ATNF NEWSLETTER

Number 12 March 1990

ATUC

At its first meeting in May 1989, the ATNF Steering Committee decided to set up a users group to provide feedback on the operation of the Australia Telescope. It would hold meetings approximately twice yearly to provide potential AT users with information about the current status of the AT and planned developments, and scientific results already obtained. It would also enable users to inform the management about problems encountered, and to provide input concerning improvements in operation or facilities. An AT Users Committee (ATUC) was set up, with the following membership (based on the previous AT Scientific Objectives Committee):

Dr. G. Bicknell, ANU
Dr. D. Blair, Univ. of Western Australia
Dr. R. Clay, Univ. of Adelaide
Dr. R. Colman, Univ. of Sydney
Dr. K. Freeman, ANU
Dr. P. Godfrey, Monash Univ.
Dr. R. Hunstead, Univ. of Sydney
Dr. D. Jauncey, ATNF
Dr. R. Manchester (Chairman), ATNF
Dr. P. McCulloch, Univ. of Tasmania
Dr. J. Robertson, Univ. of Sydney
Dr. J. Ross, Univ. of Queensland
Dr. L. Staveley-Smith, AAO (now ATNF)
Dr. B. Turtle Univ. of New South Wales
Dr. A. Vaughan, Macquarie Univ.
Dr. J. Whiteoak, ATNF
Dr. W. Zealey, Univ. of Wollongong

The first meeting of ATUC took place at CSIRO Radiophysics Laboratories on 25th October 1989. It followed an open Users Meeting at which reports were given on the status of the AT and the first scientific results from use of the Compact Array. Topics relating to AT operation and development were also discussed.

The following conclusions were reached:

1. The composition of the Committee provided a satisfactory representation of the AT user community.
2. Meetings should be held twice yearly, preferably within two months of a Steering Committee meeting. They should be held over two days, with a general open meeting on the first day and a Committee meeting on the second. This decision has been effected by a later Steering Committee decision to hold its meetings annually.
3. Outfitting of the 6 km antenna of the Compact Array should take precedence over outfitting of the Coonabarabran antenna.
4. Notwithstanding item 3, the Coonabarabran antenna should be completed to the point where its incorporation into a Mk II VLBI network is possible, provided that this does not delay the completion of the Compact Array by more than two months.
5. An interim narrow-band spectral-line system with a bandwidth of 8 MHz should be provided for the Compact Array as soon as possible.
6. The option of simultaneous 20/13 cm operation should be retained for the moment. The decision should be reviewed before any future upgrade of the preamplifiers to HEMTs.
7. Both bandwidth synthesis and 'snapshot' operational modes should be fully supported for the Compact Array.
8. ATNF should provide assistance wherever possible to the University of Adelaide group in their efforts to establish a VLBI facility.
9. ATNF should consider a joint venture with the Perth astronomy research group to seek funds to develop an LBI site incorporating an AT antenna near Perth.

The next meeting of ATUC will be held on 16th and 17th May at the CSIRO Radiophysics Laboratories. The first day will contain an open meeting, with emphasis on recent AT results, and a workshop on LBA operation. The Committee will then meet privately on the second day.

SECOND ATNF STEERING COMMITTEE MEETING

The second meeting of the Steering Committee took place during the week beginning 30th November 1989. On the Monday a visit was made to the Parkes Observatory and the Parkes Visitors' Centre. A formal day-long meeting was held on the following day. At this meeting the Committee reaffirmed that the construction, outfitting and testing of the AT should be the top priority until a terminal date to be set by the Committee. The plans for the beginning of AT operation on a national Facility basis were endorsed. In regard to the questions from the AT Users Committee about joint ventures with Curtin University and the University of Western Australia, the Committee requested written proposals from the universities. At the same time, it emphasised that the primary obligation of ATNF at present is to complete construction of the AT and successfully make the transition to a fully operational facility. ATNF presented for discussion a draft version of an annual report intended for formal presentation to the Minister of Science, Customs and Small business.

