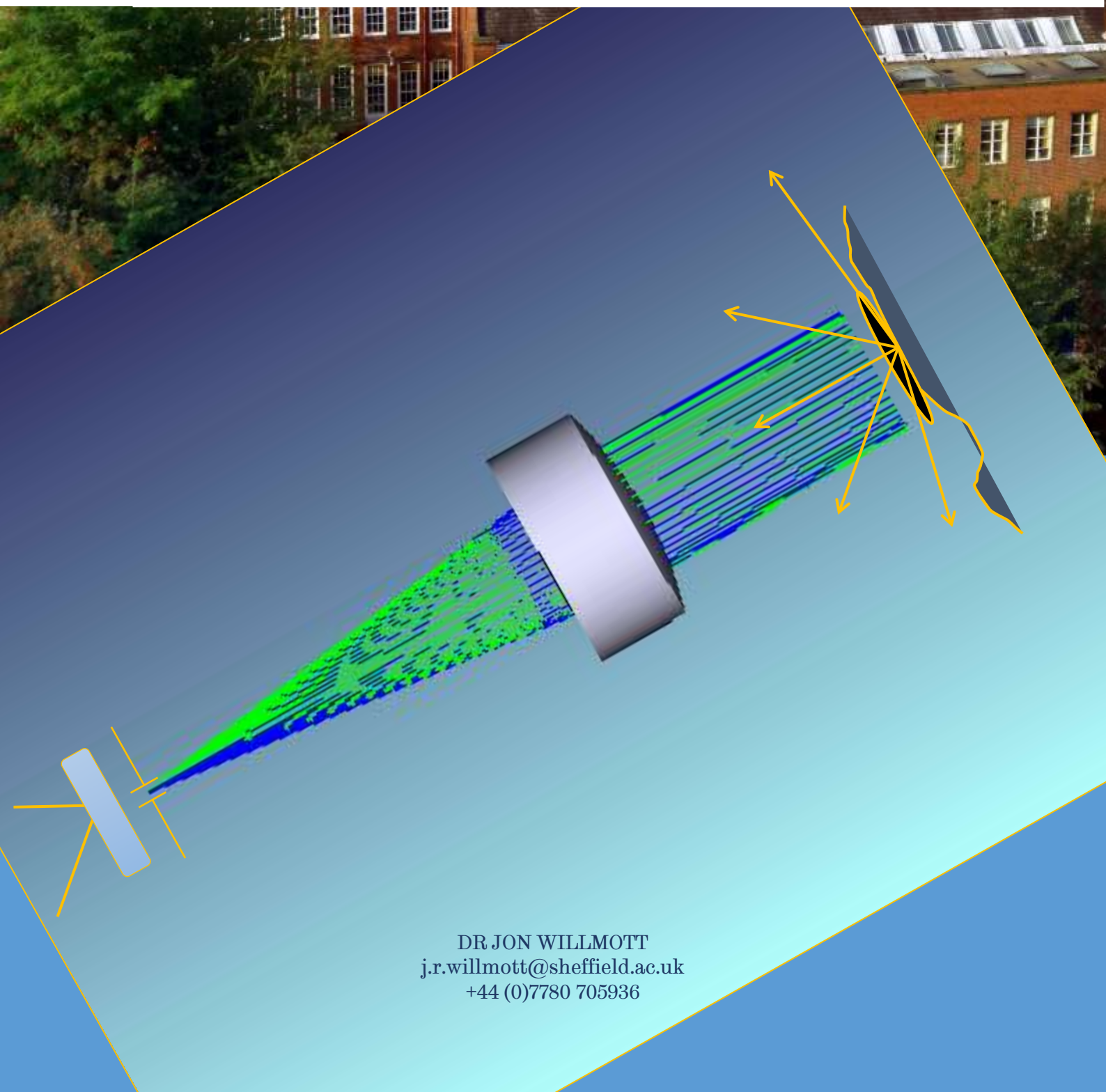
The University Of Sheffield.

Sensor Systems Research Group

Department of Electronic and Electrical Engineering



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Optical Design Capabilities

The Sensor Systems Group has a total of 20 years' experience in lens design amongst its members. We have a very diverse portfolio of optical systems projects: from microscopes to telescopes and from ultraviolet to long wave infrared wavelengths.

