THE KLEM HIGH-ENERGY COSMIC RAY COLLECTOR FOR THE NUCLEON SATELLITE MISSION

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The basic objective of the KLEM (Kinematic Lightweight Energy Meter) Project is to directly measure the elemental energy spectra of very high energy (10^{11}–10^{16}eV) cosmic rays by determining the angular distribution of secondaries produced in a target layer. A preliminary small scale version of a KLEM device has been designed for inclusion in the NUCLEON Russian satellite mission. Despite its relatively small size of 36×36×30 cm^3, this instrument has an aperture of about 0.12 m^2 sr and can thus make an important contribution to data concerning the elemental energy spectra of cosmic rays up to and above 10^{15} eV. Details of the experiment and the astrophysical significance of the mission will be presented.