

Mercury

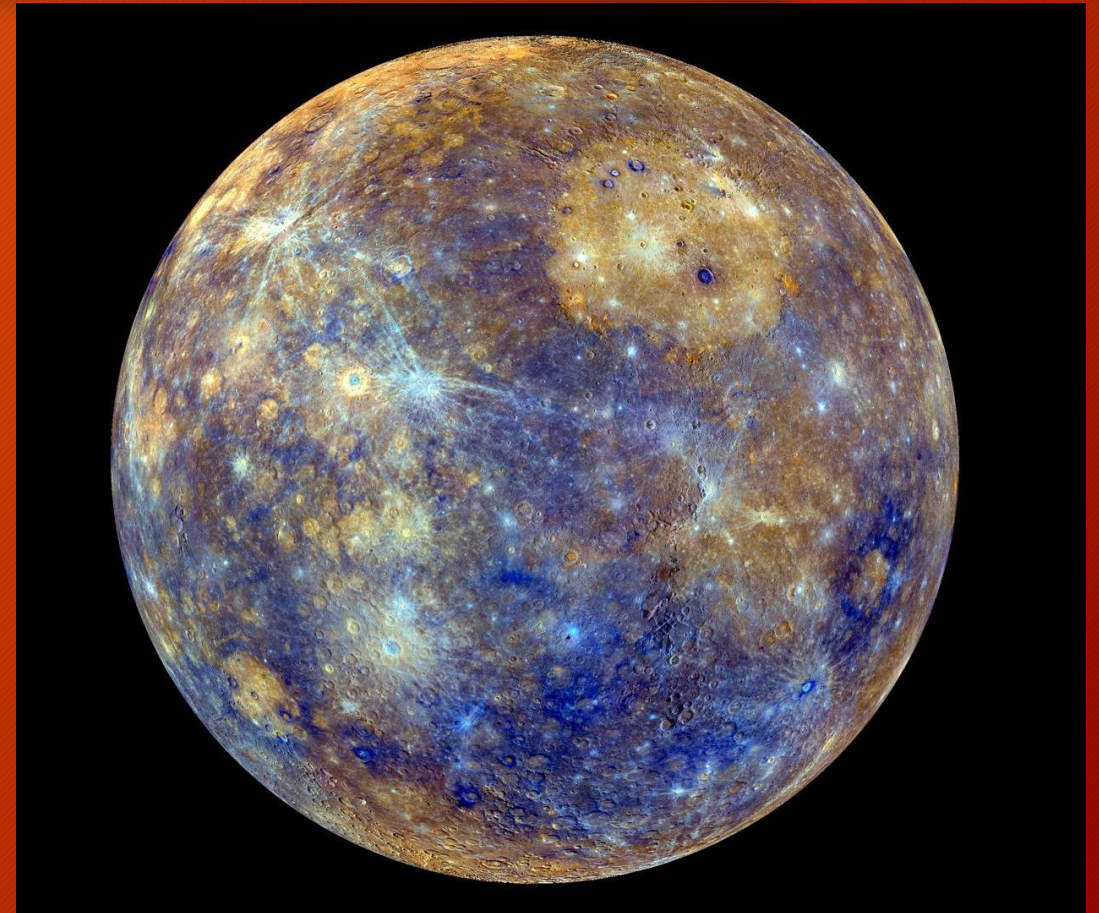


Matt Cass, Southwestern Community College

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Let's Learn About Mercury

- Similar to Earth's Moon
- Negligible Atmosphere
- Ancient lava-filled lowlands.
- Heavily Cratered Surface



