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IGR J17361-4441: a possible planetary tidal disruption event in NGC 6388

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In 2011 a new hard X-ray source, IGR J17361-4441, was discovered by INTEGRAL close the centre of the globular cluster NGC 6388.

Based on its peak luminosity, it was classified as very faint X-ray transient.

A Swift/XRT monitoring campaign showed an evident t^(-5/3) trend in the light curve,

and a thermal emission of 2000 keV that did not evolve significantly with time.

We investigated whether this source could be a tidal disruption event,

and for certain assumptions, we found an accretion efficiency consistent with a massive white dwarf and a disrupted minor body mass \overline{MMM} $2E+27 M/M_Ch g$ in the terrestrial-icy planet regime.

Although the density of white dwarfs and the number of free-floating planets are uncertain, we estimated the rate of planetary tidal disruptions in NGC 6388 to be

in the range 3E-6 up to 3E-4 yr^(-1). Averaged over the 150 globular clusters in the Milky Way, the upper limit value corresponds to 0.05 yr^(-1), consistent with the life-time of INTEGRAL and Swift.

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