



Potentialities of the Compas-2 satellite in studying the ionospheric disturbances associated with the seismic, meteorological and human activities

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Having analyzed extensive observational data, we arrived at a conclusion that satellite observations could contribute significantly to increasing the reliability of forecasts of the major earthquakes by recording the effects in the ionosphere associated with the earthquake preparation processes. The experimental small satellite *Compas-2* (operational interval from May 26, 2006 to June 2007, altitude 500 km, inclination 79 deg.) with five scientific instruments onboard was designed to study the anomalous ionospheric effects due to the seismic, meteorological and human activities by measuring various parameters, such as the plasma density, electromagnetic spectrum in a broad wavelength range (from 1 Hz to 15 MHz), energetic particle fluxes (E_e : >40 keV; 300-600 keV; >0.7-0.9 MeV; E_p >7-16 MeV; 14-60 MeV; >110 MeV; \dot{A}_α >400 MeV), and UV emission ($\lambda=200-350$ nm). The satellite measurements allowed us to detect plasma and electromagnetic anomalies associated with various types of

geophysical, seismic, and human activities and demonstrated a high sensitivity of the satellite-borne devices to such anomalies. Abnormal operation of the satellite platform did not permit us to make systematic measurements and build-up sufficient statistics over the world seismic regions traversed by the satellite. A description of the Ñompas-2 scientific payload and the measuring results are provided.