China Takes a Decisive Lead in Space

by Kesha Rogers

> The Moon is so rich in helium-3, that it could solve humanity's energy demand for around 10,000 years at least. Helium-3 is an ideal fuel for nuclear fusion power, the next generation of nuclear power.
>
> —*Professor Ouyang Ziyuan, chief scientist of China's Lunar Exploration Program, the Chang'e Project*

Jan. 8—On Thursday, January 3, Beijing time, China became the first nation to ever attempt—and accomplish—a soft landing on the far side of the Moon. This achievement has far greater implications than what has been reported in almost all media coverage.

I will begin with a quote from Lyndon LaRouche, because it is urgent to properly situate this current Chinese accomplishment, and the point made by Mr. LaRouche will define the larger context in which to view all of what is discussed below.

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China's Yutu-2 rover makes history as it rolls onto the Moon's far side shortly after touchdown, Jan. 2, 2019.

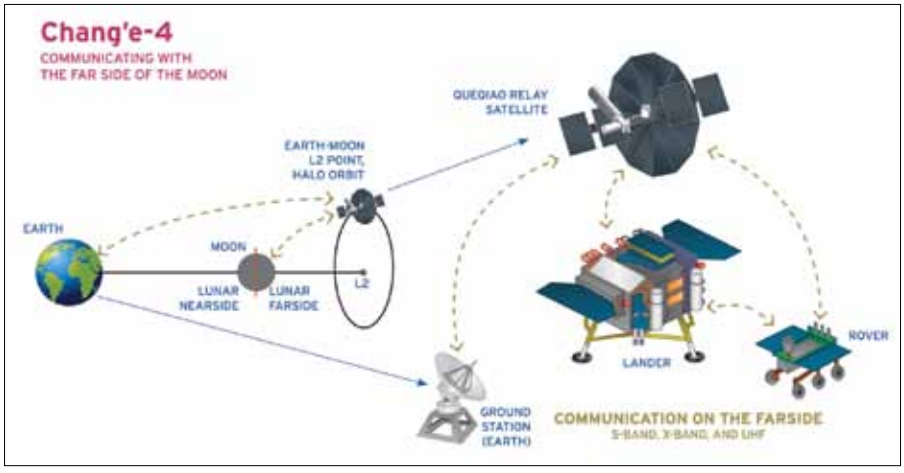
After China launched its first rover to the lunar surface, about five years ago, in 2013, the first Yutu rover, this is what LaRouche had to say about the implications:

> We know that the greatest power in the solar system accessible to us now, the greatest power available to mankind in the solar system now is what? It's the Moon. It's the helium-3 on the Moon. That's the greatest power now. What if we should decide to take this great power, which is there, the Moon-power? It's more powerful than anything on Earth. The Moon is more powerful than anything on Earth, and China's working with the Moon.

If you think about this, this is what we have identified in the economic laws of Lyndon LaRouche around his fourth law for the advancement of a fusion science-driver economy. As LaRouche makes very clear, the economic development of the Moon, in conjunction with a crash program for fusion power, would be the most powerful science-driver program for all of humanity.

What the Chinese have done, in their own way, is to

respond to that mission and vision, as outlined by Lyndon LaRouche. This is not just something that has been done in the recent period, but it has been an ongoing feature of the opening up of China for the past forty years. It occurs within the context of LaRouche's fight to free the United States and the rest of the world from British geopolitics, i.e., the pitting of nation against nation—and to initiate a new paradigm of growth and economic scientific progress. This is what we see going on right now.



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Schematic showing how China's Chang'e-4 lander and Yutu-2 rover communicate with Earth from the far side of the Moon via the Queqiao relay satellite.

Rabbits on the Moon

China's Chang'e-4 lunar farside mission landed on the Aitken Basin's von Kármán crater, near the Moon's South Pole. The basin is massive in size, estimated to be about 2,400 km across and 13 km deep. The Chang'e-4 lunar mission has two elements to it: a relay satellite, Queqiao, and a lunar probe consisting of a lander and a rover. The rover, which has now separated from the lander and is now roving around, is named the Yutu-2. The first Chinese rover that landed on the Moon, just about five years ago, was the Yutu rover and this one is called Yutu 2. Yutu means "Jade Rabbit."

