Ibn Rushd: Abū al-Walīd Muḥammad ibn Aḥmad ibn Muḥammad ibn Rushd al-Ḥafīd

Miquel Forcada

**Alternate names**

Averroes

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**Born**  Cordova (Spain), 1126

**Died**  Marrakech (Morocco), 10 December 1198

Ibn Rushd, one of the best-known Islamic philosophers, challenged Ptolemy's astronomical system on philosophical grounds and made interesting theoretical contributions to the Andalusian criticisms of the Greek astronomer. Along with Ibn Bājja, Ibn Tufayl, and Bītrūjī, he wished to formulate a model for the cosmos according to Aristotelian principles – i.e., uniform and circular motions centered on the Earth – in which there was no need for eccentrics and epicycles. He was also an active and a first-rate scholar in many other disciplines, including Islamic religion and law, medicine, and the various aspects of Hellenistic philosophy.

Ibn Rushd was born into an important family of religious scholars, but in addition to religious sciences, he also studied medicine and astronomy. We know little of his formative period; he probably studied in Cordova and Seville, learning medicine from a physician named Ibn Jurrayūl. In Seville he met Abū Ja'far ibn Hārūn al-Tarjālī, a court physician who also had a profound knowledge of philosophy and mathematical sciences; Ibn Rushd became his pupil in these disciplines. In his *Summary of the Almagest*, Ibn Rushd himself mentions a master in astronomy named Abū Ishāq ibn Wādiʿ, who is otherwise unknown. We know that in 1153 Ibn Rushd was in the service of the Almohads, a North African dynasty that ruled Muslim Spain (al-Andalus) and North Africa for many years. In 1153, according to his commentaries to Aristotle's *De Caelo*, he observed several stars in Marrakech. In the *Summary of the Almagest*, Ibn Rushd goes on to say that he calculated the positions of Venus and Mercury, under the supervision of Abū Ishāq ibn Wādiʿ, in order to check a conjunction of these planets with the Sun allegedly observed by the nephew of the Andalusian astronomer Ibn Muʿādh. These autobiographical data, together with his treatise on the *Almagest*, bear witness to a thorough knowledge of the fundamentals of astronomy, though he did not pursue these studies in his later years.

The personal and intellectual sides of Ibn Rushd's life are inseparable, and both were decisively
sources are the astronomers who criticized parts of his system but respected its fundamentals. Ibn Rushd's main attempt at an authoritative work such as represented by the Summary of the Almagest is more an attempt to understand the scope of theoretical astronomy in his time rather than an attempt at an authoritative work such as represented by the Kulliyyāt. Ibn Rushd asks to what extent astronomy can be considered a true science and deals not only with mathematical astronomy but also with the physical representation of the cosmos. He discusses Ptolemy, comparing and contrasting his work to some of the most important Arabic and Andalusian mathematical astronomers who criticized parts of his system but respected its fundamentals. Ibn Rushd's main sources are the Işlāḥ al-Majisti (Corrections to the Almagest) of the Andalusian Jābir ibn Aflah, the Kitāb fi hay'at al-ālam (Book on the configuration of the World) and al-Shukkūk 'alā Baṭṭāmyūs of the Egyptian Ibn al-Haytham, and the treatises by the Andalusian Zargāli on the motion of the fixed stars and on the Sun. Though he seems convinced that astronomy needs to be thoroughly redefined, in the meantime he is obliged to rely upon the questions on which all the astronomers agree. His short commentaries (jawāmi') to Aristotle's works (generally written during the same period of his life) reflect the doubtful opinions expressed in the Mukhtaṣar al-Majisti. Underlying his short commentaries to the De Caelo and Metaphysics is the paradigm of contemporary astronomy even though it contradicts Aristotle. However, Ibn Rushd disagrees with Ptolemy and Islamic astronomers on many points such as the existence of a ninth sphere. To deal with these contradictions, he uses ambiguous explanations such as the metaphor of the “universal animal” (ḥayawān kulli) found in Ptolemy's Planetary Hypothesis, also echoed in Ibn Ṭūfayl's Risālat Ḥayy ibn Yaqẓān, which he uses to pose the problem of the existence of several motions in the planets in different directions.

Ibn Rushd's opinions evolved during the second period of his work, which was characterized by a strict reading of Aristotle, freeing it from the opinions that both Hellenistic and Islamic philosophy had added to it. For this reason, in his long commentaries (tafāsir) to De Caelo and the Metaphysics in particular, he openly rejects the existence of eccentrics and epicycles insofar as they contradict the necessity of circular and uniform motions around the Earth for the planets. The main problem is
that Ibn Rushd is not aware of the astronomical theories formulated by Eudoxus and Callippus that underlie the Aristotelian cosmos and so has great difficulty in understanding Aristotle's texts on this point. Having no time and insufficient knowledge (as he himself confesses) to formulate a new proposal that allows the coexistence in the same model of the apparent planetary motions alongside Aristotelian tenets, he only suggests that planets have a spiral movement that accounts for both daily motion and motion in longitude. This intuitive idea based on the observation of the Sun (also shared by Bitrûjî) has some precedents in Plato and Theon of Alexandria, but in Ibn Rushd seems to have sprung from a misreading of Aristotle.

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Selected References


