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Qāsim ibn Muṭarrif al-Qaṭṭān: Abū Muḥammad Qāsim ibn Muṭarrif ibn ʿAbd al-Raḥmān al-Qaṭṭān al-Ṭulayṭulī al-Qurṭubī al-Andalusī

Mercè Comes

Flourished **Cordova, (Spain), 10th century**

Qāsim ibn Muṭarrif al-Qaṭṭān may well represent the earliest astronomers in Islamic Spain (al-Andalus) of whom we have knowledge. Though known as a reciter of the Quran (*muqri'*) and traditionalist with the sobriquet *al-shaykh al-ra'īs* (Principal Shaykh), only one of his works is extant, a study of cosmological and astronomical subjects. However, in the biographical dictionaries there is no reference to Qaṭṭān's interest in cosmology or astronomy. From what we know of the lives of his teachers, we can deduce that he was born at the end of the 9th or the beginning of the 10th century. An analysis of Qaṭṭān's work offers only two chronological details: a quotation from **Maslama al-Majrīṭī** and the following statement in the title of the star table: "We found its longitude in the ecliptic in the year 300 of the Hijra" (912–913).

If the attribution is correct, Qaṭṭān's work, entitled *Kitāb al-hay'a* (Book on cosmology), would be the first extant Andalusī treatise on astronomy. The only known manuscript is preserved in the Süleymaniye Library in Istanbul (Carullah Efendi 1279, folios 315r–321v). The work is a compendium of all the Andalusī cosmological and astronomical knowledge of the time and draws upon a variety of traditions. The most prominent is that of eastern Islam, which flourished in the 10th century after successfully combining the old cosmology and astronomy of Greece and India. There are also echoes of an old Latin astrological tradition, still in use in the Iberian Peninsula.

The text consists of 30 numbered and five unnumbered chapters. The unnumbered chapters differ from the others in several aspects and do not seem to belong to the work. The chapters are as follows: 1–8: signs of the Zodiac and lunar mansions; 9–11: planets and cosmographical subjects; 12: stars; 13–16: Moon and Sun; 17–27: subjects related to the calendar, *i. e.*, years, months, days, hours (22 and 23 are devoted to clocks); and 28–30: description of the cosmos, both the superlunary and sublunary world. The other five chapters – the ones without numbering – deal with the Sun, the Moon, and terrestrial latitudes. Some of the chapters that purport to explain the physical structure of the cosmos show a clear dependence on **Aristotle**, while others draw upon **Ptolemy**, in particular on his *Planetary Hypothesis*, which very probably reached the author through the *Kitāb al-aʿlāq al-nafīsa* of the eastern geographer Abū ʿAlī Aḥmad ibn ʿUmar ibn Rustah.

The clocks described are a sundial, the description of which coincides almost word for word with

the one found in the *Kitāb al-asrār fī natā'ij al-afkār* (Biblioteca Medicea Laurenziana, MS Misc. Or 152, folio 47r), explicitly attributed to **Ibn al-Ṣaffār**, one of Maslama's disciples. This clock is unlike extant Islamic clocks, although we know of at least two texts that describe a similar instrument (the *balāṭa* described in the *Zīj* by **Ibn Isḥāq al-Tūnisī** and the one in the commentary to the *Mišná* by **Maimonides**). These clocks seem to date back to biblical times. The second one, called *thurayya*, is a "fire clock" because the hours are indicated by the burning of oil. A description of a similar clock is found in a work by a certain Yūnus al-Miṣrī. Qaṭṭān's clock derives from a clock calculated for Baghdad, which probably reached al-Andalus through Tunis, perhaps thanks to the well-known epistolary relationship between Ḥasdāy ibn Shaprut of Cordova, and the Tunisian **Dunash ibn Tamīm**.

The star table contains 16 stars. It is a standard table of the kind that accompanies a treatise for constructing an astrolabe, although, in view of the errors found, it was probably derived from a reading of the coordinates of an instrument calculated for Cordova, namely ecliptic coordinates (longitude and latitude) and the degree of the zodiac that rises with a star and diurnal arc. It is the first star table documented in al-Andalus and is clearly influenced by **Battānī** and Maslama.

In a number of chapters there are signs that the author does not have a thorough understanding of the field. However, the work is important because it demonstrates the emergence of astronomical and cosmological knowledge from a range of traditions in 10th-century al-Andalus, the period in which science was beginning to develop in this area. Although the author is Andalusī, the manuscript is eastern, suggesting that it reached a fairly wide readership. The text is largely nonspecialist and was probably used in the nonscientific circles in which the author undoubtedly moved.

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