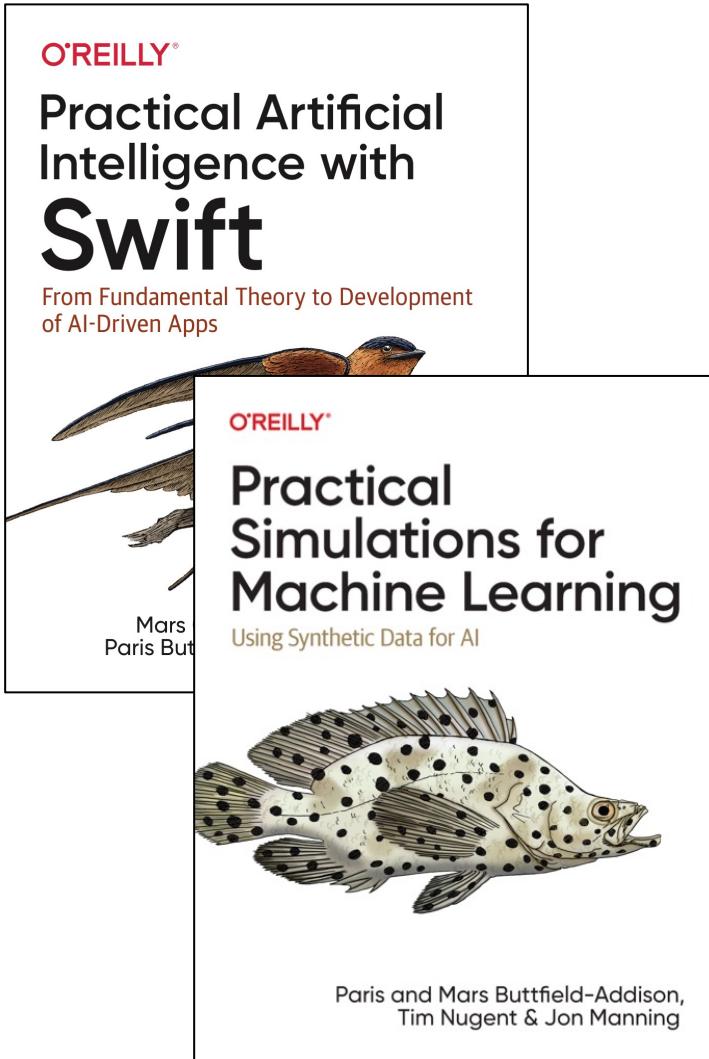


STATE OF THE INDUSTRY

Space Technology in Tasmania



Hi, I'm Mars



- **PhD Candidate**, UTAS/CSIRO
- **Author**, O'Reilly Media
- **Technologist**, Freelance
- **...and many more...**



Image: CSIRO

Agenda

- **Strengths and opportunities**
- **Current and ongoing projects**
- **Skills translation**



Strengths & Opportunities



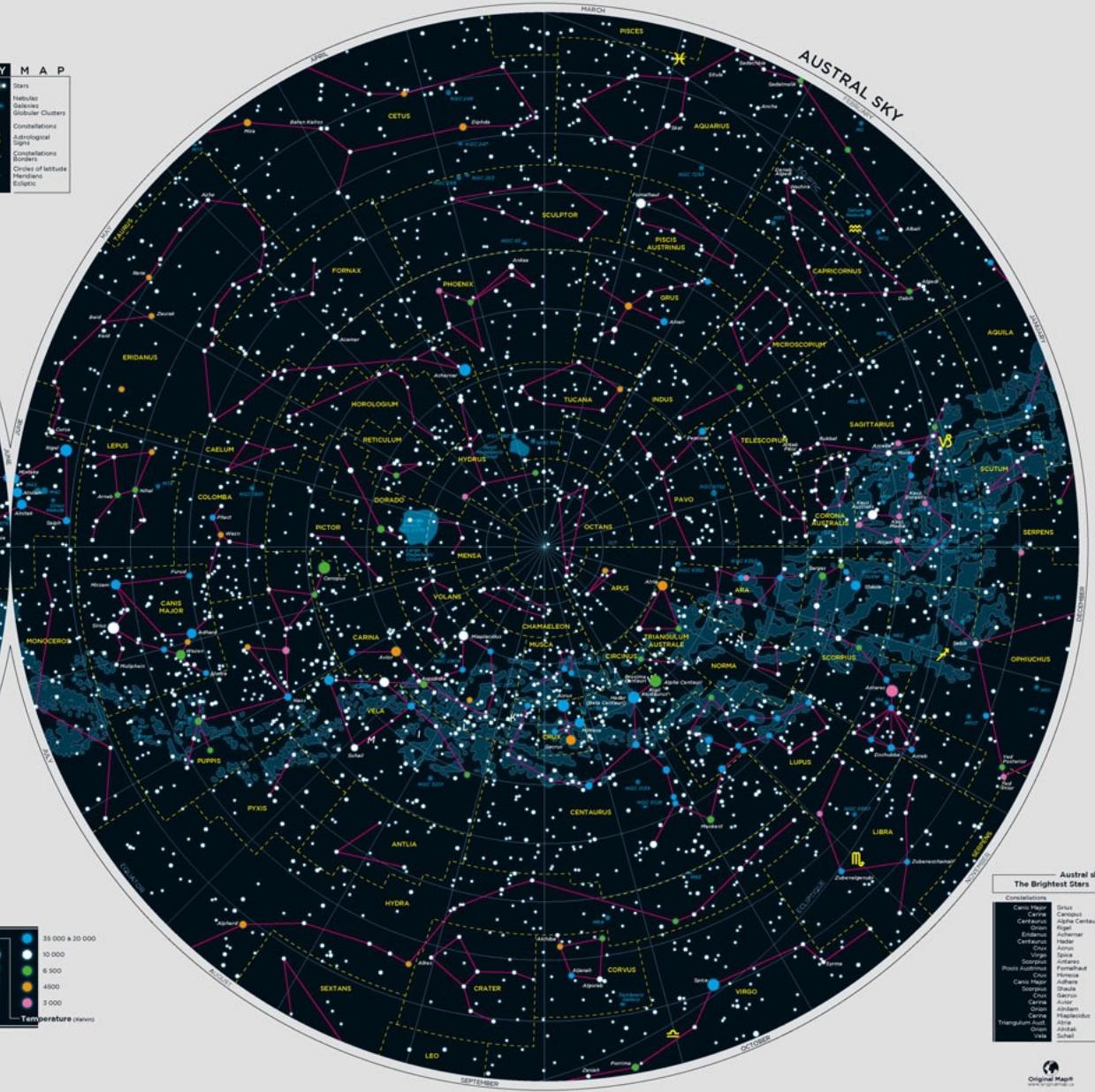
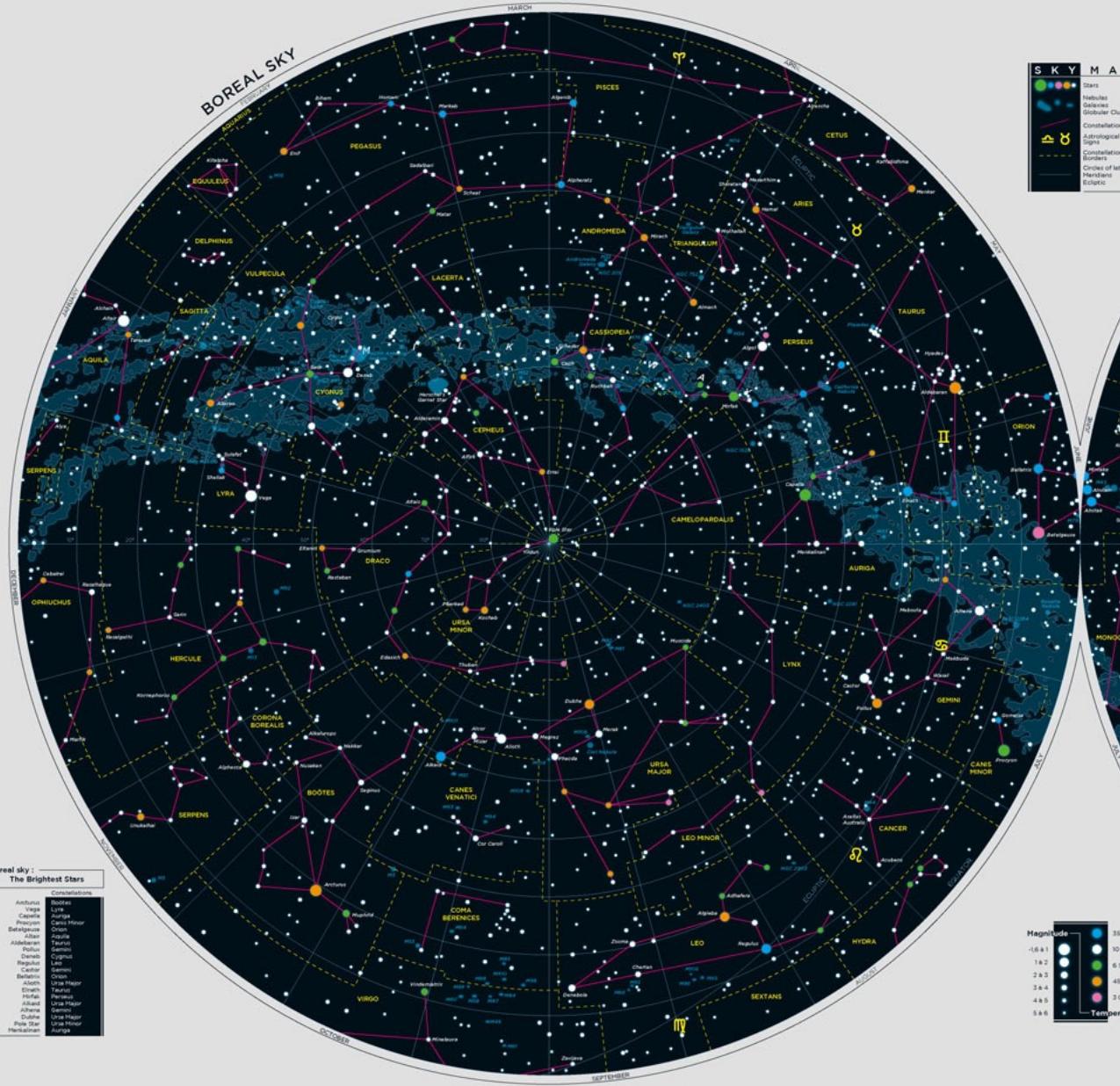
Image: Graham Denyer



