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LaRouche's Strategic Defense of Earth

This is the edited presentation of Benjamin Deniston, a leader of the LaRouche PAC Scientific Research Team, to the Schiller Institute conference in Morristown, N.J. on Feb. 16, 2019, as prepared for delivery.

EIR/Stuart Lewis

Benjamin Deniston

I'm going to discuss mankind's future in space, but from a slightly different perspective—from the standpoint of the Strategic Defense of Earth from the threats and challenges posed to all mankind by the very nature of our existence in the Solar system and in our Galaxy beyond.

We are going to look at the threat of asteroid and comet impacts on the Earth, the danger of solar flares and electromagnetic pulses, and the challenges, the *real* challenges of climate change, which are the natural climate variations that mankind has to deal with to survive.

We tend to think of ourselves as living on Earth, with Earthly origins, and Earthly destinies. That mentality is no longer going to cut it. We don't live on Earth, we live in the Solar system, and in our Galaxy.

Mankind has a choice: we can rise to that level—to become a species of the Solar system, an inhabitant of the Galaxy—or we can deny that destiny and ensure our own extinction. This is a question about the true nature of mankind.

LaRouche's SDI Principle

The Strategic Defense of Earth, or SDE, was named in reference to the Strategic Defense Initiative, the SDI. If we wish to truly understand the SDE, we have to look to Lyndon LaRouche's unique conception for the policy of the SDI. Mr. LaRouche was one of the original authors of the SDI policy. He operated as a backchannel between President Reagan and the Soviet leadership.

References to the SDI continue to have existential importance for today. Still today the world is threatened by geopolitical conflicts, and the looming danger that tensions between the United States and Russia and China could be pushed over the brink, leading to full-scale nuclear war and civilization's likely annihilation. The fundamental question remains the same today, as it was when LaRouche authored his conception of the SDI: On what scientific basis is it possible to sustain peace among the leading powers of the planet?

It is impossible to answer this question without also understanding the true nature of the human species, the scientific distinction which separates mankind from all other forms of life on this planet—and that's the secret of Lyndon LaRouche's unique and superior policy.

I would like to briefly highlight his March 30, 1984 Draft Memorandum, "The LaRouche Doctrine: Draft Memorandum of Agreement between the United States and the U.S.S.R."

In that memorandum, Mr. LaRouche outlined the full breadth and scope of his SDI policy, proposing a policy for U.S.-Soviet relations. It is composed of seven articles, and it's not until Article 5—halfway through the document—that military policy and missile defense are even mentioned.

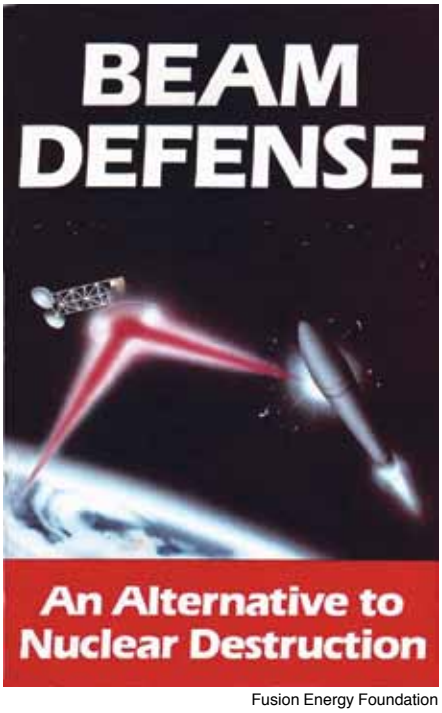
Towards the end of Article 5, LaRouche writes:

> If both powers and their allies were to deploy simultaneously the "strategic" and "tactical" defensive systems implicit in "new physical principles" [LaRouche's SDI program], the abrupt shift to overwhelming advantage of the defense would raise qualitatively the level of threshold for general warfare.... For a significant period of time, the defense would enjoy approximately an order of magnitude of superiority, man for man, over the offense, relative to the previous state of affairs ...
>
> This would permit negotiation of a tempo-

rary solution to the imminence of a "Launch on Warning" posture by both powers: a solution which might persist for 10, 15 years, or longer. The true solution must be found in the domain of politics and economics, and the further shaping of military relations between the powers must produce military policies by each coherent with the direction of development of the needed political and economic solutions.

