



Cultural bridge

Dance drama *Princess Zhaojun* set to captivate audiences in Beijing [LIFE, PAGE 13](#)

Drug control battle yields positive results
[NATION, PAGE 2](#)

Miami tragedy
Rescuers continue to look for survivors in building collapse
[WORLD, PAGE 11](#)



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Students, space stars talk cosmology

HK schoolchildren seize rare opportunity to ask top scientists about space missions

By LI BINGCUN and SHADOW LI in Shenzhen

"What's the view like in outer space? Can astronauts look directly at the sun? I think they can always put on sunglasses when they look at the sun. I haven't been to outer space. Maybe, in the future, you could be the one to tell me how the view up there when you become an astronaut."

Such questions and sentiments were part of a conversation on Friday at Pui Kiu College in Sha Tin, Hong Kong, between a student and 88-year-old veteran aerospace expert Long Lehao, chief designer of China's Long March rocket series.

This is just one of the spontaneous interactions that took place between youngsters from Hong Kong and a group of top-notch national aerospace experts, the



Wang Yajun of the China Aerospace Science and Technology Corp (left) presents a model of the Tianwen 1 Mars probe to a faculty member of Pui Kiu College on Friday.

latter of whom are currently on a multiday public appearance tour in the city.

Hundreds of teens from six secondary and primary schools in Hong Kong got the rare chance on Friday to explore the mysteries of the universe with the scientists. Mostly chief designers of prominent space projects, the scholars gave lectures on the nation's aerospace achievements and answered questions students posed about the cosmos.

Animated illustration

During these interactions, Long worried that the material was too arcane for his young audience to wrap their minds around. So the veteran scientist came up with a way to bridge the knowledge gap — animation.

In a bid to explain the role of the rockets in the nation's space missions to the youthful participants, Long used Chinese martial arts motifs, further brought to life by animations to explain the role of the rockets.

A student surnamed Lam from Ling To Catholic Primary School in Kowloon came to St. Teresa Secondary School to attend the lecture given by Zhang He, executive director of the Chang'e 4 lunar probe project.

Lam said meeting Zhang, one of her idols, was thrilling. She had practiced her Mandarin for several nights, hoping to get to ask Zhang a few questions during the encounter.

Lam got what she wished for — answers and encouragement from Zhang, plus her autograph — some-



Long Lehao, chief designer of the Long March rockets, takes a picture with four students holding up their gift bags at Pui Kiu College on Friday. PHOTOS BY EDMOND TANG / CHINA DAILY

thing Lam said she would greatly treasure. She added that she can't wait to share what she heard with her classmates on Monday.

The Hong Kong Special Administrative Region's top leader took a question from China Daily at a Friday news conference. Chief Executive Carrie Lam Cheng Yuet-ngo said the visit of leading national scientists can help fire up dreams of scientific achievement among the city's youngsters.

Contact the writers at bingcun@chinadailyhk.com

Q&A

Long Lehao, chief designer of China's Long March rocket series, speaks to a student from Pui Kiu College on Friday.

Long: Do you want to go to the moon?

Student: Yes.

Long: Then you need to work really hard. We will try to send you there. You will become a modern-day Chang'e (a goddess of the moon in Chinese

folklore) and talk to the Chang'e granny, who has been there for thousands of years.

A student of Diocesan Boys' School talked to Sun Zehou on Friday after listening to a speech delivered by the chief designer of the Tianwen 1 Mars probe.

Student: What's your view on the international competi-

tion in Mars exploration?

Sun: It's just several people exercising on the playground. We're not meant to compete with others; we just want to push our limits. But we're glad to see the participation from other countries in planetary exploration, which will help humankind understand the universe better.

CHINA DAILY

What They Say

Yang Sheng

Space missions inspire big dreams among HK people

China has achieved another major breakthrough in aerospace exploration with the successful launch of its crewed spacecraft Shenzhou XII, which carried astronauts Nie Haisheng, Liu Boming and Tang Hongbo to the country's space station in low Earth orbit.

For the first time, China's brand-new space station began manned operation and in-orbit construction, with the three-member crew scheduled to stay for three months onboard. Right now, the space station, designed and built by China on its own, consists of the core module Tianhe, a node module Tianzhou 2 cargo spacecraft, and Shenzhou XII crew spacecraft.

The latest space mission is a manifestation of the country's strength and advancement in aerospace technology, which includes contributions from Hong Kong scientists, and Hong Kong residents should all be proud of this epic achievement.

