



X-RAY ASTRONOMY 2019

Current Challenges and New Frontiers in the Next Decade

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Peculiar outbursts of an ultra luminous source likely signs of an aperiodic disc-wind

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The ultra luminous X-ray source XMMU 122939.7+075333 is located in the metal rich globular cluster RZ 2109 in the massive Virgo elliptical galaxy NGC 4472 (M49). Previous studies showed that this ultra luminous source varies between bright and faint phases on timescales of just a few hours. Here, we present the discovery of two peculiar X-ray bursting events that last for about 8 and 3.5 hours separated by about 3 days. It is the first time that such a recurring X-ray burst-like behaviour has been observed. We show that type-I X-ray bursts or super bursts as well as outburst scenarios requiring a young stellar object are highly unlikely explanations for the observed light curve. Thus only an aperiodic disc-wind scenario driven by hyper-Eddington accretion remains as a viable explanation for this new type of X-ray flaring activities.

Topic

Compact and diffuse sources in galaxies and in the Galactic Center

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