Swift GC monitoring program detection of a new outburst from the faint X-ray transient CXOGC J174538.0-290022

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Swift GC monitoring program detection of a new outburst from the faint X-ray transient CXOGC J174538.0-290022

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*on **24 Feb 2022; 01:44 UT***
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Swift observations of the Galactic center (Degenaar et al. 2013, 2015) have resumed after the solar constraint period and the recent resumption of Swift observations (GCN #31603).

In a 0.84 ks XRT observation on 2022 Feb 23rd (01:20 UT), excess point like X-ray emission consistent with the position of the known faint X-ray transient CXOGC J174538.0-290022 is present (Muno et al. 2003, 2005).

Source counts are extracted from a 10" radius circular region centered on the source position, with background extracted from a neighboring source free region. Due to the intrinsic faintness of the source (~11 net counts), we carry out a restricted spectral fit with only the model normalization permitted to vary. When characterized with a powerlaw (tbabs*po with Nh == 20e22 cm^-2; Gamma == 1.8), an observed flux of fx = (5.51 +1.8 -1.5)e-12 erg/s/cm^2 (1sigma, 2-10 keV) is measured. For an assumed distance of 8 kpc, this corresponds to a luminosity of Lx ~ 4e34 kpc.

CXOGC J174538.0-290022 was previously detected in outburst in 2009 by XMM-Newton and Swift (Ponti et al. 2009; Degenaar et al. 2010). The X-ray spectrum was characterized by a powerlaw with Gamma = 1.4 +/- 0.9, with a peak luminosity of

approximately Lx ~ 2e35 erg/s. The duration of this 2009 outburst is unknown but constrained to be greater than 9 weeks (Degenaar et al. 2010). The source was also detected with a luminosity Lx > 1e34 erg/s in 1999 suggesting an additional episode of activity during this time (Muno et al. 2005).

We note that the source is not present at a statistically significant level (fx < 5e-13 erg/s/cm^2, 2-10 keV) in a 0.76 ks observation on 2022 Feb 22nd (03:05 UT). Thus, we have likely discovered the source during the beginning of the current outburst. Swift will continue to observe this source as part of the ongoing GC monitoring campaign. Further multi-wavelength observations to reveal the nature of CXOGC J174538.0-290022 are encouraged.

We thank the Swift team for their ongoing efforts to ensure continuing science observations.

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