Hong Kong has participated in many national space projects over the years and can expect more opportunities, as the national space exploration program is ready to select astronaut candidates from the Hong Kong and Macao special administrative regions. To this end, the HKSAR government should devise a plan and incentive policies for participation in space-exploration-related activities, which will fuel Hong Kong's drive to become an innovation and technology hub.

The success of the Shenzhou XII manned spaceflight marks a new pinnacle in China's space technology, accomplishing five maiden attempts, including the auto rapid docking of a manned spacecraft to the core module, orbiting and rendezvous with the space station, and protracted orbital berthing. The three astronauts will also perform a robotic arm operation for the Tianhe core module and other extravehicular tasks, which will test key technologies such as the feasibility of a long-term stay for astronauts, bioregenerative life-support systems, etc. This will usher in a new era of astronauts living in space for China. A man embarked on its first manned space projects in 2003 with the launch of the Shenzhou 5 spacecraft. Eighteen years on, it has achieved a remarkable leap in aerospace technology in accordance with its plan, from a single astronaut on a one-day mission to multiple astronauts on an extended space mission, from performing in-vehicle tasks to a spacewalk, from short-term sojourns to medium-term stays. Such accomplishments make up a glorious chapter in China's pur-

suit of a space dream; they also serve as evidence of China's rapid development in science and technology, as well as its increasing national strength.

China will launch two space laboratory modules — Wentian and Mengtian — next year. There will also be four cargo spacecraft and four manned spacecraft launches. China is scheduled to complete the construction of its first space station in 2022, marking the advancement in space flight and exploration technology from acquiring experimental capabilities to implementation and development stages. The United Nations/China Cooperation on the Utilization of the China Space Station program jointly conducted by China and the United Nations Office for Outer Space Affairs has completed the selection of the first batch of nine research projects onboard the Tiangong space station from more than 90 proposals submitted by UN member states. Therefore, the space station will truly benefit all mankind. With an open, collaborative and inclusive attitude, China is committed to developing a space station for international space cooperation and exchanges.

Hong Kong residents were joyous and hopeful when China's manned space program announced its plan to select aspiring astronauts in Hong Kong. In recent interviews, Zhou Jianping, chief designer of China's manned space project, and Huang Weifen, chief designer of the astronaut system for China's manned space project, said Hong Kong people would be included in future space missions, and that preparation for the selection process was underway.

Hong Kong has participated in many national space projects. The Camera Pointing System developed by Professor Yung Kai-leung's team of the Polytechnic University together with their mainland peers was adopted in the Chang'e 3 and Chang'e 4 lunar exploration missions. Hong Kong researchers also developed the Mars Landing Surveillance Camera, a key equipment for China's ongoing Mars probe Tianwen 1. The opportunity to take part in national space missions will encourage the people of Hong Kong to join the national aerospace industry, which will not only motivate Hong Kong to integrate its own development into the overall national development strategy but also bolster the local innovation and technology industry and enhance the city's competitiveness.

The author is a current affairs commentator. The views do not necessarily reflect those of China Daily.

Jo Lee

China's Tiangong program brings space tourism step closer to reality

When President Xi Jinping greeted via video link the three orbiting Chinese astronauts on the Beijing Aerospace Control Center on Wednesday, the people's attention was drawn to the spacious module of the space station during the broadcast.

Tianhe, the core module of the Tiangong space station, whose construction will be completed in a record time of less than two years, is bigger than most train or subway carriages. With a diameter of 4.2 meters, it has six separate zones for work, sleep, sanitation, dining, healthcare and exercise. This will surely compensate for the demanding work schedule of Nie Haisheng, Liu Boming and Tang Hongbo, who will have to complete a crucial stage of the construction in three months.

Compared to the cramped living conditions of the International Space Station, this is working at the height of luxury, at least by international space-traveling standards. And the food? There are more than 100 varieties, including fresh fruits, along with a super-refrigerator to keep them from going bad. Classic Chinese dishes? No problem! Shredded pork with garlic sauce, kung pao chicken and classic stir-fried rice are all on the menu. What about Sichuan cuisine such as fish-flavored shredded pork, or ice cream and dessert dumplings? All there!

Now, what if we send tourists instead of professionals up there? What about affordable space tourism, Chinese style? So far, the nascent industry has been associated with British billionaire Richard Branson's Virgin Galactic and Jeff Bezos' Blue Origin, and a few other startups. It's not far-fetched.

Since 2001, the ISS has been open to the occasional visiting tourist, who usually has had to fork out millions of dollars for the privilege. But that's not for the faint of heart, and it offers few creature comforts. You and your family probably wouldn't want to stay

in the ISS, which is like a high-tech caged home in Hong Kong. Anyway, its life cycle is close to expiring and its future uncertain.

