# Stuart A. **Smith**

MSc Space Exploration Systems · Transitioning from Payroll to Physics

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## Professional Summary

A highly motivated and disciplined professional, I am currently pursuing a master's degree at the University of Leicester, due to graduate in September 2025. My postgraduate studies have allowed me to develop strong analytical and research skills, with a focus on Light Curve Analysis and the Interstellar Medium. Building on my experience in the Armed Forces, I thrive in high-pressure environments, demonstrating exceptional problem-solving abilities, adaptability, and attention to detail. I am a reliable and punctual individual with excellent time management and teamwork skills, eager to apply my academic expertise and research experience in a doctoral setting.

## Education

### University of Leicester

*Leicester, United Kingdom*

MSc Space Exploration Systems

*Sep. 2024 - PRESENT*

- **Active Project:** Interstellar Medium Mission Concept focussed on investigating the plasma processes and boundary dynamics of the heliosphere, and its interaction with the Local Interstellar Medium. This project is split between the University of Leicester, and the University of Dayton, Ohio, in conjunction with the Jet Propulsion Laboratory - California Institute of Technology. I oversee the mission's instrumentation, holding responsibility for designing and selecting the appropriate payload packages for the spacecraft.
- Industry-led MSc covering robotic and human space exploration. Developing expertise in space systems engineering, astrodynamics, instrumentation, mission design, and power systems (including nuclear). Gaining hands-on experience in end-to-end space system development and working across academic and industrial sectors. Introduction to key analysis tools such as Geant4 (GRAS) for radiation modelling, and programming languages such as Python and MATLAB. Gaining interdisciplinary skills that bridge systems engineering and planetary science, and preparing for roles in the global space industry.

### Birkbeck, University of London

*London, United Kingdom*

BSc Planetary Science with Astronomy

*Sep. 2020 - Sep.2024*

- Degree Awarded: **Second Class, Upper Division** (2:1)
- **Dissertation**: *"Chasing Shadows: Identifying Undiscovered Exoplanets in Kepler's Historical Data"*
- A reanalysis of Kepler/K2 Light Curves, in a research area with little establishment support. My research was reliant on my own ability to set up such a project from scratch. This involved pitching a unique research topic to the School, networking to source the most relevant supervisor, learning how to process large data sets, selecting a relevant analysis tool, and processing results.
- Despite the conclusion of the program, I am now trying to verify the presence of a binary star system that I detected in this research in conjunction with the Mikulski Archive for Space Telescopes (MAST). This has exposed me to new techniques such as analysing Target Pixel Files (TPF's) and coding through Python to identify and model these TPF's.

## Skills

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| **Technical Skills** | Light Curve Analysis, Geant4 (GRAS) Modelling, Astrodynamics, Data Analysis, Operation of Spacecraft Systems, CAD Design, Mission Planning, Individual Research, Supervised Research, Clean Room Trained |
| **Programming** | Python, MATLAB, LaTeX |
| **Soft Skills** | Team Collaboration, Presenting, Exemplary Communication Skills, Time Management, Data Entry |
| **Leadership** | Cadet Forces Instructor |
| **Languages** | English (Fluent), German (Basic), Arabic (Basic) |

## Academic References

**Dr. Andrew Rushby**
BSc Project Supervisor
Birkbeck, University of London
a.rushby@bbk.ac.uk

**Dr. Tim Trent**
MSc Personal Tutor
University of Leicester
t.trent@leicester.ac.uk

## Awards & Attendance

### Grants

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|---|---|---|
| 2025 | **Turing Scheme**, Funding for international placement to work on an Interstellar Medium Mission Concept. Placement taking place at University of Dayton, Ohio, U.S.A. | *Leicester, U.K.* |

### Conferences

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|---|---|---|
| 2024 | **Sagan Summer Workshop**, Advances in Direct Imaging: From Young Jupiters to Habitable Earths. NASA Exoplanet Science Institute | *Virtual* |
| 2025 | **Sagan Summer Workshop**, Exoplanet Demographics. NASA Exoplanet Science Institute | *Virtual* |

## Work Experience

**University of Leicester** — *Leicester, United Kingdom*
Payroll and Pensions Administrator — *Nov. 2022 - Sep. 2024*

**Buckinghamshire New University** — *High Wycombe, United Kingdom*
Payroll and Pensions Administrator — *Jul. 2022 - Nov. 2022*

**Civil Service** — *High Wycombe, United Kingdom*
Project Support Officer — *Feb. 2022 - Jul. 2022*

**Royal Air Force** — *London, United Kingdom*
Clerk (Personnel Support) — *Feb. 2018 - Feb. 2022*

**Tesco** — *Locks Heath, United Kingdom*
Customer Assistant — *Apr. 2016 - Jan. 2018*

**Primark** — *Southampton, United Kingdom*
Retail Operative — *May. 2015 - Apr. 2016*

*Full details of each role are available on request.*

## Additional Experience

**Royal Air Force Air Cadets** — *Leicester, United Kingdom*
Civilian Instructor — *Nov. 2023 - PRESENT*

- Teaching and overseeing the deliverance of the Air Cadets Cyber and Space programmes, giving opportunity for 12 - 18 year olds to get unique access to STEM topics.

## Research and Personal Interests

A keen trail-runner, I recently competed in the Arc of Attrition Ultramarathon, and am training to race the London Marathon in April 2025. I act as a 'Game Lead' for a large MMO within the RAF eSports association, being heavily involved in the day-to-day management of a group of 80 fellow gamers, a position I greatly enjoy.

My research interests span a wide range of astrophysical and observational topics, with a particular focus on binary star system detection, exoplanet detection and categorization, and the modelling of atmospheric conditions in both terrestrial and exoplanetary environments. I am deeply engaged in studying stellar system structures and mapping, as well as utilising advanced observational techniques with instruments such as JWST, PLATO, and the Roman Telescope. Additionally, I have a strong interest in instrumentation design and the innovative use of CubeSats for exoplanet detection, contributing to the development of next-generation space-based observational capabilities.