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Space Agency Strategies and Plans (1)

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PLATO: A SATELLITE DESIGNED TO FIND THE SECOND EARTH.

Abstract

The PLATO satellite will detect earth-like exoplanets in the habitable zone of solar type stars. In June 2017 the mission was confirmed for implementation in the frame of the ESA Science Program.

PLATO will be launched in 2026 into a stable orbit around the Sun-Earth L2 point in order to perform high precision photometry over extensive observation periods of up to several years.

The PLATO instrument is composed by 24 normal cameras (25s sampling frequency) plus 2 additional fast cameras (2s sampling frequency) that are additionally used for satellite pointing. The resulting

impressive field of view and long term stability will lead not only to numerous exoplanet detection but more importantly to the characterization of relevant planet parameters (radius, mass, density and age) with sufficient precision to address fundamental questions such as planet habitability.

This paper presents the satellite baseline proposed for the implementation phase by the industrial consortium under OHB leadership. Special focus is placed on system level impacts of the driving pointing requirements (in particular for thermoelastic distortions and AOCS) and payload protection as well as on the trade-offs performed to optimize the science return.