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Kindī: Abū Yūsuf Yaʿqūb ibn Isḥāq al-Kindī

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Born **probably Kūfa, (Iraq)**, ***circa* 800**

Died **probably Baghdad, (Iraq), after 870**

Kindī was a pivotal figure in the transmission of Greek science into the Islamic world. A polymath, he left approximately 260 treatises on various scientific and philosophical subjects, including optics, astronomy, arithmetic, geometry, medicine, music, and metaphysics. Only a few of these have survived. Little is known about his life.

Kindī arrived in Baghdad, the capital of the Islamic realm, during the reign of the ʿAbbāsid Caliph **Maʾmūn** (reigned: 813–833), when the Graeco–Arabic translation movement was in its early stages. Kindī enjoyed the favor of several caliphs, serving as tutor to the son of Caliph Muʿtaṣim (reigned: 833–842), under whom Kindī especially flourished, but he fell into disgrace under Caliph Mutawakkil (reigned: 847–861). His library was confiscated, and he was publicly beaten, possibly due to court intrigue. According to some accounts, Kindī's library was eventually restored.

Although he is remembered primarily as "the philosopher of the Arabs," Kindī was active in many areas of scientific research. His work is significant in the history of astronomy for a number of reasons. First, he founded the philosophical program of study, centering on the works of **Aristotle**, without which the pursuit of Greek-inspired astronomy, and the many contributions made by Islamic theoretical astronomers, would have been impossible. He taught that philosophical knowledge can be acquired only through years of sustained study. The sciences of the quadrivium (arithmetic, geometry, music, and astronomy) must be mastered before the student can understand Aristotle's writings on logic, physics, ethics, and metaphysics, or other sciences such as astrology and medicine. Kindī's approach toward the ancient sciences was to complete them, and his strategy of presentation was to combine observation with the Euclidean "axiomatic method" of rational demonstration, a perspective he presented in a treatise entitled *That Philosophy Can Be Acquired Only by Mathematical Discipline*. Kindī did not slavishly follow Aristotle or other Greek philosophers. For example, he produced an ingenious argument against the infinite magnitude of the Universe; by employing a skillful *reductio ad absurdum* argument, Kindī showed how the notion of actual infinity leads to paradoxes.

Second, Kindī began the systematic formulation of a scientific Arabic terminology based on Greek concepts. This idiom formed the groundwork for the later philosophical and scientific contributions of **Fārābī**, **Ibn Sīnā**, Ghazālī, **Ibn Rushd**, and others. And through Latin translations of the 12th century, Kindī's influence also extended into Europe.

Third, Kindī also created an Islamic idiom, showing how Greek ideas could be adapted into the Islamic metaphysical framework, without detriment to either. Despite these efforts, however, Kindī clashed with contemporary Islamic theologians, who often viewed the Greek sciences with suspicion.

In terms of actual work in astronomy and cosmology, Sezgin lists some 30 works, only 13 or so being extant. Of those that are extant, five are general or cosmological works (one being a paraphrase of the *Almagest*), three concern instruments, and the rest are on particular topics. None of these seem particularly original but indicate an interest in making the Greek scientific heritage better known to a wider audience. Kindī also wrote extensively on astrological topics and was responsible for introducing **Abū Maʿshar** to astrology; he was to become the most influential astrological authority in both the Arabic and the Latin Middle Ages. Finally, it is worth mentioning that Kindī was also interested in optics, a subject important to astronomy, and developed a new analytical approach, punctiform analysis, whereby each point of the visible object is perceived by an individual ray coming from the eye.

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