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X-ray re-brightening of the accreting millisecond X-ray pulsar IGR J17379-3747

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X-ray re-brightening of the accreting millisecond X-ray pulsar IGR J17379-3747

ATel #11520; *J. van den Eijnden, N. Degenaar, T. Russell, R. Wijnands, J. V. Hernandez Santisteban (University of Amsterdam), D. M. Russell, A. AlManna'ei (NYU Abu Dhabi), D. Maitra (Wheaton College), A. W. Shaw, C. O. Heinke, G. R. Sivakoff (University of Alberta), T. Maccarone (Texas Tech University), J. Miller-Jones (ICRAR-Curtin), M. Armas Padilla (Instituto de Astrofísica de Canarias), A. Bahramian (Michigan State University)*

on 9 Apr 2018; 18:56 UT

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Subjects: X-ray, Neutron Star, Transient, Pulsar

IGR J17379-3747 is a neutron star low-mass X-ray binary, identified as an accreting millisecond X-ray pulsar by the detection of 468 Hz pulsations by NICER (Atel #11507). On 19 March 2018, MAXI/GSC reported renewed X-ray activity of this source (ATel #11447). This outburst reached a peak 2-10 keV X-ray luminosity of $9E35 (D/8 \text{ kpc})^2 \text{ erg s}^{-1}$ on 23 March 2018 (Atel #11487), after which it started to decay in X-rays. On 4 April 2018, the source was no longer detected in a 645 second monitoring observation using the Swift X-ray Telescope (XRT).

Here, we report the X-ray re-brightening of IGR J17379-3747 in the latest XRT monitoring observation taken on 8 April 2018 00:59 UT. We extract the PC-mode spectrum using the Swift XRT online pipeline (Evans et al. 2009, MNRAS, 397, 1177) and fit it in the 0.5 to 10 keV energy range with an absorbed power law model (TBABS*PO in XSPEC). The spectrum is well-described with an $N_{\text{H}} = (1.05 \pm 0.17) E22 \text{ cm}^{-2}$, a power law index 2.6 ± 0.2 and a reduced chi-squared of 222/351. The unabsorbed 0.5-10 keV and 2-10 keV X-ray fluxes are $(4.3 \pm 0.3)E-11 \text{ erg s}^{-1} \text{ cm}^{-2}$ and $(1.4 \pm 0.2)E-11 \text{ erg s}^{-1} \text{ cm}^{-2}$, respectively. These fluxes correspond to X-ray luminosities of $(3.3 \pm 0.2) (D/8 \text{ kpc})^2 E35 \text{ erg s}^{-1}$ and $(1.1 \pm 0.1) (D/8 \text{ kpc})^2 E35 \text{ erg s}^{-1}$, respectively.

Further Swift XRT monitoring observations are planned every other day. Optical observations are planned with Las Cumbres Observatory and VLA radio monitoring is ongoing (Atel #11487). Further multi-wavelength observations are encouraged.

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