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**Publication date**

2011

**Document Version**

Final published version

**Published in**

The astronomer's telegram

**License**

Unspecified

[Link to publication](#)

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

Del Santo, M., Kuulkers, E., Bozzo, E., Capitanio, F., Alfonso-Garzon, J., Beckmann, V., Bird, T., Brandt, S., Chenevez, J., Courvoisier, T., Domingo, A., Ebisawa, K., Jonker, P., Kretschmar, P., Markwardt, C., Oosterbroek, T., Paizis, A., Pottschmidt, K., Sanchez-Fernandez, C., & Wijnands, R. (2011). The soft spectral state of the black hole candidate IGR J17091-3624 observed by INTEGRAL and Swift. *The astronomer's telegram*, 3203. <https://www.astronomerstelegam.org/?read=3203>

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## The soft spectral state of the black hole candidate IGR J17091-3624 observed by INTEGRAL and Swift

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on 2 Mar 2011; 18:42 UT

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Subjects: X-ray, Binary, Transient

Referred to by ATel #: [3225](#), [3229](#), [3230](#), [3266](#), [3299](#), [3913](#), [4773](#)

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The currently on-going outburst of the black hole candidate (BHC) IGR J17091-3624 (ATel #[3144](#), #[3159](#), #[3167](#)) has been recently observed simultaneously with INTEGRAL and Swift. The source was in the IBIS FOV on 2011 Feb. 28 from 17:45 to 21:23 (UTC; exposure time 7.7 ks) during the Galactic Bulge monitoring (Kuulkers et al. 2007, A&A, 466, 595) and pointed with the narrow field instrument on board Swift, XRT, on 2011 Feb. 28 from 19:00 to 20:36 (UTC; exposure time 1.2 ks).

Fitting the XRT spectrum with an absorbed power law model results in an unacceptable reduced  $\chi^2=1.4$  (304 d.o.f.). However, a better description of the spectrum (confirmed by the F-test) can be obtained adding a disk black-body component (red.  $\chi^2=1.1$  (302 d.o.f.)). The fit of the joint XRT+IBIS/ISGRI broad-band spectrum (0.8-200 keV) gives an absorption column density of  $N_{\text{H}}=1.00\pm 0.06$ , a disc black-body temperature of  $1.0\pm 0.1$  keV and a power-law photon index of  $2.2\pm 0.2$  (red.  $\chi^2=1.1$  (312 d.o.f.)). No high-energy cut-off is requested up to 200 keV. The estimated fluxes in the 2-10 keV and 20-100 keV energy bands are  $2\text{E-}09$  erg/cm<sup>2</sup>/s and  $9\text{E-}10$  erg/cm<sup>2</sup>/s, respectively.

These results confirm that IGR J17091-3624 is presently in the canonical high/soft

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spectral state of BHCs (see also ATel #3179), unlike the previous reported INTEGRAL observation (Feb. 07-08) during which the source was in a low/hard state (ATel #3159).

Further simultaneous INTEGRAL and Swift observations are already planned.

We thank the Swift team for the rapid scheduling of simultaneous Swift ToO observations with the pre-planned INTEGRAL Galactic Bulge monitoring.

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