GSA DR Item **2013350** accompanies Saballos, J.A., Malservisi, R., Connor, C.B., La Femina, P.C., and Wetmore, P., 2013, Gravity and geodesy of Concepción Volcano, Nicaragua, *in* Rose, W.I., Palma, J.L., Delgado Granados, H., and Varley, N., eds., Understanding Open-Vent Volcanism and Related Hazards: Geological Society of America Special Paper 498, p. 77–88, https://doi.org/10.1130/2013.2498(05).

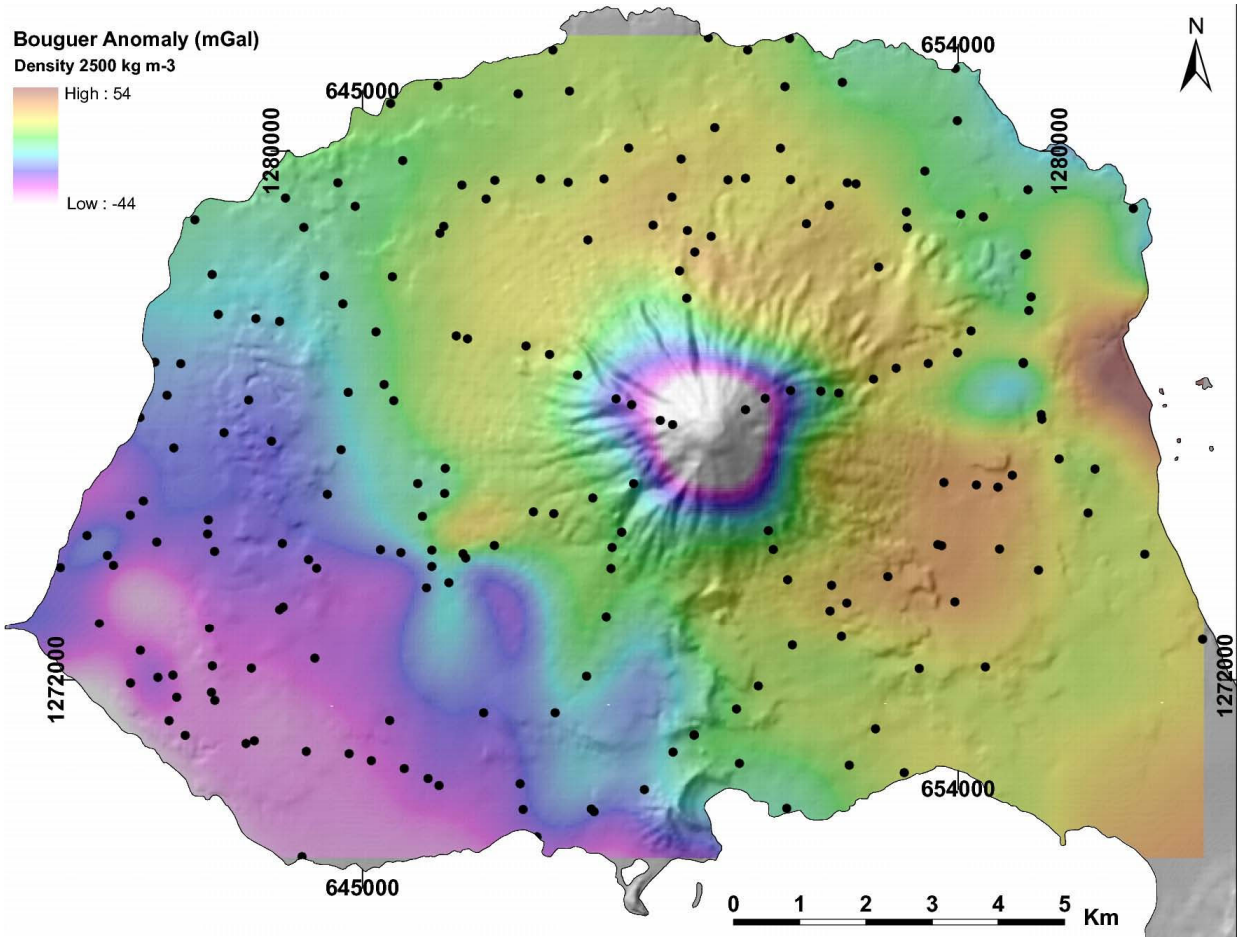

Figure DR1: Simple Bouguer anomaly map computed using a density of 2500 kg m^{-3} used in gravitational spreading models (e.g. Borgia and van Wyk de Vries (2003)). Note the narrow steep negative ring-like gradient formed around the volcanic cone. This is due to an overcorrection caused by a density that is higher than the bulk average terrain density.

