

**Project Submillimetron:
The Cryogenic Telescope for the International Space Station**

V. Gromov, Astro Space Center of the Lebedev Physical Institute RAS,
84/32 Profsoyuznaya str., 117810 Moscow, Russia, *gro@asc.rssi.ru*

The Submillimetron is the international project of the space telescope for astronomical studies at the submillimeter and infrared wavelengths using facilities of the Russian segment of the International Space Station (ISS). The concept of the telescope includes a 60 cm mirror cooled to liquid helium temperature and novel type microbolometers arrays using effects of superconductivity. This combination gives unique possibility to realise background-limited sensitivity in the spectral minimum of the extraterrestrial background near frequency 1 THz between peaks of galactic dust emission and CMB. The angular resolution about 1 arcmin, field of view about 1° , and optics are similar to IRAS mission, but more then order of magnitude better sensitivity about $10^{-18} \text{ W Hz}^{-1/2}$ and another spectral region permits reveal in full sky survey considerably more new astrophysical objects. The concept of free flying instrument with periodic docking to ISS gives possibility to combine low cost with reliability, refilling, repairment and maintenance. The initiative of the project was done in Astro Space Center of the P.N. Lebedev Institute after discussions with NASA and JPL. Detectors are under development in Chalmers University of Technology, Sweden. The proposal was undertaken to feasibility study in S.P. Korolev Rocket Space Corporation Energia and approved by the Russian Space Agency for the 2-d stage of ISS realisation after years 2004 - 2005.