

# The ASIM Mission to the International Space Station

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The Atmosphere-Space Interactions Monitor (ASIM) is proposed for the International Space Station external facilities on the Columbus module, for the study of high-altitude optical emissions from the stratosphere and mesosphere, the so-called red sprites, blue jets, and elves, or "Transient Luminous Events" (TLE). The monitor is proposed with three types of instruments:

- The Miniature Multi-Spectral Imaging Array (MMIA) of 6 cameras (4 limb; 2 nadir)
- The Miniature X- and Gamma-ray Sensor (MXGS) (nadir)
- The Photometer Experiment (PHOT) of 3 units (2 limb and 1 nadir)

The optical cameras, MMIA, record emissions from energetic particles colliding with neutral atmospheric constituents. The 4 limb-cameras observe in 4 different wavebands simultaneously, giving detailed spectral information on emissions, and the 2 nadir cameras in 2 bands for separation of TLE from simultaneous lightning illumination of clouds. The MXGS observes X- and  $\gamma$ -radiation flashes from the atmosphere, the "Transient Gamma-ray Fluxes" (TGF), previously observed by the CGRO, ABE and HESSE satellites. It is known that TGFs are related to atmospheric electrical processes, but their relationship to TLEs is unknown. The PHOT instruments provide high time-resolution data at 10 kHz and supports MMIA data selection. The talk will give an overview of the mission and its current status.