



Australian  
National  
University



**ANU Institute for Space**

**InSpace 2023–24**

Solving Society's Biggest Challenges





InSpace connects ANU space research with society's biggest challenges to deliver positive impact. We do this by shaping and growing the Australian space ecosystem in partnership with industry, government, academia, and communities.



Photo Credit: Seth Lazar



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**Over the past six years, The Australian National University Institute for Space (ANU InSpace) has played a pivotal role in shaping and growing the space ecosystem in Australia and connecting space research at ANU with society's biggest challenges to deliver positive impact. We do this by working in partnership with industry, government, academia, and communities. The multidisciplinary collaboration between researchers, industry partners, and stakeholders demonstrates a commitment to innovation and progress in space-related ventures.**

# Introduction from our Director Professor Anna Moore

ANU InSpace is dedicated to the critical task of advancing space research and technology to support and facilitate a sustainable relationship between Earth and space. This is why space is not a choice – it is essential in keeping our everyday lives running smoothly, and the wellbeing of future generations depends upon it.

The work we do advocating for space-related initiatives, engaging with relevant stakeholders, and translating space research and technology into practical applications are all vital components of building a sustainable presence in space.

I'm proud to highlight that in this past year we've grown our Mission Specialist team to include eighteen leading academic researchers and established relationships with experts in space-related fields across all seven ANU colleges. We also work in close partnership with the Global Institute for Women's Leadership.

InSpace Mission Control and Mission Specialists have had another successful year of awards and accolades, having been recognised by many organisations and institutions both nationally and internationally for their stellar work in space research. The highlight of 2023 was our triumphant win at the Australian Space Awards, where we were named Academic Institute of Year. I was also honoured to become an ATSE Fellow in 2023.

The dynamic iLAUNCH Trailblazer initiative between the University of Southern Queensland, The Australian National University, and the University of South Australia, created through the \$50M winning University Trailblazer bid, will allow academics to translate essential research and technologies through to product manufacturing.

Two of our Mission Specialists, Professor Kirk McKenzie and Professor Hanna Kurniawati, became SmartSat CRC Professorial Chairs, with funding to expand their research in Precision Measurements in Space and in System Autonomy, Intelligence and Decision Making, respectively. These are all valuable assets to expanding research and technology.

I'm honoured to announce our new InSpace Board, currently made up of five members who I greatly admire and who I know will aid in the strategic direction and expansion of InSpace and our work in 2024 and beyond.

- Professor Ute Roessner – Pro Vice-Chancellor (Research Initiatives and Infrastructure), The Australian National University
- Professor Helen Sullivan – Dean, College of Asia and the Pacific, The Australian National University
- Dr Sue Barrell AO FTSE, former Chief Scientist, Bureau of Meteorology
- Professor Kieran Kirk – Dean, College of Science, The Australian National University
- The Hon Kate Lundy – former Senator, ACT Federal Parliament, 1996–2015, Company Director 2015–present

We will be recruiting two further members later in 2024 to ensure multiple voices and professional perspectives are represented.

The future of InSpace is bright. In the coming years, we will build upon our connections with our industry and government partners, as well as continue our commitment to providing support for dynamic space research at ANU and the cutting-edge companies that our ANU academics have enabled.

My heartfelt congratulations to InSpace Mission Control and Mission Specialists, whose hard work, dedication, and commitment to space advocacy have brought about remarkable success in supporting our pioneering research.



ANU InSpace received the Australian Space Awards Academic Institute of the Year 2023



ANU InSpace Director Professor Anna Moore was named an ATSE Fellow in 2023 (Photo Credit: Salty Dingo)



Professor Kirk McKenzie, Professor Hanna Kurniawati, Professor Rob Sharp, Professor Marta Yebra, SmartSat CRC CEO and Managing Director Professor Andy Koronios, ACT Chief Minister Andrew Barr, ANU InSpace Director Professor Anna Moore at the ACT Government Space Update and SmartSat CRC Projects Announcement (Photo credit: Carl Davies, CMD Photographics)

# WHO WE ARE

## InSpace Mission Control



ANU InSpace Mission Control Team (Photo credit: Carl Davies, CMD Photographics)

Our team believes that strong diversity of thought is crucial to success and that it's invaluable for younger generations to see scientists and space industry professionals from diverse backgrounds.

The InSpace Mission Control and Mission Specialist teams celebrate multidisciplinary collaborations, representing all seven ANU colleges, and multiple schools and departments under each, to aid the development of critical space and Earth initiatives.

At InSpace, we are building the next generation of capabilities to provide impact and outcomes for space research at ANU as well as in the Australian space sector and globally.



ANU InSpace HQ

**InSpace Mission Control is a team of dedicated professionals working to support space initiatives at ANU and develop new opportunities for cross-disciplinary collaboration with the global space industry.**

### **Navigate**

We uncover and create compelling opportunities for space innovation, connecting ANU teams with the space community.

### **Catalyse**

We convert space innovation and research opportunities into funded missions that lift ANU research performance and deliver translation and impact.

### **Build**

We ensure our mission delivery is of a quality to mature our domestic space industry and is leveraged to drive further impact.

### **Advocate**

We are the voice of ANU space capabilities – shaping policy, stimulating funding, and inspiring diverse career choices in space.

# WHAT WE DO

ANU InSpace amplifies the message that space is not just about rockets and astronauts – it's about space-based technology solutions to society's biggest challenges. How do we deal with climate change, mass migration, food and water security? How do we respond to geopolitical issues, especially in the Indo-Pacific region? Developing and translating Space technology is an integral part of the answer of how we can address these challenges.



ANU InSpace and Team ACT at the Avalon International Aerospace and Defence Exposition in February 2023



Space Medicine for Earthlings Sundowner Panel  
(Photo credit: MySecurity Media)



Professor Marta Yebra and Dr Zena Assaad speaking at Vogue Codes 2023



ANU InSpace Director Professor Anna Moore and Associate Professor Francis Bennet at the opening of the ANU Quantum Optical Ground Station (Photo credit: Carl Davies, CMD Photographics)

## Space Research

Space research at ANU isn't just creating game-changing innovation that will accelerate our future space industry – it's shaping and growing the next generation of Australians who will think nothing of working off-world, using space to reach their goals, and innovating to save our planet while sustainably exploring the next.

## Space Technologies

ANU InSpace is here to leverage opportunities for ANU researchers to amplify Australia's space capabilities. We work to produce positive outcomes for enhancing, enabling, and engaging in space development to progress sovereign capability and increase Australian manufacturing, knowledge, and space technology.

## Collaboration and Translation

Today, more than ever before, collaboration is critical for space advancements. Across ANU, researchers from a multitude of disciplines are applying their world-class expertise to space-related research. InSpace harnesses the work of these world-leading experts by making them our Mission Specialists, and our Mission Control team supports their endeavours.

The Mission Control Team creates national initiatives and generates external funding for our Flagship Missions and other space-related projects. InSpace translates space research and technology to tackle some of society's biggest challenges, building strong partnerships and commercial connections with national and international space agencies and companies. The Mission Control team advocates for research capabilities for local and remote communities, government, and defence.



### Dr Zena Assaad

Zena Assaad is a Senior Research Fellow in the School of Engineering and is also a Fellow with the Australian Army Research Centre. She has previously held a Fellowship with Trusted Autonomous Systems. Zena's research explores the safety of human-machine teaming and the assurance and certification of autonomous systems and AI. Zena is the Founder and Chair of the Australian National Community of Practice for UAS and AAM Research. She received the 2023 Asia Pacific Women in AI Award for Defence and Intelligence, the 2023 Women to Watch in Emerging Aviation Technologies Global Award from Women and Drones, and was named one of the 100 Brilliant Women in AI Ethics for 2023 as a result of her work around safety and assurance of AI. She was also Top 5 Science Resident with the ABC in 2023 and is the co-host of the Algorithmic Futures podcast.



### Associate Professor Francis Bennet

Francis Bennet is an Associate Professor at the Research School of Astronomy and Astrophysics. Francis is an expert in adaptive optics for astronomical instrumentation, space situational awareness, and laser communications. He takes quantum communications experiments from the lab to space, enabling a global quantum encrypted communications network. This includes working on the development of a satellite to test quantum communications between space and the ground and creating a prototype to demonstrate high-speed optical communications between Earth and Lunar spacecraft equipped for optical communications. Francis also leads the ACT Node of the Australasian Optical Ground Station Network and is a member of the Australian Space Agency's Technical Advisory Group on Advanced Communications.



### Dr Ben Bramble

Ben Bramble is a Moral Philosopher and Lecturer at the Fenner School of Environment and Society. His research focuses on environmental ethics, space ethics, utilitarianism, and the ethics of AI. Ben received his PhD from the University of Sydney in 2014. He then held postdoctoral positions at the University of Vienna and Lund University Sweden. In 2016, he was appointed as an Assistant Professor at Trinity College Dublin. In 2018, he was appointed as a Senior Lecturer at the University of Liverpool. In 2019, he was a Laurance S. Rockefeller Visiting Faculty Fellow at Princeton University. Ben is an Associate Editor of the Journal of Ethics and Social Philosophy (JESP). He was a finalist for the 2020 Vice Chancellor's Award for Impact and Engagement for his work on pandemic ethics.

# MISSION SPECIALISTS

Meet the researchers from across ANU, working to support space initiatives and develop new opportunities for cross-disciplinary collaboration with the global space industry.



