



**MAḤMŪD IBN MUḤAMMAD IBN ‘UMAR AL-
JAGHMĪNĪ – THE PHILOSOPHER AND FOLLOWER OF CLAUDIUS
PTOLEMY FROM TRANSOXIANA**

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<https://doi.org/10.5281/zenodo.14524887>

Annotation: This article discusses the influence of the scientific legacy of the ancient philosopher Claudius Ptolemy on the astronomical views of the natural scientist and philosopher Maḥmūd ibn Muḥammad ibn ‘Umar al-Jaghmīnī from Transoxiana.

Keywords: Universe, cosmos, celestial body, theoretical astronomy, “Almagest”, “Mulahas fi-al hay’a”.

Annotatsiya: Ushbu maqola movaraunnahrlik tabiatshunos faylasuf Al Chagminiyl astronomik qarashlariga antik davr mutafakkiri Ptolemey ilmiy merosini ta’siri o’rganiladi.

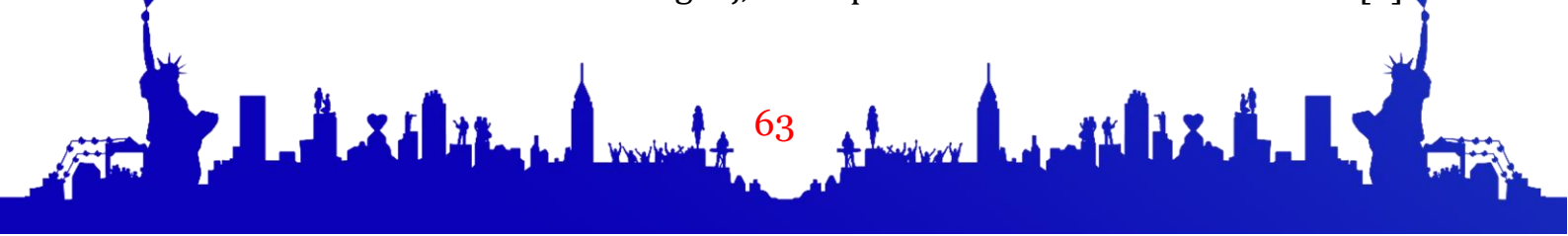
Kalit so’zlar: Koinot, fazo, samoviy suv, nazariy astronomlar, “Almagest”, “Mulahas fi-al hai’a”.

Аннотация: В данной статье рассматривается влияние научного наследия Птолемея на астрономические взгляды Аль Чагмини, натуралиста и философа из Моварауннахара.

Ключевые слова: Вселенная, космос, небесное тело, теоретическая астрономия, “Альмагест”, “Мулаххас фи-аль хая”.

Maḥmūd ibn Muḥammad ibn ‘Umar al-Jaghmīnī was an esteemed scholar of the 12th–13th centuries who lived and worked in Mavarannahr. According to sources, the village of Chaghmin in Khwārizm is indicated as the place of birth a natural philosopher and follower of prominent figures such as Abu Rayhan Beruni, Muhammad al-Khwarizmi, and al-Farghani, he contributed significantly to the development of science in the Islamic world. Sources identify his birthplace as the village of Jaghmīnī in Khwārizm in Central Asia. His renowned work, Al-Mulakhkhas fi-al-hay’a, is dated 618 H/1221 CE according to a manuscript preserved in the Leiden Library [1].

Al-Jaghmīnī's lifetime coincided with the final phase of the political, economic, and intellectual prosperity of the Khwārizm Shāhs dynasty under the Anushteginids (470-628 H [1077-1231 CE]). He is known to have taught the exact sciences at madrasas in Gurganj, the capital of the Khwārizm Shāh state [2].