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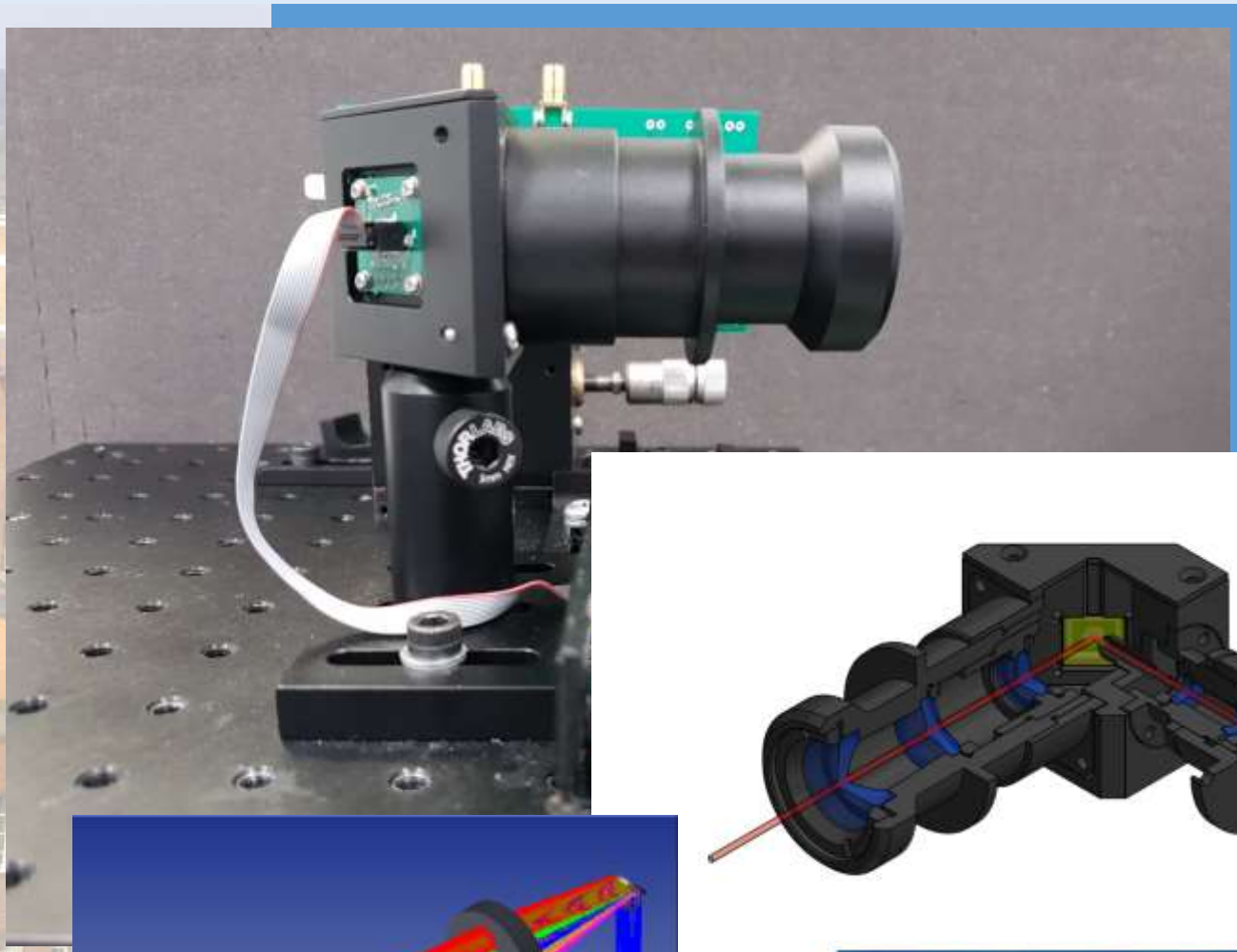
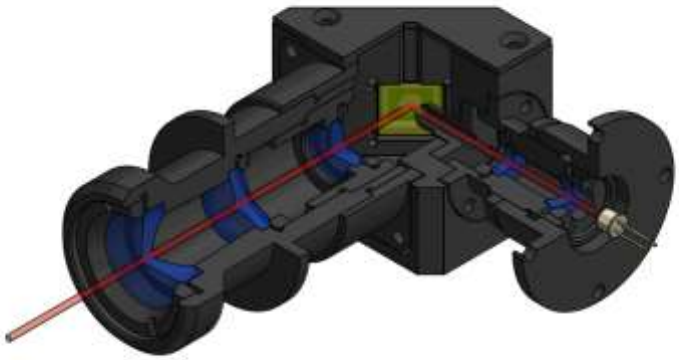
