Australian Government
Department of Industry
Innovation, Science, Research
and Tertiary Education

Australian Time Allocation Committee (ATAC) Policies and Procedures

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Preface

This Handbook provides a summary of current policies of the Australian Astronomical Observatory (AAO) and the Australian Time Allocation Committee (ATAC) in relation to the allocation of telescope time on the Anglo-Australian Telescope (AAT), Gemini and Magellan. It is designed to assist ATAC committee members and AAO staff.

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1. Background

1.1 With the passage of the Australian Astronomical Observatory Act 2010, the AAO is now a division within the Department of Innovation, Industry, Science, Research and Tertiary Education. Section 11 of the Act provides that the Secretary of the Department has functions relating to optical astronomy. For the purposes of time allocation specifically, these functions include: *11(2)(d)* to facilitate access to optical astronomy facilities; and *11(2)(k)* to implement Australia's international obligations in relation to optical astronomy. Under the Act, the Secretary may delegate any or all of these functions to the Director of the AAO. The Act also provides for an AAO Advisory Committee, to provide advice to the Secretary on matters pertaining to the functions detailed in the Act.

1.2 The AAO Director will periodically solicit nominations for the Australian Time Allocation Committee (ATAC) and seek the advice of the Advisory Committee in making new appointments to ATAC.

1.3 ATAC ranks all proposals for observing time on the AAT, Gemini and Magellan on the basis of scientific merit, and assigns each one an appropriate number of nights (in the case of the AAT and Magellan) or hours (in the case of Gemini).

1.4 ATAC maintains an "open skies" policy, accepting proposals from astronomers worldwide. Any astronomer is eligible to submit a proposal to ATAC, and such proposals do not have to include Australian astronomers. However ATAC will generally require a justification for why the science proposed cannot be done with facilities already available to the applicants.

2. Membership

2.1 There are seven members on ATAC, with at least one international member. In addition, a substitute member will also be appointed, to take the place of an ATAC member who is unavailable for a meeting of the committee.

2.2 Appointment to ATAC will usually be for a 3-year term although the appointments may be for staggered terms to ensure a steady turnover in membership.

2.3 Nominations to the committee will be periodically solicited by the AAO Director via an open call to the community. There will normally be no more than one representative on ATAC from any given institution. The AAO Director and the Advisory Committee will review the nominations, when making recommendations to the Secretary, to ensure suitable representation on ATAC, encompassing a broad spread of specialisations and seniorities. The Secretary will appoint a Chair from among the committee members. The Director will then appoint a Deputy Chair.

2.4 An AAO staff member may be appointed to ATAC, although (as for other institutions) normally no more than one AAO representative would be on the committee at a time. The AAO will provide a Technical Secretary to ATAC; the Technical Secretary is not a member of the committee.

3. Meetings

3.1 Observing time is allocated by semester, namely:

February – July (the 'A' semester) with nominal proposal deadlines of 5pm AEST on 15 September (AAT), 30 September (Gemini), and 7 October (Magellan); and

August – January (the 'B' semester) with nominal proposal deadlines of 5pm AEST on 15 March (AAT), 31 March (Gemini), and 7 April (Magellan).

The committee meets twice each year, usually in the first or second weeks of May and November, to assess and rank proposals for the following semester.

3.2 ATAC will normally meet in person in Australia, at the AAO in Sydney, but members unable to travel to Sydney are expected to participate via videoconference.

3.3 Four members constitute a quorum. At the meeting the Chair (or in their absence, the Deputy Chair) presides. Allocations are made by a grading system (described below) carried out by the members present. ATAC members may also be required to vote on procedural or allocation matters. In the event of an equality of votes the Chair (or Deputy Chair, if presiding) has a casting as well as a deliberative vote.

4. The allocation process

4.1 Proposals for observing time will only be accepted via the online proposal form/tool, and must be submitted before the announced deadline. Applications received after the deadline will only be considered at the ATAC meeting if the Chair and Deputy Chair judge that there are sufficient extenuating circumstances explaining why the proposal could not be submitted before the deadline.

