

Why can we only see one side of the moon

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Why Can We Only See One Side Of The Moon? As many presume to view the moon completely, only one side of the moon is visible while the other remains blind to the earth. Images of the moon from satellites have shown that as the moon revolves around the earth, we only view one side of it even as we see its different shapes from full moon to crescent. There are several explanations as to why earth views one side of the moon; thus, it is better to analyze why, even though the moon rotates around the earth in 29 days, only about 50% is visible to the earth every time.

Earth force of gravity pulls the moon as it rotates, causing a drag effect making only one side of the moon be visible. Similarly, the moon's gravitational force affects oceans causing low and high tides, while the earth, which is bigger than the moon, causes low and high gravitational pull on it. Additionally, as the moon rotates around the earth in its orbit, the earth exerts a torque on the rotating system of the moon. This causes the moon's speed along its own axis to slow down, eventually revealing only one side of the moon as it completes its rotation (Pandian).

The moon is also viewed as though facing only one side of it on earth through a concept known as libration, which occurs because of the spherical nature of the moon. Libration is the irregular motion of the moon in its orbit computed longitudinally and latitudinally from a fixed geographical location on the moon's surface (Coffey).

The earth affects the moon through its elliptical orbit, a process called longitudinal libration. This implies that when the moon is nearer the earth in its orbit, the earth's gravitational pull is stronger. This makes the moon move faster on its axis, but since the moon's rotational speed is constant, it causes a lag or a pull effect (Coffey). This pull effect on the moon's surface causes

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the earth to view an extra portion of the moon's surface up to 59% of it.

When the moon orbit is farther away from the earth, the earth's gravitational force on it is weak, causing it to slow down, even though its rotational speed remains the same. This makes the moon "spin" away from the earth and, as a result, it becomes only 41% visible (Miles).

In addition, we view one side of the moon surface because of latitudinal libration caused because the moon's orbit is tilted 5 degrees towards the ecliptic. Therefore, during the moon's rotations around the earth, half of it is on the higher side while the rest of the revolution is on the lower side. This causes an extra part of the moon to be viewed as the moon rotates from either the northern or southern hemisphere of the earth (Miles).

Therefore, we can conclude that the reason behind the earth viewing only one side of the moon is mainly because of earth gravitational pull and the elliptical nature of the moon. As the moon rotates, we should be theoretically able to see all its sides, but the pull effect and the nature of the moon's orbit hinder this.

Works Cited

Coffey, Jerry. "Why Do We See Only One Side of the Moon? Universetoday.com. March 6, 2011. Web. 19th August 2012 .

Miles, Kathy. "Why Do We See Only One Side of the Moon?" Starryskies.Com. 2008. Web. 19th August 2012. .

Pandian, Jagadheep. "Why Does the Earth See Only One Side of the Moon?" Curiousaboutastronomy. November 2, 2002. Web. 19th august 2012 .