

Memory of the World Register - Nomination Form
Turkey - Kandilli Observatory and Earthquake Research Institute
Manuscripts

Abstract

Mathematics, medicine and astronomy were the core disciplines of Islamic science in the Ottoman Empire. There have been quite a number of works written on these subjects in Turkish, Arabic and Persian. The collection in the Library of the Kandilli Observatory and Earthquake Research Institute specializes in astronomical, astrological, mathematical and miscellaneous works. This is perhaps the only collection in the world that houses manuscripts on related subject matters. Therefore, it is significant for those scholars and experts who are interested in these subjects and Ottoman and Islamic cultural structure.

The collection in the library comprises a total of 1339 works in 581 volumes. 822 of the works are in Turkish, 414 are in Arabic and 103 are in Persian. Since this collection consists of a number of unique and rare manuscripts it occupies an important place among other manuscript collections in the world. In addition, works on astronomy and astrology in this collection are not only crucial to the Ottoman Empire and the Islamic world, but also to Western scholars in this field.

Identity and Location

Name of the Documentary Heritage: Kandilli Observatory and Earthquake Research Institute Manuscripts

Country: Turkey

State, Province or Region: Kandilli, Çengelköy, Istanbul

Address:

Bogaziçi University

Kandilli Observatory and Earthquake Research Institute

81220 Çengelköy

Istanbul

Name of Institution: Bogaziçi University, Kandilli Observatory and Earthquake Research Institute

Legal Information

Owner:

Bogaziçi University

Kandilli Observatory

and Earthquake Research Institute

81220 Çengelköy

Istanbul

Custodian:

Bogaziçi University

Kandilli Observatory and Earthquake Research Institute

81220 Çengelköy

Istanbul

Legal Status:**Category of ownership:****Details of legal and administrative provisions for the preservation of the documentary heritage:****Accessibility:** With the permission of the institution**Copyright status:****Responsible administration:** Bogaziçi University, Kandilli Observatory and Earthquake Research Institute**Identification**

Description: The manuscripts in this collection are in general well preserved, complete and have no water staining. Little damage by bookworms can be seen on some works. Some manuscripts in the collection are artistically gilded (MS nos 99 and 369, Turkish; Marifetnâme by Ibrahim Hakki Erzurumî, died 1194/1780) and some calendars were prepared with careful attention (MS no 365/1, Persian; Ahkâm-i tâli-i sâl wa takvîm: 895-896 dedicated to Sultan Bayezid). Some manuscripts contain drawings and figures such as observational equipment, eclipses of the sun and moon and the signs of the zodiac (MS no 208/2, Turkish, Alet-I Rasadiyye by Takiyeddîn, 927-993/1521-1585; MS no 463, Turkish, Davetnâme by Firdevsî-I Tavîl in late 15th century). In addition, some manuscripts include various drawings like altitude lists (irtifa cetvelleri) and annual calendars.

Bibliographic details: The collection has two master files prepared individually for every manuscript in both Latin and Arabic script. These master files contain the manuscript number, the title, author, folio number, dimensions and calligraphy type of each work.

Visual documentation:

History: The Kandilli Observatory and Earthquake Research Institute was under the responsibility of Turkish Ministry of Education until 1982, when it came under the responsibility of Bogaziçi University. This library contains manuscripts on the subjects mentioned above, donated to the Institute by the founder and the first director of the observatory, Fatin Gökmen (also known as Fatin Hoca), who began operations in July 1911.

Bibliography:

- Kandilli Rasathanesi Kitaplığı Yazma Eserler Katalogu II, Derleyen Rifki Seven, İstanbul: MEB Kandilli Rasathanesi, 1977.
- Kandilli Rasathanesi Kitaplığı Takvim Katalogu, Düzenleyen Muammer Dizer ve Atila Özgüç, İstanbul: MEB Kandilli Rasathanesi, 1973.
- Kandilli Rasathanesi Kitaplığı Yazma Eserler Katalogu I, Düzenleyen Muammer Dizer, İstanbul: MEB Kandilli Rasathanesi, 1973.

Management Plan

There is no preservation budget. The collection is stored in a single room in glass cabinets and the manuscripts are put into individual envelopes. There are no special regulations of room temperature or humidity. The manuscripts have been microfilmed for recovery purposes. There is no preservation staff, but one person has been assigned responsibility for these manuscripts.

Assessment against the Selection Criteria

Influence: Some of the manuscripts of the collection are important works on astronomical observations such as MS no 262/2, Arabic, Sarh Zîc Ulug Beg by Ali Kuscu (died 5 Saban 899/December 15, 1474); MS no 274, Arabic, Ahkâm at-Tusî wa't-tasayyurat by Tusî (597-672/1201-1274); MS no 352, Arabic, Tahdîd nihâyât al-amâkin tashîh masâfât al-masâkin by Bîrunî (362-443/973-1051). These works are significant for the world history of science because they indicate the early beginning of studies on astronomical observations in the Islamic world, which had a great influence on similar studies in Europe. (see J. Samsó. "Marsad". The Encyclopedia of Islam. V. 6. Leiden: E. J. Brill, 1991. pp. 599-602.)

