

ATUC Report to ATNF Director

ATUC meeting 15th and 16th June 2004

Chair: Steven Tingay
Secretary: Jim Lovell

Meeting open at: 09:02

1) Apologies and attendance

Apologies: Joss Bland-Hawthorn, Brad Gibson

Attendance: Simon Ellingsen, Aidan Hotan, Maria Hunt, Simon Johnston, Helmet Jurgen, Jim Lovell (Secretary), Naomi McClure-Griffiths, Steven Tingay (Chair), Mark Wardle, Brad Warren, Tony Wong, Chris Wright

2) Report from last meeting

Motion: That the ATUC report from the November 2003 meeting be approved.

Moved Naomi McClure-Griffith, seconded Simon Johnston. Carried.

3) Matters arising from Director's response

- a) The ATUC Chair recommends that items in future ATUC reports to the ATNF Director be tagged with either "Response required from ATNF" or "response optional from ATNF"

The Chair's suggestion was endorsed by ATUC.

- b) Motion: That the Director's response to the November 2003 ATUC report be accepted.

Moved Simon Ellingsen, seconded Aidan Hotan. Carried.

4) ATUC organisational matters

- a) ATUC feedback from users/consultation reports

The Chair was happy with the way that the new feedback mechanisms put in place since the last ATUC meeting have worked. ATUC had an unprecedented number of comments back from users on a wide range of issues (evidenced by the number of items in the Business Meeting agenda), notably from a number of overseas observers. Particularly useful were the "consultation reports" supplied by the majority of ATUC members. The Chair encouraged those ATUC members who didn't supply reports to do so for the next meeting.

- b) Amendments to terms of reference (ATUC term lengths)

The Chair proposed an amendment to the ATUC Terms of Reference, clarifying term lengths for ATUC members. This proposed change was endorsed by ATUC. ATUC ask that the ATNF Steering Committee endorse the addition of the following statement to the ATUC Terms of Reference:

"The normal length of service for non-student members of ATUC will be six meetings. Student members will sit on ATUC for a maximum term of two meetings. ATUC members' terms will normally begin on 15 July. Variations to the length of service of any ATUC member may be made at the discretion of the Australia Telescope Steering Committee."

Further, if the Director approves item 4e (below), the following should also be added to the Terms of Reference:

"ATUC may have up to one member from the international community whose length of membership lasts for a six month period, three months either side of the meeting which they will be attending."

ACTION ATNF (response required)

c) ATUC replacement for Simon Ellingsen

After almost two full terms (due to the fact that no other representative from the University of Tasmania was available to sit on ATUC), Simon Ellingsen wishes to leave ATUC before the end of his current term.

ATUC nominate Giuseppe Cimo (also from the University of Tasmania) to the Steering Committee as a replacement for Simon Ellingsen, to sit on ATUC starting from the December 2004 meeting.

ACTION ATNF (response required)

d) Results of ATUC review of ATNF projects

Before the June 2004 meeting, ATUC reviewed the projects currently in the ATNF Projects Database according to established Terms of Reference. A summary of the results of the ATUC review were presented at the June 2004 meeting by Naomi McClure-Griffith. A document describing the results of the ATUC review will be forwarded to the ATNF Director by ATUC before the next ATUC meeting.

ACTION ATUC

e) International user representation on ATUC

ATUC propose to nominate one person per year to the Steering Committee from an overseas institution to attend one ATUC meeting per year as an overseas representative. ATUC would undertake to nominate appropriate candidate(s) for approval by the ATSC at least three months prior to the meeting in question. It would normally be expected that the overseas member would not require support from the ATNF for international travel (i.e. that the overseas member would be in Australia for other purposes e.g. observing near to the time of the meeting) but that the ATNF would support reasonable requests from the international member for local travel and subsistence costs incurred in attending the ATUC meeting. In this way the

nominee will have had immediate experience with ATNF facilities and will be able to give appropriate input to the ATUC meeting. Will the ATNF approve this proposal?

