

High Rate GPS Data From the 2007 Mw 7.7 Tocopilla Earthquake in Northern Chile

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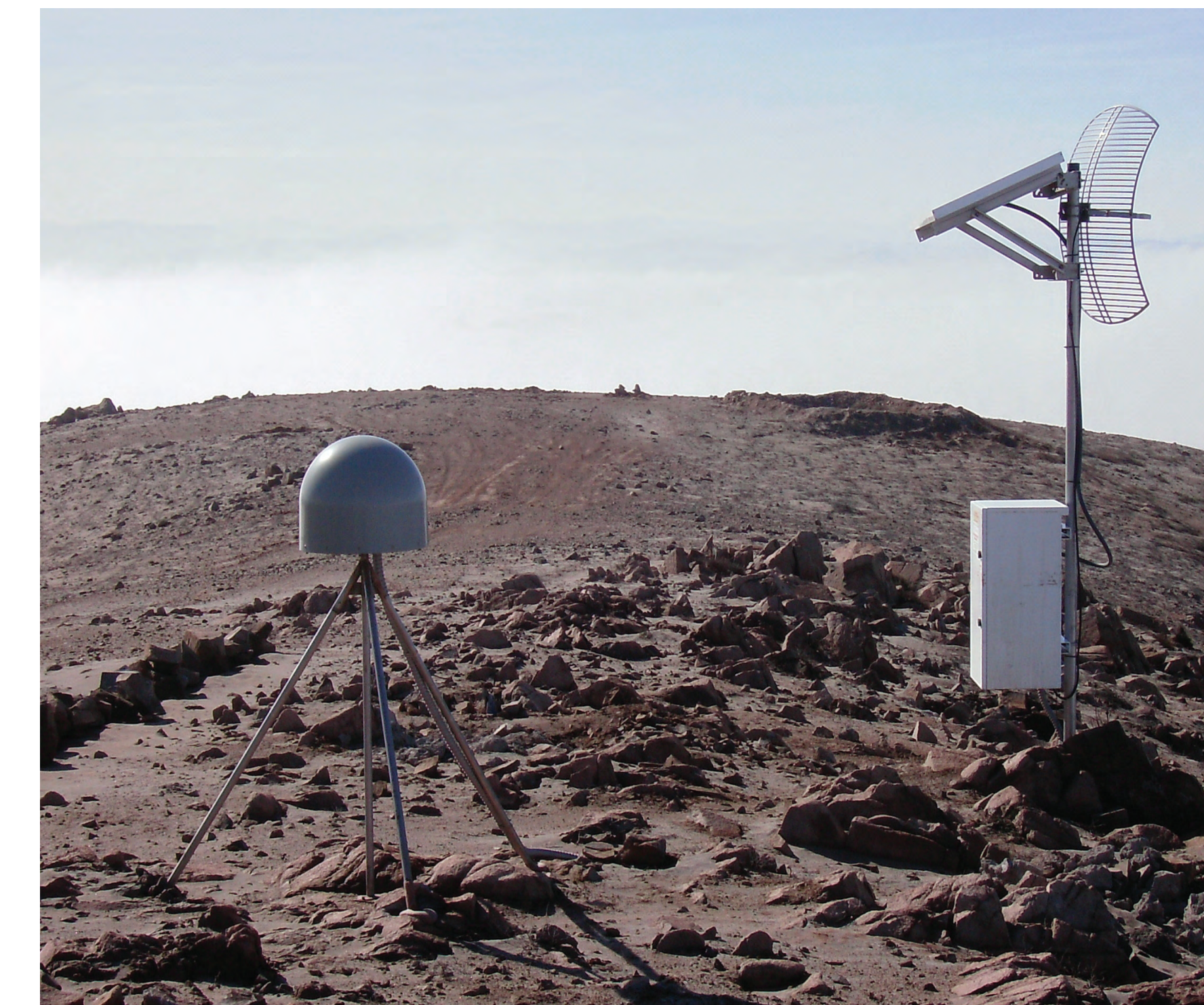


Figure 1. Map location of CAnTO stations with site codes.

