

MS-LART: DLR's latest telescope platform for satellite and space debris laser ranging

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ABSTRACT

MS-LART (multi-spectral large aperture receiver telescope) will be DLR's latest telescope platform for the development of instrumentation for satellite and space debris laser ranging. MS-LART will be the next step following the successful development at DLR's UFO (Uhlandshöhe Forschungsobservatorium) satellite laser ranging station and will serve as the scientific basis for the next decade.

The site of MS-LART within a closed facility in the greater Stuttgart area was selected to fulfill all requirements and can be reached within 35 min. from the institute. The telescope building with dome is 15 m in height. The telescope is based on a Ritchey-Chrétien design with a primary mirror diameter of 1.75 m, has four Nasmyth foci, and a Coudé path option.

The platform will be used to develop and specify instrumentation in the following areas: (eye-safe) satellite laser ranging, space debris laser ranging, multi-spectral light curves, single photon detectors, adaptive optics, and satellite laser communication.

The implementation of the project started in late May 2019 and 'first light' will be in Dec. 2020. This contribution will introduce MS-LART to the community and present further specifications and current status.