A List of Arabic Manuscripts of Naṣīr al-Dīn al-Ṭūsī's Taḥrīr al-Majisṭī

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ABSTRACT: The *Taḥrīr al-Majisṭī* by Naṣīr al-Dīn al-Ṭūsī is known to have survived in several dozen manuscript copies in different parts of the world. At present, however, we do not have a full list of the preserved manuscripts —or any record that might serve as a basis for drawing up a list of this kind. For the first time, the present article gathers together information on more than a hundred Arabic manuscripts of the *Taḥrīr al-Majisṭī*, identified through an extensive search in manuscript-catalogues, collection reports and, when possible, by inspection of manuscript copies. Special importance has been given to clarifying the bibliographical situation of each manuscript, particularly concerning the printed catalogues. The article consists of four parts: 1. A brief introduction; 2. A description of the methodology; 3. The list of manuscripts; 4. Concluding remarks.

KEYWORDS: Naṣīr al-Dīn al-Ṭūsī, Arabic manuscripts, *Taḥrīr al-Majisṭī* (*Exposition, Commentary, Recension, Almagest*), manuscript catalogues.

1. INTRODUCTION

Naṣīr al-Dīn al-Ṭūsī (1201-1274, mainly in the area of present-day Iran) was one of the most influential astronomers of medieval times.² Among his numerous

1. I express my gratitude to Dirk Grupe, who was ready to help at all times during the preparation of this article.

2. A rich amount of literature on al-Ṭūsī and his work is available. For a brief account and selected publications see, e.g., Ragep, 'Ṭūsī'. pp. 1153-1155.

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works, the *Taḥrīr al-Majisṭī* (*Exposition, Commentary, or Recension of the Almagest*), dated 5 Shawwāl 644 AH (13 February 1247), was particularly important: in fact, in Islamic astronomical studies it largely replaced Ptolemy's *Almagest*, which had been available in Arabic in various translations since the ninth century. In the *Taḥrīr al-Majisṭī* al-Ṭūsī presents Ptolemy's arguments in a revised manner that is easier to understand. On occasions in the *Taḥrīr* al-Ṭūsī also discusses differences between the Arabic versions of the *Almagest*, particularly the ones translated by al-Ḥajjāj, Ishaq ibn Ḥunayn (probably revised by Thābit ibn Qurra), and a third one by Thābit ibn Qurra himself.

Al-Ṭūsī's previously unnoticed remarks in the *Taḥrīr al-Majisṭī* recently enabled the identification of a newly found Arabic tradition of the *Almagest* as representing the previously unknown translation of Ptolemy by Thābit ibn Qurra.³ Research made in the preparation of the present article have revealed further instances in which al-Ṭūsī makes use of Thābit ibn Qurra's translation of the *Almagest* or relates it to the other versions.⁴

The *Taḥrīr al-Majisṭī* also contains theoretical innovations by al-Ṭūsī, including the famous Ṭūsī-couple, which is described in Book XIII.⁵ Al-Ṭūsī is

3. Grupe, 'The Thābit-Version', establishes (against previous belief) that Thābit ibn Qurra translated Ptolemy's *Almagest* into Arabic, and that MS Dresden, SLUB, Db. 87 contains a Latin translation of Thābit's version of the *Almagest*. In 2015, Grupe ('Further Witnesses') was able to prove his assumption from 2013 ('PhD dissertation', p. 128, note 152) that the Arabic text in MS Jaipur, Maharaja Sawai Man Singh II Museum Library, 20, is a representative of Thābit ibn Qurra's translation of the *Almagest*. In the same work from 2015, Grupe also demonstrated the survival of large portions of Thābit's translation in MS Tehran, Majlis-Sena, 1231, and also the importance of Thābit's *Almagest* for the astronomical works of Avicenna, al-Nisābūrī, al-Abharī and other Islamic astronomers. During a research stay in Jaipur between September and November 2018, Dr. Grupe and I had the opportunity to transcribe the *Almagest* fragment in MS Jaipur 20, on which occasion Grupe could also compare the text with his prepared edition of the Latin translation in MS Dresden, SLUB, Db. 87. The comparison has confirmed Dr. Grupe's conjecture from 2015 that, among the known Arabic witnesses of Thābit ibn Qurra's translation, the Jaipur *Almagest* corresponds most closely to the Latin text, and it has revealed a high degree of authenticity of the late Jaipur copy; an article by Dr. Grupe on the results of the comparison between the Jaipur and the Dresden texts is forthcoming. Editions of Thābit ibn Qurra's version of the *Almagest* in Arabic, based on the Jaipur manuscript, and in Latin, based on MS Dresden Db. 87, are currently prepared by Dr. Grupe and me.

4. See below the descriptions of MSS Berlin, SBPK, Sprenger 1838, and Cairo, Dār al-Kutub, Hay'a 17. See also below, on MS Tehran, University Library 468.

5. Saliba, 'The Role'.

justly accredited with developing the Ṭūsī-couple for a variety of purposes.⁶ Experiments with inversely rotating spheres at double speeds, however, are known to have been performed in Syria already in the twelfth century.⁷

Due to its popularity, al-Ṭūsī's *Tahrīr al-Majisī* became the most frequently copied Arabic commentary on the *Almagest*. This ensured its survival until the present day in a large number of manuscripts, many of them complete. Despite the importance of the work, however, no critical edition of the *Tahrīr al-Majisī* has yet been made. Nor is there any comprehensive account of the preserved manuscripts; the most extensive list currently available, established by Rosenfeld and İhsanoğlu, includes around sixty shelf marks of manuscripts considered to contain the *Tahrīr al-Majisī*.⁸

The following list combines information from manifold sources, printed or online, reporting the existence of manuscripts of the *Tahrīr al-Majisī* and their respective repositories. In many cases, I have been able to clarify vague or contradictory information in the available sources, often based on digital copies of the manuscripts. This study has also enabled me to expand the known corpus with the addition of several copies of the *Tahrīr* which were previously recorded only in local catalogues. While many libraries provide useful information about their manuscripts online, it has been a priority in the present article to document the printed catalogue for each manuscript as its primary bibliographical reference.

In the cases in which I have been able to access a copy of a manuscript, an independent description is given. The following conventions are used in the Arabic transcriptions:⁹ square brackets [] contain editorial additions where the text was erroneously omitted by the scribe; a dot within square brackets [.] stands for an illegible word; an underscore between square brackets [_] indicates a lacuna, e.g., due to holes or absence of ink; and finally underlined words are speculative.

2. TEMPLATE FOR THE DESCRIPTIONS.

The list of manuscripts is organised alphabetically by repository (city and library) and shelf mark. An asterisk (*) follows the numeration in cases in which

6. Ragep, 'From Tūn to Toruń'.

7. Grupe, 'Stephen of Pisa's theory', pp. 392-394.

8. See MAOSIC, p. 215.

9. I am grateful to Julio Samsó, whose suggestions helped me to interpret many difficult readings.

I was able to examine the manuscript, normally using a digital copy. For descriptions of the manuscripts examined I have created the following template, which is divided into four parts: ‘context’, ‘content’, ‘codicology’ and ‘references’.

Context. This first part of the template indicates whether the manuscript contains the *Tahrīr al-Majisī* on its own, or as a part of a collection; in the case of a collection, the number of works is specified. This information is followed by the dates of the copy, the collation or the composition, the name of the copyist and the place of production if available, along with the respective folio or page numbers. Additionally, particular features of the manuscript that can help to contextualise the copy are transcribed or reported:

- *Titles*: work titles appearing in the manuscript, written by, for instance, the copyist, a later hand or a cataloguer.
- *History*: statements and seals pertaining to the manuscript’s history.
- *Others*: further elements such as poems, drawings or short pieces of text, relevant to the context of the manuscript.

Items under the above points are numbered consecutively and preceded by their folio or page number.

Content. The works in the manuscript are listed, if possible by their titles or other identifications as found, e.g., in introductions or colophons. Folios or pages occupied by each part are also given. In several cases I noticed that the text is followed by a small set of chapters appended to the work which deal with the inferior planets, Mercury and Venus. In the descriptions, I therefore refer to this part as *Appendix* which, in its most extended form, consists of three chapters. While the order of these chapters occasionally varies, the following arrangement is used as the standard model for the descriptions:

- (1) نريد أن نثبت اختلاف وقوع الخطوط في الأشكال التي يعرف منها أوضاع مراكز أفلاك عطارد في مسيراتها ومقادير أبعاد مركز التدوير عن مركز العالم ومعدل المسير ومقادير اختلافه الأول بحسب الإبعاد المختلفة ومقادير أبعاد العظام ايضاً
- (2) مقدّمة نافعة في معرفة الاختلافات التي تحدث بسبب الخروج عن المركز
- (3) في تشكّل الزهرة في الفصل الثاني من المقالة العاشرة من المجسطي

Due to the frequent occurrence of the *Appendix* in the manuscripts examined and its apparent connection to the *Tahrīr al-Majisī*, I identify the copies of the *Tahrīr* which are not accompanied by the *Appendix* (and were probably not at an earlier stage either) as “Type A”, and those with the *Appendix* as “Type B”. This classification into “Type A” or “B” is followed by an indication of the copy as being complete or incomplete and an identification of the possibly missing part. In some cases, the foliation of each Book-section is also indicated and, if considered relevant, transcriptions from a colophon.

Codicology. This section contains brief information on the total number of folios or pages; the type of foliation and its placing; the script; presence and quality of diagrams and tables; occurrence of marginal notes; ink color. Other codicological details such as page size, number of lines per page, or material of the cover were deemed less relevant for the purpose of the present list and are not included.

References. Bibliographical references to the printed catalogue(s) and/or bibliographical repertories in which the manuscript is listed, described or previously mentioned. Obscurities and potential discrepancies between the references are discussed and clarified where possible.

3. LIST OF MANUSCRIPTS

(1) **Ahmedabad, Hazrat Pirmohammedshah Dargah Sharif Library, 1010.**

69 fols; dated 1149 AH (1736/37) and written by Abū Amīr Muḥammad Hāshim; in the printed catalogue the MS is described as an *Almagest* (المجسطي) of which only Book I is preserved; however, the portion of text transcribed by the cataloguer corresponds to the *Tahrīr* [*Dargah Sharif*, pp. 214-215].

(2) (*) **Alexandria, Municipal Library, 12591**

Context. A single work; dated 1037 AH (1627/28) by Murtaḍā Muḥammad (f. 160v).

Content. Type A, incomplete; a large part of the introduction (from the beginning until close to the end) is missing in this manuscript.

Codicology. 160 fols+i; foliation with Eastern-Arabic numerals on each recto in pencil; a single ordinary script; black and red ink; abundant marginal notes; diagrams and tables.

References. *Alexandria*, p. 76.

(3) (*) **Aligarh, Maulana Azad Library, Abd al-Hayy 629/6**

Context. A single work.

Content. Incomplete (until Book XII);

Codicology. 126 fols; foliation in Urdu numerals on each recto in pencil; a single hand in *nasta'liq* script; empty tables; red and black ink.

References. The manuscript is listed on p. 23 of the electronic handlist for the Abd al-Hayy collection [See below *Note on the Aligarh manuscripts*]

(4) (*) **Aligarh, Maulana Azad Library, Subhanullah 520/8**

Context. A single work; in the colophon (f. 125r) the date of the copy and the name of the copyist are smeared. However, a handwritten card gives the name of the copyist as:

بخط اشكي الهي بن فلسفي رياضي.

The librarian informed me that the identification of the copyist may be an assumption deriving from the reading of the two last visible letters of the name *فلسفي* in the colophon.

Content. Type A, complete; fols. 252-254 contains empty frames.

Codicology. 254 fols; foliation in Urdu numerals on each recto in pencil; a single *nasta'liq* script; black and red ink; abundant marginal notes from another treatise; diagrams and tables.

References. [*Aligarh, Subhan Allah*, p. 121].

(5) (*) **Aligarh, Maulana Azad Library, Suleman 164/24**

Context. A single work; the colophon states that it was copied from another copy dated Wednesday, 22 Ramaḍān [no year] by Maḥmūd al-Khaṭīb in Marāgha.

Content. Type A, complete.

Codicology. 160 fols; unfoliated; a single hand in *nasta'liq* script; tables, diagrams; red and black ink.

References. The manuscript is listed on slide 4 of the electronic handlist for the Suleman collection [See below *Note on the Aligarh manuscripts*].

(6) (*) **Aligarh, Maulana Azad Library, Suleman 165/25**

Context. A single work; the colophon states that it was copied from the autograph; the date is given as Wednesday, 22 Ramaḍān and the copyist is named as Maḥmūd al-Khaṭīb.

- *History:* the names of Muḥammad [] al-Qashawarī and Muḥammad ‘Abd al-Ḥalīl al-Ulūwī (?) appear in a statement following the ending of the text dated Saturday, 9 Muḥarram 1346 AH (9 July 1927).

Codicology. 185 pp.; paginated with Urdu numbers in ink;

References. The manuscript is listed on slide 4 of the electronic handlist for the Suleman collection [See below *Note on the Aligarh manuscripts*].

(7) (*) **Aligarh, Maulana Azad Library, Suleman 174/34**

Context. A single work.

Content. Incomplete; it is preserved from around a page before the beginning of Book I until the middle of Book v.

Codicology. 72 fols; unfoliated.

References. The manuscript is listed on slide 4 of the electronic handlist for the Suleman collection [See below *Note on the Aligarh manuscripts*].

(8) (*) **Aligarh, Maulana Azad Library, Shīftah 155/191**

Context. A collection of two works; a note close to the colophon of the *Tahrīr* states that the model copy for the present copy was made on Jumādā I 664 AH (February/March 1266).

- *History:* an ownership statement is dated 1248 AH (1832).

Content.

(a) *Tahrīr al-Majisī*: Type A, complete;

(b) Treatise of four pages: the title and beginning of the first chapter are:

معرفة اطول البلدان من الساعات
فيكن احد البلداين او الاخر ا ب وخط الاستواء ج د وقطبه...

Codicology. 145 fols; the foliation occurs only on some pages without system; diagrams and tables.

References. *Aligarh*, Amrohvi, no. 69, p. 27.

Note on the Aligarh manuscripts:

Lists of Arabic manuscripts, organized by collection, at the Maulana Azad Library are available at the website of the Aligarh Muslim University. For

each of the Suleman and the Abd al-Hayy collections a handlist in electronic format is also available. This handlist is based on hand-written records, with brief information about each manuscript, including title, number of folios and, occasionally, a date. According to the librarians, the handlists are still subject to corrections. In addition, a searchable online catalogue of manuscripts at the Maulana Azad Library has recently been initiated under the direction of Dr. Amjad Ali.¹⁰ The shelf marks of the above MSS nos. 3 and 5-7 are listed in MAOSIC, p. 215, along with a certain MS Shaifta 38/1, which I have not found in the printed catalogue; MS Shīftah 155/191, which I found listed in the printed catalogue, is not mentioned in MAOSIC.

(9) **Baghdad, Awqāf Library, 5421**

217 fols; dated 1017 AH (1608/09) by Muḥammad Nūr al-Dīn al-Ḥusaynī. [*Mawrid*, p. 377].

(10) **Baghdad, Awqāf Library, 5436**

143 fols; dated 1128 AH (1715/16) by Muḥammad ibn ‘Alī al-Bābāṭāghī. [*Mawrid*, p. 377].

(11) **Baghdad, Awqāf Library, 5498**

157 fols; dated 788 AH (1386/87) by Mūsā b. Faṭḥ Allāh b. al-Naṣr al-Lajandānī; a transcription of the beginning of the text is provided in the printed catalogue. [*Mawrid*, p. 377].

(12) **Baghdad, Museum Library 10116**

344 pp.; dated 1312 AH (1894) by Hādī b. ‘Abbās Najl al-Shaykh ‘Alī; abundant marginal notes and comments. [*Mathaf al-‘irāqī*, pp. 28-29, describing the MS as “another copy” of the *Taḥrīr al-Majisṭī*, with reference to the following one, from which transcriptions are given].

10. I am grateful to Dr. Amjad Ali and his team at the Maulana Azad Library for the helpfulness which Dr. Dirk Grupe and I received during a visit to the library in October 2018. On the occasion of our visit, Dr. Grupe could identify MS Abd al-Hayy 126/19 as containing a copy of al-Shīrazī’s *Talkhīṣ al-Majisṭī*; the text is erroneously described as a translation of the *Almagest*, on p. 4 of the handlist for the Persian section of the Abd al-Hayy collection.

(13) **Baghdad, Museum Library 18339**

366 pp.; dated 1027 AH (1618) by Aḥsan b. Muḥammad, known as Qāḍī Aḥsan, from a copy made in the hand of Birjandī; abundant marginal notes and comments. The catalogue provides a transcription of the beginning and the book headings. [*Maṭḥaf al-irāqī*, pp. 28-29].

(14) **Baku, Academy of Sciences, M 428**

The MS is described as a *Taḥrīr al-Majisī* on the website of the Academy of Sciences, Institute of Manuscripts, in Baku. No further information is given. [The MS is listed in MAOSIC, p. 215].

(15) (*) **Berlin, SBPK, Sprenger 1838**

Context. A single work; (f. 152r) a colophon contains the date of composition, followed by what seems to be the date of a former copy, Wednesday 22 Ramaḍān [year missing] by Maḥmūd al-Khaṭīb in Marāgha (cf. MS Cairo, Dār al-Kutub, Hay'a 17).

- *Title:* (f. i-v) اصل مجسطي, presumably by a later hand;
- *Others:* (f. ii-r) two geometrical figures, accompanied by explanatory texts in Persian in which the name Birjandī (*sic*) is mentioned.

