



Figure 3. Map location of CTO Central Andes cGPS stations with 4-character site codes (from tectonics-ims.caltech.edu/ims/net/2/sis). Yellow lines represent international borders.

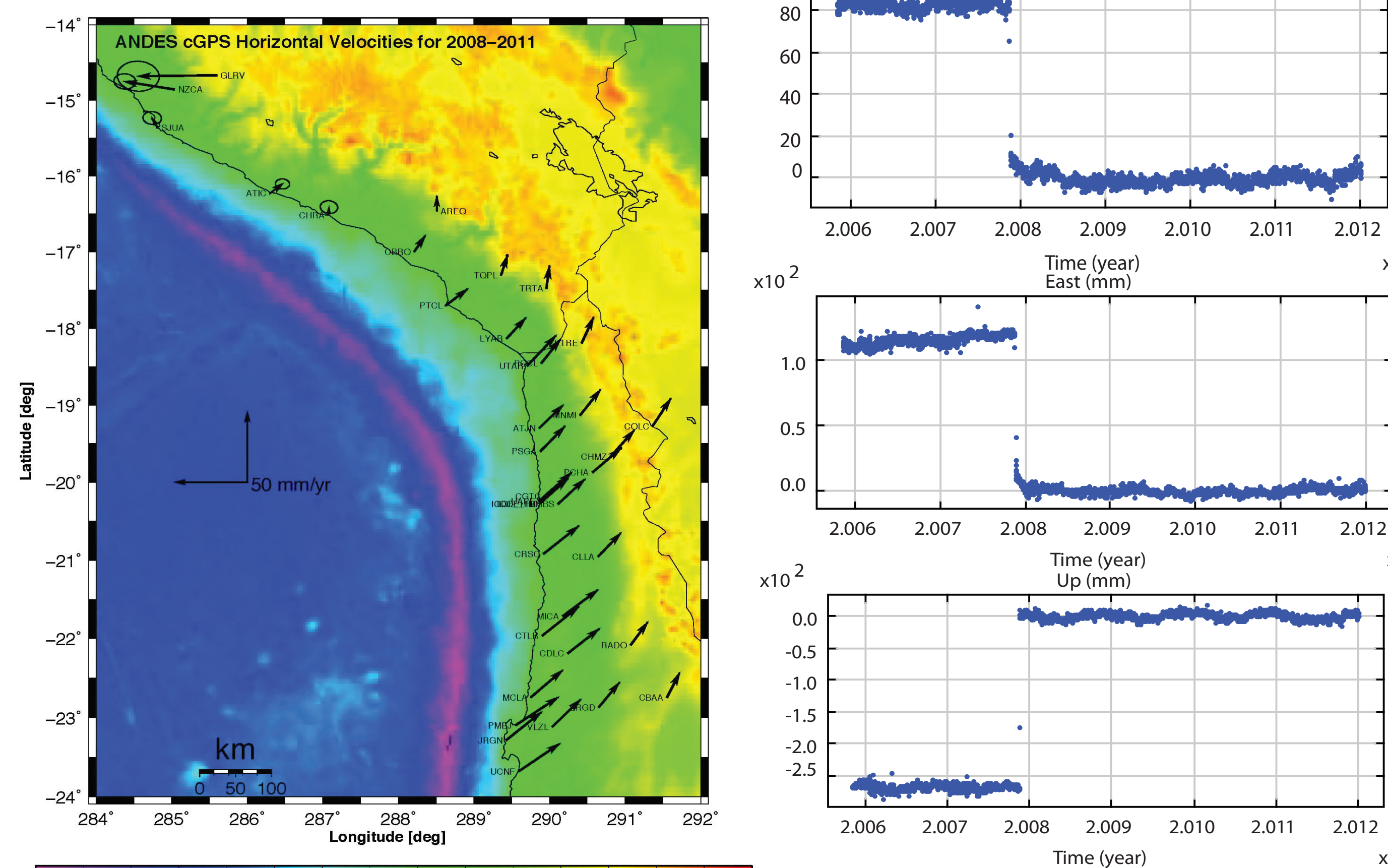


Figure 9. Map location of CTO Taiwan cGPS stations with 4-character site codes (from tectonics-ims.caltech.edu/ims/net/4/sis).

