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Published in:
The astronomer's telegram

[Link to publication](#)

Citation for published version (APA):

Degenaar, N., Wijnands, R., Reynolds, M. T., Miller, J. M., Kennea, J. A., Gehrels, N., Haggard, D., & Ponti, G. (2014). Swift/XRT observations of the Galactic center have resumed. *The astronomer's telegram*, 5847. <http://www.astronomerstelegam.org/?read=5847>

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Swift/XRT observations of the Galactic center have resumed

ATel #5847; *N. Degenaar (Michigan), R. Wijnands (UvA), M. T. Reynolds (Michigan), J. M. Miller (Michigan), J. A. Kennea (PSU), N. Gehrels (GSFC), D. Haggard (Northwestern), G. Ponti (MPE), on behalf of a larger collaboration*

on 3 Feb 2014; 16:11 UT

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

Referred to by ATel #: [5861](#), [7023](#)



Swift has resumed its daily X-ray monitoring campaign of the Galactic center (ATel #[5006](#); see link below). The first XRT observation was performed on 2014 February 2 and had a duration of 1.1 ks.

We detect no X-ray activity from Sgr A* or the nearby transient magnetar SGR J1745-29 (e.g., Atels #[5009](#), #[5020](#), #[5032](#); Kennea et al. 2013; Mori et al. 2013; Rea et al. 2013). Using a 10" circular extraction region centered on the radio position of Sgr A* we detect an XRT count rate of $\sim 3E-2$ counts/s. This is not significantly higher than the average intensity of the persistent (diffuse) emission at this location as measured between 2006 and 2011 ($\sim 1.1E-2$ counts/s; Degenaar et al. 2013). We estimate a 2-10 keV luminosity upper limit of $\sim 7E34$ erg/s for the magnetar and the supermassive black hole (uncorrected for absorption, assuming a distance of 8 kpc). This observation suggests that the X-ray outburst of SGR J1745-29 may have ceased. Ongoing Swift/XRT monitoring will allow us to confirm this.

The transient neutron star low-mass X-ray binary AX J1745.6-2901 continues to be active. This source entered a new accretion outburst in 2013 July (ATel #[5226](#)). The XRT spectrum fits to an absorbed power-law model with $NH \sim 1.9E23$ cm⁻² and a photon index of ~ 2.3 . The inferred unabsorbed 2-10 keV flux of $2.9E-10$ erg/cm²/s corresponds to a luminosity of $2.2E36$ erg/s for a distance of 8 kpc. Its current intensity is similar as seen between 2013 July and November (Degenaar et al. 2014).

There are no other active X-ray transients visible in the XRT image. Daily updates can be found at the [Swift Sgr A* Monitoring Campaign Website](#).

References:

Degenaar et al. 2013, ApJ 769, 155
 Degenaar et al. 2014, to appear in proceedings of IAU Symposium 303
 Kennea et al. 2013, ApJ 770, L24
 Mori et al. 2013, ApJ 770, L23
 Rea et al. 2013, ApJ 775, L34

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