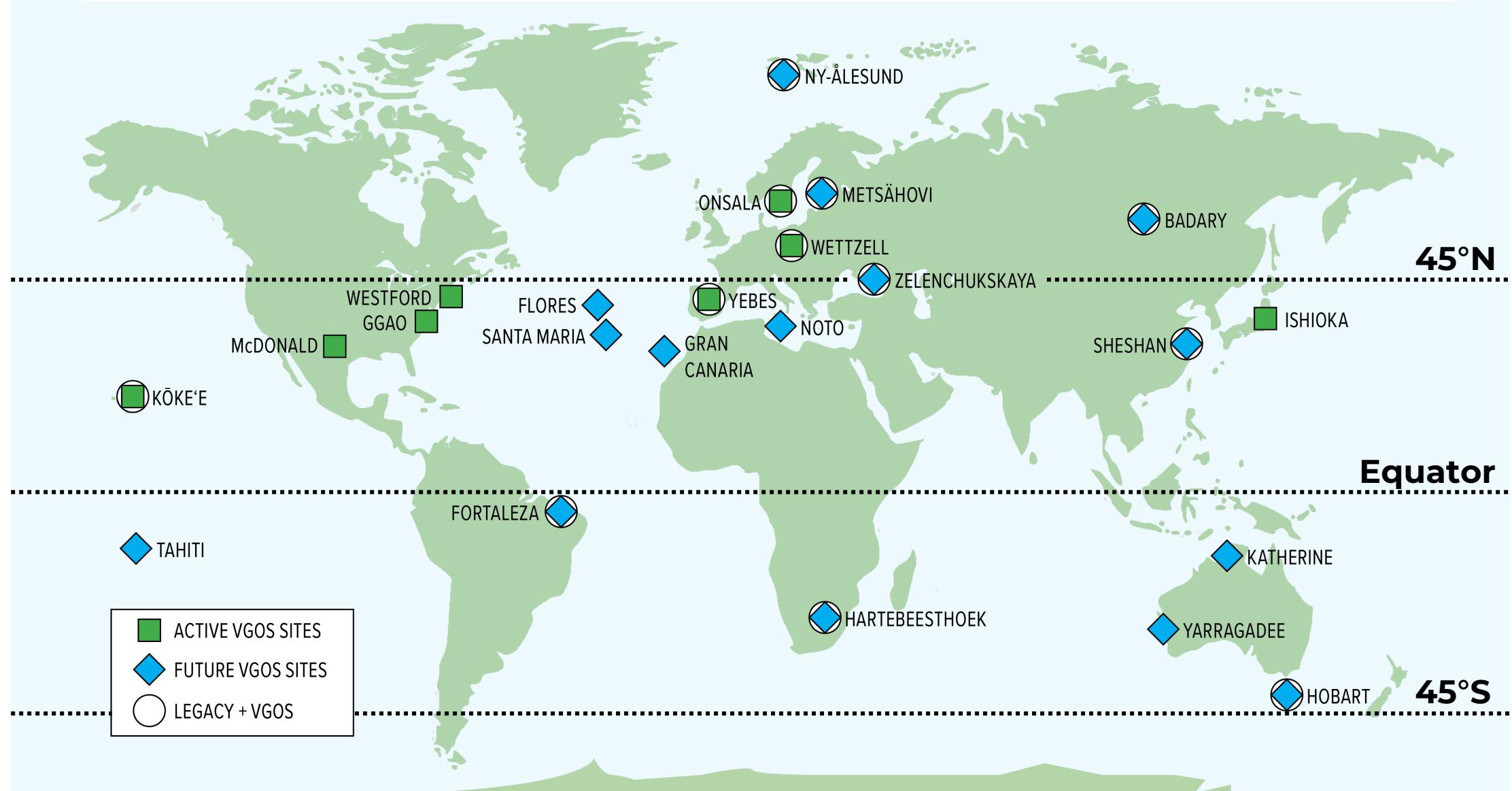
Image: UTAS/RHH

Key Areas

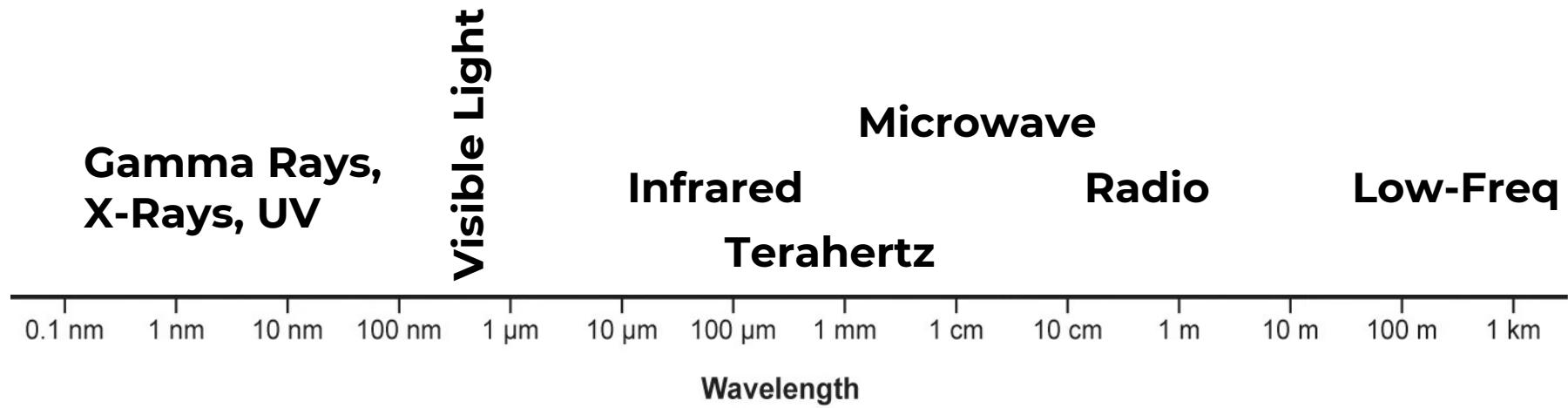
✓ Astronaut Medicine & Training

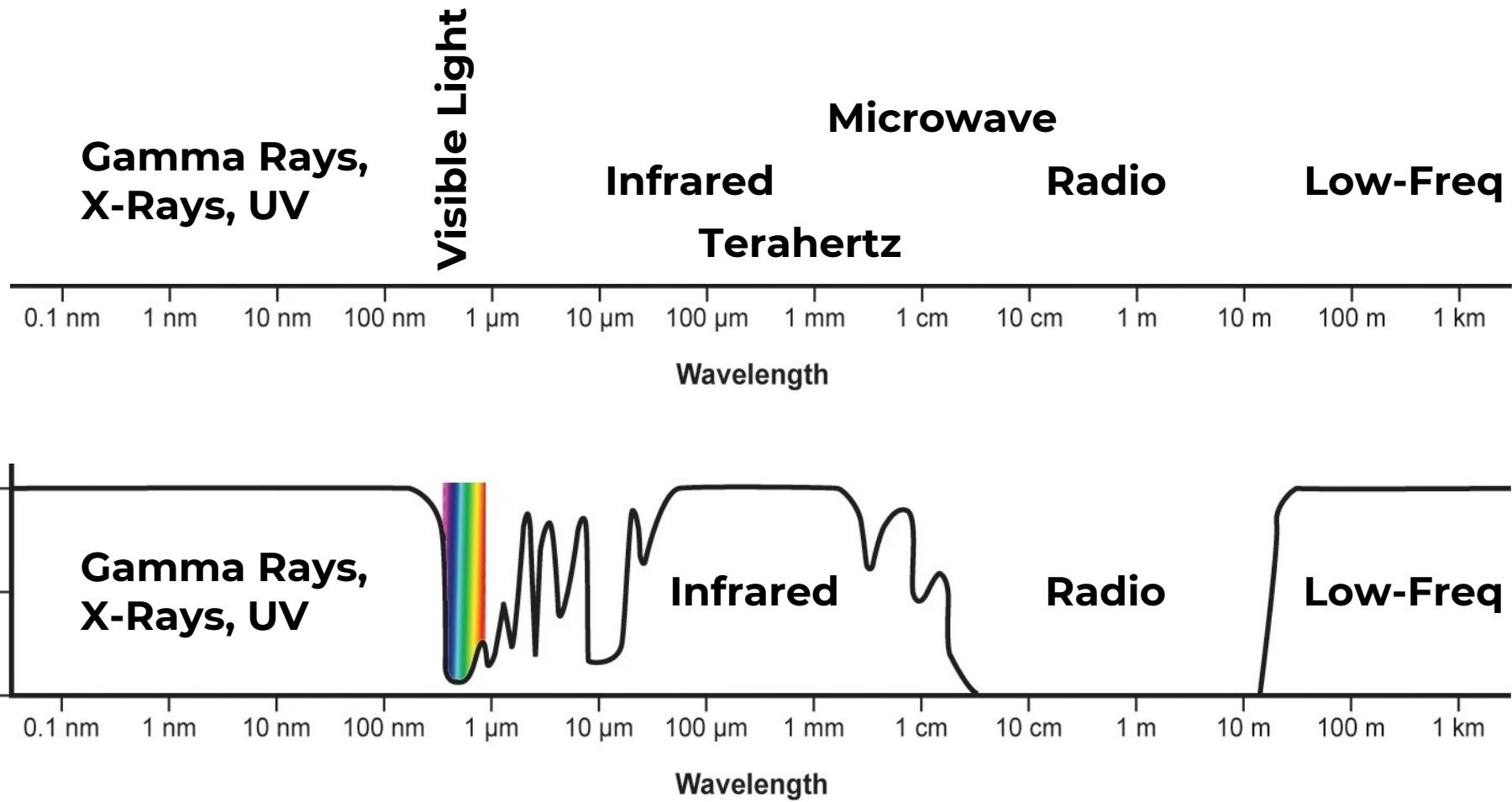


Source: Original Map



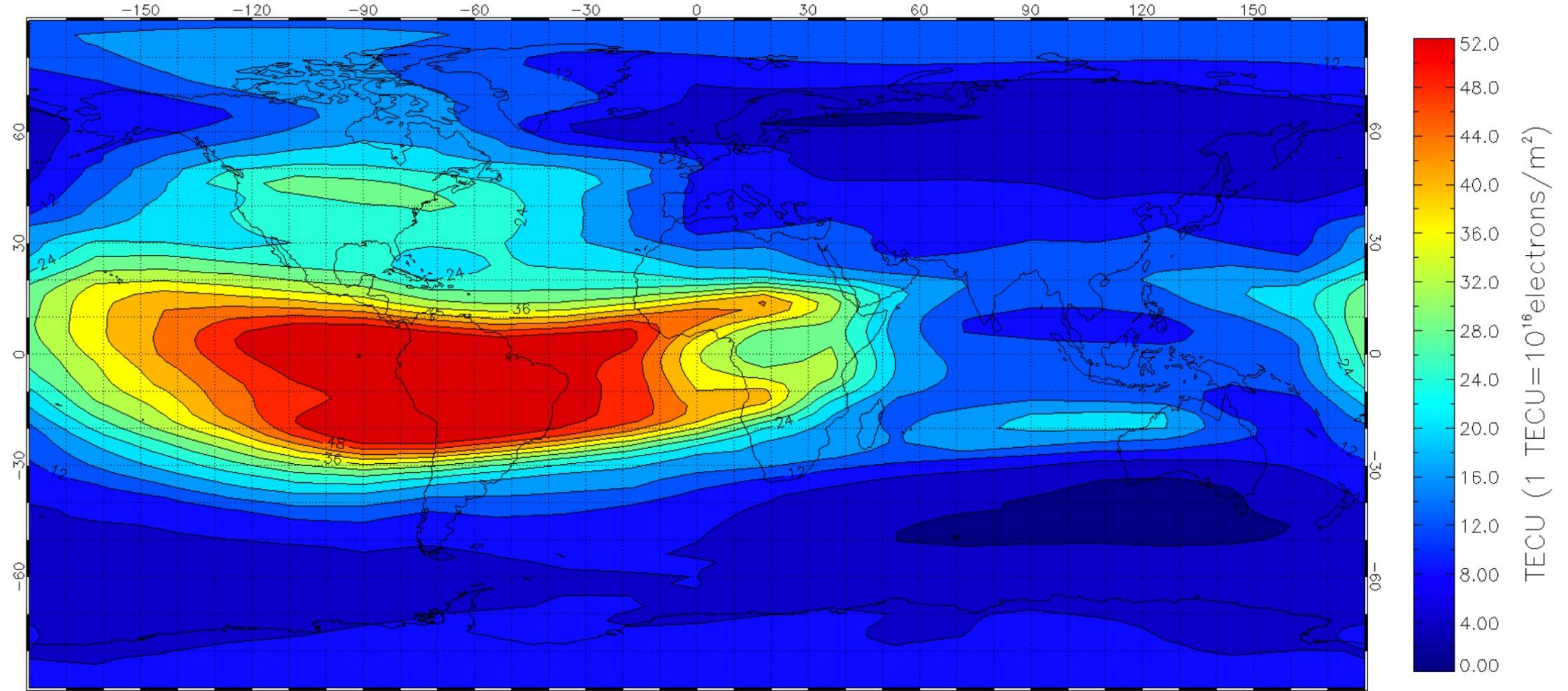
Source: IVS







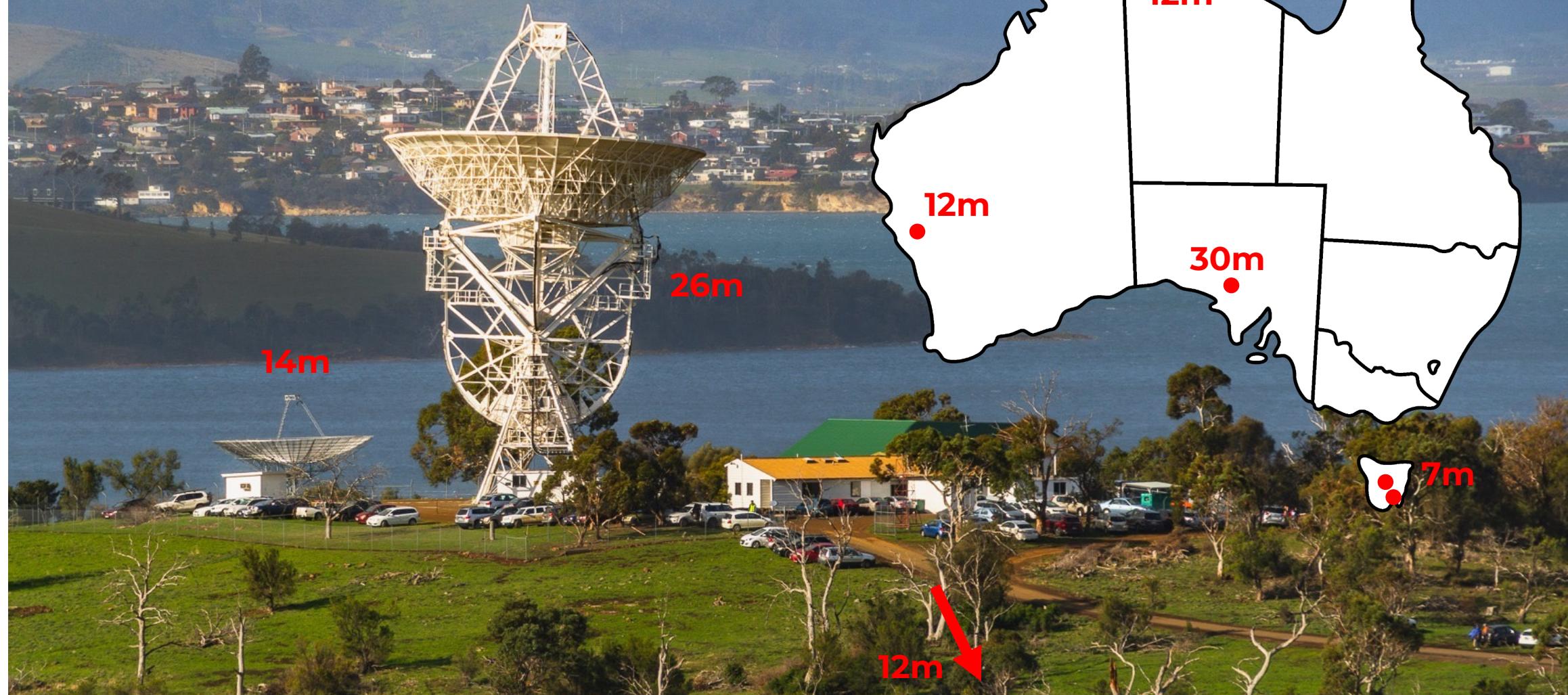
CTIPE Total Electron Content



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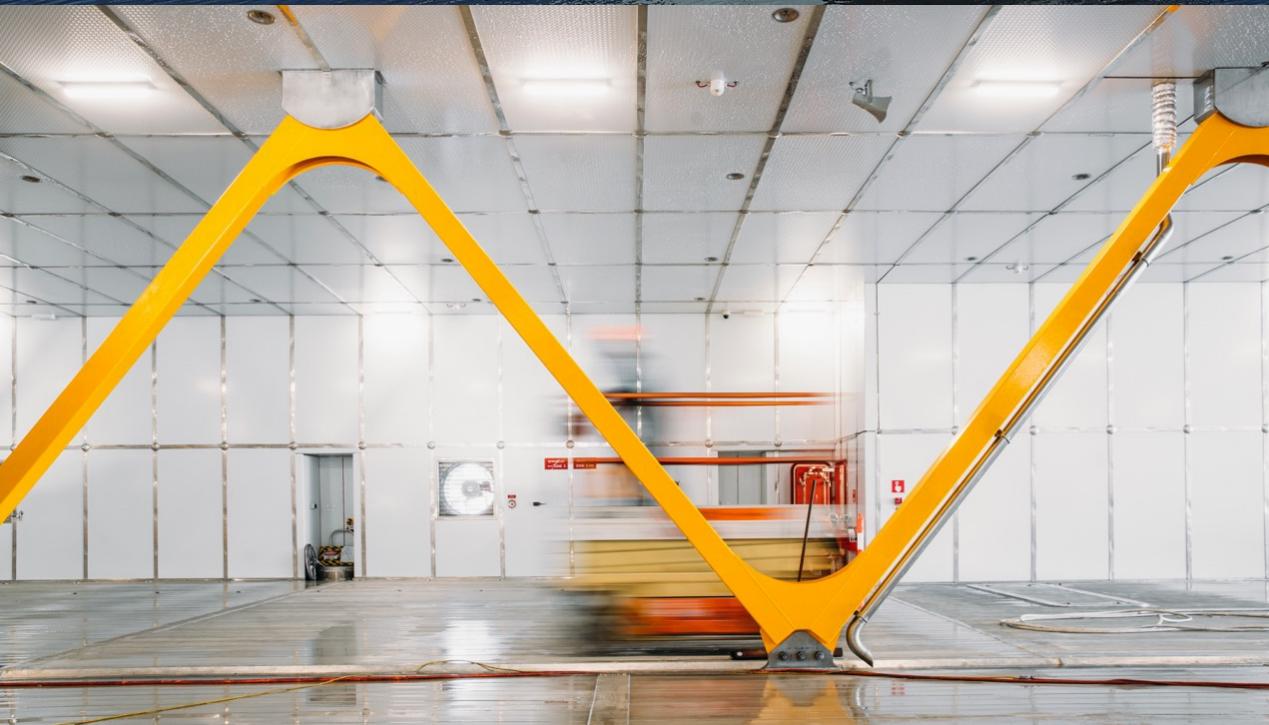
