

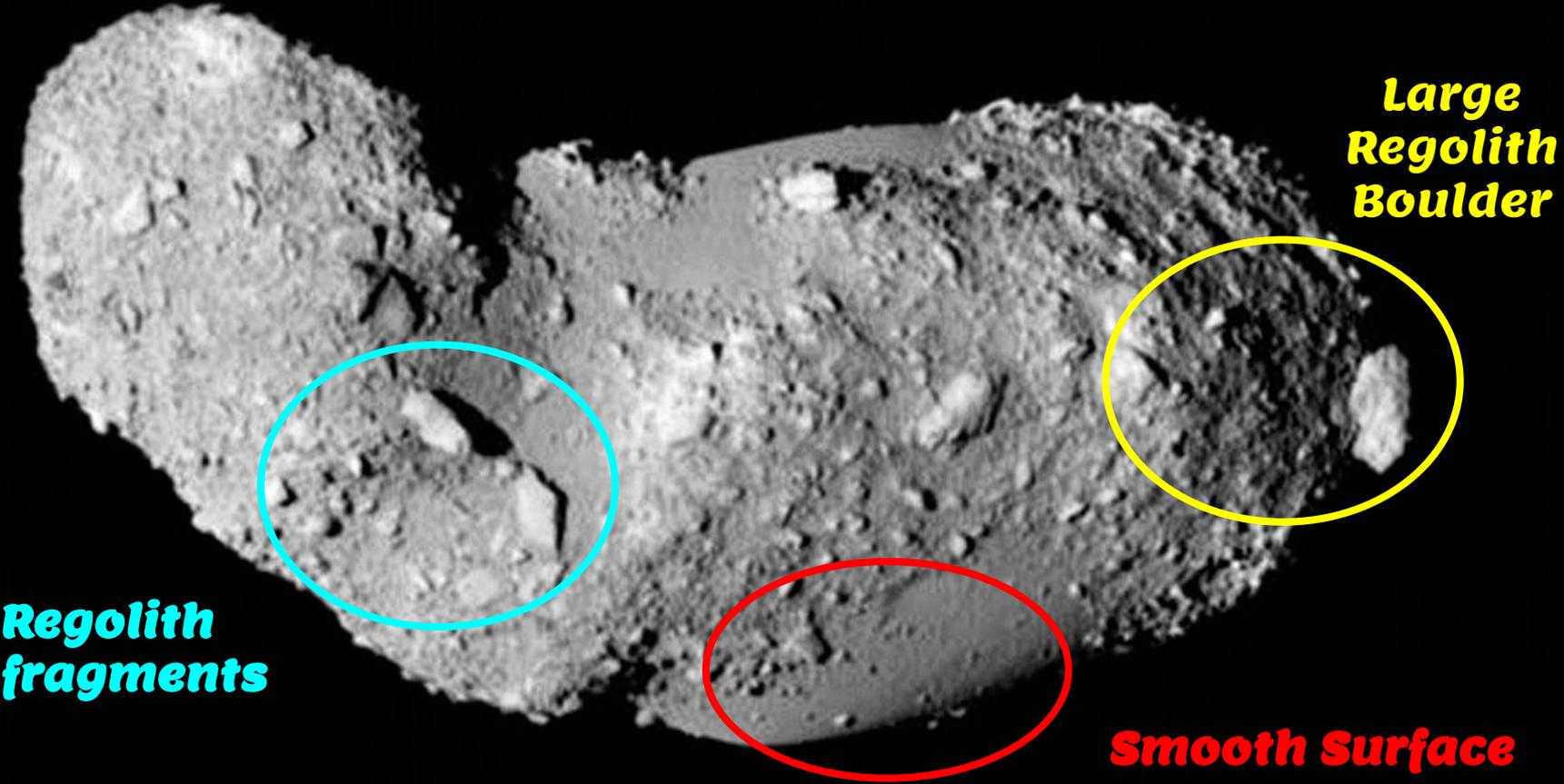
Asteroid 101

By: Easha, Malaika, Hunter, Hailey

Image #1

This asteroid is known as asteroid Itokawa, in 2005, Itokawa became the first asteroid from which samples were captured and brought to Earth for analysis. Itokawa is part of what remains from a much larger object that was shattered by a collision. Asteroids like this, are also the most common type of asteroid in the inner main belt, and are the most common kind of meteorite found on Earth.





