

AN LPAC BASEMENT WEBCAST

A Policy Initiative for the Survival of the Human Species

Creighton Cody Jones gave this keynote address to a LaRouchePAC Basement Science Team [webcast](#) Dec. 17, with the above title. Jones was joined by Sky Shields from the Basement Team, and LPAC editor Matthew Odgen, for a three-hour program, which included a dialogue with audiences from cities throughout the Americas.

Today, I'd like to present an idea with the personality of a fugue, with many different lines of thought acting against each other, but in harmony. The theme is one which has served the poets as an image for the imagination, and has been provocative to many a scientist, from Shakespeare to Shelley, from Benjamin Franklin to Albert Einstein—that theme is *lightning*.

Most people they have a very definite, probably a universal conception or an idea, impression, of what lightning is. Usually we think of some streak, glowing streak, that reaches from a cloud, down to the ground, maybe associated with a large thunderclap; and for some, even the smell that tends to accompany a



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The human mind, said Jones, is able to generate an idea of the long-arc evolution of life, and to extend its sensorium to go beyond simple sense-impressions, to discover what is the One.

thunderstorm. But this is an image which is very much, wholly associated with the very specific, so-called, inborn senses that we come out of the womb with.

But what if we, for example, *saw* in the range of x-ray, or if we *heard*, as with an antenna in the domain of radio? Or we *felt*, as if, not with heat from infrared, but we felt frequencies in the very low or extremely low frequency range? What then might be our impression, our image, of this thing we call “lighting”?

Now, I'd like to bring up an image here, which is the first image ever taken, X-ray image ever taken, of a lightning strike (**Figure 1**). Now, you'll see, there are many different frequencies of the electromagnetic spectrum

represented in this picture, but I want to draw your attention to just the front portion of that strike, that very white-hot, right at the front end of that strike: That is the x-ray portion of that lightning strike.

So, if, for example, all you saw was in the domain of x-ray, to you, lightning would not be a streak from the cloud to the ground, but in fact, would be more like a very hot, glowing ball, that would shoot down at roughly a sixth of the speed of light, from a cloud to the ground. So, already, you'd have a different visual idea of what lightning is.

Now, if for example, we had a capability of hearing, so to speak, which was of the quality of an antenna, of a radio-tuned antenna, well, lightning would also have a very different sound to us [electronic whistling noise]. So what you're hearing here is an antenna tuned to pick up the frequency that is emitted by lightning.

Now, it travels through a number of octaves of sound in the radio range, and it's largely due to the fact that lightning is sending a pulse all the way from Earth up to the magnetosphere, and back down; the magnetosphere being that region where the magnetic field of the Earth interacts with the field from the Sun. So you have a different quality of sound image of lightning.

Now, as I said, what if you then *felt*—not as we feel on our skin—infrared radiation that produces a certain heat sensation, but what if we were tuned sensually, to feel extremely low-frequency radiation emanating from the effects of lightning. Well, then we would find ourselves awash in a constant pulsing domain which was fueled by lightning. And we'll see an image of that, what's known as the Schumann resonances,¹ which are created by lightning strikes.

So here you're seeing a video which depicts a representation of lightning striking, and then the production of extremely low frequency electromagnetic radiation which then pulsates between the surface of the Earth and the ionosphere, and creates a constant kind of background pulsation in the Earth (**Figure 2**).

1. Named for Winfried Otto Schumann (1888-1974), a German physicist who predicted the low-frequency resonances caused by lightning discharges in the atmosphere.

FIGURE 1
The First-Ever X-Ray Image of a Lightning Strike



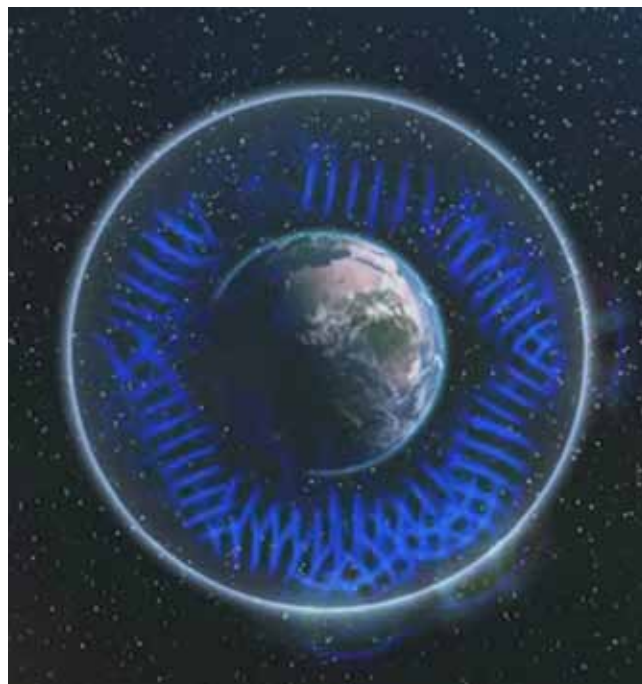
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So we have a very different *feeling* of what lightning, in fact, is.

