

Discover Cosmic Radiation

Following is the conclusion of Citizens Electoral Council leader Craig Isherwood keynote address to the CEC's May 1-2, 2010 National Conference. (The first portion of the speech was printed in the May 2010 New Citizen newspaper.) Craig contrasted the British oligarchy's genocidal scheme to reduce the world's population to around two billion people, championed in Australia by Malthusians such as Kelvin Thomson, to Lyndon LaRouche's optimistic vision for a manned Mars mission, and the human colonisation of space. To overcome the challenges that are thrown up by adopting this mission, LaRouche has identified the necessity for a deeper understanding of the nature of the universe, and the nature of space itself. This is the subject of the study of Cosmic Radiation, which the famous LaRouche Youth Movement Basement Project is working on. This excerpt of Craig's speech is the first edition in a brand new centrefold feature of the AAS, which will endeavour not only to keep you the reader up-to-date with the breakthroughs in this and related areas of scientific research, but to step you through those discoveries so you can make them your own. So strap yourself in—this is the launch of your mission to Mars!

In early March this year, the mass strike process erupted in the 22nd Congressional District in Houston, Texas, securing the Democratic Party Primary nomination for LaRouche Youth Movement member, Kesha Rogers. In the U.S. electoral system, they have a kind of Party pre-selection process, called "Primaries", by which registered Democratic and Republican voters determine who will be their respective candidates for the mid-term Congressional elections to be held in November this year.

In the Democratic primary for the 22nd District, there were three candidates: one whom the Democratic party officials wanted to win, one independent Democrat, and one candidate from the LaRouche Youth Movement, Kesha Rogers.

Kesha campaigned relentlessly on two main themes:

1. Impeach Obama. Get this: Here is a young woman, widely-known as a supporter of Lyndon LaRouche, who is campaigning in her own party, the Democratic Party, for the impeachment of the man who is formally at the head of her party, President Barack Obama. and

2. Keep the funding for the NASA manned space program, which Obama had just unilaterally shut down.

And she won, with a resounding 52% of the vote—more than the other two candidates combined.

Not only is that a symptom of a mass strike, but the people of Texas as a subset of the American population as a whole, gave a clear message: **YOU WILL NOT DESTROY OUR FUTURE BY SHUTTING DOWN THE SPACE PROGRAMME.** They voted for a future—a future organised around the intensive physical economic progress that can only be brought about by the scientific advancements connected with the expansion of Man's presence in space.

Sky Shields, who is part of LaRouche's "Basement Team", a team of young political activists/scientists working in collaboration with LaRouche on a number of ground-breaking projects, including the whole issue of Cosmic Radiation, wrote recently:

"Rogers' victory provides the opportunity to address the urgent question of accomplishing the economic development of the Solar System: the first steps of lunar industrialisation, and the undertaking of a successful manned mission to Mars. Connected with this mission, is the task of finally establishing a very different conception of the organization of the Solar System and beyond. Specifically, the planned presence of human beings in locations very far from the surface of our Earth will require the development of a much more in depth understanding of the action of cosmic and other forms of radiation on and within living systems. Not only will this expanded view of the role of energetic phenomena

in living matter make extended stays off planet possible, it also promises to revolutionise medical technology here on Earth, as well as provide a deeper understanding of the nature of living processes, evolution, and morphogenesis than would ever be possible under the existing policy of atomization and underfunding of such scientific investigations.

We will now have the opportunity to tackle the challenge of producing the types of artificial environment required for mankind to leave its "womb" here on Earth.

So, when looking toward the mission of landing human beings on Mars, which has a completely different atmosphere to Earth, the question becomes: "What, from the Biosphere, will we need to

carry with us? And what will be the role of electromagnetic phenomena and cosmic radiation in that environment?"

To contemplate travel to Mars, it will be crucial to reduce the current 300 or so days travel time to the planet by conventional rockets, or human beings will end up—if they are alive—as blobs, because of the effects of zero gravity. Our bones and muscle will shrivel up as they are

taken out of the Earth's gravitation field. It is already a common problem with astronauts on extended missions in space today, and is not remedied by simply doing exercise in space.

