First metal part 3D printed in space

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Credit: ESA/NASA

ESA's Metal 3D Printer has produced the first metal part ever created in space.

The technology demonstrator, built by Airbus and its partners, was launched to the International Space Station at the start of this year,

where ESA astronaut Andreas Mogensen installed the payload in the European Drawer Rack of ESA's Columbus module. In August, the printer successfully printed the first 3D metal shape in space.

This product, along with three others planned during the rest of the experiment, will return to Earth for quality analysis: two of the samples will go to ESA's technical heart in the Netherlands (ESTEC), another will go to ESA's astronaut training center in Cologne (EAC) for use in the LUNA facility, and the fourth will go to the Technical University of Denmark (DTU).

As exploration of the moon and Mars will increase mission duration and distance from Earth, resupplying spacecraft will be more challenging. Additive manufacturing in space will give autonomy for the mission and its crew, providing a solution to manufacture needed parts, to repair equipment or construct dedicated tools, on demand during the mission, rather than relying on resupplies and redundancies.

ESA's technology demonstrator is the first to successfully print a metal component in microgravity conditions. In the past, the International Space Station has hosted plastic 3D printers.

Provided by European Space Agency

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