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## III. How History Is Made in the Individual Mind

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# Colonizing Mars: The Future of Man in Space—Three Views

*Includes unpublished Wernher Von Braun-Krafft Ehrlicke correspondence*

by Marsha Freeman, *EIR* Technology Editor

Aug. 30—At the present moment, there are three spacecraft on their way to Mars. They will arrive at their common destination next February, each having a specific mission assignment. The United Arab Emirates' *Hope* orbiter is to track changes in the atmosphere, to function as a weather station for the planet.

China's mission is a first-ever attempt to deploy an orbiter, lander, and rover on China's very first mission to the red planet. It is a technology demonstration.

And NASA's *Perseverance* rover will collect high-resolution data. *Perseverance* is also carrying the four-pound *Ingenuity* helicopter. Most important, the rover will collect soil samples that will be brought to Earth in a joint sample return mission with Europe, tentatively set to launch in 2026.

The ultimate goal of all of the robotic missions to Mars is to prepare for a manned mission and eventual colonization. There have been many manned Mars missions planned, but never yet executed because of false notions of the impact of Federal spending. Below are examples of three different approaches, from Wernher von Braun, Krafft Ehrlicke, and Lyndon LaRouche.

### **Wernher von Braun's *The Mars Project***

In 1948, German scientists and engineers who had created mankind's first rocket to reach the boundary of space at the Army Research station at Peenemünde during World War II, were at the White Sands Missile Range in New Mexico, teaching U. S. Army personnel how to launch the A-4 (V-2) rockets brought to the U.S. as the war was ending. This was hardly challenging to the Germans. Having lots of free time, they



NASA

*It is estimated that 25 million people—undoubtedly many of them children—watched Wernher von Braun explain how rockets work, and how we will get to the Moon and Mars. Here von Braun (right) and Walt Disney in the TV studio in 1954.*

sought to learn English, with about 100 men sharing one dictionary, and trips into town to watch cowboy movies.

Wernher von Braun, who led the rocket research

program at Peenemünde, and Krafft Ehrlicke, a visionary who “lived in the future,” and was drafted to work on the Army rocket research project at Peenemünde, shared the ability to describe a project in great detail, while always keeping in mind the overall purpose of the endeavor. And they were both passionate about space exploration. But they had distinctly different approaches, seen in their published works, and in personal letters (see below). People asked, “Why are you planning on going to Mars? We have not yet gone to the Moon.” Perhaps the reason was that Hermann Oberth in his 1929 book, *Ways to Space Flight*, had already worked that out. And they all saw *how* it would be done in Fritz Lang’s 1929 film, *The Woman in the Moon*, for which Oberth was the technical adviser.

Von Braun, without whom it is doubtful that there would have been a successful Saturn V rocket, or Apollo trips to the Moon, was a conservative engineer, who felt comfortable advancing technology in small steps. For example, von Braun had a negative view of using nuclear power for propulsion, and instead continued to use the fossil fuels with which the “rocket team” was already familiar. His approach was to try to convince policy makers and the public that the Mars mission could be done in a relatively short time without any breakthroughs in science or revolutionary advances in technology. In a letter to a colleague in 1950, von Braun wrote that the project was developed in the following manner:

The whole thing is a futuristic novel, based on solid technical facts. I have consciously avoided utilizing any fantastic assumptions that today could not be asserted with certainty (for example, nuclear propulsion). I have instead projected into the future technology which now exists, and

is well-known.... The result is an expedition to Mars and back for 70 people.... And not once did I introduce liquid hydrogen, for which I don’t have much use, as many authors do.