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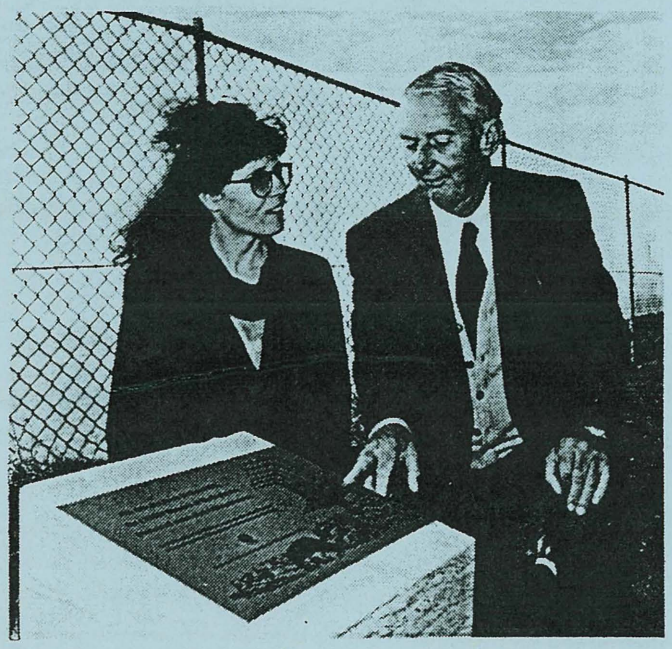
It had been originally intended to hold six-monthly meetings of the Steering Committee. However, it was decided that the full Steering Committee should meet annually, and that the ATNF Director should set up an external technical advisory committee to meet when required. Accordingly, the next Steering Committee meeting is planned for the third week of November, 1990. It is hoped to precede this with a meeting of the technical group.

ATNF SYMPOSIUM ON RADIO GALAXIES

In conjunction with the Steering Committee visit, ATNF sponsored a very successful symposium 'Forty years of Radio Galaxies' at Radiophysics Laboratories on the Thursday. This was held to celebrate the 40th anniversary of the first optical identification of discrete cosmic radio sources by J. Bolton and colleagues. Much of the organization was carried out by Dr. E. Sadler of AAO. Speakers at the symposium included J. Bolton, R. Hunstead (Sydney Univ.), W. MacAdam (Sydney Univ.), V. Radhakrishnan (Raman Research Inst.), O. Slee (ATNF), L. Woltjer (European Southern Observatory),

RADIOASTRONOMY PLAQUE FOR DOVER HEIGHTS

In association with the symposium celebrating the 40th anniversary of the first radio source identification, on Thursday 3rd November an early-morning expedition was made to Dover Heights on Sydney's coast to 'unveil' a plaque commemorating the observations, made with a 'sea interferometer', that provided the first identifications. The plaque will be installed at the the edge of the cliff, near the location of the antenna used for the observations. Very little remains of the original structures. More than fifty people were present for the short ceremony; these included astronomers, representatives of the Waverley Municipal Council and Southern Astronomy magazine, and inquisitive early morning joggers. ATNF Director R. Ekers opened the proceedings, reading a short message from J. Wild before introducing J. Bolton who gave a short history before unveiling the plaque. Following the ceremony, the astronomers breakfasted at nearby Bondi Beach before returning to Radiophysics for the symposium.



John Bolton & Deputy Mayor of Waverley Council (Meredith Symonds) inspecting the Dover Heights plaque

LATEST ON VISITORS CENTRES

Parkes Centre handed over to ATNF

Over the last few months ATNF has been negotiating with the CSIRO Public Affairs Unit to take over the operation of the successful Parkes Visitors' Centre, which currently has 80,000 visitors per year. The negotiations have now concluded successfully, and on 20th February ATNF obtained the financial control of the Centre. Both the Parkes and Narrabri Visitors' Centres will be operated under the management of the OICs of the associated ATNF sites, under the guidance of a Visitors' Centre Advisory Committee. This committee consists of the Manager of the Parkes Visitors Centre (R. Twardy), the OICs of the two sites (D. Cooke and G. Nelson), leader of the RP Communications Group (R. Haynes), and representatives of ATNF management. The first meeting of the Committee was held in Sydney on 13th March; the next meeting will take place in June.

