



# STRATEGIC VISION for Taiwan Security

Volume 5, Issue 47 ♦ September, 2020 ♦ ISSN 2227-3646

## Red Flag on Mars

### China Sets its Sights on the Red Planet

Tonio Savina

### PLA Strives for Global Military Reach

M.S. Prathibha

### India-China Border Tensions

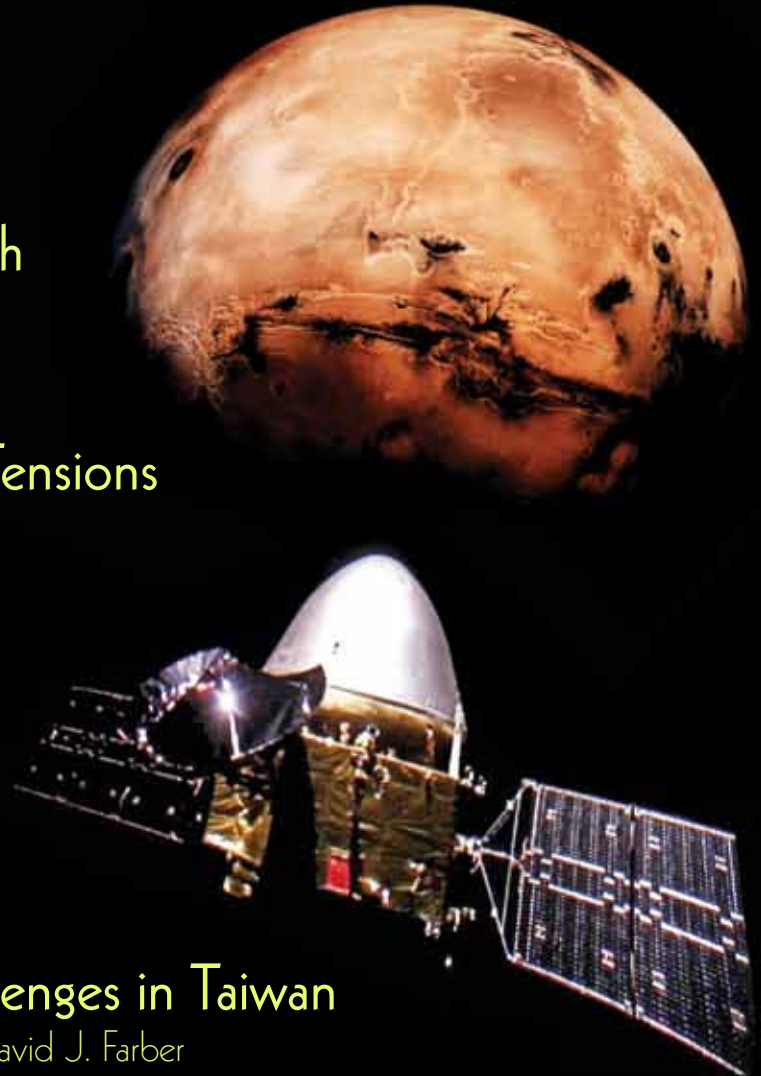
Raviprasad Narayanan

### China's Successes Against COVID-19

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Tobias Burgers, Hon-min Yau, David J. Farber





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**Submissions:** Essays submitted for publication are not to exceed 2,000 words in length, and should conform to the following basic format for each 1200-1600 word essay: 1. Synopsis, 100-200 words; 2. Background description, 100-200 words; 3. Analysis, 800-1,000 words; 4. Policy Recommendations, 200-300 words. Book reviews should not exceed 1,200 words in length. Notes should be formatted as endnotes and should be kept to a minimum. Authors are encouraged to submit essays and reviews as attachments to emails; Microsoft Word documents are preferred. For questions of style and usage, writers should consult the *Chicago Manual of Style*. Authors of unsolicited manuscripts are encouraged to consult with the executive editor at [xiongmu@gmail.com](mailto:xiongmu@gmail.com) before formal submission via email. The views expressed in the articles are the personal views of the authors and do not necessarily represent the views of their affiliate institutions or of *Strategic Vision*. Manuscripts are subject to copyediting, both mechanical and substantive, as required and according to editorial guidelines. No major alterations may be made by an author once the type has been set. Arrangements for reprints should be made with the editor. Composite cover photograph of is courtesy of NASA and the China National Space Administration.