ABSTRACT: Together with local partners the Tectonics Observatory at the California Institute of Technology operates four networks of continuously observing GNSS geodetic stations in Asia (Nepal, Taiwan) and the Americas (Chile, Mexico, Peru). The Nepal and Central Andes networks with currently 33 and 25 active sites, respectively, are designed to analyze slow strain build up in preparation of future earthquakes as well as transient geodetic deformation due to earthquakes, slow slip events, and other sources of transient deformation of larger segments of plate boundaries. Our networks in Taiwan (17 sites) and Northern Baja California (8 sites) focus on capturing smaller scale crustal deformation along active regional faults. Dual frequency code and phase observations are recorded with mostly Trimble NetRS, NetR8 and NetR9 receivers. Measurements at sampling intervals of 1 and 15 sec are stored internally while the high rate data is also backed up on external serial ring buffers. About half of all stations have continuous telemetry links, while the remaining sites are manually downloaded at regular intervals. RINEX data are freely available at UNAVCO archives, position time series, velocity maps, and metadata at Caltech websites (links at http://tectonics.caltech.edu/resources/continuous_gps.html). Our ongoing development efforts are geared toward expanding the objective of the networks to include active, near real time monitoring of deformation. Thus, the realization of reliable telemetry links at reasonable costs presents currently the biggest challenge. Our approach demands a combination of various methods, including satellite, cellular, and long range spread spectrum based systems.

