

## **The Copernican Revolution**

The Structure of Scientific Revolution (1962) by Thomas Kuhn is an analysis of the history of science. Its publication was a landmark event in the history, philosophy and sociology of scientific knowledge.

In this book Kuhn challenged the then prevailing view of progress in science. Scientific progress had been so far seen as continuous increase in a set of accepted facts and theories. In this work Kuhn argued that the period of conceptual continuity, *Normal Science* in Kuhn's language, were interrupted by periods of *Revolutionary science*. According to him during the period of *Revolutionary Science* a process of radical change in some conceptual scientific ideas starts which takes quite a few times to mature. this involves a clash of new and old ideas and participation of many practitioners.

The Copernican Revolution refers to the paradigm shift away from Aristotelian and Ptolemaic models of heavens which postulate the Earth as the centre of universe towards the heliocentric model of our solar system. Ptolemy, however in his geocentric model proposed some elliptical orbits through which the stars rounds the earth. Copernicus turned the table upside down. It was one of the starting points of the Scientific Revolution of the sixteenth century. In his book called 'On the revolution of the heavenly bodies' Copernicus proposed (which he published in 1543 on his deathbed) that the Sun, not the earth was the center of the solar system.

There were three incorrect ideas about the solar system prevalent until the sixteenth and seventeenth century. (1) The assumption that the earth was the centre of the universe. (2) The assumption of uniform circular motion of the heaven (3) the assumption that the objects in the heaven are made of perfect, unchanging subjects, not found in the earth. Copernicus challenged assumption 1 but not assumption 2. He was able to rid himself of the long held notion that the earth was the centre of the solar system, but he did not question the assumption of uniform circular motion. As we shall see later, the orbits of the planets are not circles, they are ellipses. We may also note that Copernicus implicitly challenged the assumption also. Since earth is just another planet, it will be a natural