

THE PRECINCT
PRESENTS

4
MAY | 2022

SPACE

QLD 2.0

BRINGING TOGETHER QUEENSLAND'S SPACE
SECTOR TO SHAPE TOMORROW

PROGRAM OVERVIEW

- 8.30am Delegate Registration
- 9.00am Welcome
Dr Michael Smart, CTO and Head of Research & Development, Hypersonix
- 9.30am Keynote 1: Space exploration for tomorrow's world
Michael Elsperman, Director of Space Exploration, Boeing (USA)
- 10.30am Morning tea
- 11.00am Panel discussion: Solving our technical challenges together
Dr Kimberley Clayfield, Space Research Program Director, CSIRO:
Adam Gilmour, CEO & Founder, Gilmour Space Technologies:
Prof. Paulo de Souza, Head of School of Information and Communication Technology, Griffith University:
Alanna Fenning, Growth and Business Development Manager, BOC Ltd:
Air Vice-Marshal AM (ret'd) Neil Hart, Qld Govt. Strategic Defence Advisor
- 12.00pm Lunch
- 1.25pm BOC presentation
- 1.30pm Keynote 2: Space data, Earth action
Professor Stuart Phinn, University of Queensland and Past-President, Earth Observation Australia
- 2.30pm Afternoon tea
- 3.00pm Panel discussion: Adapting Queensland capabilities for space
Dr Jonathon Ralston, Senior Principal Research Scientist, CSIRO:
Dr Michael Smart, CTO & Head of R&D, Hypersonix:
Peter Clowes, Director and Co-Founder, Raytracer:
Dr Jason Armstrong, Senior Manager, Brisbane Boeing Research & Technology Centre:
Air Vice-Marshal AM (ret'd) Neil Hart, Qld Govt. Strategic Defence Advisor
- 4.00pm Networking event
- 6.10pm Keynote 3: Why we look up
Prof. Tamara Davis, Astrophysicist and Cosmologist, University of Queensland
- 6.40pm Keynote 4: The ethics of colonising space
Dr Evie Kendal, Swinburne University of Technology, Member of Humanities, Arts & Social Science (HASS), Space & Cosmology Research Group, University of South Australia
- 7.30pm Cult space movie: Battle Beyond the Stars (1980)

S P E A K E R S

Dr Michael Smart, CTO and Head of Research & Development, Hypersonix Launch Systems

Michael is a world leader in scramjet design with particular interest in reusable space launch. He graduated with a Bachelor of Mechanical Engineering from The University of Queensland (UQ) in 1985 and completed a PhD at NYU-Poly in 1995. He spent 10 years as a research scientist in the Hypersonic Airbreathing Propulsion Branch at NASA's Langley Research Center. He returned to Australia in 2005 and spent 15 years in the UQ Centre for Hypersonics, being appointed Professor and Chair of Hypersonic Propulsion in 2007. In December 2019 he co-founded Hypersonix Launch Systems Pty Ltd. Hypersonix Launch Systems is an Australian startup that is developing hydrogen fuelled scramjet technology for green access to space.



Michael Elsperman, Director of Space Exploration, Boeing (USA)

Michael has over 30 years of diverse technical leadership experience including program management, customer and employee relationship development, team building, business development, strategic and tactical planning/goal setting, and strong communications skills (interpersonal, technical, and business). Brings a solid track record of complex problem solving success to every assignment. Demonstrated ability to lead, interface, and execute broadly across multiple technical program levels and domains. Possesses current NASA Personal Reliability Program clearance enabling access to restricted launch and mission control facilities. Held previous Top Secret Government clearance classification.

Air Vice-Marshal AM (ret'd) Neil Hart, Queensland Government Strategic Defence Advisor

Neil has extensive experience in strategy and international relations, working with government and high technology industries. A trusted executive and advisor motivated by advancing national capability through connecting and facilitating expertise from across public and private sectors, scientific and academic communities and with international partners.



Dr Kimberley Clayfield, Space Research Program Director, CSIRO

Kimberley leads CSIRO's growing space research program, which includes oversight of the CSIRO Centre for Earth Observation, the AquaWatch Australia Mission and implementation of CSIRO's responsibilities under the National Space Mission for Earth Observation. She has also led organisation of the CSIRO Space 2.0 Workshop series, amongst other activities. In addition, Kimberley is the leader of the CSIRO Space Technology Future Science Platform (or Space FSP), a multi-disciplinary program to build capability and develop innovative new space technologies and applications, as well as support the growth of Australia's space industry. Kimberley is also a member of the Australian Academy of Science's National Committee on Space and Radio Science.

