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Hāshimī: ‘Alī ibn Sulaymān al-Hāshimī

Mònica Rius

Flourished **890**

Hāshimī's only known astronomical work is his *Kitāb fī ‘ilal al-zījāt* (Book of the reasons behind astronomical tables); although it does not contain innovative ideas, it does provide a great deal of extremely useful information for the history of science and preserves materials from the Hellenistic world, India, and the Sasanians that would otherwise be lost. The unique 13th-century manuscript does not indicate the date of its original composition; however, it may date from the late 9th century since the treatise is mentioned by several authors from the 9th century, but none from the 10th.

The book is divided into sections on various aspects of astronomy. The first section is on *zīj*es (astronomical handbooks), and Hāshimī explains the meaning of a *zīj*, as well as provides a historical introduction with commentaries to various *zīj*es. These include **Ptolemy's** *Almagest*, **Theon's** *Canon*, the *Arjabhar*, the *Zīj al-Arkand*, the *Zīj al-jāmi‘*, the *Zīj al-Hazūr*, the *Zīj al-Shāh* of Khusro Anūshirwān, the *Zīj al-Shāh* of Yazdigird III, **Fazārī's** *Zīj al-Sindhind*, the *Zīj* of **Ya‘qūb ibn Tāriq**, the *Zīj al-Sindhind* of **Khwārizmī**, the *Mumtaḥan zīj* of **Yaḥyā ibn Abī al-Mansūr**, the two *zīj*es of **Habash**, and the (Thousands) *Zīj al-hazārāt* of **Abū Ma‘shar**.

The *‘Ilal* also includes sections on chronologies and calendars; cycles and world-days; operations based on the cycles; equations, *kardajas*, and sectors; the solar motion and related problems; lunar tables and equations; and miscellaneous subjects such as the lengths of night and day and equation of time, rising and setting amplitudes in the various climates, time of sunrise as affected by the Sun's declination, projection of the rays, and lunar and solar eclipses.

Hāshimī's *‘Ilal al-zījāt* provides us with a valuable indication of astronomy during this period as well as Hāshimī's understanding of certain astronomical texts. It is clear that this work is written at a time before the ascendancy of Greek astronomy in the Islamic world, when Indian and Sasanian astronomy were still on an equal footing with it.

Hāshimī also contributed to the development of mathematics, specifically calculation with irrational quantities.

Selected References

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