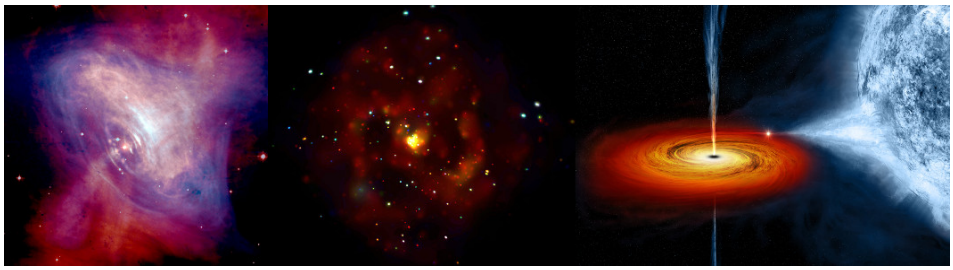

Contribution ID: **64** Type: **not specified**

Revisiting the Black hole binary XTE J1859+226 to understand the disk-jet coupling.

Tuesday, April 4, 2023 4:50 PM (10 minutes)

The source XTE J1859+226 is a black hole X-ray binary, which underwent outburst in 1999-2000. This source serves as a rich astrophysical laboratory to understand the connection between accretion disk and radio jet since it exhibits different types of Low Frequency Quasi Periodic Oscillations (LFQPOs) along with multiple radio flares.
We re-investigate the timing and spectral propertise of this source using the RXTE observations of its outburst. We model broadband RXTE (PCA+HEXTE) energy spectra ($3-150$ keV) using diskbb and thcomp models for thermal and non-thermal part respectively in order to understand evolution of spectral parameters throughout the outburst. To examine the variability properties and understand the accretion mechanism,we have carried out the energy dependent study of PDS by investigating the rms spectra of type-B and type-A QPOs. We correlate the timing properties of type-B QPO as well as rare and less studied type-A QPO with radio jet flux and with spectral parameters. We find a decrease in covering fraction ($0.55-0.4$) and increase in Type-A QPO freqency ($7.0-7.69$ Hz), X-ray ($3.4-6.1\times10^{-8}$ erg s^{-1} cm^{-2}) and radio flux ($13-20$ mJy) near flare when compared to the one away from flares implies the reduction in size of corona as a result of evacuation of coronal material to the jet. We also find a direct correlation between frequency of type-B QPO and radio flux of jet. In addition to it, we constrain the spin of the source to be $\sim 0.15\pm0.05$ using continuum fitting method, and try to investigate the connection between the spin and jet generation. We discuss the implication of our results in the context of disc-jet coupling.

Presentation Type

Oral

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Session Classification: Short Talks

Track Classification: Short Talks