The first pictures from the Chang'e-4 probe have now been sent back to Earth, made possible because of the earlier launch and deployment of the Queqiao relay satellite. The Queqiao (or Magpie Bridge) relay satellite was launched in May 2018. Queqiao entered its current orbit on June 14, 2018. It is the world's first communication satellite operating on the far side of the Moon, in what is called a halo orbit, at the Earth-Moon L2 Lagrange point. There is no direct line of sight from Earth to the far side of the Moon, and direct radio communication is therefore not possible. This satellite makes possible communication between the Earth and the Moon's far side.

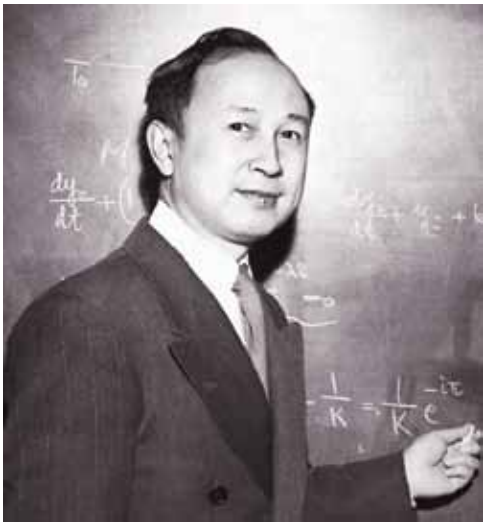
Chang'e-4 has a number of instruments on the lander and rover for performing a variety of studies, and many of these instruments have come from other countries, particularly a number of European countries, including the Netherlands, Sweden, and Germany. They will study the mineral deposits and the shallow lunar surface, the structure of the Moon's far side. They are also going to perform low frequency radio astronomical observations, and there are instruments to test for the presence of water on the far side of the Moon.

Among the instruments on this mission is a spectrometer that will be used to test for plasma that bombards the Moon. China will be looking for the rare isotope helium-3, which is known to exist on the Moon. Professor Ouyang Ziyuan, the chief scientist of the Chinese Lunar Exploration Program (CLEP), has said that "the Moon is so rich in He-3, that it could "solve humanity's energy demand for around 10,000 years at least." Ouyang has called He-3 "an ideal fuel for nuclear fusion power, the next generation of nuclear power."

How Did China Get There?

Chinese involvement in understanding the importance of a space program began in 1935, when a 24-year-old Chinese student, Qian Xuesen, came to the United States on a scholarship to MIT. He then continued his studies, receiving his doctorate, at Cal Tech. There he studied under the great Hungarian-American aerodynamicist and aerophysicist Theodore von Kármán. For those of you who have been following the progress of the Chang'e-4 mission, this name might sound familiar, as the name of unique place Chang'e-4 has landed is called the von Kármán crater.

By 1943, Qian became one of the founders, with von Kármán, of what became the Jet Propulsion Laboratory (JPL) at Cal Tech. He was one of von Kármán's closest collaborators and von Kármán referred to him as an undisputed genius. As you may know, JPL has been instrumental in much of the scientific work of the American space program. During World War II, Qian began



Qian Xuesen teaching at Caltech, before returning to China.

NASA JPL

Theodore Von Kármán (center) at the Jet Propulsion Laboratory in 1940.

groundbreaking work on ballistics for the U.S. military and was commissioned as a colonel in the U.S. Army.

Despite his war-time service to America, after the war, during the years of the "red scare," Qian was accused of being a Communist sympathizer by J. Edgar Hoover's FBI, and in 1955, he was driven out of the United States. So, you had one of the greatest scientists, rocket engineers and individuals who has ever worked in the U.S. space program, forcibly expelled from this country and sent back to China. In China, he became a prominent scientist, working on the space program and its ballistic missile systems, until he died at the age of 97 in 2009.

In 1979, seven years after the last Americans set foot on the Moon, China's leader Deng Xiaoping paid an extraordinary visit to the United States, as part of what Deng called the "Opening up of China." It's important to think about this history. Deng and his wife were invited to the Johnson NASA Space Center in Houston, where they were given a tour. Deng was able to ride in a lunar module simulator with astronaut Fred Hayes. He was completely transformed by this program, by our space program.

