

## Answers to Earth Science Homework Sections 28.1 and 28.2

### Section 28.1 Homework: Origin and Geology of the Moon

What is the main form of erosion on the surface of the moon? \*

- Rivers
- Wind
- Oceans
- Micrometeoroid bombardment**

Approximately how old is the Moon? \*

- Around 3 billion years old
- Around 6,000 years old
- Around 4.3 billion years old**
- Around 1 million years old

What was the name of the mission that originally LANDED the United States on the Moon? \*

- Luna
- Mercury
- Gemini
- Apollo**
- Zeus

How does the crust on the side of the Moon facing the Earth compare with the crust on the side of the Moon facing away from the Earth? \*

- The side facing the Earth is thinner and more dense.**
- The side facing the Earth is thicker and more dense.
- The side facing the Earth is thinner and less dense.
- The side facing the Earth is thicker and less dense.

Areas on the Moon that have higher elevation than the other areas are known as \*

- mare
- highlands**
- rilles
- mascons

What is the predominant type of rock on the Moon? \*

- Sedimentary
- Metamorphic
- Igneous Extrusive**
- Igneous Intrusive**

This could be argued, because the highlands are made of anorthosite (igneous intrusive rock) and the mare basins are made of basalt (igneous extrusive rock). I would re-word this question if I were to give it to you on a test.



How were lunar maria formed? \*

Lunar Maria were formed by large impacts from meteoroids. The original thin crust of the near side of the Moon is blasted away, leaving basalt to flow in to the mare basins.

Lunar rays are most often formed by \*

- Meteoroids and asteroids hitting the Moon directly
- Meteoroids and asteroids hitting the Moon at an angle**
- The Sun's rays hitting the surface of the Moon
- Volcanic eruptions from below

Detail the three steps involved in the formation of the Moon according to the Impact Theory. \*



- 1) Earth is impacted around 4.3 billion years ago by a large, Mars-sized object known as Thea.
- 2) The material from Thea and the early Earth are sent out in to a cloud of material that continues to orbit around a common center of mass.
- 3) The material from Thea and the early Earth coalesce (come together) to form the Moon and the early Earth. The remaining material for planet Earth is acquired from later meteoroid impacts. This is why evidence of the impact is not seen.

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### **Section 28.2 Homework: Moon Phases and Eclipses**

What was Galileo Galilei's evidence that the planets were orbiting the Sun, not the Earth? \*

- The Moon had phases
- The planet Venus neither rises nor sets
- The planet Venus has phases similar to the Moon**
- The planet Mars changed its position in the night sky

Why does the Moon rise and set about 50 minutes later each day on average? \*

- The Moon is in sync with the Sun
- The Moon always has one side attracted to Earth
- Earth must rotate an additional 13 degrees of rotation for a point on Earth's surface to be directly under the Moon again
- The Moon is moving (revolving) around Earth
- Both options 3 and 4 are correct**

What word describes the Moon getting brighter over time in a lunar cycle? \*

- Waxing**
- Weeping
- Warping
- Waning

The Moon's orbit around the Earth is mostly \*

- circular
- elliptical**
- square
- rectangular

Gibbous means that \*

- more than half of the lunar disc is visible**
- less than half of the lunar disc is visible
- the Moon is full
- the Moon is new

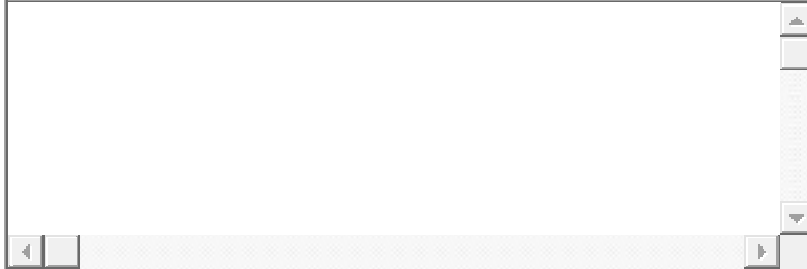
Total Lunar eclipses occur when \*

- **The Moon is in the umbra of the Earth**
- The Earth is in the umbra of the Moon
- The Earth is in the penumbra of the Moon
- The Moon is in the penumbra of the Earth

Which type of eclipse would it NOT be a good idea to look at with the unprotected eye? \*

- Total Solar Eclipse
- Partial Solar Eclipse
- Annular Solar Eclipse
- Total Lunar Eclipse
- **ALL Solar Eclipse!**

Describe why it is that the Moon goes through phases. What is happening? \*



The Moon is revolving around the Earth. The illumination perspective on the Moon changes as the Moon moves around the Earth with respect to the Sun. The Moon is reflecting light from the Sun and does not give off any light of its own.

What TWO conditions MUST be satisfied in order for a Lunar Eclipse to take place? In other words, what phase



and planar arrangement is required? \*

The following two conditions must be satisfied.

- 1) The Moon must be in a full phase.
- 2) The orbital plane of the Moon and the orbital plane of the Earth, which are offset from each other by 5 degrees, must intersect at the line of nodes at the same time there is a full Moon.

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