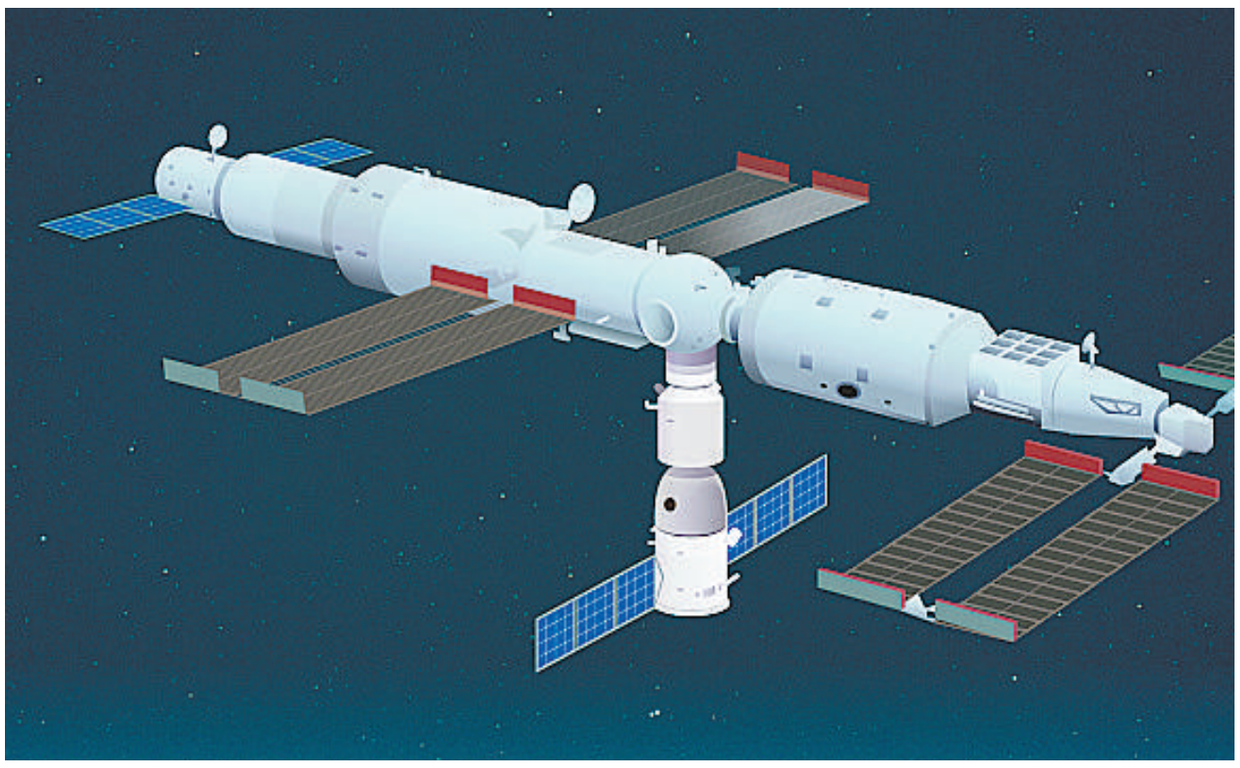
# Cooperation in Space Benefits All of Humanity



The construction of Tiangong space station will be completed during Shenzhou-14 mission. (PHOTO: VCG)

## Voice of the World

**Edited by QI Liming**

China's crewed spaceship Shenzhou-14 sent three astronauts to Tianhe, the core module of the Tiangong, China Space Station (CSS) in early June. This year will see completion of Tiangong, meaning China will be the only country to operate a space station on its own.

With the booming development of China's space industry, various threats and slanders have been heard from Western quarters. China's outer space exploration has always been guided by the spirit of peaceful cooperation, rather than "oppression" or even to challenge the U.S. as some media have assumed.

***A self-contradictory smear***

As the administrator of NASA, Bill Nelson should treat China's space exploration rationally. He should not take science and technology cooperation as a political bargaining chip to gain congressional funding by smearing China.

Nelson said this April that China continues to display a lack of willingness to cooperate with the U.S. and other countries in space.

It sounds contradictory for the U.S. to accuse China of not cooperating with the U.S. while legislating against space cooperation with China, such as lunar exploration.

As early as 2021, when Chinese taikonauts were stationed in CSS, China had sent invitations through the United Nations, hoping to cooperate with other countries to conduct experiments on CSS.

