

# UNAVCO Resources: Campaign and Kinematic GPS/GNSS

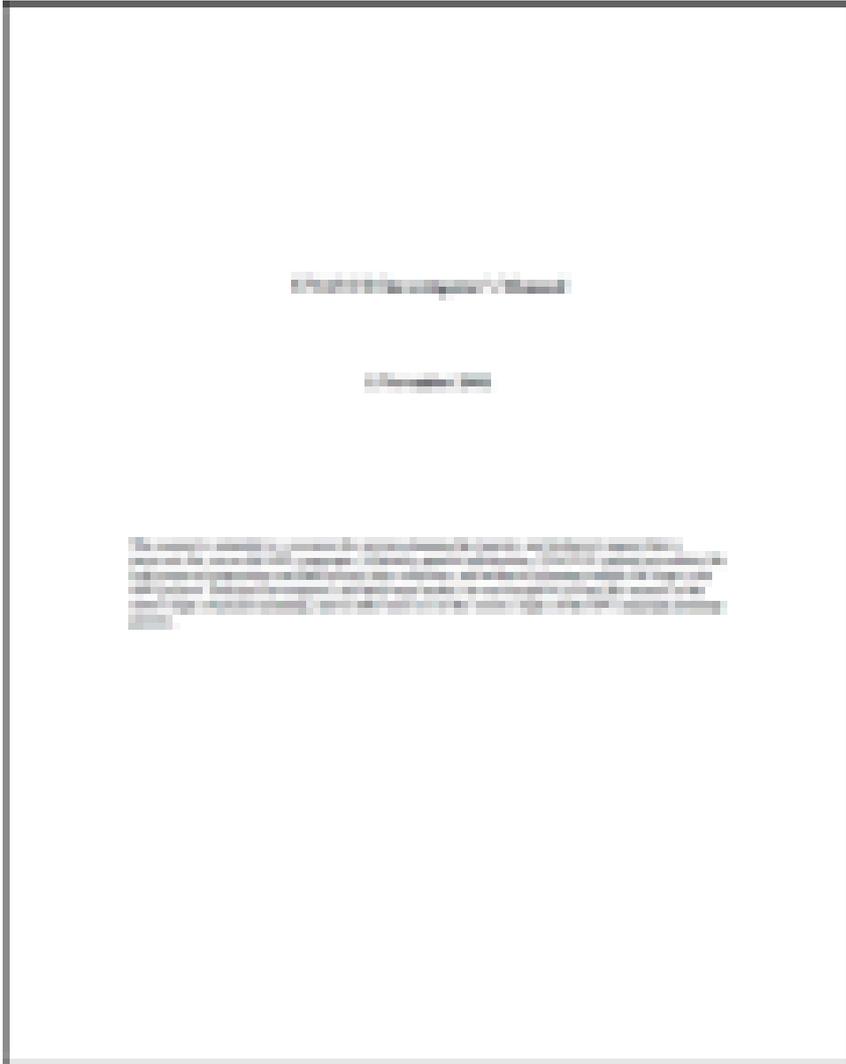
390 Beth Bartel June 12, 2024 [GNSS Campaigns](#) 9132

## UNAVCO Resources: Campaign and Kinematic GPS/GNSS

This page covers resources for GPS/GNSS surveys with portable equipment and includes static, rapid static/fast static, or kinematic data collection. UNAVCO can supply the full range of equipment, training, and field support for these surveys. Training may be provided at UNAVCO prior to the field project, or on-site at the beginning of a project. Technical support provided by UNAVCO included field engineering staff, custom tailored training to research field teams, technical consultation, software, and documentation.

UNAVCO maintains a pool of GPS/GNSS receivers and ancillary equipment available for community use. Investigators funded by NSF-GEO, NSF-OPP, and NASA receive the highest priority. This section contains an overview of the equipment and other resources available.

### Working with UNAVCO



### [UNAVCO Campaign Investigator's Manual](#)

General information, UNAVCO support procedures for both proposal preparation and field project data collection, and technical planning outlines for large scale GPS/GNSS projects.



### [Support Request Form](#)

Use this online interface to request project support from UNAVCO.



## [UNAVCO Equipment Loan Agreement](#)

Outlines the terms and responsibilities of borrowing equipment from UNAVCO; required to be filled out by the P.I. or designated project representative prior to borrowing UNAVCO equipment.

## Planning a Campaign Survey

For a complete overview of executing a campaign survey from start to finish, check out our UNAVCO Campaign GPS Handbook:

- [UNAVCO Campaign GPS GNSS Handbook.pdf](#)
- [UNAVCO Campaign GPS GNSS Handbook.doc](#)

Online resources are listed below.

## Survey Style



## [GPS Data Collection Methods](#)

A summary with brief explanations and comparisons of continuous, static, rapid/fast static, and post-processing and real-time kinematic data collection. Scientific needs and logistics will drive the survey style used.

## Monumentation and Mounts



[UNAVCO Resources: GNSS Station Monumentation](#)

Geodetic monuments for GPS campaigns ensure that the surveyed point is directly coupled to the medium to be studied (e.g. solid earth, glacier ice). The marks are typically flush or near the surface for stability, minimal visibility, security, and low cost.



