

Impact cratering as a geological process

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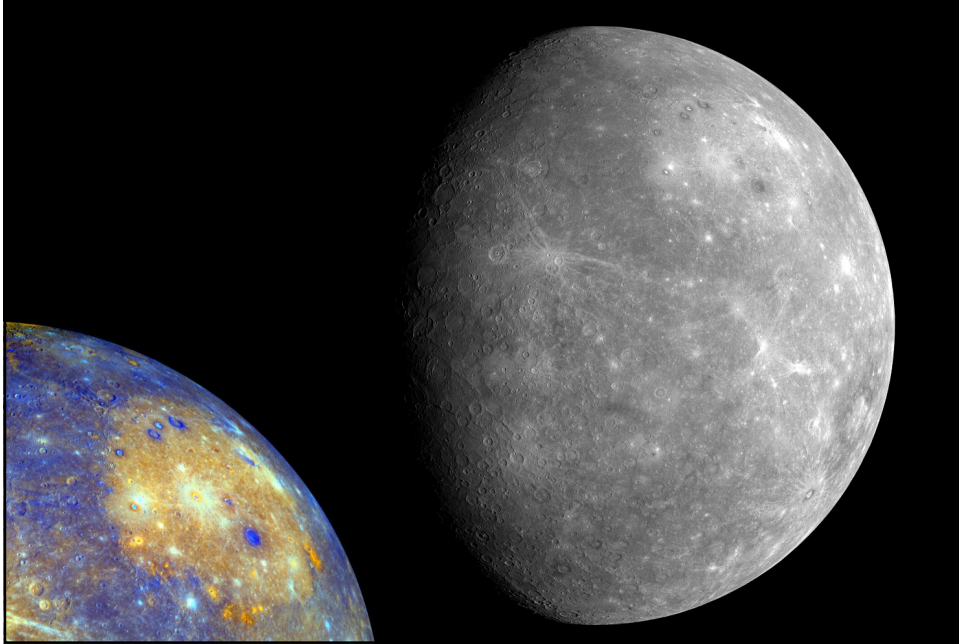
1

Importance

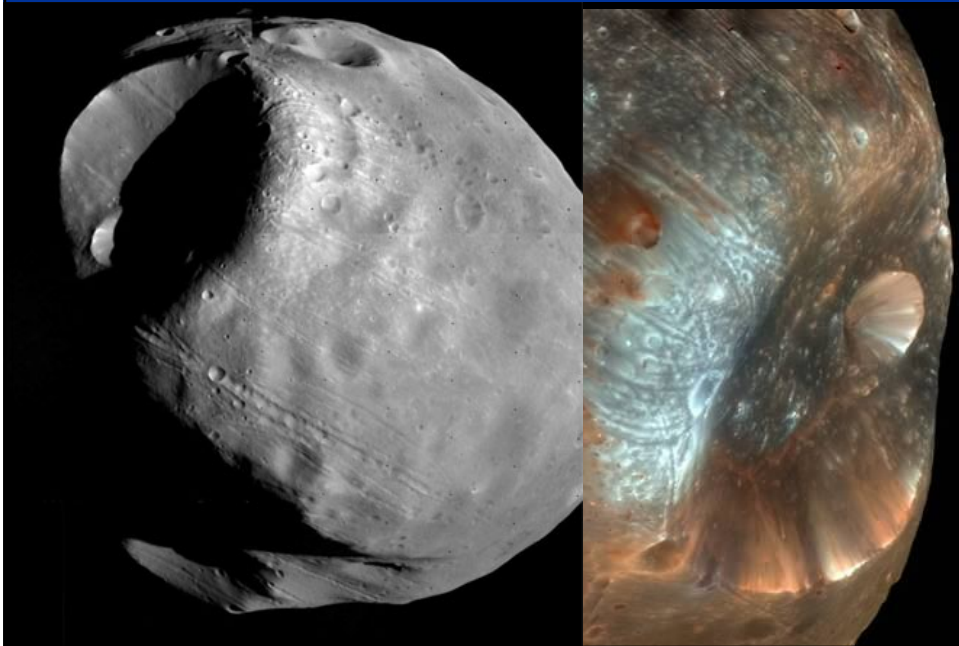
- A Geological process that affects all solid bodies in the solar system
- Evolution of the solar system
- Formation of the Earth/Moon system
- The Late Heavy Bombardment
- Evolution of life on earth

