



Spectral properties of lightning and TLEs observed by ASIM on the International Space Station

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The Atmosphere-Space Interactions Monitor (ASIM) was launched on April, 2nd 2018, and consists of a dedicated suite of instrumentation, designed to measure thunderstorm processes such as conventional lightning, electric discharges in the atmosphere between cloud tops and the ionosphere and bursts of X- and gamma-rays.

The Modular Multispectral Imaging Array (MMIA) on board ASIM contains a collection of 5 nadir-viewing optical sensors, 3 photometers and 2 cameras, which are dedicated to monitor electrical discharges in and above thunderstorms. The 3 photometers sample in 337/4 nm, the VUV band 180-230 nm and 777.4/5 nm, the 2 cameras record in 337/5 nm and in 777.4/3 nm, with temporal resolutions of up to 100 kHz and 12 frames per second, respectively.

In this presentation we show various cases and emphasize the spectral ratios of MMIA camera images with concurrent interpretation of the photometer signals. We aim for a better understanding of the blue emissions and focus on the relative magnitude of 337 nm compared to 777 nm. For this purpose, the simultaneous analysis of spectral ratios as well as the temporal and spatial characteristics of the optical emissions give the opportunity to identify Transient Luminous Events (TLEs).