academic publishers
INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE (ISSN: 2692-5206)
Volume 04, Issue 10, 2024
Published Date: 22 -12-2024

THE SCIENTIST ON A THRONE

Ozodova Muqaddas Sardorbek qizi
Tashkent State Pedagogical University named after Nizami, Bachelor 2nd year student
muqaddasozodova0@gmail.com +998979006406

"No father can give his child anything better than good education and good manners."
Mirzo Ulug'bek

Abstract: Tamerlane himself would probably have believed that Mirza Ulugh Beg should have been famous for his conquests and victories. But he went down in history as a lover of the world, a poet and a stargazer. He can serve as a shining example for modern youth due to his irrepressible passion for knowledge and desire for scientific progress. His life inspires young people to strive for discoveries and contribute to the development of society.
Key words: Mirza Ulugh Beg, Ulugh Beg Observatory, Astronomy, Ziji Guragan, Science, Legacy, Mathematics, Star Catalog

Introduction

There is an unusual structure on one of the hills of the city of Samarkand. It was built more than five centuries ago – and this is the Ulugh Beg Observatory, a building that made it possible to make a breakthrough in medieval astronomy. Ulugh Beg is not only an astronomer, but also a mathematician, educator, poet, and historian. In the XV century, he called on the people to educate: "A Muslim and a Muslim woman should have knowledge." Ulugh Beg's place in the modern world is due to his scientific heritage, which continues to influence various fields. In 1394, Amir Temur besieged the fortress of Mordin in Iraq. At this time, Ulugh Beg is born in the sultan's residence of Sahibkiran. Historian Sharafiddin Ali Yazdi writes in his work "Zafarnoma" that the envoy came to Amir Temur and told him the good news about the birth of Ulugh Beg and, that astrologers predicted that this grandson would become both a scientist and a ruler in the future. The baby was named after Tamerlane's father, Muhammad Taragai. Sahibkiran joyfully ends the siege of the Morda fortress and cancels the ransom imposed on his people.

Main body

The education of the princes was personally supervised by his grandfather and his beloved (but, alas, childless) wife Sarai-mulk khanim. Tamerlane raised the future Ulugh Beg as a warrior. From an early age, Muhammad Taragai accompanied his grandfather, like all his relatives, on campaigns; in peaceful days he was accustomed to the saddle and sword. At the age of three, the prince visited India. At the age of five, he followed his grandfather to Asia Minor and Syria, on a campaign that lasted the next five years of his life. Already at the age of 10, he became the ruler of the vast territory of Transoxiana with its capital in Samarkand, but in history he became not a formidable ruler, but a great scientist. Mirzo Ulugh Beg was one of the most educated people in the world and was even a man who was ahead of his time. Perhaps not everything that Ulugh Beg did was understood by his contemporaries. Despite his high political responsibilities as a ruler, Ulugh Beg was actively engaged in teaching students and scientists, creating a science center at his observatory in Samarkand, where he personally conducted lectures on astronomy and

mathematics. According to legend, even as a child, Ulugh Beg had the opportunity to visit the ruins of the famous At-Tusi observatory, Nasir al-Din in Maragha. This made a strong impression on the inquisitive Ulugh Beg and became the beginning of his passion for astronomy. The construction of the observatory, according to research scientists, was completed in 1428-1429. The observatory was a unique structure for its time. To ensure that the building is insensitive to Earth tremors, the rocky foot of Kuhak Hill was chosen as the site for the construction of the observatory. The main instrument, the sextant, was oriented along the meridian line from south to north. In addition to the main instrument, there were other astronomical instruments in the observatory. The Ulugh Beg Observatory in Samarkand, built at the beginning of the XV century, was not only an outstanding scientific center, but also an important architectural structure. She demonstrated advanced engineering solutions of her time, including a large astronomical instrument — a vertical sextant about 40 meters long, allowing accurate observation of celestial bodies. The architecture of the observatory reflected the principles of Islamic architecture of that period using geometric shapes and symmetry, which emphasized the importance of science and its connection with the divine order. The construction of the observatory on a hill provided minimal impact of external factors on the accuracy of observations, and the layout and technical details were carefully thought out for the convenience of scientists. This building became a symbol of the cultural and scientific prosperity of the Timurids and played a key role in the development of astronomy. The construction of the observatory by Ulugh Beg proves how important it is to value science, education and innovation. This example shows that the pursuit of knowledge and ambitious goals can change the future by inspiring young people to develop and contribute to culture and technology. Ulugh Beg demonstrates how important it is to work in a team and preserve the legacy to build a better society. The size of the sextant, its successful design, and the scientific knowledge of Ulugh Beg and his colleagues made accurate astronomical observations possible. Under the guidance and with the participation of the great astronomer Ulugh Beg, the main work of the observatory “Ziji Guragan”, “Ulugh Beg Star Tables” was compiled. The catalog contains the coordinates of 1018 stars, determined by this Samarkand observatory with incredible accuracy for the first time since Hipparchus. The creation of the astronomical catalog is an outstanding contribution to the treasury of world astronomical science. Ulugh Beg's astronomical tables, compiled on the basis of observations at his observatory in Samarkand, were significantly more accurate than earlier works such as Al-Battani's Ziji (IX century) and Ptolemy's Almagest. This was especially true for calculations of the position of the Sun, Moon and planets, as well as data on the stars. There were other important astronomical works in the Arab world at the time of the creation of Zij Ulugh Beg, but none of them had such high accuracy as his tables. Ulugh Beg, who used more advanced tools and methods, managed to achieve more accurate results, which made his work outstanding and relevant for several centuries. Ulugh Beg's works have also been recognized in Europe. Many European scientists, including Copernicus and Kepler, used his tables for their research, which confirms their high accuracy. However, it is worth noting that despite the high level of accuracy, Ulugh Beg's astronomy itself could not completely abandon the geocentric model, which in the future was replaced by the heliocentric Copernican model.