Source: NOAA

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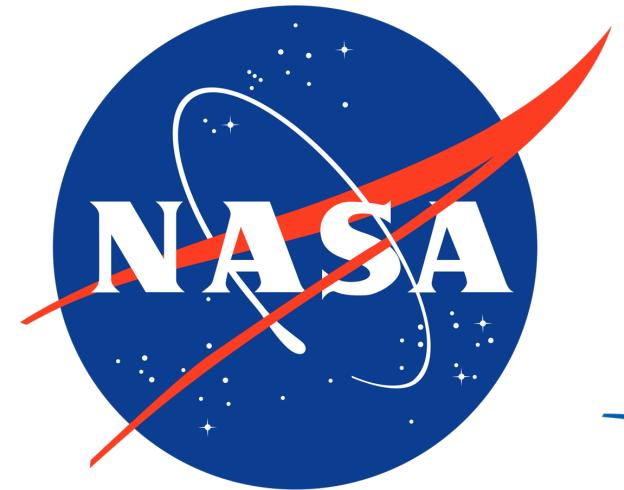
Key Areas

- ✓ Astronaut Medicine & Training**
- ✓ Spacecraft Monitoring & Communications**



Key Areas

- ✓ **Astronaut Medicine & Training**
- ✓ **Spacecraft Monitoring & Communications**
- ? **On-Island Manufacture & Operation**



