Geophysical Research Abstracts
Vol. 17, EGU2015-4584, 2015
EGU General Assembly 2015
© Author(s) 2015. CC Attribution 3.0 License.

VERNOV SATELLITE MISSION. FIRST RESULTS: Study flashes of light in the ultraviolet and infrared optical range of the light spectrum

Gali Garipov (1), Mikhael Panasyuk (1), Sergey Svertilov (1), Vitaliy Bogomolov (1), and Vera Barinova (1)

(1) Moscow State University, Skobeltsyn Institute of Nuclear Phisics, Moscow, Russian Federation (ggkmsu@yandex.ru), (2) SRI of RAS, Moscow, Russia, (3) Lvov Center of SRI, Lvov, Ukraine, (4) Etvosh University, Budapest, Hungary , (5) ISI of PAS, Warsaw, Poland

Main goal of "Vernov" (former "RELEC") satellite mission is to study relativistic electrons fluxes arising in thunderstorms or in the Earth's radiation belts and their relation to the short atmospheric luminescence in optical, radiofrequency and gamma ray ranges in global and near Earth space scale.
The set of scientific payload for optical observation on-board "Vernov" satellite, launched on the 8 of July 2014, measured transient (millisecond) flashes in the atmosphere in two wavelength bands: ultraviolet (240-400nm) and red-infrared (610-800nm). Global distribution of the flashes, their frequency, their spectrum and time characteristics are presented in this work. Transient flashes measured from the satellite frequently are detected in high latitudes in winter time. Flashes in near- equatorial region are observed in series which are stressed along magnetic meridian and some of them are detected in cloudless region. At the same time they are not detected above Sahara desert. Comparison with the data obtains by "Tatiana-2" satellite and probable ionospheric and tropospheric origin of such flashes and their relation with relativistic electrons are discussed in this work.