

SPACE CAPABILITIES STATEMENT

EXPERTISE: The space thematic group contains a diverse range of academics and researchers with extensive experience of in space research and development to further scientific knowledge, technology and applications in space fields. The interests of the group spans multidisciplinary research across physics, engineering, pharmacy, biosciences, geographical sciences and more.

- **Midlands Space Cluster** – Developing a space cluster in the Midlands.
- **ARC Plants For Space** – Reimagining plant design and bioresource production for space.
- **VITA** – Visualising In-Space TxTI Astropharmaceuticals.

Specific areas of expertise lie within and across:

Earth observation and geosciences	Space physics and astronomy	Space engineering and material sciences	Space biosciences, pharmacy and medicine
Global Navigation Satellite Systems (GNSS), positioning and navigation-based services	Fluid and granular dynamics in weightlessness	Manufacturing, assembly and repair operations in space	Spaceflight effects on human health
Satellite technology including EO, GNSS, CubeSats and nanosats	Asteroids and space debris	Testing of materials for space applications	Astropharmacy, medicine and healthcare in space
Environmental and engineering applications of EO data	Black holes, galaxy cluster structures and optical astronomy	Space missions and payload design	Space agriculture and food science
Geoinformatics and data modelling	Magnetic fields and diamagnetic levitation	Spacecraft engineering and avionics	Life support in space

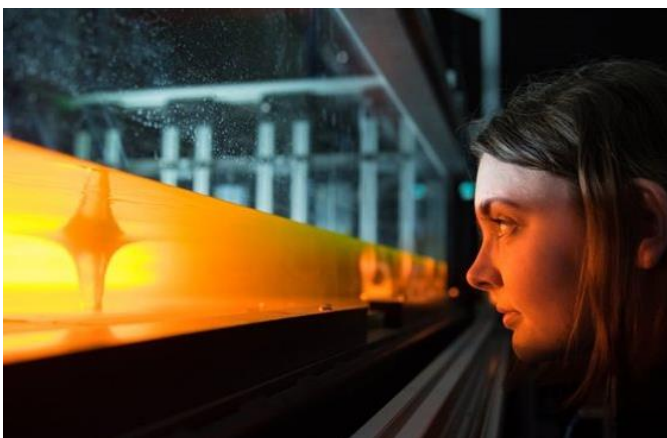
We also have expertise in space economy, space law and rights, and space education and outreach.

PEOPLE: Over 100 academics and researchers work within and across this diverse range of research themes to deliver novel, cross-disciplinary, integrated research projects to both industry and research funders.

RESEARCH FACILITIES: Across our research entities, we can provide access to:

CubeSat and Small Satellite Laboratory	Superconducting magnet	Software and access to major observatories and telescopes - Chandra, XRISM, ALMA, JWST, VLT, XMM-Newton, VLA, NASA EMTG	Radio Ground Station
Manufacturing and digital assembly - Omnifactory®	Cloud Computing	Satellite ADCS HWIL facility (Attitude Determination Control System HIL)	GNSS signal simulator

TRACK RECORD: Our specialist aerospace teams at UoN work in partnership with a range of major space companies and SMEs. We also have an extensive track record in securing key UK and EU funding to further space research and development for our industry partners.



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