

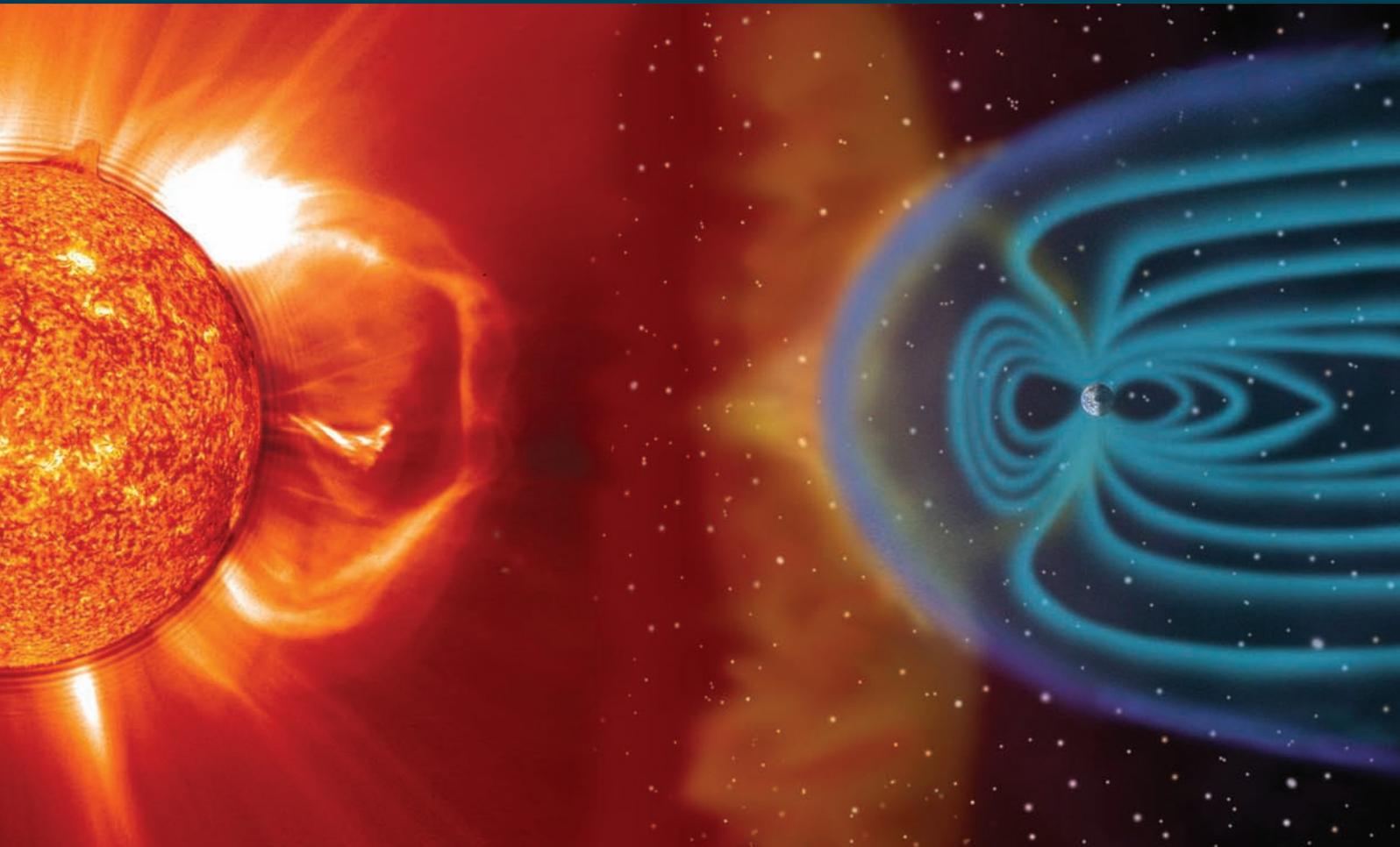
# EIR

Executive Intelligence Review

August 5, 2011 Vol. 38, No. 30 [www.larouchepub.com](http://www.larouchepub.com) \$10.00

Congress Ratifies Obama's Hitler Coup  
Are Earthquakes Foreseeable? The State of Research  
Glass-Steagall Needed Now To Avert Global Dictatorship

**LaRouche: Without Science,  
There Will Be No Civilization**



Founder and Contributing Editor:

*Lyndon H. LaRouche, Jr.*

Editorial Board: *Lyndon H. LaRouche, Jr.,*

*Antony Papert, Gerald Rose, Dennis Small,  
Edward Spannaus, Nancy Spannaus, Jeffrey  
Steinberg, William Wertz*

Editor: *Nancy Spannaus*

Managing Editors: *Bonnie James, Susan Welsh*

Science Editor: *Marjorie Mazel Hecht*

Technology Editor: *Marsha Freeman*

Book Editor: *Katherine Notley*

Graphics Editor: *Alan Yue*

Photo Editor: *Stuart Lewis*

Circulation Manager: *Stanley Ezrol*

INTELLIGENCE DIRECTORS

Counterintelligence: *Jeffrey Steinberg, Michele  
Steinberg*

Economics: *John Hoefle, Marcia Merry Baker,  
Paul Gallagher*

History: *Anton Chaitkin*

Ibero-America: *Dennis Small*

Law: *Edward Spannaus*

Russia and Eastern Europe: *Rachel Douglas*

United States: *Debra Freeman*

INTERNATIONAL BUREAUS

Bogotá: *Javier Almaro*

Berlin: *Rainer Apel*

Copenhagen: *Tom Gillesberg*

Houston: *Harley Schlanger*

Lima: *Sara Madueño*

Melbourne: *Robert Barwick*

Mexico City: *Gerardo Castilleja Chávez*

New Delhi: *Ramtanu Maitra*

Paris: *Christine Bierre*

Stockholm: *Hussein Askary*

United Nations, N.Y.C.: *Leni Rubinstein*

Washington, D.C.: *William Jones*

Wiesbaden: *Göran Haglund*

ON THE WEB

e-mail: [eirns@larouchepub.com](mailto:eirns@larouchepub.com)

[www.larouchepub.com](http://www.larouchepub.com)

[www.larouchepub.com/eiw](http://www.larouchepub.com/eiw)

Webmaster: *John Sigerson*

Assistant Webmaster: *George Hollis*

Editor, Arabic-language edition: *Hussein Askary*

EIR (ISSN 0273-6314) is published weekly (50 issues), by EIR News Service, Inc., 709-A 8th St. SE, Washington, D.C. 20003. (703) 777-9451

**European Headquarters:** E.I.R. GmbH, Postfach 1611, D-65006 Wiesbaden, Germany; Bahnstrasse 9a, D-65205, Wiesbaden, Germany Tel: 49-611-73650 Homepage: <http://www.eirna.com> e-mail: [eirna@eirna.com](mailto:eirna@eirna.com) Director: Georg Neudekker

**Montreal, Canada:** 514-461-1557

**Denmark:** EIR - Danmark, Sankt Knuds Vej 11, basement left, DK-1903 Frederiksberg, Denmark. Tel.: +45 35 43 60 40, Fax: +45 35 43 87 57. e-mail: [eirdk@hotmail.com](mailto:eirdk@hotmail.com).

**Mexico City:** EIR, Ave Morelos #60-A, Col Barrio de San Andres, Del. Azcapotzalco, CP 02240, Mexico, DF. Tel: 5318-2301, 1163-9734, 1163-9735.

Copyright: ©2011 EIR News Service. All rights reserved. Reproduction in whole or in part without permission strictly prohibited.

Canada Post Publication Sales Agreement #40683579

**Postmaster:** Send all address changes to EIR, P.O. Box 17390, Washington, D.C. 20041-0390.

# EIR

## From the Managing Editor

**I**t's an ill wind that blows no good.

Keep this in mind, as you contemplate what has happened over the past few days: Whatever you thought remained of the United States as a sovereign constitutional republic, was blown away in a cold coup run out of the White House by President Obama and his British controllers. But, the pathetic spectacle that took place Aug. 1-2 in our nation's capital presents us with an opportunity: At this point, Lyndon LaRouche said, victory is the only option we have.

Perhaps not since South Carolina—then, still a de facto British colony—seceded from the Union shortly after the election of President Abraham Lincoln, has this nation faced such an existential crisis. Then, we had a great man about to enter the White House. Today, we have the mentally unstable Obama, who functions as a lickspittle for the British Empire. Thus, we have no choice but to turn this adversity to our advantage.

We begin this issue with Nancy Spannaus's sober strategic analysis of "Obama's Hitler Coup," written as NerObama was signing into law his version of Hitler's Enabling Act of 1933, just passed with significant margins by both Houses of Congress—just as Hitler's law was overwhelmingly passed by the Weimar parliament, albeit under threat from the Führer's stormtroopers. The pressures on Members of Congress was hardly more subtle: that failure to act would spook the "Markets," and cause a meltdown of the economy!

Around the world we see the same dramatic dissolution of institutions (see *World News*): From Euroland, where Helga Zepp-LaRouche describes it as civilization "hitting the wall full-tilt"; to Afghanistan, where a fresh eruption of violence in the South has forced Washington policymakers to recognize that the secret U.S.-Taliban talks are going nowhere; to a renewed threat of Mumbai-style terror aimed at setting up conditions for dictatorship.

Our greatest weapon against the enemies of mankind, is our ability to make creative breakthroughs in science and art, as LaRouche states in the lead to our *Feature* this week. Taking up the challenge, which is suggested by the image on our cover, are Sky Shields, from the LaRouche Basement Team, and the Russian physicist Sergey Pulinets, whose contributions to the recent Schiller Institute conference in Germany are reproduced in this issue.



## Cover This Week

*Solar activity impacts the Earth's magnetosphere; an image of the enormous power that mankind must understand and control.*



NASA

### **4 Reverse This Treason Now!**

#### **Congress Ratifies Obama's Hitler Coup**

Nancy Spannaus reports that the so-called debt plan, passed by Congress, and immediately signed by President Obama Aug. 2, is nothing but a copy of Adolf Hitler's Enabling Act of 1933, a measure that will, if implemented, rip up the U.S. Constitution. "This vote brings us that much closer to the imminent destruction of the United States," declared Lyndon LaRouche. But LPAC is already mobilizing across the country for the only remedy that will work: Glass-Steagall and removal of Obama.

## Feature

### **8 Without Science, There Will Be No Civilization**

Lyndon LaRouche, at the start of the July 27 LaRouchePAC Weekly Report, noted that science has virtually died in the U.S. and Europe, and that the only solution is to go to the frontiers of scientific progress today.

### **9 The Universe Is Creative**

Sky Shields, leader of the LaRouche Basement Science Team, opened the second panel of the Schiller Institute European Conference July 2 with this presentation, in which he develops the concept of the "Ontology of Mind," through the work of especially, Vernadsky, the Curies, and Pasteur.

### **23 Are Earthquakes Foreseeable? The Current State of Research**

Prof. Sergey Pulinets, a physicist from the Institute of Applied Geophysics, Moscow, and an expert in earthquake precursors, in his address to the Schiller Institute conference on July 2, discussed the processes that are connected with the ionization of the atmosphere.

## World News

### **46 Glass-Steagall Needed Now To Avert Global Dictatorship**

“If the casino economy is not shut down immediately with a two-tiered banking system—a Glass-Steagall standard—we are threatened with dictatorship and a Dark Age,” writes BüSo chairwoman Helga Zepp-LaRouche, from Germany.

### **49 London Drives Global Asymmetric Warfare**

Senior intelligence officials are bracing for a renewed wave of asymmetric warfare attacks, modeled on the 2008 Mumbai, India assault.

### **50 Progress Seen Toward a Regional Solution for Afghanistan**

As the realization sinks in among Washington policymakers that the situation in southern Afghanistan is worsening, Secretary of State Clinton’s Senate testimony, and her proposals during her subsequent visit to India, have raised hopes for a regional solution to the Afghan conflict.

### **54 Jail Bernanke, Geithner, and Obama! GAO Report Reveals Massive Theft of Taxpayer Money**

### **55 Gov. Christie’s Green Genocide Challenged: LaRouche Dems Bring Science to N.J. Energy Hearings**

## Editorial

### **58 Our Disaster, Our Opportunity**

REVERSE THIS TREASON NOW!

## Congress Ratifies Obama's Hitler Coup

by Nancy Spannaus

Aug. 2—With the fate of the U.S. republic hanging in the balance, 269 members of the House of Representatives, on Aug. 1, cast their votes for President Barack Obama's copy of Adolf Hitler's Enabling Act of 1933, thus ratifying a measure that will, if implemented, rip up the American Constitution. Today, the Senate followed suit with a vote of 74 to 26, and sent the bill to Obama, who immediately signed it into law.

"This vote brings us that much closer to the imminent destruction of the United States," declared Lyndon LaRouche on the evening of Aug. 1. LaRouche is leading a major mobilization to stop Obama's coup. "The people who voted for it have committed an act of treason on behalf of a foreign power, whether they knew it or not."

Under the pretext that the U.S. budget had to be massively slashed in order to preserve U.S. solvency, British and Wall Street institutions had waged an extraordinary campaign to intimidate and brainwash the Congress into going along with Obama's "budget control act," which was agreed upon by the leaderships of the two Houses of Congress on Sunday night, July 31. But the evil content of the bill they crafted, and which has now been ratified, does not lie in the cuts per se, but rather, in the creation of a new body—what Obama calls a "Super-Congress"—to usurp the authority of the Congress itself on matters of budget policy.

The key asset of the London-Wall Street crowd in this endeavor was not, as popular wisdom claims, the

Republican Party, but rather British puppet Barack Obama himself. As we will elaborate below, it was *Obama*, not the Republicans, who colluded with the British-controlled rating agencies to demand up to \$4 trillion in budget cuts, and it was Obama, not the Republicans, who first proposed making cuts in Social Security, Medicare, and Medicaid part of the package linked to the so-called debt ceiling. And finally, it was Obama, who has already created two special commissions to usurp the powers of Congress—the Independent Payment Advisory Board for Medicare, and the Catfood Commission (Committee on Fiscal Reform and Responsibility)—who demanded the creation of a "Super-Congress," which is to be empowered to decide on \$1.5 trillion in cuts, including in entitlements, without any interference from the Congress, which can only vote them up or down. And if they vote them down, a nearly equal amount of draconian cuts are to be made *automatically* across the board.

To reverse this disaster, therefore, not only must the credit system of the United States be restored through the immediate reinstatement of the FDR Glass-Steagall Act, but British puppet Obama must be removed from office immediately, by Constitutional means.

### **Like Hitler's Enabling Law**

The legislation being rammed through the Congress has the following elements:



White House/Pete Souza

*President Obama and his Republican Party allies (House Speaker John Boehner, Majority Leader Eric Cantor, and Rep. Mike Pence) observe a moment of silence, perhaps for the U.S. Constitution, which they have just killed.*

1. An initial cut of \$1 trillion (over 10 years) from the Federal budget;

2. The creation of a “Super-Congress,” a 12-person body, composed of 6 Democrats and 6 Republicans, from the House and Senate, who are tasked to come up with an additional \$1.5 trillion in cuts by Nov. 23 of this year, including from entitlements such as Social Security and Medicare.

3. This package will be “expedited” through Congress, without any chance for amendments or filibusters, or substantial debate. But, if it is not passed, or if no agreement is reached by the full Congress, at least \$1.2 trillion in cuts will be imposed automatically, across the board.

Herein lies the coup, where Congress cedes, as a first step, its power to decide on matters of spending—a specific violation of Article I, Section 1 of the nation’s founding document. And that’s just the beginning. *Regardless* of what the Congress decides, the cuts worked out by Obama and his cronies go into effect! Obama has made the Congress irrelevant.

With these provisions, Obama and his British backers are attempting to fill the loopholes in their previous attempted coup through the Catfood Commission. When that Commission failed to agree on a package of

budget cuts to be submitted to Congress, the cuts died on the vine. Not this time—if Obama gets his way.

The Obama Super-Congress measure directly mirrors the Hitler Enabling Law (*Ermächtigungsgesetz*) of March 1933, by which the German Reichstag “democratically” voted to give Hitler emergency powers, by passing the “Law for Removing the Distress of People and Reich,” which gave Hitler the right to govern *on his own*, and in contravention to the Constitution, without consulting the parliament for a period of four years.

How was it done? The parliamentarians “made a deal.”

Specifically, the crucial agreement with Hitler was concluded with the Center Party, headed by a Catholic priest named Ludwig Kaas. Kaas agreed to deliver votes

for Hitler, in exchange for assurances of protections for religious liberties and the continued existence of the Center Party. Hitler acceded, promising to memorialize the guarantees in writing. The letter of guarantee wasn’t forthcoming, but Kaas fulfilled his part of the bargain, on the promise that the letter was being drafted. Not surprisingly, it never came.

At that point, the vote was assured. Only 84 Social Democrats (their ranks diminished by arrests) opposed the Enabling Act. The Center Party and the National People’s Party decided to take Hitler at his word, permitting him to act on behalf of the parliament, including passing laws which deviated from the Constitution, “as long as they do not affect the institutions of the Reichstag and Reichsrat” (the two houses of parliament), and maintained the rights of the President.

The guarantees, as any sane person could see, were a farce. Within three months of the passage of the Enabling Act, all political parties but the Nazis had been banned. Hitler did not rule alongside the parliament, but effectively superseded it. It only met 12 times over the next 12 years—including the two sessions in which it renewed the Enabling Act.

Only a cowardly idiot would not see the handwriting on the wall with Obama’s Hitler coup today.

## On Behalf of a Foreign Power

In addition to violating the Constitution, from the Preamble on down, the Obama-Congressional deal in fact serves the interests of a foreign power, specifically, that power identifiable as the British-dominated international monetary system. To put it succinctly, the deal maintains the legitimacy of the trillions of dollars in private gambling debts, a large portion of which are in foreign money-centered banks, which the Obama Administration (like Bush before him) has been bailing out—and dictates an accelerating austerity regime which takes the cost of the bailout out of the living standards of the American people. In sum, it fulfills the long-standing goal of the British Empire to destroy the United States.

Among the leading agents of the supranational financial power, in addition to Obama, are the so-called financial rating agencies, which have wielded the threats to downgrade U.S. sovereign debt as a spur to forcing Congress to capitulate to this unconstitutional deal. Take the case of Standard & Poor's.

A House Financial Services Committee hearing July

27 provided the evidence against S&P, specifically suggesting that Treasury Secretary Tim Geithner and S&P executive David Beers, a Briton, may have started that wrecking ball swinging in the current “debt ceiling” crisis. Beers, a London School of Economics graduate, is S&P's head of “Sovereign Credit” ratings, based in London.

Both Republican Randy Neugebauer of Texas and Democrat Michael Capuano of Massachusetts forced the evidence of this collusion out at the July 27 hearing. What was shown was that Beers and Geithner (and other Treasury personnel) have been exchanging large numbers of e-mails about the U.S. credit rating since March 2011; that Beers put United States debt on “negative watch” in April; and that Beers and Geithner had been in “very regular, frequent contact, many times” since then on the issue. This last comes from hearing witness and S&P chairman Deven Sharma, who knows something about what goes on in Beers' Sovereign Credit department.

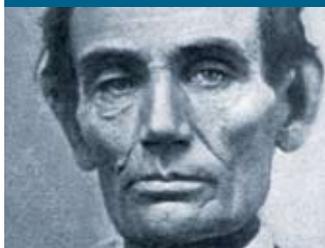
The direct attack on the United States went public when Beers, on July 4, told the London *Financial Times* and Bloomberg News that Congressional action to increase the U.S. debt ceiling would not suffice to save its AAA rating; that it would require something like a \$4 trillion package of cuts and tax revenues to (supposedly) reduce U.S. deficits by that much in a decade. Immediately, Nerobama propelled himself into negotiations with House Speaker John Boehner, pushing what Obama called the “Big Deal”: \$4 trillion in cuts and tax increases, including “putting Social Security, Medicare, and Medicaid on the table.” He did this amid mass unemployment and negative employment growth in the nation.

Ever since then, certain members of Congress have endlessly repeated, “S&P says \$4 trillion,” in the debt debate, and the sane idea of simply increasing the debt ceiling (with investment demand for U.S. Treasury debt extremely high and stable) has been dropped from this disastrous debate. Although Sharma quickly backtracked at the July 27 hearing and said that “smaller agreements” on austerity might suffice to keep AAA, the crime had been committed.

Beers continued, in a Bloomberg interview July 28, to criticize the United States for “not having taken action as European countries have,” a recipe for national suicide, and, now, even after the deal was done, S&P continues to suggest that it might have to down-

An LPAC-TV Video

## Life, Liberty, And the Pursuit of Happiness



*In honor of  
Abraham Lincoln  
on the  
150th anniversary  
of the beginning of  
the Civil War.*

Before the the American Declaration of Independence and the U.S. Constitution, there was the brilliant project of the 15th-Century genius Nicholas of Cusa to found a new world, away from the imperial oppression of the European oligarchy. The result was the founding of the American Republic and its long struggle against British Empire, through the victory in the Civil War under Lincoln, and today's battle to defeat the Empire and its puppet President Obama.

[www.larouchepac.com/node/18653](http://www.larouchepac.com/node/18653)

grade U.S. debt because a full agreement on trillions in cuts has not yet been reached.

### Why Listen to Them?

“There is no excuse for a Congressman to tolerate the actions of the rating agencies,” said LaRouche Aug. 1. “These rating agencies must be closed down!” Referring to the fact that Obama and Treasury Secretary Tim Geithner have been shown to have been conspiring with the London-centered rating agencies to force through the murderous cuts, LaRouche continued:

“They are engaged in treason. It is an act of treason to shut down the U.S. government, and these agencies are engaged in a conspiracy to shut down the U.S. government. Instead of them acting to shut down the government, the government should *shut them down!*”

LaRouche then referenced the well-documented reality that these very agencies “cost people billions, even trillions, with their fraudulent positive ratings for Enron, Lehman, mortgage-backed securities, while they are moving to shut down the U.S. government.” In fact, S&P’s malevolent role goes back even further, to 1975, when it took the lead role in downgrading New York City bonds, precipitating that city’s financial crisis. Later the same year, it became the first rating agency to begin valuing mortgage-backed securities, the infamous instrument for mass looting of the U.S. population which made the bankers trillions, and helped trigger the blowout of 2008.

And the U.S. government has decided to listen to these criminals, to guide its economic decision-making?

### The Only Line of Defense: Glass-Steagall

As LaRouche and LPAC have consistently made clear, the first step toward economic and fiscal sanity in the United States—and globally—is the restoration of the Glass-Steagall Law as implemented by President Franklin D. Roosevelt. Up to \$20 trillions of dollars in fictitious, unpayable debt will be off-loaded from the Federal books by this means—and, if you doubt that figure, take a look at the recent GAO preliminary audit of the Federal Reserve Bank (see following article), or the testimony of former TARP Inspector General Neil Barofsky, or numerous other knowledgeable, and honest, sources.

Eliminating those gambling debts should help the United States’ ability to pay its debts, don’t you think?



LPAC-TV

*LaRouche Democratic Congressional candidate Dave Christie is leading a drive for Glass-Steagall in Washington State; so far, seven Democratic Legislative Districts have passed emergency resolutions in favor of H.R. 1489.*

And once that’s done, the U.S. government can issue credit directed to the physical economic improvements so desperately needed to save our people, provide jobs, and restart the path to technological progress.

The relevant legislation for reinstating Glass-Steagall already exists in the House of Representatives (H.R. 1489 and H.R. 2451), and between them, 35 Representatives, from both parties, are on board. At the same time, there is a growing movement among trade unions, the Democratic Party, and other constituency groups to force Congress to act now—before the disintegration of the economy goes any further.

As LaRouche put it on Aug. 1, if Obama’s Hitler coup goes ahead, the U.S. population is looking at bodies piling up in the streets, soon, real soon. Some will be as a result of cutting energy assistance, others from cutting medical services, others from cutting jobless benefits and Social Security, to name only a few proximate causes. Others will come from the desperate social conditions that generally result from robbing a population of its future, not to mention its current ability to survive.

Glass-Steagall, implemented rapidly and combined with removing Obama, *could* reverse this coup, and stop these deaths, before it’s too late. That requires a mobilization of the American population on a level not seen for decades. That is the challenge that lies before us.

## Without Science, There Will Be No Civilization

by Lyndon H. LaRouche, Jr.

*LaRouche made this statement at the opening of the July 27 LaRouchePAC Weekly Report (<http://larouchepac.com/node/18916>).*

We're in a situation, in which science has virtually died in the United States, and in Europe. The scientific technology is being destroyed, and therefore, we're in a situation in which we have to, by other means, revive and maintain physical science and its related things.

Therefore, today, we are going to take on a major factor—several major factors actually—which are combined together, to define things that have to be understood, lest they be lost as knowledge, for dealing with the science of the future, without which there will be no civilization. And we are on the verge of losing civilization entirely right now.

And if we tried to restart civilization now, we would have a problem: that most of the professors out there are incompetent, in science. Because they don't care about science any more; they want to *control* it, without actually practicing it. And therefore, there's a tremendous amount of slop. And there are two crucial elements in the practice of economy, in general, science in particular, which are just being lost entirely.

So therefore, we have something which is not far out, shall we say, really. It's very important. It's very current, very currently important. And, in a sense, it seems premature, but it's not. Because unless we get back to real science, which means we are going to have to make giant steps in terms of leaps forward, we are not going to be able to save civilization. Even if we

stop the present collapse of the world economy, especially in the trans-Atlantic region, we are going to have a tremendous challenge in trying to educate people who are now totally *un*-educated, or incompetently educated.

And the only way you can do that, is by going to the frontiers of scientific progress today, or frontier issues. Because it's on the frontiers of science that science and related practice live. So you have to go to the most advanced area of science, in order to maintain it and reproduce it, now. It takes two to three generations of science to develop a scientific capability. So, we have to leap ahead to some things which may be one or two generations ahead of what people would think today, and this is the nature of the subject today.

The subject includes such things as esoteric names, but they're not esoteric in fact, as these things we will just hear now: one is the question of life; the other question is reversal of time, which very few people have an adequate consciousness of, which is absolutely essential. The reversal of time, from the standpoint of the incompetence of Laplace—which he [Sky Shields] particularly dislikes—it is a fraud. And therefore, these things which are popular science, and taught in universities, universities which practice science without practicing it. They just go through the motions and recite the chatter; there's no real science, there's no involvement.

So these questions—the ontological questions of science—have to be brought to the fore. And we thought that today is a good opportunity to present some preliminary introduction into the science of the future.

# The Universe Is Creative

by Sky Shields

*Sky Shields, of the “Basement Team,” as the La-RouchePAC science department is known, opened the second panel on “The Preeminence of Science over Ideology,” of the Schiller Institute European Conference, “Rescuing Civilization from the Brink,” which took place July 2-3, in Rüsselsheim, Germany.<sup>1</sup>*

I would like to take up the theme—it’s a theme that is taken up in this recent video, the recent series of videos which have gone under the title [“Is the Past Fixed?”](#)<sup>2</sup> but which are tackling a question that might be best described as the ontology of mind. People have a lot of different concepts, I think, attached to the word “Mind.” But the problematic thread that I think runs through all the different concepts people have of “Mind,” is that somehow, mind is something which we possess; there’s something that we recognize exists in us, but is completely distinct, and it’s maybe observing something out there in the objective universe.

That is to say, you’ve got something in *you*, you want to call “Mind,” you want to name yourself. It has certain laws, certain rules to it. Certain words seem to come to mind when you think about it: ideas, concepts, like morality, beauty: There are certain principles that you consider to be definite principles of Mind. But then, these are not necessarily principles that you would assume exist in the so-called “objective universe.” You assume that there must be some other thing out there that perhaps is more logical, perhaps has other characteristics to it, and we are using our minds to observe it.

The theme of this video series is what I’d like to



EIRNS/James Rea

*“This thing we call ‘Mind’ has a fundamental ontological significance,” Shields told the conference, “that is the basis for everything that we see in Creation.”*

cover today, using some of the work of Vladimir Vernadsky [1863-1945]. I’d like to disabuse you of that idea, and develop a notion instead, that this thing we call “Mind” has a fundamental ontological significance. That is to say, that everything you know as the physical universe is derived from that exact same process that you know in yourself as Mind, to the extent that you recognize it in yourself and others. That this is a principle that has a very serious ontological significance that is the basis for everything that we see in Creation.

And, in the course of this, we will see that the actual scientific facts of the matter, agree very closely with the notion that you find in the Abrahamic religions, of man being made in the image of the Creator. We’ll demonstrate that this is actually a very rigorous scientific concept, and it’s the basis for all human knowledge, and it’s the basis of all human economic activity in the universe:

1. A video Shields’ speech can be found at <http://www.larouchepac.com/node/18723>. The complete conference is available in video format at <http://www.schillerinstitute.org>. The July 15 and July 22 issues of *EIR* also carried transcripts of speeches from the conference.