Action ATNF (response required)

5) Celebrating success

We congratulate the ATNF on their achievements as follows, in no particular order of significance:

- a) ATUC congratulate the different teams that are demonstrating RFI mitigation techniques at Parkes
- b) ATUC congratulate all involved in the successful deployment and operation of the 12 mm system at the ATCA. By all accounts it is performing very well.
- c) ATUC thank staff at the ATCA and Parkes for their support of the work that MNRFP partners of the ATNF are undertaking at the Observatories
- d) ATUC congratulate the team that have developed and tested the new seeing monitor at ATCA.
- e) ATUC congratulate Tony Wong and the team involved in developing the on-the-fly mapping capabilities at the Mopra telescope for their progress to date.
- f) ATUC congratulate the Parkes Observatory staff for their highly successful support of NASA Mars tracking, especially the "in-house" support efforts of John Sarkissian and Stacey Mader.
- g) ATUC congratulate Tasso Tzioumis, team, and collaborators for their rapid uptake of e-VLBI opportunities. ATUC look forward to the future success of this project.
- h) ATUC congratulate the ATNF on their now long-standing policy of increasing the science output of ATNF staff and the quality of the recent science highlights.
- i) ATUC congratulate Jessica Chapman and the National Facility Office team for their efforts in ATNF outreach programs.
- j) ATUC congratulate Dave McConnell and the Project Management team for the continued progress on project management initiatives, including consolidation and update of the Project Management database.
- k) ATUC congratulate the engineering team responsible for the installation of the Arecibo multi-beam receiver, especially Graeme Carrard.
- l) ATUC congratulate the ATNF engineering team for the recent 3mm LNA results, in particular the very promising performance that appears possible up to the 115 GHz frequency.
- m) ATUC thank those responsible for improvements made to the Mopra manual; these efforts are much appreciated.

6) High priority items for ATUC discussion

a) Does ATUC have any comments on the potential 7mm upgrade, in particular the impact of NASA tracking requirements (4 - 8 hr/week in 2006 - 2013) on users (question from ATNF) or the desire for a 26 - 50 GHz system in preference to a narrow-band system? (raised by user)

ATUC recommend that ATNF base their negotiations with NASA on a broad-band (26 – 50 GHz) upgrade to the ATCA, in preference to a system that only operates in the narrow Ka band required for spacecraft tracking.

ATUC note a conflict between the current scheduling arrangements for the ATCA and the proposed NASA method of scheduling the potential 7mm system for spacecraft tracking. The NASA schedule would only be known 4 – 8 weeks in advance, while ATCA schedules are produced for a period of six months at a time (note that the same problem would occur for the old four month terms). ATUC would like to be sure that scheduling of the 7mm system will not significantly impact on astronomer usage of the ATCA. How would the ATNF propose to deal with scheduling NASA tracking, given the mismatch in scheduling timescales?

ATUC suggest that a science case be formulated sooner rather than later so that we can provide input on detailed receiver specifications. Also, how will the development of the 7mm system impact on other activities of the receiver group over the next few years?

ACTION ATNF (response required)

b) Does ATUC have any comments on how to optimally schedule winter time e.g. mm + cm swaps, proposals deferred across semesters, separate ranking schemes for mm and cm proposals, etc? (question from ATNF)

ATUC recommend that millimetre observing slots continue to be partnered with centimetre observing slots or Director's Time (DT) to allow for swapping if the weather is unsuitable for mm observing. ATNF should seek to encourage more swappable centimetre projects through heavy promotion, including via the call for proposals. Furthermore, once the ATCA schedule has been determined (including possible swaps), a separate announcement to the user community advertising the availability of swappable DT could be made. This announcement would include details of possible dates, LST ranges, configuration, etc. for each slot and users would be encouraged to submit requests to the Director. Applicants for swappable DT who are also duty astronomer for the period requested should be given priority. If local or service observing of an approved DT project proves difficult to arrange, remote observing should be made available to both domestic and qualified overseas observers.

