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INTEGRAL highlights and perspectives for GW counterparts search

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The International Gamma-ray Astrophysical Observatory is providing outstanding science data to the whole international scientific community since its injection in orbit.

INTEGRAL has been observing the gamma-ray sky since October 2002, discovering 1000+ high-energy sources, pioneering γ -ray polarization, detecting radioactivity from extragalactic supernovae, and shedding new light on the enigmatic positron annihilation in the Galactic Centre Region, with its putative link to light dark matter.

With its 870 kg of detectors and shield scintillators, the observatory is virtually omnidirectional, and thanks to the highly elliptical orbit, the entire sky is accessible with a duty cycle of 90%. Between the positive detection of GW170817, and the upper limits established for the BH merger events (invariably the most stringent upper limits for electromagnetic counterparts), INTEGRAL was able to observe the extended source regions of all but one GW event (six out of seven as of today).

We will finally summarize the scientific perspectives of the INTEGRAL observations during the LVC O3.

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