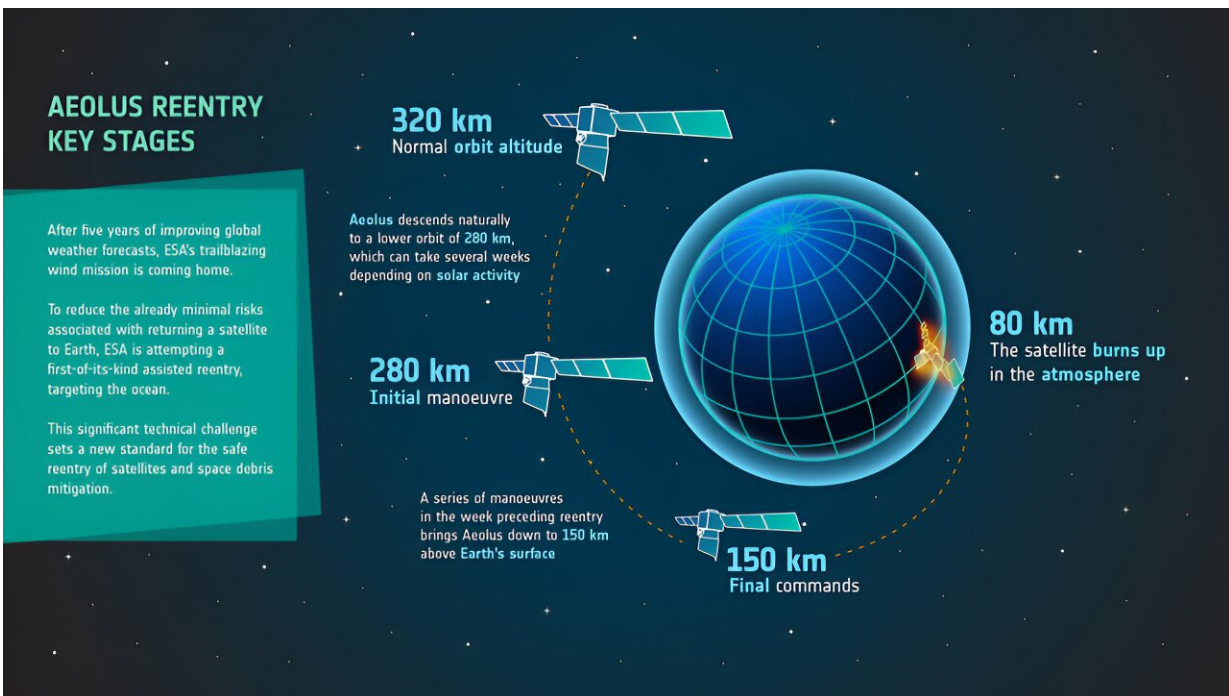


# European wind-mapping satellite returned safely to Earth

July 29 2023



Credit: ESA

A European wind-mapping satellite has returned successfully to Earth following a delicate assisted return designed to minimize damage from flying debris, the European Space Agency said on Saturday.

It is the first time ESA's mission control had attempted an assisted re-entry through the planet's atmosphere.

The Aeolus [satellite](#)—named after the guardian of wind in Greek mythology—was launched in 2018 to measure Earth's global wind patterns, and thus improve both short-term weather forecasting and our understanding of man-made climate change.

"Surpassing scientific expectations and exceeding its planned life in orbit, the Aeolus wind mission has been hailed as one of ESA's most successful Earth observation missions," the agency said on its website.

"And now, its end will go down in history too, thanks to the ingenuity of the agency's mission control team, who guided this remarkable satellite down to Earth's atmosphere for a safe reentry."

The one-ton satellite re-entered the atmosphere above Antarctica at around 02:00 GMT on Saturday, after several days of complex maneuvers, it added.

These lowered its orbit from its operating altitude of 320 kilometers (200 miles) to 120 kilometers so it could re-enter the atmosphere and burn up safely.

"Crucially (they) positioned Aeolus so that any pieces that may not have burned up in the atmosphere would fall within the satellite's planned Atlantic ground tracks," the ESA explained.

"(Aeolus) successfully entered the corridor we were aiming for, over Antarctica, where the fewest people in the world live," the ESA's top [space debris](#) engineer, Benjamin Bastida, told AFP.

Nowadays satellites are designed so as to minimize the risk of causing damage on their return to Earth.

## **Zero debris**

At the end of their useful life, they are guided down to Point Nemo, a location in the South Pacific that is the furthest place on Earth from land.

Typically, most of the satellite burns up on reentry, the ESA explained.

But Aeolus was designed in the late 1990s before the damage-limitation regulations came into force.

Without intervention from the ESA, it would have run out of fuel a few weeks from now and entered Earth's [atmosphere](#) naturally "with no control over where this would happen," the agency explained.

Even though the risk of falling debris from Aeolus was low, the ESA sought to reduce it to an absolute minimum to demonstrate, it said, its commitment to reducing space debris to zero by 2030.

Radars were unable to detect whether any debris from Aeolus had survived reentry, Bastida said.

The pioneering satellite has contributed to climate research and its data been used in weather forecasts.

"(This) proved essential during the COVID lockdown when aircraft, which carry weather instruments, were grounded," said ESA's Director of Earth Observation Programmes, Simonetta Cheli.

The agency is now developing Aeolus-2.

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