2. [www.larouchepac.com/node/18639](http://www.larouchepac.com/node/18639)

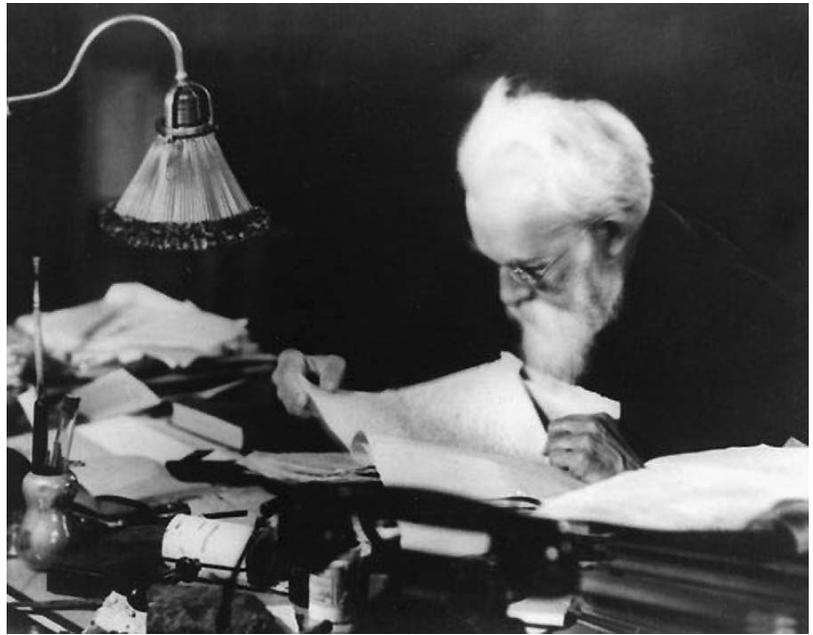
The ability for the human species to act on the universe is based on this principle, this ontology of Mind.

To do it, I'd like to give people an introduction to a thinker whom you have probably seen in various works of the movement. Mr. LaRouche has referenced his works in a number of different papers, a number of different locations: This is the Russian biogeochemist Vladimir Ivanovich Vernadsky. He is most well known as being the founder of the notion—he's not the person who coined the word, but he's the person who most rigorously develops the concept—of the Biosphere. And that, in its short description, is the envelope of the planet on which we recognize the existence of living processes.

But in its more in-depth investigation, it actually becomes something much larger. To make the point that people have seen, I think, in some of the recent discussion we've had, that has come under the rubric of "cosmic radiation": The entire first half of his book *The Biosphere* is describing processes that you would name, that would also fall under that rubric of "cosmic radiation."

### **Vernadsky: The Ontology of Mind**

That is to say, his definition of that thin layer of the planet that we call the Biosphere, is that this is the only part of the planet which interacts with the rest of the cosmos. Or this is the part of the planet which most actively interacts with the rest of the cosmos, largely through the process we know as photosynthesis, where you've got the steady flow of radiation from the Sun, electromagnetic radiation from the Sun, being used to catalyze an amazing negentropic process of the development of the beginning of all of the food and all of the energy cycles that you see on the planet: The construction of the carbohydrate structures that form the bodies of these plants, and that are eventually incorporated, later on, into the bodies of animals, to be recycled, to pass through the Biosphere, in what Vernadsky called a biogenic migration of atoms, ultimately to become the structure of that Biosphere itself, via the death and the decay of various living organisms; to become other generated waste products, to become the mountains, to become the soils, to become the oceans.



*Vernadsky develops the concept of the Biosphere, the envelope of the planet in which we recognize the existence of living processes, and which interacts with the rest of the cosmos, largely through photosynthesis. Early on, he insisted that life is a principle as fundamental as matter or energy.*

You've got a steady flow that, if you were to view it as this biogenic migration of atoms, would be something that continues, from the far reaches of our cosmos into that thin layer we know as the Biosphere, and becomes the very structure of the Earth, the rest of it as we know it.

That's the scope of what he's actually describing. But in the course of describing that, he ends up drawing some conclusions which have major implications for ontology in general, but which we'll see—once we follow this path—lead us directly to this question of the ontology of Mind.

I'll give you some background. Vernadsky's life is a funny one. We've discussed this in the past. It spans a time period which is a very unusual, but very interesting and rich time period. It roughly spans a period between the American Civil War and World War II, so it positions him in an interesting place. He lives half of his life in Tsarist Russia, and half of his life in post-Tsarist Russia. And he's a major political player in organizing for the overthrow of feudalism in Russia, in particular. But because of his scientific views, he realized the necessity of this being the complete elimination of feudalism in order to facilitate the evolution of the human species. Just to give you some idea of where he stands.

A lot of his work leading into the Russian Revolu-

tion, and out of it, was on the topic of human economic studies, for that reason. You'll find studies of his on examining, comparing different kinds of farming practices, between the U.S. and Russia at the time. He does a study of U.S. agriculture, European agriculture, as he's trying to find out what's going to replace the feudal structure that exists in Russia at that time. He's looking, and says, "Well, after revolution—if you're going to end the idea of serfdom, you're going to end the idea of a feudal structure under the Tsar—what should replace that?" And in his mind, this was a real question of the scientific evolution—this is a question of the evolution of the human species. And you'll find writings of his on that subject already in the late 1890s, early 1900s, that this is a theme that's on his mind.

But he's investigating that at the same time as he's doing some early geological studies with his teacher Dokuchaev, examining, looking at the nature of soils, looking at the nature of the mineral composition of the Earth's crust. And in the course of this study, he quickly realizes that when he's looking at these minerals, he starts realizing that you're not observing a fixed system; that what you're looking at is a process that exists. He said, you're looking at a process that changes and evolves.

And very early on, he makes the statement that you see a process that exists *in time*. And this strikes him as early as, again, the 1890s, early 1900s; this strikes him as something that's unique to, first, geological processes. But then he realizes that every place you see change in these geological processes, it's connected to the action of living processes. And he realizes—his background is initially only in geology—but he realizes that he needs to hurry up and give himself a crash course in the biological sciences, in order to be able to make any functional, useful statements about geology.

And so he does this. He does a whole investigation himself of figuring out, of just getting at what we later recognize as his impressive map of all life on the planet, really, everything you can possibly imagine. Because he realizes that all of this, this entire Biosphere, is involved in acting on, and developing, and changing the underlying abiotic structure of the Earth's crust.

### 'The Eternity of Life'

But then it begins to spark in his mind, from that observation of the way these biological processes operate on geological processes, it makes him begin to realize that, if this is true, then that earlier recognition that he had about the fact that geology is a science that exists

in time, means that the thing he's calling time is closely connected to the action of living processes. And in fact, he coins a term that becomes very controversial, which he calls "the eternity of life."

Now, this has got two interpretations at present. One is a very practical interpretation, which is not un-useful, but it's a very important thing to know this and kind of wrap your mind around: that, to the extent that he can observe these changes in geological structures over

---

---

*How could you have this guy Vernadsky claiming that life, as a principle, is something that's eternal, if there was some point where you couldn't have had living things? Doesn't there have to be some moment of what's called abiogenesis, where life has to spring out of nothing and come into being?*

---

---

geological time, every metric of change that you have to look at is something that's connected to life: Everything, from carbon-dating—all of your dating methods in your geological strata, depend on living processes. But then, he says, that these changes in the geological strata were exactly the thing that separates geology from the other sciences, because it gives us this feeling, this sensation that you want to refer to as "time." And what he concludes from that is that there's never been a period on the planet when life did not exist.

Now, this is very interesting for a couple of reasons. The first thing that should come to mind, as we had a discussion earlier: "Well, isn't it true, wasn't there some period of time when conditions on the Earth were so hot, so impossible, around the formation of the Earth, that you couldn't possibly have life? How could you have this guy Vernadsky claiming that life, as a principle, is something that's eternal, if there was some point where you couldn't have had living things? Doesn't there have to be some moment of what's called abiogenesis, where life has to spring out of nothing and come into being?"

And Vernadsky is very insistent that, no, this is not true. And as early as 1908, we have him making the statement that—which he'll refine—I'll give it in the form he gives it in 1908, but we'll see, as time progresses, that his development of this notion becomes

much more complex. But he says, in 1908, he's beginning to recognize, *that life is a principle as fundamental as matter or energy*. This is as early as 1908, so you can get an idea of where his mind is going.

That's obviously very different from the standard reductionist view. The view that's prominent today is that, somehow, life is just some epiphenomenon, composed out of non-living processes. And then cognition, we're just some epiphenomenon that grew out of living things. But he stresses, no; he's saying that this principle of life is something that exists, that, he says, is eternal, that pre-dates all other phenomena that might be observable.

By 1920, he comes under very heavy attack specifically for that notion, the idea of the eternity of life. This is a period, after he plays a major role in the overthrow of Tsarism in Russia, but there's a coup that's launched by—he recognizes it as some sort of meddling. He's not totally clear that this is the meddling of the British Empire to ensure that the revolution that occurs is the Bolshevik Revolution, and not the kind of revolution that Vernadsky is looking for, but this happens.

In that context, you have the takeover in Russia of the ideology of dialectical materialism: The materialist aspect of that requires the reductionist notion of the progression upwards, from the abiotic, into the biotic, into the cognitive. Whereas Vernadsky is making this insistence, that processes are organized in the opposite direction. At this point, he's only being very explicit that it's life, as primary, that governs the processes that are below it. But then we'll see that he develops that further.

This becomes a huge deal. The paper he writes on the subject in 1920, which is called "The Origin and Eternity of Life," is completely censored. It's not allowed to be published, and the book in which he was planning to publish it, is heavily redacted. The piece that's most heavily redacted is his piece on human autotrophy, which is on the willful evolutionary development of the human species. So this sort of gives you an idea of the context.

This notion of the eternity of life is exactly what Alexander Oparin is deployed to attack in Vernadsky's work, to attack and try to attempt to rework and rewrite and to explain away. But we'll see that Vernadsky is not only insistent upon that principle, but his later work develops that to an even higher level.

## Work with the Curies

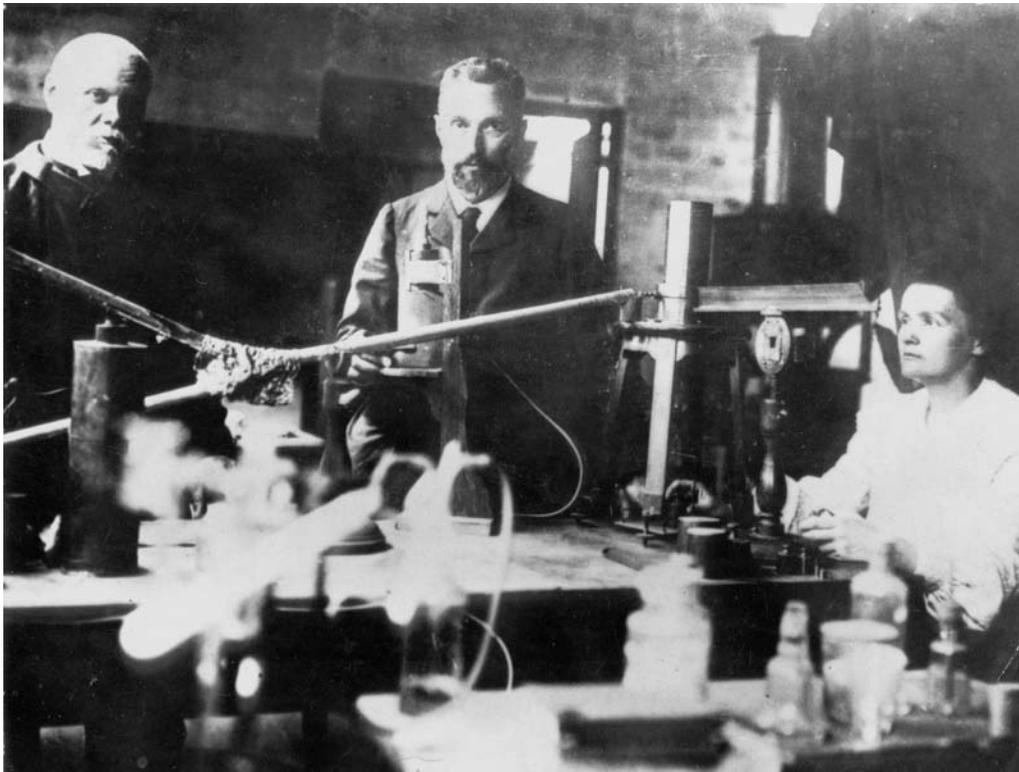
A major change in his development of this concept occurs in the period around 1924, when he moves to

France to work in the laboratory of Marie Curie. Now, he's working there on various topics, many of which are dealing with the notion of radioactivity, obviously, and radioactive dating methods, which he saw as a major way to see this expression of time and development in the Biosphere.

But while he's there, he has a series of personal discussions with Marie Curie [1867-1934], and she relates to him the work of her husband, Pierre Curie [1859-1906]. In that series of vignettes, it's interesting to see, he describes her description of dinnertable discussions with the family, which would be Pierre Curie, Marie Curie, and their daughters, on scientific topics. He mentions that they had a very peculiar working style, which is that they would spend a long time in discussions, that they would spend months in just discussion amongst them, developing these ideas in their head, and then Pierre Curie would write a very short paper as a result. And Vernadsky does a little summary; he points out that the Curies' life's work, which he says is about—he gives a figure of something like 25 years—some number of decades of life's work, fits in one volume. He says this is not because he's not a prolific writer, but because he writes these incredibly dense summaries of his thought process.

But, as a result, when Pierre Curie is killed, he doesn't get a chance to write out the final project that he was working on, which was the generalization of work that had been done earlier by Louis Pasteur [1822-95]. Now this was some work that Vernadsky was obviously very familiar with, on the question of handedness, or chirality. This was Pasteur's observation that there was a distinction between the same chemical compounds when they are produced: The exact same chemical compound, which is chemically identical, meaning it undergoes the exact same reactions, is produced in the exact same way in each case, but there's something fundamentally different for certain compounds, when they're produced by living processes, or in a laboratory, outside a living process. And that difference is expressed in the ability of these compounds to rotate a plane of incident light.

If you have light that is polarized to oscillate in a specific plane, certain compounds produced by living processes would exhibit an ability to rotate that plane of light, whereas that exact same chemical compound, produced outside living processes, could not. And again, I'd like to stress that, in other respects, these compounds are completely identical. They're completely chemically identical, but somehow, their rela-



Roget-Viollet

*Pierre (center) and Marie Curie in their crude “laboratory,” an unheated shed in the courtyard of the School of Physics and Chemistry in Paris. On the table is the Curies’ quartz piezoelectrometer. On the left is chemist Gustave Bémont.*

tionship to light changes, on the basis of their being generated, or not being generated, by living processes.

Now, Curie saw this as an expression of a much more broad principle of symmetry. And he had discussed this in work with his family, with Marie Curie. Vernadsky found this very exciting, and in particular, he said that he was excited about the universality of this principle of Curie’s, and in particular, that it had two expressions. One is a quote that became very fruitful in all areas of investigation later on, where Curie notes that a dissymmetry is an event.

Now what did he mean by that—that dissymmetry is an event? I can give you a mental image, which would help. If you were to picture in your head, right now, a rotating sphere; now imagine that we’re talking about a perfectly geometric sphere, with no external markings. If it were perfectly geometric, no external markings on it, would you be able to register that that sphere was rotating? And in fact, could you even give a meaning to rotation? If it were perfectly geometric, no external markings to it, you’d find, as you look at the thing, it looks exactly the same.

If you do something to that sphere, and you change its spherical symmetry—say you put a dot on it, all of a sudden—so imagine you’ve got this spinning sphere,

and somebody comes with a paint brush and they dab a dot on the side of that sphere: Suddenly you have motion, you have something that you recognize as rotation. That as soon as you add a dissymmetry, you have something that becomes recognizable as an event. And Curie generalizes that, to say that in general, whenever you see something you recognize as a phenomenon, as an actual event, it’s because you’re seeing a dissymmetry that’s generated out of a symmetry.

Now, this is important, because that principle alone, allows you to eliminate the idea of empty space. Because you realize that what seems in this case to be an object in empty space—in that case, you would say the dot moving on the surface of the sphere—is not. What it is, is a process that initially seemed to be, with respect to some parameter, perfectly symmetrical. Suddenly, some portion becomes asymmetrical—you introduce a singularity in that process, and the asymmetry relative to the symmetry registers to you as an event, as a thing. And the simple sense-perception response to that, is to say, “Well, this is an object, whereas what you had before was empty.”

But in general, Curie says no, that’s not true. Everything you see as an event or an object, is, in fact, a dissymmetry being measured against a pre-existing sym-

metry, and that looks to you like an object against empty space.

And so Vernadsky recognizes in that approach Curie is taking, a very powerful heuristic tool. And if we get a chance, we'll be able to see that you will find that, in musical composition, that becomes a principle that you can play with, and you will see how it moves the mind: What you recognize as background versus foreground; what you recognize even as silence versus sound in a musical composition, is really playing on this question of the symmetries and asymmetries, in your mind: There's no such thing as empty space.

So Vernadsky is excited about this, because he has started to realize that this gives you the ability now, to eliminate all the notions of the physicists, these sort of preexisting unquestionable notions of absolute space, absolute time, and matter. He says, well, these are fictions, these are mathematical fictions, and in the real world, they don't exist. And you have to figure out a healthier way to get around them, to be able to approach actual phenomena, to describe actual phenomena as they are.

So that becomes an exciting notion.

### The 'Principle of Redi'<sup>3</sup>

But then he's also taken by the second element, that's often called Curie's Principle, which is that the symmetry of an effect must be contained in the symmetry of the cause. And so, he asks, what does that exactly mean? Curie has famous examples of it. The most famous example is, Pierre Curie and his brother, their discovery of the phenomenon of piezoelectricity.

Now, people may or may not be aware, that their discovery of piezoelectricity, that is, the ability for certain crystals, when compressed, to generate an electric current, is based entirely on considerations of symmetry. Of recognizing what pre-existing symmetry exists in a crystalline structure, and upon its compression, what sort of changes in symmetry are you observing? What occurs as a result? And do the induced symmetries—do they or do they not agree with the symmetry of an electric field, of a generated electric current? And

---

3. What Vernadsky calls Redi's principle, "*omne vivum ex vivo*," is the principle, proven by Pasteur, that "all life comes from life." This principle was formulated by the 17th-Century Italian scientist Francesco Redi (in the form "*omne vivum ex ovo*"—"all life comes from the egg") and has not been disproven to this day: *There has never been discovered any evidence of the ability to generate the living from the non-living.*

on that basis, he's able to determine, first predict, that the phenomenon of piezoelectricity will occur; but then also be able to determine in what material could that phenomenon be generated. And it's premised on the idea that you can get the symmetries to agree between the electrical current and its associated magnetic field, and the crystal itself.

Vernadsky hears this in his discussion with Marie Curie, and then, in his own reading of Pierre Curie's work. And then he connects that with an idea that was already dear to his heart, which is this question of there not being any observed abiogenesis. The idea of what he calls the "principle of Redi": that life always comes from life. That is to say, you never see the spontaneous generation of a living process. And what he observes in the history of the Biosphere, you see the steady emergence of life, from life, from life, typically expressed as organism to organism.

But we will see that the symmetry principle is going to allow him to expand this notion of life much more broadly than even that simple description allows.

What he does see also, is that this peculiar symmetry that you see with the handedness—he goes back, now, and looks at the work that Pasteur had done on the ability for certain compounds, when produced by living processes, to be able to rotate the plane of light as it passes through them, and he starts to realize that there seems to be here an intrinsic handedness in the process itself.

Pasteur himself had already concluded that this was a form of handedness that had to exist in the very, very small; that this was not some property of the compound in the large. I'll give you an example: It was already known that certain crystals could rotate a plane of light when light was shone on them. For example, quartz crystal. Crystallized quartz, if you shine light through it, is capable of taking a plane of polarized light and then rotating that, as the light passes through it. But, if you liquefy the quartz, or you convert it into glass, the form that we often see it, in its liquid form or in solution, it loses that ability to rotate the plane of light. So you're able to conclude from that, that the rotation of light in the case of quartz has something to do with the crystal structure itself.

But then, in the case of these living products—like the famous example we discussed in a [video](#) on this subject on the website,<sup>4</sup> the case of tartaric acid: In the

---

4. "Louis Pasteur: The Space of Life." See <http://www.larouchepac.com/node/13732>.

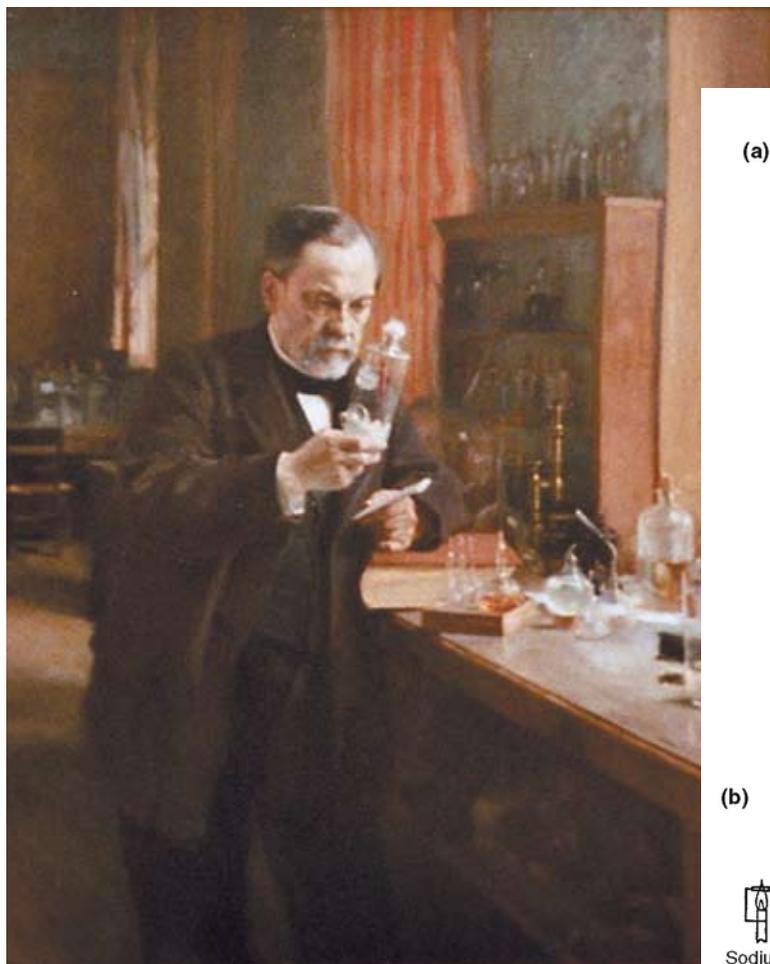
case of living processes, the plane of light is rotated in the solution by the liquid itself; which means in Pasteur's mind that, no matter how you change the liquid, it will continue rotating the plane of light as the plane of light passes through it. So in Pasteur's mind, this is a product of the solution in the very, very small.

### A Fruitful Discussion

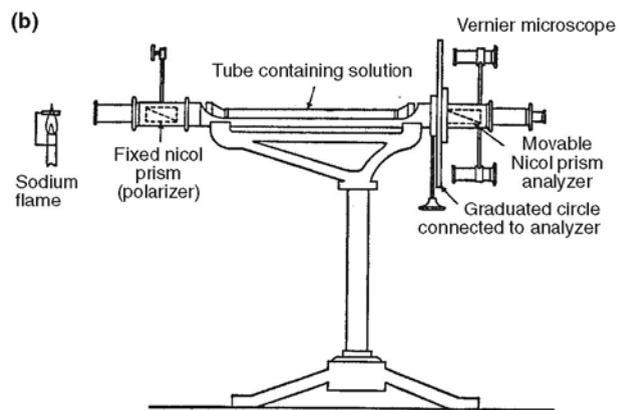
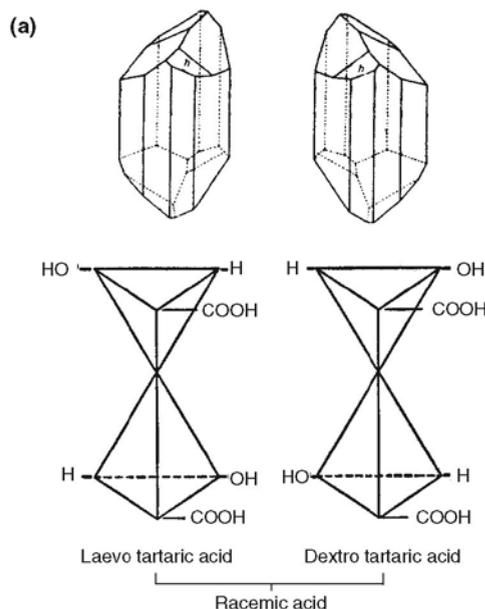
This is something about the handedness of the geometry that goes to the, very very small. He calls it molecular dissymmetry. Vernadsky takes a look at that, and says that that thing that Pasteur is calling molecular

dissymmetry, is actually an expression of something much more fundamental. And remember, he's coming from the standpoint that he recognizes life as being an actual independent, active principle in the universe, a fundamental one.

So, what he does is, he begins a discussion. He begins tossing these ideas around. They develop really to their peak in the period around 1929, 1930, 1931. In '29, he begins a correspondence with a mathematician, but a very interesting mathematician, named N.N. Lusin, Nikolai Lusin. It's interesting, because Lusin is part of a very specific mathematical school in Russia at the time. This school includes Lusin, another figure named Pavel Florensky, there's a number of these folks. I won't give this as an



In 1848, Louis Pasteur (shown here in his laboratory; painting by A. Edelfeldt, 1885) succeeded in separating, the left- and right-handed forms of tartaric acid crystals (a). Dissolving them in water, and examining the two solutions in a polariscope (b), he found that one solution turned the plane of polarized light to the left, and the other one to the right. He then showed that only the left-handed form is produced in biological processes, while equal quantities of left- and right-handed forms arise in laboratory synthesis of the compound.



endorsement necessarily, but to give you an interesting idea of what their mindset is: people who were opposed to dialectical materialism, because they were opposed to the concept of continuity as being primary in philosophy. And they stress that there had become an over-obsession in mathematics, in particular, with continuity in continuous processes.

And, so the discussion amongst themselves in this group, is that real processes are, at their heart, at root, discontinuous. And in their discussions, you find that they discuss, in particular, that political processes and social processes, do not occur by some kind of gradual social evolution, That they occur of necessity by discontinuous leaps, that they occur in revolutions.

And so they stress that any kind of mathematical study that is not taking discontinuity into account, is something that's problematic. Florensky, for his part, goes so far as to say that he thinks that it has the net effect of separating man from God, because of man's preoccupation with the necessity that things must continuously follow from what came prior.

So that's simply to give you some context. And among them, they form a group which was heavily opposed to the reigning ideology, the materialist ideology in dialectical materialism. Florensky himself is later executed. Lusin, in a major event in the early '30s, becomes a target for execution, which is eventually stopped by Vernadsky, groupings around Stalin, and other people. I'll get into some of that and what's to come, but this is just to give you a flavor of what the discussion is.

So this is who Vernadsky writes to, asking him about this question of handedness. He sends Lusin a copy of Marie Curie's book; it's a biography of Pierre Curie written by Marie Curie. Vernadsky sends this to his friend Lusin, and says: "Look, I'd like you to take a look at this"—this is in '29—and simply: "look at this and tell me your thoughts on this. I'd like to know from your standpoint, is there any mathematical or geometrical significance to this question of handedness in living processes?" That discussion may end up being taken up in person between Vernadsky and Lusin, between '29 and '37, but the next letters we have between them are in '37.

### **The Handedness of Space-Time**

Before I get to that, I'd like to discuss some of the developments in-between, but that letter in '29 just shows that this was something that was on Vernadsky's

mind as a fundamental question, and already connected to his idea of, at this point, the primacy of life as a process. But in 1931, something interesting happens. In 1931, Vernadsky—already in his 70s—is again coming under heavy political attack from different circles. Some groupings within the Soviet Union are defending him; others are attacking him. Some of those that are defending him are attempting to defend his scientific work, but prevent it from being propagated into the general population, because people recognize that his concepts are obviously correct, because they're effective, but that they would be dangerous, were they taken up by the general population.

