

THE LAROUCHEPAC WEEKLY REPORT

## A Scientific Pedagogy For the Human Mind

*Here is the LaRouchePAC New Paradigm for Mankind Weekly Report of Jan. 8, 2014 (<http://larouchepac.com/>), hosted by Jason Ross of the LPAC Science Research Team, and featuring a dialogue between Lyndon LaRouche and Liona Fan-Chiang, also of the Science Research Team.*

**Jason Ross:** Mr. LaRouche, you just finished yesterday, a paper called “Against Dictatorship!” (see this week’s *Feature*), in which you began by talking about the toleration of practicality, the dictatorship of toleration of practicality, bureaucracy, the toleration of a Zeusian outlook as opposed to that of Prometheus. Later, you spoke in your paper about the evidence for the reality of Zeus and Prometheus, not being a mythological story, not just a fairy tale, like a monster underneath your bed or something, but an actual true piece of history, and you point to the evidence that we see in physical economy to demonstrate that. That, we as human beings, through our use of physical economy, physical chemistry, unlike animals, we’re able to react to a future. We can react to the future that doesn’t yet exist, that we foresee, that we intend, and we’re able to respond to that. Many people today don’t do that, but that is the human characteristic, to respond to the future, not the past.

Now if you look at physical chemistry over time, and you cited the *Handbook of Chemistry in Physics*. It’s taken on an increasingly inous form over the years, and it’s got its problems, but a very interesting thing to

look at in it, is how the book has changed, what new chapters, what new considerations are in it, what new measurements are made, what new characteristics of materials are even known by us, to even think about measuring and putting in a handbook.

You know, we reshape our physical world. The earliest example of this, really, is the use of fire, and the first truly major, huge step forward was the advent of metallurgy. Metals were found in nature; you can find—today it’s very rare—but in ancient times, you could find copper, like you might find any other rock today; gold existed in its native state; even iron was found in meteorites that had made their way to Earth. So metals were not unknown, but the amazing step of taking an ore, like malachite, it’s a green stone; Egyptians used it for eyeshadow. But you can transform malachite, not just into a cosmetic, you can turn it into copper, which almost seems magical, to think about turning a rock into a metal.

This increasing mastery brought us to a stage where, to a larger and larger degree, the world that we interact with, the *man-made* world that we interact with, increasingly is made up of substances that never existed before our time, mirroring the development in the biosphere of higher forms of life that bring more and more elements of the Periodic Table into biological roles; that bring new types of physical existences even into their bones: the formation of bones in skeletons, for example.

But all of this represents a fight between the nonfic-



*“Science really is a study of the human mind,” and not a matter of “learning” and regurgitating facts from textbooks, declared Liona Fan-Chiang. “This is one of the best kinds of pedagogy that I’ve ever heard in any classroom!” Lyndon LaRouche exclaimed in response to her presentation.*

tional Zeus, the gods of Olympus, and the Promethean power of mankind, the great joy in creation that is snuffed out and unexperienced, by Zeus, by the oligarchy.

Last week, I read a part of Aeschylus’ play *Prometheus Bound*, and also Goethe, who wrote a poem *Prometheus*, which is so much better in German, that I don’t really want to read much of it in English, except to recommend that you read it in German along with English; but he says, “I know nothing poorer / Under the Sun than you gods.” That what he’s able to do, what his powerful “glowing heart” is able to do, what his mind is able to accomplish, that is something to have pride in, not the static world of the gods of Olympus, who keep things the same and demand obedience. He says at the end—I will read the last stanza—Prometheus says:

Here I sit, and form mortals  
 In my own image,  
 A race like myself,  
 To suffer, to weep,  
 To joy and to be glad,  
 And to respect you not  
 As I.

This contempt, this disdain, this defiance, this slight regard that Prometheus shows for Zeus, is a sign of a very healthy mental state. This is what the practice of psychology, and the practice of society need to aim for in human beings: The right mental state is a contempt for Zeus, a scorn for the oligarchy, and a growing awareness of the powers of one’s own mind, to reshape the world, to improve it, and to improve our power in it, and to discover more about it.

So today, Liona has a presentation on this subject. Let me just say one more thing, first. Which is that, towards the conclusion of your paper, Lyn, you write about the exciting prospects of lunar helium-3. If you look at the stages of development of mankind, this is where we now have to go. The Sun has provided the

Earth with power and light and the ability for photosynthesis for billions of years, in addition to forming the Earth. But now, a much higher form of solar power, rather than capturing the paltry light coming from the Sun, is to capture the helium-3 fuel from the Sun, as deposited on the Moon, for example, and then make our own Suns: Use that power from the Sun, use the fuel from the Sun directly, in the form of thermonuclear fusion.

So, Liona, what do you have for us?

### The Periodic Table

**Liona Fan-Chiang:** If we had an educational system which taught our students, our children to be Prometheans, I think the “-ologies” would actually disappear. Because the study of the human mind, which is now allocated to these psychologies, sociologies, and so on, would largely be already encapsulated in your study of science.

And what I’d like to do, is to take up the way that our education system works, first from the standpoint of the development of the “the nuclear age,” and where I want to start is here (**Figure 1**). Some people might recognize it; most people probably will not, because

FIGURE 1  
Mendeleev's Periodic Table

Reihen	Gruppe I. — R <sup>0</sup>	Gruppe II. — R <sup>0</sup>	Gruppe III. — R <sup>0</sup> <sup>3</sup>	Gruppe IV. RH <sup>4</sup> R <sup>0</sup> <sup>4</sup>	Gruppe V. RH <sup>5</sup> R <sup>0</sup> <sup>5</sup>	Gruppe VI. RH <sup>6</sup> R <sup>0</sup> <sup>6</sup>	Gruppe VII. RH R <sup>0</sup> <sup>7</sup>	Gruppe VIII. — R <sup>0</sup> <sup>4</sup>
1	H=1							
2	Li=7	Be=9,4	B=11	C=12	N=14	O=16	F=19	
3	Na=23	Mg=24	Al=27,8	Si=28	P=31	S=32	Cl=35,5	
4	K=39	Ca=40	—=44	Ti=48	V=51	Cr=52	Mn=55	Fe=56, Co=59, Ni=59, Cu=63.
5	(Cu=63)	Zn=65	—=68	—=72	As=75	Se=78	Br=80	
6	Rb=86	Sr=87	?Yt=88	Zr=90	Nb=94	Mo=96	—=100	Ru=104, Rh=104, Pd=106, Ag=108.
7	(Ag=108)	Cd=112	In=113	Sn=118	Sb=122	Te=125	J=127	
8	Cs=133	Ba=137	?Di=138	?Ce=140	—	—	—	— — — —
9	(—)	—	—	—	—	—	—	
10	—	—	?Er=178	?La=180	Ta=182	W=184	—	Os=195, Ir=197, Pt=198, Au=199.
11	(Au=199)	Hg=200	Tl=204	Pb=207	Bi=208	—	—	
12	—	—	—	Th=231	—	U=240	—	— — — —



Mendeleev Museum-Archive,  
St. Petersburg State University  
Dmitri Mendeleev, the founder  
of nuclear physics (portrait by  
Ivan N. Kramskoy, 1878).

