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Accreting Millisecond X-ray Pulsars: Probing Strong Field Gravity

X-ray binaries, the most luminous galactic objects, harbor the universe's fascinating Neutron Stars (NSs) and Black Holes (BHs). In particular, low-mass X-ray binaries (LMXBs), in which matter from a solar-like companion star falls towards the compact object via an accretion disc, represent excellent laboratories to investigate the motion of matter orbiting nearby these extreme objects. In some NSs, X-ray pulsations of the order of millisecond have been detected. They belong to peculiar X-ray pulsars called accretion-powered millisecond X-ray pulsars (AMXPs). In this talk, I will present our recent results from the pilot survey of Accreting Millisecond X-ray pulsars (AMXPs) with AstroSat and the discovery of a new intermittent AMXP, XTE J1739-285, a valuable addition to this class of objects.

Email

aruberi31@gmail.com

Affiliation

IISER Mohali

Author: Dr BERI, Aru (IISER Mohali)

Presenter: Dr BERI, Aru (IISER Mohali)

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