

### Taste of success

Growth in catering segment powers consumption recovery  
BUSINESS, PAGE 14



### Court cracks down on domestic abuse

CHINA, PAGE 5

### Timeless grace

Hanfu enthusiast on journey to revive traditional attire  
Z WEEKLY, PAGE 18



香港版  
HONG KONG

# CHINA DAILY

中國日報

www.chinadailyhk.com HK \$10

WEDNESDAY, November 29, 2023



Shenzhou XIII astronaut Wang Yaping waves during a media briefing to introduce the latest developments of China's manned space program at the Hong Kong Convention and Exhibition Centre in Wan Chai on Tuesday. The media briefing was also attended by Lin Xiqlang (center), deputy director of the China Manned Space Agency, and Shenzhou XIV astronaut Chen Dong. ANDY CHONG / CHINA DAILY

## SARs' contributions to nation's space programs praised

By WU KUNLING and HU YUYAN in Hong Kong

A high-level delegation, comprising astronauts and experts from the China Manned Space Agency, lauded the participation of the Hong Kong and Macao special administrative regions in the development of the nation's space programs, and expressed the hope that the SARs will further leverage their strengths to make greater contributions.

The delegation, led by Lin Xiqlang, deputy director of the space agency, arrived in Hong Kong on Tuesday on a four-day visit and made the remarks at a news conference.

Lin said that President Xi Jinping and the central government have

**Inside** always attached importance to and have been supportive of the scientific and technological development endeavors of Hong Kong and Macao.

Astronauts who helped in the construction of the Tiangong space station, including Liu Borning from the Shenzhou XII manned mission, Wang Yaping from Shenzhou XIII, Chen Dong from Shenzhou XIV and Zhang Lu from Shenzhou XV, and experts from related fields of manned space engineering are part of the visiting delegation.

Hong Kong Chief Executive John Lee Ka-chiu hosted a welcoming banquet for the delegates after the media briefing, and said that over

the past 30 years, the nation's manned space program has achieved a lot of breakthroughs, making Chinese people everywhere very proud.

Lee said he hopes that Hong Kong's young people will seize the opportunity of the delegation's visit to learn more about the nation's manned space program, and gain inspiration from the perseverance, skills and abilities of astronauts and other experts.

On a separate occasion on Tuesday morning, Lee expressed his gratitude to the central government for arranging the visit, saying it fully demonstrated the central government's support for the SARs and the attention given to Hong Kong's young people, as well as the nation's

high regard for and recognition of the city's development in science and technology.

Photographs showing the Tiangong space station in its entirety, taken by the crew of the Shenzhou XVI mission using a handheld high-definition camera during a flyby before their return to Earth, made their debut at the media briefing in Hong Kong.

This is the first time China has obtained, while in orbit, images of its space station with Earth visible in the backdrop. These photographs also represent the first set of images to display the complete configuration of the space station while in operation.

[See Space, page 3](#)

## Space: Astronauts from HK, Macao expected

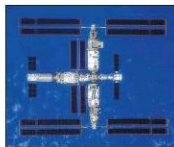
*From page 1*

During the news conference, Lin, from the space agency, said it is evident that the SARs have had a wider, deeper participation in and have made a bigger contribution to space development over the years.

Lin cited the three experiments designed by Hong Kong's secondary school students, which were carried out during the Shenzhou XI mission. Experts from Hong Kong and Macao played an active part in the selection of the country's fourth batch of payload specialists and the development of the manned lunar rover, he said.

Some candidates from Hong Kong and Macao have entered the final stage of selection for payload specialists, Lin said, adding he hopes to see astronauts from the SARs at the Tiangong space station soon.

Chen, from the Shenzhou XIV mission, said that curiosity, the spirit of exploration and the love for Hong Kong and the nation



A high-definition image of the Tiangong space station taken by the crew of Shenzhou XVI on Oct 30 was released on Tuesday in Hong Kong. PROVIDED TO CHINA DAILY

exhibited by the people, including a student who wrote a letter to the Shenzhou XIV crew members, prompted him to come to the city and share stories about China's manned missions.

Chen, who had replied to the letter from a Hong Kong middle school student, said that Tiangong is "the home of Chinese people in

space" and is open to experts from Hong Kong and Macao.

Students from Hong Kong and Macao also left an indelible impression on Wang Yaping, the nation's first female astronaut to conduct a spacewalk and one of the three Shenzhou XIII crew members who beamed a science lesson from Tiangong for students across the nation in 2021.

Wang said she was deeply impressed by a Hong Kong student who asked her if water could be recycled in space.

The astronaut said she felt fortunate to be able to build passion for aerospace endeavors in young minds, and added that she is looking forward to having students from Hong Kong and Macao join the country's aerospace team soon.

Atlas Shao in Hong Kong contributed to this story.

