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INTEGRAL detection of the on-going outburst from NGC 6440 and a new outburst likely from GRS 1747-312 in Terzan 6

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INTEGRAL detection of the on-going outburst from NGC 6440 and a new outburst likely from GRS 1747-312 in Terzan 6.

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Subjects: X-ray, Neutron Star, Transient

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During the observations performed in the direction of the Galactic Bulge (Atel #438), INTEGRAL detected hard X-ray emission from the direction of the Globular Clusters NGC 6440 and Terzan 6.

The source undergoing an outburst in NGC 6440 has been recently reported to be likely the neutron star low mass X-ray binary SAX J1748.9-2021 (Atel #10821, #10826, #10827). The source is detected in the IBIS/ISGRI mosaic with a significance of 10 sigma (20-40 keV) and a flux of 30 \pm 3 mCrab. The IBIS/ISGRI spectrum (effective exposure time 7.7 ks) could be reasonably well fit by using a power-law model with a photon index of 2.2(-0.7,+1.0). The 20-100 keV flux estimated from the spectral fit was 3.7E-10 erg/cm²/s. The source was outside the JEM-X field of view for the entire observational period.

A new outburst from a source likely located within Terzan 6 was discovered during the same observations in the JEM-X data (and also confirmed by MAXI; see <http://maxi.riken.jp/pipermail/x-ray-star/2017-October/002657.html>). Comparing the two independent detections in JEM-X1 and JEM-X2, the best obtained source position is at RA=267.694 and DEC=-31.280, with an associated uncertainty of 1.5 arcmin at 90% c.l. (J2000). This is consistent with the position of Terzan 6, likely indicating that the known neutron-star low-mass X-ray binary GRS 1747-312 is again in outburst. The estimated flux of the source from the two JEM-X mosaics is 22 \pm 4 mcrab in the 3-10 keV band and 17 \pm 4 mcrab in 10-25 keV band.

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No X-ray bursts have been detected in the JEM-X lightcurves. The source was not detected in the IBIS/ISGRI mosaic.

Further INTEGRAL observations of the fields around the two Globular Clusters NGC 6440 and Terzan 6 are already planned in the coming weeks.

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