

Press Release

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CNES Board of Directors gives go-ahead for French contribution to PLATO European astronomy mission

Friday 11 October, meeting at its 360th session, CNES's Board of Directors gave the go-ahead for the French contribution to ESA's medium-class (M3) PLATO mission (PLANetary Transits and Oscillations of stars). PLATO is part of Europe's Cosmic Vision 2015-2025 programme to study the formation and evolution of planetary systems in our galaxy and in particular to find Earth analogues.

PLATO follows in the footsteps of two earlier space missions, the European CoRoT mission, for which CNES was prime contractor, and NASA's Kepler mission. PLATO was proposed as a candidate for Cosmic Vision's third medium-class (M3) mission. It will use the proven transit technique to detect planets and asteroseismology—analysis of stellar vibrations—to probe the inner workings of stars. The satellite will observe hundreds of thousands of very bright stars with unequalled precision almost continuously over a period of at least two years.

These observations will enable scientists to precisely determine the size of planets and their orbit around their star, as well as the age of star-planet systems. Combined with precise mass measurements by ground-based spectrographs, they will make it possible to determine the structure and composition of rocky, gaseous or ocean exoplanets, and establish whether they have an atmosphere. Such knowledge will be vital to identify target planets for more detailed characterization, including spectroscopic scanning for biomarkers in the nearest habitable exoplanets where water could exist in a liquid state on the surface.

PLATO will be launched from the Guiana Space Centre in 2026 to the second Lagrange point (L2) 1.5 million kilometres from Earth in the direction away from the Sun. It will be carrying 26 telescopes operating in the visible spectrum. Several French research laboratories at the CNRS/INSU institute for Universe sciences (LESIA¹, LAM², IAS³, IRAP⁴, IAP⁵, IPAG⁶, LUPM⁷, OCA⁸) and at CEA, the French atomic energy and alternative energies commission (AIM⁹), are contributing with CNES support to development of the payload and preparations for processing of data from the mission.

1 Space and astrophysics instrumentation research laboratory

2 Astrophysics laboratory in Marseille

3 Space astrophysics institute

4 Astrophysics and planetology research institute

5 Astrophysics Institute in Paris

6 Planetology and astrophysics institute in Grenoble

7 Universe and particles laboratory in Montpellier

8 Côte d'Azur observatory

9 Astrophysics joint research unit

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