



Ode to heroes

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[POLICY REVIEW, PAGE 6](#)



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[WORLD, PAGE 12](#)

CHINA DAILY

香港版
HONG KONG

WEDNESDAY, March 24, 2021

中國日報

www.chinadailyhk.com HK \$10

Project leader shoots for the stars

By **ZHOU WENTING** in Shanghai
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Born on Mid-Autumn Festival day in 1968 when the moon was full, Zhang Yuhua has always believed her destiny was intertwined with exploring the universe.

A member of the scientific and technological committee of the Shanghai Academy of Spaceflight Technology and the China Aerospace Science and Technology Corp, Zhang has been a key player in China's major achievements in space exploration.

She worked as the deputy chief commander of both the Change 5 lunar exploration project and Tianwen 1, China's first Mars mission.

Zhang formed a powerful team for the Change 5 mission, which made the world's first unmanned docking and transfer of moon samples during a lunar orbit in December. Change 5 brought back the first lunar samples in 44 years, and China became only the third country to return samples from the surface of the moon.

Her team also overcame major difficulties facing the Tianwen 1



Zhang Yuhua at an exhibition in Shanghai. PROVIDED TO CHINA DAILY

mission, which was launched in July, such as the long flight time, developing sophisticated control systems and managing complicated space maneuvers.

The 5-metric-ton probe, which

consists of two major parts — the orbiter and the landing capsule — had flown for 224 days and about 475 million kilometers as of March 4, according to the China National Space Administration.

It entered its preset orbit above Mars on Feb 24 and will remain there for about three months before releasing its landing capsule.

"My three decades of work experience coincided with the country's development from the era of manned space flight to lunar probe and deep space exploration," said Zhang, who works at such a rapid pace that her young colleagues struggle to keep up with her.

Career choice

Born in Huzhou, Zhejiang province, Zhang was a straight-A student at school. She said she could have applied to study at prestigious universities such as Peking or Tsinghua, but decided to attend the National University of Defense Technology in Changsha, Hunan province. Part of her decision was based on the lower cost of living there.

After graduation, Zhang, who

dreamed of becoming a scientist since childhood, obtained a job at the Shanghai academy and started designing the power systems of spacecrafts, a novel research field at the time.

"People mocked scientific research in the 1990s and said that selling tea eggs was a better job than making atomic bombs," she said. "But I didn't give up. Major aerospace projects were launched one after another, and those days laid a foundation for China's achievements today."

Aerospace research and development requires meticulous work of the highest quality. Industry insiders said that the public only notices the successes, but a high chance of failure is the reality of such work.

Zhang said when a consultation group raised a query about a project they were working on, the team would do hundreds of experiments and tests to address their concerns.

Accountability

Zha Xuefei, who is on the same committee as Zhang at the Shanghai academy and the deputy chief designer of the Change 5 probe system, said the success rate of a space flight is around 50 percent. Even successful missions have high inci-

dences of breakdowns.

Zhang said: "If an average company encounters difficulties, it may have the opportunity to just return the money to the client and admit that they cannot do it. But we can't. There are usually more than 100 institutions and more than 10,000 workers involved in an aerospace mission and many on the big team await the success of our steps to carry on that mission."

Women are usually in the minority of aerospace project teams, but Zhang said she rarely encounters gender issues in her daily work.

"Women have strong perseverance and a sense of responsibility as well as advantages in team work such as observation and intelligence," she said, referring to female colleagues who worked on the Change 3 and Change 5 missions.

Zhang said when she worked at the Wenchang Space Launch Center in Hainan province, she would often look up to the starry sky and think of what lay ahead for her and her colleagues.

"We'll go farther with our space probes for sure, which may broaden people's understanding of humanity's past and future and find potential options for the Earth as its resources are limited," she said.