### Professor Caitlin Byrt

Caitlin Byrt is a Professor in the Division of Plant Sciences at the Research School of Biology. Caitlin studies proteins found in cell membranes throughout many organisms. These proteins can help plants survive droughts as well as life in space. They can be used to filter valuable nutrients from wastewater or filter drinking water and can even be used in soft robotics. Caitlin is Co-Founder and Director of Membrane Transporter Engineers, a company working on advancing the function of membrane separation technologies to enable the harvest of valuable resources from liquid wastes.



### Professor John Close

John Close is a Professor in the Department of Quantum Science at the Research School of Physics and a Senior Fellow of the Higher Education Academy. John's research focusses on harnessing the properties of ultra-cold atoms to develop quantum sensors for measuring gravitational fields and magnetic fields, with applications in underground structure mapping and navigation on Earth and in space. John's work is multidisciplinary, and he has broad collaborations with Earth Sciences and Biology as well as industry. John is former Head of the Department of Quantum Science, former elected member of ANU Council, and current Head of ANU Defence Engagement. John was awarded the Australian Defence Industry Prize for Academic of the Year and the Australian Defence Industry Prize for Excellence in 2020.



### Dr Doris Grosse

Doris Grosse is a Research Fellow at the Research School of Astronomy and Astrophysics. Doris specialises in adaptive optics and the space environment. She investigates the characteristics and whereabouts of space debris to reduce its threat, making space safer and more sustainable so humans can rely on and benefit from satellites for centuries to come. She is also expanding her expertise in optical communications by working on space to ground laser communications. Doris served as a member of the World Economic Forum's Global Future Council on Space from 2018–22.



### Professor Junichiro Kawaguchi

Junichiro Kawaguchi is a Professor at the School of Engineering. During his career, Junichiro has participated in several solar system exploration projects, including Japan's first planetary probes to Halley's Comet, the lunar orbiter Hiten, the Hayabasa Mission for which he was Project Manager from 1996–2011, and the Hayabasa-2 Mission for which he currently holds an Official Advisor position. Junichiro is Founder of Ikaros, the world's first Solar Sail demonstrator project, launched in 2010. He has previously been a Senior Fellow for Japan Aerospace Exploration Agency (JAXA), President of the Japan Society for Space and Astronautical Science, Fellow at the Japan Society for Space and Astronautical Science, and he has served on the Board of Trustees at the International Academy of Astronautics.



### Associate Professor David W. Kim

David W. Kim is an Associate Professor at the Research School of Social Science and the School of History. David's research focuses on safety and risk management for astronauts in deep space travel, specifically on psychological well-being during Mars Missions. David is currently exploring the potential role of animals, namely dogs, in reducing the emergence rate of behavioural health and performance decrements such as loneliness, mental and emotional strain, fear, lethargy, lack of enthusiasm, and violence in the long-term astronaut. David is a Fellow of the Royal Historical Society (RHistS), United Kingdom; a Fellow of the Royal Asiatic Society (RAS), United Kingdom; Chair for the ANU Religion Conference Committee; a Member for UNESCO World Heritage Committee, Korea Government; and Chair for the National Association of Foreign Scholars in Korea (NAFSIK). He served as a visiting scholar at the Harvard Divinity School from September 2023 to May 2024.



### Professor Penelope King

Penelope King is a Professor at the Research School of Earth Sciences and Associate Dean of Research at the College of Science. Penelope's research examines surface and interior processes on planetary bodies, aiming to improve our understanding of the fundamental aspects of how materials in the solar system behave. Her work creates better tools to explore our solar system and the deep Earth and to understand climate change. Penelope was elected as a Fellow to the Geochemical Society in 2023. She is a champion for diversity in STEM Industries.



### Professor Hanna Kurniawati

Hanna Kurniawati is a Professor in the School of Computing and holds the SmartSat CRC Professorial Chair for System Autonomy, Intelligence and Decision Making. She leads the Robust Decision-making and Learning Lab at the ANU and is the ANU Node Lead and Planning & Control Theme Lead for the Australian Robotics Inspection and Asset Management (ARIAM) Hub. Hanna's research spans robotics, decision-making under uncertainty, motion planning, computational geometry applications, integrated planning and learning, and reinforcement learning. She and her teams have developed algorithms that enable the principled decision-making under uncertainty framework to become practical. Hanna's works have received multiple recognitions, including Best Paper at ICAPS 2015, finalist for Best Paper at ICRA 2015, keynote speaker at IROS 2018, and the Robotics: Science and Systems 2021 Test of Time Award.



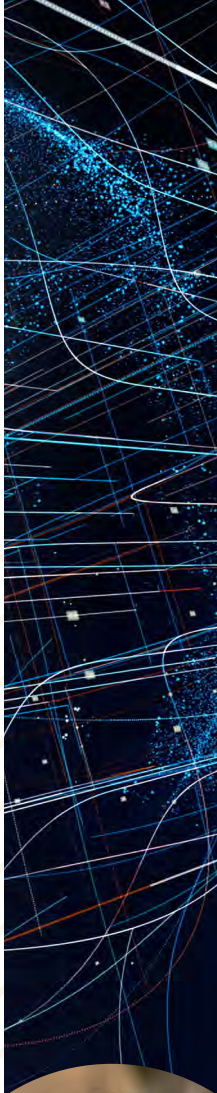
### Professor Robert Mahony

Robert Mahony is a Professor at the School of Engineering and a Fellow with the Institute of Electrical and Electronics Engineers. Rob's research interests are in non-linear control theory with applications in robotics, geometric optimisation techniques, and systems theory. Using his specialised knowledge of aerial robotics, Rob has developed prototype autonomous aerial water gliders that can carry enough water to saturate specific targets and stop fires before they can spread.



### Professor Kirk McKenzie

Kirk McKenzie is a Professor in the Centre for Gravitational Astrophysics at the Research School of Physics and Research School of Astronomy and Astrophysics, and he holds the SmartSat CRC Professorial Chair for Precision Measurement in Space. Kirk and his team are developing lasers for precise measurements that will map Earth's water to measure climate change effects, ice-cap melt, and monitoring of water basins such as the Murray-Darling. Kirk leads one of the Moon to Mars missions to develop laser measurement technology for the next Gravity Recovery and Climate Experiment (GRACE) Mission, in partnership with CEA Technologies.



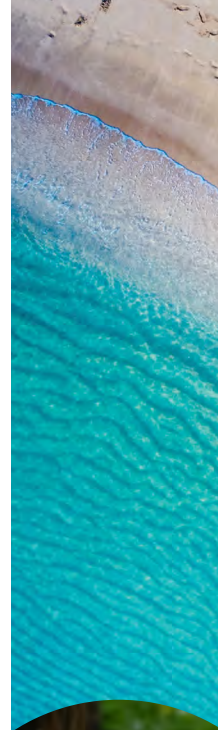
### Associate Professor Maria Racionero Llorente

Maria Racionero Llorente is an Associate Professor at the Research School of Economics. Maria is an expert in public economic theory, including optimal taxation theory and methods to improve gender equity in public policy. She contributes her public economics expertise to addressing issues with market decentralisation, market failures, and regulation of the space economy.



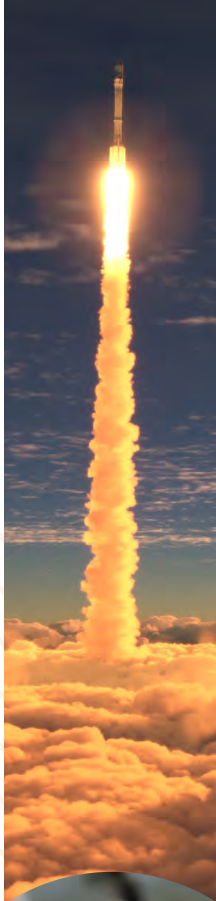
### Professor Air Vice- Marshal (Ret) Tracy Smart AO

Air Vice-Marshall (Retired) Tracy Smart AO is a Professor of Military and Aerospace Medicine in the College of Health and Medicine. Tracy is developing aerospace health educational offerings at ANU and is a co-investigator on the iLAUNCH 'Manufacturing wearable-based health solutions for space medicine' project. In 2022, Tracy was awarded the Royal Australasian College of Medical Administrators (RACMA) Distinguished Fellow Award.



### Professor Paul Tregoning

Paul Tregoning is a Professor and Area Head of Climate, Ocean, and Geosciences Group at the Research School of Earth Sciences and a Fellow of the International Association of Geodesy. Paul uses Earth observation data from satellites to study how the Earth's surface changes through geophysical processes, including tectonic deformation, climate-driven variations in sea level, continental hydrology (including groundwater), and melting of polar ice sheets. Paul is a member of the NASA Gravity Recovery and Climate Experiment Follow-On (GRACE-FO) Science Team; the ANU Institute for Climate, Energy and Disaster Solutions; and the ANU Institute for Water Futures. He is also member of the Australian Space Agency's Technical Advisory Groups on Earth Observation and on Positioning, Navigation and Timing.



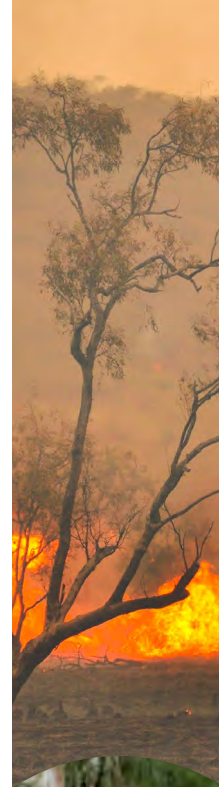
### Mr Eduardo Trifoni

Eduardo Trifoni is the Director of the ANU National Space Test Facility (NSTF), the largest space testing infrastructure in Australasia. Eduardo has over 20 years of experience carrying out independent research in technology frontier fields spanning from Hydrogen Energy to Experimental Aerothermodynamics, with major breakthroughs in PEM fuel cells and in hypersonic ground testing. Eduardo has been instrumental in the experimental development of many space vehicles capable of operating in Low Earth Orbit and withstanding the hypersonic entry phase, including eleven spacecraft successfully sent into orbit in the last four years.



