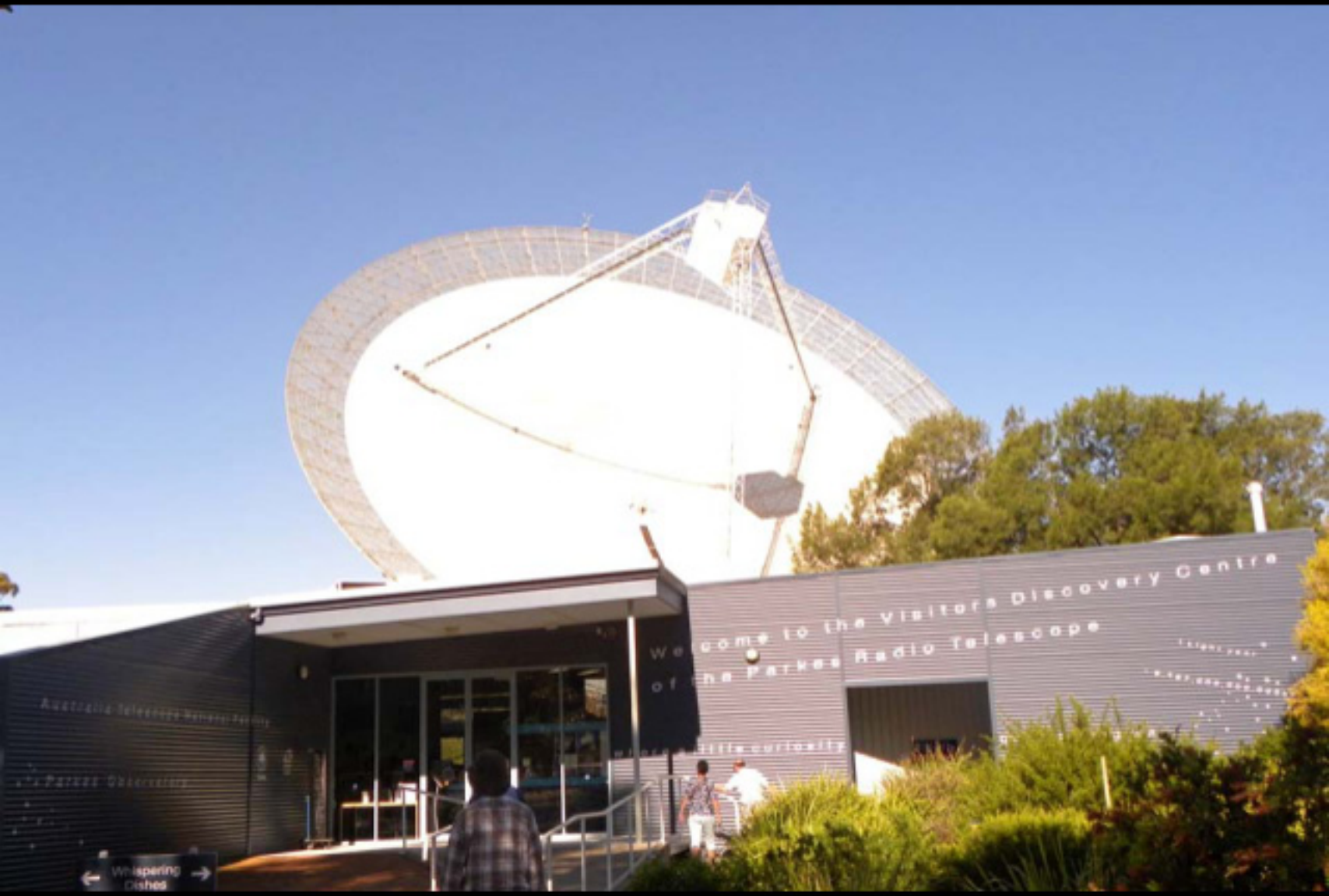