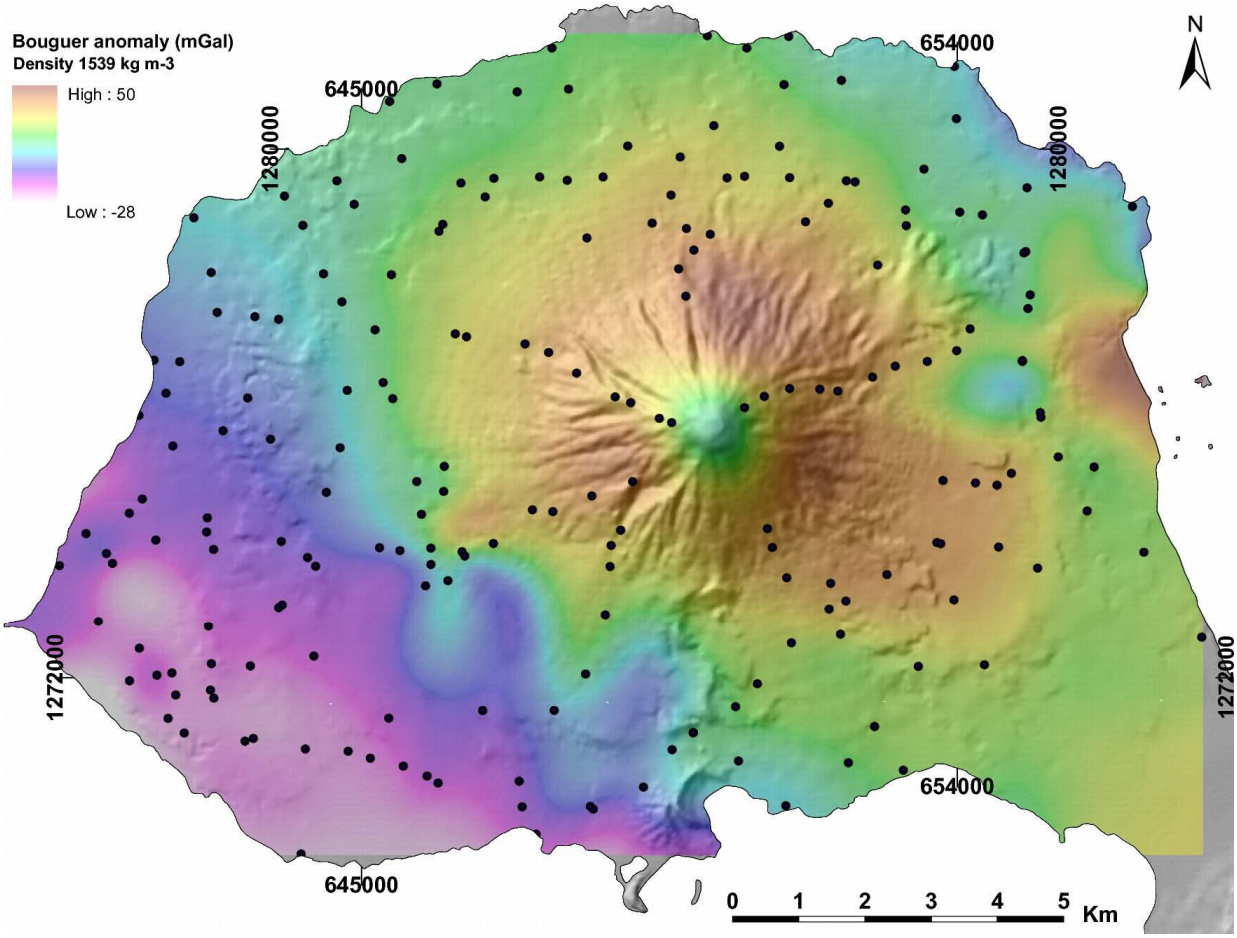

Figure DR2: Simple Bouguer anomaly map computed using a density of 1539 kg m^{-3} provided with the 1-D Nettleton (Nettleton, 1939) and Parasnis' (Parasnis, 1997) meth- ods. Although this density does a better job in removing the effect of topography from the gravity anomaly than a density of 2500 kg m^{-3}, there is still some positive correlation between the volcanic topography and the Bouguer anomaly caused by a lower density than the best bulk average density that represents the terrain.

