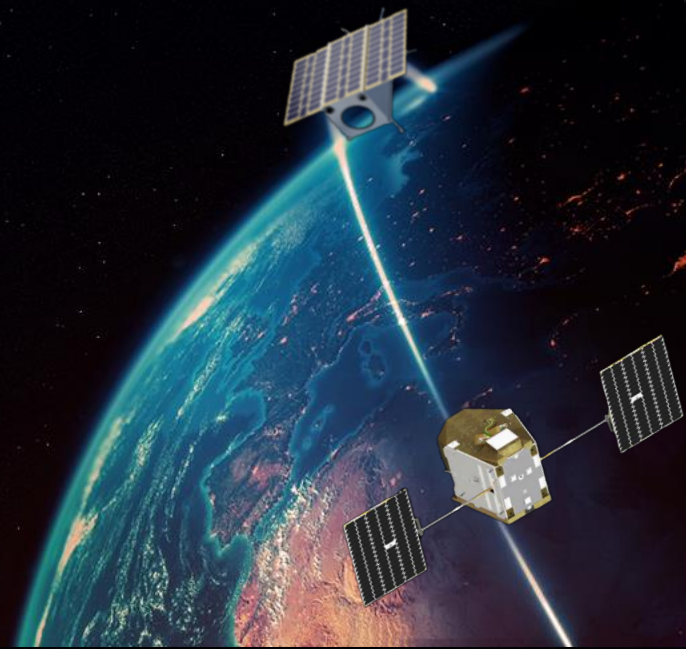
A new model for the future of space-based research data



Parul Janagal
Blue Skies Space Ltd., London, UK

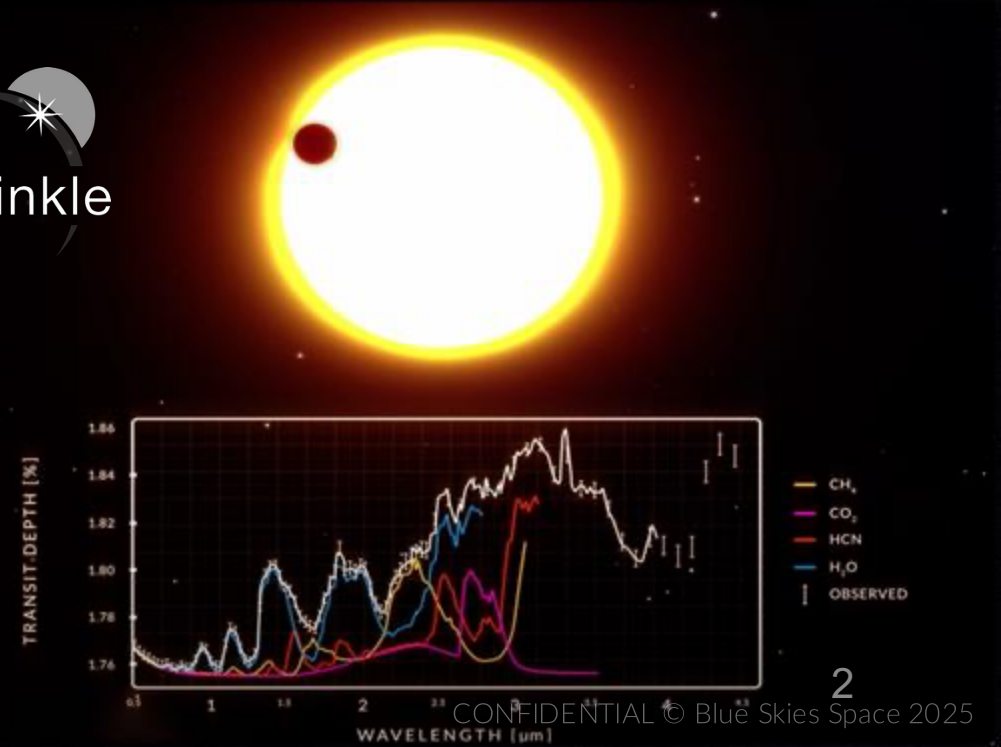
BLUE SKIES SPACE LTD.

Provider of space science data

Fleet of small to medium class satellites

Focus on in-demand science cases

Twinkle



New model for astronomy

- A private company approach to accelerate the delivery of science data
- Blue Skies Space finances the satellites up front -