ATNF response optional

c) How does ATUC rank the proposal to put 16 MHz filters on the 2nd IF for mm observations? (question from user via Ott presentation)

ATUC rank this proposal very highly and recommend that ATNF implement it as soon as possible to take maximum advantage of the 12 and 3 mm systems prior to the CABB coming on-line. It seems that this relatively simple and inexpensive project will greatly enhance the efficiency and scientific usefulness of the ATCA for 12 and 3 mm observations.

ACTION ATNF (response required)

- d) Does ATUC support the proposal for the Mopra Delta-quadrant survey or other potential large Mopra projects (question from ATNF)

ATUC endorse the Delta-quadrant survey as an appropriate use of Mopra time, as recommended by ATUC in the November 2003 meeting. However, this, and other large projects, should be reviewed by the TAC and, as is the case for large projects on other instruments, the data should be made available to the wider community in a timely manner. Hopefully the encouragement of this large project for Mopra will prompt other teams to devise further large projects for Mopra.

ATNF response optional

- e) Does ATUC support the straw man proposal for Mopra operations? (question from ATNF)

The restriction to observing April-November only is unacceptable from a VLBI perspective. The LBA schedule is already severely constrained by the availability of Tidbinbilla. Blocking the use of Mopra from December to March would mean that any large allocations of Tidbinbilla time during this period could not be efficiently used. The future availability of Mopra should not constrain LBA scheduling any more than it is currently.

The 25% community time may be too small and ATNF should consider increasing it to between 25 and 50% depending on user demand. ATUC would not like small users to be discouraged from applying for Mopra time, especially given the recent closure of SEST.

ATUC strongly endorse the remaining points in the straw man model, especially the aim for full remote observing by 2005.

ACTION ATNF (response required)

- f) ATUC are concerned by the impact of increased RFI in the 50 cm band at Parkes over the next two years (raised by ATUC)

ATUC see a strong need to move away from the currently used band for the 10/50cm receiver due to increased RFI from digital TV transmissions. ATUC request that the ATNF undertake a feasibility study to determine what resources are required to modify or replace the existing 10/50cm system in order to access relatively clear spectrum. Even if the 50 cm band is shifted, ATUC see an ongoing need for RFI mitigation efforts at Parkes in the 50cm band. ATUC request a report on this at the December 2004 ATUC meeting. Hopefully ATNF are now keeping an eye on the frequencies of future digital TV transmitters, even when they are hundreds of km from the Observatories, and planning the frequency ranges of future receivers accordingly.

ACTION ATNF (response required)

- g) Does ATUC have any input on the e-VLBI development as the future of Australian VLBI? (question from ATNF)

ATUC recognise that the potential scientific and technical benefits of eVLBI clearly identify these developments as the future of Australian VLBI. ATUC endorse the project plan put forward subject to the following points:

ATUC recommend that real-time correlation with the LBA correlator (phase C of the project plan) be dropped from the project plan. The resources required to execute this part of the plan are not justified in terms of the science return and the resources will be better expended on other parts of the project.

ATUC recognises that the ultimate science case for e-VLBI requires broadband receiver upgrades at Parkes as well as at all non-ATNF antennas. ATUC ask the ATNF to consider coordinating a plan for the broad-band upgrade of these antennas to match the expected performance of the ATCA and Mopra broad-band upgrade. ATUC note that the "MNRF-3-like" funding opportunity expected for 2006 would be an appropriate and timely mechanism for supporting a project of this size and complexity.

ACTION ATNF (response required)

- h) ATUC is concerned by the number of negative comments it has recently received regarding feedback on proposals submitted to the ATNF TAC (raised by users)

ATUC received correspondence representing approximately 15 users from both within Australia and overseas, complaining about the quality of TAC comments on observing proposals. Many specific negative views were expressed but the common theme was that, in a number of cases, the comments indicated a significant lack of understanding of the science in question. From what ATUC understand of the TAC process, we think that it is likely that the TAC comments in some cases do not reflect the high level of consideration given to proposals by the TAC.

