INTEGRAL detection of the neutron-star X-ray transient Swift J1734.5-3027

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*on **4 Sep 2013; 16:12 UT***
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Referred to by ATel #: 5448, 5646

INTEGRAL Galactic bulge monitoring (see ATel #438) observations performed between UT 2013 September 3 20:43 and September 4 00:25 clearly reveal the newly detected neutron star X-ray transient Swift J1734.5-3027 (ATel #5354, GCN #15157, #15172). The JEM-X and IBIS/ISGRI flux averages during the observations are 14+/-3 mCrab (3-10 keV), 19+/-6 mCrab (10-25 keV), 23+/-2 mCrab (18-40 keV), and 17+/-2 mCrab (40-100 keV). The average IBIS/ISGRI spectrum, with an effective exposure of about 9 ksec, can be well (reduced chi^2=0.8 for 9 degrees of freedom) fitted by a power-law with index 2.1+/-0.4, with a 20-100 keV flux of about 3.7e-10 erg/s/cm^2.

A re-analysis of the previous monitoring observations, performed between August 31 20:38 and September 1 00:19, shows that the source was already marginally detected by JEM-X and IBIS/ISGRI with fluxes of 7+/-2 mCrab (3-10 keV; 4 sigma significance) and 14+/-2 mCrab (18-40 keV; 6.6 sigma significance), respectively. The 10-25 keV JEM-X 6-sigma upper limit is about 4 mCrab, while the 40-100 keV IBIS/ISGRI 3-sigma upper limit is about 8 mCrab. The average IBIS/ISGRI spectrum for these observations, with an effective exposure of about 6.5 ksec, can be described by a power-law with index 2.3+/-0.8 and a 20-100 keV flux of about 2.3e-10 erg/s/cm^2 (reduced chi^2=1.5 for 7 degrees of freedom).

We encourage further observations of this new X-ray transient, which showed a long Type I X-ray burst, possibly a superburst (ATel #5354), near the start of its current outburst, i.e., about 9 hours after the end of the INTEGRAL Galactic bulge observations on September 1.

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