

A REVISION OF PROF. SAYILI'S ACCOUNT ABOUT THE SAMARQAND OBSERVATORY AND SCHOOL BASED ON SOME OLD PERSIAN TEXTS

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Abstract

The Samarqand observatory was one of the most important observatories in the Islamic civilization, in the 9th c. A.H./ 15th A.D. It was founded near a scientific center in Samarqand under the direction of Ulugh beg and became a remarkable school of astronomy at the time. Among the modern sources which are dealing with the observatories in the Islamic civilization, Prof. Aydin Sayili's book entitled: *The Observatory in Islam and its Place in the General History of the Observatory* is the most prominent one in which one finds substantial information on this Observatory. Moreover, there are numerous historical Persian texts which include information about the various aspects and events of the Observatory and the Samarqand astronomy school, however in some cases there is not an agreement between them. For example there are discrepancies and even contradictions in dating some events like al-Kāshānī's entrance into the Samarqand, the year in which the Observatory was founded, the period of time in which the Observatory was active and etc. in various historical sources.

In this paper we will examine some of these differences and try to select the most authentic one. Furthermore, in some cases we will read the original Persian texts based on new interpretations which lead to new conclusions. As a whole this research can be considered as a supplementary to Prof. Sayili's work on the Samarqand observatory and school.

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Keywords: Samarqand Observatory, Observatory, Islamic civilization, Aydın Sayılı, al-Kāshānī

Özet

Miladi 15. yüzyılda/Hicri 9. yüzyılda kurulmuş olan Semerkant Gözlemevi, İslam Uygarlığı'nın en önemli gözlemevlerinden biridir. Uluğ Bey'in yönetimi altındaki Semerkant'ta bir bilim merkezinin yakınında kuruldu ve zamanında dikkate değer bir astronomi okulu oldu. İslam Uygarlığı'nda kurulan gözlemevleriyle ilişkili olan modern kaynaklar arasında, Prof. Aydın Sayılı'nın *The Observatory in Islam and its Place in the General History of the Observatory* adlı kitabı bu gözlemevine dair en önemli kaynaklar arasındadır. Ayrıca, gözlemevi ve Semerkant astronomi okulunun değişik yönlerine ilişkin çok sayıda Farsça metinler de vardır. Ancak bazı durumlarda bunlar arasında bir uzlaşma yoktur. Örneğin, çeşitli kaynaklarda, gözlemevinin kurulduğu, faaliyete geçtiği tarih olan al-Kāshānī'nin Semerkant'a gelişi gibi bazı olayların tarihi hakkında tutarsızlıklar ve çelişkiler vardır.

Bu çalışmada bu farklılıkları tartışacağız ve en otantik olanını seçmeyi deneyeceğiz. Ayrıca, bazı durumlarda yeni sonuçlara yol açan yeni yorumlara dayalı orijinal Farsça metinleri okuyacağız. Bir bütün olarak bu araştırma, Semerkant Gözlemevi ve okulu üzerine Prof. Sayılı'nın çalışmalarının bir tamamlayıcısı olarak kabul edilebilir.

Anahtar Kelimeler: Samarkant Gözlemevi, Gözlemevi, İslam Uygarlığı, Aydın Sayılı, al-Kāshānī

Introduction

The Samarqand Observatory has an important place in the history of observations in Islamic civilization both as a scientific institution at the time and from the standpoint of its historical function. Astronomical activities in the Samarqand Observatory can be known as an important school of astronomy in the Islamic civilization, after the Observatory of Marāgha. Ulugh Beg (795/1394-853/1449), the governor of Samarqand and grandson of Teymūr, himself was a competent mathematician and astronomer. He ordered some of the scholars of his time to found a school and an observatory in Samarqand. He invited great scholars including Ghīyāth al-Dīn Jamshīd Kāshānī, Mu'in al-Dīn Kāshānī, Salāh al-Dīn Qādī Zādeh Rūmī and 'Alī Qūshchī for doing this. The first director of the observatory was Ghīyāth al-Dīn, and after his death, Qādī Zādeh undertook this position. Finally, after the death of Qādī Zādeh, Qūshchī lead the observations as the last director of the Observatory (Sayılı, p. 260-275).

Since the foundation of the Samarqand observatory was an important event in the 14th century, almost all of the historical sources which were compiled after

this time, have mentioned this event by citing its date. Besides, there are some modern sources which are dealing with its detail. Among the modern sources, Prof. Sayili's work entitled *The Observatory in Islam* including the most comprehensive information about the Samarqand Observatory as a chapter of his book. His work includes valuable information about the historical and astronomical aspects of the Observatory. Sayili used a large amount of primary sources that some of them are in Persian. During the historical information of Samarqand observatory, Sayili cited the dates of some events which happened in relation to Samarqand Observatory according to the primary sources. Some of these dates are cited in modern sources differently. Following is the part in which we will revise Sayili's account by using some Old Persian texts on the Samarqand Observatory.

Comprising Sayili's Account with the Old Persian Texts on the Samarqand Observatory and School

In the 8th chapter of the book *The Observatory in Islam*, Sayili refers to the dates of some events concerning the Samarqand Observatory and school. According to him, Kāshānī (al-Kāshī) entered Samarqand after the age of 25 (Sayili, p. 261). On the other hand, regarding to *Maālaā-e Saādayn wa Majmaā-e Baārayn* and *Lubb al-Tawārikh* we can conclude that Kāshānī's entrance to Samarqand, likely happened before 823/1420 (Samarqandī, p. 238; Qazwīnī, p. 316). Qādi Zādeh and Qūshchī were in Samarqand before foundation of the Samarqand Observatory, but Ghīyāth al-Dīn and Mu'in al-Dīn traveled from Kāshān to Samarqand upon the invitation of Ulugh beg. They formed a scientific group in Samarqand for the observations (before foundation of the Observatory). Ulugh beg ordered to found the Samarqand School and Observatory in the year 824/1421. Prof. Sayili cited the year 823/1420 as a date in which the Observatory foundation was begun (Sayili, p. 271), but according to *Maālaā-e Saādayn wa Majmaā-e Baārayn* and *Tārikh-e Rawāā-t-al-āafā*, *Tārikh-e āabīb al-Sīyar* the most probable date for this event is 824/1421 (Samarqandī, p. 238; Mīrkhānd, p. 5360; Khāndmīr, p. 21). As Prof. Sayili mentioned, the Observatory building completed shortly before 833/1430 (Sayili, p. 279), while Amulī cited the year 830/1427 for this event (Amulī, fol. 1 v.).

The other dates that are mentioned by Prof. Sayili, such as the duration of the Observatory activities and the date in which the Ulugh Beg's *Zīj* (the most important achievement of the Samarqand Observatory) has been compiled, are in accordance with our Persian sources.

Conclusion

Having a comparison between some Old Persian texts about the Samarqand observatory which were composed by the historians who lived shortly after the foundation of the Observatory, we can find the most probable dates for the events

which happened in connection to the Samarqand Observatory. Although, in his great book, *The Observatory in Islam*, Prof. Aydin Sayili cited some of these dates, we revised these dates and changed one of them.

According to our revision, Ghiyāth al-Dīn Jamshīd Kāshānī and Mu'in al-Dīn Kāshānī entered Samarqand before 823/ 1420 upon the invitation of Ulugh Beg. The foundation of the Samarqand School and Observatory was started in the year 824/ 1422 (Prof. Sayili mentions the year 823/1421 for this event). The most important achievement of the Samarqand Observatory was the *Ulugh Beg's Zij* (*Gürkānī Zij*) which was compiled in 841/1438. The Samarqand Observatory was active for about 30 years.

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