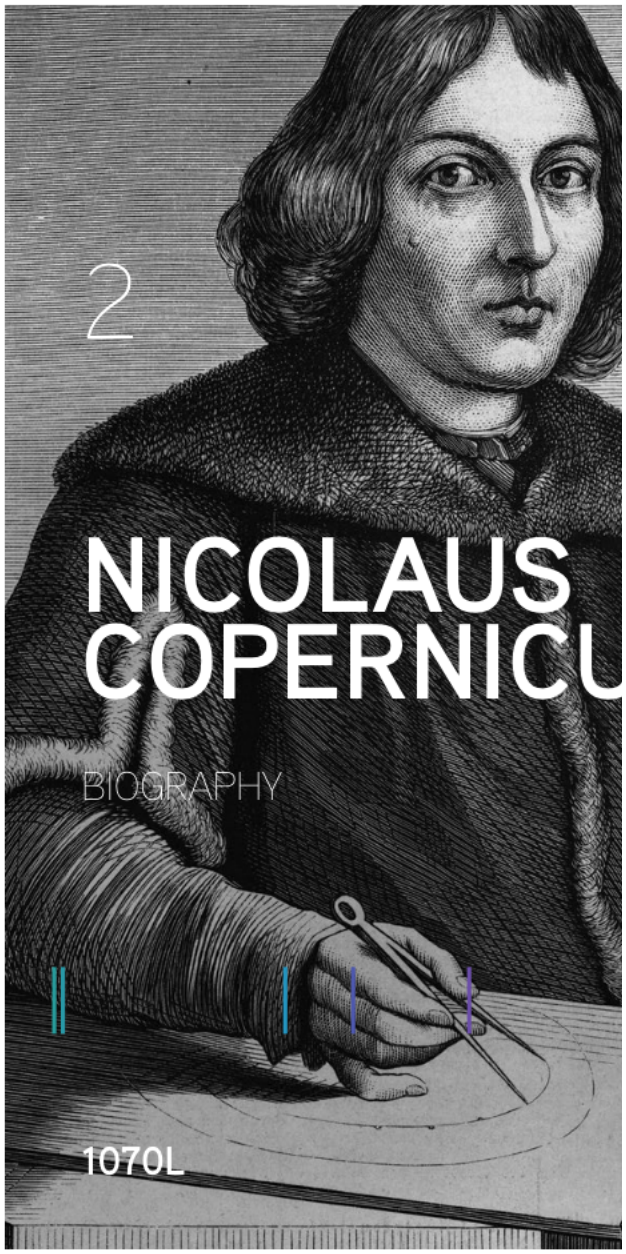


BIG HISTORY PROJECT

Born
February 19, 1473
Torun, Poland

Died
May 24, 1543
Frombork, Poland

NICOLAUS COPERNICU

A RENAISSANCE MAN WHO STARTED A SCIENTIFIC REVOLUTION

By Cynthia Stokes Brown, adapted by Newsela

In the middle of the 16th century, a Catholic, Polish astronomer, Nicolaus Copernicus, use observational data to diagram a Sun-centered view of the Universe. His work launched mode astronomy and set off a scientific revolution

Have you ever heard the expression "Renaissance man?" The phrase describes a well-educated person who excels in a wide variety of subjects or fields. The Renaissance is the name for a period in European history, the 14th through the 17th centuries, when the continent emerged from the Dark Ages with a renewed interest in the arts and sciences. European scholars were rediscovering Greek and Roman knowledge, and educated Europeans felt that humans were limitless in their thinking capacities and should embrace all types of knowledge.

Nicolaus Copernicus was a true Renaissance man. He became a mathematician, an astronomer, a church judge with a doctorate in law, a physician, a translator, an artist, a Catholic cleric, a governor, a diplomat, and an economist. He spoke German, Polish, and Latin, and understood Greek and Italian.

Family and studies

Copernicus was born to wealthy parents in what is now Poland on February 19, 1473. Both his parents died when he was young. His wealthy, powerful uncle adopted him and his siblings.

