



## **ABU RAYHAN BERUNI, A GREAT SCHOLAR HONORED BY HIS DESCENDANTS**

**Termiz State Pedagogical Institute, Faculty of Philology, Uzbek  
language and literature, 2nd stage, student of group 206,**

**Qudratova Manija**

**Abstract:** This article contains thoughts about Abu Rayhan Beruni, a great scholar and encyclopedist. Beruni's life and work, scientific experiments in the field of astronomy and geography, and written works are explained. Among them, opinions were expressed that it is not for nothing that Beruni is in the eyes of not only our countrymen, but also world scientists, and that he has a unique place on the world stage.

**Key words:** encyclopedist, Abu Rayhan Beruni, astronomer, science, Ptolemy of his time, legitimacy, great, scholar.

Al Beruni is a great scholar of Khorezm, the author of encyclopedic works on history, geography, philology, astronomy, mathematics, geodesy, mineralogy, geology and many other subjects. His full name is Abu Rayhan Muhammad ibn Ahmad al-Biruni. He was born on September 4, 973 in Kat, the ancient capital of Khorezm. Little is known about Beruni's early life, only that he was an orphan. In his old age, Beruni wrote: "The Iraqi family gave me bread and tea and took me among the people...". Beruni's first teacher was the author of basic works on astronomy, mathematics and trigonometry. Abu Nasr was Mansur ibn Iraq al-Jadi. According to Beruni, everything in nature changes based on the laws of nature, and these laws can be understood only with the help of science. His main works were devoted to mathematics and astronomy, which were of great practical



importance in the economic life of Khorezm - land irrigation and trade trips.

According to Beruni scholar P.G. Bulgakov, Beruni studied mathematics and astronomy from a young age under the leadership of Abu Nasr Iraq, and measured the height of the Sun at the zenith with an armila at the age of 16-17. 30 years later, Beruni measured it himself. studying the results obtained, he notes that they are quite reliable. In his youth, he was engaged in observing solar eclipses. At the age of 22, Beruni made the first globe in Central Asia. He studied many books left by his ancestors and created the first major work about the annual accounts of different peoples that has reached us - "Osorul Baqiya", i.e. "Memorials left by ancient peoples". It fully describes all periods, holidays and calendars of the Greeks, Romans, Persians, Sugdians, Khorezmians and many other tribes and peoples, as well as the cultural and literary history of various countries of the East.

In this work, Beruni showed himself not only as a linguist, but also as a linguist, connoisseur of Arabic, Greek, Persian, Surkhani, and gradually other languages and literatures. In 1004, he returned to Gurganj at the invitation of Khorezmshah Ma'mun II and established the "Ma'mun Academy" named after the king in Gurganch. Beruni's teacher, Abu Nasr ibn Iraq, was an extremely knowledgeable scholar of his time. He was nicknamed "the Ptolemy of his time" during his lifetime. In addition, Abu Nasr raised Beruni in his house. Beruni's scientific works are valuable in the hands of generations without losing their importance. Among them are such major works as "Monuments left by past generations", "India", "Minerology", "Saydana" and "Geodesia". Beruni was an encyclopedic scientist who knew all fields of science well, and with his works, he made a great contribution to the sciences of philosophy, astronomy, geodesy, geography, and history.

Beruni spent the first 25 years of his life in Khorezm, where he studied Islam, jurisprudence, theology, grammar, mathematics, astronomy, medicine and



philosophy, physics and other sciences.

In addition to his mother tongue, Khorezm, Beruni knew Persian, Arabic, Greek, Hebrew, and Syriac, and learned Sanskrit at the age of 50. Our great grandfather died in 1048 in the city of Ghazna. Perpetuating the name of the great scientist, many scientific centers, streets, cities, villages in our country are proudly named after the scientist.

Beruni's rich scientific heritage has not yet been fully explored. Beruni studied Euclidean geometry and Ptolemy's astronomical teachings from the great scientist Abu Nasir ibn Iraq. Until 995, he solved the practical problems of astronomy, geography, geodesy, made a globe of the Earth and the sky, and wrote several books on astronomy. One such work of the scientist "Geodesia" was completed in 1025. This work is about "setting the boundaries of places to determine the distances between cities". Central Asian scientists such as Khorezmi, Farghani, Habash Khasib, Marvaridi worked in various fields in the Academy of Sciences of that time named "Donishmandlik Uyi" established in Baghdad. Beruni was also a member of this "House of Wisdom" and worked there for 7 years.

According to him, according to the order of Caliph Ma'mun, the scientists of the "House of Wisdom" were divided into two groups and began to determine the size of the Earth based on the degree measurement method in the Sanjar desert west of Mosul, Iraq. Abu Ibn Isa as Asturlabi led the second group. Each group calculated the length of one degree meridian arc based on the results they measured. Beruni wrote the names of more than a thousand medicinal substances in 30 languages in his work "Saydana" dedicated to medicine. During the reign of Sultan Mas'ud's son Mawdud, he wrote two works called "Mineralogy" and "Pharmacognosia". Each of them is one of the unique works in these fields and is considered one of the unique masterpieces of world culture.