Conclusion

After the death of the great scientist, his famous student, Samarkand astronomer Ali Kushchi, forced to leave his native Samarkand, took the star book “Ziji Guragan" to Europe. Ulugh Beg's name and works have become famous among scientists in Europe and Asia. The murder of Ulugh Beg by his own son Abdul-Latif in 1449 is a tragic moment in the history of the Timurids, which had a long—term impact on scientific and cultural development. Abdul-Latif, in an effort to consolidate his power, organized the murder of his father, despite his outstanding achievements as a scientist and ruler. This event reflects a sad paradox, when personal ambitions and power struggles overshadowed cultural and scientific achievements. For young people, this serves as a warning about how important it is to balance personal aspirations and higher goals, as well as how destructive ambitions can slow down the development of society and culture that could benefit future generations. The memory of Mirzo Ulugh Beg is perpetuated through various cultural and scientific initiatives. In 1950, academician T. Kara-Niyazov wrote a monograph "The Astronomical School of Ulugh Beg", receiving the Stalin Prize for it. In 1969, an anniversary conference was held in Tashkent, and in 1970 a monument to Ulugh Beg was erected in Samarkand. In 1966, the film "The Star of Ulugh Beg" was shot in Uzbekistan, and writers Maksud Sheikhzade and Adil Yakubov wrote

works dedicated to him. In 1994, it was declared the year of Ulugh Beg. Monuments to him have been erected in Tashkent, Samarkand and Riga, and one of the stations of the Tashkent metro bears his name. A crater on the Moon and the asteroid (2439) Ulugh Beg are named in honor of the scientist.

References:

1. Davron, K. (2017). Ulugh Beg's Legacy and Modern Science. Journal of Central Asian Studies, Vol. 25.
2. Gerasimov, A. V. (1969). Ulugh Beg Observatory: Architecture and Astronomy. Moscow: Academy of Sciences of the USSR.
3. Geidarov, A. (2000). The History of Ulugh Beg and His Observatory. Uzbekistan Publishing.
4. Kara-Niyazov, T. (1950). The Astronomical School of Ulugh Beg. Academy of Sciences of the Uzbek SSR.
5. Muminov, I. M. (1971). Ulugh Beg's Scientific and Cultural Activity. Tashkent: Academy of Sciences of the Uzbek SSR.
6. Nazarov, K. (2006). Ulugh Beg’s Contribution to World Astronomy. Tashkent: University "Technik".
7. Nygmatullin, A. (1994). Ulugh Beg: The Scientist and Ruler. Journal "Science and Society", 9(4), pp. 32–36.
8. Pirmakhammedov, M. (2002). The Fate of Ulugh Beg's Scientific Legacy. Samarkand: Ulugh Beg Foundation.
9. Sharafiddin Ali Yazdi. (1987). Zafarnama. Publishing House "Nauka".
10. Voronin, S. (2012). Ulugh Beg’s Astronomical Tables and Their Influence on Modern Science. Historical and Scientific Journal, No. 2, pp. 55–63.
11. www.Ulugh Beg-observatory.uz – Official website of Ulugh Beg Observatory in Samarkand.
12. www.astro.uz – Uzbek Institute of Astronomy and its research.
13. www.encyclopedia.com – Article about Ulugh Beg and his scientific contributions.
14. www.scientificexploration.com – Scientific research and articles on Ulugh Beg’s contributions to astronomy.
15. www.history.com – The history and legacy of Mirzo Ulugh Beg.