

Europe set for launch of "space plane" prototype

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The European Space Agency's Intermediate eXperimental Vehicle is transported on January 30, 2015 ahead its launch in French Guiana

Engineers were preparing for the launch Wednesday of a "space plane" that Europe hopes will help it master a key phase in orbital flight—the ability to return to Earth.

UPDATE: Europe launches prototype 'space plane'

phys.org/news/2015-02-europe-p...ype-space-plane.html

A five-metre (16-feet), two-tonne wingless demonstrator, the Intermediate eXperimental Vehicle (IXV) is scheduled to be hoisted by a Vega rocket from Kourou, French Guiana, at 1300 GMT.

"The countdown is underway," Arianespace, which stages European Space Agency (ESA) launches, said in a communique.

The 100-minute sub-orbital mission will test technologies that ESA hopes will lead to a reusable spacecraft.

Alone among the major space powers, Europe can launch satellites, robot explorers and supply ships but does not have the means to bring them back to Earth.

Nor does it have its own capacity for human flight—European astronauts instead have been taken aloft and returned to Earth aboard the US [space shuttle](#) or Russia's Soyuz.

The IXV is a first step towards addressing the gap.

It will test an automated design for coping with the fiery stress of re-entry and gliding to a pre-determined point.

The IXV seeks to strike a balance between flat-bottomed capsules—the tried-and-trust return-to-Earth vehicle since the pioneering days of space—and the US shuttle, a winged but complex and expensive system, two of which were lost before the craft was retired.

It looks like a wedge whose surfaces have been slightly rounded, providing lift but less resistance than wings to atmospheric molecules.



The European Space Agency's Intermediate eXperimental Vehicle is readied for launch in French Guiana on January 30, 2015

Manoeuvrability in space comes from four thrusters, while two hind steering flaps are intended to stabilise and angle the craft for its return path. Ceramic panels will shield it from temperatures up to 1,700 degrees Celsius (3,092 degrees Fahrenheit).

Stuffed with sensors, the vehicle will be taken to an altitude of around 320 kilometres (200 miles) by the 18-minute Vega flight.

It will climb to just over 400 kms then begin a descent at hypersonic

speeds before deploying a parachute and splashing down in the Pacific around 3,000 kilometres west of the Galapagos Islands.

Flotation bags will enable the IXV to be recovered by ship, according to mission controllers in Turin, Italy.

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