ATUC Report – March 2026

1. ATUC members in attendance

Stas Shabala (Chair), Andrew Zic (Executive Officer), Nick Seymour (incoming ATUC Chair), Beth Cappellazzo (student member), Jane Kaczmarek, Marcus Lower, Tiege McCarthy, Saurav Mishra (student member), Gavin Rowell, Tessa Vernstrom, Karen Lee-Waddell.

2. Commendations

- Near-completion of the first ASKAP survey, FLASH, and improvements in day time observing for other spectral line projects.
- Successful commissioning of BIGCAT, fringes to the Tid 70m L-band receiver, and progress with CryoPAF.
- High-impact science results with Murriyang UWL (plasma lensing towards a repeating FRB) and BIGCAT (possible TDE).
- Completion of several iterations of the RACS survey with the new implementation of the astrometry correction and work towards joint band imaging.
- Strong community engagement through the ATNF Futures 2030 and the first ATNF-university postdoc hire, improvements to the ATNF student program, and building a talent pipeline through student engagement at all levels of education.
- Strong demand for ATNF facilities, as illustrated by an increasing number of proposals across all facilities.
- ATNF's support of the radio transient network LIEF bid. ATUC notes the strong community support for breakthrough transient science which would be enabled by the proposed network, consistent with the growing importance of radio transient science globally as illustrated by the increasing numbers of ToO/NAPA proposals in recent years.
- ATNF's investment in data storage infrastructure (Banksia), which represents a significant step forward in addressing the long-standing concerns around data storage capacity, a critical area.
- Breadth of ongoing ATNF activities focused on development of the current and future user community (e.g. radio schools, Summer Vacation Scholarships, PULSE@Parkes).
- Increased resourcing in operation of ATNF telescopes, which are likely to have a positive impact on reliability.

3. ATNF operations

3.1. RFI mitigation

Radio frequency interference (RFI) continues to be a significant and growing concern. With the increasing prevalence of satellite constellations, the impact of RFI will intensify. There are ongoing efforts at ATNF to develop and test promising mitigation solutions that can be applied throughout the data acquisition chain. For example, there is exciting potential in photon-based adaptive notch filtering, which could be added to the UWL high band to fix recent saturation issues. Similarly, beam nulling techniques could be implemented

on CryoPAF, BIGCAT, and ASKAP. In ATUC's view, development of these techniques is worth a modest loss of observing time.

It is encouraging to see progress in engagement and communication with satellite operators to help manage RFI. Developments in RFI mitigation also present opportunities to engage with disciplines beyond astronomy. Continued investment could contribute to collaborations and the development of translatable intellectual property.

Recommendation: ATNF to establish RFI mitigation as a core strategic priority, supported by a dedicated, ongoing program that includes spectrum management as well as development and implementation of emerging technologies and algorithmic solutions. This program should balance near-term operational interventions and long-term investment in advanced technologies alongside global engagement with initiatives such as the IAU-CPS.

3.2. User support

User feedback highlighted issues with the clarity and reliability of current support contact information, particularly for international users. In time-critical situations, users have encountered difficulties reaching support due to incorrect number forwarding, as well as uncertainty around how to dial Australian numbers from overseas. This introduces unnecessary stress where timely communication may be essential.

There continues to be feedback from users who are unsure how to request help with topics such as BIGCAT data reduction and the BIGCAT scheduler. The "Help and Support" ATNF webpage currently describes the address ATNF.feedback@csiro.au primarily as a "feedback" mechanism, rather than a "help desk". Therefore it may be unclear to users that this email is the appropriate way to submit any query to ask for help related to ATNF facilities and data.

Recommendation: ATNF to review all user-facing support contact information to ensure accuracy and accessibility, especially for international users. ATNF to improve visibility of the existing help desk email address to the user community by making it more prominent on the website.

3.3. ATNF Newsletter

ATUC supports the continued distribution of a regular newsletter to users as it is a valuable tool for engaging with and updating the user community. We anticipate that it will have a broader impact with a clear definition of its purpose, audience and schedule release. The newsletter can serve as a consistent part of communication for operational updates and feedback pathways, rather than as an ad hoc information channel.