Time: The collection holds 1339 works in astronomy, astrology, mathematics, geography and miscellaneous written in various dates from 11th to the early 20th centuries.

In the Islamic world, astronomical and astrological works and calendars were used in the following areas: determining the proper time for planting and harvesting in farming, determining eclipses of the sun and moon, determining the appropriate organization of one's day, ship navigation (for example, when the rûz-i Kasim or the winter arrives the ships come into harbour and war and merchant ships do not navigate), finding directions and the time with an astrolabe; determining prayer times in accordance with the position of the sun, determining sunrise and sunset as well as the rising and setting of the moon, determining the arrival of Nevrûz (the first day of spring) and the start of the Celâlî year according to Nevrûz, setting the time for judicial events and organizing social life, such as setting work hours. In other words, astronomical and astrological works were extremely important in organizing daily, religious, judicial and social activities.

People: The collection gains importance as it contains works by Takiyeddîn (927-993/1521-1585), the important Ottoman mathematician and astronomer Ali Kuscu (d. 5 Saban 899/December 15, 1474), Ulug Bey (d. 853/1449) (see L. Bouvat, Orhan Köprülü, "Ulug Bey", İslâm Ansiklopedisi, c. 13, İstanbul: Kültür ve Turizm Bakanlığı, 1988, pp. 27-29), Kadizâde Rumî (d. 815/1412-13) (see Brockelmann, C., Geschichte der Arabischen Literatur, Leiden: Brill, 1937-1949; I, 473; II, 212; S I 869; Ekmeleddin İhsanoglu, Ramazan Sesen and others, Osmanlı Astronomi Literatürü Tarihi / History of Astronomy Literature During the Ottoman Period I-II, v. 1, İstanbul: IRCICA, 1997, pp. 5-21), and other well known mathematicians, astronomers and chronometrists in the Islamic world.

Subject/Theme: The collection includes works on following subjects: Astronomy –General astronomy, astronomical instruments, calendars (Annual calendars or Takvîm-i sâl, Annual movement and influences of the stars and calendars or Ahkâm-i tâli-i sâl ve takvîm, Tables for initial day of the month or Gurrenâmes, Daily calendars or Rûznâmes, Yearly tables or Sinîn cetvelleri, Animal calendars or Sâl-i Türkân), times of prayer, Astronomical tables or Zîcs, altitude lists; Astrology –General astrology, Influences or Ahkâm, Calendars of influences or Ahkâm takvîmleri; mathematics, geography, miscellaneous.

Form/Style: The manuscripts contain some calendars that are designed according to each month of a year with gold gilded and black colours and contain figures of the partial and total eclipses of both the sun and moon. Calendar scrolls are important pieces of ornamental and elegant artistic handwork. The collection is also important because it consists of various astronomical tables prepared through the use of Takiyeddîn's works, the translations of Ali Kuscu's Hulâsatu'l-hey'e and Mirkatu's-semâ and Ulug Bey's astronomical tables.

Social Value: The first calendar that occupies a significant place in the Islamic world is Turkish and was presented to Fatih Sultan Mehmet (Mehmet the Conqueror). This work, entitled Takvîm ve ahkâm-i sâl, comprises tables of the names of the Ottoman Sultans up to Fatih Sultan Mehmet, shows the signs of stars and planetary houses, the qualities of good and bad vibrations in the body, superstitious observances related to the stars and planets and the four seasons of the year. This calendar was prepared for the year 1452 AD (See Fehmi Edhem Karatay, Topkapi Saray Müzesi Kütüphanesi Türkçe Yazmalar Katalogu, v. 1, Istanbul: Topkapi Sarayı Müzesi, 1961, p. 536). The Kandilli collection contains another calendar in Persian prepared in 1489-90 AD and presented to Sultan Beyazıt. As seen in Bayezıt's own manuscripts, the Sultan's personal seals are found at the beginning and end of this calendar. In addition, since this collection contains works on astronomy, astrology, mathematics and geography produced over many centuries, it reflects the cultural and scientific accumulation of a nation. In particular, the rûznâmes are important in showing the religious festivals and prayer times of the time in the Islamic world. In his work Osmanlı Türklerinde İlim, Abdülhak Adnan Adivar (See Abdülhak Adnan Adivar, Osmanlı Türklerinde İlim, 2th ed., Istanbul: Maarif Vekaleti, 1943 and Abdülhak Adnan Adivar, Osmanlı Türklerinde İlim, 3th ed., Istanbul: Remzi, 1970) traces the history of science among the Ottoman Turks, relying on various sources found in the Kandilli Observatory Library (including Lalande's Tables astronomiques, a Turkish copy of Cassini's tables of astronomy and Takiyeddîn's Âlâtu'l-rasadiye li-zîc-i sehinsâhiye etc). Since some works in this collection are not known by numerous scholars and experts they possess importance of an original nature.

