

Project of space telescope for planet observation -- TOPS

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In order to understand the mechanisms of dynamics in the planetary atmosphere/ionosphere/magnetosphere, long-term continuous monitoring is required. However, observations by ground based telescope are quite limited in spectral range and in spatial resolution by the atmospheric absorption/scattering and scintillation. On the other hand, only a in-situ planetary orbiting spacecraft would not be enough in the roadmap of planetary science, considering risks, time and cost effectiveness. Here, we propose a space telescope mission ,TOPS, which is customized for planet observation. Two telescopes with diameter of 30 cm are installed at a small satellite bus (~200kg).

The telescopes cover in the wavelength range from 100 nm to 1 μ m with interference filters and liquid crystal variable filters. Four imaging sensors are used according to spectral range and the scientific purpose. Observation targets for TOPS are reviewed with engineering perspectives.