Ground-Based Preparatory Activities (11)
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INTA AS TEST HOUSE FOR PLATO

Abstract

PLATO, PLAnetary Transits and Oscillation of stars, is an ESA mission mainly devoted to survey the Galaxy searching for and characterizing Earth-like exoplanets, and their host stars. This will be achieved by using continuous and extremely accurate photometry for both exoplanetary transits and asteroseismology analysis. Current design plans to mount 26 cameras in the same instrument bench in order to cover a large field of view with the highest possible photon statistics. Each PLATO camera consists of the telescope (TOU, Telescope Optical Unit), the focal plane assembly (FPA), and the detector and camera control electronics. Once the cameras are fully integrated, their calibration and functional tests have to be carried out, implying the necessity of doing most of these tests under simulated working (Space) conditions. Due to the huge amount of cameras and checks to be done, three institutions are going

to share such activities (SRON, the Netherlands Institute for Space Research, IAS, the French Institute for Space Astrophysics, and INTA, the Spanish National Institute of Space Techniques), all leaded by KUL (the Catholic University of Leuven, Belgium). At INTA, a new facility have been developed in order to be compliant with all the calibration and functional tests requirements, including a new vacuum chamber with six different and independently controlled nitrogen based cooling lines (space simulator) located in a new cleaning room constructed for such purpose. In addition, all the ground support equipment (GSE) needed for the correct checks have been designed and is currently being manufactured and/or acquired. In the following lines, the facility and GSE development plan current status are briefly presented, pointed out the most critical features required for the very first activity in which it will be used, PLATO telescopes calibration and functional tests, but available for the rest of Space and On-ground instrumentation tests in the near future.