

## CHAPTER I.

### PRELUDE TO THE INDUCTIVE EPOCH OF NEWTON.

WE have now to contemplate the last and most splendid period of the progress of Astronomy;—the grand completion of the history of the most ancient and prosperous province of human knowledge;—the steps which elevated this science to an unrivalled eminence above other sciences;—the first great example of a wide and complex assemblage of phenomena indubitably traced to their single simple cause;—in short, the first example of the formation of a perfect Inductive Science.

In this, as in other considerable advances in real science, the complete disclosure of the new truths by the principal discoverer, was preceded by movements and glimpses, by trials, seekings, and guesses on the part of others; by indications, in short, that men's minds were already carried by their intellectual impulses in the direction in which the truth lay, and were beginning to detect its nature. In a case so important and interesting as this, it is more peculiarly proper to give some view of this Prelude to the Epoch of the full discovery.

(*Francis Bacon.*) That Astronomy should become Physical Astronomy,—that the motions of the heavenly bodies should be traced to their causes, as well as reduced to rule,—was felt by all persons of active and philosophical minds as a pressing and irresistible need, at the time of which we speak. We have already seen how much this feeling had to do in impelling Kepler to the train of laborious research by which he made his discoveries. Perhaps it may be interesting to point out how strongly this persuasion of the necessity of giving a physical character to astronomy, had taken possession of the mind of Bacon, who, looking at the progress of knowledge with a more comprehensive spirit, and from a higher point of view than Kepler, could have none of his astronomical prejudices, since on that subject he was of a different school, and of far inferior knowledge. In his "Description of the Intellectual Globe," Bacon says that while Astronomy had, up to that time, had it for her business to inquire into the rules of the heavenly motions, and Philosophy into their causes, they had both so far worked without due appreciation of their respective tasks; Philosophy neglecting facts, and Astronomy claiming assent to her mathe-