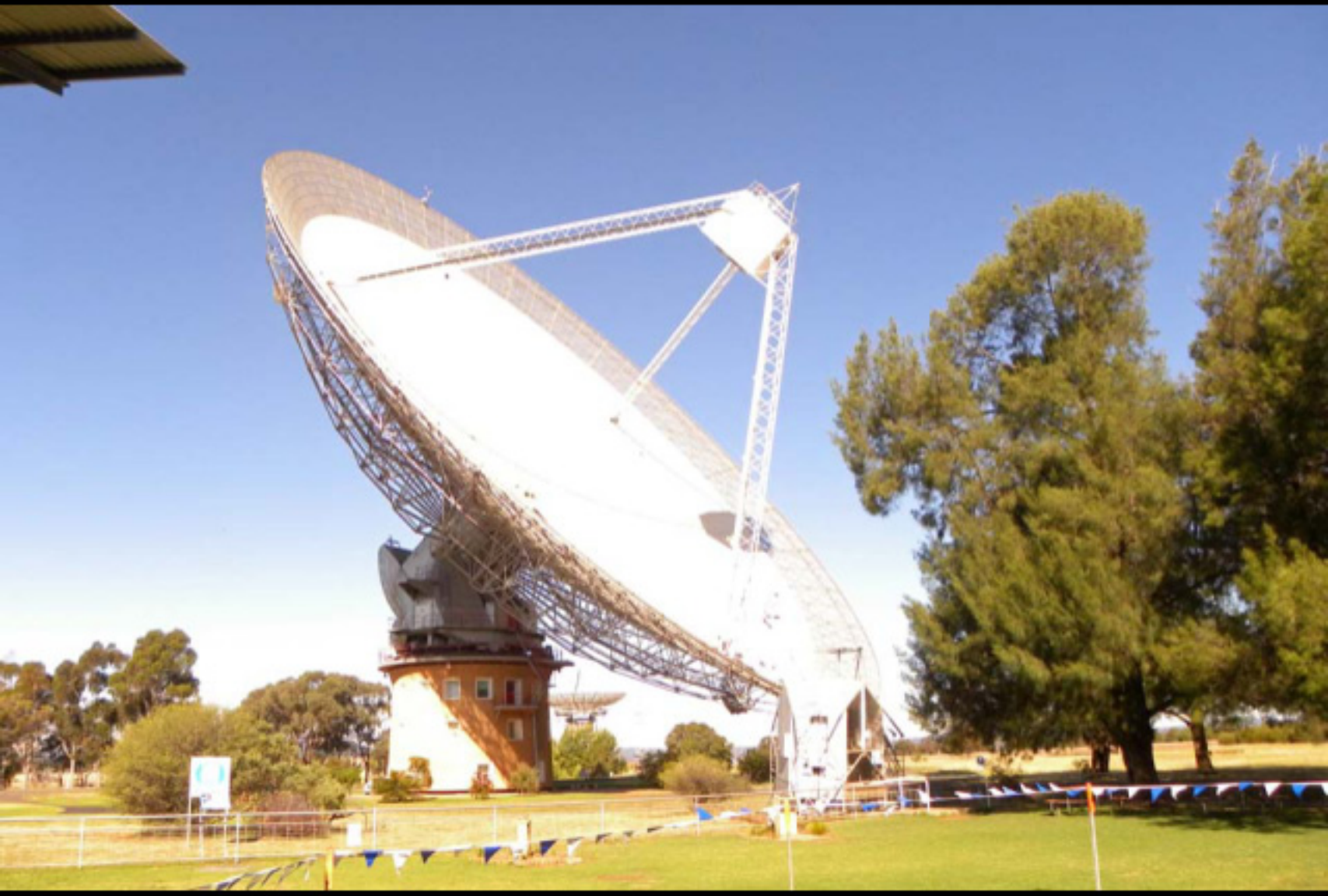