Grant Funding	Private Investors	Early Participation

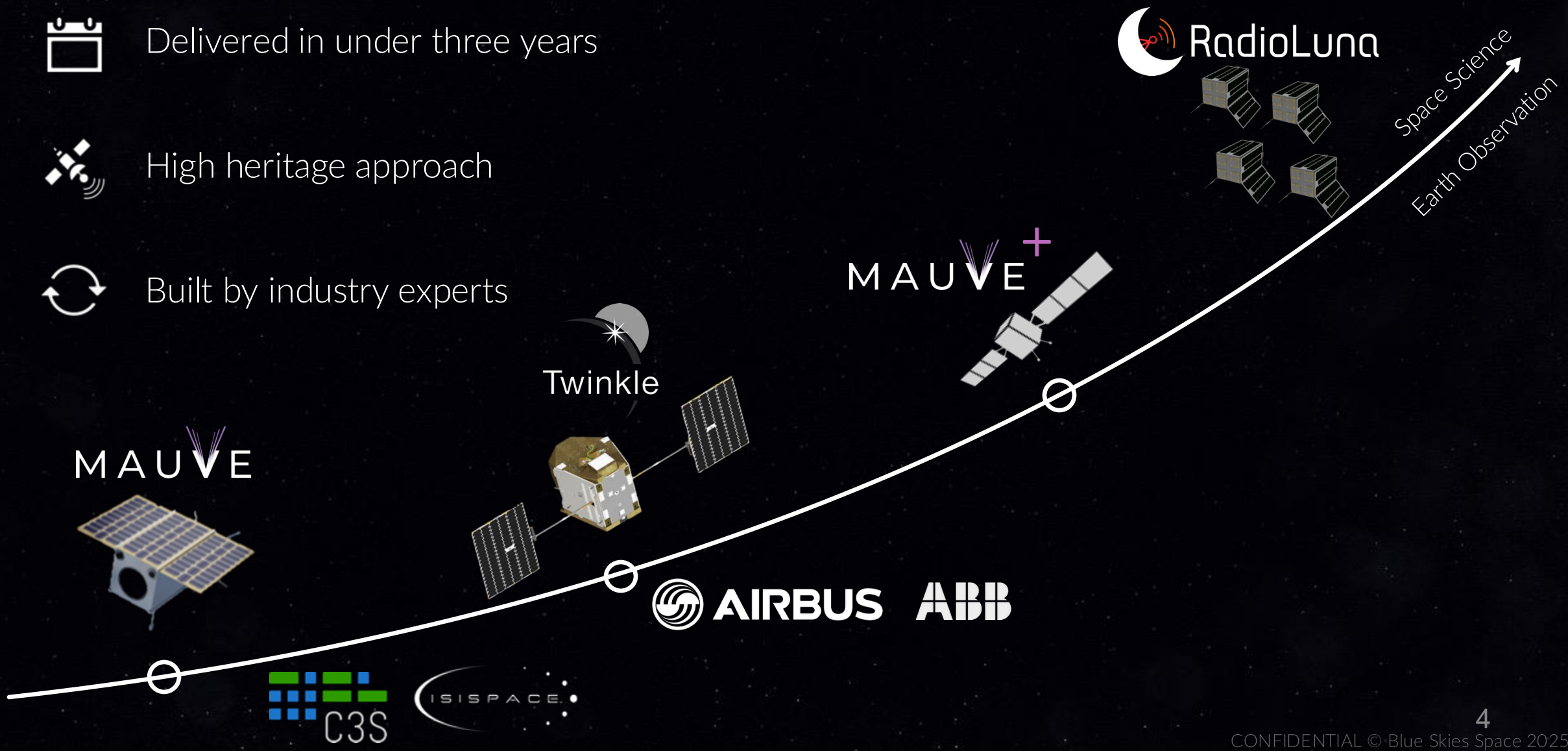
- Recover the costs through annual memberships to our programs
- Re-invest any surplus to the next satellite → A sustainable model