We would like the TAC to review its methods of generating comments on proposals, with the aim of making the content more uniform across proposals and a better reflection of the TAC process.

ACTION ATNF (response required)

- i) ATUC would like to help the ATNF develop some criteria for the success of 6 month terms (raised by users and ATUC) and ATUC have some suggestions for the improvement of six month scheduling (raised by ATUC).

Several criteria for the success of 6 month terms were discussed by ATUC. Basically the success or otherwise of 6 month terms will be very difficult to measure quantitatively as it is only one of a number of variables that affect proposal statistics. However, it is worth attempting to track the following statistics (some of these are already tracked). Six month terms should be considered a success if:

- Publication rates from ATNF telescopes rise or remain constant (very difficult to track the effects of one variable in this);
- The total time awarded to proposals for which the PhD "yes" box is checked rises or remains constant (an interesting statistic to track student participation);
- The oversubscription rates rise or stay constant (again difficult to quantify in terms of one variable);

- VLBI usage of highly constrained antennas such as Tidbinbilla increases or remains constant (should be a relatively straightforward measurement to make and interpret);
- Administrative load on the ATNF and the TAC is decreased. Total person hours spent on TAC matters should decrease;
- Users are satisfied. ATUC will survey users after the first full 6 month term to assess their level of satisfaction with 6 month terms.

ATUC also have some suggestions for improved implementation of 6 month terms.

ATUC suggest the scheduling of clearly identified pilot projects early in the term to give investigators the maximum opportunity to propose for the major observing program in the following semester. Similarly, for proposals identifying PhD projects, scheduling early in the semester would give PhD students the maximum chance to obtain data for their theses.

ATUC suggest that a category of NAPA proposal could be created for simultaneous observations with other facilities. The only difference between this category of NAPA and the usual NAPA would be that the data would not be subject to the usual rapid data release rules.

ACTION ATNF (response required)

- j) Does ATUC have any input on the new NTD plan, in particular does ATUC endorse the change of direction for the NTD project? (question from ATNF)

ATUC endorse what appears to be a very sensible plan for evaluating a number of different technology options on a feasible timescale, underpinned by the developments to date in terms of radio quiet reserves in Western Australia and connections to international partners. ATUC do recommend that the NTD have a strong science component and that this science component be detailed at the next ATUC meeting.

ATUC request that ATNF look at the possibility of pushing the upper frequency limit of the NTD as high as possible. In particular, if the upper frequency can be pushed to 1.7 GHz, the NTD can co-observe with the Tidbinbilla 70m antenna, all of the ATNF antennas, and Hobart, as part of the Australian VLBI array. Given the strong overlap between some of the NTD technology and the ATNF e-VLBI project, ATUC feel that operation at as high a frequency as possible would be advantageous to the NTD science case as well as its SKA technology demonstration case.

ACTION ATNF (response required)

- k) Does ATUC have any suggestions for what the science requirements of ATCA broad-band correlator should be? (question from ATNF)

ATUC propose, in conjunction with the CABB project scientist and project manager to convene a one-day workshop on the science requirements of the CABB project, including the coverage of:

- a) cost/effort-neutral tradeoffs in specifications;
- b) correlation of data from other antennas;
- c) scientific applications for the ATCA

The meeting will likely be arranged for September.

ACTION ATUC

7) Does ATUC have any comments on the 2004/05 Divisional plan? (question from ATNF)

ATUC fully endorse the 2004/05 ATNF Divisional plan.

8) TAC issues

a) Request for policy on data sharing (raised by user)

What is the ATNF policy on sharing data for observations of the same source, at the same time, using the same telescope, but sharing the IF signal to feed completely different sets of instrumentation? For example, at Parkes one user may request an observation of a pulsar with CPSR2 while another may wish to observe the same object with WBCORR.

ACTION ATNF (response required)

b) Does ATUC have any comments on the proposed electronic proposal submission at this point, given that further details will be distributed to ATUC before the next meeting? (question from ATNF)

ATUC would like to see the LaTeX cover sheet format be kept as part of the printable proposal and the basis for web submission. ATUC would not like to see a complicated web form that users have to fill in while online.