4.2 Approximately ten percent of the total AAT time is normally set aside for use at the Director's discretion, principally for essential maintenance, commissioning of new instruments, or payback of programs that lose significant amounts of time to instrument failure.

4.3 There is no special allocation of time made to AAO staff. No applicant, or institution, should receive special consideration by ATAC. However, all other things being equal, some priority would be given amongst proposals near the cut-off for scheduling to those deemed essential for completion of a student's PhD thesis, where such a case has been made in the proposal itself.

4.4 The AAO Director will make recommendations to ATAC on the number of nights to be set aside for Service observations with each AAT

instrument, based upon the number of active proposals in each Service queue, while seeking to maintain approximately the same level of over-subscription as for regular AAT proposals.

4.5 The ATAC meeting is usually held 4-8 weeks after the proposal deadlines, and proposals are circulated to committee members as soon as possible after those deadlines. The proposal materials are distributed electronically, although at the request of ATAC members hard copies will be provided. At that time each of the proposals are allocated to a specific committee member by the Chair for more careful consideration and for presentation at the meeting. The committee member presenting the proposal should not be one of the investigators on that proposal, and whenever possible should not be from the same institution as the Principal Investigator.

4.6 AAT proposals are distributed to AAO staff members to assess the technical feasibility of the observations. The technical assessors remain anonymous, and should not make any comments regarding the scientific merit of the proposal. The assessor should not make guesses if the necessary information is not clear from the application. These reports are circulated to ATAC members at least one week prior to the meeting, along with a response from the Principal Investigator (PI) if necessary. It is the responsibility of the Technical Secretary to contact the PI if there is a serious technical problem. The Technical Secretary will have the final say on whether a proposal is feasible, and an appropriate number of AAT nights to be allocated if awarded time.

4.7 In general, ATAC will review proposals without recourse to external referees. However, it remains at the discretion of the ATAC Chair to call for referee reports if appropriate (e.g., for Large Programs, or for highly specialised or contentious proposals). The Technical Secretary and ATAC Chair will be responsible for soliciting up to 3 referees per proposal, with each referee typically asked to review 2 or 3 such proposals. PIs will have the right of reply to matters raised by the referees, but the referee's identity should only be made known to ATAC members not on the proposal.

4.8 In order to save time at the meeting, each panel member does a full science pre-grading of all the proposals beforehand, abstaining for those proposals in which they are taking part or are unsure of. These votes are submitted to the ATAC Secretary before the meeting. Panel members are still free to change their votes at the meeting, as subsequent discussion may change opinions.

4.9 Committee members should grade each of the proposals based on scientific merit, using the following guidelines:

5 = outstanding proposal
4 = well above average proposal
3 = good proposal
2 = below average proposal
1 = technically/scientifically defective proposal

4.10 At the meeting, a number of proposals with the lowest pre-grades may be omitted from further discussion unless there is a sufficient dispersion in the pre-grades to warrant more investigation. Then the remaining proposals are discussed. The committee member assigned to each proposal gives a brief summary of the proposal, concluding with his/her scientific opinion of the application. The committee then discusses the application and the final score is given in terms of the above grades; fractional grades are permitted. Each ATAC member submits their final score to the Technical Secretary, who then determines the final averaged score.

4.11 Scores by committee members should be given on the scientific merit of the proposal, irrespective of whether dark, grey, or bright time is requested. When a committee member is included in the list of applicants on a proposal, or otherwise feels they may have a conflict of interest, they must excuse themselves from the meeting during discussion and voting on that proposal.

4.12 Proposals are graded scientifically for the maximum number of nights/hours requested unless panel members feel the goals can be met in less time.

4.13 The scores for each application are indicative only and are one of several considerations in the allocation of time. They are strictly confidential and should not be circulated outside the meeting.

4.14 Allocations made at the meeting are provisional only, and strictly confidential. The AAO undertakes to release a draft AAT schedule within one week of the ATAC meeting, after which the AAO Scheduler, or ATAC Secretary, will e-mail the named Principal Investigator of all successful proposals with details of their scheduling and guidelines for observing.

