

Chapter Title: Syriac and Arabic Transmission of On the Cosmos

Chapter Author(s): Hidemi Takahashi

Book Title: Cosmic Order and Divine Power

Book Subtitle: Pseudo-Aristotle, On the Cosmos

Book Editor(s): Johan C. Thom

Published by: Mohr Siebeck GmbH and Co. KG. (2014)

Stable URL: <https://www.jstor.org/stable/j.ctv9b2w4j.13>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



This book is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-ND 4.0). To view a copy of this license, visit <https://creativecommons.org/licenses/by-nc-nd/4.0/>. Funding is provided by Knowledge Unlatched Open Services.



JSTOR

Mohr Siebeck GmbH and Co. KG is collaborating with JSTOR to digitize, preserve and extend access to *Cosmic Order and Divine Power*

Syriac and Arabic Transmission of *On the Cosmos*

Hidemi Takahashi

1. Introduction

On the Cosmos is one of a group of non-Christian Greek texts that were translated at a relatively early date (in the sixth century) into Syriac and, it might be remembered, also into Armenian, a fact which no doubt reflects the popularity of the work, at least in certain circles, in Late Antiquity. The work was then translated into Arabic mainly, it seems, from Syriac, and probably, again, at a relatively early date. While the Syriac version is known to us only through a single manuscript, there are several manuscripts representing at least three different Arabic versions of *On the Cosmos*. The account that follows here attempts to provide a summary of what is known about these Syriac and Arabic versions of *On the Cosmos*, together with some indications of the research that waits to be done on these versions.

2. Syriac Version of *On the Cosmos*

The Syriac version of *On the Cosmos* is preserved in MS. British Library, Additional 14658 (fol. 107v–122r), a manuscript that has been dated to the seventh century, some five centuries before the oldest Greek witness of the work.¹ This Syriac version, one of the texts that were taken note of by Ernest Renan some years after its arrival at the British Museum in 1843,² was published by Paul de Lagarde in his *Analecta syriaca* in 1858.³ A detailed study of the Syriac text, mainly of the first four chapters and including an annotated translation of Chapter 4, was then made by Victor Ryssel.⁴ Further notes and suggested emendations were provided by

¹ W. WRIGHT, *Catalogue of the Syriac Manuscripts in the British Museum, Acquired since the Year 1838* (London 1870–72) 1157 (no. 987/8).

² E. RENAN, *De philosophia peripatetica apud Syros commentatio historica* (Paris, 1852) 26; id., “Lettre à M. Reinaud sur quelques manuscrits syriaques du Musée Britannique contenant des traductions d’auteurs grecs profanes et des traités philosophiques”, *Journal asiatique*, 4e sér., 19 (1858) [293–333] here 321.

³ DE LAGARDE 1858, 134–58.

⁴ RYSSEL 1880–1.

Anton Baumstark in his *Lucubrationes syro-graecae*.⁵ For Chapters 5–7, a German translation made by Eduard König was printed with the edition of the Greek text by William L. Lorimer, who used this, as well as Georg Breitschaft’s translation of Chapters 1–3 and Ryssel’s work, in producing his critical edition, and who judged the Syriac version to show the greatest affinity with the excerpts in Stobaeus and the codices (B)CG, though also agreeing with ZAlD and Z in several places from 398b onwards.⁶ Nearly eighty years after its use in Lorimer’s edition, the Syriac version has just in the past few years been the subject of a doctoral dissertation by Adam McCollum, which includes an English translation of the Syriac text, as well as a Greek-Syriac index of words.⁷ Lorimer’s use of the Syriac version suffered from the fact that he himself did not know Syriac and had to rely on translations provided by others.⁸ Given these circumstances, there is still room for reappraisal of the Syriac evidence as an aid for the establishment of the Greek text, and such a reappraisal would need to take into account the advances made in the meantime in the study of Greco-Syriac translations.⁹

Besides its use in the establishment of the Greek text, the Syriac version is worthy of study in itself as a representative of the cultural milieu in which it was produced and for the influence it had on later Syriac works. The heading of the Syriac text as found in the British Library manuscript tells us that this is “a letter of Aristotle the philosopher, which was translated from Greek into Syriac by the excellent Mār Sargīs the priest of the city of Rēš-‘Ainā.” In his preface, the translator refers to the work as a “letter composed by Aristotle the philosopher [and addressed] to Alexander the king on the knowledge of the created things (*hwayyā*).”¹⁰ We learn furthermore from the preface that the translation was made at the request of an unnamed client who himself procured and sent to the translator a copy of the Greek text from which the translation was made.¹¹ The translator of the work, Sergius of Rēš-‘Ainā (ob. 536), often referred to in the sources as the chief physician (*archiatros*) of that city,¹² is the earliest person known by

⁵ BAUMSTARK 1894, 405–36; cf. id., *Geschichte der syrischen Literatur* (Bonn 1922), 167 n. 6.

