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Swift/XRT detects a new outburst of the Galactic Center transient GRS 1741.9-2853

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on 28 Apr 2020; 21:44 UT

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Subjects: X-ray, Neutron Star, Transient

Referred to by ATel #: [13839](#), [14378](#)

During our daily Swift/XRT monitoring observations of the Galactic Center (Degenaar et al. 2015, JHEAp, 7, 137), we detect renewed activity of a transient X-ray source located ~10 arcmin from Sgr A*. The location of this object is consistent with the position of the known neutron star low-mass X-ray binary (LMXB) and thermonuclear X-ray burster GRS 1741.9-2853. The source is first detected in a 0.9-ks XRT exposure obtained on 2020 April 25, in photon-counting (PC) mode, at a count rate of ~1E-2 c/s (obsID 00095660023). Over the past 2 days it brightened to ~9E-2 c/s.

We extracted an average spectrum for GRS 1741.9-2853 from the PC-mode data obtained on April 25-27 (obsIDs 00095660023, 00095660024, 00095660025). This spectrum can be described by an absorbed power-law model with an index of 2.8 +/- 1.0 and a hydrogen column density of (1.8 +/- 0.6)E+23 cm-2 (1-sigma errors). These spectral parameters are similar to those inferred from Swift/XRT data of previous outbursts of this source (see below). For this fit we infer a 2-10 keV unabsorbed flux of (1.6 +/- 0.6)E-11 erg cm-2 s-1, which translates into a luminosity of ~9.9E+34 erg s-1 at a distance of 7.2 kpc (deduced from its thermonuclear X-ray bursts; Trap et al. 2009).

Over the past 15 years, the Swift/XRT monitoring campaign has recorded several outbursts from GRS 1741.9-2853: in 2006, 2007, 2009, 2010, 2013, 2016 and 2017 (Degenaar & Wijnands 2009, 2010; Degenaar et al. 2013; ATels #[8881](#), #[9109](#), #[10859](#), #[11263](#)). Its outbursts typically reach a 2-10 keV luminosity of ~1E+35-1E+37 erg s-1 and last a few weeks (Degenaar et al. 2015). Given the steady rise in XRT count rate during the past few days, and the luminosity inferred above, it is plausible that GRS 1741.9-2853 is currently in the rising phase of another bright

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outburst.

We report that apart from GRS 1741.9-2853, we detect ongoing activity from the transient neutron star LMXB AX J1745.6-2901. This source, located ~1.5 arcmin from Sgr A*, was detected in outburst in 2019 September-October (ATel #13150) and has remained active since the XRT monitoring observations resumed in 2020 Feb after the Sun-constrained window (ATel #13453).

Results of our ongoing daily Swift/XRT monitoring of the Galactic Center are automatically posted on <http://www.swift-sgra.com>.

References:

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 Degenaar et al. 2013, IAU conf. proc. 303, 315
 Degenaar et al. 2015, JHEA 7, 137
 Trap et al. 2009, A&A 504, 501

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