So, one of the major moves of the censors at this time was, instead of stopping the publishing of his work, they would prevent it from circulating any wider than the Academy of Sciences. They would only allow the work to circulate among a very small circle of scientists and then limit the amount of publication.

But in 1931, he applies to do research abroad and is denied, and instead is told that what he can do is go and study in a special vacation house that's been set aside for members of the Academy of Sciences. So he's understandably upset. But this year, '31, where he's in this vacation house, becomes a very fruitful year for him, because a number of ideas that have been floating around in his mind begin to converge. One, his concept of the eternity of life, this idea of life being an actual fundamental principle. But then, that combined with the notion of symmetry, as he had discussed it with Marie Curie from the works of Pierre Curie, and this combined, then, with certain other clear properties that he recognized.

One is, he recognizes the creative nature of living processes, that they express a very clear anti-entropy, where the only place that what you would call an "arrow of time" seems to be seen in the abiotic, at least in the small, as in what Sadi Carnot was able to describe for heat engines, which is their tendency over time for concentrations of heat to dissipate, etc., which was described as entropy, and named entropy. And he makes the point that it was erroneously attempted to be applied to the whole universe by Clausius. Vernadsky makes the point that that was an invalid attempt to generalize it, that nothing experimental demonstrates that. In fact, Vernadsky will show, when you're talking about the whole universe, it's going to have a characteristic which looks much more like a living process than anything else.

But he recognizes this anti-entropy, and he makes a

very unique and interesting correlation, which is between that directedness of living processes, that anti-entropy of living processes, and the handedness as Pasteur had observed it. And he says, what we're seeing here in the case of the living processes is a handedness of time. And then in his writings, he says, well, of course, this makes sense, because it was actually an arbitrary division that was done by Descartes and Newton, to separate space and time into distinct things.

In fact, you only have one phenomenon here, which you would call space-time but really physical space-time. It's a process. The thing that you're calling space and time are reflections of some actual physical process there that's occurring. Since that's true, things that you see reflected in the characteristic space of a process should also be in the characteristic time. So, whatever this handedness of space that we're seeing in Pasteur's work, should also be connected to a handedness of time.

And he starts a deep investigation of this, really getting into the thick of it around '31, when he does a full historical study of this discussion of everybody who tried to tackle time, and he concludes that—it's really at this moment, that he's doing his work now—the first moment that the greatest fallacy up until this point, has been the idea really imposed by Newton, that time and space are some sort of absolutes that are not subject to be studied by the human mind. That these are something that you're supposed to take as *a priori*, and not be able to question.

And he says, well, that's clearly wrong. He says that's something that the mathematician might think, that's something that even the physicists may think, but it's not something the real scientist, the naturalist, has the liberty to think.

So he begins elaborating this notion. He begins a series of discussions. He writes a series of papers in '31 on this theme, on the theme of the, as he calls it, "living time," and sometimes, "biological time." But it's inter-

esting that already in this period, over the Summer of 1931, he's beginning to realize that certain principles that you've already seen reflected earlier in his work about the nature of human activity and economic processes—he starts realizing that these are absolutely fundamental, in discussing this question of even living time.

And you see there, in his work, as far as I can tell, the first reference to the works of Wolfgang Köhler [1887-1967] and the Gestalt psychologists. And his explicit statement on that matter, I'll grab that quote. He references the work of Köhler and the Gestalt psychologists, and he says that what's most interesting about them is that they recognize in perception the things that you would normally start to describe as perception, which is: "They point out the necessity of recognizing certain geometrical forms or structures for visual space, for tonal melody, and for other such phenomena, which are connected with the structure of the spatially and temporally identifiable cognitive apparatus."

And he points out that the "Berlin Professor Wolfgang Köhler extends these notions about the psychological forms, about these cognitive processes, to phenomena of zoopsychology and to physics." And this becomes a new philosophical current of Gestalt philosophy.

Now, it's important—I just want to draw your attention right there to that reference. He says specifically that what he's talking about when he's describing this character of biological creative space-time, is the best example of being able to start to examine these sorts of geometries, is what you see specifically in the work of the Gestalt psychologists, but specifically in their work on vision and hearing, and specifically music. Note the reference to tonal melody, because that will come up. His discussion of the significance of music for these geometries, and for the notion of time, will become interesting, especially when we come back to a discussion of what Köhler was working on at that time, ele-



*Vernardsky investigates the work of Wolfgang Köhler and the Gestalt psychologists, in particular, their work on vision and hearing, and specifically music, as he is developing his notion of biological space-time.*

ments of which would have undoubtedly been known to Vernadsky.

But I'll come back to that.

## The 'States of Space'

I want to do a little more on the arc of what Vernadsky was doing. But keep in mind that reference, in his work on biological time, to specifically cognitive processes, specifically the work of the Gestalt psychologists, and then specifically the character of the role of music, and tonal melody in this process.

But that's 1931; you see that reference. And I know of one other reference at that time to Köhler's work, which is in his notes being prepared around the same period. So that develops.

And a number of other things begin to happen. He publishes those papers. He comes under heavy, heavy attack in 1931 as a result of that. I should add that in January of that year, he'd already come under fire. In the magazine *Bolshevik*, there was an article published which was called "Subversives in Science."

And it was one of these things—clearly, to get how the process worked—you'd have these moments of just riling up the population. You'd build a rage in the population into a fever pitch, with the intent of targeting certain specific individuals, and usually they would meet with very bad ends.

And at this point, Vernadsky had been attacked. He had never made a secret of his own attacks on dialectical materialism, and he'd been attacked publicly for this before. But this one had a particularly sharp edge to it. And he was put on a list with a number of other scientists, a very short list, among whom was Aleksandr Gurwitsch [1874-1954], for the record, scientists who, this article in *Bolshevik* magazine claimed, were using their scientific work and using their positions to draw political and philosophical conclusions.

And I will make the point: He most certainly was using his scientific work to draw political and philosophical conclusions, and I think this was a moment of clarity on the part of the enemy at this point.

But he was singled out for attack. In that context, he still wrote what he was writing on this further development of his anti-reductionist work on life, and extend-

ing it more explicitly into cognition, in '31, and published it. He presented it at that Fall's session of the Academy of Sciences, and he gave a speech on what he called "the problem of time in contemporary science," where he included his work on life; he included the reference to the Gestalt psychologists; and he included the reference to music, in particular. This came under fire from A.M. Deborin, who at the time, was sort of *the* watchdog for dialectical materialism. He was *the* Soviet philosophical defender of dialectical materialism; he was *the* person who would be assigned to try and attack you for being a subversive.



*Vernadsky comes under heavy attack in 1931 as one of the "subversives in science"; A.M. Deborin is the top watchdog for dialectical materialism.*

And attack Vernadsky he did: He launched a massive, scathing attack. It was very vicious, but everybody also recognized, it was sort of universally recognized, that it lacked content.

Vernadsky, again, in his 70s, responded—again, I'm going into this, to give you a sense of what the context was. This was a very sensitive situation. I mean, to draw in other people who would come under this kind of attack who had been exiled and/or killed—that

was clearly what some people, whoever Deborin was connected with, were lining up Vernadsky for.

So it was important that he handle this well; and he writes a large public response, and launches a very sharp counterattack on Deborin. And in it, he emphasizes his, Vernadsky's, own importance for Soviet science and the maintenance of the Soviet Union, and really lacerates Deborin for attempting to stop scientific progress with this attack, for his uneducated ideological reasons. And when you see Deborin's response after that, he actually puts Deborin on the defensive, which is very nice, and Deborin begins nagging somewhat after that, but then backs down in that series of attacks.

But now this frees Vernadsky up to do some other work, and he starts building networks to broaden this notion that he's been working on, this concept of—a term he borrows, that Pierre Curie used, that Marie Curie told him about—this "states of space." So he continues his work on what he calls the states of space. But he then stresses everywhere he writes it, what he means when he says that is, he's referring to this physical space-time.

In what follows, almost every time I use the word

“space,” unless otherwise specified, I’m referring to a physical space-time, and he’s clear on that himself. This is, again, most explicitly after this ’31 period, where you’ve got his explicit work on time being carried out.

## Georgii Frantsevich Gause

So then, in 1933, Vernadsky, then in his 70s, in his diary, he describes meeting with a 23-year-old researcher named Georgii Frantsevich Gause [1910-86], and they discuss. Vernadsky had been familiar with Gause’s mentor, who was a friend of his, and Vernadsky had three years prior approved for publication Gause’s first published work. But in this meeting, Vernadsky’s ill, and he’s staying in a sanatorium to get better, a special sanatorium for members of the Academy of Sciences, and he has a number of people come to visit him.

In ’33, Gause comes to visit him, and what he tells Vernadsky is that he’s doing experimental work on this question of optical activity in the protoplasm, that he’s taking up the questions that Pasteur had posed on the optical activity of protoplasm, experimentally. And Vernadsky becomes very excited. He’s thrilled this is taking place. He even goes so far as to offer Gause a position in his laboratory, because Vernadsky sees in this the potential to extend, experimentally, his idea, as he begins to work it around this time, that the principle that governs living processes is something that lies on a much more fundamental level than space, time, or matter; that this is something that space, time, and matter are a process, that they’re a reflection of. These are simply projections of something much more fundamental.

So he offers Gause a position. Gause does not take it, but he agrees to research and publish things in the laboratory. The only reason Gause doesn’t take it is because—if you take a look at the areas he’s working on at the time, they’re so broad, he feels he’ll be limited if he leaves the university and goes to work for a specific laboratory.

But to give you an idea of the number of things that come out of this: Gause is able to confirm that the Pasteur principle of the handedness of time runs far deeper than had even been suspected prior, with just optical

activity. In fact, if you are to take a look at the actual structural composition of an organism, there are certain principles of handedness that aren’t violated.

For instance, the handedness of proteins, the optical activity of proteins in living processes, the amino acids that compose proteins, is always the same. You always have proteins that have what’s called left-rotary power. They always rotate the plane of light to the left. The sugars that are involved in the construction of living processes will always have right-rotary power. They also rotate the plane of light to the right.

He does a lot of interesting work. He, unfortunately, comes under heavy fire from the Lysenko apparatus, and then the same groupings among the Soviet apparatus that are enforcing materialism as an ideology launch an attack on him; his main collaborator actually ends up being killed, is executed, and Gause becomes understandably afraid.

His work takes a very practical turn. He continues working with Vernadsky, and Vernadsky never leaves the direction that he’s on. Gause makes a point, though, to avoid the actual work, the conclusions that Ver-

nadsky is drawing about the states of space, but discovers a number of very interesting things. One thing is, he tries to, in the course of trying to take a practical job, he assigns himself to work with the Soviet military in World War II, making himself indispensable and un-executable, in the way he positions himself. That he’s the only person able to develop antibiotics for Soviet Russia, and he develops the first—possibly the only antibiotics during the war. I’m not certain, but definitely the first native antibiotics that Soviet Russia had during World War II were developed by Gause.

But an interesting spin on the story, is that it’s a naturally produced antibiotic, that has the capability of rendering bacterial cell walls permeable and causing them to eventually just simply disintegrate. And Gause looks at their structure and he breaks down the amino acid structure of the antibiotic, and he finds out that it contains exactly one amino acid, which is mirrored in the opposite direction, as that which should be required



*The young scientist, Georgii Frantsevich Gause, who comes to work with Vernadsky, makes a number of discoveries about Pasteur’s principle of the handedness, but his work takes a practical turn, after he comes under attack; during World War II, he develops the first antibiotics for Soviet Russia.*

for living processes. Every other occurrence of that amino acid, when it's in the organism, is left-handed, and this one case in the antibiotic is right-handed. He experimentally switches the hand, and turns it back left-handed, and it ceases to be an antibiotic.

So he's able to demonstrate that the antibiotic character of this thing is closely connected to the nature of handedness in the antibiotic. A whole class of these antibiotics is developed, called "Gramicidin S" for Gramicidin Soviet.

But then there's a whole class of Gramicidins: Each and every one of them contains at least one flipped amino acid, where if you flip the amino acid back, it loses its ability to be an antibiotic. So then, despite the fact that he ceases to draw some of these more profound conclusions, he is able to conclude that this is a deep-running principle.

Now, we know that that shows up in a number of different places. I'll just give a list, so people know that it's true that living processes are uniquely sensitive to the handedness of the chemical compound. I'll just give you an example. People know maybe aspartame, which is the artificial sweetener. If you take the exact same chemical and you reverse the handedness of it, it ceases to be sweet and becomes bitter—chemically identical. Every experiment you could do, outside of experiments with light, would demonstrate those two compounds to be identical. But the organism recognizes them as a universe apart in terms of actual activity.

The smell of caraway and spearmint is the exact same chemical: The difference is the handedness. So, chemically identical, but you, your organism, recognizes them as being distinct. The limonene, which makes citrus fruit smell like citrus—orange, lemon, etc.—if you reverse its handedness, it begins to smell like pine or turpentine.

Some of these artificial drugs are nice: One called Darvon, in one form, is a painkiller. If you flip it to its mirror-image, it will have no effect on your pain, but it will cure your cough. And there are all sorts of insect pheromones and things, that have completely different actions: Exact same chemical, just flipping the hand that changes fundamentally its biological effect.

## Riemannian Geometry

So you realize there's a symmetry principle there in living processes that's very specific, and does not exist outside of it. In '37, Vernadsky continues his discussions with Lusin on this topic, and he asks Lusin: "I

want to ask you something that's more profound. Is there anything in Euclidean geometry that can account for this distinction here?"

Supposedly, the standard description of what the handed molecule is, is a handed molecule floating in Euclidean space. And I've had discussions, we've gone to a number of these astrobiology events, talking to the people who are supposed to be the main workers in this area, and you'll find they all subscribe to this idea, that you cannot touch the nature of the space that things operate in. It is a Euclidean space with a handed molecule.

But Vernadsky goes deeper. He says, "Look, is there anything in a Euclidean space that can distinguish, fundamentally, between these hands?" And he assigns Lusin this investigation to figure it out. And they have a really wonderful dialogue back and forth. I won't go into all the details, but it involves them really hacking and slashing at everything that's known about Euclidean geometry and beyond, and concluding that there's not a way to make this distinction in Euclidean space—and again, I'm summarizing a lot of a very interesting discussion. We can have some more on it.

But then Lusin asks a friend of his, Finikov; he asks a number of mathematicians. They're all passing around Curie's book. And a friend of his relays back to Vernadsky, that well, no, in order to get to the phenomena that you're talking about, you're going to have to start looking at the works of Bernhard Riemann. And so you then begin to have a discussion, here, with Vernadsky, with a number of other thinkers, on the nature of Riemann's work.

They have a first pass series of discussions, and you see this develop over time. It culminates in 1938, where Vernadsky holds a number of seminars at his house with these thinkers. At first, he initially asks Gause to come and just talk with him, and he gets the reply back that Gause will not meet in private with any professor, because there had been some bad blowback from the Soviets, due to people setting themselves up like that; he refused to set himself up in that way. But later on, Vernadsky was able to call together a larger meeting, including Gause, another histologist—essentially, it becomes two mathematicians (it sounds like we're setting up a joke!); two mathematicians, two physicists, and two biologists, and Vernadsky.

The biologists are experts in the handedness in living organisms: Gause and another thinker; two physicists, one an expert in relativity, and the other one an expert in spectrometry. And then the two mathemati-



*Einstein states, in a dialogue with Planck, that some of the phenomena that they are running into in physics, in particular, the quantum phenomena, can only be addressed from the standpoint of a Bach fugue. Einstein understood the intimate connection between art (music) and science.*

cians, Finikov, who is the expert in Riemannian geometry, and Lusin, who was the expert, who had this streak of requiring discontinuity, who said that continuity was the biggest problem you had in mathematics.

They have a number of discussions. Again, I'll just summarize: They conclude with Vernadsky's conclusion in '38—what becomes the second in a series called "The Problems of Biogeochemistry," that living processes express a distinct physical space-time, and that that distinct physical space-time has to be of a Riemannian character. And again, there's a lot in this. There's a lot more to that, but then, in the course of discussing working on it, he's got a number of references where he's very, very explicit (and again, I'll make these available in an upcoming paper); but he's very explicit that the mind is capable of understanding this.

But in order to understand the actual character of the geometry that's characteristic of these living processes, it's necessary to embark on a more fundamental discussion of creativity per se. And you see a lot in his diary entries, of him discussing the fact that, likely, the model

that we're going to need to look at, in order to examine, to look at the sort of space-time phenomena I want to look at here, is going to be the one you find in the compositions of Bach, Mozart, and Beethoven. There's quote after quote of him discussing that. This is in his private writings, not in the published ones, but you can see the direction his mind is going.

It's significant that he's doing this at the exact same time—this is almost exactly coincident with the time period, where you see Einstein coming to some of the same conclusions. He makes an explicit statement in a dialogue Einstein has with [Max] Planck, that some of the phenomena that are being run into in physics, the quantum phenomena, can only be addressed from the standpoint, he says, specifically, of a Bach fugue. So you start realizing this theme is coming up.

Remember that Vernadsky had started looking at Köhler's work on sight and sound, and realized that Köhler had been in a dialogue at that

time and prior with Max Planck, whom Einstein was in his dialogue with, on exactly that theme, on the nature of the character of creativity, as it expressed itself in music and psychology, for physics.

### **Picking Up the Threads**

I'm actually going to leave it at that point, because frankly, that's sort of the most honest thing that we could do here: Because things actually are left at that point right now. To give you an idea of where things stand, Vernadsky never finished founding the science that he wanted to found on that topic. There is an amazing body of work, and we want to assemble it so people can see what it is, but it was left unfinished. The threads that are required to be pursued there are very clear, though, on the investigation of creativity per se, and its expression in the anti-entropic nature of living processes. That that's going to have a very specific geometric characteristic that will be reflected in the space-time of the process.

All that is clear, but what's left to be done is going to

require the work of people with the expertise in the right areas, with the right sense of the physical-scientific questions that are involved, but also, the sense that the resolution lies in the higher domain of Mind. It would have to be a group of people that somehow had an expertise in Classical artistic composition, maybe performed it often, maybe opened events with impressive performances. It would have to be that same group of people that would do these musical performances, that would also engage in their free time in profound scientific discussion. It would have to be a group of people which was interested in the exact same sorts of economic questions that Vernadsky was interested in, because you would have to be able to pursue a study of human activity in the large.

So it would require a very specific kind of grouping that you don't often find in history. That exact same grouping would be well situated to finally finish off, pick up the thread where it was left by Einstein and Planck, where they didn't get much further than the recognition that the whole approach quantum mechanics has taken to these questions is wrong, and the proper approach would have to be something that looked like

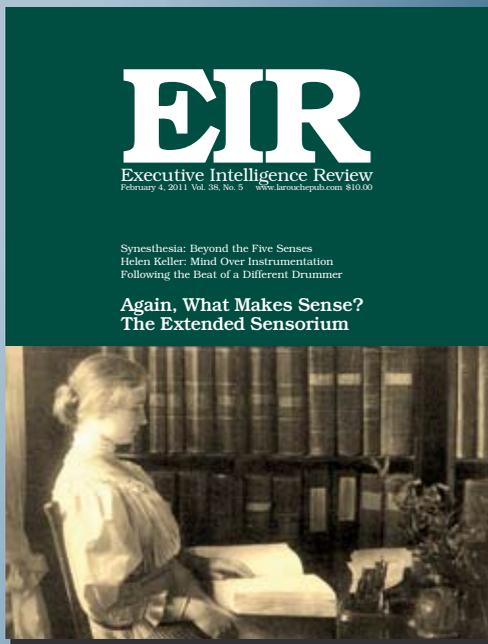
something in the character of a Bach fugue.

Now, again, that was left undone. It's going to require a very specific grouping of people to be able to pursue that. I think people might get the idea. I'd like to propose that this is a task that we take up, and that we are well situated to take up amongst ourselves. And that, frankly, there's nobody else on the planet except for our association that's in the position to answer these questions.

Everything that came after has proven itself to be a dead end. The reductionist approach in biology has proven itself to be a dead end. The statistical approach in physics has proven itself to be a dead end. Not by coincidence, they're closely connected to the statistical approach, the fraud that's launched in economics, because it's the exact same problem expressed across the board, the same underlying ideological problem. And the resolution to all of these I think will be found at once. But that's a discussion that, hopefully, we'll be having over the course of the weekend, and in perpetuity, after this moment.

So, that's what I've got so far. We can pursue some more in discussion afterwards.

## THE EXTENDED SENSORIUM



The LaRouche Basement Team explores the extended powers of sense-perception, beyond the limits of the five ordinary senses. This provocative report, commissioned by Lyndon LaRouche, was featured in EIR, Feb. 4, 2011:

- **Synesthesia: Beyond the Five Senses**
- **Helen Keller: Mind over Instrumentation**
- **Following the Beat of a Different Drummer**
- **Polarization Sensitivity: A Strong and Weak Sense**
- **What is Polarized Light?**
- **Insects and Infrared**
- **Magnetoreception**
- **Unheard Melodies: Electric and Magnetic Senses in Humans**
- **The Sounds of a Cosmic Chorus**

# Are Earthquakes Foreseeable? The Current State of Research

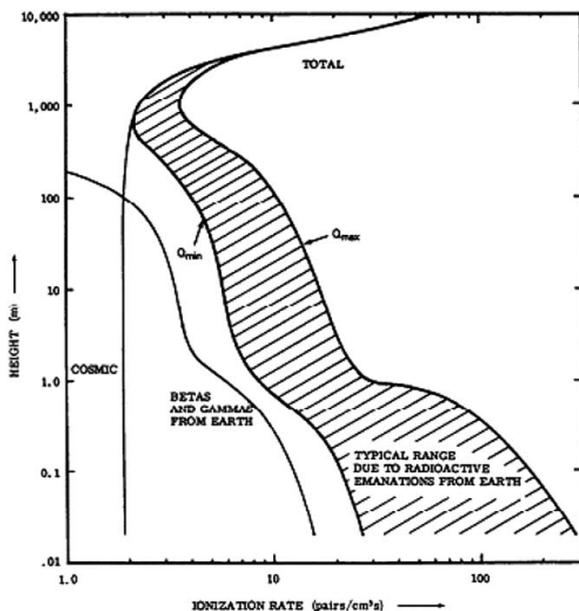
by Sergey Pulinets

*Professor Pulinets, from the Institute of Applied Geophysics, Moscow, addressed the Schiller Institute conference in Rüsselsheim, Germany, on July 2. The following is an edited transcript, with a significant portion of his graphics. The full speech can be viewed [here](#).*

Good afternoon. We had a meeting with Mr. and Mrs. LaRouche yesterday, and we discussed many problems; I decided to widen the title and content of my presentation a little bit, and I will continue the issues which were raised by Professor Ewert<sup>1</sup> in the previous presentation. We'll start with climate change. Because all these issues are connected with the same physical mechanism, and I would like to show you how simple physical laws and processes can play a very important role in our life, in

1. Professor emeritus Friedrich-Karl Ewert, Paderborn University, Germany, "The Anthropogenic Climate Change Swindle," <http://schillerinstitute.org>.

FIGURE 1  
Natural Sources of Air Ionization



W. Hoppel et al., 1986

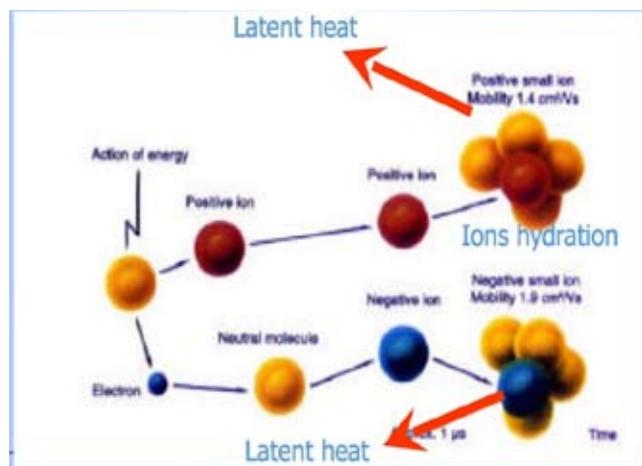
our environment.

The main thing we will touch on now are the processes that are connected with ionization of air, of our atmosphere. Actually, we have two main natural sources of ionization: The first one is the ground; this is the Earth's radioactivity. We know that the Earth's crust contains uranium, and the products of uranium decay, and especially the gaseous product, radon gas, is released everywhere—even here, you can measure the products of decay of radon.

In **Figure 1** you can see, in the lower part of the graph, the ions produced by natural ground radioactivity. And when we go up, with this profile, the most powerful source we have, our galaxy, is the main source of ionization of the upper layers of the atmosphere; the galactic cosmic rays, which are born in our universe, are accelerated in the neighborhood of the stars, and then penetrate our environment, and make very strong changes, including climate changes.

But, first, let us look at what processes are connected with ionization (**Figure 2**). If you have a neutral particle (atmospheric gas molecule), and you have some energetic particles that collide with the neutral molecule, you can obtain a positive ion, by the release of electrons

FIGURE 2  
The Main Driver for Energy Release



from their shell. And free electrons can be attached again to a neutral particle, and form a negative ion.

But in our atmosphere, we also always have water vapor. The water molecule's structure is not symmetrical; it has a dipole structure, so one part of the molecule contains the positive charge of hydrogen, and another one, the negative charge of oxygen. Because of this polarity, they become attached to the ions. This is a very interesting thing, which in many works is not taken into account.

You probably know the saying that a "watched pot never boils." Why? Because, to convert liquid water into vapor, you need additional energy, which is called "latent heat." Because the free water molecule has more energy, it flies through the air, whereas the liquid water is bound up in molecules, and has no such movement. This additional energy, which is necessary for transition of the phase-state of the substance—now, we're speaking about water—is called "latent heat."

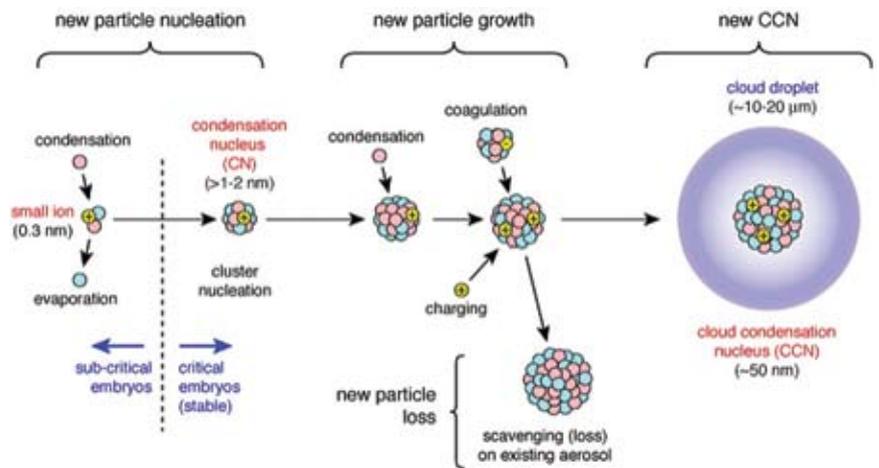
So, when you transform the liquid water into vapor, you need to add some energy. When the water molecules became connected with some molecule, they release this energy in the form of heat, and this is the latent heat. We will look at the role of the latent heat in many processes in our environment.

### Cosmic Rays and Cloud Formation

Let us start with the formation of clouds (Figure 3). There are many scientists working on this area, and probably the most well-known are Henrik Svensmark and Eigil Friis-Christensen, who made the discovery that galactic cosmic rays are responsible for the formation of clouds. Why? Because the ions became very good centers of condensation: When the cosmic rays enter the atmosphere, they produce a lot of ions, and water vapor condensed around them, and these particles grew in size, up to the size of the water droplets in clouds.

And these newly formed ions and clusters enter into different chemical reactions. You

FIGURE 3  
The Process of Cloud Formation

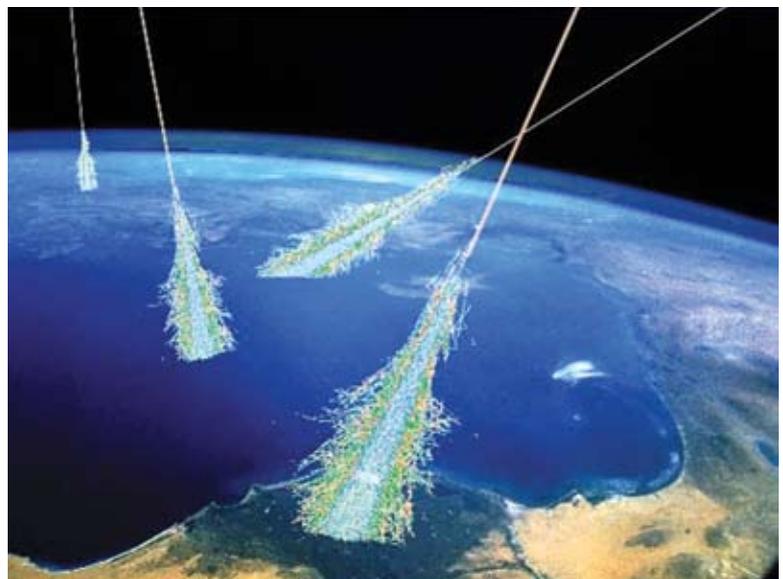


J. Kirby, 2008

probably know that we have sulfuric acid in our atmosphere, nitric acid, and many other types, which are formed during these reactions, in which the ions and hydrated ions—ions with attached water—enter into chemical reactions.