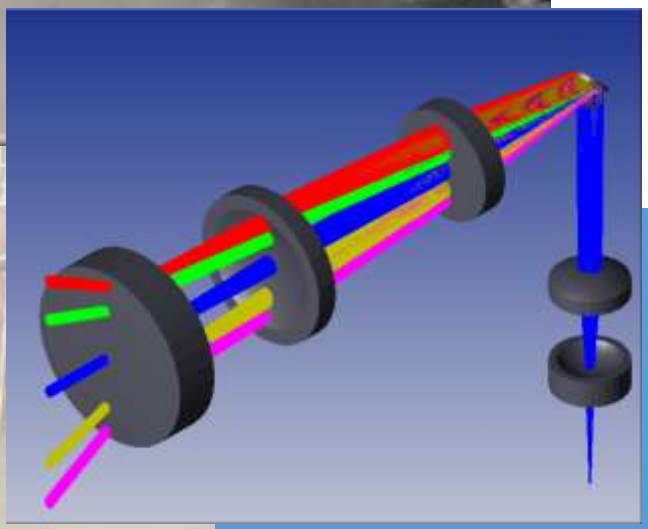
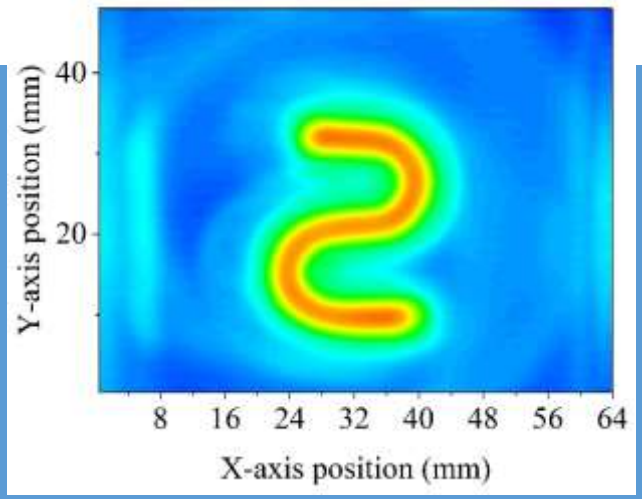
EXAMPLE: Single Pixel Camera F-Theta Lens