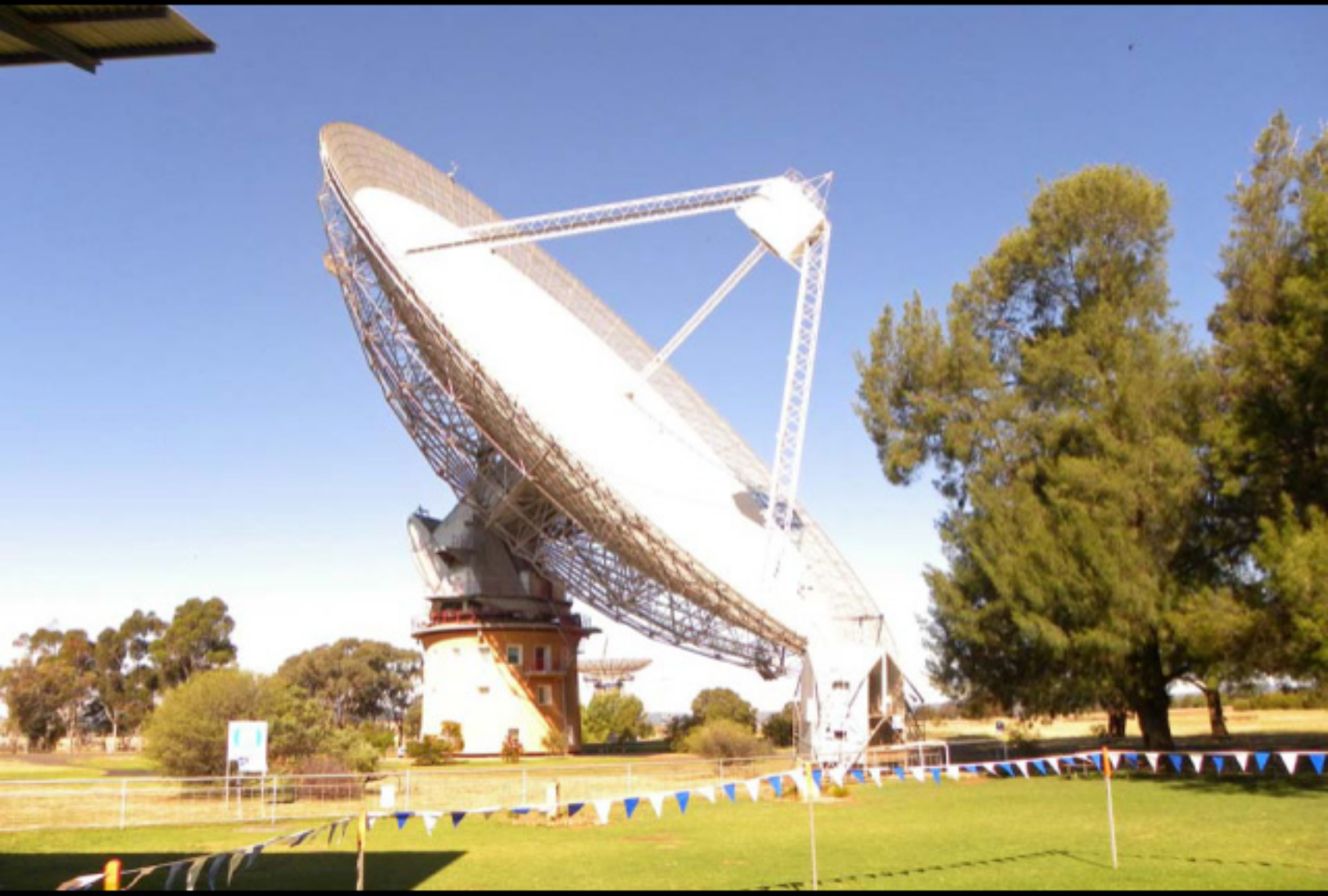
