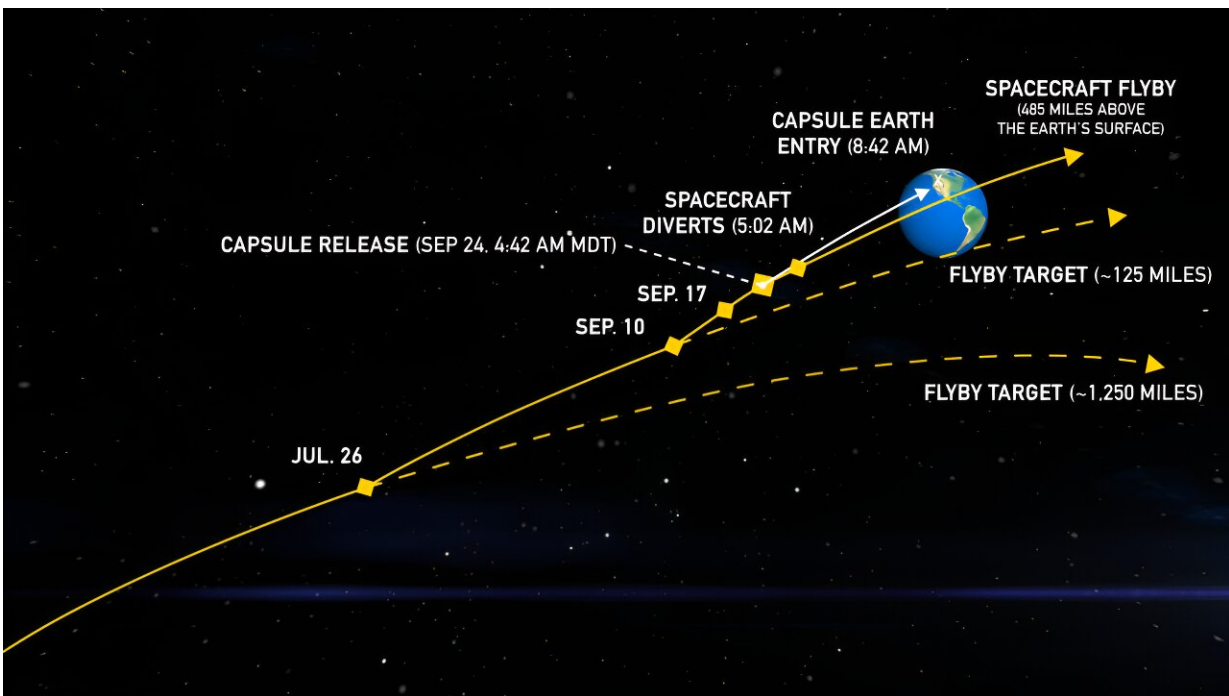


OSIRIS-REx adjusts course to target sample capsule's landing zone

September 12 2023, by Lonnie Shekhtman



This graphic shows the Earth return trajectory for the OSIRIS-REx spacecraft and for the sample capsule, after the spacecraft releases it above Earth on Sept. 24. The yellow diamonds indicate the dates of spacecraft maneuvers that slightly adjust its trajectory to get it closer, and then pointing at, and then above Earth. Credit: NASA's Goddard Space Flight Center

On Sept. 10, NASA's OSIRIS-REx spacecraft briefly fired its [ACS \(attitude control system\) thrusters](#) to point itself toward Earth, putting it

on course to release its sample capsule, carrying rocks and dust from asteroid Benu, from 63,000 miles (or 102,000 kilometers) above Earth's surface on Sunday, Sept. 24.

Yesterday's trajectory-correction maneuver changed the spacecraft's velocity about a ½ mph (less than 1 kph) relative to Earth. Without this tiny but critical shift, the spacecraft and its asteroid cargo would have flown past Earth.

But now, the spacecraft is set up to release the capsule to enter the atmosphere just off the coast of California at 8:42 a.m. MDT / 10:42 a.m. EDT.

Traveling at a precise speed and angle, it will land approximately 13 minutes after release in a 36-mile by 8.5-mile (58-kilometer by 14-kilometer) predetermined area on the Department of Defense's Utah Test and Training Range southwest of Salt Lake City.

Meanwhile, about 20 minutes after releasing the sample capsule, the spacecraft will fire its engines to divert past Earth and onto its next mission to asteroid Apophis: [OSIRIS-APEX](#) (OSIRIS-Apophis Explorer).

OSIRIS-REx may fire its [thrusters](#) again on Sept. 17 if engineers determine that one final adjustment to its trajectory is necessary before it releases its capsule a week later.

The spacecraft is currently 4 million miles, or 7 million kilometers, away, traveling at about 14,000 mph (about 23,000 kph) toward Earth.

Provided by NASA

Citation: OSIRIS-REx adjusts course to target sample capsule's landing zone (2023, September 12) retrieved 29 April 2024 from <https://phys.org/news/2023-09-osiris-rex-adjusts-sample-capsule-zone.html>

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