

CHEOPS: Characterising ExOPlanet Satellite

K.G. Isaak(1) for the ESA CHEOPS team and the CHEOPS Mission Consortium
(1) Scientific Support Office ESTEC/SRE-S Keplerlaan 1, NL-2201 AZ Noordwijk, The Netherlands

Abstract

CHEOPS (CHAracterising ExOPlanet Satellite) is the first exoplanet mission dedicated to the search for transits of exoplanets by means of ultrahigh precision photometry of bright stars already known to host planets. CHEOPS will provide the unique capability of determining radii to ~10% accuracy for a subset of those planets in the super-Earth to Neptune mass range. The high photometric precision of CHEOPS will be achieved using a photometer covering the 0.4 - 1.1 μ m waveband and designed around a single frame-transfer CCD which is mounted in the focal plane of a 30 cm equivalent aperture diameter, f/5 on-axis Ritchey-Chretien telescope. Key to reaching the required performance is rejection of straylight from the Earth that is achieved using a specially designed optical baffle.

CHEOPS is the first S-class mission in ESA's Cosmic Vision 2015-2025, and is currently planned to be launch-ready by the end of 2017. The mission is a partnership between Switzerland and ESA's science programme, with important contributions from Austria, Belgium, France, Germany, Hungary, Italy, Portugal, Spain, Sweden and the United Kingdom.

In this presentation I will give a scientific and technical overview of the mission, as well as an update on the status of the project.