The CAnTO (Central ANdean Tectonic Observatory) geodetic network captured the November 15 Tocopilla earthquake. Using GAMIT/TRACK software we compute 3-component 5Hz time series of station displacement to investigate coseismic and postseismic kinematics.



Figure 2. Location of Epicenter based on USGS and Harvard CMT solutions.



Figures 3a and 3b. Standard design of CAnTO station. GPS choke ring antenna is located inside radome on stainless steel center rod stabilized by tripod support. White box contains GPS receiver, batteries, and communications equipment.

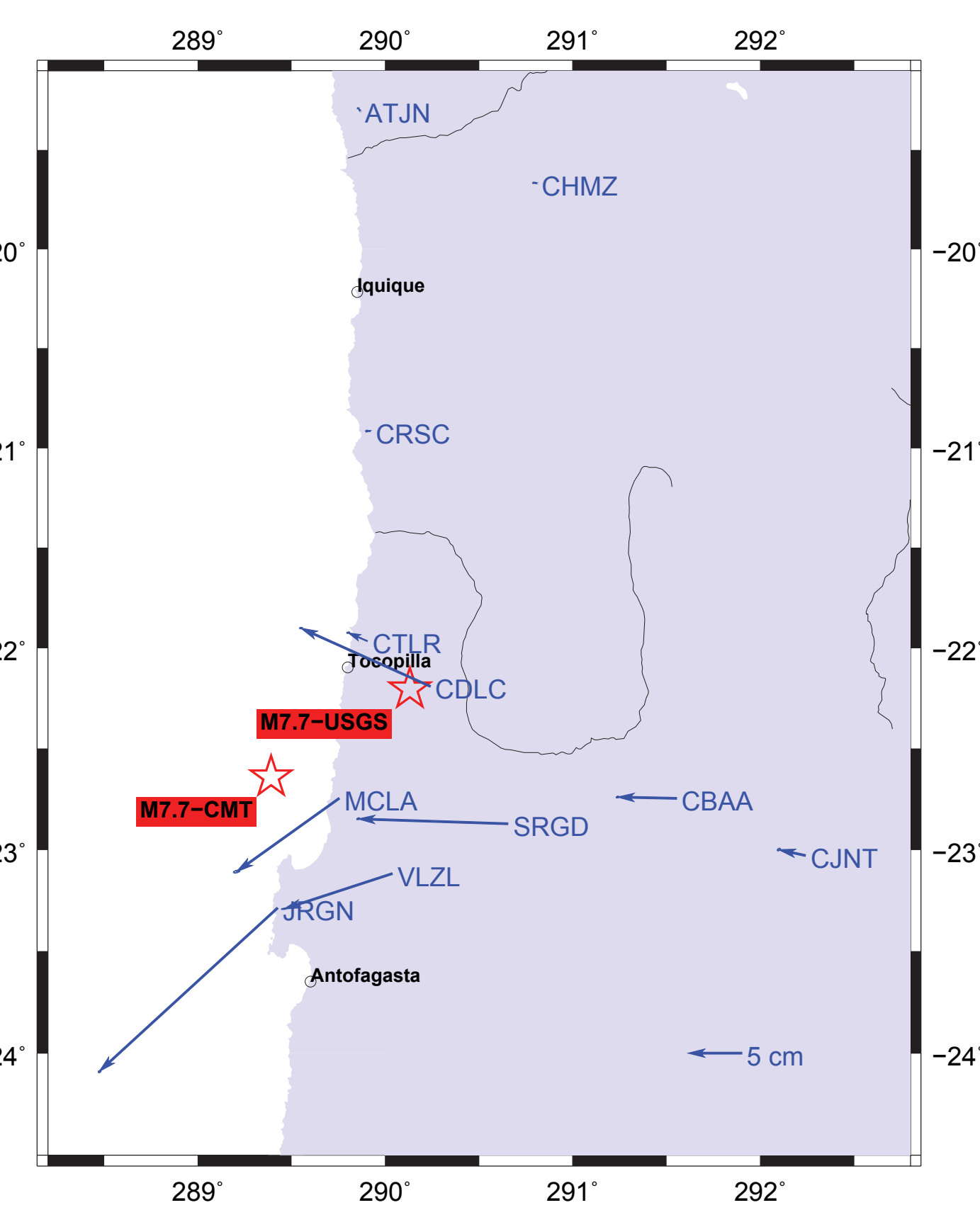
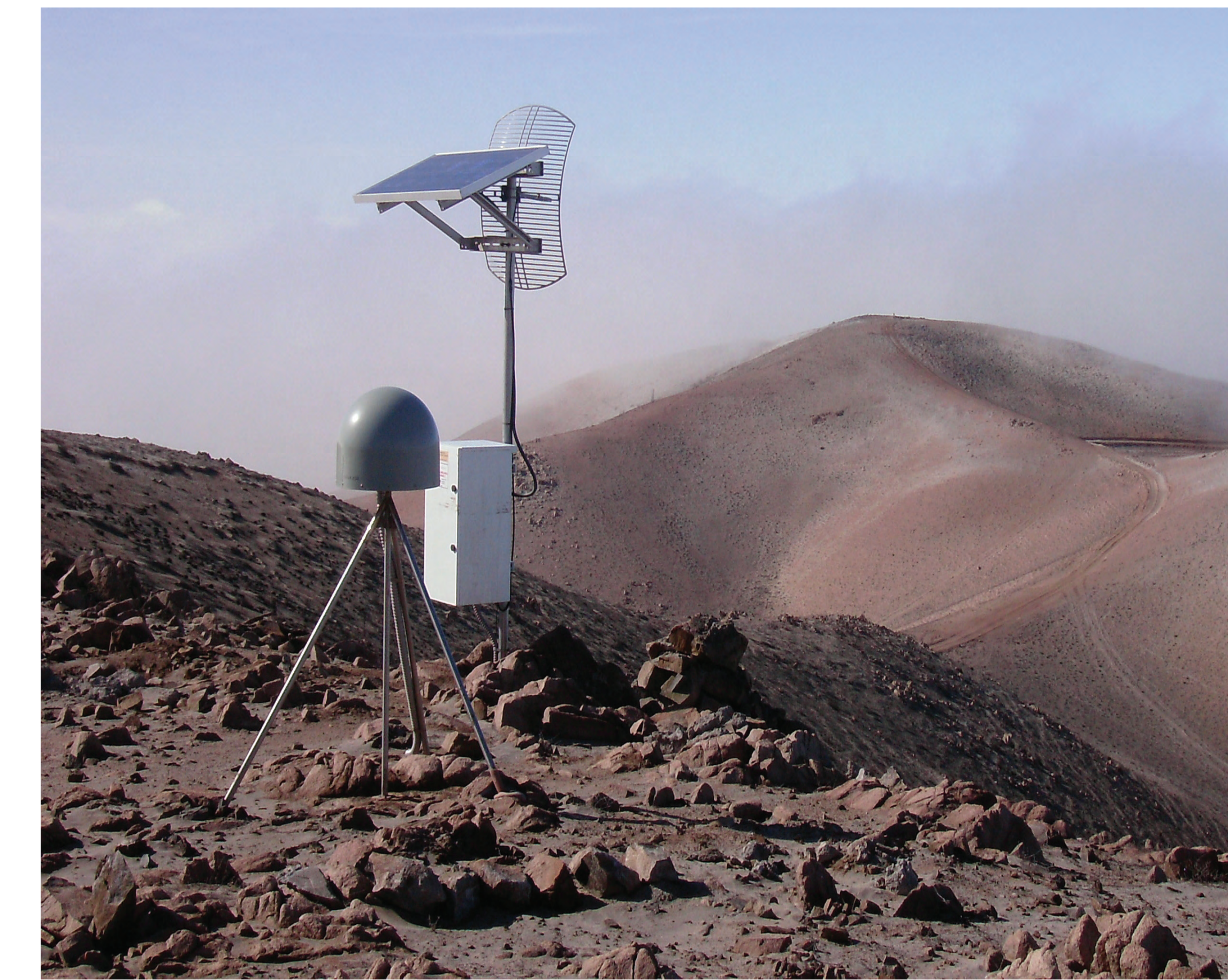


