



Australian
Space Agency

■ GIVE ME

SPACE



Learn
about the
**Australian
Space
Agency**



Meet
Katherine:
**Our
Australian
astronaut**



Discover
our plans
to **return
to the
Moon...**

Explore Aussie space innovations, companies, careers + more

ABOUT THE AGENCY ►



Women in the Sky



The Three Brothers



Eagle's Footprint and Claw

The Seven Sisters



Emu in the Sky



Wanjel and Yuree
Pursuing Purra



Stingray Pursued by Sharks



Ginan

THE STORY OF OUR BRAND ►

At first glance, the Australian Space Agency logo looks like a satellite view of Australia. But, hidden within the dots are several Indigenous star constellations that can be seen if we look to our night sky. It captures Australia's powerful cultural heritage and that we're home to the world's oldest astronomers. It also highlights the spirit of the Agency—one that looks to space to make life better on Earth.



The **Australian Space Agency** is a little bit different to NASA. Our job is to help Australia's space industry to grow, to make sure it's safe, to build and maintain relationships with other space nations and to inspire Aussies about everything that space can do for us ... as well as highlight the cool jobs. The Agency was established on 1 July 2018 with just a handful of staff and has grown to well over a hundred agents. Our headquarters are in Adelaide, but many of our agents work from all parts of Australia.



Meet Enrico Palermo

HEAD OF THE AUSTRALIAN SPACE AGENCY

Enrico had his eye on a career in space from an early age, inspired by NASA's Galileo mission to Jupiter and Aussie-born astronaut Andy Thomas' missions.

Born and raised in Perth, Enrico graduated from the University of Western Australia with a Bachelor of Engineering in Mechanical Engineering and a Bachelor of Science in Physics and Applied Mathematics. He also studied at the International Space University in France.

Enrico was among Virgin Galactic's first 10 employees, and spent 14 years in various roles, including Chief Operating Officer.

Enrico was excited to return to Australia in 2021 to lead the Agency and has overseen many milestones - including the Agency's agreements with NASA for an Aussie-built rover to go on a future mission to the Moon, and the first space launches from a commercial facility in Australia.



“

I'll never forget that I got to tell Sir Richard Branson his spaceship had finally made it to space.”

“

Our Agency is punching above its weight. We're one of the smaller agencies out there by headcount, but you wouldn't know it from the reach and the amount of activity we have.”

Enrico at the unveiling of Virgin Galactic's 'VSS Unity' spaceplane.

Credit: Virgin Galactic



SPACE INNOVATIONS

OVER THE YEARS



1.



2.

DID YOU KNOW?

Australia was one of the earliest nations to launch its own satellite!

Using a rocket donated by the US, WRESAT-1 was developed by the Weapons Research Establishment and the University of Adelaide.

WRESAT was launched from Woomera in South Australia on 29 November 1967 and operated for five days.

CAN YOU BELIEVE?

A group of Melbourne University students constructed the first amateur radio satellite built outside the US.

It's incredible to think a satellite, which is still in orbit after 50 years, includes stuff you might find in the backyard shed! The antennae for the Australis-OSCAR 5 is made of flexible steel tape from a hardware shop. It was the first amateur satellite to use a passive magnetic attitude stabilisation system, and a command system to turn its transmitter on and off. Launched on 23 January 1970, it transmitted for about six weeks and is still out there.



3.



4.



HyImpulse's SR75 rocket launched from Southern Launch's Koonibba Test Range, SA

AUSTRALIA:

A LAUNCH DESTINATION

From the very top end to the far south – launches happen across Australia.

NASA has launched sounding rockets from the Arnhem Space Centre in the Northern Territory. German company HyImpulse launched from the Koonibba Test Range in regional South Australia. The Bowen Orbital Spaceport in north Queensland is the first orbital launch facility in Australia. Our country's vast outback is also a return destination for technology coming back from space.



Australia offers a unique launch destination for our international partners. Our geographic position provides clear skies, wide open ranges and access to both equatorial and polar orbits.

IMAGE CREDITS

1

WRESAT under construction at the WRE.

Credit: Defence Science and Technology Group

2

WRESAT launch.

