

GRIPS: Gamma-Ray Burst Investigation via Polarimetry and Spectroscopy

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We describe a new generation gamma-ray observatory capable of unprecedented spectroscopy over a wide range of gamma-ray energies (200 keV–50 MeV) and polarimetry (100–1000 keV). This mission was proposed to ESA in the Cosmic Vision programme in 2008 and was presented to, but not selected by ESA's Astronomy working group.

The primary scientific goal of the GRIPS mission is to revolutionize our understanding of the early universe using gamma-ray bursts. Secondary goals achievable by this mission include direct measurements of supernova interiors through gamma-rays from radioactivity, nuclear astrophysics with massive stars and novae, and studies of particle acceleration near compact stars, interstellar shocks, and clusters of galaxies.

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