

SPACE RESEARCH IN SLOVAKIA
2000 - 2001

SLOVAK ACADEMY OF SCIENCES

COSPAR
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1. EXPERIMENTS ON THE SATELLITES.

INTERBALL.

The energetic particle experiment DOK-2 was working on Interball tail probe until October 15, 2000 almost until the end of the satellite's function. DOK-2 and its simplified version DOK-S have been developed and constructed at the Institute of Experimental Physics, Slovak Academy of Sciences in Košice (IEP SAS) in the co-operation with the Space Research Institute, Moscow, Russia and with the Demokritos University of Thrace, Xanthi, Greece. The measurements provide detailed data on flux, the energy spectra and angular distribution of ions and electrons with the energies from ~ 20 keV up to ~ 600 keV in various regions of the outer magnetosphere and near the bow shock. Figure 1 shows examples of spectrograms of the particles in two different regions.

CORONAS-F.

The «CORONAS-F» satellite, the second one of CORONAS satellite series, was launched on July 31, 2001 in Russia into a circular orbit with the altitude 507 ± 21 km and 82.5 degree inclination. The satellite is oriented towards the Sun. A complex of instruments measuring predominantly corpuscular energetic emissions from the Sun (SKL, coordinated by Skobeltsyn Inst. of Nucl. Physics, Moscow, Russia) is a part of experimental devices. Institute of Experimental Physics, SAS, Košice, Slovakia participated at a device measuring energetic neutrons, gammas and protons (Figure 2).

ISS.

The participation of the Slovak scientists (Institute of Experimental Physics, SAS, Košice) on ISS started by the passive measurements of the tracks of products induced by cosmic rays and other energetic particles inside the Russian module of the station. The stack of detectors is a small part of the complex experiment SCORPION (coordinated by Skobeltsyn Inst. of Nucl. Physics, Moscow, Russia, with the participation of several other laboratories). The stack was delivered to the ISS by the end of November 2001.