Accelerating satellite delivery

Delivered in under three years

High heritage approach

Built by industry experts



Meet the Team

Prof. Jonathan Tennyson
Chair

Dr. Marcell Tessenyi
CEO

Prof. Giovanna Tinetti
Chief Scientist

Phillip Windred
Chief Operating Officer

Richard Archer
Strategic Partnerships

Benjamin Wilcock
Sr. Science Programme Manager

Ian Stotesbury
Lead Systems Engineer

Rachel Grant
Senior Software Engineer

Dr. Fatemeh Zahra Majidi
Mauve Project Scientist

Lawrence Bradley
Software Engineer

Yoga Barrathwaj
Business Operations

Dr. Parul Janagal
Science Outreach

Dr. Arianna Saba
Performance Simulations

Sarah Harvey
Junior Software Engineer

James McLaren
Software Consultant

Tailong Zhang
Intern

Prof. Giorgio Savini
Engineering Adviser

Dr. Dan Brown
Adviser

Dr. Fabio Favata
Senior Adviser

Dr. Ahmed Al-Refaie
Software Consultant

Members

MAUVE

Twinkle

Boston University

INAF - Osservatorio Astrofisico di Arcetri

Rice University

Western University

Vanderbilt University

National Astronomical Observatory of Japan

Cardiff University

Centro de Astrobiología

Excellence Cluster ORIGINS

French Alternative Energies and Atomic Energy Commission

Ludwig-Maximilians-Universität München

Nanjing University

National Tsing Hua University

Ohio State University

University of Central Lancashire

University of Delaware

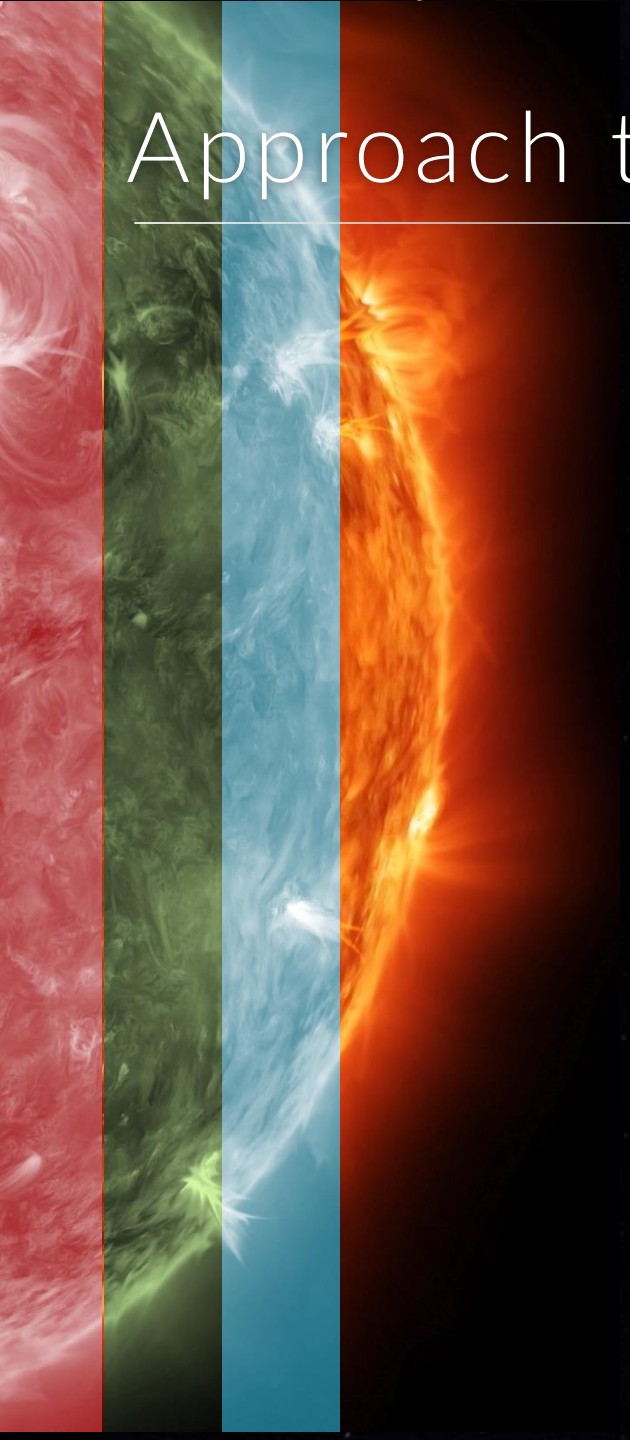
University of Toronto

University of Southern Queensland

Vanderbilt University

18 Institutions | 11 Countries | Across all missions

Approach to science



- All science is defined by consortium members
- Blue Skies Space conducts performance simulations to assist target selection
- Members submit science themes & target lists
- Blue Skies Space provides raw and calibrated data in FITS format

