

Performance indicators

The ATNF assesses its performance through Key Performance Indicators, based on those used generally by CSIRO but adapted to be appropriate for a National Facility. Wherever possible, the ATNF benchmarks its performance against best international practice.

Unless otherwise noted, figures are for calendar year 2000.

1 Scheduled and successfully completed observing time

For the Parkes and Narrabri observatories, the ATNF sets a target that at least 70% of the time available should be allocated for astronomical observations. (The remaining 30% is needed for maintenance and upgrading the facilities.) A second target is that the time lost during scheduled observations, from equipment failure, should be below 5%.

The following values show the use of time for the year 2000:

	ATCA	Parkes
Time used for scheduled observations	76.3%	82.3%
Downtime during scheduled observations	4.9%	2.4%
Percentage of scheduled observations successfully completed	92.3%	97.1%

The downtime for the Parkes telescope includes time lost for wind stops (1.4%).

In 2000 the downtime during scheduled observations at the Australia Telescope Compact Array was higher than for the

previous few years. This was largely due to a failed drive on antenna 2 and an electrical burnout on antenna 6.

The telescope most comparable with the ATCA is the Very Large Array (VLA) in the USA. The percentages of scheduled observations successfully completed are very similar for the ATCA and the VLA.

Further breakdowns of time use for Narrabri and Parkes can be found in the Observatory Reports (pages 50 and 56).

2 Response of the ATNF to recommendations by the Users Committee

The ATNF Users Committee (ATUC) meets twice a year to represent the user community in the ATNF decision-making process. After each meeting the committee presents a list of recommendations to the Director. ATUC considers matters raised by the user community, current operations and sets priorities for future developments. Over the last four years, approximately three quarters of ATUC recommendations have been followed up by the ATNF.

3 Adoption by users and organizations of practices, instruments and processes developed by CSIRO

This list includes some of the hardware and software developments at the ATNF which are now in use at other organizations:

Antenna holography developed at the ATNF is used routinely in external industry and defence contracts.

Karma visualization software developed



Photograph
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at ATNF is now used by more than 30 astronomical institutions.

Miriad data reduction software, jointly written at the ATNF and BIMA, is in routine use at radio astronomy institutions around the world.

ATNF digital correlator hardware and control software are in use at the Tidbinbilla, Hobart, SEST, Ceduna, Hartebeesthoek and Jodrell Bank observatories.

Multibeam observing techniques and data management systems developed for the Parkes Observatory have been adopted by Jodrell Bank (UK).

Components of aips++ software, including visualization routines and fundamental measures, written at ATNF, are being used by several institutions including the Herzberg Institute for Astrophysics (Canada), Jodrell Bank and the Joint Institute for VLBI in Europe (JIVE).

A **correlator**, built at the ATNF for the Swedish ESO Submillimetre Telescope (SEST) was delivered in March 2000.

ATNF staff provided scientific and technical support for the Taiwanese AMiBA project in three ways: as consultants for the receiver construction and MMIC development; the construction of a prototype wide-band correlator; and providing support for system specifications, observing strategies, science and data-reduction issues.

4 Time allocation on ATNF facilities

In 2000 a total of 168 proposals were allocated time on ATNF facilities (each proposal is counted once only per calendar year although some proposals are submitted two or three times). Of these, 112 were for the Australia Telescope Compact Array, 36 were for the Parkes telescope, 10 were for the Mopra telescope and 10 were for the Long Baseline Array. Figures 3 and 4 show the time allocated to observing teams on the Compact Array and Parkes radio telescope as a percentage of the total allocated time, by affiliation of the team leader.

