

TIMELINE OF SPACE ACTIVITY IN SOUTH AUSTRALIA

South Australia's involvement with space dates back to 1947. It is now home to leading-edge research and development in satellite and space technologies. In April 2016 South Australia released the first space strategy of any Australian jurisdiction. In 2017 it hosts the world's largest space exhibition, the International Astronautical Congress. The establishment of the South Australian Space Industry Centre (SASIC) in Adelaide in September 2017 will support the growing space ecosystem as the state propels into a new world of space technology.



Government of
South Australia



1947

In 1947 the Woomera Rocket Range was established in South Australia on the Arcoona plateau as part of an agreement between the British and Australian governments under the Anglo-Australian joint project. The Range was established to develop long-range missiles in response to the threat of attacks on London in WWII and the developing cold war in Europe. Over 4000 short-range missiles were tested between 1947 and 1980.



1957

South Australia hosted significant research into space through the launching and monitoring of over 250 Skylark sounding rockets over 20 years. The experience enabled Australian research teams to develop the Australian-designed Long Tom sounding rocket which was used to develop instrumentation at Woomera and to study the upper atmosphere.

Image: Skylark Launcher used to launch Australia's first sounding rocket, the Long Tom from Woomera in 1957
Source: nasa.gov



1967

In November 1967 the Australian-built Weapons Research Establishment Satellite (WRESAT 1) was successfully launched into orbit from Woomera on board a modified US Redstone rocket (the same type used to launch the first US astronauts into space). This made Australia the third country, after the US and the USSR, to launch a satellite to orbit from its own territory.

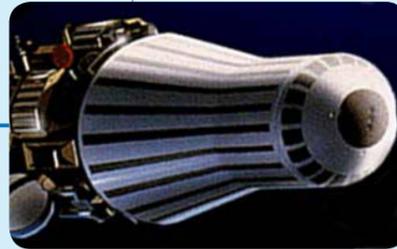
Image: The Australian satellite 'WRESAT' was launched from Woomera on 29 November 1967
Source: U.S. federal government



1995

Several international space programs continued in South Australia throughout the 1990s. 1995 saw the start of the Express mission, a collaborative program between Germany and Japan to land an unmanned re-entry capsule at Woomera. The spacecraft was launched from Kagoshima Space Centre in Japan on 15 January 1995. Although the landing did not eventually happen at Woomera due to technical problems, Australian support during this mission pioneered the approach for future spacecraft programs at Woomera.

Source: Courtesy of Weebau



1996

In 1996 US company, Kistler Aerospace Corporation developed Kistler K-1, one of the first ever fully reusable launch vehicles. Kistler had a contract for 10 satellite launches worth over \$150 million. Woomera was chosen over Nevada to be the first site for the test launches.

1996

Also in 1996 a total of 13 Japanese Automatic Landing Flight Experiment (ALFLEX) landing trials took place over a range of experimental conditions, with all being spectacularly successful. The Japanese also established four 10m space satellite telescopes to the north of the Woomera airfield to study high energy Gamma Rays.

Source: JAXA

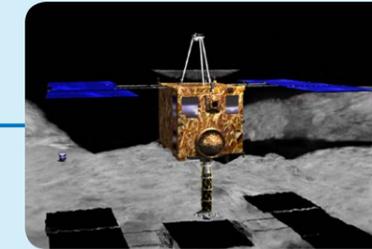


2011

In 2011 the University of South Australia commenced the Southern Hemisphere Space Studies Program in collaboration with the International Space University (ISU). The program is a unique, five week live-in experience focusing on an international, intercultural and interdisciplinary educational philosophy for which the ISU is renowned.

2016

Since the creation of the space office in 2016, the South Australian state government has provided extensive support to nurture the growth of space enterprise, education and research in South Australia, establishing Adelaide as a thriving space hub.



1950s

In the 1950s larger Blue Streak missiles were developed and large testing and launcher sites were constructed on the edge of Lake Hart. Although the weapons program was abandoned, the Blue Streak rocket became the first stage of the Europa rocket, developed jointly by Britain, France, West Germany, Belgium, Italy and the Netherlands, under the European Launcher Development Organisation Program (ELDO). The program launched 10 rockets between 1964 and 1970.

Image: Launch site for ELDO's Europa launch vehicles on the shore of dry Lake Hart
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1957

In 1957 a Minitrak satellite tracking station and Baker-Nunn satellite tracking camera were established in Woomera, starting a long association between Australia and the United States (US) in the field of space tracking. In 1960 NASA established a deep-space instrumentation facility at Island Lagoon and a Mercury spacecraft communication station at Woomera. The tracking and communications facilities proved South Australia as an ideal location for space-support activities due to its geographic location, large testing areas and growing expertise in supporting space activities.

Image: 26-metre antenna in Island Lagoon, Woomera, constructed by USA and Australia as part of the plan to develop three Deep Space stations equidistant around the world
Source: nasa.gov

1971

In 1971 Britain's BLACK ARROW rocket launched from Woomera carrying the satellite Prospero into polar orbit where it will remain until around 2070.

Image: The Prospero spacecraft was launched atop the Black Arrow rocket on 28 October 1971
Source: esa.int

1996

In May 1996, South Australian-born astronaut Dr Andy Thomas conducted his first trip into space on the Space Shuttle Endeavour. He logged a total of 178 days in space during his career.

Image: Dr Andy Thomas was the first Australian to walk in space as part of Space Shuttle Discovery mission.
Source: nasa.gov

2002 – 2004

Between 2002-2004 the Japanese Aerospace Exploration Agency (JAXA) conducted the National Experimental Supersonic Transport (NEXST) flight trials at Woomera. JAXA undertook significant upgrades at Woomera with extensive support from the Royal Australian Air Force and Adelaide aerospace companies. Further upgrades to Woomera were confirmed in 2016 over 10 years which will transform the Woomera Range Complex into the most sophisticated land-based test range in the world.

Source: Department of Defence

2010

In 2010, South Australia was the landing site for Hayabusa 1, the first unmanned spacecraft to return to Earth. The Hayabusa 1 spacecraft was launched by JAXA on 9 May 2003 from Kagoshima Space Centre to collect a sample from the asteroid Itokawa. The rendezvous with Itokawa was accomplished with pin-point precision in September 2005. The recovery of the capsule followed a spectacular re-entry sequence over the South Australian desert. Following the success of the first mission, Hyabusa 2 was launched in 2014 and is due to return to Woomera in 2020.

Image: Hayabusa 1
Source: J.R.C Gary

2017

In April 2017, Adelaide University and the University of South Australia teamed up to develop one of 50 CubeSats as part of the global QB50 initiative, one of four Australian satellites to be built in over 15 years. Australia's future in space looks promising and is set to reach new heights.

Image: Three CubeSats are ejected from the NanoRacks CubeSat Deployer attached to the outside of the Japanese Kibo laboratory module. The trio are part of a subset of CubeSats released to monitor different gaseous molecules and electrical properties of the Earth's thermosphere to better understand space weather and its long term trends.
Source: nasa.gov

