

The legacy of galileo galilei essay example

[Literature](#), [Books](#)



Throughout my formative years in elementary, middle school, and high school; Galileo Galilei's name became known in both history and science books as the man who developed the telescope. At first, I thought his invention of the telescope earned him the title "Father of Modern Astronomy" due to the telescope's capacity to augment celestial bodies without any visual strain to the user. While my conviction to Galileo Galilei's expertise remained firm as I entered tertiary years, the Dan Brown novel entitled "Angels and Demons" challenged my ideas over the Italian scientist. In the movie, Galileo was a pronounced heretic by the Church for his creation of the books "Dialogo", "Discorsi", and the infamous and fictional "Diagramma". The books emphasize Galileo's interest in heliocentricity, questioning the Church's adherence to the geocentric model despite the theory's inaccuracies. While the movie presented the three scientific testaments as a key in locating the illusive "Path of the Illuminati", the books became testimony to Galileo's key contributions to the field of physics and astronomy despite the heresy attached to his discourses.

In order to grasp Galileo's contribution and life works, my pursuit for knowledge brought me to the University of California-Berkeley's Lawrence Hall of Science. Reminiscent to the Solomon Guggenheim Museum in New York City in terms of structure, the Lawrence Hall caters to an expanding array of exhibitions for every field of science. It is also located on top of a hill, perfect for astronomic ventures. By the time my curiosity brought my passion to understand Galileo in the Earth and Space exhibit, I began to comprehend why the Italian scientist became fascinated in the field of astronomy. Diagrams of the planets littered around the exhibit hall,

exhibiting sun charts for every rotation. Ancient diagrams of planets and other celestial beings were in the display to interested onlookers. As the exhibits supplied ideas for my interview, I first approached a young and smiling staff in the area to begin my study. After the pleasantries, I began to ask my questions: "What do you know about Galileo Galilei?" The staff I approached named Briana Mullen, responded with a smile "Galileo Galilei is born on the 15th of February 1564. He came from Pisa, Italy, and a son of a lutenist/composer and noble." Jotting down her response in a small notepad, I then asked "What can you tell me about Galileo's work and involvement in science? Do you have any idea as to how it all started?" She responded, "Ironically, Galileo first began his scientific path as a medicine student in the University of Pisa. However, one day, he found himself to be watching a swinging chandelier that shifted in both large and small arcs by the wind. He compared it to a person's heartbeat, each beat taking the same time to develop strong and weak beats. That sparked his first breakthrough with the pendulum. His breakthrough invention is the refracting telescope, or the telescope, which he developed in 1609 to observe the stars and planets."

Thanking Miss Briana for her response, I reviewed her responses and felt delight. It was enthralling to know that Galileo's inspiration is similar to Isaac Newton's discovery of gravity. I also found it to be surreal that with all of his expertise; it did not include Galileo's expertise in the field of medicine. However, my notes were still incomplete so I decided to approach another staff member in the exhibit hall. Locating one near the Chaco Canyon display, I approached him with a smile and asked if I can get some of his time for an interview. He nodded, so I began by asking "What details are

you aware of about Galileo's work for Astronomy? Was he undoubtedly considered a heretic for his work?" The male staff I asked named Ian Larson, responded easily to my question.

" Galileo is classified heretical by the Catholic Church because he produced research that supported the Copernican Theory instead of the Aristotelian geocentric theory. His research noted that the Sun was the one the Earth was revolving around and not the other way. He retracted his studies in fear of punishment; however, he still got ordered to serve house arrest. He studied a lot of things such as anatomy, physics and drawn several models of the planets".

Hearing about the Copernican and the Ptolemaic Theory, I then asked him " What can you tell me about the two theories Galileo tried to prove in his work? What made these two theories clash?" The answer came with a chuckle

" The Copernican Theory is fundamentally emphasizing that the Sun is the center of the universe. In contradiction to this theory is the geocentric theory used by the Greeks or the Ptolemaic theory, which denotes that the Earth is the core of the universe. Galileo supported the Copernican Theory as seen in his book " Dialogue", stemming what to now known as the Galileo Affair" .

Hearing about the term " Galileo Affair" presented additional questions my current understanding of Galileo's work. Hours after leaving the Lawrence Hall, my pursuit led me to several books discussing the life of the Italian who created the telescope. Galileo Galilei, born on February 16, 1564, is the son to Guilia Ammannati and Vincenzo Galilei. His mother Guilia was a noted recalcitrant mother, while his father was a prominent lutenist and theorist. In

his teenage years, Galileo exhibited keen interest in the field of Latin, art, literature and spirituality as a student in Florence's Vallombrosan Monastery. Historians firmly believed that Vallombrosan honed Galileo's love for astrology, considering the monastery's curriculum over scientific theories. However, his first formal immersion to the field of science happened in his first years as a medical and philosophy student in the University of Pisa. In 1581, his father Vincenzo wanted Galileo to enter medical school in full hopes he could provide for the family as a doctor despite Galileo's interest in a more complex division of science. One day, he noticed a swinging chandelier and how it produces varying waves through the wind. It was through this phenomenon that allowed Galileo to develop his quest to understand motion, mechanics, mathematics and even the Ptolemaic astronomy concepts. He also began to study the Aristotelian ideals, which at that period, the foundation of most scientific theories and mysteries. While he took an interest with the Aristotelian sciences, Galileo also developed a growing interest in the Copernican system. For Galileo, the Copernican theory made more sense compared to the Aristotelian/Ptolemaic theories. Around 1595, he constructed the first set of discourses that would support the Copernican philosophy by discussing tidal waves. However, he did not disclose his discoveries in fear of persecution as the Church vehemently saw all scientific discoveries a heresy. He only released his research during 1616, wherein he noted that the motion of a point on the surface of the Earth comprises two components, the rotation of the Earth daily and the annual motion of the Earth to the Sun. He also discovered in 1604 the supernova phenomenon, noting that there is a lack of diurnal

parallaxes that there are some new stars occupying the zone of the heavens located above the moon, which according to Aristotle should not be changing.