2

Mercury



Mars



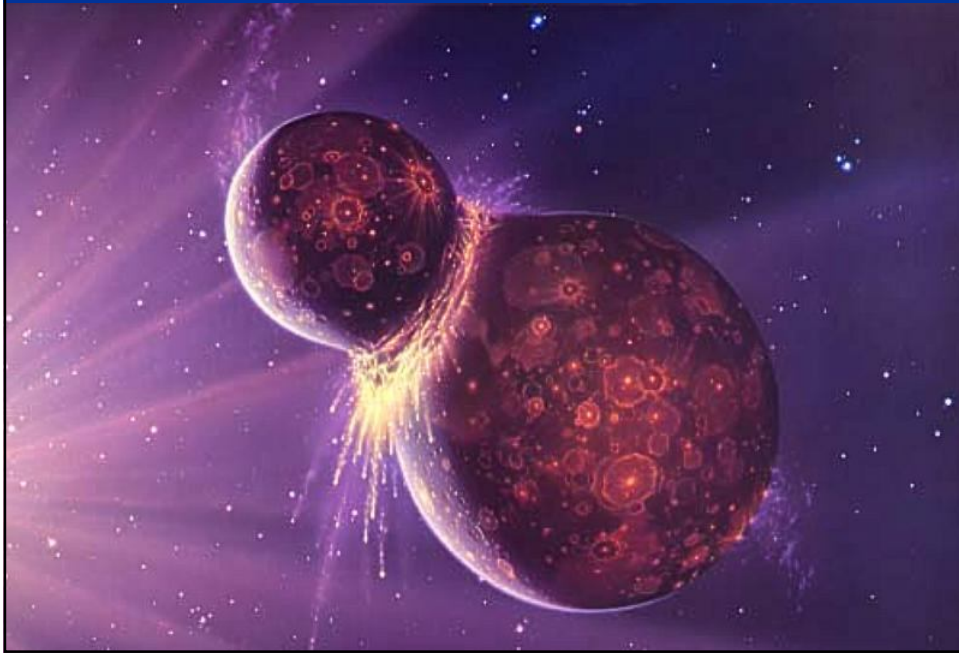
Moon



Earth

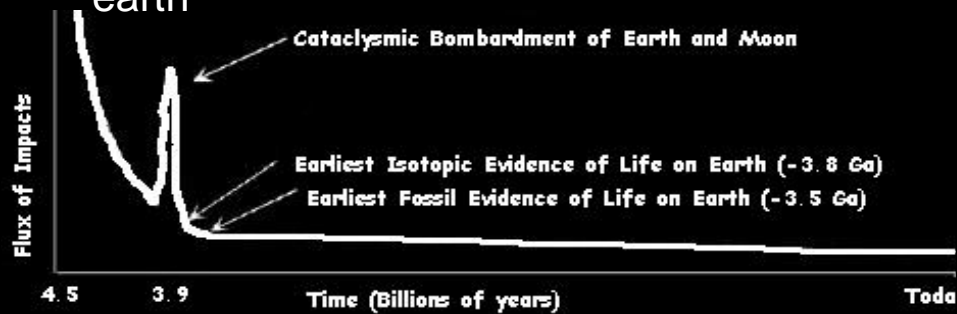


Formation of the moon



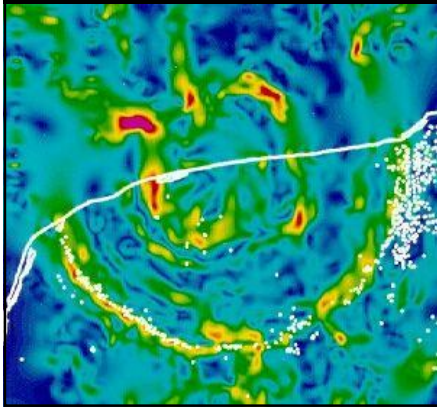
The Late Heavy Bombardment (LHB)

- Later stage of asteroid impacts
- Caused by change of orbit by Jupiter and Saturn
- The evolution of life on earth; panspermia
- Asteroids are a possible source of water on earth



