

## “Neutron Star Spin Measurements and Dense Matter with LOFT”

Observations over the last decade with RXTE have begun to reveal the X-ray binary progenitors of the fastest spinning neutron stars presently known. Detection and study of the spin rates of binary neutron stars has important implications for constraining the nature of dense matter present in neutron star interiors, as both the maximum spin rate and mass for neutron stars is set by the equation of state. Precision pulse timing of accreting neutron star binaries can enable mass constraints. Particularly promising is the combination of the pulse and eclipse timing, as for example, in systems like Swift J1749.4-2807. With its greater sensitivity, LOFT will enable deeper searches for the spin periods of the neutron stars, both during persistent outburst intervals and thermonuclear X-ray bursts, and enable more precise modeling of detected pulsations. I will explore the anticipated impact of LOFT on spin measurements and its potential for constraining dense matter in neutron stars.