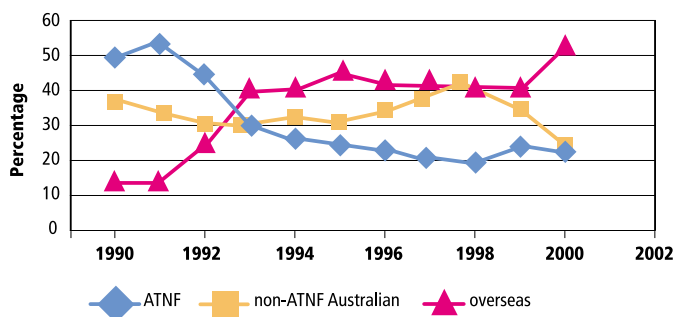


Figure 3 Compact Array time allocation, 1990–2000

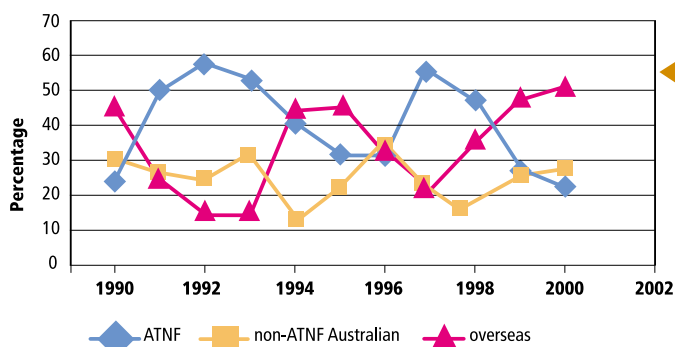


Figure 4 Parkes time allocation, 1990–2000

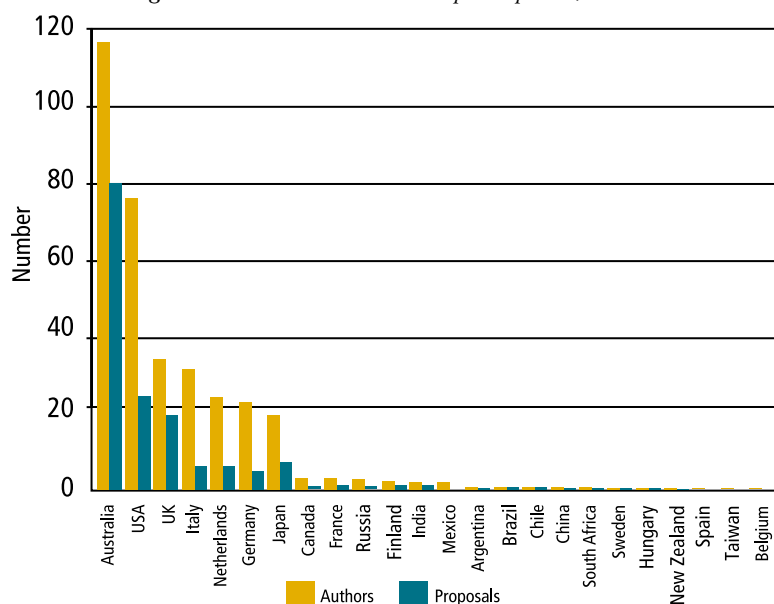


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Allocation of time on the ATNF facilities is done on the basis of scientific merit. The ATNF has a guideline that at least 60% of allocated time should be used by astronomers at the ATNF and other Australian institutions, with up to 40% for astronomers at overseas institutions. For the years 1993 to 1999 this was close to the actual allocation of observing time on the Compact Array. In the year 2000 however, the percentage of time allocated to overseas observers increased to over 50%. The strong performance of overseas users of the Australia Telescope facilities is also reflected in a large number of publications by overseas authors. For the Parkes telescope the time allocation is more variable. For the years 1993 to 2000 the time allocated to overseas observers has varied between 15 and 50%.

In 2000 the proposals allocated time on ATNF facilities included a total of 358 different authors. Of these 38 authors were from the ATNF, 77 were from 16 other Australian institutions and 243 were from 98 overseas institutions in 23 countries. Figure 5 shows the number of proposals (counted using the team leaders) and the total number of authors from each country.

Figure 5 Australian and overseas participation, 2000



5 Number of publications

Figure 6 shows the number of publications in journals and conference proceedings, which include data obtained with the Australia Telescope. The publication counts include papers dealing with operations or data reduction but do not include IAU telegrams, abstracts, reports, historical papers, articles for popular magazines, or other papers by ATNF authors. Appendix F (page 89) lists the 106 papers published in refereed journals and the 75 papers published in conference proceedings in 2000.

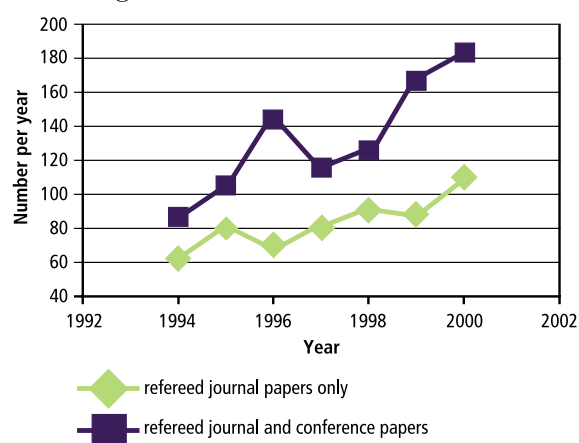


Figure 6 Papers from data obtained with the Australia Telescope, published in refereed journals and conference proceedings.