An Extended Sensorium

So now, we have—given a different set of senses, which, fortunately, science has provided us with—an extended sensorium; we have a very different impression of what lightning would be. We have a different visual impression of what we would call lightning; we have a different auditory impression of what we would call lightning; we have a very different sense, feeling impression of what we would call lightning. But yet, of course, those impressions still exist in the same universe which has produced the sensations that we're more familiar with: the visual, auditory, smell sensations

FIGURE 2
A Lightning Strike Producing Low-Frequency Electromagnetic Radiation Pulsating between the Earth and Its Ionosphere (Animation)



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that we currently associate with lightning.

So, it begs the question: Where does the reality of what we call “lightning,” in fact, lie, if any one set of impressions can be very different from another set of impressions, but yet, both systems, so to speak, exist in the same universe? Well then, maybe the reality is not in any one, or even a number of these impressions, but the reality must be located elsewhere.

This raises another very interesting question, which is, why, then, given just that very simple demonstration, do we continue to operate with a mathematics, with a geometry, and most commonly, with a physics, which is still wholly based on the kinds of derivatives you get from the simple, immediate, “out of the womb” so to speak, set of senses?

For example, the whole idea of “space” that most people are familiar with comes from an idea that is derived, effectively, from a very visual-based notion of what the world is, of what the environment that we exist in, is. That we have different objects that present themselves discretely, say, to our visual apparatus. Like this microphone and this desk, for example. And visually, I see that, well, seemingly, there’s nothing between these two objects. And I could then go further, and say, well, if I removed all the objects from this room, I would still be left with this extension that I call “space.” And I could go further, and say: Well, I could remove all objects from the universe, so to speak, but yet, I would still be left with this quality, this threefold extension that we call “space.”

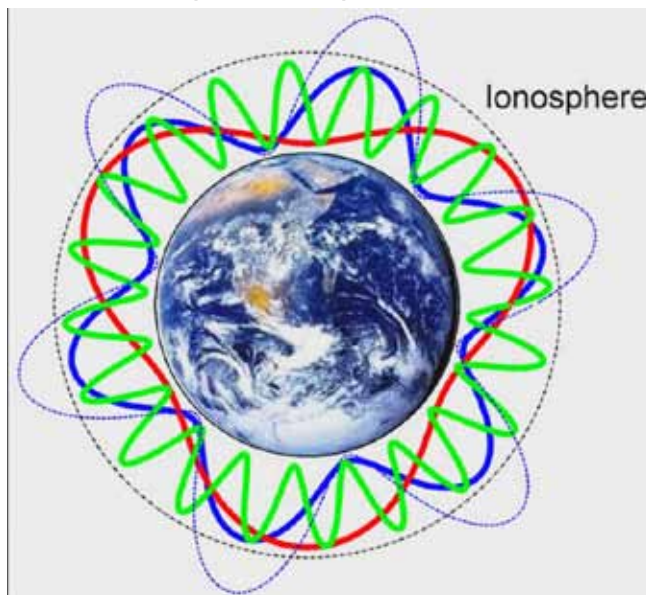
And it’s really from that kind of false, sense-based notion, that much of current mathematics, physics, geometry, has been derived. Things have been filled in, in the course of that, but always filled in against that kind of backdrop, even to the extent that we do recognize that, yes, well, there are electrical fields, there are gravitational fields, there are all kinds of other fields present, that we may not be able to immediately access through our God-given senses. Nonetheless, I still have to fill in everything relative to that initial impression of an empty space, or a linear extension of time.