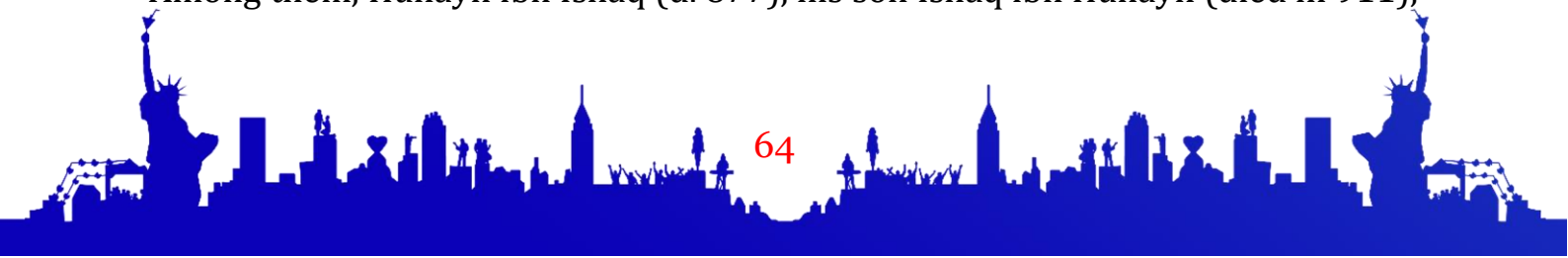


His prolific writings include works such as “Fi Quwa al-Qawakib wa-Ha'afiha” (On the Strengths and Weaknesses of the Planets), a concise treatise on astrology; “al-Mulakhkhaṣ fī al-hay’a al-basīṭa” (الهيئة في الملخص); “Election A Treatise on the Role of the Number Nine in Mathematics” (التسع الحساب رسالة), “Commentary on Mathematical Methods in Matters of Inheritance Division” (شرح الوصية مسائل في الحساب ترياق) and “Talhis Kitabi Uqlidis” (A Summary of Euclid’s Book).

The scientist's contribution to science is first of all measured by his discoveries in the field of astronomy. Among his works that have come down to us, his greatest work is the treatise “al-Mulakhkhas fi-al hay'a” (الهيئة في الملخص) on astronomy , which is translated into Uzbek as “A short collection of astronomy”. The “al- Mulakhkhaṣ fī al-hay’a ” was an extremely popular astronomical textbook that

played a critical role in the teaching, dissemination, and institutional instruction of Islamic theoretical astronomy. The treatise was written in 1206 AD/603 AH, during the period when economic, political, and spiritual life of the Khwārazm Shāh kingdom flourished. This treatise is a simple and concise summary of the science of astronomy in medieval Muslim science, and also provides extensive information about the general conclusions of geography and other natural sciences. He drew new conclusions from the natural sciences by widely involving the scientific works of Central Asian thinkers. In this work of Jāghmīnī, the general structure of the world surrounding man, celestial lights, circles, the position of the planets, the sun, the moon's eclipse, the length of the solar year, night, day and other important issues have been reworked. The Mulakhkhaṣ was also translated from its original Arabic into Persian, Turkish, and Hebrew, and continued to be taught in earnest well into the nineteenth century [3].

We mentioned above the influence of Greek thinkers in the formation of Umar al- Jāghmīnī 's cosmological and ontological worldview. Translations of Greek natural science and philosophical sources into Arabic are important in the formation of allomā's natural-philosophical worldview. Translation in the Muslim East processes continued from the 8th century to the 10th century, in which mainly Greek scientific and philosophical sources, partially ancient Persian, Indian, Syriac and Jewish (Hebrew) sources were translated into Arabic. Middle The famous fixrist An-Nadīm, who lived and created in the early Middle Ages, gave information about 65 famous translators of the early Middle Ages. Among them, Hunayn ibn Ishaq (d. 877), his son Ishaq ibn Hunayn (died in 911),





