

Krafft Ehricke: Creating a Knowledge of the Future

The following is an edited version of a speech delivered by Megan Beets to an event held in Houston, Texas on March 25, 2017 to celebrate the 100th anniversary of the birth of Krafft Ehricke.

Megan Beets: Thank you very much for having me today; I'm very excited to speak to you even if for a short time. I'd like to begin by reading something that Krafft Ehricke wrote in 1948. Think about 1948: that was just after the end of World War II; Krafft Ehricke had been in the United States for two years, and he was just beginning to master English. It would be nine more years before the first satellite, Sputnik, would be launched into orbit.

What I'm going to read you is the opening of something he wrote called "Expedition Ares."¹ Written in 1948, this is an imaginary account of space travel in the year 2050, as seen by people *looking back* from the year 2400.

We live in the age of fast-flying, far-reaching space ships, and are proud of what human ingenuity has achieved in this field. Research is going on with ultra-fast ships, reaching half the velocity of light and designed as powerful instruments for visiting our neighboring stars.

But the adult soon forgets the first stumbling steps of childhood, and the first attempts to reach

our nearest cosmic vicinity has almost completely vanished from our memory.

Looking back through the centuries, we perceive a chain of heroic deeds which mark Man's grasp at other planets. Only fifty years ago, Glenn Wolf's party landed on Pluto. Their flash light photographs showing the men wading through helium pools amidst fantastic structures of frozen

gas which tower into the eternal night, belong to the standard equipment of astronomical books today.

A hundred years ago, Ted Aitken, the most fearless space explorer of his time, died in a bold attempt to reach Saturn. His ship, the famous "Nightmare," was smashed between the rocks of Saturn's rings after a meteor had blown away the navigation room.

A hundred years before his time, Gordon Rockwell opened the golden age of discoveries. He was the first to jump, in his ion-powered "Blizzard," over

the great gulf—the vast gap behind Mars, as they called it—and intrude into the dangerous realm of Jupiter's satellites. This pioneer discovered fossils of a strange life on Satellite 111. It blossomed millions of years ago when the giant planet was still the hot, animating center of its extensive system. Rockwell actually founded the cosmic branch of palaeobiologic sciences and made Jupiter's moons an El Dorado of cosmic life research.

Even farther back, old documents reveal the



NASA, ESA, and The Hubble Heritage Team

Photograph of Mars taken by the Hubble Space Telescope.

1. "[Expedition Ares: A Saga From the Dawn of Interplanetary Travel](#)," *21st Century Science & Technology*, June 2003.

tragedies connected with the exploration of Venus and tell a tale of Duke Hatchword's "sunny" trip to Mercury... yes, planet after planet unveiled their secrets before the eager spirit and ironclad will of keen explorers.

Yet, there is one planet which must be mentioned separately. Mars, the most familiar outer world for our generation, is connected with the very first beginnings of space travel.

Back in the 20th Century, when tiny rockets climbed a meager two hundred miles (did you ever hear of a "V-2" or a "Neptune 8"?), Mars was the dream goal of those who believed in space travel, actually a fantastic conception when one considers the troubled and primitive world into which they were born. Mars was considered the most interesting planet in the system, the only one that might bear life. Some even dreamed of a Martian civilization, superior to ours, with which a cosmic exchange of ideas might be brought about. Small wonder that Mars became the first planet ever explored by Man.

Circling Earth in small scout rockets, scientists and engineers, dreamers and adventurers, found themselves on the brink of a vast emptiness, beyond which new worlds lured and stimulated their desire to remove the barriers erected between Man and star.

The first attempt to realize these dreams is known in history as "Expedition Ares."

Imagining the Past from the Future

After the introduction, Krafft goes on to depict this first attempted mission to land on Mars. What an incredible and *important* imagination he had! I want to ask you, all of you, today, sitting in this room, to take a moment and think from our standpoint now, in 2017—imagine what mankind in one hundred years might be like. Now imagine, not what *we* will perceive mankind one hundred years from now to be like, but imagine what people in five hundred years will see as they look back on those people, and what will they think of them? How will they perceive their actions?

Now, when you think of these people one hundred years from now, can you imagine a humanity for whom war is something which is unknown? In other words, war is something which children of that time learn about in history books, when they study a more primitive age of Man, but is not something which exists in

civilization. I want you to imagine how *those* people will look back on 2017: what will be the meaning of China's One Belt, One Road to them? Maybe, when these people look back on 2017, they will recall that this was the first year that humanity *finally* began to integrate itself across the entire planet with the World Land-Bridge, and began to become a modern civilization.

