

Galileo Galilei as a Peripatetic: Necessary Demonstrations, Demonstrative Regress and the Moon like the Second Earth

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Abstract. From *Sidereal Messenger* (1610) onwards Galileo more and more explicitly defended Copernicus' heliocentric cosmology, which led to a fierce polemics about the theological dimension of the heliocentrism in the years 1613–1616. In this context he ventured into a Copernican interpretation of some biblical passages, which aroused concerns among theologians and even among his fellow mathematicians. Jesuit father Grienberger, for instance, who replaced Christopher Clavius at Collegio Romano as a teacher of mathematics, pointed out that “he would have liked Galileo to first carry out his demonstrations, and then get involved in discussing the Scripture”. Galileo, in his turn, continuously claimed that his Copernican conclusions are based on “what sensory experience places before our eyes” (he also used the terms “sense” and “thousand experiences”) and on what “necessary demonstrations prove to us concerning natural effects” (also: “demonstrative and necessary reasons”, “thousands necessary demonstrations”).

In my talk I would address the following questions: What exactly does Galileo mean when he speaks about the “necessary demonstrations” or “demonstrative and necessary reasons”? Can the answer to the question be found in his youthful logical notes on questions stemming from Aristotle's *Posterior Analytics* (GAL. MS 27)? Did Galileo in his writings on the heavens really »used, or attempted to use« the demonstrative regress (*regressus demonstrativus*), discussed at the very end of his logical notes (Wallace). Were Galileo conclusions really proved by “necessary demonstrations”? I will examine these questions focusing just on one of the issues in the debate: the existence of mountains and valleys on the moon.