

AST - Advanced Silicon Telescope for International Space Station

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Abstract. The AST is the next step of the SilEye experiment. It is dedicated to the systematic measurement of the nuclear component of cosmic ray and radiation environment investigation on board of the International Space Station (ISS). The objective of this project are the measurements of flux and nuclear component of cosmic rays, the spatial and time characteristics of cosmic ionizing radiation fields in range of linear transfers of energy $\sim 10^{-1} - 10^3$ KeV/m inside ISS. The instrument consists of 8 silicon strip detectors and two

scintillation counters. Each silicon strip detector (8cm*8cm and 380 mm thick) has 32 strips with 2.5 mm wideness. The distance between two neighbor planes is 1.5 cm. The couple of 1 mm thickness scintillation counters are producing trigger pulse, which starts the data acquisition system to read silicon strip detectors information. The beam test of the telescope prototype was carried out in Svedberg Laboratory of Uppsala University.