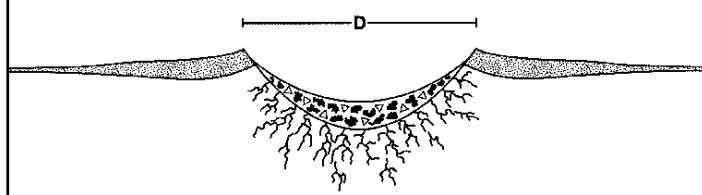
Evolution of life on earth

- Source of water
- Panspermia
- Mass extinctions

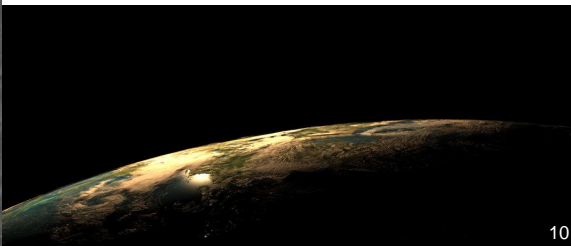


Simple craters

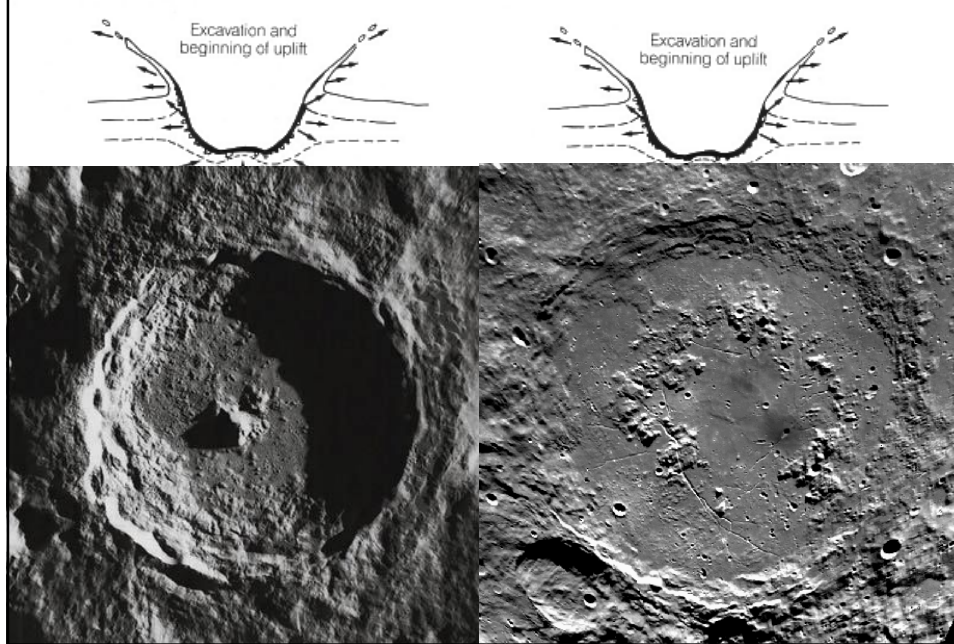
Simple Crater



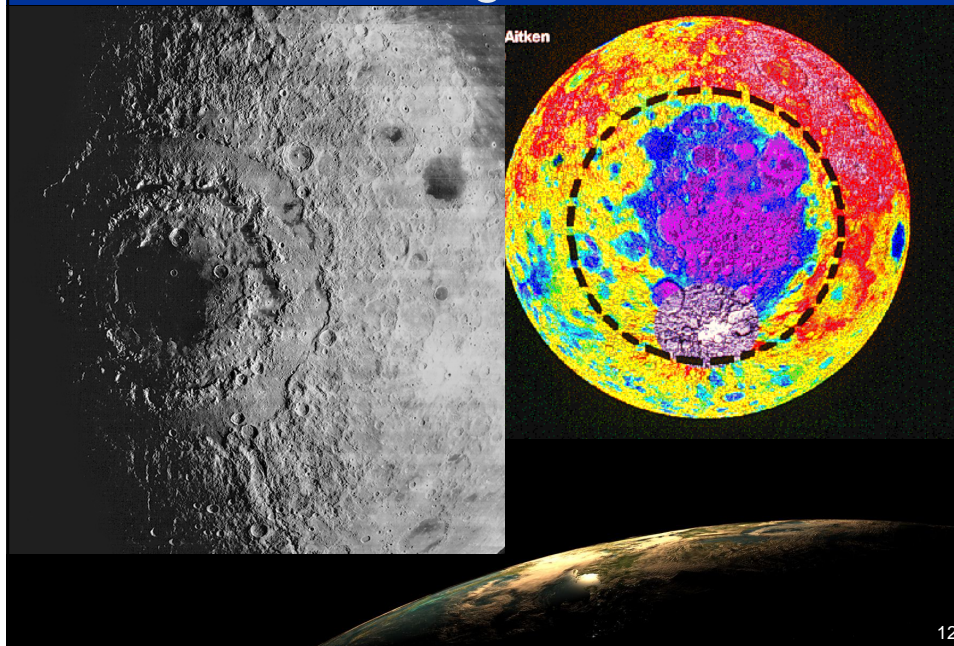
- | | |
|---------------|---------------------|
| △ Breccia | Fractured bedrock |
| Impact melt | |
| Impact ejecta | Central peak uplift |