Regolith fragments

Large Regolith Boulder

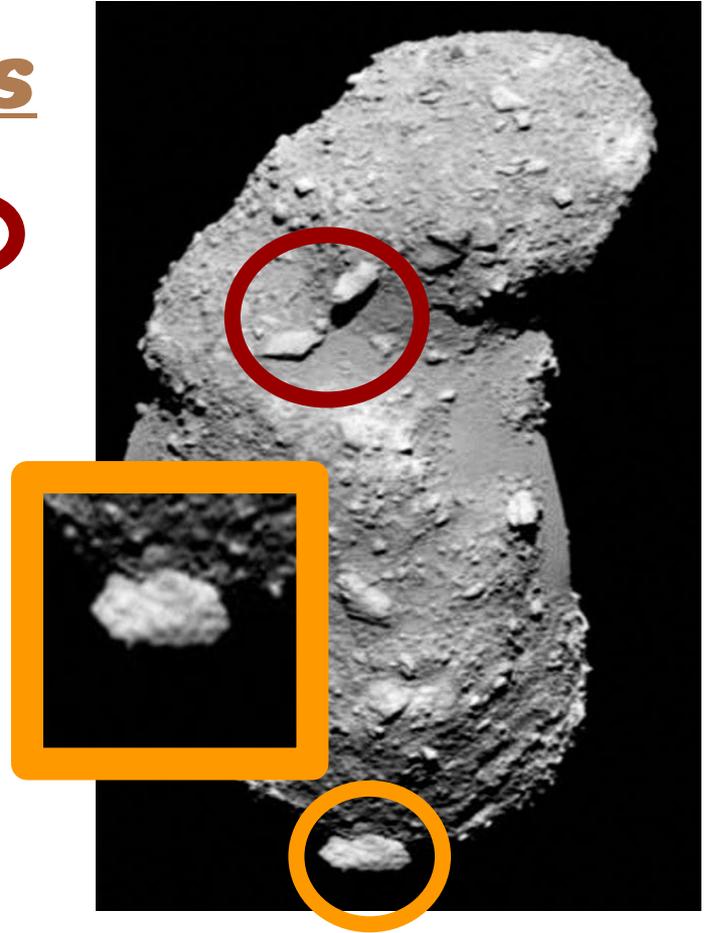
Smooth Surface

Formation of Features

Regoliths - ○ Regoliths Fragments - ○

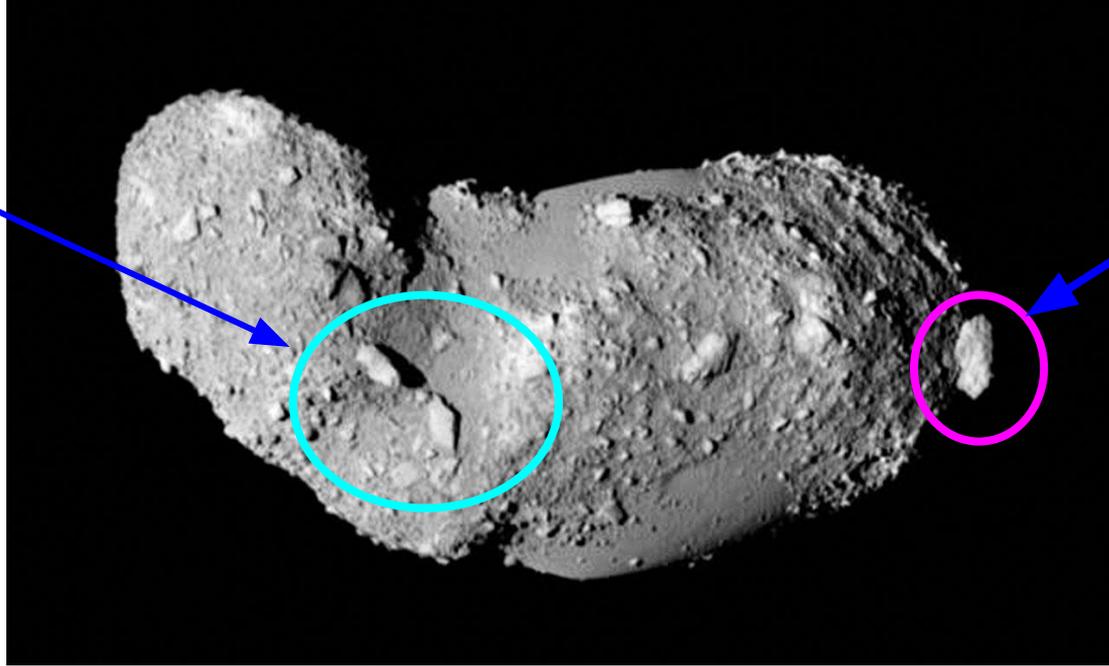
Boulder like layer of solid rock material developed through meteoroid impact.