Source: NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington

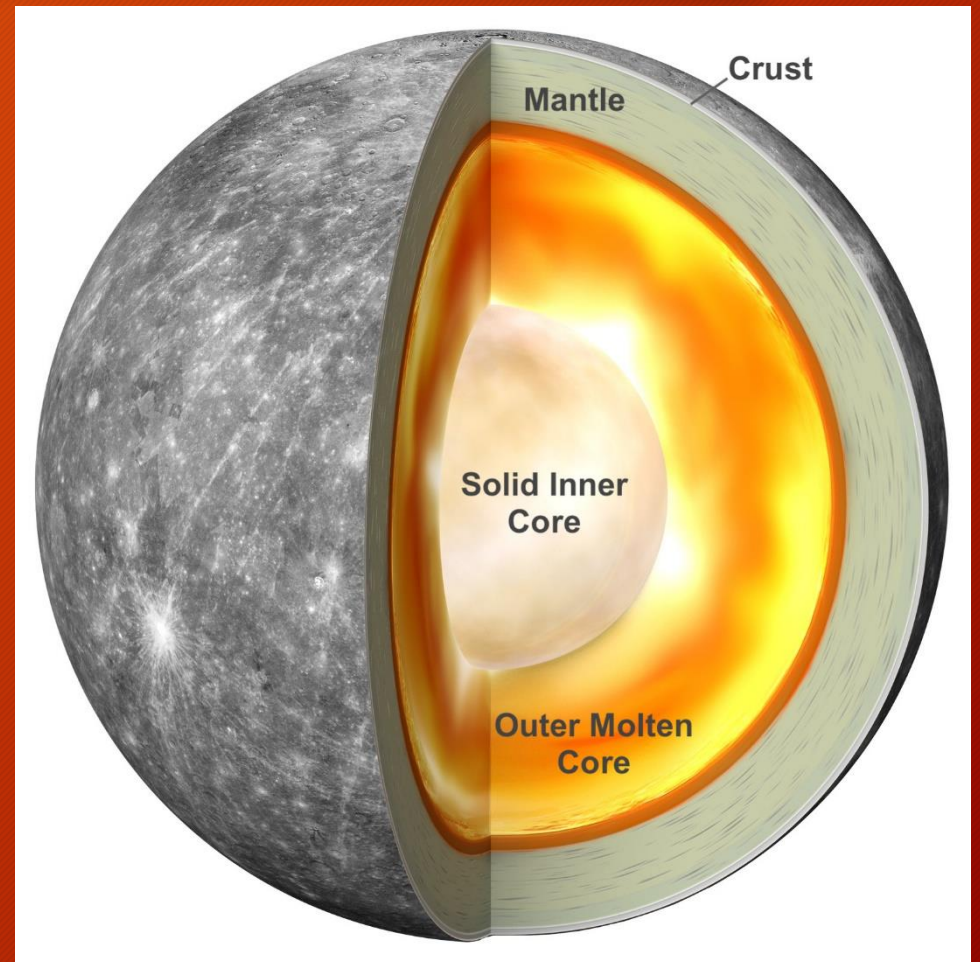
Craters and Geology

- Hakusai Crater
- Craters (bright spots) are newer.
- Lavaflows (dark spots) are older.



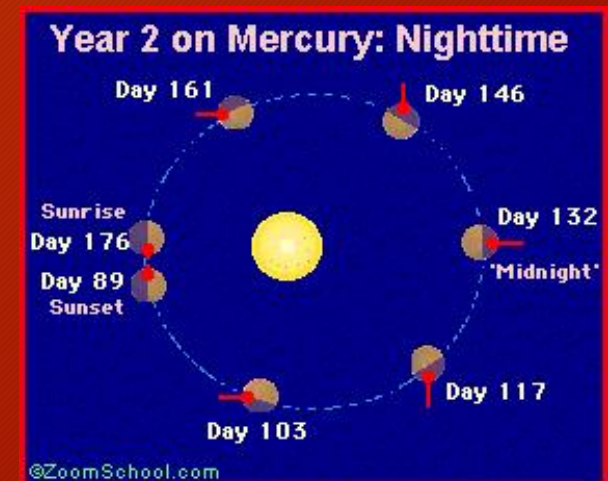
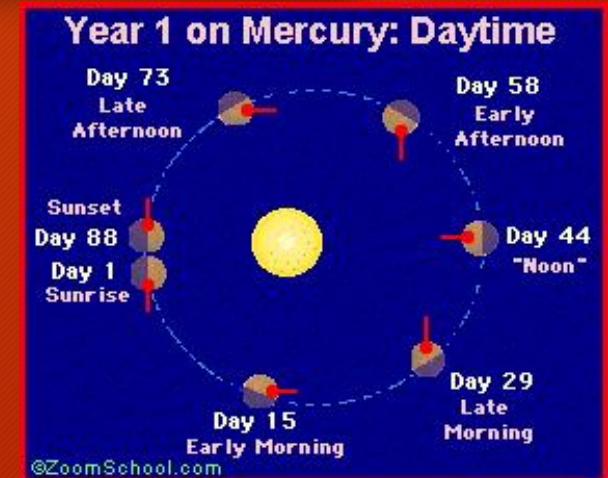
Geology Continued