Articles 1-4 of this memorandum stipulate the leading, principled features of the required political and economic solutions.

What are the first four articles of the LaRouche Doctrine? They define the scientific nature of technological progress, how mankind can uniquely increase its potential relative population-density, and how to define the economic and monetary policies that ensure these anti-entropic results.



Fusion Energy Foundation

Cover of Beam Defense*, a book published by the Fusion Energy Foundation in 1983.*

The General Conditions for Peace

As Mr. LaRouche states in the very opening of Article 1 (General conditions for peace):

> The political foundation for durable peace must be: a) The unconditional sovereignty of each and all nation-states, and b) Cooperation among sovereign nation-states to the effect of promoting unlimited opportunities to participate in the benefits of technological progress, to the mutual benefit of each and all.

The genius of LaRouche's SDI program was the science-driver characteristic. The directed energy systems to defeat nuclear missiles required major technological breakthroughs, and if these technologies had been implemented in the civilian U.S. and Soviet economies, they would have generated massive increases in the productive powers of labor, and in the potential relative population-density of both economies.

Combining this science driver program with a program of technology transfer to the formerly colonized world—allowing the so-called Third World to become modern, industrialized, and productive economies, participating in these advanced technologies—LaRouche knew this was the only true, scientific, and lasting basis for peace.

The specifics of directed energy technologies for missile defense were just a subsumed element of the true policy, while the full realization of the policies required for peace demanded the continuation of the most advanced science driver policies—requiring the challenges posed by mankind's conquest of space.

As Mr. LaRouche stated near the conclusion of the LaRouche Doctrine,

> The powers jointly agree upon the adoption of two tasks as the common interest of mankind, as well as the specific interest of each of the two powers: 1) The establishment of full economic equity respecting the conditions of individual life in all nations of this planet during a period of not more than 50 years; 2) Man's exploration and colonization of nearby space as the continuing common objective and interest of mankind during and beyond the completion of the first task. The adoption of these two working-goals as the common task and respective interest in common of the two powers and other cooperating nations, constitutes the central point of reference for erosion of the potential political and economic causes of warfare between the powers.

As fundamental, underlying principles, these remain just as valid today as they were when LaRouche authored this document 35 years ago.

From SDI to SDE

Even though LaRouche's SDI program at the time was not successfully implemented, echoes of this perspective continued following the fall of the Soviet Union. Interestingly, it was right around this time that leading scientific figures began to realize the active

threat of asteroid and comet impacts with Earth.