Now, we will talk about the global changes. Figure 4 is a cartoon of cosmic rays entering our environment. They are very energetic: They have giga-electron volts

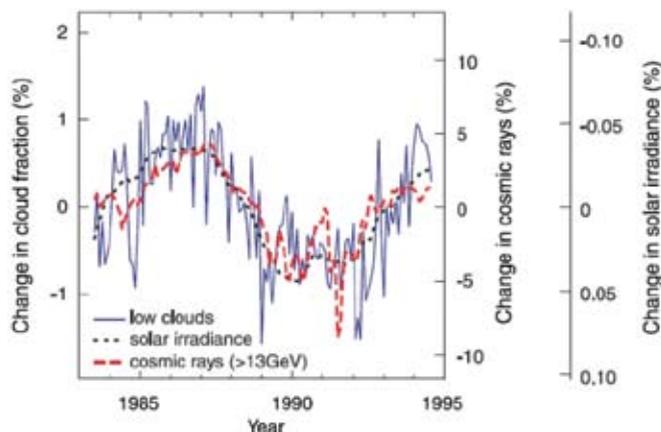
FIGURE 4  
Cosmic Rays



<http://apod.nasa.gov/apod/ap060814.html>

Artist's rendition.

FIGURE 5  
**Variation of Low-Altitude Cloud Cover, Cosmic Rays, and Total Solar Irradiance, 1984-94**



H. Svensmark, E. Friis-Christensen, *J. Atmos. Solar Terr. Phys.*, 59, 1225 (1997).

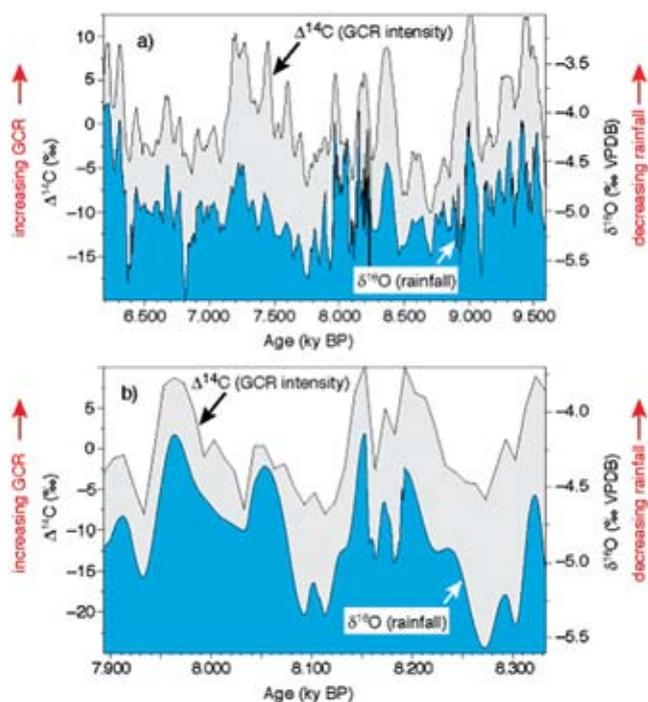
of energy, and they produce so-called cascade decays (cosmic ray showers), with many, many energetic particles; these particles collide with atmospheric molecules, and this is called particle showers.

Svensmark and Christensen, in one of their first publications, established the correlation between the variations of the fluxes of the galactic cosmic rays, and global cloud coverage, and you can see that they found a very good correlation between these (Figure 5). They did not present the physical mechanism for this; they simply demonstrated the existence of the correlation. But now, at CERN [European Center for Nuclear Research] in Switzerland, there is a huge project named CLOUD, and with special particle accelerators, they are studying cloud formation with the process of ionization.

But in all the literature, practically nobody takes into account the latent heat exhalation during this process. Everybody looks only at the particle formation in clouds; but, along with the formation of clouds, we also have the positive effect at the level of the tropopause—this is the level between 10 and 15 kilometers above the Earth's surface, which is continuously heated by the release of latent heat.

Now, we have this global heating and change which we heard about in the previous presentation. In this light, you can see (Figure 6), derived from the analysis of the radioactive isotope of carbon from tree rings in California, and the analysis of stalactites in a cave in Oman, which indicate the amount of the precipitating water. This analysis was made for thousands and hun-

FIGURE 6  
**Galactic Cosmic Rays and Climate, Over Several Millennia**



J. Kirby, 2008

*Indications that galactic cosmic rays (GCR) affect climate. The amount of rainfall is assessed by analysis of the radioactive isotope of carbon and of stalactites. The correlations are quite close.*

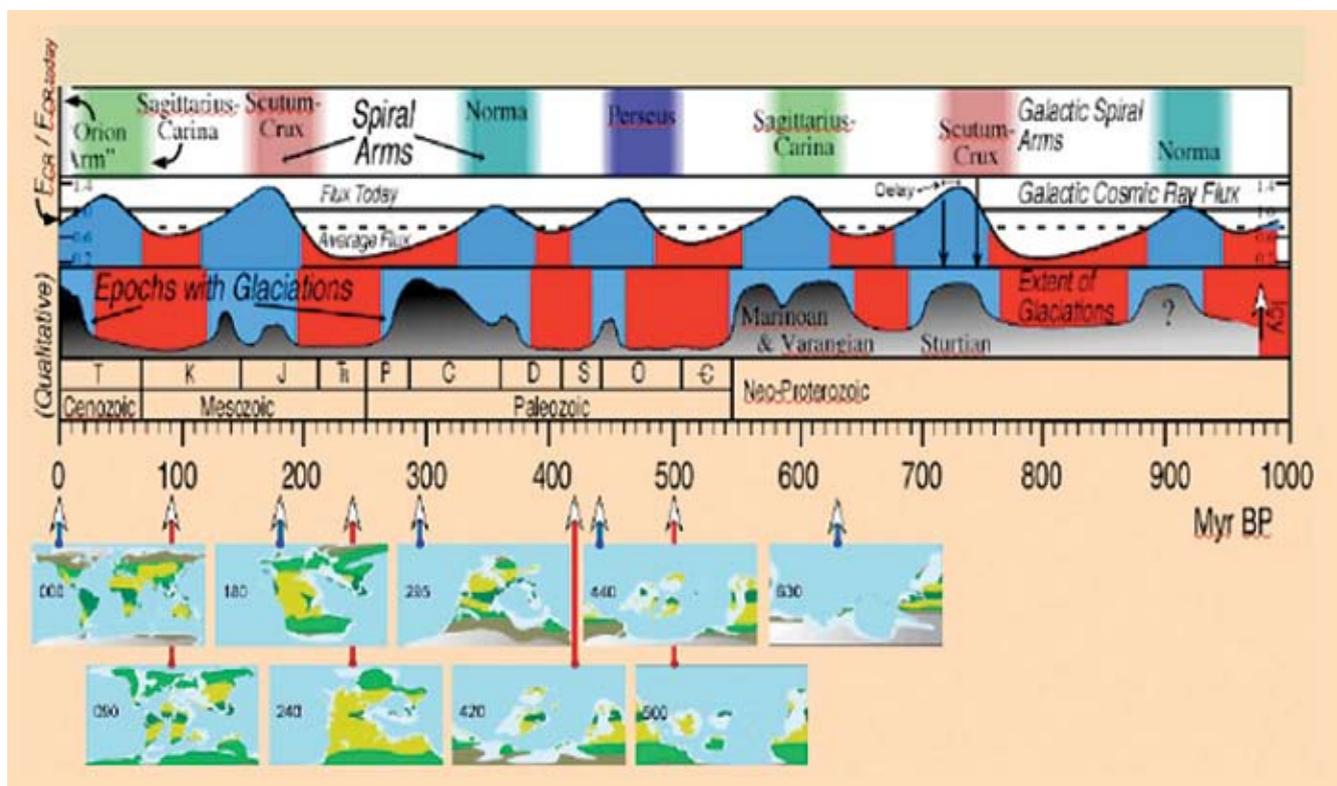
dreds of thousands of years, and the carbon shows the activity of the galactic cosmic rays. You can see that the precipitation and galactic cosmic rays are in very good correlation.

### Periodicity of Change

Now, about the origin of the periodicity in these variations: the shorter periods, which we heard about, 100 years; the periodicity of the solar cycle, 11 years; and the very short periodicity of the so-called Forbush effect, which lasts several days, during geomagnetic storms.

The largest known periodicity is probably connected with the position of the Solar System within our galaxy. You know that our galaxy is spiral, and from time to time, the Solar System enters into the arms of our galaxy, where the density of matter is higher, so the fluxes of galactic cosmic rays are lower. If we have lower intensity of galactic cosmic rays, lower cloud coverage, then we have a rise of the temperature on

FIGURE 7  
Ice Epochs and Galactic Radiation



J. Kirby, 2008.

As the Solar System moves through the spiral arms of our galaxy, the intensity of galactic cosmic rays changes, as well as the temperature of the Earth (shown here as epochs of glaciation).

Earth. Between the arms, there are more galactic cosmic rays, more cloud coverage, the temperature drops, and in **Figure 7**, you can see, over millions of years, the correlation of the glacier periods and warming on the Earth, connected with the position of the Solar System in our galaxy.

There have been a lot of studies—it is a very popular issue now—and you can find that 75% of the variation of the global temperature, on the scale of hundreds of thousands of years, can be explained by variations in the fluxes of galactic cosmic rays. We have different time scales of solar or galactic cosmic ray correlation with climate:

- the Gyr [gigayear] time scale: Milky Way star formation rate and glacial activity
- 150 Myr [millions of years] cycle: Milky Way arms
- 10-100,000-year cycle: mostly solar activity and climate
- 11-year solar cycle: solar activity and  $\Delta T$ , clouds

- days: Forbush events and various climate variables.

And of course, the solar activity produces modulation of the galactic cosmic rays, because our magnetosphere is immersed in the solar wind. And during higher solar activity, the density of the solar wind is greater; it compresses the magnetosphere, and this makes it a greater obstacle to galactic cosmic rays. So, during periods of higher solar activity, the fluxes of galactic cosmic rays are also lower.

And we observe the modulation of weather and climate with the activity of the Sun of different lengths of periodicity. The so-called Maunder Minimum during the Middle Ages was demonstrated earlier, when in Holland, all the canals were covered with ice, and people were skating on them, whereas now, they never freeze.

So, we have different periodicities, and different sources of the modulation of the galactic cosmic rays. All these periodicities were discovered in the variations

of the global temperature of our planet.

There are a lot of scenarios and models of how it works, taking into account different mechanisms, different processes. I will not go deeper into this, as we do not have time; but believe me, this work is developing very dramatically, and a lot of people are involved in these studies.

Probably you have heard, and you can feel for yourself, that our climate and weather have become very unstable. We have oscillations of the weather, to more extreme conditions, from higher to lower temperatures, high winds, cyclones. In **Figure 8**, you can see how the variability of the production of ions has increased during the last decades; probably this is one of the reasons for such variability of our climate.

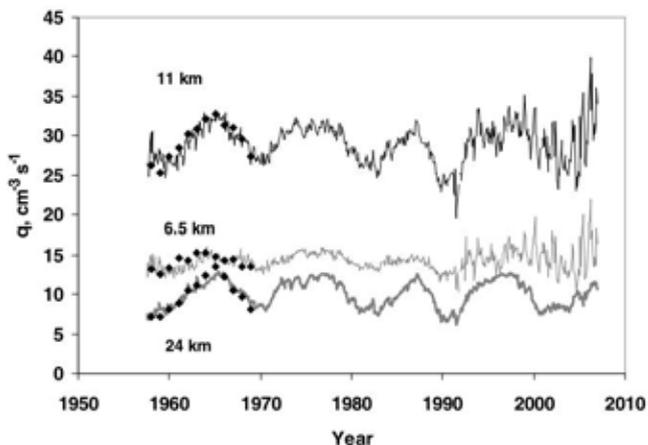
**Figure 9** is a very beautiful example: The measurements were made underground, registering the secondary cosmic rays, and correlated with the temperature in the stratosphere. And here, you cannot even see the blue line, under the red one. The red one shows the temperatures of the Winters 2003-04, 2004-05, 2005-06, and 2007, exactly repeating the variations of the fluxes of secondary galactic cosmic rays (the blue line).

It was a surprise for me, how strong the role of the latent heat is. If we take the total balance of the thermal energy of our atmosphere, only 42% is provided by direct heating by the Sun; 48% is dependent on the changes [in latent heat]—the dew in the morning and evening; and the daily transformation, evaporation, and condensation. And the daily variations of temperature are 48% dependent on this transformation in the latent heat.

## Earthquakes: The Ring of Fire

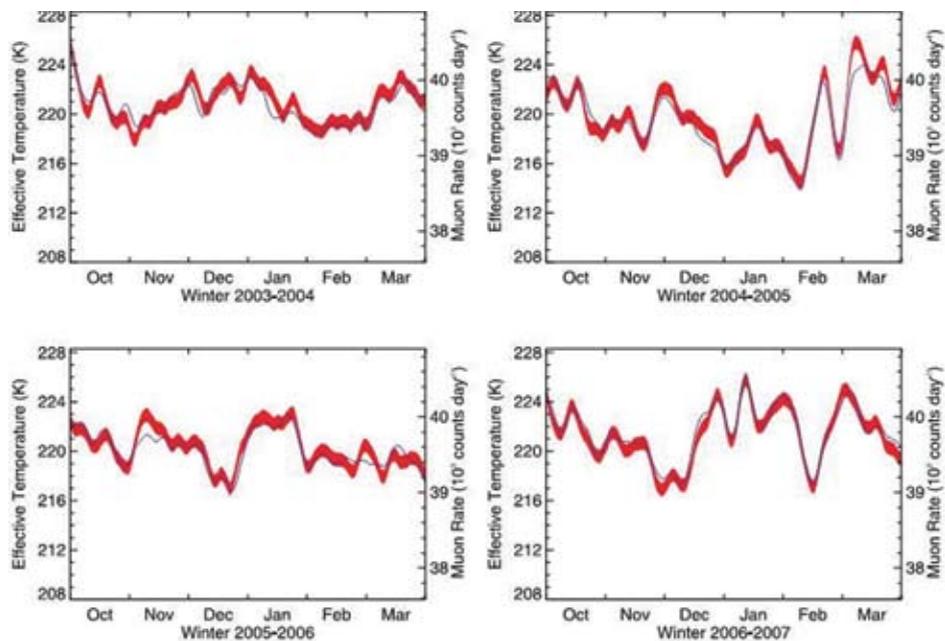
So, the first part of my presentation was connected with the role of ionization in so-called global change, and the periodicity of the changes in the climate of our planet. Now, we are going to the next item: earthquakes.

FIGURE 8  
**Increased Ion Production Rate in Recent Decades**



G.A. Bazilevskaya et al., 2008

FIGURE 9  
**Short-Term Correlation of Temperature in the Stratosphere and Secondary Cosmic Rays**



Scott Osprey et al., 2009

*The thick red line shows temperature; the thin blue line shows cosmic rays.*

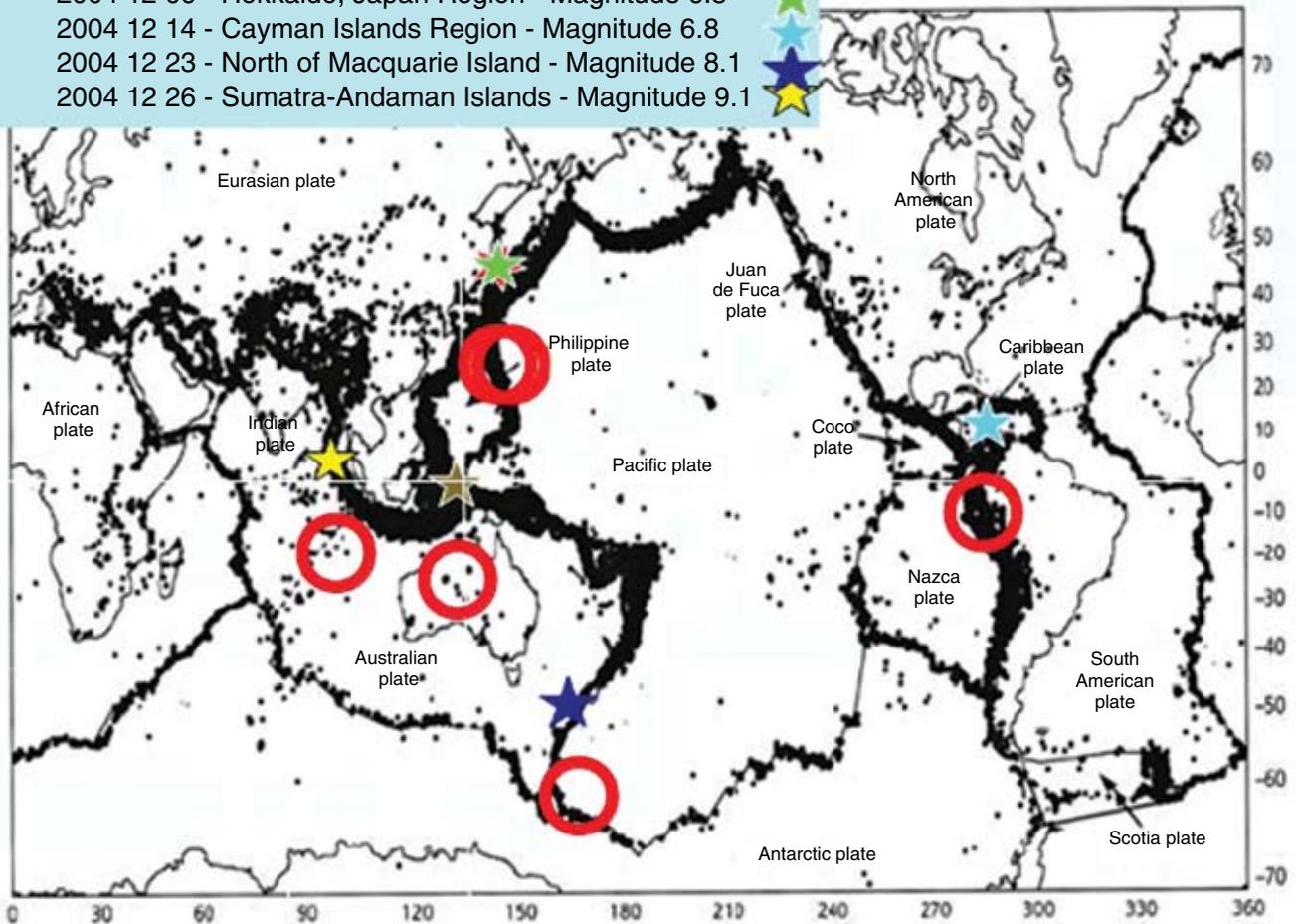
I have seen a very interesting presentation on La-RouchePAC television about the Ring of Fire.<sup>2</sup> I would like to demonstrate for you how it works. **Figure 10**

2. <http://tiny.cc/xb9rg>

FIGURE 10

**Major Earthquakes: The Pacific Ring of Fire**

- 2004 11 26 - Papua, Indonesia - Magnitude 7.1
- 2004 11 28 - Hokkaido, Japan Region - Magnitude 7.0
- 2004 12 06 - Hokkaido, Japan Region - Magnitude 6.8
- 2004 12 14 - Cayman Islands Region - Magnitude 6.8
- 2004 12 23 - North of Macquarie Island - Magnitude 8.1
- 2004 12 26 - Sumatra-Andaman Islands - Magnitude 9.1



Courtesy of S.A. Anagnostopoulos, 2011

shows November-December 2004, and you can see how earthquakes developed, and all the earthquakes have magnitudes higher than 7. It shows that the whole Ring is activated, and we see the movement of the earthquakes around this Ring.

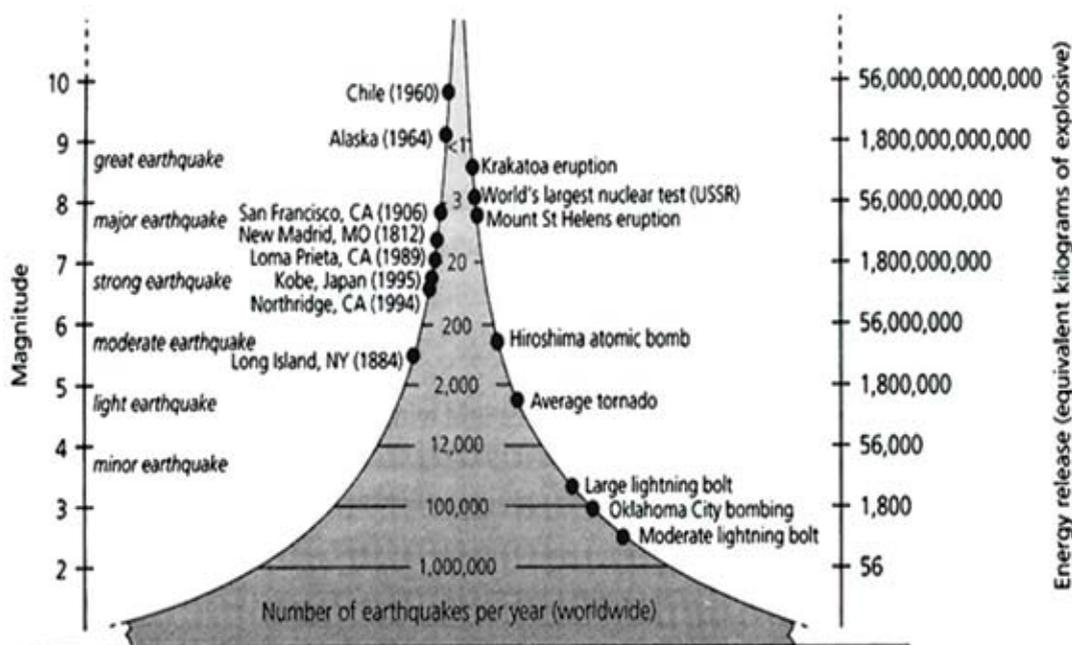
Now we will talk about the processes that lead up to the earthquake, and first of all, I would like to explain my approach to this.

**Figure 11** shows the distribution of the energy of an earthquake in comparison with other processes that we know. The graph doesn't take into account the recent strong earthquakes; the strongest in the 20th Century was the Chilean earthquake in 1960; the second strongest was the Good Friday earthquake in Alaska in 1964.

These are at the left part of the graph, the two upper points. And to the right, the second from the top, we have the largest nuclear tests made by the U.S.S.R., in Novaya Zemlya, which was equivalent to 56,000 billion tons of explosives. So you can see how powerful the energies are that are released during these earthquakes.

When people tell you that it's impossible to predict earthquakes, that it is stupid to try—you cannot imagine...! Even if you want to make a nuclear bomb, there are precursors! It is organized someplace where it is produced; you hire the people. And you can track all these processes before the production of this bomb! The same with an earthquake: Such huge amounts of energy

FIGURE 11  
**The Energy of Earthquakes**



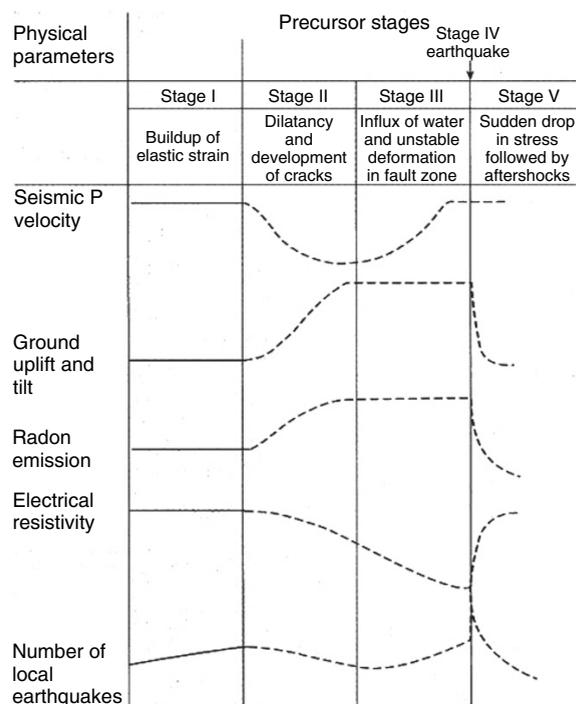
P.M. Shearer, 1999

are released in one moment, that it is impossible that the Earth would not manifest *anything* beforehand!

In our studies, we use the so-called physical approach, and so-called physical precursors; one of the first papers was published by Christopher Scholz (Figure 12), who looked at the process of earthquake preparation from one earthquake to the next, in the same location. And you know that they come with some periodicity—in different places, the periodicity is different—but for strong earthquakes, the periodicity is from 30 to 70 years, and we are looking at the last stage, which is a few months, a few weeks, before the earthquakes. There were several parameters that were monitored by the United States, by the Soviet Union, and other countries, in the 1970s and '80s, and there was great hope that this problem would be resolved.

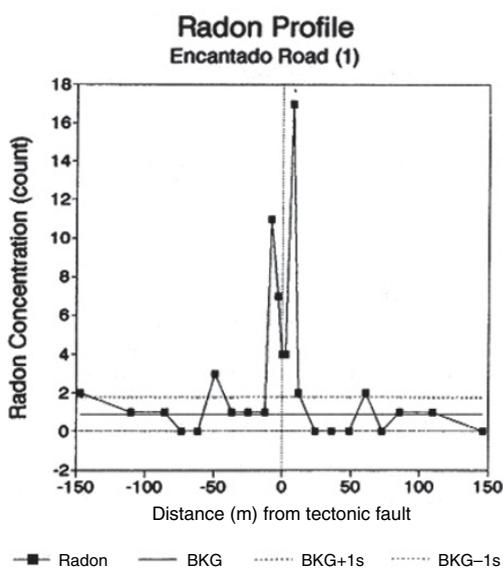
But after a few failures, in '96-97, there was a discussion in *Science* magazine; the leader of this discussion was a professor at Tokyo University, Robert Geller. And seismologists decided that prediction is impossible, and it was prohibited, in scientific literature, to use the words “earthquake prediction”! The scientists were punished—it is really true!—the scientists were punished for using this term, and their papers were not published, especially in the *Journal of Geophysical Re-*

FIGURE 12  
**Classic Approach to Earthquake Study:  
 Physical Precursors**

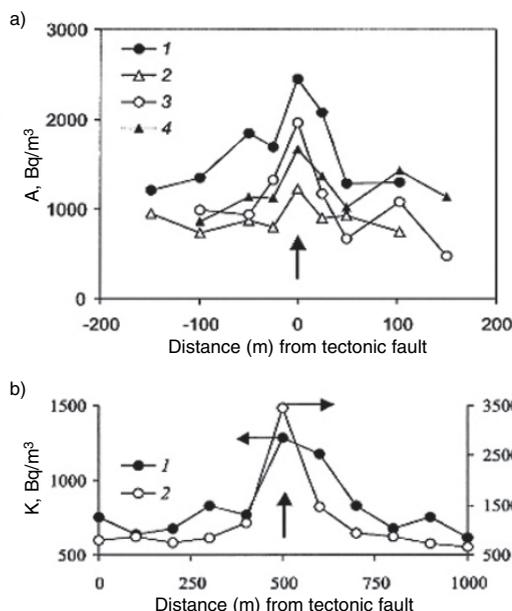


C.H. Scholz et al., *Science*, 1973

FIGURE 13  
**Radon Activity over an Active Tectonic Fault**



C.Y. King et al., 1993



A.A. Spivak, 2009

*Volumetric activity of radon by volume in the subsoil atmosphere along the line intersecting the magnitude II tectonic dislocation; a) points 3-6 (1-4); b) points 5 (1) and 2 (2) (the vertical arrows show the location of the tectonic fault).*

search, or *Geophysical Research Letters*, the *Bulletin of the Seismological Society of America*, and so on.

Fortunately, the situation is now changing. In 2005, simultaneously in the United States and Russia, the councils were reestablished that are analyzing the different kinds of earthquake prediction. But still, we are in a situation in which the majority of the seismological community claims that it is “impossible.”

