

Tides

Explain how many high tides would be observed per day at a given point on the Earth.

Answer

The tides arise as a differential gravitational force between the liquid water and the solid Earth. During the rotation of the Earth, there will be a time when a particular location is closest to the moon. Therefore, the sea water experiences a stronger gravitational attraction than the centre of the Earth, so we have a high tide. When this location is on the opposite side, the gravitational force from the moon on the centre of the Earth is larger than that on the sea water. The net result is that we again observe a high tide.