

and that such periods were also in proportion to the square roots of the cubes of their distances from the sun, or principal planets; Newton found that the force which caused heavy bodies to fall on the surface of the earth, extended to the moon, and retained it in its orbit; that this force diminished in the same proportion as the square of the distance increased, and consequently that the moon is attracted by the earth; that the earth and planets are attracted by the sun; and that in general all bodies which revolve round a centre, and describe areas proportioned to the times of their revolution, are attracted towards that point. This power, known by the name of *gravity*, is therefore diffused throughout all matter; planets, comets, the sun, the earth, and all nature, is subject to its laws, and it serves as a basis to the general harmony which reigns in the universe. Nothing is better proved in physics than the actual existence of this power in every material substance. Observation has confirmed the effects of this power, and geometrical calculations have determined the quantity and relations of it.

This general cause being known, the effects would easily be deduced from it, if the action
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