- Solid, Metallic Inner Core
- Possibly some molten liquid in the outer core
- How do we know?
 - Weak Magnetic Field



Peculiar Rotation / Orbit Characteristics

- Mercury rotates very slowly...
- A Mercury Day lasts approximately 59 Earth Days
- Mercury revolves around the Sun very fast...
- A Mercury Year lasts approximately 88 Earth Days
- Put it all together and you have a day/night cycle that lasts two years on Mercury!

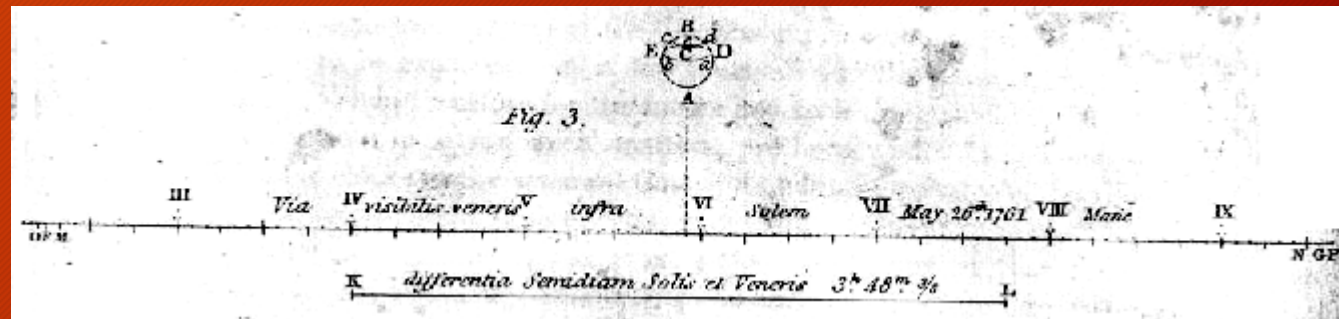


Now about that transit...

- What is a transit?
 - Mini-eclipse
- When do they occur?
 - May / November (for Mercury)
- How often do they occur?
 - Approximately 13 times a century (for Mercury)
- Why don't they occur more often?
 - 7° tilt from Earth's orbit (the ecliptic)
- Venus Transits too! (but that is for another time).

Why do they matter?

- Edmund Halley, (yes, the comet guy) in 1716, devised a method to measure the distance between the Earth and Sun using solar transits.
- Until now it was heavily debated and there were very different ideas.
- Had to wait until 1761 to test it with Venus! (He was already dead!)
- It worked (kinda) as Venus's motion wasn't well understood.



Source: Abridged Transactions of the Royal Society, Volume VI, pp.243-249, published in 1809

And we still make use of this method today!



Source: Transit of Mercury Images - Citizen ToM - Zack Stockbridge, SCC

A fun look at the Transit.

- https://mercurytransit.gsfc.nasa.gov/display.php?year=2019&phase=All&dataset=Mercury19_AIA12s_193&title=AIA%20193

Questions?

- Thanks for attending!
- Our next Lunch & Learn will be on December 10th!