Institute for
Technical Physics

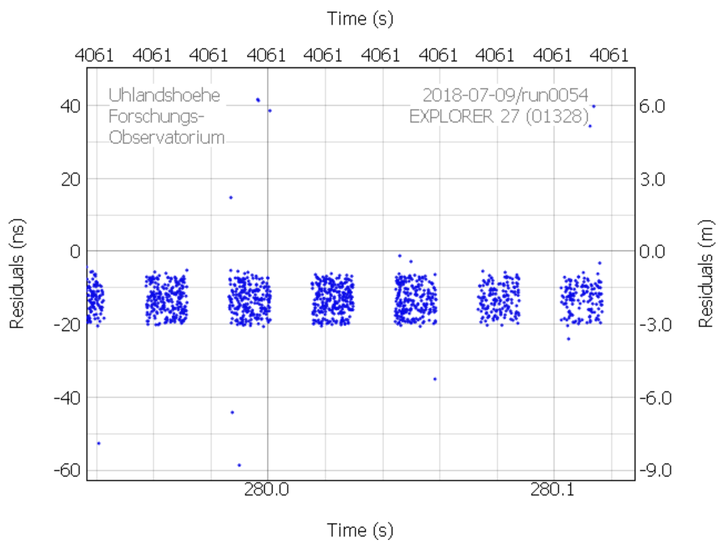
Stuttgart SLR stations

Uhlandshöhe Observatory (UFO)

Status: Experimental operation
Capabilities: LEO to GNSS, night only

UFO is the first SLR station in Stuttgart, dedicated to the evaluation of new technologies for satellite laser ranging. It is housed in one dome of the city's historic observatory, and has seen first echoes in early 2016. It is part of the ILRS as *engineering station* (UROL).

Ranging wavelength	1062 nm
Pulse energy	50 µJ
Repetition rate	100 kHz
Apertures	42 cm / 10 cm
Light transmission	Optical fibre



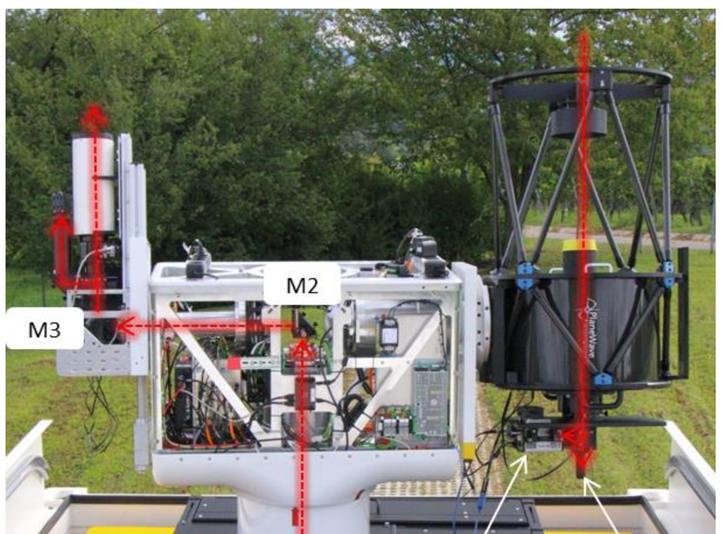
Short section of a ranging plot recorded at UFO, showing the returns from a burst mode run at 100 kHz.

STAR-C

Status: Under construction
Capabilities: Space debris (< 1 m²)

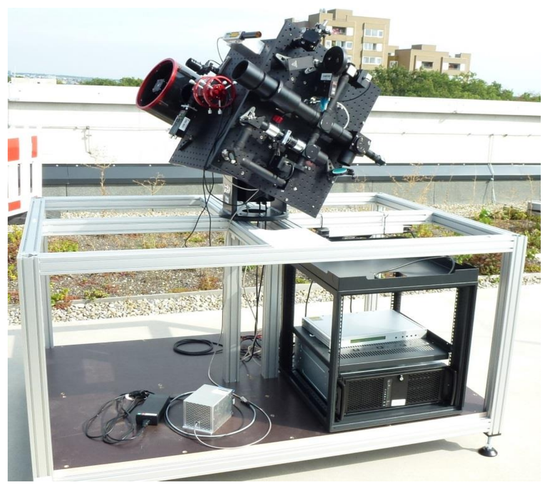
STAR-C (surveillance tracking and ranging container) is developed specifically for space debris laser ranging. It is completely integrated into a standard 20ft container and can thus be transported easily to suitable observation sites.

Ranging wavelength	1064 nm
Pulse energy	50 mJ
Repetition rate	1 kHz
Apertures	42 cm / 10 cm
Light transmission	Coudé path



Coudé path mount on the observation platform.

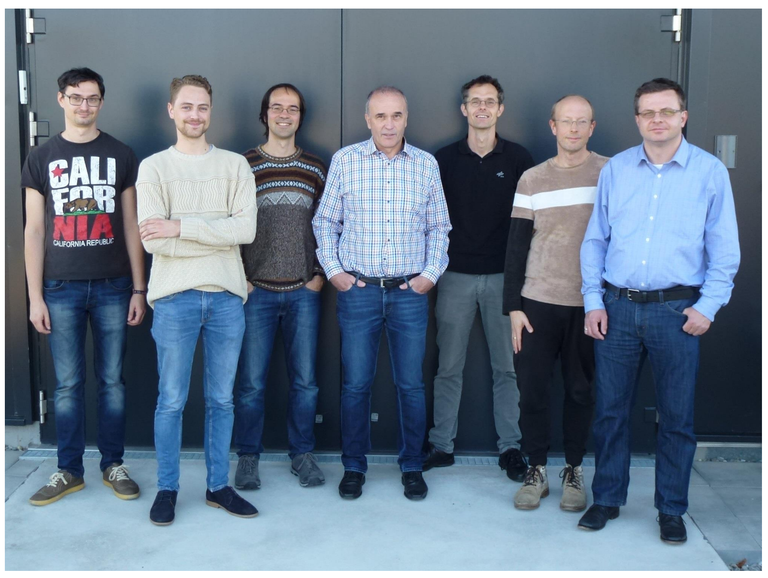
miniSLR



Status: Under construction
Capabilities: LEO to GNSS

MiniSLR is designed to be a small, affordable and flexible SLR system "in-a-box". It runs fully autonomously and will be sealed and weather-proofed for use in remote locations. A small multi-kHz laser will be integrated on the mount.

Team



From left: Paul Wagner, Ewan Schafer, Daniel Hampf, Wolfgang Riede, Jens Rodmann, Stefan Scharring, Gerd Wagner

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