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香港版
HONG KONG

CHINADAILY

FRIDAY, June 25, 2021

中國日報

www.chinadailyhk.com HK \$10

HONG KONG

National scientists' HK visit well-received

Aerospace experts get enthusiastic greeting from young space fans during their lectures

By LI BINGCUN, KATHY ZHANG, CHEN ZIMO and CHEN SHUMAN in Hong Kong

National aerospace scientists were greeted with growing enthusiasm and passion by the Hong Kong community — especially young space fans eager to have closer contact with the top brains — as their public tour of the city entered its second day.

As part of the science delegation's five-day visit to Hong Kong, two lectures for students and an exchange activity between scholars were held on Thursday at Hong Kong Polytechnic University and the University of Hong Kong.

During the lecture at PolyU, Xie Jun, deputy chief designer of the BeiDou Navigation Satellite System, and Zhang He, executive director of the Chang'e 4 lunar probe project, shared the advanced technologies applied in the satellite program and also the nation's future plans for lunar exploration.

In another lecture, Long Lehao, chief designer of the Long March rocket series, and Sun Zezhou, chief designer of the Tianwen 1 Mars probe, spoke about the nation's achievements in exploring Mars and outer space, as well as their personal experiences pursuing scientific dreams.

During the exchange session in the afternoon, Xie, Zhang, Sun and five young scholars from the Chinese mainland exchanged views and feelings with 23 PolyU teachers and students.

During another event, Zhao Xiaojin, vice-president of the China Academy of Space Technology, a world-class spacecraft designer and manufacturer, said the warm welcome received in Hong Kong was beyond the delegation's expectations.

After Long ended the lecture and stepped off the podium, he was quickly surrounded by students eager to talk with him. The enthusiastic fans queued up to shake his hand, ask for his autograph and take photos with him.

Cornelius Leung, a 21-year-old aviation engineering student at PolyU, said he decided to attend the lecture to learn about the engineering technologies behind aerospace exploration to enhance his professional knowledge. But, in the end, he was more impressed by the spirit and beliefs that supported the scientists in overcoming hardships in their quest.

Wu Bo, a professor at PolyU who led a team in the nation's Mars project, also attended the lecture at his university. Noting an instant increase in students' inquiries about outer space projects, Wu said he was very happy to see their growing interest in space research

as a result of public seminars delivered by leading experts.

Teng Jingnang, PolyU president, said such lectures offered precious opportunities for its teachers and students to understand China's aerospace achievements.

The growing communication between mainland and Hong Kong experts during the activities also promoted understanding.

Hu Hao, chief designer of China's third-phase lunar exploration program, said he learned of the University of Hong Kong's great potential in the aerospace field, such as its strength in remote-sensing and talent cultivation, during the exchange activity.

Noting that cross-border exchange in the aerospace field has room for improvement, Hu said the visit will help the two sides increase mutual understanding.

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From left: The University of Hong Kong Provost Richard Wong Yue-Chim, Wang Yajun, from the China Aerospace Science and Technology Corp. and Zhao Xiaojin, vice-president of the China Academy of Space Technology, pose for a group photo in an activity titled "The Space Programme Scientists Enter Campus-Cum Distinguished Chinese Scientists Public Lecture Series". EDMOND TANG / CHINA DAILY



Zhang He, executive director of the Chang'e 4 lunar probe project, shares her experiences during a lecture at the Hong Kong Polytechnic University on Thursday. EDMOND TANG / CHINA DAILY



Long Lehao, an academician of the Chinese Academy of Engineering and a chief designer of the Long March rockets, delivers a speech at the University of Hong Kong on Thursday. PROMOTED TO CHINA DAILY



Primary school students show booklets on the Chinese aerospace industry at a lecture by Zhang He, executive director of the Chang'e 4 lunar probe project, at the Hong Kong Polytechnic University on Thursday. EDMOND TANG / CHINA DAILY

HK-mainland space cooperation can help realize city's potential

By KATHY ZHANG, GU MENGYAN, CHEN SHUMAN and LI BINGCUN in Hong Kong

Aerospace collaboration between Hong Kong and the Chinese mainland is set to reach new heights, with a regular cross-border exchange mechanism on the cards, according to the leader of a national team of top space engineers and designers now on a five-day visit to the SAR.