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STRATEGIC VISION For Taiwan Security  
(ISSN 2227-3646) Volume 9, Number 47,  
September, 2020, published under the aus-  
pices of the Center for Security Studies and  
National Defense University.

All editorial correspondence should be  
mailed to the editor at STRATEGIC VISION,  
Taiwan Center for Security Studies, No. 64,  
Wan Shou Road, Taipei City 11666, Taiwan,  
ROC.

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Online issues and archives can be viewed at  
our website:

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## From The Editor

**T**HE EDITORS AND staff of Strategic Vision would like to wish our readers well this fall season. The Indo-Pacific region remains as dynamic and complex as ever, and we wish to keep our readers abreast of developments that continue to affect security in the region. To that end, we offer our latest issue.

We open this issue with Dr. Raviprasad Narayanan of the School of International Studies, Jawaharlal Nehru University in New Delhi, who examines the border clash between China and India. Next, Tonio Savina, a PhD student at the Italian Institute of Oriental Studies at Sapienza University in Rome, looks at China's space program and the current mission to explore Mars.

Dr. M.S. Prathibha of the East Asia Center at the Manohar Parrikar Institute for Defence Studies and Analyses in New Delhi offers an analysis of China's drive to field a global military as a means to achieving the Chinese Dream.

Dr. Tobias Burgers, Dr. Hon-min Yau, and Dr. David J. Farber discuss the implications of a pair of surveys that reveal a fundamental lack of understanding about the seriousness of cyber threats among the Taiwan public.

Finally, Dr. Shao-cheng Sun, a visiting professor at The Citadel in Charleston, South Carolina, examines China's messaging on its fight against COVID-19.

We hope you enjoy this issue, and look forward to bringing you the finest analysis and reporting on the issues of importance to security in the Taiwan Strait and the entire Asia-Pacific region.

Dr. Fu-Kuo Liu  
Editor  
Strategic Vision

# Red Planet Ambitions

## Beijing seeks to plant red flag on Mars to boost China's status back on Earth

*Tonio Savina*

**O**N 23 JULY, China launched its first Mars exploration mission, Tianwen-1, which is expected to land on the Red Planet's surface in the first quarter of 2021. The launch did not come as a surprise: it was part of China's step-by-step strategy to accumulate capabilities in outer space and was announced as far back as 2016. Most of the analysis conducted on Tianwen-1 focused on the technological and scientific aspects of the mission, while far too little attention has been paid to the political significance of the launch and to the strategic rationale of such a risky program.

The history of Mars exploration can be divided into

two major phases. The first was from the 1960s to the 1970s and basically coincided with the Space Race between the United States and the Soviet Union. Despite numerous failures experienced by the two superpowers, this phase saw the first US spacecraft perform a flyby of Mars (Mariner-4), the first Russian probe to successfully carry out a soft landing on its surface (Mars 3), and the first US probe to orbit the planet (Mariner 9). It also includes the 1975 launch of the lander Viking 1: the first US probe to take a color image of the red Martian surface.