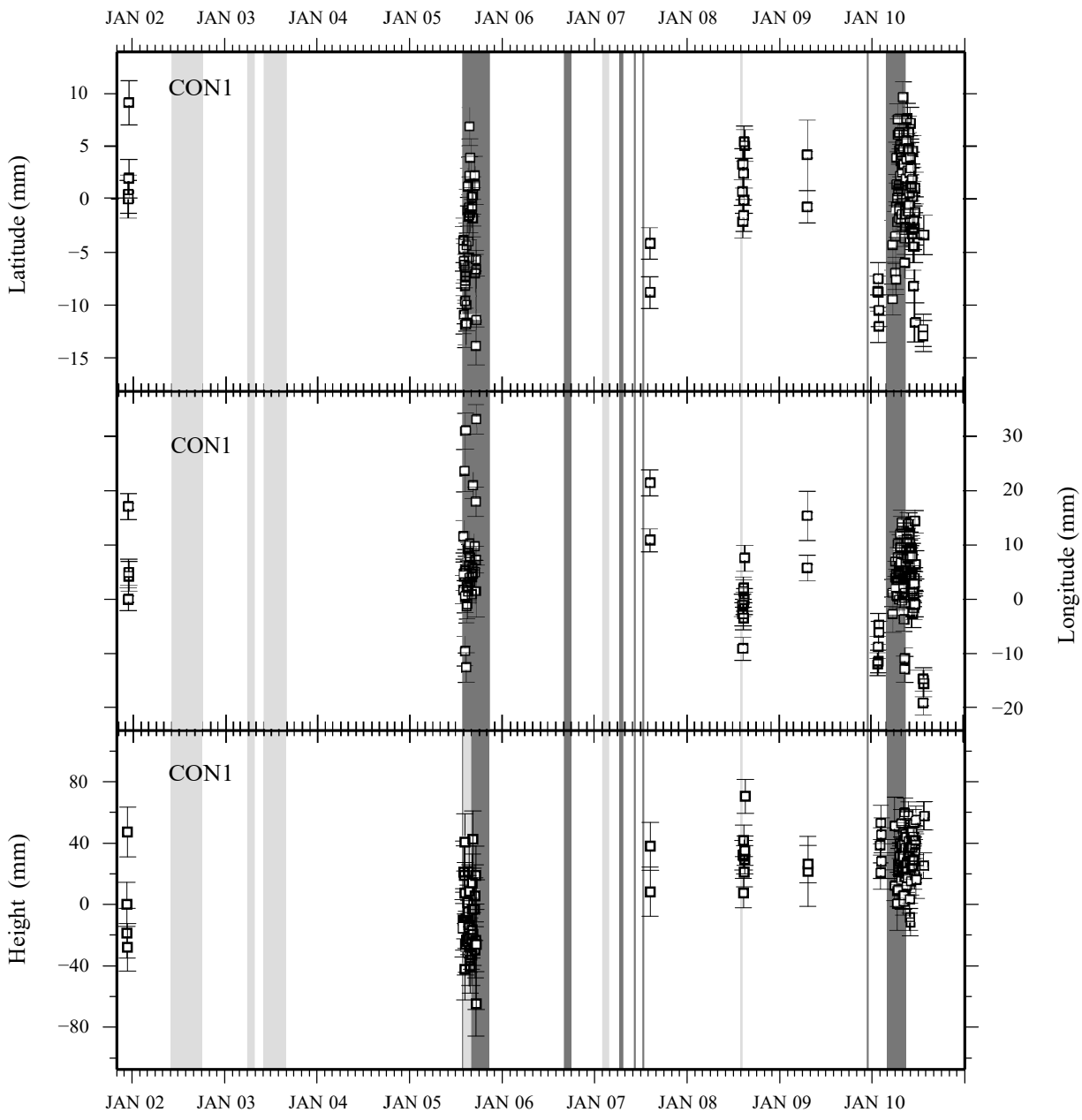

Figure DR3: Time series for the three components of station CON1 for all the campaigns. Light-gray vertical bars indicate periods of unusual seismic activity on Concepcion volcano and/or near Ometepe Island, while dark-gray vertical bars represent periods of volcanic activity characterized by ash and gas explosions. CON1 is located slightly NW from Concepión, see Figure 1.

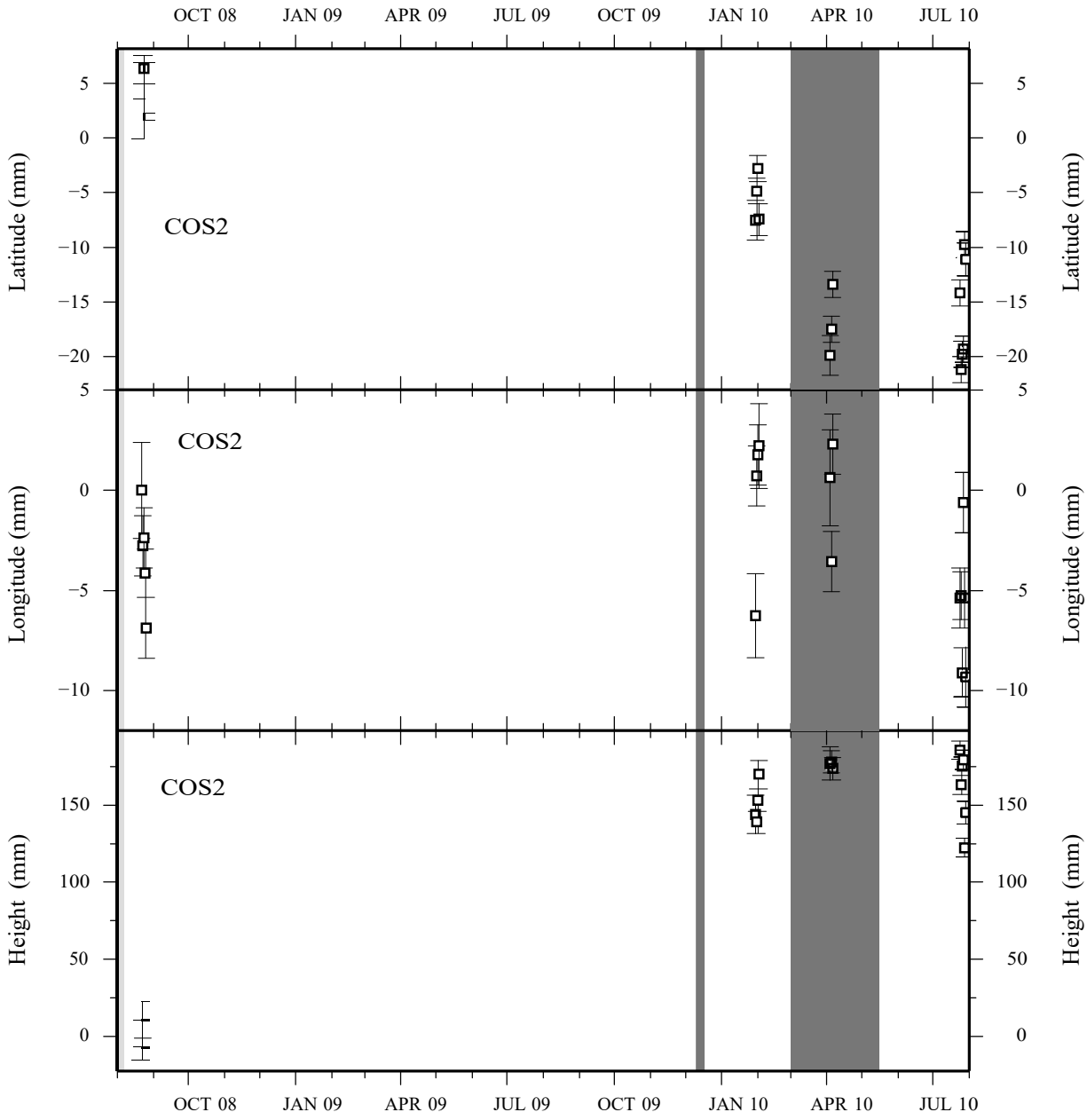

Figure DR4: Time series for the three components of station COS2. Light-gray vertical bars indicate periods of unusual seismic activity on Concepción volcano and/or near Ometepe Island, while dark-gray vertical bars represent periods of volcanic activity characterized by ash and gas explosions. COS2 site, located slightly SW of the volcano, in the San José del Sur town (Figure 1), shows the largest vertical variation through time, an increase, of ~13–16 cm in 1.932 yrs.