Zhao Xiaojin, who's heading the delegation, said the country's space institutions will establish a mechanism to maintain regular exchanges with Hong Kong universities.

Zhao, vice-president of the State-owned satellite and rocket maker, the China Academy of Space Technology, said Hong Kong students are welcome to take up internships or work at national space institutions.

He said six of his team's members had studied at Hong Kong universities before returning to the mainland. They shared their experiences in working on the mainland during a closed-door meeting with staff members of the Hong Kong Polytechnic University on Thursday afternoon.

Hong Kong scientists have been working with mainland aerospace institutions on many national aerospace projects, and there's room for closer and deeper collaboration, Zhao said.

More important projects are being planned and scientists and young people from Hong Kong are needed to join the nation's mission to become a space power, he said.

Hu Hao, chief designer of the third phase of China's lunar exploration project, agreed that collaboration between Hong Kong and the mainland in aerospace projects should be stepped up.

The Hong Kong Polytechnic University has contributed to several of the nation's lunar and Mars exploration programs in the past few years.

He said such cooperation has demonstrated Hong Kong's ability and strength in scientific research, and the city is capable of participating in the nation's key science and technology projects.

Hu, who gave a lecture at the University of Hong Kong on Wednesday, said HKU has certain competitiveness in remote sensing, a strength in aerospace research.

"We certainly hope to work with competitive and strong institutions to research and design aerospace facilities and

equipment," he said.

In his view, this exchange visit is an opportunity for both sides to improve mutual understanding and Hong Kong universities and research institutions are also able to get the latest information about the country's development and needs.

Xie Jun, deputy chief designer of China's BeiDou Navigation Satellite System, said given the SAR's lower latitude, the city has a geographical advantage in conducting satellite research as satellite positioning systems work better in lower latitudes regions.

Noting that Hong Kong has many ideal locations to conduct related experiments and research, Xie suggested that PolyU scientists carry out more research on the application of satellite navigation in cities.

Qi Faren, first chief designer of China's Shenzhou spaceship, said Hong Kong should further integrate into the nation's science and technology development.

He urged the city's relevant sectors to learn from the world's scientific and technological frontiers, meet the country's major development needs and focus on the people's health.

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Chinese science and technology grows by leaps and bounds

Around 25 years ago, I recall reading expert media commentary that China may be able to build refrigerators — or even television sets; but it would never be able to build motor vehicles that would sell widely. The reasoning was that the manufacturing logistics required to bring so many diverse components together into a single product was not something China could manage. Chinese motor vehicles would remain rough and ready at best, rather like those from the former USSR.

In 2003, after the launch of Shenzhou 5, China's first manned space flight, one respected, veteran local commentator agreed that China could offer such a project using a highly planned, almost military-style application of resources. But, this argument continued, China's national planned socialist system restricted the scope for cutting-edge scientific and technological advancement.

When the International Space Station was first established in 1998, it was a joint enterprise between the United States and Russia (the pivotal partners) together with



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Japan, the European Union and Canada. The ISS is now approaching the end of its serviceable life. US sanctions imposed on Russia have complicated the politics of possibly extending its life. Whenever it is finally allowed to be retired, plans will need to be worked out for its re-entry to Earth as it cannot maintain orbit indefinitely. It weighs (on Earth) over 400 metric tons — equivalent to the weight of around 400 small motor cars.

China expressed a firm interest in participating in projects being run at the ISS and received support from the EU to do so. The Christian Science Monitor reported in 2010 that the US was, however,

openly wary about allowing any Chinese participation. In 2011, the US Congress passed a law vetoing US cooperation with the Chinese National Space Agency. China has not, consequently, been invited to send any nationals to visit the ISS.

Never mind: In late April this year, China launched the initial (Tianhe) module of its own, first-ever comprehensive manned space station. The Tiangong Space Station will be less than 25 percent of the mass (or Earth weight) of the ISS once completed. Its expected life span is 10 to 15 years. Certain features are more advanced than those on the ISS.

