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Short space trips for paying passengers on the way

By ZHAO LEI
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CAS Space, a Beijing-based rocket company owned by the Chinese Academy of Sciences, is designing a set of reusable rocket and spacecraft, with the aim of sending paying passengers on short trips into space, said the company's chairman.

Yang Yiqiang, a senior rocket scientist and founder of CAS Space, told China Daily in an exclusive interview on Wednesday that if everything goes according to plan, the combination of the rocket and spaceship will become mature after at least 15 test flights and will be able to transport up to seven tourists each time to an altitude of more than 100 kilometers, about 10 times the cruising altitude of a commercial jetliner.

That will take passengers across the Karman Line, the globally recognized boundary between Earth's atmosphere and the edge of space. The trip into space will last seven-

al minutes, long enough to allow passengers to get a magnificent view of the stars and Earth and experience weightlessness, Yang said.

"Along with the rapid development of space technology, a space tour for ordinary people is no longer a fantasy but is becoming a reality. A trip to outer space will bring tourists a brand-new experience they've never had before," he said.

"Our idea is that after the rocket reaches the Karman Line, the spacecraft will separate and then continue to fly with the force of inertia. The rocket will reenter the atmosphere and make a soft landing using its own engines, while the spaceship will return with its parachutes," Yang said, adding that the landing zone will be in a sparsely populated area in northwestern China.

According to Yang, the rocket will be propelled by five engines and will have a weight of 70 metric tons. The spacecraft will be three meters tall with a diameter of 3.35 meters and



An artist's rendering of a space tourism vehicle. PROVIDED TO CHINA DAILY

will have four large windows. It will operate in accordance with preset programs, with no pilot or controllers inside the spacecraft.

The scientist said his company is planning for the rocket's first flight in 2023 in order to verify its overall design, the engines' capability and the landing equipment.

Once the program is open to the public, anyone willing to pay about \$300,000 for this orbital journey will initially go through a training

session which will be a simplified version of flight education for Chinese astronauts, he said.

Dennis Tito, an engineer and multimillionaire from the United States, was the world's first space tourist. Together with two Russian cosmonauts, Tito joined the Russian Soyuz TM-32 mission and spent nearly eight days in space. Since then, more than 10 people around the world have rocketed into space at their own expense.

CAS Space recently signed a strategic cooperation agreement with CTG Travel, a major State-owned travel agency, to work together to tap the space tourism market.

Currently, Yang's team is preparing for the debut flight of the company's first product, the Lijian 1, or Powerful Rocket 1, a solid-propellant rocket, which is scheduled to take six small satellites into space.

The 31-meter rocket will be able to transport satellites weighing 133 tons to a 700-km-high sun-synchronous orbit, designers said.

New satellite series adds capabilities

Now planet-wide relay network to improve country's space coverage

By ZHAO LEI
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China launched a Tianlian II series satellite early on Wednesday morning to form a global-covering network of the country's second-generation relay satellites.

A Long March 3B carrier rocket blasted off at 12:30 am at the Xichang Satellite Launch Center in southwestern China's Sichuan province and then placed the Tianlian II-03 satellite into a geostationary orbit, according to China Aerospace Science and Technology Corp, the country's leading space contractor.

The State-owned conglomerate said in a news release that the spacecraft will form a network with its two predecessors — the Tianlian II-01 and Tianlian II-02. The service of the second-generation relay system is expected to extensively improve the nation's space-based control, tracking and data relay capabilities, it said.

The launch marked the 426th flight mission of the Long March series rockets.

China began to establish its own relay satellite system in April 2008 when the first satellite in the Tianlian I series was launched from Xichang.

In July 2012, China became the second country, after the United States, possessing non-stop relay capability for its space-based infrastructure after the Tianlian I-03 was deployed that month to complete a basic system with global coverage.

In March 2019, China launched Tianlian II-01, the first of its second-generation data relay satellite.

Currently, eight Tianlian satellites — five of the Tianlian I and three in the Tianlian II series — have been launched and seven of

them, except the Tianlian I-01, are in service.

Compared with the first-generation model, Tianlian II satellites feature stronger capabilities, heavier carrying capacity and longer life spans, according to satellite designers at the China Academy of Space Technology.



The new generation is able to serve more spacecraft and has a larger operational radius."

Wang Jiansheng, chief engineer of the Tianlian II series

"Tianlian II satellites were built on the DFH-4 platform, which is better than the DFH-3 used by the Tianlian I craft," said Wang Jiansheng, chief engineer of the Tianlian II series.

"The new generation is able to serve more spacecraft and has a larger operational radius."

The Tianlian family is playing a key role in China's space programs and has served a variety of functions such as assisting with the rendezvous and docking between spacecraft and the Tiangong space station and transmitting data for Earth observation, weather and other low-orbit satellites.

Without them, it will be very difficult to carry out communications and video links with astronauts, designers said.

So far, China has carried out 21 space launch missions this year. The country plans to conduct more than 60 launches in 2022.