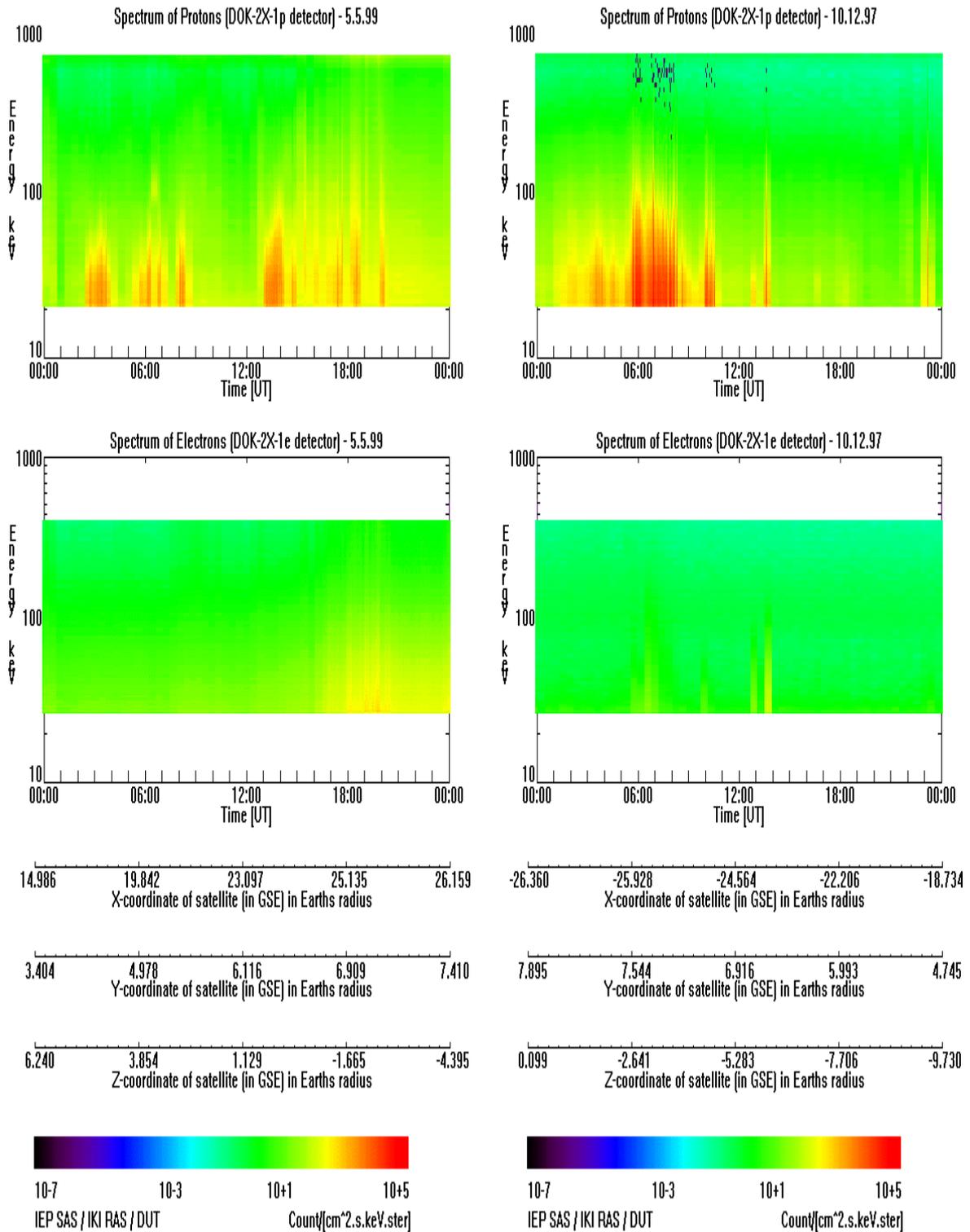


Fig. 1. Spectrograms of ions and electrons (upper and lower panels) during one day measurements by DOK-2 on Interball-1 in the region upstream from the bow shock (left) and in the geomagnetic tail (right). The review spectrograms in this form are available on daily basis at IEP SAS Košice and cover the interval August 1995 – October 2000.

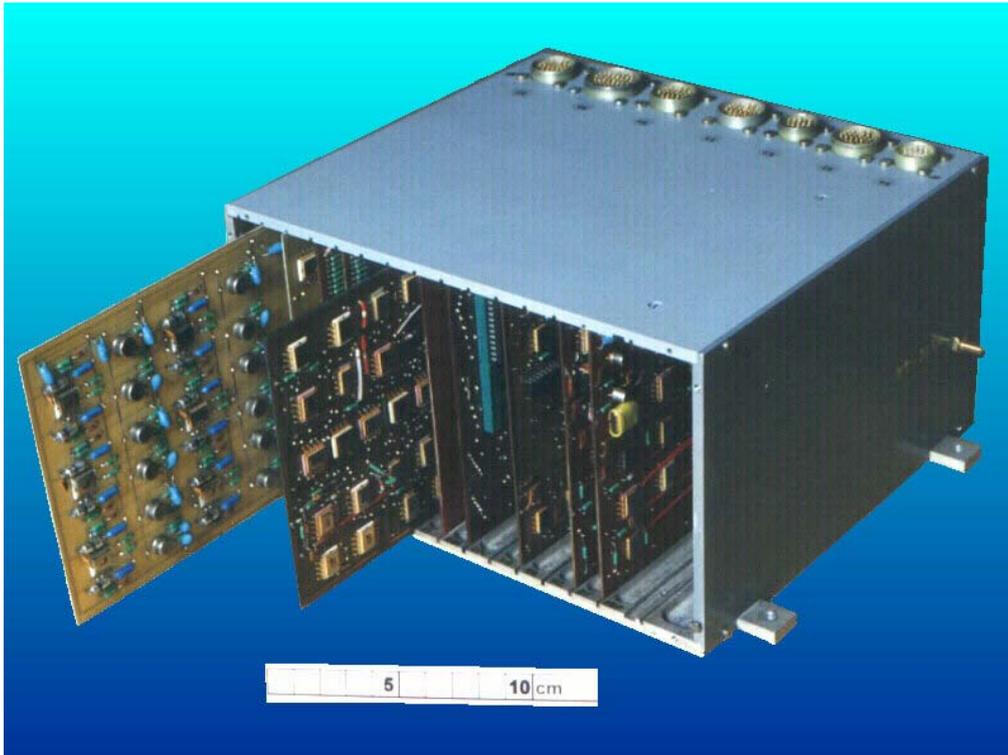


Fig.2. One of the experiments within the complex of energetic particle devices SKL onboard CORONAS-F satellite is SONG (the acronym for SOLar Neutrons and Gammas). It is a joint experiment of Skobeltsyn Inst. Nuclear Physics, Moscow State University, Russia and the Institute of Experimental Physics, SAS, Košice, Slovakia, where the block of electronics displayed in the figure was developed, constructed and tested.