Wikimedia Commons

you don't see it very often: This is actually the first Periodic Table. This is the Periodic Table that was drafted by Dmitri Mendeleev [1834-1907], and it was a very amazing thing, because prior to this, you didn't have a lot of people who were studying the different characteristics of elements. The important thing about this Periodic Table is that, it's not describing what things look like, but rather, the relationship of everything to each other, *and* the relationship based on action.

And so these are, from several experiments, the active power of each element. And therefore, he had a certain insight into something that was *beyond*, something that was more universal to matter, and therefore he could place them in an order. Now, the important thing also, is that you see that there are these blank places, so, next to calcium, there's a little line, a blank. There's a number there, but there's no letter. And there are several places along here—you'll see in this last column—there are four dashes and so on, and what these represent are elements which had not been discovered, but technically have, by him. They've never been seen, they've never been sensed in any way, and yet, they are known in principle to Mendeleev.

Now, this is the Periodic Table as it is known today (Figure 2). And it's much more filled out: There are elements that weren't on his table, most of which are beyond uranium; they're transuranic. The transuranic ones beyond 92, a large number of them—and for

people who are young today, you may have heard, just two years ago, for example, we had two elements being discovered. So you have elements being discovered all the time, and they're generally part of the same age. In other words, they're produced in a similar way; they're really all products of the nuclear age.

But even before then, most people don't know that there were at least four elements which were suburanic; they were pre-uranium, they were in Mendeleev's Table, but were not discovered until the 1930s and '40s! The first one of that bunch was technetium. Technetium actually means "artificial," because this is something, again, that was not found in so-called nature. But because of our increased understanding of the atom, of the nucleus, and of its power—and the important thing was, the ability to transform.

And then, once we understood that atoms were able to be transformed, and were able to transform themselves, for example, in decay and other things, we were able to use that transformative process to actively transform materials, and use that for our own purpose. And so, for example, technetium is used for medical purposes: tens of millions of medical procedures, annually, that we use this material for.

So this is a material that we produced. Now it's not unnatural—the potential for it was not artificial in that sense—but this element would not exist in any substantial amount, and definitely not enough for our use, without human beings creating this; without human beings going through that process of first understanding a nat-

FIGURE 2  
**Periodic Table of Elements**

1																	2															
	1 H																	2 He														
2	3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne														
3	11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar														
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr														
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe														
6	55 Cs	56 Ba	57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
7	87 Fr	88 Ra	89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Uut	114 Fl	115 Uup	116 Lv	117 Uus	118 Uuo
Lanthanides			57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu															
Actinides			89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr															

ural process, and then wielding that understanding to change the universe.

Same thing with astatine (85), another material, again which—and this is a funny one; we haven’t actually characterized its physical characteristics yet, because there hasn’t been enough produced to be able to see its color, and whether it’s a metal in its structure and so on. And so, again, non-describable to the five senses, and yet, we’re able to use this for medical diagnoses.

And one more I want to point out, is promethium, aptly named, one of these four [suburanic elements], promethium-61 named after Prometheus. And people knew this was a new age.

### Radioactivity

And I want to show on more thing, which is this (Figure 3): Only if you’ve ever seen it before, would you know what this is! Let me step back one step, which is that, the nuclear age had a couple of parallel moves. One was the development of, the understanding of radioactivity and the understanding that that was a change in what we were considering as immutable elements; two was Einstein’s  $E=mc^2$ , really, the underlying nature of what we considered matter was. And three, was our continual increase of understanding of the cosmos, and so, our understanding of the so-called filled space,

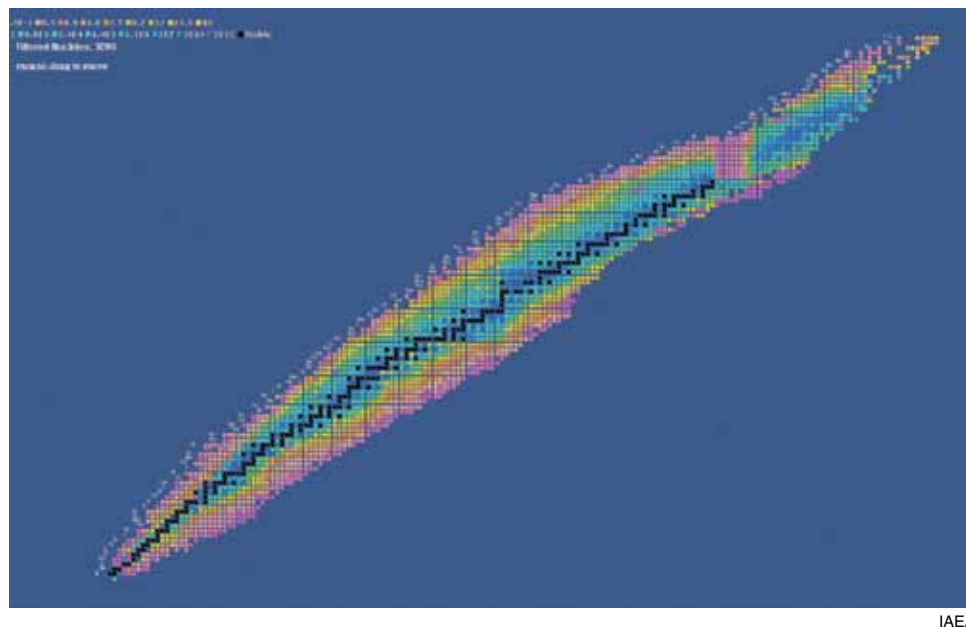
which we collected as cosmic radiation and things like that, was absolutely integral to this whole age that we considered the nuclear age.

But during this time we also found that each chemical element which still had these characteristics that Mendeleev ordered, also had, sometimes five, sometimes even ten or more analogues, “isotopes,” we called them. Which is, they had the same place chemically in that Periodic Table, yet they had completely different characteristics. So you had these different variations of lead.