Recommendation: ATNF to implement regular distribution of the ATNF newsletter, with the global user community as the target audience. A 6-month cadence would be appropriate, offset by 3 months from the ATUC meetings. Suitable content includes:

- summaries and outcomes of the two most recent ATUC meetings, including links to reports and encouragement of the community for feedback on actions to-date
- operational updates and facility status
- science and technical highlights

- upcoming events, opportunities, and call for participation
- any other key announcements relevant to the user community, such as updates to policies.

4. Policies

4.1. ASKAP GSP

There is concern in the community around the transparency of Guest Science and Director's Discretionary time allocation on ASKAP – both in terms of decision making, and in visibility of approved GSP and DDT projects on ATNF webpages. For example, ToO observations are currently taken under project AS113: "Other ASKAP pilot science including tests, TOOs or guest observations", which makes it difficult for non-ATNF staff to track time allocation.

Increased transparency would help to assure the community that time on ASKAP is being allocated in a fair, unbiased way, while not delaying the SSP timelines.

Recommendation: ATNF to ensure that ASKAP Guest Science and Director's Discretionary/ Target of Opportunity time allocation are transparently advertised on an ATNF webpage, as is done for Murriyang, ATCA, and the LBA, and to ensure that procedures for requesting ToO/DDT times are clearly advertised to the community.

4.2. Paid time & DDT policies

Policies governing purchased telescope time and DDT are currently under review, however there is limited visibility by the user community into the scope, timeline or intended outcomes of these changes. This is particularly important in the context of increasing use of paid telescope time for spacecraft tracking at Murriyang (e.g. Artemis and Intuitive Machines), which introduces additional competition for access and reinforces the need for clear time allocation policy.

ATUC acknowledges that the review of these policies is timely, particularly in the context of evolving operational models, funding pressures and an increasing demand for flexible access to telescope time (e.g. ToOs/NAPAs). The demand for, and support of, rapid response capabilities with ATCA have already enabled high-impact science. Ensuring continued access to such pathways remains important for scientific competitiveness, especially in the LSST era.

Recommendation: ATNF to provide a clear timeline and regular updates on the review and release of policies relating to purchased time and DDT, including opportunities for community input when appropriate.

4.3 Release/reliability of observing schedules

ATUC commends the ATNF on the numerous observatory-based positions that are being advertised and have already been hired into. This clearly demonstrates to the community the ATNF's ongoing commitment to ensuring the reliable operation of relevant instruments.

ATUC understands that the Murriyang observing schedule currently requires a degree of flexibility given ongoing commissioning of the CryoPAF, telescope maintenance and spacecraft tracking obligations. However, the lack of a long-term schedule is creating difficulties in managing observing projects, in particular, ensuring adequate observer rostering for large projects. These difficulties have been exacerbated by short-notice changes in the schedule and the current user overheads in tracking lost observation time as subsequently how much replacement time will be provided by the observatory.

Many of these issues could be alleviated by increasing the reliability of the observing schedule, and having a more proactive workflow for communicating and logging changes to the schedule. In particular, where potential spacecraft tracking activities are known in advance, early communication to impacted or potentially impacted teams should be provided as soon as possible.

Recommendation: ATNF to minimise impact on users, for example by offering additional observing support and/or improving schedule stability where possible. Where this is not possible, clear communication around scheduling constraints and potential disruptions is needed as soon as possible, alongside tracking of lost time with affected PIs informed of any time owed.

5. ATCA

5.1. Funding

ATUC welcomes the comments providing clarity on the timeline of the funding situation with ATCA. We were encouraged to see that ATCA is likely to remain fully funded as a merit-based facility until at least mid-2028.

Recommendation: ATNF to disseminate information about ATCA's future to the full community, for example via the ATNF Newsletter and call for proposals. ATNF should also continue diverse efforts to keep some time on ATCA as merit-based beyond mid-2028. ATUC requests an update at the next meeting.

5.2. BIGCAT early science

ATUC was pleased to see the successful commissioning of the BIGCAT upgrade at ATCA and a clear path to future development. We were encouraged to see the goal of 2026OCTS for routine ATCA operations. ATUC congratulates the ATNF on implementing and testing the BIGCAT tied array mode as part of recent LBA operations, and notes that the return of an even-more-flexible ATCA to the LBA is likely to drive increased VLBI proposal numbers. ATUC commends the ATNF on the work towards a repository of data reduction scripts, and look forward to this being made public in the near-future. ATUC has received feedback from users reporting an inability to understand to who, or where, data reduction issues should be reported, which leads to delays in publishing or abandonment of data.