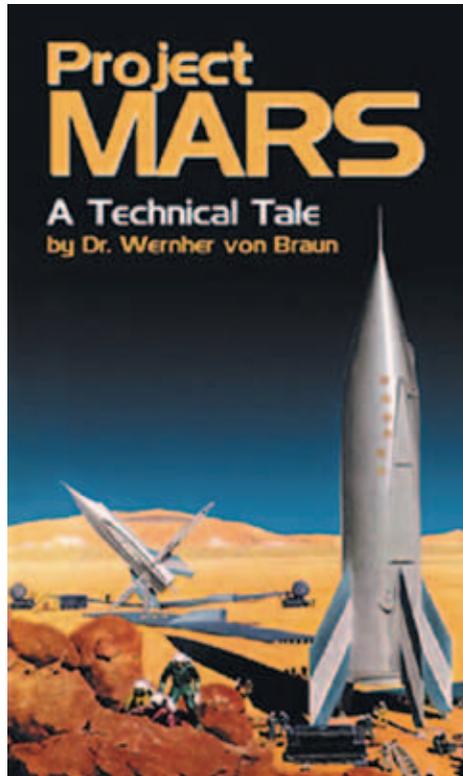
The remark about liquid hydrogen is a friendly jab at Krafft Ehrlicke, who later was known as “the father of the Centaur,” the world’s first liquid hydrogen rocket.

Von Braun’s Mars expedition consists of a flotilla of 10 space vehicles to be “manned by not less than 70 men,” and assembled at an Earth-orbital space station. Von Braun’s “neighbor” at Fort Bliss, Krafft Ehrlicke, suggested to von Braun that only three of the [ten] vessels be equipped with “landing boats” for descent to Mars’ surface. This would make the mission less complex, and more affordable.

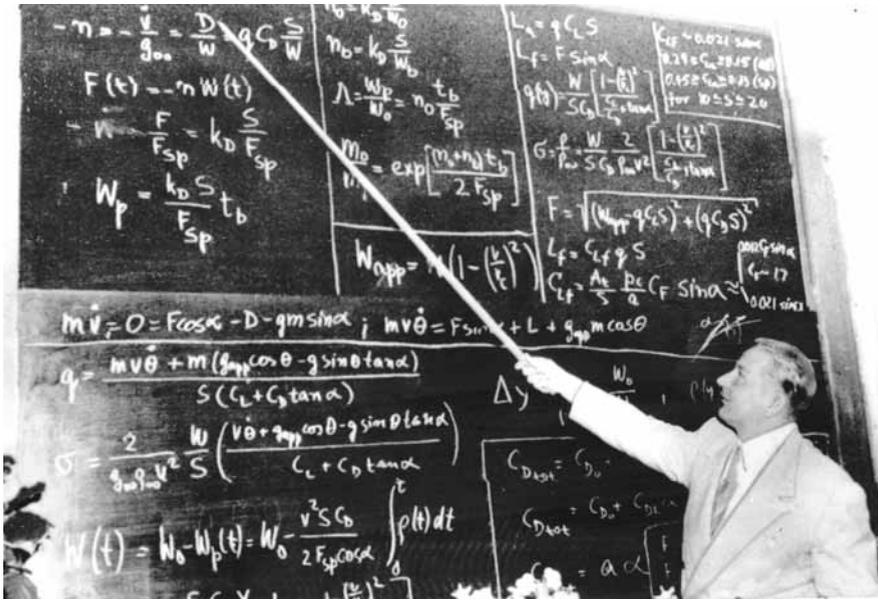
Considering the optimistic content of the story, it is not surprising that no one would publish the novel. The science fiction being offered to the American public in the 1940s was characterized not by advanced extraterrestrial beings, but by creatures engaged in wars, and even cannibalism. These “civilizations” were more like *The First Men on the Moon* of H.G. Wells than *From the Earth to the Moon* by Jules Verne. By 1950, von Braun had

sent the manuscript of *The Mars Project* to more than a dozen publishers. All of them rejected the novel. In 1953, the University of Illinois published the Technical Appendix. The book languished for another nearly 60 years. It was finally published in 2006 by Apogee Books in Canada, under the title, *Project Mars: A Technical Tale*.

