

Positive Effects of Galileo Galilei

Galileo Galilei's discoveries helped to spark the Renaissance and Scientific Revolution as the worldview of the Middle Ages changed from a religious-centered perspective on life to a humanistic world view, based on rational thought, observation and education. According to some historians, Galileo was one of the founders of modern science as a result of his observations regarding astronomy and his conflict with the Catholic Church.

Scientific Inventions and Discoveries

Galileo invented the telescope and is credited with the foundational laws of motion, forever changing the way in which Westerners viewed their place in the universe. Using the telescope, Galileo was the first to see the moons of Jupiter and mountains on the moon. Galileo also invented the first microscope and performed experiments regarding the relativity of motion, which led to the advent of mathematical physics. As one of the fathers of modern physics, Galileo was the first scientist to determine the parabolic path of falling objects and the law of free-falling objects.

Astronomy

Galileo is credited with being one of the founders of modern astronomy. Europeans believed earth to be the center of the universe, as espoused by the theology and teachings of the Catholic Church. However, Galileo was able to use the telescope to observe and prove Copernicus' theory of the sun being the center of the solar system. Despite his persecution by the Catholic Church, Galileo continued to complete research and write on the subject of astronomy.

Scientific Revolution

According to the Stanford Encyclopedia of Philosophy, Galileo Galilei was the first experimental scientist and serves as one of the central figures, if not the most important person, in spawning the Scientific Revolution of the 17th century. Galileo, perhaps more than any other figure, represents the historical period when the study and role of science was separated from the religious thought and philosophy of the church. As a result, scientists were able to use their powers observing natural phenomena to develop theories of natural laws. The schism of science from religious life meant that science no longer was subjected to the approval and interpretation of Scriptures by religious authorities.

Philosophy and Science

Galileo also impacted the science of philosophy, which at the time was intermingled with theology and science as defined by the Catholic Church. Before Galileo, philosophers notably followed the Aristotelian tradition of using analytical concepts and categories. However, after Galileo science and philosophy adopted a unified theory of matter, which replaced the Aristotelian categories of elements and motion. During Galileo's experiments concerning astronomical observations, he was forced to reconcile his scientific observations with the interpretation of Christian Scripture as espoused by the Catholic Church of the time. As a result of Galileo's considerations concerning the nature of truth and Scripture, as well as his trial with the Catholic Church, he served as one of the founders of modern empiricism as he sought to answer questions regarding the nature of truth and how truth is to be known and observed.