The community has also acknowledged the BIGCAT scheduler as a large improvement over SCHED; however, the community also notes that this only extends to simple observation schedules, with complex observations hindered by UI issues. There is a desire to allow for scan renaming (e.g. for pointing and calibration scans) to help facilitate ease of data reduction. Another issue identified by the community is that

the current correlation configuration setup process is opaque, with some recommended setups from the ATCA user guide currently not working and others not fit for purpose. Clear guidance on who users should contact to facilitate advice on optimised observation planning, correlator setup and scheduling should be provided to successful PIs in advance of their scheduled observations.

Recommendation: ATNF to overhaul documentation and clarify support channels for users encountering issues with BIGCAT observing. This includes planning observations, designing correlator configurations and scheduling through to data-reduction.

Recommendation: ATNF to continue working on improvements to the BIGCAT scheduler, and to provide standard correlation configurations for all common observing modes.

5.3. Implementation of remaining BIGCAT observing modes

ATUC acknowledges that the commissioning and implementation of observing modes on BIGCAT is an ongoing and time-consuming process.

There is a desire in the community for clarity regarding the roll-out of the remaining observing modes on BIGCAT, in particular the pulsar observation modes (visibility pulsar binning and tied array pulsar fold/search modes). The committee is aware of at least one proposal in the APR2026 semester that requested pulsar fold mode, and notes that the pulsar-binning mode has not been available for several years.

Recommendation: ATNF to provide a clear timeline outlining the implementation and relative priority of remaining BIGCAT observation modes.

6. ASKAP

6.1. Polarisation calibration

ATUC received feedback from the POSSUM team relating to poor polarisation data quality from the use of the reference field calibration method. The data are unusable due to polarisation leakage with existing pipelines using the reference fields approach. Currently EMU and POSSUM have switched back to 1934 calibration but the WALLABY polarisation data products still use the reference fields. While WALLABY is one of the highest priority SSPs and POSSUM data are intended as an additional best-efforts data product, ATUC notes that commensal data products from WALLABY were intended to be used by other surveys.

ATUC is concerned about the length of time for the polarisation issue to be identified, as well as the communication about it (and potential fixes) between the ASKAP operations team and POSSUM survey team. ATUC sees a need for identification and implementation of technical improvements at high priority, both in order to preserve the world-leading status of the POSSUM survey and to keep the rest of the SSPs on time.

Recommendation: ATNF to highly prioritise delivering the polarisation calibration with the full-Stokes reference field calibration method to the level that was previously met under 1934 calibration for all observing bands.

6.2. ASKAP Key Capabilities project

The ASKAP Key Capabilities project is a welcome effort to invest resources in the short term to improve ASKAP data quality and scheduling efficiency, and allow completion of the SSPs by 2030. ATUC acknowledges the effort put in to improve processing for the WALLABY survey and to progress the other spectral line surveys, and congratulates ATNF on progress towards routine daytime observing. ATUC commends ATNF for improved communication with the SSPs since last semester, but is concerned about poor data quality for some SSPs which appear to be in part due to missed opportunities for input from the relevant teams. Examples include lack of clear two-way communication before major changes (e.g. switching to a reference fields strategy), and not including SSP coordinators in relevant Jira tickets. Suggested communications avenues relating to any proposed major changes to the pipeline may include Jira tickets which include SSP coordinators; and follow-up meetings involving relevant ATNF staff, SSP coordinators, and SSP PIs or nominee on specific issues as needed.

Recommendation: ATNF to strengthen two-way communication between the software team and SSPs including Jira tickets and joint resolution of specific technical issues.

Recommendation: SSP teams should be consulted about any proposed changes that may impact data quality via coordinators and PIs or nominees, prior to implementation.

6.3. Processing Pipelines

ATUC recognises the excellent work undertaken in RACS processing and the continued development of high-value observatory data products for the community. The Flint pipeline was highlighted multiple times in RACS processing and by ASKAP Survey Science Teams as delivering significantly improved continuum image quality compared to the standard ASKAPSoft pipeline, which continues to be the default for spectral line processing. The development of the Flint pipeline demonstrates strong internal capability and effective collaboration with Survey Science Teams, with clear gains in data quality, usability, and scientific output. Despite excellent performance on continuum and polarisation data, Flint is not currently offered as an operational or optional processing pathway. This limits the scientific return of ASKAP data and delays the adoption of demonstrably improved methods developed within ATNF and the community.