Contact the writers at [anherm@chinadailyhk.com](mailto:anherm@chinadailyhk.com)

# Scientist hails accuracy of satellite data

Geomagnetic monitoring system starts operations after six months of trials

By ZHAO LEI in Macao  
zhaolei@chinadaily.com.cn

The Macao Science Satellite 1 network, China's leading space-based geomagnetic monitoring system, has achieved remarkable feats and attracted scientists from around the world, according to a top member of the program.

Zhang Keke, director of the Macao Institute of Space Technology and Application, said in an exclusive interview on Tuesday that research into geomagnetic fields is one of the frontier spheres in the international science community and the two-satellite network is able to accurately detect and measure the space-time variables of Earth's magnetic fields.

"Thanks to the data obtained by the satellites, we have been able to make breakthroughs in several fields. For instance, we have created the first version of a world magnetic model that has big potential in deep-space and deep-sea explorations, air and sea transport, as well as natural resource prospecting.

"We have also, for the first time in China, made a map of the global lithosphere's magnetic anomalies and revealed the magnetic structures of global tidal movements," said Zhang, who is also chief scientist of the Macao Science Satellite 1 project and chair professor at the Macao University of Science and Technology.

The scientist said the two-satellite network has world-class detection capability and accuracy. "It is extremely difficult to measure our planet's magnetic field vectors. It is highly likely that the magnetic field data obtained by our satellites is the most accurate in the world," he said.

After witnessing the success of the satellite system, the Royal Astronomical Society in London, the United Kingdom, has arranged workshops for scientists from 11 nations to discuss the scientific value of the data.

So far, a total of 18 foreign organi-

zations have signed joint research agreements with Zhang's team, according to the professor.

On Tuesday it was announced that the Macao Science Satellite 1A and 1B had started formal operations after six months of in-orbit trials.

Jointly developed by scientists from the mainland and Zhang's team at the Macao University of Science and Technology, the satellites were launched into space on May 21.

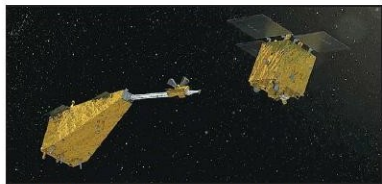
Over the past six months, the two satellites have carried out a host of capability tests.

The satellite platforms were designed and built by the China Academy of Space Technology in Beijing and Northwestern Polytechnical University in Xi'an, Shaanxi province. The scientific equipment on the satellites, including a vector field magnetometer, an energetic electron spectrometer, a coupled earth state magnetometer and a solar X-ray detector, were provided by Zhang and his fellow scientists.

The two satellites are tasked with obtaining data on different layers of the Earth's system in the South Atlantic by detecting the geomagnetic anomaly area; studying the origin and evolution of the geomagnetic field and the geomagnetic inversion mechanism; and drawing a high-precision and high-resolution lithospheric geomagnetic map.

The satellites are the world's first scientific satellites to be put into a near-equatorial orbit to study the space environment and geomagnetic field, specifically the South Atlantic Anomaly, from outer space, the China National Space Administration said.

"The magnetic field over the South Atlantic Anomaly is the weakest on Earth, which means many man-made vehicles traveling in this region, ranging from jetliners to spacecrafts, are more susceptible to the impact of high-energy particles from our sun. Our research results will be used to improve the operations and safety of aircraft and spacecraft," Zhang said.



The Macao Science 1 satellites in space. PROVIDED TO CHINA DAILY

# Chang'e 5 lunar samples put on display in Macao

By ZHAO LEI in Macao

Lunar samples retrieved by China's Chang'e 5 robotic mission went on display in Macao on Tuesday, marking the first time any lunar samples have been brought to the city for public exhibition.

The samples, contained in a specially built glass case and closely guarded, can be viewed by members of the public at the Macao Science Center until next Saturday.

The appearance of the lunar materials is the major feature of the Science and Technology Serial Activities in Macao, launched on Tuesday to popularize knowledge about China's space, marine and polar explorations.

The events are jointly organized by the Macao Special Administrative Region government, the Liaison Office of the Central People's Government in the Macao SAR and the China National Space Administration.

The 12-day activities include the Second Macao Space Development Forum, a themed exhibition at the Macao Science Center, several space industry seminars and lectures at local schools.

Huang Yong, assistant director of the CNSA's publicity center, said that the Chang'e 5 samples will enable people in Macao, especially youngsters, to closely observe lunar dust. "I am sure this will become an unforgettable experience in their life and will inspire them to learn more about the universe and the motherland's space activities, and also to pursue their own 'science dream' in the future."

At the opening ceremony of the activities on Tuesday, Li Guoping, chief engineer of the CNSA, said the mainland will continue to share the country's accomplishments in space, marine and polar exploration with Macao residents.

Tai Kin Ip, director of the Economic and Technological Development Bureau of the Macao SAR, said he believes that with support from the Macao government and the space administration, space professionals from both sides will continue to work together to bring about more scientific and technological advances, train more researchers and engage in more international cooperation projects.

