

AST - ADVANCED SILICON TELESCOPE FOR INTERNATIONAL SPACE STATION

S. Avdeev (4), V. Bidoli (1), M. Boezio (9), W. Bonvicini (5), P. Carlson (9), M. Casolino (1), G. Castellini (8), C. Fuglesang (9,10), G. Furano (1), A. Galper (3), A. Khodarovich (3), G. Mazzenga (6), A. Morselli (1), L. Narici (1), M. P. De Pascale (1), P. Picozza (1), **A. Popov (3)**, E. Reali (1), M. Ricci (6), W.G. Sannita (2), R. Sparvoli (1), P. Spillantini (7), A. Vacchi (5), N. Vavilov (3) and N. Zampa (5).

(1) Dept. of Physics, Univ. of Rome "Tor Vergata" and INFN Sez. Rome2, Italy, (2) DISM-Univ. of Genova, Genova, Italy and Dept. of Psychiatry, SUNY, Stony Brook, NY, USA, (3) Moscow State Engineering Physics Institute, Moscow, Russia, (4) Russian Space Corporation "Energia" by name Korolev, Korolev, Moscow region, Russia, (6) L.N.F. - INFN, Frascati (Rome), Italy, (7) Dept. of Physics of Univ. and Sez. INFN of Florence, Italy, (8) IROE of CNR, Florence, Italy, (9) Royal Institute of Technology, Stockholm, Sweden, (10) European Astronaut Center, ESA, Cologne, Germany.
popov@sileye.mephi.ru/Fax: +095-323-9194

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 μ m 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.