Studying Earthquake Precursors On the 'Operation Kepler' Model

by Susan Welsh

April 26—If Robert Geller, the self-appointed mandarin of earthquake science (see preceding article), had been alive in 1600, before Johannes Kepler's revolutionary discoveries of universal gravitation and the elliptical orbit of Mars, he would undoubtedly have proclaimed that precise determination of the planetary orbits was impossible, and that funding for Kepler and other scientists interested in the question should therefore be instantly stopped.

In fact, there were plenty of "Robert Gellers" in Europe in the 1600s, and they not only deprived Kepler of financial support, but tried to burn his mother at the stake as a witch, in a case which the great scientist was forced to spend two years of his life combatting.

What was the key to Kepler's scientific discoveries, which was rejected by his "Gellerian" opponents?

The LaRouchePAC "Basement Team," taking its cue from Lyndon LaRouche's voluminous writings on the subject, is demonstrating that it is the creative leap beyond sense-certainty that allowed Kepler, and allows all creative scientists, to make breakthroughs. Just as Kepler explored the paradoxes posed when visual and harmonic modalities are both employed to solve a problem, in his *The Harmony of the World* (1619), so the Basement Team's "Operation Kepler" is "using multiple parameters to 'triangulate' a principle," according to an April 25 statement issued by the six LaRouche Democratic candidates for Congress (http://www.larouchepac.com/node/18035). "This is the 'multi-parameter approach' already being employed by international scientists such as Sergey Pulinets and Pier Francesco Biagi," the statement continues. "While other nations move toward cooperation, our nation, under Obama, will be left in ruins."

Embattled Scientists

As part of Operation Kepler, two members of the LaRouche political party in Germany (the BüSo), attended the European Geosciences Conference in Vienna on April 6-8, where they interviewed scientists who are studying earthquake precursors: meteorological, tectonic, and other natural events that have been found, after the fact, to correlate with major earthquakes. This research may enable us to predict such disasters in the future, and thereby save thousands or millions of lives, especially in the Pacific Rim of Fire, where great earthquakes are occurring with markedly increased frequency.

These scientists constitute a small group, working under a great deal of Gellerian pressure and even ridicule from a science establishment which, notably in Europe and the United States, has denied them financial support.

Daniel Grasenack-Tente, who conducted the interviews, told *EIR*'s Internet radio show, "The LaRouche Show," on April 9, that "every single person that we interviewed—we did video interviews with seven of the presenters—all made the point . . . that we can't just rely on one or two parameters. We have to take as many as we can into account, before we can really be sure that we have something to do with the seismic phenomenon oncoming" (*EIR*, April 15, 2011; all the BüSo video interviews are posted at www.larouchepac.com).

Last week's *EIR* published the BüSo interview with Russian scientist Dr. Pulinets, who works at the Fyodorov Institute of Applied Geophysics and the Moscow Center for Ionosphere Monitoring. The title of his presentation to the Vienna conference was "A Multi-Parameter Approach to Earthquake Forecasting."

He described several of the crucial parameters that are being studied, including the use of infrared sensors on remote-sensing satellites to measure anomalies in infrared radiation; anomalies in electric conductivity, the total electron content in the ionosphere, which is measured both from the ground and from low-orbiting satellites; thermal anomalies, and others.

"What I would like to underline more," he told Grasenack-Tente, "is that our approach is a multi-parameter analysis. We can say that it's very difficult, almost impossible, to make some kind of prediction using only one parameter, for example: thermal, iono-

spheric, VLF [very low frequency] propagation, so on, so on. But if you have something like what we name 'synergy' of the processes, we see that all of them are connected, and show the same area, within the same time-interval, and we see some development of the processes, starting from the ground surface, like surface temperatures, and air temperatures, and at the top of the atmosphere, then the ionosphere, and we see these dynamics, all this complex of the effect, we may say that this is a multi-parameter precursor of the earthquake. This is our approach."

Dr. Pier Francesco Biagi

Grasenack-Tente also interviewed Dr. Biagi of the University of Bari, Italy, who has been doing experiments with man-made electromagnetic waves, and setting up nine receivers across Europe, at very different frequencies. He says that he is trying to "define a method to make predictions. Now it is only study, not defining a prediction."

BüSo

Dr. Pier Francesco Biagi of Milan, shown during his interview with the BüSo, believes that prediction of earthquakes can definitely be achieved.

Biagi told Grasenack-Tente that his group is working with two types of frequency, VLF and LF (low frequency). "These signals [VLF] are used for military purposes, or for time signals and so on. And these signals [LF] are used for long-wave broadcasting. It means that some stations still use this type of transmission. We use this one, because these waves propagate in the lower atmosphere, and so it is easier to see some disturbance; whereas when the propagation is in the upper atmosphere, meaning the upper ionosphere, it is more difficult to see [the relevant] disturbances, because there is disturbance externally, from the Sun. This means that we see a lot of disturbance."

Dr. Biagi underlined that financial support for his research is "terrible." In fact, he was forced to take out an EU100,000 bank loan to set up their network. But if money were not an issue, he said, "I think that it is necessary to enlarge the network, with about 20 or 30 more receivers. And then, only one parameter is not sufficient. We need to make also some other measurements, because with only one parameter, the possibility of error is larger. The best solution would be to have a network where it is possible to take a lot of different measurements. That means different parameters; it means radio waves is a parameter, but then we can also measure radon content or some other gauges. And also seismicity is a good parameter, because the variation of seismic activity is very important. . . .

"The best solution would be to combine satellite observation with ground observation. This would be the best solution.

"It would be necessary to spend some money—not so much money! But to have some financial support."

"I cannot make a prediction as a single researcher at a university," he said. "This is not correct. It is necessary to have a government organization, and the government organization must collect a lot of data, and then probably it can launch some lab."

