



Australian
Space Agency

■ GIVE ME

SPACE



Learn
about the
**Australian
Space
Agency**



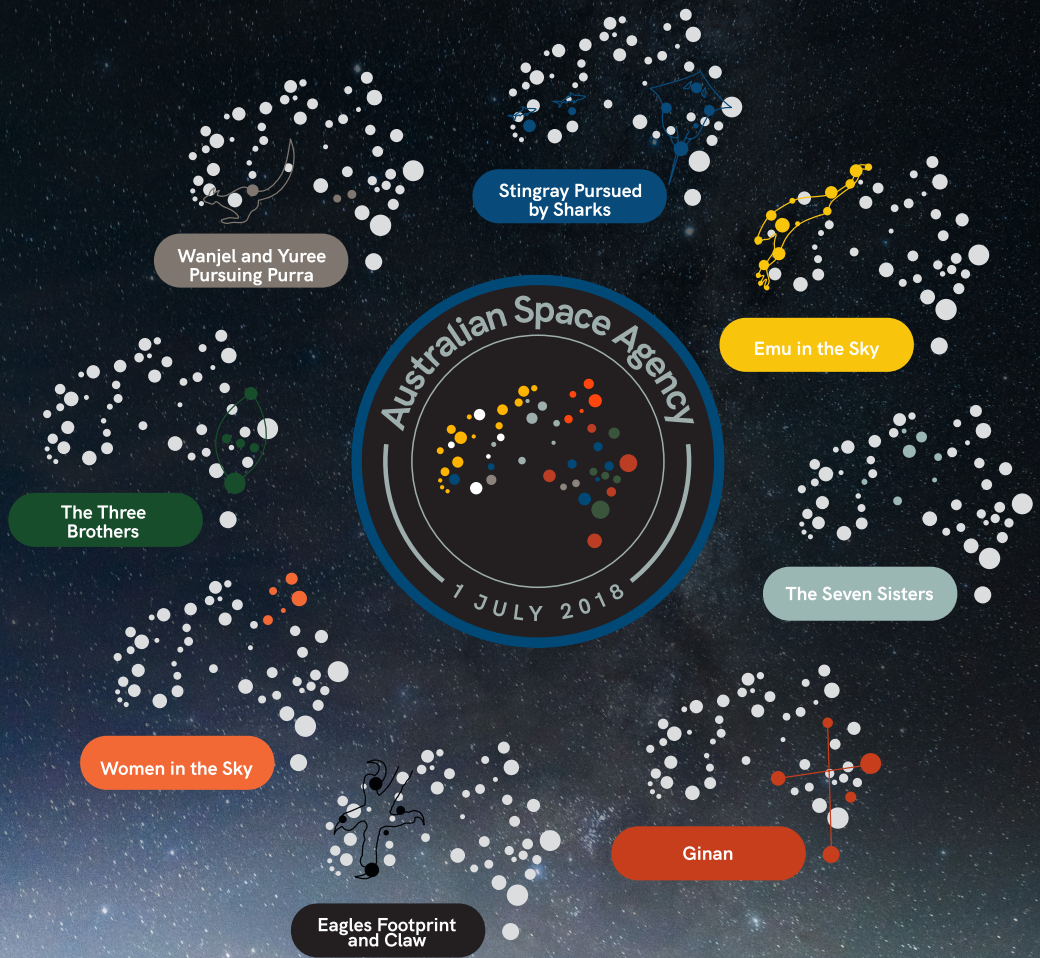
Meet
Katherine:
**Our
Australian
astronaut**



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

Explore Aussie space innovations, companies, careers + more

ABOUT THE AGENCY ►



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.

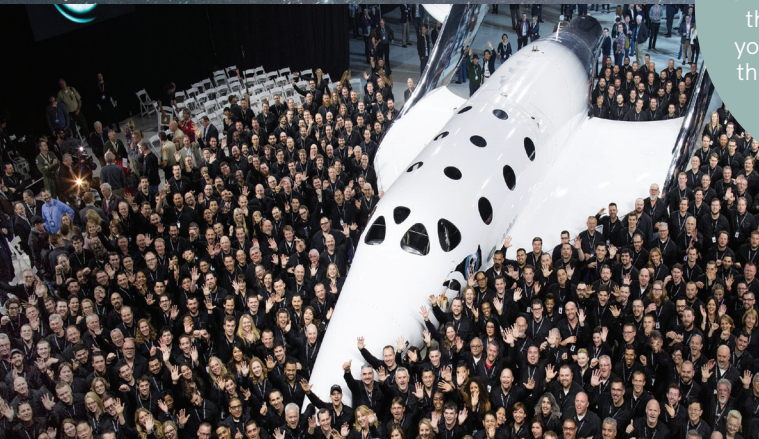


“

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



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?

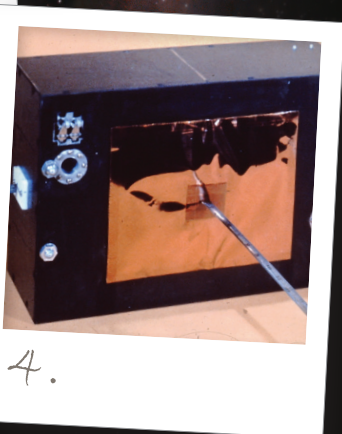
A group of Melbourne University students constructed the first amateur radio satellite built outside the US.

