

Vesta

At almost 300 miles across, Vesta is the second biggest celestial body in the asteroid belt, the region of space between Mars and Jupiter that is full of rocks and debris. Vesta was most likely formed 1 to 2 million years after the birth of our solar system. Unlike other asteroids, Vesta's body is made of a separated crust, mantle, and core. This is called *differentiation*, and it is similar to the make up of the Earth.



TOUCH VESTA!

Dhofar 007

Found: Oman, 1999

Mass: 21.27 kg

Class: Eucrite-cumulate

Specimen weight: 2.83 gm, Full Slice

Provenance: Abrams Planetarium 2020.003

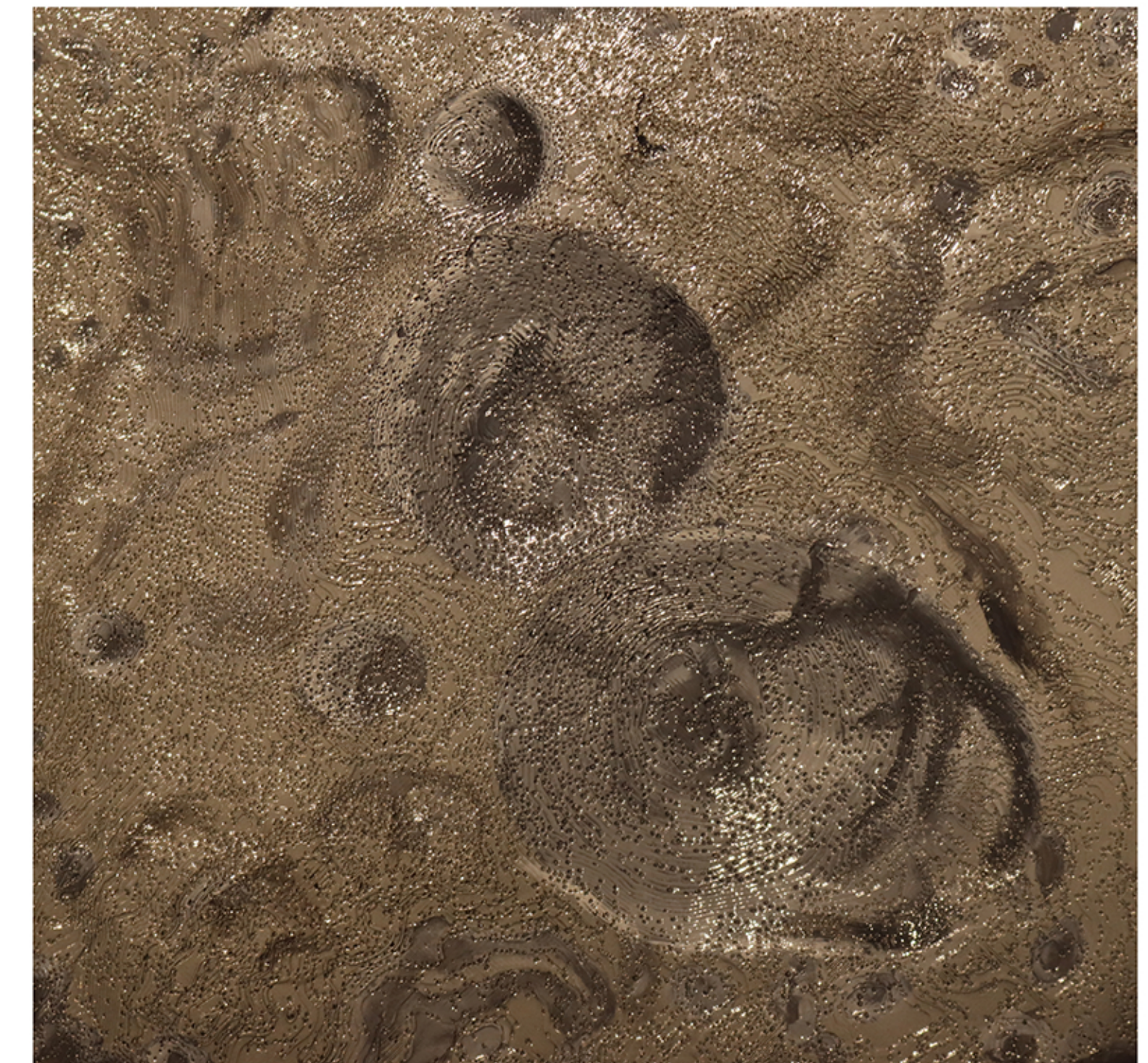
How do we know that a meteorite is from Vesta?

Due to Vesta's *differentiation*, scientists are able to determine that almost 6% of all meteorites found on Earth originated from Vesta. The special meteorites that come from Vesta are called **HED meteorites**, short for Howardite, Eucrite, and Diogenite, and they are very similar to igneous rocks we would find on Earth. However, their composition is slightly different, showing signs of space travel and lack of atmosphere. Comparing HED meteorites to Vesta's Rheasilvia Crater shows that this is most likely where they came from.



Have we ever visited asteroids?

Scientists have sent spacecraft to gather photos and data from asteroids, but landing on them is very difficult. Many asteroids are too small to create strong enough gravity for us to safely land. However, in 2019, Japanese scientists landed the spacecraft Hayabusa2 on the asteroid Ryugu to collect rock samples to bring back to Earth. NASA has a similar mission called OSIRIS-REx, which centers around the asteroid Bennu.



Snowman Crater

These three craters, individually named Marcia, Calpurnia, and Minucia, are so nicknamed due to their sizes and arrangement. Marcia is the largest at 63 kilometers (40 miles) across, and forms the bottom of the snowman. Calpurnia, the midsection, is about 53 kilometers (33 miles) across, and Minucia, the smallest at 24 kilometers (15 miles) across, forms the head. Can you find the craters on the wall in front of you?