Biographical Encyclopedia of Astronomers

Autolycus

Born Pitane (Candarli, Turkey), circa 360 BCE

Died circa 290 BCE

Two of Autolycus's three books have come down to us and are considered the oldest original treatises on mathematics that have survived (in translation) in their entirety.

Little is known about the life of Autolycus, and even the dates associated with him are not clear. It is generally believed that he was older than Euclid, and it is known that he taught the philosopher Arcesilaus, founder of the Middle Academy. Autolycus was a contemporary of Aristotle and is generally considered to have been primarily an astronomer. The only known specific piece of information on his life comes to us from Diogenes Laertius, who reports that Autolycus was accompanied by Arcesilaus on a trip to Sardis

The two of Autolycus' treatises on astronomy that have survived are *De orto* (On risings and settings) and *De sphaera mota* (On the moving sphere). They survived in large part due to their inclusion in *Little Astronomy*, which was an early compilation similar to Ptolemy's later *Great Collection* or *Almagest*. *De sphaera mota* deals generally with great circles, including meridian circles and latitudinal parallels. It also deals with visible and invisible areas produced by a light source shining on a rotating sphere. In this book, Autolycus used the same form of writing as Euclid, including propositions and proofs.

De orto is largely a book on observational astronomy. Autolycus is known to have relied heavily on Eudoxus for his astronomical ideas and was a supporter of Eudoxus' theory of homocentric spheres (a series of embedded spheres that held the stars and planets, and that all rotated on an axis parallel to the Earth's). Autolycus attempted (unsuccessfully) to explain the variability in brightness of Venus and Mars within the context of this theory and also attempted to rectify the theory with the concept of eclipses, again without real success. It is interesting to note that there is no evidence that Autolycus, despite his work with spheres, had any knowledge of spherical trigonometry. However, his propositions indicate that there should have been some knowledge of that type at the time. Many scholars conjecture that there must have been a contemporary standard textbook on the subject that has been lost to history. Some suggest, simply through the process of elimination, that the author of this unknown textbook was Eudoxus, but not a shred of proof exists to support that claim.

A crater on the Moon is named for Autolycus.

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