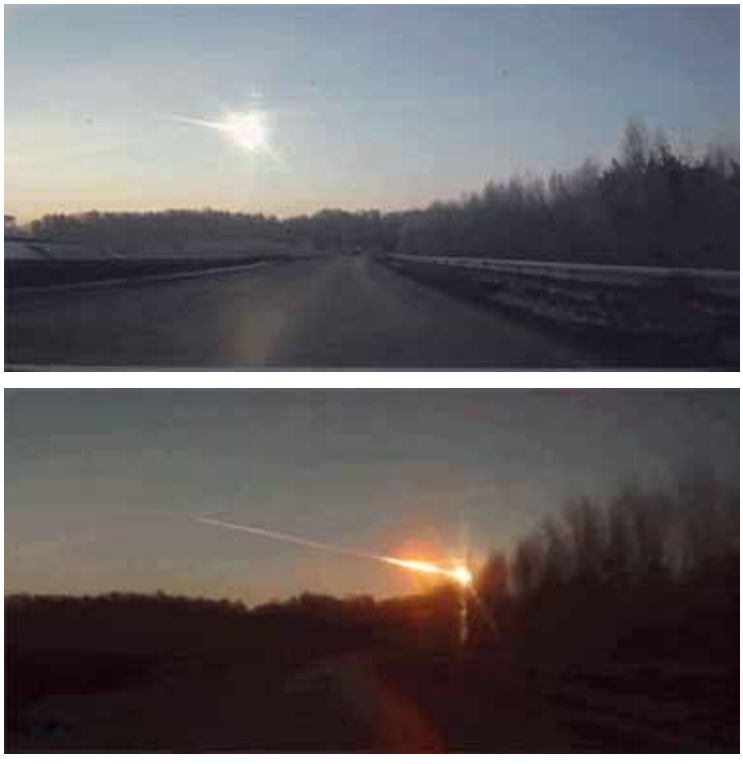
Veterans of the SDI and parallel efforts in Russia came together around joint U.S.-Russian cooperation in defending Earth from incoming asteroids and comets. Among other locations, a series of high-level international scientific conferences on the subject was held at the Los Alamos and Lawrence Livermore national labs in the United States, in Erice, Italy, and in Russia's formerly secret science city of Chelyabinsk.

Many of these discussions were at the high-technology laboratories involved in missile and nuclear weapons research and development.

Towards the end of the 1990s, explicit support for an SDE policy faded away, although the idea—like any truthful principle—remained just beneath the surface.

In 2011, Russia-U.S. cooperation in asteroid defense was again put on the table, this time by Russia's Dmitry Rogozin—who at the time was acting as a special envoy to NATO on the subject of missile defense. The Russian offer was clear: Rather than supporting the eastward expansion of NATO right up to Russia's borders—threatening an outbreak of nuclear war—the United States should work with Russia on a joint program of missile defense and the defense of all Earth against the threat of asteroids and comets.

FIGURE 1



Explosion of a small asteroid over Chelyabinsk, Russia, on Feb. 15, 2013.

This offer was given the name SDE, the Strategic Defense of Earth.

The offer, combined with the February 15, 2013 surprise explosion of a relatively small asteroid over the city of Chelyabinsk, Russia [**Figure 1**], led to an array of high-level Russian officials putting their support behind the SDE idea.

So, the idea for joint cooperation in the strategic defense of Earth has a long and important history and is rooted in the LaRouche Doctrine *based on the scientific principles of a lasting strategic peace*.

Today's Extended SDE

Let's now look at of the Strategic Defense of Earth from the broadest perspective. In doing so, we define a complete coherence between the joint defense aspects of LaRouche's SDI, and LaRouche's deeper insights into the necessity of space colonization and related scientific and technological developments.

The threat of asteroid and comet impacts is very real and very dangerous. Although this threat has been talked about, as we have seen, the commitment among nations to establish joint institutions and shared observational data and technologies to address the threat, has yet to occur. Mankind is slowly waking up to the existence of additional existential threats, including solar flares and electromagnetic pulses, natural climate change, and even the frontiers of our relation to our Galaxy.

I will now discuss each of these threats.

Asteroids

Starting with asteroids, there has been some success, led by NASA, in detecting and tracking some of the largest asteroids in the inner Solar system. However, we've barely scratched the surface.

As was demonstrated by the surprise explosion of a small asteroid over Chelyabinsk in 2013, we still do not know where the vast majority of potentially hazardous asteroids are.