British Geopolitics: Enemy of Cooperation

Despite the recent intensive efforts of U.S. President Donald Trump and Chinese President Xi Jinping to improve U.S.-Chinese relations, fools in the U.S. Congress and other British puppets continue to sabotage collaboration between America and China in space exploration.

The U.S. space program led the way, going back more than forty years, in being the first nation to send human beings to the surface of the Moon, coming in peace for all of mankind. China has now resurrected that universal mission, as originally set forth by John F. Kennedy.

NASA

Deng Xiaoping (center foreground) and his wife Zhuo Lin, being briefed by NASA Johnson Space Center Director Christopher Kraft, Feb. 2, 1979.

China launched its first satellite into space on April 24, 1970. On the 46th anniversary of that event, April 24, 2016, China designated April 24th its first national Space Day. On that occasion, Chinese President Xi Jinping called on scientists and engineers to make China a leader in space exploration, to "seize the strategic opportunity and keep innovating to make a greater contribution to the country's overall growth and the welfare of humankind." He added, "Becoming an aerospace power has always been a dream that we have been striving for." That dream has now become a reality, as China has now taken leadership in space.

Convair/General Dynamics Astronautics Atlas Collection

Krafft Ehricke discussing his design for the Experimental Manned Space Station, Sept. 19, 1958.

I want you to think about all of this. Where is the United States going? Rather than an outpouring of enthusiasm greeting the success of Chang'e-4, or proposals for the United States to cooperate with China in this "return to the Moon," Congress and the news media are targeting China, as well as Russia, as strategic enemies of the United States, demanding that we break the few ties of collaboration we have, that we refuse altogether to work with these nations in space exploration and settlement. That is what is being discussed right now, and that is what occurred already, back in the 1950s, when Qian Xuesen was deported back to China.

I want to make that point very clear: What has happened with this very successful mission of the Chang'e-4 lander is not just an event in and of itself. It's not just that China did something for China; this is a breakthrough for all of humanity. China is following a path coherent with the conception of the great space pioneer Krafft Ehricke, who was a dear friend of Lyndon and Helga LaRouche. Ehricke proposed that it was mankind's destiny to advance beyond any so-called limitations to growth, that there are no limitations to growth. This is the idea Krafft Ehricke always presented in his writings on lunar settlement and industrial development—what he called "The Extraterrestrial Imperative."

The Moon is a "gold mine" and a breakthrough for the advancement of all of mankind. Krafft Ehricke demonstrated that space exploration is not just about space itself; it's about the breaking free of the limitations and bounds of Earth, a "closed world system," where nations with borders fight against each other, and where poverty suffocates and snuffs out so many lives—that all these things can be overcome by advancing mankind into what would be known as an "open world system," where we leave the limits and bounds of the Earth and advance mankind scientifically and technologically.

This is what China is responding to. In landing a probe on the far side of the Moon, China has sent out a shock, a Chang'e shock, if you will, or, a new "Sputnik shock." We can't just sit back and get mad, or say with negative pessimism and cynicism, "Well, you know, if the Chinese are doing it, it's no good." China has raised the bar for mankind. The United States has to respond accordingly and adequately right now. The New Paradigm must replace geopolitics.

Let Optimism Reign

This goes back to exactly what Lyndon LaRouche stated in the quote I cited at the beginning of this article about the Moon being the greatest power in our solar system. The mentally shallow Barack Obama once publicly dismissed the proposal for returning to the Moon with the foolish and dangerous adolescent quip, "Been there, done that." Better that he should have consulted the scientists of the Apollo missions. China's intention is not new. The leaders of the Apollo program understood the necessity of having lunar settlements not just to be there and raise our colors, but that getting there and being there drives advances and breakthroughs in mankind's science and technologies in every field.

The termination of America's lunar mission after Apollo 17 in December 1972 was a great loss for humanity, but China has taken up the torch forty years later.

