

as if the planet were, in the progress of his revolutions, receding further from the Sun. This is explained, if we suppose that there is, in the region of Mercury, a resisting medium which moves round the Sun in the same direction as the Planets move. Evidence of a kind of nebulous disk surrounding the Sun, and extending beyond the orbits of Mercury and Venus, appears to be afforded us by the phenomenon called the *Zodiacal Light*; and as the Sun itself rotates on its axis, it is most probable that this kind of atmosphere rotates also.⁸ On the other hand, M. Le Verrier conceives that the Comets which now revolve within the ordinary planetary limits have not always done so, but have been caught and detained by the Planets among which they move. In this way the action of Jupiter has brought the Comets of Faye and Vico into their present limited orbits, as it drew the Comet of Lexell out of its known orbit, when the Comet passed over the Planet in 1779, since which time it has not been seen.

Among the examples of the boldness with which astronomers assume the doctrine of gravitation even beyond the limits of the solar system to be so entirely established, that hypotheses may and must be assumed to explain any apparent irregularity of motion, we may reckon the mode of accounting for certain supposed irregularities in the proper motion of Sirius, which has been proposed by Bessel, and which M. Peters thinks is proved to be true by his recent researches (*Astr. Nach.* xxxi. p. 219, and xxxii. p. 1). The hypothesis is, that Sirius has a companion star, dark, and therefore invisible to us; and that the two, revolving round their common centre as the system moves on, the motion of Sirius is seen to be sometimes quicker and sometimes slower.

The Earth's Density.

“Cavendish’s experiment,” as it is commonly called—the measure of the attractions of manageable masses by the torsion balance, in order to determine the density of the Earth—has been repeated recently by Professor Reich at Freiberg, and by Mr. Baily in England, with great attention to the means of attaining accuracy. Professor Reich’s result for the density of the Earth is 5.44; Mr. Baily’s is 5.92. Cavendish’s result was 5.48; according to recent revisions⁹ it is 5.52.

⁸ M. Le Verrier, *Annales de l’Obs. de Paris*, vol. i. p. 89.

⁹ The calculation has been revised by M. Edward Schmidt. Humboldt’s *Kosmos*, ii. p. 425.