Content. Type B, complete; (fols 1v-152v) *Taḥrīr*; (fols 153v-158r) *Appendix*. Collation marks, بلغ, appear frequently in the margins; (fol. 4r) a marginal note to ch. 1,7 refers to proposition 4 of Theodosius' *Spherics* 1; (f. 22r-v) the table¹¹ corresponding to Ptolemy's description of the parallels in *Alm.* 11,6 includes in red numerical and textual variants which, according to a marginal note, result from a comparison with another copy written by Abū al-Rayḥān: e.g., the second parallel through the island Taprobane is transcribed as جزيرة طروفاني and the variant جزيرة برانن, the Island of Meroe as جزيرة باروي and the variant جزيرة بروس, etc.

Codicology. 1 flyleaf+ ii+160+ii+ 1 flyleaf; two sets of foliation on each folio, one in Perso-Arabic and the other in European numerals; a single hand in *nasta'liq* script; black and red ink; spaces for diagrams and tables are occasionally left empty.

11. Here al-Ṭūsī follows Thābit ibn Qurra's translation of the *Almagest*, where Ptolemy's extensive description of the parallels has been recast into a table; Grupe, PhD dissertation, pp. 83 and 312, relating to MS Dresden, SLUB, Db. 87, fol. 20v, l. 1-2

References. Ahlwardt, *Verzeichniss*, vol. 5, pp. 143-144 and 161, where the *Tahrīr* (no. 5655) and the *Appendix* (no. 5680) are treated separately and where an estimated date of the collation is 1215 AH/1800; the manuscript is digitalized and available at the ECHO Cultural Heritage Online website.

(16) (*) **Cairo, Dār al-Kutub, Hay' a 17**

Context. A single work; undated, but a colophon (f. 124r) states that the copy derives from another one dated Wednesday, 22 Ramaḍān 663 AH (8 July 1265) in Marāgha.

- Titles: (title page, f. 1r) تحرير المجسطي (كذا) لبطلميوس تحرير نصير الدين الطوسي, probably added by a later hand.
- *History*: (title page, f. 1r) a statement in Arabic on the library's acquisition of the manuscript in the name of a certain Mister Kurtish (transliterated); a circular blue seal with an unclear inscription, stamped also on f. 129v.

Content: Type B, incomplete; (fols 1v-124r) *Tahrīr*, complete; Books: I, fols 1v-16r, II, fols 16r-28r, III, fols 28r-36r, IV, fols 36r-47r, V, fols 47r-58v, VI, fols 58v-68v, VII, fols 70v-78v, VIII, fols 78v-89v, IX, fols 89v-102r, X, fols 102r-105r, XI, fols 105r-112r, XII, fols 112r-116v, XIII, fols 117r-124r; (fols 125v-129v), *Appendix*, incomplete, ending after Chapter 2.

Marginal notes include references to other sources, including Theodosius' *Spherics*. (f. 18r). The table of the geographical parallels has, again, the variants in red for the names of locations accompanied by the marginal note referring to Abū al-Rayḥān. (f. 90v) A marginal note to a passage in Book IX, 2 on the use of the so-called "abadī" ("aeonian") tables¹² refers to Abū al-Rayḥān's mention of other *zīj*es of the same type,

12. For a discussion of these tables see Toomer, Ptolemy's *Almagest*, p. 422, n. 12. In his introduction to Ptolemy's tables of the mean planetary motions in Alm. IX,3, al-Ṭūsī provides, in the *Tahrīr al-Majisī*, a small table (f. 91r in the present MS) containing different notations of the fractions in the periods of returns in anomaly, derived from each one of the three Arabic translations of the *Almagest*, by al-Ḥajjāj, Ishaq ibn Ḥunayn, and Thābit ibn Qurra alone, and from al-Bīrūnī. Notably, according to al-Ṭūsī, in his own translation Thābit follows the notation of al-Ḥajjāj rather than Ishaq's, which Thābit himself revised.

including Tīmūkhāris' *zīj*,¹³ *zīj al-Kurūm*, *zīj al-Aṣābi*, *zīj al-Saghīr*, *zīj al-Ikhtiraqāt*, etc.:

ذكر أبو الريحان أنَّ الجداول الأبدية كزيج طيموخارس المعمول لدقريطانوس وزيج الكروم
وزيج الأصابع وزيج السغير. وزيج الاحتراقات وزيج الحقبه فإنها معمول باظهر الاختلافين
وهو الذي بالإبعاد عن الشمس فيما من الاختراقين (١٢) هـ.¹⁴

Codicology. 129 fols; foliation in Perso-Arabic numerals in pencil on each recto; a single hand in an elegant and careful *naskh* script; a very fine copy; text within a frame inside a larger frame close to the edge of the paper; both frames in blue and golden ink; (f. 1v) an ornamental headpiece; (fols 1v-2r) a golden flower motif fills the space between the two frames, and golden lines fill the interlinear space; golden, black, red and blue ink; diagrams, tables and some glosses.

References. Listed in King, *Fihrist*, vol. 1, p. 210, and vol. 2, pp. 6-7, item 1/1/6, where the estimated date is 1150 AH; also listed in MAOSIC, p. 215.

(17) (*) **Cairo, Dār al-Kutub, K 3822**

Context. A single work; (f. 191v) dated on a Tuesday between 1-10 Jumādā I 1116 AH (1704) by 'Abd al-Nādim 'Abd al-Wahhāb al-Khādim al-[.], as written vertically in a marginal text:

قد وقع الفراغ من كتابة هذه النسخة الشريفة المسمى بالمجستي (كذا) في المشهد المقدس
للسلطان علي بن موسى الرضا عليه التحية والثناء يوم الثلاثاء من العشر الأول من شهر
جمادى الأول من شهور سنة ستة عشر بعد المائة والألف [.] من الهجرة النبوية المصطفوية
على يد العبد النادم عبد الوهّاب الخادم. [dark stain in the script]

(f. 191v) the main text is followed by what the copyist indicates to be a reproduction of the colophon that he found in the copy he used. Accordingly, the former copy was dated Jumādā I, 678 AH (September/October 1279)

13. This *zīj* is mentioned in BIRŪNĪ, *Qanūn Mas'ūdī*, p. 141.

14. The number '12' is used by the glosser as a mark to indicate that the text derives from the exemplar; this is explained in a note to the introduction of the *Tahrīr*.

and was reproduced from another copy handwritten by Quṭb al-Dīn al-Shīrāzī, who made his copy from al-Ṭūsī's exemplar.

- *Titles*: (title page [f. 1r?]) تحرير المجسطي للمحقق الطوسي.

Content. Type A, complete; Books: a foliation of Books I to IV is invisible in my copy, v, 68r-87r, vi, fols 87v-102r, vii, fols 102v-116r, viii, fols 116r-130v, ix, fols 130v-150r, x, fols 150v-156r, xi, fols 156r-169v, xii, fols 169v-177r, xiii, fols 177v-191v.

Codicology. 191 fols; foliated with Eastern-Arabic numerals on each recto; another set of foliation is stricken through; the beginning of each group of eight folios is indicated by an *abjad* numeral in the upper-left corner on the recto page; the first page is written in a different hand, both handwritings in an ordinary *naskh* script; tables, diagrams and many marginal notes (description based on a black-and-white copy).

References. Listed in King, *Fihrist*, vol. 2, p. 7; also listed in MAOSIC, p. 215, as Falak 3822.

(18) (*) **Cairo, Dār al-Kutub, K 8530**

Context. A single work; undated, but in the colophon (f. 222r) it is said that the text was copied by Mīrzā ‘Abbās from another manuscript which was dated Thursday 12 Rajab 1252 AH (23 October 1836) by ‘Abd al-‘Alī al-Birjandī (*sic*). Proper dates appear also in the colophons of the following Books: I, f. 25r, 26 of Rabī‘ II 1252 AH (10 August 1836), vii, f. 141r, Tuesday, 16 of Jumādā I 1252 AH (29 August 1836), ix, f. 178r, Friday, 4 of Jumādā II 1252 AH (16 September 1836), xi, f. 196v, 8 Jumādā II 1252 AH (20 September 1836).

- *Titles*: (f. ii-v) المجسطي المنسوب إلى بطليموس القلوزي للخوجه نصير الدين الطوسي, written by a modern hand.
- *History*: King gives the name ‘Alī b. Taḥsīn as the former owner of the manuscript, but I cannot find this name in my copy. (f. 1r) A rectangular seal, whose inscription is not legible in my copy.
- *Others*: (fols 223r-224v) an incomplete index of chapter titles of the *Taḥrīr* by a modern hand.

Content. Type A, complete; Books: I, fols 1v-25r, ii, fols 25v-45r, iii, fols 46r-60r, iv, fols 60v-76v, v, fols 77r-97v, vi, fols 98r-118r, vii, fols 119r-141r, viii, fols 141v-158v, ix, fols 159r-178r, x, fols 178v-184r, xi, fols 184v-196v, xii, fols 197r-208v, xiii, fols 209r-222r.

Codicology. ii+224; foliation in Perso-Arabic numerals on each recto; a

single hand in a very neat and clear *naskhī* script; text within a frame; some tables are left empty (description based on a black-and-white copy).

References. Listed in King, *Fihrist*, vol. 1, p. 355, and vol. 2, p. 7, item 1/1/6; also listed in MAOSIC, p. 215, as Falak 8530.

(19) (*) **Cairo, Dār al-Kutub, Ṭal'āt hay'a 43**

Context. A single work; (f. 91v) dated 898 AH (1492/93) by Muḥammad b. al-Faṭḥ al-Ṣūfī,¹⁵ according to a note in an unknown hand which follows the colophon:

الحمد لله قوبل وتمم على يد كاتبه الفقير إلى الله تعالى محمد بن أبي الفتح الصوفي [...] غفر
الله له ول[أ]ولاده فتمم سنة ٨٩٨.

The year and the name of the copyist are also written on the title page, f. 1r. At the end of some books, dates are written which are copied from a former copy containing annotations by Muḥammad b. al-Mu'ayyad al-'Urḍī (see item 1 under *others*);¹⁶ the dates (all between 1272 and 1274 AD) are written in an abbreviated form mixed with the *abjad* system, which I interpret as follows (*jīm* and *dāl* at the beginning are the third and the fourth days of the week, Tuesday and Wednesday):

Book III, f. 26v, Wednesday, possibly 13 Ramaḍān 670 AH (April 1272):

د يج رمضان المبارك سنة خع تعليق العبد الفقير إلى الله تعالى محمد بن المؤيد العرضي عفا
الله عنه منقولة من خطا (كذا) المحرر

Book IV, f. 34v, Tuesday, 15 Dhū al-Ḥijja 670 AH (13 July 1272):

ج يه ذي الحجة سنة ٧٦٠ على يد الفقير إلى الله محمد بن المؤيد العرضي عفا الله عنه

15. This is mostly likely Shams al-Dīn Abū al-Faṭḥ Muḥammad b. Aḥmad al-Ṣūfī (d. 950 AH), see Fazlroḡlu, 'al-Ṣūfī', p. 547.

16. Shams al-Dīn Muḥammad al-'Urḍī (ca. 1279), son of the well-known astronomer Mu'ayyad al-Dīn al-'Urḍī (d. 1266); see Schmidl, 'Urḍī', pp. 1161-62. Schmidl also says that al-'Urḍī himself, or his son, produced in 1252/53 a copy of the recension of the *Almagest* by Ṭūsī which is preserved in Cairo. I did not find any evidence for this.

Book VI, f. 52r, Wednesday, 20 (month illegible) 671 AH (1271/2):

د ك ا خعا

Book VII, f. 58v, Wednesday, 20 Dhū al-Qa‘dah 671 AH (8 June 1273):

د ك ذا خع

Book VIII, f. 65v, Wednesday, 9 Rabi‘ (no indication whether I or II) 673 AH (1274):

د ط ع سنة خعج

- *Titles*: (title page, f. 1r) كتاب تحرير المجسطي للإمام العالم الأوحـد العلامة نصير الدين محمد بن محمد بن الحسن الطوسي قدس الله روحه ونور ضريحه, written by the mainhand.
- *History*: (title page, f. 1r) a circular seal is partly visible, the statement is effaced; (fols 1v, 2r and 85r) a circular seal, barely visible.
- *Others*: (title page, f. 1r) I. Above the title, there is written by another hand:

هذه الـ[] رحمه الله تعالى وناقلها ولد الشيخ مؤيد الدين العرضي المهندس

2. Also under the title is a stricken-out text in which the name of the work is repeated, but in this case the author is described as Sharīf Shams al-Milla al-Dīn Muḥammad b. Ashraf al-Ḥusnī al-‘Uluwī al-Samarqandī; in the margin, it is clarified in the same hand that this man is the author of a *Ḥāshiyah* on this book (i.e., the *Tahrīr*?).¹⁷

وللسيد الشريف شمس الملة والدين محمد ابن أشرف السمرقندي حاشية على هذا الكتاب...

3. A collational memorandum reads “91 leaves”. Two more notes of this type are found on f. 91v.

Content. Type A, complete; Books: I, fols 1v-12r, II, fols 12v-20r, III, fols 20v-26v, IV, fols 27r-34v, V, fols 35r-44r, VI, fols 44v-52r, VII, fols

17. According to MAOSIC, p. 230, the works attributed to this author include a “Commentary on the *Almagest*”.

52v-58v, viii, fols 58v-65v, ix, fols 65v-74v, x, fols 75r-77r, xi, fols 77v-82v, xii, fols 83r-86r, xiii, fols 86v-91v. Glosses include references to al-Nayrīzī (e.g., f. 15v), the “Greek copy” of the *Almagest* (e.g., f. 28v), al-Ḥajjāj’s translation (e.g., f. 34v), and Thābit’s version (e.g., f. 35r); other glosses comment on variant readings in other copies of the work. A few tables are left partially empty (e.g., fols 18v-20r). Between fols 66v and 67r there is an inlaid sheet, written by the main copyist, with a text related to ix,3.

Codicology. i+91+i; foliation in Perso-Arabic numerals in ink on each recto; the beginning of each group of ten folios is indicated with an ordinal number on fols 11r, 21r, ..., 71r; a single hand in *naskh* script, dotted and clear; well-drawn diagrams and tables; marginal notes in the main hand; black and red ink.

References. Listed in King, *Fihrist*, vol. 1, p. 530, and vol. 2, p. 7, item 1/1/6; also listed in MAOSIC, p. 215.

(20) **Calcutta, Imperial Library, Bihar 344**

124 fols; undated but estimated to be from the 18th century; written in *naskh* script. [*Bihar*, pp. 379-380, where a transcription of the beginning is provided. Also listed in MAOSIC, p. 215, as Calcutta (Bihar 344)].

(21) (*) **Chicago, Newberry Library, Ayer 745 (Edward E. Ayer Collection)**

MacDonald, who does not indicate no. 745 but seems to refer to this manuscript, describes it as a copy of the *Taḥrīr* containing 220 leaves [MacDonald, *The Arabic and Turkish Manuscripts*, pp. 8-9, no. xiv]. A recent description on the library’s website mentions 429 pages. I was able to inspect photographs of the first and the last double-pages of the text.¹⁸ In the photographs, no foliation is visible on the first double-page, whereas on the verso of the last double-page the number 218 is written. The first double-page contains the chapter titles of the 13 Books of the *Taḥrīr*. The last double-page contains the ending of the *Taḥrīr*, which thus seems to be of Type A, and a colophon dated the end of Ṣafar 1077 AH (1666). [MacDonald, *The Arabic and Turkish Manuscripts*, pp. 8-9, no. xiv; *Mapline*, p. 3].

18. I thank the library staff for these photos.

(22) (*) **Dublin, Chester Beatty, Ar. 3637**

Context. Collection of two works; the colophon of the *Tahrīr* (f. 164v) is dated Tuesday, 10 Shawwāl 691 AH (24 September 1292) in Shīrāz, at the Madrasa ‘Aḍūdiyya by Abū al-Maḥāmid Muḥammad ibn Muḥammad al-Turkistānī al-Arzawānī (almost the same name appears in the colophon of MS Istanbul, Ayasofia 2583); on the same page, the date of collation is given as 13 Shawwāl 691 AH (25 September 1292) together with the information that the exemplar derives from another copy made by Badr al-Dīn al-Malaṭī who, in turn, made his copy from the one by Quṭb al-Dīn al-Shīrāzī, who is described as “our teacher” (i.e., the teacher of al-Turkistānī, the copyist) and is said to have made his copy from the autograph.

- *Titles:* (f. 1r) كتاب المجسطي تصنيف الحكيم الكامل المكمل أفضل المتقدمين (f. 1r) والمتأخرين قدرة السالكين المعلم الثالث نصير الملة والدين الطوسي قدس الله روحه
- *History:* f. 167v) traces of a *tughra*, which appears covered by ink in my copy.
- *Others:* (fols 169v-170r) a map in rectilinear layout. Places on the map include: الخليج [البحر] صره (Basora), الخليج الفارس (Persian Gulf), الاحمر (Red [sea] Gulf), عدن (Aden).

Content. Collection of two astronomical works:

1. (fols 2v-167v) *Tahrīr al-Majisṭī*; Type B; the *Tahrīr* is complete; Books: I, fols 2v-21r, II, fols 21v-35r, III, fols 35v-48r, IV, fols 48v-64r, V, fols 64v-82r, VI, fols 82v-94r, VII, fols 94v-102r, VIII, fols 102v-112v, IX, fols 112r-130r, X, fols 130v-135r, XI, fols 135v-144v, XII, fols 145v-153r, XIII, fols 153v-164v; (fols 165r-167v) *Appendix*, complete. The colophon of the *Tahrīr*, on f. 164v, is followed by an explanatory text regarding the glossing in the MS.
2. (168v-169r) an astronomical treatise, attributed to Quṭb al-Dīn al-Shīrāzī, entitled:

فصل في كيفية تحصيل الزمان الدوري للقمر على ما ذكره بطليموس في أوائل المقالة
الرابعة من المجسطي

The same treatise is copied again on fols 170v-171r.

Codicology. ii+171 fols; foliation with European numerals on the recto at the beginning of each group of five folios; a single hand in undotted *naskh* script; abundant marginal notes in the main hand and in at least one other

hand in a very careless script; diagrams and tables (description based on a black and white copy).

