Asteroid 101

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Types of Meteorites

Stony

- ➔ Most common
- ➔ Mostly silicon based minerals, some nickel iron alloy, and contain tiny amounts of iron sulfide
- ➔ Chondrites and Achondrites

Stony Iron

- ➔ Made of approximately even parts silicates and nickel-iron alloy
- ➔ Pallasites and Mesosiderites

Iron

- ➔ Most easily recognized
- ➔ Composed of almost entirely nickel-iron alloy
- ➔ Likely came from the cores of large asteroids

Image 1

Known as “Asteroid Itokawa”

S-Type

Mostly covered by boulders

Lack of Craters

Thin layer of regolith

http://www.lpi.usra.edu/exploration/education/hsResearch/asteroid_101/A101_1jpg

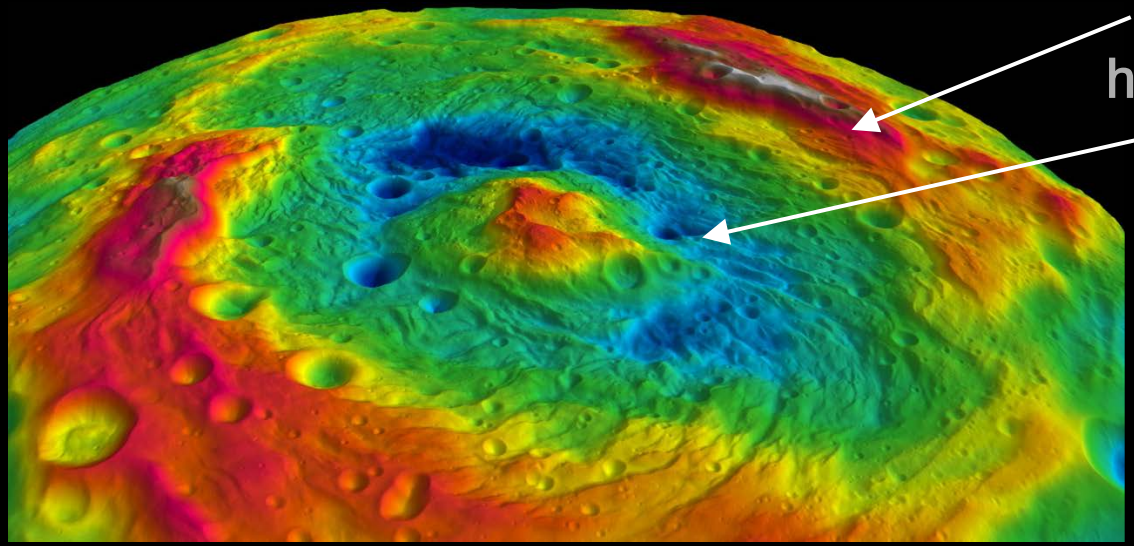
http://www.lpi.usra.edu/exploration/education/hsResearch/asteroid_101/Asteroid%20Itokawa_A%20Source%20of%20Ordinary%20Chondrite

Image 2

4 Vesta
V-Type
Covered in igneous rocks and craters
    Volcanic history
Geologic Features
    HED's & Craters
    Rheasilvia impact
    Hills

http://www.lpi.usra.edu/exploration/education/hsResearch/asteroid_101/A101_2.jpg

Rheasilvia Impact Crater



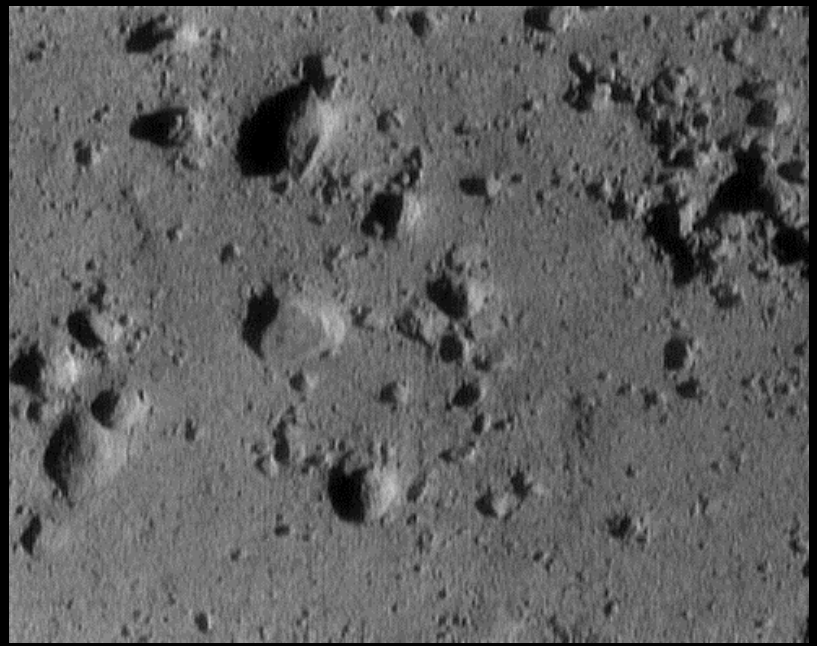
Color coded topography

Warm colors represent higher elevation

Cool colors represent lower depth

http://www.lpi.usra.edu/science/dawn_at_vesta/

Image 3



Surface of Asteroid “433 Eros”

S-Type

Layer of Regolith

Boulders

Lack of Craters

http://nssdc.gsfc.nasa.gov/planetary/text/eros.txt
http://www.lpi.usra.edu/exploration/education/hsResearch/asteroid_101/A101_3.jpg

To conclude...

The three types of meteorites are stony, stony iron and iron.

Image 1is the S-type asteroid Itokawa, which is a gravitational aggregate formed from the fragments of a larger body that was broken up by a collision.

Image 2 is of the V-type asteroid, Vesta, located in the asteroid belt.

Image 3 is the S-type near-earth asteroid, 433 Eros .

Questions?