⁶ LORIMER 1933, 25–6.

⁷ A. C. MCCOLLUM, “The Syriac *De mundo*. Translation, Commentary, and Analysis of Translation Technique”, Diss. Hebrew Union College, 2009; cf. id., *A Greek and Syriac Index to Sergius of Reshaina’s Version of the De Mundo* (Piscataway 2009); id. 2011.

⁸ Cf. F. E. PETERS, *Aristoteles Arabus. The Oriental Translations and Commentaries on the Aristotelian Corpus* (Leiden 1968) 62, n. 1: “... Edward König’s startlingly bad translation of [Chapters] 5-7 ... the latter has led Lorimer into some fantastic Greek variants!”

⁹ As an example of what might be achieved in this direction, see D. KING, *The Earliest Syriac Translation of Aristotle’s Categories. Text, Translation and Commentary* (Leiden 2010).

¹⁰ Cf. RYSSEL 1880, 7.

¹¹ DE LAGARDE 1858, 134; cf. MCCOLLUM 2011, 167–8.

¹² Greek Theodosiopolis, present-day Ra’s al-‘Ain/Ceylanpınar on the Syrian-Turkish border.

name who worked on the translation of secular Greek works into Syriac. He is reported in a near-contemporary historical work to have received his education in Alexandria, and is known as the translator from Greek into Syriac of the medical works of Galen and the mystical works attributed to Dionysius the Areopagite, as well as the author of, among others, two treatises on Aristotelian logic.¹³

Taken together with the fact that it was translated by Sergius of Rēš-'Ainā, the manuscript in which the Syriac version of *On the Cosmos* is found is of interest in giving us some suggestions as to the milieu in which the work circulated in Late Antiquity. The British Library Manuscript Additional 14658 is a manuscript that contains many of the earliest known Syriac translations and original works on philosophy and related subjects, many of them associated with Sergius of Rēš-'Ainā. The first portion of the manuscript contains works relating to Aristotelian logic, including Sergius' two treatises on the subject, as well as the anonymous translations of Porphyry's *Isagoge* and Aristotle's *Categories*. The translation of *On the Cosmos* is immediately preceded (on 99v–107v) by a Syriac adaptation, by Sergius, of Alexander of Aphrodisias' treatise *On the Principles of the Universe*.¹⁴ The later portions of the manuscript contain such items as the Syriac versions of (Ps.-)Isocrates' *Ad Demonicum* and other works on what may be called 'popular philosophy', including the sayings attributed to Plato, Pythagoras and Theano.¹⁵ It would appear that what we find in the manuscript is an attempt to gather together the various secular (non-religious and non-medical) works that were available in Syriac at the time, for use no doubt in a didactic context, and the choice of such Greek works made available in Syriac in and around the sixth century would appear, in turn, to reflect the standard textbooks that were in use in the schools of Late Antiquity. It may be remembered in this connection that *On the Cosmos* was translated not only into Syriac but also into Armenian at a relatively early stage,¹⁶ making it one of a group of secular Greek texts that

¹³ On Sergius, see the papers gathered together in H. HUGONNARD-ROCHE, *La logique d'Aristote du grec au syriaque* (Paris 2004); S. BROCK, "Sergios of Resh'ayna", in: id. et al. (eds.), *Gorgias Encyclopedic Dictionary of the Syriac Heritage* (Piscataway 2011) 366.

¹⁴ This has been edited recently by E. FIORI, "L'épitomé syriaque du *Traité sur les causes du Tout* d'Alexandre d'Aphrodise attribué à Serge de Reš'aynā", *Le Muséon* 123 (2010) 127–58; cf. D. KING, "Alexander of Aphrodisias' *On the Principles of the Universe* in a Syriac Adaptation", *Le Muséon* 123 (2010) 159–91. The Arabic version of the same work has been edited by GENEQUAND 2001.

