

The IBIS Gamma-ray Telescope on INTEGRAL

Pietro Ubertini et al., on behalf of the IBIS Consortium (IAS/CNR - Via Fosso del Cavaliere, snc - 00133 Rome, Italy)

The IBIS Telescope is the high angular resolution Gamma-Ray imager on-Board the INTEGRAL Satellite. The Scientific goal of IBIS is to address, complemented by the high resolution Spectrometer (SPI), astrophysical processes from celestial sources and diffuse regions in the X and Gamma-ray domain.

The imager is an essential element with its powerful diagnostic capabilities of fine imaging source identification and spectral sensitivity to both continuum and broadened lines. It will observe, simultaneously with the other instruments on board INTEGRAL, celestial objects of all classes ranging from the most compact galactic systems to extragalactic objects.

IBIS features a coded aperture mask and a novel large area ($\sim 3,000\text{cm}^2$) multilayer detector which utilises both Cadmium Telluride (16,384 detectors) and Caesium Iodide elements (4,096 detectors) to provide the fine angular resolution ~ 12 arcmin, wide spectral response (15 keV to 10 MeV), high resolution timing (60 μs) and spectroscopy (6% at 100 keV) required to satisfy the mission's imaging objectives.