Perhaps they'll look back on 2017 and see a population which *finally* took the steps to shut down a ridiculous Wall Street economic system, put Wall Street out of existence, and shut down this gambling and looting system—and replace it with the American System.

And maybe they'll look back on 2017 as the very beginning of actions that were taken which eliminated poverty, for good; which eliminated famine, such that it was no longer known among mankind.

Now, I want you to think about us from their standpoint. Look back at them. Perhaps the year 2117 will be the first year that mankind begins to settle Titan, one of the moons of Saturn. Or, perhaps, we will be far beyond Titan by that point. Perhaps we'll be exploring some of the middle to outer regions of the Solar System.

That play in your imagination, that possibility, should be everyone's understanding of what we today could cause the meaning of the Trump administration to be. I think that the Trump administration may be more aware of this possibility than some have thought, but no matter how aware they are, or not, it doesn't really matter. *We* have to think about our own responsibility for realizing the great potential that I asked you to play with in your imagination. The way that we do that, the way that we understand our task today, to determine the meaning of the Trump administration, is to begin by passing LaRouche's [Four Laws To Save the U.S.A.](#) This will allow us to reestablish the American System, first by putting Glass-Steagall in place, to put Wall Street out of its misery; and to put the measures in place to enable the activity that LaRouche calls for in his Fourth Law, which is for a fusion driver, science-driver crash program, which includes the space program.

For that space program today, Krafft Ehrlicke is the absolute touchstone; he is the model of what a successful and meaningful space program for mankind must be. Krafft Ehrlicke was born one hundred years ago, in 1917, and he was there from the very beginning of the Space Age. He was born only a few years after mankind had first achieved flight, and he recalled that as a young man he was completely gripped by the idea that man-

kind could leave the Earth and open up a new world beyond the Earth; could bring civilization to take up residency in a completely new world, which was separate from the Earth.

This idea fascinated him. This is not merely the idea of extending terrestrial mankind and all of his existing qualities out to a different place, but *transforming* mankind by opening up a completely new world. Krafft Ehrlicke said that this could really only be compared to the event many millions, perhaps billions of years ago when life first emerged from the oceans onto land.

It is that magnitude of a change Krafft Ehrlicke was thinking about, and he took upon himself the responsibility for making those first steps happen.

The Extraterrestrial Imperative

So this is the idea of what a space program is really about; an idea much more advanced than almost all of Krafft Ehrlicke's contemporaries—and it is certainly much more advanced than what people today think. As a people, we have generally become somewhat demoralized, somewhat practical; we have submitted to the idea that we can only do small things. But Krafft was different. He was not looking for big victories in a space race against our enemy. He was not even looking for simple exploration where we send people millions and millions of miles away, to plant a flag somewhere and then come back and check it off of our list. He was not thinking of anything practical, except to the extent that it served this mission of mankind's extraterrestrial imperative.

That mission of the “extraterrestrial imperative,” Krafft Ehrlicke saw as a fundamental transformation of mankind. I think you could make a comparison to that difference in thinking, if you think back to the European settlers who first crossed the Atlantic Ocean and came to America. Some of those people came here for reasons of adventure, seeking a fortune, or perhaps escaping something. Most of the people who came here came, in their own minds at least, for somewhat practical reasons.

However there was a minority of people who understood that the possibility of setting up a republic on the shores of America would *completely alter human history*. That's how Krafft Ehrlicke thought about the space program.

Now, what Krafft did—he had a shorter life than he should have had—but what he dedicated that life to,

and what he worked on, especially in the last decade of his life, was how we would move every aspect of civilization off of the Earth, and how that would open up completely new possibilities for mankind, unveiling new potentialities of places like the Moon, for example. Krafft worked tirelessly to imagine what many of those new possibilities might be.

What he said, in a paper he wrote in, I think it was around 1955, was: We have to begin by occupying low-Earth orbit; we have to begin by putting a space station up into orbit. And he said we could do that by the 1960s. Now, as people know, we had Skylab in the 1970s, and the Mir space station a little later; we didn't get the full-fledged International Space Station until the 1990s. But Krafft said we could have a space station by the 1960s, and he imagined this would be the first baby step, the training ground for human beings to begin living and operating in space, to learn more about Man's biology and medical conditions; to do experimentation with how chemistry behaved in the space environment, how different materials behaved in the space environment, and so on.

He also imagined things that could be put into orbit around Earth, like hospitals or retirement homes. And I think that was very beautiful, because he was thinking about how in orbit you have a completely unique environment of zero-gravity, and of what new benefit zero-gravity could bring to people who are recovering from injuries; or how we could relieve the stress on the joints of people who are elderly by moving them to a lower-gravity environment.