And a funny story is: Lead is a decay product, one of the decay products. For example, thorium, if left long enough, will transform itself, and then that will transform itself, and so on, down a chain, until it gets to lead. And for quite a while, this form of lead, lead-208, was called “thorium-d.” And people knew after some investigation, that this was called “lead,” and that this was a form of lead, chemically. But we still called it thorium-d for a while, because its kinship was much closer to thorium than it was to lead, even though you might call it lead, and it seems similar to it, but in a process it was closer to thorium.

It reminds me of the harmonic scale, for example. In harmonic progression, the fifth, for example would be closer in kinship than the second to the tonic.

FIGURE 3  
Table of Nuclides



But they started to get a sense of this process of transformation, and then, during this welding then, for example, to create, to use, fission and fusion, as for, example, our discussion of using helium-3 as a fusion fuel.

Now, on this table (Figure 3), it's very hard to see, but the black ones are stable elements, so many of them we previously had discovered.

**Ross:** What does the position mean? Up, down, left, right? What does it represent?

**Fan-Chiang:** To the right . . .

**Lyndon LaRouche:** Is it time?

**Fan-Chiang:** No, to the right are actually neutrons, increase in neutrons, and up is the increase in protons. In very, very small letters in here, you'll see that the elements are listed along one edge, and then everything along one row is all of that element.

**LaRouche:** Ah! Very clear, very clear.

**Fan-Chiang:** But now, the black ones are stable, which means that everything else is not. Everything else, is constantly in transformation. Now, the black ones also are in transformation, but at a very, very, slow, slow rate.

Another thing to point out is that the upper portion, which are elements, mostly transuranic, post-uranium, are completely unstable. Also, technetium was the first element that we made which had no stable isotopes.

And this is important, because it may have existed in some larger amount, at some point, but because it transforms itself so quickly, it no longer exists. I think the longest half-life it has is a few million years. Now a few million years sounds like a long time, but not in history. . .

**Ross:** Not in the history of the Earth, at least!

**Fan-Chiang:** Not in the history of the Earth, right: The dinosaurs were 65 million years ago! So, even between the dinosaurs and now, that would have disappeared. So these are things that were created by us, by human beings, as nature cre-

ates them. Also created for the purpose of advancing mankind, and thus advancing the capability to make those advances.

And so, this is actually a very exciting, and I think necessary, arc, for all students to understand, not just nuclear scientists, or chemists, so-called, which is actually a very small percentage of the entire population.

### Science Pedagogy

Now, I didn't bring these two books, but I was reading a few books to get a sense of some of this history, and realized that there are two very disparate ways of communicating this history. One of them, a book from 1958, is a very insightful book, but of course, it goes back to 1958, so, there's half a century of development that I had to catch up on. So then I picked up a book from 2003.

Now the first book starts off with the history of X-rays, it starts off with [Ernest] Rutherford [nuclear physicist, 1871-1947]; it starts off with this paradox that had come about in the beginning of the 20th Century: that there seemed to be a violation of the law of "conservation of energy" for example, or "conservation of matter," and so on. And it began with all these paradoxes which then launched several generations into investigating a completely new world, basically, to us, a completely new world.

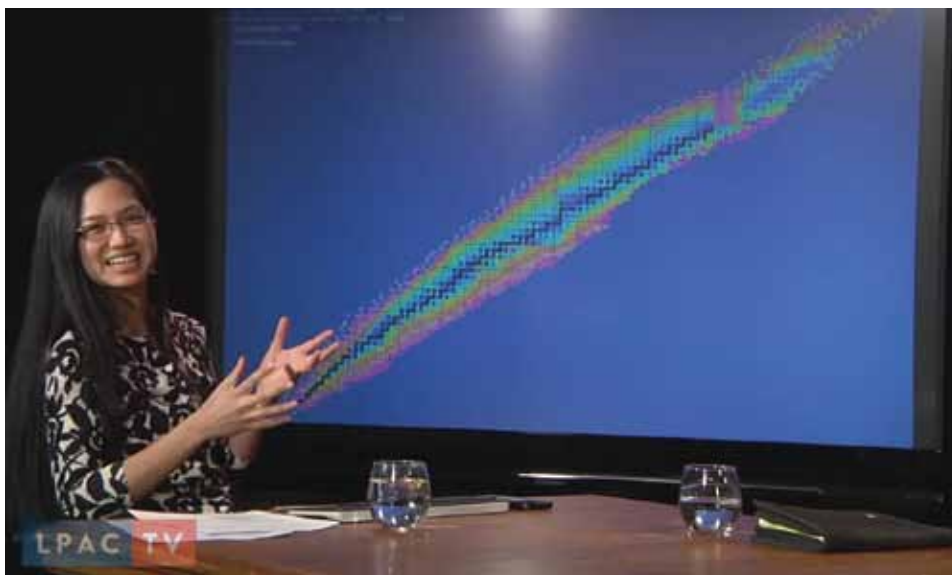
And the second book that I picked up, started with “there are 92 elements before uranium”; each of them has valence electrons, and so on. And it actually says in the preface, that there are things in here which we can only explain by mathematics. And because we’re not going to go through all the mathematics, there are certain things which I will point out which you will just have to swallow—very explicitly!

**LaRouche:** Sounds like MIT.

**Fan-Chiang:** Well, unfortunately, it’s much further than just MIT. And there are two things I want to point out: Ask yourself two questions when you’re reading a book. Both of these books assume that the reader is a beginner, a novice, so these are both books that are trying to take you through a subject you’ve never really approached. For example, the 2003 one says, an atom has electrons and protons, and so on; they both start assuming you know nothing.

But the first question to ask is, what do these two authors think about your mind? In other words, who do they think they’re talking to? They both think that you don’t know anything about the subject, but otherwise, who do they think they’re talking to? And the first one, the earlier one has assumed about your mind, that your mind is able to go through a discovery. And the second one assumes that you can’t. The second one assumes, not only that you can’t go through a discovery, but it does not need to consider the human mind as a subject of its investigation. Because, as you see, a series of definitions like that, leaves out the substance of science.

Because remember: Science really is a study of the human mind. A lot of people say that science is the study of nature, but, one, they leave out human beings as part of nature; and two, the principles that we discover—a lot of them existed prior to human beings discovering them! So to say that science then, is that, means that it’s never new.



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*When studying science, Fan-Chiang said, “you get all sorts of explanations of why you don’t need to read the original works, you don’t need to study history, we don’t have enough time—I’ve heard all these arguments. . . . Why would you want to learn all these mistakes of other people?”, they say.*

But science really is our ability to both discover these principles, and then use them for our means; to then discover more principles, and to increase the power of not just human beings, but of those principles of the universe. So that’s one aspect of it, leaving the human mind out.

