

The Physical Profit of Planetary Defense

by Jason Ross

Jason Ross delivered this presentation at an April 2013 Schiller Institute conference held outside of Frankfurt, Germany. The video presentation is available at newparadigm.schillerinstitute.com.

I am very happy to follow the excellent presentation of Mr. Benediktov on planetary defense, on the Russian proposals for international cooperation. He covered many of the technical aspects and the threat of asteroids very well.

What I would like to focus my presentation on today, is Mr. LaRouche's economic outlook, which underlay his initial proposal for the Strategic Defense Initiative (SDI). Mr. LaRouche's view, of human creativity as the fundamental source of economic wealth, and of being able to consider a global measure of economic value, as opposed to an addition of local economic values, saw the buildup of the SDI not as a cost, not as a burden, but as a source of great economic profit. Think how different that is from the current U.S. anti-missile system, which has a cost, is expensive, but provides no great spin-off technologies, as the Strategic Defense Initiative would have.

So let me discuss the concept of *energy-flux density* that Mr. LaRouche referred to. He did not propose kinetic kill vehicles in the proposal made in the 1980s, but instead the use of "new physical principles," including breakthroughs in laser and particle beam technologies, as well as fusion. Now, while there were advancements in anti-missile systems, these were *not* the SDI.

We heard about some of the developments in the anti-missile system at our last Schiller Institute conference in the United States, but this did not represent the intention of the SDI, or the Strategic Defense of Earth, now. The purpose of the SDI was not only defense against missiles, but for political cooperation with the Soviet Union—which the U.S. is not pursuing with its anti-missile system, in regards to Russia—and, for the spin-off technologies and the economic profit that it would bring. It would be similar to, but much greater than, President Kennedy's mission to go to the Moon. The Apollo program had a large cost, but it had zero net cost, a negative net cost because of the benefits that came from the technologies.

In the case of the Strategic Defense Initiative, and the

need today for technologies for Strategic Defense of Earth, including the necessity of fusion, the developments will not only be technological, but scientific as well. This has a very great potential.

Energy-Flux Density

So, what is energy-flux density? There is a problem in applying scalar metrics, where we use one kind of ruler to understand many different processes. For example, economists, who study the economy in terms of "money," are never actually studying the economy. Or, if you look at physics, there is a unit of "energy." There is something real about energy, but there is an understanding that is lost when we consider purely energy itself. Rather, with the concept of energy-flux density, we begin to look at the *quality* of sources of power, not only the quantity.

Now, by the *quality* of power, I don't mean a fancy Swiss watch—I mean the opposite of quantity. So, for example, if you have a scientist who studies rocks, he's used to dealing with mass, density, perhaps temperature, electrical conductivity; if he were looking at a dog, he isn't even considering many of the things a veterinarian would look at, such as heartbeat, metabolic rate, nutrition. A pure biologist could not understand human beings; without a concept of culture, a biologist might try to cure all social problems with medicines, instead of changing the culture in which people exist, or their thoughts.

So, from the standpoint of physics, from the standpoint of economics, energy-flux density is crucial for understanding the different sources of power.

For example, if we use muscle power, whether human muscle power, or the muscle power of an animal, it's very limited, and it consists in mechanical motions. With the use of burning coal to create a steam engine, yes, we still make mechanical motions, but they're much more powerful than what could be done by, say, a horse. With the use of electricity, you can measure electrical power,

in terms of horsepower as a physical unit, but electricity does so many things you cannot do with an animal. I think we can all think of many examples: There's nothing you can do with a horse that can make the headphones we're wearing, work. It's a different kind of power.

With fission power, and then especially with fusion power—if we develop fusion, the benefit will be that electricity will be almost free; the other benefit is that new qualities of economic activity are possible. Take, for example, the ability to use a fusion torch for recycling purposes, to break down material into its elements, in a similar way that we break down petroleum products into different products now.

For the SDI, or the SDE, we need, as a source of power, fusion; we will not be able to move asteroids with windmills! We cannot use mirrors to take the solar power to move an asteroid. We're not going to do it by returning empty soda bottles for 15 cents. This outlook of humanity will not defend us against an asteroid. And currently, fusion power, at least in the U.S., is funded far below the funding for stupid solar panels—it's ridiculous. We could completely change our relationship to the physical world by the development of fusion power, which would change our relationship to materials, for example.

