



Contribution ID: 45

Type: **not specified**

Millihertz Quasi-periodic Oscillations in 4U 1636-536: Pulse Profile and Energy Spectrum

Thursday, 27 March 2014 16:45 (15 minutes)

4U 1636-536 is a well-studied LMXB, consisting of a neutron star in a 3.8 hr orbit with a companion star of about 0.4 solar mass. The X-ray source shows the full range of rapid time variability, among them, burst oscillations and mHz QPOs are associated with thermonuclear burning on the neutron star. We performed a variability study of archival broadband X-ray observations of 4U 1636-536 and investigated the energy dependence of the mHz QPOs. Here we present the results of our waveform analysis and phase resolved spectral investigations and discuss implications of mHz QPO as a thermonuclear burning mode on the neutron star.

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Session Classification: Evening session - Parallel B