- Gravitational attraction pulls objects together
- Dust, soil, broken rock, and etc present on the Earth, Moon, Mars, Asteroids, and other terrestrial planets and Moons.



Relative Ages

**Younger
Regolith
fragment**



**Older
Regolith
Boulder**

Relative Ages (cont.)

I know that the pink labeled fragment is older than the blue labeled fragments because the pink one is attached to the actual asteroid, and the blue is attached to other fragments.

Image #2

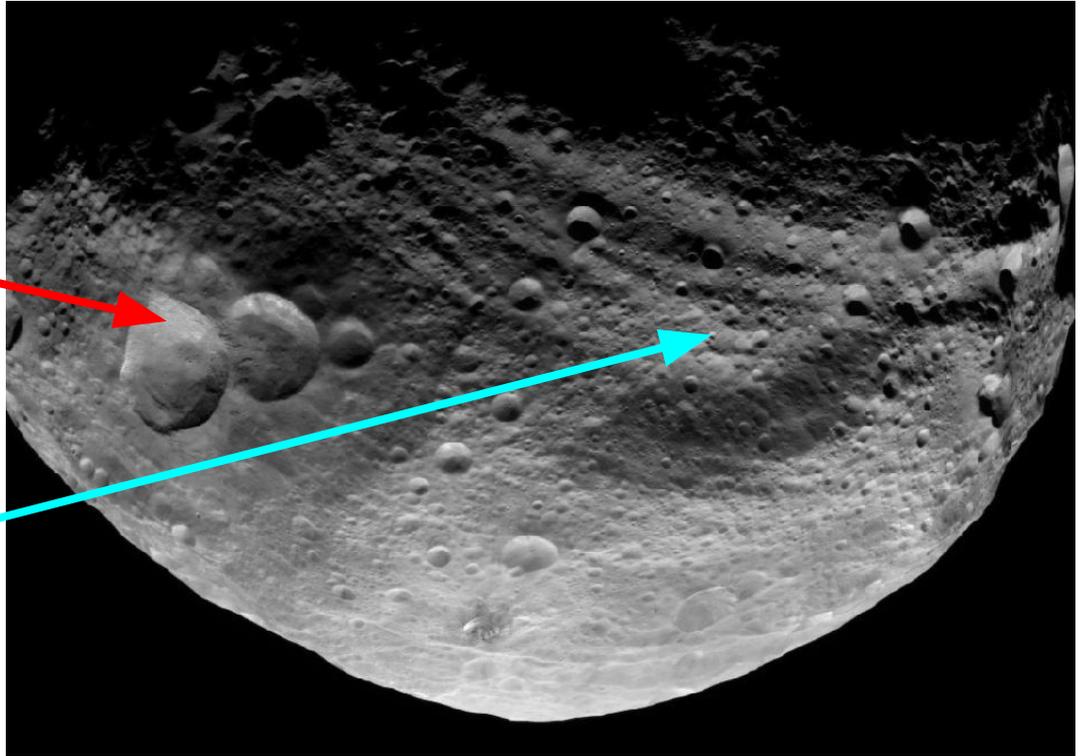
This image is known as Vesta 4, Vesta is the second most massive asteroid in the main belt. The Dawn spacecraft circled Vesta from 16 July 2011 until 5 September 2012. The giant asteroid is almost a circle, and it is almost a dwarf planet. Unlike most asteroids, it is separated into crust, mantle and core. Vesta formed early, within 1 to 2 million years of the solar system being created.