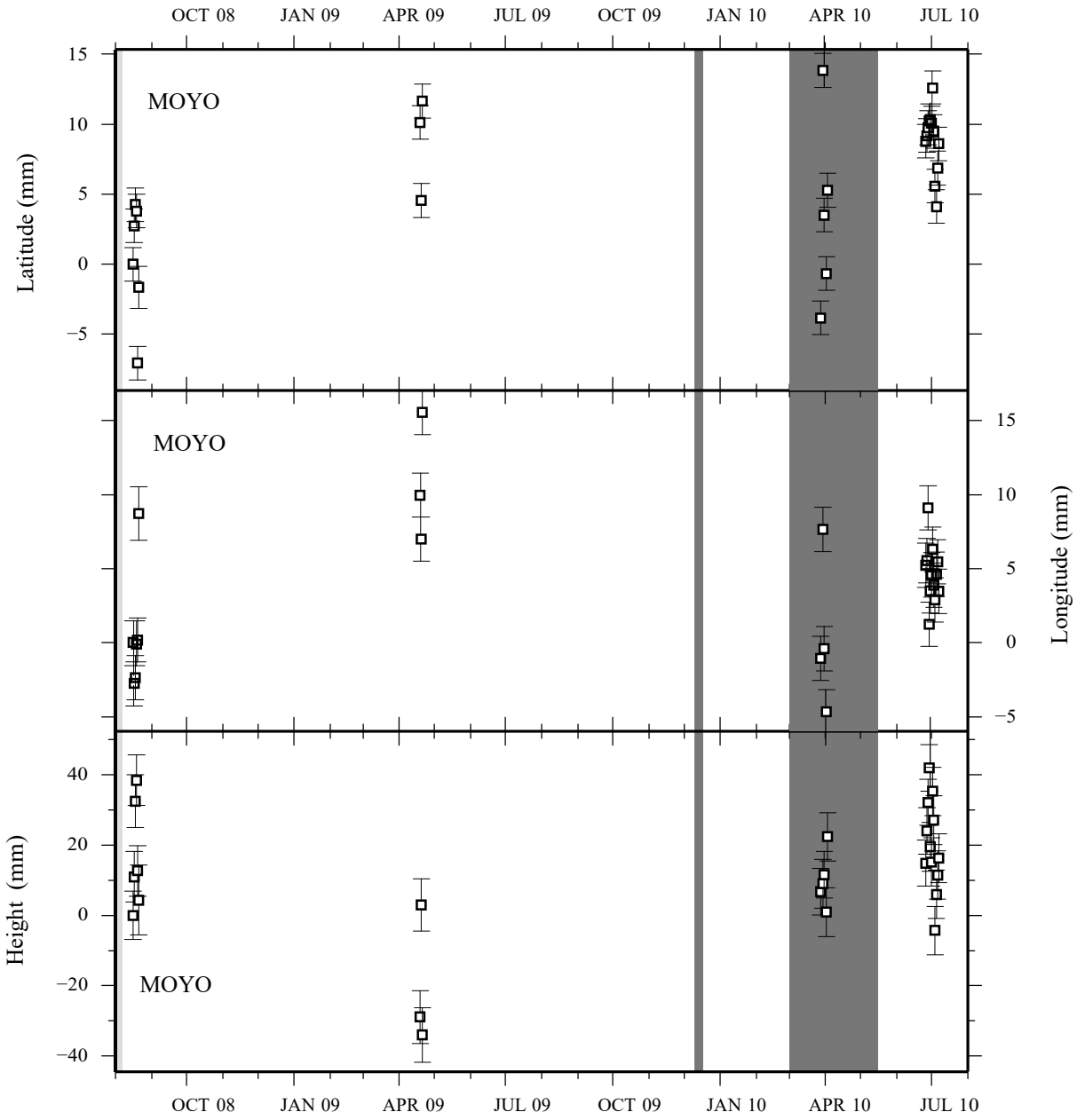

Figure DR5: Time series for the three components of station MOYO. Light-gray vertical bars indicate periods of unusual seismic activity on Concepción volcano and/or near Ometepe Island, while dark-gray vertical bars represent periods of volcanic activity characterized by ash and gas explosions. MOYO is located of the western side of the volcano, near the town of Moyogalpa, see Figure 1.

