

# MERCURY

50 PAGES

30 Cents

WEDNESDAY, MAY 14, 1986

Hobart 30 0622

Launceston 31 9144

## RADIO ASTRONOMY FOUNDER SEES WORK IN ACTION

THE Mt Pleasant Observatory, home of the southernmost major radio telescope in the world, was opened yesterday by the Governor of Tasmania, Sir James Plimsoll.

The telescope, a gift from NASA, was based for more than 20 years at the Orroral Valley tracking station near Canberra, where it maintained constant contact with space.

It was involved in the space shuttle programme, the joint United States-USSR manned Apollo-Soyuz mission of 1975, and tracking the re-entry of Spacelab over Australia in 1979.

On average, it made contact with more than a dozen satellites a day.

A reorganisation of NASA's worldwide space tracking system resulted in the closure of the Orroral Valley station. The \$8,000,000 radio telescope was still in perfect working order and it was a coup for the University of Tasmania to convince NASA to make a gift of it.

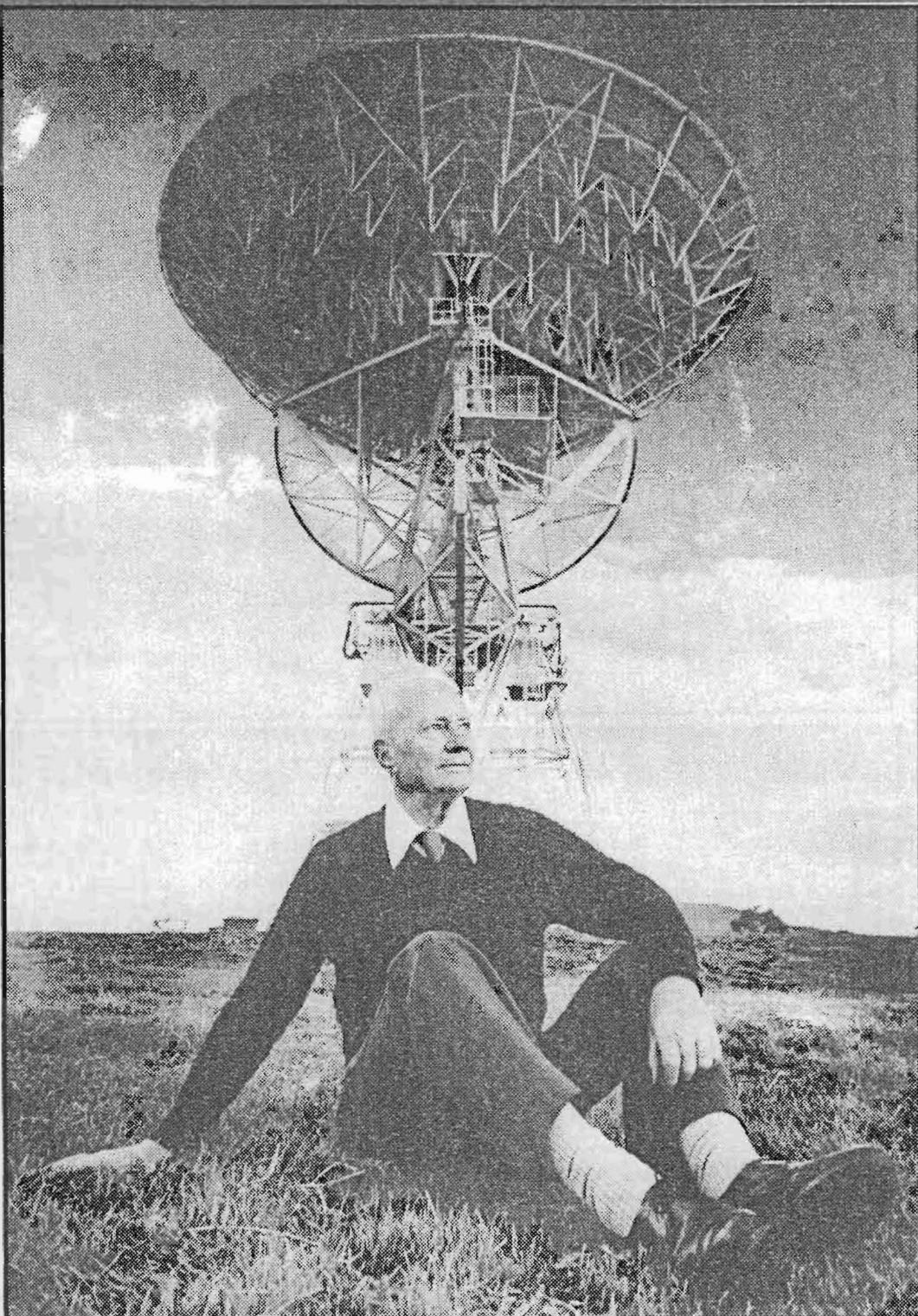
NASA also provided \$285,000 towards relocation and the university spent another \$425,000.