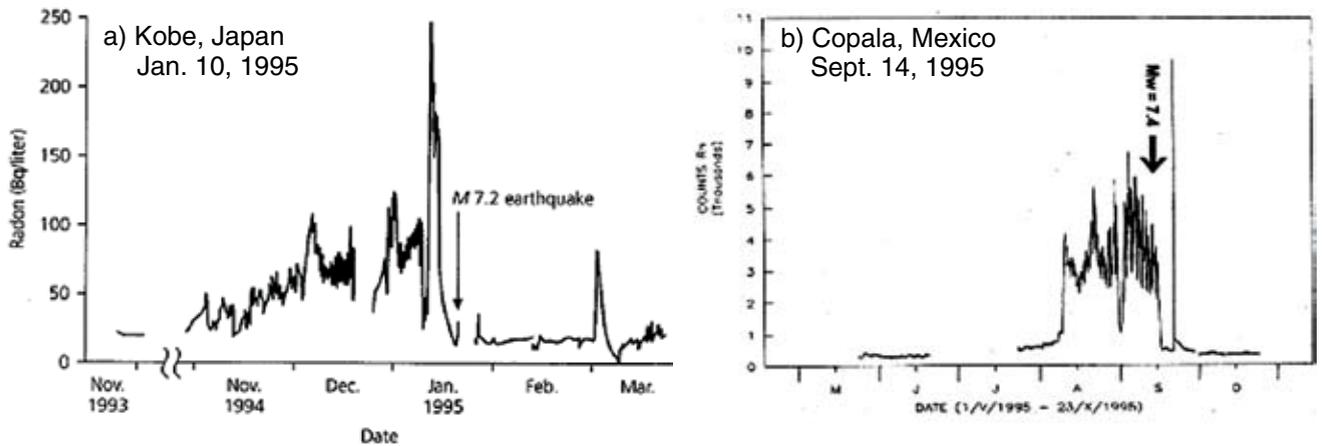
I will start, very briefly, with our model, which explains how these processes are developing. I am, by original training, a space physicist. We don’t go deep underground; we start from the ground surface and go up, and study what processes develop within the atmosphere. [The flow-chart of the model] starts with the activation of tectonic activity, which is manifested in the activation of the faults where the earthquake will occur. We have the storing of energy, increasing deformation of this area, and with increasing deformation, the restructuring inside the Earth, and gas migration. You know from oil prospecting, that methane, carbon dioxide, hydrogen, and helium go from deep underground to the Earth’s surface; and they carry with them the radon, which starts to be very active in the area of active tectonic faults.

I will not explain the whole model; we will see the pictures, so, please relax! **Figure 13** shows the activity

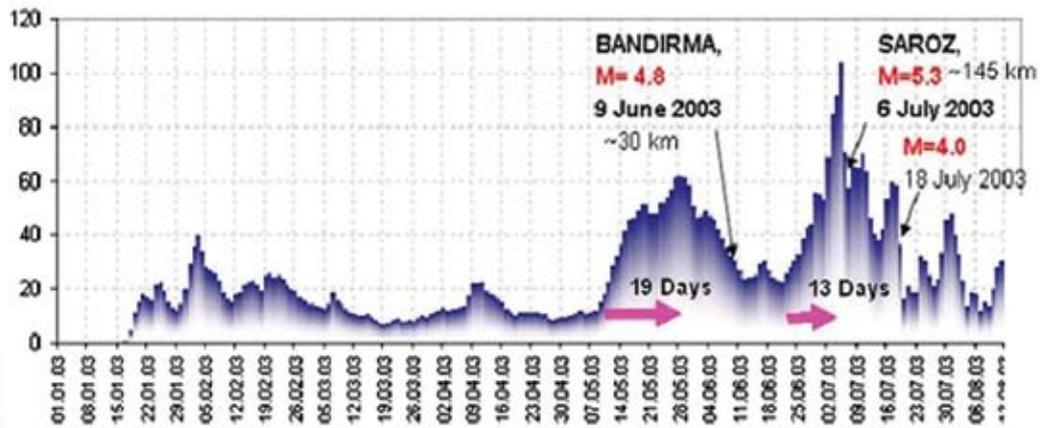
of radon when you have a cross-section across the tectonic fault. You can see how drastically the concentration of radon grows, at the center of the active tectonic fault. In **Figure 14**, you see some examples from several strong earthquakes, how radon develops before the earthquake. Graph (a) shows the Kobe, Japan earthquake, 1995; (b) is the Copala, Mexico earthquake, close to Acapulco, magnitude 7.2-7.4. Graph (c) shows typical variations for the many earthquakes in Turkey—which is the only country where radon monitoring was *not* cut from the budget, as in the United States or Russia. They obtained \$11 million for a project of putting in radon sensors all over the country. And the last example (d), is from Signor Gioacchino Giuliani: The red (lower) curve shows the sharp increase of radon activity before the L’Aquila, Italy earthquake.

And now, let’s go to our mechanism. If radon is going up, because radon is radioactive, it emits alpha particles of high energy, which produce ionization; then, we know this mechanism of condensation of water vapor on ions, and heat release. If you put an infrared sensor on a satellite, you will be able to detect the difference in the temperatures on the ground’s surface, and you can see the structures of the active tectonic faults in India, before the Gujarat earthquake (**Figure 15**). The faults existed all along, but these faults were now acti-

FIGURE 14  
**Radon Anomalies Before Strong Earthquakes**



c) Typical radon variations, Turkey



The towns shown, Bandirma and Saroz, are those closest to the epicenter of the particular earthquakes.

d) L'Aquila, Italy, April 6, 2009

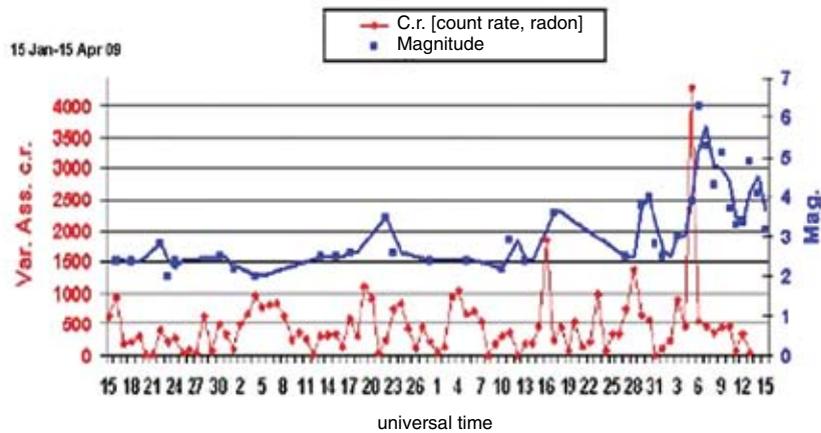
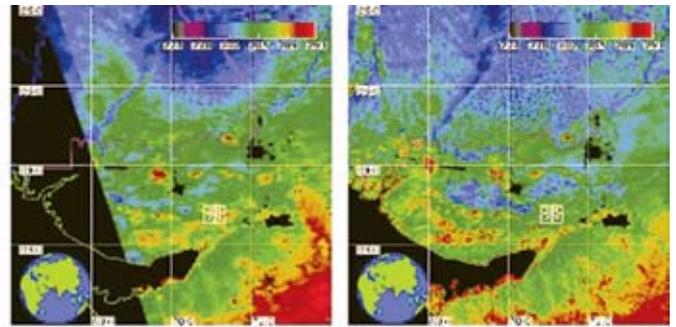
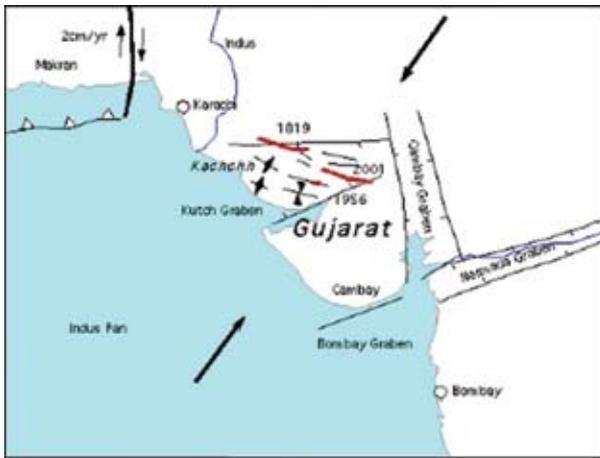
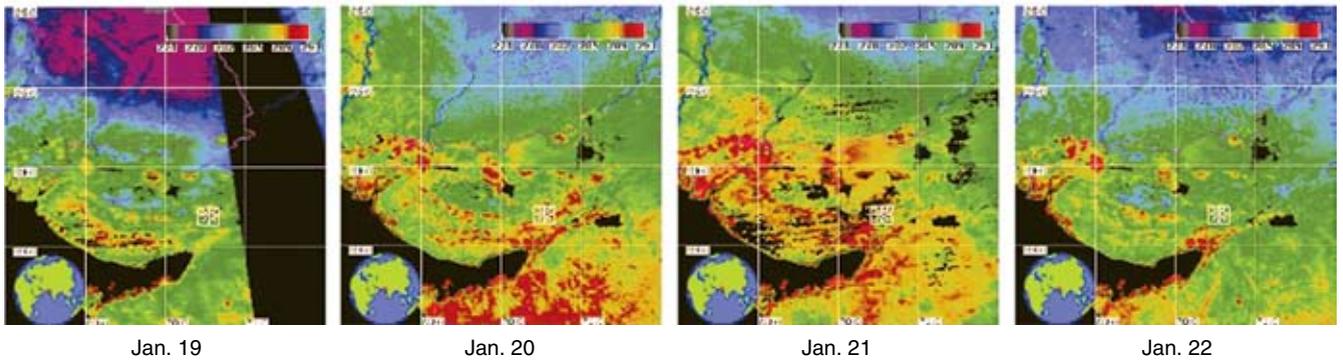


FIGURE 15  
**Gujarat Earthquake: Heating Along Tectonic Fault**



Gujarat Earthquake (India); Date-Time 2001 01 26 23:40:30 UTC,  
 Location 23.4N 70.32E; Depth 23.6.0 Km; Magnitude 7.7 (USGS NEIC)



D. Ouzonov and F. Freund, 2004

*Infrared emissions, captured by MODIS remote-sensing technology, show heating along the active tectonic faults.*

vated. In the map on the upper left, you can see the red lines which follow this system of the tectonic faults. This is data from the Terra/Aqua satellite with the MODIS device, showing the infrared emission which demonstrates the heating of the area exactly in the place of the active tectonic faults.

So, what are the consequences of these processes? If you have condensation of the water vapor, you should have less free water vapor in the atmosphere, and you should observe diminishing relative humidity (**Figure 16**). Graph (a) shows the drop of the relative humidity in Islamabad, before the 2005 Kashmir earthquake. Graph (b) shows the satellite measurements of the surface temperature increase in the same area. There are some techniques that permit us to measure the anomalous fluxes of latent heat, and in the bottom row, graph (c) shows that. It's the same area of Pakistan. Graph (d) shows the so-called "outgoing long-wave radiation"

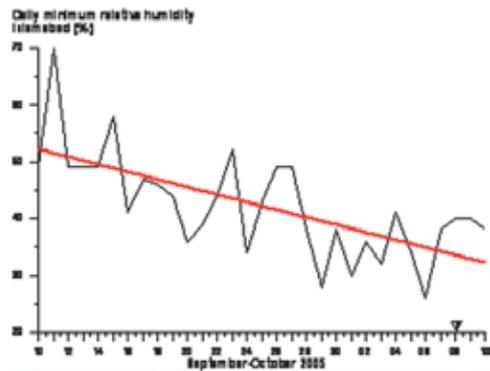
(OLR); it's also infrared emission, but it is measured at the altitude of the top of atmosphere, or in the tropopause, between 10 and 15 km up, and you see the red spot close to the epicenter of the impending earthquake. And graph (e) shows the developing anomaly of electron concentration within the ionosphere.

So you have a lot of parameters, a lot of anomalies in the atmosphere, which could be measured; and all of them appear in the same place, almost at the same time, between two weeks and a few days before the impending earthquake.

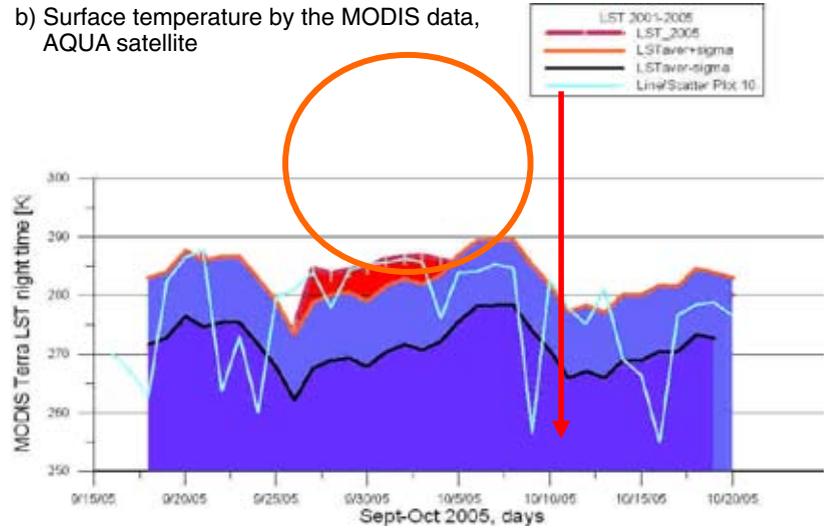
Another example: **Figure 17** is a sequence of days in 2007, before the strong earthquake in the Sumatra region, and you can see how the latent heat follows the tectonic fault, or the shape of Sumatra. This cannot be explained by any other processes, because all these spots are over ocean. Nothing except gases can go out from there. Nobody can explain it; it is impossible to

FIGURE 16  
**The Kashmir Earthquake, Oct. 8, 2005**

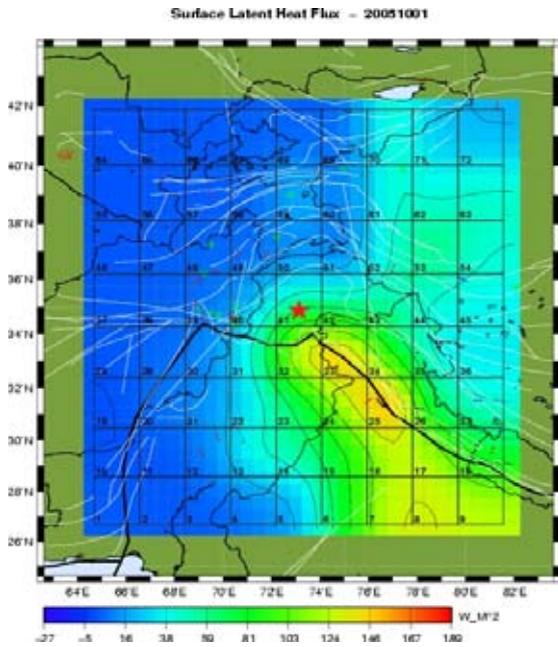
a) Relative humidity drop



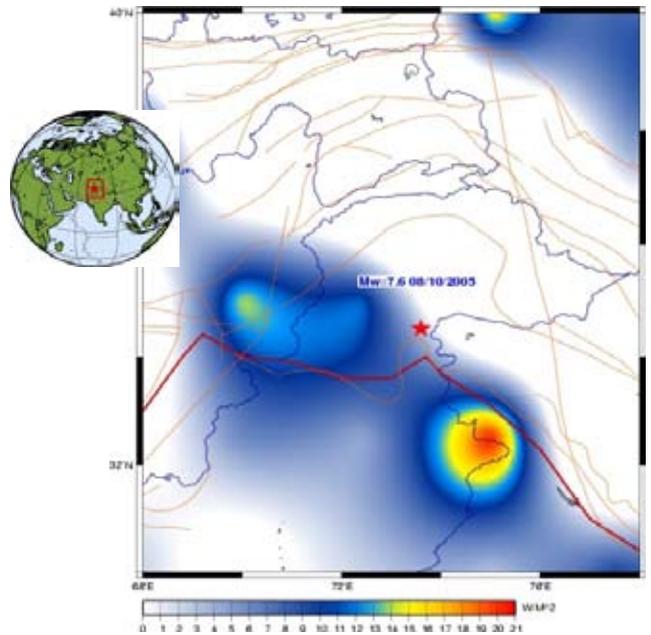
b) Surface temperature by the MODIS data, AQUA satellite



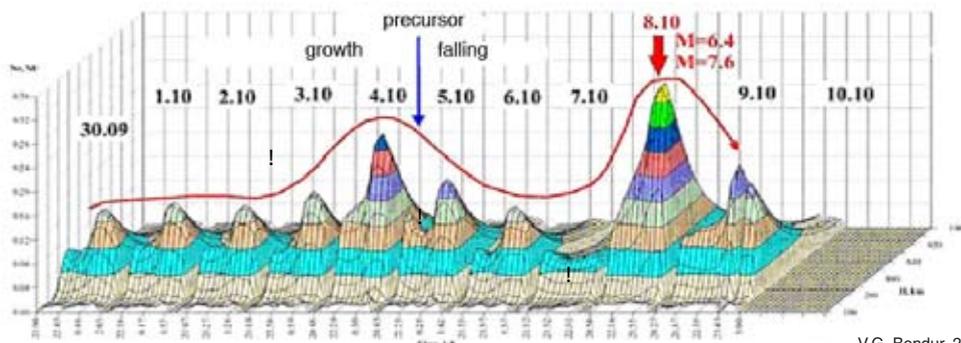
c) Anomalous latent heat flux



d) OLR anomaly one week before the seismic shock

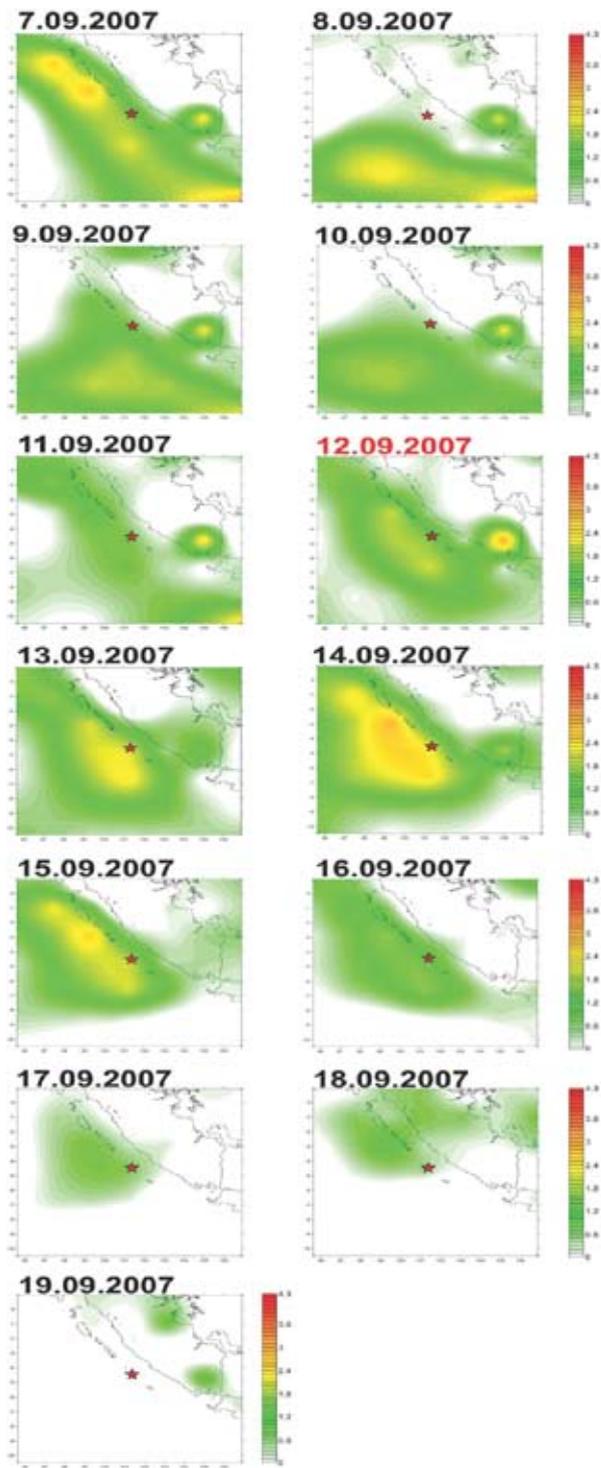


e) GPS/TEC anomaly



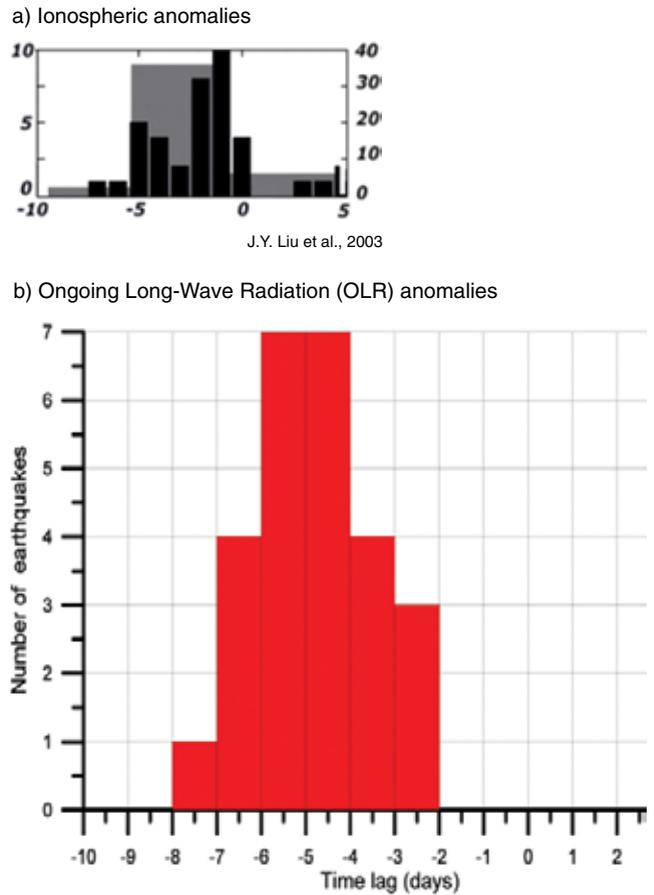
V.G. Bondur, 2006

FIGURE 17  
**Anomalous Latent Heat Dynamics**

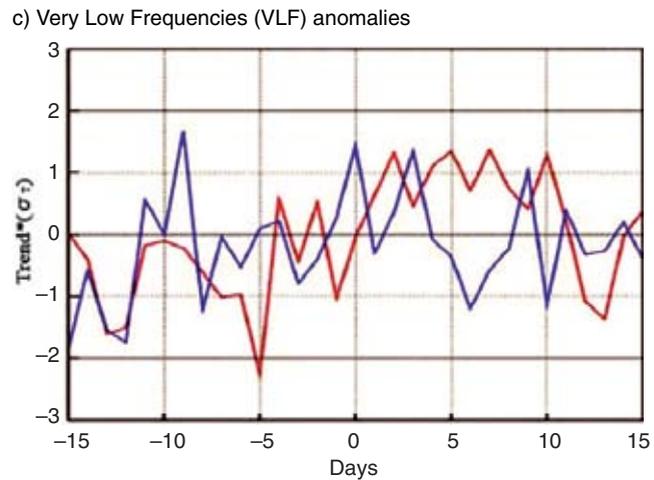


*These measurements are around the time of the M8.8 Southern Sumatra Earthquake, Sept. 12, 2007. Note that the dates are in European style: DD/MM/YYYY. Green is cooler, yellow is medium, red is hottest.*

FIGURE 18  
**Lead Time of Ionospheric Precursors**  
 (Anomalies Five Days Before Earthquake)

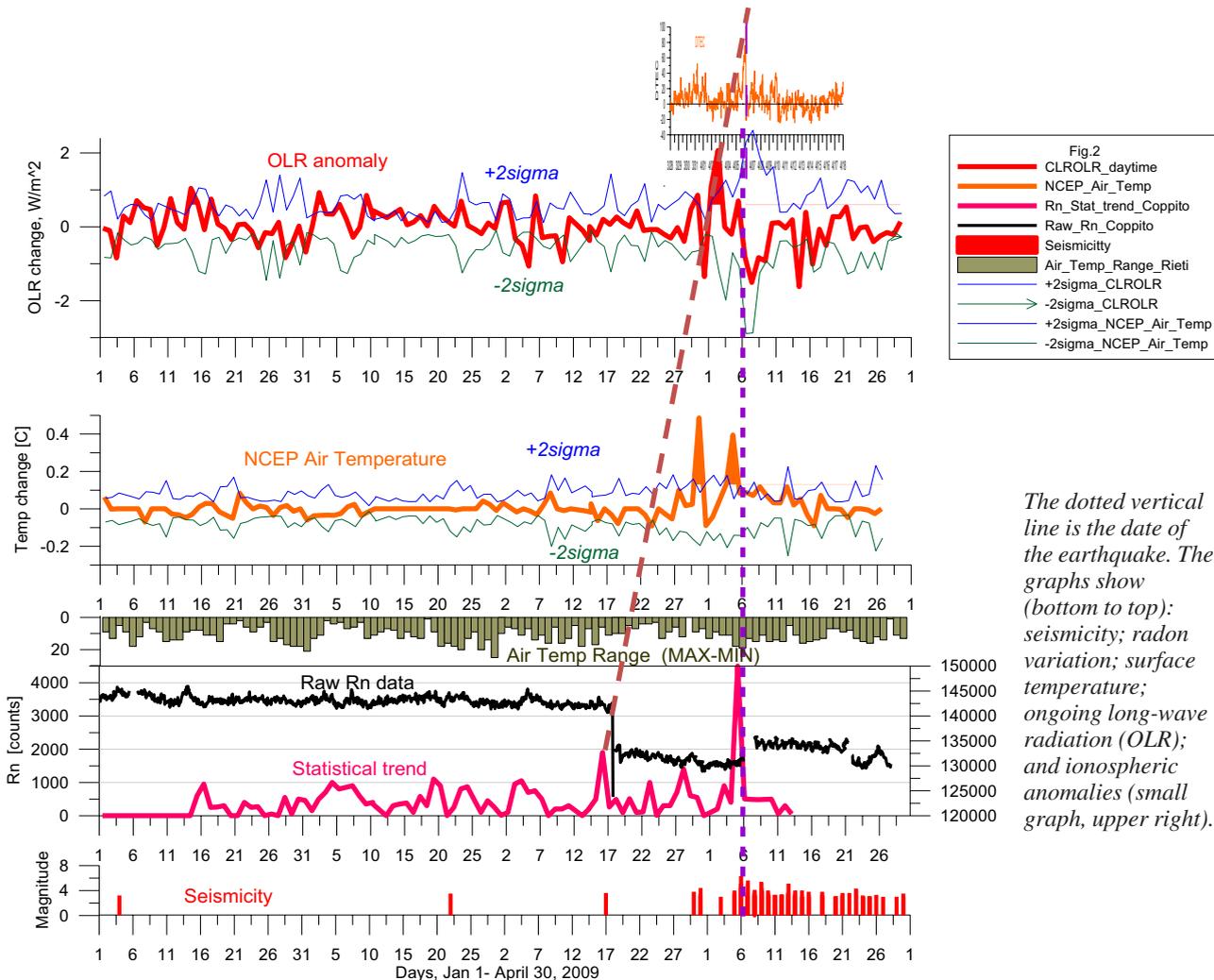


D. Ouzounov et al., 2009



M. Hayakawa et al., 2010

FIGURE 19  
**Temporal Evolution (Synergy) of Earthquake Precursors**  
 (L'Aquila, Italy, April 6, 2009)



The dotted vertical line is the date of the earthquake. The graphs show (bottom to top): seismicity; radon variation; surface temperature; ongoing long-wave radiation (OLR); and ionospheric anomalies (small graph, upper right).

explain by other mechanisms.

The question is, how powerful is the heating of the atmosphere? We know that there have been some satellite failures because of great magnetic storms, when the atmosphere was heated and expanded, and, for example, the Space Station was braked by the heated atmosphere, and lost its altitude due to braking in the more dense atmosphere in these altitudes. And we were able to detect the braking of a small satellite, of small mass, but it had an accelerometer onboard, so we observed the braking of the satellite when it passed over the epicenter of impending earthquakes; on average, statistics show that braking happens five days before the earthquake. And it corresponds to the statistics of ongoing

long-wave validation, which also shows a maximum in its temporal distribution five days before the seismic shock.

