CHAPTER IV.

Sequel to the Inductive Epoch of Hipparchus.

Sect. 1.—*Researches which verified the Theory.*

THE discovery of the leading Laws of the Solar and Lunar Motions, and the detection of the Precession, may be considered as the great positive steps in the Hipparchian astronomy;—the parent discoveries, from which many minor improvements proceeded. The task of pursuing the collateral and consequent researches which now offered themselves,—of bringing the other parts of astronomy up to the level of its most improved portions,—was prosecuted by a succession of zealous observers and calculators, first, in the school of Alexandria, and afterwards in other parts of the world. We must notice the various labors of this series of astronomers; but we shall do so very briefly; for the ulterior development of doctrines once established is not so important an object of contemplation for our present purpose, as the first conception and proof of those fundamental truths on which systematic doctrines are founded. Yet Periods of Verification, as well as Epochs of Induction, deserve to be attended to; and they can nowhere be studied with so much advantage as in the history of astronomy.

In truth, however, Hipparchus did not leave to his successors the task of pursuing into detail those views of the heavens to which his discoveries led him. He examined with scrupulous care almost every part of the subject. We must briefly mention some of the principal points which were thus settled by him.

The verification of the laws of the changes which he assigned to the skies, implied that the condition of the heavens was constant, except so far as it was affected by those changes. Thus, the doctrine that the changes of position of the stars were rightly represented by the precession of the equinoxes, supposed that the stars were fixed with regard to each other; and the doctrine that the unequal number of days, in certain subdivisions of months and years, was adequately explained by the theory of epicycles, assumed that years and days were always of constant lengths. But Hipparchus was not content with assuming these bases of his theory, he endeavored to prove them.