Features of Asteroids

**Large
Craters**

**Smaller
craters**

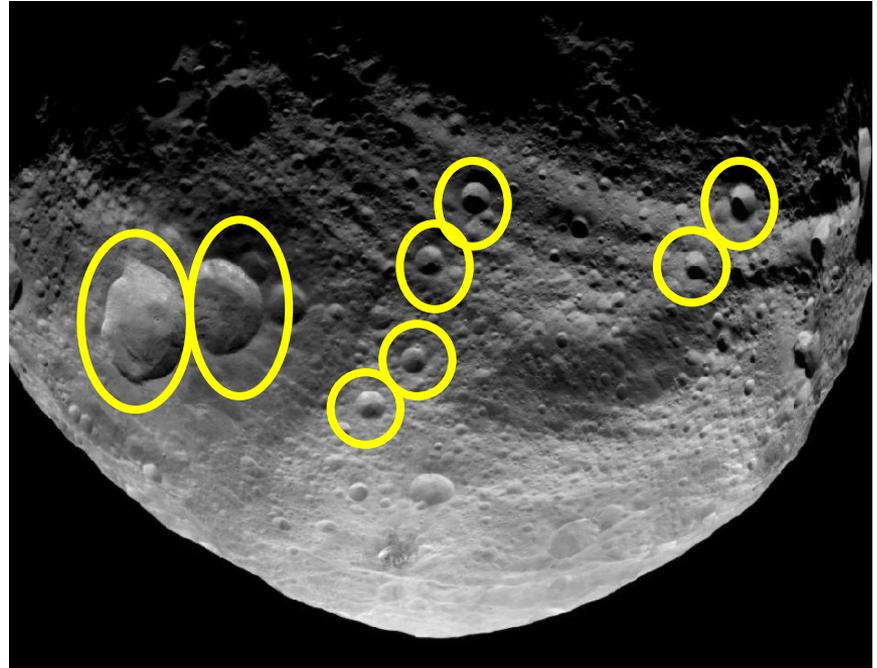


Formation of Asteroids

Impact Craters - ○

Caused due to other Asteroids, Comets and space debris colliding with the Asteroid's surface.