### Dr Emma Tucker

Emma Tucker is a Research Fellow in the College of Health and Medicine and an emergency medicine registrar (Australasian College for Emergency Medicine) at the North Canberra Hospital Emergency Department. Emma's research specialises in the effect of microgravity on the cardiovascular system. After completing a PhD in Astrophysics and a medical degree, Emma held an Aerospace Medicine clerkship at the NASA Johnson Space Center. She is a member of the Australian Space Agency's Technical Advisory Group on Space Medicine and Life Sciences.



### Professor Marta Yebra

Marta Yebra is a Professor at the Fenner School of Environment and Society. Marta uses satellite data to provide fire managers with critical information to support the prevention of, response to, and recovery from bushfires. She is Director of the ANU-Optus Bushfire Research Centre of Excellence, which is designing Australia's first satellite mission to help forecast areas where bushfire fuel conditions create the highest risk of fires starting or burning out of control. Marta is also a member of the Australian Space Agency's Technical Advisory Group on Earth Observation. Marta was awarded Academic of the Year at the Australian Space Awards in 2023 and the Earth Observation Australian Significant Contribution to the Development of the Australian Earth Observation Community and its Capabilities.

**InSpace  
at ANU**

College of  
Arts and Social  
Sciences

College of  
Health and  
Medicine

College of  
Engineering,  
Computing and  
Cybernetics

College of  
Business and  
Economics

College  
of Law

College of  
Asia and  
the Pacific

College of  
Science

ANU boasts **\$200 million** in space infrastructure.

InSpace works with researchers in all **seven ANU colleges**  
and has brought **\$32 million+** in research funding to ANU.

Photo credit: ANU Media

The \$200 million of ANU space infrastructure consists of multiple facilities across the ANU Acton campus, at Mt Stromlo, and in NSW, all operated and run by a community of world-class ANU experts.

# ANU Space Infrastructure



## The Australian National University Institute for Space (ANU InSpace)

InSpace connects ANU space research with society's biggest challenges to deliver positive impact. We do this by shaping and growing the Australian space ecosystem in partnership with industry, government, academia, and communities.



## Heavy Ion Accelerator Facility (HIAF)

The HIAF space irradiation beamline (HIAF-SIBL) enables extreme radiation testing of electronics, sensors, and solar cells destined for space. The radiation environment of space is complex and harsh. Spacecraft exposed to these conditions are vulnerable to the dramatic effects induced by single events and to gradually accumulated damage – both of which can lead to catastrophic mission failure. Ground-based testing of mitigation strategies is essential to extend mission lifetime.

HIAF offers the highest energy heavy ion space radiation testing facility in Australia and has almost 50 years of heavy ion accelerator operation and radiation experience. HIAF is a founding member of the National Space Qualification Network (NSQN).



## National Space Test Facility (NSTF)

The NSTF is recognised by the industry across Australia and New Zealand as a hub for space environmental testing of prototype spacecraft. A one-stop-shop testing facility for space environment qualification, NSTF has all the capabilities and instrumentation required to provide the best mission assurance prior to launch. The NSTF provides access to unique space environmental testing capabilities such as thermal vacuum, vibration, pyroshock, electromagnetic interference/compatibility, LEO atomic oxygen interaction, and the use of a large cleanroom for assembly and integration activities.



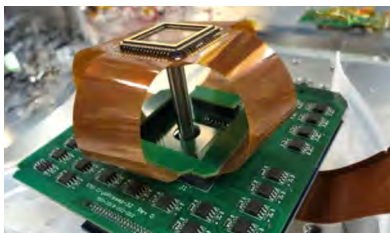
## Advanced Instrumentation and Technology Centre (AITC)

The AITC is an internationally recognised Centre of Excellence established to support the development of the next generation of instruments for astronomy and space science. The AITC has extensive capabilities in telescopes and instruments for astronomy and space, software and control systems, laser guide star adaptive optics for optical communications and space situational awareness, remote sensing for astronomy, and Earth observation.



## Quantum Optical Ground Station (QOGS)

The ANU QOGS consists of a telescope with an aperture of 70 cm for high performance optical and advanced space to ground communications including quantum communications. The ANU QOGS is capable of supporting missions across LEO, GEO, and lunar orbits, and is equipped with advanced instrumentation, including adaptive optics, which can mitigate the impact of atmospheric turbulence by correcting wavefront distortions.



## Remote Sensing Laboratory

The ANU Remote Sensing Lab has significant capability in optical design and integration and visible, short-wave infrared and mid-wave infrared focal plane detectors. The remote sensing programs focus on a wide range of contemporary topics including water quality monitoring and land care, bushfire mitigation, agricultural analysis and mineralogical surveys, and space situational awareness for satellite and debris tracking.



## Siding Spring Observatory (SSO)

SSO is the ANU-owned and operated premier optical astronomy observatory. Located on the edge of the Warrumbungle National Park near Coonabarabran, SSO hosts a range of telescopes from ANU and other institutions for astronomy, advanced communications, and space situational awareness.



## The Australian National Fabrication Facility (ANFF) OptoFab ACT

ANFF ACT is one of eight nodes established by ANFF under the National Collaborative Research Infrastructure Strategy (NCRIS) to provide researchers and industry with access to state-of-the-art fabrication facilities to deliver precision full custom optics, coatings, chips, and systems to customer specifications. ANFF OptoFab ACT is housed at the ANU Research School of Physics, Laser Physics Centre.





In addition to national contributions, InSpace's Flagship Missions form a critical link between the space infrastructure and researchers at ANU and the global space industry.

# Flagship Missions

The following diagram demonstrates how InSpace's Flagship Missions align with the portfolio of the Deputy Vice Chancellor (Research and Innovation) Impact Focus Areas and Research Identity.



The following pages showcase the current Flagship Missions within InSpace.

Our society is critically reliant on satellite-to-Earth communications for a range of daily activities, from navigation and weather predictions to supporting national security. Current radio frequency systems carry limited data, creating a data downlink bottleneck. Laser communications promises a technology revolution by offering data rates at least 10x faster than existing radio transmission while avoiding spectrum licensing constraints. It's also compatible with quantum communications for enhanced security. This provides a clear path to meet the growing global demand for space-to-ground communications and support the expanding satellite communications market.

# Future of Communications

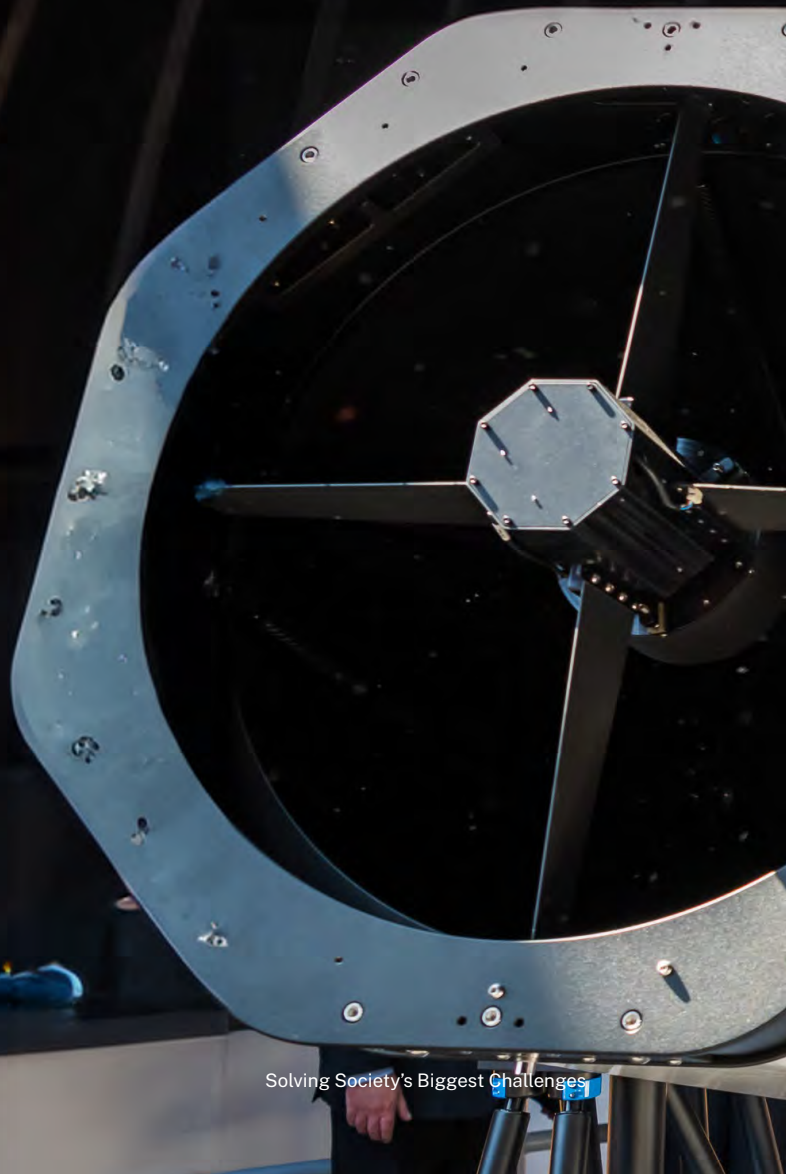
## Australia's first Quantum Optical Ground Station



Photo credit: ANU Media



Former ANU Vice Chancellor Distinguished Professor Brian Schmidt, ACT Chief Minister Andrew Barr, and Associate Professor Francis Bennet at the opening of the ANU Quantum Optical Ground Station



In December 2023, ANU launched the Quantum Optical Ground Station (QOGS), a first for Australia. The QOGS will be equipped with advanced instrumentation including adaptive optics and quantum technology to enable high performance and enhanced security.

