

# The emergence of Modern Science from Philosophy

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In antiquity natural phenomena were mainly considered from a rather speculative philosophical point of view (e.g. Aristotele). Yet there existed also a certain, different understanding of particular aspects of nature as shown by technical (e.g. Heron) and mathematical applications (e.g. Archimede). This attitude towards nature persisted through the middle ages without all too great changes. Then the astronomical observations, performed through the centuries, and the resulting models of the planetary system culminated in Kepler's laws. Furthermore the increasing number of systematic experimental studies of nature (e.g. Gilbert, Galileo) produced the first quantitative ideas and Descartes' "Principia philosophiae" excited a new general interest in the philosophy of nature. On this basis, in the year 1687 Newton proposed his mathematical theory "Philosophiae naturalis principia mathematica" that led to a novel and comprehensive understanding in mechanics and cosmology. Thus he gave rise to the science of physics. Subsequently this example initiated the separation of other natural sciences.