Now, the second question to ask yourself, when picking up any of these textbooks, or novice books, is to ask, what is the effect on the human mind of shaping your textbooks in this way?

**LaRouche:** Aha, beautiful!

**Fan-Chiang:** What kind of population do you create when you do this?

Now, one, is this newer, more modern, so-called, way of writing a textbook, really creates somebody who is just learning something to be sort of “covering the subject,” covering all the bases. But is that really what type of person we want to turn out into society? Or, do you want to turn out someone into society who is intimately integrated into mankind as a whole, into that productive process, into that entire process of history, which includes past, present, and future, just as Mendeleev had history in his periodic tables?

**LaRouche:** Mm-hmm! Excellent! Excellent!

**Fan-Chiang:** And so, there’s much more to say, but really, this is what it comes down to: It’s not really just a form of style. And you know, there are all sorts

of explanations of why you don't need to read the original works, you don't need to study history in these things, we don't have enough time—I've heard all these arguments. I mean, I went to college and got all these different arguments of why that wouldn't be necessary—why would you want to learn all these mistakes of other people! Right? "These things are wrong now; we have these other things which are updated."

But really what are you instilling into the student? It's a stagnation versus an incredible creation process, which you're putting this new human being into.

So I'll stop there.

**LaRouche:** You realize what you've done, in this presentation: You've presented, in particular to me, things that I knew, but you presented them in a way which shows a process of development, and shows them in the proper terms, and overcomes the exact accumulation of errors which were implicit in the list of things, the sequence of things that you bring in chronically, into consideration. This is one of the best kinds of pedagogy that I've ever heard in any classroom!

**Fan-Chiang:** Well, they should be brought into the classroom!

**LaRouche:** Well, that's exactly what my thought is: It's not to bring it into the classroom alone, but to bring the classroom into the process of realizing *that mission*. And what you've laid out, you've laid out a scheme, which gives the student in any university, who's had some qualification, really, in this area, and they get their minds ordered in a way which makes sense to reality, insofar as we know it.

But we know therefore, that that's not the end of it. That's the point. The point is the first point, *A*, this is what we can know, and do know, presently. *B*, what we have yet to know. And what the implications are.

### **The Sun Is Dying**

And I would put in, one thing you didn't mention, the decay of the Sun, which is what I'm really hot on right now! Because we need more heat! The point is, people are so impressed by the energy-flux density of the Solar System in the past time, as compared with the present time.

But what we know from the physicists who had the information and published it, and say it in all kinds of classrooms, not all classrooms, but some classrooms, they say it: "The Sun is decaying!" The process of decay is expressed in terms of the radiation process.

But the Moon was not always as it is today, for example, because the Sun has been deteriorating in its intensity and its capability of energy-flux density.

Therefore, you have parts of the Solar System which were much more vital in the time of their creation, as [Carl Friedrich] Gauss [1777-1855] laid out a whole scheme on this thing, on the planetary scheme; the evolution of the planets, the evolution of the Earth system, it was all done by Gauss already! It was the basis of all his work, which I read years ago, saturated with this whole thing, fascinated by it!

And you put this together, the fact that the Sun is dying, from a clinical standpoint; it's dying as a captive of the galaxy. And the Sun is moving through the galaxy. Now, we wonder what's going to happen, because as the Sun moves through different positions in the galaxy, the Sun is undergoing completely different conditions.

**Fan-Chiang:** Mm-hmm, yeah.

**LaRouche:** And therefore, this is the factor we have to take into account: Is the Sun—the Solar System—is the Solar System inherently decaying? Or, is this an episodic aspect of the process? The evidence we have so far, which is not final by any means, is, how much of the problem we're concerned with, is the movement of the Solar System's position within the galaxy? Because the shift within the galaxy—the Solar System's position in the galaxy is a factor we have to take into account before we open our mouths on making final conclusions on what the Solar System is going to become.

Now, this creates a very interesting further implication, which is not generally discussed, but it's there: If we allow the fact that the Solar System as such, is moving through the galaxy, into different positions—already we know that the change in position of the Solar System results in a very significant change in characteristic of the Solar System.

**Fan-Chiang:** Right.

**LaRouche:** So therefore, we don't know enough about the galaxy; we know certain things about the galaxy, we know some remarkable changes that have occurred in our lifetime—the Chinese record of the great changes that occurred in the galactic position. And that occurred in a well-known, geographical/chronical time. So therefore, we have to take that into consideration before opening our mouths with any sense of finality, on what the future history of the Sun will be, or the Solar System in particular.

So therefore, we as human beings, as the victims of



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*“The Sun is dying,” LaRouche pointed out, and in about 2 billion years, the Sun will explode and destroy itself, along with the Solar System. “Now, 2 billion years may seem awesome to some people, but it’s not to me; it’s not to anybody who thinks.”*

living, isolated on our planet, and doing most of our research either directly on the planet, or from around the planet, and the effects around that planet we inhabit—that’s our knowledge. So we have already, to begin with, before we start investigating the future, the first thing we have to take into account, is we have to take factors like these two: one, the effects of the transmission of the movement of the Solar System within the galaxy. That’s the primary context for Earth, for the Solar System, and for Earth as a consequence. All against this background that we have experienced, historically, since Gauss came along with his idea of the discovery of the Solar System, and you look at that process and extend that, and here, you’re trying to put the thing together.

We know that in the recent period, there has been a decay in the effectiveness of the Solar System. We also know the conclusion has been reached by people who worked on this thing, in studying this problem, of saying the Sun is disintegrating, the Sun is dying, in the sense that, it is projected now, that within 2 billion years, the Sun will have gone through a process of coming to a sort of quiet death, a virtual death, and then, after that, suddenly, the Sun will explode, and destroy itself. That’s the doctrine which is given on this history of the Sun, the future history of the Sun.

All these considerations duly taken into account before we open our mouths, these things we know are

things we don’t have answers for; therefore, we have to keep our mouths shut on those questions, and realize, we don’t know! And that’s not bad, because that’s what people are supposed to do, is find out what they don’t know.

What we’re looking at then, is not what we don’t know. We’re looking at what the effect is of what we don’t know. And therefore, the question is: Is the Solar System going to disintegrate, and pass away, and will the passing away of the Solar System do some disastrous thing, in terms of changes which are

going on in the galaxy? Because these changes are occurring in the galaxy which we already know. In the recent period we had whole studies on this subject.

So therefore, we have to say, well, we’re starting from a very simple thing; but if we put all our ignorances as a context, then we can say: The net evidence is, that the Sun is in a process of decay, that people who are specialists in this area, have estimated that the Sun will die over a period of 2 billion years.

