

[IT-01] **MEMS Space Telescope Obscura : Pathfinder of Future Space Missions**

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The first application of optical MEMS (Micro-Electro-Mechanical Systems) technology to space telescopes is presented. A MEMS telescope obscura, named MTEL (MEMS Telescope for Extreme Lightning), is the main payload of Tatyana-2 micro-satellite built by VNIIEM in Russia. Tatyana-2 will be launched in July 2008 and is foreseen to take at least one year of mission at 800 km in altitude. The primary scientific objective is to observe a variety of UV flashes like Transient Luminous Events (TLE) occurring at upper atmosphere, which are main backgrounds in the observation of Ultra High Energy Cosmic Rays from future space missions. We will present the idea, design, and fabrication of MTEL, and plan of future space missions including Ultra Fast Flash Observatory.

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