Impact cratering as a geological process

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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
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

![Diagram of the Late Heavy Bombardment with timelines and key points]
Evolution of life on earth

- Source of water
- Panspermia
- Mass extinctions

Simple craters

- Breccia
- Impact melt
- Impact ejecta
- Fractured bedrock
- 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