Narrabri Centre open to public

The initial outfitting of the new visitors centre at the Narrabri site is nearing completion, and this centre is now open to the public. Although it is planned for the centre to operate unattended, at least in the beginning, during the busy Easter period, the building will be manned.

OPERATION AS NATIONAL FACILITY

A significant milestone occured on April 2nd when the Narrabri Compact Array began operation as a National Facility. At the end of 1989 a worldwide call for observing proposals was made, with a submission deadline of 9th February, 1990.

For the first quarter of observations all five 22-m antennas on the 3-km railtrack have been equipped with dual-channel 6-cm and 3-cm wavelength receiving systems. Three of the antennas are also fitted out with dual 11-cm and 21-cm wavelength systems. The spectral-line configuration is somewhat restricted. Only the wide-band capability of the final correlator spectral-line system is available; the best resolution is provided by a configuration of 128 channels covering 64 MHz. However, to enable high-resolution observation an interim system of up to 1024 channels covering 8 MHz has been added.

For the observing four non-redundant 3-km array configurations were planned on a three-week cycle. Nine days of each cycle were allotted to observing, while the remaining twelve days were for testing, outfitting etc. ATNF staff were rostered at Narrabri on a six-day basis as 'friends' of the Array, to provide support for observers. A small User Support Group has been set up in Sydney to provide general assistance, in particular for visiting astronomers. Currently, Mrs G. Manefield of this group is responsible for the distribution of observing information, observing proposals, AT preprints etc. In addition she also acts as Secretary to the time-allocation committee.
Readers who do not receive this information and wish to be included in the distribution list should contact Mrs Manefield at ATNF.

For the first observation period with the Compact Array a total of 37 proposals, requiring 73 observing days, was received. The proposals were submitted by 67 scientists (not including 25 collaborators associated with one program submitted by Dave Jauncey!) from 27 different institutes in 7 different countries. Both the

Compact Array and Parkes 64-m antenna proposals were reviewed by a time-allocation committee consisting of ATNF Director R. Ekers together with G. Bicknell (MSSSO), J. Caswell (ATNF), P. McCulloch (U. of Tasmania), R. Hunstead (U. of Sydney), and the OIC's of the Parkes and Narrabri sites. Based on their review, observing schedules were drawn up. Unfortunately, the commencement of operation was delayed a few days; however, the cancelled programs will be rescheduled later.

The closing date for observing proposals for the following quarter (beginning 1st July 1990) is April 27th. The capability of the Compact Array will be unaltered. The design of the proposals form for the Compact Array has been modified slightly in line with suggestions received during the present quarter. It is intended to upgrade the proposal form for the Parkes 64-m antenna in the near future.

Closing date for the following quarter will be July 27th.

PARKES CATALOGUE AVAILABLE

A version of the New Parkes Catalogue ('PKSCAT90') can now be purchased from ATNF at a cost of A$40 (postage included). Currently, it consists of radio and optical data for over 8000 radio sources. It covers essentially all the sky south of declination +27 degrees, but largely excludes the Galactic Plane and Magellanic Cloud regions.

The original Parkes catalogue was compiled from major radio surveys with the Parkes 64-m radio telescope at frequencies of 408 MHz and 2700 MHz. Resulting from work undertaken largely by John Bolton and colleagues over a period of nearly 20 years, improved positions, intensities at other frequencies, optical identifications and redshifts have been added. The listed measurements now cover the frequency range 80 MHz - 22 GHz. The usefulness of the catalogue has been enhanced by the addition of data from the Molonglo 408 MHz survey.

Copies of PKSCAT90 can be obtained on magnetic tape (6250 or 1600 bpi density) or IBM pc compatible disk (5.25 or 3.5 inch) with data-base access software from Mrs R. Otrupcek, ATNF Parkes, PO Box 276, Parkes NSW 2870.