Copernicus studied mathematics and astronomy at the University of Krakow from 1492 to 1496. He changed his last name, Koppernigk, to its Latin version while at the university, since scholars used Latin as their common language.

He also studied law at the University of Bologna and medicine at the University of Padua. It took two months to travel from Poland to Italy by foot and horseback, but the two schools in Italy were among the best in the world at that time.

As a student, Copernicus began to question what he was taught. He learned Aristotle's and Ptolemy's views of the Universe. Even though his professors believed that the Earth was at the center of the Universe and it did not move, Copernicus began to question those ideas.

Even as a young university student, there is evidence that Coper beginning to envision a Universe where the Earth moved.

Copernicus returned to Poland in 1503, at age 30, to live in his castle and serve as his secretary and physician. He stayed at thi gave him free time to continue his observations of the heavens, two years before his uncle's death.

Life as a canon

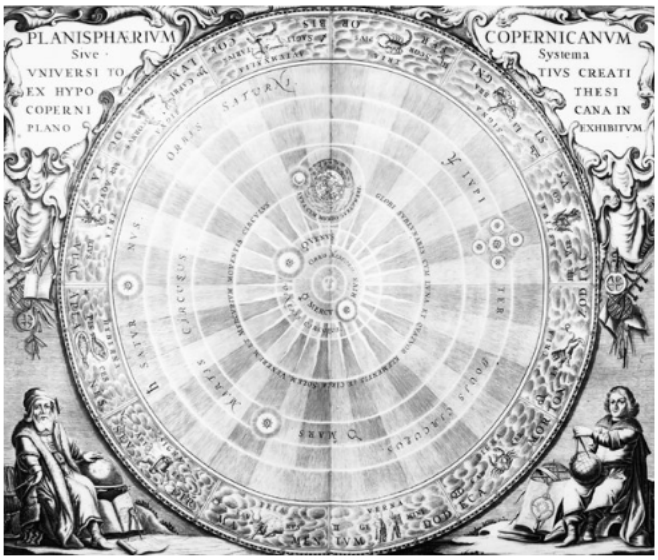
In 1497, Copernicus was elected canon of the cathedral in Fron Canons were responsible for administering all aspects of a cath He had many duties as canon, including mapmaking, collecting t managing the money, serving as a secretary, and practicing mec

He led a half-religious, half-secular life and still managed to con astronomical observations from his tower apartment. He conduc with devices that looked like wooden yardsticks joined together, s measure the angular altitude of stars and planets and the angles two distant bodies in the sky. He had a simple metal tube to look but no telescope had yet been invented.

By 1514, Copernicus had written a short report that he gave to his minded friends. This report, called the Little Commentary, explai heliocentric theory. In it, Copernicus confidently said that the E revolved on its axis and orbited around the Sun.

A heliocentric theory

Copernicus worked on a detailed astronomical book for 16 years want to publish it because he was afraid of the huge controversy produce. He also hoped to gather more data.



The Copernican model from the *Harmonica Macrocosmica* atlas by Andreas Cellarius

Finally, in 1541, when he was 68, he agreed to publish it after a mathematician friend helped convince him. Copernicus gave his master work the title On the Revolutions of the Celestial Spheres.

In this work, Copernicus began by describing the shape of the Universe. He provided a diagram to help the reader. In the diagram, he showed the outer circle that contained all the fixed stars, much further away than previously believed. Inside the fixed stars were Saturn, then Jupiter, and Mars, then Earth, Venus, and Mercury, all in circular orbits around the Sun in the center.

He calculated the time required for each planet to complete its orbit, and was off by only a bit. Copernicus's theory can be summarized like this:

The center of the Earth is not the center of the Universe, only of Earth's gravity and of the Moon. The Sun is fixed and all other spheres revolve around the Sun. Copernicus kept the idea of spheres and of perf lar orbits. In fact, the orbits are elliptical, which the German astr Johannes Kepler demonstrated in 1609. Earth has more than or turning on its axis and moving in a spherical orbit around the su

The stars are fixed, but appear to move because of the Earth's m

Death and legacy

Legend has it that Copernicus, in a sickbed when his great work lished, awoke from a coma to look at the first copy of his book w brought to him. He was able to see and appreciate his accompl and then closed his eyes and died peacefully, on May 24, 1543. He to hear the praise or criticism of his ideas.

