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Status of Global Lightning and Sprite Measurements on JEM-EF Mission (JEM-GLIMS)

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In order to study the generation mechanism and occurrence condition of Transient Luminous Events (TLEs), global occurrence rates and distributions of lightning and TLEs, we will carry out the lightning and TLE observation at Exposed Facility of Japanese Experiment Module (JEM-EF) of International Space Station (ISS). In this mission named JEM-GLIMS (Global Lightning and sprIte MeasurementS on JEM-EF) two kinds of optical instruments and two sets of radio receivers will be integrated into the Multi mission Consolidated Equipment (MCE). The optical instruments consist of two wide FOV CMOS cameras (LSI) and six-channel spectrophotometer (PH), and all these optical instruments are pointed to the nadir direction. In order to detect whistler wave in the VLF range excited by lightning discharges, one VLF receiver (VLFR) is installed. In addition to this, VHF interferometer (VITF) which measures VHF pulses emitted by lightning discharges is installed. JEM-GIMS will be launched by H-IIB F3 this summer. We have finished the fabrication of GLIMS instruments and all the environmental tests (EMC, vibration, and thermal vacuum) and have delivered GLIMS instruments to the system side. All system functional and environmental tests of MCE were also finished at the end of 2011. Now JEM-GLIMS with MCE has delivered to the launch site and the assembling of the HTV and rocket system are started. We will present the status of the JEM-GLISM mission and discuss the expected science outputs derived from this mission more in detail.

Keywords: lightning, sprite, ISS