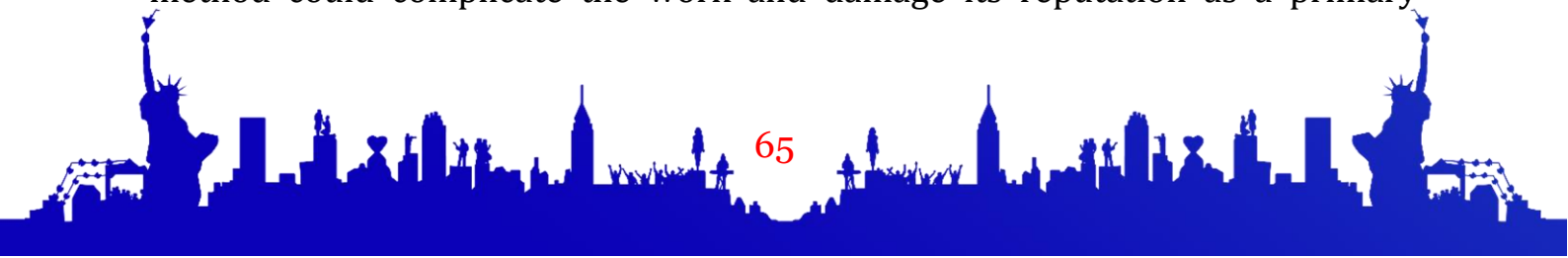
Qusto ibn Luqqa (died in 900) were the most famous [4], and besides them there were many unknown translators and commentators.

Jaghmīnī 's natural philosophical views were greatly influenced by the philosophical and rational views of Greek scholars Aristotle and Ptolemy on the existence and structure of the cosmos.

The greatest work of Ptolemy, which influenced Umar al- Jaghmīnī's views on astronomy, is the "Mathematical System" * known as "Almagest" (Al-Majist), which describes a unique new system of cosmology was covered in his work, which included much of the traditional knowledge of Greek mathematical astronomy. The consistent and perfect description of the work served as a guide for the next generations. The work soon gained great fame among representatives of science in Alexandria, Athens and Antioch. The work consists of thirteen parts, which include a simple interpretation of geometric models, quantitative parameters of the celestial shells, some celestial bodies and their movements, the Moon and the Sun the general description of the planet, the theories about the upper and lower planets, and the fixed stars. Jaghmīnī 's work "al-mulakhkhas fi-al hay'a" shows the influence of Ptolemy's views on geocentric, climatology and geography. The division of the work "al-mulakhkhas fi-al hay'a" into special sections, the geocentric analysis in it, the division of existence into two types - the lower world - the Earth and the upper world - heavenly bodies, their location and movement at certain distances are related to his "Almagest" in the Middle Ages shows it as a work described in its own way, created from the fusion of Arab-Muslim natural sciences. Chapter I of the second part of the treatise "al-mulakhkhas fi-al-hay'a" Earning population lives part, their breadth and lengths are dedicated to their division into climates. The division of the Earth into seven climates in this section is similar to the information in Ptolemy's "Geography".

The treatise "al-mulakhkhas fi-al-hay'a" was one of the works of the Islamic Middle East it is clear that he wrote with extensive use of Greek science although, however in itself only the ancient Greek scholar Claudius Ptolemy's name is mentioned twice. His works "Almagest" and "Geography" which are the famous disaster encyclopedias in science are only mentioned [5].

However, in contrast to "Almagest", " al-mulakhkhas fi al-hay'a" does not provide information about the sizes and distances of the planets. If the planets in "Mulakhkhas" if theories about dimensions and distances were given, this method could complicate the work and damage its reputation as a primary





textbook on astronomy. Qāḏīzāde al-Rūmī, the most famous columnist of "Mulakhkhas", noted the representative of his school.

So, Umar al-Chag'mini was a follower of Claudius Ptolemy who lived and worked in Movarounnahr in the 12th-13th centuries, and the scholar served as a unique bridge in the spread and development of ancient Greek natural sciences and astrophysics in the medieval arab Muslim world.

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