



Welcome to the 16th Appleton Space Conference

Professor Chris Mutlow

Director RAL Space

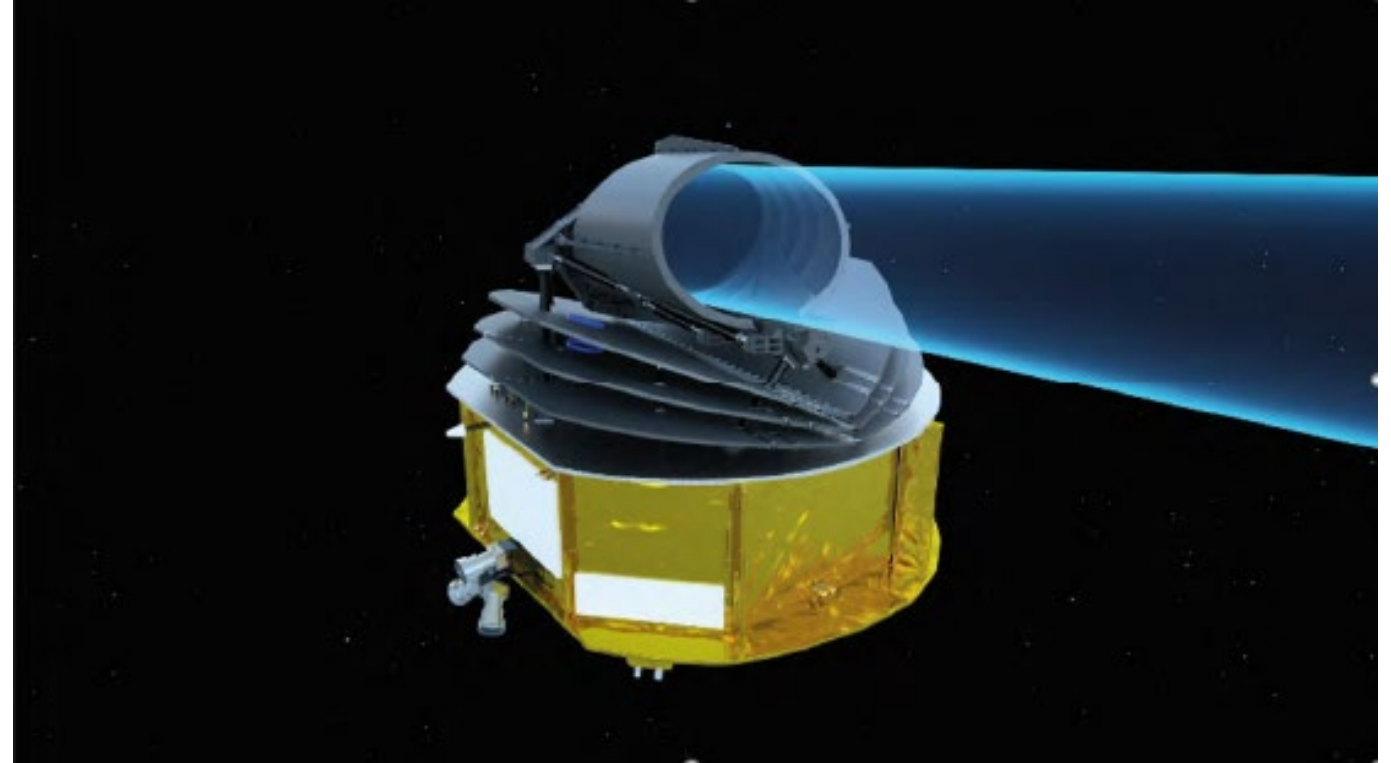


National Satellite Test Facility (NSTF)

- ✦ Currently, under construction at Harwell funded by:
 - ✦ Funding from Industrial Strategy Challenge Fund (ISCF)
 - ✦ National Productivity Investment Fund (NPIF)
- ✦ Comprehensive, co-located, large-scale space test facilities for the UK
- ✦ Enabling industry to be more competitive by providing facilities, skilled staff
- ✦ Foundation for industry to bid for national and international satellite/infrastructure contracts
- ✦ Good progress on site despite COVID-19
 - ✦ Exterior is weather-tight
 - ✦ Internal walls going up and plant and equipment being installed
- ✦ Build completion July 2021
- ✦ Operational July 2022 (after year of commissioning and characterisation)