SPACEX

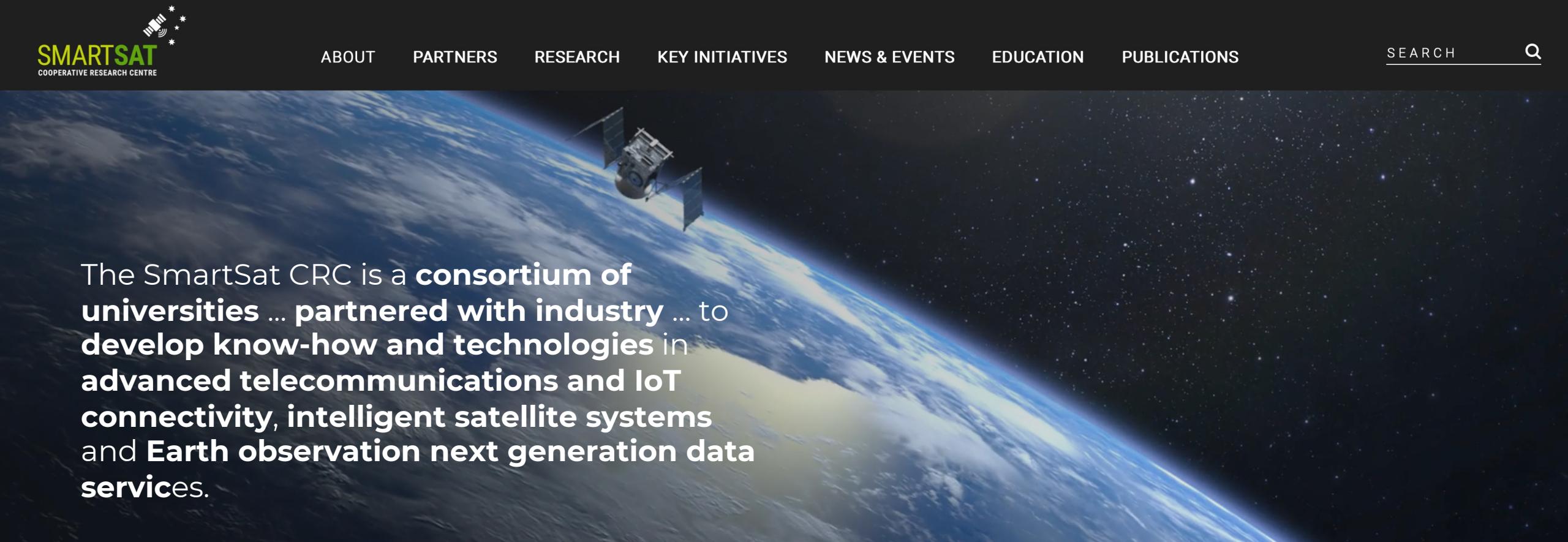


HENSOLDT



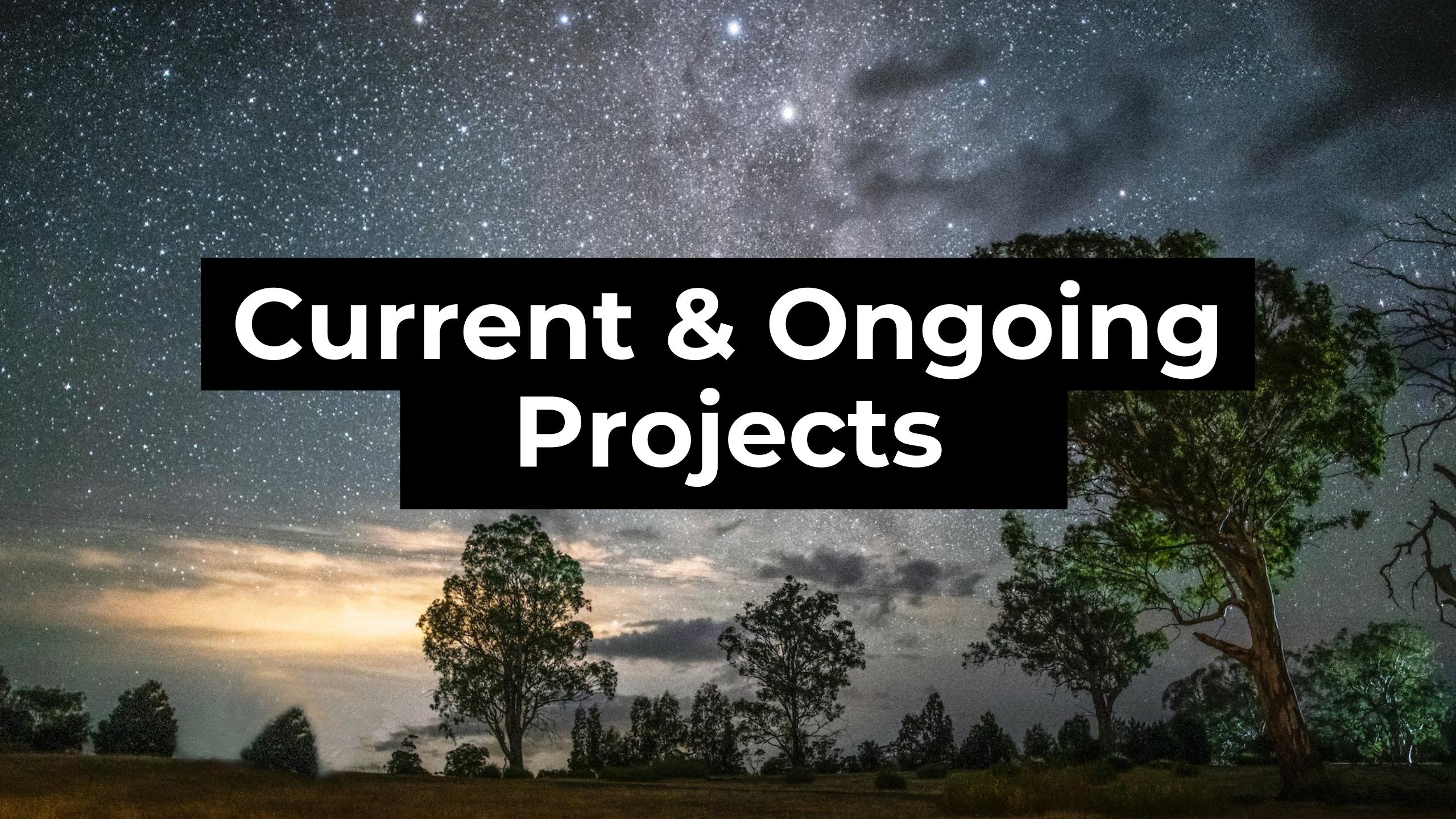
Australian
Space Agency

e esa

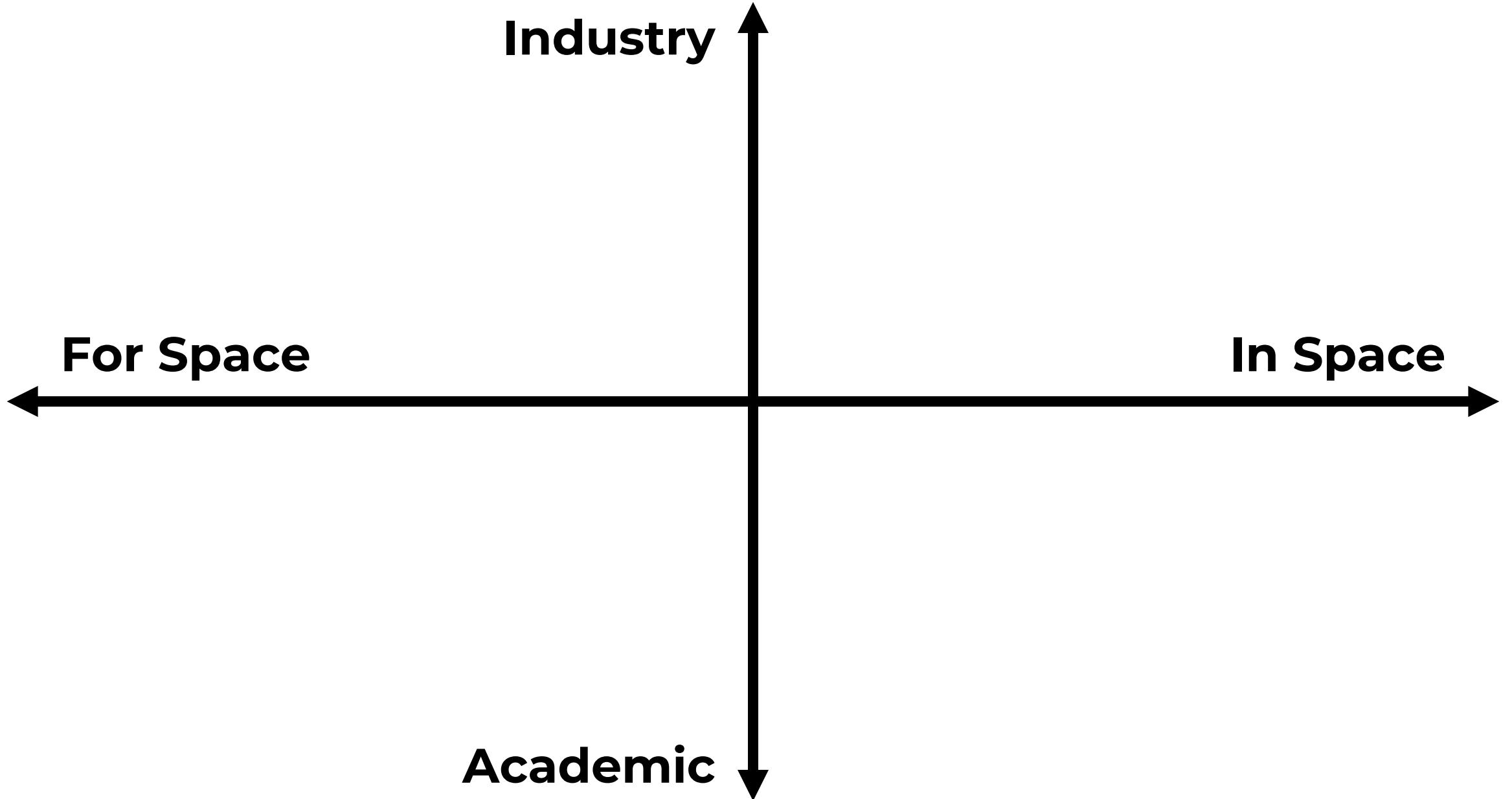


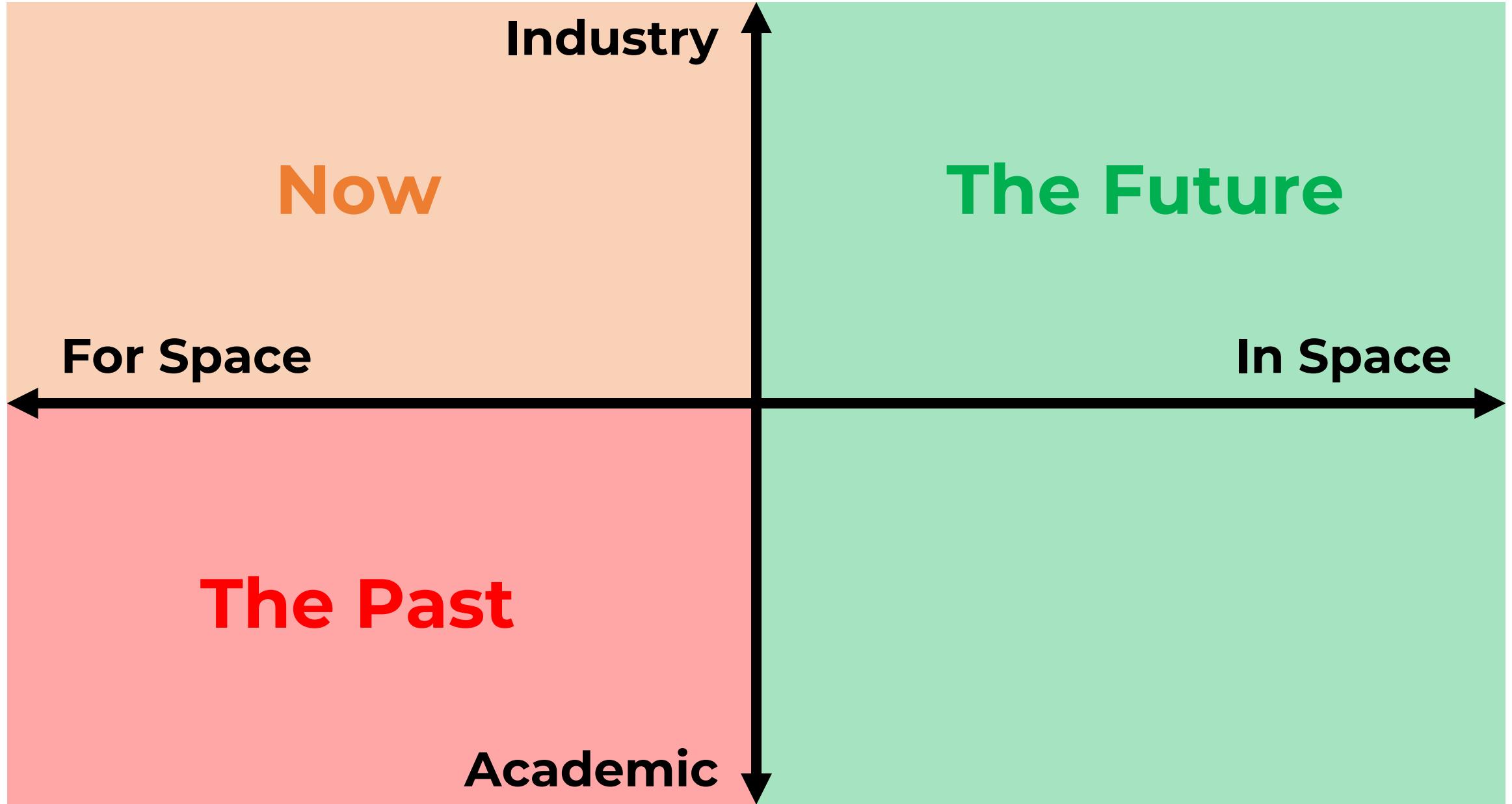
The SmartSat CRC is a **consortium of universities** ... **partnered with industry** ... to **develop know-how and technologies** in **advanced telecommunications and IoT connectivity, intelligent satellite systems** and **Earth observation next generation data services**.

