



Space debris and micrometeoroids on the space station orbits

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Six PLATAN chambers (stacks of solid state track detectors) were exposed onboard space stations Salyut-6, Salyut-7, Mir and ISS over the period of 1978-2004. Exposure time was typically 1-3 years, sensitive area of detectors ranging from 800 to 3200 sq. cm. After retrieval of chambers to the Earth a number of craters and holes were observed in protective layers consisting of foils and metallized plastic sheets. These damages produced by impacts of space debris and micrometeoroids were studied giving information on the dimensions of microparticles and their fluxes. Masses of microparticles were estimated under various assumptions on the material density. Distribution of particle sizes and the flux changes over period of about 26 years were studied. Results are compared with predictions of the MASTER 2001 model.