¹⁵ On the Syriac versions of works of 'popular philosophy', see S. BROCK, "Syriac Translations of Greek Popular Philosophy", in: P. BRUNS (ed.), *Von Athen nach Bagdad. Zur Rezeption griechischer Philosophie von der Spätantike bis zum Islam* (Bonn 2003) 9–28.

¹⁶ The Armenian version, apparently attributed (erroneously) in some manuscripts to David the Invincible (Dawit' Anyaŋt'), has been edited under the title "Aristoteli imastasiri T'uŋt' ar Ālek'santros 'āgawor: Patmut'iwn yaŋags ašxarhi" (the letter of Aristotle the philosopher to Alexander the king: narration about the world), in: *Koriwn vardapet*,

are shared by the Syriac and Armenian traditions, which includes, besides *On the Cosmos*, such works as the Pseudo-Aristotelian *De virtutibus et vitiis* and the Aristotelian logical works, as well as the *Geoponica*, the *Physiologus*, Dionysius Thrax's *Technē grammatikē* and the sayings of Secundus and Menander, a group of texts which again appears to be representative of the standard textbooks used in the schools of Late Antiquity.¹⁷

The British Library manuscript, the only extant manuscript known to contain the Syriac version of *On the Cosmos*, was probably brought from Iraq to the Monastery of the Syrians (Dair as-Suryān) in the Scete in Egypt by Moses of Nisibis in the tenth century,¹⁸ and remained there until it was acquired by the British Museum. The same Syriac version of the work, however, was evidently still available in northern Iraq in the thirteenth century, where it was used by Severus Jacob Bar Šakkō (ob. 1241), abbot and bishop in the Syrian Orthodox Monastery of Mar Mattai near Mosul, as one of the sources for his *Book of Dialogues*.¹⁹ In the part of that work concerned with the natural sciences (*Dialogues* II.2.3), the 'answers' to Questions 11 (on the celestial spheres) and 13 (on the causes of meteorological phenomena) are taken almost entirely from the Syriac version of *On the Cosmos*, while a sentence based on *On the Cosmos* is also found in the answer to Question 12 (on the elements). The closeness of the wording in Bar Šakkō to that of the version in the London manuscript indicates that it was Sergius of Rēš-'Ainā's version of the work which was known to Bar Šakkō.²⁰

Mambṛē Vercanoṭ, Dawit' Anyaṭt'. Matenagrut'iwnk' (Venice 1833) 603–28. On this Armenian version, see F. C. CONYBEARE, *A Collation with the Ancient Armenian Versions of the Greek Text of Aristotle's Categories, De interpretatione, De virtutibus et vitiis and of Porphyry's Introduction* (Oxford 1892) 51–71; A. TESSIER, "[Arist.] Mu 395b: congetture al testo armeno", *Bazmavep* 133 (1975) 376–8; id., "Per la tradizione indiretta del *De Mundo* pseudo-aristotelico: note alla *Versio armena*", *Atti dell'Istituto Veneto di Scienze, Lettere ed Arti* 134 (1975–76) 215–24; id., "Leitfehler nella traduzione armena del *De Mundo* pseudo-aristotelico?", *Bollettino del Comitato per la preparazione dell'edizione nazionale dei classici greci e latini* 27 (1979) 31–40; id., *Il testo di Aristotele e le traduzioni armena* (Padua 1979) 39–122; id., "Some Remarks about the Armenian Tradition of Greek Texts", in: T. J. SAMUELIAN / M. E. STONE (eds.), *Medieval Armenian Culture* (Chico [Ca.] 1984) [415–24] 419–22.

¹⁷ For a comparison of the works translated into the two languages, see H. HUGONNARD-ROCHE, "La tradition gréco-syriaque des commentaires d'Aristote", in: V. CALZOLARI / J. BARNES (eds.), *L'œuvre de David l'Invincible et la transmission de la pensée grecque dans la tradition arménienne et syriaque* (Leiden 2009) [153–73] 166–8.

¹⁸ On the manuscript collection of Moses of Nisibis, see S. BROCK, "Without Mushē of Nisibis, Where Would We Be? Some Reflections on the Transmission of Syriac Literature", *Journal of Eastern Christian Studies* 56 (2004) 15–24.

