
OpenStax Astronomy, Ch.9: WS Problems (Apr-2021)

Review Questions

1. What is the composition of the Moon, and how does it compare to the composition of Earth? Of Mercury?
2. Why does the Moon not have an atmosphere?
3. What are the principal features of the Moon observable with the unaided eye?
4. Frozen water exists on the lunar surface primarily in which location? Why?
5. Outline the main events in the Moon's geological history.
6. What are the maria composed of? Is this material found elsewhere in the solar system?
7. The mountains on the Moon were formed by what process?
8. With no wind or water erosion of rocks, what is the mechanism for the creation of the lunar "soil?"
9. Explain the evidence for a period of heavy bombardment on the Moon about 4 billion years ago.
10. What is the main consequence of Mercury's orbit being so highly eccentric?
11. Describe the basic internal structure of Mercury.
12. How was the rotation rate of Mercury determined?
13. What is the relationship between Mercury's rotational period and orbital period?
14. The features of Mercury are named in honor of famous people in which fields of endeavor?
15. Why did it take so long for geologists to recognize that the lunar craters had an impact origin rather than a volcanic one?
16. How might a crater made by the impact of a comet with the Moon differ from a crater made by the impact of an asteroid?
17. Why are the lunar mountains smoothly rounded rather than having sharp, pointed peaks (as they were almost always depicted in science-fiction illustrations and films before the first lunar landings)?
18. The lunar highlands have about ten times more craters in a given area than do the maria. Does this mean that the highlands are 10 times older? Explain your reasoning.
19. The Moon was once closer to Earth than it is now. When it was at half its present distance, how long was its period of revolution? (See Orbits and Gravity for the formula to use.)