The Schumann Resonances

So, let’s get back to this theme of lightning, and let’s go to this next image here of another image of the Schumann resonances (**Figure 3**). What you’re seeing here is a simple depiction of the harmonics that are created, as this extremely low frequency, which is emitted by a lightning strike, starts to resonate and

FIGURE 3

Harmonics Created by the Schumann Resonances (Animation)



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bounce between the surface of the Earth and the ionosphere, where the wave gets trapped in a kind of a wave-guide.

Now, it’s going to set up certain harmonics, which are themselves equal divisions of the Earth, based on the size of the Earth—and then its relationship to the ionosphere—determines what are the harmonics of the Schumann resonances. And so here you see depicted a division into three, six, and then greater, with the green one.

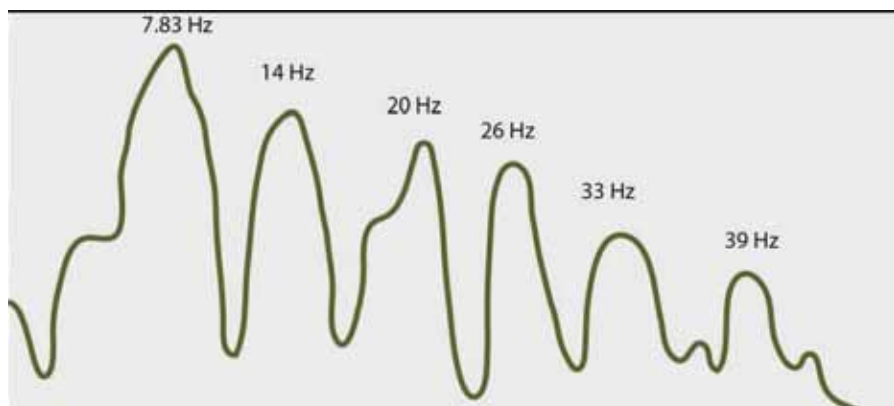
And if we can go to the next image, too (**Figure 4**) you’ll see these are the peak frequencies which correspond to that division of the Earth, which generate, then, your harmonics of the Schumann resonances. And the peak one there, I think is at 7.83.

Now, there’s something very interesting to this: that, one, this is constantly there, as a pulsating kind of action in our environment, something which we’re not readily aware of, but which we can be made aware of through an extension of our senses, through the creation of the kind of apparatus that science has developed over the last couple of generations.

Now, an aspect of this, is that these various frequencies, these peak frequencies that we just saw on the Schumann resonance, correspond also to the background frequency of the mammalian brain itself. For example, the human brain—and people are, I think fa-

FIGURE 4

Peak Frequencies that Generate the Harmonics of the Schumann Resonances



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miliar with some of this (**Figure 5**)—what you’re seeing is a simple depiction of EEG [electroencephalograph] readings, which are effectively the brain-wave readings the emitted standing wave frequencies of the brain, when it’s at different activity levels—sleeping versus awake, versus excited, etc.

Now, you’ll notice that the frequencies that are depicted there, are in the same general range, as those frequencies that we have with the Schumann resonances; that in fact, the brain itself, you could say, has been “tuned,” or is “in tune,” in a harmonic relationship, with this background radiation, with this standing wave, background electromagnetic pulse.

Interestingly, and there’s a lot of sort of wild hypotheses that we could start to posit at this point, the peak frequency of the Schumann resonance, the 7.83 Hz, does in fact correspond with what’s known as, what’s readily acknowledged as more of the deeper, mentative state of the human brain. Whenever we’re in a more relaxed, contemplative, thinking state, the EEG frequency, which tends to correspond with that, is in harmony with the peak frequency of the Schumann resonance.

And I won’t say too much more about that, but maybe in the Q&A we can get into some of the

wilder implications of this.

One thing that does come up, which is very interesting, is that they’ve done these deprivation studies, where people were maintained deep under the Earth, in completely dark caves, for days, weeks, months at a time. And so they had no access to clocks, no contact with the outside world through phone calls or anything, no access to sunlight, so they were deprived of any kind of external sensory input that would tell them, what time of the day it is, whether it’s night, etc.