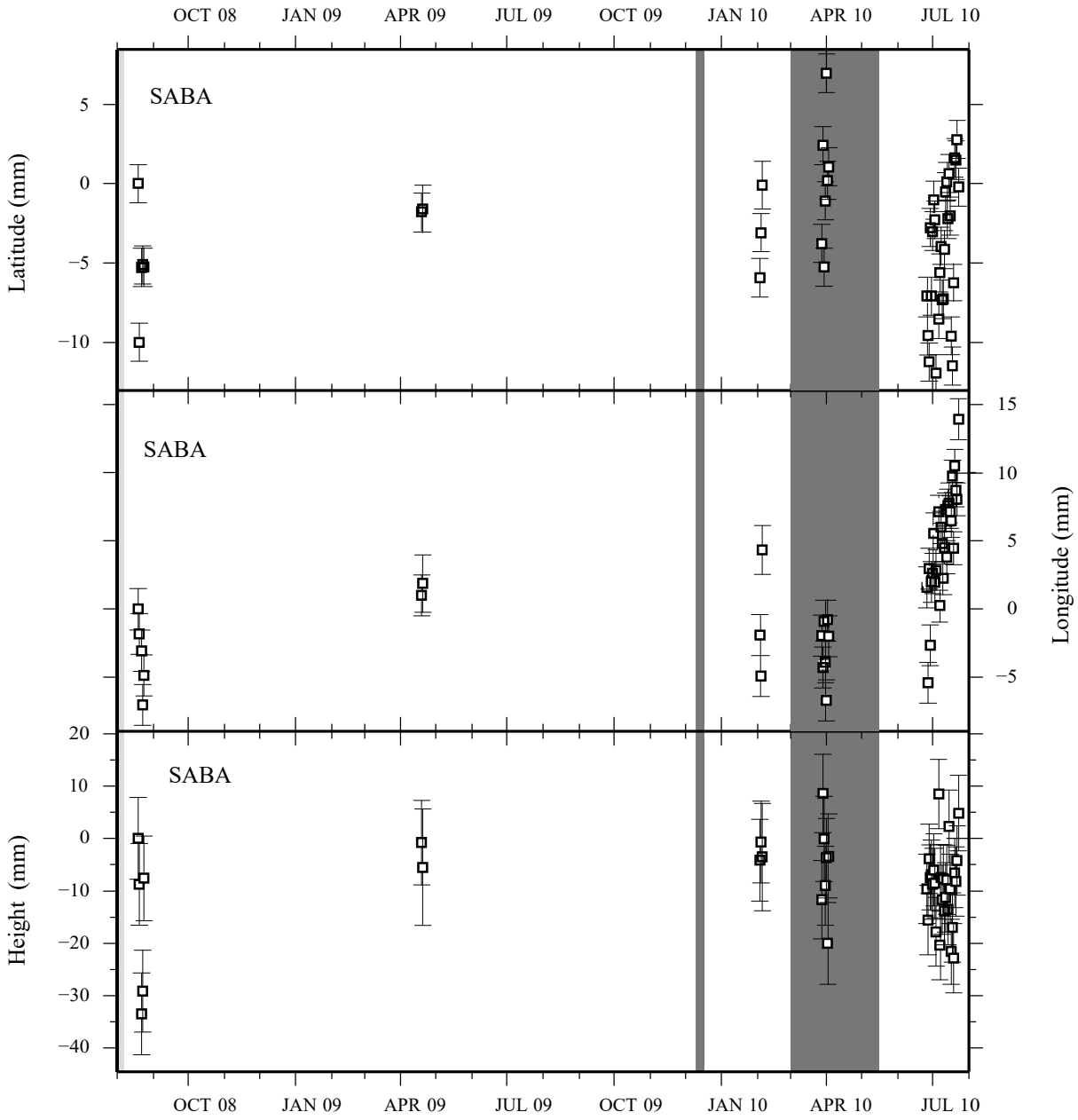

Figure DR6: Time series for the three components of station SABA. Light-gray vertical bars indicate periods of unusual seismic activity on Concepción volcano and/or near Ometepe Island, while dark-gray vertical bars represent periods of volcanic activity characterized by ash and gas explosions. SABA is located in the northeast from Concepción volcano in the community of La Sabana, see Figure 1.

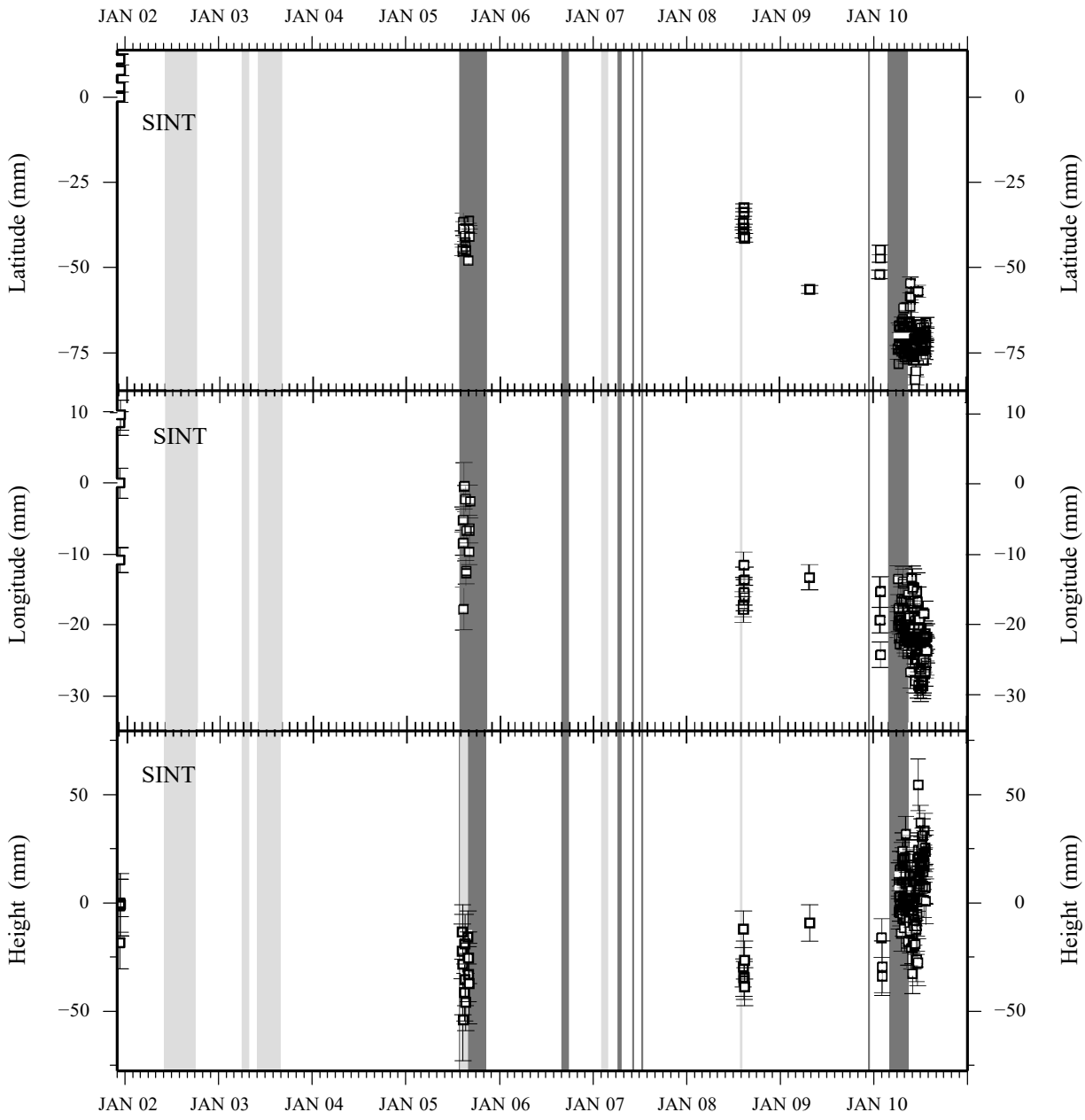

Figure DR7: Time series for the three components of station SINZ. Light-gray vertical bars indicate periods of unusual seismic activity on Concepción volcano and/or near Ometepe Island, while dark-gray vertical bars represent periods of volcanic activity characterized by ash and gas explosions. SINT is located southeast from Concepción volcano, in the Sintiope town, see Figure 1. In April 2010 the GPS site COS1, see Figure 1, was tied to the new site SINT because a water well pump was built a few meters from COS1 in early 2010.