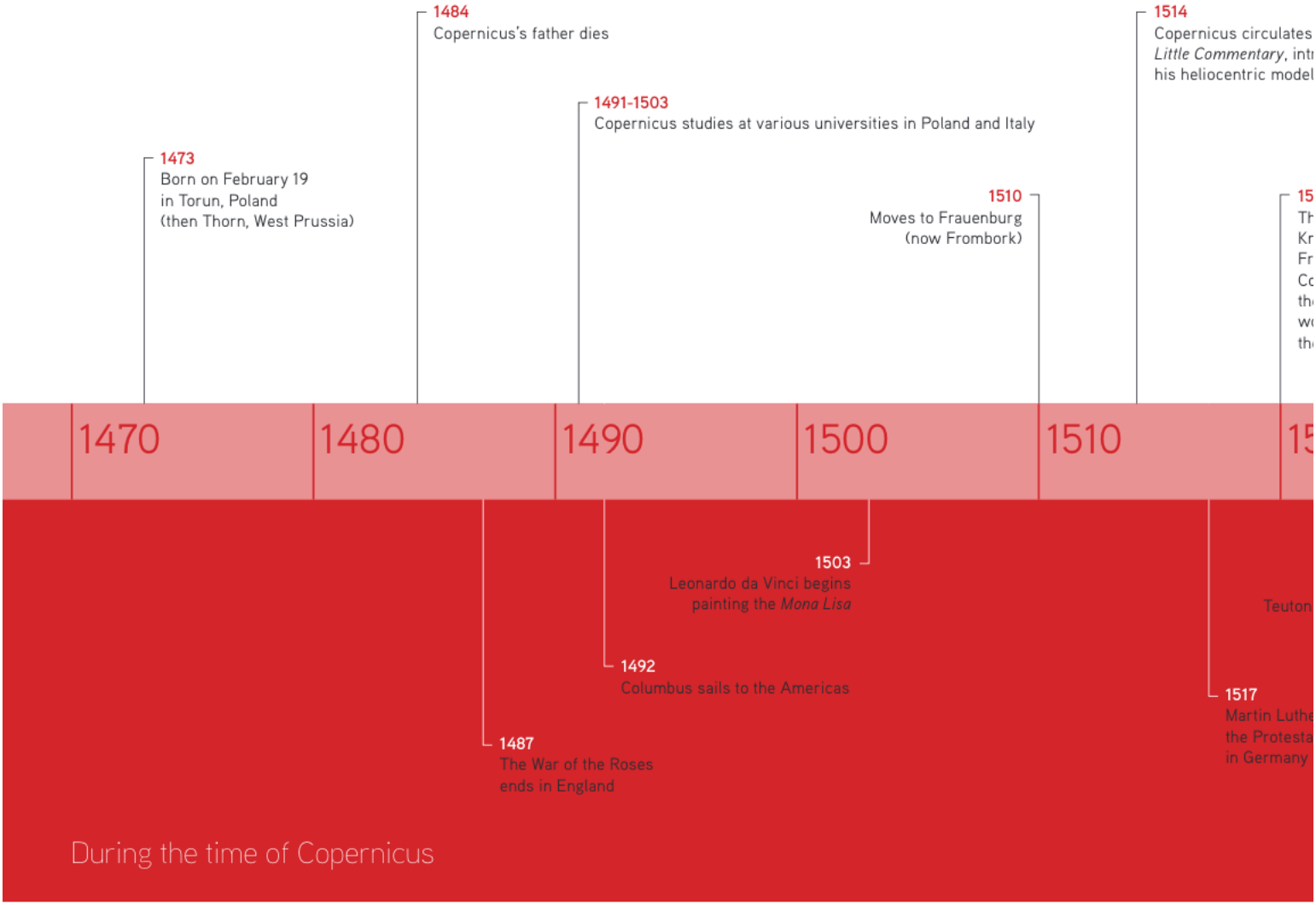
The Catholic Church waited seven decades to take any action ag the Revolutions of the Celestial Spheres. Why it waited so long h subject of much debate. In 1616, the church banned the book and work that defended the movement of the Earth. In 1633, Galileo convicted of defying Church teachings for following Copernicus'