***Think big and start small***

*Scientific American* said that space won't be safe until the U.S. and China can cooperate. China is undeniably one of the world's top players in space, with successful missions to the moon and Mars. The U.S. and China must figure out a way to cooperate on some, if not all, issues in the use of space.

The most critical area is the safety of space infrastructure, where a lack of communication could be damaging and possibly even deadly.

Yet, there are serious barriers to a tête-à-tête, including the fact that some forms of cooperation are illegal. *The Wolf Amendment* prohibits NASA from using government funds to engage with the Chinese government and China-affiliated organizations.

However, this legislation does not block all cooperative possibilities, such as exchanging orbit information about human- made space objects through agencies like the North American Aerospace Defense Command.

To make real progress, the two countries should adopt a "think big, start small" approach.

By tackling smaller problems, such as rules about communicating when a crewed space station is at risk of collision, the two sides may more easily find common interests and are more likely to work in a cooperative manner. Thus, they can establish mutual trust in this process and, over time, expand their cooperation to other spheres in space.

***Future space cooperation model***

Svetla Ben- Itzhak, assistant professor of Space and International Relations, Air University, commenting this April on The Conversation website, said that even during times of conflict on the ground, space has historically been an arena of collaboration among nations. In her opinion, space blocs (groups of nations with similar strategic interests on Earth coming together to further their interests in space) allow for nations to collaborate closely with others in their bloc.

"Going forward, space blocs will serve as the major means through which states further their national interests in space and on the ground." she said.

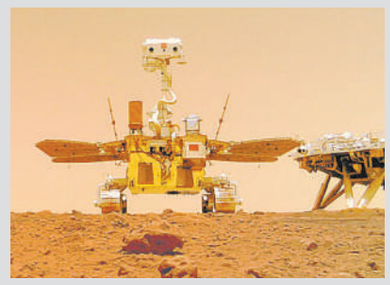
There are many benefits when nations come together and form space blocs. Space exploration is a difficult challenge, so pooling resources, manpower and know-how makes sense.

A key lesson therein is that as long as existing space blocs remain flexible and open to all, cooperation will flourish.

Maintaining the focus on scientific goals and exchanges between and within space blocs, while keeping political rivalries at bay, will help to ensure the future of international cooperation in space.

## China's plan for space exploration

2022: Completion of the construction of CSS



2030: Launch of Mars sample-return mission

2030: Sending of astronauts to the Moon

2035: Development of reusable carrier rockets

(Source: XINHUA)

## Hi! Tech

# Intelligent Bicycle Helmets

RELEE M1 bike helmet. (PHOTO: SCREENSHOT)

**By Staff Reporters**

Since the bike helmet was designed, its only function has been to protect us in case of a crash. However, with the rising trend of outdoor activities, people have increasingly higher requirements of outdoor equipment. Now, a Chinese company, RELEE, has introduced a revolutionary model of AI sports helmet-Magician M1.

RELEE's M1 is the first helmet to integrate camera, lighting and voice-commanded operation. With a built- in SONY STARVIS CMOS sensor, it provides the functions of an action camera, so that you can start recording anytime and anywhere. M1's built- in 120° wide- angle action camera has an FHD lens capable of shooting at 1080P.

This lens can accurately capture targets even in low light, with textures and colors clearly demonstrated. Equipped with advanced Electronic Image Stabilization (EIS) technology, it can shoot pictures that are extremely stable and smooth, and can compete with conventional professional DSLR (digital single lens reflex) cameras.

For the sake of getting rid of the bulky camera module overhead, RELEE has developed a revolutionary DV module separation system, which allows for up to 25cm between the lens and the processor. In this way, the camera can get the best possible angles, while data can be stably transmitted to the processor on the back of the helmet and finally to your smartphone. M1 can even take over the functions of the driving recorder: when you collide with others, for example, you can restore everything that has happened just by using your smartphone to receive the data.

While out riding, you may encounter various situations that could result in an accident. M1 has been designed with response solutions to these situations: for example, through the remote control installed on the bike's handlebars, it can send a rear signal while veering to alert the car behind.

In addition, M1 also comes with VOISCHAT-a one-button activated walkie-talkie, which enables team communication, without restrictions on distances or numbers of people. So you can talk with your buddies while riding, which can help make your ride more interesting.

# DLPE to Diagnose COVID-19's Sequelae

**Edited by QI Liming**

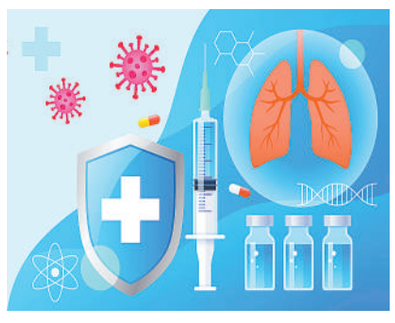
A new computer- aided diagnostic tool, developed by researchers from China and Saudi Arabia, could help monitor lung health following viral infection.