In order to get to the planet quicker, we need to develop fusion-powered space-ships that can reproduce the gravity environment here on Earth. Here on Earth, if you drop any object, it will increase its velocity (speed), under the effects of gravity, at a rate of 9.81 m per second, every second. That same force is acting constantly on our bodies all the time even if we stand still. If we can make a space-craft accelerate at the same rate as Earth's gravity for half the journey and then decelerate at the same rate, then we replicate the Earth's gravitational field, and can preserve our body's mass.

Presuming this is possible, it would be the first time that such a wilful act of constant acceleration has occurred anywhere in the universe. It would represent the first artificial creation of a sustained gravitational field which, if maintained for long periods, would quickly result in relativistic velocities—velocities so fast that they are measured against the speed of light. Clock time becomes irrelevant, as what is a day when you travel closer and closer to the speed of light? So the questions immediately become, what will be the effect of this sort of travel on a crew? What will be its effect on the physical universe more generally?

In order to replicate the conditions on Earth, in space or on another distant planet, for potential space colonisation, it is obvi-



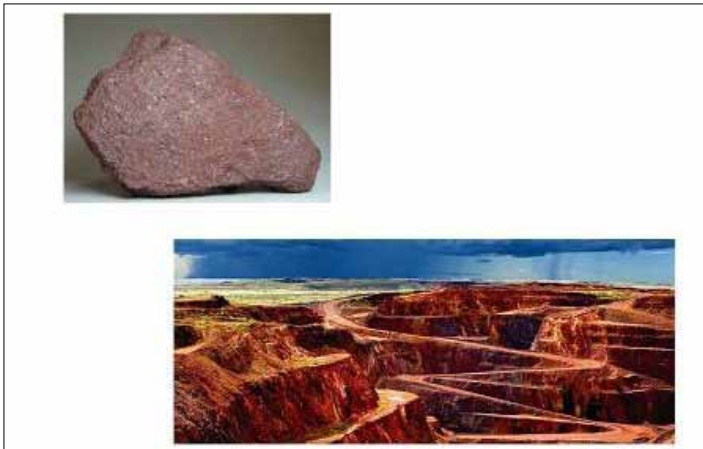
March 2, 2010, Kesha Rogers, "LaRouche Democrat", wins Texas Democratic nomination.

Discover Cosmic Radiation

ously very important to get a truthful understanding of how we exist on Earth. The best beginning point for that is the work of the famous biogeochemist, Vladimir Vernadsky, who discovered that the universe that we exist in is composed of three, distinct phase spaces, that interact with each other dynamically, because each of these phase-spaces is governed by unseen universal physical principles. The first of Vernadsky's phase spaces is the non-living or lithosphere; the second is the biosphere which is governed by the universal physical principle of life, and the third is the noetic phase-space or Noosphere, which is uniquely Man's domain as it is governed by the physical principle of creativity or cognition.

For Vernadsky, there are no organisms or matter, even what you would normally consider "non-living" things like rocks, that are not defined by everything that occurs within the Biosphere as a whole, as every organism is in a constant state of flux, or change, because of what he calls the "biogenic migration of atoms". This occurs when non-living components of the Biosphere, such as chemical elements, energy, and water move through living organisms, and are eventually returned to the Earth, but usually in a higher energetic or organised form.

For example, take just one of the many minerals we have, and are rapidly digging up and depleting here in Australia—Iron. Initially iron-molecules were distributed diffusely across the surface of the planet. The action of "iron-loving" bacteria absorbed the diffuse iron-molecules, concentrating them in their "bodies", and then died leaving oxidised iron, or iron oxides behind as fossils of their activity. These ore-fossil materials are then mined and processed by human economic activity, becoming "noetic" fossils in the form of steel, which never existed before, and which man then uses in bridges and other constructions.



Iron Ore deposits in Australia.

This biogenic migration also represents a continuous process extending well outside of the atmosphere of the Earth itself. For instance: most important material cycles within the Biosphere begin with the action of photosynthesis. In this process, dispersed, low-energy-flux-density radiation from the Sun is captured across large land areas by the action of photosynthetic plants, and organised into the carbohydrate-dense structure of those plants. These energy-dense carbohydrates are then consumed by more complex animal life and, via the process of digestion, are incorporated into the structure of these higher organisms, ultimately passing back out into the environment in the form of residual biological fossil materials such as soils, mineral deposits, and even Earth's atmosphere.