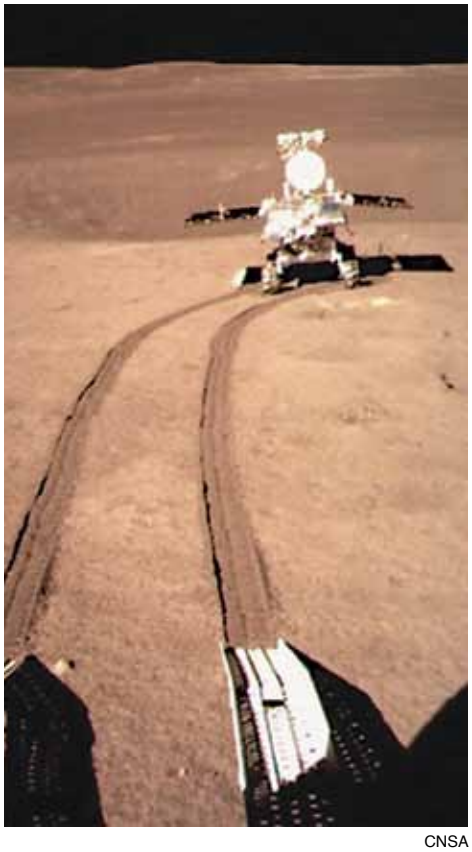
In a recent interview with *Politico*, Apollo 8 Commander Frank Borman stressed that since the termination of the Apollo program, "NASA hasn't been able to define a consistent mission." Another astronaut, the geologist on the Apollo 17 program, Harrison Schmitt, has written a book called *Return to the Moon*. In it, Schmitt emphasizes the importance of lunar settlements and the development and industrialization of the Moon for mining of helium-3. This was the Apollo perspective; it was to be an economic breakthrough for the advancement of all mankind.

This is exactly the present view of China. They do not view Chang'e-4 as a narrow, single program. This really has to be looked at within the larger context of the "Opening Up" of China. What's happened in China—one of the poorest countries on the planet—since Deng's visit to the United States and NASA's Space Center forty years ago? Over 700 million people no longer live out their lives in conditions of abject poverty. That is not something that "just happens."

That is the result of carrying out a long-term vision—a mission intention—in the same way the United States, under the vision and mission of President John F. Kennedy, advanced and became a powerful economic force in the world with our space program. There wasn't a separate program only for our astronauts and rocket scientists; it was a unifying force for the progress of the entire nation. This is what you see going on right now with China, because it has that vision; it's a mission that is going to advance the whole of mankind.

The rapid growth of the Chinese space program and its historic mission to the lunar farside was not done without robust international cooperation and recognition of its effects on the whole of humanity. The director of International Cooperation at China's National Space Administration, Xu Yansong, stated,

> We have wide participation from the international community. The dosimeter is from Germany, the neutron detector is from Sweden, and a number of other instruments are from Saudi Arabia, as well as the Netherlands. We have support from the European Space Agency and we are also cooperating with NASA on using the lunar reconnaissance orbiter from NASA to observe changes in the landing process. So we've been closely cooperating with the international community, and certainly look forward to very fruitful scientific returns.



CNSA

A path to tomorrow: China's Yutu-2.

NASA administrator Jim Bridenstine issued a tweet praising the landing as an "impressive accomplishment." But Bridenstine and others who have welcomed space cooperation with China and Russia, are now being targeted by the anti-Russia, anti-China geopolitical fanatics. Yet, as America falls further and further behind in the field of space exploration and achievements, one has to ask how much longer these tired "Cold War" tactics will work.

This is the time to be absolutely optimistic, because mankind is taking off in a way that you would never have imagined. Despite all of the pessimism, all of the imposed cultural decadence, what we see now is the potential for the emergence of a cultural renaissance and a "Moon renaissance." This is what we have to demand here in the United States.

We can no longer accept being a culture of a "limits to growth" paradigm, a nation which accepts widespread poverty and an increasing rate of suicides and drug overdosing. Open Up! Join in with the New Paradigm. We have the resources right at our fingertips. We just have to go out there and capture them. We should be happy to take inspiration from what China is doing right now in advancing mankind, in fulfilling mankind's extraterrestrial imperative. Let us join hands with China and other space-faring nations in this great project.

We are living in very exciting times!