Figure 4. Coseismic station displacement. determined from daily solutions before and after the event.

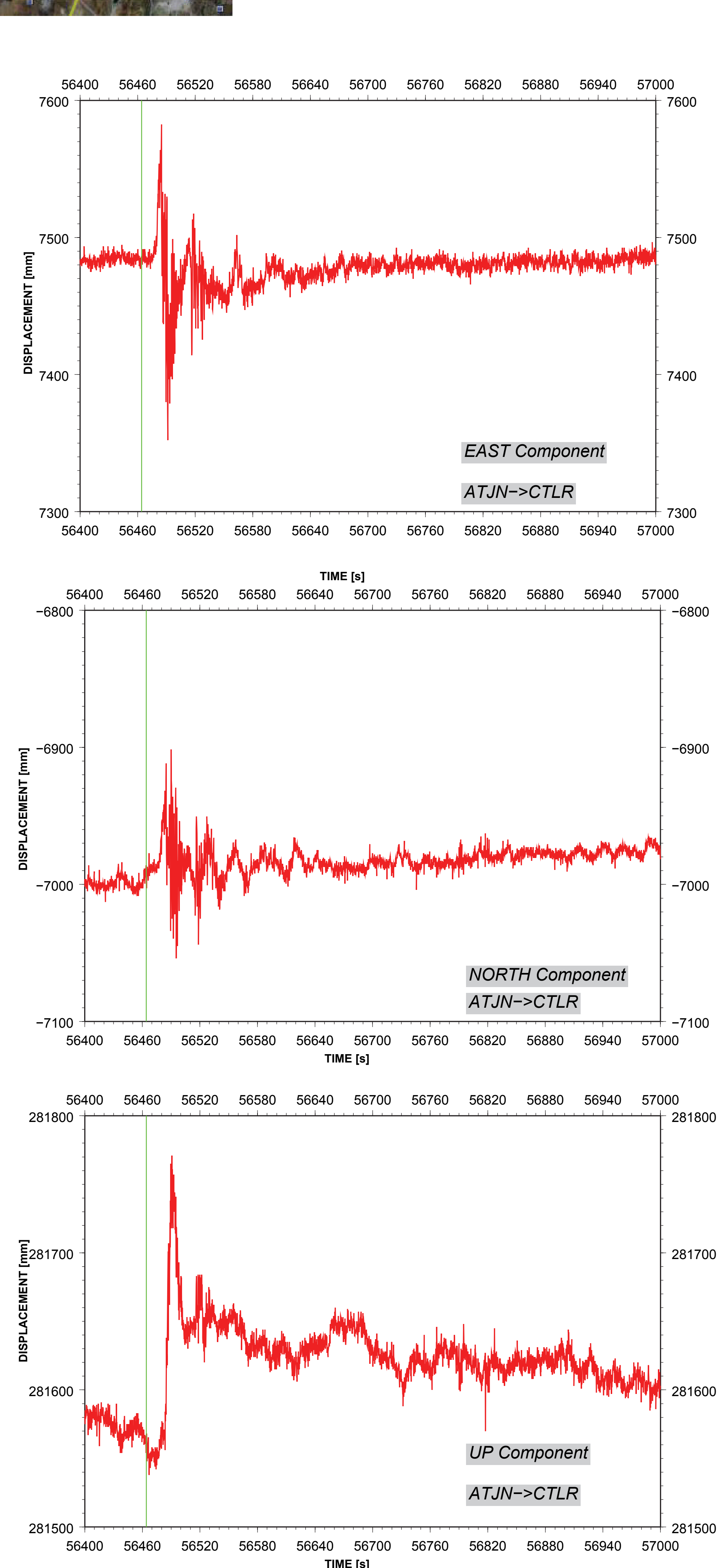


Figure 5. Ten-minute window of baseline ATJN->CTLR sampled at 5 Hz during M7.7 event. Vertical green line marks origin time.

