

the planets. Gravitation is therefore general and mutual in all the planetary system, for action cannot be exercised without a reaction ; all the planets, therefore, act mutually one on the other. This mutual attraction serves as a foundation to the laws of their motion, and is demonstrated to exist by its effects. When Saturn and Jupiter are in conjunction, they act one on the other, and this attraction produces an irregularity in their motion round the Sun. It is the same with the Earth and the Moon, which likewise mutually attract each other ; but the irregularities of the motion of the Moon, proceeds from the attraction of the Sun, so that the Earth, the Sun, and the Moon, mutually act one on the other. Now this mutual attraction of the planets, when the distances are equal, is proportional to their quantity of matter, and the same force of gravity which causes heavy matter to fall on the surface of the Earth, and which extends to the Moon, is also proportional to the quantity of matter ; therefore the total gravity of a planet is composed of the gravity of each of its parts ; from whence all the parts of the matter, either in the Earth or in the planets, mutually attract each other ; and the Earth, by its rotation
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