¹⁹ As was noted by J. RUSKA, "Studien zu Severus bar Šakkū's Buch der Dialoge", *Zeitschrift für Assyriologie* 12 (1897) [8–41, 145–61] 154.

²⁰ See H. TAKAHASHI, "Fakhr al-Dīn al-Rāzī, Qazwīnī and Bar Shakkō", *The Harp. A Review of Syriac and Oriental Ecumenical Studies* 19 (2006) 365–79.

It may have been the same manuscript as that used by Bar Šakkō which was available to the Syrian Orthodox prelate Gregory Abū al-Farağ Barhebraeus (1225/6–86), who as maphrian, or primate of his church in the areas roughly corresponding to today's Iraq and Iran, resided a few decades after Bar Šakkō in the Monastery of Mar Mattai and who used the Syriac version of *On the Cosmos* as a source in at least three of his works. In composing the *Treatise of Treatises*, probably the earliest of the three works with which we are concerned here, Barhebraeus used al-Ġazālī's *Intentions of the Philosophers* (*Maqāṣid al-falāsifa*) as his main source, but he clearly also made use of a number of other sources, and an examination of the passages dealing with meteorological matters reveals at least three places where the author borrowed materials from *On the Cosmos*. The first of these occurs in a passage concerned with rain, where the notion of cloud being 'pregnant' with rain goes back to *On the Cosmos*.²¹ The second instance is less clear, but one suspects that the word 'residue' (*šarkānā*) used in connection with mist was gleaned by Barhebraeus from the same work.²² The third instance involves a longer passage dealing with volcanic activities, where the place-names mentioned and the forms in which they occur leave little doubt that the passage is based on the Syriac version of *On the Cosmos*.²³ In the last of these instances, Barhebraeus mentions 'the Philosopher' as his source at the end of the passage, which must in this context mean 'Aristotle', suggesting that he believed *On the Cosmos* to be a genuine work of the Stagirite. The second work in which Barhebraeus is known to have used *On the Cosmos* is his theological work, the *Candelabrum of the Sanctuary*. The use of *On the Cosmos* in passages dealing with meteorological phenomena in the Second 'Base' of that work (composed ca. 1266/7) was noticed by Ján Bakoš, who frequently refers to *On the Cosmos* in the footnotes to his edition of that 'base'.²⁴ While Bakoš does not make any detailed comparison of the text of the *Candelabrum* with the Syriac, as opposed to Greek, text of *On the Cosmos*,²⁵ even a cursory comparison of the texts makes it clear that it was the Syriac translation by Sergius of Rēš-'Ainā that Barhe-

²¹ See H. TAKAHASHI, "Barhebraeus und seine islamischen Quellen. Têgrat têgrātā (Tractatus tractatum) und Ġazālīs Maqāṣid al-falāsifa", in: M. TAMCKE (ed.), *Syriaca. Zur Geschichte, Theologie, Liturgie und Gegenwartslage der syrischen Kirchen. 2. Deutsches Syrologien-Symposium (Juli 2000, Wittenberg)* (Münster 2002) [147–75] 161.

²² *Treatise of Treatises*, MS. Cambridge University, Add. 2003, 55v 19–20; cf. DE LAGARDE 1858, 141.22–4 (394a 19–21).

²³ MS. Cambridge University, Add. 2003, 57r 4–12; cf. DE LAGARDE 1858, 145.17–146.2 (395b 18–30).

²⁴ J. BAKOŠ, *Le Candélabre des sanctuaires de Grégoire Aboulfaradj dit Barhebraeus*, *Patrologia Orientalis* 22/4 and 24/3 (Paris 1930–33), 11–2, 14, 113 n. 4, 114 n. 1, 115 n. 4, 117 n. 1–2, 119 n. 2, 125 n. 1, 127 n. 1, 128 n. 4, 132 n. 2, 153 n. 3, 154 n. 4. Cf. TAKAHASHI 2004b, 194–6, 203–6.

