

Astrophysics Seminar

Monday, January 25, 2016

Opening the Field of Soft X-ray Polarimetry

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Abstract:

We present development of a telescope for measuring linear X-ray polarization over the 0.2-0.8 keV band. We employ multilayer-coated mirrors as Bragg reflectors at the Brewster angle. By matching to the dispersion of a spectrometer, one may take advantage of high multilayer reflectivities and achieve polarization modulation factors over 90%. We have constructed a source of polarized X-rays that operates at a wide range of energies with a selectable polarization angle. We will present results from development of laterally graded multilayer mirrors and new gratings essential to the design. Finally, we will present a design for a small telescope for suborbital or orbital missions. A suborbital mission could measure the polarization of a blazar such as Mk 421 to 5-10 percent while an orbital version could measure the polarizations of neutron stars, active galactic nuclei, and blazars.

3:15 pm

Refreshments
CAS Room 500

3:30 pm

Seminar
CAS Room 502

Next Week

- Rachel Lash Maitra
Wentworth Institute of
Technology
- TBD