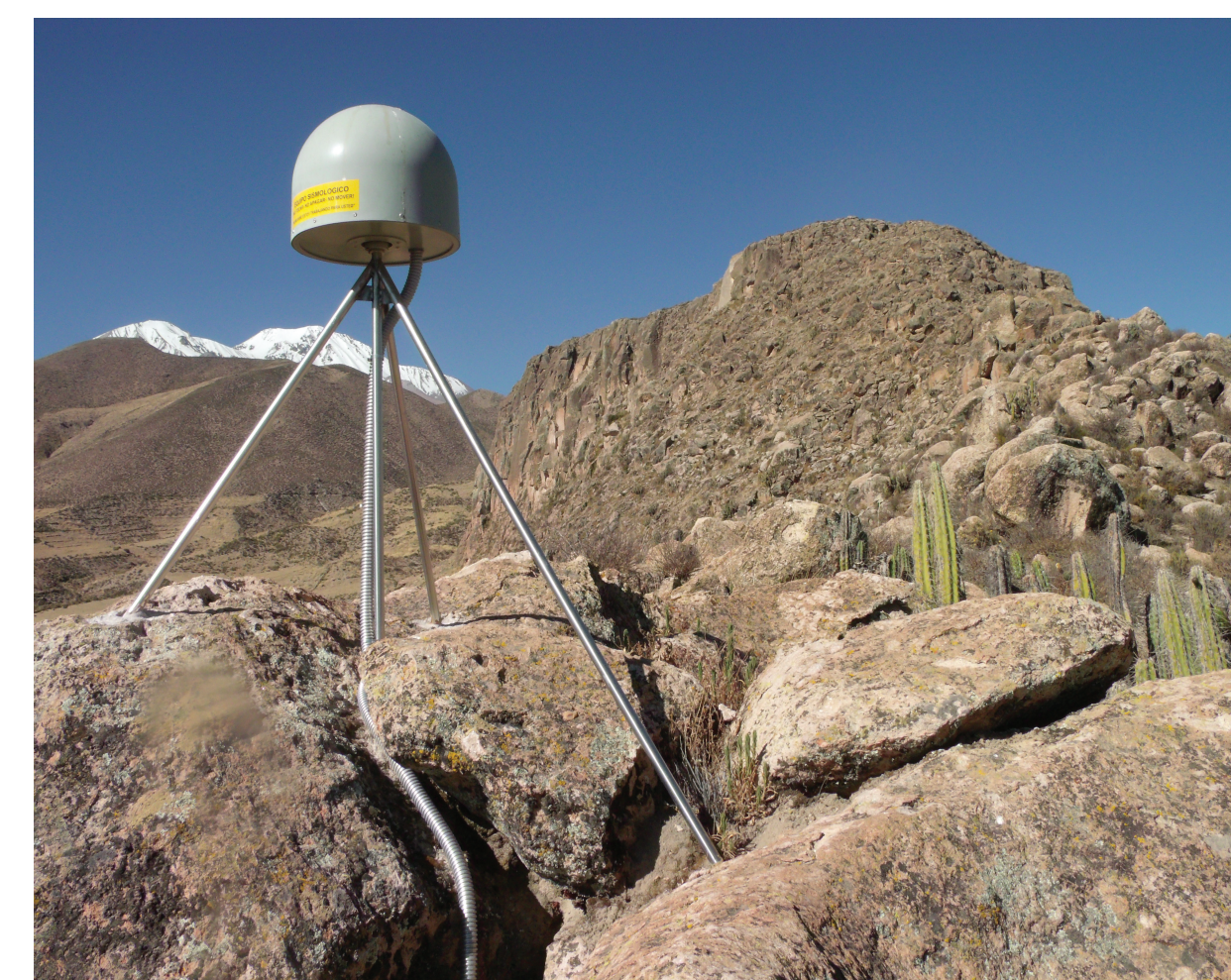


Figure 1. Typical layout of CTO cGPS station (PTRE, Chile). Monument with antenna and radome above, equipment box and solar panel to the right.



Figure 2. Above left: Evidence of vandalism and theft. Door of equipment box was forced open, battery and GPS receiver were removed. Above right: Re-enforcement of door with heavy duty steel chain and padlock.

