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## **Xorazm Ma'mun akademiyasi**



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**“Beruniy va Ibn Sino – Ikkinchi ming yillikning taqdirini o‘zgartirgan daholar:  
Ma’mun akademiasining jahon fani taraqqiyotida tutgan o‘rni” mavzusidagi**

## **XALQARO ILMIY KONFERENSIYASI MATERIALLARI**

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## HISTORICAL CONDITIONS OF THE FORMATION OF BERUNI'S SCIENTIFIC AND PHILOSOPHICAL VIEWS

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**Abstract:** In this article, it is stated that Beruni's natural-scientific heritage, the problems raised by Beruni in specific sciences, are of great importance in creating a general view of the world, that is, in the formation of a philosophical worldview, and that this can be clearly seen in the issues raised by him in many sciences, such as astronomy, geology, mineralogy, and biology.

**Key words:** "Relics from ancient peoples" , natural-scientific heritage , critical thoughts , the highest happiness of man , correspondence with Ibn Sina.

The great scholar of Khorezm, Abu Raykhan Beruni, is one of the most famous figures in the history of world science.

Beruni was born in 973 in Kot, the ancient capital of Khorezm. In 995, he was forced to leave Khorezm due to conflicts and settled in Ray, Iran. Later, Beruni lived in Jurjan and mainly in Ghazna cities. As a result of Sultan Mahmud's expeditions to India, Beruni had the opportunity to interact directly with Indian scholars and wrote several books on Indian history, culture and science.

Beruni died in Ghazna in 1048. He created 152 works during his lifetime. The most famous of them are "Memorials from ancient nations" "Masud's law", "India", "Geodesy", "Mineralogy", "Saydana".

Beruni was one of the scientists who thoroughly acquired experimental knowledge in his time, and this is one of the important factors determining certain aspects of his natural-scientific and philosophical views. According to many scholars studying Beruni's legacy, he was an outstanding researcher of his time and a keen observer of nature. We can clearly see how useful the experimental method used by Beruni in the field of various sciences is in the work "Mineralogy". G. T. Lemmlein, one of the Russian scientists studying Beruni's mineralogical heritage, spoke about his method in mineralogy: "A scientific method that requires observation and experimental determination of logical structures and method that meets the rules of modern science. G. T. Lemmlein continues his opinion and says: "During the time of Beruni, experimental sciences had achieved a certain progress, and the experimental method was for the first time significantly entering the practice of natural science."

In general, Beruni's natural-scientific heritage, the problems he raised in specific sciences had a great importance in creating a general picture of the world, that is, in the formation of a philosophical worldview.

Here Beruni's natural-scientific views are combined with his philosophical views and the direct influence of the former on the latter.

The French scientist Carra de Vaud summarized the results of Beruni's scientific research from the point of view of mathematics and said that his development is one of the important features of his scientific thinking. Beruni made many innovations in the field of mathematics, including trigonometry , and some researchers consider him to be the scientist who founded the recognition of trigonometry as an independent science.

Beruni's important features as a famous naturalist played an important role in the formation of his philosophical views.

It is based on natural science and exact sciences in solving many philosophical issues.

Beruni talking about not mixing the truth of religion with the truth of science

He criticizes those who "... attribute the knowledge of the causes of natural phenomena that they do not know to the knowledge of God" [1,317-b] .

One of Beruni's great services to science is that he tried to cleanse science from various persecutions and fought for the purity of science. Beruni equates the arts of magic and astrology. He says about astrology in Geodesy: "As the art of astrology has a weak foundation in general, so do the results obtained from it. The conclusions drawn from them are confused compared to real sciences" [2, p. 295]

Beruni answers the questions of whether the world was created or not, that the world was created. At this point, de Boer's opinion can be cited: "We imagine Beruni's philosophy in this way: only a certain emotional perception, which is correctly and logically connected, can be true knowledge." Although this

assessment does not fully cover Beruni's philosophy, it can accurately reflect certain aspects of his views: The two opposite ideas manifested in Beruni's views, i.e., on the one hand, the inability to deny that the world was created, and on the other hand, recognizing nature as independent, show that Beruni, as a naturalist, tends to a certain extent to a deistic direction in understanding the world and nature.

God creates the world in its entirety and gives laws that are known from eternity. Due to these laws, natural force, i.e. nature, moves. He finds proof of this idea in the Qur'an.

Beruni directly dealt with Aristotle's natural philosophy and put forward important ideas on solving a number of issues of natural philosophy of that time. The achievements in natural science at that time led him to take a critical approach to Aristotle's natural philosophy, as well as to distinguish its weak points, especially Beruni's some aspects of Aristotle's natural philosophy criticism is important.

This is reflected in his correspondence with Ibn Sina. Their correspondence was mainly based on Aristotle's works "On Space" and "Physics" [3,260-p.]. In this correspondence, Ibn Sina defended Aristotle's natural philosophy. Beruni objected to Ibn Sina.

Their discussion was mainly about one of the important issues of Aristotle's natural philosophy - the infinite division of bodies. Some authors who saw that Beruni opposed Ibn Sina in this regard came to the conclusion that he was a supporter of Democritus atomism. But Beruni takes this issue somewhat more seriously. and tries to overcome its limitations.

The difference between Beruni's atomistic theory and Democritus' atomistic theory is that Beruni believes that the world is a necessary and integral part.

Beruni turns to experience before criticizing Aristotle. This way of Beruni was directed against Aristotle's method of observation. Thus, Beruni's recognition of the infinite divisibility of parts and indivisibility tends to show the limitations of the atomistic doctrine of particles, but does not fully solve this problem. Despite this, the fact that the issue was raised in this way was a great achievement of the thinker.

Beruni speaks about the tendency of all elements, as well as the heavier elements, to the center before other elements, and states that "All elements tend towards the center, but the lighter ones surpass other elements" [4,39-b].

In the work of Beruni "India", it is not about the simple aspiration of the elements to the Earth, but about the attraction of all weights to the center of the Earth. Beruni's recognition of the weight of the environment in his objections to Ibn Sina shows that he came close to the idea of recognizing the existence of gravitational forces between the space bodies and the Earth.

Beruni's assumption about the existence of other worlds is one of his philosophical achievements. While thinking about the other world, Beruni says that the other material world probably has the same natural characteristics as our world, "and the directions of movement are different from the directions of movement in our world."

Ibn Sina said that Beruni's ideas about other worlds lead to a logical conclusion that confirms the existence of countless worlds, and this is nonsense. Against him, Beruni said, "If the name of sophists is given to them for this reason, then I will not refuse to receive this name" - [5,39 -b] says.

Another important merit of Beruni is that he focused on the issue of the movement of the Earth and raised the issue of equality of geocentric (teaching that the center of the world is the Earth) and heliocentric (teaching that the center of the world is the Sun) systems from a geometric point of view. Beruni looks at the issue of the Earth's rotation from a geometric and physical point of view. According to Beruni, if the two theories are equal from a geometric point of view, and if the recognition of the Earth's motion solves some difficulties, then it is useful. . He recognized the existence of mutual attraction forces between the Earth and bodies. Also, Beruniy raises the issue that requires the solution of a number of important problems, recognizing the movement of the Earth. He also does not believe in the real large volumes of the speed coming from the calculation of the speed of movement of the Earth along the equator. But the speed of rotation of the Earth shown by him is almost not different from the speed calculated at the present time. This was extremely important for Beruni's time and especially for later periods. Although Beruni did not recognize the movement of the Earth from the point of view of physics, it can be considered that his scientific work in this field objectively encouraged the celebration of the view that the Sun will be at the center of the universe in the future and that there will be many worlds.

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