

Biographical Encyclopedia of Astronomers

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Mersenne, Marin

Born in Oizé (Sarthe), France, 8 September 1588

Died in Paris, France, 1 September 1648

An avid astronomical correspondent, Marin Mersenne provided vital communication links between practicing scientists of his era. He made important contributions to timekeeping, experimental practice, and the philosophical approach to science by religion, the latter at some personal risk. Mersenne was born into a family of laborers. He spent five years at the Jesuit college at La Flèche, beginning in 1604, followed by two years of theology at the Sorbonne University in Paris. In 1611, he joined the Franciscan Order of the Minims, so named because they considered themselves the least of all the religious orders. Mersenne became a priest in Paris in 1612, and from 1614 to 1619, he taught philosophy at the convent at Nevers. In 1619, Mersenne moved to the Minim convent de l'Annonciade near the Place Royal (now Place des Vosges). Other than for a few short trips, he remained there until his death

Mersenne's greatest contribution was his continual correspondence and meetings with scientific leaders, developing an informal network for disseminating information well before the inception of scientific journals. It was said that "to inform Mersenne of a discovery meant publishing it throughout the whole of Europe." After Mersenne's death, letters from nearly 100 correspondents were found in his cell. Those who visited or corresponded with Mersenne included René Descartes, Gérard Desargues, Pierre Fermat, Thomas Hobbes, Christiaan Huygens, John Pell, Galileo Galilei, Blaise Pascal, and Nicholas Torricelli

Mersenne viewed the question of Earth's motion as undecided and encouraged the search for more scientific evidence to settle the issue, yet he defended Galileo and published his work in French (*Les Méchanique de Galilée* 1634, as well as parts of Galilei's *Dialogo* and *Discorsi*). Mersenne felt the church should censor some opinions, but urged moderation because he believed that "true philosophy never conflicts with the belief of the church." Mersenne was a careful experimenter who insisted on precision and repetition. "One should not rely too much only on reasoning," Mersenne wrote, as he questioned whether or not Galileo actually carried out some of the experiments on acceleration down a plane that Galileo described

In 1636, Mersenne proposed a design for a reflecting telescope using a concave paraboloidal primary and a convex paraboloidal secondary arranged so that their focal points coincide. The electro-optics branch at the National Aeronautics and Space Administration's Marshall Space Flight Center uses an off-axis Mersenne telescope in a lidar (light detection and ranging) system.

Mersenne was the first to discover that the frequency of a pendulum is inversely proportional to the square root of its length, and it was Mersenne who proposed the use of a pendulum as a timing device to Huygens, inspiring him to invent the pendulum clock.

In other fields, Mersenne is often credited with developing the system of tuning musical instruments called equal temperament, and he experimentally developed three important principles in the acoustics of stringed instruments. Mersenne also published results on the cycloid, reported on the chemistry of tin, and discussed a "sensitive plant" from the West Indies, and sought a perfect language that was natural and universal for communicating scientific ideas.

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