

First Results of Operation of the IR-Radiometer MSU-IK-SRM as Part of the Kanopus-V-IK Spacecraft

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Abstract. The necessity of creating a specialized Russian equipment for space monitoring of forest fires on the territory of the Russian Federation and countries of the near abroad is discussed in this paper. The technical characteristics, principle of image formation, design features of the IR-radiometer MSU-IK-SRM that provides a session route survey in two spectral channels of the thermal range in the swath of 2000 km with spatial resolution of 200 m in nadir, and its information capabilities are presented.

The first results of the operation of the radiometer in orbit as part of the Kanopus-V-IK spacecraft are analyzed. Flight tests have shown that all parameters of the apparatus meet the requirements and can be used for development of a Russian specialized space system of forest fire monitoring. In particular, a real ability to detect seats of fire was confirmed. Due to a relatively high resolution, the radiometer allows obtaining a fundamentally new information on high-temperature objects.

There were more than 1500 survey sessions of Russia and other territories during the first year of operation.

Keywords: IR-radiometer, Earth remote sensing, scanner, space monitoring of forest fires, monitoring of high-temperature objects