



Global melody

Young musician mesmerizes foreign audiences with *guzheng* skills **LIFE, PAGE 11**

Both roots and routes of BRI are beneficial **COMMENT, PAGE 8**



Gathering pace

More migrants are set to arrive in Europe, says think tank **WORLD, PAGE 7**

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Shenzhou XVI crew members share space stories

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The Shenzhou XVI crew members shared their space stories with the public on Friday for the first time since their return from space last October, after the historic five-month mission involving China's first civilian astronaut.

The three crew members, Major General Jing Haipeng, the mission's commander, Colonel Zhu Yangzhu and Professor Gui Haichao, arrived at China's Tiangong space station last May, in the nation's 11th manned spaceflight and the fifth crewed mission to the space station.

Jing and spaceflight engineer Zhu are members of the People's Liberation Army Astronaut Division, while Gui, who served as the mission's payload specialist, is a doctoral supervisor at the Beijing-based Beihang University's Department of Spacecraft and Launch Vehicle Technology.

"I felt particularly happy to fly with the diverse crew members, which for the first time included a



The crew of Shenzhou XVI — Jing Haipeng (center), Zhu Yangzhu (right) and Gui Haichao (left) — make their first official public appearance at Beijing Aerospace City on Friday since they returned from space 80 days ago. **ZHU XINGMIN / CHINA DAILY**

pilot, an engineer, and a payload specialist," Jing, 57, said at the news conference held in Beijing.

The Shenzhou XVI mission marked Jing's fourth journey into space, making him China's most experienced astronaut.

"In previous missions, astronauts had to multitask, piloting the spacecraft, conducting experiments, maintaining equipment, and even performing medical tasks such as conducting our own ultrasounds," he said.

"However, this time, as the commander and pilot, I mainly focused on the spacecraft's navigation and the space station's operations," said Jing, adding that the primary responsibilities of his companions were assembling and maintaining the space station's equipment and managing payloads.

Jing also revealed that, unlike his previous space missions, he actually gained weight by the end of this one.

"We strictly followed our exercise and dietary plans, which is why our physical and mental conditions were exceptionally good," he said. At the news conference, Chen Dong, the head of the PLA Astronaut Division, said that after medical quarantine and recuperative care, the three astronauts are in good physical and mental health, with their weight stable and similar to preflight levels, and their muscle strength, endurance and cardiorespiratory fitness basically restored to the preflight state.

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Space: Strength of team seen as critical to success

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They will undergo a final health assessment before returning to normal training and work routines, he said.

Flight engineer Zhu said the greatest challenge was to ensure "zero mistakes in daily operations" during the five-month mission.

"I was mainly responsible for the maintenance and repair of the space station platform, ensuring that it is safe, stable, efficient, and maintains long-term operations," he said, noting that unexpected situations which are difficult to predict on Earth can arise in space.

"This requires us to learn to solve problems promptly and effectively," Zhu said. "We must be extremely familiar with the complex systems of the space station and possess specialized knowledge."

"The most important aspect, in fact, was the strength of our team. For every critical operation, we repeatedly confirmed and remind-

ed each other to ensure infallibility," he said.

Payload specialist Gui became China's first civilian astronaut to fly in space. As a researcher, he expressed great joy in conducting scientific research in space.

"We closely collaborated with ground researchers to complete more than 70 space experiments and technical research projects, obtaining a wealth of experimental data and bringing back many valuable samples."

Gui said he was so proud, as a civilian, to enter China's own space station and contribute to research projects.

Commander Jing also expressed his long-lasting passion for his career. "The pursuit of dreams knows no end. In fact, the success of each mission heralds the start of the next."

"Chinese astronauts have been advancing steadily, step by step, and will explore with greater courage and wisdom to realize even bigger dreams," he said.

LIFE

The significance of stars in Chinese culture dates back thousands of years. From the earliest known star catalogs compiled by astronomers Gan De and Shi Shen in the 4th century BC, to the modern-day Shenzhou XVI space flight, the mysteries of the heavens have held a particular fascination for the people of China, and that enduring celestial appeal has been reaffirmed by the recent Astronomy Photographer of the Year 15 competition, held by London's Royal Observatory Greenwich.

