

Portrait of Galileo Galilei

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Galileo Galilei was born in Pisa, Italy on February 15, 1564. He was the oldest of seven children. His father was a musician and wool trader, who wanted his son to study medicine as there was more money in medicine. At age eleven, Galileo was sent off to study in a Jesuit monastery.

**Galileo Galilei - Rerouted from Religon to Science**

After four years, Galileo had announced to his father that he wanted to be a monk. This was not exactly what father had in mind, so Galileo was hastily withdrawn from the monastery. In 1581, at the age of 17, he entered the University of Pisa to study medicine, as his father wished.

**The Leaning Tower of Pisa**

At the time that Galileo arrived at the University, some debate had started up on one of Aristotle's "laws" of nature, that heavier objects fell faster than lighter objects. Aristotle's word had been accepted as gospel truth, and there had been few attempts to actually test Aristotle's conclusions by actually conducting an experiment!

According to legend, Galileo decided to try. He needed to be able to drop the objects from a great height. The perfect building was right at hand--the [Tower of Pisa](http://architecture.about.com/library/blleaningtowerofpisa.htm)3, 54 meters tall. Galileo climbed up to the top of the building carrying a variety of balls of varying size and weight, and dumped them off of the top. They all landed at the base of the building at the same time (legend says that the demonstration was witnessed by a huge crowd of students and professors). Aristotle was wrong.

However, Galileo Galilei continued to behave rudely to his colleagues, not a good move for a junior member of the faculty. "Men are like wine flasks," he once said to a group of students. "...look at....bottles with the handsome labels. When you taste them, they are full of air or perfume or rouge. These are bottles fit only to pee into!"Not surprisingly, the University of Pisa chose not to renew Galileo's contract.

**Galileo Galilei - Jupiter**

Months passed, and his telescopes improved. On January 7, 1610, he turned his 30 power telescope towards Jupiter, and found three small, bright stars near the planet. One was off to the west, the other two were to the east, all three in a straight line. The following evening, Galileo once again took a look at Jupiter, and found that all three of the "stars" were now west of the planet, still in a straight line!

Observations over the following weeks lead Galileo to the inescapable conclusion that these small "stars" were actually small satellites that were rotating about Jupiter. If there were satellites that didn't move around the Earth, wasn't it possible that the Earth was not the center of the universe? Couldn't the [Copernican](http://inventors.about.com/od/cstartinventors/a/Copernicus.htm)2 idea of the Sun at the center of the solar system be correct?

**Galileo Galilei - Heresy Charges**

Galileo Galilei was a religious man, and he agreed that the Bible could never be wrong. However, he said, the interpreters of the Bible could make mistakes, and it was a mistake to assume that the Bible had to be taken literally.

This might have been one of Galileo's major mistakes. At that time, only Church priests were allowed to interpret the Bible, or to define God's intentions. It was absolutely unthinkable for a mere member of the public to do so.

And some of the Church clergy started responding, accusing him of heresy. Some credits went to the Inquisition, the Church court that investigated charges of heresy, and formally accused Galileo Galilei. This was a very serious matter. In 1600, a man named Giordano Bruno was convicted of being a heretic for believing that the earth moved about the Sun, and that there were many planets throughout the universe where life--living creations of God--existed. Bruno was burnt to death.

However, Galileo was found innocent of all charges, and cautioned not to teach the Copernican system. 16 years later, all that would change.

**The Final Trial**

The following years saw Galileo move on to work on other projects. With his telescope he watched the movements of Jupiter's moons, wrote them up as a list, and then came up with a way to use these measurements as a navigation tool. There was even a contraption that would allow a ship captain to navigate with his hands on the wheel. That is, assuming the captain didn't mind wearing what looked like a horned helmet!

As another amusement, Galileo started writing about ocean tides. Instead of writing his arguments as a scientific paper, he found that it was much more interesting to have an imaginary conversation, or dialogue, between three fictional characters. One character, who would support Galileo's side of the argument, was brilliant. Another character would be open to either side of the argument. The final character, named Simplicio, was dogmatic and foolish, representing all of Galileo's enemies who ignored any evidence that Galileo was right. Soon, he wrote up a similar dialogue called "Dialogue on the Two Great Systems of the World." This book talked about the Copernican system.

"Dialogue" was an immediate hit with the public, but not, of course, with the Church. The pope suspected that he was the model for Simplicio. He ordered the book banned, and also ordered the scientist to appear before the Inquisition in Rome for the crime of teaching the Copernican theory after being ordered not to do so.

Galileo Galilei was 68 years old and sick. Threatened with torture, he publicly confessed that he had been wrong to have said that the Earth moves around the Sun. Legend then has it that after his confession, Galileo quietly whispered "And yet, it moves."

Unlike many less famous prisoners, he was allowed to live under house arrest in his house outside of Florence. He was near one of his daughters, a nun. Until his death in 1642, he continued to investigate other areas of science. Amazingly, he even published a book on force and motion although he had been blinded by an eye infection.

**The Story Continues...**

The Church eventually lifted the ban on Galileo's Dialogue in 1822--by that time, it was common knowledge that the Earth was not the center of the Universe. Still later, there were statements by the Vatican Council in the early 1960's and in 1979 that implied that Galileo was pardoned, and that he had suffered at the hands of the Church. Finally, in 1992, three years after Galileo Galilei's namesake had been launched on its way to Jupiter, the Vatican formally and publicly cleared Galileo of any wrongdoing.