

NEXT-TIME QUESTION

CONCEPTUAL PHYSICS

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Answers: 2 bulges, yes; 2 tides, no!

The presence of an astronomical body near another produces a pair of tidal bulges. But whether or not the bulges result in "tides" (the periodic moving up and down of the surface) depends on whether or not the body rotates beneath these bulges. There would be no periodic high and low tides, on the Moon because it doesn't rotate beneath these bulges.

The Moon rotates once each 28 days with respect to the stars, but does not rotate at all with respect to the Earth—so the bulges, like the side of the Moon that always faces Earth, would be "frozen," with no high and low tides to sweep across the Moon's surface.

