

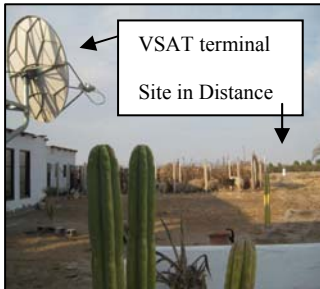
New Sensor Locations:



QuakeFinder has finished installing three new sensors at Chalame, Ca. East Hayward, Ca. and Tacna, Peru. The new Chalame site (left) is located in an area where UC Berkeley (Nadeau) has discovered “non-volcanic tremors” 40 km beneath the surface. Tremors are actually “slow earthquakes” that take from tens of seconds to tens of minutes to slip. This site may help detect new stress changes associated with the “Tremors”.



This new site at East Hayward, resides between the Hayward and Calaveras faults. It is in an area where the fault breaks every 140 years, and it is about 142 years since the last quake. However, the site is close to BART trains, so we had to use special noise processing limits.



This new site at Tacna, Peru was installed near the southern Peruvian border with Chile. This is the first site we used a VSAT terminal (shown at left). The site is located near an area with a historical potential for a large, M6+ earthquake. The photo (left) is courtesy of Prof Jorge Heraud, our collaborator

at the university (PUCP) in Lima.

New Lab Facilities and Data Center Architecture:

The past quarter saw a remodeling of our laboratory facilities, and more importantly, a re-building of our Data Center computer architecture resulting in a 30x increase in processing speed for all of our instruments, and so we have smoother more reliable delivery of sensor data to the QF website.

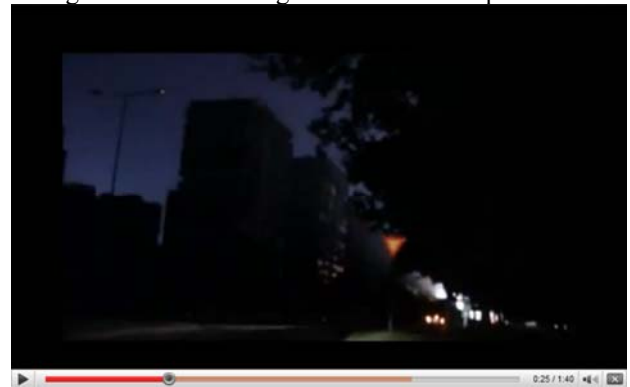
Update of our QuakeFinder Website-Help us:

We did a review of our current website, and decided to make it more “user friendly”. Our intent was always to share our data with the public, and encourage people to join us on this journey of discovery. We solicit you, our interested audience, to let us know what you would like to see in the website. As an example, we are updating our maps to allow you to zoom to your neighborhood by zip code to see local magnetic activity. We are also adding more “topic blogs” to explain about: “Earthquake Lights”, ULF Anomalies, Thermal patterns and Ionospheric anomalies. For those that want more “hands on”,

the site has information about sponsoring or hosting individual instrument sites in California, and along the “Ring of Fire”.

“EQL-Earthquake Lights”: Another Precursor?

There have been anecdotal stories documented for thousands of years reporting strange “earthquake lights” being observed during (and prior) to large earthquakes. EQL may be caused by stress-induced underground charged particles, rising to the surface, and ionizing the air. The same currents may cause the magnetic disturbances that QF is detecting. Recently, YouTube posted amateur videos of these EQL, and below is a still shot of the lights observed during the Chilean earthquake.



Click here for full video:

<http://www.quakefinder.com/community/videos.php?forceVid=KMunTcLvSZe> The sequence shows the quake (P-wave) arriving, the local lights going out, and then a series of flashes and glowing patterns behind the blackened buildings. Recent discussions with local residents in Peru reported that similar lights were observed for over 400 km around the epicenter of the 2007 M8 quake. They reported seeing these lights over the ocean, and against the backdrop of the mountains to the east, where no power lines or transformers exist.

Collaborations:

We recently teamed with researchers at NASA Ames Research Center and JPL, comparing earthquake signals from Infra Red (IR) sensors on GOES satellites, METEOSATs, and MODIS instruments. Over two dozen earthquakes had previously been analyzed and shown to have IR signatures several days prior to large earthquakes, similar in timing to the magnetic pulses QuakeFinder detected at the 2007 Alum Rock quake. This study will determine if these signals are unique to earthquakes and if there are “false positives” 1-2 years prior to the events. DARPA is also interested in pursuing this research, and proposals are being generated for a more comprehensive program of “fusing” signals from several wavelengths of IR, ULF magnetometers, and air conductivity together to determine these indicators occur simultaneously prior to earthquakes. QuakeFinder/JPL reported all three IR, ULF, and air conductivity changes prior to the M5.4 Alum Rock quake. <http://www.quakefinder.com/research/pdf/nhess-9-585-2009.pdf> If you have comments or questions, contact Tom Bleier at: tbleier@quakefinder.com