

**Extended far field diffraction pattern characterization of LAGEOS and LARES
retroreflectors in isothermal conditions**

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The SCF_LAB is dedicated to the far field diffraction pattern (FFDP) industrial acceptance test of laser cube corner retroreflectors (CCR) for space applications; this test can be done also in isothermal conditions. The FFDP-test in isothermal conditions provides an acceptance test of the nominal, basic CCR optical specs. We tested about in isothermal conditions about 200 flight CCRs for different missions, including the current American GPS-2 (32 CCRs of a flight model loaned by the University of Maryland at College Park to LNF) and the first flight of the European VEGA launcher (115 CCRs, provided by ASI). Some of the tested CCRs were and are for undisclosed missions by other space agencies. 37 good optical quality CCRs belong to the so-called LAGEOS “Sector” loaned by NASA-GSFC to LNF for testing.

Here we report results from an extended far field diffraction pattern characterization of LAGEOS Sector and of LARES flight retroreflectors in isothermal conditions