References. Catalogued in Arberry, *Chester Beatty*, vol. 3, p. 52; also listed in MAOSIC, p. 215, as Dublin 3637.

(23) **Hyderabad, Oriental Manuscripts Library and Research Institute, 85 M**

(24) **Hyderabad, Oriental Manuscripts Library and Research Institute, 87 M**

(25) **Hyderabad, Oriental Manuscripts Library and Research Institute, 405 T**

The above manuscript numbers are given in the *Hand Book*. MS 405 T is described as a collection of the *Intermediate Books* (*Majmū'a Mutawwasīāt*), without any mention of the *Tahṛīr* [vol. 1, f. 204r of the hand-written catalogues at the Osmania University of Persian and Arabic works; MAOSIC, p. 215, lists the manuscripts as 85, 87 and 405, stating that MS 405 contains also a copy of the *Tahṛīr*].

(26) **Isfahan, University Library, 567**

177 fols; dated 5 Šafar 1020 AH (19 April 1611) by Muḥammad Mu'min Isfahānī; *nasta'liq* script; various ownership marks in the name of Sayyid Muḥammad 'Alī Rawḍātī, Muḥammad Bāqar b. Muḥammad Taqī Isfahānī, and Abū Ja'far Kāfī b. Muḥtashim b. 'Umīd b. Muḥammad b. Shāhanshāh Qā'nī (*sic*) in Isfahan in 1027 (AH?). [Listed in DENA, 2, p. 876, referring to a vol. 2, p. 434. The property marks are reported in a description available on the website of the University Library of Isfahan].

(27) **Istanbul, Aṭif Efendi 1713**

253 fols; dated 909 AH (1503/04); careful *ta'liq* [Krause, 'Stambuler Handschriften', p. 504. Also listed in *Defter Atif Efendi*, p. 100].

(28) **Istanbul, Beyazıt, Fayd Ullah 1360**

212 fols; dated 870 AH [*Mawrid*, p. 305, without transcriptions].

(29) **Istanbul, Beyazıt, Fayd Ullah 1361**

188 fols; dated 778 AH by 'Alī Ḥusayn in Isfahan [listed in Krause, 'Stambuler Handschriften', p. 504, and in *Mawrid*, p. 305, both without transcriptions].

(30) **Istanbul, Beyazıt, Veliyüddin, 2302**

According to Krause, ‘Stambuler Handschriften’, p. 504, the *Tahrīr* is the second part, on fols 1v-95v, of at least three parts in the manuscript and is dated 25 Ramaḍān 732 AH (20 June 1332). The MS is also listed in *Defter, Veliyüddin*, p. 131, where it is said to have 206 pages.

(31) **Istanbul, Hacı Selim Ağa 727**

209 fols; dated 1076 AH (1665/66); good *taʿlīq* script [Krause, ‘Stambuler Handschriften’, p. 504. *Defter, Selim Ağa*, p. 63, says that the text extends on 418 pages. Also listed in MAOSIC, p. 215, as Selim 727].

(32) **Istanbul, Köprülüzāde, Mehmed Paşa 932**

67 fols; the printed catalogue by Şeşen also provides transcriptions of the beginning and the end of the work, which suggests to me that the copy is a complete Type B; from the collection of Ḥusayn Jilibī (Çelebi) and owned by Muḥammad b. Abī al-Faṭḥ; in *naskh* script [Şeşen, *Köprülü*, vol. 1, p. 472. Also listed in *Defter Köprülüzāde*, p. 60].

(33) **Istanbul, Köprülüzāde, Mehmed Paşa 933**

179 fols; in the printed catalogue by Şeşen, the title appears as:

تحریر المجسطي لنصير الدين الطوسي، حرره بناء على حث حسام الدين الحسن بن
محمد السيواسي.

In the same catalogue, the beginning and the end of the work are said to agree with those in MS Mehmed Paşa 932, and a transcription of the colophon is given, including the name [...] Muḥammad b. Mawlānā Darwīsh and the date, Friday, 5 Dhū al-Qaʿda 918 AH (12 January 1513); commented and corrected; in *taʿlīq* script [Şeşen, *Köprülü*, vol. 1, p. 472. Also listed in *Defter, Köprülüzāde*, p. 60, and in Krause, ‘Stambuler Handschriften’, p. 504, where it is identified as the first work (172 fols), within a collection].

(34) **Istanbul, Millet, Carullah 1458**

According to Tekeli, the MS contains a copy of the *Tahrīr* and was used by her, in addition to MS Esad Efendi 2007 (see below) and MS Veliyüddin

2302, for her English and Turkish translations of a passage from the *Tahrīr* [Tekeli 'Takīyüddīn'in']. Rosenthal refers to a hand-written catalogue for the "Jarullah (Carullah)" collection [Rosenthal, 'From Arabic Books', p. 14, referring to J. Kraemer (Oriens 6.203, 1953), who also mentions the existence of manuscript cards for this collection; GAS, 6, p. 438, gives additional information on the collection].

(35) Istanbul, Ragib Paşa 913

According to Krause, the MS has 175 fols and is dated 878 AH (1473/4); 'Stambuler Handschriften', p. 504. *Defter Ragib* (1285), p. 38, describes the script to be *naskh*; *Defter Ragib* (1310), p. 70, reports a statement, dated 644, in the name of 'Umar b. 'Uthmān b. 'Umar al-Usturlābī. [Also listed in MAOSIC, p. 215].

(36) Istanbul, Ragib Paşa 914

According to Krause, the MS has 199 fols and is dated 1034 AH (1624/5); 'Stambuler Handschriften', p. 504. *Defter Ragib* (1285), p. 38, describes the script to be *ta'liq*. [Also listed in *Defter Ragib* (1310), p. 70, and MAOSIC, p. 215].

(37) (*) Istanbul, Süleymaniye, Aya Sofya 2583

Context. A single work; the colophon is dated Thursday, 5 Shawwāl 686 AH (13 November 1287) by Abū al-Maḥāmid Muḥammad b. Muḥammad b. Aḥmad b. Mas'ūd al-Arza'unī, (see MS Dublin, Chester Beatty, Ar. 3637, where the *nisba* is الارزواني); a note of collation, written in the margin in red in the main hand, is dated 21 Dhū al-Qa'dah 686 AH (28 December 1287) at the *madrassa* [.] in Nīsābūr.

• *Titles:*

1. (flyleaf 1) *الهيئة في التحرير مجسطي*, written by a different hand.
 2. (f. 114r) a title similar to that of the first chapter of the *Appendix* is written in pencil in a later hand at the top of this folio, which is otherwise leftblank: رسالة في اختلافات وقوع الخطوط في الأشكال.
- *History:* (title page, f. 1r) a circular seal contains the *tughra* of Sulṭān Maḥmūd I (1730-1754), son of Muṣṭafā III [I found this seal in Hammer-Purgstall, *Abhandlung*, pp. 10-11 and 37]. The inscription of the seal has the motto from Qur'ān, ch. 7:43: الحمد لله الذي هدانا لهذا وما كنا لنهتدي لولا ان هدانا (كذا) الله

aforementioned seal is in the name of Aḥmad Shaykh Zāde, inspector of the *waqfs*:

وقف هذه النسخة الجليلة سلطاننا الأعظم والخاقان المعظم مالك البرين والبحرين
خادم الحرمين الشريفين السلطان بن السلطان السلطان الغازي محمود خان وقفا
صحيحا شرعيا الفقير احمد شيخ زاده المفتش بأوقاف الحرمين غفر [الله] لهما.

Below is the seal of the inspector of *awqāf*, Aḥmad, with the inscription:

يا رب [.]. توفيق قنا [.]. احمد.

Content. Type A, complete; fols 1v-113r; inlaid sheets for supplementing missing diagrams or pieces of text; some marginal notes include references to other sources, e.g. on f. 18r, a reference to al-Nayrīzī next to the paragraph related to the ascensional difference (Book II, ch. 7).

Codicology. 114 fols; foliation with Eastern-Arabic numerals in pencil on each recto; a single hand in a careful *naskh* script mostly undotted (the calligraphy is similar to that in MS Dublin 3637); text within a frame, very well-drawn diagrams; f. 113v blank; black and red ink.

References. Listed in *Defter Ayasofya*, p. 154, and in Krause, ‘Stambuler Handschriften’, p. 504, who classifies the text on fols 1v-113r as the first part of a collection; the description in Şeşen, ‘Al-Makhtutat’, pp. 818-819, does not indicate whether the manuscript contains any other part.

(38) (*) **Istanbul, Süleymaniye, Esad Efendi 2007**

Context. A single work; undated.

- *Titles:* (f. 1r) قطعة من تحرير المجسطي, written by a modern hand.
- *History:* (f. 1r) a circular seal with a *waqf* statement appears damaged in my copy.

Content. Incomplete; the text on the first folio of the digital copy contains the end of the introduction of the *Tahrīr* and the beginning of Book I. The last folio ends with the title of XIII,8; inlaid sheets, e.g. one between fols 8v and 9r dealing with Theodosius’ proposition I,16 and another between fols 15v and 16r dealing with Menelaus’s *Spherics* III, 5.

Codicology. 155 fols; foliation with European numerals on each recto; a single hand in ordinary *naskh* script; abundant marginal notes; well-drawn diagrams; black and red ink.

References. Listed in *Defter Esad Efendi*, p. 117, Krause, 'Stambuler Handschriften', p. 504, and MAOSIC, p. 215, as Esat 2007.

(39) **Istanbul, Süleymaniye, Nuruosmaniye 2941**

Krause lists the work as 2941/1, which could mean that the MS contains a collection in which the *Taḥrīr* is the first text, on fols(?) 1-105, dated 684 AH, copied by Qutb al-Dīn al-Shīrāzī [Krause, 'Stambuler Handschriften', p. 504. Also listed in *Defter Nuruosmaniye*, p. 168].

(40) (*) **Istanbul, Süleymaniye, Yeni Cami 798**

Context. A single work; the colophon (f. 146v) is dated to the middle of Dhū al-Qa'dah 854 AH (ca. 20 December 1450) by a certain Aḥmad b. Muḥammad b. Aḥmad.

- *Titles:* (f. 1r) title and author.
- *History:* (f. 1r) 1. Traces of a signature dated 1137 (AH?).
(fols 1v and 146v) 2. A seal impression with the *waqf* inscription and a *tughra*: وقف سلطان احمد خان بن غازي سلطان محمد خان.

Content. Type A, complete. Glosses, additional diagrams and inlaid sheets from other works on the *Almagest*. A picture of the instrument called *Dhāt al-Shu'batayn* (the parallactic instrument in *Almagest* v,12) is drawn in the margin to IV,12 (f. 59r), which deals with this instrument. Some marginal notes I was able to identify as taken from Iṣḥaq/Thābit's version of the *Almagest*, including the ending of that version, which appears in the margin of the last folio (f. 146v).

Codicology. 146 fols; European foliation in pencil on the recto at the beginning of each group of five; ordinary *naskh* script; frames, diagrams and well-drawn tables.

References. The work is correctly identified in Krause, 'Stambuler Handschriften', p. 504, whereas in *Defter Yeni*, p. 42, it is described as *Sharḥ al-Majisī al-musamā bi-Ta'bīr al-Taḥrīr*, in *ta'liq* script, and the author is described as al-Nīsābūrī. The same misidentification is also given in GAS, 6, p. 93, and in MAOSIC, p. 239.

(41) **Istanbul, Süleymaniye, Yeni Cami, Turhan H. Sultan 219**

According to Krause, the first part of the MS, listed as Yeni Cami T 219, contains the *Taḥrīr*; the number of folios is not indicated; written for the Sultan Mehmed in 849 AH [Krause, 'Stambuler Handschriften', p. 504.

Also listed in MAOSIC, p. 215, as Yeni Cami T 219, and in *Defter Yeni Cami*, p. 92].

(42) Istanbul, Topkapı, Ahmet III 3328

127 fols; undated; described as a single work in the printed catalogue [Karatay, *Topkapı*, p. 767, where a transcription of the first sentence of the *Tahrīr al-Majisī* is also given. Also listed in Krause, ‘Stambuler Handschriften’, p. 504, who only gives the shelf-mark, “Seray 3328”, without further information].

(43) Istanbul, Topkapı, Ahmet III 3453

282 fols; dated 678 AH (1279) by ‘Abd al-Kāfī b. ‘Abd al-Majīd b. ‘Abd Allāh al-Tabrīzī. The MS contains 19 works, most of them apparently belonging to the “Intermediate Books”, the *Tahrīr al-Majisī*: work 18, starts on fol. 180v. [Karatay, *Topkapı*, p. 735, where a transcription of the first sentence is also given].

(44) Jaipur, Maharaja Sawai Man Singh II Museum Library, 19

96 fols; dated 16th century by Mullā Haidar and acquired in 1725 bearing the seal of Mohammad Suleh bin Muhammad bin Yāyhā bin Muhammad (*sic* in the printed catalogue) dated 1067 AH; golden and blue work on the first page; no transcription is provided. [Bahura, ‘Maharaja Sawai’, p. 74 where the identification of the text is given as “Taharīr-ul-Majisī by Hakīm Baṭāṭī-Mūsā Yūnānī and Arastātālis (Aristotle)”. In the same catalogue, MS 20 is wrongly listed as another copy of the same text; listed in King, ‘A Handlist’, p. 82, having 97 pp].; During a stay at the library between September and November 2018, I was informed that the manuscript is currently inaccessible.

(45) Kuwait, Jaber al-Ahmad Central Library of the University, 838

335 fols; 13th century AH; *ta’līq* script; the transcriptions provided correspond to the beginning and the end of the *Tahrīr al-Majisī*; [a short description of the manuscript is available on-line in the website of the University of Kuwait].

(46) London, British Library, Add. 23392

[Cureton, p. 620, item 1338; a description of the manuscript is available on-line in the website of the British Library].

(47) (*) **London, British Library, India Office 1148**

Context. Collection of three works; the colophon of the *Tahrīr* (f. 62r) is dated 6 Muḥarram 722 AH (24 January 1322) by Ḥamza ibn ‘Alī ibn Ḥamza al-Qazwīnī al-Bayhaqī, known as Sa‘d al-Khurāsānī, in the city of Sulṭaniyya.

- *Titles:* (title page, f. 1r) the titles of the works in this collection, written twice in the same later hand: مجسطي واکر مانالوس وزيج الغبيك
- *History:* (title page 1, f. 1r) Four seal impressions, three of which are clearly from the Mughal empire (from the top to the bottom of the page):
(a) dated 1059 (Isf. Year), circular with the inscription:

شاه جهان فاضل خان [.] ۱۰۵۹

- (b) dated 1068 (Isf. Year), circular with the inscription:

سنة ۱۰۶۸ ۳۱ عناية خان شاه جهاني

- (c) circular with a partly legible inscription, d) oval with an illegible inscription; in addition, there are notes similar to what John Seyller calls “inspection notes”, from the years 1062 to 1069 [Seyller, ‘The Inspection’, p. 302].

Content. Collection of three works:

1. (fols 1v-62r) *Tahrīr al-Majisī*; Type B; *Tahrīr* complete; Books: I, 1v-8v (128v), II, 8v (128v)-14v (134v), III, 14v (134v)-19r (139r), IV, 19r (139r)-24r (144r), V, 24r (144r)-30r (149r), VI, 30v (149v)-34r (154r), VII, 34r (154r)-38r (159r), VIII, 38r (149r)-42v (163v), IX, 42v (163v)-50r (171r), X, 50r (171r)-52r (173r), XI, 52r (173r)-56r (177r), XII, 56r (177r)-58r (179r), XIII, 58v (179v)-62r (183r). (fols 62v/183v-63r/184r). *Appendix* incomplete, and the sequence of the chapters is different from the model.
2. (fols 63v-67v) revised edition of Menelaus’ *Spherics* by Muḥyī al-Dīn Yaḥyā ibn Muḥammad ibn Abī al-Shukr al-Maghribī.
3. (fols 68v-135v) *Zīj* by Ulugh Beg.

Codicology. Two fly-leaves+iii+135+ii+2 fly-leaves; two sets of foliation, one in European numerals in pencil and the other in Perso-Arabic numerals in ink, the former being visible from the title page (f. 1r) onwards and the latter starting on f. 2r with number 122; tables and diagrams.

References. Briefly described in Loth, *Catalogue*, pp. 215-216. A digital copy of the MS is available on the website of the Qatar Digital Library in collaboration with the British Library, where a description says that the second part of the MS was created in the 14th century.

(48) (*) **London, British Library, Royal MS 16 A VIII**

191 fols; undated, possibly 15th/16th c.; Type A, complete; a digital copy and a detailed description of the MS are available on the website of the Qatar Digital Library in collaboration with the British Library. [Listed in Cureton, *Catalogus codicum*, p. 187, item 391].

(49) **Mashhad, Āqāye Ḥājj ‘Abd al-Majīd Mūlūwī, 56**

The collection of manuscripts in this library is reported in *Nashriyya*, 5, pp. 6-107. MS 56 is described as a copy of the *Tahrīr al-Majisī*, in *naskh*, by Fakhr al-Dīn Muḥammad Ḥusaynī and dated Ramaḍān 1087 AH (1676/77) in Isfahan. [Also listed in DENA, vol. 2, p. 876, referring to *Nashriyya*].

(50) **Mashhad, Holy Shrine, 471**

The number of folios is not given; dated 1047 AH (1637/38), by the copyist Muḥammad Taqī b. Rafī‘ al-Dīn b. ‘Alī Ghafārī Qāsānī [listed in DENA, 2, p. 876, referring to the printed catalogue abbreviated as *Ihdā’ī* which I have not seen].

(51) (*) **Mashhad, Holy Shrine, 5452**

Context. Collection of several works (the digital copy I used is incomplete); the colophon of the *Tahrīr al-Majisī* (f. 92r) is dated Wednesday, 18 Rabī‘ II 1092 AH (7 May 1681), by Ḥasan al-Ḥusnī (?).

