

Questacon

Giant Leaps in Space



Centenary of Federation

Australia shows the world the first steps on the Moon.

WHAT'S THE PROBLEM?

Space exploration hit a peak when the Apollo 11 spacecraft flew to the Moon and Neil Armstrong made his famous "small step" speech. The mission was run by the United States' National Aeronautics and Space Administration (NASA). When NASA's Goldstone tracking station faced away from the moon, it lost touch with Apollo 11.

A GREAT AUSSIE SOLUTION

When the signal from Apollo 11 could not be picked up at the California base, two Australian facilities communicated with the spacecraft and relayed the information to Mission Control at Houston. These facilities were the Parkes Observatory, 25 kilometres north of the town of Parkes, and the Honeysuckle Creek tracking station near Canberra.



On 21 July 1969, the television images of the moonwalk were transmitted through Honeysuckle Creek for the first eight minutes and then through Parkes. Australian TV viewers saw the images 300 milliseconds before the rest of the world.

The Parkes Radio Telescope
Photograph by John Sarkissian
(CSIRO, Parkes Observatory)

HOW DOES IT WORK?

Radio waves bring TV and radio into our homes, and in a similar way spacecraft send out signals that are detected on Earth. Instructions can also be sent back to the spacecraft. An antenna can follow the position of a spacecraft (tracking) by pointing in the direction where the signal is strongest.

THE FUTURE

The Honeysuckle antenna can now be found at the Canberra Deep Space Communication Complex, Tidbinbilla, which is home to the largest steerable antenna in the Southern Hemisphere. The Complex is a NASA facility and is used to track spacecraft as they explore the far reaches of the Solar System.

The Parkes Observatory is part of the Australia Telescope National Facility that studies objects in the universe through radio astronomy research.

FURTHER INFO, FACTS & FUN

- An Australian-made movie, *The Dish*, is based on the role that the Parkes Observatory played during the moon landing.
- Paul Scully-Power and Andy Thomas are two Australians who have become astronauts.
- For more info on Australia's involvement in space exploration, check out:
Parkes Observatory <http://www.parkes.atnf.csiro.au/>
Canberra Deep Space Communication Complex <http://www.cdsc.nasa.gov/>
Andy Thomas <http://www.jsc.nasa.gov/Bios/htmlbios/thomas-a.html>
Paul Scully-Power <http://www.odysseytelevision.com/live/interactive/moonshot/biography-paulscully-power.html>

For more info on great Australian Science check out:

Questacon's Innovative Australians <http://www.questacon.edu.au/innovaus>

CSIRO's Australia Advances <http://www.csiro.au/promos/ozadvances>

The Australian Academy of Science's Nova <http://www.science.org.au/nova>

The Australian Science Archive Project <http://www.asap.unimelb.edu.au/>