mixed up with astrological fancies. But Kepler, even in error, erred like a man of genius. When his feet took the wrong path, his face often turned toward the right. He believed the sun to have a soul, which was constantly rotating. He also thought that between sun and planets there is a friendly side, and a side that is hostile; and that when the friendly side was turned the planets moved toward the sun, and when the hostile side was turned they moved from him.

All this was fanciful enough, but here error pointed in the direction of truth, for twenty years later Galileo saw through his telescope that the sun's rotation was a reality. Newton's theory has withstood more than two centuries of criticism, and is confirmed by the most careful observations. Eight thousand telescopic observations taken of the moon during a period of eighty years were compared, under direction of Prof. Airy, with the place at which, by Newton's theory, the moon should be at the time of each observation. Each theoretical place was computed separately and independently. The work took a body of calculators eight years, at a cost of £4,300, and by it the truth of Newton's theory was fully sustained.

If the moon revolved around the earth, controlled solely by force of their mutual attraction, the calculation of her orbital motion would present no special difficulty to the expert astronomer. What would be the moon's position in the heavens at a given future time could be predicted with like exactness to that of Jupiter, which has been given ten years in advance, to within half a second of actual observation. But in addition to attraction of the earth, the moon is influenced by that of the sun, and to a less extent by that of the nearest planets. Moreover, from the moon's elliptic orbit and inclination of the plane of that orbit to the plane of the ecliptic, the sun's attraction is a force constantly varying both in degree and direction. Hence calculation of the lunar motion is one of the most difficult tasks accomplished in the field of physical astronomy. In a letter to Flamsteed, Newton himself lets fall words bordering on doubt as to whether he should finish the task. These lunar inequalities, as they are called, Prof. Airy explained in his work on "Gravitation." His book was written for general readers; and Lord Brougham, who tried his hand at similar work, deemed it the best account of the Newtonian philosophy ever written, or likely to be written.

Besides theoretical interest of being able to predict exactly the