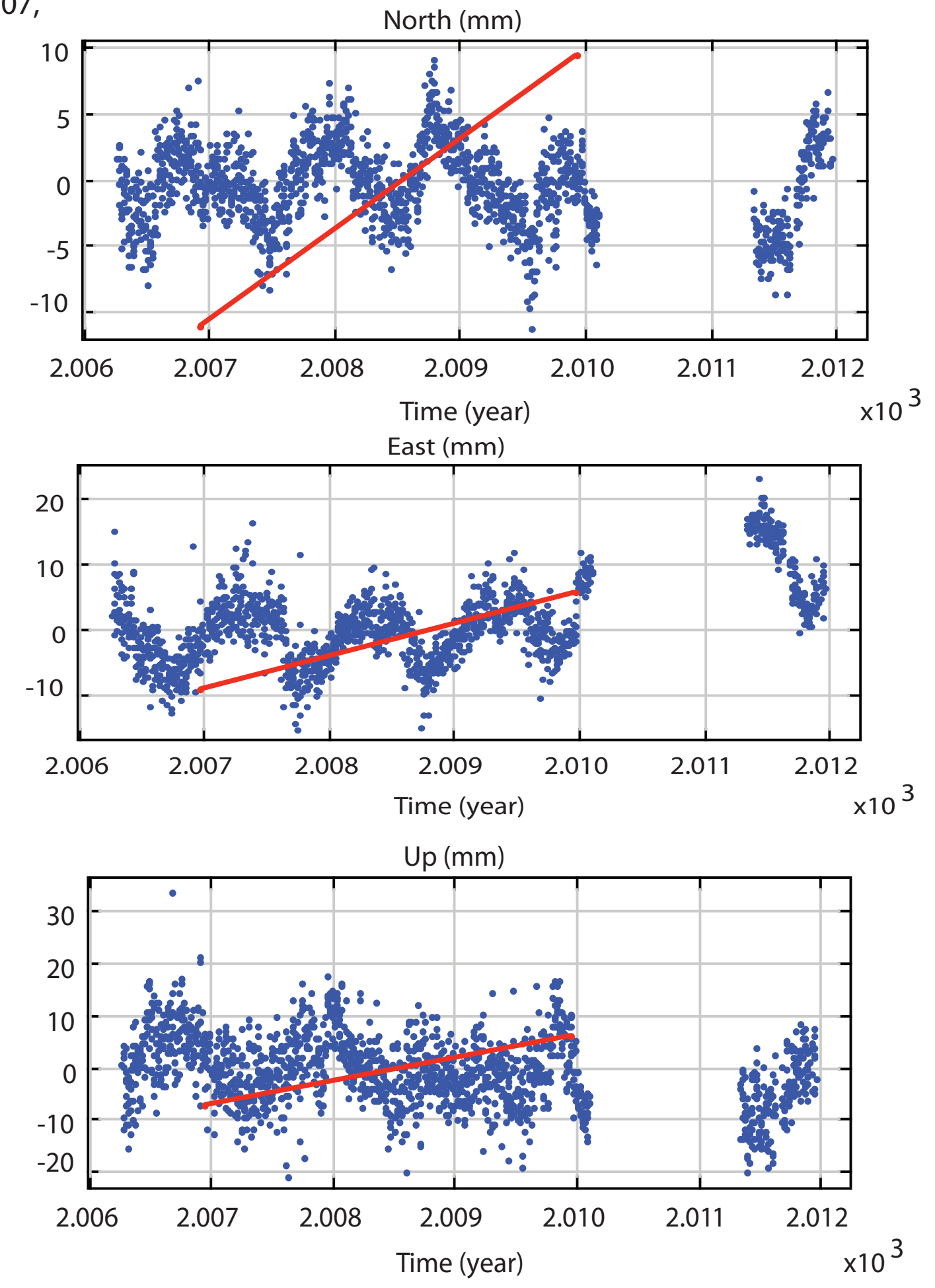


Figure 10. North, East, and Up components of time series of daily solutions for station CHTS after removal of linear trend (red lines). From www.gps.caltech.edu/~jeff/taiwan/.



Figure 13. Map location of CTO Northern Baja California cGPS stations with 4-character site codes (from tectonics-ims.caltech.edu/ims/net/5/sis). Yellow lines represent international borders.