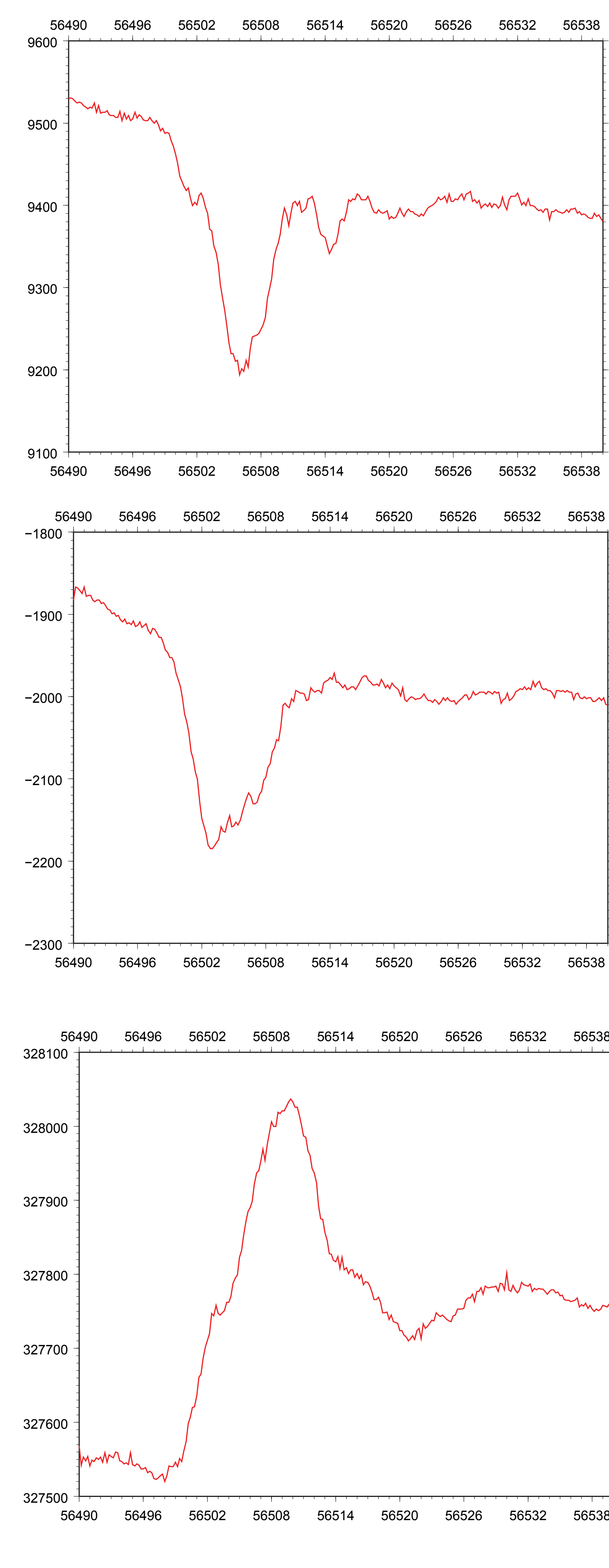


Figure 6. Fifty-second window of East, North, and UP components of baseline ATJN->JRGJN sampled at 5 Hz during M7.7 event.

