BOOK III.

THE GREEK ASTRONOMY.

INTRODUCTION.

THE mathematical opinions of Plato respecting the philosophy of nature, and especially respecting what we commonly call "the heavenly bodies," the Sun, Moon, and Planets, were founded upon the view which I have already described: namely, that it is the business of philosophy to aim at a truth higher than observation can teach; and to solve problems which the phenomena of the universe only suggest. And though the students of nature in more recent times have learnt that this is too presumptuous a notion of human knowledge, yet the very boldness and hopefulness which it involved impelled men in the pursuit of truth, with more vigor than a more timorous temper could have done; and the belief that there must be, in nature, mathematical laws more exact than experience could discover, stimulated men often to discover true laws, though often also to invent false laws. Plato's writings, supplying examples of both these processes, belong to the Prelude of true Astronomy, as well as to the errors of false philosophy. We may find specimens of both kinds in those parts of his Dialogues to which we have referred in the preceding Book of our History.

To Plato's merits in preparing the way for the Theory of Epicycles, I have already referred in Chapter ii. of this Book. I conceive that he had a great share in that which is an important step in every discovery, the proposing distinctly the problem to be solved; which was, in this case, as he states it, To account for the apparent movements of the planets by a combination of two circular motions for each:—the motion of identity, and the motion of difference. (*Tim.* 39, A.) In the tenth Book of the *Republic*, quoted in our text, the spindle which Destiny or Necessity holds between her knees, and on which are rings, by means of which the planets revolve round it as an axis, is a step towards the conception of the problem, as the construction of a machine.

It will not be thought surprising that Plato expected that Astron-