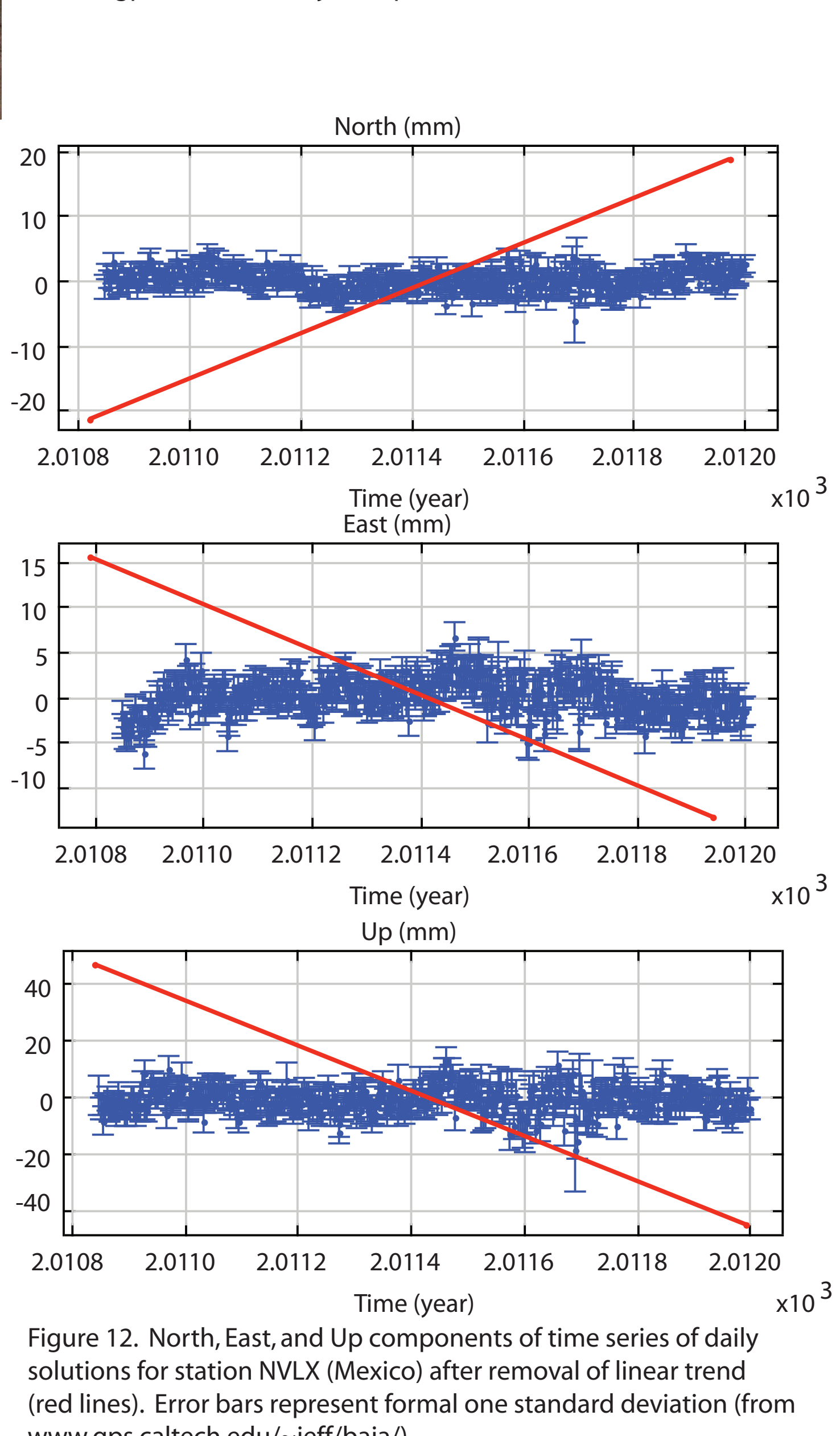