SmartSat CRC Core Partners

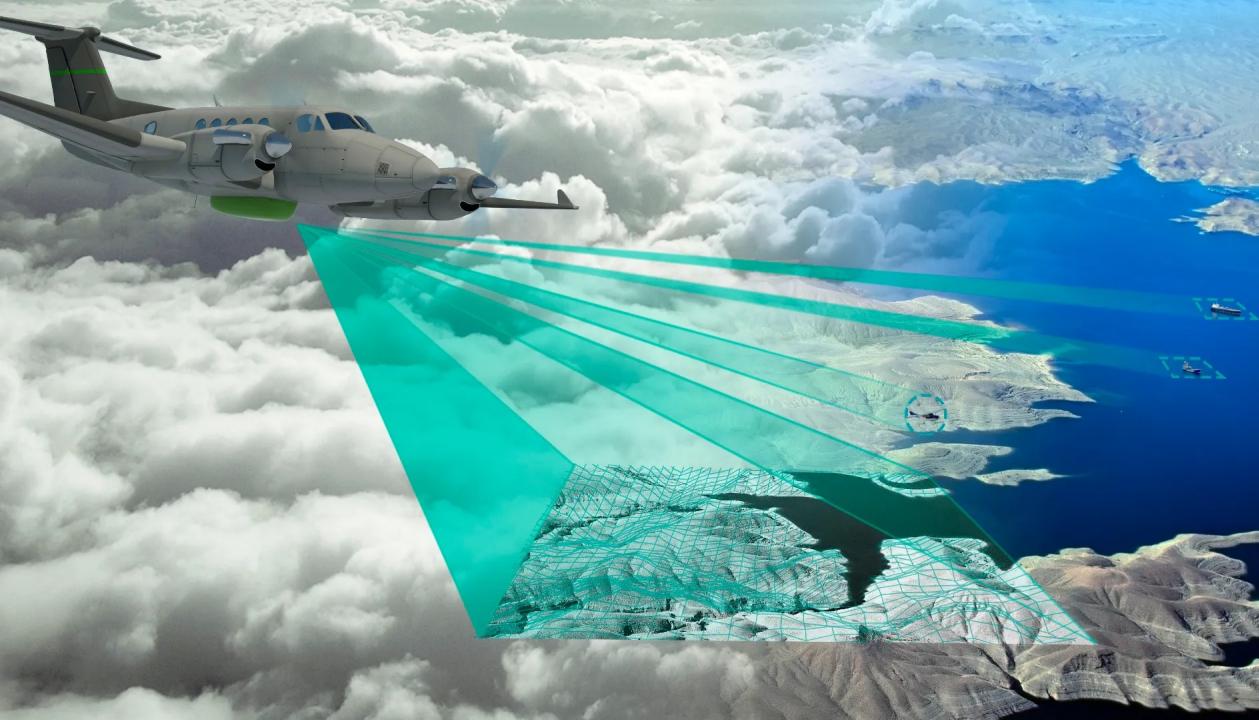


Current & Ongoing Projects





CLASSIFIED



HENSOLDT

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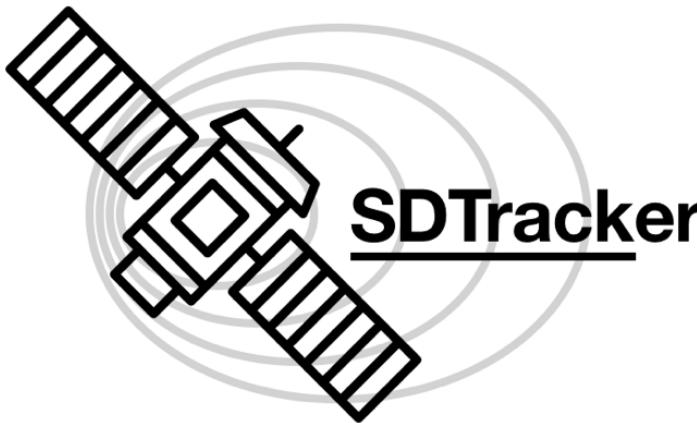


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Image: ABC Hobart



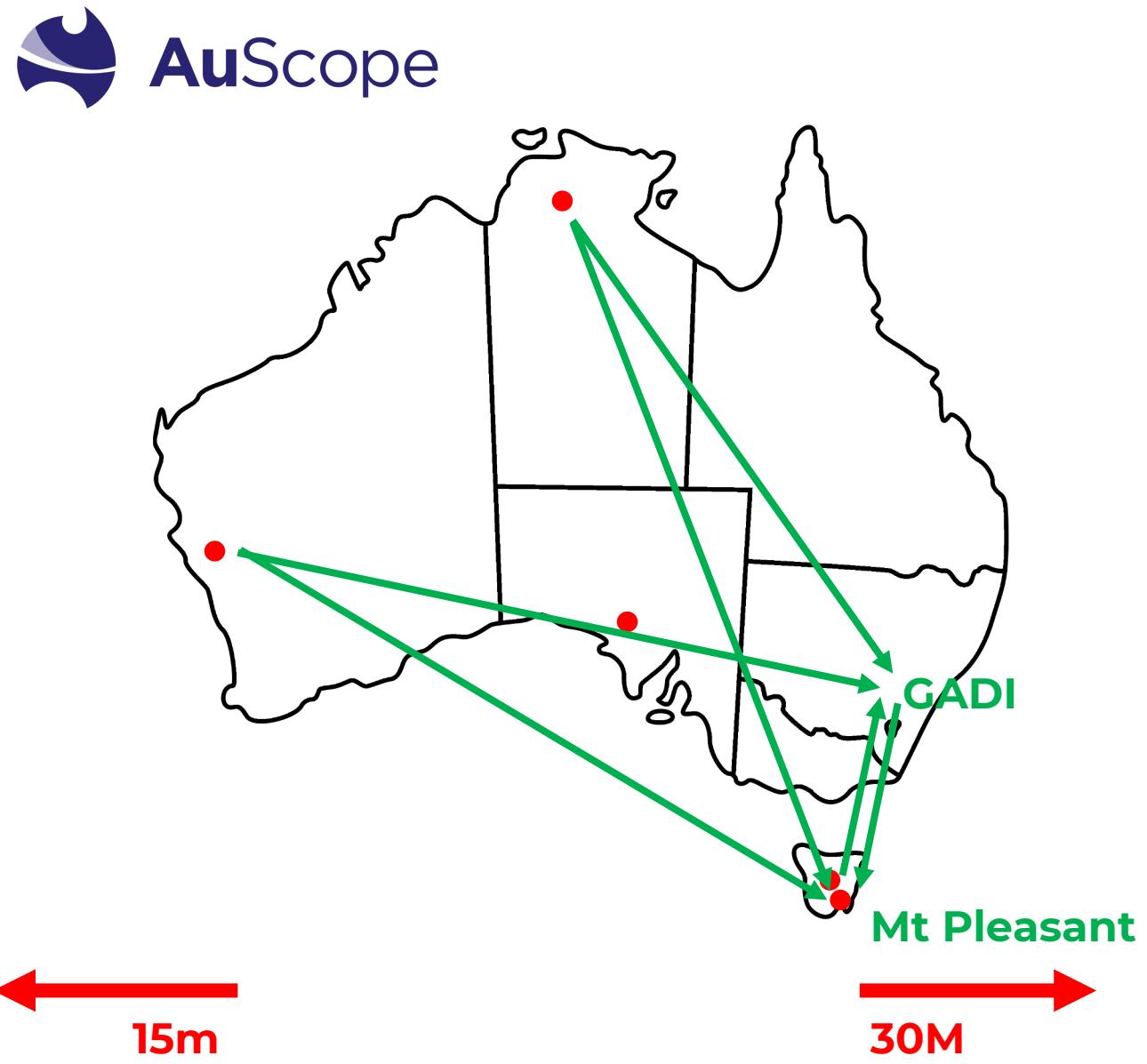
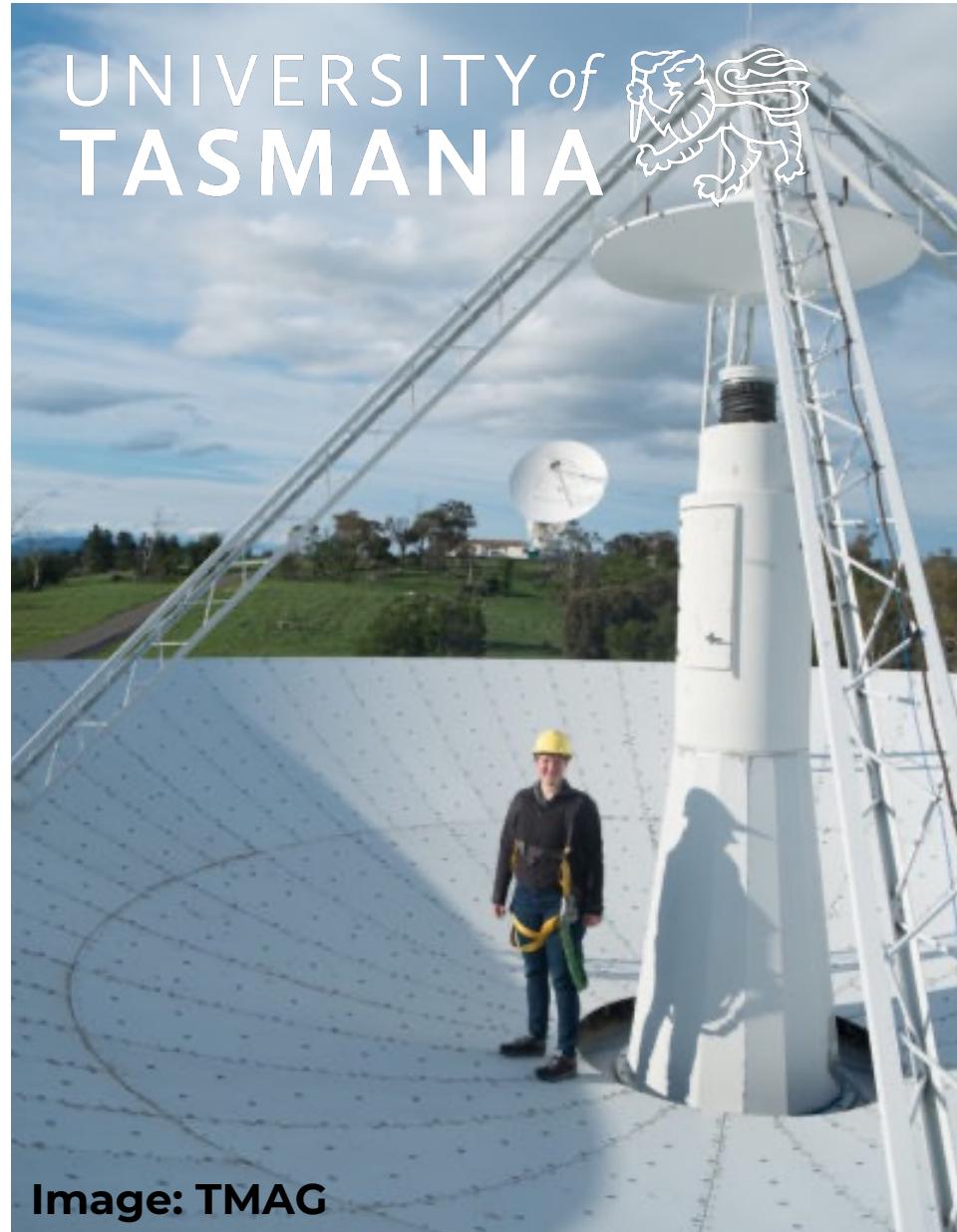
Spacecraft Doppler Tracker (SDTracker)

