## Micropulsations of local land magnetic field and their possible association therewith

**Responsible researcher:** Jorge Heraud and Antonio Lira **Research assistants:** Neils Vílchez, Víctor Centa, Daniel Menéndez and Rafael Vílchez **Involved institutions:** INRAS and QuakeFinder

Institute of Radio astronomy

From the dawn of Mankind, earthquakes have been a synonym of catastrophes related to the "god age" many times; even more, if they were accompanied by heaven brightness. Ancient Greeks and other civilizations have accumulated bright phenomenon stories related to earthquakes and, in many cases, to the appearance of lights and "tongues of fire", as occurred before the great earthquake at El Callao, on October 28, 1746. Nowadays, no longer with fantasies and speculations but with science and advanced technology, Radio-science, Physics of Solid State and Semiconductor theory offers not only plausible explanations which have begun to be proved by laboratory experiments, on site and through observations with a more physical and electronic criteria than before, as well as new experiments. In addition, the usage of said techniques is becoming indispensable to complement seismologist's efforts to procure a dreamed but elusive prediction method.

Up to now, it is believed that earthquakes only produce mechanic waves and therefore seismic waves are used to study the occurrence of earthquakes. The Institute of Radio astronomy at the PUCP is conducting co-seismic luminescence observations, local magnetic field micropulsations through magnetometers located in strategic points, HF and VHF band radio wave emissions, and obtaining results which do not lead it to prove the "post-occurrence" of certain earthquakes and to predict two earthquakes through electromagnetic channels. If they are informed prior to their occurrence, they verify the theory and possibilities of advancing in earthquake prediction. As in Galvani and Volta ages and discussions about bio-electricity and electrical conduction of nerves and muscle activity, maybe we are discovering that Earth itself has "electronic circuits" in its geophysical and geological structure, physical batteries and not only chemical batteries and that the conducts are similar to semiconductors. As well as cardiologists not only use heart sound and mechanic impulses when taking patients' pulse to diagnose heart diseases, this new view and "geoelectricity" in its many scientifically provable manifestations provide new "electrocardiogram" can us with а or "electroencephalogram" which provide us, in some other way, with a "Mother Earth" pulse, for diagnosis and an idea of convulsions.

First prediction of an earthquake through electromagnetic channels in the world was made by the Institute of Radio astronomy (INRAS) at the PUCP

Upon having recognized electromagnetic activity registered by INRAS magnetometers in Tacna, 15 days before the earthquake of October 22, 2010, some signals (see picture 1) were registered which could cause an earthquake. Even though the method is still incipient, we made the decision to communicate this possibility to the PUCP Presidency with the aim of having them as witnesses of the prediction. The communication was sent carefully and it was requested to be kept confidentially. The prediction was fulfilled within the fixed term. The earthquake that took place in October 22 was a low-intensity earthquake (M4.7) which occurred 75 km from our station (see picture 2). It is the first time in the world that an earthquake is predicted by using electromagnetic channels.

The earthquake data as disclosed by USGS is as follows:

US GEOLOGICAL SURVEY DATA

**MAGNITUDE** 4.7 **DATE-TIME** Friday, October 22, 2010 at 08:26:26 UTC Friday, October 22, 2010 at 03:26:26 AM at epicenter

Time of Earthquake in other Time Zones LOCATION 18.339°S, 71.120°W DEPTH 51.9 km (32.3 miles) REGION OFF THE COAST OF TARAPACA, CHILE DISTANCES 85 km (55 miles) W of Arica, Tarapaca, Chile; 100 km (60 miles) WSW of Tacna, Peru; 130 km (80 miles) S of Moquegua, Peru; 1680 km (1040 miles) N of SANTIAGO, Region Metropolitana, Chile

LOCATION UNCERTAINTY horizontal +/- 23.9 km (14.9 miles); depth +/- 2.5 km (1.6 miles) PARAMETERS NST= 28, Nph= 28, Dmin=390.7 km, Rmss=0.87 sec, Gp=144°, M-type=body wave magnitude (Mb), Version=6

**SOURCE** USGS NEIC (WDCS-D)

EVENT ID usa00042x