INTERNATIONAL RADIO SPECTRUM MATTERS

The International Telecommunication Union will hold a special World Administrative Radio Conference (WARC) in 1992 to consider, amongst other things, radio spectrum allocations in the band 500 MHz - 3000 MHz. There are several important radio astronomy bands (used by the Australia Telescope) in this region, and Drs B. Robinson (RP), and J. Whiteoak (ATNF) are involved in Australia's preparations for this conference. Robinson, who is the Chairman of both National Study Group 2 (a group set up by ITU's International Consultative Committee for Radiocommunications to deal with space research and radio astronomy) and the Inter-Union Commission for the Allocation of Frequencies (IUCAF), will attend a special Interim Working Party on the preparation of SG2 input, to be held in Washington during September. Whiteoak, an Australian delegate to SG2 meetings in Geneva since 1977, will attend a meeting of study groups in Dusseldorf during May.

In common with several other observatories overseas, Parkes observations of the 1612 MHz OH transition are severely hampered by transmissions from satellites of the Russian navigation system GLONASS. Unfortunately, this situation does not contravene the international Radio Regulations, because this important radioastronomical band has only a secondary allocation, whereas the navigational satellite service has a primary allocation. Under such conditions the allocation to radio astronomy is totally ineffective.

NEW COMPUTER AT PARKES

For many years a VAX 11/750 computer has been used to control the 64-m antenna and support the general computing needs of the Parkes staff. A MicroVAX processor has now been purchased, and over the next few months it will take over the operations performed by the older machine.

A MULTI-BEAM SYSTEM AT PARKES

A seven-beam 5 GHz receiver system on loan from NRAO will be installed on the Parkes 64-m antenna during May, with a primary involvement in an extensive survey of the southern sky to complement a northern survey carried out on the Green Bank 140- and 300-ft antennas. The survey is the initiative of MIT and involves collaboration with NRAO and ATNF. It has been designated the MIT-Parkes-Green Bank Southern Sky Survey. Mr G. Behrens, an engineer at Green Bank, visited Parkes during February and will return with Mr C. Chestnut (who built the system) in May to oversee the installation of the receiver. The project leader will be M. Griffith, assisted by A. Fletcher (both MIT PhD students), Dr A. Wright of ATNF has been organizing the local observing support. The receiver will be available for other research projects in the third quarter and then returned to NRAO.

LOW CA LIMITS ON SN 1987A INTENSITY

A few days after its appearance on Feb. 23 1987, SN 1987A yielded a weak radio burst of peak flux density 100 mJy. However, this decayed away after a couple of weeks and nothing has been seen since at radio wavelengths. Dr R. Manchester and colleagues at ATNF used the Compact Array during three days in August 1989 to obtain a 6-cm image of the region containing the supernova. In the direction of the supernova no signal was detected above the rms noise level of 120 μJy.

WINDSTORM AT NARRABRI

The design and construction of the Narrabri antennas were put to the test on 9th February when a violent windstorm swept through the site. Despite winds gusting up to 150 km/hour, the Compact Array antennas were undamaged. In contrast, ten of the radioheliograph antennas and the early-storm-warning equipment were damaged.

VACATION STUDENTS

Both ATNF and the Division of Radiophysics operated extensive vacation student programs in the period December 1989 to February 1990. From applications by about 80 engineering or physics students who had just completed three or four years of their courses, 10 were selected by ATNF and 3 by RP. Two of the ATNF students were located at Narrabri. Each student was assigned a staff member and allocated a specific project. To familiarise the students with the various research activities, staff members gave talks, visits to telescope sites were organized. An observing period of two days on the Parkes 64-m antenna was allocated for student projects of their own choice. The latest intake was particularly lively, even producing nine issues of a newsletter. Towards the end of the period, an open meeting was held in which the students reported on the work they had been doing.

The program will be repeated this year. Requests for applications will be distributed to relevant institutions in August. Information about the progam can be obtained by contacting Dr D. Milne at ATNF.