ATUC suggest that ATNF look at the Mt Stromlo electronic proposal submission procedure as a good model. See <http://www.mso.anu.edu.au/TAC/applying.html>. The Mt Stromlo submission process is apparently derived from the corresponding AAO submission process.

ATUC expect that the move to electronic submission of proposals will reduce the time required for the proposal review process.

ATNF response optional

c) Does ATUC have any comment on the apparent decrease in ATNF usage by non-ATNF Australian astronomers? (question from ATNF)

ATUC propose to look into the causes of this apparent decrease within Australian universities and aim to report on its findings.

ACTION ATUC

9) ATCA issues

a) ATCA users guide (raised by user)

A user has requested that the following "local folklore" be documented in the Users' Guide:

- a) What are typical calibrator duty cycles for different weather conditions?
- b) How common are DC offsets and how are they recognized?
- c) How close and how strong should a secondary calibrator source be to a target?
- d) Should averaging be used?

- e) What is the best way to set delays for narrow-band observations?
- f) What are typical integration times for mosaic observations?

ACTION ATNF (response required)

- b) 13 cm polarisation (raised by user)

Users would like to see 13cm polarization performance improved. This should be done as part of the broadband upgrade. Is this possible?

ACTION ATNF (response required)

- c) Does ATUC have any comment on the continued use of overseas remote observers? (question from ATNF)

ATUC think that the trial of overseas remote observing has been successful and that overseas remote observing should take place on an ongoing basis, subject to existing policies regarding the total amount of time available for remote observing.

ATNF response optional

- d) New ATLOD version in Miriad (raised by ATUC)

ATUC request all ATCA users are notified of the new version of ATLOD that will be required for ATCA 12 mm observations and any other future important MIRIAD upgrades. This may be best done via the "Call for Proposals" email exploder.

ATNF response optional

- e) Does ATUC have any comments on how to further refine the 12 mm system? (question from ATNF)

Not at this point. The 12mm system appears to working extremely well.

ATNF response optional

10) Mopra issues

- a) What can ATUC do to engage the community in Mopra usage? (question from ATNF)

ATUC do not have much comment on this beyond what has been said at previous ATUC meetings. As stated in item 6d, above, ATUC think that the emergence of a large science project for Mopra is positive. ATUC is happy where possible to promote the use of Mopra but feel that the ATNF need to advertise Mopra more heavily in the Call for Proposals.

ATUC also feel that further engagement of international community would be beneficial, especially as a pathfinder for ALMA science, and since SEST has recently shut down.

ATNF response optional

- b) User facilities (raised by user)

ATUC request that the ATNF review the quality of observer accommodation at Mopra, given that the cost per night is comparable to the lodge at the ATCA. ATUC recognize that accommodation costs at Narrabri benefit by economy of scale. However, making Mopra as attractive as possible to observers may also encourage more users. Perhaps if making extra facilities available is not possible, a reduction in the accommodation cost may be possible.

ACTION ATNF (response required)

11) Parkes issues

- a) Higher level links to proposal tools on Parkes web site (raised by user)

A user has requested a higher level link on the ATNF web pages to proposal and observation preparation tools that are available on the Parkes web page.

ACTION ATNF (response required)

- b) Does ATUC have any comments on the development plans for the pulsar archive?
(question from ATNF)

ATUC think that the recommendations look good but ask, how does the ATNF plan to archive past data collected at Parkes? For example, the only copy of datasets taken during a period of many years now resides on tapes owned by individual users and distributed around the world.

ATUC suggest that future Parkes data should be archived at the observatory as a matter of course.

ACTION ATNF (response required)

- c) Multi-beam refurbishment (raised by user)

ATUC thank John Reynolds for the receiver status report with timescales. By the next observing deadline ATUC would like to know the schedule for receivers that will be operational at Parkes (similar to the announcement of the configurations planned ahead of time for the ATCA) over the duration of the next two semesters. This information should be included in subsequent calls for proposals.