4.15 Immediately before or in conjunction with the release of the AAT schedule, the ATAC Secretary e-mails all applicants giving the committee's reasons for the non-allocation of time, or for the number of allocated nights, and general feedback. The Chair can indicate the relative position of the application in relation to the others, but should not give out the actual score of the committee.

4.16 The process for allocating Australia's purchase of Magellan nights (nominally 8 nights in the A semester, and 7 nights in the B semester) is essentially the same as that described for the AAT, except that (a) technical assessments are carried out by the staff of the Australian Gemini Office, and (b) allocations are then forwarded to the Magellan Scheduler, who will make best efforts to accommodate ATAC's recommendations within pre-scheduled blocks of Carnegie Institution time on each Magellan telescope.

4.17 The process for allocating Australia's share of Gemini time is more complex. Technical assessments are carried out by Australian Gemini Office staff, or in the case of Joint Proposals may be performed by other National Gemini Office staff. After the ATAC meeting the ranked proposals and their

recommended allocations are forwarded by the Technical Secretary to the Gemini Observatory, which carries out an iterative queue merging process between the Gemini partner countries up to and during the International Time Allocation Committee (ITAC) meeting. The top ~30% (by time allocated) of proposals go into queue Band 1, for which Gemini aims to achieve a 90% completion rate; the next 30% go into Band 2, which aims to have a 75% completion rate; the next 20% go into Band 3, for which 85% of programs which are started should receive at least 75% of their time; and the bottom 20% is available for "Poor Weather" programs which can tolerate seeing >2" and/or >3 mag of extinction by clouds. ATAC may award 'rollover' status for 2 more semesters to Band 1 programs (except for Target of Opportunity programs) so as to ensure their completion. ATAC is required to forward programs that can use the full range of observing conditions and Right Ascensions, or risk forfeiting any unfilled time in that semester. During the ITAC meeting the ATAC Chair must decide whether to support Joint Proposals seeking some time from Australia, even if not all the other partners from which time is being sought have supported them with a comparable ranking. 'Classical' observing time on either of the Gemini telescopes (and on the Keck or Subaru telescopes via exchange time agreements) may be awarded by ATAC in units of 10 hours = 1 night, but these will be top-sliced from ATAC's total allocation, reducing the size of the queue bands accordingly. A complete description of the Gemini time allocation process can be found at http://www.gemini.edu/sciops/observing-gemini/proposal-submission/tac-process.

5. Responsibilities of committee members

5.1 Each member of ATAC is expected to:

- Assess and grade each application prior to the meeting.
- Prepare a summary of the proposals allocated for presentation at the meeting.
- Prepare a brief feedback statement for each proposal, based on discussion during the meeting.
- Provide a point of contact for their constituents to communicate general issues with ATAC, although any potential matter of dispute arising from the meeting should be directed to the Chair.
- Undertake other tasks as directed by the ATAC Chair.

5.2 In addition, the ATAC Chair (or in their absence, the Deputy Chair) will be expected to:

- Oversee policy matters.
- Conduct the business at each meeting.
- Coordinate the allocation process at the meeting.
- Liaise with the ATAC Secretary and Technical Secretary on any matters arising or on development of new policies.

- After the meeting, oversee the dispatch of feedback to all applicants following its collation and drafting by the ATAC Secretary. Final feedback on AAT proposals is sent by the ATAC Secretary.
- Liaise with the AAO Scheduler and Technical Secretary in the event of a scheduling conflict.
- Represent ATAC at the Gemini ITAC meeting, supported by the Australian Gemini Scientist; participation in the ITAC meeting is usually by videoconference.

6. The Technical Secretary

6.1 The AAT Technical Secretary is responsible for:

- Providing an updated list of available AAO instruments to the user community in advance of the application deadline.
- Supervising the receipt of ATAC applications via the online proposal form.
- Coordination of technical assessments by qualified AAO staff.
- Liaison with PIs prior to the meeting where there may be a serious technical problem with a proposal. An extract from the technical assessment should be forwarded to the PI, edited for clarification if necessary. This is intended to be a one-pass process and lengthy email correspondence should not be entered into.
- Providing a report to ATAC through the Director on over-subscription history, telescope usage and updates on instrumentation status.
- Any other matters as directed by the ATAC Chair or AAO Director.

