

Lunar Pathfinder Laser Retroreflector Array

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ESA's Lunar Pathfinder mission is scheduled to launch and orbit the Moon at the end of 2024 in an elliptical lunar frozen orbit. The mission will provide lunar communication services and host a Navigation In-Orbit-Demonstration payload that will use Global Navigational Satellite System (GNSS) signals from the moon for positioning. NASA is providing a laser retroreflector array (LRA) for this mission to validate the GNSS-based positioning and demonstrate two-way laser ranging in support of precision orbit determination for lunar missions. The LRA consists of 48 x 4.06 cm diameter uncoated cube corners that will provide an optical cross section around 10 times larger than LRA on the Lunar Reconnaissance Orbiter (LRO). This increased cross section 33 along with regular dedicated periods where the LRA is pointed towards Earth should significantly reduce the challenges encountered during laser ranging to LRO. An overview of the Lunar Pathfinder mission will be presented along with results from optical measurements of the Lunar Pathfinder LRA.