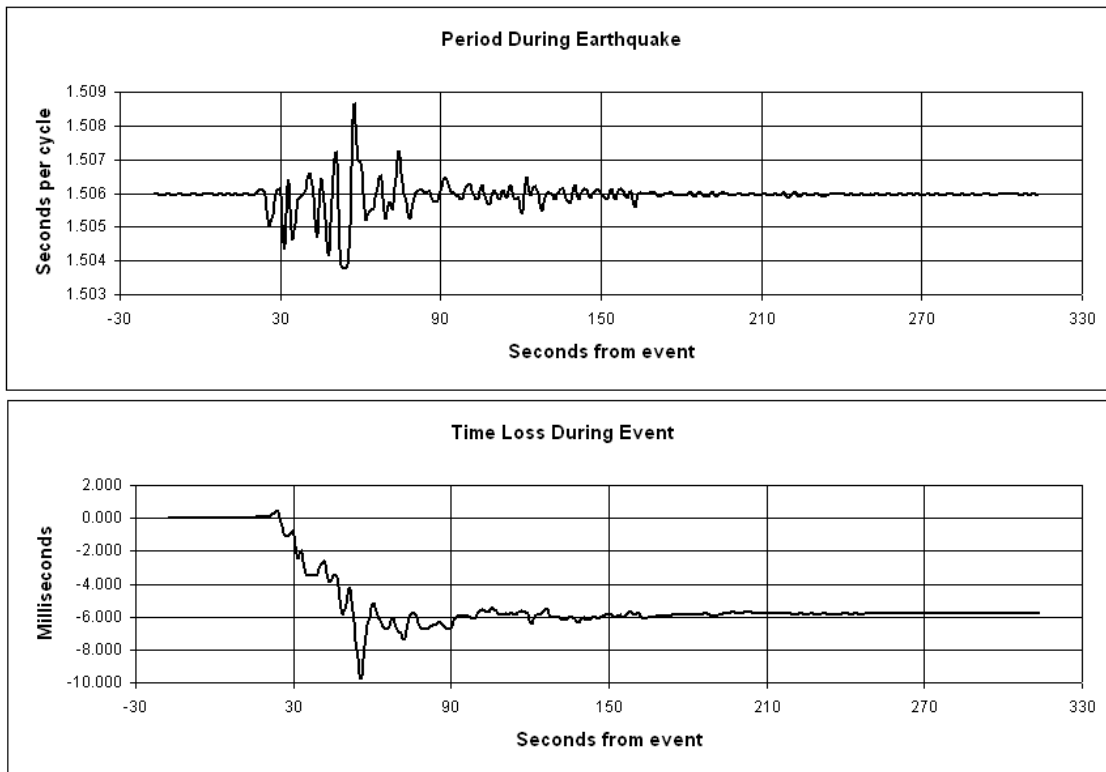


An Earthquake Observed

by Robert L. Belleville

At 1:20:46 PM PST November 29, 2006 a magnitude 4.0 earthquake occurred five kilometers west of Hollister California. My #8 pendulum was logging data and was disturbed by this event which took place some 80 kilometers southeast of my lab. Each period of the pendulum (pictured in HSN 2006-3) is measured and recorded by a timer linked to the atomic master clocks via a GPS receiver. About 21 seconds later the period per cycle was disturbed as shown in the following plot:



By comparing the mean period outside the event with the actual accumulated time during the event a second plot shows that the clock lost 5.8 milliseconds from this earthquake. In other words, the plot shows how the real clock varied from a hypothetical clock which did not feel the earthquake.

No doubt all earthquakes are different. Some may speed up or have no effect on a pendulum. Of seven earthquakes greater than magnitude 3.6 recorded by the USGS from Nov 27 to Dec 4, 2006, only this quake registered on my clock.

Earthquake information from the USGS on the web is at url: quake.wr.usgs.gov