Now, 2 billion years may seem awesome to some people, but it’s not to me; it’s not to anybody who thinks. When we take the factors which may influence, and do influence in other respects, the ration of the Solar System to the galaxy, our ignorance of the galaxy’s characteristics is *startling!* And we have a *big story* about what happened suddenly in the galaxy, the great phenomenon, which from the discovery, the first observation by China, of this phenomenon, that we know there are big things going on in the galaxy, as such. We don’t have a fixed galactic system, we have an evolving galactic system, which is going through a real birth problem right now: It’s giving birth to some monsters up there, which we don’t really understand too well.

So therefore, what’s the problem? Therefore, that means that we, on Earth, have to increase the net energy-flux density in areas of the Solar System to which we have access. That means we will go to the Moon,



because the Moon's degeneration from its earlier state has created a situation where the Moon still is out there, functioning as the Moon, but it is no longer active, in the sense it could have been earlier, when it contained life.

The same thing comes up on Mars, the speculation, the traces of evidence of the decay of an actual process of living creatures; we don't know if there's a living process really actually going on on Mars. If that were to occur, that would be very, very interesting. We do know that it's decaying. The evidence that we've explored is, Mars is decaying.

**Fan-Chiang:** Right, it used to be more active. . .

**LaRouche:** Yes.

Now, we have the inner Solar System, which is inside the Mars orbit, in respect to Earth, which defines an area of the Solar System, where we have potentially the ability of experimental work, discovery and development.

So therefore, what are we going to do? If we take the helium-3, which is still being received on the Moon, from the Sun, because the magnetic field prevents living processes on Earth from getting much of this helium-3 in that form, in that manner; if we develop the Moon, which is otherwise sort of a dead object out there, as far as life is concerned, if we use that thing properly; then, if we take the helium-3 which is in the Sun, which is probably in a long process of dying, because life and death in the universe is much different from life and death of human beings on Earth.

So if we look, we have these two reference points: the life of the Solar System, on the one hand—is that decaying over a period of time? In other words, the estimate is 2 billion years, before the explosion which terminates the whole Solar System.

Then, since we can not move much helium-3 produced by the Sun into the planet Earth area, therefore we have to make our thermonuclear fusion program based on the more limited resources available on Earth itself.

### China's Discovery

So now we have, as China has discovered, this implication. I mean, we have people, scientists and astronauts, who actually have considered this problem, but they haven't been able to get to the conclusion they want to reach, though they desire to. They *do* know; this one guy, particularly, [Apollo 11] astronaut [Harrison Schmitt]: thermonuclear fusion. Thermonuclear fusion

is the quality which the Sun deposits on the Moon itself, gives us a raw material which, if we can use it, and apply it from on the Moon, means that we can put an entirely new industry for Earth!

**Fan-Chiang:** And for the rest of the inner-Mars system. . .

**LaRouche:** Exactly! That's my concept.

Therefore, our mission is, we follow up on the China project—the project defines a capability, an equipment capability, which is far greater than what was done, which means this is not a one-time job! And the China team is concerned with the thermonuclear fusion question.

**Fan-Chiang:** Well, it seems like they're concerned with the development of the Solar System, and then fusion is necessary for that.

**LaRouche:** Well, look at it from the practical standpoint from back here on Earth: What about the condition of man on Earth, in respect to this development? If we have an abundance, relative to our needs, for thermonuclear fusion in China, and available to us from a China-based operation, we have *changed* the destiny of mankind!

Now, we have to go one more step beyond that: That is, we can not just have thermonuclear fusion, in the helium-3 form. We have to use the helium-3 form as a raw material, to go to a much higher order of energy-flux density.

**Fan-Chiang:** Right, as with every raw material.

**LaRouche:** And *that's* my package! That's my commitment! I've just described what I see as the mission before us: That mankind is not going to remain an Earthling. Once we do that on the Moon, mankind is no longer an Earthling; we're not going to go out with Mars suits, with crazy guys—Buck Rogers guys!—we're not going to go to other planets in that way. Mankind can not do that; we don't have the conditions to do that, at least not for developing a whole planet.

However, if we on Earth use our Moon as a raw materials supply of helium-3 being given to us on a regular schedule by the Sun, then we can take the helium-3 which is on the Moon—available to us via the Moon, as a raw materials representative—if we do that, *then*, we use the helium-3 as a driver, for a higher order, by treating it as a raw material.

Now, what you did today, here, on the policy question, what you put in there, the way you laid this out *fits perfectly!* with that mission. And put in, as it happened to me, this idea of the helium-3 actually being a reliable



NASA

*Apollo 17 astronaut Harrison Schmitt, shown here on the Moon (Dec. 12, 1972), is calling for a renewed U.S. lunar mission, to accomplish, among other things, mining of helium-3 for production of thermonuclear fusion power.*

supply from the Sun, deposited on the Moon, and you put a scientific team which is not simply observing, but it's *intervening* to transform the Moon into a factory—not into a place where you collect things, but a *factory* where you manufacture substances of a higher order than the raw material you're using, which is helium-3, to go to much *higher* forms of fusion!

**Fan-Chiang:** Right.

**LaRouche:** Now, when you say you can do that, go to higher forms of fusion, you now open gates for man's movement *out* of the bounds of Earth. No longer are we distant travelers to Mars: Now, we are people who are spreading *our influence inside the Solar System, to include Mars!*

**Fan-Chiang:** Well, once you've created the properties of the Sun and can wield it, then you become...

**LaRouche:** Exactly! That's my point!

**Fan-Chiang:** You've created your own Solar System.

**LaRouche:** Yes, exactly! You're actually transforming the Solar System, by introducing an element of viability which otherwise the Solar System seems to be losing.

Now, with this come all kinds of uncertain questions. But the core issue, the core, principal issue is clear. And therefore, we have to work from the assumption that that is the case: Now that this development on the Moon has been confirmed in that degree, as China's landing proves, that means that *we've changed the destiny of mankind:* Mankind's destiny is no longer limited to Earth; mankind's personal existence, as human beings, is still limited to Earth, but our ability to *change the Solar System*—.

In this area of the Earth-Mars relationship, you have all these asteroids. Now, this means that we're going to have the power to control these asteroids! Or at least the perfected power to control these asteroids; instead of having to fight them off, we will redirect them. And we can't do that, effectively, without a Mars project based on helium-3 as a raw material basis for the operations in space.

But the damned thing about it: Here we are, suffering on Earth with terrible deteriorating conditions throughout most of Earth—the whole trans-Atlantic region is a disaster area! It's about to collapse; the Sun's going to collapse, later, in 2 billion years. The Earth is already going to collapse, the way our present trans-Atlantic system is going!

