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X-ray Flare from Galactic Center Detected by Swift

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Published in:
The astronomer's telegram

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Citation for published version (APA):
Reynolds, M., Kennea, J., Miller, J., Degenaar, N., & Wijnands, R. (2018). X-ray Flare from Galactic Center Detected by Swift. *The astronomer's telegram*, 11313. <http://www.astronomerstelegam.org/?read=11313>

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X-ray Flare from Galactic Center Detected by Swift

ATel #11313; *Mark Reynolds (University of Michigan), Jamie Kennea (Penn State University), Jon Miller (University of Michigan), Nathalie Degenaar (University of Amsterdam), Rudy Wijnands (University of Amsterdam), on behalf of a larger collaboration*
on 17 Feb 2018; 05:39 UT

Credential Certification: Mark Reynolds (markrey@umich.edu)

Subjects: Radio, Millimeter, Infra-Red, X-ray, Request for Observations, AGN, Black Hole

We report the detection of a large X-ray flare, in a 1ks XRT observation on 2018-02-17 (00:45UT), originating from the direction of the Galactic center during regular monitoring observations with Swift (Degenaar+ 2015, JHEA 7, 137).

The source is observed to be variable (0.02 ct/s -- 0.08 ct/s) with an average count rate of 0.04+/-0.01 ct/s resulting in a total of 40 counts detected during the observation, facilitating basic spectral fitting. Assuming a fixed column density of $9.1e22 \text{ cm}^{-2}$ (Degenaar+ 2015) and fitting with a power-law in the 2 - 10 keV bandpass, we measure (68% confidence)

Gamma: 1.5 +/- 0.6

norm: 0.003 +0.004 -0.002

resulting in an absorbed flux of $\sim 1e-11 \text{ erg/s/cm}^2$ (2-10 keV), or a luminosity of $\sim 7.7e34 \text{ erg/s}$ for an assumed distance of 8 kpc.

The position of the source of this flare is nominally consistent with the position of Sgr A*. The properties of this flare are consistent with previous detections of flares from Sgr A* as part of the long term Galactic center monitoring program (Degenaar+ 2013, ApJ, 769, 155). Swift will observe the GC region again later today as part of the regular monitoring program (Atel #11263) and significant further evolution will be reported in subsequent telegrams.

Follow-up observations are encouraged to determine the source of this flare.

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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