© 2022 Jan Wagner / Guifre Molera Calves, with contributions from Nelson Nunes, Sergei Pogrebko and Mars Buttfield-Addison.

- The use of this software is restricted.

SDTracker is an end-to-end system for high spectral resolution multi-tone Doppler tracking of spacecraft. It is made up of the software spectrometer [swspec](#) and the processing library [sctrac](#). SDTracker can extract the phase of spacecraft signals from Mark5A, Mark5B, VLBA or VDIF data, and output to either binary or ASCII format.

For detailed usage instructions, please see the [project documentation](#). Developers may also like to read the [Developer Guide](#), in particular the [manual installation instructions](#). Please note that some operations require the Python utilities library [pysctrack](#).



(Bandwidth is a common theme)

Memorandum of understanding between the Australian Space Agency and Tasmanian Government

Date published: 26 September 2019

The Australian Space Agency has signed a Memorandum of Understanding (MoU) with the Tasmanian Government. The MoU draws on the support of Tasmania's space capabilities including space medicine, ground stations and tracking facilities.

This MoU will support Tasmania's existing capabilities, propose areas for expansion and leverage these to grow Australia's wider space industry. The state is host to the [Centre for Antarctic, Remote and Maritime Medicine](#) (CARMM), a partnership between the Australian Antarctic Division, Australian and Tasmanian Governments and the University of Tasmania.

Tasmania also hosts the [Australian Antarctic Division](#), which has been affiliated with NASA since 1993. Antarctica's remote nature makes it an excellent space analogue for remote operational medicine and human research.

Acting Head of the Australian Space Agency Anthony Murfett said the signing also builds upon the Space Infrastructure Fund to upgrade space tracking facilities in Tasmania.

The Australian Government has committed \$1.2 million to upgrading the University of Tasmania tracking facilities under the Space Infrastructure Fund.

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Image: Simon Ellingsen

Space Technology Seed Fund

The Tasmanian Space Technology Seed Fund aims to grow Tasmania's space sector, drive innovation, strengthen industry collaboration, increase investment, and create new skilled jobs for Tasmanians.

The Tasmanian Space Technology Seed Fund is providing grants of between \$25 000 to \$100 000 to eligible businesses to support research and development projects that seek to extend, adapt or develop new products or services for the space economy. See [Round One recipients](#).

The Tasmanian Space Technology Seed Fund will allocate up to 50% of the eligible costs for projects of up to 18 months in duration.

If you have queries email the team at space@stategrowth.tas.gov.au.

Opens: 9am, 30 September 2022

Closes: 2pm, 30 November 2022



Fortifyedge Solution - Zero Trust Identity at the Tactical Edge

Movement Authentication
user's movement bound to device

Imposter Detection
behavioral anomalies

Mobility
works anywhere

Tiny Machine Learning on-Device

PIVOT
MARITIME
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x

Fortifyedge

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- 
- Condition Monitoring
 - Auth and Access
 - Virtual Training

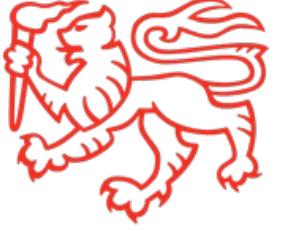
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Image: NASA

