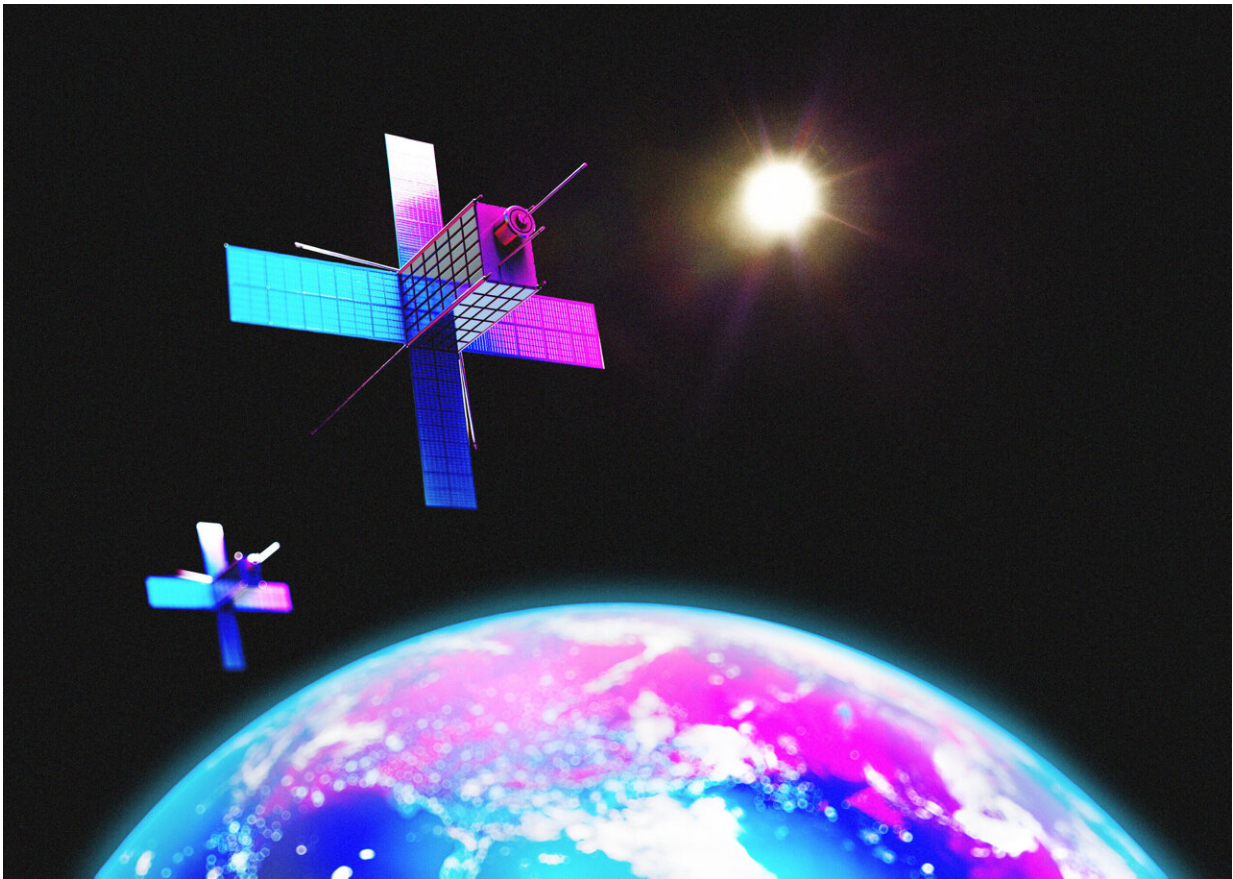


# Microgravity on demand with Earth return through ESA's Boost

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Space Forge, supported by ESA's Boost! programme will offer a six-month round-trip commercial space transportation service from 2022. This will enable companies to manufacture in space very pure and more capable materials, discover new pharmaceutical drugs and bring them back for use on Earth. As part of this, Space Forge, based in the UK, is working with partners to develop ForgeStar – a reusable suitcase-sized vehicle that can be lofted to space and which will return to Earth after an up to six-month stay in low Earth orbit.

Credit: Space Forge

A new round-trip commercial space transportation service from 2022, backed by ESA, will enable companies to manufacture in space very pure and more capable materials, discover new pharmaceutical drugs and bring them back for use on Earth.

Space Forge, based in the UK, is working with partners to develop ForgeStar—a reusable suitcase-sized vehicle that can be lofted to space and which will return to Earth after an extended stay in low Earth orbit.

With its quick mission turnaround, ForgeStar will be part of a complete commercial service offering 'microgravity on demand' as a routine access to and return from space service, that can be launched from a variety of launch vehicles. It promises to be more flexible and responsive than existing opportunities, ensure a confidential setting and offer possibilities for customisation and a comfortable return to Earth.

"Space Forge has raised private funding, identified niche markets and strengthened its core team and industrial organization to bring these novel reentry and recovery technologies to life. ESA is delighted to support Space Forge in its endeavor to prepare this service for the market," commented Jorgen Bru, ESA's Commercial Services Manager and Technical Officer for the contract.

Initially, ForgeStar (in its ForgeStar Orbital Vehicle-1 configuration) could host a few kilograms on any one return mission though the company intends to subsequently scale up the vehicle and increase this tenfold in future versions.

The ForgeStar service presents a wealth of opportunities for companies

to use the special environment of space to manufacture new materials, increase the purity or capability of existing materials, or carry out experiments. This will improve life on Earth in areas such as medicine and advanced industrial applications.

The idea for this service is built on the success and observed value of similar but limited opportunities on the International Space Station and experiments on parabolic flights.

"We're thrilled to receive this support for the ForgeStar platform. Sustainable return from space can unlock commercial opportunities not otherwise possible, and leverage Low Earth Orbit as a resource in a similar way to how reductions in launch prices have democratized access to space.

"Space Forge is uniquely positioned to multiply the value of microgravity research coupled with dedicated return and we cannot wait to see the [positive impact](#) this will have on commercial space," commented Joshua Western, CEO and Co-Founder at Space Forge.

ESA supports this project through a two-year contract worth two million euros within its Boost! program. This covers the preliminary and detailed design phases, as well as the launch, in-orbit operation and return of the first operational ForgeStar demonstration vehicle.

This is the first [service](#) project within Boost! with return-to-Earth capability. ForgeStar complements a much larger scale initiative currently under ESA development which is Space Rider, an uncrewed reusable robotic space laboratory to be launched on Vega-C.

Boost!—ESA's Commercial Space Transportation Services and support to Member States program provides co-funding, tailored expert advice and the use of testing facilities to help European economic entities to

develop and prepare new [space](#) transportation services.

Provided by European Space Agency

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