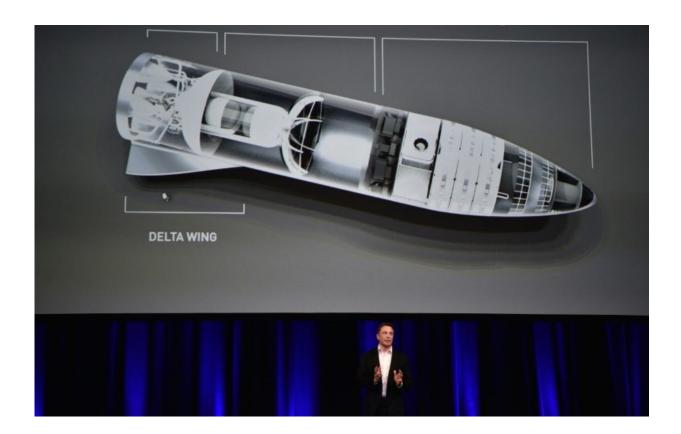


Fly me to the Moon? A look at the spacetourism race

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SpaceX is among a handful of companies racing to propel tourists into space. Here are the top projects in the works, and what they involve.



Moon orbit: SpaceX

The California-based company headed by tycoon Elon Musk <u>announced</u> <u>plans Thursday</u> to send a passenger into lunar orbit aboard a monster rocket, called the Big Falcon Rocket (BFR), still in development.

The cost of the latest trip, its timing, and the identity of the passenger are unknown, for now. Details are to be revealed Monday.

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The trip would mark humanity's first journey to the Moon since the last Apollo astronauts went there in 1972. Only 24 people have ever left Earth's orbit and journeyed close to the Moon.

Virgin Galactic

Virgin Galactic, founded by British billionaire Richard Branson, is working to carry tourists on a brief journey to <u>space</u>, dozens of miles above the Earth's surface.

Tourists will spend several minutes floating in zero gravity, aboard a spaceship that approaches or passes through the Karman line, the boundary of Earth's atmosphere and space, some 62 miles (100 kilometers) high.

For comparison, astronauts at the orbiting International Space Station fly some 250 miles (400 km) above Earth.

Plans call for six passengers and two pilots to ride the SpaceShipTwo



VSS Unity, which resembles a private jet.

The VSS Unity will be attached to a carrier spacecraft—the WhiteKnightTwo—from which it will detach at around 49,000 feet (15,000 meters.) Once released, the spaceship will fire up its rocket, and head for the sky.

Passengers will float in zero-gravity for several minutes, before coming back to Earth.

The total trip time would last between 90 minutes and two hours.

Cost: \$250,000 per ticket. Timing: TBD.

Blue Origin

Blue Origin, the rocket company created by Amazon founder Jeff Bezos, also plans to send up to six passengers on a short journey to space aboard the New Shepard, a capsule affixed to the top of a 60-foot (18-meter) rocket.

After launching, it detaches and continues several miles toward the sky. During an April 29 test, the capsule made it 66 miles.

After a few minutes of weightlessness, the capsule gradually falls back to Earth with three large parachutes and retrorockets used to slow the spacecraft.

From take-off to landing, the trip takes about 10 minutes.

The timing of the first flights, and cost per ticket, have not been announced.



China

The China Academy of Launch Vehicle Technology is working toward sending its first tourists on a suborbital journey some 60 miles high.

The first flight could take place by 2028, on a re-usable spacecraft that can fit up to 20 people.

Total mission duration would be about 30 minutes, with 10 minutes in the darkness of space, experiencing weightlessness and seeing the curvature of the Earth through the windows.

Price: about \$200,000.

Russia

Seven people have already paid big bucks for a trip to space, organized by the Virginia-based company Space Adventures, and riding aboard Russian rockets and spacecraft.

The first space tourist was US businessman Dennis Tito, a multimillionaire who reportedly paid \$20 million to ride a Soyuz and visit the International Space Station in 2001.

The Russian space company Energia is reported to be working on a new spacecraft called NEM-2 to carry tourists to the International Space Station (ISS).

Four to six people may ride at a time, and the first flights could come as early as 2019.

Paying space tourists might even be able to float out into the vacuum of



space on brief spacewalks.

A firm price tag has not been fixed, but it is expected to cost around \$100 million.

Space hotel

A US start-up called Orion Span announced earlier this year it hopes to place a luxury space hotel into orbit within a few years—but the project is still in its early stages.

Why travel to space?

The journey would be thrilling, to be sure, but also risky. Rockets can and do sometimes explode, after all.

Barring any technical failures by the machinery, the tourists' own health could be a factor, and it remains to be seen if people with heart ailments or circulatory problems would be permitted to fly.

Beyond that, astronauts often report feeling severe motion sickness during the ascent to space, and tourists are expected to be no different.

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