

A study for candidate scientific instruments for DESTINY

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DESTINY (Demonstration and Experiment of Space Technology for Interplanetary Voyage) aims to demonstrate new technologies of high energy orbit insertion, large scale ion engine, ultra light-mass solar panel, etc., which will be useful for deep-space mission by Epsilon launch vehicles. DESTINY has possibility to equip scientific mission instruments when system design makes the margin of the resource. DESTINY can conduct scientific observations for a half to one year on the Halo orbit of solar-terrestrial Lagrange 2 (L2) point. If conditions permit, DESTINY will leave L2 Halo orbit, and transfer to the next destination. Potential scientific topics include in-situ observation and remote sensing from L2 for, such as, plasma, energetic particles, and the magnetosphere in the plasma sheet of terrestrial magnetosphere. It is considered to be useful for the pilot observations for future infrared, gamma-ray, and cosmic-ray space astronomical telescope. It is probable to observe and monitor Near Earth Objects (NEO), inter-planetary and inter-stellar dust. It is also valuable to observe ultra-violet and X-ray emission from planetary phenomena. The mass allocated for the instruments is, however, currently estimated as in the range of between a few and ten kilograms. DESTINY will play roles as pilot experiments for these full-scale observations.

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