strategic activity and provide ATUC with regular updates on the development, operational deployment and effectiveness of RFI prediction and mitigation techniques across ATNF facilities.

3.3. User support

ATUC notes that there has been no use of the Helpdesk email address. However, users are supposedly accessing support through their Observing Expert (OE) and submitting tickets via the Portal and Jira, though there is no external view on issue triaging nor resolution.

Recommendations: ATNF to

A. explore a mechanism for tracking and communicating technical support requests (Jira) that is visible to users (so that others can see what questions have been asked and answered),
B. ensure that the Helpdesk link is prominently displayed everywhere (Call for Proposals, CASDA, DAP, BIGCAT scheduler, newsletter etc.)

4. Policies

4.1 Paid time & DDT policies

ATUC welcomes progress towards documenting the principles governing purchased telescope time, Green Time, Director's Discretionary Time, Target of Opportunity observations and

Observatory Projects. The previous Director's Response indicated that these documents would be presented at this ATUC meeting following consideration by the ATNF Steering Committee.

As purchased telescope time becomes a potentially more important component of the ATNF operating model, users require clarity not only on how time can be purchased but also on how competing categories of telescope time are prioritised.

Recommendation: ATNF to finalise and publish the policies governing purchased time, DDT, ToO, Green Time and Observatory Projects, including an explicit hierarchy or decision framework for resolving conflicts between these categories of time and merit-allocated observations.

4.3 Update of TAC policy document

ATUC notes that the current Time Allocation Committee policy document dates from 2014. Telescope capabilities, observing modes and proposal pressures have changed substantially since that time, including increasing use of rapid-response observations and more complex categories of telescope access.

Recommendation: ATNF to update the TAC policy document to include recent developments in observing modes and categories of telescope access as well as more recent issues noted in the Call for Proposals, e.g. around the use of generative AI.

4.4 Increase in the number of expert readers

ATUC acknowledges the increasing proposal pressure on ATNF facilities. Maintaining an appropriate workload for expert readers and ATAC members is important to preserving the quality and consistency of scientific assessment.

Recommendation: ATNF to review the number of expert readers used by the ATAC against current proposal numbers and the intended maximum reviewing load per reader, and increase the expert-reader pool where necessary to maintain the quality of proposal assessment.

4.5 Green Time

ATUC acknowledges the willingness to share the statistics of Green Time with the community.

Recommendation: ATNF to consider how to prioritise Green Time requests made by students and also to clarify the prioritisation and use of Green Time policies within the relevant communication channels.

5. ATCA

5.1 BIGCAT

ATUC commends the progress of BIGCAT, with phases 0 and 1 complete and phase 2 substantially complete. The early science results demonstrate the significant capabilities enabled by BIGCAT, including improved sensitivity and dynamic range for 3-mm observations and new observing capabilities across continuum, zoom and tied-array modes. ATUC particularly notes the successful first scientific publication and associated press release.

Recommendations: ATNF to

A. prioritise completion of the BIGCAT observing modes that are not yet working well.
B. provide clear timelines for the implementation of remaining capabilities, including pulsar binning, rapid-response and any further modes required by the community,
C. ensure that documentation and data-reduction support meet the needs of the ATCA user community.

5.2 Infrastructure upgrade timeline/schedule impact

ATUC notes that a number of infrastructure fixes are required at ATCA, with potential impacts on both array availability (failure of new transformers) and the reliability of the telescope (e.g. CA04 SWEO drives). Greater visibility of their relative priority and operational impact would help users understand the implications for future observing schedules.

Recommendation: ATNF to communicate the priority and status of outstanding ATCA infrastructure fixes (e.g. the SWEO drives), including their expected impact on array configuration availability and observing schedules, and how impacts on science operations are considered in prioritising this work.

6. ASKAP

6.1 ASKAP Key Capabilities project

ATUC is very pleased with the progress of the ASKAP Key Capabilities project. We note the quick and successful actions taken since the last meeting to rectify the POSSUM reference fields calibration process. The work done to improve solar artefact removal with jolly roger should especially be commended as it enables daytime observing for surveys that previously could only observe at night. This should go a long way to completing the SSPs in a timely manner. ATUC also acknowledges that previous feedback around implementation of the FLINT pipeline has been actioned, at least integrating aspects of it into the current ASKAP pipeline. The work continues and ATUC encourages the ASKAP team to keep exploring ways to improve the data quality, particularly we note the intended implementation of direction dependent calibration.