A time-domain opportunity with Mauve

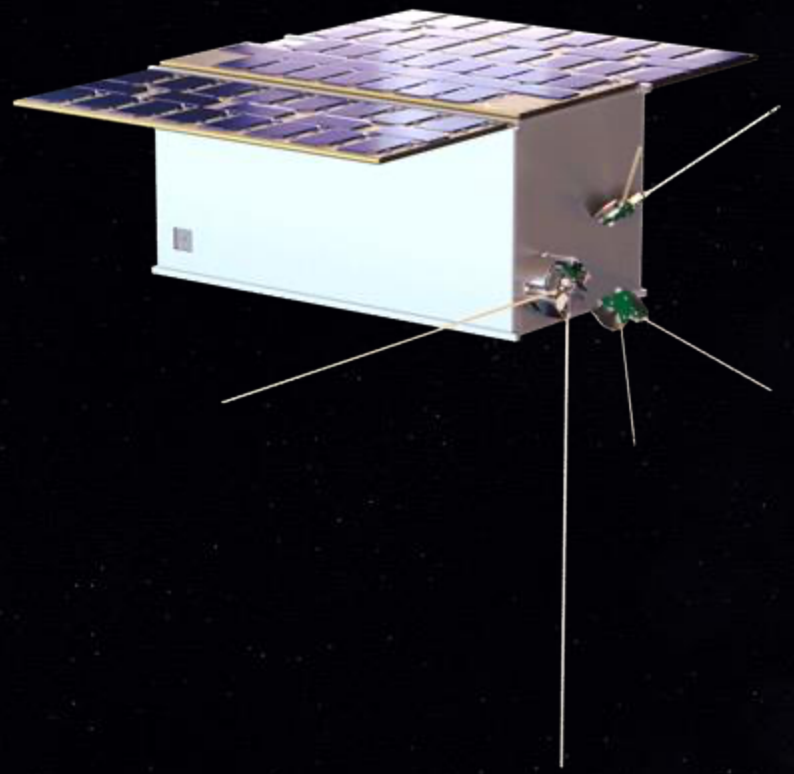
MAUVE

UV-Vis Spectrophotometry

Conceived for monitoring flaring stars

3-year collaborative survey programme

1000's of yearly observation hours



C3S

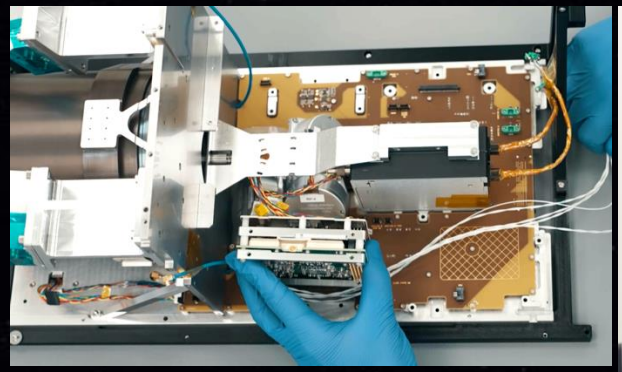
ISISPACE

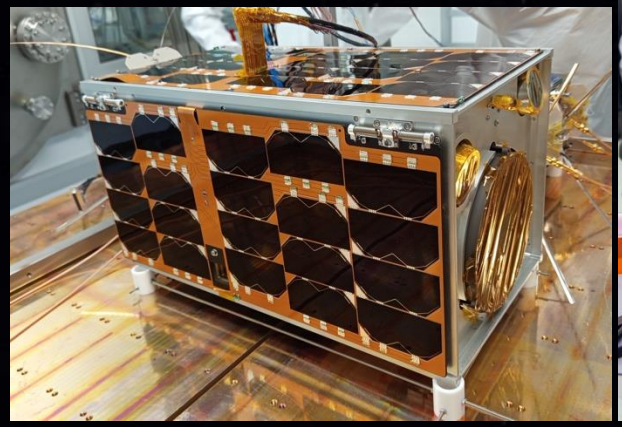
Funded by the European Union

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101082738.

Mauve

MAUVE



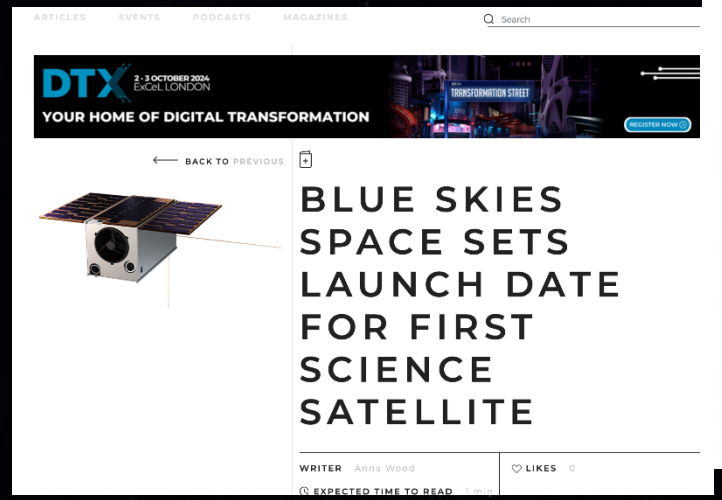


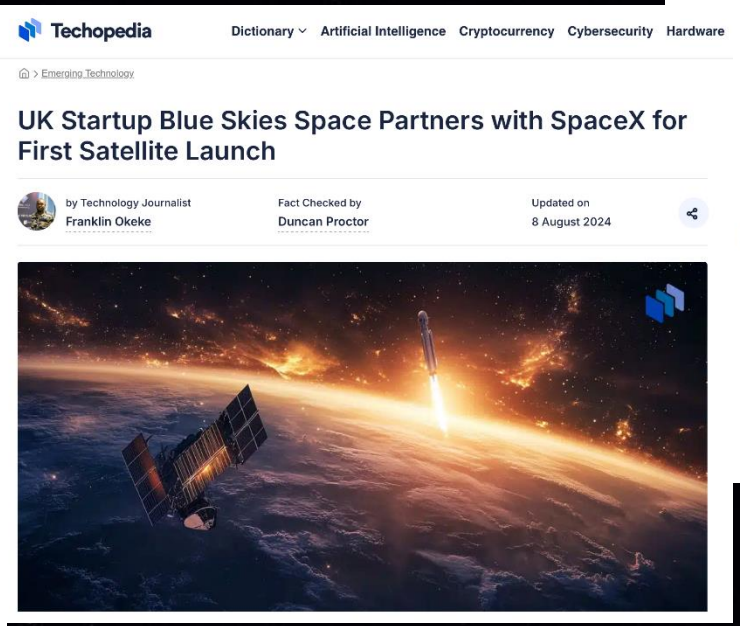
Size	16U (25kg)
Orbit	500km, 10:30LTAN, sun-synchronous
Wavelength range	200 - 700 nm (NUV + Visible)
Spectral resolution	10 nm
Resolution	R = 20 - 65
Spectrometer	2-mirror grating spectrograph with CMOS linear array detector
Telescope	13 cm Cassegrain
Field of View	~ 95” full cone