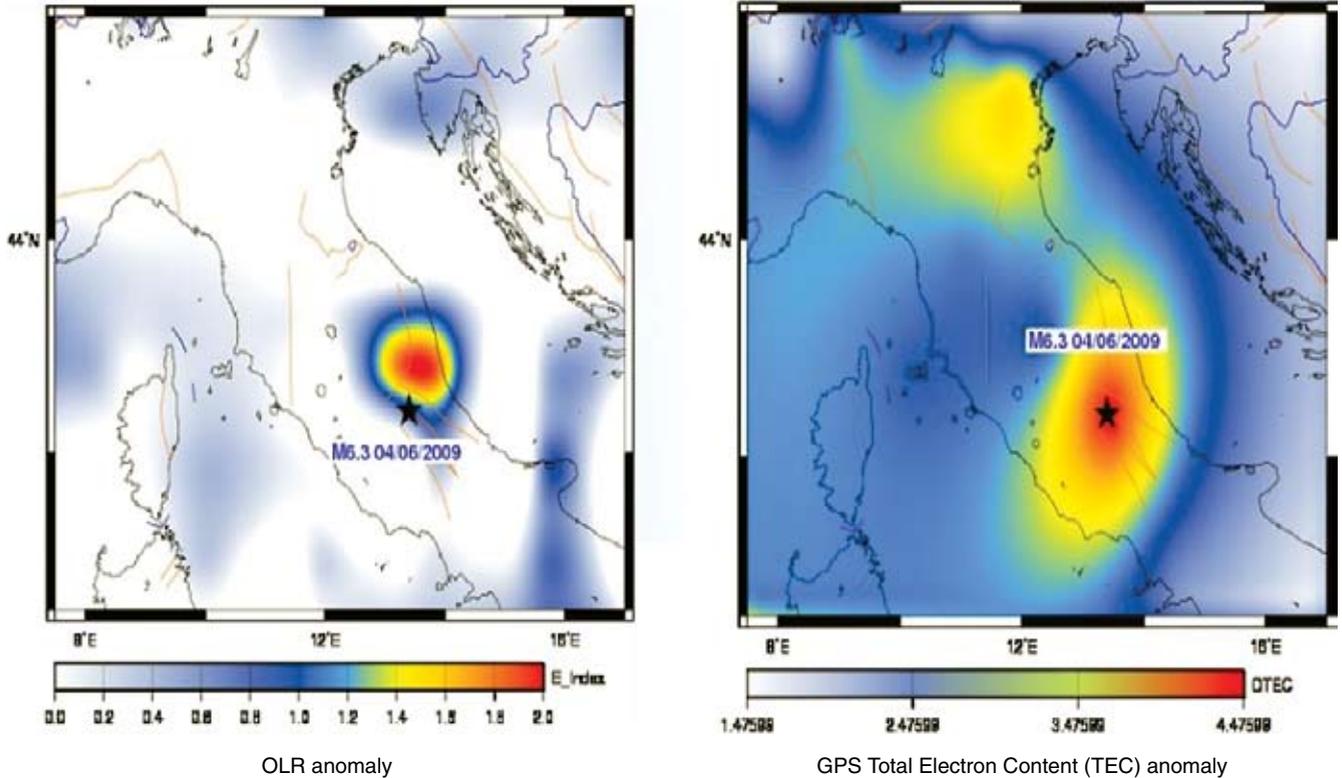
And, if we take completely different parameters (Figure 18), the top one is ionospheric anomalies; the middle one is OLR, ongoing long-wave radiation; and the lower one is anomalies in propagation of the very low frequencies [VLF] in the near-ground wave guide—these signals are emitted by the navigational transmitters for navigation of submarines. And all of them show anomalies exactly five days before the earthquake.

And now, if you have a model, and you know how it develops, you have the synergy of the many atmospheric and ionospheric parameters, and you see how

FIGURE 20

### Ongoing Long-Wave Radiation (OLR) and Ionospheric Precursors of L'Aquila Earthquake

(April 6, 2009)



the processes developed from the ground surface. In **Figure 19**, the lower graph is radon variation near L'Aquila in Italy. Then there is the surface temperature; then, there is OLR; and then, there is the ionospheric anomaly. The blue curve shows how this process propagates from the ground surface to the ionosphere, and the red curve, the vertical curve, shows the moment of the earthquake.

**Figure 20** is a comparison: On the left, we see infrared emission at the top of the atmosphere, and the red area is the distribution of electron density—the total electron content over L'Aquila. So you are able to detect the location of the impending earthquake.

*(Continued on next page)*

FIGURE 21

**Variations in Earthquake Precursors, Before Earthquake**

<b>Geophysical Parameter</b>	<b>Sensor</b>	<b>Sensor name</b>	<b>Spatial</b>	<b>Temporal</b>	<b>Advantages</b>	<b>- Days</b>
<b>Surface temperature (land and sea)</b>	Sat	Polar orbit: AVHRR , EOS MODIS, ASTER	90 m-5km	1-2days	long historic record, high spatial resolution	<b>5-10</b>
<b>Meteorological information</b>		Geosynchronous: GOES, METEOSAT	1-4km	20min-1h	high temporal resolution	<b>4-7</b>
<b>Long Wave Radiation</b>	Sat	NOAA AVHRR 14,14,15,17,18	1 degree	Twice per day	Global pre seismic indicator for major events	<b>30-5</b>
<b>Surface Latent Heat Flux (SLHF)</b>	Sat	NCEP	2 degree	Once per day	coastal strong earthquakes	<b>15-4</b>
<b>Ionospheric perturbations EM waves (VLF) and plasma parameters</b>	Sat	DEMETER	--	1 day	Low atmospheric disturbances	<b>6-2</b>
<b>Space weather EQ catalog, Deformation maps</b>	Sat Grd	NOAA USGS	-	-	Kp Dst EQ catalog stress maps	
<b>Aerosol contents</b>	Grd	AERONET	Vary	Hourly	High temporal resolution	<b>7-4</b>
<b>GPS/ Total Electron Content</b>	Grd	GPS	Vary	Hourly		<b>5-3</b>
<b>Radon concentrations</b>	Grd	Turkey, Israel	Vary	Hourly		<b>14-3</b>
<b>Air Temperature/ Relative Humidity</b>	Grd	Meteorological network	Vary	Hourly		<b>14-3</b>
<b>Atmospheric &amp; Ground E field</b>	Grd	Taiwan, CA, Mexico	Vary	Hourly		<b>5-2</b>
<b>Magnetic field</b>	Grd	CA, Israel, Taiwan	Vary	Hourly		<b>4-2</b>

Courtesy of S.A. Anagnostopoulos, 2011

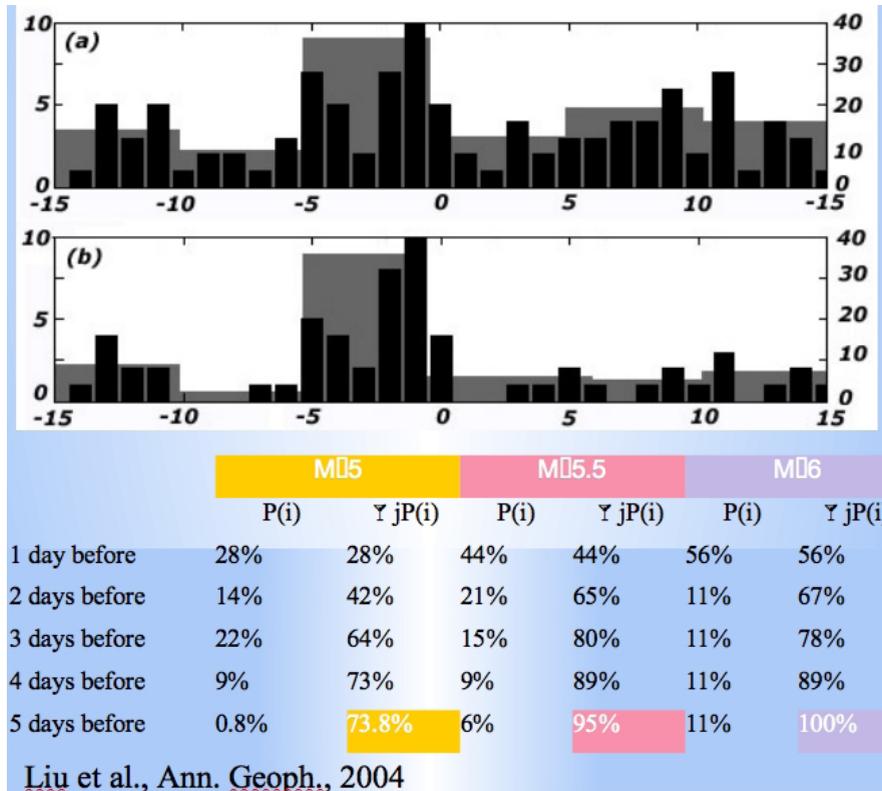
In **Figure 21**, you can see a lot of other variations—of electromagnetic emissions, particle precipitation, and so on—registered on the ground, in the atmosphere, and by satellites, and *all of them show the same lead time before the earthquakes, and all of them were registered experimentally.*

So, from experimental observation, we should develop something practical, to automatically detect these precursor phenomena. First, we study the phenomenology of the event: We develop the physical model; we look for the specific features that differentiate these processes from other natural processes, for example, variations in the ionosphere connected with magnetic storms.

From this study, we create the “mask” of the precursor. Then we make a statistical validation of this mask, and if it shows good results, we produce a practical application for prediction.

*(Continued on next page)*

FIGURE 22  
Precursor Anomalies: Time of Earthquake



J.Y. Liu et al., Ann. Geoph., 2004

You can see three parameters which need to be detected: the position of the epicenter, the time of the earthquake, and the magnitude. For position, as you have seen in previous slides, we can quite nicely determine the position of the epicenter. Now, the time, within the window of five days (**Figure 22**). And the magnitude: From some empirical relationships, we determined, from the size of the anomaly—for example, this estimation (**Figure 23**) was made for the Irpinia earthquake in Italy, by ionospheric measurements from the topside sounder installed on the satellite.

But still, we are criticized by seismologists, who say that it's all very nice, but has no relation to seismology.

Finally, we were happy, very happy, when we found a reasonable seismologist who started to talk with us, the Greek seismologist Gerassimos Papadopoulos, very well known worldwide. He studies precisely the

catalogs of the earthquakes, and has tried to determine, “Okay, you have a sequence of seismic shocks. Which of them are foreshocks, which is the main shock? Which are aftershocks? And what shocks are there between the long period of the earthquake?” He was able to find out how to determine *exactly* the foreshocks’ activity! This is, again, for the L’Aquila earthquake: He looks for the three parameters, the sharp increase of the event rate of the number of small shocks in the area; second, the clustering of the events, so they start to be merged close to the epicenter. And there is a relationship between the frequency and the magnitude of the earthquakes, which is part of this equation; there is a *b*-coefficient from the Gutenberg-Richter relationship, which is characteristic of the process, and it was determined that before the earthquake, the *b*-value dropped.

(Continued on next page)

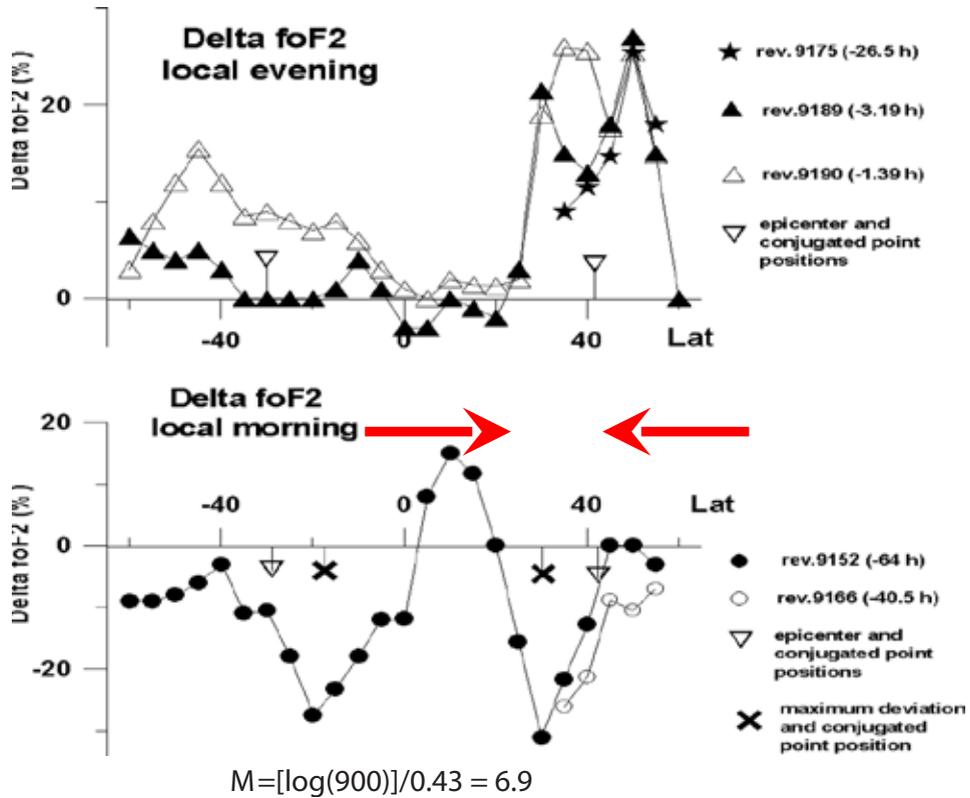
FIGURE 23

**Precursor Anomalies: Magnitude of Earthquake**

X = 100.43M km

Magnitude	3	4	5	6	7	8	9
Earthquake	19.5	52.5	141	380	1022	2754	7413

**Irpinia earthquake, Italy, 23 November 1980, M6.9**

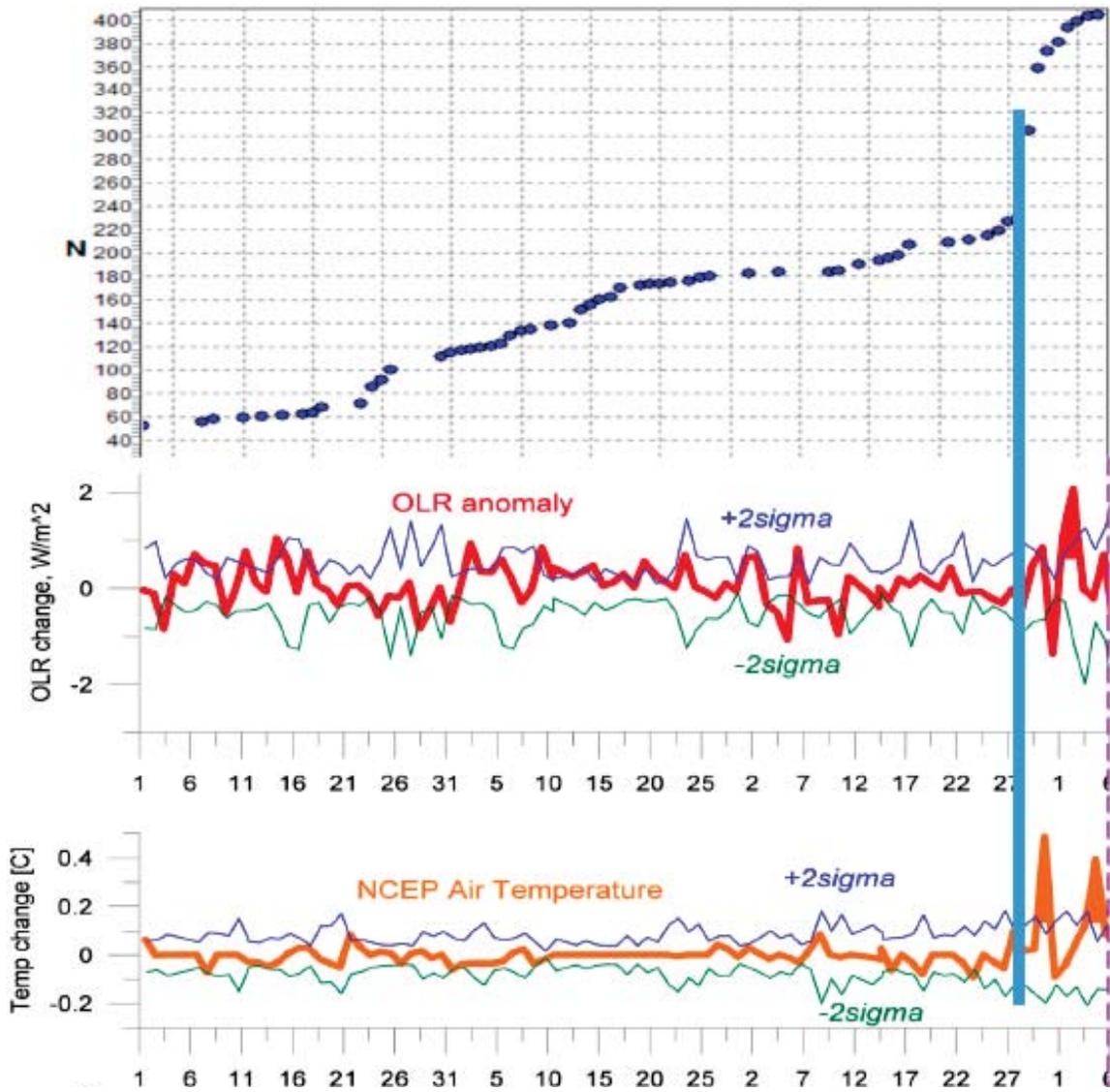


Dobrovolsky et al., 1979

FIGURE 24

**Foreshocks and Short-Term Earthquake Precursors: the Same Physical Process**

(L'Aquila Earthquake, 2009)



The graphs show the corresponding anomalies in (bottom to top) air temperature; ongoing long-wave radiation (OLR); seismic activity (foreshocks) (from G. Papadopoulos).

We compared his results with our results for the L'Aquila earthquake, and you can see exactly, that where we see our precursors, he determines the foreshock activity (Figure 24).

So, finally, we found the relationship between the seismic parameters—and especially foreshock activity, which says that, “for sure, there will be an earthquake”—and our atmospheric parameters. There is no doubt, that what we are measuring are real precursors of the earthquakes.

**Can We Predict?**

Okay, now that we're finishing with the earthquakes, you will ask me, “If you are so clever, why don't you predict earthquakes?” The answer is very simple: If you have, for example, a fire in your house, and you are by yourself, it's very difficult to fight it. You call the firemen. There are a lot of emergency services. A special service should be created [for studying earthquake precursors]. My friend and co-author Dimitar Ouzounov,

who took all the thermal measurements, lives in the United States, and I live in Russia; now I'm here at the conference. But to make predictions, there should be people who are sitting and analyzing information around the clock, in real-time. At least some group should be created to perform this service.

We have zero financing for our research. Everything I've demonstrated was done in the course of our ordinary activity, with no financing. To be successful, we need to create at least one laboratory, and direct it; it will have a few young people, because all this data processing is time consuming. We sit at the computer after a strong earthquake, and try to get information from all over the world, taking the atmospheric parameters—but we have no direct channels to immediately get the information on the air temperature in Japan, in Sumatra, and so on; the humidity; to download the data from satellites; GPS calculations—all this needs special infrastructure. Until it is organized, this problem will not be practically resolved.

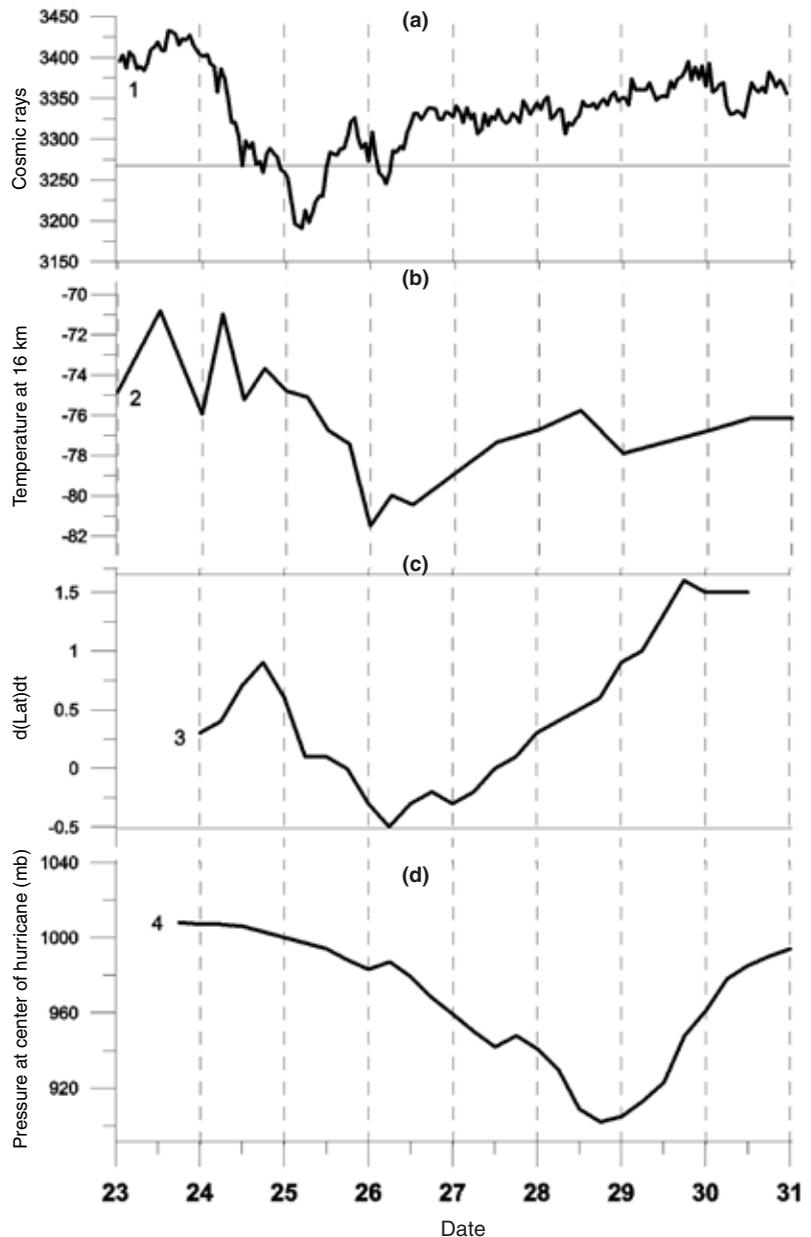
### Hurricanes

The next thing about the short-time variations in our atmosphere is hurricanes, and I would like to say a few words about them....

Imagine a situation like this: You have the stable flux of galactic cosmic rays; during geomagnetic storms, the Sun makes an obstacle for the galactic cosmic rays, and their flux decreases sharply, on a very small scale, but a very small period of time. So, if you have less of the source of ionization, less heat will be released, and in this area where we have maximum production of particles, we should observe a drop in the air temperature. And it happens.

So that at the beginning of the development of Hurricane Katrina, there was a magnetic storm. And you can see in **Figure 25** that graph (a) shows the drop in the flux of the galactic cosmic rays, measured by neutron monitoring in the United States; graph (b) is the decrease of the temperature at the level of the tropo-

FIGURE 25  
Anomalies over Hurricane Katrina  
(August 2005)



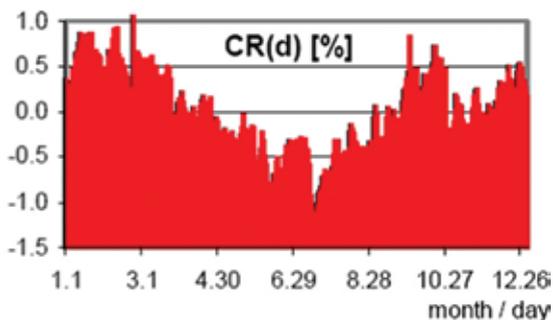
pause. And you can see the vertical profiles of the temperature, over Hurricane Katrina—okay, it was not a hurricane yet—taken by sounding by radiosondes installed on balloons, launched from meteorological stations. And you can see the drop in temperature: It is 8.6°C, which is a huge drop, according to atmospheric parameters. And you can imagine, if you have the ocean surface temperature near 28°C, and the temperature

FIGURE 26

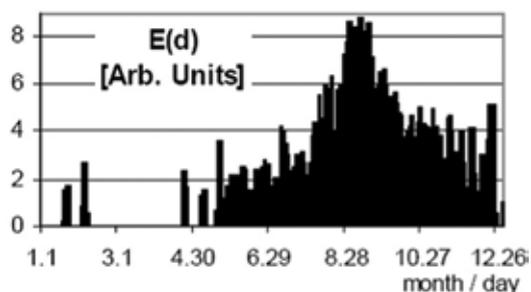
### Hurricane Energy and Cosmic Rays

(Hurricane Katrina, August 2005)

a) Average cosmic ray CR[d] density distribution



b) Average energy E[d] distribution



S. Kavlakov, 2005

drops at the top of the hurricane, how this increases the circulation of air. So, it leads to a sharp increase of the vertical convection.

And another effect: Graph (c) shows that these changes of temperature are not uniform in space, and our model calculation shows that it's in these circumstances that a hurricane changes its trajectory. And in fact, Katrina changed its trajectory and went into the Gulf of Mexico, where there was an extremely high temperature; and convection was initiated, stimulated by the magnetic storm, increasing more and more, until Katrina reached a Category 5.

This shows that galactic cosmic rays *do* play a role in the intensification of cyclonic activity, and especially in hurricanes.

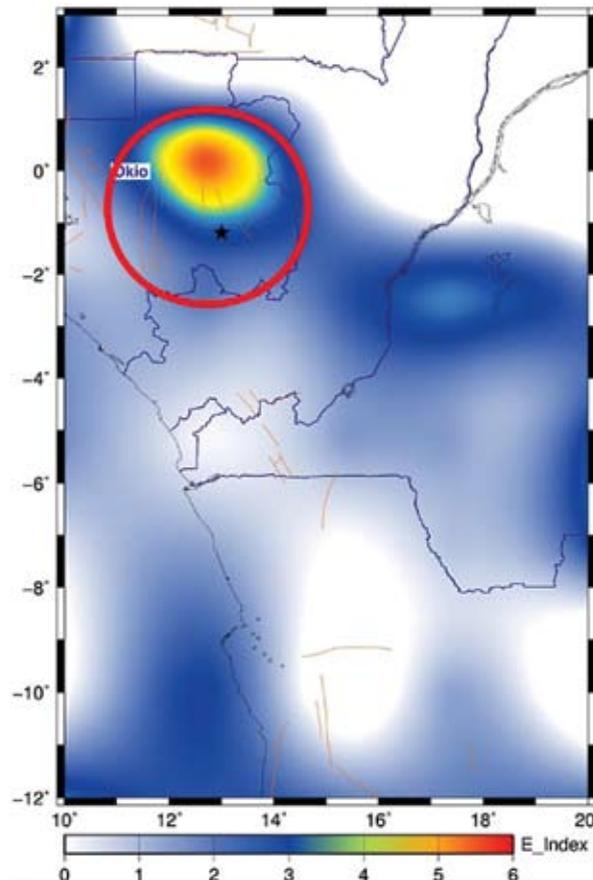
Now in **Figure 26**, graph (a) is the statistical work showing a drop in the galactic cosmic rays, and graph (b) is the increased energy of the hurricane. These are statistical results.

So, the process of ionization and release of latent heat play an active role in one more process in our atmosphere.

FIGURE 27

### The Oklo Natural Fossil Nuclear Reactor, Gabon

(July 2004-10)



*The image shows increased air ionization in the area, and a thermal anomaly over the Oklo "reactor."*

### Radioactive Pollution

The next item I want to touch upon is radioactive pollution of the environment. We started to work on this, because many people have said to us, "How can you prove that your mechanism is working, that the thermal anomalies you observe are connected with ionization? You have plenty of sources of ionization all over the world: Please show that they are having an effect here."

**Figure 27** shows a place in Africa, in Gabon, where there is a natural "nuclear reactor," from fossils. There are fossils with a large content of uranium, and there is increased radiation over this area; and you can see the thermal anomaly over Oklo, which is the name of this natural nuclear reactor.