China has expressed a wish to see foreign astronauts working and living in the new space station in the future. The China Manned Space agency signed a memorandum of understanding with the United Nations Office for Outer Space Affairs to invite UN member states to conduct scientific experiments aboard the new space station. Over 40 proposals from 27 countries have been submitted.

Meanwhile, back in July 2020, China launched its first (Tianwen 1) mission to

Mars. On May 15 this year, the lander-rover portion of this project successfully set down on the surface of Mars, after the transit to Mars from Earth and a series of reconnaissance orbits. On May 22, the Zhurong rover drove from the lander onto the Martian surface and dropped a camera able to photograph both the lander and the rover. China became only the second nation, after the US, to land an operational rover on Mars — and on its first attempt.

It transpires that detailed, advanced planning of the sort very widely used by China does not, after all, shackle innovation in the way argued by a number of commentators some 20 years ago. By any measure, these new feats of space exploration by China are exceptional both in terms of the speed at which they have advanced and the sophistication and nature of the achievements. They foreshadow more to come.

Finally, let us consider, again, the manufacture of popular, mass-market motor vehicles, once also said to be a step too far for China. Last year, China manufactured around 30 million motor vehicles (primarily for local purchase). This comprised

over 32 percent of the total number of motor vehicles produced worldwide.

Moreover, China is today both the largest producer and consumer of electric vehicles. It makes more than 50 percent of all EVs sold in the world and the bulk of electric buses made globally. China also dominates the global market for the supply of EV batteries.

We have recently been told that if Australia is ever going to make serious headway in boosting EV usage to replace fossil-fuel vehicles, it will have to rely on a supply of lower-cost, reliable Chinese EVs.

The unprecedented changes briefly outlined above with respect to space exploration and vehicle manufacturing in China have all been accomplished within a generation. Around 25 years ago, expert commentators were saying nothing of this sort was seriously conceivable for China. What we can now reasonably wonder, may happen over the next 25 years?

The views do not necessarily reflect those of China Daily.

HONG KONG



Top Chinese aerospace scientists join a media session during their trip to Hong Kong on Thursday. PROVIDED TO CHINA DAILY

Stoking dreams of space

Six top Chinese aerospace scientists led a delegation that continued its five-day tour of Hong Kong on Thursday to inspire young minds with personal tales of space adventures. They spoke of the work behind China's scientific and technological breakthroughs, from the recent Mars probe to the BeiDou satellite system.



Primary school students steal the media spotlight after hearing a lecture by Zhang He, executive director of the Chang'e 4 lunar probe project, at the Hong Kong Polytechnic University on Thursday. EDMOND TANG / CHINA DAILY



“BeiDou's role in people's daily lives is as important as water, electricity or the internet. The technology is also closely linked to infrastructure on national security.”

Xie Jun, deputy chief designer of the BeiDou Navigation Satellite System and chief designer of BeiDou's third-phase satellite



“Hong Kong youngsters aspiring to work in science should set their sights on the scientific and technological frontiers while striving to meet the nation's needs and serve the well-being of the people.”

Qi Faren, first chief designer of China's Shenzhou spacecraft



“Patriotism comes naturally to me. I owe my position today as chief designer of China's Long March rockets to the Communist Party of China. Without the Party, the cowherd boy wouldn't be here today.”

Long Lehao, chief designer of China's Long March rocket series



“The aerospace delegation brought rare opportunities for Hong Kong to have a glimpse of our country's aerospace technology. They'll give lectures; the lunar soil samples will be showcased alongside exhibits on the achievements of Chinese scientists over the past century.”

Carrie Lam Cheng Yuet-nger, chief executive, Hong Kong Special Administrative Region



“The lunar soil samples collected during the country's 2020 moon landing mission will be on display for the first time in the city. I'm grateful that Hong Kong people can share the pride in the country's space exploration achievements.”

Alfred Sit Wing-hang, Hong Kong secretary for innovation and technology



“PolyU's participation in China's space missions has opened up more room for advancement for researchers, and makes Hong Kong people proud to be Chinese. This exchange will motivate students to pursue their dreams and explore the uncharted depths of the universe.”

Teng Jin-guang, president of the Hong Kong Polytechnic University

