



Biruni's Work "Tafhim": Problems and Solutions

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ABSTRACT

The article discusses the brief content and essence of the book "Kitab at tafhim li avail sina at-tanjim" about the art of astrology by the thinker Allama Abu Rayhan Beruni, who made a great contribution to the development of natural sciences. Also, the scholar of history, Ashraf Akhmedov, states that the translation of this work is an important source for the development of our science and the study of our spiritual heritage.

Keywords:

Abu Rayhan Beruni, science, natural-scientific knowledge, the art of astrology, "Kitab at tafim li avail sina at-tanjim", Earth, Moon, Sun, spiritual property of mankind

Introduction

The scientist-thinker Abu Rayhan Biruni, who conducted research in all scientific fields of his time, founded several new sciences, in particular, mineralogy and geodesy in the natural sciences. Abu Rayhan Biruni conducted effective research in the field of social and human sciences, as well as natural and scientific knowledge. For example, in the works of the scientist "India" and "Relics of ancient peoples" and similar works, perfect concepts of history, ethnography, ethnic culture, history and theory of religions are created. In particular, in the work "India", the thinker conducted a comparative analysis of the spiritual heritage and religious beliefs of the Indian people, national religions and their features, and in the work "Relics of the Ancient Peoples" - the traditions of the peoples of the world, gives valuable information about the customs, religious beliefs, holidays and holy days,

conducts a comparative analysis of Judaism, Christianity and Islam.

Materials

The main characteristic of all scientific research of the scientist-thinker Abu Rayhan Biruni in the natural sciences and social and humanitarian fields is that he relies on experimental facts and a rational way of thinking. Therefore, the scientist-thinker Abu Rayhan Biruni rejects any conclusions and teachings that contradict logic and rationality.

But there is a work on the art of astrology by the scientist-thinker A Abu Rayhan Biruni. The full Arabic title of the work is "Kitab al-tafhim li-awa'il sina'at al-tanjim", that is, "Book of Instruction in the Elements of the Art of Astrology", and in the West it is also known as "Astrology".

Methods

Although Biruni is recognized as a great encyclopaedic scientist and thinker who made a great contribution to the development of the natural sciences, the question naturally arises why he wrote a work on astrology.

It is known that astrologers played an important role in feudal palaces in the Middle Ages and their predictions from the stars were in great demand. And at the same time, under the pretext of satisfying astrological needs, observatories created favourable conditions for astronomical research. I. Kepler (1571-1630) explains it in the best way. "Astrology is the illegitimate daughter of astronomy, and she must feed her mother so that she does not die" [2.129].

In this regard, although Biruni calls the name of his work "The Art of Astrology", in fact, he focuses on geometric and arithmetic, geographical and astronomical issues necessary for human practical activity. The work served as an important practical and theoretical guide for architects, engineers and scientists. In particular, the measurement of time and types of clocks, mathematical geography, determining the coordinates of cities by latitudes and longitudes, the astrolabe and its construction, manufacture, determining the height with the help of an astrolabe, applying the astrolabe to geometry, the astrolabe for measuring the depth of a well, to such issues as determining the heights of an impenetrable tower or wall are detailed in the drawings.

Results

In 1973, in connection with the 1000th anniversary of the birth of the encyclopaedist Abu Rayhan Biruni, much attention was paid to the translation of his rich scientific heritage into Uzbek, five volumes of his selected works were published. In 2006, Biruni's work "Tafhim" was published as the VI volume of selected works of the researcher and propagandist of the history of our science A. Akhmedov.

The translation of this work serves as an important resource for the development of our science and the study of our spiritual heritage. In the translation of the scholar's work, the story of the book's writing, the structure of the

narrative, details of the existing handwritten copies and, of course, the theoretical and practical significance of the work are told at the beginning, the content of each chapter and the concepts outlined in them, as well as full comments.

Although the work is called "The Art of Astrology", it makes extensive use of concepts related to the natural and exact sciences. The work consists of 8 chapters, of which 6 chapters are devoted to mathematics, astronomy, geography, chronology and 2 chapters are devoted to astrology [1].

At the beginning of Biruni's work, he says: "I started with geometry, then (moved) to calculations and numbers, then (moved) to the structure of the universe, then (moved) to judgment from the stars, because (any) person is worthy of being called an astrologer only then when he mastered these four sciences" [1.16]. The scientist emphasizes that the astrologer must first of all master geometry, mathematics and astronomy. Emphasizing the need for accuracy and rationality in astrology is the essence of the rationality of Biruni's scientific heritage.

Khandasa corresponds to the modern science of geometry, and Biruni defines it as follows: "This is the doctrine of quantities and their relative quantities, the doctrine of forms and their properties in bodies. It transforms the science of numbers from the particular into the general, and takes the science of astronomy from hypotheses and conjectures into reality" [1.17]. It is emphasized here that the level of accuracy of the sciences is due to the fact that they are based on mathematical calculations. The principle of mathematization in modern epistemology confirms the importance of this idea.

At the Faculty of Geography, mathematics, explaining the location of the earth's equator, prove that day and night are always equal there. He cites the religious approach of the Persians, Greeks and Romans to explaining the earth's climate map by region and explains his concept in this regard. Explains the causes of eclipses of the Moon and the Sun through graphic forms.

The chronological section of the work provides information about the days, months,

calculation of the year, epochs, calendars, holidays of different peoples, especially Christian, Persian and Muslim holidays. It also contains valuable ethnographic information about the famous times of the Sogds and Khorezmians.

Discussion

Professor A. Akhmedov not only translates this work, but also compares the ideas, definitions and conclusions put forward by Biruni with the theories of the Greek scientists Euclid, Pasidonius, Archimedes, Pythagoras and substantiates the advantages. In particular, Biruni tried to scientifically substantiate that the theory of parallel lines differs from the Euclidean one and that it was an important stage in the emergence of Lobachevski's non-Euclidean geometry [1. 10].

Here is what A. Akhmedov says about the scientific significance of the work. "Tafhim" is a work based on a deep scientific methodological principle, which Biruni wrote as an encyclopaedia of various sciences of his time in the form of a single logical system. We trust that each of today's readers will draw their own conclusions from this masterpiece" [1.13]. Indeed, Biruni's work "Tafhim" is considered a valuable resource for all researchers in the natural and social-humanitarian fields.

Conclusion

Summing up, we can say that the work "Tafhim" of the scientist, like his other works, has acquired an encyclopaedic character and is considered a rare pearl of the spiritual heritage of mankind.

Secondly, the work served as an important practical guide for Eastern architects and engineers, mathematicians and astronomers. Thirdly, the encyclopaedist Abu Rayhan Biruni in this work emphasizes that any astrological activity should be based on rationality. This work of the great thinker Abu Rayhan Biruni, like other works of his rich scientific heritage, remains one of the unique masterpieces of the spiritual development of the peoples of Central Asia.

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