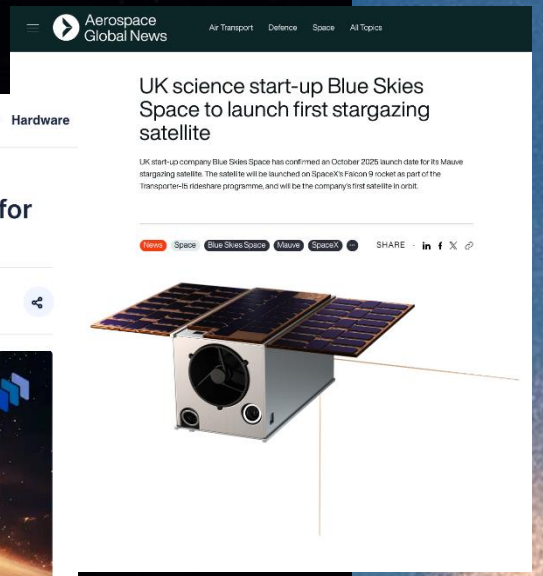
C3S ISISPACE Media Lario AVANTES

Mauve Launch

- Launching in October 2025
- Falcon 9 – Transporter 15
- LEO polar orbit – 500 km







Mauve science

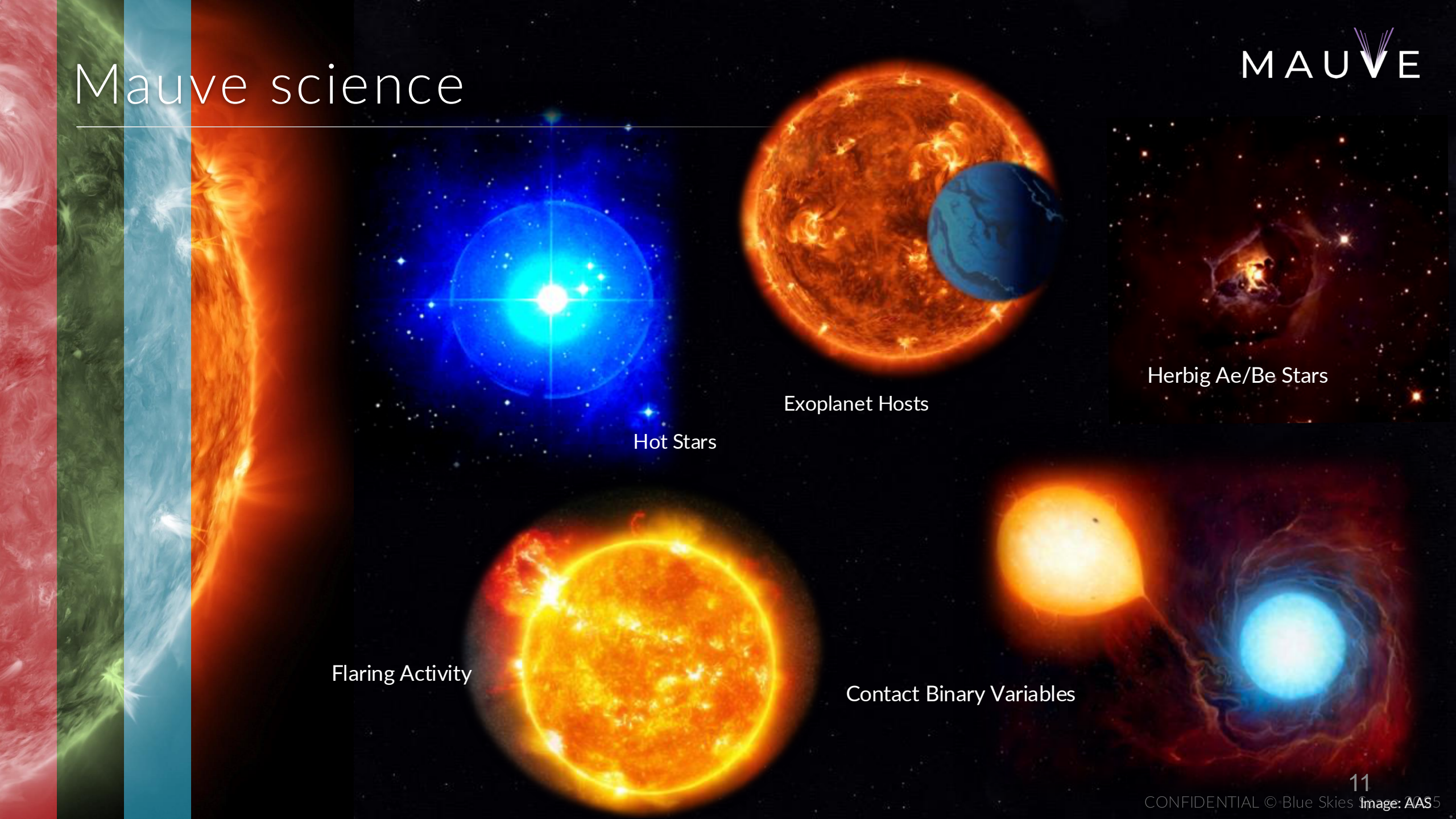


Image: AAS

Mauve Science Themes

Calibration
3 Members

Young Planet Hosts
3 Members

Characterising Future Habitable Worlds Observatory Targets
3 Members

Probing Stellar CMEs in G-type Sun-like Stars: Possible UV Dimming Signatures Following Flares
2 Members

