



UvA-DARE (Digital Academic Repository)

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

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

Publication date

2022

Document Version

Final published version

Published in

The astronomer's telegram

License

Unspecified

[Link to publication](#)

Citation for published version (APA):

Reynolds, M., Wijnands, R., Degenaar, N., Miller, J., & Kennea, J. (2022). Swift GC monitoring program detection of a new outburst from the faint X-ray transient CXOGC J174538.0-290022. *The astronomer's telegram*, 15238. <https://www.astronomerstelegam.org/?read=15238>

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

ATel On

Patreon
Mastodon
Twitter

The Astronomer's Telegram

Post | Search | Policies
Credential | Feeds | Email

17 May 2023; 08:41 UT

This space is free for your conference.

Thanks to Patrons, The Astronomer's Telegram is free to read, free to publish and always will be. Thank you.

[\[Previous](#) | [Next](#) | [ADS](#)]

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

ATel #15238; *Mark Reynolds (U. Michigan), Rudy Wijnands (U. Amsterdam), Nathalie Degenaar (U. Amsterdam), Jon Miller (U. Michigan), Jamie Kennea (Penn State) on behalf of a larger collaboration.*

on 24 Feb 2022; 01:44 UT

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

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

Tweet

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 $N_h == 20e22 \text{ cm}^{-2}$; $\Gamma == 1.8$), an observed flux of $f_x = (5.51 \pm 1.8 \pm 1.5)e-12 \text{ erg/s/cm}^2$ (1sigma, 2-10 keV) is measured. For an assumed distance of 8 kpc, this corresponds to a luminosity of $L_x \sim 4e34 \text{ kpc}$.

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 $\Gamma = 1.4 \pm 0.9$, with a peak luminosity of

Related

15238	Swift GC monitoring program detection of a new outburst from the faint X-ray transient CXOGC J174538.0-290022
2038	XMM-Newton detects activity from a weak X-ray transient source in the Galactic Center

approximately $L_x \sim 2e35$ 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 $L_x > 1e34$ 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 ($f_x < 5e-13$ erg/s/cm², 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.

References:

Muno et al. 2003, ApJ, 589, 225

Muno et al. 2005, ApJL, 611, 113

Ponti et al. 2009 Atel #2038

Degenaar et al. 2010, A&A, 524, 69

Degenaar et al. 2013, ApJ, 769, 155

Degenaar et al. 2015, JHEAp, 7, 137

[[Telegram Index](#)]

R. E. Rutledge, Editor-in-Chief

rrutledge@astronomerstelegam.org

Derek Fox, Editor

dfox@astronomerstelegam.org