

# Biographical Encyclopedia of Astronomers

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Scheiner, Christoph

Born Wald (Markt Wald near Mindelheim, Bavaria, Germany), 25 July 1573

Died Neisse (Nysa, Poland), 18 June 1650

Christoph Scheiner was a German mathematician, physicist, and astronomer, who was one of the first to observe sunspots

After attending the Jesuit Latin school in Augsburg and the Jesuit college at Landsberg, Scheiner entered the Jesuit order in 1593. (In 1617, he was ordained a priest.) From 1598 to 1601, he studied mathematics and metaphysics at the University of Ingolstadt; then he worked (1602–1605) as a teacher of Latin at the Jesuit college in Dillingen. From 1605 to 1609, Scheiner studied theology in Ingolstadt. During 1610–1617, he was professor of mathematics (astronomy) and Hebrew at the University of Ingolstadt, from 1619 to 1620 professor in Innsbruck, and during 1620–1621 professor in Freiburg. In 1621, Scheiner became father confessor to Archduke Charles of Austria and Bishop of Neisse, and in 1622 he founded a Jesuit college in Neisse and became its superior. From 1624 to 1633, Scheiner was in Rome on behalf of the college. (No details are known about this stay (perhaps there was diplomatic business). Later he was in Vienna, and in 1636 he returned to Neisse, without resuming the post of principal of the college

Scheiner's time was the beginning of modern scientific thinking, using experiment and observation, and the period when astronomy was influenced by the ideas of Nicolaus Copernicus. Scheiner, first of all, is famous for his discovery of sunspots in 1611. The telescope had been invented, and Scheiner was among the first to use it for astronomical observations. (He produced a telescope specifically for solar observations, the helioscope.) A "stained sun" was in conflict with conservative Christian doctrine, and therefore the Jesuit Scheiner had to be cautious. Thus, in 1612, he communicated his observations in three letters written under the pseudonym "Apelles." As a result, a priority dispute with Galileo Galilei arose (Nowadays we know that there were sunspot observations already before Scheiner and Galileo, but all seem to be independent of each other.) During his time in Rome, Scheiner wrote his main work, *Rosa Ursina sive Sol*, where he summed up all his knowledge on sunspots and other solar phenomena. He did not show that Galileo made errors of observation, but although he came close to a modern understanding of the nature of sunspots, he followed Christian doctrine in his book. If Scheiner had an influence on the Galileo prosecution, as is sometimes said, it is not proven.

Another memorable contribution of Scheiner is the invention of the pantograph (around 1603/1605, but published only in 1631), an instrument for copying plans on any scale. He also dealt with the physiological optics of the eye, and he published his results in his book *Oculus* in 1619 (and further results also in *Rosa Ursina*). He stated that the retina is the crucial part for the sense of seeing, and he described the function of other parts including the pupil and iris.

During his last years, Scheiner wrote a refutation of the Copernican theory, which was published posthumously, but had no influence at all.

*Horst Kant*

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