²⁵ Bakoš does make a reference to de Lagarde's edition at 113 n. 4, but seems not to have had access to it.

braeus had access to. Towards the end of his life, Barhebraeus turned to *On the Cosmos* again in composing the parts dealing with meteorological and geographical matters in his major philosophical work, the *Cream of Wisdom* (composed in 1285–6).²⁶ Barhebraeus used *On the Cosmos* there mainly in the same contexts as those in which he had used it earlier in his *Candelabrum*, but there are some instances where he makes new use of *On the Cosmos*, the most important of these instances being in his description of the Mediterranean Sea.²⁷

Influence of *On the Cosmos* may also be detected in Syriac in the *Hexaemeron* of Jacob of Edessa (ca. 640–708), where, for example, the Greek names given for the twelve winds agree more closely with those given in *On the Cosmos* than with those given in Aristotle's *Meteorologica*. The forms in which these names occur, however, and the directions assigned to Caecias and Apeliotes by Jacob, who was capable of reading and using Greek sources in the original language, indicate that what Jacob used here was not the Syriac version of the work by Sergius.²⁸

3. Arabic Versions of *On the Cosmos*

The Arabic versions of *On the Cosmos* are known to have come down to us in at least five manuscripts.

Istanbul, Süleymaniye Library, Fatih 5323, 86r–108r (716 AH/1316–7 CE, = F)
 Istanbul, Süleymaniye Library, Ayasofya 4260, 97v–120v (714 AH/1314–15 CE, = Ay)
 Princeton University Library, Yahuda 308, 295v–305r (677 AH/1278–9 CE, = Y)
 Istanbul, Köprülü Library, 1608, 182v–189v (17th century, = K)
 Tehran University Library, 5469, 36v–41v (olim Yazd, Šaiḥ 'Alī 'Ulūmī 64/8, Ğumādā II, 557 AH/1162 CE, = T)

The identification of the texts in the first four of these manuscripts as Arabic versions of *On the Cosmos* was made by S. M. Stern,²⁹ while the presence of

²⁶ See TAKAHASHI 2004a, 55 (introduction), 691 (index locorum).

²⁷ *Cream of Wisdom*, Book of Mineralogy, V.1, TAKAHASHI 2004a, 126–9, 369–84; cf. id. 2003.

²⁸ J.-B. CHABOT, *Jacobi Edesseni Hexaemeron* (Paris 1928) 84–5; cf. M. WILKS, "Jacob of Edessa's Use of Greek Philosophy in His Hexaemeron", in: B. TER HAAR ROMENY (ed.), *Jacob of Edessa and the Syriac Culture of His Day* (Leiden 2008) [223–238] 224. We may note in the passage of Jacob the absence of Meses and Phoenicias, which are in the *Meteorologica*, and the inclusion, on the other hand, of Euronotus, Libonotus and Iapyx, names that appear in *On the Cosmos* but not in the *Meteorologica*. In this Jacob was followed, in turn, by Moses Bar Kēphā (833–903) in his *Hexaemeron* (MS. Paris, syr. 311, 57r; Paris, syr. 241, 188v; cf. L. SCHLIMME, *Der Hexaemeronkommentar des Moses Bar Kēphā. Einleitung, Übersetzung und Untersuchungen* [Wiesbaden 1977] 618–9, 654; TAKAHASHI 2004b, 195–6). See further n. 52 below.

²⁹ STERN 1964 and 1965.

the text in the Tehran manuscript was noted by Fuat Sezgin,³⁰ and the three different Arabic versions found in the first four manuscripts (F = Ay, K and Y) have been edited in an unpublished dissertation by David Brafman.³¹

The colophon of the text in Y states that it was translated from Syriac by 'Īsā ibn Ibrāhīm an-Nafīsī, who is known to have worked at the court of the Ḥamdānid emir Saif ad-Daula (944–67), the patron also of the poet al-Mutanabbī and the philosopher al-Fārābī, in Aleppo.³² The content of the manuscript as a whole consists mostly of philosophical works of Ibn Sīnā and al-Fārābī, but also includes Alexander of Aphrodisias' treatise *On the Principles of the Universe* (121r–127v), a work which, as we have seen, had been rendered into Syriac by Sergius of Rēš-'Ainā, as well as the Arabic versions of the *Placita philosophorum* made by Qusṭā ibn Lūqā (268v–291v) and of Iamblichus' commentary on the *Golden Verses of Pythagoras* (303v–308v).³³ In other words, unlike the versions F(Ay) and K, to which we shall turn in a moment, the Arabic version Y has come down to us as part of a philosophical compilation, and the presence of the treatise *On the Principles of the Universe* provides another link between this compilation and the Syriac compilation found in MS. British Library, Add. 14658. It is worth noting, at the same time, that a note at end of the text in Y tells us that this treatise is called the 'Golden Letter', a designation also encountered in F(Ay) and K.³⁴