6.2 The Gemini/Magellan Technical Secretary is responsible for:

- Providing an updated list of available Gemini and Magellan instruments to the user community in advance of the application deadline.
- Supervising the receipt of ATAC applications via the online proposal form or tool.
- Coordination of technical assessments by qualified Australian Gemini Office staff.
- Liaison with PIs prior to the meeting where there may be a serious technical problem with a proposal. An extract from the technical assessment should be forwarded to the PI, edited for clarification if necessary. This is intended to be a one-pass process and lengthy email correspondence should not be entered into.
- Providing a report to ATAC on over-subscription history, program completions, and updates on instrumentation status.
- Sending out final feedback on all Gemini and Magellan proposals.
- Any other matters as directed by the ATAC Chair or AAO Director.

6.3 The Technical Secretary may not comment on scientific issues, unless invited to do so by the Chair. The Technical Secretary, or a suitable substitute,

should attend policy and scientific sessions of the ATAC meeting or at the very least be available for technical comment during the meeting.

6.4 All discussion and information accessible to ATAC members and Secretaries remains confidential

7. Accounting for AAT observing time

7.1 The allocation of AAT time uses two parameters to balance Australian AAT share and high-quality science:

1. A specified fraction, f_O, of open-access time, taken out of Australia's (otherwise unconstrained) share, f_A, such that $f_A+f_O=1$. The purpose of the open-access share is to foster international collaboration and allow high-ranking but internationally-dominated proposals to access the AAT.
2. A super-majority threshold, M, based on the proportion of Australian involvement in a proposal. The purpose of the super-majority threshold is to ensure that time is awarded largely according to Australia's funding of the AAT's operation while still allowing (and even encouraging) some level of collaboration.

7.2 The time allocation procedure starts with ATAC ranking all proposals by scientific merit, without regard to the nationality of the applicants.

7.3 The AAT Scheduler then proceeds by:

- Initially drawing upon the Australian and Other time shares in proportion to the fraction of such proposers on each program. Note that 'nationality' is determined by the location of the proposer's home institution, not by the proposer's citizenship. A proposal that is awarded N nights and has A Australians and O Other proposers counts as N_A Australian nights and N_O Other nights, where $N_A = N\times A/(A+O)$ and $N_O = N\times O/(A+O)$. Then:
- If the Australian share is exhausted first, the remaining proposals are awarded time as ranked, regardless of nationality, or:
- If the Other share of AAT time is exhausted first, the remaining proposals are only awarded time from the residual Australian share if they (i) they have an Australian PI and (ii) meet the super-majority criterion - i.e. if the fraction of Australians is greater than or equal to the super-majority threshold, $A/(A+O) \geq M$, rounding to the nearest whole percentage. The exception to this is when there are no qualifying proposals that can make use of the remaining time due to observational constraints.

Presently ATAC adopts an Australian fraction f_A=70%, and an Other fraction f_O=30%. The Australian super-majority threshold is set at 67% (rounded to the nearest percent). These fractions will be reviewed by the AAO Director in the context of AAT demand and performance in future semesters.

7.4 Once time has been allocated by a first pass through all eligible proposals, any remaining time will be filled by a second pass through the list. In this instance, proposals are taken solely on the basis of rank order, and the super-majority nationality criteria no longer apply. This means that time is distributed from the remaining nights irrespective of nationality.

7.4 The AAT Scheduler will, with guidance from the Chair of ATAC, make minor adjustments to the allocations to allow for practical matters such as dark time, scheduled instrument blocks, Director's time and so on.

8. Long Term Programs and Large Programs on the AAT

8.1 AAT programs requiring time in more than one semester, and particularly those that will be spread over three or more semesters or requiring substantial amounts of telescope time, may seek Long Term status for their proposal. If successful, the proposal will gain an award of time for the coming semester and a provisional award for future semesters (subject to reports on the progress of the project), relieving applicants of the need to continually apply for time for the same project. A proposal is deemed a Large Program if the total requested telescope time exceeds 50 nights.

