

Thermal-Optical Performance of the GPS III Laser Retroreflector Array

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Satellite laser ranging to the GPS satellites will provide an independent means of estimating GPS satellite orbits enabling better assessments and improvements to the accuracy of the orbits. This systematic co-location in space will also contribute significantly towards improving the accuracy and stability of the Terrestrial Reference Frame and the Earth Orientation Parameters. NASA, in partnership with the Naval Research Laboratory, is preparing to implement Laser Retroreflector Arrays on the next generation of GPS satellites. An engineering qualification model of the GPS array was built and verified to meet environmental and performance requirements. Recent results of the thermal-optical performance testing will be presented.