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X-ray Flare from the Galactic Center Detected by Swift/XRT

ATel #16785; *Mark Reynolds (Ohio State University/University of Michigan), Jon Miller (University of Michigan), Nathalie Degenaar (University of Amsterdam), Rudy Wijnands (University of Amsterdam), Jamie Kennea (Penn State University)*
on behalf of a larger collaboration.

on 22 Aug 2024; 14:00 UT

Credential Certification: Mark Reynolds (reynolds.1362@osu.edu)

Subjects: Radio, Infra-Red, X-ray, AGN, Black Hole, Transient

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We report the detection of an X-ray flare during regular monitoring observations of the Galactic center with the Neil Gehrels Swift observatory (Degenaar+ 2015). In a 0.89 ks XRT observation on 2024-08-21 (09:13UT), a flare is detected originating from the direction of Sgr A*.

The source is observed with a net count rate of 0.053 \pm 0.008 ct/s resulting in a total of 52 counts detected during the observation. Assuming a fixed column density of 9.1e22 cm⁻² (Degenaar+ 2013) and fitting with a power-law in the 2 - 10 keV bandpass, we measure $\Gamma = 1.10 \pm 0.47$ (68% confidence) resulting in an absorbed flux of $f_x = (1.55 - 1.03 + 0.06)e^{-11}$ erg/s/cm² (2-10 keV, 68% conf.), or a luminosity of $\sim 1.2e^{35}$ erg/s for an assumed distance of 8 kpc. A subsequent observation ~ 80 ks later shows the flux from this region to have returned to background levels.

The position of the source of this flare is nominally consistent with the position of Sgr A*. Swift monitoring of the GC region continues and additional significant activity will be reported in subsequent telegrams.

Our daily Swift X-ray monitoring campaign of the Galactic center will continue throughout

2024. Updates on new observations are immediately posted at the Swift Sgr A*
Monitoring Campaign Website (<http://swift-sgra.com/>)

References:

Degenaar et al. 2013, ApJ 769, 155

Degenaar et al. 2015, JHEA 7, 137

Swift Sgr A Monitoring Campaign Website*

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