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Nasawī: Abū al-Ḥasan ʿAlī ibn Aḥmad al-Nasawī

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Born **Rayy, (Iran), 1002/1003**

Nasawī was an astronomer and mathematician whose name indicates that his family was originally from Nasā, a town in ancient Khurāsān that is in present-day Turkmenistan. He spent most of his life in his birthplace. In the introduction to his book, *Bāz-nāma* (On caring for falcons), Nasawī states that he served in the army, had been in the service of the kings, and trained birds of prey for 60 years, since age eight. Bayhaqī remarks that Nasawī lived until the age of 100. However, the date of his death is unclear.

Nasawī's disciple Shahmardān Rāzī, as well as **Naṣīr al-Dīn al-Ṭūsī**, refer to Nasawī as *al-ustādh al-mukhtaṣṣ* (distinguished teacher), probably due to his expertise in mathematics and astronomy. The famous Iranian poet Nāṣir-i Khusraw (1003–1088) writes in his *Safar-nāma* that he met Nasawī in Simnān (Iran) in 1046, where the latter was teaching Euclid's *Elements*, medicine, and arithmetic. Nasawī also quoted from discussions he had had with **Ibn Sīnā**, which led Nāṣir-i Khusraw to conclude that Nasawī had been a disciple of Ibn Sīnā. It has been claimed that Nasawī was also a disciple of **Kūshyār ibn Labbān**, but Nasawī would have been too young when Kūshyār died.

Nasawī wrote several astronomical works, only one of which is extant. *Kitāb al-lāmiʿ fī amthilat al-Zīj al-jāmiʿ* (Illustrative examples of [the 85 chapters] of [Kūshyār's] *Zīj-i jāmiʿ*) is also called *Risāla fī maʿrifat al-taqwīm wa-'l-asṭurlāb* (A treatise on the almanac and the astrolabe).

Only a few of the tables from *al-Zīj al-Fākhir* (The glorious astronomical tables) have survived following the Leiden manuscript of Kūshyār's *Zīj-i jāmiʿ*. These tables indicate that the values used for the planetary mean motions are extracted from **Battānī**'s *zīj*, confirming remarks in *al-Zīj al-mumtaḥan al-ʿarabī*, a recension of **Muḥammad ibn Abī Bakr al-Farisī**'s *Zīj* preserved in Cambridge.

Ikhtiṣār ṣuwar al-kawākib (Summary of the constellations) is dedicated to al-Murtaḍā, the Shiʿite leader from Rayy. This nonextant work was a summary of **ʿAbd al-Raḥmān al-Ṣūfī**'s book on the constellations.

Nasawī was also a noted mathematician and wrote works on arithmetic, geometry, and spherics. Among his works are his *al-Muqniʿ fī al-ḥisāb al-Hindī*, a treatise on Indian arithmetic whose purpose was, among other things, to be useful for both businessmen and astronomers. Chapter 4 of *al-Muqniʿ* deals specifically with sexagesimal reckoning used in Islamic astronomy. *Al-Tajrīd fī uṣūl al-ḥandasa* (An abstract of Euclid's *Elements*) was composed for those who wanted to learn geometry in order to be able to understand **Ptolemy**'s *Almagest*.

Nasawī also wrote works on philosophy, pharmacology, and medicine.

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