The translators and the exact dates of the remaining versions are unknown. The text of *On the Cosmos* in the Tehran manuscript bears the simple title of a "letter of Aristotle to Alexander on the Cosmos" (*Risālat Aristūṭālīs ila l-Iskandar fi l-'ālam*). The text there is incomplete and breaks off in mid-sentence near the beginning of Chapter 6.³⁵ The Arabic version represented in this manuscript is the same as that in F and Ay. Unlike in F and Ay, however, there is no indication in T that the treatise is called

³⁰ F. SEZGIN, *Geschichte des arabischen Schrifttums*, vol. 6 (Leiden 1978) 72; cf. M. T. DĀNĪŠ-PAŽŪH, "Fihrist-i kitābhāna-hā-yi šahristānhā (Tabrīz, Kāšān, Yazd, Iṣfahān)", *Našriya-yi Kitābhāna-yi Markaz-i-yi Dānišgāh-i Tihirān* [Bulletin de la Bibliothèque Centrale de l'Université de Téhéran] 4 (1344 [1966]) [283–480] 448. For the identification of the Tehran manuscript as the manuscript once in Yazd, see SEZGIN, *Geschichte des arabischen Schrifttums*, vol. 3 (Leiden 1970) 271–2 (under no. 13); M. T. DĀNĪŠ-PAŽŪH, *Fihrist-i nusḥa-hā-yi ḥaṭṭī-yi Kitābhāna-yi Markaz-i wa Markaz-i Isnād-i Dānišgāh-i Tihirān*, vol. 16 (Tehran 1978) 17. I am indebted to Prof. Fuat Sezgin for forwarding to me a photocopy of the text.

³¹ BRAFMAN 1985. For further secondary literature relating to the Arabic versions, see RAVEN 2003.

³² BRAFMAN 1985, 46, 166.

³³ The contents are listed at BRAFMAN 1985, 43–6. Cf. GENEQUAND 2001, 30; DAIBER 1980, 77–8; id., *Neuplatonische Pythagorica in arabischem Gewande. Der Kommentar des Iamblichus zu den Carmina aurea* (Amsterdam 1995) 9–10.

³⁴ BRAFMAN 1985, 166.

³⁵ The last words of the text of *On the Cosmos*, at fol. 41v, l. 6–7, are التعلیم مثل علی, corresponding to MS. F, 99v, 15 (BRAFMAN 1985, 103; answering, in turn, to 397b12 δ' ἄκκιβείας).

'Golden', nor does the text there form part of a fictive exchange of letters between Aristotle and Alexander. The manuscript T as a whole consists rather of a collection of scientific and philosophical texts that begins with several astronomical treatises by al-Birūnī, and *On the Cosmos* is immediately preceded and followed there by a part of Heron of Alexandria's *Mechanica* (translated by Qusṭā ibn Lūqā)³⁶ and a treatise by Qusṭā ibn Lūqā on the elements that constitute the human body.

From the colophons of F and Ay, it can be gathered that these two manuscripts both derive from an archetype copied in 491 AH (1097 CE) from an earlier manuscript.³⁷ In the manuscripts F, Ay and K, *On the Cosmos* has been integrated into a series of fictive letters purportedly exchanged by Aristotle and Alexander the Great.³⁸ In F and Ay, the main text of *On the Cosmos* is preceded by a note telling us that the treatise/letter (the Arabic word *risāla* can mean both) is also called 'Golden' (*ḡahabīya*) and was so named after the 'Golden House', a palace adorned with golden furnishings which Alexander discovered in India.³⁹ The text of *On the Cosmos* in K is likewise preceded by a preface in which Aristotle rebukes Alexander for admiring the Golden House, a structure made by human hands, and exhorts him rather to turn his mind to the marvels of the universe, giving this as the pretext for writing the treatise that follows.⁴⁰