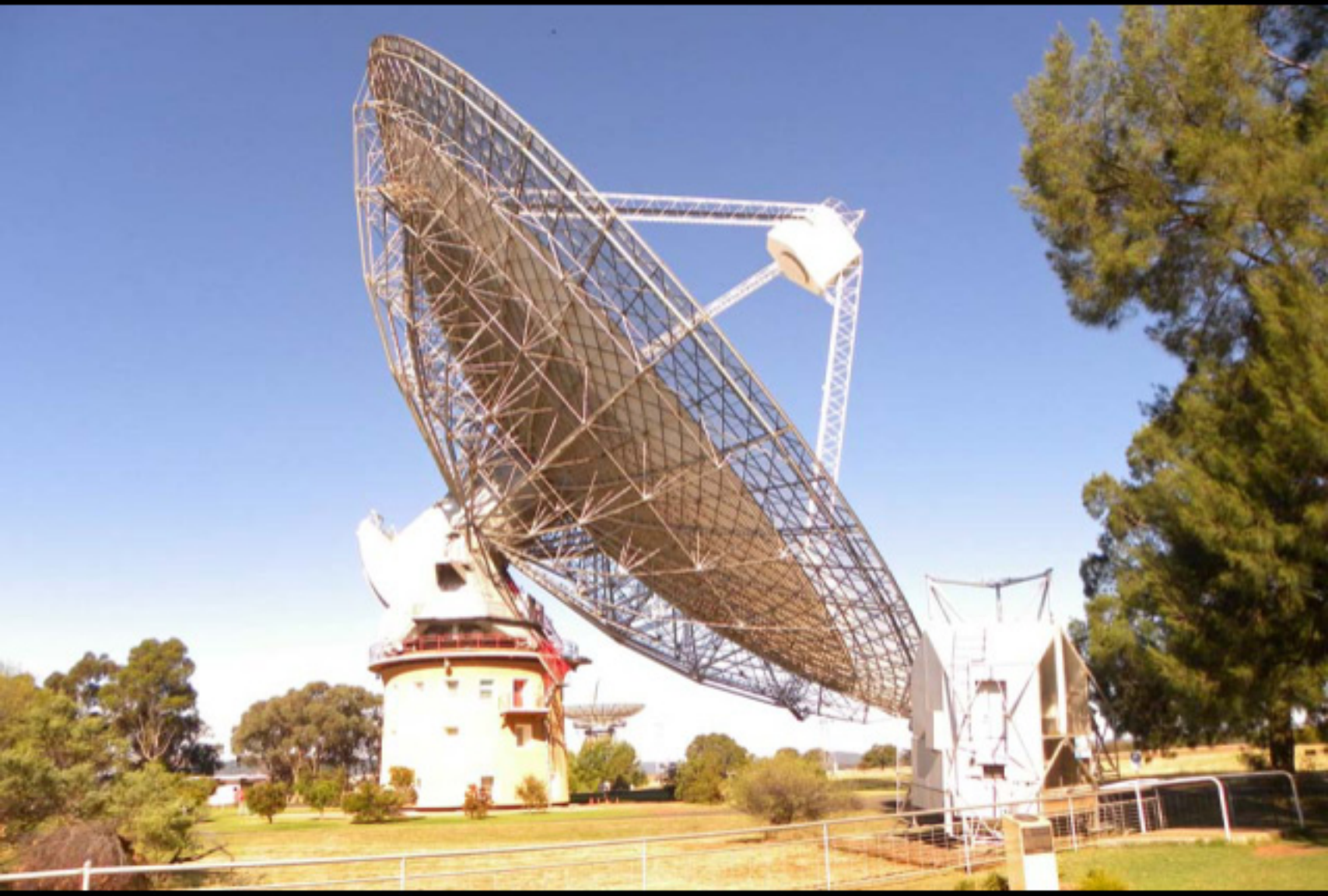
