

# This Day in History... December 27, 1571

## Birth of Johannes Kepler

Johannes Kepler was born December 27, 1571 in Weil der Stadt, Germany. Kepler was one of the leading figures in an era that has been called the “Scientific Revolution.”

Weak and sickly from his premature birth, Kepler was an extremely bright child, who often impressed travelers at his family’s inn with his mathematical skills. He discovered at an early age his love of science and the cosmos, after witnessing the Great Comet of 1577 and a lunar eclipse by the age of nine. Once he completed his studies, Kepler began teaching math and astronomy at the Protestant school in Graz, Austria, in 1594.



Romania stamp honoring Kepler



Mars stamp from the Views of Our Planets set

The following year, Kepler believed he’d had a breakthrough, discovering what he thought to be the geometrical basis of the universe. He published his findings in the *Mysterium Cosmographicum* in 1596. Twenty-five years later he re-released the volume with extensive footnotes of corrections and improvements he discovered in that time. Although the first issue was not widely read, it earned Kepler a reputation as a talented astronomer.

In 1600, Kepler met and began working with Tycho Brahe, who allowed Kepler to study his observations of Mars. The following year, Brahe died and Kepler replaced him as the imperial mathematician. His 11 years in the position proved to be the most productive time of his life.

During this time, he produced *The Optical Part of Astronomy*, which, among other things, explained how images are projected inverted and reversed by the eye’s lens onto the retina. His next great work was *A New Astronomy* which included his first two laws of planetary motion – that all planets orbit the sun in an elliptical shape, that planets sweep out equal areas in equal times, and that planets move faster when they’re closer to the sun than when they’re farthest away.

Kepler improved on the refracting telescope, developing the Keplerian telescope, which serves as the model for our modern telescopes. He also published the *Epitome of Copernican Astronomy* which was the most widely used astronomy book of its time.

Kepler died on November 15, 1630. Many of Kepler’s ideas were ahead of their time, leading Carl Sagan to call him “the first astrophysicist and the last scientific astrologer.” He’s been the subject of novels and operas and the namesake for streets, schools, an asteroid, a Martian crater, a supernova, and more. In 2009, NASA launched the Kepler space telescope, which has observed thousands of planets and stars, many of which have been named in Kepler’s honor.



Kepler helped to popularize Copernicus’s theory that the Earth revolved around the Sun.



Kepler’s been called the “father of science fiction” for his novel *Somnium*, which in part explored the ideas of space travel from another planet. It’s sometimes referred to as the first work of science fiction.

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