

China Conducts 1st 3D Printing Experiment In Space

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China has conducted its first 3D printing experiment in space on a newly launched spacecraft, according to the China Academy of Space Technology.

The academy said on its WeChat account on Thursday that the experiment was done by a 3D printer, developed and built by its Beijing Spacecrafts Manufacturing Factory, inside the prototype of China's new-generation manned spacecraft.

The printer, officially named Space-based Composite Material 3D Printing System, uses carbon fiber-reinforced composites to autonomously print objects. It is installed in the re-entry module of the experimental spaceship and will be brought back to Earth once the module returns to the ground.

The academy said the printer features advanced technologies in material modeling, precision control and automation. It explained that once the space-based 3D printing technology becomes operationally ready, it can extensively benefit space programs as astronauts can use it to manufacture a lot of things they currently need to obtain from resupply flights by cargo spacecraft.

Video clips broadcasted on China Central Television showed that the printer had printed a flat section of a honeycomb-shaped structure as well as an emblem of China Aerospace Science and Technology Corp, parent company of the China Academy of Space Technology.

Also known as additive manufacturing technology, 3D printing is the process in which three-dimensional objects are made through the layering of material. It is advancing rapidly and is increasingly used in the manufacturing sector.

The prototype of China's new-generation manned spacecraft was lifted into the low-Earth orbit by the maiden mission of China's Long March 5B heavy-lift carrier rocket on Tuesday evening from the Wenchang Space Launch Center in Hainan province.

The flight was intended to verify key technologies and equipment for the new-generation spaceship including the heat-resistance, control and recovery devices, and the test results will be used for further improvements, according to the China Manned Space Agency.

The agency said the vehicle will return to Earth on Friday.

In September 2014, NASA sent a 3D printer to the International Space Station. In November that year, the machine made the world's first in-orbit 3D printing experiment.

Since then, the organization has been actively exploring the technology's applications and potential in space missions.

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