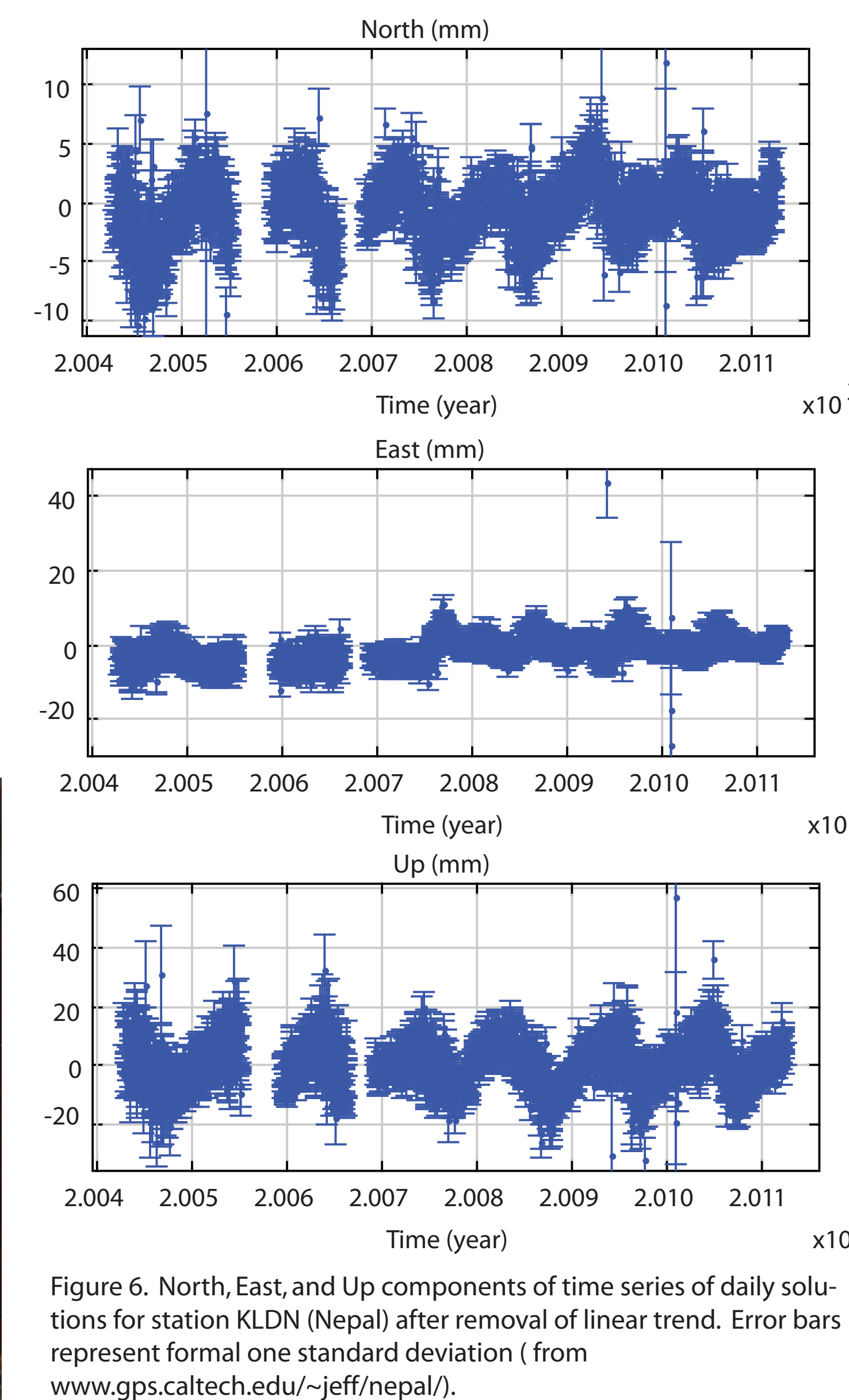