Although the telescope was not yet in full working order, yesterday's opening ceremony was scheduled to coincide with a national meeting of the Astronomical Society of Australia in Hobart this week.

With many of the nation's most distinguished astronomers present, along with representatives of NASA, the telescope formally was given to the university on behalf of the US by the US Ambassador, Mr Laurence Lane jun.

A special guest was Dr Grote Reber, one of the founders of radio astronomy, who built the world's first radio telescope in Illinois 49 years ago. He first came to Tasmania in 1954 because of the ideal conditions in this State for long-wave radio astronomy.

For many years Tasmania has made a significant contribution to astrophysics research and the new telescope will assure the maintenance of this tradition.



● Dr Grote Reber and the Mt Pleasant Observatory ... he is known as the father of radio astronomy

*Presentation of the 26-metre antenna  
and opening of  
Mt Pleasant Observatory*

**TUESDAY, 13 MAY 1986**

**2.30 pm**

*Programme*

**Opening**

The Chancellor, Sir Guy Green, KBE  
Chief Justice of Tasmania

**The 26-metre Antenna**

Dr P.A. Hamilton  
Head of the Department of Physics

**Presentation of the Antenna to the University**

His Excellency the United States Ambassador to Australia  
Mr Laurence William Lane Jnr

**Acceptance by the Chancellor**

**Opening of the Mt Pleasant Observatory**

His Excellency the Governor of Tasmania  
Sir James Plimsoll, AC, CBE

The Mt Pleasant Observatory has been established by the University of Tasmania on the University Farm at Cambridge, near Hobart, as a facility for research and postgraduate training in radio astronomy and related fields.

The central instrument at the Observatory is the 26-metre parabolic antenna formerly at the Orroral Valley tracking station near Canberra. The tracking station was part of the worldwide spacecraft tracking and data network of the United States National Aeronautics and Space Administration (NASA), operated for NASA by the space projects branch of the Australian Department of Science. A reorganisation of NASA facilities in Australia resulted in the concentration of space tracking activities at Tidbinbilla, near Canberra, and the closure of the Orroral Valley station. The 26-metre antenna was surplus to requirements. Following representation, NASA donated it to the University together with extensive support equipment and spares. NASA also provided \$285,000 towards the cost of relocation. The University provided the remaining \$425,000 needed to move the antenna, to prepare the foundations and to establish the Observatory.

The 26-metre antenna has an interesting history. It was completed in 1965 and since then has supported many of NASA's best-known activities. The Orroral Valley station maintained a 24 hour-a-day, 365 days-a-year space tracking operation and during a typical day it made contact with more than a dozen different satellites. The 26-metre antenna was the largest at the station, and was involved in programmes such as the Orbiting Solar Observatory (OSO), the joint US-USSR manned Apollo-Soyuz mission of 1975, and the Space Shuttle programme. It was also responsible for tracking the re-entry of Spacelab over Australia.

Throughout its life the antenna has been maintained in excellent condition, which was noted by the removal team from Johns Perry (Johns and Haywood). The instrument now stands in its new position as a splendid tribute to the original builders, to the maintenance team at the Orroral Valley, and the crew from Johns Perry.

# Mt. Pleasant Observatory

The antenna has a surface made up of solid panels with an r.m.s error of 0.8mm. It was designed for use at frequencies up to 18 GHz. It is a prime focus instrument, with the feed and receiver front-end housed at the apex, which is supported by four legs. The original hydraulic drive, capable of moving the structure at three degrees a second, has been replaced by an electric drive with speeds up to 20 degrees a minute; the new drive is adequate for astronomy, and offers significant savings in maintenance and operating costs over the hydraulic system.

The Observatory will be used for much of the year as a stand-alone facility in research programmes of interest to members of the Physics Department, particularly the study of collapsed objects such as pulsars. NASA has been offered up to 30 days a year for astronomical observations (this is the most southern Observatory with a telescope of significant size, and it offers considerable advantages for some objects in the southern sky). However one of the most exciting prospects is long baseline work with other telescopes such as those at Parkes and Tidbinbilla, and the Australia Telescope. The baseline from Hobart to the NSW telescopes is 1400 kilometres, giving a resolution of 0.005 arc seconds at 10 GHz.

The establishment of the Mt Pleasant Observatory is the result of the NASA donation of the 26-metre antenna. Representations were made not only by the University, but by others who recognised the advantages for astronomy of siting such an antenna at Hobart. Particular mention must be made of members of the CSIRO Division of Radiophysics, the Department of Science, and NASA itself. Within the University the project has involved senior administrative staff, the Buildings Branch, the Faculty of Engineering and Surveying and the Department of Physics.