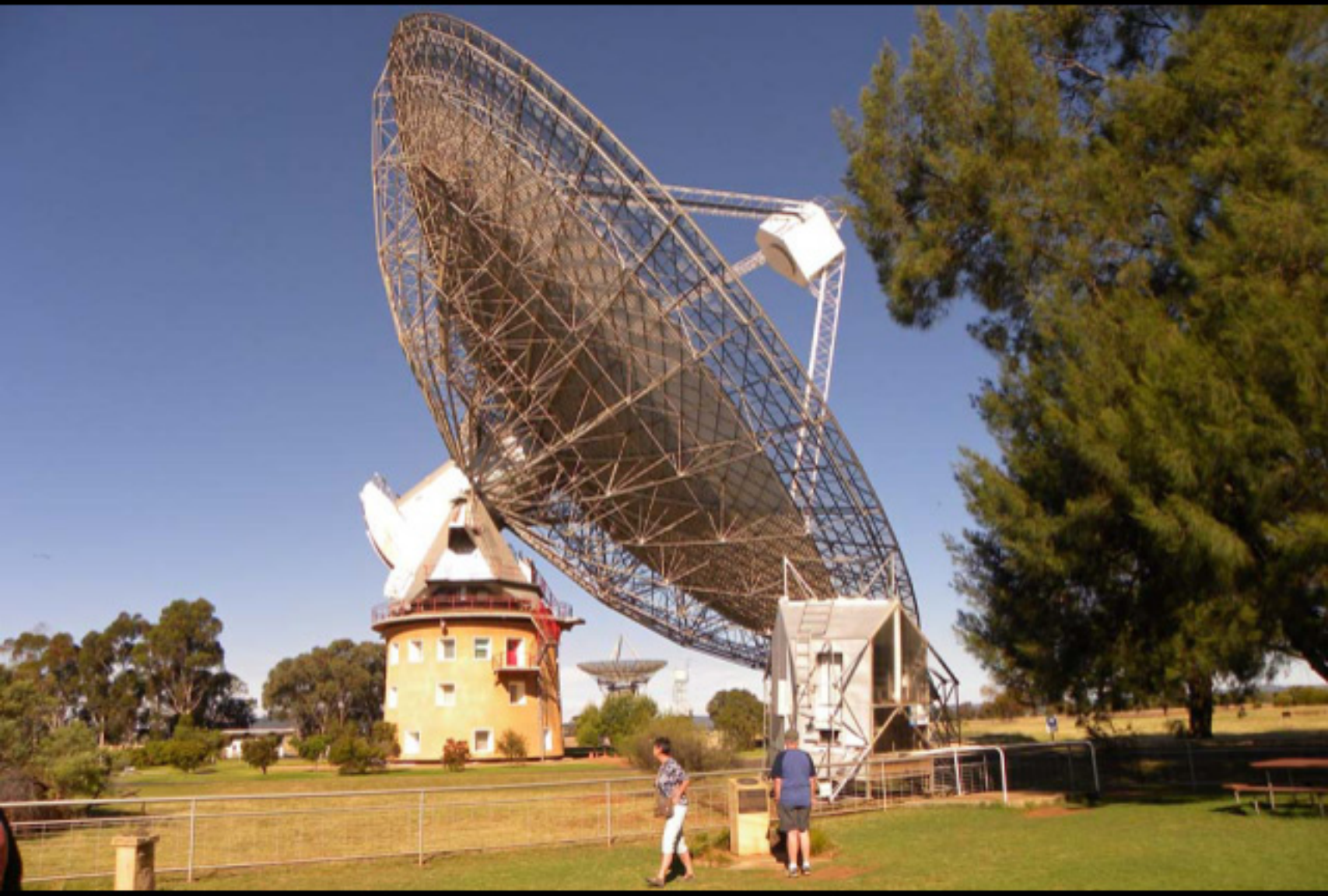