**Fan-Chiang:** ... before 2 billion years, yes!

### 'Storm Over Asia'

**LaRouche:** We're still getting progress in Eurasia, apart from the enemies which started the terrorism, which are the ones I wrote about for the television story in 1999.

**Fan-Chiang:** "[Storm Over Asia.](#)"

**LaRouche:** That was the beginning of the whole terror system, in 1999! And 1999 was an awesome, symbolic date, which some dumb ass, did, in that particular, that *exact* location, ran a terrorist operation.

And that terrorist operation, after the breakup of the Soviet Union, this element of the former Soviet Union got turned loose, in that particular part of the Caucasus area. That area had a concentration of terrorism.

Now, in 1999, I produced a film, in which I laid out what the implication was of this operation, there. And that was the beginning of the whole wave of terrorism of this kind of terrorism we're seeing now; it was started, generated then, there, and all of the terrorism in the Middle East and so forth, and other areas, we're dealing with today, was an outgrowth, a deliberate outgrowth, a systemic outgrowth, of the policy which I identified as an active terrorist movement, in 1999.

So therefore, that's our problem. The Green policy is also a crucial part of that. The Green policy being introduced as a growth factor, that was a starting point.

**Fan-Chiang:** Right, it was definitely coincident—it coincided.

**LaRouche:** Yes. And the Green policy, which led into the developments of the terrorist policy which we picked up, I picked up on in detail, with all the essential facts, in 1999, in that video program I produced. So this is where we are.

So, therefore, we have to recognize who the enemy is, and what the effect of the enemy is, on the various parts of Earth today. It's spread all over the planet. And the Queen's policy, of reducing the human population of the planet, is the convenient instrument for bringing back the old Zeus destructive thing, like what happened to the Roman Empire.

**Fan-Chiang:** They seem to be the same, to me.

**LaRouche:** This is the enemy of mankind. And the people who are doing this, against mankind, like the Queen of England in particular, who's prescribed that the population of the planet must be reduced from what has been reached, the level of approximately 7 billion people, it must be reduced to less than 1! So there's your driver! There's the political instrument, the political force which is responsible for the threats to mankind directly; as distinct from the decay factor, which is built in to the solar relationship.

So therefore, we have two things to consider: We have to get rid of the terrorists, get rid of everything that Saudi Arabia represents. Saudi Arabia's terrorism is a product of that thing that I identified in 1999!

Now, think about what they're saying about the problems of warfare and the problems of terrorism, in

all the press and so forth, and the governments today: Are they saying that? *No!* Maybe in Russia, and a few other places, they know it. But in general, in the United States, the governments of the United States *have never* admitted this problem! They haven't even admitted the 1999 facts, which I presented, in my production of this film.

Now, I think that putting what you defined here, outlined, and putting it in that context of the Moon landing, the implications of China's Moon landing, this time, opens up a conception of the future, of the possible future of mankind, which is one of the most optimistic, *truly* optimistic ideas available, for making policy for life on the planet Earth, from here on.

**Fan-Chiang:** I think also that we have to create an optimistic view of mankind, we have to make that optimistic view of mankind as widespread as possible, because otherwise, people don't have a sense that they need to defend this mankind! That's a part of education today, that's very big!

**LaRouche:** Well, take the case of China: China's breakthrough, that special team in China which did this project on the Moon landing, crafted the whole project, and what they're doing on the thermonuclear problem, of helium-3, has opened up the gates *as an actuality*, rather than a speculation. And that removal of the speculative factor, opens up the eyes of people *to see what we really have to do as human destiny*.

**Fan-Chiang:** Right. Yes, and that makes it a global issue, that's right.

**LaRouche:** And that takes people out of the deadness: "We're all going to die and rot!" We get rid of that damned thing which is poisoning the people, discouraging, demoralizing the people of the United States and elsewhere today! So it's not just a scientific experiment, it's really a grand-scale project.

**Fan-Chiang:** It's strategic.

**LaRouche:** That's right! It's a strategic, but it's a *globally* strategic program, which includes the Solar System, and immediately the area of Earth and Mars. Because the Earth and Mars are within the reach of the kind of capability which is opened up, down the line, in the future—in the reachable, and calculable future. In the calculated terms of the future, we can *get this thing done!* Get that going, as a functioning change in the condition of the Solar System, particularly in the area relevant to us and Mars. We can do that! We can do that in a few generations, within this same century

we can finish that. And we can make a lot of progress along the way.

If we open up the scale of thermonuclear fusion which is enabled by the means of what we can do on the Moon, we can turn a product out which will revolutionize the conditions life on Earth!

**Fan-Chiang:** And elsewhere.

**LaRouche:** To me, that's what the implication is of what you added into the context of what we've been discussing already. I think this is a very important thing to get out to people, relevant people, who will understand what this is. And I'm sure that people in China, who are in the project will give feedback into China and other circles; and I'm sure that Russia is fully aware of this; I'm sure that India will be very much aware of this. And those three large nations of Eurasia, if they are engaged in this thing—then the opportunities of mankind are such that the only obstacles are political situations among nations today.

### The Background to the SDI

**Fan-Chiang:** That's a very common one.

I wanted to pose something a little bit, maybe, tangential, which you made me think of, which is, when you're discussing this idea of the Sun disintegrating, I thought of Bostick's work. Because Winston Bostick took up this concept of a self-developing system, specifically in the field of plasmas. And I'm thinking about the Sun going through this, seeming to be a disintegrative process, but possibly participating in a larger singularity process, a self-developing process.

**LaRouche:** In the Fusion Energy Foundation we had a quarrel, in which Bostick was on the wrong side. He a very good experimental physicist. He was excellent; his skills were tremendous. But his basic education at Tufts University had poisoned his world outlook, in a degree that he had never cured it. We had a big fight with him, in a meeting of the Fusion Energy Foundation...

**Fan-Chiang:** On Kepler, no?

**LaRouche:** Well, on Kepler, and so forth. And the fact that his opposition to Kepler, and his crazy theories he came up with to try to explain away Kepler, just crippled him. He still was a brilliant experimenter, but in the context which he had competence, and his areas of

competence were large, highly varied, also. But he had this reductionist problem, underlying reductionism, and he was trying to go from reductionism to find creativity as applicable to reductionism.

**Fan-Chiang:** Well, actually, that's why I brought it up. Because that was sort of a simple concept of self-development. But then, we bring in now this idea of using fusion, producing, really, temperatures above those

found on the Sun, as far as we know it, and basically, carrying out the process which we call "solar." Now, we're adding in this concept of human beings creating those, or at least participating in that creation of singularities.