China did not participate in this first phase of Mars exploration; however, this does not imply that

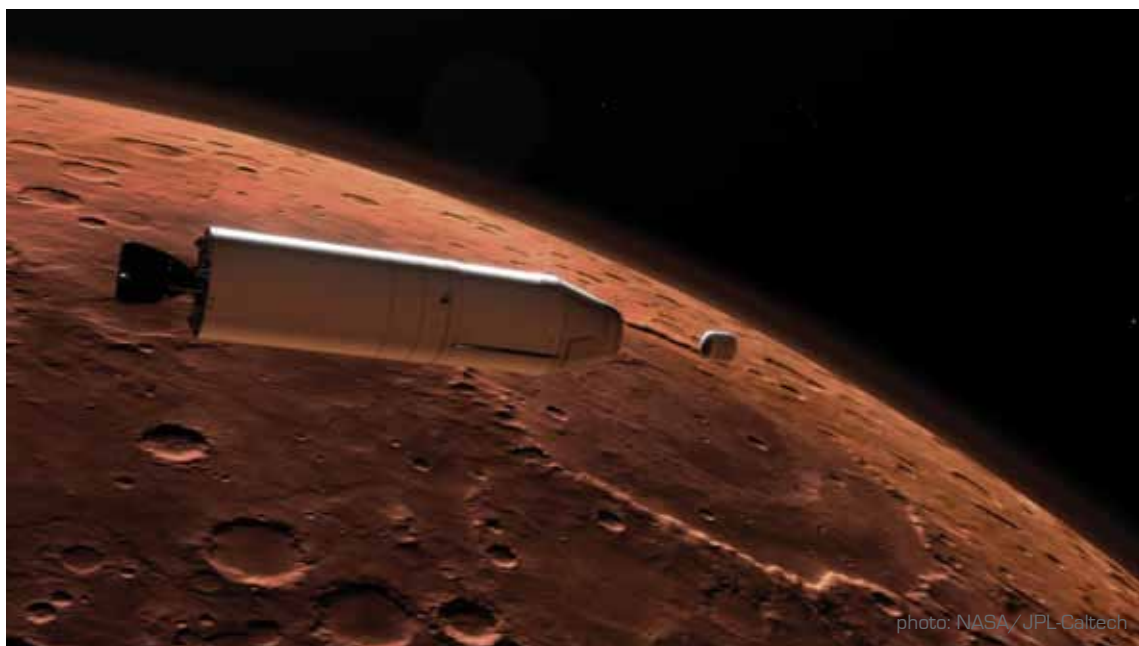


photo: NASA/JPL-Caltech

Mars Ascent Vehicle deploying a sample container in orbit (Artist's Concept).

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The launch pad at China's Xichang satellite launch center stands illuminated at night.

Chinese scientists were totally uninterested in the Red Planet. On the contrary, there is some evidence that they were already involved in studying Mars, while taking a close look at foreign experience with the planet's exploration. A paper published in 1961 by Yi Zhaohua and Huang Tianyi calculated the minimum time needed by a spaceship to reach Mars, while in November 1976 the Chinese journal *Foreign Trends in Space* carried out a detailed analysis of the US Viking program in its Special Issue on the Mars Exploration of the Viking Space Vehicle.

### *New era for exploration*

After several years of deadlock, the second phase of Mars exploration began in the second half of the 1990s, evolving through the 2000s. The Soviet Union had already collapsed, and this new phase was dominated by NASA's Mars Exploration Program. Indeed, while in 1996 Russia's most ambitious interplanetary probe (Mars 96) failed to launch, NASA succeeded in sending aloft its robotic spacecraft Mars Global

Surveyor, initiating a new era for exploration of the Red Planet. Furthermore, only one year later, the United States deployed the first rover (Sojourner) to the planet.

It was during this phase that the Chinese scientific community began to seriously study the feasibility of a Mars mission. As revealed in the summer of 2003 by Liu Zhenxing, a researcher with the China Academy of Science, a voyage to Mars began to be part of the Chinese planetary exploration ambitions from the early 1990s. A mission to the Red Planet was conceived under the 863 plan—a scientific program that, according to the official narrative, was started in 1986 under the endorsement of Deng Xiaoping, but whose history should more properly be re-written in a less propagandistic way.

By the 1990s, however, China had not even launched its first man in space, and it lacked high-power data transmission and communications systems to cover the large distances between Mars and Earth. Indeed, it was only in the 2000s that China could participate more actively in Mars exploration. At that time, the



An MH-60S Sea Hawk delivers supplies to USS *Ronald Reagan* while taking part in Valiant Shield 2020.

