

UNAVCO SUPPORT TO THE NASA GLOBAL GEODETIC NETWORK AND SPACE GEODESY PROJECT

UNAVCO, in conjunction with JPL, is responsible for monitoring the 61 GNSS permanent stations, which include 64 GPS receivers, that comprise the NASA GGN network. These sites represent approximately 12% of the ~500 International GNSS Service (IGS) stations, providing a globally distributed GPS network to support NASA operations and commitments to the Global Geodetic Observing System (GGOS). As part of its support, UNAVCO provides data flow monitoring, trouble-shooting, station installation, maintenance, as well as engineering services to improve the capabilities and performance of station infrastructure.

Data from this network are used to produce highly accurate products that are essential for Earth science research and other multidisciplinary and educational applications. Products include GNSS precise satellite orbits, Earth rotation parameters, global tracking station coordinates and velocities, satellite and tracking station clock information, zenith tropospheric path delay estimates, and the definition of the International Terrestrial Reference Frame (ITRF).

Notable activity in the past two years has included UNAVCO's support of the NASA Space Geodesy Project (SGP), a next-generation network of co-located geodetic instruments including very long baseline interferometry (VLBI), satellite laser ranging (SLR), and GNSS. Major station upgrades to selected GGN sites are also discussed.



Image – The SGP VLBI instrument at the McDonald Observatory near Fort Davis, TX, surrounded by three UNAVCO-installed GNSS stations. Optical astronomical telescopes are visible on the hill in the background. (Photo credit: J. Sklar, UNAVCO)