Apogee reports that the book has hardly sold at all. This is certainly a reflection of the lack of optimism about the future. Von Braun faced the same problem in the 1950s. He decided to take his space exploration program directly to the people and especially,



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Krafft Ehricke presented papers at many of the annual meetings of the International Astronautical Federation. Here he addresses the meeting in Copenhagen in 1955.

young people, through the new medium of television.

Von Braun teamed up with Walt Disney to produce four television shows about space. Then on March 5, 1955, *Man in Space* was aired. It is estimated that 42 million people saw the program. The second show was *Man on the Moon*. And in December 1957 aired the third show, *Mars and Beyond*. Von Braun hoped that the television series would encourage young people to study science and learn about rockets and space.

### Krafft Ehricke's Expedition Ares

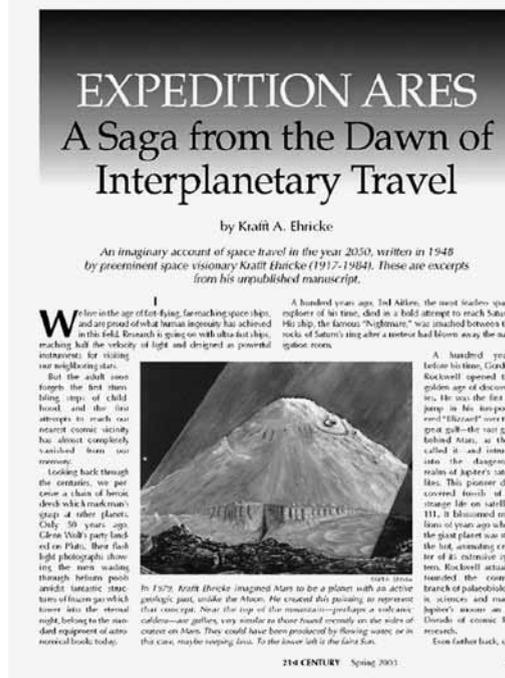
While von Braun was writing *The Mars Project* in the late 1940s at Fort Bliss, his neighbor, friend, and former Peenemünderer, Krafft Ehricke, was writing his own Mars tale, *Expedition Ares*. That they had collaborated on the two Mars tales is evidenced by the fact that Ehricke is the first person listed

in the author's acknowledgements in the introduction to *The Mars Project*.

But recently a new source of material, that here for the first time has been translated into English, has added to the picture of the relationship between the two men. In the von Braun archives at the Space & Rocket Center in Huntsville, Alabama, where von Braun headed the Saturn V rocket program, there is a group of letters written in 1953-1955 between von Braun and Ehricke. The authors are quick to point out where they disagree in some technical details of their Mars missions. One ongoing bone of contention was the size of the expedition. Von Braun had proposed a flotilla of 10 interplanetary vessels with a total of 70 men. Ehricke believed this was too many people. He explains his thinking in a letter to von Braun, August 21, 1953:

I stand by the fact that a space ship crew can be organized in such a way that it can avoid the need of a much greater number of specialists, which by their very nature must carry with them much intellectual ballast, which has no relationship to the mission. For example, why should a navigator be a fully educated astronomer and know everything about the distribution of mass in the universe or the creation of energy in the inside of the star or the Nernstian pulsating universe or de Sitter's theory, etc. A complete knowledge of the space ship; from the engine to the gyroscope is what's necessary.

Such an expedition has therefore a chance to



21st Century Science & Technology

*Krafft Ehricke's Expedition Ares, written in 1948, was published for the first time in the Spring 2003 issue of 21st Century Science & Technology magazine.*

be done a second time and this is an important consideration for keeping it small. Each following expedition will have a new exploration task and will be carried out with better equipment, more skill in preparation, improved overall planning, and with trained personnel.

We still make today often the mistake of projecting the limited means of our present period into that of the era of space flight....

