

JEM-GLIMS Mission

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Global Lightning and sprIte MeasurementS on JEM-EF (JEM-GLIMS) is a space mission to observe lightning and TLEs from the Exposure Facility (EF) of the Japanese Experiment Module (JEM) at International Space Station (ISS). The scientific goal of the JEM-GLIMS mission is to study the generation mechanism of transient luminous events (TLEs) and to identify the relationship between lightning, TLEs, and terrestrial gamma-ray flashes (TGFs). The scientific instruments of the JEM-GLIMS mission consist of two CMOS cameras, two photometers, one spectro-imager, and two VHF receivers. The objective of the optical sensors is to acquire imaging, absolute luminosity, and near-UV spectrum data of lightning, TLEs and parent lightning discharges of TGFs. On the other hand, the objective of the two VHF sensors as an VHF interferometer is to detect electromagnetic pulses emitted by lightning discharges. All these instruments will look at the Earth's atmosphere with the nadir view from ISS.

The current status of the JEM-GLIMS mission is the final review phase. We have passed the system requirement review (SRR) on March 2008, and we will have the system definition review (SDR) on June 2008. After the review, we will start the fabrication of the pre-flight model (PFM) of the instruments. All the instruments will be delivered to JAXA at the beginning of 2010 and will be launched in 2011 by HII-b.

At the presentation, we will introduce an overview and the scientific objectives of the JEM-GLIMS mission, and will present the PFM design of the instruments in detail, and will discuss the future collaborative study with the ground-based observations and with other space missions, such as TARANIS and ASIM.