6 Teaching, measured by the number of postgraduates supervised by ATNF staff

In December 2000 the ATNF was co-supervising 18 students from eight universities in Australia and six students from overseas institutions (Appendix G). Of the 24 students 18 were PhD students and six were Masters degree students.

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7 Public communication, measured by the number of media appearances and talks to schools and community groups

In 2000 the media coverage of the ATNF was dominated by reports on the Parkes telescope, following the release of the film *The Dish* in October 2000. During the year the ATNF issued eight media releases (Appendix E). The organization, its staff or research activities, featured in at least 100 press items. ATNF staff gave approximately 25 television interviews and 50 radio interviews while at least 60 talks were given to school, university and community groups.

The counts shown in Figure 7 have been verified where possible. However, the numbers for media reports (TV, radio, newspapers) for all years and the number of public talks given by ATNF staff in 1996 to 1998 are likely to have been undercounted.

Figure 7 also shows the number of Web hits to the central ATNF web site. The counts include internal use by staff and hits generated by external search engines. In the year 2000, the total number of Web hits

was 6.7 million, approximately 10 times more than in 1996.

8 User feedback at Narrabri and Parkes

Observers at the Parkes and Narrabri observatories are asked to complete a User Feedback questionnaire. The responses from these are given in the Observatory Reports. These show that the level of satisfaction with facilities provided is generally very high (see pages 51 and 56). For the year 2000 the average over all items ranked was 91% for the Narrabri Observatory and 88% for the Parkes Observatory.

9 ATNF engineering milestones

A performance indicator introduced by the Steering Committee, to gauge instrumentation development, is given by the planned and actual capital costs and timescales for engineering projects. These are given in Appendix H. Typically, projects undertaken by the ATNF take around 30% longer to complete than predicted and cost about 30% more than originally estimated. Such over-runs may be inevitable when dealing with innovative technologies.

Further development of this indicator is planned, to establish its usefulness and to compare the ATNF performance with best practice elsewhere.

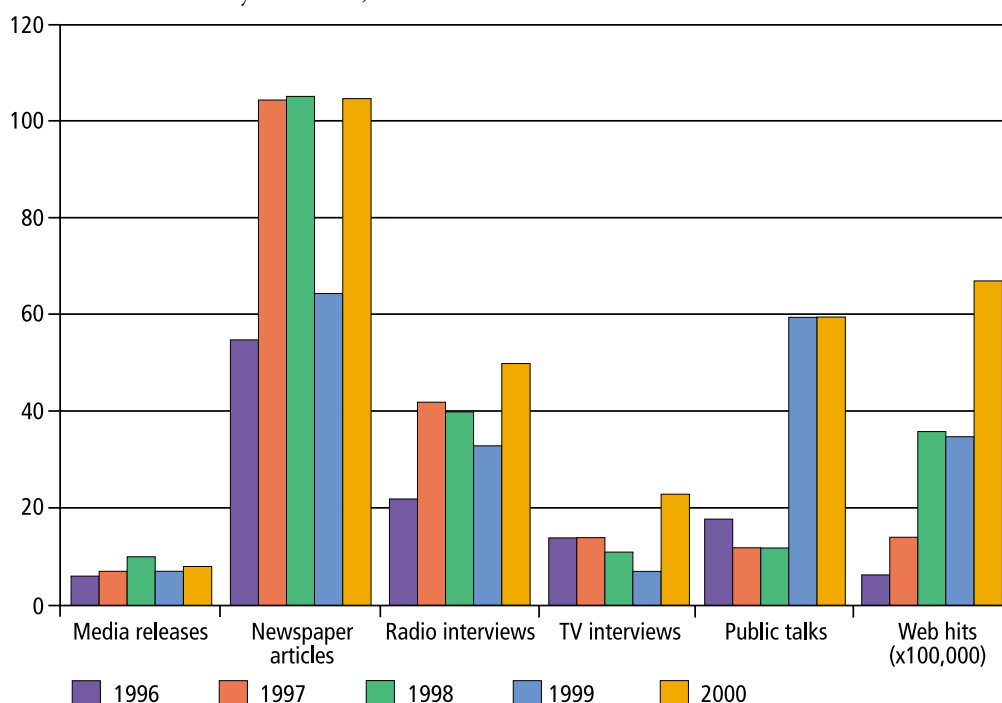


Figure 7 ATNF Public Relations activities for the years 1996 to 2000