



UvA-DARE (Digital Academic Repository)

Swift monitoring observation of the Be/X-ray transient GX 304-1 in quiescence and its current outburst

Rouco Escorial, A.; Wijnands, R.

Publication date

2016

Document Version

Final published version

Published in

The astronomer's telegram

License

Unspecified

[Link to publication](#)

Citation for published version (APA):

Rouco Escorial, A., & Wijnands, R. (2016). Swift monitoring observation of the Be/X-ray transient GX 304-1 in quiescence and its current outburst. *The astronomer's telegram*, 9101. <http://www.astronomerstelegam.org/?read=9101>

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.

Outside

GCN
IAUCs

Other

ATel on [Twitter](#) and [Facebook](#)
ATELstream
ATel Community Site[[Previous](#) | [Next](#) | [ADS](#)]

Swift monitoring observation of the Be/X-ray transient GX 304-1 in quiescence and its current outburst

ATel #9101; *A. Rouco Escorial, R. Wijnands (Amsterdam)*
on *31 May 2016; 07:41 UT*
Distributed as an Instant Email Notice Transients
Credential Certification: *Rudy Wijnands (rudy@space.mit.edu)*

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

On 2016 May 17, the Be/X-ray transient GX 30-41 was found (using MAXI and BAT) to exhibit a new outburst although this was not yet expected based on the previous outbursts of the source (Atel #9064). This new outburst was also detected using INTEGRAL (Atel #9067). We have been monitoring GX 304-1 after the end of its previous outburst (Atel #8592; first detected on 2016 January 24) using the X-ray telescope aboard Swift to study the source behavior in quiescence and to catch the early phase of the next outburst. We found that the flux decayed (measured using an absorbed power-law model) from $1.4E-10$ erg/s/cm² (0.5-10 keV, all quoted fluxes are unabsorbed fluxes) on February 5 to $7.3E-11$ erg/s/cm² on February 17 after which it slowly decreased to $4.4E-11$ erg/s/cm² on April 28 (although with flux variations of a factor of a few were observed during this decaying phase). The column density n_H varied between $0.9E22$ and $1.7E22$ cm⁻² and the photon index (γ) between 1 and 1.6 (although we note that, due to the often low number of photons detected, the errors could be significant, up to 0.7). On 2016 May 7, the source suddenly increased its flux to $2.7E-10$ erg/s/cm² ($n_H = 1.3 \pm 0.3$ cm⁻²; $\gamma = 1.1 \pm 0.2$) indicating that the current outburst started between April 28 and May 7. Since then we have obtained several additional observations of the source using Swift/XRT and it flux has increased to $6.8E-10$ erg/s/cm² ($n_H = 1.6 \pm 0.6$ cm⁻²; $\gamma = 0.9 \pm 0.3$) during our last observation obtained on 24 May. We continue to monitor the source using the Swift/XRT to further study its outburst behavior. We thank Neil Gehrels for approving our monitoring observations of GX 304-1.

GX 304-1 Swift/BAT transient lightcurve

Related

- | | |
|------|--|
| 9101 | Swift monitoring observation of the Be/X-ray transient GX 304-1 in quiescence and its current outburst |
| 9067 | INTEGRAL detection of the on-going activity from the Be HMXB GX 304-1 |
| 9064 | MAXI/GSC detection of a weak X-ray activity from Be/X-ray binary pulsar GX 304-1 |
| 8592 | MAXI/GSC detection of the outburst onset from Be/X-ray binary pulsar GX 304-1 |
| 8055 | MAXI/GSC detection of the X-ray outbursts from Be/X-ray binary pulsars, GX 304-1 and A 0535+26 |
| 8024 | Rise in optical activity of HDE245770/A0535+26 system |
| 7441 | MAXI/GSC detection of an onset of X-ray brightening from Be/X-ray binary pulsar GX 304-1 |
| 7015 | MAXI/GSC detection of the onset of the outburst from Be/X-ray binary pulsar A0535+26 |
| 5782 | INTEGRAL/IBIS detects renewed activity from H 1417-624 |
| 4420 | MAXI/GSC detection of an outburst from Be/X-ray binary pulsar GX 304-1 |
| 3856 | MAXI/GSC detects the onset of a recurrent outburst of GX 304-1 |
| 3624 | MAXI/GSC detects the onset of a recurrent outburst of GX 304-1 |
| 3309 | MAXI/GSC detected a renewed X-ray activity from GX 304-1 |
| 2297 | MAXI/GSC detection of an outburst from GX 304-1 |
| 2277 | Renewed activity of A0535+26 detected by MAXI/GSC |
| 2276 | Swift/BAT confirms the outburst from 2S 1417-624 |
| 2275 | 2S 1417-624 in Outburst |

[**Telegram Index**]

R. E. Rutledge, Editor-in-Chief

`rrutledge@astronomerstelegam.org`

Derek Fox, Editor

`dfox@astronomerstelegam.org`

Mansi M. Kasliwal, Co-Editor

`mansi@astronomerstelegam.org`