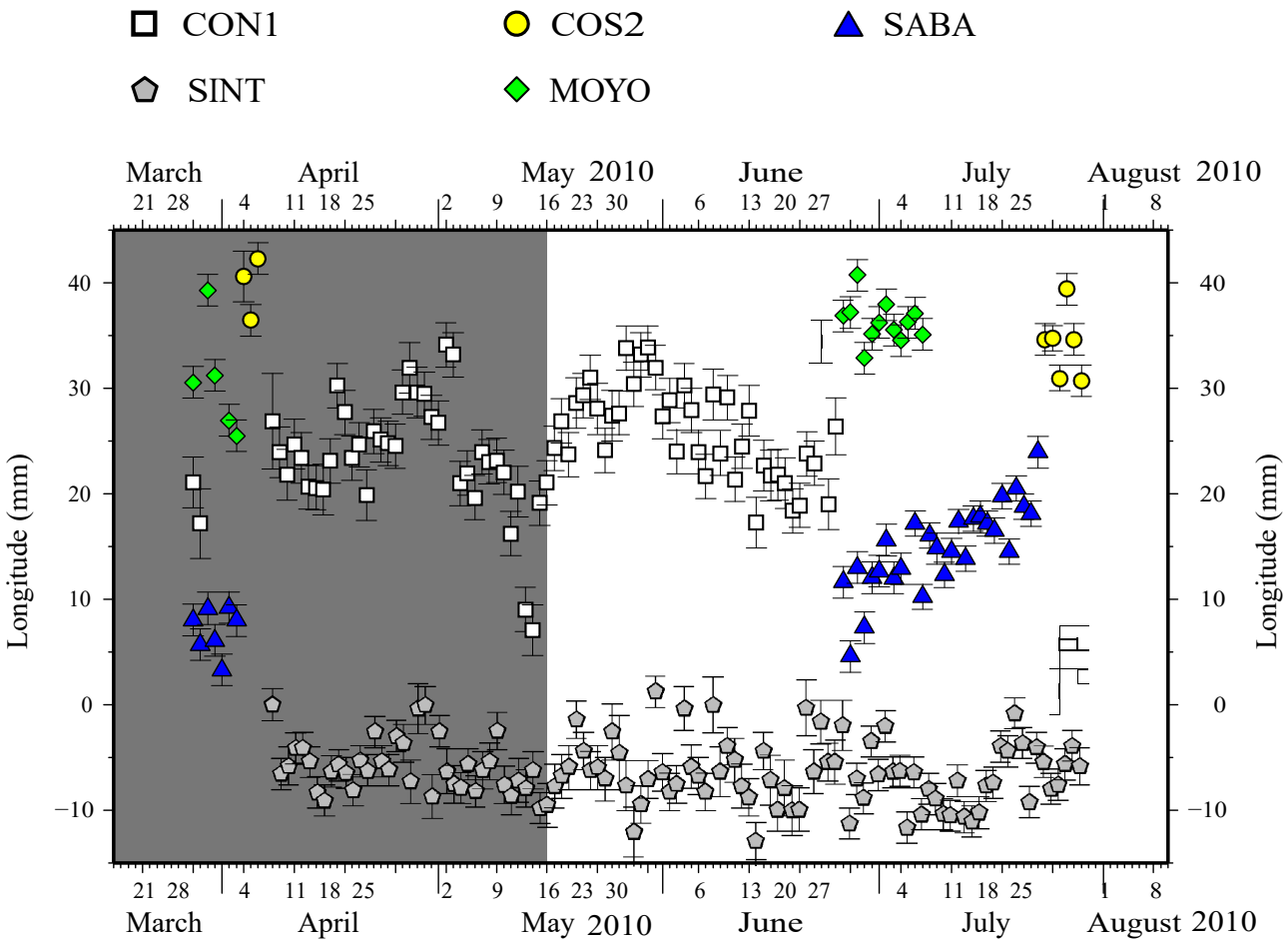

Figure DR8: Time series changes for the Longitude component of all stations around Concepcion volcano during April through July 2010. Dark-gray vertical bars represent periods of volcanic activity characterized by ash and gas explosions. Time series have been offset for better visualization.

