

ELF TRANSIENT EVENTS REGISTERED SIMULTANEOUSLY IN OPTICAL AND IN SCHUMANN RESONANCE BANDS

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The optical observations and ELF-band measurements of sprites at both the Astronomical and Geophysical Observatory of Comenius University (AGO) Modra and at the Széchenyi István Geophysical Observatory of the Geodetical and Geophysical Institute of the Hungarian Academy of Sciences near Nagycenk, Hungary (NCK) are analyzed. Since April 2007 dozens of sprites have been captured by the automated all-sky TV systems at AGO. A majority of optical transient events are accompanied with the transients in Schumann resonance band. No ELF counterparts are found for 23% of the captured sprites. Optical frames, the associated ELF time plots and the Fourier spectra are presented for several events simultaneously observed at AGO and NCK. Moreover, ELF data time series of the transients associated with the sprites are subjected to the time-frequency analysis (wavelets, matching pursuit decomposition). The higher order Schumann resonance peaks are seen in the short-time spectra.

Transient Luminous Events, Schumann resonances, time-frequency analysis

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