S P E A K E R S

Adam Gilmour, CEO & Co-founder, Gilmour Space Technologies

Adam is the CEO and Co-founder of Gilmour Space Technologies, a venture-funded space technology and rocket company in Queensland that will be launching small satellites to orbit in 2022. A lifelong space fan, Adam believes that rockets can be made smaller, cheaper and faster, and that the New Space industry, and Australia, would benefit greatly from having more dedicated access to space.



Professor Paulo de Souza, Head of School of Information and Communication Technology, Griffith University

Paulo has over 20 years experience working in industry, consultancy, government agencies and universities. He is an accomplished researcher in instrumentation and sensing technologies. He contributed to the design, manufacturing, testing, integration and operation of sensors used by NASA on their Mars rovers. For his contribution to the Mars Exploration Rover program, Paulo received three NASA Achievement Awards and is the author of numerous breakthrough discoveries including the first in-situ evidence that Mars was once wet. Paulo leads Griffith University's Aerospace Program that is focused on satellite development, including the g-class satellite with Gilmour Space Technologies. He also leads a STEM program building a 1U CubeSat with 56 Queensland schools kids from grades 9 to 11. This project is a collaboration between Griffith University, Gilmour Space Technologies, Airbus, Queensland Government and Deloitte.

Alanna Fenning, Business Growth and Development Manager, BOC Ltd

Alanna has over 16 years experience working in the gases business. Alanna is driven in the areas of business growth, people, process and successful outcomes. She thrives on developing strategies and creating systems and processes to drive mutually beneficially outcomes for customers and industry. Alanna is energised by the opportunities that exist for the space industry and the overall space economy for Australia. Her organisation is motivated to assist start-ups, established space companies and launch sites in the security of a sustainable supply chain model in Australia.



Professor Stuart Phinn, University of Queensland and Past-President, Earth Observation Australia

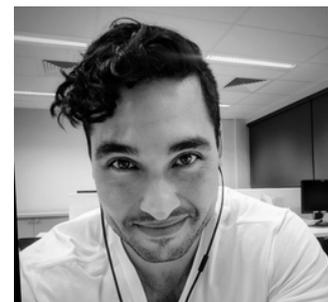
Stuart is a scientist, educator, and leader who builds and applies methods to measure and understand how our environments are changing at multiple scales. He works across collaborative, multi-disciplinary teams and organisations to deliver quality science that draws upon field-work, satellite-image data, and modelling, through: founding directorships of Australia's national Earth observation coordination body and collaborative research infrastructure, operational program management that supports government environmental monitoring, and program leadership of industry-driven research. Stuart's work provides solutions to support sustainable development and resource use for all levels of government, various industries, and communities.

S P E A K E R S

Peter Clowes, Director and Co-Founder, Raytracer

Raytracer, one of Australia's most exciting new space technology companies.

Peter and the team at Raytracer are on a mission to enable safe and effective work in the challenging and remote environments of space. To achieve this mission, Raytracer are building new human and machine teaming technologies that will propel humanity into a brave and bold future of work in space.



Dr Jason Armstrong, Senior Manager, Brisbane Boeing Research & Technology Centre

Jason received a doctorate in Immunology from NASA Center in the USA. His career has a thread of biomedical software & automation, in particular for spaceflight payloads. The earlier part of his career in the 1990s saw Jason place payloads on four space shuttle flights and personally fly on the "zero-g vomit comet" for payload development & astronaut training. Immediately following his early career NASA related work, Jason worked in the US biomedical industry and on returning to Australia in 2005 was CEO of a company that went public on Australian stock exchange. Since the outbreak of COVID-19 Jason has been contributing as a lead in the topic of "Disease Transmission Prevention & Screening" for the Boeing Confident Travel Initiative. He currently leads the Research and Technology organization for Boeing in Brisbane, which includes some 10 space projects.

