



HISTORICAL ANALYSIS OF THE ACTIVITIES OF ABUL ABBOS AHMAD IBN MUHAMMAD IBN KASIR AL-FARGANI

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Abstract

ABUL ABBOS AHMAD IBN MUHAMMAD IBN KASIR AL-FARG‘ONIY FAOLIYATINING TARIXIY TAHLILI

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Annotatsiya:

Mazkur tezisdan buyuk alloma va mutafakkir Ahmad al-Farg‘oniy hayoti, ilmiy ishlari, kashfiyotlari haqida fikr yuritilgan. Ahmad al-Farg‘oniy asarlarining yurtimiz hamda dunyo olimlari tomonidan tadqiq etilishi, ularning o‘zaro o‘xshash va farqli tomonlari tahlil qilinadi.

Kalit so‘zlar: Ahmad al-Farg‘oniy, nilometr, Alfraganus, Aziz Qayumov, “Bayt ul-hikma”, Al-Xorazmiy, Quva, Bag‘dod.

Among the Central Asian scientists, Ahmad Farghani (797-865) gained fame as a great astronomer, mathematician and geographer. The full name of the scientist was Abul Abbas Ahmad ibn Muhammad ibn Kathir al-Farghani. According to sources, no other information has been preserved except that the scientist was from Fergana. Al-Farghani was born in the village of Quwa (Quba) in the Fergana Valley. Despite the lack of information about al-Farghani's life, his name was very famous in the East in the Middle Ages. This is because his knowledge was widespread in the Eastern regions. In particular, they are the following: we can



see that such Eastern researchers as Ibn an-Nadim (10th century), Ibn al-Qifti (12th-13th centuries), Abul Faraj Bar Ebrey (13th century), Haji Khalifa (17th century) described al-Farghani as a potential scientist in their works. Due to his vast knowledge, al-Farghani was the deputy of Caliph Harun al-Rashid in the Eastern lands, and also worked in the team of scholars in Merv under his son Abdullah (Caliph al-Ma'mun). In 819, when Caliph al-Ma'mun moved to Baghdad with all his courtiers and scholars, al-Farghani also moved with them. Despite the fact that there were many learned scholars in the Middle Ages at that time, Caliph al-Ma'mun took al-Farghani with him because of his potential, knowledge, broad outlook, and thirst for knowledge. All of the scholar's works were famous. In particular, one of Al-Farghani's main astronomical works, "The Book of Celestial Movements and the General Science of Astronomy" ("Kitab al-harakat as-samowiyya wa jawami' ilm an-nujum"), was translated into Latin twice in Europe in the 12th century and into other European languages in the 13th century, and its Latinized name "Alfraganus" was widely distributed in the West for several centuries. Due to its perfection, this work of the scientist was used as the main textbook on astronomy in European universities. The Latin translation of Al-Farghani's work is one of the oldest books, first published in 1493. The fame of Al-Farghani's works in Europe increased even more when in 1669 the famous Dutch mathematician and Arabist Jacob Golius published the Arabic text of Ferghani's work with a new Latin translation, and thus his works became very popular [1:444-b].

Ahmad al-Farghani made a huge and unique contribution to the development of world science and culture with his scientific discoveries. In particular, his prediction of a solar eclipse in 812, as well as his determination that the Earth is round, are vivid examples of this. While living in Egypt, al-Farghani also made a device for measuring the water level of the Nile River, which has been preserved to this day. According to some sources, in 861 he repaired a nilometer, that is, a device for determining the water level of the Nile River, on the island of Rawza near Cairo [2:445-b]. Thus, the great representative of early Renaissance literature, Alighieri Dante, when describing the order of the structure of the sky in his works "The Feast" and "The Divine Comedy", turned to al-Farghani's knowledge [3:58-b].