The design challenge was set for us to magnify the ±5° scan angle of an electronically steerable mirror to achieve a ±30° field of view: with high resolution, for a single pixel camera. After assessing various designs, we arrived upon a novel form of f-theta lens and integrated electronics.









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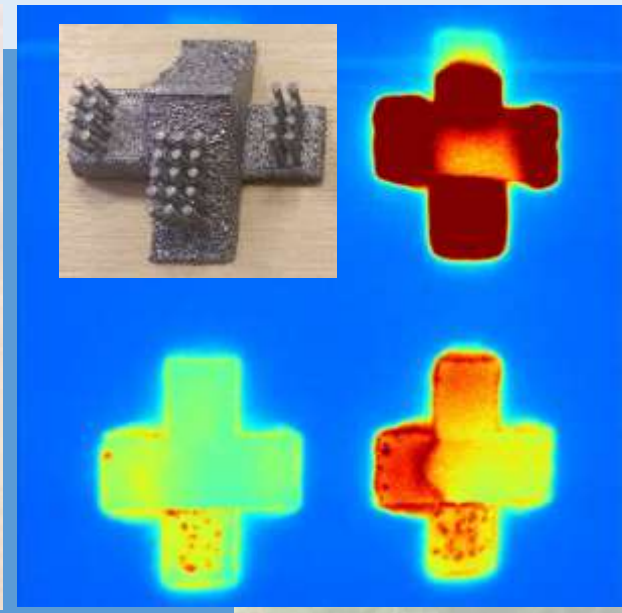
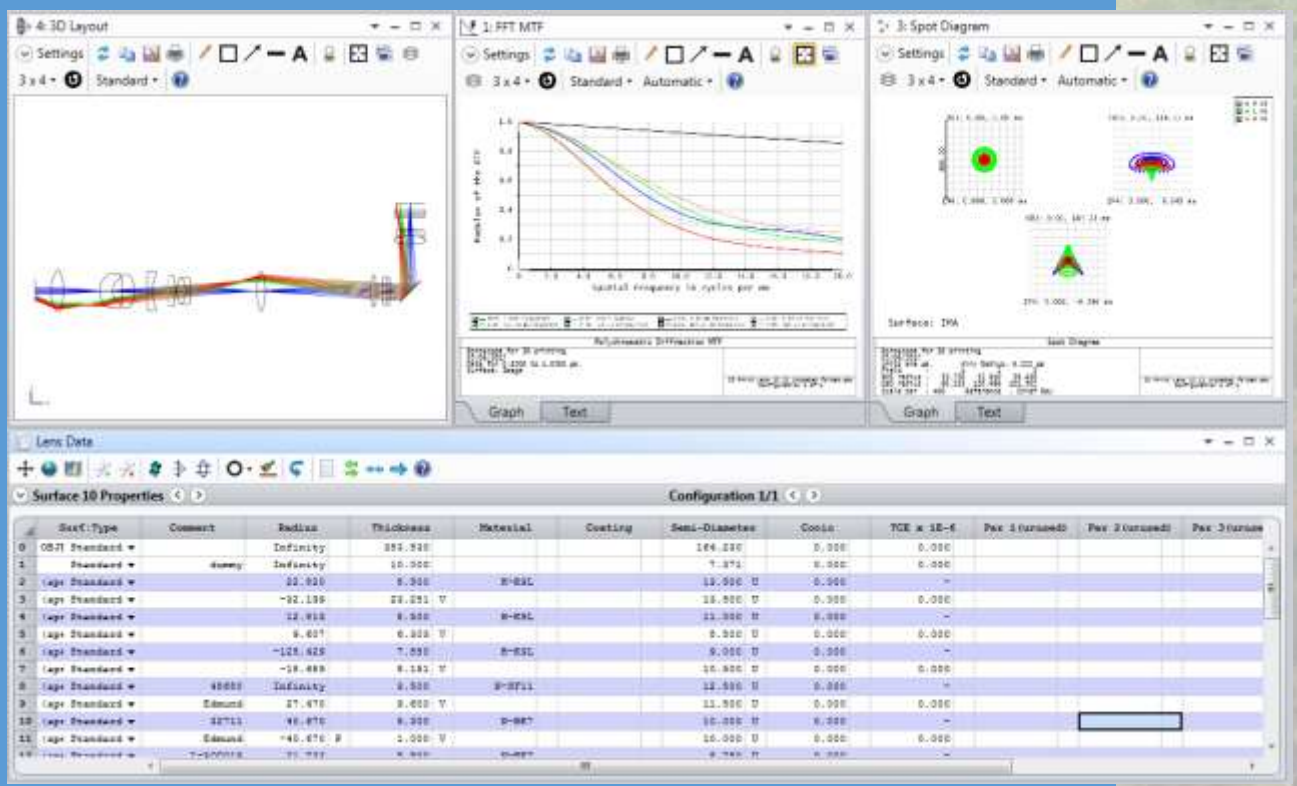
EXAMPLE: Thermal Imaging Boroscope

Electron beams can melt metal powder and form 3D printed objects under vacuum. Viewing access is very restricted and we designed an 11 element boroscope for the purpose. Low-cost was achieved with high performance by combining 6 catalogue lenses with 5 lenses manufactured in China, to our design.