Dr Jonathon Ralston, Senior Principal Research Scientist, CSIRO

For more than 25 years, Jonathon has been involved in delivering R&D solutions to the resource sector to address challenges in areas such as remote operations, system automation, geosensing and process integration to provide safer, cleaner and more efficient operations. He is also leading new space developments within CSIRO in the area of In-Situ Resource Utilisation (ISRU), as a way to provide new science exploration and engineering capabilities which are necessary to support and sustain future planetary missions. Jonathon is particularly excited about the opportunities that exist for technology development and transfer – to benefit both Earth and space applications – as well as identifying ways to grow capacity for a growing space sector through greater levels of awareness and collaboration.



Professor Tamara Davis AM, Astrophysicist and Cosmologist, University of Queensland

Tamara is an astrophysicist who studies the elusive "dark energy" that is accelerating the universe. Over her 25 year career she's measured time-dilation in distant supernovae, helped make one of the largest maps of the distribution of galaxies in the universe, and tested advanced theories of gravity. She is now a Professor and Australian Research Council Laureate Fellow at the University of Queensland, and is helping coordinate Australia's involvement in major international surveys involving hundreds of astrophysicists. She's received the Australian Academy of Science Medal for female leadership in science and is an Order of Australia recipient. She's a prolific science communicator, including occasionally hosting ABC science show Catalyst.

S P E A K E R S

Dr Evie Kendal, Swinburne University of Technology. Member of Humanities, Arts & Social Science (HASS), Space & Cosmology Research Group, University of South Australia

Evie is an emerging technology bioethicist whose work focuses on reproductive biotechnologies and space ethics. She is currently working as a Lecturer of Health Promotion at Swinburne University of Technology in Victoria, Australia. Evie's research interests include artificial womb technology, ethical issues in aerospace medicine, planetary defence, and public health education.



Dr Rob Bell



Dr Rob grew up on a pineapple farm, where he became passionate about the impact that humans have on the environment and natural resources. It also gave him the chance to tinker with machines and generally find out how stuff worked. His love of STEM all started there. He went on to study science and graduate with a PhD from the University of Queensland. Dr Rob worked for the CSIRO and spent nearly 11 years hosting the Network Ten kids' science show Scope. Recently he started Experimentary, a science education website for schools and has written some kids books (with a sprinkling of science of course!). He is also an advisor to the World Science Festival.

C U L T S P A C E M O V I E

Battle Beyond the Stars (1980)

Battle Beyond the Stars is an American space opera film produced by Roger Corman, directed by Jimmy T. Murakami, and starring Richard Thomas, Robert Vaughn, George Peppard, John Saxon, Sybil Danning and Darlanne Fluegel. Intended as a futuristic "Magnificent Seven in outer space", the screenplay was written by John Sayles with the score by James Horner and special effects designed by future filmmaker James Cameron.

The film is widely credited as James Cameron's big break into Hollywood. He was hired as a model maker, and when the original art director for the film was fired, Cameron became responsible for the majority of the film's special effects, or, as he later put it, "production design and art direction". The low-budget led to Cameron designing the spaceship's corridors out of spray-painted McDonald's containers.



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Advance Queensland, Department of Tourism, Innovation and Sport

Advance Queensland is a \$755 million Queensland Government initiative designed to foster innovation and build a more diversified Queensland economy, creating jobs now and for the future. Advance Queensland comprises a diverse suite of programs, and is designed to impact Queensland's entire innovation system.



The Precinct

The Precinct is Queensland's premier startup hub, bringing together startups, scaleups, investors and accelerators to foster greater collaboration and partnerships across the state's innovation ecosystem.



Find out more www.advance.qld.gov.au

Department of State Development, Infrastructure, Local Government and Planning



The Department of State Development, Infrastructure, Local Government and Planning works with Queensland's priority industries, such as space, to drive economic growth. The \$8 million Queensland Space Industry Strategy is supporting the industry to be a leading centre in Australasia for launch activities, ground systems, Earth observation, niche manufacturing, robotics and automation by 2025.

Find out more www.statedevelopment.qld.gov.au

BOC Limited



BOC, a Linde company, supplies compressed and bulk gases, chemicals and equipment around the globe. The company develops safe, sustainable and innovative solutions for customers in many specialty sectors, heavy industry and medical environments. For more than a century, the company's gases and expertise have contributed to advances in industry and everyday life, including steelmaking, refining, chemical processing, welding and cutting, electronics, analytical and pharmaceutical and more recently the space sector.

Find out more space@boc.com

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