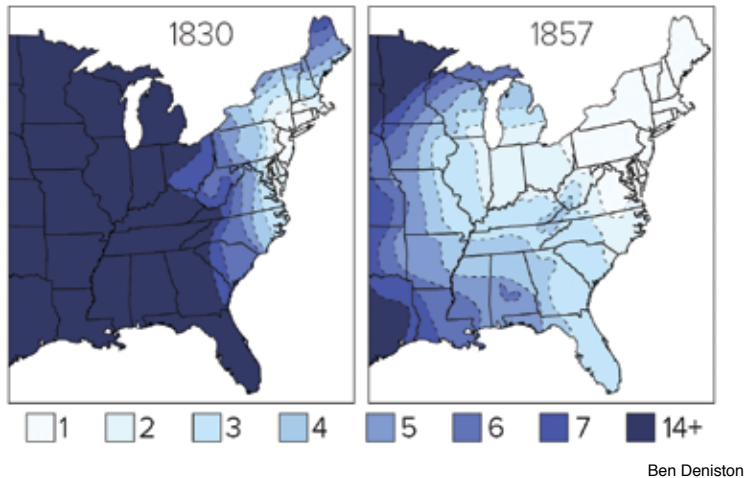
Krafft also imagined that we would begin to set up manufacturing facilities in zero-gravity and take advantage of that unique environment, which could allow us to build structures of metal with a much higher purity, and stronger than we can manufacture on Earth. Krafft imagined space stations that would be resorts where people could go on vacation and experience a completely new environment, including a “zero-gravity swimming pool,” where you could swim around as if in water. He imagines first conquering low-Earth orbit and then very quickly moving beyond, to absorb all of cislunar space—or the space that includes the Earth all the way up to the Moon and their orbits—into human civilization.

How did he think about that? I want to give one example from our pamphlet [Figure 1]. This is an image from the newest LaRouche PAC pamphlet, “La-

FIGURE 1

Days travel from New York City 1830 vs 1857

How rail transformed America's space-time relations



Rouche's Four Laws & America's Future on the New Silk Road." It gives an example of how space-time was changed with the building of rail in the United States. What is indicated by the different colors is how many days of travel it would take from New York City to get to any of the other areas in the United States. Look at the transformation between 1830 and 1857, because of the building of rail: space and time became *condensed*—and this transformed everything, not just passenger travel, but it also completely changed the economic possibilities for moving freight, moving semi-finished products, moving raw materials to different industrial centers.

Krafft Ehricke imagined such a thing for cislunar space, and as part of his work, he thought of the design of a multi-layered transportation system that would incorporate different segments from the Earth to the Moon. In a 1984 paper, he called this the "Diana Fleet." Think about what the different components are of transportation between the Earth's surface and the Moon's surface. First, you

have to get from the surface of the Earth up into low-Earth orbit. The way we do that today is with very large launch rockets, like the Saturn V rocket, or the one that NASA is building today, the SLS. There are more modern proposals for that today, which I won't go into. From low-Earth orbit, you must have vehicles to get to lunar orbit, for both people and freight, and then get from lunar orbit to the surface.

Here's something Krafft Ehricke designed [Figure 2], a nuclear-powered cargo ship. Krafft imagines that at a certain point in our process of developing the economic activity on the Moon, we will have a large fleet of nuclear-powered cargo ships that can move partially finished structures, raw materials like hydrogen, and other things, that would be imported from the Earth, and they can also transport materials from the Moon to the Earth.

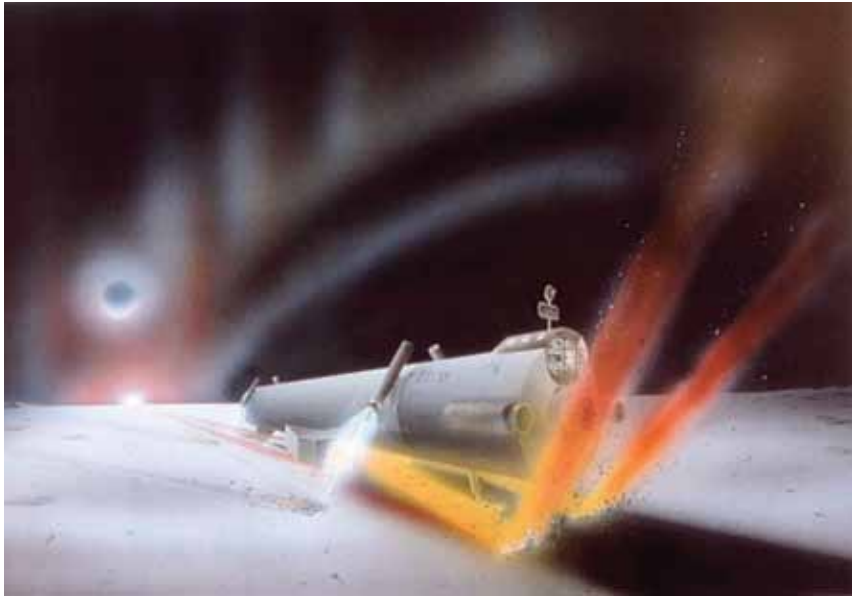
Krafft also imagines some very novel ways of getting from lunar orbit to the lunar surface. Here is one that he designed himself, called the "Lunar Slide Lander" (LSL) [Figure 3]. The LSL would descend from orbit toward the surface, and would slow down by sliding along the sandy/gravelly surface of the Moon, which transfers the momentum of the ship to the lunar soil. Krafft points out