8.2 If a proposal is unsuccessful in obtaining Long Term status, it may still be considered for a normal award for the forthcoming semester in the usual way. Applicants should justify the total time request carefully, and indicate the total number of nights (the sum of the time requested for next semester plus the additional time requested) on the application form.

8.3 Applicants seeking Long Term status may be allowed to submit a longer proposal with prior permission from the committee (in the first instance via the ATAC Secretary). Such cases will normally have a strict five-page limit for the science case.

8.4 Applicants seeking Large Program status must include as part of their application a major, compelling and feasible science program, an observing strategy, a management plan, and a project timeline. Prospective applicants are to discuss their plans with the AAO Director prior to submission. Such Large Programs proposals will normally have a strict ten-page limit.

8.5 Large Programs are usually refereed by three referees external to ATAC, as outlined in section 4.7.

9. Proprietary rights for AAT data

9.1 Most AAT data are available upon request via the Cambridge Astronomical Survey Unit after an initial proprietary period. Data taken prior to 1 August 2006 had a proprietary period of 24 months, while data taken on or after that date have a proprietary period of 18 months.

9.2 ATAC and/or the AAO may choose to extend, or shorten this proprietary period for any particular program (or a subset of the data).

10. AAT Service observing

10.1 Applications for AAT service observing can be made for programs requiring up to 6 hours of telescope time. Service proposal deadlines are set at regular 4-monthly intervals. Service proposals will expire 18 months after submission, but may be re-submitted for re-assessment at any time.

10.2 Service observing applications are assessed by a Service sub-committee according to their feasibility, timeliness and scientific merit. The Service sub-committee normally comprises two ATAC members and an AAO staff member.

10.3 Submitting the same proposal both to ATAC (for scheduled time) and to the service program is permitted if the PI makes a case for why time should be awarded both ways.

11. AAT over-ride policy

11.1 Applications for over-rides should be submitted in the same way as other applications, and will be assessed on scientific merit in the normal way.

11.2 An over-ride can take several different forms. The most obvious is an observation of a target of opportunity (ToO). This is defined as any observation where the notice given to the AAO and the scheduled observers is likely to be short. Applications for such projects should be submitted in the usual way, explaining why the science can only be done in this fashion. However, any other short observation requiring less than half a night may also be treated by the AAO as an over-ride (e.g. a scheduled observation requiring two hours after twilight for three consecutive nights is also treated as an over-ride). In this case though, the scheduled observers will know in advance, and compensation is normally given for the time lost.

11.3 The following special rules apply to all over-ride projects:

- As much notice as possible should be given to the scheduled observers that their program could be subject to an over-ride.
- There should normally only be one over-ride per program (i.e. one single time slot) without compensation from ATAC. Applicants seeking an exception to this rule (e.g. several short exposures on the same target spread over several nights) should make this clear in the technical case and in the scheduling comments part of the application forms. Such cases will be considered by ATAC on an ad hoc basis, but they will be expected to set a total maximum length of time that these observations should not exceed during a single block of time. That block will then be considered as one over-ride.
- Observers would normally be compensated through Director's time or through the normal scheduling process where possible for programs where more than one over-ride was scheduled. However, no compensation would be made where the same observers would

be participating in the scheduled program and the over-ride program.

- Over-rides may take place during Director's time or on Service nights. These still count towards the total allocated by ATAC.
- The over-ride would be deemed to have been completed regardless of poor weather or any other obstacle that might affect observations. PIs are allowed to check what the weather is before calling for the over-ride.
- A given observation program can only be over-ridden once. There is therefore the potential for conflict between different over-ride programs. In all cases the over-ride program that is triggered first shall have priority. Resolution of disputes will be the sole responsibility of the AAO Director, or an appointed designate.
- Over-ride programs will only be executed after a complete observing checklist, full contact details, and template observing sequences (where appropriate) have been provided by the PI, to the satisfaction of the AAO Director. To assist in this process, an AAO contact astronomer will be assigned to each approved over-ride program.