The Tiangong, on the other hand, is a different proposition. With State subsidies and policy backing, China's commercial space travel and tourism can easily flourish. The United States has weaponized space and even established the Space Force, which is considered the sixth and newest branch of the US military forces. By contrast, China is a peace-loving nation and promotes international cooperation, rather than conflict and detrimental competition. Beijing has offered the Tiangong space station and a planned moon station, to be built with Russia, to international researchers and astronauts. Why not plan for international tourists down the road, too?

Chinese excel in commercialization that's a win-win for everyone. A separate module to the space station can easily be designed to become a space hotel. And a five-star resort on the moon by the middle of the century? Totally possible!

Furthermore, China and Russia have already formed a partnership to build a moon base, with a timeline for construction and completion by the middle of the next decade.

During this decade, the construction and operation of the International Lunar Research Station will be fully automated. It will be accompanied by an orbiting lunar station, several Chinese-made orbiters, and a set of mobile rovers and robots.

The European Space Agency, Thailand, the United Arab Emirates and Saudi Arabia have all expressed interest in joining the project. Perhaps Washington can learn to put aside its outdated Cold War mentality to learn to cooperate with other nations, rather than dominate them.

By 2025, a lunar site will be selected for the moon base, with construction expected to start the following year. When fully completed in about

a decade, it will offer a full range of facilities and equipment to study lunar topography, geomorphology, chemistry, geology and the internal structure of the moon, as well as enabling space and Earth observations from the moon's surface. The lunar station will be serviced remotely by the orbiting station that can also be a transit point to transport cargo and people.

The moon station and lunar orbiters will be steppingstones for future manned missions to Mars. Mining large quantities of Helium-3 deposits on the moon may also become economically viable. This isotope is thought to be able to provide safe nuclear energy in a fusion reactor because it's not radioactive and does not produce dangerous nuclear waste.

So, a five-star hotel resort on the moon? Who wouldn't want to orbit Earth, the moon and spend a few days surveying the lunar surface in fully automated rovers, all in safety and comfort?

The multimillionaires and billionaires who for the big tickets could subsidize education trips for the most promising Chinese and international students. During their stay, they can take super-STEM (science, technology, engineering and mathematics) classes while conducting actual experiments in space and on the moon.

Space should be for exploration, education and vacation, not weaponization. China can lead the way, hierarchically, to universal peace. The UN Committee on the Peaceful Uses of Outer Space was set up in 1959 to prevent the weaponization of space. Former US president Donald Trump's creation of the Space Force was a blatant violation of the treaty that China should not emulate in competition. Rather, China should use space as a unifying force toward a peaceful world.

The author is a freelance writer and veteran journalist, focusing on Chinese mainland and Hong Kong affairs. The views do not necessarily reflect those of China Daily.

HONG KONG



Speaking at Queen's College, Qi Faren, first chief designer of the Shenzhou manned spacecraft, says scientific research aims to create a better life for mankind. PROVIDED TO CHINA DAILY



Speaking at Po Leung Kuk Ho Yuk Ching (1984) College, Xie Jun, deputy chief designer of BeiDou, says the navigation satellite system is an infrastructure providing public services to the world. PROVIDED TO CHINA DAILY



Sun Zezhou, chief designer of Tianwen 1, says the trials and errors before success are like the difficult questions in school homework. EDMOND TANG / CHINA DAILY

Passing along knowledge

Top Chinese scientists spoke youths' language on Friday as they imparted knowledge usually shrouded in arcane space terminology. On the third day of a five-day trip, the delegation shared their expeditions into the unknown with more Hong Kong students.



Long Lehao, chief designer of China's Long March rockets, speaks to students at Pui Kiu College on Friday. EDMOND TANG / CHINA DAILY



Speaking at St. Teresa Secondary School, Zhang Ha, executive director of the Chang'e 4 probe, says China's lunar missions are the result of hundreds of thousands of researchers working together. PROVIDED TO CHINA DAILY



A primary school student from Pui Kiu College sent this thank-you card to the visiting experts. PROVIDED TO CHINA DAILY



Speaking at The Church of Christ in China Heep Woh College, Hu Hao (right), chief designer of China's third-phase lunar exploration project, says the moon is like a mirror to Earth, and is yielding previously elusive knowledge. PROVIDED TO CHINA DAILY



Space experts, students, and faculty members of Pui Kiu College gather for a group photo. EDMOND TANG / CHINA DAILY



Students watch a video before Sun Zezhou, chief designer of China's Tianwen 1 Mars probe, gives a lecture at Diocesan Boys' School on Friday. EDMOND TANG / CHINA DAILY