Russian space agency Roscosmos was working on its Phobos-Grunt spacecraft, which was intended to land on the Martian Moon Phobos and to collect samples. This provided China with the first convenient opportunity to send a probe to Mars.

Since Beijing had been invited by Russia to join this mission, the two countries signed an agreement on 26 March, 2007, stating that China would develop a small satellite—the Yinghuo-1—to be launched with the main Russian probe Phobos-Grunt. What was implicit in the agreement was that China would contribute economically to the Russian mission while at the same time it would take advantage of Russia's experience in deep space exploration.

In 2009, Yinghuo-1 was moved to Moscow, but since the tests needed to assure the spacecraft's safety could not be completed in time, Russia decided to postpone the mission until November 2011. Despite this, on launch day, two booster engines of the spacecraft failed to ignite, and the Russian probe was lost. After a month of orbital decay, Yinghuo-1 burned up in the atmosphere.

As the Australian space analyst Morris Jones wrote in *Solar Daily*, it would be naïve to think that the loss

of Yinghuo-1 was merely a failure for China's Mars program. On the contrary, the incident was only a training exercise for the Chinese planetary exploration ambitions. Therefore, after the failure, China's interest in a Mars program rapidly increased. A new proposal was presented to the Chinese government for a 2015 mission, but it did not get approval and it was eventually dismissed.

### *Renewed enthusiasm*

There was renewed enthusiasm for the project when, during the International Planetarium Society Conference held in Beijing in July 2014, geologist and cosmochemist Ouyang Ziyuan, the founding father of China's lunar program, announced that China was working on a Mars mission. At that time, the final funding decisions had not yet been made. Indeed, the mission was not formally approved until 2016, as confirmed by the 2016 White Paper on China's Space Activities, which described China's intention to "execute its first Mars exploration operation, and [...] to launch the first Mars probe by 2020 to carry out orbiting and roving exploration."

Reaching Mars is very difficult. Long-term exposure to radiation, the presence of a toxic soil, and a substantial communication delay between Mars and the Earth are only some of the problems a Mars mission would have to contend with. Going to Mars also requires an enormous amount of resources: an investment that would be unlikely to provide any observable benefits in the short term at best, and may, if the mission fails, end in a public-relations disaster. Considering this risk, one might well wonder what the strategic rationale is for the Chinese Communist Party (CCP) to commit the country to a risky voyage to the Red Planet.

In his book *Mission Mars: India's Quest for the Red Planet*, Ajey Lele points out that a State has five main reasons for seeking to reach Mars. First, as with every space mission, such a journey represents a formidable technological challenge, and would encourage industry to develop new technologies that could serve as a driver of innovation. In this sense, a trip to Mars could strengthen the Chinese path of innovation.

Lele, who is a space expert at the Institute of Defense Studies and Analyses in New Delhi, offers a second

reason: a Mars mission would have a lot of economic advantages and, like the Apollo program did for the United States and the Chang'e program did for China, it could provide the country with several spin-off applications, such as advancements in remote-sensing technologies.

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*“China could use a Martian mission to enhance its national prestige and present itself as a leader in space exploration.”*

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Third, Mars has always been fascinating, in that it has a particular attraction for humans and, above all, is the major space challenge in the decades to come. Furthermore, it could boost studies in space-related technologies and planetary science. CCP leaders are aware of the need to mold the younger generation who will be the astronauts, engineers, and scientists that will serve the country in the future. To this end, in 2018, China opened a Mars simulation base in the vermilion sands of the Gobi Desert, as part of the so-called Space C Plan: a project to inspire and motivate



photo: NASA/JPL-Caltech

In this illustration, NASA's Mars 2020 rover uses its drill to core a rock sample on Mars.



photo: Jan David De Luna Mercado

**A P-8A Poseidon lands at Misawa Air Base after a maritime patrol and reconnaissance mission..**

young generations of potential engineers. It is important to note that the goal of inspiring new generations is strictly linked with the fourth reason for a State to go to Mars as enumerated by Lele, that of national pride. Such a mission would build up citizens' sense of belonging to a great nation, and would enhance their loyalty to the Communist Party.

