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Chair's report



This year was one of many changes for the ATNF, with Professor Ron Ekers stepping down as Director in March 2003 and his successor Professor Brian Boyle (formerly Director of the Anglo-Australian Observatory) arriving in July 2003.

As the Foundation Director, Ron was responsible for shaping the culture of the Australia Telescope as a national research facility for Australian and overseas scientists. In this, he has been outstandingly successful; in 2003 the Australia Telescope facilities were used by over 400 scientists from 21 countries, and user feedback indicated an extremely high level of satisfaction with almost every aspect of telescope performance and support. Under Ron's leadership, the ATNF has become recognised as an institution which both inspires and supports excellence while

at the same time being inclusive and welcoming to a wide and growing user community. As an example, the ATNF's student program now includes around 30 graduate students from Australian and overseas universities who are co-supervised by ATNF staff members.

The AT Steering Committee thanks Ron for his outstanding efforts as ATNF Director from 1988 to 2003, and wishes him well as he takes on new challenges as President of the International Astronomical Union and as a Federation Fellow. We also acknowledge the efforts of Professor Ray Norris as Acting Director for several months in 2003, and extend a warm welcome to the new Director, Brian Boyle.

2003 was another excellent year for both science and technology at the ATNF. The science highlights included the discovery of the first double pulsar, which will provide important tests for theories of strong-field gravity. The completion of the 12-mm upgrade to the AT Compact Array has opened up a new and very broad (16 – 25 GHz) region of the radio spectrum for both continuum and spectral-line imaging, and the eagerly-awaited full 3-mm system will be available by mid-2004. The ATNF continues to play a leading role in the international Square Kilometre Array (SKA) radio telescope project, both in technology development and in the planned setting up of a radio-quiet zone in a remote region of Australia.

It has been both a privilege and an education to serve on the AT Steering Committee for the past three years. My overwhelming impression is that the ATNF is a healthy and vibrant organisation which is well-positioned for an exciting future.

Dr Elaine Sadler, Acting Chair (April - December 2003),
AT Steering Committee
Photo: © University of Sydney

Director's report

2003 has been a year of great success and new directions for the ATNF. As the incoming Director, I have the pleasure and privilege of taking over the leadership of such a world-class facility. At the core of the ATNF's success is its outstanding staff, the collaborative CSIRO network in which they work, and the strong national and international astronomical community that they support. The achievements wrought by this teamwork are evident for all to see in the pages of this annual report.



Over the past year a number of major upgrades and instrumentation have been delivered to both the Compact Array and the Parkes radio telescope. This includes the 12-mm receiver at the Compact Array, already delivering important new results on molecular gas in star-forming galaxies and providing the highest resolution radio maps of SN 1987A. Two new receivers, the 8-GHz receiver built for NASA and the 10/50-cm receiver designed for pulsar timing, were also successfully commissioned on the Parkes radio telescope. However, it was the by-now venerable multibeam receiver that perhaps produced the most spectacular scientific result of the past year; namely the discovery of the double pulsar. This was a true "breakthrough" discovery that will provide a wealth of information on both pulsar systems and fundamental physics over the coming years.

As exemplified by the Parkes pulsar survey, the international nature of the ATNF's user community is another of its great strengths. Time devoted to programs with an overseas principal applicant remains at a healthy forty per cent. This open access leads to a rich network of international collaborations and knowledge exchange for the Australian community and enables the ATNF to maintain a high profile and impact amongst the world's radio astronomy facilities.

On the international stage, the highly successful IAU 2003 General Assembly in Sydney enabled the ATNF and, more broadly, the Australian community to demonstrate its talents and capabilities. An important factor in this regard was the strong support the General Assembly received from industrial partners such as Connell Wagner. This underscores the need for partnership across all key stake holders; Universities, Industry and Government, if Australian astronomy is to achieve its long-term strategic goals.

One of the key strategic goals is the Square Kilometre Array (SKA). Facilitating the Australian community's engagement in the SKA remains the primary long-term goal of the ATNF. During 2003, Australia continued to re-enforce its position as one of the leading members of the international SKA consortium. Through events such as the SKA meeting in Geraldton, Australia provided key input to the scientific and technical case for a wide-field SKA and was able to showcase the unique qualities of a remote Australian site for SKA. Further related development of SKA technology and infrastructure issues, including capitalising on new broadband-network opportunities within Australia, will remain a major focus of the ATNF's activities during 2004.

Professor Brian Boyle, Director of the ATNF
Photo: © Kristen Clarke



A Compact Array antenna
Photo: © David Smyth