- *History:* (title page, 1r) 1. An ownership statement, dated 1170 AH (1756/57), for Ibn al-Ḥasan al-Ḥusaynī b. ‘Abd al-Ghanī:

بسم الله خير الأسماء لقد انتقل إلى هذا الكتاب سنة ١١٧ (كذا) وأنا الفقير إلى الغني
الله عبد الغني الشافعي ابن الحسن الحسيني ابن عبد الغني الماضي عفى الله عنهم
يوم تؤخذ بالنواصي

An oval seal is stamped under the statement.

2. An ownership statement dated 1208 AH (1793) for Ḥusayn b. ‘Abd al-Ghanī al-Ḥusaynī:

هو من من من من من هو أقل الخليص سيد حسين ابن عبد الغني الحسيني عفى
[الله] عنهما ١٢٠٨ سنة

(The beginning derives from “mannun min mannin man manna min mannihi”). An oval seal is stamped below the statement. The inscription is partially legible as:

سيد حسيني عبد [؟]

3. An ownership statement dated 1254 AH (1838/39) in the name of a certain Ismā‘īl ibn Ḥunayn:

ثم انتقل الى سنة ١٢٥٤ وانا اسماعيل ابن حسين الحنين

4. A Persian ownership statement dated 28 Muḥarram 1348 AH (5 August 1929).

Content. Collection of several works:

1. (f. i-r) A text on the meridian line, including two diagrams; written in a careless hand.
2. (1r-96?) *Tahrīr al-Majistī*; Type B; (fols 1r-92r) *Tahrīr*, complete; Books: I, fols 1r-11r, II, fols 11r-19r, III, fols 19r-25r, IV, fols 25r-32v, V, fols 32v-41r, VI, fols 41r-48v, VII, fols 48v-55r, VIII, fols 55r-61v, IX, fols 61v-71r, X, fols 71v-73v, XI, fols 73v-81r, XII, fols 81r-85v, XIII, fols 85v-92r.

From the printed catalogue, it seems that the *Appendix* is also extant and complete in this MS; according to the catalogue, the *Tahrīr* is followed by a work extending until f. 96, and the transcriptions provided correspond to the beginning and the end of the *Appendix* in accordance with the model. A date associated with the work is the same as I read in the colophon of the *Tahrīr*.

3. -? According to the catalogue, f. 96 is followed by nine leaves containing works presumably attributed to Mu‘ayyad al-Dīn al-‘Urḍī, e.g., *Introduction to the Exposition of the Demonstration of the Fourth Proposition of Book Nine of the Almagest*, *Introduction for the Construction of the Square inside a Triangle*, etc.

Codicology. The printed catalogue mentions 96 fols plus nine additional leaves; the foliation in my incomplete digital copy is in Perso-Arabic

numerals in pencil on each recto; a single hand in a very careless *nasta'liq* script; abundant marginal glosses; occasional interlinear glosses; diagrams and tables; black and red ink.

References. *Mashhad*, 8, pp. 69-72 (p. 65 according to DENA, vol. 2, p. 876).

(52) (*) **Mashhad, Holy Shrine, 5453**

Context. A single work; the colophon of the *Tahrīr* (f. 84v) is dated Tuesday, 6 Muḥarram 722 AH (25 January 1322) by Ḥamza ibn 'Alī ibn Ḥamza al-Qazwīnī al-Bayhaqī known as Sa'd al-Khurāsānī in the city of Sulṭaniyya, and the colophon of the *Appendix* (f. 90r), undated, describes the copyist as Bāyazīd b. Sayyid Jumāl.

• *Others:*

1. (f. 90v) a text on the eight terms comprising the *abjad* system:

ابجد، هوز، حطي، كلمن، سعفص، ...؛

2. (f. [92r]) a biographical text on al-Ṭūsī and his work;

3. (f. [93v]) a Persian poem in a different hand.

The three additional elements are all written in different hands.

Content. Type B, (fols 1v-84v) *Tahrīr* complete, Books: I, fols 1v-11r, II, fols 11r-20v, III, 20v-26r, IV, fols 26r-35v, V, fols 35v-43v, VI, fols 43v-49v, VII, fols 49v-54r, VIII, fols 54r-59v, IX, fols 59v-68r, X, fols 68r-70v, XI, fols 70v-75v, XII, fols 75v-79v, XIII, fols 79v-84v. On f. 83r, space for the tables of the slant of Venus and Mercury and the planetary latitudes is left empty; the tables appear instead, in f. 87r, written in the main hand. (fols 84v-90r) *Appendix*, complete, but the order of chapters is different from the model; the first chapter, in fols 84v-85r, corresponding to ch. [3] of the model, follows the *Tahrīr* without chapter break; ch. [1] in fols 85v-89r; ch. [3] in fols 89v-90r.

Codicology. 93 fols; foliation in Perso-Arabic numerals in pencil on each recto; two handwritings, the main one an inelegant *naskh* script, fols 29v-34v are written in a smaller script; further hands are seen on fols 90v, [92r] and [93v] and in some marginal notes; well-drawn diagrams; black and red ink.

References. *Mashhad*, 8, pp. 71-72 (p. 68 according to DENA, vol. 2, p. 875).

(53) (*) **Mashhad, Holy Shrine, 5454**

Context. A single work; undated; a note on page [417], where the *Tahrīr*

ends, states that the date of the collation is Monday, 14(?) Jumādā I 1168 AH (1755), and according to an inlaid sheet, on p. i, the copyist is Ṣāliḥ b. Muḥammad Kāẓim Khātūn Abādī;

- *History*: (title page, p. i) an undated statement in the name of Ibn Mawlā Muḥammad Ismaʿīl Khātīm Abādī as ṣāḥib, accompanied by a rectangular seal with an unclear inscription; on the same page, another unclear statement is found, which is undated and accompanied by a rectangular seal.

Content. Probably Type B (my digital copy of the MS is incomplete). (pp. 2-417) *Tahrīr*, complete, Books: I, pp. 2-52, II, pp. 52-77, III, pp. 77-118, IV, pp. 118-154, V, pp. 154-199, VI, pp. 199-237, VII, pp. 237-269, VIII, pp. 269-289, IX, pp. 289-331, X, pp. 331-344, XI, pp. 344-372, XII, pp. 372-388, XIII, pp. 389-[417]. (pp. [417]-?) *Appendix* (p. [417] is the last picture of my digital copy and it shows the beginning of ch. [1]). In the printed catalogue and in the manuscript card, the MS is said to have 440 pages, but no description of the content of those further pages is given. According to the printed catalogue, the name of the copyist is Ṣāliḥ b. Muḥammad Kāẓim Khātūn Abādī. I read the same name on an inlaid sheet over the manuscript card written by a cataloguer or user, where it is also stated that the part “تشكل زهرة” (which I suppose refers to one of the chapters of the *Appendix*) is chapter 8 of Book x of the *Almagest*.

Codicology. 440(?) pp.; pagination in Perso-Arabic numerals; a single hand in careful *nastaʿlīq* script; very well drawn diagrams and marginal notes, some written in *dīwānī* script; black, green and red ink.

References. *Mashhad*, vol. 8, p. 72 (p. 68 according to DENA, vol. 2, p. 876).

(54) (*) **Mashhad, Holy Shrine, 5455**

Context. Collection of five works; the colophon of the *Tahrīr* (p. 298) is dated 2 Shaʿbān 1093 AH (6 August 1682).

- *Titles*: [p. +2] تحرير مجسطي
- *History*: according to the manuscript card, the waqf is in the name of Mīrzā Rīdā Khān Nāʿnī in 1311 (Š/AH?).

Content. Collection of fiveworks.

1. [p. -3] An untitled one-page text dealing with the sector figure, including a diagram.

2. [p. -1] A one-page text about the apogee and the centre of the Sun, with the (incomplete) title:

من [-] في الشمس

3. (pp. 1-297) *Tahrīr al-Majisī*, Type A, complete. A note on p. 2 cites Abū l-Rayḥān for the explanation that the title of the *Almagest* is “Syntaxis” (*Sūnṭākis*) in Greek and means “Order” (*al-Tartīb*). The handwriting of many glosses, added by a user, seems to be the same as the main hand of works 1 and 2.
4. [pp. +3/+4] An untitled text with geometrical diagrams.
5. [p. +5] An untitled one-page text starting with a discussion of the parallax.

Codicology. [3pp].+298 pp.+[5pp].; pagination from 1 to 298, in Perso-Arabic numerals in ink, starting on the second verso; three different *nasta‘līq* handwritings: A [pp. -2/-3], B (pp. 1-298), C [p. +3 - +5]; several marginal notes; diagrams and tables; diagrams on the extra pages careless; black and red ink.

References. *Mashhad*, vol. 8, p. 73 (p. 69 according to DENA, vol. 2, pp. 876-877) reports that the manuscript contains the *Tahrīr* and gives transcriptions of the beginning and end of the two fragments that follow the *Tahrīr*.

(55) (*) **Mashhad, Holy Shrine, 5456**

Context. Collection of several works (the digital copy I used is incomplete). A table of contents (مجموعة) by a cataloguer on the inside front cover mentions 7 works (my copy contains the first of these works and two pages of the second one). The list of works agrees with a description in the printed catalogue; the MS seems undated.

- *Titles*: the two first works are untitled.
- *History*: (manuscript card) the waqf is devoted to Mīrzā Riḍā Khān Nā’īnī. (ii-r) a stamp of the library is dated 1309 and includes the above name. A note on the same page is also in the name of this person, but dated 1311 (cf. MS Mashhad, Holy Shrine, 5455).

Content. Collection of various works:

1. (pp. 1-364) *Tahrīr al-Majisī*, Type A. Parts of Nīsābūrī’s *Tafsīr* are written in the margins.
2. (pp. 365-389) تحرير أفليدس. My copy ends on p. 366; the following part of the list is based on the printed catalogue.

3. تحرير اكر (pp. 389-396).
4. تحرير كتاب مناظر (pp. 396-400).
5. تحرير كرة (pp. 401-414).
6. تحرير كتاب المساكن (pp. 415-416).
7. تحرير المطالع (pp. 416-420).

The first and the last lines of each work appear transcribed in the printed catalogue, without information on the completeness of the works. Most of the works seem to belong to the “Intermediate Books”.

Codicology. According to a collational memorandum [i-r] and the manuscript card, the MS has 217 fols, whereas the printed catalogue mentions 420 pp.; pagination in Perso-Arabic numerals; a very careful *naskh* script, marginal notes are written in *nasta‘līq* with *shekasteh* tendencies; text within a golden and blue frame; black and red ink.

References. *Mashhad*, 8, p. 370 (p. 352 according to DENA, vol. 2, p. 877).

(56) (*) **Mashhad, Holy Shrine, 5457**

Context. A single work; the colophon (f. 268v) is dated 4 Rajab 1222 AH (7 September 1807).

Content. Type A, incomplete; Books: I, fols 1v-32r, II, fols 32r-54r, III, fols 54r-76r, IV, fols 76r-99r, V, fols 99r-129r, VI, fols 129r-156v, VII, fols 157r-171r, VIII, fols 171r-190r, IX, fols 190r-213r, X, fols 213r-221v, XI, fols 221v-236r, XII, fols 236r-248r, XIII, fols 248v-268v; tables mostly left empty; parts related to I,10 precede the last folio, f. 268, of the *Tahrīr*. Fols 17v-18r, pertaining to I,11, on the arc between the solstices, contain drawings of the related instruments in the margins; they also appear in al-Nīsābūrī’s *Tafsīr al-Tahrīr* and in the *Almagest* itself (cf. Toomer, *Ptolemy’s Almagest*, pp. 61-62, Figs. C and D).

Codicology. 268 fols; foliation in Perso-Arabic numerals in pencil on each recto; three different hands: hand A (fols 1v-16v) in *thulūth* script, hand B (fols 17r-265v) and hand C (fols 266r-268v) are both *nasta‘līq*; although the script is legible and clear, the copy is careless and gives the impression that the parts written by hands A and C were added later; unfoliated folios with empty tables have been inserted throughout the MS, while the paper is clearly the same as used by hand A; marginal notes; diagrams are very well drawn; black and red ink.

References. *Mashhad*, vol. 8, p. 73 (p. 69 according to DENA, vol. 2, p. 876).

(57) (*) **Mashhad, Holy Shrine, 12185**

Context. A single work; undated.

- *History:* (title page, f. 1r) 1. A Persian statement, in the name of Abū l-Qāsim al-Shahīr, is dated Monday, 2 Šafar 1314 AH (13 July 1896) in Dār al-Madīna al-Zāhirān. 2. Another statement dated 1343 AH (1924/1925). 3. A historical annotation on the commentary of Ulugh Beg's *Zīj*. 4. The manuscript card gives the name Sayyid Šadr Tihrānī as the *waqf* of the MS in 1261 AH (1845/46). I found no confirmation of this year in the copy I used.

Content. Type A, complete; abundant marginal notes, which coincide with parts of al-Nīsābūrī's *Tafsīr al-Taḥrīr*.

Codicology. 136 fols; foliation in Eastern-Arabic numerals in pencil on each recto; a single hand in *nasta'liq* script; well-drawn diagrams; black and red ink.

References. *Mashhad*, vol. 10, p. 24; also listed in DENA, vol. 2, p. 876.

(58) (*) **Mashhad, Holy Shrine, 12281**

Context. A single work; the colophon (f. 240r) is dated 3 Jumādā II 1070 AH (15 February 1660).

- *History:* - (title page) various Persian statements dated between 1268 and 1350 AH (1851/52-1931/32).
(f. 240v) a note of collation, undated and without name.
[f. 242v] a biographical note on al-Ṭūsī mentioning the date 18 Dhū al-Ḥijjah 672AH and 1273 as its corresponding Christian year. This is close to the year of al-Ṭūsī's death, 1274. The note has an oval seal with a *tughra*.

Content. Type A, complete; fols 18v-19r, pertaining to 1,11, on the arc between the solstices, contain drawings of the related instruments in the margins; they also appear in al-Nīsābūrī's *Tafsīr al-Taḥrīr* and in the *Almagest* itself (cf. Toomer, *Ptolemy's Almagest*, pp. 61-62, Figs. C and D).

Codicology. 242 fols; foliation in Perso-Arabic numerals in pencil on each recto; two different *nasta'liq* scripts: hand A (fols 2r-131v) and hand B (fols 1v and 132r-136); the paper used by hand B is different from the main one; abundant marginal notes.

References. *Mashhad*, vol. 10, p. 23; also listed in DENA, 2, p. 876.

(59) Mashhad, Ilāhiyyāt (Ferdowsi University, Faculty of Theology and Islamic Studies), 673

A digital copy of the MS is available on the website of the Ferdowsi University, where several pages cannot be seen. A foliation, if extant, lies outside the visible part of the pages. The copy is dated Monday, 25 Šafar 1089 AH (18 April 1678), by Fakhr al-Dīn Muḥammad Ḥusayn al-Najafī. The MS is a collection, in which the *Tahrīr al-Majisī*, Type B, is the first work, followed by others, including the *Tahrīr al-Manāẓir li-Uqlīdis*, the *Tahrīr al-Manāẓir li-Thāwudhūsūs*, the *Kitāb Ukar al-Thāwudhūsūs* and the *Ukar Menelaus*. An Excel file on the same website contains a list of manuscripts that are preserved in the Faculty of Theology as well as the date of each manuscript, the number of works it contains and the name of the copyist. In the Excel file, the present MS is described as a collection of 10 works, dated 1087 AH, and copied by Fakhr al-Dīn b. ‘Abd Allāh Qūmī and Muḥammad Mahdī Ḥusaynī Mūsawī. In DENA, vol. 2, p. 876, a manuscript with the number 56 is listed as belonging to this library, and a reference is made to vol. 1, p. 479, of the printed catalogue. There is no manuscript with this number; however, in the Excel file, the year and the name of the copyist are the same as in MS 673. Both references are probably related to the present MS.

(60) Mashhad, Ilāhiyyāt (Ferdowsi University, Faculty of Theology and Islamic Studies), 1352

A digital copy of the MS is available on the website of the Ferdowsi University, where several pages cannot be seen. I use the shelfmark as given on the university’s website. However, in DENA, vol. 2, p. 877, referring to vol. 2, p. 500 of the printed catalogue, a manuscript is listed as Ilāhiyyāt 20921 and is said to have 212 leaves, copied by Muḥammad Ibrāhīm b. Muḥammad Sa‘īd Ḥakīm Abū l-Faṭḥ Tabrīzī. This information corresponds to a description of the present MS on the website. Both references are probably related to the present MS.

(61) Mashhad, Madrasa-ye Nawwāb, 3 Riyāḍiyāt

According to DENA, the MS has 270 fols and contains the *Tahrīr al-Majisī*, written in *nasta‘līq* script. [DENA, vol. 2, p. 876, referring to *Nawwāb*, p. 540].

- (62) **Mosul, Awqāf Library, Madrasa al-Amīniyya in Jāmi‘ al-Bāshā 21/3**
196 fols; copied in 1045 AH (1635/36) by Fāḍil Allah b. Muḥammad Mu‘min Shīrwānī. [*Mosul-Awqāf*, pt. 4, pp. 147-148. Pt. 9, p. 293, of the same catalogue series contains a general index, which for this copy of the *Tahrīr* seems to refer mistakenly to pt. 4, p. 167].

- (63) **Mosul, Awqāf Library, Madrasa al-Muḥammadiyya in Jāmi‘ al-Zaywānī 18/1**
104 fols. [*Mosul-Awqāf*, pt. 7, p. 78, where a transcription of the beginning is provided].

- (64) (*) **Mumbai, Mulla Firuz Library, R I-74**

Context. A single work; without colophon.

- *Titles:* (title page, f. 1r): the title *مجلسطي ناقس الآخر* is written in pencil.
- *History:* (title page, f. 1r): a circular seal of the Mulla Firuz Library.

Content. Type A, complete; folios for the star catalogue are left in blank.