This is especially true regarding the smaller and medium-sized asteroids, objects that could easily wipe out an entire city, or even devastate an entire country or

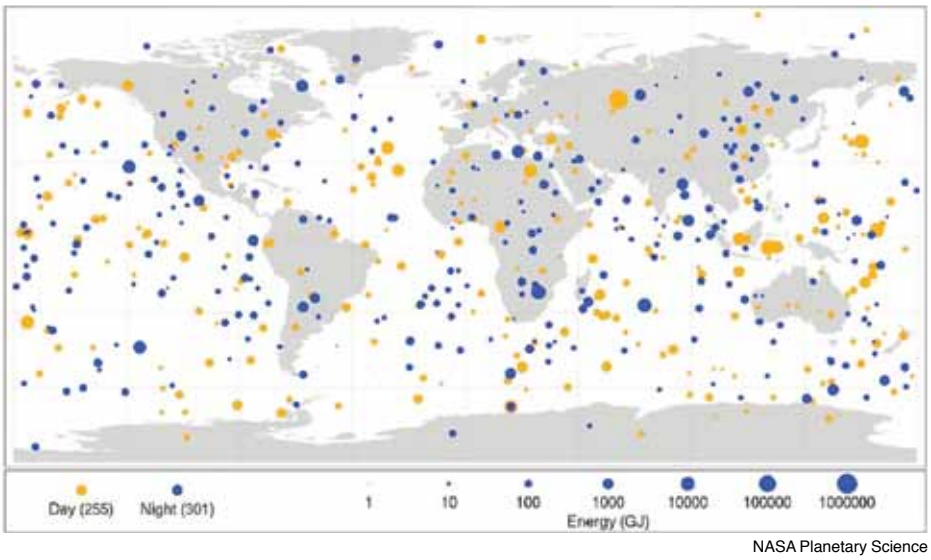
large portions of a continent. For objects of this small to medium size range, it's estimated that there are hundreds of thousands out there, which we presently know nothing about.

For example, a few weeks ago, on February 4, NASA detected a new asteroid that was only seven days away from a close pass by the Earth. They didn't even know it was there until a couple of weeks ago. If it happened to have been on an impact trajectory, mankind would have had absolutely no defense.

The map of Bolide events 1994-2013 [**Figure 2**] shows a large number of small asteroid explosions in the upper atmosphere, from the 1990s up until recently. None were large enough to be felt on the surface of the Earth, but many of them, nevertheless, release the energy equivalent of small nuclear bombs, thus demonstrating that such events are regular occurrences, and it's only a matter of time until a large body strikes us—that is, unless we're prepared to stop it.

Currently, we have absolutely zero defense for such an event. It is beyond time for the United States, Russia, China, and other leading powers to create shared capabilities for the defense of Earth from such threats.

FIGURE 2
Bolide Events 1994-2013
(Small asteroids that disintegrated in the Earth's atmosphere)



NASA Planetary Science

Comets

Asteroids are not the only issue, nor even the most serious. We also have the even more challenging threat of comets—which tend to be significantly larger than asteroids, with different orbital characteristics, in the range of a few kilometers in size, but which are nearly impossible to detect with our current systems, as the majority of them reside way out in the farthest reaches of our Solar system. One (or more) of these massive objects could be no more than 5 or 10 years away from an impact on the Earth right now. With the current state of our capabilities and understanding we simply don't know.

An example: On January 30, 1996, scientists discovered a new comet, which they named C/1996 B2, originating in the farthest outskirts of our Solar system. By the time they saw this comet, it was only two months away from what, fortunately, turned out to be only a close pass by the Earth. If that comet happened to have been on an impact trajectory, we would have had no ability to stop it. An impact from an object of this size, coming at us at around 480 km per second, would have been on the border line of an extinction-level event. It'll be back in about 70,000 years.

