

The Scientific Role of JEM-X: the X-ray monitor on INTEGRAL

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JEM-X is the X-ray monitor onboard INTEGRAL. It consists of two independent coded mask telescopes each with a 25% transparent HURA mask and a 500 cm² detector. The primary energy band is 3 – 35 keV and it overlaps with that of the INTEGRAL imager: IBIS. The scientific program of INTEGRAL contains frequently repeated scans of the galactic plane in search for appearing or disappearing sources. Also a deep scan of the galactic center is foreseen. During this program JEM-X will detect and monitor a large number of X-ray sources in particular accreting X-ray pulsars and X-ray transients including black hole candidates. Also extra-galactic sources, in particular AGN, will be observed. JEM-X together with IBIS will determine and model the shape and variability of the X/gamma-ray spectra of various classes of sources. The long-term behavior of galactic binary sources will be studied by continuous or repeated observations. The paper discusses several expected observational results based on the JEM-X sensitivity, energy resolution, and the time resolution. In addition some typical observations during the INTEGRAL lifetime are simulated.