Finally, in a letter from Ehricke to von Braun, February 10, 1955, he discusses something personal that had troubled him: being drafted into the German Army in 1940 had interrupted his graduate studies and he had never obtained an advanced degree:

With regard to my academic ambitions, I believe that a degree would be helpful for possible research work in the future. It's certainly the case that a degree does not in the least change a person's abilities. But obviously this is not so evident to many others.

Von Braun responded on September 1, 1955:

I heard about your "Odysee" [Ehricke's move from Buffalo to San Diego] in a roundabout way, and hope that you have now found a position where you can obtain your so warmly desired MS or PhD. But in all honesty, Mr. Krafft Ehricke would be just as dear to me as Krafft Ehricke, MS or Dr. Krafft Ehricke.

Ehricke's 1948 Mars exploration book, *Expedition Ares*, met the same fate as Wernher von Braun's *The Mars Project*. Ehricke's approach, which is juxtaposed to that of von Braun, takes place 400 years into the future. Looking backwards from then to the present allows him to describe many of the scientific and technological breakthroughs across the centuries. Ehricke believed that "the future could not be built with yesterday's technologies."

To Ehricke, space exploration was not an extracurricular activity, but a function of an "extraterrestrial imperative." For man to progress, he has no choice but to expand his world view and his realm of activity to the entire Universe. There are no limits to growth, Ehricke insisted, when that false notion became popular

in the late 1960s, because there is no limit to man's creativity.

Were man to deny that imperative, and try to live only within the fixed limits of his original home planet, Ehricke stated, the result would be geopolitical power politics, stagnation and eventually ecological crises, mass starvation, wars over limited raw materials, epidemics, and revolutions—a New Dark Age. Indeed, having ignored the warnings, we stand at that precipice today.

Ehricke believed that a new Renaissance was necessary. Works such as his *Expedition Ares* embody the optimism, the commitment to scientific and technological advancement, and the belief in the irrepressibility of the human spirit, that mankind must marshal today to make this, and other great projects, a reality.

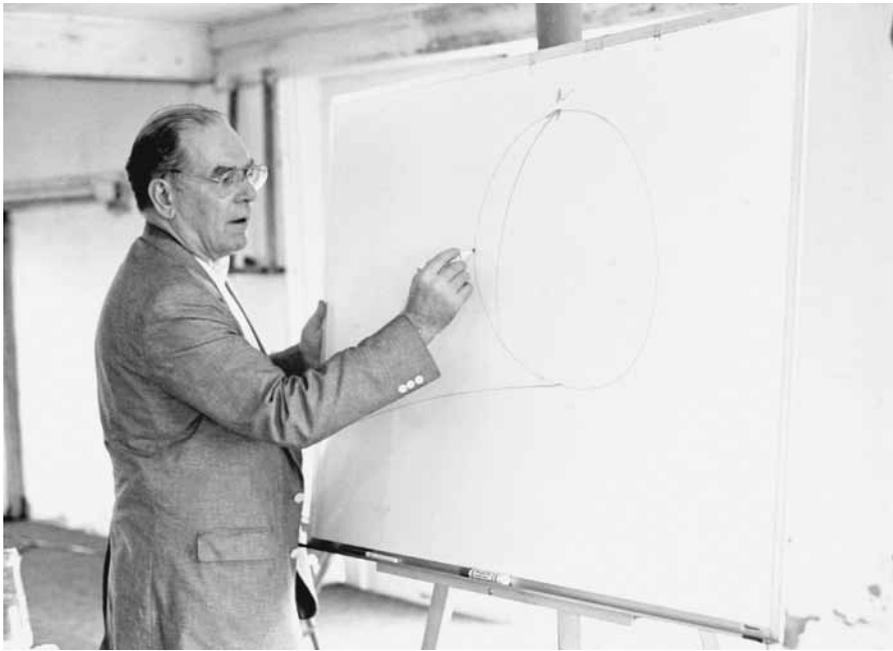
This belief was also shared by economist and statesman Lyndon LaRouche.

