



THE PROBLEM

HEO cameras, optimised for Non-Earth Imaging (NEI), face limitations in broader applications primarily due to the lack of UV imaging capability and the point accuracy and stability of present imaging and optics systems.

These constraints restrict the potential scope of current and developing NEI opportunities. To address these challenges, an enhanced camera is required for satellite-to-satellite inspection services and astronomy.



THE SOLUTION

This project aims to apply expertise in advanced scientific imaging to enhance the camera pointing precision through active optics to achieve image stabilisation similar to a GoPro. It seeks to optimise the camera for exoplanet observation and Space Domain Awareness (SDA).

Additionally, the project aims to develop a new UV sensor compatible with the High Earth Orbit (HEO) camera and conduct in-orbit testing for both exoplanet observation and SDA imaging purposes.



RESEARCH CAPABILITY

UniSQ - Centre for Astrophysics

Development of precise optical and spectrographic observational capabilities and operation of a ground network of astronomic observatories.

The Space Engineering Laboratory facilitates the development and application of on-board precision optics and UV systems to achieve arcsecond stabilised pointing accuracy at the desired target and accurate pixel level brightness measurement and analysis within the UV spectrum.



PROJECT PARTNERS



CONTACT DETAILS - PROJECT LEAD

Project Lead: Professor Brad Carter
Email: brad.carter@unisq.edu.au