Complex craters

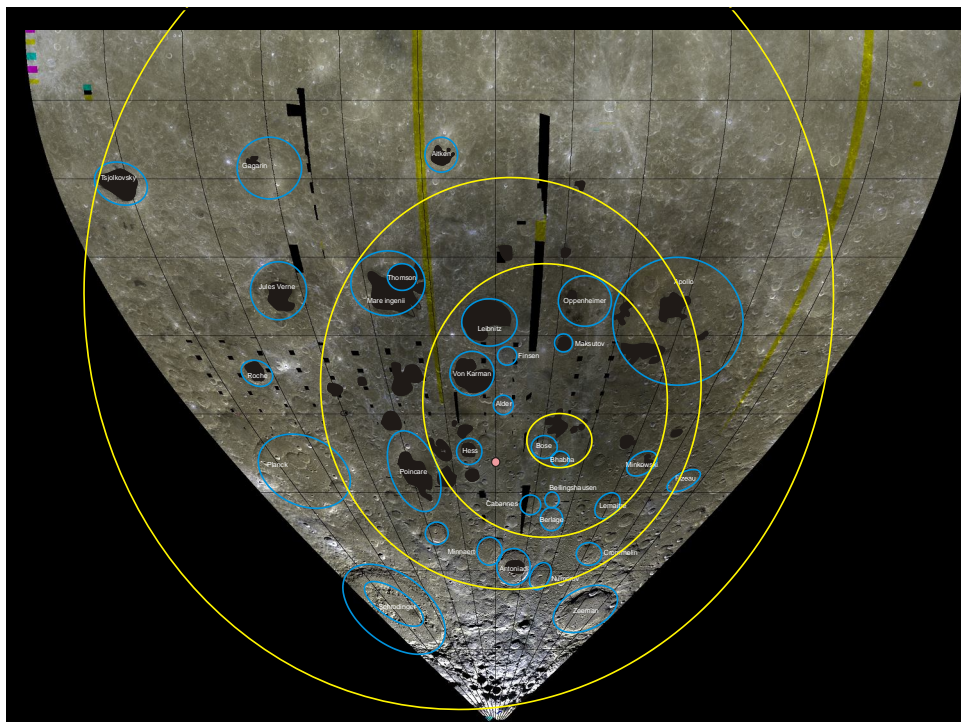
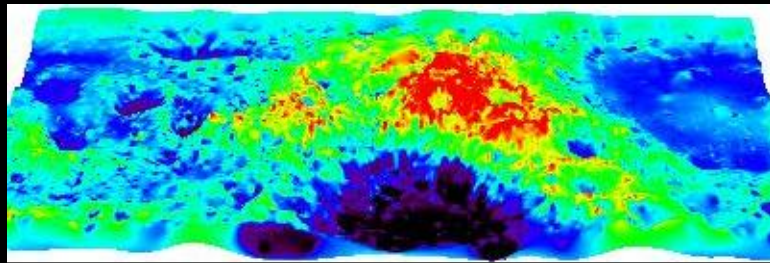


Multiring basins



The South Pole - Aitken Basin

- 2500 km in diameter
- Depth of 12 km
- The largest impact structure on the moon and in the solar system
- Direct window into the lunar interior
- Oldest impact crater on the moon



Basin centre, Bhabha and Bose