Codicology. 91 fols; two sets of foliation are visible: a first one is in Perso-Arabic numerals, discontinuous and incomplete; however, the second one is in European numerals and correct; rubricated headings; spaces for diagrams and tables are left empty; abundant marginal notes; black and red ink.

References. *Rehatsek*, pp. 148-149, describing the text as an anonymous abridgement of the *Almagest*.

- (65) (*) **Oxford, Bodleian Library, Pococke 369**

Context. Collection of two works; according to a statement between the first and the second (f. 74r), the copy was made by Abū Bakr b. Muḥammad b. Aḥmad b. ‘Alī al-Shahīr and completed on Sunday, 18 Shawwāl 981 AH (10 February 1574); according to another note (f. 183v), both works, were collated with an earlier copy dated at the end of Sha‘bān 799 AH (May 1397).

- *Titles:*

(title page, f. 1r) 1. The titles of the two works in this collection, written in *thuluth* script: كتاب أقلیدس فی علم الهندسة وكتاب المجسطي في علم الفلك.

2. Again the title of the first work, in a very fine *thuluth* script:

کتاب الإقلیدس وفيه مرسا (کذا) [] تجربة

3. Two further titles, a commentary on Euclid's *Optics* and Theodosius' *Spherics*, which are not contained in the manuscript, are written in small handwriting: كتاب تحرير المناظر لأقليدس وكتاب الاكر لثاوذوسيوس.

- *History*: (title page, f. 1r) an erased statement, in which the year 976 AH (1568/69) is visible.

- *Others*:

(f. 74r) a subtraction of '980' from '1035', yielding '55'. The subtraction is written under the copyist's statement dated 981, and possibly served to determine a time interval.

(f. 2r) 1. Index of sections in Work 1, within a frame. 2. A longer note on Ibn al-Haytham's *Sharḥ al-Muṣādarāt Uqlīdis* (sic).

Content. Collection of two works.

1. (1v-73v) Arabic translation of Euclid's *Elements*.
2. (74v-201v) *Tahrīr al-Majisṭī*; Type A, complete; Books: I, 74v-86r, II, 86r-95r, III, 95v-104r, IV, 104r-114r, V, 114r-126r, VI, 126r-136r, VII, 136r-142v, VIII, 143r-151r, IX, 151r-164v, X, 164v-166v, XI, 166v-172r, XII, 172v-176v, XIII, 177r-183v.

Codicology. iii+ 183 + ii; foliation in European numerals on each recto; a single hand, in *naskh* script, thicker in Work 2; both works have marginal notes in different hands; well-drawn diagrams; black and red ink.

References. Listed in UAM, p. 192, no. 888, where 799 AH/1396 is given as the date of the present copy. However, according to the note in the manuscript, this is the date of an earlier copy.

(66) (*) **Paris, BnF, 2485**

Context. A single work; undated.

- *Titles*: (title page, f. 1r) written by hand B: تحرير المجسطي لمحمد بن شاکر في الهندسة.

Instead of al-Ṭūsī, the title mentions a certain Muḥammad b. Shākir as the author, who is possibly Muḥammad ibn Mūsā ibn Shākir, the eldest of the Banū Mūsā, to whom a *Book on the Measurement of Plane and Spherical Figures* is attributed, on which al-Ṭūsī wrote a commentary.¹⁹

19. Casulleras, 'Banū Mūsā'.

(f. ii-r) كتاب مجسطي, written in the upper-right corner, clearly later than the main hand.

- *History*: (title page, f. 1r) 1. A statement (hand B) is dated 1208 AH (1793/4) and contains a mention of Nūr al-Dīn b. Muḥammad b. Nāṣir from Manūf al-Hilālī. 2. A circular seal, consisting of ornamental motives without inscription, to the right of statement (1); again in f. 103r. 3. A statement (hand C):

[darkstain] من فضل الله تعالى على العبد الحقير الراجي رحمة الله الحي القدير الحكيم

(f. 100r) A diagonally written text following the end of the *Tahrīr* is a piece found by the copyist in another copy. It says that the copy was finished in Jumādā I 678 AH (September/October 1279) from the copy made by Qutb al-Milla Maḥmūd b. Mas'ūd al-Shīrāzī, from al-Ṭūsī's autograph, and that some notes are copied from his (i.e., al-Shīrāzī's) copy:

وجدت هكذا مكتوب في اخر النسخة المنقول عنها
وقع الفراغ من نسخة في سلخ جمادى الأولى من شهور سنة ثمان وسبعين وستمائة
هجرية ونقلته من نسخة بخط شيخي واستاذي افضل المتقدمين والمتأخرين سلطان
العلماء والحكماء المحققين قطب الملة والحق والدين محمود بن مسعود الشيرازي
أدام الله ظلاله وضاعف حلاله وهو قد نقل من نسخة بخط المصنف المحرر افضل
العلماء والحكماء نصير الملة والدين محمد بن محمد بن الحسن الطوسي طاب الله
ثراه وجعل الجنة مثواه وأما الحواشي فنقلته بعضها أيضا من نسخته وكتبت البعض
الاخر وقت الحال

- *Others*:

(front-i) at the top there is written what might be a price (8 Egyptian piastres) of the manuscript and the place where it was bought (Cairo?): “8 piastre Cairi per Vanslebium”.

(title page, f. 1r) 1. A very unclear note in Persian in the upper inner corner. 2. A short introduction (hand B) on the *Book of the Almagest*, mentioning Ptolemy as “*Dustūr* of the natural sciences (*‘ulūm al-ṭabī‘īyah*), mathematics (*al-riyāqī*) and metaphysic (*al-ilāhī*)” and referring to “the exaltation of the excellence of the necessary skills for the comprehension of this work”:

بأمر المبدأ الواجب العقل المختار والمنشئ المقتدر الموجد القهار مما ساقته دورة حركات الفلك الدوار ومرور الشهور بالليالي والنهار وذهاب ومجي الأنجم والنيرين بالعشى (كذا - بالعشاء) والإبكار مرة بعد مرة ونوبة بعد نوبة إلى أن بلغت إلى نوبة الرق النحيف والعبد الضعيف المحتاج إلى رحمة الرب اللطيف بنو محمد بن خواجه اورنوس فتملك بالابتياح هذا الكتاب المجسطي المنسوب إلى بطليموس القلوذي الذي هو دستور في علوم الطبيعي والرياضي والإلهي في البلدة العظيمة والمدينة القديمة الموسومة بالقسطنطينية (كذا) صانها الله من الآفات والبليات في كل الآت والساعات إلى آخر الدهور والالوقات.

3. A note (hand B) to the right of the previous one, in the name of Muḥammad b. 'Ālī:

وقد ساق قاسم ال[.] ال والمعالى هذا الكتاب الى عبده محمد بن عالى جعله الله له سلما للعروج إلى بروج الحقائق وتذكرة في نهاية ادراك الدقائق.

4. A note (hand D), difficult to read, possibly relating the copyist to the times of a certain authority in Alepo:

رايعة الزمان عمر نائب السلطان بحلب المحروسة (كذا - المحروسة)

(f. 103v) a list (hand D) of works written by al-Ṭūsī.

Content. Type B, complete; (fols 1v-100r) *Tahrīr*; Books: I, fols 1v-12v; II, fols 12v-20v; III, fols 20v-27r; IV, fols 27r-36r; V, fols 36r-45v; VI, fols 45v-53v; VII, fols 53v-60r; VIII, fols 60r-67v; IX, fols 67v-79v; X, fols 79v-82r; XI, fols 82r-89r; XII, fols 89r-93v; XIII, fols 93v-100r. (fols 100v-103r). *Appendix*, complete.

Codicology. ii+103 fols+i; foliation on each recto with European numerals; the main text is written in a single hand, in an elegant and careful *naskh* script (hand A); other hands: cursive *naskh* (hand B), *thuluth* (hand C), careless *naskh* (hand D); abundant marginal and some interlinear notes in hands A and D; well-drawn diagrams and tables (description based on a black-and-white copy). Former shelfmarks: (i-r) 'Ar. 886', repeated on ii-v in a Latin explanatory text about this manuscript by the cataloguer, and 'Arab 1108' (ancient fond) followed by the note "Volume de 103 Feuilletts 9 Septembre 1875".

References. Briefly described in de Slane, *Catalogue*, p. 440, and in Kunitzsch, *Der Almagest*, p. 48.

(67) Patna, Khuda Bakhsh Oriental Public Library, 2444

146 fols; undated, ca. 16th c.; in *nasta'liq* script. [*Bankipore*, vol. 22, pp. 37-38. Also listed in MAOSIC, p. 215, where the *Tahrīr* copies in this library are collectively listed as 2444/6. A digital copy of hand-lists is available at the website of the library, where the manuscript is listed in the Arabic Hand-List, vol. 1, p. 286].

(68) Patna, Khuda Bakhsh Oriental Public Library 2445

213 fols; undated, ca. 12th c.; in *nasta'liq* script. [*Bankipore*, vol. 22, p. 38. Also listed in MAOSIC, p. 215, where the copies of the *Tahrīr* in this library are collectively listed as 2444/6. A digital copy of hand-lists is available at the website of the library, where the manuscript is listed in the Arabic Hand-List, vol. 1, p. 286].

(69) Patna, Khuda Bakhsh Oriental Public Library 2446

190 fols; dated 1227 AH, by 'Abd al-Rahman; in *nasta'liq* script. [*Bankipore*, vol. 22, p. 38. Also listed in MAOSIC, p. 215, where the *Tahrīr* copies in this library are collectively listed as 2444/6. A digital copy of hand-lists is available at the website of the library, where the manuscript is listed in the Arabic Hand-List, vol. 1, p. 287].

(70) Princeton, University Library, Garret (Yahuda) 34

In the printed catalogue, the manuscript is listed as a copy of the *Tahrīr al-Mijisfī* (sic), having 91 fols [*Garret-Yahuda*, p. 420, no. 4870]. According to a more detailed online description on the library's website, the MS has 95 leaves and is dated Friday, 19 Dhū al-Qa'dah 1324 AH / Jan. 4, 1907, copied by Muḥammad ibn Ṭāhir ibn al-Ḥabīb (?) ibn al-Muḥsin ibn al-Ḥusayn ibn Turkī al-Faḍlī, once property of al-Hādī Al-Kāshif (sic) al-Ghiṭā' al-Najafī, dated 1332 AH (1913/14), and acquired in 1942 from Abraham Shalom Yahuda. Transcriptions of the beginning and the end as provided on the website suggest that the copy is complete.

(71) Princeton, University Library, Garret (Yahuda) 3219

In the printed catalogue, the manuscript is listed as a copy of Books 1 to 4

of the *Tahrīr al-Mijisī* (sic), having 34 fols [Garret-Yahuda, p. 420, no. 4870. In MAOSIC, p. 215, a MS is listed as '3119', which probably refers to the same manuscript].

(72) **Qum, 'Alāma Ṭabāṭabā'ī Library (without shelf mark)**

The manuscript is briefly described in the journal *Turāthunā* (تراثنا), vol. 7-8, p. 151, where it is dated 29 Dhū l-Ḥijja 1085 AH (26 March 1675). DENA, 2, p. 876, refers to the journal issue as ۳ ش ۲ , تراثنا, whereas in the bibliography, vol. 1, p. 102, I read:

مکتبة علامة الطباطبائي، مجله تراثنا، سيد احمد حسيني اشكوري، شماره های ۲۲-۲۵.

(73) **Qum, Mar'ashī Najafi Library, 8282**

172 fols; dated 22 Muḥarram 1227 AH (6 February 1812) by Muḥammad Nabī. [*Mar'ashī*, 21, p. 242, where transcriptions of the beginning and the end of the *Tahrīr* are given. Also listed in DENA, 2, p. 877].

(74) **Qum, Mar'ashī Najafi Library, 13717**

227 fols; ca. 16th century; neat *naskh* script. According to the printed catalogue, the MS contains a collection in which the *Tahrīr* is the first work [*Mar'ashī*, vol. 34, pp. 656-658]. According to the same catalogue, the transcriptions of the abrupt beginning and ending of the *Tahrīr* correspond to passages in Books I and XIII:

(Beginning)

...منها نصف القطر و واحد جيب غاية الميل و هو لديه (تدل) علي ان غاية الميل هو ما
اتفقنا عليه من نسبة احد عشر

(End)

فاذن الكوكب قد تحرك من الخفا المساني الي الظهور الصباحي الي خلاف ...

The catalogue further reports that the *Sharḥ Tahrīr al-Majisī* by al-Bīrjandī is the second work in the MS, on 30 fols, transcriptions of which, extracted from the beginning and the end, are said to pertain to Books I and II. [Also listed in DENA, 2, p. 876].

(75) **Qum, Markaz Aḥyā', 1525**

27 fols; undated, an ownership statement in the name of 'Alī b. Aḥmad

Shāmī dates from 905 AH (1499/1500); it includes a statement in the name of ‘Abd al-Ghufūr b. Zayn al-Dīn Munajjim; in *nasta‘līq* script [Qum, *Aḥyā’*, vol. 4, pp. 373-375, where the MS is said to contain Books 2 to 4 of the *Taḥrīr*, whereas the transcriptions correspond to the beginning and the end of the entire work, which seems improbable. DENA, 2, p. 876, describes the content as Books 2 to 4 of the *Taḥrīr* and gives the same number of fols, date and script].

(76) **Qum, Mu’assasa Āyat-Allāh Borūjerdī, 109**

155 fols; dated 21 Dhū l-Ḥijja 1096 AH (18 November 1685); the first folio bears a statement of donation dated Dhū l-Qa‘da 1120 (January/February 1709), accompanied by an oval seal with the inscription العبد المذنب عبد النبي. [*Mu’assasa*, vol. 1, p. 72; also listed in DENA, 2, p. 877, referring to p. 73 of the printed catalogue].

(77) **Rampur, Raza Library, 706 D**

230 fols; dated 1133 AH (1720), copied by “Abu’l-Khair Khairullāh b. Luṭfu’llāh al-Muhandis a’d-Dihlawī in 23 days within blue Jidwal” (*sic* in the printed catalogue). [*Raza*, pp. 40-41].

(78) **Rampur, Raza Library, 797 M**

209 fols; dated 1043 AH (1633), copied in Tattah (Sind) from a MS transcribed in 644 AH (1247); with copious notes throughout and with a “Lawḥ and red and blue Jidwal” (*sic* in the printed catalogue). (f. 1r) Seal of Mawlawī Ġulām Jilānī Khān Bahādur Rāmpūrī (d. 1207 AH /1792-3). [*Raza*, pp. 40-41].

(79) **Rampur, Raza Library, 5134 D**

209 fols; ca. 17th c.; in *naskh* script; fols 65-72 are written in a later hand; with marginal notes. [*Raza*, pp. 40-41, where transcriptions of the beginning and the end are given].

(80) **Saint Petersburg, Institute of Oriental Studies, A 1256**

152 fols; dated 891AH (1486), according to the printed catalogue [*Khalidova*, vol. 1, p. 458, where the MS is also listed as no. 9772 adding a reference “Rosen. Coll. Sc., 1, no. 188”. In Rosen, *Les Manuscrits Arabes*, p. 120, I find that ‘188’ in the inventory pertains to a manuscript with the

shelf mark number 90, containing 77 fols, which corresponds to a copy of the *Taḥrīr* dated 1242. This MS 90 could be the same as MS D 172 (see below), based on the agreement in the number of folios and the date. MAOSIC, p. 215, lists MS A 1286, which probably refers to A 1256].

- (81) **Saint Petersburg, Institute of Oriental Studies, B 810 (614a)**
206 fols; dated 1006 AH (1597/98). [*Khalidova*, p. 458, where the MS is also listed as no. 9773].
- (82) **Saint Petersburg, Institute of Oriental Studies, C 614 (614)**
184 fols. [*Khalidova*, p. 458, where the MS is also listed as no. 9775].
- (83) **Saint Petersburg, Institute of Oriental Studies, D 172**
77 fols; dated 1242 AH (1826/27). [*Khalidova*, p. 458, where the MS is also listed as no. 9774. This manuscript is possibly Rosen's MS '90'; cf. above MS A 1256].
- (84) **Saint Petersburg, National Library, Chanykov 139**
The title and a transcription of the beginning of the text are given in the printed catalogue [*Dorn*, p. 36. Also listed in MAOSIC, p. 215, as 'Nat. Khan. 139'].
- (85) **Shirāz, Shah Cheragh Library, 2067**
Dated 16 Ramaḍān 1060 AH (12 September 1650), by Muḥammad Mu'min b. Mūsā Ṭabsā [DENA, 2, p. 876].
- (86) **Tabriz, Qāḍī Muḥammad 'Alī Ṭabāṭabā'ī Library (without shelf mark)**
The manuscript collection in this library has been described by Sayyid 'Abd al-'Azīz Ṭabāṭabā'ī in *Nashriyya* 7, pp. 512-523. On p. 513 this manuscript without a shelf mark is described as a *Taḥrīr al-Majisī*, copied ca. 16th c. [Also listed in DENA, 2, p. 577, referring to an edition of *Nashriyya* 7].
- (87) **Tehran, Madrasa Marwī, 321**
Undated, estimated 14th c. [*Marwī*, vol. 1, p. 83; also listed in DENA, 2, p. 875].

(88) (*) **Tehran, Majlis-Parliament, 35**

Context. A single work; undated.

- *Titles:* (f. 1v) تحرير المجسطي, written above the text.
- *History:* (f. 1r) an acquisition statement in Arabic, reporting a purchase in Balad al-Ḥusayn, with dirhams, in the name of Muḥammad Bāqir Shīrāzī.

Content. Incomplete, Book I till about the middle of Book XIII. The copy lacks the chapter titles, many of the diagrams and labels as well as the tables.

Codicology. 108 fols (according to my copy; the printed catalogue states that the MS has 126 pages); stamped foliation in Perso-Arabic numerals on each verso; a single hand in careless *nastaʿlīq* script; black and red ink.