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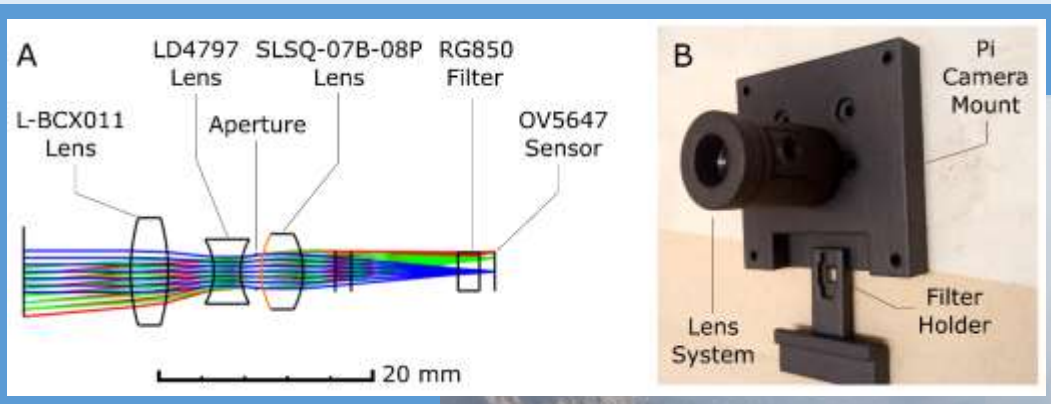
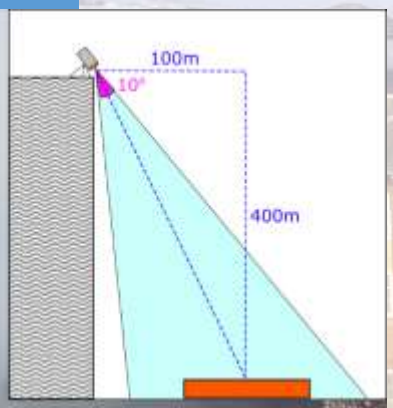
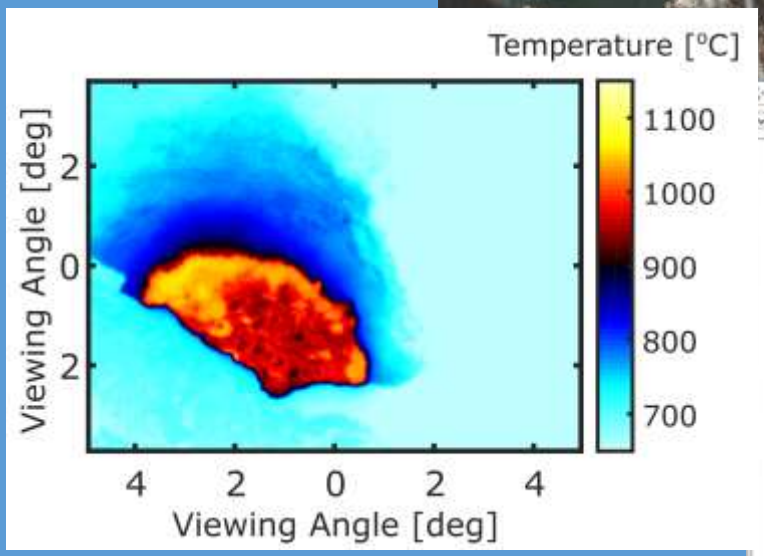
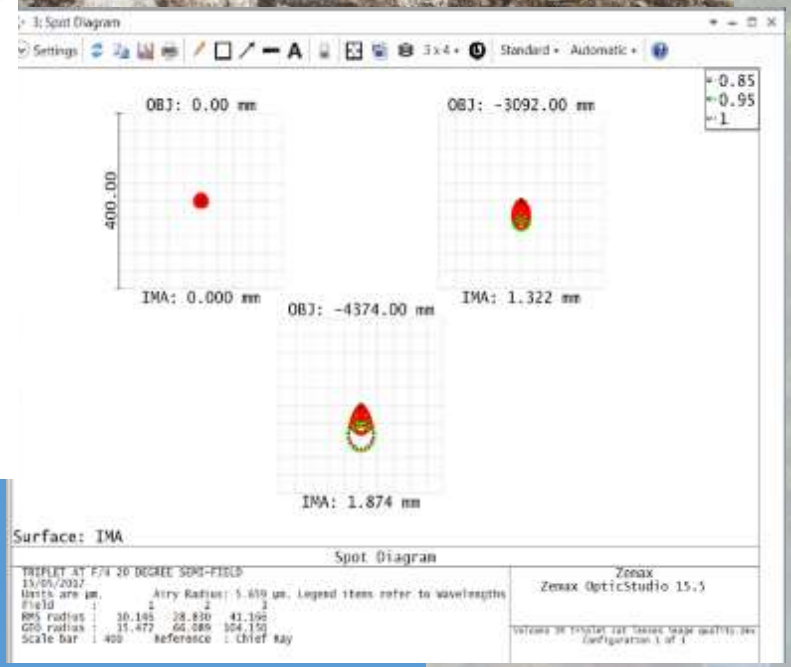
EXAMPLE: Near Infrared Cooke Triplet Telescope

A volcano lava lake monitoring project gave us a very limited budged for hardware. For under £100 we used off-the-shelf lenses inside a 3D printed housing to image from 400m with near diffraction limited performance.









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MEET THE TEAM

From left to right: Todd Zhu, Leigh Stanger, Cheong, Andy Heeley, Jon Willmott, Matt Davies, Matthew Hobbs, Nick Boone, Matt Grainger, Tom Rockett.

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