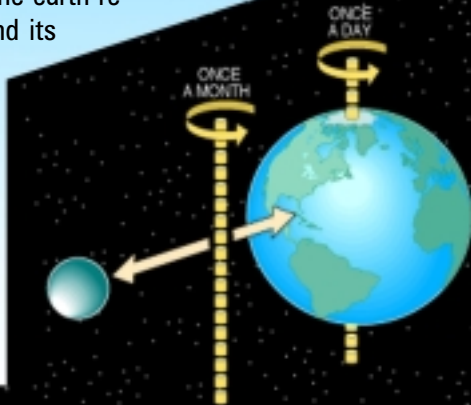


Not exactly twice a day

Along the coasts of Biscayne Bay, we have one high tide following another about every 12 hours and 25 minutes. The waters of Biscayne Bay oscillate through two complete cycles of high and low tides every 24 hours and 50 minutes. This is known as a semidiurnal tide. But the high tide does not happen at the same exact time everywhere in the Bay. The high tide in the lower bay happens 3 hours later than the high tide in the upper bay. Tides are caused by the gravitational influence of the moon, Earth, and Sun on the seas. We get two high tides a day instead of one because the moon does not actually revolve once a month around the Earth, but rather the moon and Earth rotate monthly around their common center of mass, or balance point. Because the moon is smaller than the earth, it has a much longer path to travel around this point. The reason it takes almost 25 hours for two full tidal cycles instead of just one day is that by the time the earth revolves once around its axis (24 hours), the moon has traveled some distance in the same direction, moving the tidal bulge on earth forward.



Biscayne Bubbles

Sea Grant
Florida