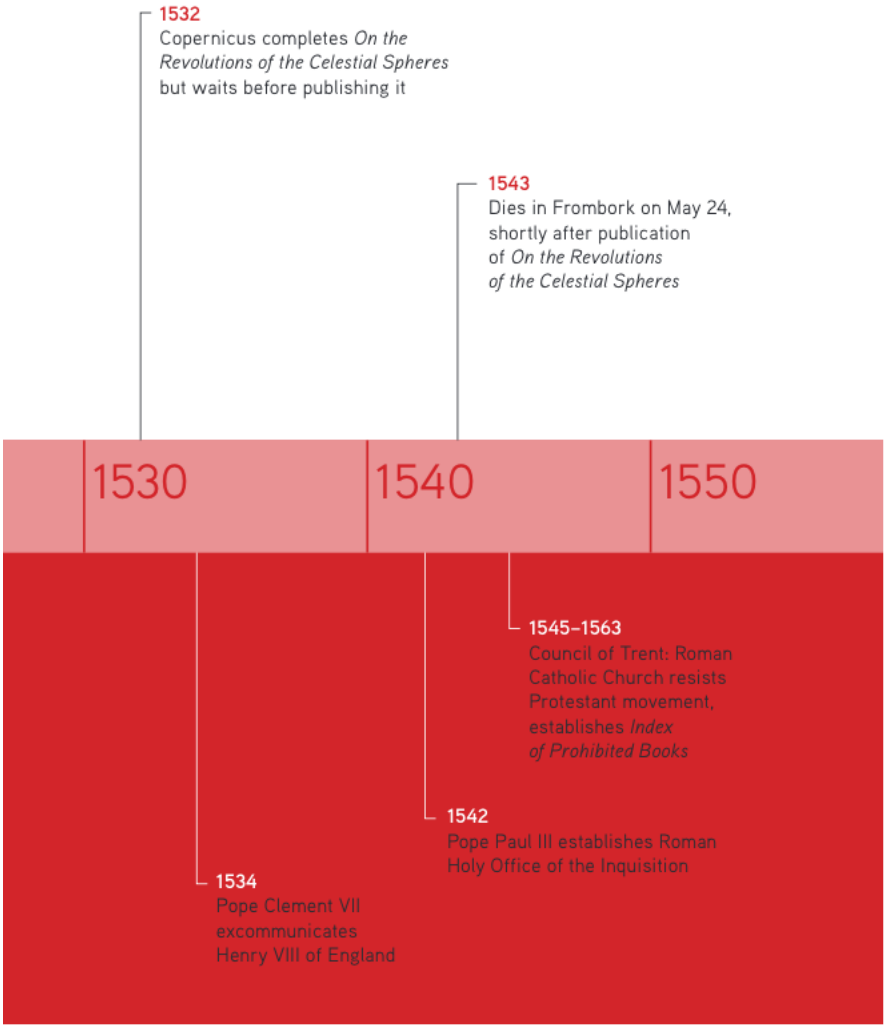
Scholars did not generally accept the heliocentric view until Isaa in 1687, formulated the Law of Universal Gravitation. This law ex gravity would cause the planets to orbit the much more massive why the small moons around Jupiter and Earth orbited their ho

How long did it take for Copernicus's ideas to reach the general p anyone nowadays still believe the apparent evidence before their the Sun moves around the Earth to set and rise? Almost everyone childhood that, despite appearances, the Earth moves around the

Copernicus's model asked people to give up thinking that they liv center of the Universe. For him, the thought of the Sun illuminat planets as they rotated around it had a sense of great beauty and

Timeline of Copernicus's life





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Copernicus's view of the Solar System from the 1661
Harmonica Macrocosmia by Cellarius
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