References. *Majlis*, vol. 7, pp. 32-33; also listed in DENA, 2, p. 877.

(89) (*) **Tehran, Majlis-Parliament, 158**

Context. A single work; the colophon is dated Dhū al-Ḥijja 1099 AH (September/October 1688).

- *Titles:* [f. i-r] مجسطي لطلميوس
- *History:*
[f. 1r] a rectangular seal with an inscription, difficult to read in my copy.
[f. 1v] a rectangular seal close to the beginning of the text, with the inscription:

لا اله الا الله الملك الحق المبين عبده محمد علي

Further statements and seals, difficult to see in my copy.

Content. Type A; complete.

Codicology: i+92 fols+i; unfoliated; a single hand in *nastaʿlīq* script; well-drawn diagrams; black and red ink.

References. *Majlis*, vol. 1, pp. 85-86; also listed in DENA, 2, p. 877.

(90) (*) **Tehran, Majlis-Parliament, 398 T**

Context. A single work; the colophon (p. 354) is dated 1198 AH (1783/84), whereas on the same page a note in red by the copyist says that he made the present copy from another one dated 2 Rabīʿ II 1198 AH (24 February 1784);

- *History:* (p. 354) a square seal for the *waqf* of Ṣādiq Ṭabāṭabāʾī.

Content. Type A, complete; Books: I, 2-42, II, 43-75, III, 76-100, IV, 100-137, V, 137-167, VI, 167-193, VII, 193-218, VIII, 218-246, IX, 246-293, X, 293-301, XI, 301-321, XII, 321-333, XIII, 334-354. Some tables are left empty or incomplete.

Codicology. one flyleaf+[3 pp].+357 pp.+one flyleaf. Pagination in Perso-Arabic numerals and foliation in Indo-Arabic numerals; a single hand in *nasta'liq* script; blue, golden and red frame on each page; illuminated headpiece; abundant marginal notes by the copyist; black and red ink.

References. *Majlis*, vol. 24/I, pp. 267-268; also listed in DENA, 2, p. 876.

(91) (*) **Tehran, Majlis-Parliament, 411 Ṭ**

Context. A single work; the colophon is dated Wednesday, 6 Dhū l-Qa'da 1056 AH (14 December 1646), by Muḥammad Ṣalāḥ b. Muṭṭī Allāh Iṣfahānī.

- *Titles:* (title page, p. i) مجسطي, written by a modern hand.
- *History:* (title page, p. i) 1. A statement, possibly regarding ownership, bears a partially legible name:

...عبيد الحسين[?]

2. A blue rectangular seal with an unclear inscription.

Content. Type A; complete. Books: I, 1-21, II, 21-37, III, 37-48, IV, 48-63, V, 63-81, VI, 81-100, VII, 100-111, VIII, 111-124, IX, 124-145, X, 145-149, XI, 149-160, XII, 160-168, XIII, 168-179.

Codicology. 180 pp.; stamped pagination in Perso-Arabic numerals; a single hand in *nasta'liq* script; many marginal notes by the copyist; diagrams and tables; black and red ink.

Reference: *Majlis*, vol. 24/I, pp. 273-274; also listed in DENA, 2, p. 876.

(92) (*) **Tehran, Majlis-Parliament, 1512**

Context. A single work; the colophon (f. 122v) is dated 27 Dhū l-Ḥijja 1006 AH (31 July 1598), by Badr al-Dīn b. Qāḍī Sulaymān.

Content. Type A; complete.

Codicology. 122+i.

Reference. *Majlis*, vol. 2, p. 222; also listed in DENA, 2, p. 876, referring to vol. 4, which I have not been able to find.

(93) (*) **Tehran, Majlis-Parliament, 3853**

Context. A single work; the colophon (p. 400) is dated in the middle of the last ten days of Ramaḍān 1044 AH (middle of March 1635), in Iṣfahān, and states that the present copy is made from al-Ṭūsī's autograph, which is dated 5 Shawwāl 644 AH, the well-known date of composition.

- *History:* (title page, [p.-1]) a statement in the name of Qāḍī Muḥammad Zāhir al-Ṭabrīsī dated 1338 AH (1919/20), including the title, *Tahrīr al-Majisī*, and the author, Naṣīr al-Dīn al-Ṭūsī.
- *Others:* (title page, [p. -1]) a text on the Majmū'a Mutawwasitāt (the Intermediate Books).

Content. Type A, complete; the margins are abundant in notes that contain parts of al-Bīrjandī's *Sharḥ al-Majisī*.

Codicology. [1p].+401pp.; pagination in Perso-Arabic numerals; a single hand in *nasta'liq* script; well-drawn diagrams; black and red ink.

References. Briefly described in *Majlis*, vol. 10/4, p. 1885, where the date is given as 1034 AH (1624/25); also listed in DENA, 2, p. 877, where no date is given.

(94) (*) **Tehran, Majlis-Parliament, 4555**

142 fols, incomplete; paginated, but highly disordered; in *naskh* script. The MS is listed as a copy of the *Tafsīr* by al-Nīsābūrī in DENA, 3, p. 126. The same identification also appears in the printed catalogue, *Majlis*, vol. 12, p. 238, where the title is given as *Sharḥ Tahrīr al-Majisī*, and where it is dated 703 AH (1303/04, matching with the date of composition of Nīsābūrī's commentary); the author is described as al-Ṭūsī. However, the text in the MS is that of al-Ṭūsī's *Tahrīr al-Majisī*.

(95) (*) **Tehran, Majlis-Parliament, 5499**

Context. A collection of 17 works, some of which are dated; Work 4 is dated 27 Shawwāl 1277 AH (8 May 1861), Works 11 and 12, Shawwāl 1283 AH (February/March 1867). According to a statement on the title page [f. 1r], the copyist of the collection is 'Alī Muḥammad Iṣfahānī.

- *Others:* (title page [f. 1r]) an index of 12 titles, written in pencil, presumably by a cataloguer.

Content. The following titles appear in the MS. Some of the works are incomplete.

1. (fols 1v-16r) موجب الوصول
2. (fols 17v-28r) صنعة الطبيعة وسرائر الخليفة
3. (fols 28v-39r) تفسير كتاب العلل
4. (39v-65r) الجامع للأشياء لبلينيوس
5. (65v-83r) كتاب خلق المخلوقة لبلينيوس الحكيم وهو الجزء الثاني
6. (87v-115r) في المعادن النافعة لتدبير معائش الخلائق هذا تعريب كتاب المعلم (فردار)
7. (117r-121v) رسالة السر لبودشيردي
8. (121v-125v) رسالة لهرمس الدهدري في صنعة الروحانية والحكمة الربانية
9. (125v-131r) كتاب رسيموس (كذا) الحكيم، رسالة تفريق الأديان وتفريق العبادات والديانات والاعتقادات
10. (131v-132r) حكمة لحكيم مؤيد الدين أبو إسماعيل الحسين بن علي بن محمد الاصفهاني الطغراني
11. (136v-150v) شرح قصيدة أبو المولاء الأصبغ عبد العزيز
12. (153v-162v) رسالة أبي بكر بن بشرون لأبي (كذا - لابن) السمع في هذه الصنعة (20)
(*Risāla by Ibn Bishrūn to Ibn al-Samḥ on alchemy*)
13. (163v-174v) معرفة ارتفاع درجة القمر وارتفاعه بحسب عرضه
14. (178v-183r) (an incomplete treatise on the mechanism of sight from the commentary by Ibn al-Haytham) القول في كيفية الإبصار من شرح مولانا صدر الدين علي الهيثم
15. (186v-191v) (Ch. 2 of the *Qanūn al-Mas'ūdī*) الباب الثاني من كتاب القانون المسعودي
16. (194r-208v) (Ch. 2 of the *Taḥrīr al-Majisī*) فصول من تحرير المجسطي
17. (208v-213v) (Ch. 5, fols 213r-213v) فصل من المجسطي في ان الأرض ليست لها حركة انتقال

Work 17 consists of a selection of chapters from Book 1 of al-Ṭūsī's *Taḥrīr*:

- (Ch. 1, fols 208v-209v) في أن السماء كرية وحركتها مستديرة
- (Ch. 2, fols 210r-211r) ب في أن الأرض كرية في الحس بالقياس الى الكل
- (Ch. 3, fols 211r-212r) ج في أن الأرض في وسط السماء كالمركز في الكرة
- (Ch. 4, fols 212r-212v) د في أن الأرض كالنقطة عند فلك البروج
- (Ch. 5, fols 213r-213v) فصل من المجسطي في ان الأرض ليست لها حركة انتقال

20. See Samsó, 'Ibn Bišrūn, Abū Bakr'.

Chapters 1-4 in the selection seem equal to chapters 1,3-1,6 of the *Tahrīr*. Chapter 5, which is unnumbered, has the same title as 1,7 of the *Tahrīr*, but the content is different and, in the parts that I compared, it is taken from *Alm.* 1,7 in the Ishaq/Thābit translation. The ending is incomplete. In the margins along the text, passages from ch. 1,7 of the *Tahrīr* have been added.

Codicology. 214 fols; foliation in Perso-Arabic numerals in pencil on each recto; a single hand in a very neat and clear *naskh* script; several blank pages: 16v-17r, 83v-87r, 115v-117r, 132v-136r, 151r-153r, 163r, 175r-177v, 183v-186r, 192r-193v, 196r-197v; black and red ink.

References. *Majlis*, 16, pp. 394-399; also listed in DENA, 2, p. 877, as Work 16 in the MS, based on the printed catalogue.

(96) (*) **Tehran, Majlis-Parliament, 6168**

Type A; incomplete at the beginning; the foliation as well as the outer side margins are lost; dated 1010 AH (1601/02), by Ḥusayn b. Muḥammad. [*Majlis*, 19, p. 162; also listed in DENA, 2, p. 876].

(97) (*) **Tehran, Majlis-Parliament, 6357**

Context. A single work; undated, probably 15thc.

- *Titles:* (title page, f. 1r) تحرير المجسطي, written in a different hand. The same title appears in the manuscript card.
- *History:* (f. i-r) 1. An oval seal with the inscription بسم الله الرحمن الرحيم
2. A square seal with an unclear inscription.

Content. Mostly complete; f. 2 with text from chapters 1,1 to 1,8 is missing, the text on f. 3r continues with the last half line of 1,8. On f. 114v, the title of XIII,10 is written in the margin and no space is left for the last chapter, XIII,11, where a short text within a triangular area in the margin may be an attempt to conclude the work. Books: I, 1v-12r, II, 12r-23v, III, 24r-30r, IV, 30r-38r, V, 38r-47v, VI, 47v-56v, VII, 56v-69r, VIII, 69v-82r, IX, 82r-93v, X, 93v-96v, XI, 96v-103v, XII, 103v-108r, XIII, 108r-114v.

Fols i-v and 115r contain similar numerical tables, unlabelled and written by a hand similar to that of the main text, with number series from 1 to 30 and from 1 or 31 to 60 as horizontal and vertical arguments.

Codicology. i+115 fols; foliation in Perso-Arabic numerals in ink on each recto; a single hand in a very clear and neat *naskh* script; many marginal notes; well-drawn diagrams; many empty tables; black, red and green ink.

References. *Majlis*, vol. 19, p. 402; also listed in DENA, 2, p. 876.

(98) (*) **Tehran, Majlis-Parliament, 6395**

Context. A collection of three works; undated, estimated 16th c.

- *Titles:* (title page, 1r) the titles of the three works in the collection are written in a modern hand; the signature is dated 1336 AH (1917/18).

Content.

1. (1v-10v) كتاب ظاهرات الفلك لأقليدس
2. (11r-17v) كتاب ثاوذوشيوس في الأيام والليالي
3. (18r-147v) *Tahrīr al-Majisī*; Type A; incomplete, starting at the beginning of 1,1:

[..] من الفلاسفة افراز الفلسفة النظرية من العملية مع كون العملية قبل العمل
ايضا نظرية لا تسبب امكان حـ[صول] بعض الاخلاق الفاضلة...

Books: I, 18r-28v, II, 28v-38v, III, 38v-47r, IV, 47r-58v, V, 58v-70r, VI, 70r-80v, VII, 80v-93v, VIII, 93v-107r, IX, 107r-123r, X, 123r-126r, XI, 126r-134r, XII, 134r-139r, XIII, 139v-147r.

Codicology. One flyleaf+147 fols+one flyleaf. Foliation in Perso-Arabic numerals in pencil on each verso; a single hand in *nasta'liq* script; many marginal notes by the copyist; very well-drawn diagrams; black and red ink.

References. *Majlis*, vol. 19, pp. 507-508; also listed in DENA, 2, p. 876.

(99) (*) **Tehran, Majlis-Senate, 10 / 2248**

Context. A single work; the colophon [f. 159v] is dated the night of 20 Sha'bān 1087 AH (28 October 1676), by Muḥammad 'Alī b. Khwāja Mīrzā Bīk Ṭabsī Mashhadī.

- *History:* [f. 1r] a statement dated 1322 (AH?) in Tehran accompanied by a damaged oval seal.

Content. Type A, complete; however, after the end of the *Tahrīr* [f. 159v], unlabelled diagrams are drawn [fols 160v-161r] which correspond to Chapter 1 of the *Appendix*; substantial portions of the *Tafsīr al-Tahrīr al-Majisī* by al-Nīsābūrī are written in the margin and a loose sheet contains an illustration of the *Dhāt al-Kursī*.

Codicology. 1 flyleaf + [162]; without foliation, groups of eight successive folios are numbered on each first recto; a single hand in a very careful *naskh* script; well-drawn diagrams; black and red ink.

References. *Majlis, Sena*, vol. 1, pp. 3-5, and DENA, 2, p. 876, both referring to the MS by the shelf mark “10”. *Nashriyya* 2, p. 221, describes a MS with shelfmark “2248”, without transcription but giving similar information as *Majlis, Sena* and, in addition, reports of ownership by ʿĪyāʾ al-Dīn in 1322 (Š?). Since both numbers, 10 and 2248, appear on the MS, both reports clearly refer to the same copy. MAOSIC, p. 215, also lists the MS under the shelf mark 2248].

(100) **Tehran, Malik, 3389**

197 fols; dated Muḥarram 1051 AH (April/May 1641) in Mashhad, by Muḥammad Šādiq b. ʿAbd al-ʿAlī Tarshīzī, and (judging from the information in the printed catalogue) copied from another copy which, at its end, contained an attribution to Abū Jaʿfar Kāfī b. Muḥtashim b. ʿAmīd b. Muḥammad Qāʾinī from Isfahān dated 1027 AH (1617/1618); once owned by Zayn al-Dīn ʿAlī Nayrīzī and Ibn Hidāyat Allāh; some seals; in *nastaʿlīq* script. The printed catalogue also provides transcriptions of the beginning and the end. [*Malik*, vol. 1, p. 113; also listed in DENA, 2, p. 876, referring to a certain vol. 1, p. 85, apparently of a second edition of the catalogue].

(101) **Tehran, Malik, 3390**

147 fols; dated Sunday, 15 Dhū l-Ḥijja 905 AH (12 July 1500), by Sayyidī Aḥmad b. Zayn al-ʿĀbidīn b. Sayyidī Aḥmad Marshadī Qurshī; once owned by ʿAbd al-Karīm b. Sulṭān Muḥammad Tabrīzī and Muḥammad Bāqar b. Muḥammad Ḥusaynī Qahpāyī (?) Isfahānī, dated 1122 (1710/11) and 12 Šafar 1125 (10 March 1713). [*Malik*, vol. 1, pp. 113-115; also listed in DENA, 2, p. 876, referring to p. 85, apparently of a second edition of the same catalogue].

(102) **Tehran, Malik, 3653**

161 fols, incomplete; dated 1094 AH (1682/83), by Muḥyī al-Dīn Muḥammad; once owned by Rustam b. Shāh. [*Malik*, 1, p. 114; *Malik-Index*, p. 214, refers to the place of the printed catalogue and also to vol. 2, p. 85, of a second edition of the same catalogue. The latter also seems to be referred to in DENA, 2, p. 876, where vol. 1, p. 85, is mentioned instead].

(103) **Tehran, Malik, 6213**

According to the printed catalogue [*Malik*, vol. 9, p. 271], the MS contains

a collection in which the *Tahrīr al-Majisī* (fols 52v-102v) is the second part. The given transcription of the beginning of the text does not correspond to the beginning of the work, whereas the transcribed ending pertains to VII,5 of the *Tahrīr*.

The same catalogue reports that the first part of the collection was written by 'Abdallāh b. Muḥammad b. 'Abdallāh in Isfahan in 1266 AH (1849/50), in *nasta'liq* script, and the second part by Muḥammad 'Alī b. Muḥammad Ismā'īl Qā'inī Ḥusaynī in the same year; the names Mīrzā Naṣīr and Ḥabīb Allāh appear in a margin; the MS was owned by 'Alī b. 'Abd al-Rasūl, in 1353. [The MS is also listed in DENA, 2, p. 877. My search of the library's website (www.malekdlb.org) for the shelf mark 6213 yielded indications of another work in this MS, but not of the *Tahrīr*].

(104) (*) **Tehran, Milli, 1057**

Context. A single work; undated, estimated ca. 17th c.

- *Others:* (f. 2r) an index of chapter titles with folio numbers, written by a later hand.

Content. Incomplete, the beginning and the end are lost; the preserved part comprises from around the middle of I,4 till XIII,10. A particularity of this copy is that XIII,10 contains text where, in other copies of the *Tahrīr*, a table for phases (the first and last visibilities of the fiveplanets) with an introduction to their use is found.

الظهور مع صيرورة الكواكب الجنوبية ابدية الخفاء بعد ان كانت
ذوات طلوع وغروب... (Beginning, f. 10r)
الفصل العاشر في الجداول [...] العمل بجدول ان الكوكب اذا كان... الطلوع
والخفاء مكان الغروب كما وقع في عبارات المتأخرين فاذا عرف.

