Microspacecraft Optical instruments

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Designs for lightweight microspacecraft cameras and imaging spectrometers will be presented These will include combined camera and imaging spectrometer systems and a binary optical imaging spectrometer.

Microspacecraft require remote sensing optical instruments that are an order of magnitude lighter than the instruments used in the past. This paper will present the latest designs for microspacecraft cameras and imaging spectrometers meeting the low mass requirements (less than 4 kg). The first design is for a compact camera/imaging spectrometer system for a Pluto flyby. This instrument consists of a combined two color visible camera, a far ultraviolet imaging spectrometer and an infrared imaging spectrometer. The second design is a 2 degree field of view imaging spectrometer, based on an off-axis three mirror camera design and an infrared imaging spectrometer. The third design is for a wide-angle imaging spectrometer based on a binary optical grating array, Designs for microspacecraft imaging spectrometers utilizing liquid crystal filters and acousto-optic tunable filters will also be discussed.

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