ANU technology enables communication links in challenging environments for a range of mission scenarios from LEO and GEO to lunar and deep space. This will enhance system-wide resilience by augmenting existing telecommunication infrastructure.

With quantum capability built in, this ground station will also provide the underlying infrastructure to connect quantum devices and establish a quantum internet for improved computation, sensing accuracy, and provably secure communications.

The ANU Quantum Optical Ground Station is supported by funding from the ACT Government, with additional support from CSIRO, TESAT, and the ANU Institute for Space. The ANU QOGS is being upgraded with lunar and deep space communication capability with support from the Australian Space Agency Moon to Mars program.

### **Mission Goal:**

To create scalable, integrated, and quantum-compatible optical communication ground station technology to enhance telecommunications capability, security, and resilience across Australia.

### **ANU Team:**

Associate Professor Francis Bennet, Professor Ping Koy Lam, Associate Professor Matt Sellars, Dr Jie Zhao

### **Partners:**

Defence, Science and Technology Group, University of Western Australia, University of Auckland, NASA Goddard Space Flight Center, NASA Glenn Research Center, German Aerospace Center Institute of Communications and Navigation, Optus, Clearbox Systems, Leonardo Australia and Leonardo UK, Liquid Instruments, Platypus R&D, and SSC Australia

### **Key Milestones and What's Next:**

- The ANU Quantum Optical Ground Station was launched December 2023.
- Development and integration of next-generation scalable adaptive optics to enable high-performance data transfer and quantum communications between space and the ground, providing Australia with world-leading capabilities in advanced communications.
- An ANU-lead consortium with partners Liquid Instruments, Platypus R&D, and SSC Australia were awarded \$4.5 million from the Australian Space Agency's Moon to Mars program to upgrade the Quantum Optical Ground Station with lunar and deep space communication capability and establish the first Australian deep space communication-capable optical ground station.
- ANU is leading the development of an integrated, optical satellite telecommunications research network, proposed Australasian Optical Ground Station Network (AOGSN), with our partners at the University of Western Australia, Defence Science and Technology Group, and the University of Auckland. The AOGSN will enable next-generation, secure satellite communications for Australia's nation-critical capabilities.

Photo credit: Carl Davies, CMD Photographics

# Resilience Mission

## A Fire Resilient Australia



**Catastrophic bushfires are increasingly threatening communities, livelihoods, and critical infrastructure all over the world. It's undeniable that Australia faces a future living with bushfires. Between climate volatility and a rise in extreme weather events, it's vital that we work with our communities, our industries, and our governments to build our resilience infrastructure to ensure a safe environment for us all to live.**

The ANU-Optus Bushfire Research Centre of Excellence and ANU InSpace have collaborated to create the Resilience Mission to provide landscape flammability risk data at a continental scale to support effective planning, preparation, and response.

Over the past three years, ANU has made major investments in developing OzFuel, a new and innovative spaceborne sensor. This sensor has been designed to be sensitive to leaf-level flammability traits in eucalypt trees, as well as being capable of detecting changes in the flammability traits of other vegetation fuels. With the data provided by the OzFuel sensor, we can mitigate fire risks by knowing where the fuel is, how much there is, how dry it is, and what the risk is to neighbouring communities and critical infrastructure.

The Resilience Mission will be a satellite mission with the OzFuel sensor as its payload to provide the nation with the most cost-effective way to measure the daily to weekly changes of bushfire risk over the whole of the Australian landmass, as well as on a global scale.

The experts driving the Resilience Mission combine world class expertise in remote sensing of bushfires, sensor development, and innovation. The Resilience Mission leverages advanced instrumentation technologies from astronomy, and key industry partnerships in space systems technology to develop the OzFuel sensor and the mission as a whole.

The Resilience Mission aims to utilise the OzFuel advanced sensor system to acquire high spatial, spectral, and radiometric resolution data over the Australian mainland. The mission will provide this data freely to anyone involved in assessing bushfire risk, predicting fire behaviour, informing suppression efforts, and planning prescribed burns, as well as to other users to make our communities more resilient.

Photo credit: ANU Media



**Mission Goal:** To develop, test, and deploy a satellite that will monitor forest flammability, thereby protecting Australia from catastrophic bushfires and informing fire management and response operations.

**ANU Team:** Professor Marta Yebra, Professor Rob Sharp, Dr Nicolas Younes, Dr Joice Mathew

**Partners:** SmartSat CRC, KiwiStar and EOS Space Systems, Nominal Systems, Spiral Blue, Leonardo Australia and Leonardo UK, New Frontier Technologies

### Key Milestones and What's Next:

- In 2023, ANU InSpace and industry partner EOS Space Systems received \$1.3 million from the ACT Government and SmartSat CRC. This project will develop the critical optical telescope subsystem for OzFuel and develop the scientific know-how to convert the spectral data it acquires to actionable instructions on the ground that can be used for bushfire mitigation.
- Through an iLAUNCH ANU-led project, the ANU 'Rosella' detector controller for Leonardo's advanced shortwave infrared SAPHIRA electron avalanche photodiode (eAPD) arrays, for low-noise, high-resolution remote sensing from space will be matured to commercialisation readiness.
- As part of a CRC-P led by New Frontier Technologies, a dedicated carbon fibre optical mounting system will be delivered for the OzFuel optical sensor prototype. Carbon fibre additive manufacture allows the creation of a strong and lightweight optical barrel assembly, and by carefully tuning the manufacturing process, the barrel can be made free from the effects of thermal expansion to ensure the optics stay aligned across different temperature ranges.
- The OzFuel team will continue to collect field data to verify and validate the sensor requirements, as well as to measure the changes in the biophysical characteristics of eucalypt leaves over time. This data will help verify sensor designs and design the data products for the mission.



Amit Parashar, Canadian Astronaut David Saint-Jacques, Professor Marta Yebra, and the WildFireSat mission team: Joshua Johnston, Denis Dufour, Mark de Jong, and Helena (Marleen) van Mierlo collaborating for a safer future at the Canadian Active Fire Monitoring Satellite Stakeholders Meeting hosted by the Canadian Space Agency

In mid-2021, the NSQN was inaugurated, supported by a \$2.5 million grant from the Australian Space Agency's Space Infrastructure Fund. This initiative has enabled space qualification infrastructure nationwide, worth \$1 billion, bolstering the prospects for the success of future space missions.



Saber Astronautics Responsive Space Operations Centre



The Australian National University's Heavy Ion Accelerator Facility Space Irradiation Beamline (HIAF-SIBL)

# NSQN

The NSQN emerged from a collective ambition to establish a premier, sovereign space qualification service, aimed at bolstering the Australian Space Manufacturing Industry. This initiative was brought to life through the collaboration of six foundational partners: The Australian National University (InSpace, HIA, and NSTF), the Australian Nuclear Science and Technology Organisation (ANSTO), Steritech, the University of Wollongong Australia (Centre for Medical Radiation Physics), Saber Astronautics, and Nova Systems. This united effort underscores a commitment to an Australian-led and -managed space testing landscape.

The cornerstone of preparing Australian enterprises for space endeavours is ensuring the utmost reliability of their products, critical for the success of missions in harsh space environments. The NSQN is poised to offer over \$1 billion in space qualification infrastructure, providing accessible, cost-effective testing solutions to expedite the design and deployment of space missions.

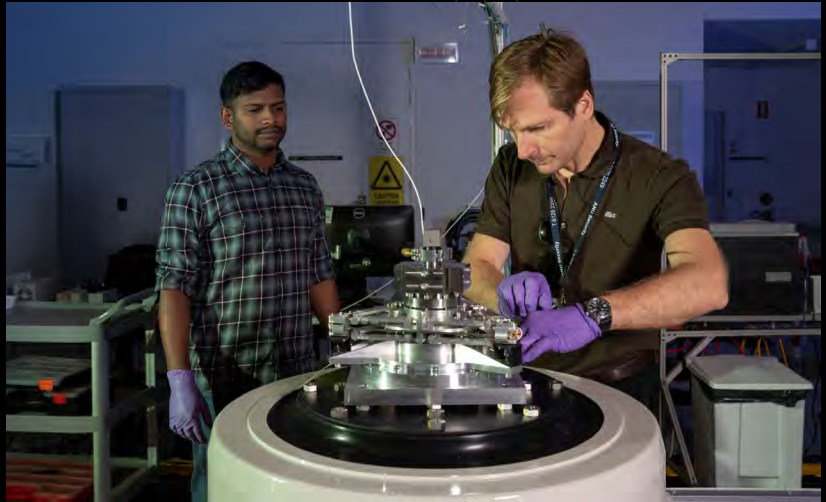
## National Space Qualification Network (NSQN)

### Enabling Australian Space Manufacturing

A standout feature of the NSQN is its cutting-edge radiation testing capabilities, unique to the region, positioning Australia at the forefront of global space manufacturing and enhancing the international competitiveness of Australian space technology. Through the NSQN, businesses can significantly elevate their space mission assurance and success, leveraging local expertise, thorough testing, and qualification processes.

