

# Biographical Encyclopedia of Astronomers

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## John of Holywood

Flourished First half of the 13th century

John of Holywood wrote mathematical texts that were widely commented upon, corrected, and republished all over Europe. His work and that of his commentators was used for teaching astronomy for several centuries.

Almost no reliable information about the life of John of Holywood exists. Based on a statement made by his commentator Robertus Anglicus in 1271, he is generally considered to have been English by birth, but the possibility that he was of some other nationality has also been entertained by historians. His only known institutional connections were with the University of Paris, where John of Holywood is thought to have lectured on mathematics and astronomy; he may, however, have been educated elsewhere. After his death, a memorial was erected in the Paris monastery of Saint Mathurin, which was closely associated with the university. This monument is no longer extant, but the record of its inscription has often been said to indicate that John of Holywood died in 1244 or 1256. These dates, however, have been derived not from the inscription itself, but from a few lines of verse found at the end of his *Compotus*, which bear a superficial resemblance to those of the monument; moreover, the lines are ambiguous—1234 is another plausible interpretation of the signified date and one more consonant with the period of composition of the treatise itself—and the nature of the event to which they actually refer is unclear. It is fair to say, therefore, that the dates and circumstances of John of Holywood's life and death are equally obscure.

John of Holywood's most famous work, the *Tractatus de sphaera*, sets out the basic principles of spherical astronomy, from the divisions of the celestial sphere to the explanation of eclipses. His longest and most sophisticated work is the *Compotus*. Datable to 1232–1235, this is a systematic treatment of calendrics and time-reckoning, which suggests several remedies for the calendrical discrepancies arising from the use of the Julian scheme and the Metonic cycle equating 235 lunar months with 19 solar years. Thus, centuries before the Gregorian Reform, John of Holywood advocated the elimination of 10 days from the civil calendar in order to restore the spring equinox to its rightful position (as he thought) of March 25th, and the omission of one leap year every 288 years in order to prevent it from drifting from this date again. He also suggested employing a 76-year sequence for the reconciliation of the solar and lunar cycles. But it seems that John of Holywood's calendrical ideas were heavily indebted to other calendrical writers, in particular to Roger of Hereford and to the unknown author of another 13th-century *computus*.

A more original text was his *Quadrans*, written circa 1245–1250, which describes the construction and use of the time-finding instrument known as the *quadrans vetus*. Although related to other mathematical treatises, particularly the *Astrolabium* of pseudo-Messehallah, it seems to have been the first text devoted to this particular instrument. John of Holywood also wrote *Algorismus*, which, although not an astronomical text, was described by Peter

Nightingale as having been written for the benefit of astronomy. Since it outlined elementary arithmetic procedures, including the extraction of square and cube roots, it may indeed have been of some use in the education of astronomical practitioners, and it is frequently found bound with astronomical works in manuscript codices.

It is no longer thought that John of Holywood's works were written as university texts and employed in meeting the needs of the 13th-century curriculum. They were probably too sophisticated for the typical arts student and would most likely have been studied as an extracurricular interest. Nevertheless, with the exception of the *Quadrans*, which was quickly superseded by the *Quadrans vetus* written by Johannes Anglicus, his texts were widely distributed in manuscript, attracted numerous medieval commentators, and continued to be read, reproduced, and annotated into the early modern period. Indeed, with influential 16th-century pedagogues such as Philipp Melanchthon and Christoph Clavius sponsoring printed editions of the *Comptus* and *De sphaera* and promoting their use, John of Holywood's works were an established component of the university arts curriculum well into the 17th century.

*Adam Mosley*

### **Alternate names**

Johannes de Sacrobosco

Sacrobosco

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