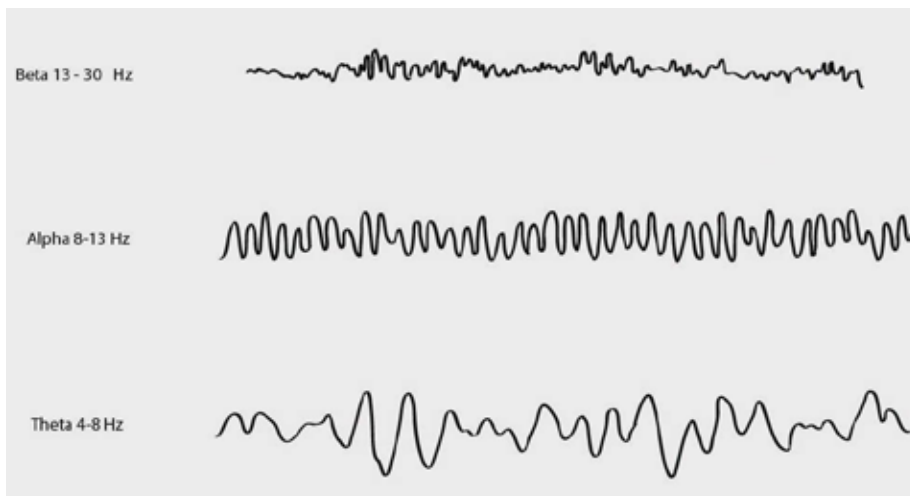
Now, despite that, people still maintained a sort of internal bio-

logical clock. They still maintained somewhat of a regular sleep cycle, a regular eating cycle. It was slightly shifted from what we typically think of as a 24-hour cycle, but nonetheless, it was a regular cycle. *But!*, whenever those same people were shielded from the Schumann resonances, where they set up a kind of shielding, all of the cycles were completely thrown out of whack. Now, the eat cycle, the sense of time, the sleep cycle, all of these things were completely thrown out of whack, once they were deprived from the ability to tune in, so to speak, to the Schumann resonances.

Which raises some very interesting questions about what kind of a role, perhaps, do the Schumann reso-

FIGURE 5

EEG Readings of the Brain, at Different Activity Levels



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nances play in biological functioning? Could not these resonant frequencies act as a way to maintain long-distance coherence? Where a number of creatures of the same species, so to speak, are, in a sense, kept in a harmonic relationship with each other? Kept in a kind of coherent relationship with each other, through a tuning into the Schumann resonances?

What other kind of information, so to speak, is transmitted along these frequencies? Right now, our reading of the resonance frequencies and what's contained there is still very limited. It would be almost as limited as if you had a simple radio receiver that could pick up, say, 88 Hz frequency on an antenna, and would just vibrate at that frequency—that wouldn't tell you, then, what's all the so-called encoded information that's in that frequency.

Now, if you have the right kind of radio tuner, you can translate what seems like a simple 88 Hz, into everything we get through the radio, the news, whatever.

So, the question is what else might there be embedded, as communicated information, for lack of a better term, in these Schumann resonances? How does that coordinate certain kinds of activity among living creatures? How does that allow for certain long-range communication? How does that allow for the biological apparatus, that's in one location, to perhaps sense something that's happening in a very distant location?

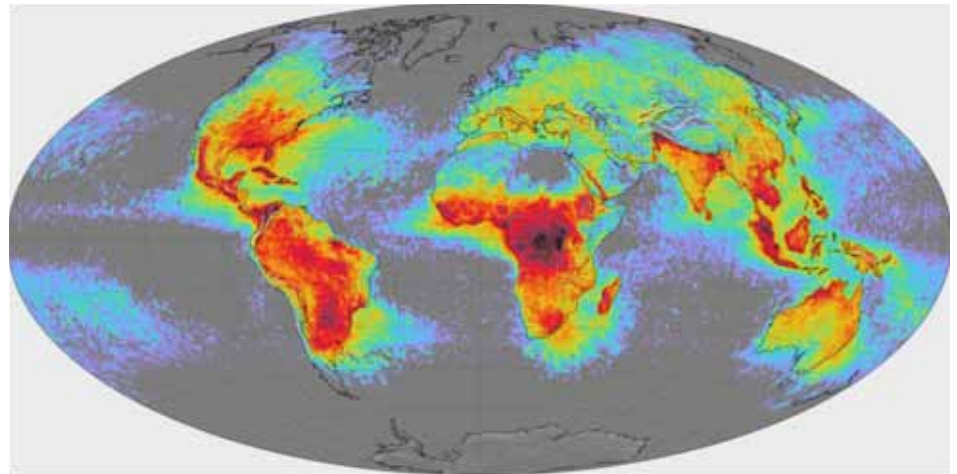
And already, just based on that technique, we use the Schumann resonance to pinpoint where, for example, thunderstorms are on the globe; that if we had the right apparatus, here in the studio, for example, we'd be able to determine, based on a reading of the Schumann resonance, where a thunderstorm was occurring somewhere else in the globe.