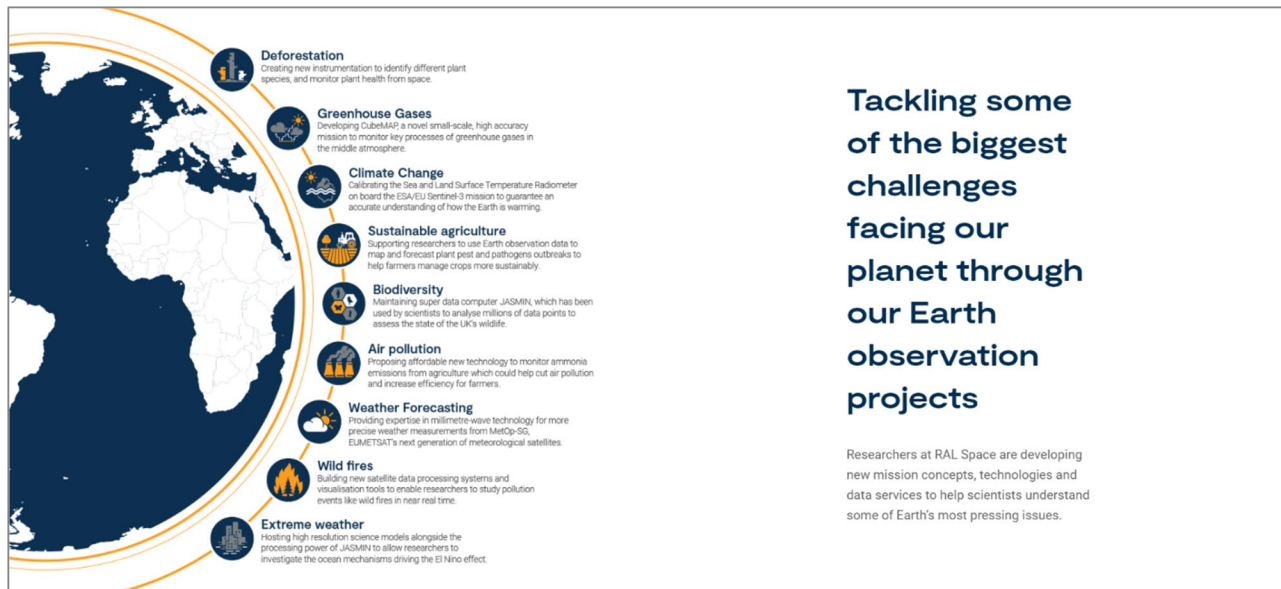
- ✦ Ariel will study the nature, formation and evolution of exoplanets
 - ✦ Survey 1000 planets outside our solar system during its lifetime
- ✦ Ariel Mission Consortium to build the payload led by UCL and RAL Space
- ✦ Mission now formally adopted by ESA following Science Programme Committee – 12th November
- ✦ Launch in 2029





RAL Space Highlights 2020

Available in the “virtual” reception area
and the RAL Space website;
ralspace.stfc.ac.uk / publications



Deforestation
Developing new instrumentation to identify different plant species, and monitor plant health from space.

Greenhouse Gases
Developing CubeMAP, a novel small-scale, high accuracy mission to monitor key processes of greenhouse gases in the middle atmosphere.

Climate Change
Calibrating the Sea and Land Surface Temperature Radiometer on board the ESA/UK Sentinel-3 mission to guarantee an accurate understanding of how the Earth is warming.

Sustainable agriculture
Supporting researchers to use Earth observation data to map and forecast plant pest and pathogens outbreaks to help farmers manage crops more sustainably.

Biodiversity
Maintaining super data computer JASMIN, which has been used by scientists to analyse millions of data points to assess the state of the UK's wildlife.

Air pollution
Proposing affordable new technology to monitor ammonia emissions from agriculture which could help cut air pollution and increase efficiency for farmers.

Weather Forecasting
Providing expertise in millimetre-wave technology for more precise weather measurements from MetOp-SG, EUMETSAT's next generation of meteorological satellites.

Wild fires
Building new satellite data processing systems and visualisation tools to enable researchers to study pollution events like wild fires in near real time.

Extreme weather
Hosting high resolution science models alongside the processing power of JASMIN to allow researchers to investigate the ocean mechanisms driving the El Niño effect.

Tackling some of the biggest challenges facing our planet through our Earth observation projects

Researchers at RAL Space are developing new mission concepts, technologies and data services to help scientists understand some of Earth's most pressing issues.

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