According to Aziz Kayumov, Ahmad Ferghani grew up with a thirst for science and knowledge from a young age. He mainly worked in natural sciences: astronomy, mathematics, geography. The development of Ahmad Ferghani's work is associated with the city of Baghdad, in particular with the "Baytul Hikma", which operated under the leadership of the great thinker and scientist Muhammad ibn Musa al-Khwarizmi. He made a worthy contribution to the emergence of Arabic terminology and the development of scientific progress. Al-Farghani personally supervised the construction of observatories in Baghdad and Damascus. In addition, he also headed the astronomical school established at the observatory built in the area of Baghdad called Raqqa. Of course, we can see that al-Farghani was not only engaged in scientific research, but also passed on his knowledge to his readers. Ahmad Farghani, together with his contemporaries, fellow scientists and students, conducted research on the data in Ptolemy's "Table of the Stars". His scientific research work on astronomy ended with positive results. Out of 8 books by Ahmad Farghani, 6 are known and famous to the world. In particular, they are: "Kitab Fi Usul ilm an-Nujum" ("Book on the Methods of Astronomy"), "Treatise on Astronomy" dedicated to Al-Majisti, "The Causes of the Celestial Spheres", "Al-Majisti" (Ptolemy's "Almagest"), "Ilm al-haya" ("Science of Astronomy"). These rare manuscripts are kept in England, France, the USA, Morocco, Egypt and St. Petersburg. Many of the scientist's works are preserved abroad. In particular, they are the following: "Al-Farghani's Tables" (manuscript), "Book on the Practice of Astrology" in India, the manuscript of the treatise "Determining the Time When the Moon is Above and Below the Earth" in Cairo, the manuscript of the work "Seven Smells of Climate" in Germany, four copies of the manuscript of "Book on the Making of Astrology" are preserved in Berlin and Paris [4: 224-225-b].

There are many scholars both in the world and in our republic who have scientifically researched and evaluated Al-Farghani's works. In particular, here we would like to list the names of researchers who have been specially engaged in the work of al-Farghani: They are: Beruni, Ion Sevil, Gerard Cremon, Gool, Regimontan, Schöner, Christman, Campani, Dante, Euler, Krachkovsky, Qori Niyazi, I. Mominov, Yushkevich, Rosenfeld, S. Sirojiddinov, Matvievskaya, Dobrovolsky, N. Sergeeva, Rozhanskaya, P. Bulgakov, A. Nosirov, H.



Hikmatullaev, M. Khayrullaev, A. Ahmedov, M. Mamadazimov, Sh. Egamberdiev, A. Abdurakhmonov, F. Sulaymonova, A. Qayumov, A. Muhammadjonov, N. Komilov, A. Azamov, O. Fayzullaev, etc. Undoubtedly, the works of Alfraganus were widely studied in the 12th century after the translations of John of Seville and Gerard of Cremona. World scientists have expressed the following opinions about Al-Farghani's science: Rizaullah Ansari (India): Al-Farghani is a genius of his time. Rashid Rushdie (France): Al-Farghani's theory of stereographic projection separates this field from astronomy and turns it into a field of geometry. Francois Sharett (Germany): In his work on the astrolabe, Al-Farghani not only described the fundamental theorems of stereographic projection for the first time in mathematical terms, but also provided astrolabe builders with trigonometric tables. With such tables, Al-Farghani created a very important and strong tradition in the field of instrument making in the Islamic world. J. Saliba (USA): Ahmad Al-Farghani is an enterprising scientist with his own method in astronomy. Li Qibin and Li Bing (China): Al-Farghani's work "Fundamentals of Astronomy" was widely distributed in China in the 9th-10th centuries [5: 8-b].

In conclusion, al-Farghani is one of the great scientists of the Middle Ages, and the scientific works of this thinker, his discoveries and the great scientific heritage he left us have not been fully studied even today, and studying and applying them is one of the priority tasks of historians today. We believe that it is necessary to analyze the discoveries of our great ancestor more deeply and widely based on the works of scientists and researchers who have studied the life and scientific works of Ahmad al-Farghani so far.

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