



## UvA-DARE (Digital Academic Repository)

### Optical Spectroscopy of IGR J1732-2731 with SOAR

*A Symbiotic Binary?*

Bahramian, A.; Strader, J.; Heinke, C.O.; Sivakoff, G.R.; Kennea, J.A.; Degenaar, N.; Wijnands, R.

**Publication date**

2017

**Document Version**

Final published version

**Published in**

The astronomer's telegram

**License**

Unspecified

[Link to publication](#)

**Citation for published version (APA):**

Bahramian, A., Strader, J., Heinke, C. O., Sivakoff, G. R., Kennea, J. A., Degenaar, N., & Wijnands, R. (2017). Optical Spectroscopy of IGR J1732-2731 with SOAR: A Symbiotic Binary? *The astronomer's telegram*, 10685.

<http://www.astronomerstelegam.org/?read=10685>

**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](#) ]

## Optical Spectroscopy of IGR J1732-2731 with SOAR: A Symbiotic Binary?

ATel #10685; *A. Bahramian, J. Strader (MSU), C. O. Heinke, G. R. Sivakoff (Alberta), J. A. Kennea (PSU), N. Degenaar, R. Wijnands (Amsterdam), on behalf of a larger collaboration on 30 Aug 2017; 17:39 UT*

*Credential Certification: Arash Bahramian (bahramian@pa.msu.edu)*

Subjects: Optical, X-ray, Binary, Black Hole, Neutron Star, Transient

Referred to by ATel #: [11273](#)

[Tweet](#)

IGR J1732-2731 is a new transient discovered by INTEGRAL (ATels [#10644](#), [#10645](#), [#10653](#)) in the Galactic bulge. The source has been observed by Swift/XRT since its discovery (ATel [#10645](#)). Using Swift/XRT online analysis tool (Evans et al. 2009, MNRAS, 397, 1177) the UVOT-enhanced position of IGR J1732-2731 is:

RA: 263.21088 (17:32:50.61)

Dec: -27.50065 (-27:30:02.3)

with radial error of 2.1" (90% confidence).

Russell et al. (ATel [#10682](#)) identify multiple candidate counterparts for this source and identify star 3 in their analysis as the most likely counterpart. Star 3 is ~1" from the XRT coordinates, within the error circle. We took optical spectrum of Star 3 with the SOAR/GOODMAN spectrograph on Aug 25, 2017. The spectrum is consistent with an M-type star, with numerous strong emission lines (spectrum plot attached).

After nominal correction for the large foreground reddening (note the spectrum in the attached plot is not corrected for extinction), the strongest emission lines are from H I, O I 8446 and [O III] 4959/5007. Emission from several lines of He I, [O I] 6300, and (likely) [Fe VII] 6087 are also present.

The rapid X-ray variability, strong optical emission lines that include H-alpha and [O III], and the cool nature of the companion (which implies it may be a giant) all suggest a symbiotic star (containing a white dwarf accretor) or a symbiotic X-ray binary (containing a neutron star or black hole accretor) as another possibility for the nature of this system.

*SOAR spectrum of IGR J1732-2731*

- Related**
- [11273](#) INTEGRAL resumes monitoring the Galactic bulge: IGR J17329-2731 still active
  - [10685](#) Optical Spectroscopy of IGR J1732-2731 with SOAR: A Symbiotic Binary?
  - [10682](#) Discovery of the likely optical counterpart of IGR J17329-2731
  - [10653](#) IGR J17329-2731: Insight-HXMT observation
  - [10645](#) IGR J17329-2731: Swift/XRT localization and characterization
  - [10644](#) IGR J17329-2731: a new X-ray transient discovered by INTEGRAL

[ **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`