Binaries in exotic stellar populations with MAUVE
3 Members

Emission Mechanism for Super-flares on Young Sun-like Stars
4 Members

Unveiling the Nature of Near-ultraviolet and Optical Continuum Radiation from Stellar Flares on M-dwarfs
4 Members

Accretion Variability of Herbig Ae/Be Stars
3 Members

The Mauve Classical Be Star Survey
2 Members

Exoplanet characterisation with Twinkle

Space-based IR spectrophotometry

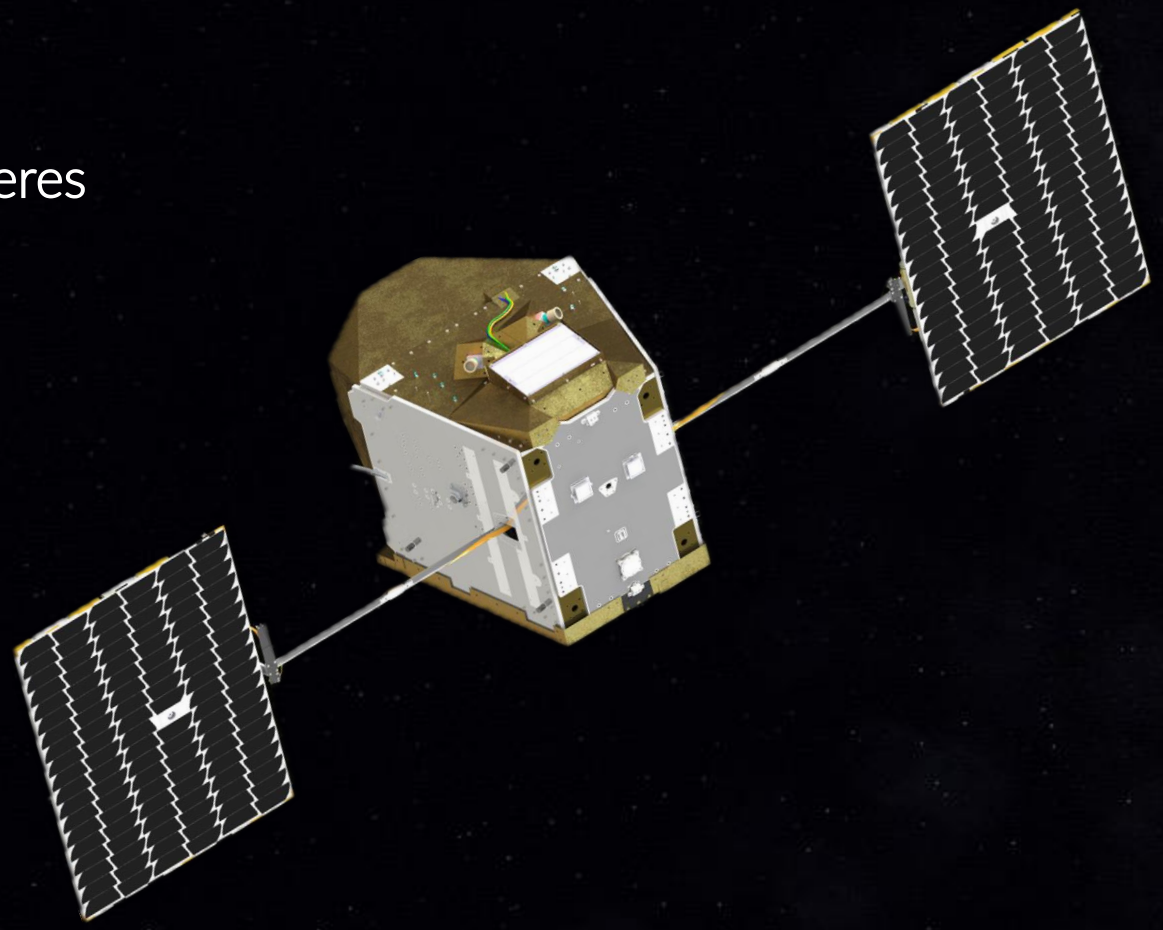
Spectroscopic characterisation of exoplanet atmospheres and Solar System bodies

