

Agenda

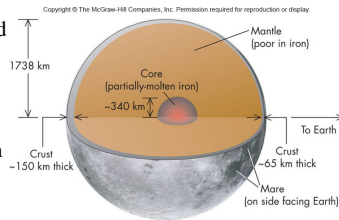
- No Class Thursday (10/23)
- Review Ch. 6
- Parallax Lab

The Moon

- No atmosphere—gravity too small, no volcanic activity
- No magnetic field—spins slowly, not molten, little iron
- Static (dead)—no atmosphere(erosion), no plate tectonics
- Orbit—
 - Synchronous—tidal breaking (Earth on Moon)
 - Tilted—w/r/t ecliptic and equator; results in infrequent eclipses (solar and lunar)
 - Tides—twice a day
 - Stabilize climate—may stabilize spin axis of Earth

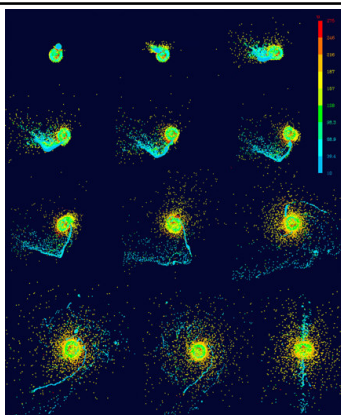
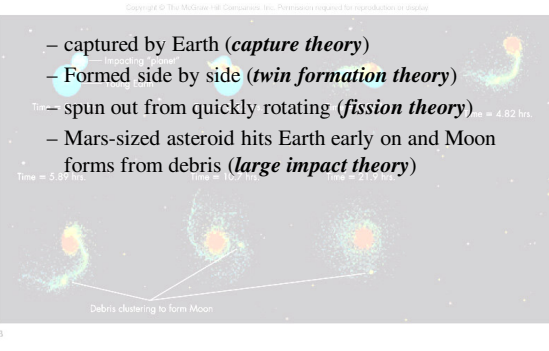
The Interior of the Moon

- Regolith—crushed rock
- Crust—rock
- Mantle—not hot
- Core—low in iron



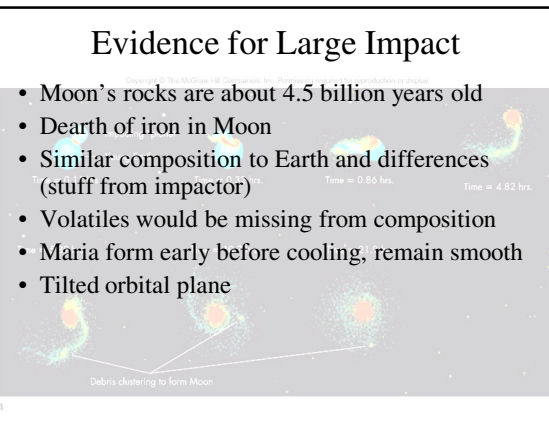
Theories:

- captured by Earth (*capture theory*)
- Formed side by side (*twin formation theory*)
- spun out from quickly rotating (*fission theory*)
- Mars-sized asteroid hits Earth early on and Moon forms from debris (*large impact theory*)



Evidence for Large Impact

- Moon's rocks are about 4.5 billion years old
- Dearth of iron in Moon
- Similar composition to Earth and differences (stuff from impactor)
- Volatiles would be missing from composition
- Maria form early before cooling, remain smooth
- Tilted orbital plane



Evolution

- Traits inherited
- Changes introduced
“randomly”...recombination, mutation, etc
- Traits that are helpful for survival more likely to stick around...natural selection
- Requires element of chance, a long time, and environment which selects for beneficial traits

Parallax Lab

Parallax

- 3.26 light-years)
- Distance for which the annual parallax is 1 arcsecond

