AT NEWSLETTER
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Following funding for the Australia Telescope (AT) in the August 1982 Federal budget, considerable progress has been made in setting up the project organization and in detailed design studies. Responsibility for the project rests with the CSIRO and, within the CSIRO, with Dr R.H. (Bob) Frater, Chief of the Division of Radiophysics. An AT Advisory Committee has been set up with three members representing CSIRO and three members representing other institutions. Current membership is R.H. Frater (Chairman), A.G. Little, R.N. Manchester, D.S. Mathewson, D.C. Morton and B.J. Robinson. There are also three overseas advisors, R.D. Ekers (VLA), J.E. Baldwin (Cambridge) and P.J. Napier (VLA). Peter Napier is currently at Radiophysics on a six month visit and has been active in the initial stages of planning. The position of project manager has been advertised and an appointment should be made shortly. A project scientist is also to be appointed in the near future. Both of these people will be responsible to Bob Frater.

An AT Scientific Objectives Committee (ATSOC) has also recently been set up. The responsibility of this committee is to provide a set of final specifications for the AT from a scientific standpoint - the final design will of course be based on a compromise between these specifications and those resulting from engineering and budgetary constraints. The ATSOC is widely representative; its members are G.V. Bicknell (Mount Stromlo) K.C. Freeman (Mount Stromlo), W.G. Elford (University of Adelaide), P.D. Godfrey (Monash), R.W. Hunstead (Uni. of Sydney), D.L. Jauncey (RP), P.M. McCulloch (Uni of Tasmania), R.N. Manchester (RP - Chairman), J.G. Robertson (AAO), J.E. Ross (Uni of Queensland), L.F. Smith (Uni of Wollongong), A. Stolz (Uni NSW) and K.N.R. Taylor (Uni NSW).

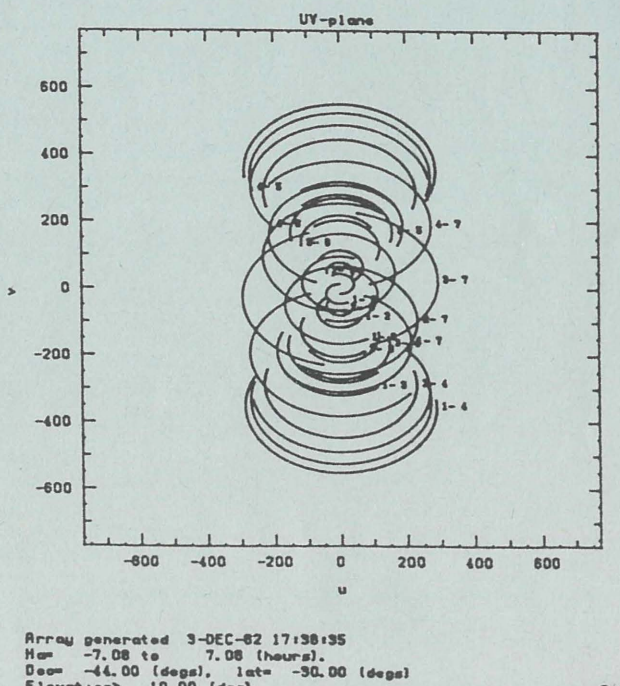
In current plans, the AT consists of five 22m diameter antennas located on a 3 km rail-track at Culgoora, a sixth 22m antenna to give an approximately 6 km baseline and a seventh 22m antenna at or near Siding Spring Observatory. The Culgoora antennas form a "compact" array suitable for wide-field mapping of galaxies, HII regions, supernova remnants etc. The Siding Spring antenna, together with the Parkes 64m telescope and one or more elements of the compact array form a "long baseline array" (LBA). We expect that, for much of the time, one of the antennas at the Tidbinbilla Deep Space Station will be able to join the LBA. The LBA in its present form will be a powerful instrument for astrometry and geodetic studies, but its mapping capabilities will be rather limited. One of the recommendations of the ATSOC is that additional baselines be provided for the LBA to fill in gaps in the u-v plane and hence enable maps of larger fields and more complex objects to be made. One way of achieving these extra spacings would be to use a transportable antenna of diameter say, about 10m. Such an antenna could also be used to extend the baseline of the compact array.

The original proposal included frequency bands between 1.4 and 45 GHz. Extension of this range at both ends, to frequencies below 1 GHz for studies of non-thermal sources and to 115 GHz for CO observations, has been discussed by the ATSOC.

Engineering consultants, Macdonald, Wagner and Priddle (MWP) of Sydney have been engaged by the CSIRO to assist in Phase I of the design and procurement procedures for the antenna elements. The acting project manager, Dr D.N. Cooper, and two MWP engineers have left on a two-week visit to various European observatories to study current overseas antenna design practice. A small group consisting of J.G. Ables, R.H. Frater, A.G. Little, P.J. Napier and J.D. O'Sullivan (currently at Dwingeloo, Netherlands) has been set up to establish the electronic concept design for the AT. This group will hold its first meeting at Parkes in the second week of December.

Tender documents for construction of the antennas are expected to be completed in the second half of 1983. At this time the exact configuration of the compact and long baseline arrays should also be established, and the electronic design be well under way.

Completion of the AT in 1988, the Bicentennial Year, will require strict adherence to a very tight timetable - a considerable challenge!



Sample set of uv-tracks for the long baseline array involving Culgoora, Siding Spring, Parkes, Tidbinbilla and three locations for the transportable antenna.