

easily conceive, must have appeared of very formidable complexity while it was unsolved, and the first of its kind. Accordingly Halley, as his biographer says, "finding himself unable to make it out in any geometrical way, first applied to Mr. Hooke and Sir Christopher Wren, and meeting with no assistance from either of them, he went to Cambridge in August (1684), to Mr. Newton, who supplied him fully with what he had so ardently sought."

A paper of Halley's in the *Philosophical Transactions* for January, 1686, professedly inserted as a preparation for Newton's work, contains some arguments against the Cartesian hypothesis of gravity, which seem to imply that Cartesian opinions had some footing among English philosophers; and we are told by Whiston, Newton's successor in his professorship at Cambridge, that Cartesianism formed a part of the studies of that place. Indeed, Rohault's *Physics* was used as a class-book at that University long after the time of which we are speaking; but the peculiar Cartesian doctrines which it contained were soon superseded by others.

With regard, then, to this part of the discovery, that the force of the sun follows the inverse duplicate proportion of the distances, we see that several other persons were on the verge of it at the same time with Newton; though he alone possessed that combination of distinctness of thought and power of mathematical invention, which enabled him to force his way across the barrier. But another, and so far as we know, an earlier train of thought, led by a different path to the same result; and it was the convergence of these two lines of reasoning that brought the conclusion to men's minds with irresistible force. I speak now of the identification of the force which retains the moon in her orbit with the force of gravity by which bodies fall at the earth's surface. In this comparison Newton had, so far as I am aware, no forerunner. We are now, therefore, arrived at the point at which the history of Newton's great discovery properly begins.