Asked about the connection between solar activity and seismicity, he replied: "Probably there is a correspondence; why not? Because generally, there is a cycle in seismic activity. Probably the level of energy freed is always the same, roughly. But sometimes the energy is freed by a stronger earthquake, and sometimes by not so strong. Now we are in a period of very large magnitude, which means a large earthquake. . . .

"It is possible that there is a connection, strict connection, between seismic activity, and all the geomagnetic and the solar activity and so on, because this normal. It's not so strange, it's normal."

Dr. Yasuhide Hobara

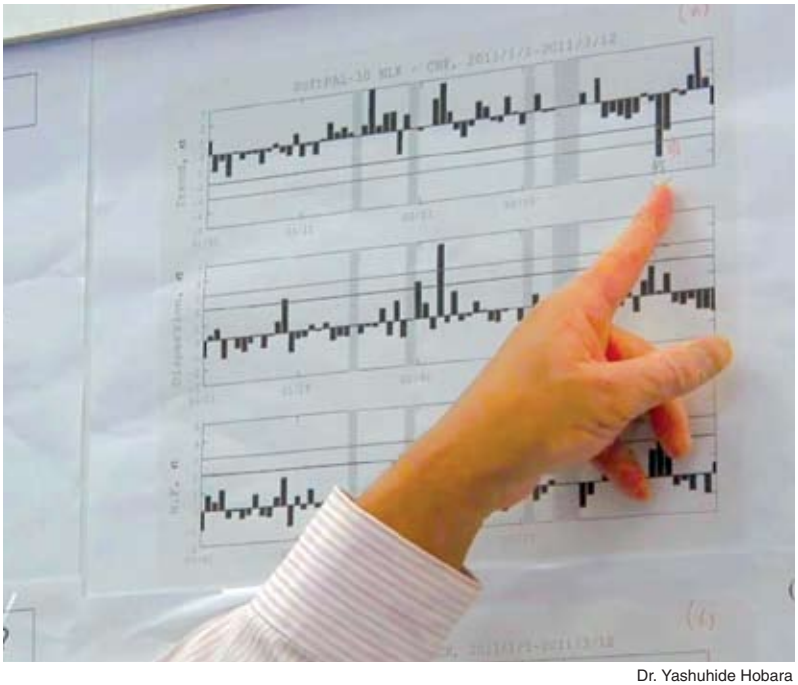
Professor Biagi collaborates with a group in Japan led by Dr. Masashi Hayakawa, who was represented at the conference by Dr. Yasuhide Hobara, the successor to Hayakawa's chair at the University for Communications in Tokyo. Grasenack-Tente interviewed Dr. Hobara as well.

BüSo

Dr. Yasuhide Hobara of Tokyo, whose group monitored precursors of the March 11 Tokyo earthquake, focusses on Very Low Frequency (VLF) electromagnetic activity in the atmosphere.

"In the last 10 years," Hobara said, "we developed a receiving system all over

FIGURE 1



Dr. Yashuhide Hobara

The charts show Very Low Frequency waves from Jan. 1 to March 12, 2011, with the top graph portraying the difference from the average value. Six days before the March 11 earthquake, there was a very large drop, 4 sigma, which means statistically that huge changes were observed.

Japan, which we call the VLF Receiving Network System. We have five stations, and at every station we receive the so-called VLF transmitter signal. The VLF is the frequency range of something indicative by kilohertz. And then the transmitter is distributed all over the world.

"In Japan, we can receive this transmitter signal from Australia and the U.S. mainly, and we have domestic transmitter stations, for example, at Kochi, Shikoku, Kasegoya near Nagoya, Chofu in Tokyo located in my university, and also Hokkaido. And new stations are available now, near Hiroshima. At every station we receive these different transmitter signals, which means one from the south, another from the west, and so on."

His group views three parameters as particularly important: "One is the so-called mean amplitude of the transmitter signals; another one is dispersion. If you know some statistics, that means, how many fluctuations.... The third one is the so-called 'nighttime fluctuation,' that is, how much the drop of amplitude is during the nighttime."

On March 5-6, the team monitored large changes in the usual pattern of VLF activity in the area of what would become the earthquake's epicenter (**Figure 1**). "So we think that this is a kind of precursor signal, and also these results, consistent with our previous statistical results, already published in scientific journals, saying that these kinds of VLF—which means ionospheric perturbations in the D region, which is the bottom region of the ionosphere—are actually perturbed, five, six, or seven days before the earthquake. That also satisfies the conditions. So this is a big kind of precursor."

Looking for Correlations

Grasenack-Tente asked: "So, the main way that it happens, is that you look for a correlation amongst the different stations, and everything else, and where there's a variance between each one, you know that doesn't have anything to do with the earthquake?"

"Yes," Dr. Hobara replied. "And also, something happened along the path [of the transmitting satellite] between Seattle and Tokyo. Normally, we don't look at the path over the ocean, because we're focussing on earthquakes that occur on land. But when we had the earthquake over magnitude 7 [in the ocean] on March 9, we said, 'Okay, we'd better look at the ocean," because a magnitude 7 is still big! Before this super-earthquake, a magnitude 5, 6 in Japan was considered very big!...

"We need, of course, further work. We should look carefully at the rest of the results.... We have to think about, for example, other effects which also disturb the ionosphere. You know that solar activity certainly affects the lower ionosphere, if you have very strong flares or the magnetic storms and so on. So we would check the magnetic storms...."

Although these scientists are under attack by the Gellerians, an international initiative is underway to establish global monitoring of earthquake precursors, as *EIR* reported last week. The Russian-originated plan for an International Global Monitoring Aerospace System (IGMASS), which has 23 countries backing it (not including the United States), is the way to go. Its first working session took place last Fall.