Integrity: Although some other manuscript libraries in Turkey house works on the history of science in the Ottoman Empire, this documentary heritage on the whole shows unity in terms of its subject matter. Therefore, scholars who can

make use of microfilms, photocopies and the manuscripts themselves in one place will save time in their research.

Rarity: This collection is also extremely important in that it houses a number of unique and rare copies of certain works dating back to early periods of history. The oldest works in this collection are *Risâle-i sî-fasl*, translated into Turkish by Ahmed-i Daî (died after 824/1421) from Persian in the first half of the 15th century, *Tahdîd nihâyât al-amâkin tashîh masâfât al-masâkin* in Arabic by Birunî (362-443/973-1051) in 1025 AD and *Lubab al-ihtiyarât fî ta'yîn al-awkât* in Persian by Husayn b. Ali b. Hasan Bayhakî al-Kâsifî Husayn Waiz (died 910/1505) in 1461-62 AD.

Contextual assessment: Although some libraries in Turkey and around the world (such as British Library, Bibliothèque Nationale, Bodleian Library etc.) hold various works on the history of science in the Ottoman Empire, the Kandilli Observatory collection houses calendars, altitude tables and the translations of Ulug Bey, Lalande and Cassini's works all together. In his work *Carîdat ad-Durar wa Harîdat al-Fikar*, Takiyeddîn arranged the trigonometry tables in accordance with decimal fractions, bringing a resolution to this matter for the first time. This invention was a proud discovery for both Turks and Muslims. Earlier, this subject was taken into consideration by Giyaseddin Cemsid al-Kâsî (died 841/1437) in his work *Miftâh al-hisâb*, but he failed to reach a solution (See Ekmeleddin Ihsanoglu, Ramazan Sesen and others, *Osmanli Astronomi Literatürü Tarihi / History of Astronomy Literature during the Ottoman Period I-II*, v. 1, Istanbul: IRCICA, 1997, p. 203). The importance of this documentary heritage compared to other heritages can only be determined by those experts specializing in it. This determination is related to the copy dates of manuscripts, their readability and completeness (some manuscripts may lack pages in the beginning, middle and end) found in various manuscript libraries.

Authenticity: Each manuscript has authenticity in itself. As people are all individuals, so each manuscript is individualistic in accordance with the type of writing, paper, binding, shape and other characteristics. Thus, one can argue that the collection of this documentary heritage is authentic in its own right.

Rarity: Although some other libraries have copies of the well-known work, *Marifetnâme*, by Erzurumlu Ibrahim Hakki (died 1194/1780), two copies of this work in this collection gain attention for their miniatures and the delicacy of their drawings. The collection also possesses a rare copy of the important work by Takiyeddîn, *Âlât al-rasadiyya li-zîc sahinsâhiyya*, in which the equipment used in the Istanbul observatory are described. Sevim Tekeli's article calls our attention to this point (See "*Âlât-i Rasadiye li-zic-i sehinsahiye*", *Islâm Tetkikleri Enstitüsü Dergisi* 3, nos 1-2 (1960): 1-30). In addition, the collection contains a rare copy in Arabic of *Sidrat al-muntahâ al-afkâr fî malakût al-falak al-dawwâr* by Takiyeddîn. Takiyeddîn wrote this work in order to correct and complete Ulug Bey's astronomical tables, based on his observations in Egypt and Istanbul. With

regard to calendars in the collection, most of them were prepared for presentation to the Sultans. This is another unique characteristic of the collection.

Consultation

Owner: Bogaziçi University, Kandilli Observatory and Earthquake Research Institute

Custodian: Bogaziçi University, Kandilli Observatory and Earthquake Research Institute

Regional or National Memory of the World Committee: Prof. Dr. Ayse Soysal

Independent institutions and experts: Published sources describing the Kandilli Observatory:

- Prof. Dr. Ramazan Sesen, expert on Arabic manuscripts, IRCICA

Address: Barbaros Bulvari, Yıldız Sarayı Köskü, Beşiktaş, İstanbul, Turkey

- IRCICA (Islamic Research Center for Islamic History, Art and Culture Library) undertakes research, publication, documentation and informative activities on Islamic culture and civilization in various subject areas including history, history of science, arts and cultural heritage.

Address: Barbaros Bulvari, Yıldız Sarayı Köskü, Beşiktaş, İstanbul, Turkey

- The Süleymaniye Library, which has the largest collection of manuscripts in Turkey, contains collections received from 109 foundation libraries and the donations of various individuals and institutions.

Address: Süleymaniye Mahallesi, Ayşe Kadın Hamamı Sokak, No: 30-35, Süleymaniye, İstanbul, Turkey.

Nominator

Name: Bogaziçi University, İstanbul, Turkey

Relationship to documentary heritage: Owner

Contact person: Prof. Dr. Ahmet Mete İsikara

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