**LaRouche:** The whole thing, the whole achievement, in terms of scientific achievement, was one thing with [Dr. Robert] Moon, and so forth. Moon was the leader of a group of professors, who were all in the Fusion Energy Foundation, or closely associated to it. We were going to create a new university, in the area of Virginia. We had the plans, it was ready to go. It was on the basis of this project, in which this fight with Bostick on that issue occurred.

The point is: Get rid of this damned reductionist conception! This crazy nonsense that he got at Tufts University.

When we fought that out, and we reorganized the thinking on the issues considered in the Fusion Energy Foundation, we became at that point a very potent influence. And it was out of that, and my use of that, my response to that, that we had the whole project, which was the Strategic Defense policy. And it was a top physicist



U. of Wisconsin

*China's breakthrough in landing its Chang'e-3 rover on the Moon "opens up the eyes of people to see what we really have to do as human destiny," LaRouche said. Shown: An artist's impression of a helium-3 mining machine.*

[Dr. Edward Teller], working out of the northern California institution [Hoover Institution], who was the key man who I found myself working with in planning the SDI, the Strategic Defense Initiative.

And what we had, is all the reactionary swine and fools and idiots and opportunists, in 1982-83, when we were ready, and we had the forces lined up internationally, including the Soviet forces, who were all committed to my leadership, which had a very broad international base of top people of military and similar people. We were ready to go with the launching of this kind of process.

And what happened, there was a change in the Soviet system, where the new Soviet entry in that period had a completely contrary commitment: He [Yuri Andropov] was totally a British agent. And this British agent, who was the big boss of the Soviet Union at that time, and the guy who helped to destroy the Soviet Union. Because people in the Soviet system recognized that the Soviet system was not working. And they realized—I had a general, who was working as a diplomat in the United Nations, and he approached me, or made an intercession to me, discussed with me, the ideas that I was presenting as the option. We had a large, leading team of Soviet officials, who were the people that I was meeting with. I just approached this guy, who was acting as a diplomat in a routine relationship to the United States, near Washington.

So we had a meeting there, and there were a bunch of Soviet leaders, economic leaders, and they attended a meeting, which I had organized. And these Soviet figures wanted to talk with me after the meeting had occurred. So there was a selection, and I had the choice of picking the selection, so I picked a Soviet official, who was a diplomat in service to the United States. And he negotiated with me, and with the [Reagan] administration at that time, negotiated an agreement, which was going to put all these forces, from France, from Germany, from Russia, from Italy, and from the United States, and so forth, and from other places. We were all organized, and with leading representatives of these nations, who were going to create the SDI.

What happened is, the British and the Bush people, Prescott Bush's whole tribe, these people worked with the new "grand mufti" of the Soviet Union, to prevent this. We were immediately victimized, on the basis of what I had done in organizing out of the base of the

Fusion Energy Foundation—we created the whole thing. Then *we*, who had done this, were picked off.

Now, for example, the leading intelligence service of the administration was the key supporter of what I had proposed. So I was not fooling around. Under any reasonable circumstances, what I had done and proposed, would have been pulled off. President Reagan himself was an advocate in defense of my policy, my proposal. And so after that, since that time, 1983 and beyond, they came after me. 1985, '86, they went out to try to destroy me! And they're still trying to do it. The same sources.

So the point is, the ideas I'm presenting *here*, at this table at this time, are a reflection of the background, which pertains to what I'm talking about now. And so the scientific concerns were all there, already, in my efforts.

What's happened more recently is a new situation, with the elements of scientific progress, during the intervening period: At the present time, I'm in the strongest intellectual position for defining the policy, that I've ever been. Because I know these backgrounds, I know these facts, I've been through the mire, I'm not fooled by this.

And if somebody comes along, like you did today, with some good ideas, and good information, *that exactly*, is what I need, what I receive and gobble up and use! With the consent of the person involved. I use that, to enhance gaps, things that have to be filled out, in terms of scientific principle, needed to make this thing better understood.

### Asia Is on the Upswing

**Fan-Chiang:** Well, Jason's been leading this up, but we've been doing a larger project, now, on physical chemistry, which this is part of. And I think we're due for a special on this, coming up pretty soon.

**LaRouche:** Oh, yes, I would say! This is absolutely necessary! What you need in this case, in the situation we're in now, you need not only the ideas, you need the tempo of development of those ideas. And that's what we've been tending to do, more and more gradually, actually, by steps in these meetings on Wednesday. These meetings on Wednesday have been a leading factor in the possibilities of achievement of the United States itself. And it's international.

And when you take the case that the world is now divided into two dominant groups, one is the trans-At-

lantic region, which is dying, including the United States. The United States is dying at a very rapid rate, especially under Obama. If Obama reigns, people of the United States will be destroyed! Which is what the British intend.

So, the other option, is that we move with something, which shifts the thing. Russia's succeeded in defeating the attempt of the Western and Central European organizations [the European Union/EU], where they defeated the attempt to gobble up Ukraine. The defeat of the effort to take over Ukraine created a determination to go quickly toward thermonuclear war, in terms of that part of the world, in terms of the trans-Atlantic region. They're a dying part of the world; the trans-Atlantic region, at present, that part which is not in the eastern part, is dying. The dying of that process, means that the thermonuclear faction, which includes U.S. agents, and U.S. forces like the Wall Street types, who are pushing to get this defeat of the Asian region. Because the Green policy means that the power of the Asian sector is going to die, going to be crushed, destroyed.

If the European forces, who are in a very weak situation, had actually succeeded in capturing Ukraine as they attempted to do, we would have had some kind of thermonuclear warfare, already. When Russia defeated the attempt to take over Ukraine, the strategic situation throughout the planet changed radically. The trans-Atlantic region is still dominated by people who have that warfare intention.

*But!* you have 60% or more of the U.S. population who *hate Obama!* And the hatred of Obama, who's really a rather dumb guy, but controlled by a couple of evil women, who control Obama on behalf of the British Queen. It was an agent of the Queen, who was the organizer of the employment of Obama. She was the runner, who created Obama, out of mud, or something less appealing.

So anyway, so the situation now is, we're now threatened, since the trans-Atlantic region of the world is dying, strategically, while the Asian part of the world, or the leading part of the Asian part of the world, or the Eurasian part of the world, is moving upward, as the China exploration of the Moon indicates. It's just symptomatic of that development. They're moving on ahead on a principle which is known, but they're actually doing it! And so, instead of the depression and demoralization which is coming

within the population of the trans-Atlantic region, we're getting, in certain parts of the Asian region, a mutually reinforcing spirit: Russia has been reinforced spiritually, by these developments; India is being reinforced in a sense; China has been vigorously reinforced by these developments. And there are other things in addition to that.

