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The XRISM view of outflows in Black Hole Low-Mass X-ray Binaries

The first year and a half of XRISM science has led to a select number of observations of Black Hole Low Mass X-ray Binaries (BHLMXB), most of which in very unusual states. We will briefly present the context of all these observations, and notably results for :

-A faint soft state exposure of the Black Hole candidate 4U 1630-47 taken at the end of its 2022-2024 outburst. Despite the closest to a "standard" observation with wind signatures, the sensitivity and resolution of XRISM reveal a variety of time-dependent absorbers, whose origin remain puzzling at such a low Eddington fraction. -An extremely faint, soft, obscured exposure of the BHLMXB V4641Sgr, taken at the tail-end of its weak, fully obscured 2024 outburst. Despite an apparent Eddington fraction around 2e-4, the spectral shape and many strong emission lines hint at much higher intrinsic accretion rate.

-A low hard state exposure of the wind-emitting BHLMXB candidate IGR J17091-3624 from February 2025. -A high-soft state exposure of the new BHLMXB candidate MAXI J1744-294, discovered in 2025. The very crowded field of view makes for a very complex analysis, with a very strong diffuse emission from the Supernova Remnant Sagittarius A East, and the dipping Neutron Star Low-Mass X-ray Binary AX J1745.6-2901.

Contribution

Oral talk

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