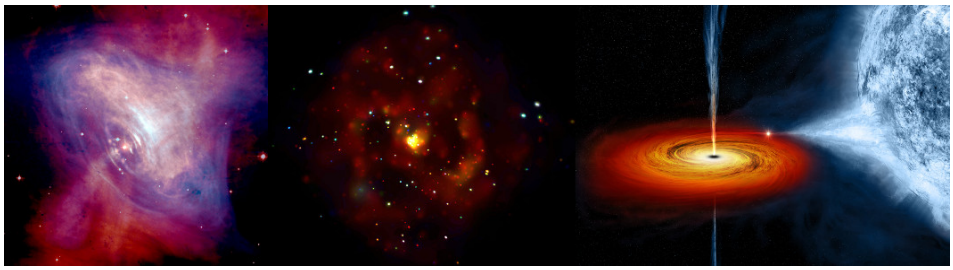

Contribution ID: **36** Type: **not specified**

Broad-band mHz QPOs and spectral study of LMC X-4 with AstroSat

Tuesday, April 4, 2023 3:05 PM (15 minutes)

LMC X-4 is a highly luminous and eclipsing high-mass X-ray binary pulsar which is known to exhibit variations in X-ray flux over a wide range of time scales. The Large Area X-ray Proportional Counter (LAXPC) and Soft X-ray Telescope (SXT) instruments onboard the *AstroSat* observed the source in August 2016. The source was found to emit an X-ray luminosity of $\sim 2 \times 10^{38}$ erg s^{-1} in the energy range of 0.5-25 keV. The power density spectrum showed the presence of coherent pulsations at 13.5 s along with a $\sim$ 26 mHz quasi-periodic oscillation feature. From the joint analysis of the SXT and LAXPC spectral data, the 0.5-25 keV spectra were found to be comprised of an absorbed high-energy cut-off power law with a photon index of ~0.8 and cut-off at ~16 keV, a soft thermal component with $kT_{BB} \sim 0.14$ keV, and emission lines due to Fe Kα, Ne IX, and Ne X. We will discuss the implications of these results.

Presentation Type

Oral

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