The 15th staging of the competition attracted more than 4,000 images from photographers in 64 countries. Chinese entrants performed well, with An Jiu's *Grand Cosmic Fireworks* winning the Skyscapes category, runner-up, and Liang Weitang's image, *The Eyes Galaxies*, finishing as runner-up in the Galaxies class.

But it was in the Young Photographer category that China's photographic stars shone the brightest, providing the winner, runner-up, and two of the three highly commended entries.

"Every year in the competition, we're going from strength to strength, and we learn a bit more, with the next year pushing our knowledge even further," says Ed Bloomer, public astronomy manager at the Royal Observatory.

"We have increasing numbers of entrants, and also an increasing number of entries, as each person can enter up to 10 photos, and in 2023, China had the second-highest number of entries behind the United Kingdom, but that's to be expected as we are the competition hosts."

Photographers from China have twice won the overall top prize. Dong Shuchun won in 2021 with *The Golden Ring*, and in 2016 Jin Yu took top prize for the image *Baily's Beads*.

But last year the youngsters stood out, especially 14-year-old duo Xu Runwei and Wang Binyu for their image of the star-forming region and emission nebula called IC 2944, located 6,000 light-years away in the constellation Centaurus, which is 100 light-years across and known as the Running Chicken Nebula, which was the title of their image.

One thing that may surprise people who see their contribution in the exhibition of prize winners on display at the observatory in southeast London and online is that the entry by two teenagers in China is recorded as having been taken thousands of kilometers away in Chile.

Gold standard picture

"Lots of astro photographers at this level like to travel a lot, go to certain places to get the best photos, and if they can't do that, as was the case during the pandemic, they may be using robotic scopes in another country, which is what these two did," Bloomer explains, pointing out that artistic judgment is still needed to come up with such a striking image.

"You still have to collect the data and process it to make aesthetic choices. *The Running Chicken Nebula* had a lovely balance of colors, and a lot of the fine detail is very clear. Their image lets an astronomer see what's going on, and it's also very beautiful in its composition. So there wasn't much debate, we put it through to the shortlist very quickly.

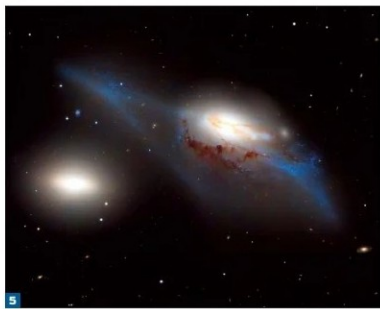
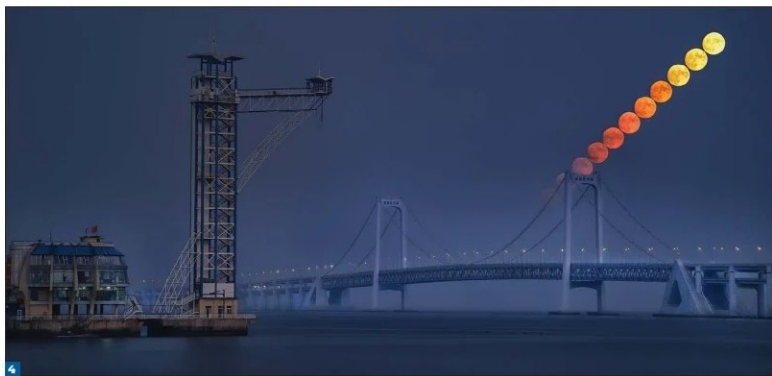
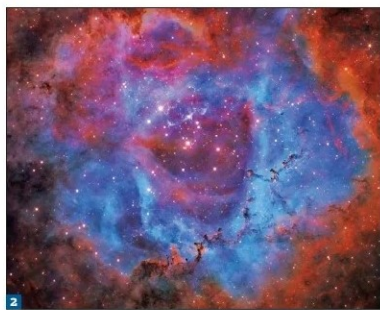
"Choosing winners takes a long time, and we make sure we have a variety of judges, from all kinds of backgrounds, so we get a broad range of opinions and look very carefully.

