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LARES 2 MISSION IN ORBIT: FIRST TRACKING RESULT AFTER THE LAUNCH.

Abstract

The maiden launch of the new Vega-C European launcher is finally scheduled for July 2022. This launch will carry the new LARES 2 (LAser RElativity Satellite) on its orbit, that is supplementary to the orbit of the LAGEOS satellite. The satellite is designed to improve both laser ranging accuracy and the accuracy on the measurement of relativistic frame-dragging effect. Frame dragging has been already measured by the first LARES mission, LARES 2 is expected to improve the accuracy of at least one order of magnitude. The improved precision of satellite laser ranging will be obtained by the optical design of LARES 2, that is described in this paper. The first laser ranging data will be obtained in the first week after the launch and the results will be presented and discussed in the following paper. LARES 2 data will be used to test general relativity and for space geodesy.