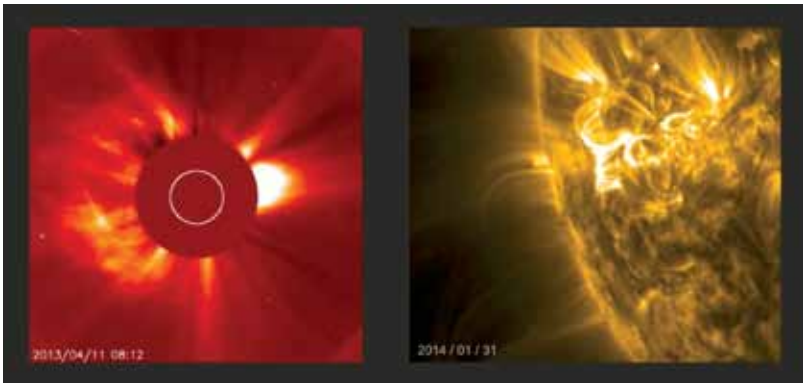
Rogue Planets and More

Beyond asteroids and comets, we face even more exotic threats. To the best of their knowledge, scientists expect that there are countless "rogue planets" out there that have been ejected from their respective stellar systems and are flying randomly around the galaxy. Were a rogue planet to simply pass through our solar system—even without hitting anything—its gravitational effects could substantially alter Earth's orbit around the Sun, rapidly and dramatically altering our climate.

In order for us to even have the ability to competently assess such a threat, we will require a far greater understanding of our nearby galactic environment. Stepping away from asteroids, comets, and other miscellaneous planetary bodies, we will now take a look at yet another category of danger: cosmic radiation.

Only relatively recently have scientists grasped the dangers posed by large solar flares [**Figure 3**], and the explosive release of plasma blobs from the Sun [coronal mass ejections] that can generate electromagnetic

FIGURE 3



NASA/SOHO

A solar flare event (l.), and loops of plasma reflecting solar magnetic activity (r.).

pulses impacting the Earth's magnetic field.

For example, in 1859, Earth was struck by a massive outburst of solar activity. The coronal mass ejection hit Earth's magnetosphere, generating one of the largest geomagnetic storms on record. Auroras were visible as far south as Florida, bright enough to permit the reading a book outside in the middle of the night. Telegraph operators at the time reported received electric shocks, as the electromagnetic surges in the Earth transferred to their telegraph wires. This was later named the Carrington Event.

A similar event today would be catastrophic for the electric power infrastructure throughout the high latitudes. Long-distance, high voltage electric transmission lines are particularly vulnerable, and the surges from such a solar-driven electromagnetic pulse would destroy the largest and most difficult to replace electric transformers. Were a Carrington Event to happen today, we could have dozens of major metropolitan areas without power for months, creating a humanitarian catastrophe.

And solar events of this size are really not all that infrequent. In 2012 a solar ejection occurred comparable to the one that caused the Carrington Event. It missed the Earth by a mere couple of weeks. The vast majority of the world's population was completely ignorant while we narrowly missed catastrophe; the vast majority to this day don't even know that this happened.

These singular and large explosive events represent one end of that challenge, but we also have much to learn about slower and more gradual changes that occur over the course of decades and centuries. Some of the most significant climate change in relatively recent human history corresponds directly to changes in solar activity.

The so-called Little Ice Age from around 1645 to 1715 coincided with a period of weakened solar activity known as the Maunder Minimum.

Regional or global cooling of this scale, even over the course of decades, will have major consequences for agricultural production in various parts of the world. A few independent scientific teams globally think that we could be heading into a similar period of solar weakening during this century [**Figure 4**].

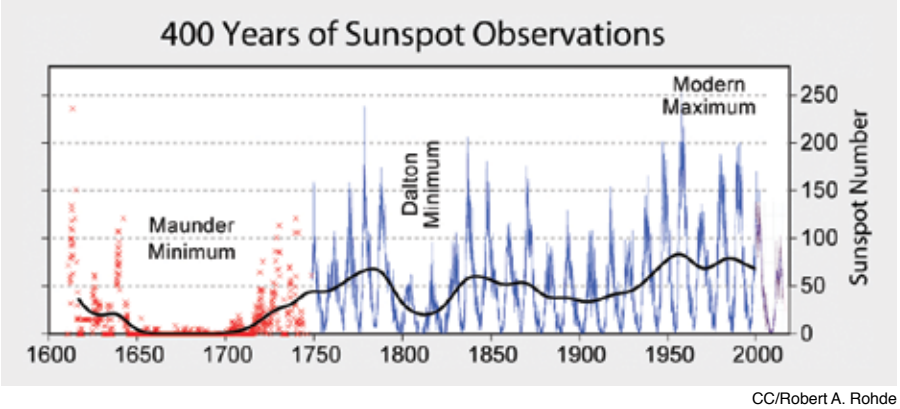
We have to better understand our own Sun, which also requires studying other stars similar to our own—to learn what we can expect, and how to prepare in advance to respond to trouble.

