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Qaṭṭān al-Marwazī: ‘Ayn al-Zamān Abū ‘Alī Ḥasan ibn ‘Alī Qaṭṭān al-Marwazī

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Born Marw (Merv, Turkmenistan), 1072/1073

Died Marw (Merv, Turkmenistan), October 1153

Qaṭṭān al-Marwazī was a prominent scholar of the 11th and 12th centuries, whose only extant work, a treatise on astronomy, entitles him to be ranked among the leading observational astronomers of his age. He was born in Marw, an ancient city in Persia, which had become by then one of the most prosperous cities of Great Khurāsān, a vast and flourishing province on the eastern borders of the Islamic world and home to many outstanding scientists, philosophers, religious scholars, saints, and mystics. At the time Marw had ten large public libraries, one of them housing 12,000 books.

Living in a city with a rich cultural milieu, Qaṭṭān al-Marwazī grew up to become an expert in many fields of science and wisdom. Like other erudite and encyclopedic savants of the Islamic Middle Ages, he wrote books in most areas of knowledge including astronomy, medicine, prosody, engineering, and literature. His writings were regarded highly among the learned circles of Marw. Though well versed in different disciplines, Qaṭṭān al-Marwazī's main occupation was medicine.

Sources describe Qaṭṭān al-Marwazī as a master of Greek sciences and an ardent exponent of Greek philosophy. Being a student of Lawkarī, who himself was a student of Bahmanyār, the most distinguished disciple of [Ibn Sīnā](#), Qaṭṭān al-Marwazī belongs to the third generation of scholars who have fully benefited from the Avicennian tradition.

None of Qaṭṭān al-Marwazī's numerous writings, however, have survived save a book on astronomy written in Persian and entitled *Gayhānshenākht* (Knowledge of the Cosmos). According to the author, the book was so titled because “he who understands this book will have a coherent knowledge of the configuration of the cosmos, and its system will be clear to him.” The book, however, is not confined to cosmology in the proper sense of the term, but, as is usual for the works of its genre in the Islamic tradition, covers a wider range of subjects such as the configuration of the Earth and certain topics in geography. Therefore, it falls within the context of cosmographical works. Furthermore, the treatise also includes what we usually find in the works dedicated to the calendar and issues related to the “passage of time.” The book, therefore, comprises a range of topics from the celestial movements, eccentrics and epicycles, apogeas, planetary sectors, the ecliptic, the fixed stars, lunar and solar eclipses, the meridian, and the azimuth to the sizes of the Earth and other planets, chronology, and even some minor hints regarding astrology.

Gayhānshenākht may thus be placed within the corpus of what was known as *hay’a basīṭa*, i. e., plain or simplified astronomy. These works were simplified forms and summaries of astronomy that gave a coherent and unified account of the discipline. The main audience for such works were ordinary, educated people for whom astronomy had a greater appeal than other sciences, in part because of its applications in religious matters, and in part because it dealt with the realm of the unknown. Therefore, despite the fact that Arabic was the prime language of

science and letters throughout Islamdom, Qaṭṭān al- arwazī, out of an inner obligation, chose to write a simple and easy-to-understand book on astronomy in Persian for the educated public and for beginners who wished to have a share of the art.

Qaṭṭān al-Marwazī seems to have been involved in other aspects of astronomy. His status as an observational astronomer is well established by the fact that he mentions in several places his engagement with astronomical measurements. Furthermore, Qaṭṭān al-Marwazī claims to have written other books on astronomy, including a *zīj* or astronomical handbook, which requires direct participation of the observer. Nevertheless, his interest was not limited to pure astronomy, a science that in his view “is based on certitude and demonstration” and “into which no discrepancy shall find a way.” He shows interest in astrology as well, which for him is “a science of analogy and conjecture.” By this, however, Qaṭṭān al-Marwazī does not mean to belittle astrology but rather to place each within its own proper domain, since he promises to write a book on that subject, too.

Despite the very little information available to us about the man and his works, we may conclude that Qaṭṭān al-Marwazī was one of the most prominent scientific figures of his time. In a series of correspondences between him and Rashīd al-Dīn Waṭwāṭ, himself a great literary figure of his age, Rashīd al-Dīn Waṭwāṭ does not fail to acknowledge him as “a scholar for whom not even a minute replica can be found across either east or west” even though the author is being accused by Qaṭṭān al-Marwazī of plundering his library. Furthermore, his stature as a great astronomer may be substantiated by the fact that two centuries later Ibn Taymiyya, a renowned religious scholar in Damascus, singles out Qaṭṭān al-Marwazī's name as someone very skillful in astronomy, while discussing the question of lunar crescent visibility.

A clan of the Turkish Ghuzz (Oghuz) tribe from eastern Asia invaded Marw. Being taken captive, Qaṭṭān al-Marwazī is said to have shouted words of insult at his captors, which led to his tragic death. They tortured him to death by filling his mouth with soil.

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