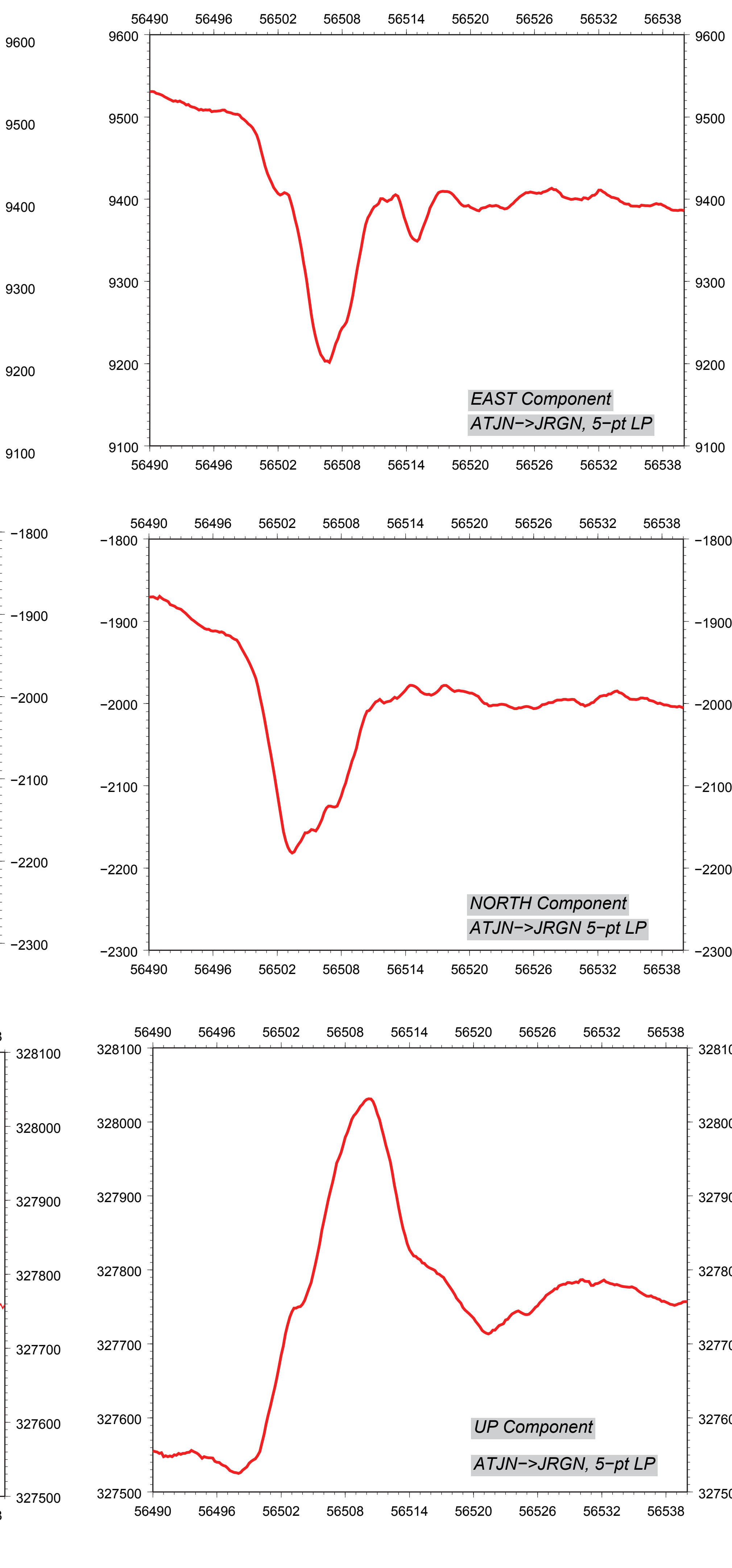


Figure 7. Fifty-second window of East, North, and UP components of baseline ATJN->JRGJN sampled at 5 Hz during M7.7 event after 5-point FIR low-pass filtering.

