

Habitable Zone Planets: PLATO, and the search for Earth 2.0

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Abstract

The PLATO mission, part of ESA's Cosmic Vision program, will launch in 2024 and will revolutionize the field of transiting exoplanets. By observing a large sample of bright stars, PLATO will discover thousands of terrestrial planets, including hundreds in the habitable zones of their host stars.

The brightness of PLATO targets allows full characterization of both the planets and their host stars, including asteroseismic analysis to precisely determine masses, radii, and ages. Moreover, PLATO host stars will be bright enough to allow atmospheric spectroscopy. Confirmation and characterization of PLATO planets will require a coordinated, ground-based follow-up program to both eliminate false-positives, and derive planetary masses.

I will present an introduction to PLATO, discussing the scientific motivation behind the mission, its aims and goals, and the significant contribution that PLATO will make to the search for a second Earth. I will also talk about the requirements and formulation of the follow-up program, showing that the demands are not as onerous as might be feared.