FIGURE 2



Krafft Ehricke

FIGURE 3



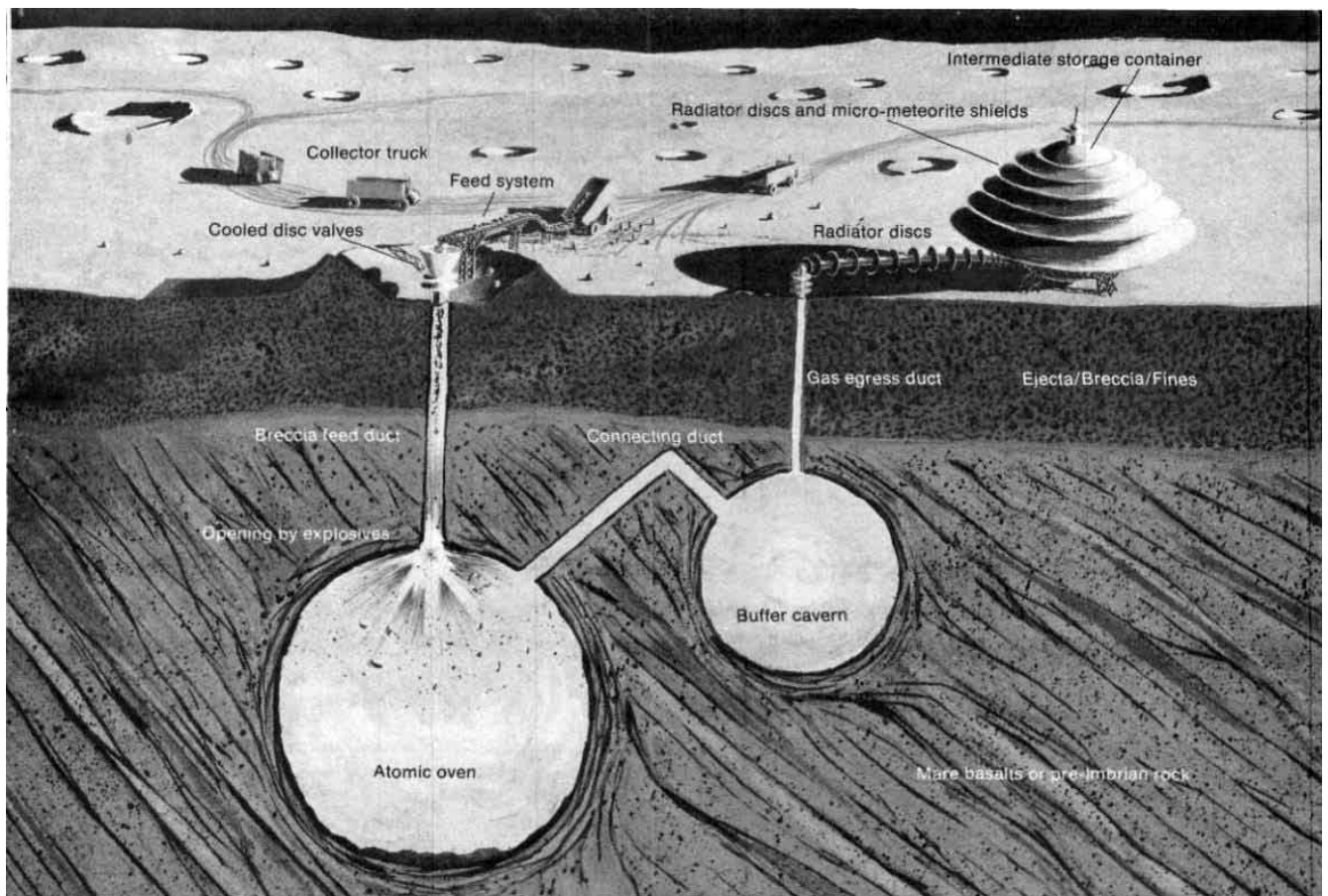
Krafft Ehricke

that by utilizing the unique features of the lunar surface in this way, you could reduce the amount of propellant that you would need for descent by 90 per cent.

