



Leading the Quest for
Quake Forecasting

NEWSLETTER
First Quarter, 2013

Where to Install International Sites?

QuakeFinder has been installing sites overseas in order to obtain more earthquake samples. The "Ring of Fire" around the Pacific Ocean has traditionally had a high incidence of M5+ earthquakes. Recently we performed an in-depth analysis of the global earthquake records. Data from more than 140,000 earthquake events was extracted from the ISC/IRIS database, which span the time range from 1900-2012 and magnitude range from 5.0 to 9.5. The data were binned into 1 deg. x 1 deg. grid squares, and the total number of earthquakes was generated for each. The 200 grid squares with the most seismic events are shown on the figure below, with red squares.



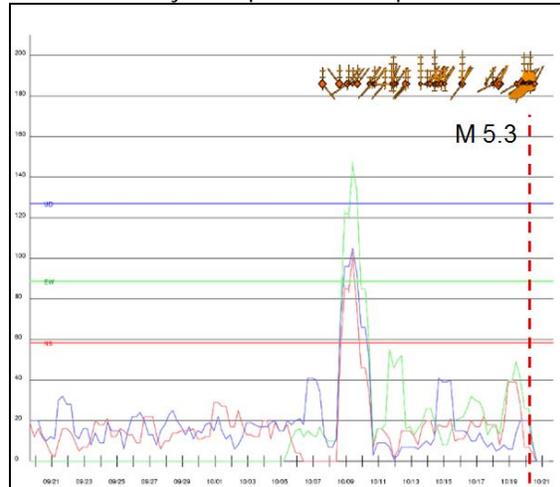
Most of the top 200 cells are in locations around the Pacific plate and adjoining tectonic structures. Areas such as Taiwan, already a modest part of the QuakeFinder network, are excellent choices. Northern Japan, Chile, and Sumatra are also strong candidates. Several potential areas in Indonesia (Sumatra, Sulawesi, and Western Papua), Mindanao in the Philippines, New Guinea, and New Britain are intensely seismic, but are also problematic from an infrastructure and access perspective (e.g. jungles). Afghanistan and Pakistan had relatively high scores, but political unrest there also makes installations difficult. This year we hope to expand our network into both Chile and Sumatra, and in 2014, these other hot spots may be targeted.

"ExtremeTech" visits QuakeFinder

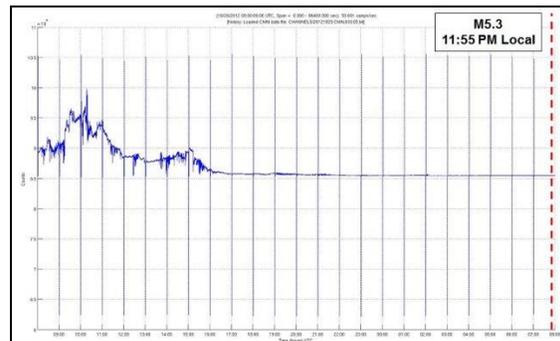
[See the article by clicking here.](#)

Signals before Bitterwater M 5.3

There was a M5.3 quake on the San Andreas Fault on October 20, 2012. We have a site, Bitterwater, about 9.4 miles to the northwest of the epicenter. The data below showed a short 2 day buildup of magnetic pulses on Oct 10-11. The M5.3 quake is shown with the dotted line at the right with a number of small quakes (red diamonds) preceding the larger quake. The pulse activity lasted 2 days, whereas 3-6 days is expected for a quake of M6+.



32 Day Plot of Pulse counts- Bitterwater



24 hr plot of positive ion activity

The ion activity at this site was flat for months before and after the quake, but showed major activity starting 23 hours before the quake, similar to the 2007 M5.4 quake at Alum Rock.

The world needs warning. Reliable earthquake forecasts will someday save lives.



QuakeFinder is a humanitarian R&D project supported primarily by [Stellar Solutions](#). Our goal, based on sound scientific theory and practice, is to create a system for short-term (days to weeks) forecasting of major earthquakes.