ATUC will consult with users as to the best date for phase 2 of the 21cm multi-beam receiver refurbishment, since the schedule for this is somewhat flexible.

ACTION ATNF (response required)

12) Tidbinbilla/Canberra issues

- a) Subsidised accommodation in Canberra for ATNF-co-supervised students (raised by user)

Currently ATNF-co-supervised students that stay in ATNF accommodation at Marsfield (to visit supervisors) or the Observatories pay no accommodation costs. There is no such arrangement for ATNF-co-supervised students visiting ATNF supervisors in Canberra, amounting to a financial penalty for these students. ATUC recommend that ATNF investigate

options for bringing ATNF co-supervised student accommodation in Canberra into line with arrangements for Marsfield, Parkes, ATCA and Mopra.

ACTION ATNF (response required)

13) LBA issues

a) Upgrade of VLBI pages (raised by user)

A user has requested that the most important LBA web pages kept up to date, these being:

- a) Documentation pages describing system parameters;
- b) Available frequencies;
- c) Proposal status;
- d) Standard observing modes available

ACTION ATNF (response required)

14) Software issues

a) Does ATUC have any feedback on the ATCA archive data model? (question from ATNF)

ATUC thanks Tara Murphy for her efforts on the ATCA archive and pipeline and encourages users to continue providing feedback on this new development. ATUC do not have any specific comments on the data model at this stage.

ATNF response optional

b) Does ATUC have any comments on meta-data coherence over pulsar/ATCA/Parkes data archive efforts? (question from ATNF)

As a matter of course ATUC would like to see all archives presented to users in the most consistent format possible.

ATNF response optional

c) SPC replacement software (raised by ATUC)

ATUC are very encouraged by the concrete progress toward the SPC replacement software and look forward to more substantial progress before the next ATUC meeting

ATNF response optional

d) Would ATUC like to see the RVS (Remote Visualisation Server) software effort expanded? (question from ATNF)

ATUC would like to see evidence that this will be a unique and widely used product before endorsing significant expansion of this project.

ACTION ATNF (response required)

15) Technology development issues

- a) Does ATUC have any comments on how to move forward with 3/12 mm focal plane arrays for Parkes/Mopra? (question from ATNF)

ATUC support focal plane developments in the 3 or 12mm bands. A 3/12 mm focal plane array for Parkes/Mopra would be more use to the user community than a 4-8 GHz focal plane array as proposed for PHAROS. Future discussion should focus on a 3/12mm system. A 12mm system would be best suited to Parkes while a 3mm system would seem to be best for Mopra. ATUC have no specific comments on how the ATNF should move forward with this project at the moment.

ATNF response optional

- b) Does ATUC have any comments on the development of the methanol multi-beam receiver. (question from ATNF)

ATUC urge ATNF to complete the development of this system so that the science can begin.

ATNF response optional

- c) Can ATUC rank the 5 largest ATNF projects that will take the largest share of ATNF resources and effort over the next 2 to 3 years, these being: CABB, NTD, eVLBI, the 7mm system for the ATCA, and the methanol multi-beam receiver? (question from ATNF)

ATUC ranked the importance of these projects to the ATNF and its user community as follows:

1. CABB (Compact Array Broadband Backend)
2. NTD (New Technology Demonstrator)
3. Methanol Multi-beam
4. eVLBI
5. ATCA 7mm system

ATUC recognized that the CABB and NTD are integral to the success of the contracted work under the MNRF program and therefore of the highest priority – CABB is more likely to be directly important for users and has the highest priority. The Methanol Multi-beam was recognized as a large project that is currently underway with a need to be pushed to completion in order to service what appears to be a strong user community. e-VLBI was seen as a high value project with good potential outcomes from modest effort and expenditure in the short term, which gives it a lower priority over at least the next 12 months. Finally, the 7 mm system is seen as a very important development for the ATNF but in the context of the next major project to be undertaken once the four higher priority projects have attained further progress.

ATNF response optional

Meeting close: 17:08

