

Review Questions

I. Heliocentric History

1. In what year did Galileo build his first telescope?
2. Which planetary configuration occurs during retrograde motion?
3. Who had a model for the solar system that was a mixture of the ptolemaic and copernican models? (*Tycho B.*)
4. What is Kepler's first law? (*Orbits are ellipses*)
5. Which early astronomer died on the birth year of Isaac Newton?
6. Who was known for his meticulous planetary observations up until AD 1601?
7. Which geometric construct was used by Ptolemy (and Hipparchus) to model retrograde motion?
8. Who used calculus and a theory of gravity to show why planets have elliptical orbits.
9. In approximately which direction do you go from the center of the Sun to reach the center of mass of the Solar system? (*towards Jupiter*)
10. Galileo's observation of which phase of Venus directly contradicted the Ptolemaic model?
11. Copernicus' heliocentric model still did not match observations well because he assumed that the shape of the planets' orbits were _____.
12. Which of Kepler's laws states that equal areas are swept out in equal times?
13. Kepler's third law relates which two properties of planets?
14. Who discovered the four brightest moon's around Jupiter?

II. Lunacy

1. How long does it take for the Moon to rotate relative to the stars?
2. A 1 km across meteoroid should make a crater about how big? (*10 km*)
3. What do you call the fine powder on the Moon's surface?
4. What surface feature on the Moon indicates where lava once flowed? (*rilles*)
5. Rilles and volcanoes are both examples of what? (*vulcanism*)
6. How much stronger is the Moon's tidal force than the Sun's tidal force on the Earth? (*2 times*)
7. Which layer of Earth's interior is missing from the Lunar interior? (*liquid outer core*)
8. Of the sister theory, the capture theory, the daughter theory and the impact theory, which theory is preferred for the Moon's formation? (*impact theory*)
9. What was detected on the Moon that makes us think it has water? (*protons or*

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10. Which NASA spacecraft was purposefully crashed into a dark crater? (*Lunar Prospector*)
11. How many times does the Moon rotate relative to the Earth in one Month?
12. What is the ratio of the Moon's diameter to the Earth's diameter? (*0.3*)
13. An object which in the solar system which orbits around a planet is called a natural satellite or a _____.

IV. Terrestrial Extras

1. Which planet has the highest average surface temperature?
2. What unique thing does Earth have which explains the low levels of Carbon Dioxide in the atmosphere? (*Oceans.*)
3. What is the minimum temperature on the surface of Mercury? (*100K, -173K, -280 F*)
4. Which terrestrial planet is the most massive?
5. What surface feature on Mercury is caused by the cooling and contracting of the planet?
6. What is the name of the large supercontinent that broke up into Earth's current seven continents? (*Pangea*)
7. What layer of a planet's atmosphere has decreasing temperature with altitude and the highest density? (*Troposphere*)
8. Which lunar features appear to the eye as dark blotches on the Moon?

V. Planetary Potpourri

1. What property of all planets suggests that the solar system originated as a rotating cloud of gas and dust? (*CCW sense of revolution.*)
2. How many times more massive is Jupiter than the Earth? (*318*)
3. Which planet has the longer synodic period, Venus or Mercury?
4. What do we call learning about the planets by comparing them to one another?
5. Which planet has the longest sidereal period? (*Neptune*)
6. Which object has the longer synodic period, Mars or Pluto? (*Mars*)
7. Which property determines whether a planet will have seasons?
8. Which spacecraft, destined for Jupiter, got gravitational assists by Venus and the Earth? (*Galileo*)
9. The fraction of light which is reflected off of a planet's surface is called its _____. (*Albedo*)

10. Large mass is associated with which class of planets?
11. Which planetary configuration is only observed for superior planets?
12. High density is associated with which class of planets?
13. If the asteroids had formed a planet, where would their orbit lie in the solar system?
14. What is the least massive planet in the Solar System? (*Pluto-> Mercury*)
15. What is the greatest elongation that can be observed for Mercury? (*28 deg*)
16. All of the planets appear near which imaginary line in the sky?
17. How many times more massive is the Sun than Jupiter?
18. Venus is nearest which planetary configuration when it appears nearly full?
19. Which terrestrial world has the highest surface pressure?
20. Which planet is made of the most dense materials?
21. What is the only object in the Solar system that we can only ever see about ½ of over time? (*The Moon*)

More questions needed about Earth (Ch. 7) and Mercury (Ch. 8).