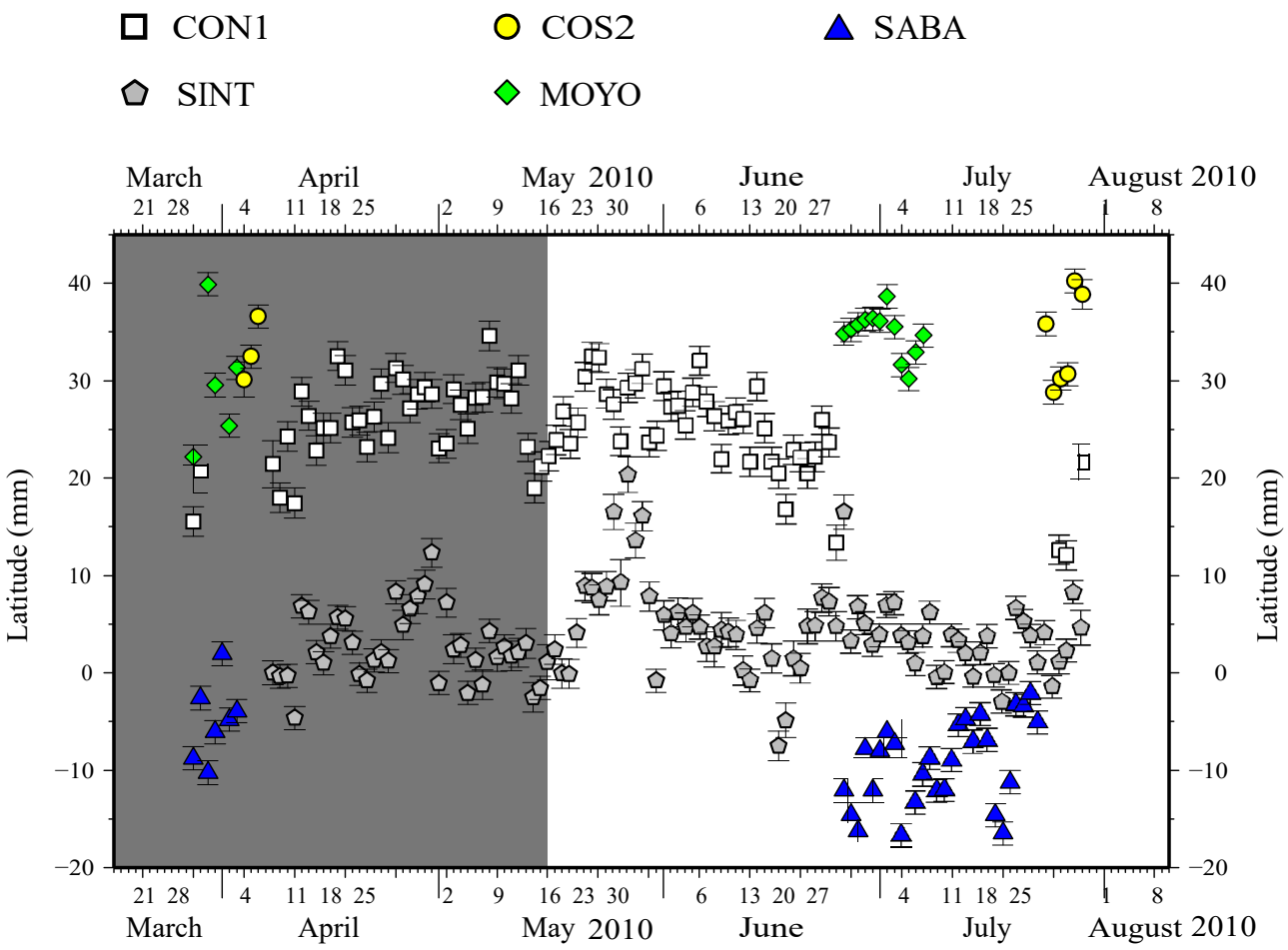

Figure DR9: Time series changes for the Latitude component of all stations around Concepcion volcano during April through July 2010. Dark-gray vertical bars represent periods of volcanic activity characterized by ash and gas explosions. Time series have been offset for better visualization.

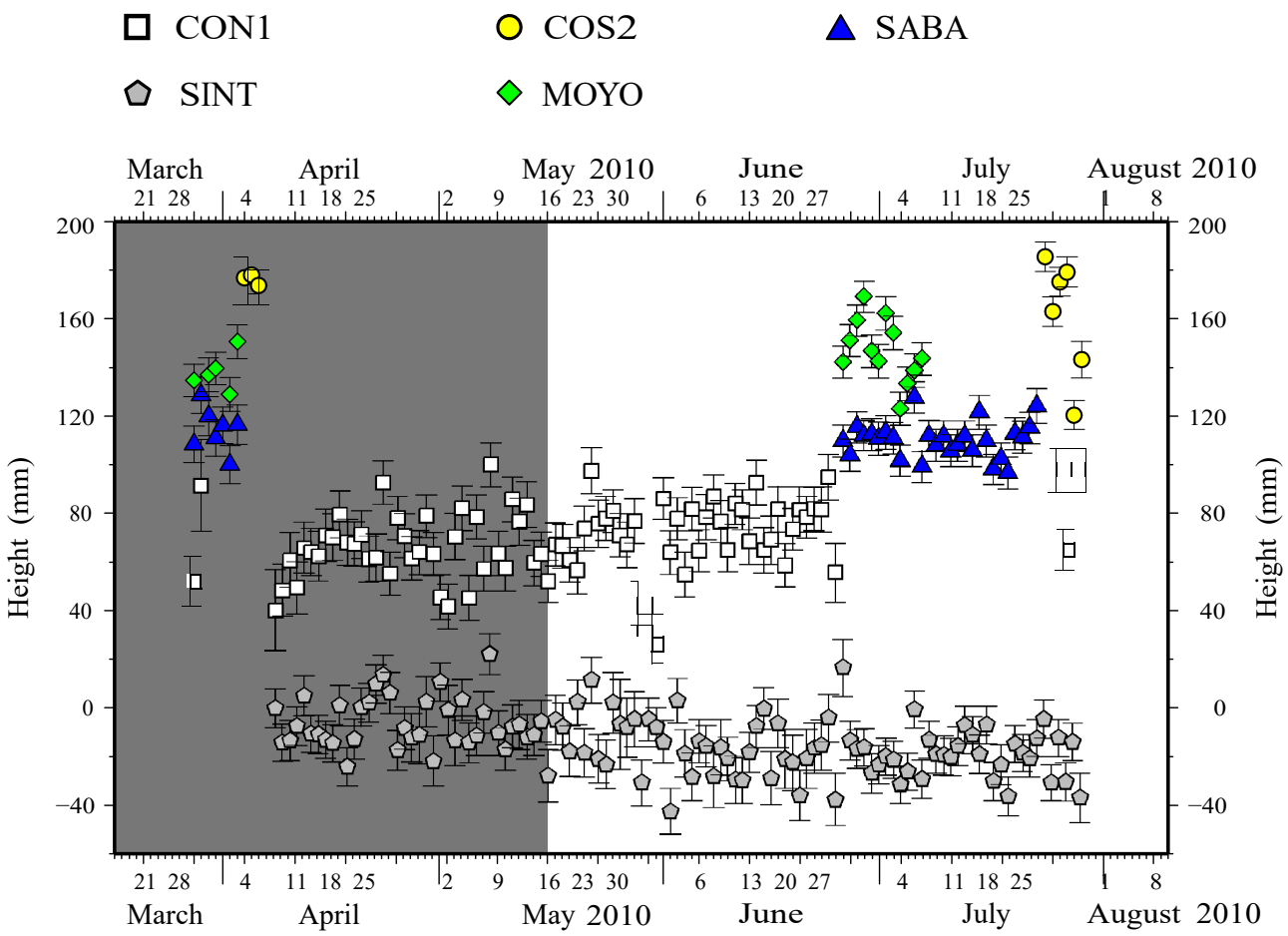

Figure DR10: Time series changes for the vertical component of all stations around Concepcion volcano during April through July 2010. Dark-gray vertical bars represent periods of volcanic activity characterized by ash and gas explosions. Time series have been offset for better visualization.