Credit: Defence Science and Technology Group

3

Australis-OSCAR 5 team.

Credit: Owen Mace

4

Australis-OSCAR 5.

Credit: Owen Mace



LEARN MORE

SPACE IMPROVES LIFE ON EARTH



The special requirements of the space environment have led to many innovations that are useful, or help us to solve problems, back on Earth. Keeping astronauts healthy has led to medical breakthroughs.

Research on the International Space Station (ISS)

The ISS is a space laboratory that provides new ways to study serious health conditions such as cancer, asthma and heart disease and develop new pharmaceuticals. Research into how materials, plants and even fire behave in space increase safety and leads to valuable spinoffs.



SPACE RESEARCH HAS SPAWNED MANY INNOVATIONS ▼



CAMERA
PHONES



DUSTBUSTER
VACUUMS



PROGRAMMABLE
PACEMAKER



WATER
PURIFIERS

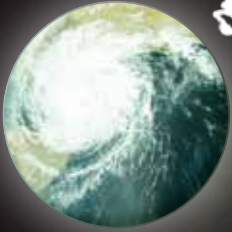


ARTIFICIAL
LIMBS



SCRATCH
RESISTANT LENSES

SPACE IS KEY TO SUSTAINABILITY



Climate change

- Satellites monitor the Earth's changing environment and climate, measuring the temperature of our oceans, land and atmosphere.



Wildlife conservation

- Satellites collect and relay sensor data to track wildlife, which helps manage and protect their habitats.



Smarter farming

- Agricultural equipment can be remotely controlled with the help of satellites to maximise farm productivity and efficiency.



Clean energy

- Space technology forecasts energy production and identifies the best locations for renewable energy.



Transport planning

- Satellites help us map and maintain roads, which reduces fuel consumption and aids with urban planning.



Zero hunger

- Satellites sense soil moisture, as well as vegetation and land characteristics, to help get more from our crops.

WHY SPACE MATTERS


Meet Katherine Bennell-Pegg,

Katherine Bennell-Pegg is the first astronaut under the Australian flag. She trained with the European Space Agency (ESA) in Germany. Katherine was born and raised in Sydney, studied and worked across six countries and has been employed by the Australian Space Agency since 2019.


“

The great thing about wanting to be an astronaut is that the backup careers are exciting... you can specialise in almost any STEM field: piloting, medicine, science and engineering all are good backgrounds for being an astronaut.”


KATHERINE'S SPACE JOURNEY




Katherine was fascinated by the stars and would marvel at how much remains to be discovered



She studied science and maths at high school, with lots of extracurriculars, targeting a career in space



Graduated with Bach. of Science in Advanced Physics & Bach. (Hons) Aeronautical (Space) Engineering from Sydney Uni; RAAF intern; Army Reservist



Studied postgrad overseas, with internships at ESA and NASA, before working as a space systems engineer on many missions

When asked at high school to write down three different career options Katherine only wrote down one – **astronaut** – and refused to add any others!

Australian Astronaut

“

I hope my training and whatever comes next helps unlock the path for more Australians to become involved in human spaceflight.



ASTRONAUT TRAINING TOPICS

DID YOU
KNOW ►

Astronauts do more than explore...
*the research they do benefits our society,
environment and science here on Earth!*

psychology human spaceflight engineering space law & history
material & fluid sciences foreign languages ocean survival
medical biology astronomy spacewalk training
training fitness and performance
human behaviour winter survival robotics training + more

LAUNCH

Do you enjoy problem solving and working in teams? Are you passionate about improving life on Earth, or curious about how the universe works?

▶ *There's much more to a career in space than being an astronaut. Space needs all sorts of skills... some you may not even expect!*

Building a future workforce

There are many exciting career paths to follow right here on Earth!
We need all kinds of people to support our growing space sector ▼



Technical specialists
such as fabricators, machinists, assembly technicians and data analysts.



Scientists
such as medical doctors, physicists, biologists, material scientists and Earth observation scientists.

YOUR CAREER IN SPACE...

SPACE | CAREER
INDUSTRY | PROFILE

*Associate Professor Marta Yebra
Senior Scientist and Director of the
ANU Bushfire Initiative*

Meet Marta.