The NSQN's efforts are supported by the Australian Space Agency's Space Infrastructure Fund and the ACT Government, reflecting a strong commitment to advancing Australian space capabilities.

For more information visit [nsqn.org](https://nsqn.org)



**Top left:** Heavy Ion Irradiation Facilities at ANSTO

**Bottom left:** X-ray Facilities at the Australian Synchrotron

**Top right:** Dr Joice Mathew and NSTF Director Eduardo Trifoni at the National Space Test Facility

## Mission Goal:

To harness Australia's space testing and qualification prowess, propelling the growth of the Australian New Space Market and the commercialization of space testing services.



NSQN Industry Workshop in March 2023

## Key Milestones and What's Next:

- The commissioning of multiple advanced space testing infrastructures at NSQN facilities will help bolster mission assurance by conducting a wide range of space qualification tests including thermal imaging, radiation testing, and shock testing, all crucial for ensuring the reliability and durability of space equipment.
- The HIAF space irradiation beamline officially opened in August 2023 and will harness particles accelerated to up to 20 percent of the speed of light, one of a kind in the Indo-Pacific region.
- At ANSTO, the 10MV ANTARES accelerator was upgraded with an external, in air, beamline to add the capability of radiation testing specimens in air.
- NSTF upgrades included an Infra-red imaging system, Temperature Controlled Quartz Crystal Microbalance (TQCM), Spectrophotometer systems, and the Pyroshock test facility.
- University of Wollongong upgrades included Level 3 laser-based bench system for Single Event Effect (SEE) testing.
- In 2023, the NSQN space-qualified many payloads and satellites. Of note, in August 2023, the University of Melbourne, in collaboration with Inovor Technologies, Neumann Space, and Nova Systems, concluded the final space environmental testing of the SplRIT satellite at the NSTF and launched successfully in December 2023. The Space Machines Company conducted space environmental testing of their Optimus spacecraft at the NSTF, which successfully launched March 2024.
- The future for the NSQN is promising, especially considering the Australian space sector's expected annual growth rate of 7.1% over the next five years. With the Australian Space Agency's goal to triple the space economy's size by 2030, NSQN's role in providing high-quality space qualification services will be crucial for the industry's development and international competitiveness.

# Australian Centre for Space Governance (ACSG)

## Enhancing sustainable space policy



**ACSG**  
AUSTRALIAN CENTRE FOR  
SPACE GOVERNANCE

**ANU InSpace supported the establishment of the Australian Centre for Space Governance (ACSG), bringing together leading experts from six universities across Australia.**

**With expertise in space law, governance and policy, science and technology, security, property, history, ethics, and political and social sciences, ACSG's team of researchers work collaboratively on the most pressing governance challenges facing the space sector today.**

### **Mission Goal:**

ACSG's six partner universities are The Australian National University, Flinders University, RMIT, University of Adelaide, UNSW Canberra, and Western Sydney University.

Chaired by Dr. Cassandra Steer, ACSG advocates for Australia's interests in space in the 21<sup>st</sup> century and advances the agenda for responsible space governance. Their workshops and executive education for mid- and senior-level public servants have led to increased trusted relationships with federal government departments, allowing for improved understanding on how space capabilities contribute to Australia's national interests and priorities and directly contributing to positive national outcomes for the space sector.

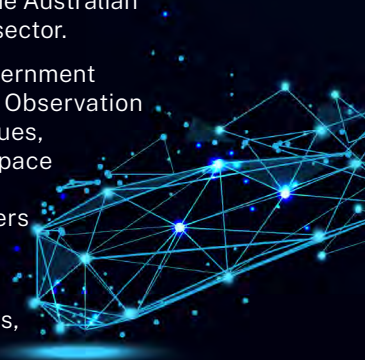
ACSG is the first of its kind in Australia, purpose-built to positively contribute to the nation's space industry and potential for global space technology impacts. ACSG is shaping a national narrative about the importance of space capabilities as critical infrastructure that serves our national interests and priorities.

The ACSG strives to depoliticise debates around space investment and provide a foundation for sustainable policy decisions at the federal and state levels. Focusing on societal benefits of space technologies and data, we aim to inform both decision-makers and the public, and advocate for Australia's ability to contribute to space technology developments with partner nations.

### **Key Milestones and What's Next:**

To serve the nation's space law and governance needs for government, industry, and community stakeholders by providing space law and governance education and training and producing interdisciplinary research to solve national and global space governance challenges.

- In 2023, the ACSG produced the country's most comprehensive public opinion poll on Australian investment in space activities, informing industry and government stakeholders about gaps in knowledge and opportunities for better outreach.
- The ACSG was a co-sponsor of the first national Diversity in Space conference in 2023 and a co-sponsor of the Australian Space Diversity Alliance, launched in 2024. Together with the Global Institute for Women's Leadership, ACSG consulted to the Australian Space Agency on diversity and inclusivity in the space sector.
- The ACSG has received over \$1.5 million in federal government funding to research 'Responsible Governance of Earth Observation Data', to provide government training on a range of issues, and to produce workshops and policy papers on how space technology helps Australia secure its national needs. This funding also supports two postdoctoral researchers and several research fellows.
- The ACSG podcast 'Space Matters' began in 2024. The Centre will continue to release regular policy papers, and host workshops for a range of stakeholders, including at APRSAF and other international events.





**Left:** Dr Cassandra Steer (second from right) at the UN-hosted Space4Women Expert Meeting in Washington DC, November 2023



**Right:** Dr Cassandra Steer and Aleks DeeJay (far right), together with several core members of ACSI at the 'Space Technologies as Critical Infrastructure for National Priorities' workshop for government.

**ANU Team:** Dr Cassandra Steer, Associate Professor Maria Racionero Llorente, Dr Elise Stephenson, Dr Zena Assaad, National Security College

**Partners:** The Australian National University, Flinders University, Home Affairs, RMIT, University of Adelaide, UNSW Canberra, Western Sydney University, Geoscience Australia, Department of Defence



# Space Gravity

## Global Water Security

**Accelerating the development of innovative new gravity sensing technologies for Earth Observation and geodetic applications, the Space Gravity Mission is developing next-generation laser interferometry and inertial sensor payloads.**

Making precise measurement of Earth's gravitational field and how it changes over time can give us crucial information for earth observation, climate change, and navigation.

As we've learned from recent droughts and floods, water management is critical in Australia and globally. Measuring the changes in Earth's gravity over time allows us to map Earth's water movement to measure climate change effects such as variations in sea level, ice-cap melt, and monitoring of water basins such as the Murray-Darling. We will be able to better predict and mitigate floods, providing support to the agricultural industry as it adapts to climate change, and the planning of new cities will be possible with precision data to support water management.

We are bringing together capabilities in developing new laser systems for precision measurement along with expertise in Earth observation data analysis and utilisation to provide key information on water resources in the different components of the hydrological cycle.

The team is also developing new quantum sensors for measuring gravitational fields and magnetic fields, with applications in underground structure mapping and navigation on Earth and in space.

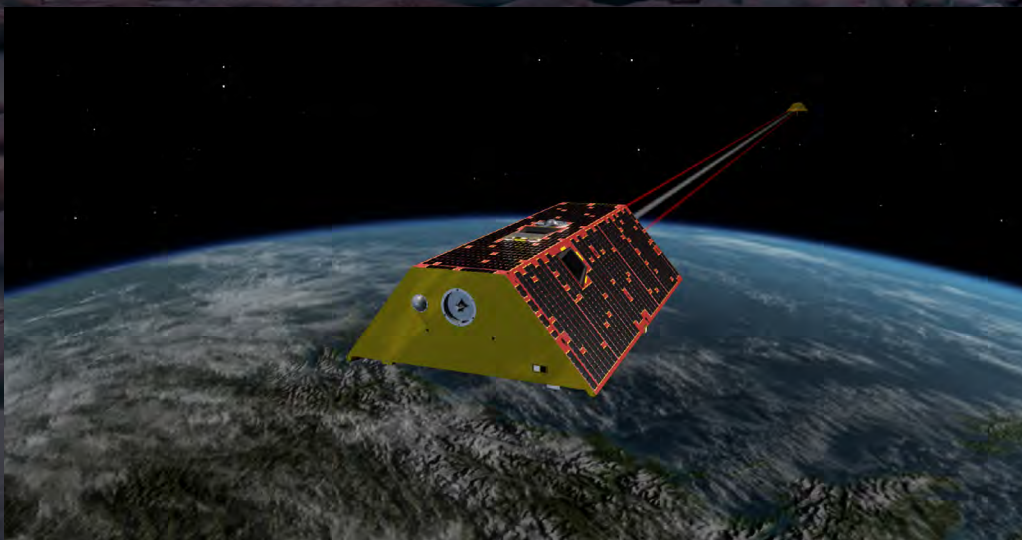
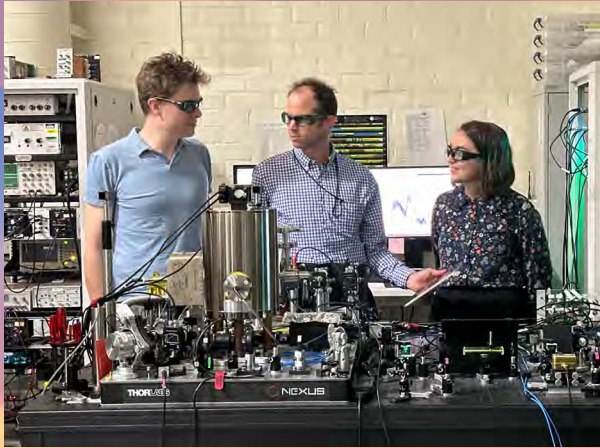


Illustration of GRACE-FO in orbit (Image credit: NASA JPL-Caltech)

**Mission Goal:** To develop new types of gravity sensors using quantum technologies, advancing data analysis for Australia's water management and climate monitoring, and continue Australian collaboration in the GRACE missions.

