NASA's Space Geodesy Project

Stephen Merkowitz (1), Shailen Desai (2), Richard Gross (2), Lawrence Hilliard (1), Frank Lemoine (1), James Long (1), Chopo Ma (1), Jan McGarry (1), David Murphy (2), Carey Noll (1), Erricos Pavlis (3), Michael Pearlman (4), David Stowers (2), and Frank Webb (2)

(1) NASA Goddard Space Flight Center, Greenbelt, United States (Stephen.M.Merkowitz@nasa.gov), (2) Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (3) University of Maryland, Baltimore County, Baltimore, United States, (4) Harvard-Smithsonian Center for Astrophysics, Cambridge, United States

NASA's Space Geodesy Project (SGP) is developing a prototype core site as the basis for a next generation Space Geodetic Network that is part of NASA's contribution to the Global Geodetic Observing System (GGOS). This system is designed to produce the higher quality data required to establish and maintain the Terrestrial Reference Frame and provide information essential for fully realizing the measurement potential of the current and future generation of Earth Observing spacecraft. The prototype core site is being developed at NASA's Geophysical and Astronomical Observatory at Goddard Space Flight Center and includes co-located, state of-the-art, systems from all four space geodetic observing techniques: Very Long Baseline Interferometry (VLBI), Satellite Laser Ranging (SLR), Global Navigation Satellite Systems (GNSS), and Doppler Orbitography and Radiopositioning Integrated by Satellite (DORIS). A novel system for near-real time monitoring of the "ties" between these four systems is an integral part of the core site development concept and this specific prototype. We present the status and performance of the prototype site as well as results from the ongoing network design studies.