

become familiar when we contemplate the sun. In what has been said, it will be perceived that I have been more anxious to dwell upon facts than theories, and rather to supply the imaginations of my audience with materials for forming a just conception of the stupendous magnificence of this member of God's creation, than to puzzle them with physical and mathematical reasonings and arguments.

NOTE ON § 12.—The effect of any supposed small loss of time in the transmission of the sun's attractive force on the earth across the intervening space, may be very easily made intelligible without going through any abstruse calculation. The *pull* exerted on the earth would be *delivered* there, not in the direction of the line joining the sun and earth at the instant of its arrival, but of that which *did* join them when it left the sun. Its action on the earth would therefore be oblique to their actual line of junction, or to what is called the radius vector of the orbit—tending, not *towards the sun*, but towards a point somewhat in advance of it—(*i.e.*, lying from it in the direction in space of the region towards which the earth is moving). This force then being resolved in radial and tangential directions would produce, in the former, a force directed to the sun differing by a mere infinitesimal from its direct gravity—and in the latter, one *always accelerating the earth in its orbit*, and which, however minute, must of necessity result in a continually progressive increase of the major axis, and therefore of the length of the year. Supposing the transmission of gravity to be performed with the speed only of light—the inclination of the line of pull to the radius vector would be $20''\cdot 25$ (the exact value of the coefficient of aberration), and the accelerating tangential force thence resulting would amount to $1\text{-}10188\text{th}$ part of the sun's direct attraction, a force whose effects would become evident in a very few years—to say nothing of the centuries elapsed since the first determination of the length of the year.