Deep- Lung Parenchyma- Enhancing (DLPE) could reveal indiscernible visual features indicative of lung dysfunction, after dealing with standard chest imaging data through AI technology.

Like other respiratory illnesses, COVID- 19 can cause lasting harm to the lungs, but doctors have struggled to visualize this damage. Conventional chest scans do not reliably detect signs of lung scarring and other pulmonary abnormalities, which makes it difficult to track the health and recovery of people with persistent breathing problems and other post-COVID-19 complications.

The researchers practiced and validated their AI algorithms using computed tomography (CT) chest scans from thousands of people hospitalized with COVID- 19 in China. They refined the method with input from expert radiologists and then applied DLPE in a prospective fashion for dozens of COVID-19 survivors with lung problems, all of whom had experienced severe disease requiring intensive care treatment.

Through DLPE augmentation, radiologists can discover and analyze novel sub- visual lung lesions. Analysis of these lesions could then help explain patients' respiratory symptoms, allowing for better disease management and treatment.



Protect the lungs from post- COVID- 19 damage. (PHOTO: VCG)

# China Tops World in Important Agriculture Heritage

*From page 1*

It performs as a model of sustainable agriculture through its remarkable agro- ecological approach, and provides ways to revitalize rural communities and promote rural development, said FAO.

FAO's worldwide agricultural heritage network now consists of 65 systems in 22 countries around the globe.

# Starlink: Blurring the Civilian-Military Line

## Opinion

**By YU Haoyuan**

UNESCO defines science as, "One of the most important channels of knowledge, which has a specific role, as well as a variety of functions, for the benefit of our society." But it seems that some countries have seldom followed this rule. During the ongoing Russia- Ukraine conflict, Starlink (satellites), a civil technology that aims to "benefit all humankind," is also being used in the war.

In 2015, SpaceX CEO Elon Musk announced his plan to launch 12,000 Starlink satellites to low earth orbit between 2019 and 2024, saying it would benefit humanity. SpaceX also started its intense campaign to promote the launching plan. Currently, there are thousands of Starlink satellites in orbit, and even before completion of the SpaceX plan the satellites are already being used by the U.S. military.

Since this March, batches of Starlink terminals have been sent to Ukraine and used for drone strikes. Musk approved the action on February 26, and the technology was weaponized by the Ukraine force Aerorozvidka, a specialist air reconnaissance unit. "If we use a drone with thermal vision at night, the drone must connect through Starlink to the artillery guy and create target acquisition," an Aerorozvidka leader told *The Times of London*.

Starlink assistance in the Ukraine war is not just commercial business, as the U.S. government has paid the bill. The United States Agency for International Development (USAID) wrote on its website that it has, "Delivered 5,000 Starlink terminals to the Government of Ukraine through a public- private partnership with the American aerospace manufacturer, SpaceX."

Perhaps many people simply consider that this technology is being temporarily used for military purposes during a time of war. But recent news has forced people to question the temporary nature of the partnership. The war between Russia and Ukraine has not yet ended, but the U.S. Army has already begun to use Starlink in other areas. Probably influenced by Starlink's huge victory in the current war, U.S. Northern Commander Gen. Glen D. VanHerck, on May 5, announced a new experiment integrating commercial satellites with military networks for tactical and strategic communications within one year. Starlink is one of the companies that may participate in the experiment.

Meanwhile, Musk also announced that Starlink has already covered all seven continents after the Philippines, Mozambique and Nigeria approved Starlink satellite services in the same month. If the U.S. Army does choose Starlink commercial satellites, then U.S. military power will be further entrenched globally.

Looking back at the recent past of Starlink's operation, its satellites were reported to be responsible for many close encounters in orbit. In September 2019, one of the SpaceX satellites came dangerously close to ESA's wind- monitoring satellite Aeolus. In April 2021, another SpaceX satellite came within 60 meters of smashing into one owned by a British- backed company. What's more of a "coincidence," in July and October 2021, their satellites nearly twice collided with China's space station Tiangong. All these near- misses are reminiscent of the U.S. Strategic Defense Initiative.

The U.S., however, has never explained the military connection with Starlink, but it is the country that always accuses others of potentially putting civil science into military use. Maybe, the U.S. should practice what it preaches and let science truly benefit all of humankind.