FORTHCOMING IAU EVENTS

IAU Symposium 148

Two IAU-related meetings will be held in Sydney Australia during July 1990. The first will be IAU Symposium 148: 'The Magellanic Clouds and their Dynamical Interaction with the Milky Way'. Sponsored by Commission 28 and co-sponsored by Commissions 25, 27, 33, 34, 37, 40, 42 and 44, this will cover the subject areas: large-scale structure and kinematics, star formation, stars and star clusters, interstellar medium, and Magellanic Clouds as members of the Local Group. The meeting will take place in the Women's College at the University of Sydney between the dates July 9 and July 13. Financial support is from IAU, ATNF, the Australian National University, the Anglo-Australian Observatory, the Donovan Astronomical Trust, the Astronomical Society of Australia, Australian Geographic Society, Southern Astronomy magazine, Apple Computers, and Ansett Airlines of Australia. Chairmen of the Scientific Organizing Committee and the Local Organizing Committee are Drs. R. Haynes and D. Milne respectively, both of ATNF. They can be contacted at:

Telephone:	61 2 868 0222
FAX:	61 2 868 0400
Telex:	26230 ASTRO AA
E-Mail:	rhaynes@rpepping.oz.au
	dmilne@rpepping.oz.au

Forms concerning the Second Announcement and Registration were recently distributed.

The symposium has already created considerable interest. A total of 256 potential attendees answered the first-round notice of the Symposium.

IAU Fifth Asian-Pacific Regional Astronomy Meeting

This regional meeting will be held between 16th and 20th July at the University of New South Wales, Sydney. The wide-ranging program will include: extragalactic astronomy; galactic structure and the interstellar medium; stellar birth, death and evolution; Supernova 1987A; the solar system (including recent Voyager results); astronomical instrumentation, including space observatories; education in astronomy in the Asian-Pacific region. The meeting will be sponsored by the IAU, the University of NSW, Mt Stromlo and Siding Spring Observatories, the Anglo-Australian Observatory, and ATNF.

Further details can be obtained from :

Dr M. Ashley (Chairman LOC)
School of Physics
University of NSW
Kensington NSW 2033 Australia

PREPRINTS

Traditionally, radioastronomy reprints from the Division of Radiophysics were assigned an 'RPP' designation. ATNF recently decided to change this to 'ATP'. Preprints which have been prepared over the last six months are:

RPP

3335 Radio positions and optical identifications for a sample of southern flat spectrum radio sources - II [G.L. White, J.D. Bunton, M.W.B. Anderson, M.J. Batty, D.R. Brown, J.B. Corben]

3350 A combined optical, infrared and radio study of the megamaser galaxy III ZW 35 [J.M. Chapman, L. Staveley-Smith, D.J. Axon, S.W. Unger, R.J. Cohen, A. Pedlar, R.D. Davies]

3356 New radio observations of the Circinus Galaxy [J.I. Harnett, J.B. Whiteoak, J.E. Reynolds, F.F. Gardner, A. Tzioumis]

3362 Low noise FET amplifiers for the Australia Telescope [R.G. Gough, H.K. Rasmussen]

3374 Infrared-luminous galaxies behind the Great Attractor [D.A. Allen, R.P. Norris, L. Staveley-Smith, V.S. Meadows, P.F. Roche]

3383 Ringo: a method of determining radio positions [R.M. Wark, A.E. Wright]

3392 Compact radio cores in extremely luminous far-infrared galaxies [R.P. Norris, D.A. Allen, R.A. Sramek, M.J. Kesteven, E.R. Troup]

3400 Universal gravity: was Newton right? [A.E. Wright, M.J. Disney, R.C. Thomson]

3408 Two wide-velocity H2O masers [J.R. Forster]

ATP

001 Light echoes revisited [R.D. Ekers and H. Liang]

002 Australia Telescope observations of excited-state OH transitions in NGC 4945 [J.B. Whiteoak and W.E. Wilson]

008 Speckle interferometry of Hipparchus link stars - III [G.L. White, D.L. Jauncey, J.E. Reynolds, D.R. Blackmore, S.J. Matcher, B.L. Morgan, H.A. Vine, A.N. Argue]

009 A 5.75 millisecond pulsar in 47 Tucanae [R.N. Manchester, A.G. Lyne, N. D'Amico, S. Johnston, J. Lim, D.A. Kniffen]