In 1609, he completed the telescope, which is capable of magnifying objects 8 times its actual image in the naked eye. In some records noting Galileo's creation of the telescope, he firmly stressed he did not invent the telescope as he only took an idea of an earlier experiment. Galileo first studied the Moon and noted that it was not smooth and spherical, debunking Aristotle's claim. He cited that there were craters in the Moon's surface and images that depict "highlands" and "seas". Galileo also used his telescope to observe the Milky Way. He even noted that he could see more stars with his telescope than seeing it with his naked eye. He also discovered the four major satellites or moons of the planet Jupiter. Venus also became a subject for Galileo considering his discovery of its phases, locating traces of sunspots in the process which allowed him to prove the Copernican Theory. Although Galileo introduced a breakthrough in astronomy by presenting plausible theories, many conservatives denoted that Galileo's work was purely sceptical and heretic. This perception is evident when Galileo supported the Copernican Theory, which then is a debatable theory by the Church. Galileo personally went to Rome to persuade the Church to stop banning the Copernican Theories. While the Church responded positively to his request by halting discussions over banning the Copernican theory, he was ordered to promise not to question the decree by the Church. Galileo continued his heliocentric research, reviving the discussion in 1623 through his book "Dialogue Concerning the Two Chief World Systems".

The book became public in 1632 and immediately caused a contentious dialogue between him and the Church. The Church banned the book, and Galileo stood in trial in September 1632. He became a heretic as rendered by the Church due to his continuing contributions to the Copernican theory of Heliocentricity. Forced under house arrest, Galileo returned to his villa in Arcetri in 1634 and read penitential psalms as penance for three years. However, this did not stop him from writing his final book "Discourses and Mathematical Demonstrations Relating the Two New Sciences" in 1638. The book detailed Galileo's work in physics for the past thirty years: his thesis on falling bodies, infinity and theories on materials. Galileo died in January 8, 1642 due to heart complications. His daughter is said to have continued his penance in Galileo's behest. Years after Galileo's death, the Catholic Church, retracted their position over Galileo's work and issued a formal apology in 2000 through Pope John Paul II. He noted that the Catholic Church has certainly made several mistakes for the past 2,000 years of its history, condemning several people such as Galileo Galilei for their pioneering discoveries regarding the universe

As my search drives to a close, Galileo Galilei's life presented three lessons that can be applied in my own life, be humble, be inspired, and be true. Galileo admitted he did not actually create the foundations of the telescope, claiming the idea came from an earlier experiment. This showcases how humble he was despite the economic and social benefits the telescope can generate for his name. He also kept himself inspired by everything around him, discovering motion through a chandelier and discovering planets through his telescope. Finally, despite becoming known as a heretic by the

exact Church he faithfully served and believed, he continued to exhibit his studies to the world by writing the " Discorsi". These three lessons would be an effective arsenal in facing the competitive world of the 21st century. Many try to conceal their names to identities false to their actual personalities. My pursuit to understand Galileo's life also enlightened my perceptions over the field of astronomy, his works presenting a different light to the planets and their cycles. While I did not discover in-depth his astrologic discoveries from his Dialogo and Discorsi journals, my research noted that Galileo changed the perception of man regarding the universe despite the vehement opposition presented by the Church.

Quick Facts:

Galileo Galilei was born on February 16, 1564 to Guilia Ammanati and Vincenzo Galilei. Galileo first enrolled to a medical degree in the University of Pisa, however, dropped the entire course due to his discovery of motion through a swinging chandelier.

After his discovery of motion through his pendulum study, Galileo developed a keen interest in both Aristotelian and Copernican Theories; mostly debunking the former due to its questionable proponents (ex. Surface of the moon, the supernova phenomenon, and the Heliocentric debates)

In 1609, Galileo developed his first version of the telescope that could magnify up to 8x magnification. He firmly claims that his development of the telescope is not his original concept, but an inspiration from another experiment.

Some of his pioneer discoveries through his telescope is his discovery of the Moon's surface, the four satellites of Jupiter, the phases of Venus and finally,

the Sunspots

He was a big supporter of the Copernican Heliocentric Model, noting that his research of the Sunspots and the phases of the planets visibly prove that the Sun is in the center of the Universe. Two of his books " Dialogue Concerning the Two Chief World Systems" and " Discourses and Mathematical Demonstrations Relating the Two New Sciences" detailed his hypothesis. However, the Church considered him a heretic for his work and forced him under house arrest in 1634; reading penance through psalms. His daughter is said to have continued his penance.

He died in January 8, 1642 due to heart complications and received a formal apology centuries later from the Church through Pope John Paul II.

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