

# Does The Moon Rotate?

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*The current scientific consensus on whether the Moon rotates or not, is that it does.*

Whether the Moon appears to rotate or not, depends on your frame of reference. Einstein said that 'there is no fixed frame of reference any where in the Universe' and that 'all objects are moving relative to everything else.' Einsteins statement shows, as example, that the our Solar System moves as one. The Sun is not rotating around the centre of the Milky Way on its own but rather, all mass within the Solar System moves as one object under the control of the Suns gravitation field. This means that the Earth and the other planets are not *chasing* the Sun, as some people believe. The entire Solar System moves relative to all the mass that it contains. However, within the Solar System there are different frames of reference. It greatly depends on what you are viewing and where from. In other words, what is your frame of reference in relation to the object you are watching?

If we were to stand in the middle of a round-a-bout and watch a car being driven around the round-a-bout we would see the same side of the car as we rotated ourselves to follow the car. If we place a coloured rod longitudinally on the cars roof, then that rod would remain horizontal in relation to our moving frame of reference. The rod would not move to a vertical position. It would always be horizontal.

However, if we moved outside the centre of the round-a-bout and stood further along the roadway, so that we cannot rotate with the car, the coloured rod would appear to become vertically inclined at two points. As the car moved through the left and right sides of the round-a-bout we would see the car from a front on position and a rear on position. Both positions would show a vertical coloured rod rather than a horizontal rod. The rod would still be attached to the cars roof, however, it would point at us rather than across us, as the car moved through the two sides of the round-a-bout. Returning to a horizontal position at the top and base of the round-a-bout.

The same can be said for the Moon. Planet Earth is the round-a-bout and the Moon is our car with a coloured rod placed across the nearside of the Moon so that it is horizontal to our reference frame here on Earth. As the Moon orbits the Earth the coloured rod will remain horizontal to any point of reference on the Earth. Showing that the Moon does NOT rotate.

If we were to position ourselves outside the Earth and far enough way for the Moon to seen it orbiting the Earth, we would see the coloured rod appear to move into a vertical position. This is not because the Moon is rotating but rather because we have changed out position relative to the Earth and the Moon. So now we are further along the roadway and therefore we are seeing the coloured rod appear to move vertically when in actual fact, it is not.

The Moon orbits the Earth showing the same side always because it is locked into the Earths gravitational field and cannot rotate. It is dragged/pushed around our planet by gravity. In much the same way as the car is forced around the round-a-bout by the energy of the cars engine. Therefore, the belief that the Moon rotates is founded from a reference frame that is *outside* the Earth/Moon system. This shows that the belief that the Moon rotates is a misconception.

