

Research & Research Training Office

Faculty Seminar

July 1, 2008

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Studying binary stars with X-ray vision

Abstract:-

The layperson's conventional picture of astronomy research is that of the astronomer peering through optical telescopes during dark and cold nights. However, in order to build an accurate and detailed picture of stars and galaxies, modern researchers have to employ a variety of instruments that are sensitive to various types of radiation emanating from these objects, ranging from radio telescopes to gamma-ray telescopes. In this talk, I will outline how X-ray telescopes are used to probe the nature and structure of binary stars, where one of the pair of stars is an exceedingly compact and dense object, viz a black hole or a neutron star. In particular, I will present results of our on-going study of the unusual binary system 2S 0114+650, which contains a blue supergiant star in companionship with a slowly rotating neutron star. Our X-ray observations from spacecraft, and additional observations from ground-based radio and infrared telescopes have helped us to place firm constraints on the structure and evolution of 2S 0114+650.

The talk will be aimed at a non-specialist audience.