Recommendation: ATNF to make Flint a supported operational imaging pipeline for continuum and polarisation observations (including continuum/polarisation observations from spectral line surveys). This may require reprocessing data which were already processed with the standard pipeline, to provide consistent data products across the full survey.

6.4. SSP timelines

ATUC congratulates ATNF staff on a significant amount of work in successfully developing realistic and transparent timelines for the Survey Science Projects, incorporating a range of complex operational and technical constraints. Feedback from survey teams has been positive, particularly regarding the regular emails outlining both expected and achieved observing time, which are seen as valuable for planning and managing survey progress.

Recommendation: ATNF to continue reporting on the timeline, and informing the community of any major changes in a timely manner.

6.5. Reported efficiency of ASKAP

It was encouraging to see the steady improvement in observing efficiency of ASKAP observing in recent years. ATUC appreciated clarity in what is required to complete the SSPs by 2030, and would like to request some additional information. Current reporting does not clearly distinguish between telescope uptime, scheduled observing time (science and calibration), and the fraction of observations that produce scientifically usable data. ATUC suggests further metrics including tracking and reporting of data losses (and potential causes of data rejection), to provide an accurate assessment of scientific productivity and suggest potential areas for improvements.

Recommendation: ATNF to implement more rigorous and transparent reporting of operational performance for ASKAP, including metrics on telescope uptime, observing efficiency, fractional time spent on SSPs, and the fraction of scientifically accepted data.

7. Long Baseline Array

ATUC was pleased to see a BIGCAT-equipped ATCA participating in the most recent LBA session (February 2026), along with first fringes to the new Tidbinbilla 70m L-band receiver. It is also encouraging to hear that Mopra has received a network upgrade to a 10 Gbps link to support LBA observing.

ATUC is pleased to see references to VLBI capabilities being highlighted as important features across future projects and notes that it is important to ensure that the expertise required to exploit these capabilities is maintained. The LBA, and VLBI more generally, remains a unique capability offered by the ATNF in the Southern Hemisphere which will not be replaced in the medium-term by other incoming non-ATNF instruments. The impact of the LBA is illustrated by both the research output (e.g. real time maser flare detections) and the healthy number of proposals received in recent observing semesters.

The ATUC acknowledges the effort put into investigating VGOS capabilities of LBA antennas, and notes that the lack of fast-slewing capability is not a critical issue for the potential applications of VGOS in the LBA, which would primarily be source positioning and imaging, rather than routine Earth Orientation Parameter (EOP) estimation. Opportunities for participation in geodetic VLBI, including but not limited to VGOS, may provide a new link (through position, navigation, and timing) to national science priorities beyond astronomy.

Recommendation: ATNF continues to support the LBA, including identifying future VLBI opportunities in both infrastructure and user training.

8. Murriyang

8.1. CryoPAF commissioning and shared-risk observing.

ATUC commends the significant progress made towards commissioning the CryoPAF ahead of shared-risk observations that are scheduled to take place in the APR2026 semester. The committee looks forward to updates on the initial science results from the receiver and full implementation of proposed observing modes (including polarisation calibration).

Something that was not covered during the ATUC open session were the plans for how Murriyang users will be trained to observe with the CryoPAF. Also missing was an update on the status of the new Gariwang user interface and an overview of how observations will transition to it from the current *Dhagu?* interface.

Recommendation: ATNF to organise and run observer training sessions for the CryoPAF. These sessions should cover how to use the new Garrawang interface to put together observing schedules and instructions on how to operate the instrument.

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

There have been repeated references over the past year to potential upgrades to the Murriyang UWL system, including digitiser improvements and increased bandwidth; however, there is limited visibility on the timeline of these developments. These upgrades appear to be linked to the development of the UWM-H, though it is not clear if they depend on the existence of the UWM-H or if these can be pursued independently.

ATUC acknowledges the success and continual investment in the UWL system, which has enabled a broad range of science through its wide frequency coverage. The continued development and planned investment in next-generation wideband systems (e.g. UWM–H), and its inclusion in the future technology roadmaps and timelines is encouraging and reflects continuing investment to maximise the scientific capability of Murriyang.

Recommendation: ATNF to provide an update on the status, timeline, and expected capabilities of UWL digitiser upgrades and the UWM–H system, including whether UWL upgrades are contingent on UWM–H deployment or could be delivered independently, along with anticipated improvements and implications for science operations of both systems.