**ANU Team:** Professor Paul Tregoning, Professor Kirk McKenzie, Professor John Close

**Partners:** Advanced Navigation, CEA Technologies, NASA/JPL



ANU researchers are developing inter-spacecraft laser instruments for next generation Earth Observation Missions. Dr. Andrew Wade, Professor Kirk McKenzie, and PhD Candidate Emily Rees are part of the ANU Centre for Gravitational Astrophysics.

## Key Milestones and What's Next:

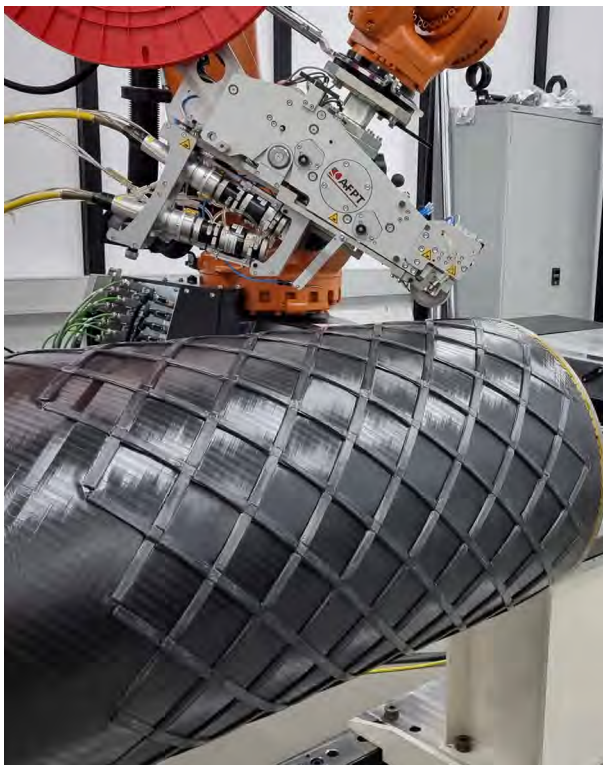
- ANU and industry partner CEA Technologies were awarded \$6.2 million from the Australian Space Agency's Moon to Mars program to produce laser stabilization technology for next generation gravity sensing missions.
- The ANU team is working on next generation laser technologies for alternate mission constellations.
- Ongoing analysis of GRACE Follow-On data as it becomes available.
- Assimilation of GRACE-FO and other satellite data (ICESat-2, SWOT) to assess changes in Australia's water resources.



**Left:** ANU InSpace Associate Director Strategic Projects Dr Kate Ferguson, ANU InSpace Director and ANU iLAUNCH Lead Professor Anna Moore, iLAUNCH Executive Director Darin Lovett, iLAUNCH COO Dr Milica Symul, the University of South Australia iLAUNCH Lead Industry Professor Colin Hall. **Right:** iLAUNCH Official Launch at the University of Southern Queensland, Toowoomba

# iLAUNCH Advancing Australia's Space Capabilities

The Australian Government is building new research capabilities, driving commercialisation outcomes, and investing in new industry engagement opportunities through the Department of Education's Trailblazer Universities Program. ANU InSpace, in partnership with program leader the University of Southern Queensland and the University of South Australia, and in collaboration with over twenty industry organisations, founded iLAUNCH – The Innovative Launch, Automation, Novel Materials, Communications and Hypersonics (iLAUNCH) Trailblazer. This \$180 million program will transform Australia's competitiveness by rapidly commercialising University space research through industry partnerships.



Additive manufacture of a structurally-efficient gridded carbon-fibre/PEEK rocket body using laser-AFP (Photo credit: New Frontier Technologies)

The efforts of iLAUNCH directly enhance Australia's burgeoning space industry. Through this federal program, iLAUNCH will receive \$50 million of investment over four years, alongside a further \$130 million from universities (the University of Southern Queensland, The Australian National University, and the University of South Australia), industry partners, and CSIRO. The net economic benefit of the \$180 million investment is expected to be \$3.6 billion by 2040.

The investment in industry research, commercialisation, and manufacturing is a commitment to Australia's burgeoning space industry, which will grow our commercially viable civil rockets, rocket test and launch facilities, rapid satellite manufacturing communication technologies, and integrated sensing systems. Ultimately this will prepare Australia for successful and sustainable space mission success.

The program's comprehensive training, education, and outreach programs will help to produce the next generation of industry professionals. Its commercialisation branch will translate research outcomes into commercially viable products, simultaneously developing Australia's sovereign capability in space and creating an industry which can deliver products onto the international market.



NSTF Team and Space Machines Company Team preparing the Optimus Platform spacecraft for the experimental activities in space conditions in the Wombat XL (Photo credit: Cristy Roberts, ANU)



“

The iLAUNCH Trailblazer is building Australia’s enduring space capability by addressing critical gaps and accelerating development of a space manufacturing sector. We have brought together a powerful consortium of industry and research partners focusing on developing advanced technologies for space and aerospace manufacturing applications, including associated manufacturing supply chains. With world class teams from The Australian National University alongside the University of Southern Queensland and the University of South Australia, we are building sovereign capability and a research and development ecosystem so that Australia can compete on a global scale and capitalise on commercial opportunities.

Utilising \$50 million of investment by the Australian Government, alongside a further \$130 million from the institutions, partners, and CSIRO, this is Australia’s leading space program, and we expect to see \$3.6 billion in net economic benefit by 2040. Over the remaining years of the program, we are focused on building a sustainable ecosystem that can live beyond the Trailblazer, to elevate the Technology Readiness Level (TRL) of research projects to commercial-ready applications, foster pathways to market, and ultimately propel Australia’s space and aerospace industries to profitability. ”

— Darin Lovett, Executive Director of iLAUNCH Trailblazer



“The scope of our iLAUNCH projects is impressive and highlights the breadth of our space capabilities at ANU. The impact of the space manufacturing and technology projects we have catalysed with industry and academic partners will accelerate the space sector development in Australia. Excitingly, we have seen companies spin-in to the space sector to partner with us on projects, showing the opportunities and new markets space research can provide.”

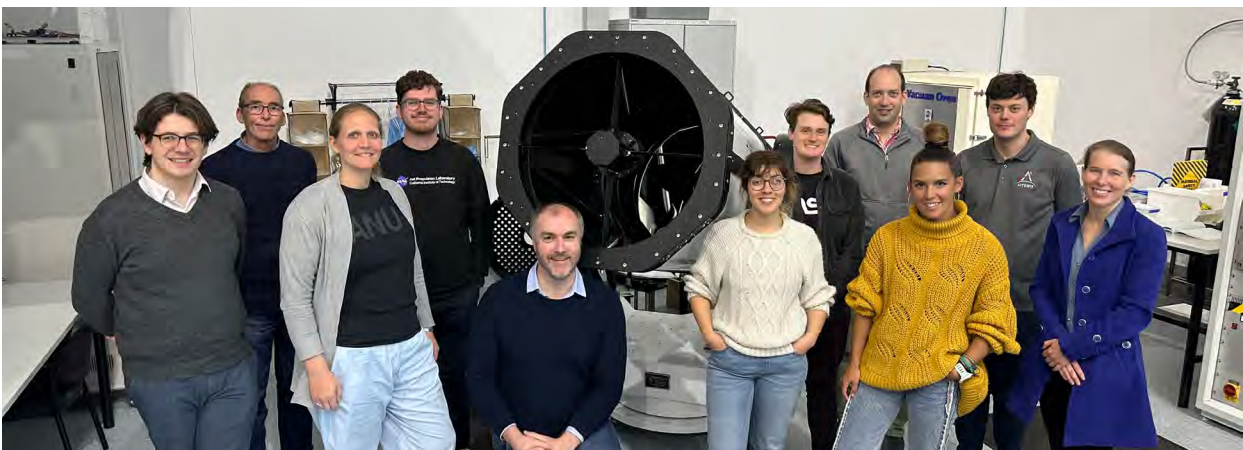
— Professor Anna Moore, Director of ANU InSpace