### **Lyndon LaRouche and the Economics of Space Exploration**

One of the few national political figures who made the colonization of Mars an integral part of his political program was economist and statesman Lyndon LaRouche, who placed space exploration at the forefront of his economic program. LaRouche saw human space exploration as the cutting edge of scientific development. In 1988 he produced a half-hour TV program titled *The Woman on Mars*. LaRouche was ridiculed at the time by the media for promoting the very idea of Mars colonization.

At the same time, LaRouche was ridiculed for his public support of a U.S.-Soviet treaty to jointly build new defense systems capable of destroying nuclear missiles in flight, which would shift military doctrine from Mutually Assured Destruction to one of Mutually Assured Survival. The LaRouche policy was, in essence, adopted by President Reagan, who announced that change in policy in a national TV broadcast on March 23, 1983.

Lyndon LaRouche and his wife Helga Zepp-LaRouche worked with Krafft Ehricke during the last period of Ehricke's life, united by their common commitment to space exploration and their opposition to the anti-technology environmentalist movement. In "The Science and Technology Needed to Colonize Mars," [published](#) in 1986, and intended as a proposal for the long-term



EIRNS/Stuart Lewis

*“Lyndon LaRouche was always rigorous in the economic changes that must precede a successful Mars exploration program, including breakthroughs in the development of thermonuclear energy.” Here, he gives a class in Leesburg, Virginia, July 8, 1985.*

space policy of the Reagan Administration, LaRouche wrote:

We are presently developing each and all of the technologies needed to accomplish [the Moon-Mars mission], although it will take about forty years of scientific development and engineering to bring us to the point of applying those technologies to this specific task.

It is also economically feasible. For every penny the United States spent on the research and development work of the NASA manned landing on the Moon, we gained between ten cents and twenty cents of income, and perhaps even more, from the application of those technologies to our civilian economy.

Due to the difference in distance to Mars as compared to the Moon, setting the date for colonizing Mars had to wait, until we had begun to master four new kinds of physics breakthroughs: controlled thermonuclear fusion as the primary source of energy used, lasers and other forms of coherent electromagnetic pulses as a basic tool, new developments in biological science of the kind now emerging around optical biophysics, and much more powerful, more compact com-

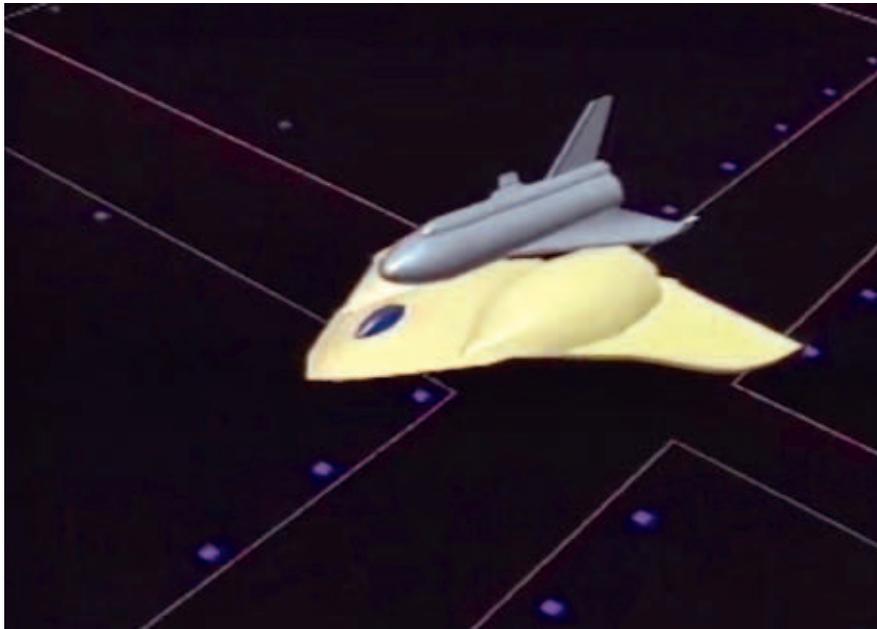
puter systems to assist us in handling these new physics technologies.

