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PLATO Science: main goals and expected achievements

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Abstract

In this talk we will describe the science goals of PLATO (PLAnetary Transits and stellar Oscillations), the ESA next generation planet finding mission. PLATO main scientific target is the identification and bulk characterization (radius and mass) of terrestrial planets (including Earth twins) for habitability estimate.
PLATO main goals will be reached by: 1) planet detection and radius determination (3% precision) from photometric transits; 2) determination of planet masses (better than 10% precision) from ground-based radial velocity follow-up, which is part of the mission project; 3) determination of accurate stellar masses, radii, and ages (10% precision) from asteroseismology.
PLATO complete characterization of hundreds of planets, including the architecture of their planetary system will fundamentally enhance our understanding of their formation and evolution. PLATO will provide targets for exoplanet atmosphere studies with ELTs and future dedicated satellites.
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