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## **Detector concepts for wide field X-ray imaging using Lobster Eye microchannel plate optics**

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Microchannel plate x-ray optics is an emerging technology, recently space proven on the NASA DXL sounding rocket experiment and soon to fly on the ESA Bepi-Colombo mission to Mercury. This compact, light-weight technology enables wide field of view x-ray imaging by mimicking the structure of a lobster's eye; MPOs utilise grazing incidence reflections within the high aspect ratio square section pores of a curved microchannel plate to focus x-rays over a wide angular range on to a focal plane detector.

We describe the detector requirements for the proposed Einstein Probe (EP) mission, a small scientific satellite dedicated to time-domain high-energy astrophysics. EP will utilise a very large field of view MPO for discovery of high-energy transients and to monitor variable objects at x-ray energies in the range 0.5-4 keV. The mission requires an array of large format soft x-ray imaging detectors with moderate spatial and energy resolution.

We discuss the detector options available and the trade-offs in terms of performance, cost effectiveness, required resources and operational risks for the 5+ year mission. We present results and simulations from the detector development undertaken during the mission advanced study phase.

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