

CHAPTER V.

SEQUEL TO THE EPOCH OF KEPLER. RECEPTION, VERIFICATION, AND EXTENSION OF THE ELLIPTICAL THEORY.

Sect. 1.—Application of the Elliptical Theory to the Planets.

THE extension of Kepler's discoveries concerning the orbit of Mars to the other planets, obviously offered itself as a strong probability, and was confirmed by trial. This was made in the first place upon the orbit of Mercury; which planet, in consequence of the largeness of its eccentricity, exhibits more clearly than the others the circumstances of the elliptical motion. These and various other supplementary portions of the views to which Kepler's discoveries had led, appeared in the latter part of his *Epitome Astronomiae Copernicæ*, published in 1622.

The real verification of the new doctrine concerning the orbits and motions of the heavenly bodies was, of course, to be found in the construction of tables of those motions, and in the continued comparison of such tables with observation. Kepler's discoveries had been founded, as we have seen, principally on Tycho's observations. Longomontanus (so called as being a native of Langberg in Denmark), published in 1621, in his *Astronomia Danica*, tables founded upon the theories as well as the observations of his countryman. Kepler¹ in 1627 published his tables of the planets, which he called *Rudolphine Tables*, the result and application of his own theory. In 1633, Lansberg, a Belgian, published also *Tabulae Perpetuae*, a work which was ushered into the world with considerable pomp and pretension, and in which the author cavils very keenly at Kepler and Brahe. We may judge of the impression made upon the astronomical world in general by these rival works, from the account which our countryman Jeremy Horrox has given of their effect on him. He had been seduced by the magnificent promises of Lansberg, and the praises of his admirers, which are prefixed to the work, and was persuaded that the common opinion which preferred Tycho and Kepler to him was a prejudice. In 1636, however, he became acquainted with Crabtree, another young astrono-

¹ Rheticus, *Narratio*, p. 98.