1000's of yearly observation hours

A global collaboration

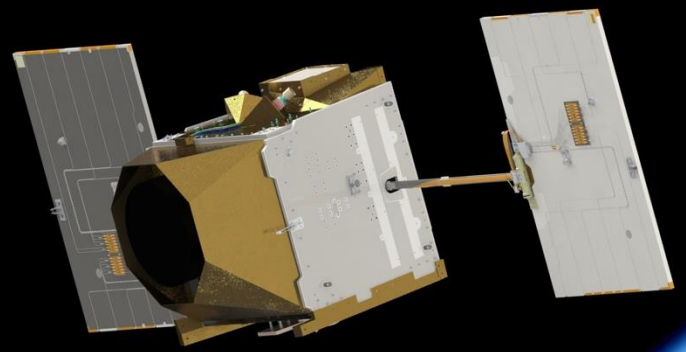
ABB

AIRBUS



Twinkle

Primary Mirror	0.45 m
Spectral Range	0.5 – 4.5 μm
Resolution	Ch 0 (0.5 – 2.5 μm): max R=70 Ch 1 (2.4 – 4.5 μm): max R=50
Platform	Airbus Arrow
Payload	Teledyne & ABB
Orbit Altitude	1200 km
Pointing Solutions	Star Tracker + Gyro
Thermal Solutions	Cryocooler
Operational Lifetime	7 years



Twinkle Science

Stellar & Sub-Stellar

Sub-Neptunes

Super-Earths

Ultra Hot Jupiters

Cool Jupiters

Solar system planets and moons

Protoplanetary Disks

Comets

Asteroids

Image: AAS

Twinkle Science Themes

Suggested New Theme: Giant Exoplanets Around M-Dwarf Stars
2 Members

Suggested New Theme: Ground Support and Very Young Exoplanets
2 Members

Stellar characterisation
10 Members

Phase-curves: Atmospheric circulation and 3D distribution of P-T profiles and chemical composition.
14 Members

Brown dwarf characterisation
5 Members

Spectroscopic survey of flares on nearby M-dwarfs
7 Members

Measuring transit timing variations and building new ephemeris
9 Members

Spectroscopy of externally irradiated protoplanetary discs
3 Members

Observation of PAHs in the atmospheres of protoplanetary discs and exoplanets
6 Members

Legacy survey of minor species
9 Members

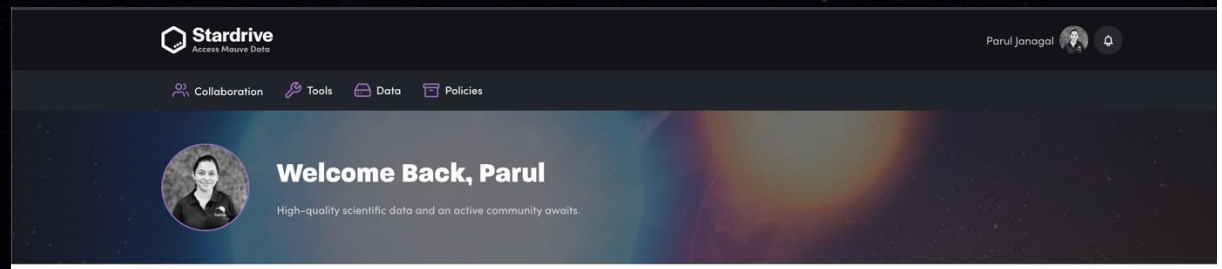
Biosignature detection in super-Earths and sub-Neptunes
13 Members