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*"The new Chinese mission to Mars should also be evaluated in relation to the current COVID-19 pandemic."*

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Finally, any country that can accomplish this challenge will be regarded as a great power. Therefore, China could use a Martian mission to enhance its national prestige and present itself as a leader in space exploration. Indeed, even the Tianwen-1 logo seems to serve this purpose: featuring the letter C, the emblem signifies China, capacity and, above all, cooperation. In this regard, it should also be noted that the Long March-5 rocket booster's payload fairing used for this mission was adorned with the European, French, Argentinean, and Austrian space agency logos, symbolizing the contributions made by these agencies to the Chinese mission in terms of instru-

mentation and tracking.

Despite this cooperative image, it is important to evaluate the Tianwen-1 mission from a competitive perspective, too. This is not true for the two missions titled Hope and Perseverance, respectively launched by the United Arab Emirates and the United States during the same launch window of Tianwen-1. The timing has been interpreted as reflecting the emergence of a new Space Race, but a more scientific reason is that the timing was determined by orbital patterns. Indeed, the decision to launch a Mars mission in July 2020, rather than in the months that follow, was primarily dictated by celestial mechanics: a spacecraft has to be launched when the Earth is at a relatively short distance from the Red Planet, allowing it to follow the most fuel-efficient orbit. Since this only occurs once every twenty-six months, every country took advantage of the July-August 2020 launch window to launch its spacecraft.

Tianwen-1 is competitive mostly because it includes an orbiter, a lander, and a rover all in one. It represents China's most ambitious attempt yet at interplanetary exploration. If it is successful, China will become either the fifth or sixth country to orbit Mars, the third to achieve a Mars landing, and only the sec-



ond to place a rover on the planet. Consequently, on a global scale, this mission could demonstrate that China is able to surpass the achievements made by its predecessors and make it an equal to the United States in terms of spacefaring capability. At the same time, on a regional scale, it could pose a challenge to India's Mars exploration program. Indeed, in 2014, the Indian probe Mangalyaan became the first Asian spacecraft to orbit Mars. At that time, this feat positioned India to leap ahead of China in this specific area: now Beijing is trying to recapture its status of major regional space power.

### *COVID-19 considerations*

The new Chinese mission to Mars should also be evaluated in relation to the current COVID-19 pandemic. Indeed, although, as mentioned above, this mission was planned in 2016, it was hardly a coincidence that Chinese State media confirmed it and triumphantly revealed its name during the country's Space Day, celebrated on 24 April, 2020. It was during that month that the spread of COVID-19 appeared to

have been largely contained in China, and the Party needed to boost the morale of Chinese citizens, who were dispirited by the pandemic. Hence, with the successful launch of Tianwen-1, the CCP seems to have replicated the pattern it followed in 2003, when in the aftermath of the SARS epidemic, the flight of the first Chinese astronaut Yang Liwei was used to bolster nationalistic sentiment. Therefore, as in 2003, this mission could be interpreted as a patriotic show, a distraction from the burning issues of politics and health policy, and an opportunity to repair damage to the Party's image.

Finally, it should also be noted that, if all goes according to plan, the spacecraft is expected to arrive on Mars in the first half of 2021. That year marks the 100th anniversary of the founding of the CCP. Therefore, from a forward-looking perspective, a successful landing on the planet would certainly serve as yet another propaganda tool for the Party to display its grandeur and achievements over the last 100 years and as a further mark of the New Era proclaimed by Chairman Xi Jinping. Nevertheless, the CCP is aware of the probability that the mission could fail. ■



photo: NASA

Artist depiction of habitats on Mars. NASA's Mars 2020 rover will carry a number of technologies to make Mars safer and easier to explore for humans.

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