"We are very careful when shortlisting. We discuss and disagree, and we have to convince one another of a picture's merits, so it can take a long time. But this was a gold standard picture.

"If it was taken by someone much older and more experienced, it would still be a fantastic image. The fact it's someone younger is deeply impressive, so it scored highly across the board."

Bloomer says the variety of subjects chosen for entries, and the multiplicity of ways they could be presented, made for fascinating viewing for the judges.

"Something like the Orion nebula is very popular for beginner photographers because it's



1: An Jiu's *Grand Cosmic Fireworks* is the Skyscapes category winner. 2: *Roses Blooming in the Dark*, by Mo Yanhao, is highly commended. 3: *The Running Chicken Nebula*, by Xu Runwei and Wang Binyu, is the Young Photographer category winner. 4: Sun Haoban's *Moon at Nightfall* is also highly commended. 5: Liang Weitang's *The Eyes Galaxies* is the runner-up in the Galaxies category. 6: *Blue Spirit Drifting in the Clouds*, by Li Haocheng and Xu Runwei, is the runner-up in the Young Photographer category. PHOTOS PROVIDED TO CHINA DAILY

bright, it's colorful, and there's a lot going on, and then your choice of equipment and filter mean you can get all sorts of different looks from the same kit," he says.

"As well as pictures of permanent features, there are lots of things that are transient or seasonal, like the glimpse of a comet passing, an eclipse, or planetary conjunction — we're very fortunate that there is so much material. Winner in 2022 was the trail of a comet that was destroyed by its close passage to the sun, so that was the only year that those images could be captured.

"One of the things about the entries from China, which did so well, was how different they all were. Something like the Pleiades constellation is easy to point out when people are doing naked-eye stargazing, but the image and detail of its cloud structures that were captured in the image *Blue Spirit Drifting in the Clouds* is amazing."

Fascination with space

An Jiu says she had long been fascinated by the heavens but only began to photograph them relatively recently.

"I've loved outer space since I was a child, but because of city light pollution, I thought the images of the stars I saw had been edited," she explains. "But seven years ago, I attended a stargazing event and saw the Milky Way clearly for the first time.

"I recognized its purity and wanted to share that moment with people around me, but my phone couldn't capture it. So, I started learning astrophotography."

Her winning entry was one of nine she submitted for the competition.

It was taken in the Himalaya Mountains in Tibet autonomous region, at about 5,000 meters, with the altitude and lack of light pollution letting me capture distant phenomena."

Astrophotography, she says, "makes us realize even though the Earth has no borders, only land and oceans. What I enjoy most about it is the ability to transcend time and freeze moments."

The Royal Observatory Greenwich was founded in 1675 and is home to the Prime Meridian, as well as being recognized as part of the wider Maritime Greenwich World Heritage Site by UNESCO.

Its historic buildings are frequently used as a location for major public productions, and, each year, the site welcomes around 2.5 million visitors, as well as hosting Chinese New Year celebrations.

And last fall, the Royal Observatory hosted two live events celebrating the history of Chinese astronomy.

Bloomer says the observatory "wants to make sure, year after year, that we're home to the best competition", and the levels of entrant interest were a cause for optimism.

"It's heartening to see young people enter, then move into the main competition. That's why we have a young category, to ensure that there is a pipeline of people and that they feel welcome," he says.

"The astronomy photography community is a pretty supportive one. People are genuinely interested in what one another do, so there's a generous spirit of communication and cooperation. The sharing of ideas seems to be part of the activity at this level."

This year's competition is launched in January. In the meantime, last year's winning entries can be viewed in person at Greenwich and also online.

"On the website you can see last year's winners as well as those from years gone by, and there are lots of other resources, but we really want people to come to the gallery and see the pictures," says Bloomer. "Even on the screen, they look amazing, but when you see them shown on light boxes, they make the gallery a beautiful place to walk through."

Details of activities at the Royal Museums Greenwich, including the exhibition and Chinese astronomy events, can be found at <https://www.rmg.co.uk/>.

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