FIGURE 28

### Ongoing Long-Wave Radiation (OLR) Anomalies for Fukushima Nuclear Plant

(Thermal anomaly)

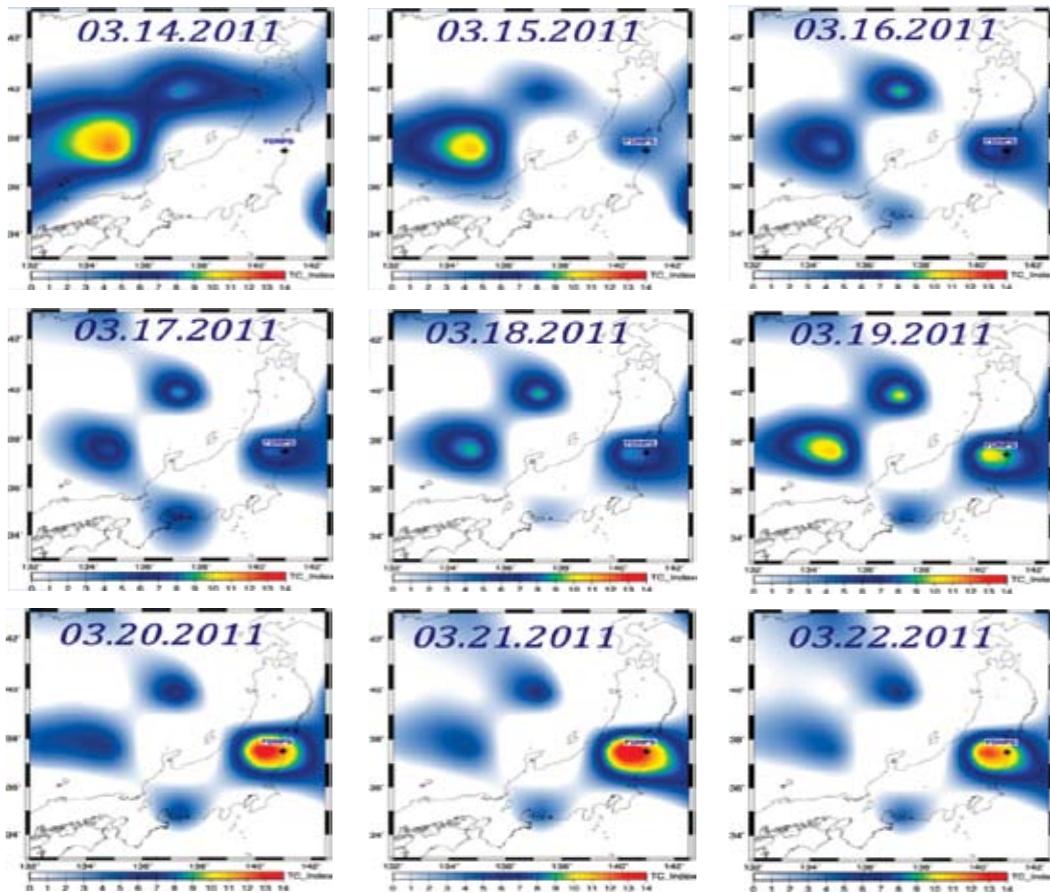
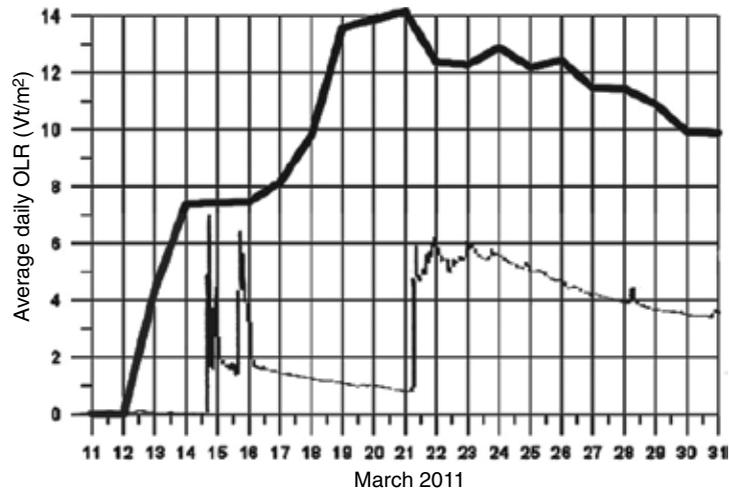


FIGURE 29

### Ongoing Long-Wave Radiation (OLR) Anomalies for Fukushima Nuclear Plant

(Thermal anomaly (bold line) and measurement of radioactive substances in hydrogen explosions at the plant [thin line]).



And what about Fukushima? In **Figure 28**, you can see the development of the thermal anomaly over the Fukushima power plant up to the maximum, and then you can see the decrease of this heat. Because it was a very recent event, we were able to study the dynamic. And this is very important, because it is connected with our lives! You remember how the Japanese changed their indicators a thousand times a day, and nobody knew what the real level of radiation was! And this gives you, in hand, an independent source of monitoring radioactive pollution, from a satellite. And in **Figure 29**, you see the level of the thermal anomaly, the bold line; and the thin line shows the indicators of the sensors of the hydrogen explosions that occurred, and which transmitted radioactive substances into the atmosphere. And you can see that these explosions coincide with an increase of the thermal anomaly.

FIGURE 30  
**Producing Rain with Ionization, Mexico**

a) The central mast



b) An example of the installation used



So, another application of our mechanism of latent heat release, is monitoring of radioactive pollution of our environment.

### Can Man Change the Weather?

And the last thing, very interesting: If ionization is so powerful, can we do something about our weather? Yes, we can!

I spent a few years in Mexico, where there is a company that worked with agriculture, to produce artificial rain, and they have installations for air ionization to produce the centers for nucleation and creation of clouds. Here is the central mast (Figure 30). I will not go deeply into the technology, but these are examples of the actual installations, and Figure 31 shows the increase of precipitation in the Sonora Desert, when these installations were active.

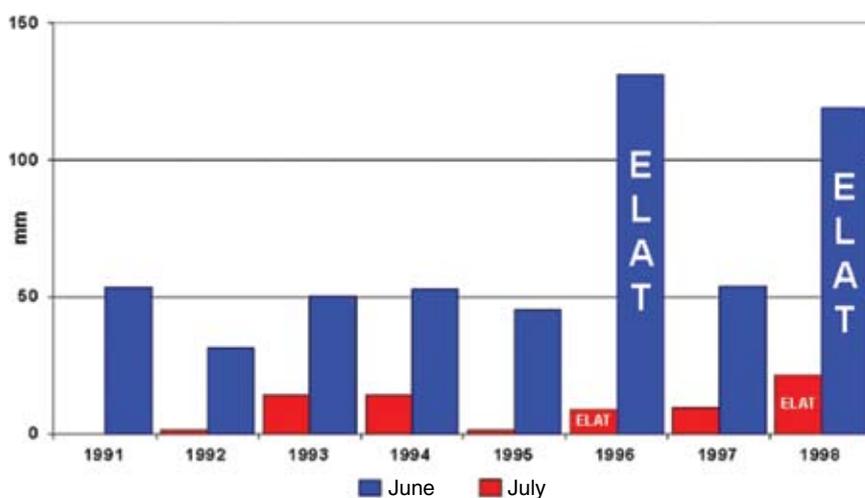
From 2003 to 2004, fully 2 million cubic meters of additional water were created artificially to fill up the water reservoirs in the small hydroelectric power stations in some regions of Mexico.

Okay, all of this could be ex-

plained within the framework of the global electric circuit, which is based on the potential difference between the ionosphere and the ground (Figure 32). This potential difference is created by thunderstorm activity, and the return current goes from the ionosphere to the ground, in areas of fair weather. It is called the global electric circuit; the current is very low, but the gradient of the potential is quite large on the ground surface, something like 100 volts per meter. (From your toe to your head, you have a potential difference of 200 volts.)

If you are able to monitor the density of this current, and produce the ions, you can do many things. For example, the trajectory of Hurricane Lane [2006] was shifted—it was a tropical storm, and then it converted to a hurricane. There was an agreement with the government of Baja California to protect the recreational areas from hurricanes; and the trajectory of the

FIGURE 31  
**Precipitation in Sonora, Mexico, 1991-98**



Sources: National Water Commission. 1996 and 1998: operation of ELAT station Puerto Libertad.

*ELAT (Electrificación Local de la Atmósfera Terrestre SA) is the company that increased rainfall in Sonora using air ionization.*

FIGURE 32  
**The Generation of Atmospheric Electricity**

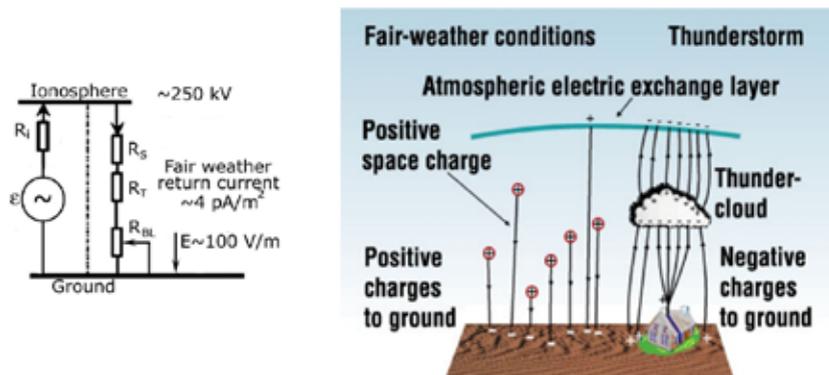
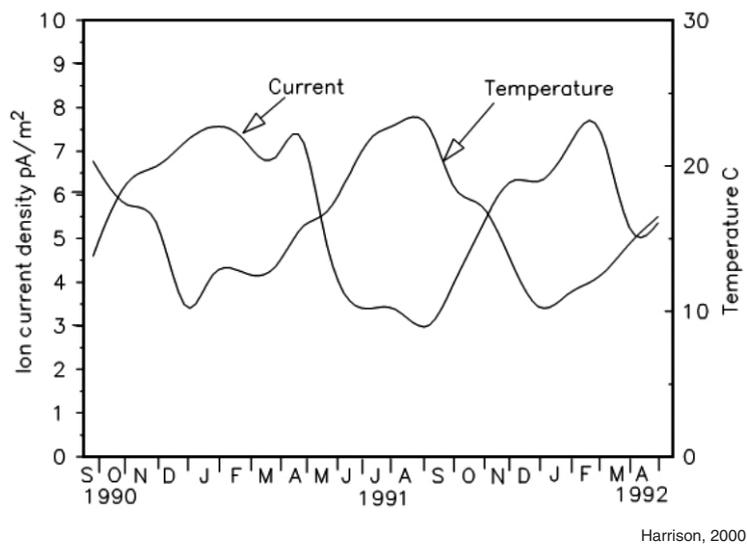


FIGURE 33  
**Can We Modify the Temperature?**



*Temperature and the global electrical circuit anticorrelate. If you can control the electrical current, you can control the temperature.*  
 Harrison, 2000

hurricane was changed. It was a special experiment, showing that it is possible to shift it to one or another side. The polarity was changed twice, and the trajectory of the hurricane changed, in comparison with NOAA’s prediction.

So we have a lot of possibilities to work with, but it has to be very accurate. You know, it is like a nuclear bomb: We cannot give the military these things! It is very dangerous.

Here is another example (**Figure 33**): It is simply measurements of the variation of the vertical current in the global electrical circuit, and temperature. You have temperature, and you can see that they anti-correlate.

So if you are able, in some area, to control the vertical electric current, you can control the temperature.

So, probably, the conclusion for my presentation today is that we should take into account the ionization processes in different areas, and we see that they are connected with climate change, with the detection of earthquake precursors, with activity of tropical cyclones and hurricanes; and the possibility exists of effects on the weather, and that somehow, sometimes, we can correct the weather.

**Looking to the Future**

I would like to say a few words also about modern science. Unfortunately, we have very narrow specialization. People know only their own field very well, and if something goes on outside of their field of knowledge, it is impossible to talk with them, because they do not understand, and their reply is, “I do not believe.”

We are not in church, where you should believe! We are doing science.

So I think that we should develop—I call it a “holistic approach.” We should train scientists who have knowledge in different fields, because for this work, you need to know the physics of the atmosphere, the physics of plasma, the chemistry of the atmosphere; atmospheric electricity; thermodynamics, and many, many other things. If you are not able at least to understand the basics, you cannot make progress in such matters.

And this is an issue of our conflicts, for example, with seismologists: They do not know the physics of the ionosphere. They do not know the physics of the atmosphere well. But, when the word “earthquake” appears in the literature, or in discussions, they say, “We are responsible for this! Get out of this field!”

This is a problem, and we should resolve it. We should explain that an earthquake and its preparation is a complex process: It envelops different geospheres which interact. And here we come to the conception of Vernadsky, that all things in our planet are connected, one to another. We should keep this in mind and work carefully to understand our planet.

Thank you very much.

## Glass-Steagall Needed Now To Avert Global Dictatorship

by Helga Zepp-LaRouche

*The author is the chair of the Civil Rights Solidarity Movement (BüSo) in Germany. This article was translated from German.*

July 30—It is incomprehensible for all thinking people to witness how human civilization is so obviously hitting the wall full-tilt, and yet apparently no single Western government or leading institution has the ability to change the course toward suicide in time. Will it be the state bankruptcy of the United States, which is possible this week, that drags the world financial system into the abyss? Or the “Euro-Angst” due to the threatened downgrading of Spain by Moody’s rating agency, and Italy’s dropping out of the rescue package for Greece? This threatens to suddenly become a superfluous question, since the system as a whole is finished. If the casino economy is not shut down immediately with a two-tiered banking system—a Glass-Steagall standard—we are threatened with dictatorship and a Dark Age.

Despite the totally irresponsible battle between President Obama and the Republican Party over the question of the debt ceiling of the United States, in which both sides are agreed on the murderous austerity policy against the section of the population whose lives depend on Social Security and Medicare, the real existential question for America, and soon for the rest of the world, is whether the Glass-Steagall law will be put through in time—that is, immediately.

Kesha Rogers, who is campaigning for Congress as a LaRouche candidate in the 22nd Congressional District in Texas, has just published a warning that the international financial oligarchy, which also controls President Obama, could try to carry out a coup, as the last-ditch attempt to maintain its control, for which either the threat of chaos or an incident like Sept. 11, 2001, in the tradition of the Reichstag Fire, would serve as a pretext. Because the political parties and the members of Congress have abandoned representing the real interests of the population, she directed her call to the leadership of the states and cities, who must force Congress to ram through the Glass-Steagall law. Whether this existential crisis in the United States is overcome by a two-tier banking system in the tradition of Franklin Roosevelt, or whether events lead to a worldwide conflagration, may well be decided this very week.

### **Foul Play by Deutsche Bank?**

Meanwhile, in Europe, the very shameful submission of the 17 heads of state at the latest European Summit, to the diktat of the Institute of International Finance (IIF)—the interest group of the 420 largest banks and insurance companies in the world, whose chairman is Deutsche Bank CEO Josef Ackermann—accomplished nothing, as expected. Only days after the summit, the danger of contagion of state bankruptcies grabbed Cyprus and Spain, whose creditworthiness

Moody's wants to downgrade. But the next mega-crisis looms in Italy.

The actions of the rating agencies threw everyone into a tizzy, as did those of Deutsche Bank. Italy naturally, as part of the European Stability Mechanism (ESM), is one of the states that are financing the rescue package for Greece; but it now has emerged that Deutsche Bank, from January to June, disposed of more than EU8 billion of its Italian state bonds—leaving a balance of EU997 million. Outraged, the Italian media have asked how the ESM can be trusted, if one of the biggest participating banks is betting on an Italian crash!

The absurdity of the situation becomes even clearer, because Italy must pay higher interest rates than the ESM is demanding for this tranche from Greece, for the EU13 billion which it must raise on the markets in order to participate in the second rescue package for Greece. This is precisely the “bankers’ arithmetic” of the IIF, which is the actual architect of the new mechanism, which essentially allows the banks to trade toxic Greek state bonds at the expense of the taxpayer, for new state-guaranteed bonds. According to this “arithmetic,” the banks always win, and the population is always the sucker.

In Italy this practice is illegal.

But Deutsche Bank's behavior has raised a much more fundamental question for the whole Italian political spectrum: whether the German government is hiding the intention to swap the Italian bonds for mainly German ones, in order to prepare for a new arrangement in the Eurozone, whereby the “periphery” would be dumped. Columnist Massimo Mucchetti demanded in the Italian daily *Corriere della Sera* that the Consob credit oversight agency investigate the Deutsche Bank transactions on suspicion of market manipulation, and hand over the results to the Office of the Public Prosecutor. So much for the trust and wonderful unity in the EU!

## Nothing Learned

It is already quite a phenomenon that the governments of Europe, and among them naturally also the German government, always hand over control of financial policy to, of all people, those who are responsible for the crisis. Let's remind ourselves: Both the U.S. Congressional investigatory commission under the leadership of Phil Angelides, and also the Senate committee under the leadership of Senators Carl Levin

and Tom Coburn, assigned the chief blame to the banks, the politicians, and the oversight agencies, and pointed to the banks as a “snakepit full of greed, conflicts of interest, and misdeeds.”

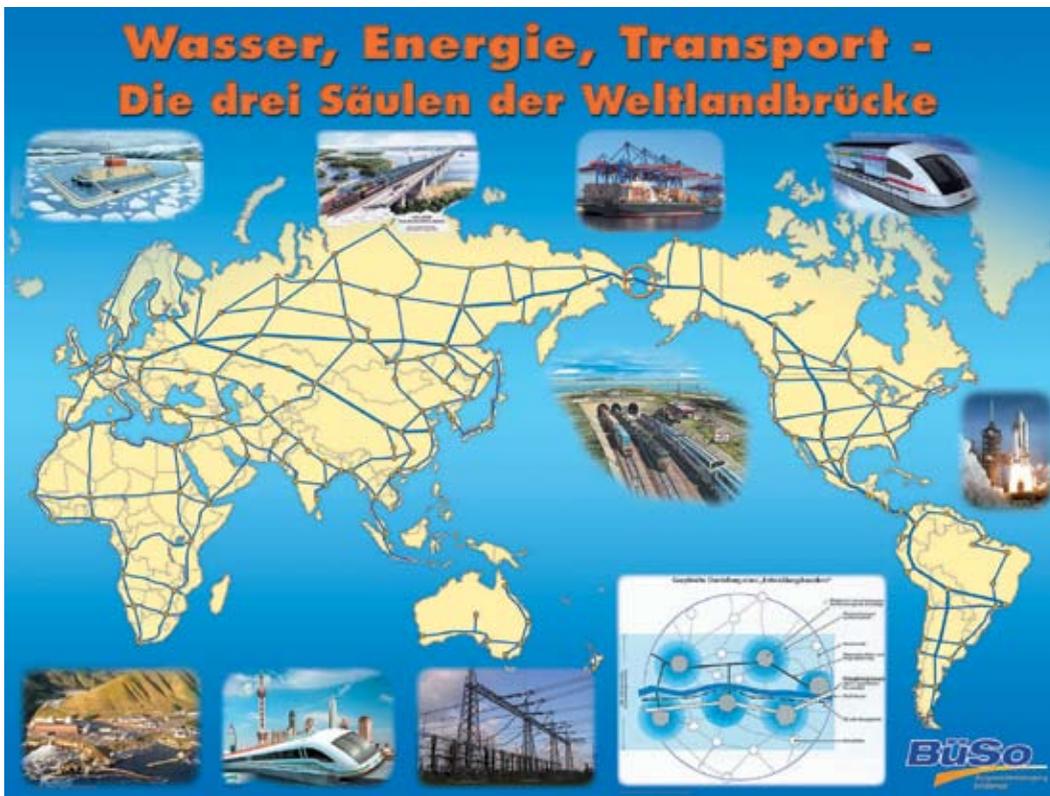
An entire 46-page chapter of the Levin Report was devoted to Deutsche Bank, which it accused of having heated up the financial crisis with its behavior, by knowingly bundling problematic mortgages, which then turned out to be wastepaper, into collateralized debt obligations—the so-called CDOs—and selling them to investors. In the case of the lawsuit of the medium-sized firm Ille against Deutsche Bank, it turned out that Deutsche Bank had knowingly sold interest-rate swaps to the company that had a negative market value, pointing out in an internal memo that the bank could only make profits if the client lost money.

The scandal is that neither in Brussels nor in Berlin has there been the slightest effort to view the results of the U.S. Congressional commissions as a cause for concern, to cancel the deregulation of the banking sector which was identified as the culprit, or to draw even the slightest conclusion from these insights. Instead the government and the parties in the Bundestag are ceding the fate of Europe to the financial institutions, and the shameless redistribution of wealth from the poor to the rich proceeds nonstop. Nothing has been done to curb or prevent the drive of the so-called shadow banks, and thus the high-risk speculation transferred to the hedge funds and other institutions, such that profit rates of 200% per year are being reached. Two hundred percent profit from honest labor?

Now the bill is coming due: Four years of a constant policy of “rescue packages,” thus the conversion of private gambling debts into public debts, which led to the current state bankruptcy in the U.S.A. and Europe, has led to ruin. Either there will be a chain-reaction collapse into chaos, or further money-printing by the central banks will lead to hyperinflation and worldwide chaos.

## What Should Be Done?

So what is the option, if the leading institutions show themselves incapable of protecting the general welfare against robber finance capital? We must build a broad international citizens' movement for the shut-down of this monetarist system and for the establishment of a credit system. A two-tiered banking system must immediately be introduced: the parts of the banks' transactions that are involved with the real



*The BüSo's program for global development: "Water, energy, transport—the three pillars of the World Land-Bridge."*

BüSo

economy and people's livelihoods must be placed under state protection, and the gambling debts must be cancelled. The commercial banks must be provided with new productive credit, which must be invested in targeted growth on a high scientific and technological level.

We must do, in most parts of the world, what the Kreditanstalt für Wiederaufbau (Credit Bank for Reconstruction) did in Germany, after 1945, namely, create an economic miracle within a few years, with a well-defined reconstruction program. The BüSo elaborated the concept for this long ago, with its program for the World Land-Bridge, and, especially, the development program for Africa. What's needed now is the mobilization of citizens, which can make that a reality.

Unfortunately, Germany does not have the political culture to think this way. People have become too much accustomed to thinking that you "just can't do anything anyway." But to remain in this state of mind would be capitulation to plunging the human race into a dark age.

The battle has not yet been decided in the United States. Rep. Mary Kaptur (D-Ohio) has introduced a bill into Congress, H.R. 1489, for a return to the two-

tiered banking system, to Roosevelt's Glass-Steagall law, which has gathered the support of 32 bipartisan co-sponsors, and many unions and other organizations. Over the next weeks, perhaps only days, the decision will be made as to whether America returns to the positive tradition of the American Revolution, Alexander Hamilton, Abraham Lincoln, and Franklin D. Roosevelt, and introduces the Glass-Steagall standard, or whether it comes under an emergency government.

In Europe there is only one opportunity, if we realize that the construct of the euro was a mistake, and never had a chance to function, and was never intended to function, according to the intention of its authors, François Mitterrand, Margaret Thatcher, and George H.W. Bush. There are competent studies which show that the reintroduction of a new deutschemark would be relatively simple, and that the return to sovereignty over its own currency and economy would bring Germany quickly onto a solid path of growth.

We find ourselves at an historical moment, when history will be decided for a long time to come, and in which the outcome depends above all on the subjective factor of whether enough people will commit themselves to the cause of humanity.

# London Drives Global Asymmetric Warfare

by Jeffrey Steinberg

Aug. 3—Senior intelligence officials from the United States, Europe, and Asia are bracing for a renewed wave of asymmetric warfare attacks, modeled on the November 2008 Mumbai, India assault. They cite the recent massacre at a youth festival outside of Oslo, Norway; terrorist attacks in Sinkiang province in China; and the aborted attack on Fort Hood, Texas, as examples of the kinds of operations that have security services on alert.

The major flaw in the security assessment is the failure to focus on the strategic motives behind the global wave of “Mumbai-style” attacks, and the common Anglo-Saudi “mother” of all of these seemingly disparate operations.

For certain British factions, associated with the most radical Malthusian elements around Prince Philip and the global green movement, the most immediate strategic objective is the destruction of the United States, through the ripping up of the U.S. Constitution and a plunge into chaos. The recent “Enabling Law” signed by President Obama on Aug. 2, establishing a nascent unconstitutional dictatorship, and the murderous austerity deal underlying the “Super-Congress” scheme, is guaranteed to plunge a majority of Americans into desperate poverty, and to create the conditions for rampant chaos.

A source warned that Mexican drug cartels have established retail drug-trafficking organizations in over 200 American cities, creating yet another source of potential violence and chaos.

Under these immediate circumstances, any kind of “Mumbai-style” attack on a U.S. city or cities would have devastating psychological and political consequences.

That is the backdrop for understanding the significance of the growing terror alerts.

## The Mumbai Model

According to one senior retired U.S. intelligence official who was involved in the investigations fol-

lowing the November 2008 Mumbai attack, the modus operandi employed by the ten-man team is one that can be replicated in almost any major city around the globe. The source explained that the men were professionally trained on a range of weapons and explosives, and were in perfect physical shape. They were prepared to die in the mission. Of the four teams that launched the simultaneous attacks against targeted sites in the city, three performed their operations successfully, and killed large numbers of people before security forces could respond. The fourth team partially failed, leading to the capture of one of them, and some in-depth leads on the operational planning and support.

While the Mumbai operation was traced back to training camps in Pakistan, tied to elements of the country’s Inter-Service Intelligence (ISI), other elements of support for the attack lead more directly to British-sponsored and protected, and Saudi-financed, organized crime gangs and neo-Salafi movements.

As long as the coverup of the Anglo-Saudi “Al Yamamah” involvement in the original 9/11 attacks is allowed to continue, the threat of more such grand asymmetric warfare operations remains. The Mumbai attack came from the same “Al Yamamah” apparatus, according to one senior U.S. intelligence officials who has been personally involved in the investigation of 9/11.

His warning was pointed: There is not a U.S. city today that is prepared to respond adequately to a Mumbai-style attack, before large numbers of people would be killed. The budget cuts in municipal police and emergency response agencies is further contributing to this vulnerability.

The problem is top-down. This is a British-engineered operation, utilizing assets that have been created over the past 30 years or more, even predating the original “Al Yamamah” deal, creating the global slush fund for black operations. Only by taking a top-down approach to identifying and dismantling that London-centered capability can the looming attacks be preempted. With the British-imposed Super-Congress dictatorship just established over the United States, any other approach will be used as a further pretext for even more draconian measures. As Lyndon LaRouche warned in an Aug. 1 interview with Alex Jones, there is already blood in the streets, as the result of the London-directed coup and the killer cuts in vital services.

# Progress Seen Toward a Regional Solution for Afghanistan

by Ramtanu Maitra

July 30—With the fresh eruption of violence in southern Afghanistan, it is evident that the much-touted U.S.-Taliban secret talks are going nowhere. Reports indicate that International Security Assistance Forces (ISAF) have handed over seven areas of Afghanistan to the control of local authorities, and the plan has failed. What worries Washington is that the violence, which has escalated to record levels, may put a damper on President Obama's plan to withdraw 33,000 troops, to facilitate his 2012 re-election and to cut down on war expenditures.

The assassination of President Karzai's half-brother Ahmed Wali Karzai, arguably the most powerful person in southern Afghanistan, in early July, and within the following two weeks, assassinations of two other powerful Afghan individuals, has set the clock back in southern Afghanistan. Wali Karzai was gunned down in his home in Kandahar by a close associate on July 12. Five days later, Karzai's inner circle suffered another hit, when gunmen killed Jan Mohammad Khan, an advisor to the President on tribal issues and a former governor of Uruzgan province, also in southern Afghanistan. Then, on July 27, Mayor Ghulam Haider Hamidi, the third powerbroker from southern Afghanistan, was killed by a suicide bomber. The Taliban have claimed responsibility for all three attacks.

While it is dawning on the British-Saudi-influenced dealmakers in Washington that the situation in southern Afghanistan is worsening, at the same time, U.S. Secretary of State Hillary Clinton's June 23 testimony at Senate Foreign Relations Committee hearings, and her proposals during her subsequent visit to India, among other nations, provided hope that, instead, the conditions on the ground are improving for a regional solution to the Afghan conflict.

## Clinton and the Regional Solution

In her prepared testimony to the Committee, Secretary Clinton stated that the "Core Group, of Afghani-

stan, Pakistan, and the United States, has met twice and will convene again next week. At the same time, we are engaging the region around a common vision of an independent, stable Afghanistan and a region free of al-Qaeda. And this effort is paying off. India, Russia, and even Iran are now on board."

In response to questions from Committee members, Clinton was forthright about the importance of bringing Iran to the table, discussing the approach to put an end to the Afghan conflict, and this did not go unnoticed.