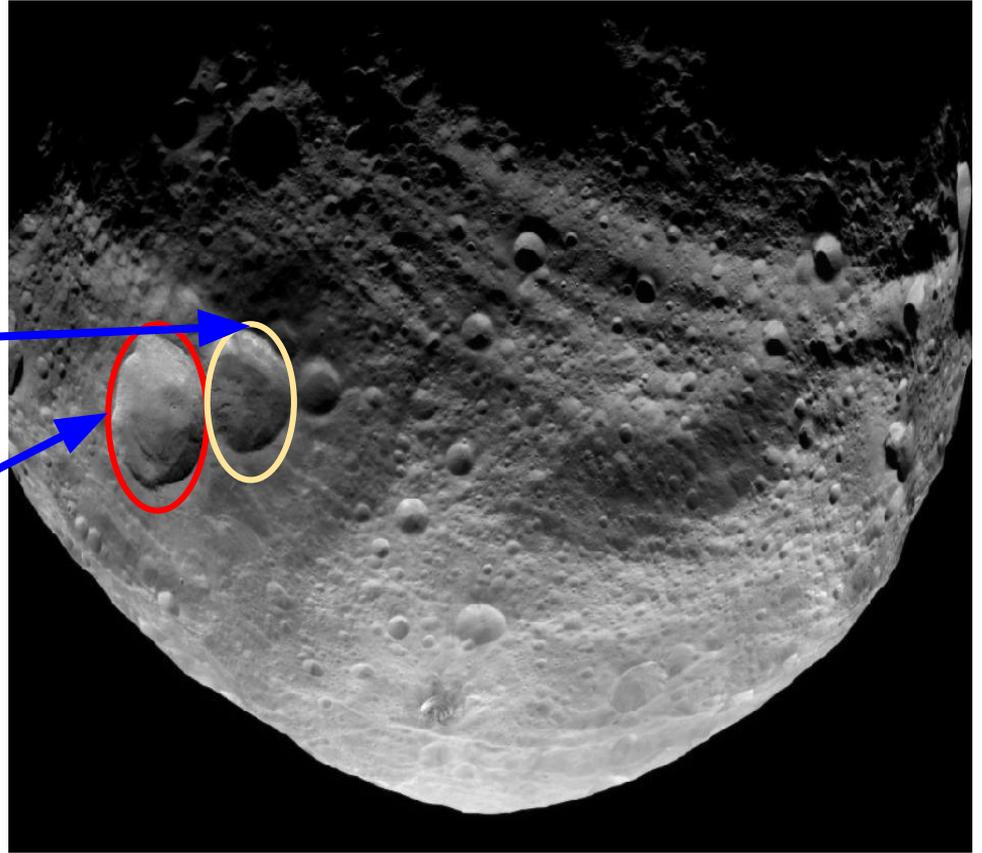
- Simple Crater
 - small and smooth bowl shape
- Complex Crater
 - shallower depth with a central peak or peak ring



Relative Ages

**Older Impact
Crater**

**Younger
Impact Crater**

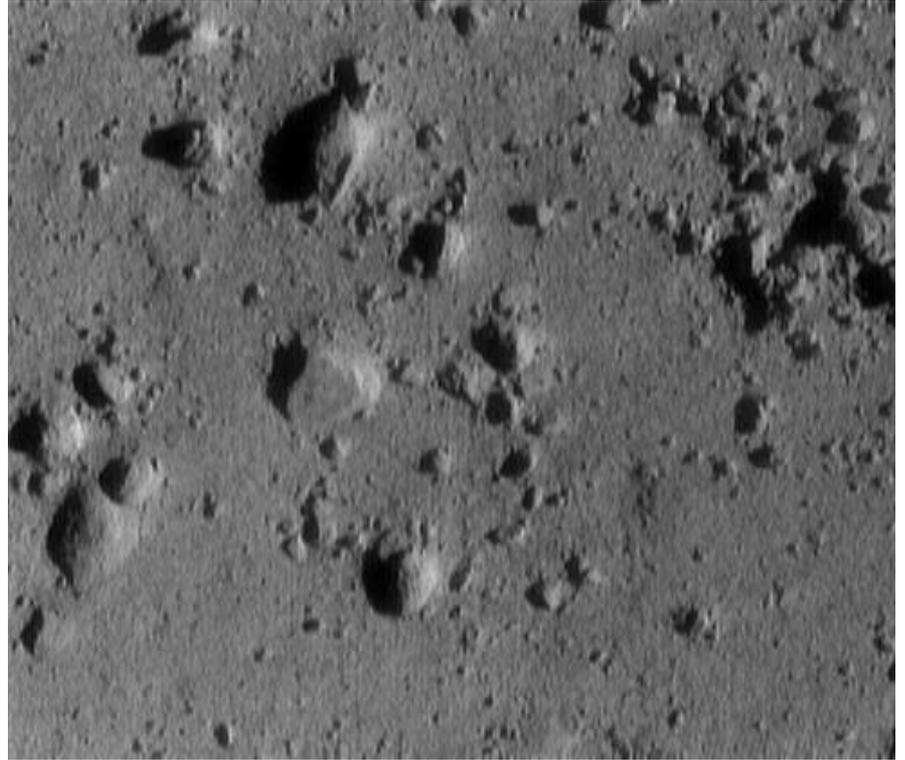


Relative Ages (cont.)