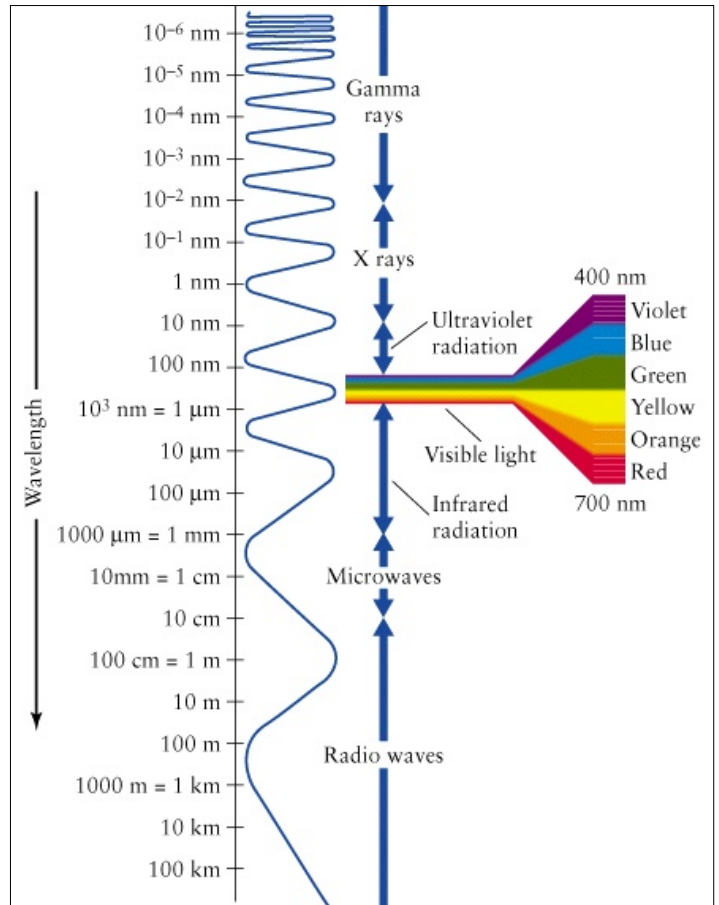
This continuous process of biogenic migration of both energy and matter extends further than to the Sun, in the form of Solar Energy absorbed by plants, and animals (in the case of Vitamin D synthesis), but out into the far reaches beyond our galaxy, as evidenced by the steady flow of cosmic radiation.

Cosmic radiation which has been impacting the biosphere since the beginning of the Earth's creation can be divided into three categories:

- * the various fields (electric, magnetic, gravitational, morpho-genetic, etc.)
- * the domains of the electromagnetic spectrum (radio, micro-wave, infrared, visible, ultraviolet, X-ray, gamma ray, etc.),
- * and so-called energetic particles (cosmic rays, radioactive decay products, etc.)

Whilst the sun is the main source of cosmic radiation, there are many others, including exploding nebula, pulsars and super and hyper novae.

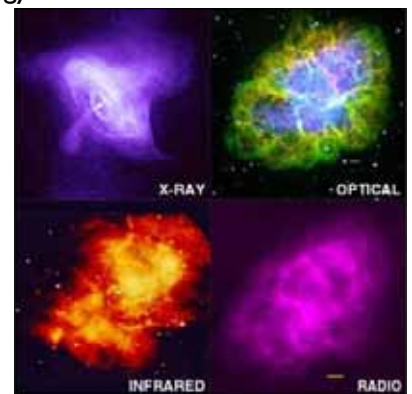
One of the most notable and important forms of cosmic



radiation is called, Cosmic Rays. Cosmic Rays were originally thought to strike the Earth as rays or a stream of particles, but it was later discovered that they hit the Earth as discrete individual packets of energy. The force of their contained energy of which is related to their electromagnetic source, so the various particles have different levels of energy associated with them.

Like the other biogenic migratory cycles such as food consumption, and photosynthesis, Cosmic rays represent a complete cycle as well.