Welcome to the Visitors Discovery Centre
of the Parkes Radio Telescope
Whispering Dishes








CSIRO



CSIRO

CSIRO's Parkes Telescope

CSIRO's Parkes telescope is a 64-m diameter parabolic dish used for radio astronomy. It is located about 20km north of the town of Parkes, NSW, and about 380km west of Sydney. It is operated by CSIRO Astronomy and Space Science (CASS), a business unit of CSIRO. CASS also operates the Australia Telescope Compact Array near Narrabri, NSW, and the Mopra radio telescope near Coonabarabran, NSW, and is developing the Australian SKA Pathfinder (ASKAP) Telescope in Western Australia.

The telescope

The telescope was built in 1961. But only its basic structure has remained unchanged. The surface, control system, focus cabin, receivers, computers and cabling have all been upgraded — some parts many times — to keep the telescope current. The telescope is now ten thousand times more sensitive than when commissioned in 1961.

- NASA copied the telescope's design for the satellite tracking dishes of its Deep Space Network.
- The moving part of the telescope, above the concrete tower, weighs 1000 tonnes — more than two Boeing 747s.
- The telescope can be pointed with an accuracy of better than 11 arcseconds — about the width of a finger seen 150 m away.
- The telescope only receives signals from space, never sends them.
- It can handle radio waves from 7 mm to 4 m long.

Using the telescope

The telescope works day and night, and through rain and cloud. About 85% of all time each year is scheduled for observing. Less than 5% of that is lost because of high winds or equipment problems. Most of the rest of the time each year is used for maintenance and testing.

The moving part of the dish is not fixed to the top of the tower but just sits on it. Because the large surface catches the wind like a sail, the telescope must be 'stowed' (pointed directly up) when the winds exceed 35 km an hour.

The telescope is used by 300 people each year. About 40% of these users are from overseas.


NATIONAL ENGINEERING LANDMARK
RADIO TELESCOPE, PARKES
THIS 64 METRE DIAMETER TELESCOPE IS THE REALISATION OF THE VISION OF CHIEF'S DR. E. G. BOWEN. DESIGNED BY FREEMAN FOX & PARTNERS TO A CSIRO SPECIFICATION AND BUILT BY MASCHINENFABRIK AUGSBURG NURNBERG (MAN). MANY OF ITS INNOVATIVE DRIVEN FEATURES WERE ADOPTED IN LATER TELESCOPES. COMMISSIONED IN 1961, IT HAS ALLOWED ASTRONOMERS TO EXPLORE THE UNIVERSE IN GREATER DETAIL THAN EVER BEFORE. EXCELLENT ENGINEERING, AND THE LATEST IN ELECTRONICS AND COMPUTING, HAVE KEPT THIS TELESCOPE AT THE FOREFRONT OF RADIO ASTRONOMY.
DEDICATED BY
THE INSTITUTION OF ENGINEERS, AUSTRALIA
AND CSIRO, 1997.

CSIRO

THE PARKES RADIO TELESCOPE

Dish Facts

64 m diameter parabolic dish
Weighs 1000 tonnes above the control tower
Observes 24 hours a day
Observes radio waves 7 mm to 4 m long
Maximum operational windspeed is 25 km hr^{-1}
Takes 15 minutes to rotate 360°

The Dish

The dish collects radio waves from space; they bounce off the parabolic surface and are focused into receivers inside the focus cabin, which is supported 26 m above the centre of the dish by three legs. The dish has three types of surfacing: galvanised steel mesh; perforated aluminium panels; and solid steel plates. The dish and focus cabin weigh 1000 tonnes and are balanced by a 250 tonne counterweight. The dish, counterweight and turret structure rotate horizontally on a track that sits on top of the control tower.

The Control Tower

The control tower houses a radio equipment room and the control room, where astronomers use computers to point the dish at specific sky co-ordinates to study objects in the Universe.


E TELESCOPE'S
SIGN AND
ONSTRUCTION
DESIGN
In the mid 1950s many different concepts were proposed for a Giant Radio Telescope, which eventually became the Parkes Radio Telescope.
CONSTRUCTION
Construction began in 1959 and took just two and a half years to complete. The telescope was officially opened on 31 October 1961.
UPGRADES


CSIRO
THE DISH
&
APOLLO 11


CSIRO
OTHER
SPACE
TRACKING
MISSIONS


Apollo
On 21 July 1969 the Parkes Radio Telescope brought television pictures of the historic Apollo 11 moonwalk to 600 million people around the world.
This remarkable event was achieved thanks to the dedication and skill of the CSIRO and NASA staff at the Observatory - a collaboration that continued until the end of the manned lunar program in December 1972.
Dedicated this 21st day of July, 1999.
CSIRO
NASA


Welcome to the Visitors Discovery
of the Parkes Radio Telescope