

Galileo's siderius nuncius

Philosophy



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Galileo Galilei's *Siderius Nuncius*, or *The Sidereal Messenger* During the age of explorations and of discoveries, the early tenets of scientific thinking were established through the use of devices and of mathematical formulae in order to prove or disprove old thoughts on how the world and the universe works, but not without offending the Catholic Church. This was the case when Galileo Galilei entertained further studies on celestial bodies, which he initiated in during the time when he published his first astronomy pamphlet, the *Siderius Nuncius*, also known as *The Sidereal Messenger* in English translations. The book became a sensation that made Galileo famous and well-known in his time, as well as initiating further discoveries of how celestial bodies such as the rocky planets, the Earth's moon, Jupiter and its satellites, the Sun's spots as well as discovering larger numbers of stars in constellations such as Orion and the Pleiades that cannot be easily seen by naked eyes through a compound telescope (13). While Galileo's discoveries stirred controversy with the Catholic Church by disproving the scriptures regarding how planets, the sun, and other celestial bodies orbit the Earth, his method of observing the movement of planets with satellites, mainly Jupiter and its four moons allowed for the support of the Copernican theory of planetary movement, and initialising the disproving of the traditionally-accepted Aristotelian theory of a geocentric view of the cosmos.

Galileo reported his initial observations of three bright bodies around the planet Jupiter, which he noticed to change positions in the course of a few months, from January to March of 1610, but remarkably remained in a straight line all throughout the time of observation (64). He begun observing the large planet around early January, wherein he records the appearance of three bright stars orbiting around Jupiter, but do not have similar sizes, and <https://assignbuster.com/galileos-siderius-nuncius/>

in which Galileo describes as such: “ the more eastern one and the western one appeared a bit larger than the remaining one” (65). After a few days, Galileo observed another star which was hidden behind Jupiter, emerging and trailing in a straight line along the other three stars that were initially discovered a few days prior, in which Galileo describes the alignment to be similar to the alignment of the zodiac constellations (66). After observing Jupiter and its Medicean stars (later found out to be its satellites or moons) for a period of three months, Galileo was able to compare the stars’ orbit to the Earth’s and Mars’ moons, which change phases at certain periods and also revolve around their own planet, thus these stars were changing their positions from within an hour to five hours, and beyond (73). After completing his observations of Jupiter’s four Medicean stars and comparing his previous observations of other nearer planets such as Mercury, Venus and Mars along with the orbiting of Mars and Earth’s moon around their own planet, Galileo was able to conclude that smaller bodies of rocky worlds revolve around larger ones, thus each planet has their own moon and is not shared with other planets (99). Following this train of thought, Galileo also concluded that because of the changing phases of the planets as seen in the telescope, it was possible that these planets as well as the Earth were not fixed in space but are rather going around the sun in their separate orbits, which not only deviates from the original geocentric theory of planetary and celestial body movement but also disproves it, thereby supporting earlier attempts in trying to prove heliocentric planetary movement only through equations and speculations but without actual or tangible evidences.

Proving the heliocentric theory of planetary movement may not have been Galileo’s original intention when he first started looking at the sky through a

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spyglass. However his continuous observations and reports on the changing phases of the moon, then of the other planets that the telescope can reach, and finally in observing Jupiter's own satellites move in orbit were strong enough to undermine the old Aristotelian belief on geocentric theory because aside from his vivid descriptions and notes of his own account, Galileo can actually show his discoveries to people using his own spyglass and allow them to see the celestial bodies for themselves (105). Because of these new discoveries and the fact that the spyglass or telescope cannot be rigged when used to view different planets or stars in the heavens, Galileo's method of observing the sky not only revolutionised astronomy but also initiated the undermining of other traditionally-held beliefs on how planets, the world and other phenomena in the world work as they do.

Work Cited

Galilei, Galileo. *Siderius Nuncius*. Trans. Albert Van Helden. Chicago and London: The University of Chicago Press, Ltd., 1989.