

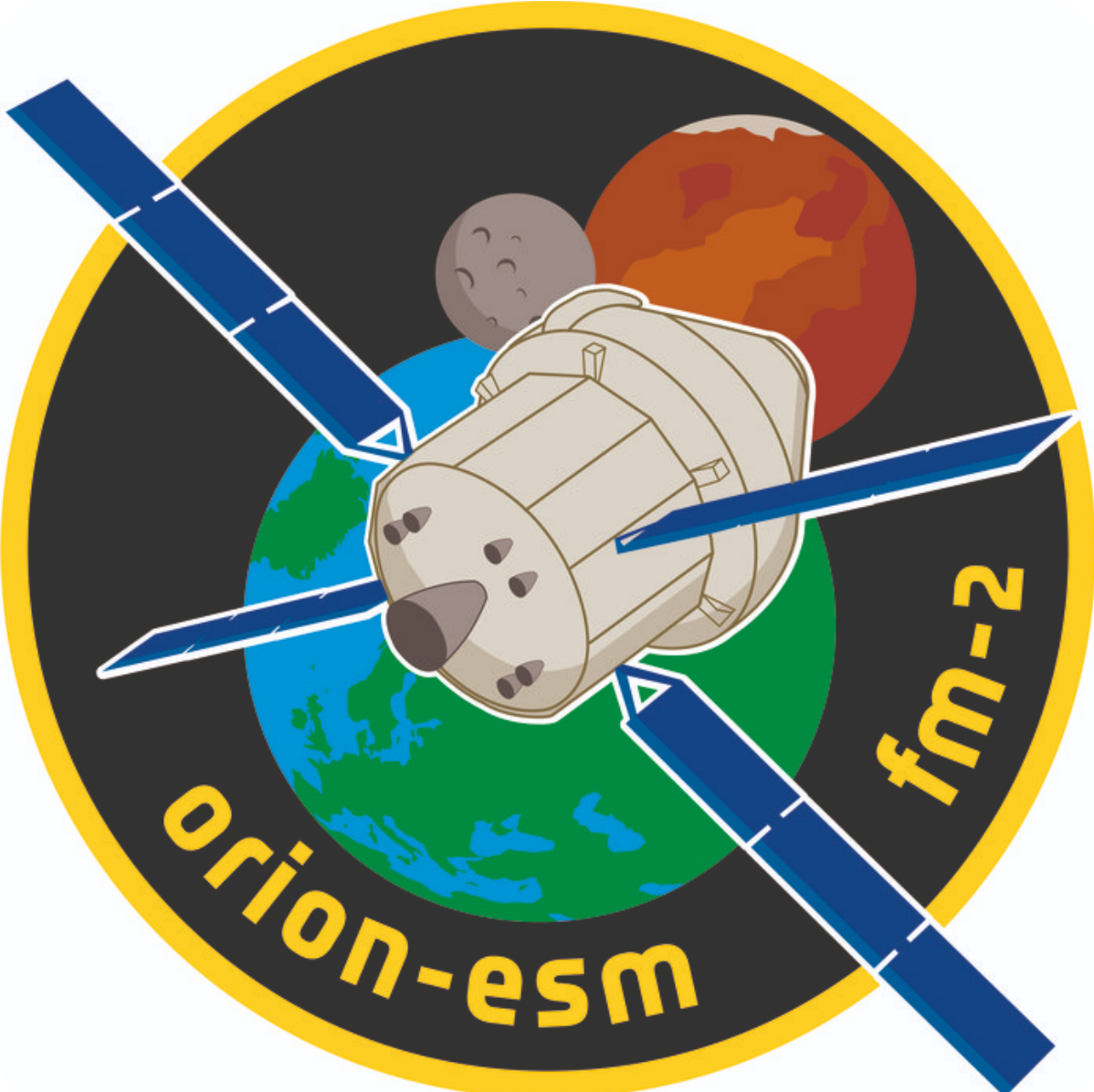
ESA and NASA team up to send astronauts to other worlds



Orion and the European Service Module will look like this when coupled together in space
[Access the image](#)

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We currently have the technology to send astronauts into Earth orbit, but if we want to go further – perhaps to the Moon, asteroid belt, or even the planet Mars – we need a new craft. NASA is currently designing a ship to do just this. Called Orion, it will be able to carry four astronauts further into space than ever before!



Can you see Earth, Mars, and the Moon in this mission patch?
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ESA is helping by developing part of Orion called the European Service Module (ESM). Based on Automated Transfer Vehicles that delivered equipment to the International Space Station, ESM will provide the Orion spacecraft with air, electricity, water, and other vital supplies. Onboard radiators and heat exchangers will even keep the astronauts at a comfortable temperature during their journey.

The ESM will have four solar panels, collecting energy from the Sun and turning it into electricity – enough to power two households on Earth! It will also store an impressive 8.6 tonnes of fuel to power one main engine and 32 smaller thrusters.



An Orion craft had a test flight around Earth after being lifted into space by this Delta IV Heavy rocket
[Access the image](#)

Orion has already had a successful test flight, and in the coming years the design will be improved upon until it will be coupled with an ESM and take us to other worlds! Returning to the Moon is an exciting idea, as no astronauts have been there since 1972. There is a lot of interesting science that we could do on the surface, and new discoveries to be made. Then perhaps we will travel onward to the planet Mars, where astronauts could dig beneath the surface to search for signs of tiny Martian lifeforms. The asteroid belt is another good target, as we can investigate those strange mini-worlds to help us learn more about our Solar System. ESA working with our friends in NASA hope to make all these plans happen!

Would you like to take a trip onboard an Orion spacecraft? Where would you like to go, and what would your mission be?

Cool fact: When returning to Earth, Orion will enter the atmosphere at over 32,000 km/h!