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SVOM : A NEW MISSION FOR GAMMA-RAY BURSTS STUDIES

Abstract

The Chinese National Space Administration (CNSA) and the Chinese Academy of Sciences (CAS) in collaboration with the French Space Agency (CNES) are developing a new mission aiming at studying Gamma-Ray Bursts called SVOM (Space-based multi-band astronomical Variable Objects Monitor).

SVOM has been designed to detect, characterize and quickly localize gamma-ray bursts and other types of high-energy transients. For this task the spacecraft will carry two widefield high-energy instruments: ECLAIRs, a hard X-ray imager (4-250 keV), and the Gamma-Ray Monitor, a broadband spectrometer (50 keV-5 MeV) . Upon localizing a transient, SVOM will quickly slew towards the source and start deep followup observations with two narrow-field telescopes: the Micro-channel X-ray Telescope in X-rays (0.2-10 keV) and the Visible Telescope in the visible(400-950 nm). The nearly anti-solar pointing of SVOM combined with the fast transmission of GRB positions to the ground in less than 1 minute, will facilitate the observations of SVOM transients by the largest ground based telescopes.

The space borne instruments are complemented on ground by two dedicated robotic telescopes (GFTs), designed for position refinement and early afterglow studies, and a set of ground wide angle cameras (GWACs) that aim at monitoring the field of view of ECLAIRs with the goal of detecting the prompt optical emission of Gamma-Ray Bursts.