

the earth is immovably fixed in a central point, while the sun revolves around it as a circling planet, attended by two satellites, Mercury and Venus. Such a view of the structure of the world might, indeed, prepare the way for that of the central force of the sun. There is, however, nothing in the *Almagest*, or in the works of the ancients generally, or in the work of Copernicus, *De Revolutionibus*, which justifies the assertion so confidently maintained by Gassendi, of the perfect resemblance existing between the system of Tycho Brahe and that which has been ascribed to Apollonius of Perga. After Böckh's complete investigation, nothing further need be said of the confusion of the Copernican system with that of the Pythagorean, Philolaüs, according to which, the non-rotating earth (the Antichthon or opposite earth, being not in itself a planet, but merely the opposite hemisphere of our planet) moves like the sun itself round the focus of the world—the central fire, or vital flame of the whole planetary system.

The scientific revolution originated by Nicolaus Copernicus has had the rare fortune (setting aside the temporary retrograde movement imparted by the hypothesis of Tycho Brahe) of advancing without interruption to its object—the discovery of the true structure of the universe. The rich abundance of accurate observations furnished by Tycho Brahe himself, the zealous opponent of the Copernican system, laid the foundation for the discovery of those eternal laws of the planetary movements which prepared imperishable renown for the name of Kepler, and which, interpreted by Newton, and proved to be theoretically and necessarily true, have been transferred into the bright and glorious domain of thought as *the intellectual recognition of nature*. It has been ingeniously said, although, perhaps, with too feeble an estimate of the free and independent spirit which created the theory of gravitation, that “Kepler wrote a code of laws, and Newton the spirit of those laws.*”

ed mathematically the assumption of the retrogressions of the planets under the idea of a revolution round the sun, without adding any thing definite and general as to the truth of this assumption. The difference of the Apollonian system, described by Gassendi, from that of Tycho, would only be, that the latter likewise explained the *inequalities* of the movements. The remark of Robert Small, that the idea which forms the basis of Tycho's system was by no means unfamiliar to the mind of Copernicus, but had rather served him as a point of transition to his own system, appears to me well founded.”

* Schubert, *Astronomie*, th. i., s. 124. In the *Philosophy of the Inductive Sciences*, vol. ii., p. 282, Whewell, in his Inductive Table of Astronomy, has given an exceedingly good and complete view of the