He also imagined new ways of getting from the surface of the Moon to lunar orbit using something he designed, which is basically a maglev launch system. It is a partially enclosed launch tube with a vehicle that would be propelled partially by electromagnets and partially by propellant, and in which much of the hydrogen expelled by the propellant could be recovered.

The Moon and LaRouche's Fourth Law

Krafft was thinking about how we could integrate this new, unique envi-



Krafft Ehricke

Krafft also imagined and designed a way to use nuclear explosions to mine and refine raw materials.

ronment into civilization, and how we can use mankind's actions, in leaving the Earth and going out into the Solar System, as a *driver* to develop new capabilities, new technologies. One thing he saw clearly is that for cislunar (nearby) space, nuclear-ion propulsion and chemical propulsion are completely adequate; but if we want to go farther, if we want to start from the Moon and go to Mars, or go to the moons of Jupiter—the kinds of things he describes in his story, “Expedition Ares”—we have to move quickly to a nuclear-powered rocket. I’m going to come back to that in a minute.

Another thing he thought of is the unique kinds of products that could be manufactured on the Moon. Until reading Krafft's works, I hadn't really considered what kinds of things you might manufacture on the Moon—I guess I had always thought of the Moon as the desolate frontier where we would just manufacture the bare necessities for people to live there; maybe we would make some ugly gray bricks to build some houses or something! But Krafft had a completely different idea: that with the resources on the Moon, and with the establishment of a central processing/manufacturing center on the Moon, you could produce an

incredible array of products! He said, on the Moon you could produce products such as sheet metal, trusses of aluminum, titanium and magnesium, casting bars, wires, glass, glass-wool, ceramics, powdered ceramics, insulation, silicon chips, and solar panels. You could also produce entire structures of various metals that would be needed to enlarge the lunar space station, for example, or to build fusion power plants on the Moon's surface. You could manufacture and build all of these things on the Moon. You could also manufacture water and liquid oxygen, which would be needed for chemical propellant and for life-support systems.

Another important thing he spoke of manufacturing on the Moon is helium-3. We know today, that you don't need to *manufacture* helium-3 on the Moon; you can just mine it from the lunar soil. The reason we want helium-3 is because it is the ideal fuel for fusion power. Krafft saw this as being not so much a *product*, but rather as an *outcome* of establishing civilization on the Moon: fusion power.

Fusion power plants are actually easier to establish on the Moon than they are on Earth. Not only are they easier to build, because of the natural vacuum and cold temperatures on the Moon (both needed for a fusion plant), but fusion power is also necessary for lunar civilization: you cannot power lunar civilization with solar panels! Aside from the low power density, the Moon is dark for two weeks out of the month! So you need fusion power to underwrite lunar civilization.

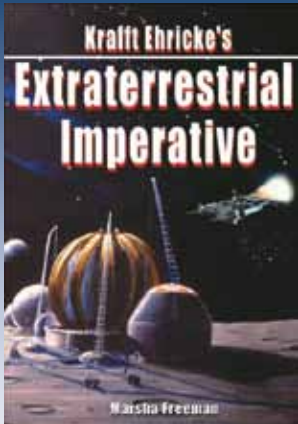
I think this is fascinating! Here we have been trying to achieve fusion power on Earth, since the 1940s and 1950s, but fusion might actually “belong” to civilization on the Moon.

I want to end with a thought from Lyndon LaRouche, which I think is very important. While we're reading this, I want you to think back to what I opened with: imagining mankind one hundred years from now, and what the meaning of 2017 *actually* is from their standpoint.

Lyndon LaRouche said, “All mankind has a commitment, an innate commitment, to create knowledge of the future... All mankind must subdue their passions to conform to what the future of mankind represents. The point is the understanding of the individual to reach and achieve the ability of insight into what the future species must do: the improvement of the human species! Lifting the human species out of its ordinary existence, taking it out of its mediocrities.”

Krafft Ehricke's Extraterrestrial Imperative

by Marsha Freeman



At this time, when there are questions about the future path of America's space program, Krafft Ehricke's vision lays out the philosophical framework for why space exploration must be pursued, through his concept of the “Extraterrestrial Imperative.” Freeman's book presents Ehricke's long-range vision for our space program and the fight that he waged for that vision.

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