

Pushing the boundaries of X-ray grating spectroscopy in a suborbital rocket

Randall L. McEntaffer, Casey DeRoo, Ted Schultz (U Iowa)

William W. Zhang (NASA/GSFC)

Neil J. Murray (Open U, UK)

Stephen O'Dell (NASA/MSFC)

Webster Cash (U Colorado/Boulder)

Developments in grating spectroscopy are paramount for meeting the soft X-ray science goals of future NASA X-ray Observatories. While developments in the laboratory setting have verified the technical feasibility of using off-plane reflection gratings to reach this goal, flight heritage is a key step in the development process toward large missions. To this end we have developed a design for a suborbital rocket payload employing an Off-Plane X-ray Grating Spectrometer. This spectrometer utilizes slumped glass Wolter-1 optics, an array of gratings, and a CCD camera. We discuss the unique capabilities of this design, the expected performance, the science return, and the perceived impact to future missions.

(OP422) Optics for EUV, X-Ray, and Gamma-Ray Astronomy VI
SPIE Optics + Photonics 2013 (August 25-29; San Diego CA)