Tuning In

So, what other kinds of knowledge could we gain, if we were effectively tuned in, and extended our understanding of that? And what role do these Schumann resonances play, in maintaining a certain coherence among

FIGURE 6

Densities of Thunderstorms and Lightning Strikes



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living species, particularly mammals. Because, as it is, they've done EEG readings of lizards and other lower types of life-forms, and haven't found the kind of coherent brain waves that you find in mammals, such as was represented by these EEG readings.

But this goes even further, and you'll see this, because as I said, it is lightning strikes which produce this extremely low-frequency Schumann resonance.

Now, let's go to the map, and you'll see the point I make here (**Figure 6**). What you're seeing is a global map that indicates density of thunderstorms, density of lightning strikes. And the darker colors are the more dense areas, the black is the densest, and it trails off down to the green and the blue. So you'll notice that the highest density of lightning strikes is occurring, 1) over landmasses; and 2) over areas of landmass which are very densely forested, which have a lot of life.

This brings up a very interesting idea: Life, some 300-plus million years ago, solely existed in the oceans. Prior to that, the land areas were pretty desolate, not a lot of water on the land areas, not a lot of—they weren't green, there wasn't a whole lot going on there. But some 300-plus million years ago, life started to move out of the oceans, and onto land. And in doing so, life brought the water cycle with them onto land. So that now you had, as life started to colonize and started to take over the landmasses more and more, the potential was created for the trapping of water, the active movement of water up into the atmosphere, which would then fuel the creation of cloud systems, and hence, the creation of these lightning strikes.

Now, if you step back, and think about that process, here again, you have an example of life, which as we just discussed, is *tuned* to the Schumann resonant effect, prior to, 300-some million years ago, moving onto land, and through the act of movement onto land, the act of movement of transporting the water cycle onto land, then fueling the formation of these cloud systems, in a sense, created the conditions then, through the lightning strikes, and the consequent Schumann resonances created the conditions then for future life to tap into, and be tuned to, this kind of global, electromagnetic environment.

So, again, you have an example of life creating future conditions for an even more evolved existence of later life. And the Schumann resonances are something which are key to this, as we said, in perhaps providing for this kind of long-range communication, etc.

So, we see in lightning, something very intimate to the living process, to the evolutionary process. But that's only, again, part of the story, because, as came up earlier, this is not simply an Earth-bound phenomenon. That, in fact, what you have with lightning, is that new studies are coming out that are trying to answer what has been an ongoing question, which is, exactly: How does lightning form?

We know, we can see, lightning seems to come from clouds, but what actually generates the voltage which then results in a lightning strike? And this is a complete mystery up to this point. What they've been able to measure, is that the voltage in a cloud is about ten times lower than what would be required to ionize the air to create the kind of lightning strike that happens all the time.

So they're trying to say, what could actually catalyze this process? What might be driving the actual creation, the formation, of the voltage for a lightning strike? What's becoming more and more evident, is that, in fact, this is something which is connected to galactic, and greater cosmic phenomena. That some new studies are coming out, and we're getting more and more evidence to the fact that what is driving, what is triggering these lightning strikes, is cosmic radiation, both your standard idea of what cosmic radiation is, as sort of light nuclei; as well as gamma-ray radiation. That through cosmic radiation and the kind of cascading effect that's produced, you're getting, as the mechanism that they think is involved, then, the creation of free electrons, that are moving at near-light speed, which are moving through the clouds, and are what are

providing the catalyst, the spark, so to speak, to generate lightning.

So we're seeing that this lightning, connected to life, to the evolutionary process of life, is then also intimately connected to cosmic processes: that it's a galactic phenomenon that we're experiencing when we experience a lightning strike.

As a side note, too, many of the clouds involved, perhaps, are themselves, the result of cosmic radiation, as the work of Henrik Svensmark and the recent confirmed experiments at the CERN/CLOUD facility have shown, that cosmic radiation, in fact, could be one of the key factors in producing clouds themselves, for seeding and creating the ability for the condensing of water into clouds.

So, again, we see, it's a *cosmic* process which is driving the formation of a system, which itself, is very intimately connected to the evolutionary process of life.

