

## **Applications of SUPER-SHARP CubeSat Space Telescopes**

**Code:** 19/36

**Company:** Institute of Astronomy, University of Cambridge

**Location:** Cambridge, United Kingdom

### **Company Description:**

The Institute of Astronomy (IoA) is part of the Faculty of Physics and Chemistry within the School of the Physical Sciences of The University of Cambridge. The IoA comprises about 88 postdoctoral staff, 63 graduate students and 26 support staff engaged in teaching and research in the fields of theoretical and observational Astronomy.

### **Project Description:**

SUPER-SHARP CubeSat Space Telescopes are metre scale sparse aperture unfolding space telescopes packaged in CubeSats as small as 10x10x30cm. The goal of this placement is to explore and prioritise potential game changing applications in astronomy, planetary science and commerce for this exciting new technology and approaches for making them rapidly available to end users.

The spacecraft are designed to have a modular sensor package which must fit within a 5x5x9cm volume, the first such module supporting the taking of visible light images and videos. However, it is envisaged that a variety of other sensor modules could be developed or repurposed, e.g. hyperspectral cameras, infra-red imagers, and spectrometers. Many such sensors have been developed at CubeSat scale and could potentially be used with refactoring, others will need to be developed from scratch.

The successful applicant for this project will produce a survey study of the range of scientific, commercial and other applications that SUPER-SHARP space telescopes could most benefit, and a survey of relevant instruments and sensors available or under development at CubeSat scale. Developing quantitative metrics for both surveys will be a focus, and these will be used to identify three candidate applications and instruments/sensors that should be the priority for SUPER-SHARP modular sensor packages beyond visible light imaging. If time permits, initial outline engineering feasibility studies or sketches of the candidates will be prepared. The outputs will be expected to be published as a poster or paper and will be used to prioritise future research directions and commercial opportunities.

**Applicant Specification:**

The ideal applicant will have/be studying for aerospace engineering, mechanical engineering, physics and/or business degrees at a postgraduate level.

**Minimum Requirements:**

An existing detailed understanding of the engineering constraints of CubeSats and CubeSat instrumentation is essential. The applicant must have permission to study and work in the United Kingdom that is not dependent on the University of Cambridge sponsoring their visa.

**Preferred Additional Requirements:**

Hands on experience working on one or more CubeSat projects that have launched to orbit and general knowledge about the global CubeSat ecosystem. Applicants with both technical and business degrees or substantial business experience are preferred. Project management and budgeting experience helpful.

**Further details:**

8 weeks minimum fixed term contract to be agreed with successful candidate but nominally with a start date around 17<sup>th</sup> June 2019 to attend the SPIN Induction day at the Satellite Applications Catapult, and completion before 20<sup>th</sup> September for the Showcase the following week. The IoA is a friendly collaborative environment that supports flexible working to help ensure our opportunities are open to all. Salary is £1,500 per calendar month gross.

**Closing Date for Applications: 5pm on Tuesday 30 April 2019**

Applications should be made through the online form attaching a CV, before the closing date. Please note that elements of the form left incomplete will be deemed to render the application ineligible. They will be checked for eligibility and forwarded to the employer.