Reflecting some of the views of the then recently deceased Ehrlicke, LaRouche said that before colonists arrive to live on Mars, transportation and storage infrastructure should be in operation, to accommodate the tons of freight to be warehoused, arriving from Earth orbit. This facility could be in Mars’ orbit, or perhaps on the Martian moon, Phobos. “We might prefer to use a large orbiting, manned station ... on which technicians and scientists would serve a tour of duty....”

Approaching space exploration from his expertise as an economist, LaRouche was always rig-

orous in the economic changes that he saw must proceed a successful Mars exploration program, including breakthroughs in the development of thermonuclear energy:

Fusion provides us the needed technology for powered interplanetary flight, superseding the problems of unpowered ballistic trajectories of spaceflight. Fusion is also indispensable for power to the colonies. Since we cannot carry vast quantities of manufactured articles or food from Earth to Mars, we must have tools specifically qualified to produce needed materials and articles from the raw materials of that planet. This requires not only very high quantities of power per-capita, but also energy-flux densities at least four times those prevailing in U.S. production. We require a universal class of tools, to use such very high energy-flux densities; we require the self-focusing characteristics of lasers and particle-beams, for example, which enable us to conquer every problem of materials. To feed the colonies, and long-range manned interplanetary expeditions, we require not merely present biotechnology, but the more pro-



*In LaRouche's Woman on Mars, the trip from Earth begins in a trans-atmospheric vehicle, or space plane, which takes off like an airplane, as seen here in LaRouche's broadcast. It takes passengers to an Earth-orbiting space station, where they transfer to a fusion-powered vehicle to Mars.*

found capabilities locked up within optical biophysics.

And always with an eye on the transformative powers of these capabilities here on Earth, LaRouche adds:

It should follow, that if we can create and maintain viable cities in artificial environments on Mars, the Sahara and the Gobi deserts ought to be mastered easily by using the same technologies on Earth....

Krafft Ehrlicke, whose death at the early age of 67, was felt as a great loss by the LaRouches. In June 1985, the Fusion Energy Foundation and the Schiller Institute sponsored a conference dedicated to his memory. The proceedings were published in the [book](#), *Colonize Space: Open the Age of Reason*. LaRouche said at the conference:

As each of us is born, each of us must die. Within that brief interval of life, what distinguishes a life as human, as exalted above the condition of mere beasts is that which the indi-

vidual contributes to the enduring benefit of future generations.... Our beloved and most accomplished friend, Krafft Ehrlicke, has bequeathed to future generations a beautiful and most valuable gift.

If we wish to develop the SDI and its offshoots in the best way, the way to organize the program is as a by-product of a mission-assignment for colonizing first the Moon and then Mars. Every technology we require for military purposes, will appear as a by-product of the primary mission-assignment.

Later in 2009, in response to a question from an economist at a webcast, LaRouche returned to the topic in the light of the recent discovery of significant quantities of

helium-3 on the Moon:

We have to think about accelerated flight. We have on the Moon a resource we recognize as helium-3. The Sun has deposited a mineral on the surface of the Moon for a long time. Helium-3 happens to be a very useful item for space flight, because it can be very directly applied to the propulsion process. We could, technically, with helium-3 fusion, have a 1-gravity flight, from the orbit of the Moon to the orbit of Mars, which would get you between the two planets within a few days!

I've been committed to this for a long time, as some people know, since I did this half-hour film, *The Woman on Mars*, back in 1988, [for my presidential] campaign—and it's still valid today—we will deal with Mars, we will conquer Mars, we will see what's up there, we will see what use we'll make of it. And we'll change the nature of man's conception of himself. Man will no longer think of himself as an Earth-bound landgrubber. (Not landlubber, but landgrubber.) And man will think of himself as man in the Solar System.