While the texts in F, Ay and K have thus come down to us as parts of a fictive cycle of letters between Aristotle and Alexander, it remains unclear when this epistolary cycle itself originated and when and how *On the Cosmos* was incorporated into this cycle. It is reported in Ibn an-Nadīm's *Fihrist* that Sālim Abū al-'Alā', the secretary of the Umayyad caliph Hišām ibn 'Abd al-Malik (724–34), either himself translated or commissioned a translation of the letters of Aristotle to Alexander,⁴¹ and it has been suggested that the epistolary cycle that we have goes back to this translation.⁴² The existence, at the same time, of what now constitutes the preface of *On the Cosmos* in K at a relatively early date is indicated by the presence of what is essentially the same passage, although in a more complete form, in al-Mas'ūdī's *Tanbih wa-l-išrāf*, a work composed in 956,⁴³ and the report by Ibn

³⁶ Cf. F. SEZGIN *Geschichte des arabischen Schrifttums*, vol. 5 (Leiden 1974) 153–4.

³⁷ BRAFMAN 1985, 38–41; GUTAS 2009, 63.

³⁸ Lists of contents at BRAFMAN 1985, 35–7, 48–56. A more detailed description of the contents of F Ay can be found at GUTAS 2009, 60–3.

³⁹ STERN 1964, 195; BRAFMAN 1985, 79 (text), 168 (translation).

⁴⁰ Text and translation at STERN 1965, 383–5; text also in BRAFMAN 1985, 118–9.

⁴¹ G. FLÜGEL (ed.), *Kitāb al-Fihrist* (Leipzig 1871) 117.30; B. DODGE (trans.), *The Fihrist of al-Nadīm* (New York 1970) 258. Cf. G. ENDRESS, "Building the Library of Arabic Philosophy: Platonism and Aristotelianism in the Sources of al-Kindī", in: C. D'ANCONA (ed.), *The Library of the Neoplatonists* (Leiden 2007) [319–50] 325.

⁴² M. GRIGNASCHI, "Le roman épistolaire classique conservé dans la version arabe de Sālim Abū-l-'Alā'", *Le Muséon* 80 (1967) 211–54; GUTAS 2009, 63–4.

⁴³ STERN 1964, 197–8.

al-Faḡīh, writing at the end of the ninth century, that al-Marwazī recited to the Abbasid caliph al-Ma'mūn (813–33) a letter in which Aristotle rebuked Alexander for admiring a man-made structure and exhorted him instead to contemplate the universe created by God.⁴⁴ It may be that *On the Cosmos* was already present in the epistolary cycle when that cycle was translated into Arabic in the first half of the eighth century; but it may equally be that it was only later, in the early Abbasid period, that it was translated into Arabic and incorporated into the cycle. Even the accounts in al-Mas'ūdī and Ibn al-Faḡīh do not necessarily mean that an Arabic translation of *On the Cosmos* existed at the time, since the letter of rebuke by Aristotle could have existed independently and it may have been the presence of that letter which prompted the translation and incorporation into the cycle of *On the Cosmos*, whose contents accorded with the purport of the letter.

The precise origin of the Arabic versions of *On the Cosmos* can only be determined through a detailed examination of the texts that we have, especially in terms of the vocabulary used and their relationships to the Greek original and the Syriac version, but this is work that still remains to be done.

4. Relationship of the Arabic Versions to the Syriac Version

The colophon of Arabic version Y tells us, as we have seen, that the translation was made from Syriac. From an examination of some passages, Stern concluded that version F was also based on the Syriac version;⁴⁵ he was less sure about version K, although he thought it more likely, on balance, that it too was translated from Syriac.⁴⁶ Brafman does not take this discussion much further, and does not, in fact, discuss the relationship of version K to the Syriac at all. He does make an attempt to confirm that versions F and Y are based on the Syriac, but his arguments are based not on his own examination and comparison of the Syriac and Arabic texts but on the agreement of several readings of the Arabic versions with the variant readings of the Syriac version as indicated in Lorimer's edition of the Greek.⁴⁷

There are a number of telltale indications that the Arabic versions were made from Syriac. In version F, at fol. 88r, l. 1–2, 'arctic' and 'antarctic' [sc. poles] of the Greek (ἀρκτικός, ἀνταρκτικός, 392a3f.) are rendered as *ḡarbī* and *izā'a al-ḡarbī*.⁴⁸ Brafman noted that "the use of the Arabic word *jarbiyah*

⁴⁴ STERN 1964, 197.