With about 150 written works, the scientist made a unique contribution to the



development of astronomy, astrology, mathematics, geodesy, geology, mineralogy, geography, arithmetic, medicine, pharmacognosy, history, philology and other sciences. Beruni's unique work has gained special attention in his native Uzbekistan. 152 works of Beruni are known, and only 30 of them have reached us. 70 of his works are devoted to astronomy, 20 to mathematics, 12 to geography and geodesy, 4 to mineralogy, 1 to physics, 1 to medicine, 15 to history and ethnography, 4 to philosophy, 18 to literature. It is known that in order to determine geographic latitude, it is necessary to have sufficient knowledge of geography, mathematics and astronomy. He comes to Ray. In Rai, he met the famous scientist - mathematician and astronomer al-Khojandi, physician and philosopher al-Razi. Beruni writes his treatise "Al-Fakhri sextant" in Rai.

In Urganj, Beruni was engaged in some issues of physics and mineralogy along with mathematics and astronomy.

World scientists expressed their opinions about Abu Rayhan Beruni. Beruni caught the attention not only of Central Asian scientists, but also of world scientists. For example, Ghaznavid historian Abu Fazl Bayhaqi wrote: "Abu Rayhan Beruni was so knowledgeable in science and manners, knowledge of the essence of things, geometry and philosophy that there was no one who could compare to him in his time." Arab traveler and geographer Yaqut al-Hamawi expressed the following thoughts about Beruni: "Abu Rayhan Beruni had a sweet conversation, polite, sweet-spoken, chastity, and did not see another person equal to him in knowledge and intelligence of his time. As much as he gained prestige in the field of perceptual and descriptive sciences, he was also a pioneer in the world of sensory knowledge and man-made wonders.

Z. Zahau, a German orientalist, said: "Abu Rayhan Beruni is the only rock in the ocean of Arabic literature. We do not know of a person equal to Beruni in Indian studies neither before nor in recent times. The American scientist G. J. Sarton gave the following description: "Abu Rayhan Beruni is the greatest figure



of his time. In the history of world science, the first half of the 11th century can be called the "Beruni period". Mahatma Gandhi said: "Indian people have many loyal friends in the world. Among them is the great sage of the East, Abu Rayhan, who is of Muslim origin. No one in the world has promoted the Indian nation, its ancient and rich culture like Beruni. Therefore, as long as there is an Indian nation, there is also his friend Abu Rayhan Beruni. We always bow to his progressive thinking.

The well-known Russian scientist S.P. Tolstov expressed these thoughts: "Abu Rayhan Beruni is the greatest of medieval scientists. The thousand-year history of Khorezm culture, one of the most brilliant cultures of the Ancient East, is embodied in it. The great encyclopedic scientist of the Middle Ages - astronomer, geographer, mineralogist, ethnographer, historian, poet - is embodied in Beruni. The famous "Masudi's Law" is a comprehensive scientific study in the fields of mathematics, geography, and astronomy, and Beruni surpassed Greek scientists with this work. The recognition of geocentric and heliocentric views of the structure of the universe by Abu Rayhan Beruni is a big step forward compared to the Ptolemaic doctrine that prevailed among "Arab" scientists.

It can be safely said that such great geniuses as Beruni and Khorezmi made a great contribution to the development of the geography and ethnography of Eastern Europe, the introduction of the countries of the Muslim East to the Slavs and other peoples of Eastern Europe. "Arabs, Persians, and also Indians got to know the Varangian-Normans and the peoples of the "Country of Darkness" - the inhabitants of the European Arctic, mainly thanks to the works of Abu Rayhan Beruni."

In short, I am a representative of this nation, I am considered a part of it. I rejoice in every success, share in every pain, every representative is dear to me, for better or for worse, he is my compatriot. Today, we young people should increase the number of astronomers and encyclopedists like Abu Rayhan Beruni,



and make our incomparable contribution to the development of our country. In a word, all areas are rapidly developing in our country today. First of all, I want to say that I am very proud to be a child of Uzbekistan. The youth of Uzbekistan should effectively use the main opportunities given to us and make a worthy contribution to the development of our dear Motherland - Uzbekistan. As our ancestors endured unprecedented suffering, fought for freedom and left us this independent land, we must leave our country to our descendants in a more beautiful way.

#### References:

1. Boliyev A. Mustaqillik va taraqqiyot yo'lidan: Markaziy Osiyo Hamdo'stligi// O'zbekiston ovozi.-1997.-29 iyun.-3-b.
2. Boltaboyeva M., Sattorov M. Ilmga baxshida umr.-T.: «Adolat», 2004. 248- b.
3. Bo'riyev O. Ma'naviyat gultoji-T.: O'qituvchi, 1997. 320 b.
4. Donolar bisotidan. Sultonov tahririda.-Toshkent.- G'afur G'ulom nomidagi adabiyot va san'at nashriyoti, 1976. 184 b.
5. Jumaboyev Y. J. Hayot mazmuni va komil inson muammosi. //Xalq ta'limi, 1997, № 4, 17-b.