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Swift/XRT detects (continued) activity of the Galactic center transient AX J1745.6-2901

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Swift/XRT detects (continued) activity of the Galactic center transient AX J1745.6-2901

ATel #13453; *N. Degenaar (U. of Amsterdam), R. Wijnands (U. of Amsterdam), M. T. Reynolds (U. of Michigan), J. M. Miller (U. of Michigan), J. A. Kennea (PSU), on behalf of a larger collaboration*

on 6 Feb 2020; 11:13 UT

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

Referred to by ATel #: [13683](#), [13839](#)

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Our daily Swift/XRT monitoring observations of the Galactic center (Degenaar et al. 2015, JHEAp, 7, 137) resumed on 2020 February 4. In the 0.8 ks exposure (obsID 00095329187), the transient eclipsing and bursting neutron star low-mass X-ray binary AX J1745.6-2901 is clearly detected. It has an average net XRT count rate of $\sim 5.5E-2$ c/s. This source started an outburst in 2019 September (ATel #[13150](#)) and remained active until the Galactic center went Sun constrained after 2019 October 30.

We extracted an average spectrum for the XRT observation of February 4. The spectral data can be described by an absorbed power-law model with an index of 3.3 ± 2.0 (1-sigma errors) for a fixed hydrogen column density of $2.0E+23$ cm⁻² (ATel #[13150](#)). The resulting 2-10 keV unabsorbed flux is $(3.6 \pm 1.5)E-11$ erg cm⁻² s⁻¹, which implies a luminosity of $\sim 3E35$ erg/s at a distance of 8 kpc. This luminosity level is similar to that seen before the Sun constrained window. We deem it likely that the source remained active between November and February, since it is known to exhibit outbursts that last months to years (see ATel #[13150](#) for a list of outbursts seen with Swift in the past 15 years).

Daily Swift/XRT monitoring of the Galactic Center is ongoing and the results of new observations are automatically posted on <http://www.swift-sgra.com>.

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