

NASA spacecraft leaves its mark after grabbing asteroid Bennu samples

April 16 2021, by Marcia Dunn



This combination of 2019 and 2021 images made available by NASA shows how the local surface of Bennu changed after the OSIRIS-REx spacecraft took a

sample of the asteroid on Oct. 20, 2020. The earlier image, top, was taken on March 7, 2019, and the bottom was taken on April 7, 2021, as part of final observations to document the surface after sample acquisition. The Nightingale site is located in the relatively clear patch just above the crater's center – visible in the center of the earlier image. The large, dark boulder located at the center right measures 43 feet (13 meters) on its longest axis.

(NASA/Goddard/University of Arizona via AP)

A NASA spacecraft left a mark at an asteroid when it grabbed a load of rubble last year for return to Earth, new pictures revealed Thursday.

The Osiris-Rex spacecraft made one final flyby of asteroid Bennu on April 7 to take photos of the disturbance left by October's [sample collection](#).

A depression is visible where Osiris-Rex penetrated the asteroid's surface. Boulders were hurled by the pressurized nitrogen gas that was fired at the ground to churn up material for vacuuming, and by the spacecraft's getaway thruster. One 1-ton boulder was flung an estimated 40 feet (12 meters).

The Osiris-Rex team meticulously plotted the final flyover to ensure the best shots. The pictures were taken around noontime to avoid shadows and better see the changes on Bennu's rocky surface.

"These observations were not in the original mission plan, so we were excited to go back and document what we did," the University of Arizona's Dathon Golish said in a statement.

Osiris-Rex will depart Bennu's vicinity next month and head back toward Earth with its precious 2-pound (1-kilogram) sample load. It's due to arrive in 2023.

The solar-orbiting, carbon-rich asteroid is 182 million miles (293 million kilometers) from Earth. By studying pieces of it, scientists hope to better understand how our solar system's planets formed and how people should react if an asteroid endangers Earth.



Bennu's surface was disturbed in three different ways: by the force of the spacecraft touching down; by the sampling mechanism, which collected material by blowing gas into its collection filter; and by four of the spacecraft's back-away thrusters, which moved the spacecraft away from the sample site (marked with a red "X" in the second of these two images) and agitated dust and boulders on the surface. The image above shows the TAG site and highlights (red circle) a large boulder thrown about 40 feet (about 12 meters). Credits: NASA/Goddard/University of Arizona

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