Figure 7. Map location of CTO NEPAL cGPS stations with 4-character site codes (from tectonics-ims.caltech.edu/ims/net/3/sis). Yellow lines represent international borders.

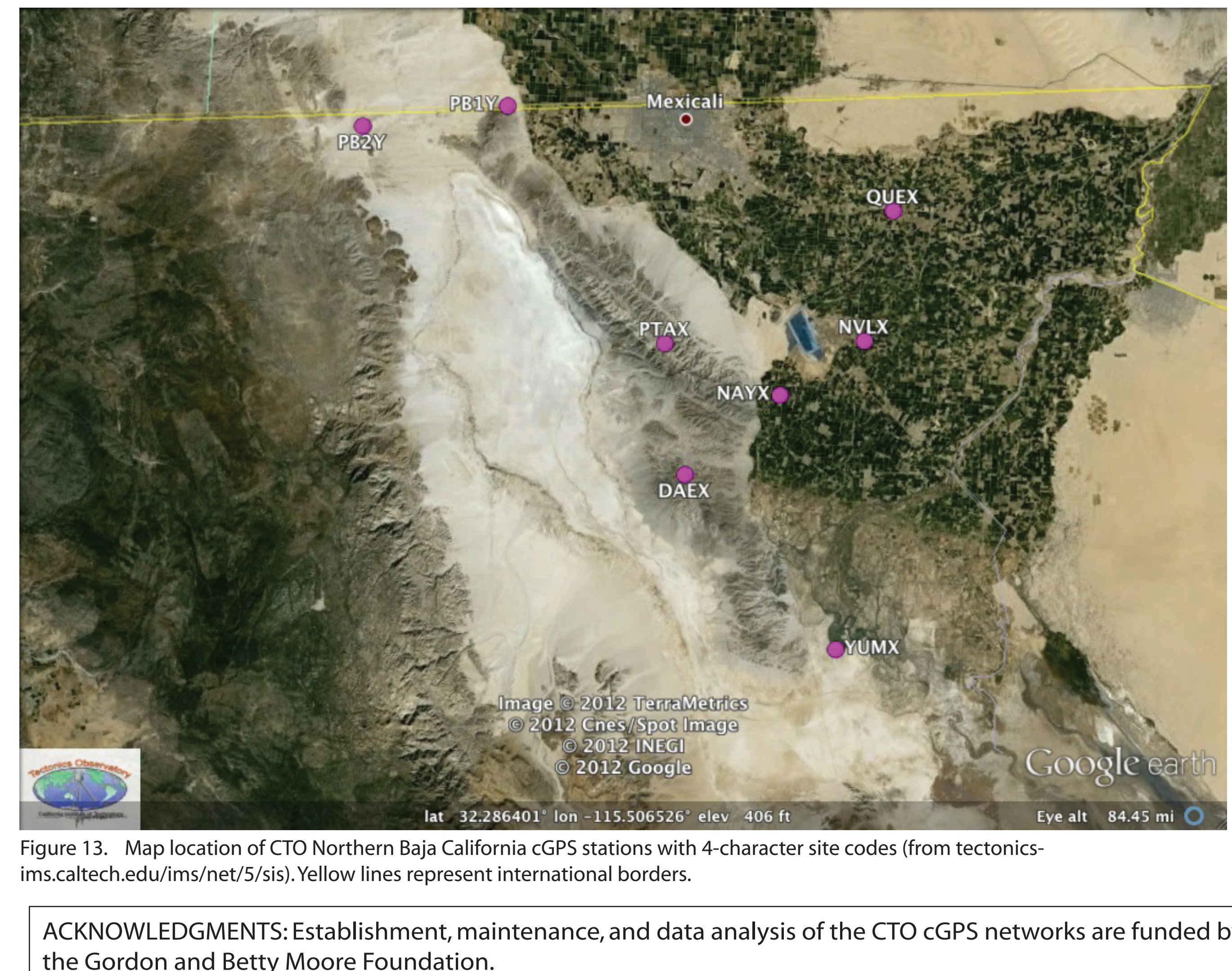
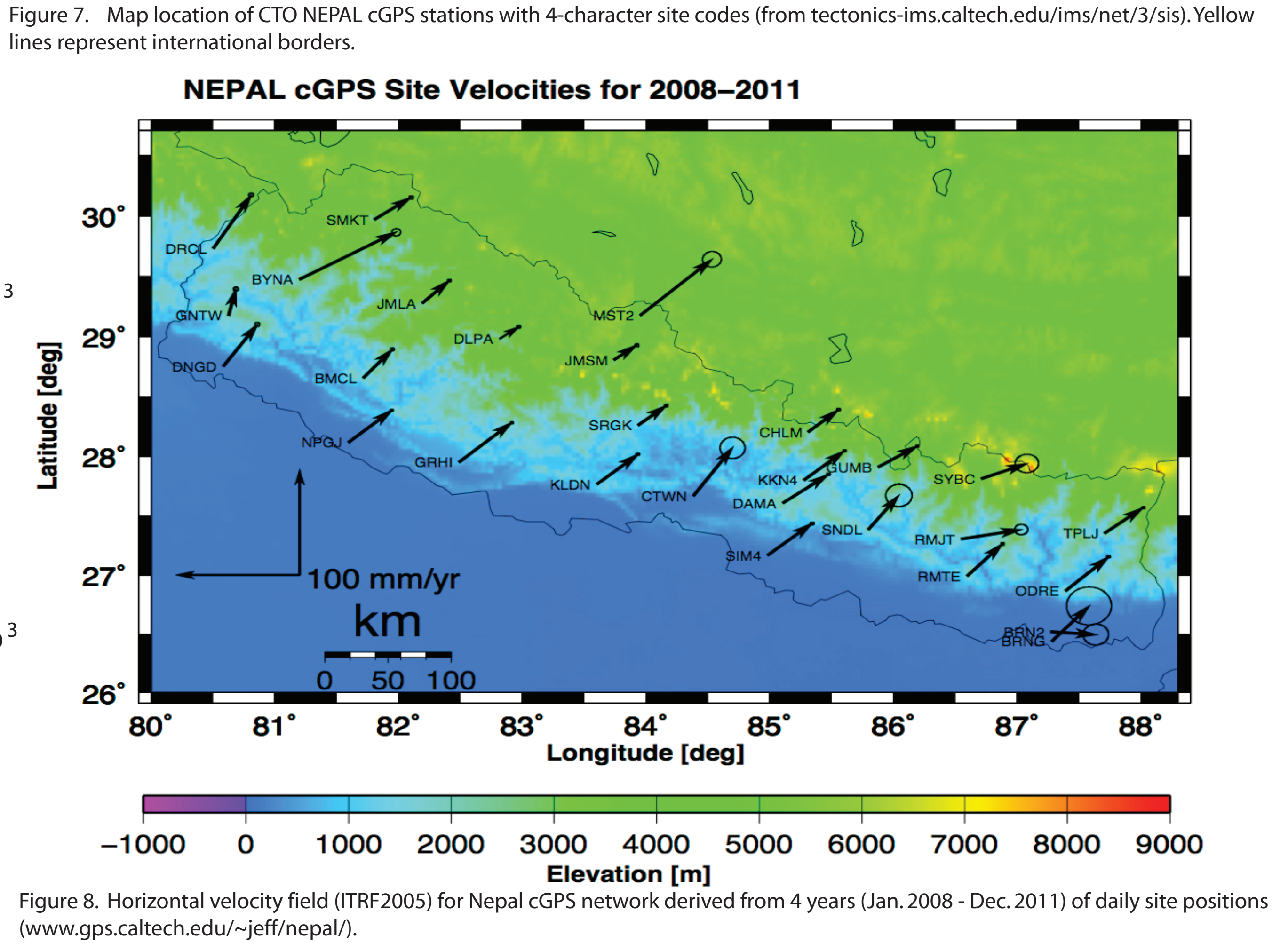
