

Observations of Zodiacal light during the Cruising Phase of - C/VCO Mission

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We present a new observing project using the cruising phase of PLANET-C/VCO (Venus Climate Orbiter) mission. The PLANET-C/VCO mission, which is a spacecraft cruising through the interplanetary space toward Venus, will give us a unique opportunity to observe the zodiacal light from various viewing points, and will realize the spatial distribution of the dust cloud along the heliocentric distance, the resonance structures, and small clumps of the cloud. We also develop a PtSi infrared sensor device dedicated for this mission, which has an extraordinarily wide dynamical range covering bright Venusian surface as well as faint zodiacal light.

Recent observations by space telescopes and large aperture telescopes on the ground show the exo-zodiacal disks around stars. The origin and evolution of the zodiacal dust are not yet understood well, since the interplanetary dust cannot stay long under the Poynting-Robertson drag and by mutual collisions of dusts themselves. To sustain the zodiacal dust cloud, it requires continuous supplies of the interplanetary dust particle. The zodiacal dust cloud must be an important template for the further studies of extra-solar planetary systems.