### **Prometheus vs. Zeus**

So, we're not dealing with quarrels among nations. We're dealing with more fundamental principles. We're dealing with essentially a conflict between Zeus and Prometheus. And the attempt to save humanity from destruction by Zeus, means that you have to call in the principle of Prometheus to do it: And that is creative work, which means, changing the *character of Earth*, by taking the policy of going back to progress. But that means going to a *Promethean policy!*

Asia has been almost destroyed by the Zeus process. It is *Zeus* who has almost destroyed Asia! Or put it through mutilation. It is the Promethean impulse which has risen up, more in Asia now in terms of government, than in the trans-Atlantic region, and which is now on the way up. It is that development, that basis of the transformation of the Eurasia area, as opposed to the trans-Atlantic region. The trans-Atlantic region is still dominated from the top, by the British Empire, as a whole. That's what the problem is. The Eurasian sector has elements in which, taken in aggregate, are now vitally struggling, to save their own nations and people from being crushed.

This means that you have, on the one hand, a Eurasian factor—it's only a Eurasian factor, not Eurasia—but the factor of influence, the factor of morale, of outlook, of leading forces that are functioning in the Eurasian region. All the old garbage is still there, but you have a leading force which is actually pulling things in a different direction, in a *Promethean direction*. Whereas we are dying in the trans-Atlantic region because of the present, continued domination of the trans-Atlantic region by the *evil ones*, typified by Wall Street, typified by the British Empire, typified by the Dutch kingdom.

And when you understand that, then you can complete the cycle. You no longer are looking at "practical things" called science, as against political things. You're now saying, there is no difference.

The question is, what's the difference? The differ-

ence is between what is identified by the ancient Greeks, the Classical Greeks, as the Zeus policy, which is what is dominating the trans-Atlantic region, against the Promethean impulses which are arising in the past years in Asia. And in the middle of the whole thing, you've got terrorism which was launched in 1998-1999. And that has been the keystone of the transformation of history, since the early '90s.

**Fan-Chiang:** Well, I think we are Prometheus's immortality.

**LaRouche:** That's exactly what we're supposed to do!

**Fan-Chiang:** So, that's our job.

**LaRouche:** But we have to make it effective, because you've got an enemy, who's—it's the Zeus/Prometheus conflict.

**Ross:** Well, that makes it more fun, we've got a fight.

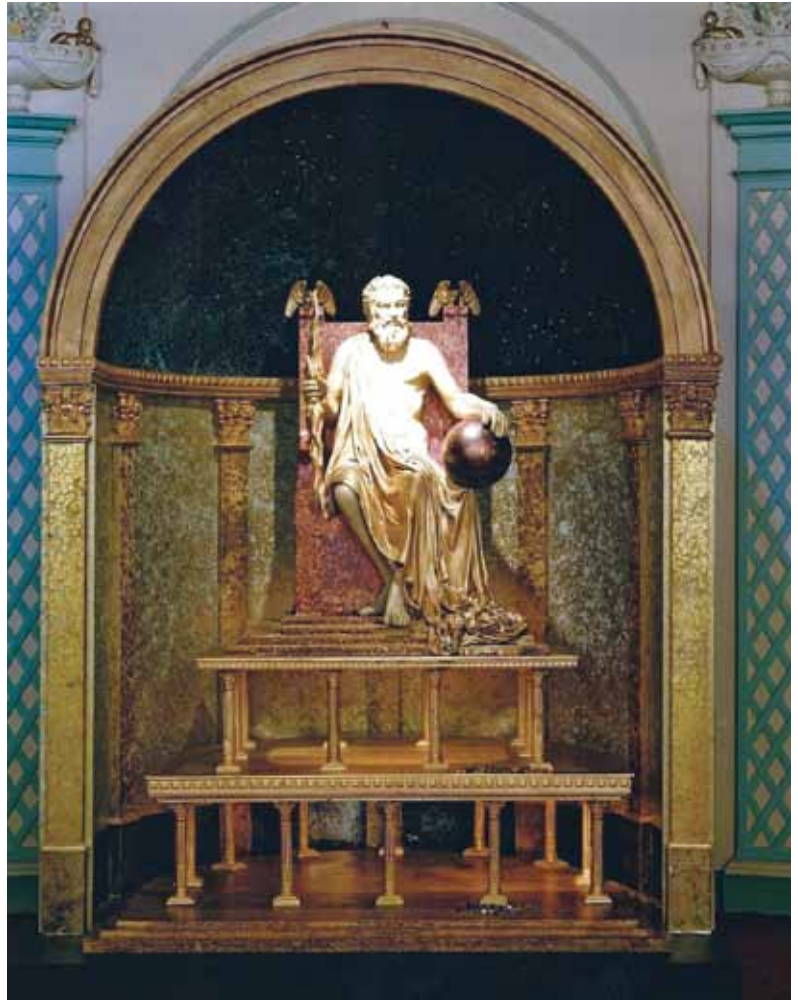
**LaRouche:** Yeah, sure. But you have to have the ideas, the concept, and the understanding of principle, and be able to prove principle, from a scientific standpoint. You simply have to eliminate the way we've been defining science, because we talk about reductionist conceptions of mathematics. And sometimes we get nasty, and we actually give some *motion* to science. We have dead science, where you assimilate facts, like accountants. And then you have people who come along and upset the accountants and actually change the whole agenda: That's called science.

Creativity in mankind is in Classical artistic composition. That's where we have the actual essential element of capability, is in Classical artistic composition. The problem is, we've separated science, formally, by university division, we've excluded the realization of what the implication of science really is, because we have separated it, emotionally, from Classical artistic composition.

**Fan-Chiang:** It became Classical "autistic" composition.

**LaRouche:** A very good term!

But the point is, that's what this organization of ours represents. We have become a spark plug of influence in this process, solely by what we do in this way.



*"We're dealing essentially with a conflict between Zeus and Prometheus," stated LaRouche. "And the attempt to save humanity from destruction by Zeus, means that you have to call in the principle of Prometheus to do it." The statue of Zeus, by the great Classical Greek sculptor Phidias (ca. 432 B.C.), in Olympia, Greece.*

When you try to say politics is one thing and art is another, that's when you're killing everything. If you don't have a sense of the artistic genius of science, you don't have real science; you have dead science. Then you try to make explanations, practical expositions on it.

This was an *excellent* presentation, for just exactly the reasons you know: For me, it was excellent for that reason, because of the implications.

**Fan-Chiang:** Well, good.

**Ross:** Well, this certainly has been enlivening. Thanks for joining us. We'll be back next week, with more on this theme.