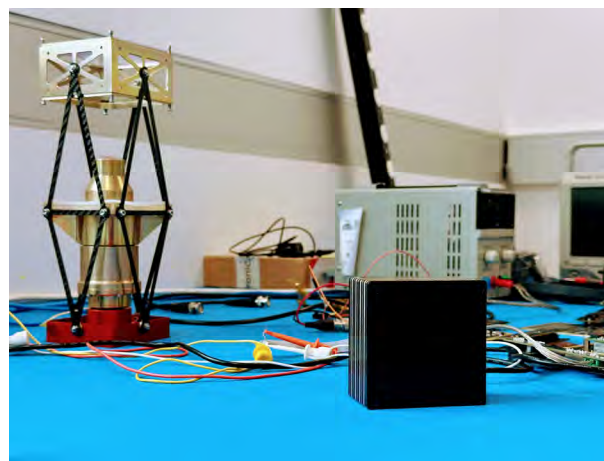
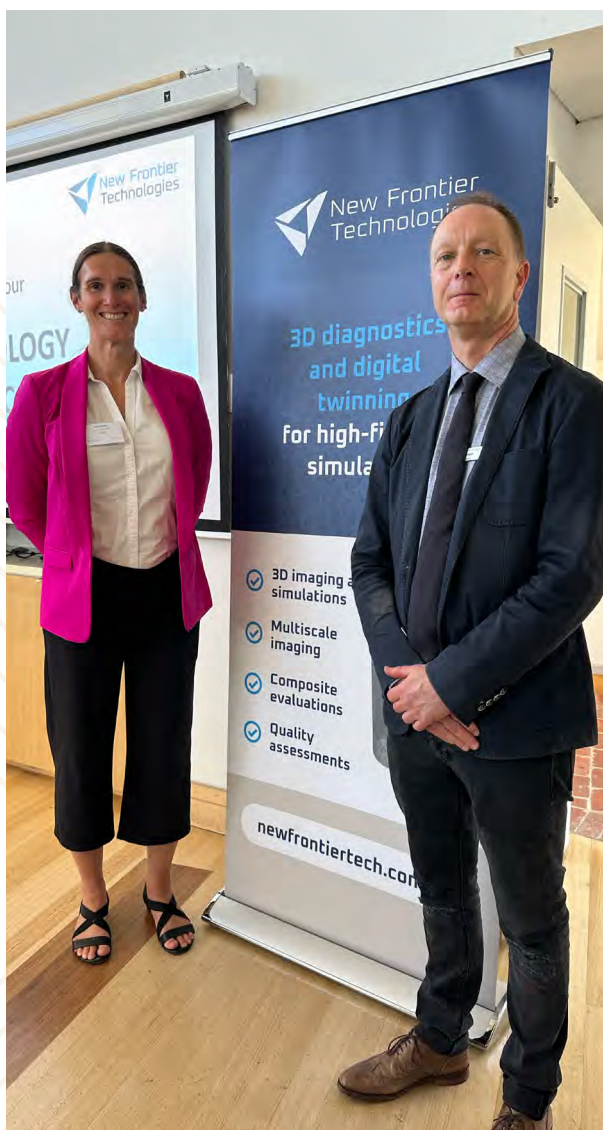
“As Chief Technology Officer for iLAUNCH, my job is to help grow the Australian space manufacturing industry. We can’t continue to be reliant on international space economies and launch facilities indefinitely. Through iLAUNCH, we are growing our sovereign capability through the development of cutting-edge technology — new products for space and adjacent industries that will ultimately make our lives better here on Earth.

I know there’s a better way for industry and academics to play, so we are creating new models for industry and universities to work together, with a focus on providing favourable IP agreements that encourage collaboration and industry growth.”

— Dr Joni Sytsma, Chief Technology Officer, iLAUNCH Trailblazer



ANU Optical Communications Team



**Left:** iLAUNCH CTO Dr Joni Sytsma and New Frontier Technologies Director and CEO Paul Compston at the New Frontier Technologies Technology Showcase in December 2023

**Top right:** Rosella prototype

**Bottom right:** Associate Professor Nan Yang

## iLAUNCH ANU-led projects

**Carbon-fibre additive manufacturing for products for space; rocket body structures**

**ANU Lead:** Professor Patrick Kluth

**Industry Partner:** New Frontier Technologies

**Carbon-fibre additive manufacturing for products for space; develop and manufacture protective nanomaterial coatings for satellite structures**

**ANU Lead:** Professor Patrick Kluth

**Industry Partner:** New Frontier Technologies

**Manufacturing a space transport and logistics platform**

**ANU Lead:** Eduardo Trifoni

**Industry Partner:** Space Machines Company

**Development and manufacture wearable-based health solutions for space medicine**

**ANU Lead:** Professor Klaus Martin Schulte

**Industry Partners:** Liquid Instruments, Aspen Medical, Saber Astronautics

**Produce advanced AI/ML-enabled space surveillance mission for hypersonic missile defence by building a mission concept and payload prototype Phase A1**

**ANU Lead:** Dr Joice Mathew

**Industry Partners:** Northrop Grumman Australia, Spiral Blue, the University of South Australia, the University of Southern Queensland

**Software defined radio for satellite communications**

**ANU Lead:** Professor Nan Yang

**Industry Partner:** Inovor Technologies

ANU InSpace is delivering state of the art space technology for the world, whilst working with multidisciplinary ANU teams and catalysing ground-breaking space manufacturing projects with industry. This will see up to \$20 million in research income brought into the university.

**For the latest iLAUNCH project news and updates, please visit the InSpace website at [inspace.anu.edu.au/missions/ilaunch](https://inspace.anu.edu.au/missions/ilaunch) and learn more at [unisq.edu.au/research/ilaunch](https://unisq.edu.au/research/ilaunch)**

**As Associate Director, Strategic Projects at InSpace, I manage the Strategic Projects Team and oversee a holistic pipeline of opportunities from initial ideation through to funded missions. In the five years I have been here, I have relished the opportunity to work on dynamic projects with inspiring people.**



## Associate Director, Strategic Projects

# Dr Kate Ferguson

My team and I curate and catalyse space research projects that are translated into technical or manufacturing initiatives that bring about impactful results and mission success in collaboration with industry and government.

The Strategic Projects Team delivers across InSpace's four strategic pillars:

### **Navigate**

We uncover and create compelling opportunities for space innovation by connecting ANU capabilities with external stakeholders in industry, government, and communities across Australia and internationally.

### **Catalyse**

We convert space innovation and research opportunities into funded missions, including our nationally significant Flagship Missions that deliver translation and impact.

### **Build**

We engage with funded projects through their delivery, ensuring outcomes are leveraged to drive further impact and new opportunities.

### **Advocate**

We promote ANU space capabilities, highlighting the importance of space technology on our everyday lives, shaping policy, stimulating funding, and inspiring diverse career choices in space.



ANU InSpace Strategic Projects Team: Christopher Kourloufas, Associate Director Strategic Projects Dr Kate Ferguson, Natasha Disha, Anupam Kumar Pilli

We are hitting the ground running in 2024, with a focus on continuing our successful translation of technological capabilities and an eye, as ever, to the sky in working to support more innovative space endeavours. A large focus is on catalysing space research under the current InSpace themes of Space and Sustainability, Space for Asia and the Pacific, and Space and Education.

The InSpace Team is keenly preparing to assist in representing the national space interest at the International Astronautical Congress (IAC) Milan and assisting Space Industry of Australia Association for the IAC Sydney in 2025, which will be a chance for the Australian space sector to shine a light on this country's amazing capabilities and innovation that will catalyse exciting developments for space research.

### InSpace highlights

- ANU is the major University partner of the University of Southern Queensland-led iLaUNCH Trailblazer Hub, a \$180 million hub funded under the Department of Education's University Trailblazer program. With our industry partners, ANU will accelerate the translation of essential research for Earth observation, advanced communications, space medicine, space platforms, materials development, plasma thrusters, and hypersonics detection.
- ANU joined the NSW Space Research Network, bringing the ACT and NSW space research sectors together, to explore new opportunities and improve coordination in our local region. We had our first SRN pilot project funded to develop new conductive Kapton coatings for lunar dust mitigation to address a critical challenge in the exploration and utilization of the Moon's surface.
- We were thrilled to build on successful partnerships with NASA and local industry to be awarded two Australian Space Agency Moon to Mars Demonstrator Mission Grants. The first project will produce laser stabilization flight technology for next generation gravity sensing missions, and the second will establish the first Australian deep space communication-capable optical ground station by upgrading the ANU Quantum Optical Ground Station (QOGS) to be compatible with NASA's Optical to Orion (O2O) mission.
- We're building off a successful internal workshop with the ANU College of Asia and the Pacific and the CBR Space Industry Cooperative Space Breakfast hosted at InSpace on the relevance of space-enabled capabilities for the Asia-Pacific region to boost our engagement with our regional partners and enhance security in the region.



## Associate Director, Mission Specialists

# Dr Cassandra Steer

**I am privileged to be part of a diverse team of experts and thought leaders who make up ANU InSpace. My role as Associate Director, Mission Specialists gives me the opportunity both to work as part of our Mission Control team, where we collaboratively create the strategic vision of InSpace, and also to work in partnership with our Mission Specialists across the entire ANU campus.**

Our Mission Specialists are the nation's – and in some cases the world's – leaders in space research, in fields as wide ranging as space health and medicine, space ethics, space law and governance, space security, quantum and edge computing, bushfire resilience, Earth observation instrumentation, data analysis and management, geodetics, Earth sciences and planetary sciences, robotics, aerospace engineering, AI, space biology, human studies in spaceflight, science and technology studies, space policy, social sciences, international relations, and more. InSpace is the nation's only truly multidisciplinary university space institute.

Bringing together experts in such diverse fields to consider what collaborations are possible is not always simple, but it is always rich in terms of cross-pollination of ideas and knowledge exchange.

Australia's space sector faces financial and political challenges. Part of InSpace's ongoing success in the face of these challenges is that we are focused on solving society's biggest issues, and bringing our experts together to do so, rather than being focused on space for the sake of space. This includes the societal benefits of space technologies and space data and the ways in which space technology can help secure the things we care about and need in Australia.

We continually demonstrate that ANU is a valuable partner for local and federal government, with national and international industry, and with space agencies in various countries. We are becoming a trusted partner in the Asia-Pacific region and a contributor to the space technologies that are making a difference to the biggest issues of the 21st century.