In a July 27 op-ed in a leading Indian news daily, *The Hindu*, India's former Ambassador to the United Nations, Chinmoy Gharekhan, said, "in a welcome development, the U.S. has now embraced the idea of seeking a regional solution to Afghanistan. In her significant testimony to the Senate Foreign Relations Committee on June 23, 2011, Secretary of State Hillary Clinton was asked by the influential Senator, Richard Lugar, whether the nearly 200-year-old precedent of the Congress of Vienna of 1814-15 could offer a model for Afghanistan today. Ms Clinton's response was positive. She said: '[The] Congress of Vienna is an interesting historical example because there was a pact among regional powers that in effect left the Benelux countries as a free zone, so to speak. . . . Afghanistan is a part of a much larger diplomatic pattern and set of relationships, comparable to the Congress of Vienna.'

"She went on: 'This [Afghanistan] is a regional problem that is going to have that kind of a rather broad diplomatic solution. Certainly, if we could get to that point with the regional powers in South Asia, that would be a very worthy outcome.' She added Iran to the names suggested by Senator Lugar—India, Russia, Saudi Arabia. In her words: 'You cannot ignore Iran. Iran is a big player in the region and has a long border with Afghanistan and Pakistan.' She concluded: 'The only way we are going to get a political solution is through this



*On July 23, Secretary of State Hillary Clinton told a Senate hearing that Iran should be included in any regional talks concerning the resolution of the Afghan conflict. This followed her trip to Asia, where she discussed Afghanistan, among other things, with regional leaders, including Indian Prime Minister Manmohan Singh (shown here on July 19).*

Press Information Bureau of India

kind of diplomatic outreach and that is what we are engaged in.’”

Gharekhan also said that during her recent visit to Delhi, Secretary Clinton “seems to have proposed a quadripartite dialogue among the U.S., India, Afghanistan, and Pakistan.” Given Pakistan’s allergy to India having anything to do with Afghanistan, this idea will not go far. It would be more practical and productive to initiate a trilateral dialogue among the U.S., India, and Afghanistan, specifically on Afghanistan, Gharekhan suggested.

### **Fresh Thinking in New Delhi?**

The fact that such an article appeared in a leading Indian newspaper is significant. It is a foregone conclusion that no workable solution for Afghanistan can be reached without the active participation of five major countries in the region: Iran, Pakistan, China, Russia, and India. Gharekhan’s evaluation of Clinton’s statement as “a welcome development” suggests that some forces have emerged within India in favor of such a regional solution. This is surely a development that has taken place recently.

When this writer visited India in May, his discus-

sions with senior Indian analysts gave him the impression that New Delhi was not considering this as a likely option. The general impression the writer had from those discussions is that, while some in India were “hoping” that the United States will stay in Afghanistan for a few more years—more than what Washington is ready to agree to now—others were of the view that the Taliban, with Pakistan’s tacit assistance, will take control of Afghanistan, and the United States will accede to that.

These views were perhaps based on a reading that Washington is unwilling to make efforts in improving conditions and equations among the regional big powers, and in absence of such efforts, any cooperation among these powers for a solution of the Afghan conflict will be difficult to come by. The most frequently cited difficulty, the analysts in India pointed out, is that India, China, and Pakistan cannot sit together at the same table, to come to a mutually agreed upon conclusion to the Afghan issue. There were also concerns in India that exclusion of Iran would further jeopardize the talks from taking a concrete shape and form.

In addition to Clinton’s June 23 statement before the Senate Foreign Relations Committee calling for

Iran's inclusion in these talks, a number of subtle shifts have occurred in the region during this short period. These developments include openings for wider China-India relations, and efforts to ease tensions between India and Pakistan.

### **A Boost in China-India Relations**

To begin with, China-India relations—which often get boxed in, over disputes regarding border demarcations, stymying attempts at further cooperation between these two large and increasingly powerful countries—may have turned the corner for the better.

Recently, the Indian media reported that Beijing is ready to support India's full membership in the Shanghai Cooperation Organization (SCO). Born in 2001, the SCO consists of Russia, China, and four Central Asian "stan" countries (excluding Afghanistan and Turkmenistan). India, Pakistan, and Iran are among those with observer status. These nations virtually ring Afghanistan, which shares ethnic linkages with most of them.

During the last annual summit of the SCO in June 2011 at Astana, Kazakstan, India's External Affairs Minister S.M. Krishna praised the SCO for its "constructive and forward-looking role in contributing towards peace in Afghanistan." Krishna also pointed out that, by becoming a part of the SCO, Afghanistan could act as the geostrategic bridge between Central and South Asia as well as a trade and transit hub, *The Hindu* reported.

At the summit, Russian President Dmitri Medvedev said: "Russia is calling for more intensive and deeper cooperation between the SCO and Afghanistan. . . . Eventually, the process of political stabilization in Afghanistan depends on this, and the security of our states to a great degree depends on the situation in this country."

In addition to India's growing relationship with the SCO, two other noticeable events occurred during this short period, which could improve bilateral relations between India and China, and between India and Pakistan.

The first involves whether China would finance development of the Gwadar Port on the Baluchistan coast of Pakistan, just a stone's throw from the Strait of Hormuz, a prospect which set off alarm bells in New Delhi, as well as in some other countries. India's concern was that Pakistan's decision to allow China to bring oil and gas through the Gwadar Port to western

China, would influence China to remain neutral in any future anti-India activities by Pakistan along its borders, and in various diplomatic forums.

However, New Delhi may have to reassess things, given what Peter Lee of *Asia Times*, in a May 28 article, called China's dropping of "the Gwadar hot potato." The reference was to Pakistani Prime Minister Yusuf Gilani's visit to Beijing this past May. One of the items on Gilani's agenda was to secure more financing for the port. Although Beijing made no such commitment, Pakistani Defense Minister Ahmed Mukhtar, who accompanied Gilani to Beijing, said, in a statement, "The Chinese government has acceded to Pakistan's request to take over operations at Gwadar port as soon as the terms of agreement with the Singapore Port Authority (SPA) expire," Associated Press of Pakistan reported. It is likely that Mukhtar made the statement to showcase the solidarity of Sino-Pakistan relations, or perhaps simply to irritate India.

Nonetheless, Beijing did not like Mukhtar's statement. Lee wrote that "China promptly issued a denial—about building the naval base, at least—that made the whole episode look like another spasm of incompetence by [Pakistani] President Asif Ali Zardari's administration."

The Chinese decision to drop the financing of the port, under the circumstances that prevail in Pakistan, has forced New Delhi to realize that China is not interested in undermining India strategically; that its decision was based on commercial considerations, i.e., that the present circumstances in Pakistan are not favorable for such a commercial venture.

The second potentially useful development is the just-concluded visit by the newly appointed Pakistani Foreign Minister, Hina Rabbani Khar, to New Delhi. While one visit by a Pakistani official cannot in itself overcome the six-decade-old enmities, including three wars and a long list of onerous issues, New Delhi has responded positively, and the Indian External Affairs Minister, S.M. Krishna, told reporters that Indo-Pak relations will "certainly improve," after the visit of his Pakistani counterpart. "This was the roadmap that we had worked out, and I am very happy that she came to India, and that certainly will improve bilateral relations between our two countries," Krishna added.

### **Iran, Afghanistan, and Pakistan**

To arrive at a regional solution to the ten-year old conflict in Afghanistan, would require strong leader-



*China's role in developing Pakistan's Gwadar Port (shown here), just a stone's throw from the Strait of Hormuz, set off alarm bells in New Delhi. But China made it clear it is not interested in undermining India strategically.*

CC/Paranda

ship from four nations—the U.S., China, Russia, and India. While it is still not clear what kind of resolution of the Afghan conflict that China, India, or Russia would consider at this point, it is likely that there is a realization that U.S. efforts, apparently carried out through Germany and Qatar, have little chance to succeed.

What is known is that the Afghan situation is worrisome to Russia, China, and Iran. Moscow worries about its own “war on drugs,” and wants NATO out of its backyard; it does not want permanent U.S. military bases in Afghanistan. Beijing worries about the Taliban influencing the Uighurs in Xinjiang. It is also abundantly clear that Tehran will keep cultivating its privileged relationship with Tajiks, Hazaras, and Uzbeks in Afghanistan, and would not like to see a return of the Wahhabi-indoctrinated Taliban to Kabul.

In addition, the emergence of a trilateral give-and-take among Tehran, Kabul, and Islamabad has become noticeable. Reports indicate that close associates of Afghan President Karzai are saying that his inner circle is pushing the President to move closer to Iran, as the U.S. forces recede. Shanthie Mariet D’Souza, a

visiting research fellow at the Institute of South Asian Studies (ISAS), National University of Singapore (NUS), pointed out, in an *Al Arabiya News* article of July 27, that visits between Iran and Afghanistan have increased in recent years, and politicians of both countries have participated in jointly organized forums. The Iranians feel that the U.S. troop presence in Afghanistan has deprived Tehran of playing a larger role in a country with which it shares deep historical, cultural, civilizational, and economic ties. Tehran further fears that the prolonged U.S. stay in Afghanistan will permanently eliminate Iran’s influence there. Iran has maintained that outsiders are not capable of establishing security in Afghanistan, D’Souza noted.

At the same time, D’Souza said, Iran is making common cause with Pakistan on Afghanistan. Both countries suggest that the regional powers need to have a stake in the solution to the Afghan problem, and that a solution imposed by either international military efforts, or negotiations with the Taliban, would not produce enduring results. The Iran-Pakistan alliance has caused deep consternation in Saudi Arabia, D’Souza added.

## GAO Reveals Theft Of Taxpayer Money

July 26—Lyndon LaRouche today called for the immediate jailing of Federal Reserve Chairman Ben Bernanke, Treasury Secretary Timothy Geithner, and President Barack Obama, for their role in a massive theft of taxpayers' money, in the 2008 bailout of Wall Street and London, and the ongoing pledge to continue the bailout of the hopelessly bankrupt European Monetary Union and Wall Street banks.

LaRouche made the demand after reviewing the July 2011 Government Accountability Office (GAO) audit of the Federal Reserve, which is the first installment of a larger audit to be completed by October of this year.

The preliminary audit reveals a trail of criminal action on the part of Bernanke and Geithner. In March 2008, Bernanke fraudulently invoked an emergency clause in the Federal Reserve Act, claiming that, on the basis of "unusual and exigent circumstances," the Fed could issue emergency loans to nondepository institutions for the first time since the Great Depression. As a result, the Fed issued more than *\$16 trillion* to Wall Street and foreign banks. Furthermore, most of the fraudulent "emergency lending" was "outsourced" to private contractors, led by JP Morgan Chase, Morgan Stanley and Wells Fargo, in no-bid contracts that *totalled \$660 million in fees*.

Numerous officials of the Fed and the outside contractors were given blanket waivers allowing them to act, despite clear conflicts of interest. The audit cited the case of William Dudley, a former chief economist of Goldman Sachs, and now, chairman of the New York Fed, who was given a waiver to retain his AIG and GE stocks at a time when he was authorizing hundreds of billions of dollars in fraudulent "emergency" loans to these firms. In another example of the rampant conflict of interest, the CEO of JP Morgan Chase was allowed to remain on the board of the New York Fed, while his firm received \$390 billion in loans, and functioned as a clearinghouse for the Fed's emergency loan program.

The GAO audit was conducted under an amendment to the Dodd-Frank bill and was introduced by Sen.



*William Dudley: Why is this man smirking?*

Bernie Sanders (I-Vt.), over strenuous objections from the authors.

### LaRouche's Alternative

"There never was an emergency warranting \$16 trillion in bailout to Wall Street and foreign banks," LaRouche declared. "There was always an alternative, which I spelled out clearly in my 2007 Homeowners and Bank Protection Act (HBPA), an alternative thoroughly in keeping with the U.S. Constitution. I called for the immediate reinstatement of the Glass-Steagall Act and a freeze on all home foreclosures for the duration of the bankruptcy reorganization of the entire Federal Reserve System.

"It was a high crime to bail out Wall Street and London's gambling debts, and Bernanke's declaration of emergency, unleashing \$16 trillion in Fed funds to bail out gambling debts that can never be repaid was a criminal fraud. President Obama has furthered that criminal fraud, by pledging that the U.S. Federal Reserve and Treasury would be the lenders of last resort for the European Monetary Union...."

LaRouche concluded: "There is only one appropriate course of action. Send Bernanke, Geithner, and Obama to prison right now. The idea that the American people should be held responsible for bailing out tens of trillions of dollars in fraudulent, worthless, unpayable debt, is unforgivable, and must be punished by criminal prosecution and hard jail time. Public officials elected or appointed to high office in our Federal government must be held accountable for their crimes, or else our entire Constitutional system is worthless. I know the American people are with me, and that there can be no delay. The GAO is the official investigative arm of the U.S. Congress. They have provided their findings in a 239-page audit report. The facts speak for themselves."

# LaRouche Dems Bring Science To New Jersey Energy Hearings

New Jersey Congressional Candidate Diane Sare, on behalf of the LaRouche Six-Candidate slate, and Dr. Ernest Shapiro of LaRouchePAC, intervened in a public hearing sponsored by the New Jersey Board of Public Utilities July 26, to blast Republican Gov. Chris Christie's proposed "energy" plan. The meeting, held at the New Jersey Institute of Technology in Newark, had the character of a Nuremberg rally, by virtue of the attendance of members of the Sierra Club, who were shrieking about Fukushima, and the alleged dangers of nuclear energy and fossil fuels.

Christie's "Energy Master Plan" calls for generating 22.5% of New Jersey's energy from "renewables." His initial version, from 2008, called for a cut in energy consumption by 20% (!)—but that has been abandoned for the moment as impractical (likely under pressure from Sare's campaign).

After the corporate feeders at the renewable energy trough were given four hours to speak, the public was given their turn. Both Sare and Shapiro spoke, Shapiro on the question of how the plan violated the requirement for advancing energy-flux density, and Sare on how it was a genocidal blueprint for the extermination of the human race.

Here is Sare's testimony:

## A Real Energy Policy Needed

Good afternoon. I am Diane Sare, and I am one of a slate of six LaRouche Democratic candidates running for the U.S. House of Representatives. I reside in Hackensack, N.J.

I am here today because the implications of the conclusions of Governor Christie's Energy Master Plan are far reaching and genocidal. Let me just situate my comments by pointing out that 12 million people in the Horn of Africa are currently threatened with death by starvation. In the United States, for the first time, life expectancy is actually *declining*. Governor Christie's green energy role model, President Barack Obama, has a so-

called science advisor, John Holdren, who is an advocate of the anti-scientific position that the world can only sustain 1 billion people,<sup>1</sup> and internationally, a report has recently been released by a German government science advisor, who has the dubious honor of having been knighted by the Queen, Hans Joachim Schellnhuber, which calls for establishing new supranational bodies to force the reduction of global dependence on fossil fuels, while excluding the use of nuclear power, thereby mandating a radical reduction in both energy and food consumption.<sup>2</sup> These policies are already having the genocidal results their authors intend.

Furthermore, there is a financial component of this criminal insanity. While the cost to the state and the nation of going with solar and wind power will be beyond measure, for no net energy gained, for some, like Christie's brother Todd, and Obama's Wall Street and London patrons, there is the fantasy of much money to be made in futures betting, and carbon swapping and trading, in the dying days of the global financial system.

Therefore, I would like to relieve the panelists and the audience of the burden of laboring under the murderous disinformation promoted by today's environmentalist movement, so that you can come to a non-genocidal conclusion of how to address New Jersey's energy needs:

1. The Second Law of Thermodynamics is a fraud.
2. CO<sub>2</sub> is *not* a pollutant.
3. There is no such thing as man-made global warming, and in fact, we are most likely headed for a period of global cooling, which is also not caused by human activity.

On the first point, we'll start two and a half billion years ago. There was no life yet on land, and the earli-

---

1. See *Ecoscience: Population, Resources, Environment*, by Paul R. Ehrlich, John P. Holdren, and Anne H. Ehrlich (1977).

2. See Schellnhuber's WBGU 2011 Report, "World in Transition—A Social Contract for Sustainability" (<http://tiny.cc/thojx>).

est forms of life were single-cell organisms living in water. These living organisms absorbed energy from the Sun, and a chemical reaction occurred, releasing oxygen into the water: the first photosynthesis, which I will say is a heck of a lot more efficient than man-made photovoltaic cells, used for solar panels. As is documented in the “[The Science of Glass-Steagall](#),”<sup>3</sup> the first little organisms couldn’t survive once the water was saturated with oxygen, and the first mass extinction occurred. But out of this came cyanobacterial organisms that can thrive in oxygen-rich water, and which produced so much oxygen that the oceans became saturated, and the oxygen was released into the air, helping to create the protective ozone layer, which allowed the possibility that life could exist outside of the oceans.

I am not going to go through each detail of how we got from single-celled creatures to human beings here, first of all because this is an area which is still not well understood, but also because we don’t have time to discuss 2 billion years of history at this forum—you can review some of this history in the cited video, but it should be obvious that a squid is much more advanced than a bacterium, and a salamander is more developed than a squid, and the transition from one species to a more advanced one, was *not* linear, as Darwin would have you believe, but occurred in leaps, most strikingly after mass-extinctions of species.<sup>4</sup>

For example, after the end of the Permian extinction, in which over 80% of all genera were wiped out, you had the development of the dinosaurs, and the beginnings of early mammals. One key feature of empirical measurement which flies in the face of the so-called Second Law of Thermodynamics, is that the amount of energy consumed and contained by the varying flora and fauna, actually increased over time, especially if you measure it in terms of energy flux-density, i.e., energy per kg of body weight, or per km<sup>2</sup>.

For example, a jellyfish which floats around in the ocean has the same temperature as the water it is in. It doesn’t require much energy for its activity or maintenance of body temperature. A reptile, on the other hand, is always exerting energy to move, and requires a certain amount of heat energy from the Sun to maintain its functioning. A mammal, which regulates its



LPAC-TV

*LaRouche Democratic Congressional candidate Diane Sare presents testimony to New Jersey Board of Public Utilities hearings July 26, in which she explained the science of energy policy vs. the genocidal character of Governor Christie’s Master Energy Plan.*

own body temperature, and must have freedom of motion on Earth, actually must consume seven times as many calories per kg of body weight as a reptile.

The same with plant life. Fruits and nuts are far more energy-dense than green algae. So the truth of the matter is, that the *natural* progression of life on Earth is not winding down, but moving toward higher and higher levels of energy flux-density—that is, the *natural* progression is to have greater amounts of energy packed into smaller areas. It is from this standpoint that solar and wind energy are actually *destructive* of the Biosphere, because they violate that principle. In fact, for this reason, they are actually a form of pollution.<sup>5</sup>

On the CO<sub>2</sub> question, first of all, the oceans produce over 50% of the CO<sub>2</sub> emissions on the planet. Secondly, it would be absurd for respiration to be destructive of the environment. Thirdly, there is no proof that levels of CO<sub>2</sub> correlate with increases in temperature.

However, on my third point, on global warming, there is very clear evidence that cloud cover is directly related to the Earth’s temperature and that cosmic rays are the key factor in cloud formation.<sup>6</sup> You can see from

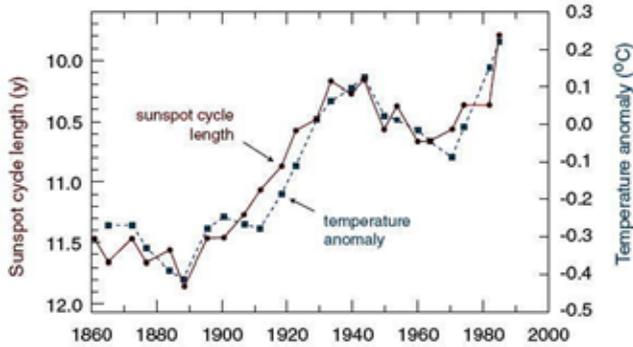
3. “The Science of Glass-Steagall” (<http://www.larouhepac.com/node/17323>).

4. “A Galactic Question,” (<http://www.larouhepac.com/galactic-question>).

5. Lyndon LaRouche’s response to a question on solar and wind power, at his July 21, 2011 webcast (<http://www.larouhepac.com/webcasts/>)

6. Henrik Svensmark film (<http://www.youtube.com/watch?v=ANMTPF1blpQ>).

FIGURE 1



Courtesy of Hans Svensmark

the charts (**Figures 1 and 2**), from the work of Danish scientist Henrik Svensmark, that the correlation between activity of our Sun, which prevents intergalactic cosmic rays from hitting our atmosphere and forming clouds, has a nearly perfect correlation to the Earth's temperature.

### A TVA-Style Approach

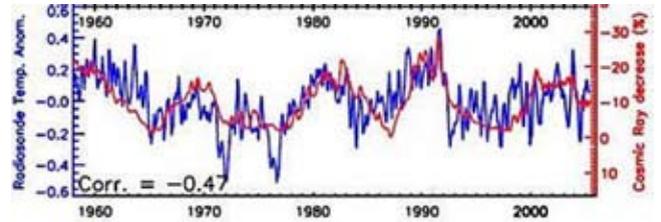
Although much more research needs to be done on the relationship between solar and intergalactic cycles and climate, studies from three independent American institutions, as well as others internationally, indicate that we are actually most likely headed toward a period of global cooling. In a few years, Al Gore may prefer to be remembered for assaulting his massage therapist, rather than his movie.

Furthermore, the cost of solar and wind power is absolutely prohibitive, as compared to the cost of much more abundant and reliable electricity from nuclear power. Of course, as the Energy Master Plan advocates, if you use less energy, you will spend less money on energy. *Voilà!* Living in a cave does not cost much in dollar amounts, but it could cost a lot in terms of longevity.

What makes Governor Christie's Energy Master Plan genocidal, is that as a result of the aforementioned disinformation, it calls for *reducing* energy consumption, where the natural course for the planet would be to *increase* energy consumption—not arbitrarily, but as President Franklin Roosevelt did when he built the Tennessee Valley Authority, and launched the Rural Electrification Administration. By how many orders of magnitude did our food production increase because of electric light bulbs and refrigeration?

Implementation of the Energy Master Plan in its

FIGURE 2



Courtesy of Hans Svensmark

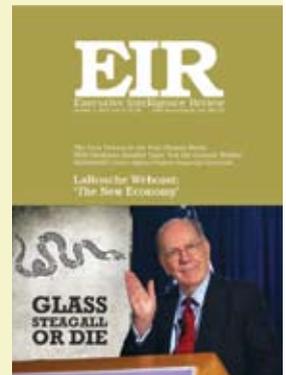
present form will lead to the destruction of the state's ability to sustain population at the current level of about 1,200 per square mile, ultimately resulting in a rapid increase in death rates.

My recommendation to this panel is that you immediately commission the experts in the Princeton Physics Department to develop a nuclear fusion-propelled rocket, which would be very high energy flux-density, with the propulsion power to lift both the corpulence of our governor, and the ego of our U.S. President, and send them to a far-off planet.

Thank you.

## Lyndon LaRouche ON Glass-Steagall AND NAWAPA:

The North American Water and Power Alliance



"The greatest project that mankind has ever undertaken on this planet, as an economic project, now stands before us, as the opportunity which can be set into motion by the United States now launching the NAWAPA\* project, with the preliminary step of reorganizing the banking system through Glass-Steagall, and then moving on from there."  
 "Put Glass-Steagall through now, and I know how to deliver a victory to you."

Subscribe to **EIR Online** [www.larouchepub.com/eiw](http://www.larouchepub.com/eiw)  
 1-800-278-3135

For subscription rates: <http://tiny.cc/9odpr>

### *Our Disaster, Our Opportunity*

It will not take long for the implications of the pro-treasonous votes in the U.S. Congress on Obama's budget deal to sink in to the population. Not only is it obvious that the majority of the Congress has violated their oath to the U.S. Constitution by passing a fascist bill which copies Hitler's Enabling Act for dictatorship, but the agreement will only accelerate the unravelling of the bankrupt financial system under which we live.

The prize for despicable honesty goes to Illinois Democratic Senator Dick Durbin, who, during the debate leading up to the Senate's ratification of this atrocity, evoked the image of the late Senator Robert Byrd (D-W.Va.). Byrd would label this bill an "outrageous" violation of the Constitution, Durbin said, given that the Congress will not be permitted to change even a single word which comes from the Super-Congress Committee of 12. Without even attempting to refute that correct assessment, Durbin then declared that he would vote for the bill, but "with a heavy heart."

Durbin's explicit violation of conscience was repeated many times over by other Senators and Congressmen who knew they were ripping up the Constitution. They acted under enormous pressure from the White House and Wall Street, many in the vain hope that they would be protecting their own portfolios from disaster. They sold their birthright for a mess of pottage—for that's just about all the casino money floating around Wall Street represents.

The good news is that a substantial quotient of the Congress did stand up against Obama's Hitler coup. One hundred sixty-one Congressmen, including 95 Democrats, refused to turn over their Constitutional responsibilities for the welfare of the nation to a special Super-Congress, and voted

against the bill. They may not have understood what *should* be done, but they stood against the coup.

The bad news is that the blowout of the world financial and economic system is upon us—as the exploding crisis of the European banking system only underscores. The cuts to be rammed through in Obama's extra-Constitutional measure, on top of those already in effect, will result in a rapidly accelerating death rate, here and abroad. At the same time, the fascist government will continue its virtually intravenous bailouts of Wall Street and the London-centered banks. As the GAO report recently documented, the trillions of dollars poured from the Fed to Wall Street and the European banks dwarf the size of the so-called deficit, and the wildly inflated GDP. Cut off and reverse that bailout with Glass-Steagall, and the pathway is clear to restoring our economy and our people to health.

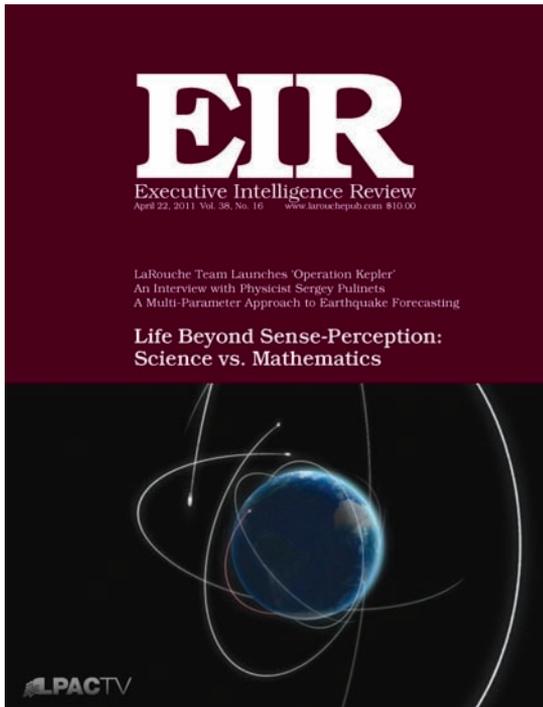
In a declaration available on the website of the LaRouche Political Action Committee, Lyndon LaRouche outlines the policy around which Americans must rally, in order to reverse this atrocity. We have reached a strategic turning point, LaRouche stresses, in which a mass movement of the American people must be roused to take the necessary action to destroy the British imperial enemy, in order to protect the very existence of this nation.

In a preview of that statement, which every patriot must take to heart, LaRouche summarized the situation thus: "We must, in reaction to that pro-treasonous action, neither whimper nor curse our fate. We must be stalwart to our own oath of allegiance to our Constitutional republic, even as most of us have tended to react as cowards, or outright traitors."

SUBSCRIBE TO

# EIR Executive Intelligence Review

## EIR Online



**EIR Online** gives subscribers one of the most valuable publications for policymakers—the weekly journal that has established Lyndon LaRouche as the most authoritative economic forecaster in the world today. Through this publication and the sharp interventions of the LaRouche Youth Movement, we are changing politics in Washington, day by day.

## EIR Online

EIR Online includes the entire magazine in PDF form, plus up-to-the-minute world news.



I would like to subscribe to **EIR Online**

(e-mail address must be provided.)

- \$360 for one year  
 \$180 for six months  
 \$120 for four months  
 \$90 for three months  
 \$60 for two months
- Send information on receiving **EIR** by mail.

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Country \_\_\_\_\_  
Phone ( \_\_\_\_\_ ) \_\_\_\_\_  
E-mail address \_\_\_\_\_

—EIR Online can be reached at:

**www.larouchepub.com/eiw**

e-mail: **fulfillment@larouchepub.com**

Call **1-800-278-3135** (toll-free)

I enclose \$ \_\_\_\_\_ check or money order

Make checks payable to

**EIR News Service Inc.**

P.O. Box 17390, Washington, D.C. 20041-0390

Please charge my  MasterCard  Visa

Card Number \_\_\_\_\_

Signature \_\_\_\_\_

Expiration Date \_\_\_\_\_