The Crab Nebula

Now, to take it a step further, and to just see how this becomes more and more interesting: As far as we can tell, now, the main driver, creator, of cosmic radiation, as well as gamma radiation, are these nebulae, these super-novae. One, in particular, that has really captured the imagination of science and of our own movement, is what's known as the Crab Nebula; we'll see an image of it here (**Figure 7**).

The Crab Nebula was discovered in 1054, when it was first observed. You could see that its coming into this current state was observed in China with the naked eye, even during daylight hours. And it's thought that these nebulae are the real source of cosmic radiation, that which is then feeding and seeding the clouds that produce electricity strikes, lightning strikes.

Here's a time-lapse video put together by NASA, showing the Crab Nebula in radio frequency; and what you're seeing is the pulsing character of the Crab Nebula (**Figure 8**). So this is the Crab Nebula: It's pulsing, and as it pulses, it's sending shock-waves of various ranges of cosmic radiation, from gamma radiation to radio frequency, pretty much the whole spectrum. And here's the kicker: that the frequency at which the Crab Nebula is pulsing is at about 60 Hz. That becomes even more interesting and relevant when you consider the fact that 60 Hz is exactly eight octaves of the range of the Schumann resonance! That, in fact, the Crab Nebula, and its pulse rate, is very much in tune with the harmonics of the Schumann resonances.

FIGURE 7

The Crab Nebula



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What exactly does that mean? That's up for further investigation. But what we can see, is that you've got this definite kind of harmonic relationship between the Crab Nebula, for example, and the standing background radiation which is there, sort of hugging life here on the Earth.

It takes us to, then, really: What's the essence of all of this? What's the invariant behind this whole process? Is it the lightning? No, the lightning is just a singular expression of a very large and complex dynamic. But what's the One, which is behind all of that which we've been discussing and investigating here? It's the human mind. That the human mind is that which is able to, in a sense, generate an idea of this long-arc evolution of life; is able to extend its sensorium to investigate things like the Crab Nebula; is able to go beyond its simple, immediate sense impressions, to generate new sense-capabilities; to look deeper into the causes and nature of lightning; to bring this all together, not as a simple discovery of the truth through a new sense-capability, but the discovery of what is the One, which projects

itself in all these many different ways?

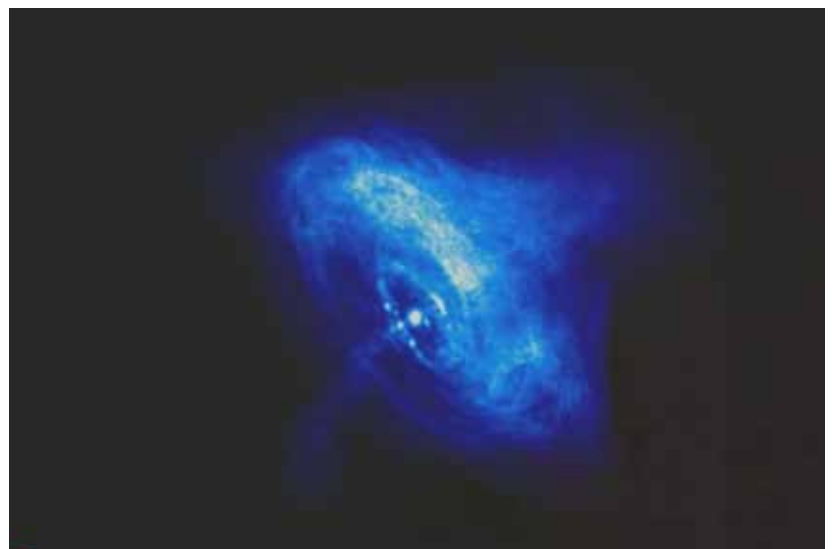
What is this One, which projects itself as this evolutionary development of life; what is the One that projects itself as these various expressions of lightning? What is this One, which bounds life to the cosmos? That's really the question that we have to take up, and that becomes the fundamental issue and investigation, that we must take up, if we're going to, in fact, master the science of physical economy.

As Mr. LaRouche has said: If mankind as a species, is going to move out

of, and survive this potential threatened extinction, it's going to be because a number of people, and more and more, move out of a trapped domain of the senses, and into the domain of mind. To take up, what is the unseen, what is the universal, which is behind all of that which we experience sensually.

FIGURE 8

The Pulsing of the Crab Nebula



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