When cosmic ray particles enter the Earth's atmosphere they collide with molecules, mainly oxygen and nitrogen, to produce a cascade of lighter particles, a so-called air-shower. These secondary particles cause a

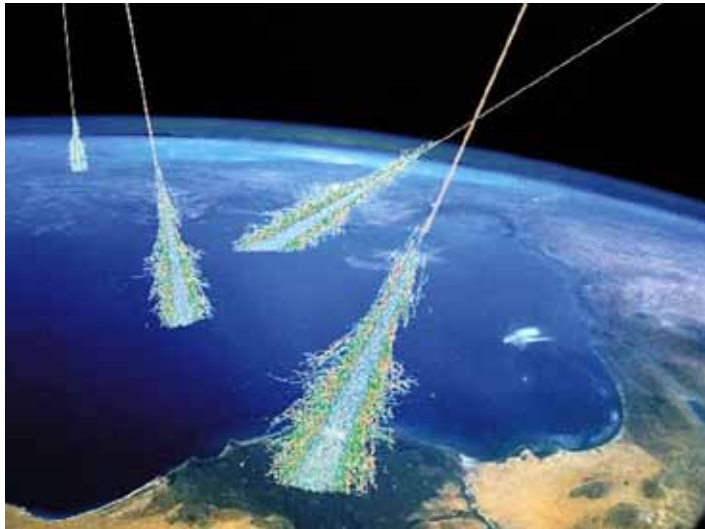


Four views of the Crab Nebula.

Discover Cosmic Radiation

number of different reactions within the three phase spaces; in the abiotic they can change the ratio of isotopes on the Earth's surface and in the biosphere potentially affect the biometric rhythms of many animal and plant species. In the noosphere, cosmic ray interaction with the lithosphere and biosphere can provide the potential for man to discover and harness previously unknown processes, which could also be used to fight crippling diseases such as cancers and other systemic disease in new ways.

The general idea is shown in this figure which depicts a cosmic ray shower produced by a high energy cosmic ray particle striking an atmospheric molecule.



This image is a simplified picture of an air shower: in reality, the number of particles created in an air shower event can reach in the billions, depending on the energy and chemical environment (i.e. atmospheric) of the primary particle.

We are showered constantly with these particles from outer space, and they in turn transform the atmospheric molecules into many different elements, and release different forms of energy. It has been well shown that cosmic radiation, particularly cosmic ray particles, play a crucial role in both global warming and glaciations. When the radiation intersects the various atmospheric molecules, it directly affects cloud formation.

Also the same type of cosmic radiation can affect different phase spaces differently, so it is important to look at cosmic radiation by the domain of its action, in terms of Vernadsky's three phase-spaces: the abiotic, the Biosphere; and the Noosphere.

For example, that ultra-violet light which is emitted from the sun as one of the many forms of radiation, affects all three phase spaces.

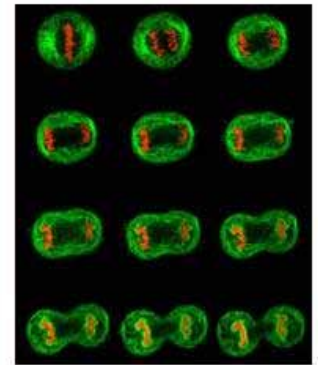
In the abiotic, UV light is active purely at breaking chemical bonds, in a purely chemical manner. It is also active in living processes, such as in the vision of many insects (you may see those UV lights in butcher shops with electrified grids to get rid of insects); and is regularly used by man in the study of various organic systems, like the UV fluorescence of bacteria.

The activity of cosmic radiation on living processes—and it is everywhere present—is very poorly studied at present.

For example, a Russian molecular biologist Alexander Gurwitsch demonstrated that mitosis in cells (cell splitting) during the development of an organism, can be induced amongst other cells in active mitosis phase. He found that the effect is caused by the radiation of UV light from one cell to another. He labelled this effect “mitogenic radiation” or

“M-rays”, at about 3 -100 electron volts energy level.

Further experiments have indicated the possibility that



cosmic radiation, under the right conditions, and in water, could emit what is called Cerenkov radiation, which is about 4-5eV—right at the low end and thus at the sweet spot of mitosis driven M-rays.

