## A FEW WORDS FROM THE PRESIDENT

QuakeFinder gave three outstanding presentations at the International Union of Geodesy and Geophysics (IUGG) July 2007 in Perugia Italy. There were 3 sessions dedicated to electromagnetic monitoring at this conference and it was a great opportunity to exchange ideas with colleagues in this new field.

Our first presentation analyzed over a thousand Pc-1 micropulsations observed in the Berkeley data near Parkfield (M6 quake) over the past 7 years, and we used Super Epoch Analyses to determine if any were unique relative to several earthquakes in that area. The analysis of the Pc-1 event observed prior to the Parkfield quake was similar in 6 characteristics to the other typical 1000+ Pc-1's generated by solar storms, except in the duration of the Parkfield Pc-1 was longer (99% percentile) relative to other Pc-1's. In addition, the superposed epoch analysis indicated that these Pc-1 events are 2-3 times more likely to occur 4-14 days prior to earthquakes, than under normal conditions. More analysis is required to understand the exact linkage between Pc-1's and earthquakes.
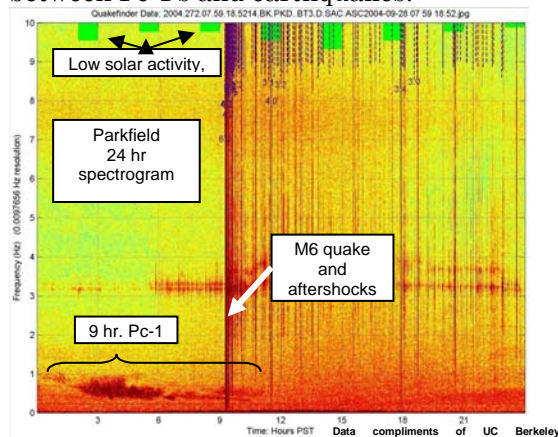
The second presentation described our CalMagNet (68 instrument sites in Ca.) and demonstrated how we are using multi-station comparisons of sites along with historical (1 year) filter bank data to characterize how each site behaves as a function of location, channel direction, day/night, season, and solar Kp index. This will help to classify "normal ULF signals" at each site, and will help discriminate truly "abnormal signals" near future, large quakes.

The third presentation demonstrated the existence of a relative "quiet" band (0.001-0.01) below the band where the Loma Prieta quake was seen. This is significant since this band also appeared to be relatively immune from man-made noise (BART trains) and should be valuable to identify deep ULF signals before the next large quake even when there is man-made noise present.

Other presenters at the conference showed new techniques using "Natural Time" and "Wavelet Analysis" techniques to extract small signals from noisy backgrounds. It was really rewarding to see so many new ideas being applied to this very difficult problem area. It was a good time to "bond" with these researchers and strategize the next efforts.

Tom Bleier, President
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NEW INSTRUMENT DESIGN: QF-1007

We have finished the basic design of our next generation magnetometer instrument. This is the sixth generation instrument improvement for QuakeFinder since 2000 when we started.
The major improvements include:
- a 30% increase in the signal-to-noise of our induction magnetometers
- Change to Linux operating system
- More robust data transfer software with an encryption option
- Addition of an 8 channel 16 bit A/D to allow complimentary instruments to be added (e.g. Optional E-Field, temperature, humidity, acoustic, seismometer and other sensors)
- Improved power supply and faster CPU
- Internal health diagnostics and remote control

We hope to have them built and tested by September. We will identify new locations to "fill gaps" in our coverage, and should have them installed later this year.

NEW PERSONNEL

We have recently hired our previous Stanford intern, Matt Maniscalco, to a full time position to help with new ground instruments, future satellite work, and (new) balloon missions.

In addition, we have hired Justin Garen (UC Berkeley) as a summer intern who is helping us with the Data Center. We are currently seeking a part time, site maintenance person to help us maintain our southern California sites.