Marta studied Environmental Sciences at university and then began work researching the use of satellite imagery in bushfire prevention. She now leads a project for the Bushfire and Natural Hazards CRC on Mapping Bushfire Hazards and Impact.



Explore a wide
range of space
careers and read
about people
working in the
Aussie space sector



Engineers
specialising in
robotics, propulsion,
AI, electronics,
avionics, software
and more.



**Project
management**
and various roles
spanning business
development,
communications,
marketing and law.

AUSTRALIA IN SPACE

Australia is playing a role in humanity's return to the Moon.

Getting back to the Moon and eventually to Mars is going to be a team effort, involving experts from around the world.

Australia has amazing talent and world leading, unique and specialist capabilities. "Team Artemis Australia" brings it all together so Australia can be part of the action.



**Australian
Space Agency**



AUSTRALIA IS A LEADER IN USING ADVANCED TECHNOLOGY IN HOSTILE AND HAZARDOUS ENVIRONMENTS



Robotics and
automation



Remote
operations



Remote medicine
and health



Australia is an expert in remote operations and robotics, which we have demonstrated in the mining and resources sector.

NASA will include an Australian-designed and built semi-autonomous rover in a future mission to the Moon. The Agency is funding its development through our Trailblazer program.

Our Aussie rover, called "Roo-ver" will assist in many science experiments on the Moon, including collecting samples of lunar soil.

Scientists will work to extract oxygen from the soil, which could then be used in human life support systems and to create rocket fuel for further exploration on the Moon, Mars and beyond.



Meet "Roo-ver"

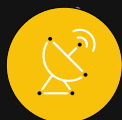
An artist's impression of what an Australian designed lunar rover could look like ◀ ◀ ◀

The first person to step foot on Mars
is sitting in a classroom today...

AUSTRALIA:

A GREAT PLACE TO DO SPACE

Here are some of the areas where Australia excels ▼



**COMMUNICATIONS
TECHNOLOGIES & SERVICES**



**EARTH
OBSERVATION**



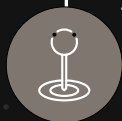
**ROBOTICS &
AUTOMATION**



**APPLIED SPACE MEDICINE
& LIFE SCIENCES**



**SPACE SITUATIONAL AWARENESS
& DEBRIS MITIGATION**



**POSITIONING,
NAVIGATION & TIMING**

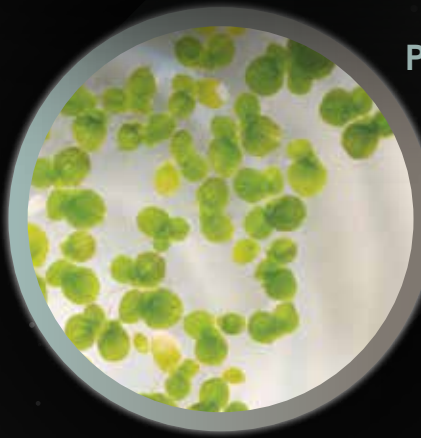


**ACCESS
TO SPACE**



**Australian
Space Agency**

COOL PROJECTS FOR THE AUSTRALIAN SPACE INDUSTRY:



Plants for Space (an Australian Research Council Centre of Excellence) is an innovative global group of researchers administered by the University of Adelaide - with sustainability in mind. They are exploring how plant-based space food can potentially enable humans to live sustainably off-Earth, and possibly one day on Mars. Space crops can be used to produce other products like medicines and plastics, which can translate into many benefits for our planet.

Saber Astronautics is helping new space companies get off the ground with an innovative software that provides a user-friendly link between satellites and mission control centres. Developed with assistance from an Australian Space Agency grant, *Saber's Open Galactic* software can make it easier for satellite-focused businesses to enter Australia's growing space market and for existing firms to increase profits.



Human Aerospace is supporting Australia in becoming a world leader in advanced spacesuits using compression technology. In microgravity (weightlessness), bones lose calcium and muscles deteriorate, but compression technology tricks the body into believing it's still standing on Earth. With funding from the Australian Space Agency, Human Aerospace is developing three spacesuit types. This technology could also be developed as sportswear to help athletes recover after strenuous activity here on Earth.



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 space.gov.au