Recommendation: ATNF to continue effort improving ASKAP data quality with a priority being the direction dependent calibration integration into the standard pipeline.

6.2 SSP timelines

ATUC acknowledges the work undertaken to explore the possible observing strategies and timelines for completing the SSPs. ATUC understands that these options remain under consideration following consultation with the SSTs and consideration of their feedback.

Recommendation: ATNF to finalise and communicate the observing strategy and associated timeline for completing the SSPs to the teams as soon as practicable.

6.4 CRACO/LoTRUn

ATUC was pleased to see the continued progress of LOTRUN towards retiring the shared-risk component of CRACO. In particular, the development of a fully automated workflow from CRACO data recording through to archiving on CASDA represents an important step towards establishing CRACO as a reliable National Facility resource for the community. The development of the pipeline for CRACO data reduction is also a valuable development. ATUC also noted that ASKAP could further benefit from CRACO's real-time capabilities by integrating CRACO telemetry (e.g., visibility of realtime bandpass calibrations) into the main ASKAP control system.

Recommendation: ATNF to continue resourcing CRACO to support the completion of LOTRUN and the transition of CRACO out of shared-risk operations, and to continue integration of CRACO monitoring within the main ASKAP control system to serve as a low-latency indicator of system health.

7. Long Baseline Array

ATUC is pleased to see VLBI, and particularly the LBA, highlighted as playing an important role in the future of the ATNF and astronomy in Australia. ATUC agrees that, for the foreseeable future, the LBA will remain a leading high-resolution cm-wavelength instrument in the southern hemisphere and must continue to be supported to ensure it is well positioned to complement SKA-Mid into the future.

7.1 LBA user accessibility and data processing

ATUC notes strong community interest in using the LBA, which is expected to grow as southern hemisphere surveys identify increasing numbers of sources suitable for VLBI follow-up. However, feedback indicates that the difficulty of reducing LBA data remains a significant barrier to new users, particularly compared with facilities that provide calibrated or science-ready data products.

Providing example continuum and spectral-line datasets, accompanied by concise calibration and imaging tutorials, could provide a relatively low-cost way of improving accessibility while more automated processing options are explored.

Recommendations: ATNF to:

A. implement a refresh of the LBA observing and data processing frameworks,
B. review the LBA observing and data-processing documentation from the perspective of new users and develop additional material to support novice users, including representative continuum and spectral-line datasets with calibration and imaging tutorials.

7.2 LBA Scheduling & Resource Availability

One barrier to using the LBA is uncertainty in scheduling and the availability of observing resources in each proposing cycle. The LBA status page currently uses terms such as ‘may be’, ‘unlikely’, ‘less likely’ and ‘usually’, making it difficult for users, particularly those without existing connections within the LBA community, to understand what resources can realistically be requested. Greater certainty around scheduling periods is also needed to coordinate joint observations with international arrays and, in future, SKA-Mid. If this uncertainty reflects reliance on a small number of key personnel, this may also present a risk to the robustness of the facility.

Recommendation: ATNF to review the medium-term approach to LBA scheduling, including providing clearer information on the availability of array elements and greater certainty around scheduling periods. Where reliance on key personnel contributes to current limitations, ATNF should explore opportunities to broaden expertise and improve the robustness of the facility.

8. Murriyang

8.2 Update on UWM-H & UWL digitisers/increase to bandwidth

The March report specifically requested an update on the status, timeline, capabilities and dependencies between the UWL digitiser upgrade and UWM-H. ATNF committed to provide this information at the September meeting. ATUC welcomes the positive UWM-H review and progress towards the next generation of Murriyang wideband capability.

Recommendations: ATNF to:

A. maintain active communication for UWM-H and associated UWL/digitiser developments as the projects progress, including major milestones, expected changes in capability and anticipated impacts on science operations,
B. send out a call for community engagement with the development of a commissioning plan to ensure the instrument is fit for purpose, tying the engineering requirements to science needs.

