

Development Progress on NASA's Space Geodesy Satellite Laser Ranging System

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This presentation discusses progress in the development of NASA's next generation Space Geodesy Satellite Laser Ranging (SGSLR) stations. SGSLR is expected to contribute significantly to the global volume of laser ranging data. Simulation analysis indicates that SGSLR's expected data volume will exceed its annual data volume requirement, which mimic the best performing SLR stations in the world. Significant progress has been made on every subsystem. Factory testing of SGSLR's Gimbal and Telescope Assembly (GTA) will be performed in early 2019, with the first delivery of a telescope to Ny-Ålesund, Norway in late summer 2019. The knowledge of the invariant point of an SGSLR telescope is required to be within a 1mm sphere. The Time & Frequency subsystem design has been finalized, with the first implementation constructed and testing nearing completion. Software builds are progressing to allow operation and monitoring of the stations, with remote operations and fully automated operation being phased in. Testing and development of the pixelated detector continues for automated closed loop tracking. The optical bench design has matured and is being constructed and tested. Factory Acceptance Testing (FAT) of the Baader Planetarium domes are planned for late 2018/early 2019. Site preparation is underway at Goddard's GGAO and Fort Davis, Texas.