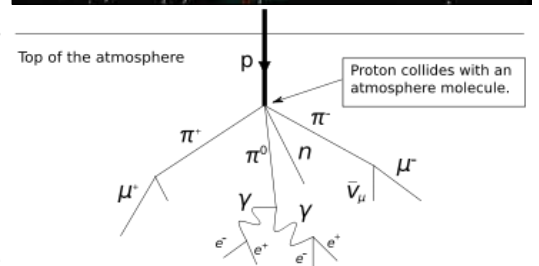
Cosmic Rays hit the earth every second, and cause nitrogen to produce sub-ozon layer ultraviolet radiation, which can reach up to 4 watts on the ground. This could be a source of M-Rays driving mitosis.



Other than the M-rays, there is clear evidence of a more-or-less behavioural influence on living organisms from other categories of cosmic radiation, under the topic of Circadian Rhythms. These are the rhythms in the biochemical, physiological, or behavioral processes of living entities, usually 24 hour cycles, and which are usually attributed to the daily cycle of the Sun and Moon.

Another major observation of cosmic radiation, is that it is never constant. The effects of cosmic radiation resulting from increasing and decreasing sun-spot or solar flare activity, show us that we should expect increases and decreases of all types of cosmic radiation, from sources other than the Sun.

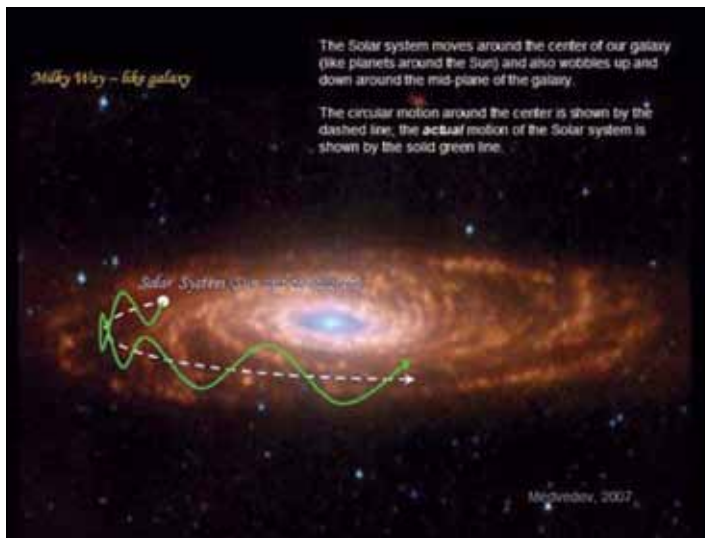
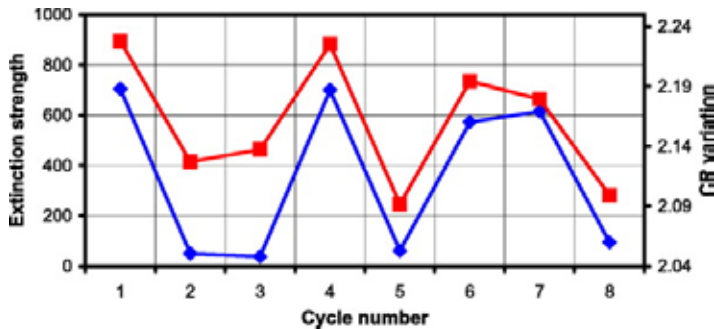
Such massive increases and decreases have been discovered, and have been shown to have had a major impact on the Biosphere.



Discover Cosmic Radiation

The Role of Cosmic Radiation in Evolutionary Processes

According to astrophysicist Mikhail Medvedev [pronounced Mied-VED-ev], there have been clear cycles of increase and decrease in fossil biodiversity (the number of distinct species living on the planet at any given moment) ranging from 62 to 140 million years, directly related to increases and decreases of cosmic radiation.