Codicology. 9 flyleaves+327 fols+3 flyleaves; the original folios are mounted on guards; a foliation in Perso-Arabic numerals in pencil on each recto includes the flyleaves; a single hand in careless *naskh* script; occasional marginal notes; well-drawn diagrams; black and red ink.

References. *Milli*, vol. 9, pp. 53-54; also listed in DENA, 2, p. 877.

(105) (*) **Tehran, Milli, 16520**

272 pp.; incomplete at the beginning and end, with notable disorder in the

pagination and many tables left empty; undated. [Not listed in DENA. The MS is still uncatalogued. A digital copy of the MS is available on the library's website].

(106) (*) **Tehran, Milli, 19073**

A digital copy of the MS is available on the library's website. I have counted a total of 458 pages, without foliation or pagination; undated; many tables are empty; no marginal notes. Some of the digital slides seem to be posted in a disorderly fashion on the website, and so it is not possible to draw any conclusions regarding the pagination in the MS. [Not listed in DENA. The MS is still uncatalogued].

(107) (*) **Tehran, Milli, 19147**

Context. Collection of two works; undated.

Content.

1. (pp. 1-36) *Tahrīr al-Majisī*; incomplete, only Book I is largely preserved, of which chapter 12 ends abruptly:

(End, p. 36) الشكل العاشر ونصل نصف قطر ا د ونخرج عمود د ز إلى ا ج ونقول لما كانت قوس ا ج معلومة كان ا ز جيب نصفها و د ز جيب تمام نصفها وزاوية ز د ا معلومة فمثلث ا د ز القائمة الزاوية معلومة باسره ولما كان ا ج معلوما ونسبة ا ٥ إلى ٥ ج كان كل واحد من ا ٥ ٥ ج بالانفراد معلوما فاذن مثلث ٥ د ز من ضلعي ٥ ز د المعلومين معلوم باسره فزاوية ا د ب وهي مقدار قوس ا ب معلومة وقوس ب ج الباقية ايضا معلومة

2. (pp. 37-38) untitled fragment, with many marginal notes, on calculations with divisions and multiplications; beginning and end missing.

Codicology. 38 pp; pagination in pencil on each recto; the *Tahrīr al-Majisī* is written by two different hands in *nasta'liq* script, the first one on pp. 1-15 and the second one on pp. 16-36; Work 2 is written in *naskh* script with *dīwānī* characteristics; generally careless handwriting, but the *Tahrīr* has well-drawn diagrams and tables; black and red ink.

References. Listed in DENA, 2, p. 877. The MS is still uncatalogued. A digital copy of the MS is available on the library's website.

(108) (*) **Tehran, Milli, 20111**

Type A, complete; no foliation; dated 6 Jumādā II 1281 AH (6 November

1864). [Still uncatalogued; listed in DENA, vol. 2, p. 877. The manuscript is accessible online via the library's website].

(109) **Tehran, Muḥammad Ḥusayn Miftāḥ 384**

The collection preserved in the library of Dr. Ḥusayn Miftāḥ in Tehran is described by M. T. Dānešpažūh in *Nashriyya*, vol. 7, pp. 95-511. The present MS is described as a *Taḥrīr al-Majisī* in p. 112; in *nasta'liq* script. [Also listed in DENA, 2, p. 876].

(110) **Tehran, Muḥammad Ḥusayn Miftāḥ 416**

Undated, estimated 14th or 15th c.; in *naskh* script. [*Nashriyya*, 7, p. 113; also listed in DENA, 2, p. 876].

(111) (*) **Tehran, Sipahsalar, 591**

Context. A single work; undated.

- *Titles:* (title page, [p. -1]) the title and the author appear in a Persian note in a modern hand:

تحریر مجسطی بطلمیوس از خواجه نصیر الدین الطوسی

- *History:* (title page, [p. -1]) 1. A statement that the manuscript belongs to the books of Maḥmūd al-Tabīb Amīr Khaḍr al-Ḥusayn. 2. A waqf statement in the name of the library Madrasa Nāṣirī, dated Friday, 15 Dhū al-Ḥijjah 1297 AH (18 November 1880); the statement is accompanied by two seals, one oval with an inscription containing the library name and the year 1297 AH, the other square with an inscription containing the name of Mīrzā Ḥusayn Mushīr al-Dawla Sipahsalār²¹ and the same year. 3. The manuscript card bears the name of the waqf, as Mīrzā Ḥusayn Khān Sipahsalār.

Content. Incomplete; chapter XIII, 11 is missing and many tables are left partially empty; Books: I, 2-46, II, 46-72, III, 72-105, IV, 105-137, V, 138-178, VI, 178-210, VII, 210-235, VIII, 236-258, IX, 259-301, X, 302-312, XI, 312-334, XII, 334-350, XIII 350-380.

21. For Mīrzā Ḥusayn Khān see Keddīe, 'Iran under the later Qājars', pp. 184-90, 193 and Lambton, 'Landtenure', pp. 400, 493.

Codicology. [1p]. + 381pp.; pagination in Perso-Arabic numerals in pencil on even pages; a single hand in a very clear *naskh* script with some *ta'liq* tendencies; very well-drawn diagrams and table grid lines; no marginal notes; black and red ink.

References. *Sepahsalar*, pp. 343-344; also listed in DENA, 2, p. 877, as having 190 fols, based on the catalogue.

(112) **Tehran, Sipahsalar, 592**

Context. A single work; the colophon (f. 143v) is dated the night of 29 Dhū al-Ḥijjah 662 AH (22 October 1264) in Marāgha, by Aḥmad b. 'Alī b. Muḥammad, known as Ibn al-Bawwāb al-Baghdādī, who made the present copy from another one dated 5 Shawwāl 644 AH (13 February 1247, the date of composition).

• *History:*

(title page, f. 2r) 1. statements and seals, including the same ones described for MS 591, *history*, item (2).

2. A statement, describing the work as *Majisṭī*, ascribed to an authority (I hesitantly read the name as Naṣr A'ẓim 'Anṣār) of the Ministry of Sciences, dated Ramaḍān 1293 AH (September/October 1876). The statement is accompanied by a square seal with the inscription السلطة عنصاري لسنة ١٢٩٣.

3. A long statement in Persian, on the date of composition of the *Tahrīr* and on the author Naṣīr al-Ṭūsī, is dated 1297 AH (1879/80).

• *Others:* (f. 144r) a text on ca. one-half of the page, in a similar hand as the main script, deals with a commentary on the *Dioptra*, شرح ذات الثقبين.

Content. Type A, complete; Books: I, 2v-17v, II, 17v-31r, III, 31r-47r, IV, 47r-51r, V, 51r-63v, VI, 63v-73r, VII, 73r-84v, VIII, 84v-97v, IX, 97v-113r, X, 113r-117v, XI, 117v-128r, XII, 128r-134v, XIII, 134v-143v.

Codicology. 1 flyleaf+144+1 flyleaf; foliation in Eastern-Arabic numerals in pencil on each recto, counting from 2 to 145; a single hand in *naskh* script; book sections written in *kāfīc* script; abundant marginal notes; well-drawn diagrams and tables; black and red ink.

References. *Sepahsalar*, vol. 3, p. 344; also listed in DENA, 2, p. 875.

(113) **Tehran, Sipahsalar, 593**

Context. A single work; the colophon (p. 241) is dated Sunday, 29 Rabī'

II 1079 AH (6 October 1668), by Ibn Muḥammad Shafī' Muḥammad Samī'.

- *Titles*: (title page, [p. -1]) written in red by the main copyist:

تحرير كتاب المجسطي من تصانيف مولى المعظم قدوة العلماء في العالم افضل المتأخرين
مكمل علوم الاولين والآخرين نصير الملة والدين برهان الاسلام والمسلمين محمد بن
محمد بن الحسن الطوسي ادام الله في العز الدائم بقاءه وإلى درج المعالي ارتقاءه

- *History*:

(title page, [p. -1]) 1. A statement in the name of an authority (possibly Naṣr A'ẓim 'Anṣār) of the Ministry of Science dated Rabī'... 1281 AH (August-October 1864), accompanied by two rectangular seals, the inscription of the first one being وزير علوم عليه دولت ايران and of the second one السلطنة[.] لسنة ١٢٧٣.

2. Another statement with a square seal, both unclear.

(p. 1) 3. A *waqf* statement in the name of the library of the Madrasa Nāṣirī dated Friday, 15 Dhū al-Ḥijjah 1297 AH (18 November 1880), accompanied by two seals, one oval with the name of the Madrasa Nāṣirī Library and the year 1297, the other square with the name Mīrzā Ḥusayn Mushīr al-Dawla²² Sipahsalār and the same date as in the statement.

4. An ownership statement, قد انتقل بالبيع الصحيح الرعى إليّ وأنا العبد، المذنب العا[؟] بي لدي

5. An oval seal.

Content. Type A; complete; Books: I, 1-31, II, 31-51, III, 51-69, IV, 69-92, V, 92-115, VI, 115-134, VII, 134-152, VIII, 152-171, IX, 171-194, X, 194-201, XI, 201-216, XII, 216-226, XIII, 226-241.

Codicology. [3pp].+241pp.; pagination in Eastern-Arabic numerals in pencil on each recto; a single hand in *naskh* script; a few marginal notes in *ta'liq* script; very well-drawn diagrams and tables; (p. 141) decorative flower motifs in the heading of the first table of the star catalogue; black and red ink.

22. For Mīrzā Ḥusayn Khān see Keddīe, 'Iran under the later Qājars', pp. 184-90, 193 and Lam-
bton, 'Landtenure', pp. 400, 493.

References. *Sepahsalar*, vol. 3, p. 344; also listed in DENA, 2, p. 876. MAOSIC, p. 215, item A3, reports that a certain ‘MS 523’ is preserved in Tehran, possibly referring to the present MS.²³

(114) (*) **Tehran, Sipahsalar, 4727**

Context. Collection of three parts, the *Tahrīr al-Majisī* being the third; the colophon of the first part (p. 98) is dated 11 Sha‘bān 671 AH (3 March 1273) from the exemplar dated 22 Sha‘bān 646 AH (10 December 1248); the group of works forming the second part is dated to different months of the year 671 AH, e.g. (p. 130) “14 Sha‘bān 671 from the exemplar dated Jumādā I 651”, etc.; the colophon of the last work in the second part (p. 424) is dated 10 Rabī‘ II 671 AH (4 November 1272), and the colophon of the *Tahrīr* (p. 571) 11 Rajab 671 AH (7 February 1273); copied, collated and illustrated by Muḥammad b. Aḥmad b. Muḥammad b. Rabī‘ al-Zarkashī.

- **Titles:** (title page, p. 1) 1. كتاب أقلیدس ومتوسطات ومجسطي. This describes the three parts in the collection, i.e., al-Ṭūsī’s *Tahrīr Uṣūl Uqlīdis*, the compendium of the “Intermediate Books” (*al-mutawassiṭāt*), and al-Ṭūsī’s *Tahrīr al-Majisī*. 2. The same title, with an addition of al-Ṭūsī’s name, is written in a modern hand:

كتاب اقلدس (كذا) متوسطات مجسطي لمولانا الطوسي قدس...

(title page, p. 425) 3. كتاب المجسطي, followed by a short text mentioning al-Ṭūsī.

- **History:** (title page, p. 1) 1. An ownership statement dated Sha‘bān 1090 AH (ca. September 1679), accompanied by an oval seal. (title page, p. 3) 2. A partially visible statement dated 920 AH (1514/15). 3. A partially visible statement dated 1144 AH (1731/32), accompanied by two seals, one oval and the other one square. (p. 425) 4. A statement in the name of Jamāl al-Dīn b. ‘Abd Allah Ḥusaynī, with an incorrect description of the title: كتاب المجسطي من تحرير أفضل المحققين....

23. According to MAOSIC, p. 215, further copies of the *Tahrīr* in Sipahsalar are extant in MSS 33/2 and 4555. I have not found more information on MS 33/2, but MS 4555 is probably stored in the Parliament Library (see above).

Content. Collection of three parts.

1. (4-98) *Tahrīr Uṣūl Uqlīdis*.
2. (98-424) “Intermediate Books” (*al-mutawassiṭāt*).
3. (426-576) *Tahrīr al-Majisṭī*. Type B, complete; (426-571) *Tahrīr*; Books: I, 426-440, II, 440-456, III, 456-466, IV, 466-476, V, 476-490, VI, 490-501, VII, 501-513, VIII, 513-525, IX, 525-541, X, 541-545, XI, 545-555, XII, 555-562, XIII, 562-571. (572-576) *Appendix*.

Codicology. 577 pp.+1 flyleaf; pagination in Perso-Arabic numerals in pencil on each recto; a single hand in a very clear and neat *naskh* script; well-drawn diagrams and tables; few marginal notes; black and red ink.

References. *Sepahsalar*, vol. 3, p. 344, referring to folio numbers, 214v-289v, instead of pages; however, I do not see a foliation in the MS. The MS is also listed in DENA, 2, p. 875, which gives only the year and the type of script.

(115) (*) **Tehran, University Library, 468**

Context. A collection of two works; undated.

- *Titles:* (title page, f. 1r) The title, تحرير المجسطي, is mentioned in an introductory text on the work.
- *History:* (title page, f. 1r) An ownership statement in the name of ‘Imād b. Muḥammad al-Isfahānī, accompanied by an oval seal with an unclear inscription, and another statement in the name of the *munajjim* ‘Alī ‘Ubayd Samīr, accompanied by a circular seal dated 1065 AH (1654/55).
- *Others:* (title page, f. 1r) an introductory text on the *Almagest*:

المجستي (كذا) لبطلميوس القلوذي. المجستي (كذا) من اللغة اليونانية الترتيب ثم
نقل إلى الكتاب الذي رتبّه بطلميوس ذكر فيه...

There is another text on the eight terms corresponding to the *abjad* system, Persian poems and an excerpt from Book I, ch. 2, of Nīsābūrī's *Tafsīr al-Majisṭī* with the corresponding diagram.

Content. Collection of two astronomical works:

1. (1v-126v) *Tahrīr al-Majisṭī*. Type A, apparently complete, though with some modifications²⁴ and disordered pagination, especially in

24. Among the modifications, on f. 13r a diagram derived from the tradition of Thābit ibn Qurra's translation of the *Almagest* has been inserted in the text which is different from Thābit's

Books II-V (fols 17v-66r); Books: I, 1v-17r, ..., VI, 66v-77v, VII, 77v-84v, VIII, 84v-92r, IX, 92r-104r, X, 104r-106v, XI, 106v-114r, XII, 114r-120v, XIII, 120v-126v.

2. (127r-138v) Selected passages from Book I of al-Nīsābūrī's *Tafsīr al-Taḥrīr*.

Codicology. 140 fols; foliation in Perso-Arabic numerals in pencil on each recto; two different hands in *ta'liq* script in work (1), and a different hand in work (2); the appearance of the text is careless in both works and particularly chaotic in work (2), where parts of the text are written in different directions; well-drawn diagrams in work (1), very badly-drawn diagrams in work (2); abundant marginal notes; black and red ink.

References. Listed in *Danishgah, Meškāt*, 3,2, p. 850-852; also listed in DENA, vol. 2, p. 877.

(116) (*) **Tehran, University Library, 1352**

Context. A single work; the colophon (f. 250v) is dated Tuesday 4 Dhū l-Ḥijjah 1015 AH (1 April 1607), by Sayyid Ṣaḳī al-Dīn Muḥammad b. Muḥammad Ḥusnī Ḥusayn.

- *Titles:* (title page, f. 3r) a title piece in trapeze form, bearing the date of the copy as 1015 AH (1606/07) and stating a use of al-Ṭūsī's autograph:

تحریر المجسطي حرره احوج خلق الله النير محمد بن محمد بن الحسن الطوسي
ونقل من شريف خطه قدس في ١٠١٥

- *History:* (title page, f. 3r) 1. A statement in the name of Muḥammad Taqī b. Mīr Muḥammad Shīrwānī, written in a similar hand as that of the title piece, accompanied by a rectangular seal stamped over the lower-left corner of the title piece. 2. An ownership statement in the name of the *munajjim* Muẓaffar Ḥusayn, accompanied by a rectangular seal in which the year 1110 AH (1698/99) is seen. 3. A statement in the name of Jalāl al-Dīn, dated Ramaḍān 1285 AH (December

diagram referred to by al-Ṭūsī. Both diagrams appear, e.g., in Avicenna's borrowings from Thābit's *Almagest*; Grupe, 'Further Witnesses' (forthcoming; draft accessible via www.academia.edu), previously presented in Grupe, 'Thabit ibn Qurra's version of the Almagest and its reception in Arabic astronomical commentaries', conference paper, 2015).

1868/January 1869); the same statement is also seen on f. 251v, where a square seal is stamped with the inscription على.

Content. Type A, complete; Books: I, 4v-33r, II, 33r-56r, III, 56r-74v, IV, 75r-95v, V, 96r-120r, VI, 120v-140r, VII, 140r-154r, VIII, 154r-171v, IX, 171v-198v, X, 198v-233v, XI, 233v-222r, XII, 222r-233v, XIII, 233v-250v.

Codicology. 251 fols; foliation in Perso-Arabic numerals in pencil on each recto; a second set of foliation starting from the title page (f. 3r), two pages behind the other; a single hand in *nasta'liq* script; text within a blue and gold frame on each page; (fols 3v-4v) gilt decoration; black, red, blue and gold ink.

References. *Danishgah*, vol. 8, p. 45; also listed in DENA, 2, p. 876.

(117) (*) **Tehran, University Library, 1886**

111 fols (unfoliated); a single work, Type A, complete; undated, possibly 17th c.; a single hand in a very careful *nasta'liq* script; well-drawn diagrams and tables; few marginal notes. [Title page, f. 1r] title and author are written in pencil. [*Danishgah*, vol. 8, p. 490; also listed in DENA, 2, p. 876].

(118) (*) **Tehran, University Library, 6947**

Context. Collection of two works; the colophon of the *Tahrīr al-Majisī* (f. 159v) is dated in a Wednesday in Rabī' I 1076 AH (September/October 1665).