8.3 Gariwang as a Unified Observing UI

The move towards a unified observing interface has the potential to substantially simplify Murriyang observing, particularly as users move between UWL and CryoPAF. The previous Director's Response indicated that both systems would be integrated into Gariwang and that training would accompany the transition.

Recommendation: ATNF to prioritise completion of the unified Gariwang observing interface and provide users with a clear transition plan, including documentation and training, before it becomes the primary interface for routine observing.

8.4 Long term impact to schedule from CryoPAF regen

ATUC notes that the CryoPAF currently requires vacuum regeneration approximately every four weeks. This introduces an ongoing operational cost and has implications for the availability and scheduling of Murriyang. ATUC understands that addressing the underlying cause is not currently prioritised.

Recommendation: ATNF to quantify and communicate the expected operational impact of CryoPAF regeneration on Murriyang observing, including the expected frequency and duration of interruptions and how these will be incorporated into observing schedules.

10. Community

10.1. Student program

ATUC acknowledges ATNF and the student committee's continued efforts to improve the ATNF postgraduate student program. ATUC commends the improvement to the communication channels including the student Slack and regular monthly meetings. ATUC acknowledges the updated student and supervisor expectations which provide needed transparency and clarity.
ATUC commends the commencement of the Observatory visits for students, which provide valuable training opportunities and hands-on experience for the students.

Recommendation: ATNF to provide ongoing funding for regular observatory visits, including visits to Murriyang/Parkes, ATCA/Narrabri & New Norcia. And schedule telescope time during the visits so students can observe at the observatory, where appropriate.

ATUC acknowledges the ongoing effort of ATNF and the student committee to identify and implement training opportunities for students.

Recommendation: ATNF & student committee to continue looking for opportunities for student training and extend that to staff if appropriate.

10.2. Internships & University Partnerships

ATUC notes the increased interest from Universities in industry internships for PhD students and that CSIRO/ATNF could act as the industry partner for these. It is not clear at this time what the process for initiating these internships is or if there is indeed a formal process through the ATNF.

Recommendation: ATNF to develop, if not already present, a clear applications or initiation process for industry internships for PhD students and to make that information available to the community.

11. DAP and CASDA

11.1 CASDA

In general, CASDA is fantastic. It is amazing that nearly 20,000 ASKAP observations are publicly available as well as the visibilities and auxiliary data products for those who would like to do further processing.

ATUC notes that CASDA can be challenging to access and overwhelming for potential new users. We have spoken to people who would like to use ASKAP data, but try to access it and find it overwhelming to digest and work out what to use. They have mentioned how good it would be to access in python. ATUC is aware this is possible and documentation exists, but is not well-advertised or well-explained/demonstrated for new users. For example, if someone

wanted to know if a source was detected what ways would they do that? If someone wanted to make cutouts of all the times a source has been observed, what way would they do that. If someone wanted to get the flux density of a source every time it's been observed, how would they do that? These things are non-trivial to implement.

Recommendation: ATNF to produce clear, well-advertised and basic tutorials/demonstrations/example notebooks for specific simple use cases. These should be easy to find, e.g. at the top of the CASDA guide. This could include the development of the AESP cutout tool and as well as a catalogue query tool.

There is no clear way to get help if someone is confused about CASDA, if an implementation is not working, or if astroquery/TAP+ has gone down. The link for "help" and the "CASDA users guide" are currently down.

Recommendation: ATNF to fix the "help" and "CASDA users guide" links urgently, and the helpdesk email should be clearly visible on CASDA.

11.2 DAP

CASDA sometimes has issues that are opaque to the general user. For example, the cutout server going down because the cache is full, or the filenames changing so a fix needs to be implemented in each user's code so the download still works. These are not shared and fixes are often internal to groups or to the CASDA mattermost. This feedback is specific to CASDA, but the fix can be applied to the DAP and CASDA.

Recommendation: ATNF to establish a publicly-accessible change log for DAP and CASDA updates and fixes.