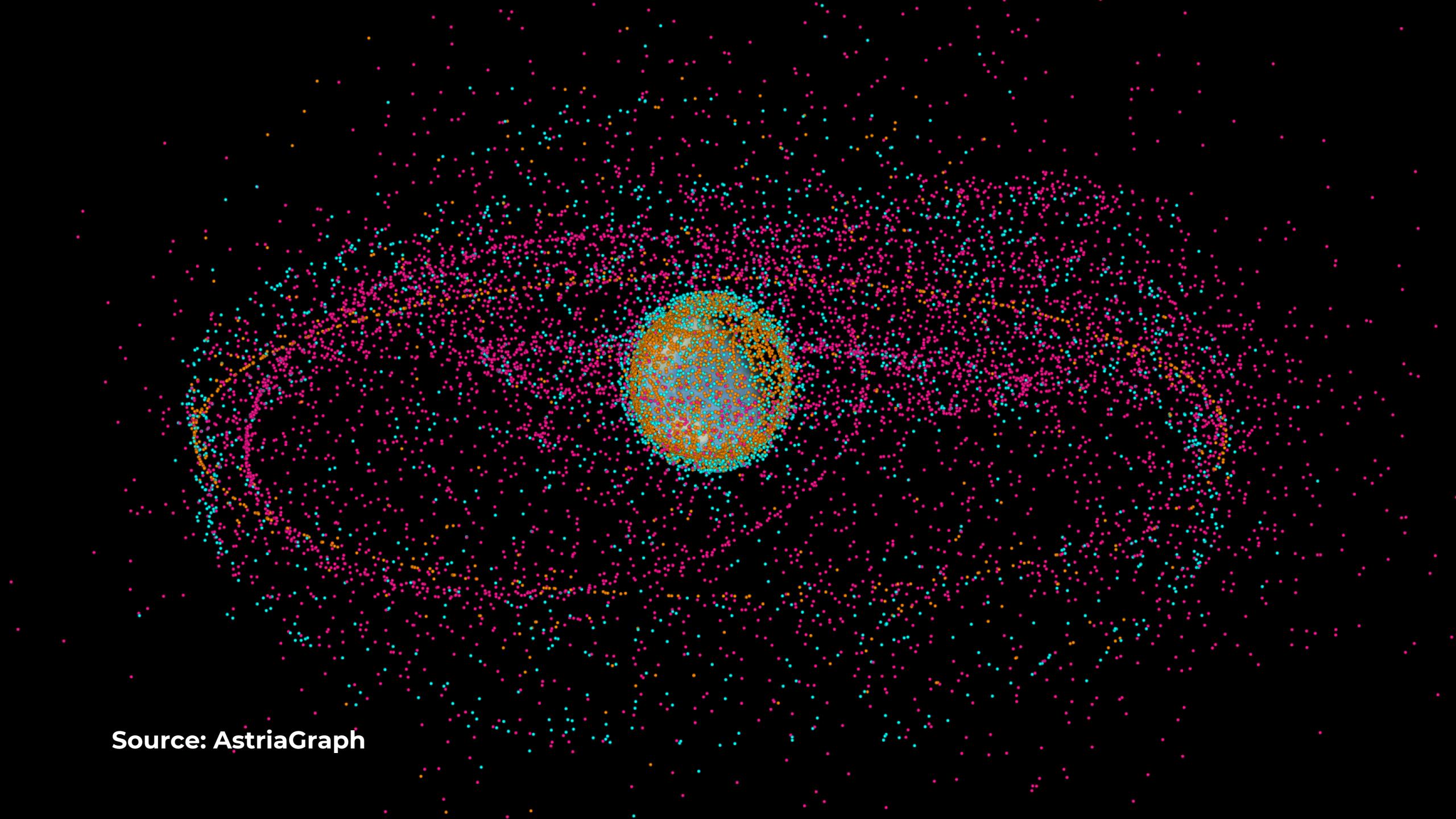


firmus

x


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Source: AstriaGraph

Skills Translation



Edge + Embedded



Image: NVIDIA

AI + ML

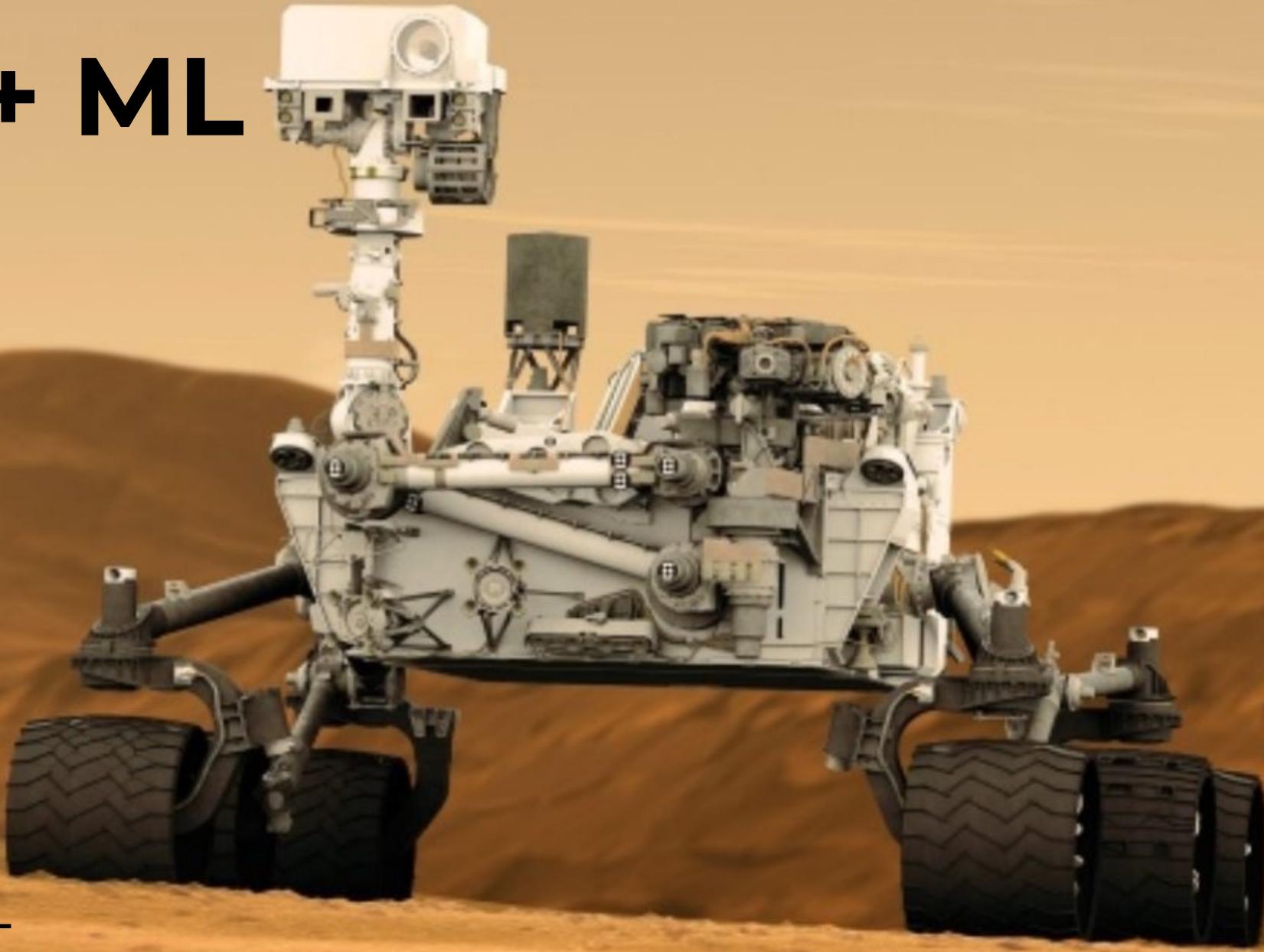


Image: JPL

HPC



Image: Pawsey Centre

Cybersecurity



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HCI + UX

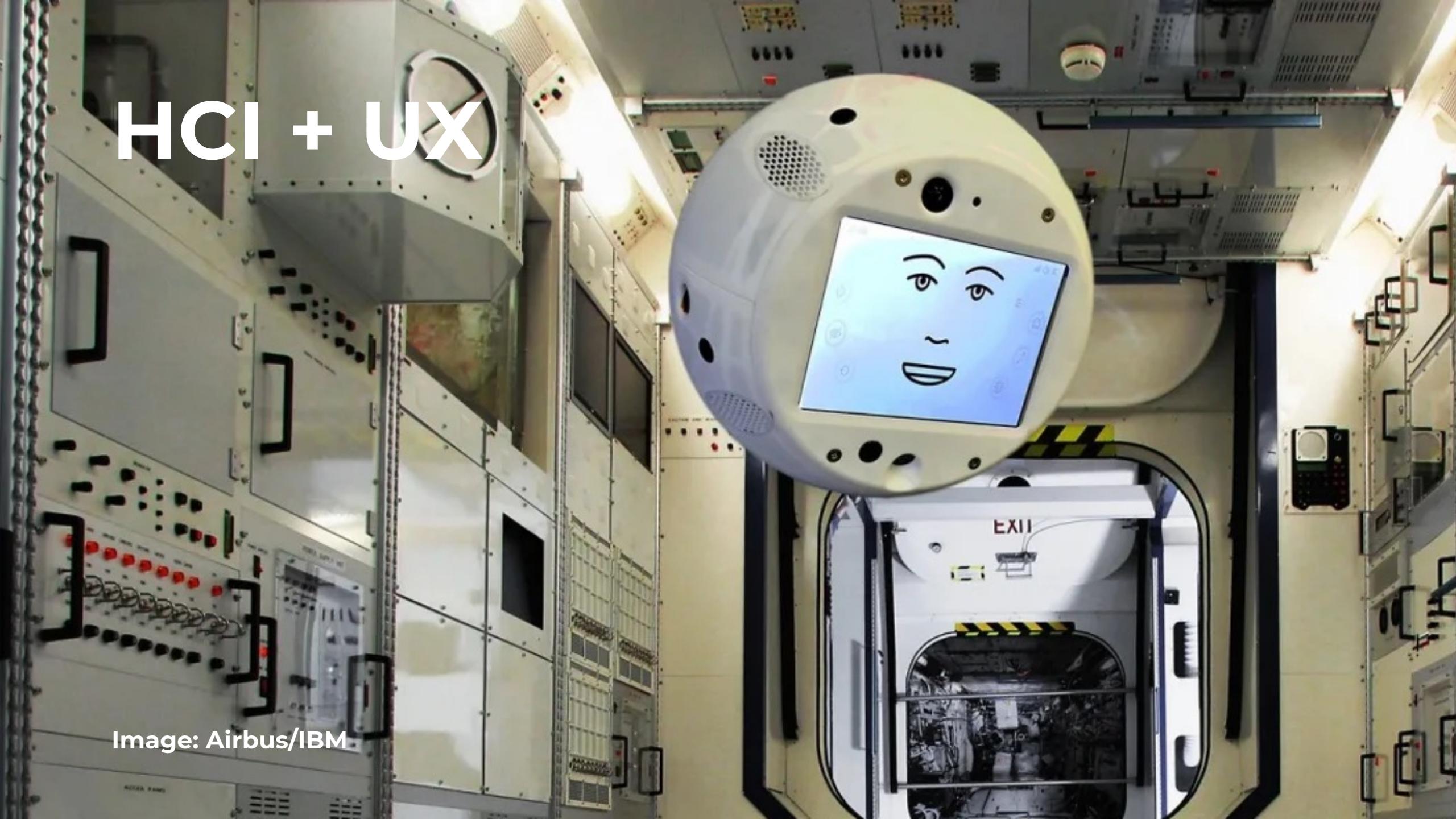


Image: Airbus/IBM

(Ask me how I know)

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That's all folks!

THEMARTIANLIFE.COM

Thanks to all the contributors who let me speak about their projects. Keep up the cool work!