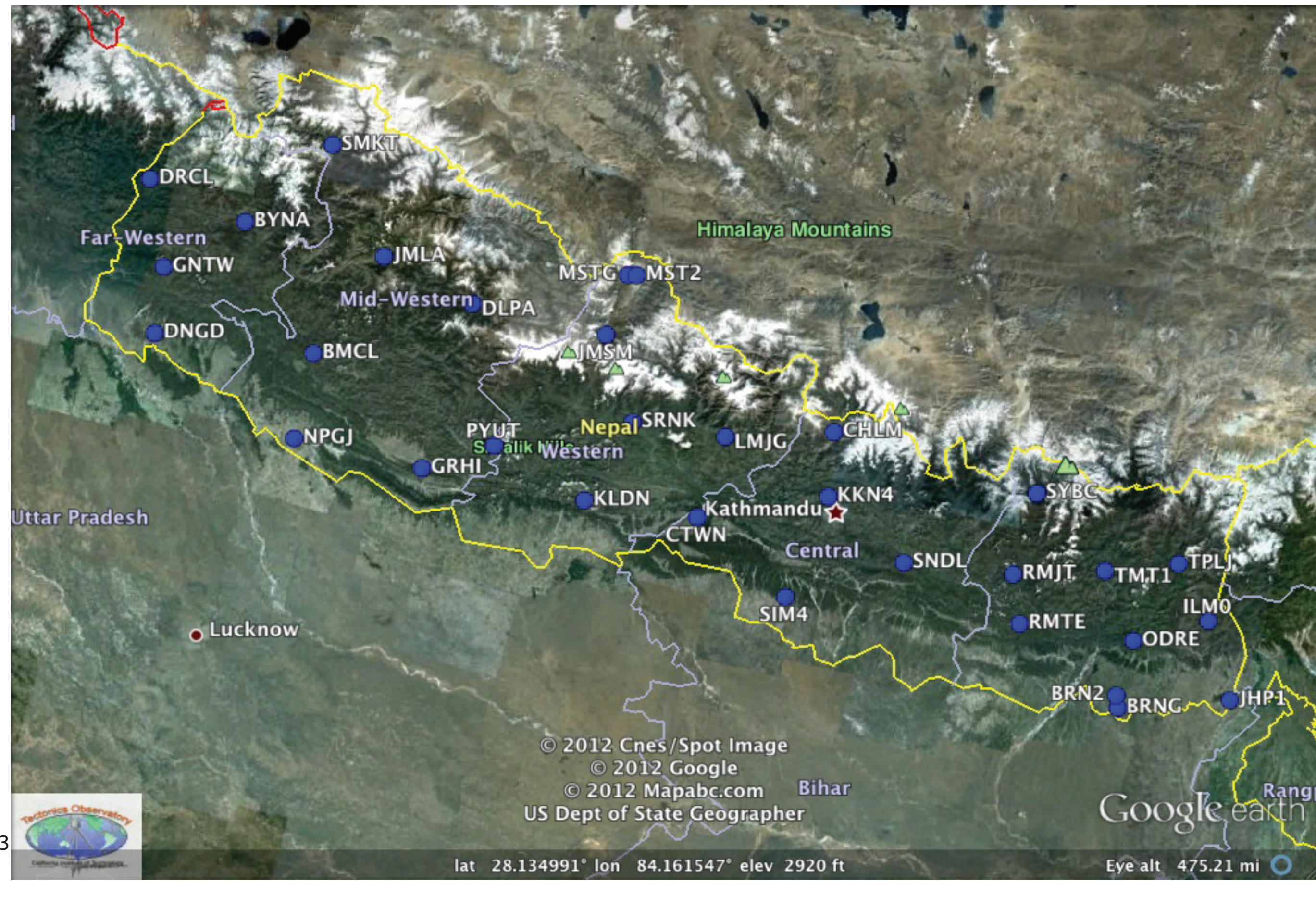


Figure 10. Map location of CTO Northern Baja California cGPS stations with 4-character site codes (from tectonics-ims.caltech.edu/ims/net/5/sis). Yellow lines represent international borders.

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