ANU InSpace Marketing and Communications Team:  
Krysia Derecki and Emily Schuster

**The Marketing and Communications Team tells the ANU InSpace story to amplify the achievements of the university's strategic goals. The team provides advice and support on brand management, marketing and public relations, communications, and events management.**



AmCham Alliance Awards Gala 2023

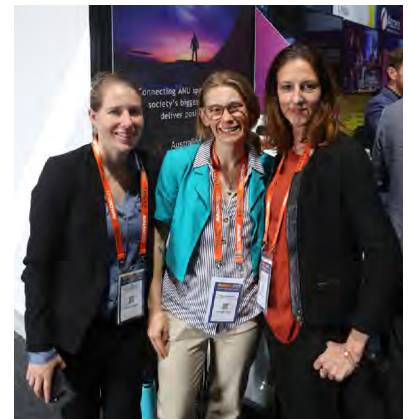
Our social media presence on LinkedIn and Facebook is dynamic and we launch several campaigns a year to highlight the work of our researchers and our team's achievements.

InSpace hosts a dynamic range of meetings, events, workshops, and conferences. We network and engage with hundreds of people involved in the space sector from academia, industry, and government.

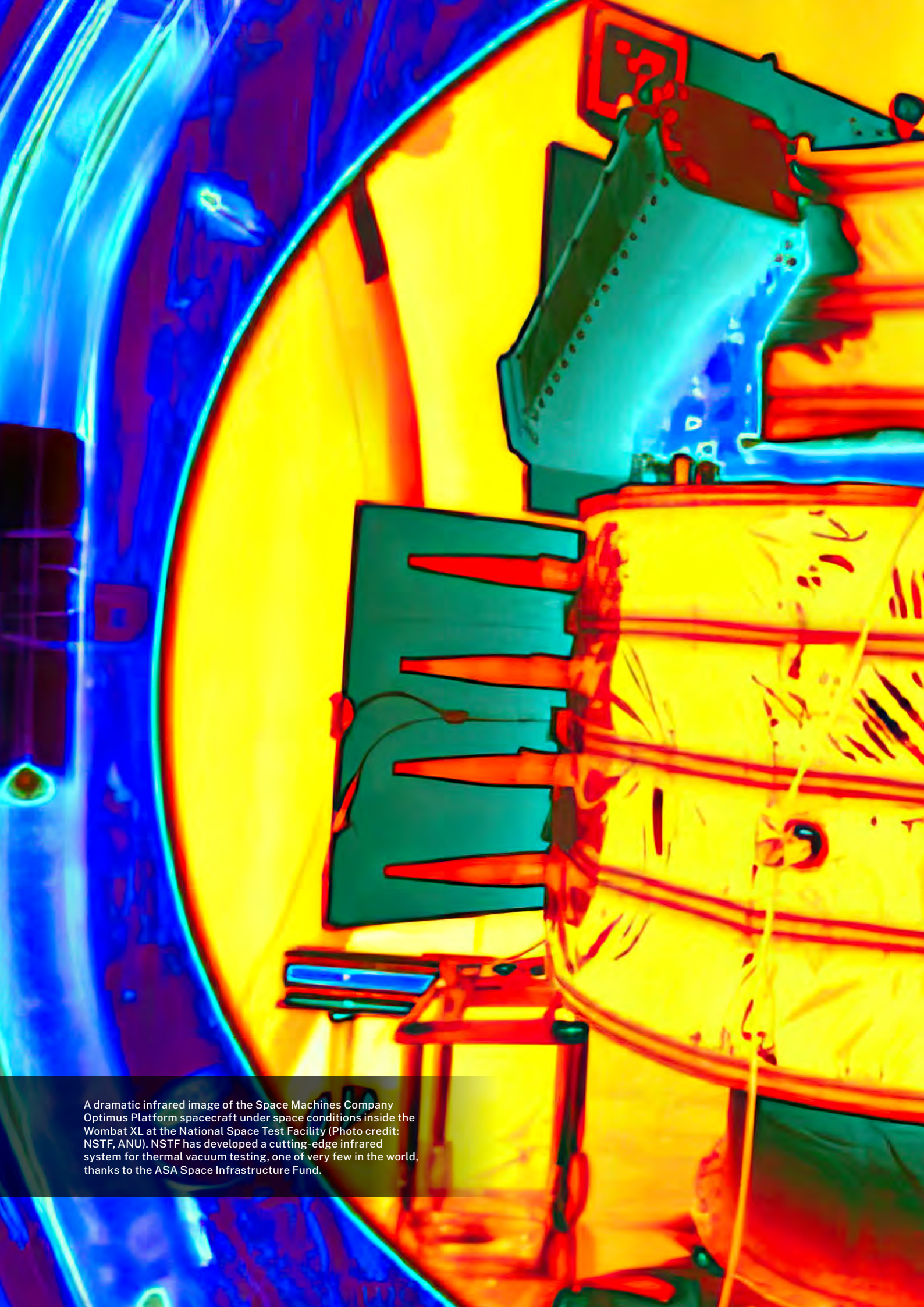
InSpace was awarded Research Organisation of the Year 2022 and Academic Institute of the Year 2023 at the Australian Space Awards.

## Marketing and Communications Team

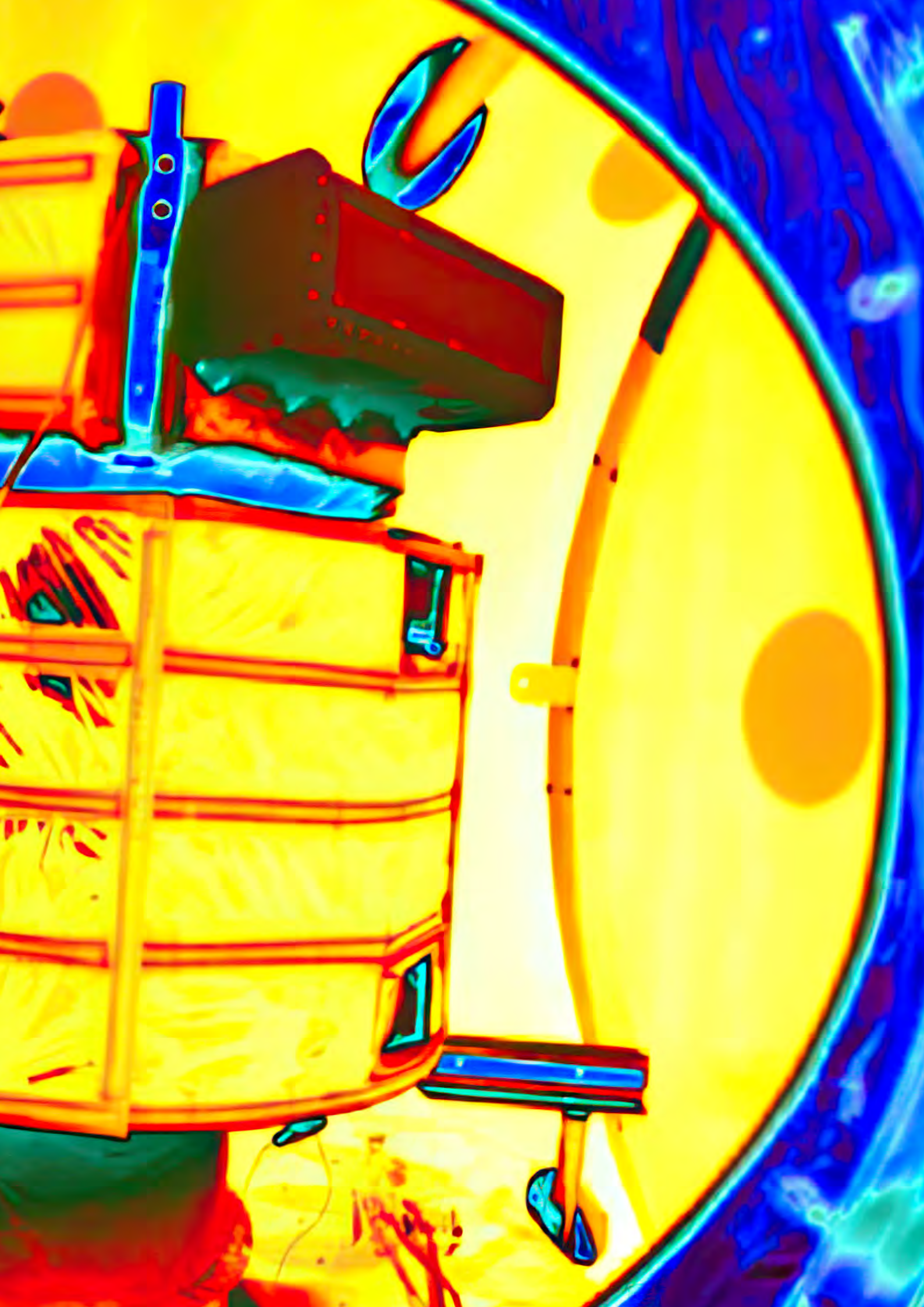
# INSPACE IN THE MEDIA



**Top left:** InSpace hosted SIAA for the IAC Sydney 2025 Workshop **Top right:** Space Medicine for Earthlings Sundowner Panel (Photo credit: MySecurity Media) **Bottom left:** ACT Chief Minister Andrew Barr speaking at the ACT Government Space Update in September 2023 (Photo credit: Carl Davies, CMD Photographics) **Bottom right:** Dr Kate Ferguson, Emily Schuster, and Krysia Derecki at the Avalon International Aerospace and Defence Exposition in February 2023



A dramatic infrared image of the Space Machines Company Optimus Platform spacecraft under space conditions inside the Wombat XL at the National Space Test Facility (Photo credit: NSTF, ANU). NSTF has developed a cutting-edge infrared system for thermal vacuum testing, one of very few in the world, thanks to the ASA Space Infrastructure Fund.





Australian  
National  
University

**ANU Institute for Space**

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