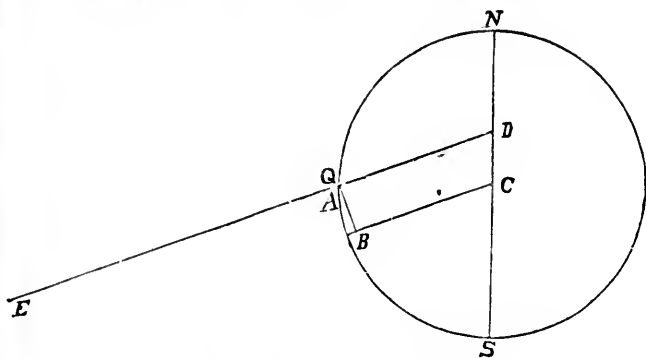


and the period of rotation 25 days 9 hours 7 minutes; the corresponding synodic period 27 days 6 hours 36 minutes."

The foregoing explanation is evidently based on an assumption that the centres of the earth and the sun are always in the same horizontal plane; or, in other words, that both of them are in the plane of the ecliptic. It is hence concluded that "if the axis of rotation were perpendicular to the ecliptic, as N S. (fig 6) this spot would be at A, and would be seen projected on C, the centre of the sun. It is actually at Q, projected upon D &c." But if we repeat Fig 6, and in Fig 7 (a) we suppose the earth,



having its polar axis perpendicular to the plane of the ecliptic, (which plane we also assert to be the plane of the sun's equator and at right angles to the sun's axis of rotation,) to have its centre so much below that plane that a line joining its centre to that of the sun will form an angle (of $7^{\circ} 15'$) with that plane—the above statements will obviously no longer hold good; but, on the contrary, the sun's axis of rotation being now perpendicular to the ecliptic, the spot seen at A, is also actually at Q, (because A, and Q, now coincide,) and is projected upon D, as observed. It is evident that S, the south pole of the sun, will now occupy precisely the same position relatively to the place of the earth which was occupied