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INTEGRAL Galactic Plane Scans detect enhanced activity from the HMXBs IGR J19294+1816 and 4U 1909+07

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Referred to by ATel #: [5104](#), [5119](#)

Enhanced hard X-ray emission has been detected from the high mass X-ray binary systems IGR J19294+1816 and 4U 1909+07 during recent INTEGRAL observations of the Cygnus region of the Galactic Plane performed in revolution 1294 between 2013-05-19 UTC 01:32:52 and 10:55:38. Neither source was detected at a significant level during observations in the previous revolution (1293) performed between 2013-05-18 UTC 03:55:28 and 15:59:42.

IGR J19294+1816 was detected at an IBIS/ISGRI count rate of 3.1 ± 0.4 counts s^{-1} in the 18-60 keV band, corresponding to a significance of 7.2 sigma and a flux of ~ 17 mCrab, for an exposure of 19.7 ks. 4U 1909+07 was detected at a count rate of 3.7 ± 0.5 counts s^{-1} in the same band, corresponding to a significance of 7.0 sigma and a flux of ~ 20 mCrab (with an exposure of 13.5 ks). Both sources were also in the field of view of the soft X-ray JEM-X instrument for total effective exposures of ~ 7.9 and ~ 2.9 ks respectively but neither were detected, with 6sigma flux upper limits of 6 mCrab and 8 mCrab in the 3-10 keV band respectively.

4U 1909+07 is a wind-fed SgXRB pulsar whose past variability is consistent with the enhanced flux detected in these observations. IGR J19294+1816 is a likely BeXRB pulsar that displays recurrent outbursts, of an approximate duration of 2 months (Bozzo et al. 2011, A&A, 531, A65), modulated on the 117.2 day orbital period (Corbet and Krimm 2009, ATel #2008) along with additional fast flaring behaviour, more typical of Supergiant Fast X-ray Transients (~ 2000 -3000s, see Rodriguez et al. 2009, A&A, 508, 889). The date of this new detection is consistent with the time of peak activity predicted by Corbet and Krimm 2009 (ATel #2008) suggesting that these observations are detecting the onset of a new outburst of the system rather than an isolated fast flare. We encourage multi-wavelength observations of IGR J19294+1816 to follow the evolution of the outburst from this early stage. INTEGRAL will be performing regular hard X-ray monitoring of the Galactic Plane over the coming months with the next observation of this region scheduled to begin on 2013-05-26.

A full description of the INTEGRAL Galactic Plane Scanning programme, along with links to light curves and sky maps can be found in ATel #3361. Please note, for consistency with the GPS archive the IBIS/ISGRI analysis presented here was performed with version 9 of the INTEGRAL Offline Science Analysis (OSA) software. However the results are also seen to be consistent with the current OSA release (v.10).

The authors wish to thank the ISOC observation planning team for their assistance in the design and implementation of the GPS pointing strategy.

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