

## **NASA's Next Generation Space Geodesy Network**

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NASA's Space Geodesy Program supports the geodetic needs of current and future Earth Observations by maintaining and operating a global network of Very Long Baseline Interferometry (VLBI), Satellite Laser Ranging (SLR), and Global Navigation Satellite Systems (GNSS) ground stations. Much of the current geodetic infrastructure is decades old and is not capable of meeting future requirements. In particular, measurement of changes in the mean sea level will require a Terrestrial Reference Frame with an accuracy of 1 millimeter and stability of 0.1 millimeters per year, a factor of 10-20 beyond current capabilities. To meet this future need, NASA is implementing plans to deploy a "Next Generation Space Geodesy Network" that will replace the legacy NASA VLBI and SLR networks with up to ten globally distributed sites with co-located VLBI, SLR, GNSS, and Doppler Orbitography and Radiopositioning Integrated by Satellite (DORIS) stations. NASA recently completed the first phase of this deployment with the demonstration of the prototype core site at NASA's Geophysical and Astronomical Observatory at Goddard Space Flight Center. The second phase is now underway with the development of new multi-technique sites in Texas and Hawaii. NASA is also working with its international partners to develop the plans for implementing additional new international next-generation geodetic sites as part of the new NASA geodetic network and the Global Geodetic Observing System (GGOS).