Swift resumes X-ray monitoring observations of the Galactic center in 2018

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Swift resumes X-ray monitoring observations of the Galactic center in 2018

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*on **6 Feb 2018; 15:21 UT***
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Referred to by ATel #: 11313

On 2018 February 4, Swift resumed its daily monitoring campaign of the Galactic center using the X-ray telescope (Degenaar et al. 2015, JHEA 7, 137; see link below). There are currently no active X-ray transients seen within the ~20x20 arcmin region around Sgr A* that is covered by our campaign. The sensitivity limit of a single 1-ks XRT exposure corresponds to a luminosity of ~1E+34 erg/s at a distance of 8 kpc.

Before the Galactic center became Sun-constrained, there were two X-ray transients active; the neutron star low-mass X-ray binary (LMXB) GRS 1741-2853 had been active since 2017 October 11 (ATel #10859) and starting on 2017 October 19 we detected activity of a very-faint X-ray transient near Sgr A* that was most likely associated with the neutron star LMXB AX J1745.6-2901 (ATel #10900). Both objects were still detected during the last observation of 2017, performed on November 2.

GRS 1741-2853 was still fairly bright on 2017 November 2; a spectrum extracted with the online XRT products tools (Evans et al. 2007, A&A 469, 379; 2009, MNRAS 397, 1177) can be fitted with an absorbed power-law model with an index of 3.7+/-1.5 and a hydrogen column density of (3.4 +/- 1.3)E+23 cm-2 (1-sigma errors, assuming wilm abundances and vern cross-sections for the absorption model tbabs). The resulting unabsorbed 2-10 keV flux is (1.1 +/- 1.0)E-10 erg/cm2/s, which implies a luminosity of ~7E+35 erg/s at 7.2 kpc (Trap et al. 2009, A&A 504, 501). This is over an order of magnitude fainter than earlier on during the outburst, when it was detected at ~1E+37 erg/s (ATel #10859), and may suggest that the outburst was ceasing. The detection on 2017 November 2 implies a minimum outburst duration of 3 weeks, whereas the non-detection on 2018 February 4 limits the maximum length of this outburst of GRS 1741-2853 to 16.5 weeks.

AX J1745.6-2901 was detected at a count rate of ~4E-2 c/s during the observation of 2017 November 2, which is too faint to extract a spectrum but implies a similar brightness as the two proceeding weeks, i.e. a luminosity of a few times 1E+35 erg/s at a distance of 8 kpc (ATel #10900). This detection implies that this outburst of AX J1745.6-2901 had a minimum length of 2

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weeks. The non-detection in our new 2018 February 4 observation sets a limit on the maximum outburst duration of 15.5 weeks.

Our daily Swift X-ray monitoring campaign of the Galactic center will continue throughout 2018. Updates on new observations are immediately posted at the Swift Sgr A* Monitoring Campaign Website.

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