I know the red labeled crater is older than the yellow labeled crater because, you can see how the yellow labeled crater's outer edges overlapped and the walls/ejecta are cutting into the red labeled crater showing that the red one had to be there first for it to be overlapping.

Image #3

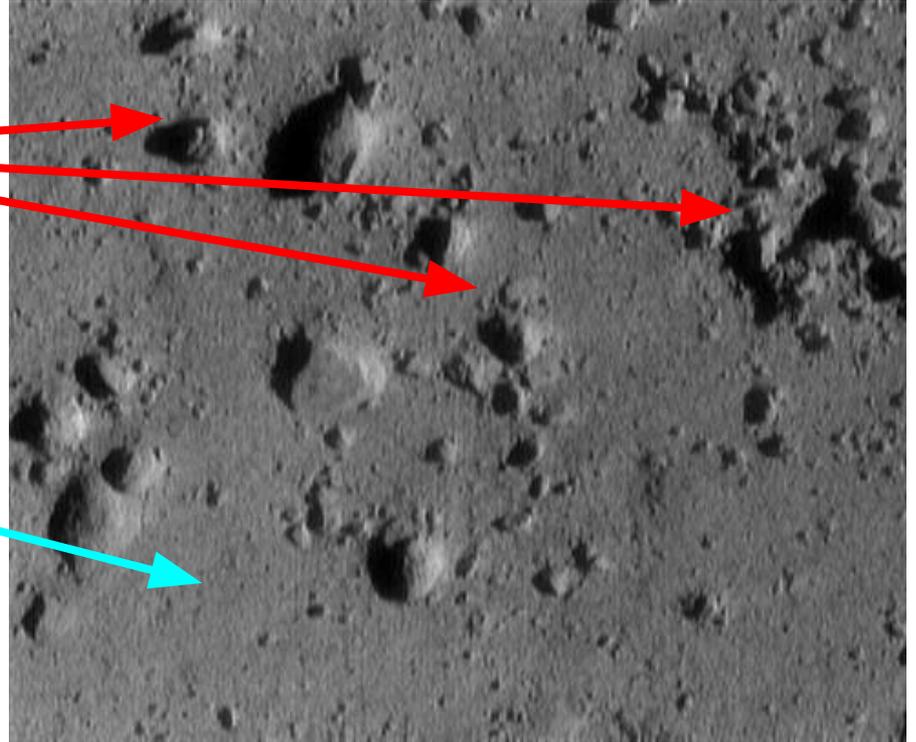
Eros is famous as the first asteroid to be orbited by a spacecraft. The NEAR spacecraft first flew by Eros on 23 December 1998 at a distance of about 2,400 miles. They found that the asteroid was smaller than expected and had two medium-sized craters, along surface ridge and a density. The mission carried out humanity's first asteroid landing on 12 February 2001.