Galactic Relations

From here we can also briefly recognize changes on a truly grand scale, those corresponding to the changing relation of our Solar system to our Galaxy [**Figure 5**]. Although these changes are measured in time scales of millions of years, we have provocative evidence indicating that, somehow, the evolutionary development of life on Earth may reflect some causal relation to changes in our galactic position.

These galactic relations challenge our most fundamental understanding of science. How shall we come to

FIGURE 4



CC/Robert A. Rohde

FIGURE 5

NASA/ESA

NGC 2683, a spiral galaxy, observed by the Hubble Space Telescope.

understand gravitational anomalies attributed to so-called dark matter, the astronomical enigmas known as supermassive black holes, and the dynamics and organization of entire galactic systems? We stand at the brink of new eras of science, defined by the higher-order levels of physics associated with galactic systems.

Today's Science-Driver Missions

We've covered quite a range of subjects encompassed by the Strategic Defense of Earth. The threat of asteroid and comet impacts, gravitational interactions from rogue planets, electromagnetic pulses generated by solar mass ejections, Sun-driven climate change, and some deep questions about the effect our Galaxy has on life on Earth and other processes here on Earth.

This may sound like a scattered array of different subjects. There is, however, really one unifying principle underlying all of this, which is that the future existence of mankind requires eliminating the conception that we are simply of an earthly existence. Mankind's destiny requires rising to the level of being a species of the Solar system, and a species of the Galaxy beyond.

And this brings us back to Lyndon LaRouche's principle—the true basis for a sustainable peace. The idea of the SDE is that leading nations must bring together the greatest scientific and technological capabilities in pursuit of revolutionary, new technological breakthroughs that will give mankind the capability to handle all the threats I have spoken of, and more. And these technologies must not be hidden away in military domains, but must be made readily, freely available for the application to economies worldwide.

We should be thinking about a complete revolution in mankind's relation to the Solar system, and what technologies would be required for that. We need things like designs for vacuum-tube, magnetic-levitation space launch systems, which can lower the cost putting payloads into orbit by two orders of magnitude, completely revolutionizing mankind's access to space. If we want to be a space-faring species, we need to look at revolutionary ways of having much more rapid and large-scale access to space.

As was discussed earlier, we need fusion propulsion technologies, allowing continuously powered flight—completely moving away from these incredibly slow orbital trajectories and really opening up the entire Solar system to rapid and dynamic access by mankind. We need the capabilities to mine, process, and even manufacture resources directly from the material on other planetary bodies. Perhaps one of the most intriguing initial examples is the unique potential to mine helium-3, as a fusion fuel, from the surface of the Moon.

The space infrastructure needed to really support manned outposts on the Moon and eventually Mars—just as LaRouche outlined in his 1980s proposals for a Moon-Mars colonization program—is another critical element required.

These are the types of crash programs that are required for a true strategic defense of Earth. We have to give mankind an entirely new platform of economic potential and activity throughout the Solar system, allowing us to handle the types of threats discussed earlier, while, at the same time forcing the required rapid rates of technological breakthroughs that are needed to ensure, as Lyndon LaRouche brilliantly called for, "Cooperation among sovereign nation-states to the effect of promoting unlimited opportunities to participate in the benefits of technological progress, to the mutual benefit of each and all." This is what Mr. LaRouche identified as the absolutely necessary precondition for peace.