Content.

1. [f. 1r] an untitled treatise, described at the beginning as:

من تعليق الشيخ أبي القاسم علي بن محمد بن السميّاطي برهان استخراجيه على
معرفة من رابعة الثانية عشر قال بطلميوس في أول رابع ثانية عشر كتابه ج لنخرج
قطر ٥ ج إلى نقط د اخراجا يكون نسبة ٥ ج إلى ج د اعظم من نسبة حركة
التدوير...

(“From the commentary by Abū al-Qāsim ‘Alī b. Muḥammad b. al-Samīyātī
Demonstration of the fourth proposition in Book XII of the *Almagest*...”).

[End, 1r] فنسبة س ح إلى ح ز التي هي كنسبة حركة التدوير إلى حركة الكوكب
كنسبة نصف ب ح إلى ح ز وما (كذا) ذلك ما اردناه.

The text maybe related to a discussion which appears under a similar title, “Demonstration of the fourth proposition in Book XII of the *Almagest*, by Samyātī”, in MS Oxford, Bodleian Library, Thurston 3, f. 107r.

2. [1v-159r] *Tahrīr al-Majisī*; Type A, complete; Books: I, 1v-18r, II, 18r-30r, III, 30r-40v, IV, 40v-54v, V, 54v-69r, VI, 69r-83r, VII, 83r-100r, IX, 115r-132r, X, 132r-136r, XI, 136r-143v, XII, 143v-149r, XIII, 149r-159r.

Codicology. 1 flyleaf + 159+ 1 flyleaf; no foliation; two different *nasta‘līq* scripts, the hand of the first work is cursive; black and red ink; well-drawn diagrams; no marginal notes.

References. *Danishgah*, vol. 16, pp. 407-408; also listed in DENA, vol. 2, p. 876.

(119) (*) **Tehran, University Library, 7190**

Context. Collection of four works; undated, possibly 16th or 17th c.

Content.

1. [1v-214v] *Tahrīr al-Majisī*. Type B, incomplete; [1v-211r] *Tahrīr*, complete; Books: I, [2r-23v], II, [23v-34v], III, [34v-56r], IV, [56r-73v], V, [73v-94v], VI, [94v-111v], VII, [111v-126v], VIII, [126v-145v], IX, [145v-168r], X, [168r-174v], XI, [174v-180v], XII, [180v-186v], XIII, [186v-211r]. [211v-214v]. *Appendix*, incomplete; the table in Chapter 1 is left empty, and Chapters 2 and 3 are missing.
2. [219v-248r] an untitled treatise; in the text, the work is described as *في كيفية الأرصاد*, by Mu‘ayyad b. Barmak al-‘Urḍī.
3. [248v-251r] *وله في استخراج ما بين مركزي الشمس وموضع أوجها*, by Mu‘ayyad b. Barmak al-‘Urḍī.
4. [251v-252r] *مقدمة نافعة في تصحيح برهان الشكل الرابع من تاسعة بالمجسطي* (“Introduction on the Explanation of the Demonstration of the Fourth Proposition of Ninth [Book] of the *Almagest*”), by Mu‘ayyad b. Barmak al-‘Urḍī.

Codicology. [254 fols]+i; a foliation in Perso-Arabic numerals in ink is preserved only on some folios, until ca. f. 187r, because the paper corners are damaged; in *nasta‘līq* script; the text of Chapter 1 of the *Appendix* (f. 211v) seems written in a different hand; few marginal notes; well-drawn diagrams and tables; black and red ink.

References. *Danishgah*, vol. 16, p. 479; also listed in DENA, 2, p. 876.

(120) **Tehran, University Library, Adabiyyāt 312 Hikmat**

According to the printed catalogue, the MS contains a copy of the *Tahrīr al-Majisī* written by Ibrāhīm b. Muḥammad b. Mardanshah Fayrūzānī in Yazd

in Rabī' II 770 AH (November/December 1368) [*Danishgah, Adabiyat Hikmat*, p. 75]. No transcriptions are provided; reported dates of ownership are 802 and 1052 AH, in the name of 'Abd al-Ghānī Ḥusaynī Mutatabbib Kaylānī, Aḥsan b. Muḥammad, 'Alī b. Ḥasan, Muẓaffar Munajjim Junābadī and Shah 'Abbās. [Listed in DENA, 2, p. 875, without information on the ownership and referring to vol. 2 of the printed catalogue series].

(121) **Tehran, University Library, Ḥuqūq 43-D**

223 fols; estimated 17th c., an ownership statement is dated 18 Rabī' I 1272 AH (28 November 1855); in *nasta'liq* script. [*Danishgah, Huquq*, p. 285; listed in DENA, 2, p. 876].

(122) (*) **Tehran, University Library, Microfilm 2885**

The digital copy of the microfilm which I have examined contains an incomplete copy of the *Tahrīr*; two sets of foliation are visible: a first one on each verso starting from f. 54v to 122v, and another on each recto from f. 2r to 69r; unlike other manuscripts, the original shelf mark of this MS is not provided in the printed catalogue, while it gives a list of the works in this collection; the *Tahrīr* is in the fourth place among other works by al-Ṭūsī [*Danishgah, Filmhā*, vol. 1, pp. 738-739]:

- (1) جوامع الحساب بالتخت والتراب
- (2) تذكرة الهيئة
- (3) تحرير المساكن لثاوذوسيوس
- (4) تحرير المجسطي
- (5) رسالة في اختلاف أوضاع مراكز فلاك (كذا في الفهرس) عطارد بحسب سير عطارد.

(123) (*) **Tehran, University Library, Ilāhiyyāt 281 ج**

Context. A single work; undated, estimated ca. 17th c.

- *Titles:* (title page, p. 1) title and author are part of an ownership statement:

تحرير كتاب المجسطي من مصنفات سلطان الحكماء والمحققين وبرهان الفضلاء
والمدققين علامة علماء الراسخين اية الله في العالمين نصير الملّة والحق والدين الطوسي
عطر الله ترتيبه

- *History*: (title page, p. 1) 1. The ownership statement containing the title is dated to the end of Muḥarram 1090 AH (February/March 1679). 2. An undated ownership statement appears in the name of [-] b. Ṣadr al-Dīn Muḥammad b. Ibrāhīm. (p. 404) 3. An ownership statement in the name of Muḥammad b. ‘Abd al-Mahdī b. Sulaymān b. ‘Alī al-Bahrānī, dated Sha‘bān 1150 AH (November/December 1737). (p. 403) 4. Three seals stamped in vertical order under the colophon, the first one square with the inscription [.] محمد and dated 1049 AH (1668/69), the second one rectangular with the inscription عبد الله عبد الله, and the third one oval with the inscription عبد الله and the date 1114 AH (1702/03). (flyleaf 2-v) 5. The last acquisition seems to correspond to 1356 AH (1937/38), the year of a statement in the name of Fāḍil Tunī (flyleaf 1-r).
- *Others*: abundant marginal notes, mostly corresponding to al-Nīsābūrī’s *Tafsīr al-Tahrīr*.

Content. Type A, complete.

Codicology. 2 flyleaves+404pp.+1 flyleaf; no foliation or pagination; a single hand in *naskh* script; abundant marginal notes; book titles and some chapter numbers, in *abjad* inside a circle, are written in gold; black, red and golden ink.

References. *Danishgah, Ilāhiyyāt*, pp. 482-483; also listed in DENA, 2, p. 875.

(124) **Tunis, Ṣādiqiyya, 1455**

The manuscript is mentioned as a copy of the *Tahrīr al-Majisṭī* in a report by Julio Samsó on the scientific manuscripts in the Aḥmadiyya and Ṣādiqiyya Libraries, which also indicates the existence of an unpublished catalogue by ‘Abd al-Ḥafīẓ Maṣṣūr [Samsó, ‘A propos’, p. 173. The MS is also listed in MAOSIC, p. 215]. I have not been able to find that catalogue, and another handwritten list of manuscripts belonging to the Ṣādiqiyya collection does not mention the manuscript. A search in the online catalogue of the National Library in Tunis yields a shelf mark, 0928, together with a transcription of the beginning and end in agreement with the *Tahrīr al-Majisṭī*.

(125) (*) **Vienna, ÖNB, Mixt. 1084**

Context. A single work; the colophon (f. 211r) is dated 23 Rabī' I 1288 AH (12 June 1871), by Aḥmad Ilhāmī, who is reported to be one of the students of Sayyid Muḥammad al-Khulūṣī Rīdā.

Content. Type A, complete.

Codicology. 211 fols; an older foliation in Eastern Arabic numerals in ink on each recto, supplemented by a corresponding European foliation in pencil on each verso; a single *naskh* script; black and red ink for the text and blue for the diagrams.

References. *Loebenstein, Katalog*, p. 176, which states that the manuscript was bought in Istanbul in 1929; in *MAOSIC*, p. 215, a manuscript in Vienna is listed with the number 1804, probably referring to the present MS.

(126) **Yazd, Jāmi' Kabīr, 16,10**

The collection at Jāmi' Kabīr is described in *Nashriyya*, 4. On p. 376, the manuscript 16,10 is said to contain a copy of the *Taḥrīr al-Majistī* dated ca. 17th/18th c.; no transcription is provided. [In *DENA*, 2, p. 876, a manuscript of this collection is listed under the shelf mark '17', with a reference to *Nashriyya*, 4, p. 376].

(127) **Yazd, Vazīrā-Yazd, 793**

163 fols; estimated 15th c.; in *naskh* script. [*Vazīrā-Yazd*, vol. 2, p. 666; also listed in *DENA*, 2, p. 876. On the website of the Maktaba Radwa Library, a MS of the *Taḥrīr al-Majistī* with the shelf mark '793' and 164 fols is shown, which is possibly the present MS].

Other manuscripts

MS Edinburg, University Library, Baillie 396

128 fols; dated 1011 AH (1602/03) [Hukk, *A Descriptive*, pp. 351-352, provides transcription of the beginning and a detailed description].

MS Edinburg, University Library, Baillie 397

Defective copy [Hukk, *A Descriptive*, p. 352].

Unconfirmed References and Clarifications

MS Calcutta, Imperial Library, Bihar 124 is listed as a *Tahrīr al-Majisī* in MAOSIC, p. 215. I have not been able to check this.

(*) **MS Tehran, Majlis, 5182** is described in DENA, 15, p. 350, as a collection which on fols 35v-36v contains an excerpt from the *Tahrīr al-Majisī*. However, the *Tahrīr* does not seem to contain what is shown on these folios. The fragment contains two diagrams which are drawn separately, on the points of stationarity, and which are drawn as a single diagram in the *Almagest* [e.g., MSS Leiden, cod. or. 680, f. 184v, and Tunis, BN, 07116, ff. 199r-199v]. The excerpt is followed by a text entitled *Aghrād maqālāt Uqlīdis*, which is also found, among others, in MS London, BL, 23570, ff. 95v-96r (available at the website of the Qatar Foundation in collaboration with the British Library).

(*) **MS Tehran, Majlis, 18248 ض** is described as a *Tahrīr al-Majisī* on the website of the library and also in DENA, 2, p. 876, stating that the MS is still uncatalogued. However, examining the manuscript, I did not find any parts of the *Tahrīr*; instead, I found a selection of chapters from al-Ṭūsī's *Tadhkīra*.

(*) **MS Tehran, Milli, 1071** is identified as a *Tahrīr al-Majisī* in the printed catalogue [Milli, vol. 9, p. 66]. The main text, however, corresponds to the *Tafsīr al-Tahrīr* by al-Nīsābūrī, to which selected portions from the *Tahrīr* have been added in the margin. A corresponding classification in DENA, 3, p. 126, is correct.

MS Tehran, University Library, Microfilm 4098 is listed as a *Tahrīr al-Majisī* in DENA, 2, p. 877, with a reference to vol. 3 of the microfilm section. I have not been able to confirm that it belongs to another manuscript.

According to Christie's website (accessed January 2018), two manuscripts of the *Tahrīr al-Majisī* were sold, one at each of the auctions *Islamic & Indian Manuscripts & Works on Paper*, 23 April 2012, Lot 144, and *Arts of Islam Including Property from the Bequest of Adrienne Minassian sold to benefit Brown University*, 26 April 2013, Lot 543. However, the images shown for these manuscripts contain parts of Bīrjandī's commentary on the *Almagest*.

4. CONCLUDING REMARKS

The date of completion of al-Ṭūsī's autograph of the *Tahrīr al-Majisī* is given unanimously in various sources as 5 Shawwāl 644 AH (13 February 1247). There is no evidence that the autograph has been preserved. Among the copies of the *Tahrīr al-Majisī* collected here, MS Tehran, Sipahsalar, 592 might appear to be the oldest. The colophon contains the earliest date, 29 Dhū al-Ḥijjah 662 AH (22 October 1264), as well as the information that the copy was made directly from al-Ṭūsī's autograph (نقلا من خط المصنف). However, a note next to the colophon states that the text was collated in Rabīʿ II (no year) with the “aforementioned model” (بالاصل المذكور). This expression does seem to denote not the exemplar but rather another copy, which would have been dated in 662 AH and from which the collator of the present text copied the colophon. Another likely candidate for the earliest copy in the list is the one included in the collection MS Tehran, Sipahsalar, 4727, where the colophon of the *Tahrīr al-Majisī* is dated 11 Rajab 671 AH (7 February 1273). This collection was copied in its entirety by the same copyist over several months of the year 671 AH. A collation note after the colophon of another work by al-Ṭūsī in this collection (p. 424) states that the copyist made the collation from the exemplar (مصنفة), from which he also transferred various annotations.

With regard to the dissemination of the *Tahrīr al-Majisī*, several manuscripts contain statements claiming a direct, or at least a close and documented, dependency of the respective copy on al-Ṭūsī's autograph.

1. The colophons and notes in several copies report that Quṭb al-Dīn al-Shīrāzī produced at least one copy of the *Tahrīr al-Majisī* from the autograph. From this copy, (1.1) Badr al-Dīn al-Malaṭī (unknown date) made a copy (now lost). This copy was later used as a model by (1.1.1) Abū al-Maḥāmid Muḥammad b. Muḥammad al-Turkistānī al-Arzawānī, who describes himself as a student of al-Shīrāzī, in Shiraz in 691 AH (1292), and who used it to produce the copy now extant in MS Dublin, Chester Beatty, Ar. 3637. Similarities in the dates and in the respective name of the scribe, as well as the identical handwriting, suggest that another copy stems from the same man, dated around five years earlier, collated in a madrasa of Nishapur and preserved in MS Istanbul, Süleymaniyye, 2583. Whether or not this other copy also derives from the tradition (1.)-(1.1) is uncertain. (1.1a) Further copies claim to derive from al-Shīrāzī's through an intermediary copy dated Jumādā I 678 AH (Sep-

tember/October 1279). It is not clear whether this intermediary copy was again the one by al-Malaṭī or a different one, like the one extant in MS Istanbul, Topkapı, Ahmet III 3453, by ‘Abd al-Kāfī b. ‘Abd al-Majīd b. ‘Abd Allāh al-Tabrīzī, which dates from the stated year. Examples of this tradition are MSS Cairo, Dār al-Kutub, K 3822 and Paris, BnF, 2485.

The question about al-Shīrāzī’s own copy of the *Tahrīr al-Majisī* deserves further consideration. MS Istanbul, Süleymaniye, Nuruosmaniye 2941 (which I have not examined) is described by Krause as a copy of the *Tahrīr al-Majisī* written by al-Shīrāzī himself and dated 684 AH (1285/86). However, according to the manuscripts of the aforementioned tradition (1.1a) an intermediary copy, based on al-Shīrāzī’s, existed before that date, in 678 AH. Thus, if Krause’s description and the dates identified are correct, al-Shīrāzī would appear to have copied the *Tahrīr al-Majisī* at least twice: once from al-Ṭūsī’s autograph, before 678 AH, and a second time in 684 AH, either from the autograph or from another source.

2. Aḥmad b. ‘Alī b. Muḥammad, known as Ibn al-Bawwāb al-Baghdādī, used the autograph to produce the copy (or the “model” for the copy, see above) that is preserved in MS Tehran, Sipahsalar, 592. He made this copy in Maragha in 662 AH (1264).
3. The unknown copyist of MS Tehran, Majlis-Parliament, 3853 claims to have had access to al-Ṭūsī’s autograph in Isfahan(!) in 1044 AH (1635).

Further relations between copies of the *Tahrīr al-Majisī* can be found from statements in the following manuscripts.

4. A (lost) copy of the *Tahrīr al-Majisī* by Maḥmūd al-Khaṭīb, dated Wednesday 22 Ramaḍān 663 AH (8 July 1265) in Maragha, was the common source for MSS Aligarh, Azad, Suleman 164/24, Aligarh, Azad, Suleman 165/25, Berlin, SBPK, Sprenger 1838 and Cairo, Dār al-Kutub, Hay’a 17.
5. Muḥammad b. al-Mu’ayyad al-‘Urḍī seems to have made annotations to a copy produced between 670-673 AH (1272-1274), which later, in 898 AH (1492/93), served as the model for MS Cairo, Dār al-Kutub, Tal’āt Hay’a 43.

Finally, the colophons of MSS London, IO, 1148 and Mashhad, Holy Shrine 5354, are identical: they describe each copy as completed on 6 Muḥarram 722 AH (24 January 1322) by Ḥamza ibn ‘Alī ibn Ḥamza al-Qazwīnī al-Bayhaqī, known as Sa’d al-Khurāsānī, in the city of Sulṭaniyya. However, a copyist could not have completed two copies of the *Tahrīr al-Majisī* on the same day, and the

two manuscripts are also clearly written in different hands. The example shows that copyists of the *Taḥrīr al-Majisī* occasionally reproduced colophons from their models without indicating that their own texts were derivatives. This reinforces the frequent impression that a manuscript of the *Taḥrīr* dates from a later period than the date of production mentioned.

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