X-ray Flare from Galactic Center Detected by Swift

Reynolds, M.; Kennea, J.; Miller, J.; Degenaar, N.; Wijnands, R.

Published in:
The astronomer's telegram

Citation for published version (APA):
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 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 ~1e-11 erg/s/cm^2 (2-10 keV), or a luminosity of ~7.7e34 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.