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Renewed activity of the Galactic center transient Swift J174535.5-285921 seen with Swift/XRT

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Renewed activity of the Galactic center transient Swift J174535.5-285921 seen with Swift/XRT

ATel #13839; *N. Degenaar, R. Wijnands (U. of Amsterdam), M. T. Reynolds, J. M. Miller (U. of Michigan), J. A. Kennea (PSU), on behalf of a larger collaboration*
 on 29 Jun 2020; 21:39 UT

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

Referred to by ATel #: [14378](#)

Our daily Swift/XRT monitoring observations of the Galactic center (Degenaar et al. 2015) reveal new activity of a transient X-ray source located $\sim 1.4'$ to the north-east of Sgr A*. The source is detected during two subsequent 1-ks observations performed on June 28 and June 29 (obsIDs 00095660082-83).

Utilizing the online XRT data products tool (Evans et al. 2007, 2009), we obtain a "standard" position (J2000) of R.A. = 17:45:35.76 and Dec. = -28:59:28.3 with an uncertainty of 3.5" (90% confidence). When the UVOT is used to derive the astrometry (see Goad et al. 2007; Evans et al. 2009), this yields an "enhanced" position (J2000) of R.A. = 17:45:35.65 and Dec. = -28:59:29.1 with an uncertainty of 2.6" (90% confidence). These XRT coordinates are consistent with the Chandra localisation of the unclassified very-faint X-ray transient Swift J174535.5-285921 (CXOGC J174535.4-285925; ATel #[3525](#)).

We also employed the online XRT tool to extract an average spectrum from the two observations performed on June 28 and 29. This spectrum can be fitted to an absorbed power-law model with $\Gamma = 1.4 \pm 0.8$ and a hydrogen column density of $N_{\text{H}} = (8.8 \pm 3.8) \times 10^{22} \text{ cm}^{-2}$ (1-sigma errors). The resulting unabsorbed 2-10 keV flux is $(1.7 \pm 4.1) \times 10^{-11} \text{ erg/cm}^2/\text{s}$. At a distance of 8 kpc, this translates into a luminosity of $1.3 \times 10^{35} \text{ erg/s}$.

Swift J174535.5-285921 was seen active twice before since Swift/XRT started monitoring the Galactic center in 2006. Previous outbursts were observed in 2011 (ATel #[3472](#); Degenaar et al. 2015) and in 2016 (ATel #[9236](#)). On both occasions the source remained continuously active for ~ 2 weeks, reaching a peak luminosity of $\sim 1 \times 10^{35} \text{ erg/s}$.

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Apart from Swift J174535.5-285921, we detect ongoing activity of the two neutron star LMXBs AX J1745.6-2901 (active since 2019 September; ATels #13150, #13453) and GRS 1741.9-2853 (in outburst since 2020 April; Atel #13683).

Swift/XRT observations of the Galactic center are performed daily and instant quick-look results posted at: <http://www.swift-sgra.com>.

References:

Degenaar et al. 2015, JHEA 7, 137
 Evans et al. 2007, A&A 469, 379
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 Goad et al. 2007, A&A 476, 1401

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