

# Biographical Encyclopedia of Astronomers

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Menaechmus

Flourished (Turkey), circa 350 BC

Menaechmus, the Greek mathematician who supposedly told Alexander the Great that there is no royal road to geometry, was a pupil of Eudoxus, the founder of Greek mathematical astronomy. Menaechmus is said to have added more homocentric spheres to the Eudoxean planetary models, which had already been enriched by Callippus. But his greatest achievement was the discovery of the conic sections, which takes pride of place in Johannes Kepler's *Astronomia Nova* (New astronomy) (1609).

Menaechmus defined the conic sections as the intersection of a cone of revolution with a plane perpendicular to one of the cone's generators. He distinguished three kinds, which arise, respectively, by cutting a right-angled, an acute-angled, or an obtuse-angled cone. (Apollonius later gave them the names parabola, ellipse, and hyperbola, by which we still call them.) The conic sections occur in Menaechmus' two solutions to the Delian problem of duplicating the cube, which can be readily explained using modern mathematical lore and notation.

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