



Contribution ID: 161

Type: Poster

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

We revisit the black hole X-ray binary source XTE J1859+226 during its outburst phase in 1999-2000 and carry out the spectral and timing analyses using RXTE observations. Over the course of outburst, type-B QPO is observed multiple occasions and the combined spectro-temporal results reveal enhanced hard X-ray contributions as $\text{QPO}_{\text{rms}}\% \sim 1 - 3$, covering fraction $\sim 0.4 - 0.6$ and Comptonized flux ratio $\sim 0.45 - 0.5$. Further, type-B QPO shows a hard lag suggesting possible alteration in coronal geometry. Using continuum fitting, we estimate the spin (a_k) of the source and find $a_k \sim 0.12 - 0.38$. In addition, we attempt to connect the observed X-ray properties with the observed radio flux in the context of disk-jet coupling and estimate the jet velocity as $\sim 0.94 - 0.98 c$, c being the speed of light.

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Session Classification: Astrophysical Relativity

Track Classification: Astrophysical Relativity