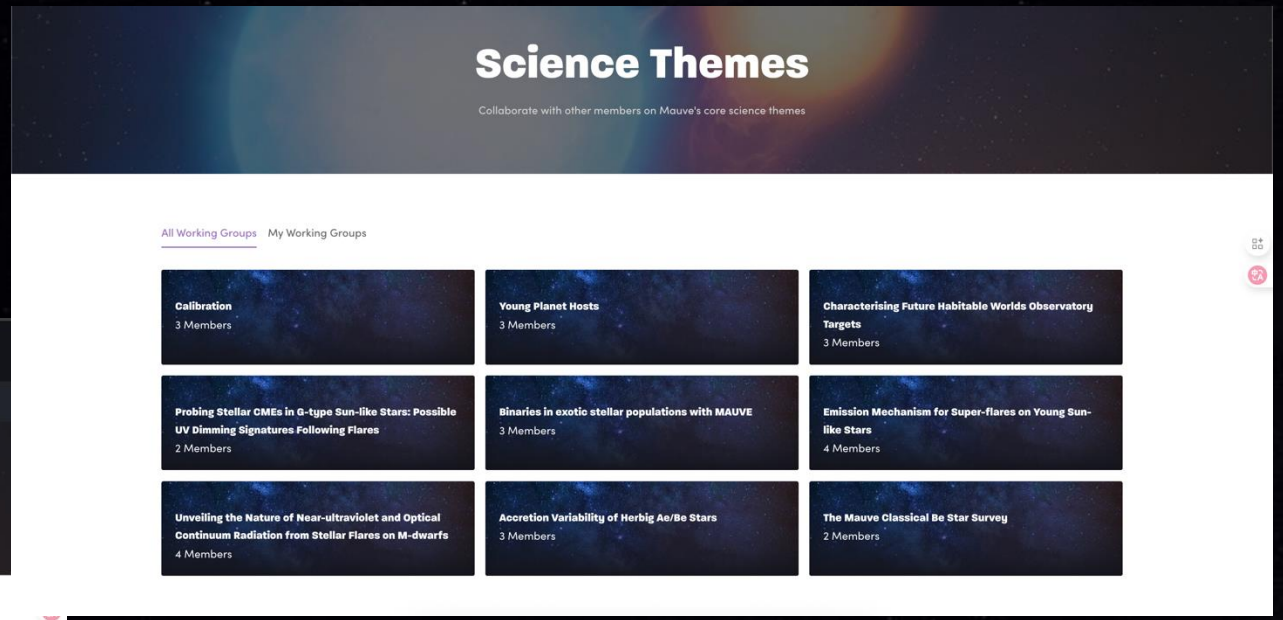
Atmospheric variability of exoplanets over stellar cycles
9 Members

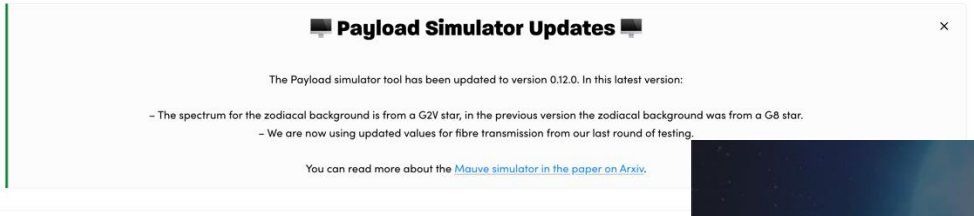
Characterising a population of cool Jupiter atmospheres
11 Members

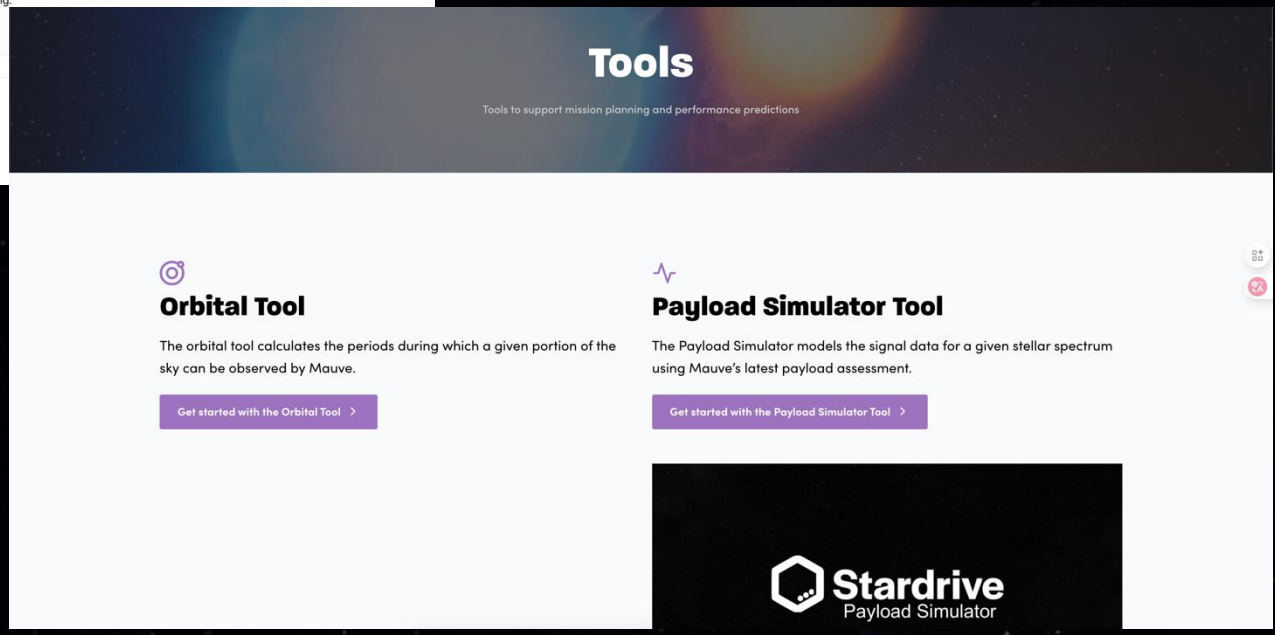
Characterising a population of sub-Saturn atmospheres
12 Members

Stardrive









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