Swift/XRT detects renewed activity of the Galactic center transient XMM J174457-2850.3

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Published in:
The astronomer's telegram

Citation for published version (APA):

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Download date: 29 Jan 2021
Swift/XRT detects renewed activity of the Galactic center transient XMM J174457-2850.3

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Subjects: X-ray, Binary, Neutron Star, Transient

Referred to by ATel #: 10089

Daily X-ray monitoring observations of the Galactic center with Swift (Degenaar et al. 2015, JHEAp 7, 137) reveal activity at a position consistent with the location of the transient neutron star low-mass X-ray binary (LMXB) XMM J174457-2850.3. This known thermonuclear X-ray burster is located ~14 arcmin NW of Sgr A*. The source is clearly detected at an XRT count rate of ~2E-2, 3E-2, and 9E-2 c/s during ~1 ks PC-mode observations performed on 2016 September 24, 25 and 26, respectively. The count rate at the source position is consistent with the local background (~3E-3 c/s) during a 1-ks pointing performed on September 23.

We extracted an average spectrum from the September 24 and 25 observations and fitted that together with the September 26 spectral data. Using an absorbed power-law model with the hydrogen column density fixed at 1.1E23 cm-2, we obtain photon indices of 1.6 +/- 0.5 for both spectra (comparable to that found for previous outbursts of this source; Degenaar et al. 2014, ApJ 792, 109). The inferred unabsorbed 2-10 keV fluxes are (1.0 +/- 0.2)E-11 and (3.3 +/- 0.5)E-11 erg/cm2/s for September 24-25 and 26, respectively. The corresponding luminosities are (4.1 +/- 1.0)E34 and (1.7 +/- 0.2)E35 erg/s for a distance of 6.5 kpc (inferred from thermonuclear burst analysis; Degenaar et al. 2014). Using these spectral parameters, the non-detection with Swift on September 23 implies a 2-10 keV luminosity of <5E33 erg/s at that time. This source exhibits occasional outbursts with a 2-10 keV peak luminosity of ~E35-E36 erg/s that last for a few weeks (Degenaar et al. 2014).

XMM J174457-2850.3 is currently the only active X-ray transient in the FOV of the Swift Galactic center monitoring observations (which cover ~20'x20' around Sgr A*), but it is the 6th active transient seen this year. Earlier on in the 2016 campaign, Swift observed activity of the neutron star LMXBs AX J1745.6-2901 (e.g. ATel #5222, #9196) and GRS 1741-2853 (ATel 13453). Swift/XRT detects renewed activity of the Galactic center transient XMM J174457-2850.3

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#8881, #9109), as well as the unclassified X-ray transients Swift J174540.7-290015 (e.g. ATel #8649, #8689, #8746, #9109, #9196, #9236), Swift J174540.2-290037 (ATel #9109, #9196, #9236), and Swift J174535.5-285921 (ATel #9236). All those other X-ray transients are currently not detected with the XRT. Daily X-ray observations of the Galactic center with Swift are ongoing.

The Swift Monitoring Campaign website can be found at: http://www.swift-sgra.com
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Jodrell Bank: flux density estimates, polarisation properties, spin-down measurement, and the highest dispersion measure measured.

Detection by Sardinia Radio Telescope of radio pulses at 7 GHz from the Magnetar PSR J1745-2900 in the Galactic center region

Spin-down Measurement of PSR J1745-2900: a New Magnetar

Further radio pulsations from the direction of the NuSTAR 3.76-second X-ray pulsar, and a dispersion measure estimate.

Detection of radio pulsations from the direction of the NuSTAR 3.76 second X-ray pulsar at 8.35 GHz

Swift-BAT monitoring for additional bursts from SGR J1745-29 (Trigger 55491)

Detection of radio pulsations from the direction of the Galactic center Soft Gamma-ray Repeater with Parkes and the GBT

Searches for Dispersed Radio Pulsar Emission from the Sag A* SGR

Chandra localization of the soft gamma repeater in the Galactic Center region

Searches for radio pulsations from the 3.76 second NuSTAR X-ray pulsar in the Galactic centre.

Limits on Radio Frequency Flux Density Changes in Sgr A*

NuSTAR discovery of a 3.76 second pulsar in the Sgr A* region

Continued Swift Monitoring of the Galactic Center Flare

Brightening of Sgr A* at 32 GHz from VLA observations

Possible brightening at 22 GHz of Sgr A*

Swift XRT spectrum of transient X-ray source at Sgr A*'s position

Swift/BAT detection of an SGR-like flare from near Sgr A*

Large Flare from Sgr A* Detected by Swift

Transient X-ray burster KS 1741-293 active again

1E 1740.7-2942 (the Great Annihilator) enters a low-intensity state

IR counterpart candidates to the transient Swift J174535.5-285921 - UPDATE

Chandra Localization of the Galactic Center X-ray Transient Swift J174535.5-285921

The Galactic center transient Swift J174535.5-285921 has returned to quiescence

IR counterpart candidates to the transient Swift J174535.5-285921

Search for an IR counterpart to the newly discovered transient Swift J174535.5-285921

Swift/XRT discovers a new X-ray transient near the Galactic center: Swift J174535.5-285921

Swift/XRT detects new outbursts of the galactic core

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Chandra detects Swift J174535.5-290135.6 in a relatively bright state

Announcement of the Swift/BAT Hard X-ray Transient Monitor

Swift/XRT detection of a transient source in the Galactic Center

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