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Author: Mr. Louis Dubois
ESTEC, European Space Agency, The Netherlands

ASTROPHOTOGRAPHY AND PHOTOMETRY RESULTS FROM THE TELESCOPE OF THE
EXOGEOLAB LANDER.

Abstract

ESA-ESTEC and the International Lunar Exploration Working Group (ILEWG) developed together the ExoGeoLab Lander. This lander is equipped with several remote controlled payloads, including a telescope. In association with ESA-ESTEC's exoplanet work team, tools and procedures are being developed and designed in order to simplify or even automatize the observation of exoplanet transits with the lander's telescope. This tools are based on telescope control, Geo-location and public databases processing. The first objective of this development is to increase the observation possibilities for analogue astronauts during simulations, such as LunAres' or Mars Desert Research Station's analogue missions, and thus to increase the realism of these simulations and carry out more accurate studies of life and work in such environments. In this frame, we also develop some tools to perform a basic analysis of the data acquired with this payloads. The idea is to allow astronauts to achieve -if not accurate, at least- rapid reduction and photometry. In that respect, first drafts of science studies could be carried out without waiting for the "ground station" to analyze the data. As explained above, we plan to test these tools and methods in realistic environments through analogue simulations, and therefore we want to finish the alpha versions before this year's EuroMoonMars workshops, and then proceed the needed modifications for the LunAres' sessions of 2018, during which the lander will be deployed.