# Taikonauts' visit raises hopes of policy shift

Quentin Parker says consortium of universities could form SAR science research mission satellite

On Tuesday, an important Chinese mainland science delegation, including four taikonauts from the Shenzhou 12-15 manned space-flight missions, started a much anticipated four-day visit to Hong Kong. This important and exciting trip follows on from that of trained taikonaut Zhao Chundong to Cyberport on Oct 20 for the "Tomorrow's Technology Today" international NewSpace conference organized by nonprofit NGO, Orion Astropreneur Space Academy (OASA), which did a fantastic job of showcasing what Hong Kong can offer in this area.

It's clear the mainland is giving the Hong Kong Special Administrative Region significant face and attention for what is emerging as a major national strategic endeavor of focus, power and ongoing achievement: space exploration, space science and a growing space industry. The last is through the opportunities offered by the burgeoning global "NewSpace" commercial economy that Morgan Stanley estimates will be worth \$1 trillion by the end of the current decade.

China's aerospace information industry alone (i.e. data from satellites in all forms and downstream usage) is forecast to reach about 45 billion yuan (\$6.3 billion) by 2025. There were already over 400 companies in this data-rich field registered by the end of 2022 with NewSpace startups springing up all the time. So far there are precious few in Hong Kong with Silkwave, HKATG and AdaSpace being a few highlighted exceptions. Just this week it was also reported that a Chinese investment group had set up a fund of around 100 billion yuan intended to turbocharge mainland investment in this area. I believe the HKSAR can pitch for some of this rich funding vein.

At the news conference on Nov 28, the first day of the visit, Chief Executive John Lee Ka-kit commented on opportunities for aerospace technology and our youth without really focusing on financial investment. Nevertheless, I hope visits such as this will not only lead to a transformation of our city's engagement with the amazing mainland space activities from an educational, public awareness and basic space science perspective but will also kickstart a major policy shift for our city.



Quentin Parker

The author is a professor in the Faculty of Science at the University of Hong Kong, the director of its Laboratory for Space Research, and vice-chairman of the Orion Astropreneur Space Academy.

This should be in terms of what we can also bring to the global and national table across NewSpace commercial development activities. One is the value the mainland clearly attaches to our top universities that are internationally connected and highly respected. We have five universities in the top 100 globally as determined by various ranking schemes with my own University of Hong Kong (HKU) being top of a very good pile. This makes the HKSAR a powerful tertiary education training and research nexus of immense value to China and almost unique for a city with a population of less than 7.5 million. We need to make much more of this leverage.

Hong Kong already has plenty of local talent "sparks" nurtured and trained across our great halls of academe to help ignite the NewSpace flame. Indeed, rather than just focusing on the issue of developing home-grown innovation and technology in this sector and building our city as an international hub in these terms, we also need to see the low-hanging fruit from the tree of fintech, finance and investment.

We have successfully grown this tree since the 1997 handover to something that is really significant — fourth globally after New York, London and our regional rival Singapore. As I have said before, the HKSAR has a superb regulatory and compliance infrastructure in place that can act as a powerful investment facilitator for NewSpace that is independent, globally respected and trusted. Our local prowess and expertise in financial management, fintech and delivery of initial public offerings can be effectively applied to NewSpace to fund, leverage and attract the investment sorely needed for NewSpace startups and more mature entities. This is to help them compete internationally and take them to the next level in terms of missions, capacity and deliverables.

Mainland analysts have already commented on the need for more private capital and entrepreneurship to act as a fundamental catalyst to boost the entire mainland space industry, including the key area of space data exploitation. Can Hong Kong seize the opportunities on offer? Can our government provide the policy framework to support this?

The mainland has been providing a stream of opportunities and green lights to the HKSAR in this increasingly important area for quite a while now. This is as exemplified by the Hong Kong-Macao opportunity for payload specialist for the Chinese space station (I believe within a few years a Hong Kong taikonaut will be in space), the ability of our universities to now apply to put payloads on the space station, the arrival of moon rock from the Chang'e 5 mission to HKU and now this major visit.

I believe there is also a wider agenda at play. It's not just about Hong Kong continuing to develop its aerospace research base. This is currently best exemplified by the Hong Kong Polytechnic University (PolyU) from a largely cutting-edge engineering perspective, but also the Lab for Space Research at HKU for more front-line space astrophysics research and now recently from the Chinese University of Hong Kong (CUHK) and the Hong Kong University of Science and Technology (HKUST) with plans for badged and recently launched satellites. I think there is an opportunity for a major satellite mission similar to what was gifted to Macao to the tune of around 675 million yuan.

I would like to see a consortium of our Hong Kong-based world-class universities propose a major HKSAR science research mission satellite at the 1 billion yuan level. It would bring together the best and brightest minds from HKU, PolyU, CUHK and HKUST in particular in a coordinated plan for an exciting HKSAR Space Science Research mission. This blue-ribbon flagship project would set a clear marker that Hong Kong has arrived on the scene of space technology, development and science leadership in the area. It would act as a powerful magnet for STEM talent incubation and broader community engagement with pride, ambition, belief and action.

The views do not necessarily reflect those of China Daily.