

The figurative and poetical myths of the Pythagorean and Platonic pictures of the universe, changeable as the fancy from which they emanated,* may still be traced partially reflected in Kepler; but while they warmed and cheered his often saddened spirit, they never turned him aside from his earnest course, the goal of which he reached in the memorable night of the 15th of May, 1618, twelve years before his death.† Copernicus had furnished a satisfactory explanation of the ap-

astronomical contemplation of the structure of the universe, from the earliest ages to Newton's system of gravitation.

* Plato, in the *Phædrus*, adopts the system of Philolaüs, but in the *Timæus*, that according to which the earth is immovable in the center, and which was subsequently called the Hipparchian or the Ptolemaic. (Böckh, *De Platónico systemate cælestium globorum, et de vera indole astronomiæ Philolaicæ*, p. xxvi.—xxxii.; the same author in the *Philolaos*, s. 104–108. Compare, also, Fries, *Geschichte der Philosophie*, bd. i., s. 325–347, with Martin's *Études sur Timée*, t. ii., p. 64–92.) The astronomical vision, in which the structure of the universe is shrouded, at the end of the *Book of the Republic*, reminds us at once of the intercalated spherical systems of the planets, and of the concord of tones, "the voices of the Syrens moving in concert with the revolving spheres." (See, on the discovery of the true system of the universe, the fine and comprehensive work of Apelt, *Epochen der Gesch. der Menschheit*, bd. i., 1845, s. 205–305, and 379–445.)

† Kepler, *Harmonices Mundi, libri quinque*, 1619, p. 189. "On the 8th of March, 1618, it occurred to Kepler, after many unsuccessful attempts, to compare the squares of the times of revolution of the planets with the cubes of the mean distances; but he made an error in his calculations, and rejected this idea. On the 15th of May, 1618, he again reverted to it, and calculated correctly. The third law of Kepler was now discovered." This discovery, and those related to it, coincide with the unhappy period when this great man, who had been exposed from early childhood to the hardest blows of fate, was striving to save from the torture and the stake his mother, who, at the age of seventy years, in a trial for witchcraft, which lasted six years, had been accused of poison-mixing, inability of shedding tears, and of sorcery. The suspicion was increased from the circumstance that her own son, the wicked Christopher Kepler, a worker in tin, was her accuser, and that she had been brought up by an aunt, who was burned at Weil as a witch. See an exceedingly interesting work, but little known in foreign countries, drawn from newly-discovered manuscripts by Baron von Breitschwert, entitled "*Johann Keppler's Leben und Wirken*," 1831, s. 12, 97–147, and 196. According to this work, Kepler, who in German letters always signed his name Keppler, was not born on the 21st of December, 1571, in the imperial town of Weil, as is usually supposed, but on the 27th of December, 1571, in the village of Magstadt, in Würtemberg. It is uncertain whether Copernicus was born on the 19th of January, 1472, or on the 19th of February, 1473, as Mostlin asserts, or (according to Czynski) on the 12th of February of the same year. The year of Columbus's birth was long undetermined within nineteen years. Ramusio places it in 1430. Bernaldez, the friend of the discoverer, in 1436, and the celebrated historian Muñoz in 1446.