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 until its batteries died and remains in orbit, circling the Earth every couple of hours.

It should continue orbiting for another 100,000 years!





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 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

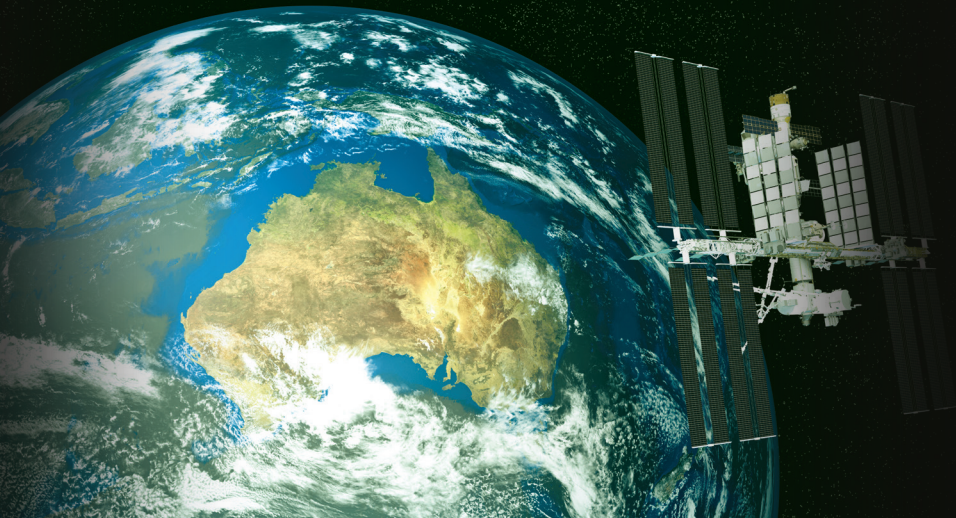
SPACE IMPROVES LIFE ON EARTH



The special requirements of the space environment have led to many innovations that 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

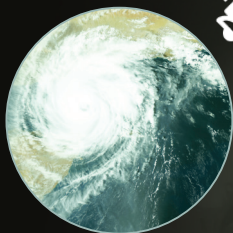


ARTIFICIAL
LIMBS



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.

SPACE HAS THE ANSWERS

Meet Katherine Bennell-Pegg

AUSTRALIAN ASTRONAUT

Katherine Bennell-Pegg is the first astronaut to be trained under the Australian flag. She trained with the European Space Agency (ESA) in Germany, graduating in April 2024.

Katherine was born and raised in Sydney, studied and worked across six countries and has been employed by the Australian Space Agency since 2019.

“

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

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!

“

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.”

MEET
KATHERINE



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

Are you passionate about improving life on Earth, or curious about how the universe works?

***It takes more than
rocket scientists &
astronauts to get
us to space....***



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

SPACE INDUSTRY CAREER PROFILE



Space Supervisor and Space Mission Operator
No.1 Space Surveillance Unit, Australian Defence Force

"Once I saw the space opportunities and job experience offered by the Australian Defence Force, I decided to enlist full-time."

Leading Aircraftwoman Johnston provides space domain awareness effects and missile warning in support of integrated and coalition forces.

YOUR CAREER IN SPACE

SPACE INDUSTRY CAREER PROFILE



"Practicing lawyers are starting to see that this is an area where they need skills."

Cassandra Steer

Chair and Founder,
Australian Centre for Space Governance

Ask Dr Cassandra Steer and she'll tell you space law isn't about making treaties with aliens - it's about keeping space secure and peaceful and is fast becoming an area of keen interest among practicing lawyers.

Building a future workforce

There are many exciting career paths to follow right here on Earth!
We need all kinds of people to support Australia's growing space sector.



Engineers

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



Technical specialists

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



Scientists

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



Project management

and various roles spanning business development, communications, marketing and law.

Australia is heading to the Moon

Returning to the Moon and on to Mars will be a team effort, involving experts from around the world. 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.



**Australia is a leader
in using advanced
technology in hostile
and hazardous
environments.**



**Robotics
and automation**



Remote operations



**Remote medicine
and health**

Our Aussie rover 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.



**Australian
Space Agency**

Introducing Roo-ver

Roo-ver is the name of our history making rover. Roo-ver is likely to land in the South Pole region of the Moon and is expected to operate for 14 Earth days. That's only about half of one Moon day.

Why Roo-ver?

The Australian public chose the name, after a competition that saw more than 8,000 entries.

How big is Roo-ver?

20kg in weight and about the size of a suitcase.

Why do we want oxygen from the soil?

Producing oxygen is a key in setting-up a sustainable human presence on the Moon.

Future Moon and Mars missions will rely on innovations created by students just like you...

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**

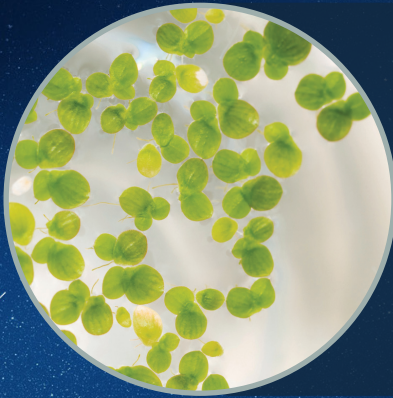


**POSITIONING,
NAVIGATION & TIMING**



**ACCESS
TO SPACE**

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.



Australian
Space Agency

 space.gov.au