[UNAVCO Resources: GNSS Antenna Mounts](#)

An antenna mount is used to temporarily mount the GPS/GNSS antenna above the monument. Mounts include tripods, spike mounts, leveling mounts, or monument-specific mounts. In every case, the antenna must be precisely centered and leveled, and the antenna height above the monument must be measured or known.

## Survey Documentation Forms

MONUMENT RECORD	
Station Name	_____
Location	_____
Station ID	_____
Monument Type	_____
Material	_____
Height	_____
Remarks	_____
Date	_____
Surveyor	_____
Checked by	_____

[UNAVCO Monument Record Form \(.pdf\)](#)

Document new or poorly documented survey monuments and markers.

The image shows a scan of a UNAVCO Monument Visit Logsheets form. The form is titled "UNAVCO Monument Visit Logsheets" and contains various sections for recording survey data. The sections include:

- MONUMENT INFORMATION:** Fields for Monument Name, Monument Number, Monument Description, Monument Type, Monument Material, Monument Shape, Monument Size, Monument Color, Monument Orientation, Monument Location, Monument Coordinates, Monument Elevation, Monument Age, Monument Condition, Monument Status, Monument Notes.
- SURVEY INFORMATION:** Fields for Survey Name, Survey Number, Survey Date, Survey Time, Survey Location, Survey Coordinates, Survey Elevation, Survey Method, Survey Instrument, Survey Operator, Survey Notes.
- OBSERVATIONS:** A table with columns for Monument Number, Monument Name, Monument Type, Monument Material, Monument Shape, Monument Size, Monument Color, Monument Orientation, Monument Location, Monument Coordinates, Monument Elevation, Monument Age, Monument Condition, Monument Status, Monument Notes.

[UNAVCO Monument Visit Logsheets \(.pdf\)](#)

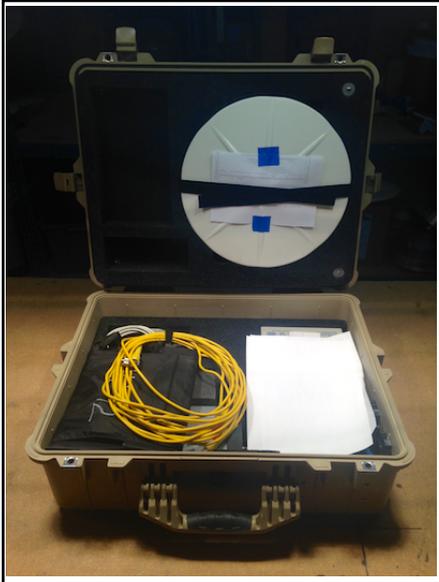
Document a survey occupation.

### General How-tos

- [How to obtain high-confidence coordinates for a base station](#)

## GPS/GNSS Campaign Kits Available

Click on links below to learn more about each system and for access to equipment-specific campaign resources such as software and how-tos.

 A black hard-shell carrying case is open, revealing its contents. On the left side of the case, a large white circular antenna is mounted. On the right side, there is a coiled yellow cable and a white rectangular box, likely the receiver or a power supply.	<p><a href="#"><u>UNAVCO Trimble NetR9/R8 Campaign Kit</u></a></p>	<p>UNAVCO's Trimble NetR9/8 campaign kit is ideal for long-term campaign installations but works for short-term installations as well. The NetR9/8 receiver can be accessed via a user friendly HTTP interface; data can be downloaded via FTP. A storage capacity of 8 GB allows ample room for years of data at a 15 second sample rate. Priority is given to NSF EAR-funded projects. Antenna mounts must be requested separately.</p>
 A black hard-shell carrying case is open, showing a white circular antenna mounted on the lid. The main compartment contains a receiver unit, a coiled yellow cable, and various other electronic components and connectors.	<p><a href="#"><u>Polar Style Trimble NetR9 Campaign Kit</u></a></p>	<p>UNAVCO Polar Services provide campaign kits suitable for Polar environments. These kits are designed for use with a Trimble NetR9 and R7 receivers and a Zephyr Geodetic GPS or GNSS antenna. The Polar campaign kit can be used for long summer deployments of weeks or months and installed on rock or snow/ice. Bulkheads for solar, antenna cable, and RTK radios allow for rapid deployment and the weathertight case is suitable for cold and snowy environments. The system can be used with various solar configurations, monuments and antenna mounts. Maximum weight of the kit is approximately 50 lbs.</p>
	<p><a href="#"><u>Topcon GB-1000 Campaign Kit</u></a></p>	<p>UNAVCO maintains 100 Topcon campaign GPS systems in order to support portable GPS deployments funded by the</p>



NSF's EarthScope Science panel. The systems have been designed for stand-alone temporary or semi-permanent deployment that will be used for densifying areas not sufficiently covered by continuous GPS and for responding to volcanic and tectonic crises. Six of the 100 systems are equipped with real-time kinematic (RTK) capability for such uses as rapid fault mapping and GIS-based geologic mapping. For [EarthScope campaigns](#) only. Antenna mounts must be requested separately.

Online URL: <https://kb.unavco.org/article/unavco-resources-campaign-and-kinematic-gps-gnss-390.html>