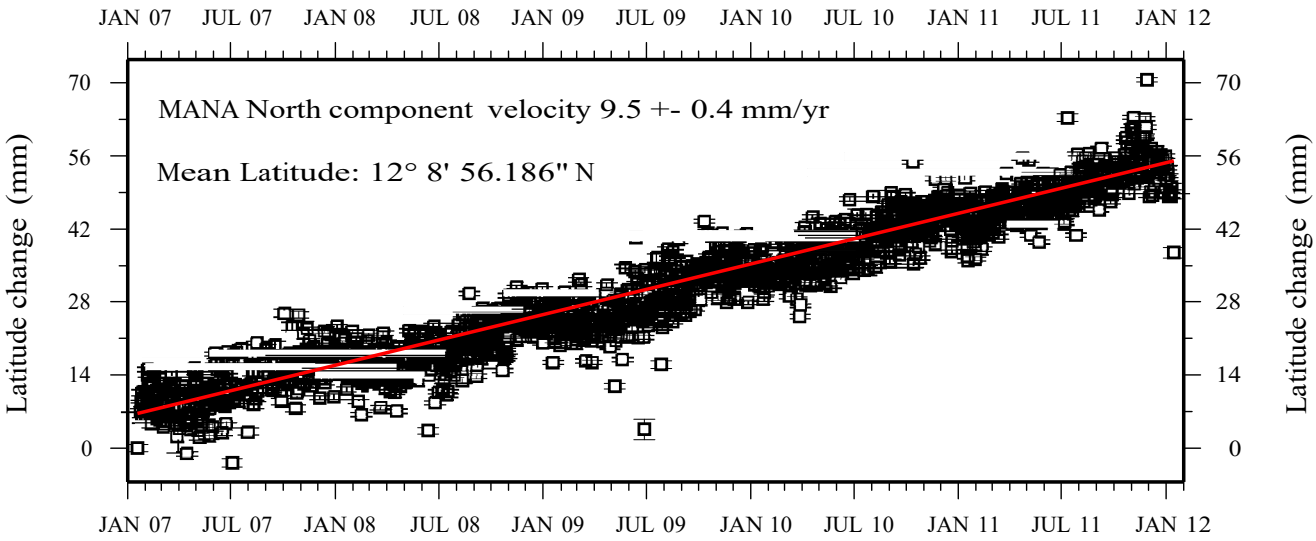

Figure DR11: Temporal changes of Latitude component of GPS station MANA between January 2007 and August 2010. This continuous site is part of International GPS Service, IGS, network, and located inside the INETER's facilities in Managua, Nicaragua. Red line corresponds to best linear fit. Velocity uncertainties were computed using the Hackl et al. (2011) algorithm.

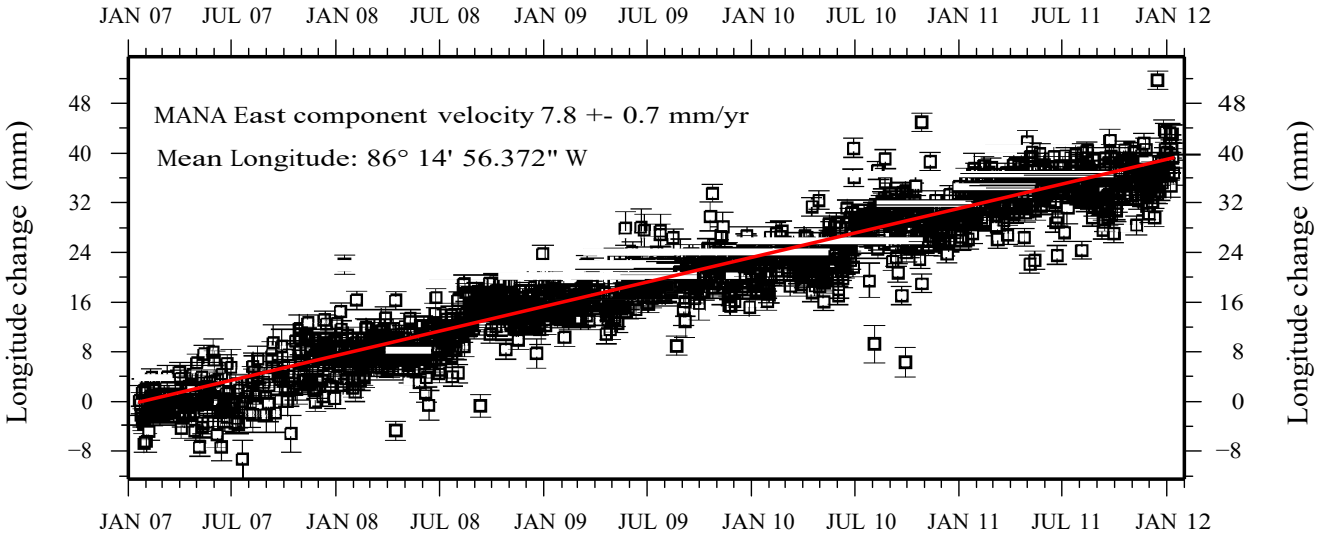

Figure DR12: Temporal changes of Longitude component of GPS station MANA between January 2007 and August 2010. This continuous site is part of International GPS Service, IGS, network, and located inside the INETER's facilities in Managua, Nicaragua. Red line corresponds to best linear fit. Velocity uncertainties were computed using the Hackl et al. (2011) algorithm.