

mer, who lived in the same part of Lancashire. By him Horrox was warned that Lansberg was not to be depended on; that his hypotheses were vicious, and his observations falsified or forced into agreement with his theories. He then read the works and adopted the opinions of Kepler; and after some hesitation which he felt at the thought of attacking the object of his former idolatry, he wrote a dissertation on the points of difference between them. It appears that, at one time, he intended to offer himself as the umpire who was to adjudge the prize of excellence among the three rival theories of Longomontanus, Kepler, and Lansberg; and, in allusion to the story of ancient mythology, his work was to have been called *Paris Astronomicus*; we easily see that he would have given the golden apple to the Keplerian goddess. Succeeding observations confirmed his judgment: and the *Rudolphine Tables*, thus published seventy-six years after the Prutenic, which were founded on the doctrines of Copernicus, were for a long time those universally used.

Sect. 2.—Application of the Elliptical Theory to the Moon.

THE reduction of the Moon's motions to rule was a harder task than the formation of planetary tables, if accuracy was required; for the Moon's motion is affected by an incredible number of different and complex inequalities, which, till their law is detected, appear to defy all theory. Still, however, progress was made in this work. The most important advances were due to Tycho Brahe. In addition to the first and second inequalities of the moon (the *Equation of the Centre*, known very early, and the *Evection*, which Ptolemy had discovered), Tycho proved that there was another inequality, which he termed the *Variation*,² which depended on the moon's position with respect to the sun, and which at its maximum was forty minutes and a half, about a quarter of the evection. He also perceived, though not very distinctly, the necessity of another correction of the moon's place depending on the sun's longitude, which has since been termed the *Annual Equation*.

These steps concerned the Longitude of the Moon; Tycho also made important advances in the knowledge of the Latitude. The Inclination of the Orbit had hitherto been assumed to be the same at all

² We have seen (chap. iii.), that Aboul-Wefa, in the tenth century, had already noticed this inequality; but his discovery had been entirely forgotten long before the time of Tycho, and has only recently been brought again into notice.