Potential Relative Population Density

To apply this to human economy, Mr. LaRouche has used the concept of *potential* relative population density. So, the potential population density, in a certain area: How many people *could* live there? What is the potential? How has that changed over the years? If we look at this chart (Figure 1), of European population, over the past centuries and several millennia, we see a dramatic increase in the number of people that are able to live here. This is not because people are having more babies; it's not for reasons like that. It's that, as we transform as a species the way that life does as a whole in evolution, we really do become like a new species, when we have a new platform of scientific development to stand on.

When life moved from the oceans to land, it dramatically began to increase its power on the Earth. We do the same thing when we develop new sources of power, for example, for agriculture, or the study of medicine.

This is something that's very natural for human beings.

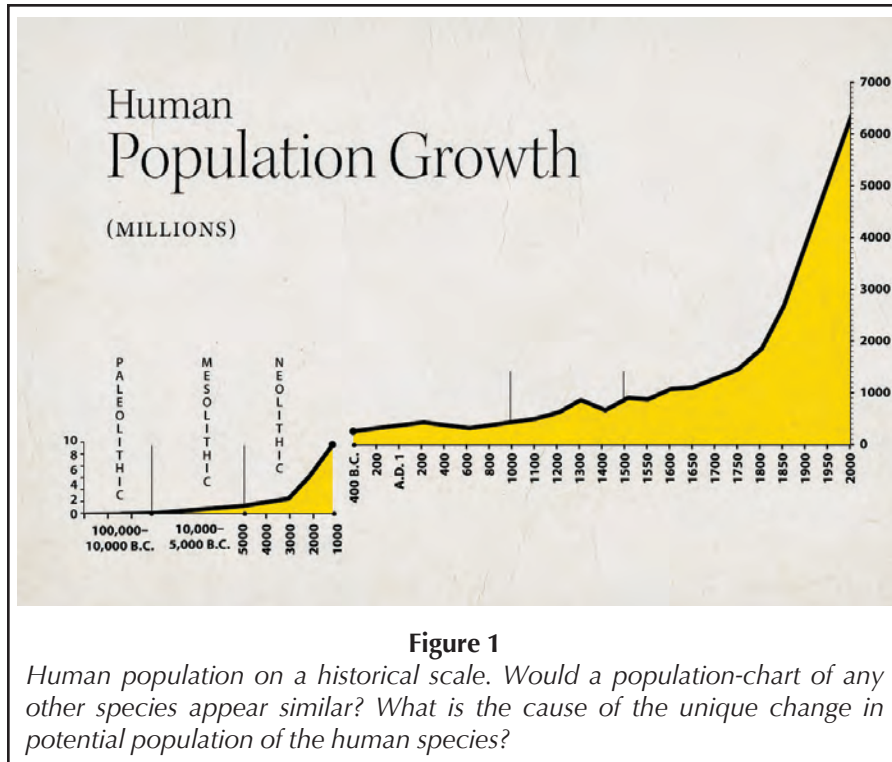


Figure 1
Human population on a historical scale. Would a population-chart of any other species appear similar? What is the cause of the unique change in potential population of the human species?

It would be *unnatural* for us *not* to continue this trend. That would be like a reptile saying that a mammal is “unnatural.” Or, it would be like a rock saying a lizard is “unnatural.” The rock says, “Hey! I’m just sitting around here, and you’re moving, you’re walking on top of me, you’re sitting on me. You know, I don’t enjoy this, it’s unnatural.” But lizards aren’t rocks, and human beings are not animals.

So, compare different cultures today: As was just discussed, China today has some ambitious programs. They have a three-phase lunar program that they began several years ago. Phase two will land devices on the Moon. Phase three is to bring back material from the Moon, something that, until now, only the United States and the Soviet Union have done. India is moving forward: They sent a probe to the Moon in 2008. They plan to send a satellite to Mars this year, which will make them the third nation to do so.

We just heard a great deal about Russian proposals for international cooperation on missile defense, which, yes, if we’re using nuclear weapons, it absolutely must be international—and it must involve civilian and military aspects, something that NASA must understand.