9. Future projects / demonstrators

9.1. Futures 2030 workshop takeaways and strategic planning

ATUC congratulates the ATNF on running a highly successful Futures 2030 workshop that resulted in a 50+ page document of community ideas from almost 300 participants. The popularity of the workshop highlights the significant desire among the community for co-design in the conceptualisation and development of future ATNF instruments.

Recommendation: ATNF to produce a white paper that synthesises broad outcomes of the Futures 2030 workshop.

Recommendation: ATNF to maintain a high level of community consultation on future instrumentation, including by presenting results from internal studies into different instrument concepts.

9.2. LOTRUN

It was pleasing to see the progress of LOTRUN as it aims to move CRACO out of shared-risk mode. Having CRACO data available on CASDA is a great resource to the community.

ATUC notes that some outcomes of the LOTRUN project – such as improved integration of the CRACO and ASKAP main control systems, and archiving of CRACO data to CASDA – are running behind schedule due to limited resources.

Recommendation: ATNF to resource CRACO appropriately to establish it as a National Facility. If feasible, ATNF to enable LOTRUN to fulfill its project outcomes, for example by formalising CRACO as a Key Project.

9.3. LAMBDA

ATUC acknowledges the significant progress made by the LAMBDA project over the last year. The successful proposal by, and joint science low-frequency VLBI centre with, South Korea is a great example of international collaboration and regional involvement in the Asia-Pacific region. Science commissioning is progressing well and two stations are expected at Parkes and Narrabri. ATUC notes the potential for broader collaboration within Australia and in the Asia-Pacific region, and would like to request clarity on the long term goals, timelines, and intended outcomes of the project.

Recommendation: ATNF to clarify the long term strategy and goals of the LAMBDA project (including exploring the possibility of incorporating existing low-frequency test-beds located at the Inyarrimanha Ilgari Bundara) and how it aligns with other ATNF Futures projects and priorities**.**

10. Community

10.1. Student program

ATUC notes ATNF's efforts to solicit feedback from students, university supervisors, and CSIRO co-supervisors, and encourages this process to continue as more activities are organised. ATUC acknowledges ATNF for their regular communication with the ATNF-co-supervised students. ATUC commends ATNF for communicating with the broader ATNF student community (including outside the ATNF co-supervised student body) to get feedback on the students' experience as ATNF users.

The student committee has been a positive addition and provides a clear avenue for students to provide feedback, receive training and engage with their peers. ATUC commends members of the student committee for engaging with the students to understand what training and information they would like to receive as part of the postgraduate student program.

Continuation of these initiatives will ensure that ATNF provides ample opportunities for student training and development. ATUC notes that there are varying levels of engagement and patterns of interaction between CSIRO supervisors and their co-supervised students.

Recommendation: ATNF to continue working with the student committee to improve the student program. ATNF to create an ATNF student email exploder and give the student committee members appropriate permissions to email this list to enable communication between the student committee and students.

Recommendation: In consultation with university supervisors, ATNF to update or develop a standard template which makes obligations for students and supervisors as transparent as possible.

10.2. Internships & University Partnerships

ATUC congratulates the ATNF on efforts to increase collaboration with universities through joint postdoc positions, noting potential benefits to the ATNF student program as well as broader long-term collaborations.

Recommendation: ATNF to continue exploring joint postdocs as a mechanism for enhanced connections with universities.

The user community has expressed strong interest in ATNF-hosted internships for PhD students. ATUC notes the broad potential benefits of such an initiative to all relevant stakeholders, and congratulates the ATNF on success in recently setting up internships. While formal requirements towards such arrangements are likely to vary across Australian universities, university supervisors would benefit from an ATNF-developed template agreement based on recent experience.

Recommendation: ATNF to develop and share with interested university supervisors a template agreement for HDR internships.

10.3. Training programs

In the Open Session, a possibility was mentioned for additional upskilling and training opportunities for ATNF staff and students or external users. The ATNF radio school is a helpful event, however it may not be appropriate for all audiences. A mini radio school covering introductory aspects, or more focused 1-3 day workshops, could be beneficial to different cohorts of users. Recordings of such hands-on workshops would be a useful “quick crash course” resource.

Recommendation: ATNF to explore training opportunities beyond the radio school, aimed at students, staff and users who do not need the depth of engagement provided by the radio school format.