

Mexican-Russian Nanosatellite for Earthquakes Precursors Monitoring

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National Autonomous University of Mexico (UNAM) and National Council of Science and Technology (CONACYT) started the new educational project to create the new generation of Mexican engineers in the field of the satellite technology. Except the theoretical studies in the Moscow Aviation Institute, Lomonosov Moscow State University and Institute of Terrestrial Magnetism, Ionosphere and Radiowave Propagation of the Russian Academy of Sciences they will participate in the creation of the Mexican-Russian nanosatellite. This nanosatellite will be designed within the framework of agreement between the UNAM and several Russian institutions, Swedish Institute of Space Physics, and Space Research Center of Polish Academy of Sciences.

The nanosatellite UNAMSAT-3 will be dedicated to studies of the ionospheric precursors of earthquakes. The satellite payload was selected using the experience of previous satellite missions registering the earthquake precursors in space, including the latest results of the French DEMETER satellite, Russian KOMPASS-2 satellite, and recent developments of the Lithosphere-Atmosphere-Ionosphere coupling model. It will contain three scientific devices: Langmuir probe to measure the variations of electron and ion concentrations, electron and ion temperatures, HF radiospectrometer to determine the local plasma parameters from the spectra of natural HF emissions, and energetic particle detectors for different energy bands. The total satellite mass will not exceed 10 kg. The satellite passed the phase A of its development and is scheduled for launch by the end of 2007.