And in the U.S., NASA has a mission to land a man on an asteroid by 2021. This is a joke. Nobody really takes this seriously. There’s really no point in standing on an asteroid. You would probably need special boots to do it, because the gravity is so small on an asteroid, that if you sneeze, you will fly off of it! In fact, right

now, with the sequester in the United States, NASA scientists can't even go to meetings anymore! They can't go to conferences! So, right now, NASA can't send a man to the Moon, NASA can't send a man to Mars; they can't even send a man to Paris, Berlin, or Tokyo for a conference!

The 'Basement' Science Project

So, we must have a total shift in our activities and our priorities, and we also have to have a revolution in how we practice science. I want to say something very briefly on this: Mr. LaRouche's "Basement" project has taken up a study of the internal history of science, going back to the first modern scientist, Kepler, up through Fermat, Leibniz, Gauss, Riemann, Planck, Einstein, and Vernadsky. I will show you briefly, one very amazing result that came from some of our studies.

What you're about to see here is, you're seeing these rings appear. What the animation¹ is showing, is, in each frame of the video, all of the dots that make it up are the centers of the orbits of various asteroids. And we're choosing the asteroids based on their average distance from the Sun. Here, they'll be drawn in, as we're moving farther from the Sun.

Now, there's not enough time to fully discuss this, but taking the approach of Kepler and Gauss, that there must be a reason for why the universe is so, and not otherwise, from the standpoint of Leibniz, who said: Yes, God is completely powerful, but He is also so wise, that he does nothing without a reason.

We decided to apply this approach—Kepler's method—to the asteroids, to start trying to look at the asteroids, as a system, to look for a structure in the Asteroid Belt. The swarm of asteroids that Mr. Benediktov discussed, where they seem to come in a greater number all at once: Why is this? If we have a hypothesis about the structure of the asteroids, maybe this will make it much easier to find them; maybe this will change our view of how to move them.

So this is something that the LaRouche Research Team is discussing, and we're starting to confront NASA scientists with this, who are trying to figure out—no one has seen this before. So this is a new observation. Kepler would be very happy.

A Wonderful Gift to the Future

Let me say, to conclude here, that the path to that is offered by the SDE concept of the common aims of mankind; this allows us to give a very wonderful gift to the future. In one generation, or more like two generations, as some of the first visitors and perhaps settlers to the

Red Planet, to Mars, are taking their one-week trip to get there on a fusion rocket, they might wonder how foolish we were, in the beginning of the 21st century, to confuse banks for the real economy, or why we were so fixated on using *less* energy, instead of developing better sources of new energy? Or why we separated our trash into fifteen different colored bags, instead of recycling it with fusion?

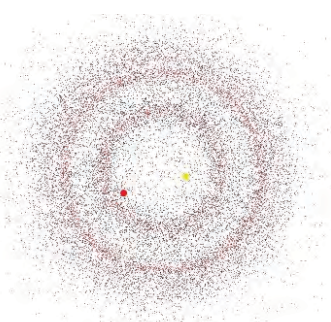
Mrs. Zepp-LaRouche was telling me the other day about a report she had read, that German youth are among the least happy, but it is not because of physical poverty. I think a large part of it comes from the omnipresent Green outlook, where children are taught that they are disease on the planet—you know, "you are a cancer"; that the best possible role for your life, is to not exist! To have no impact on the world—you come, you go; it's as if you were never there. That's not exactly an optimistic outlook!

Compare that with a mission to go to Mars, to discover new sources of power, to master matter-antimatter. And I think what we can do, is really give a wonderful gift, because the greatest gift that a nation, or a culture, can give to its members and its future members, is the knowledge that those people lived lives that were not only good and useful, but in fact, *necessary* for the future.

We have to have a direction, that we're moving to where people are necessary, and not burdens that we should euthanize when they reach 70 years of age. So, by adopting this SDE approach, the new technologies needed for planetary defense, and getting Glass-Steagall and a credit system immediately to make it possible, I think we are giving the future a very wonderful gift!

Thank you.

A written report on the asteroid research is available at: http://schillerinstitute.org/conf-iclc/2013/0413_frankfurt/AsteroidUpdate.pdf. The observed rings correspond to the "proper" orbital elements of asteroids, as their orbital elements are extrapolated into the future.



One frame from the cited animation. Rings are formed by the centers of asteroids whose semi-major axes lie in a certain range. Why is this?

1. <http://www.youtube.com/watch?v=uWXmyS30Eqk>