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 an 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 1um 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.