

April 1 Newsflash

M8.2 , M7.8 and several M6's just struck near our site at Patache Sur in Iquique, Chile

New Network in Chile in January

Why Chile? There's significant quake activity in Chile, both in the last decades as recent as March 2014! Chile had the world's largest recorded earthquake in modern history—a M9.5 near Valpariso in May of 1960 (greater than Sumatra, Japan, and Haiti), and it generated a 38 ft tsunami. More recently, Chile had another M8.8 in Feb 2010, between Santiago and Concepcion, with some of the damage shown in the picture below.



We found some wonderful collaborators at the Catholic University in Santiago (PUC-C), at the University of Concepcion, a marine research center (UNAB), and a desert research center (Patache Sur). Bob and Rey built 4 instruments for Chile, and Tom and Rey installed them at sites called Tigo (Concepcion), El Tabo (west of Santiago), UNAB (also west of Santiago), and several hundred miles north at Iquique (in the Atacama desert at Patache Sur). The site appearances were quite different, from the Mars-looking Atacama desert (below)



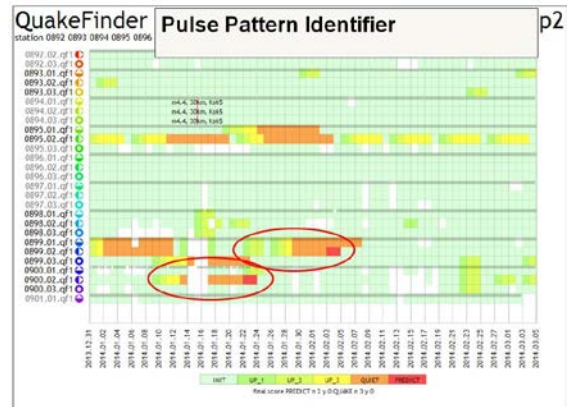
to a lush forest area near Concepcion. We received great cooperation from the 4 different groups at the 4 sites, and we hope this will be the start of a long and scientifically beneficial relationship in Chile.

Welcome Mike DeKlotz, QF Director

After providing part-time project management support to QuakeFinder for a several months, Mike DeKlotz has joined QuakeFinder full-time as Director. Mike's expertise will assist in taking us to the next level. Welcome aboard Mike!

Pattern Recognition Processing

Jim and Clark worked to develop a software set of algorithms to process earthquake magnetic pulses, and to display the results in a manner that identifies a "double hump" pattern that is characteristic of the way that pulses behave in the 2 weeks prior to a large earthquake (greater than M5). This capability is the next critical step in identifying potential earthquake patterns originating from 160 active sites and almost 10 GB of data each day. As it evolves, this capability will serve as a starting point for operations, the ability to assess our algorithms against historical data, and to measure progress as we improve our processing algorithms over time.



Pulse Pattern Output

Working with the Collaboratory for the Study of Earthquake Predictability (CSEP)

QF is evolving from post-earthquake analysis to pre-earthquake forecasting, an important step. The pattern recognition technique above will help to reduce the manual labor and time involved in detecting these pulse patterns. After assessing a detected pattern to ensure it is not a false alarm, we need a place to send forecasts to document that we made them and to allow independent review of the forecasts. CSEP is a group in southern California that performs quake forecast analyses for the seismometer community, working closely with both the California Earthquake Prediction Evaluation Council and the National Earthquake Prediction Evaluation Council, which is affiliated with the USGS. QuakeFinder has worked with CSEP to develop an initial forecast template that contains location (within 20-50km of a specific QF instrument site), time (within 1-3 days), and magnitude (above M5 -for starter). Documenting the forecasts before the quake happens with an independent group is essential toward gathering statistics on "hits", "misses" and "false alarms", and towards building confidence in the scientific community that this technique has merit.

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



[QuakeFinder](#) is a humanitarian R&D project sponsored 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.
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