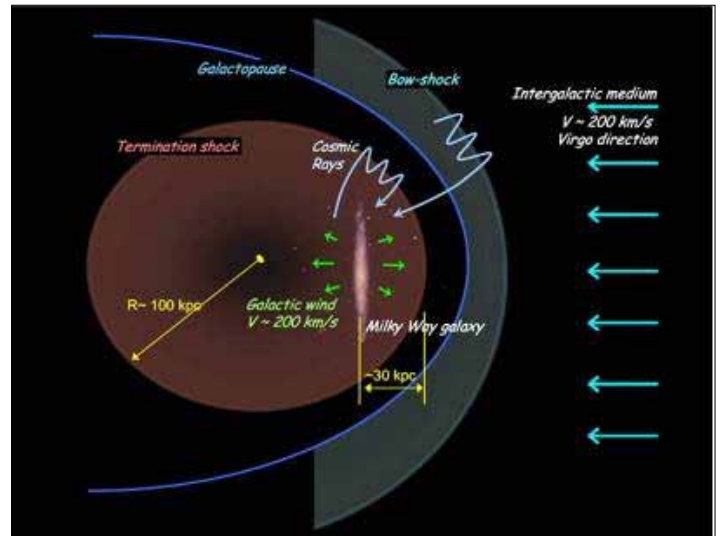
So much for Darwin and his idiotic hoax of “natural selection”! Firstly, the entire Solar System moves around the centre of our galaxy and bobs up and down, (green line) through the plane of the galaxy in a 62 million year cycle. The cosmic ray strength (red upper line) varies with each “bob”, due to the irregular distribution of cosmic ray matter through-out the galaxy but correlates directly the extinction strength (blue line), or the amount of fossil biodiversity.

The 140 million year cycle corresponds to the variations in cosmic ray activity influx predicted to occur from the Earth’s passage through our galaxies spiral arms, (dotted line) where the cosmic radiation is denser.

This correlates with a 140 million year cycle, of “icehouse” events on Earth, due to the fact that the increase in cosmic radiation causes massive global cooling or the “Snowball Earth” effect due to the increase in cloud cover formation. This predicted, periodic change in incident cosmic radiation has also been verified in examining the changes which has been verified by measuring the changing isotope ratios of Potassium 40/41 in iron meteorites.

Also, Medvedev hypothesised that due to the face-on motion of our galaxy through the intergalactic medium in the direction of the Virgo cluster, a shock front ought to be produced, creating high-energy cosmic rays, heavily irradiating this side of the galaxy.

What we can see from this is that our Biosphere is part of an organised system that extends to the farthest known sources of cosmic radiation, and it very well might be more accurate to



view cosmic radiation, generally and universally, as an aspect of life in the universe, and thus that life on Earth is itself inseparable from these radiations.

Given the vast array of unseen cosmic radiation, space is far from empty, but rather full, dynamic, and complex, and it affects the functions of the abiotic, biotic and noetic phase-spaces on Earth in many other ways as well. As Peter Martinson from the LYM, who has been researching cosmic radiation, stated, “The travellers on fusion-powered, accelerating flotilla will say that space, is indeed, anything but empty. It is as empty as the open ocean, upon which human navigators have mapped our shipping routes outside of which it is dangerous or impossible, to travel.”

The study of Cosmic radiation, and its implications opens up a vast spectrum for the discovery of new physical principles to enable mankind to extend the Noosphere and the Biosphere way out into space.

Conclusion:

Now this question of mastering the great challenges of interstellar travel and colonization of space forces us into a new geometry for mankind, into an entirely different way of thinking about the universe, and, even more importantly, of thinking about ourselves. That takes me back to what I said at the outset: that each of us in this room has to undergo a fundamental shift in our own inner, most intimate sense of identity, if we are going to have any hope of solving the life-or-death crisis now upon us, and, in particular, of getting 300 organisers into the field each week, which we must do if we are going to radically shift the direction of this country. Over the last year, LaRouche wrote extensively on this matter of changing one’s sense of self, particularly in a trilogy of articles beginning with “Economics as History: The Science of Physical Economy” in the September 18, 2009 EIR, where he discussed the shift from what he called a “Type A” personality, to a truly creative, “Type B” personality. The Type A personality being typical of the sort of blocked positivism which Bertrand Russell and the other British imperialists created for us, as actually synthetic, non-human identities, to create a fixed internal sense of self which is easily manipulated by the usual behaviourist tricks of offering pleasure or threatening pain, most typically by tying you up in your own fears. [We need to] change to the kind of personality who understands and takes immense personal joy in a true sense of immortality, of the knowledge that his or her inner self will live on by continuing to act, to change world history for the better for generations, even hundreds of millennia and longer, after his or own body has disintegrated.