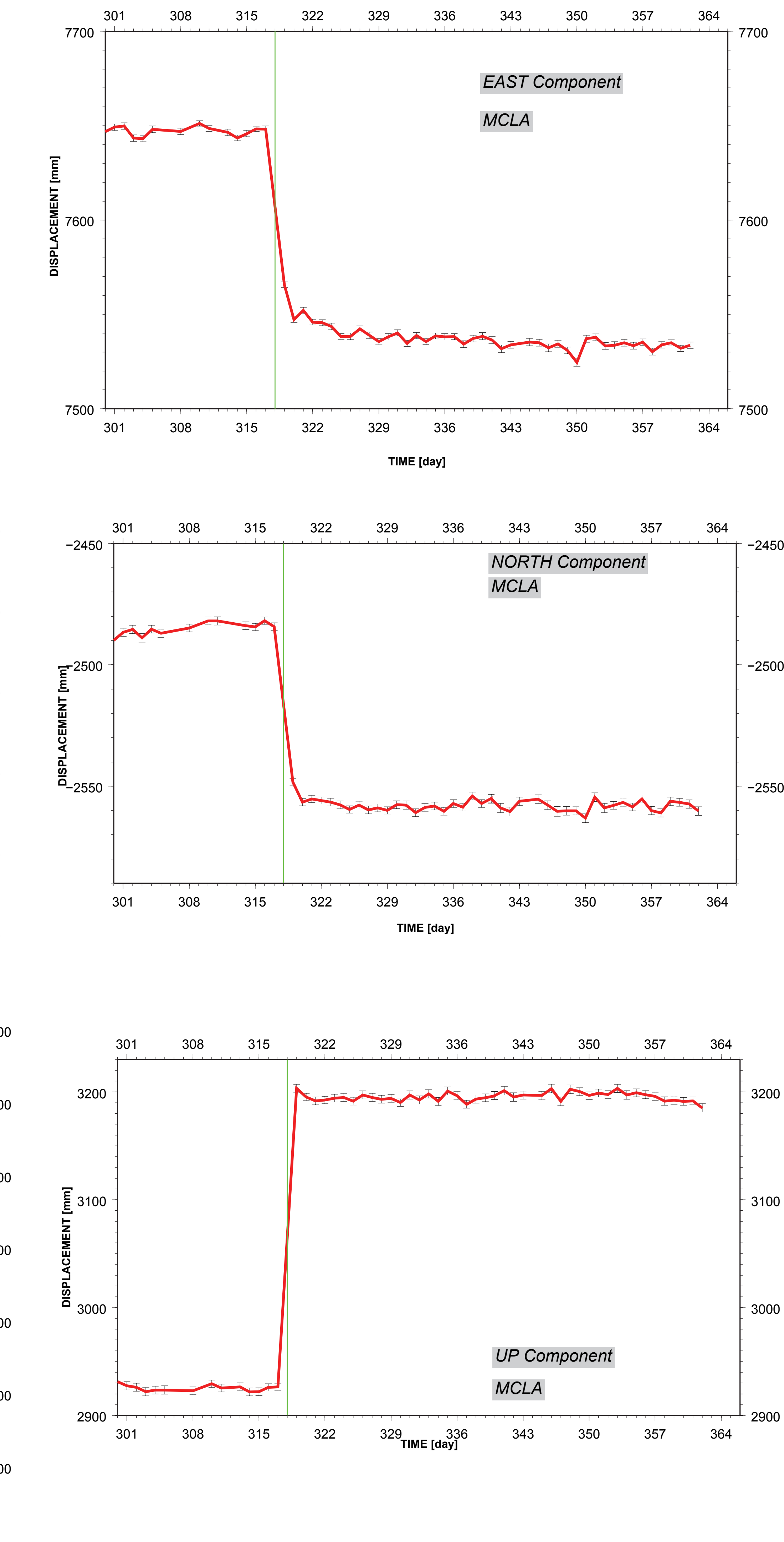


Figure 8. East, North, and Up components of postseismic displacement at MCLA for a time span of about 1 month. Estimates are based on 24-hour solutions. Error bars represent formal one standard deviations.