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CUBESAT SUNDIVER FOR INTERSTELLAR PRECURSOR MISSIONS

Abstract

We propose to establish a CubeSat architecture for sundiver maneuvers that can support the injection of nano-craft into high velocity trajectories, thus permitting experiments with implications for interstellar precursor missions.

The CubeSat eco-system in general now includes options for interplanetary craft, e.g., propulsion by solar sail and economic support by workshops such as icubesat. Some proposals even already reached out to a minimal interstellar precursor mission, e.g., as presented in IAC-16-C4.6.12 by Soni et al., or Tin Tin with Project Icarus.

Experiments seem valuable in this context to gather practical experience with spacecraft designed for significantly higher velocities than the current records held by space probes such as Helios and the planned Parker Solar Probe. Sundiver missions appear as an affordable option to establish a suitable test platform for high velocity spacecraft. The presentation maps out options for this concept.