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and least solid planets are the most remote, because they received an impulsive motion, stronger than the smallest and more dense; for, the force of impulsion communicating itself according to the surface, the same stroke will have moved the grosser and lighter parts of the matter of the sun with more velocity than the smallest and more weighty; a separation therefore will be made of the dense parts of different degrees, so that the density of the sun being equal to 100, that of Saturn will be equal to 67, that of Jupiter to $94\frac{1}{2}$, that of Mars to 200, that of Earth to 400, that of Venus to 800, and that of Mercury to 2800. But the force of attraction not communicating like that of impulsion, according to the surface, and acting on the contrary on all parts of the mass, it will have checked the densest portions of matter; and it is for this reason that the densest planets are nighest the sun, and turn round that planet with greater rapidity than the less dense planets, which are also the most remote.

Jupiter and Saturn, which are the largest and principal planets of the solar system, have retained this relation between their density and impulsive motions, in the most exact proportions; the density of Saturn is to that of Jupiter as 67 to $94\frac{1}{2}$ and their velocities are nearly