Features of Asteroids

**Regolith
Fragments**

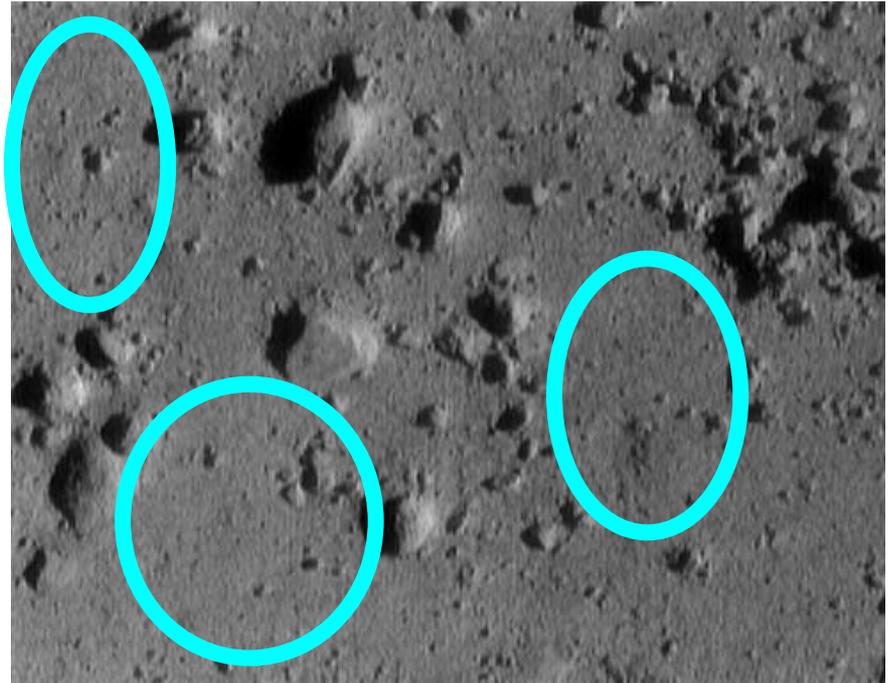
**Smooth
surface**



Features of Asteroids

Deep Layer Dust- ○

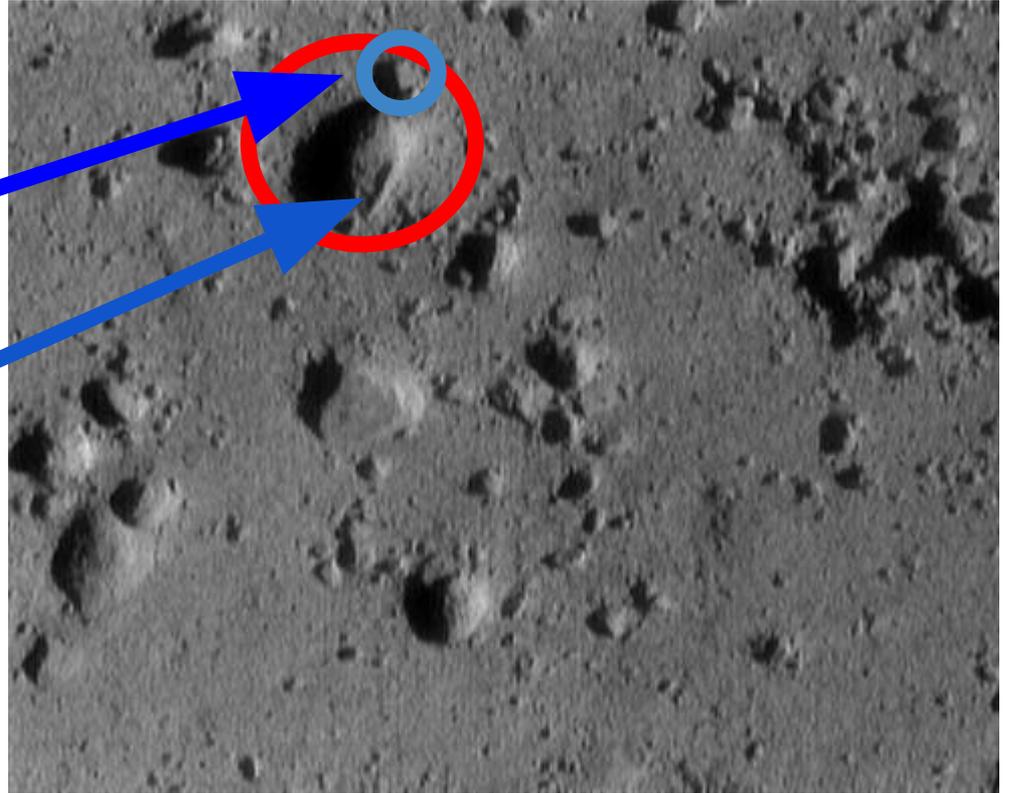
Formation of the Asteroid and repeated impacts result in deep layers of dust.



Relative Ages

**Regolith
Fragment 1:**

**Regolith
Fragment 2:**



Relative Ages (cont.)

I know the red labeled fragment is older than the blue labeled fragment due to the fact the blue labeled fragment is on top of the red, meaning that the blue labeled fragment had to be there first.