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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>

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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
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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 $1.4\text{E-}10$ erg/s/cm² (0.5-10 keV, all quoted fluxes are unabsorbed fluxes) on February 5 to $7.3\text{E-}11$ erg/s/cm² on February 17 after which it slowly decreased to $4.4\text{E-}11$ 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 $0.9\text{E}22$ and $1.7\text{E}22$ 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 $2.7\text{E-}10$ erg/s/cm² ($n_{\text{H}} = 1.3\text{+/-}0.3$ cm⁻²; $\gamma = 1.1\text{+/-}0.2$) 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 $6.8\text{E-}10$ erg/s/cm² ($n_{\text{H}} = 1.6\text{+/-}0.6$ cm⁻²; $\gamma = 0.9\text{+/-}0.3$) 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

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