⁴⁵ STERN 1964, 192, 201–2, 204.

⁴⁶ STERN 1965, 386–7.

⁴⁷ BRAFMAN 1985, 62–3.

⁴⁸ In Y, the two terms are rendered *al-quṭb aš-šimālī* and *al-quṭb al-ḡanūbī*, using the usual Arabic words for "northern" and "southern" (fol. 296r, BRAFMAN 1985, 138.16–7). Version

in this sense is otherwise unattested” and that it “is cited by medieval Arabic lexicographers as a very rare word denoting a northwesterly wind.”⁴⁹ Here, elementary knowledge of Syriac might have alerted him to the fact that *ġarbī* is related to the Syriac words *garbyā/garbyāyā* (‘north’/‘northern’) and consultation of the Syriac version by Sergius to the fact that that version has *garbyāyā* and *luqbal garbyāyā* at the corresponding place.⁵⁰ A more obvious example, this time involving all three Arabic versions, occurs in the description of the Mediterranean Sea (393a24), where all three versions concur in calling the Syrtes Major and Minor ‘islands’,⁵¹ a curious error which is also found in Sergius’ Syriac version.⁵²

These examples serve to show the dependence of the Arabic versions on the Syriac version made by Sergius. There are, however, instances also where the Arabic versions agree with the Greek against the Syriac, and the exact nature of the relationships of the three Arabic versions among themselves and to the Syriac version is a matter that requires further investigation. While a detailed examination of the matter is beyond the scope of the present paper, we give an example below which may serve to illustrate the complexity of the situation.

K, while not giving a specific term for the North Pole, calls the South Pole *markaz al-ġanūb* (“centre of the south”, fol. 183v, 10–1).

⁴⁹ BRAFMAN 1985, 213–4.

⁵⁰ DE LAGARDE 1858, 136.24–5. As noted by Brafman, the word *ġarbī* occurs again in version F in the form *ar-rīḥ al-ġarbīya* (fol. 94r, 8) answering to the βορέαι of the Greek (394b20). The Syriac has *garbyāyē* at the corresponding place (142.27).

⁵¹ Version F, fol. 90v, 13–4; Y, fol. 297v, BRAFMAN 1985, 142.12–13; K, fol. 185r, 3–4. BRAFMAN 1985, 220, ignoring the Syriac, unnecessarily suggested an emendation of *ġazīratāni* (جزيرتان, “two islands”) to *ḥalīġatāni* (خليجان, “two bays”).

⁵² DE LAGARDE 1858, 139.24–7: “It is then divided into two bays, and passes those islands that are called the ‘Syrtes’ (*‘ābar gāzrātā hālēn d-meštammhān SWRṬYS*), one of which they call the ‘Great Syrtis’ and the other the ‘Small Syrtis.’” RYSSSEL 1880, 27, attempted to make sense of the Syriac text here by suggesting that the Syriac translator wishes us to understand the words “passes [some] islands” (*‘ābar gāzrātā*) as a parenthesis and “those that are called the ‘Syrtes’ ...” (*hālēn d-meštammhān SWRṬYS* ...) as being in apposition to “bays” (*‘ubbīn*). Baumstark’s explanation is more straightforward: *miserum interpretamentum est hominis prorsus indocti, qui Syrtes pro insulis haberet* (BAUMSTARK 1894, 412). Barhebraeus followed Sergius’ Syriac version into error in his *Cream of Wisdom* (Book of Mineralogy, V.1.2), whereas Jacob of Edessa (followed by Bar Kēphā and Bar Šakkō) rightly talks of the Syrtes as gulfs of the Mediterranean (see TAKAHASHI 2004a, 375; id. 2003, paragraph 13 with n. 28; cf. n. 28 above).

<p>(1) [lightning], which falls upon [our senses] before the thunder, although it is produced later, (2) since what is heard is naturally preceded by what is seen, the latter being seen from far away, the former [only] when it approaches hearing, (3) especially when the one is the fastest of things, I mean the fiery [element], and the other is less fast, being airy, arriving at hearing by striking it [lit. in the stroke].</p>	<p>(1) [lightning], which is seen before the thunder, although it is produced after it, (2) since something that is heard is naturally preceded and overtaken by what is seen, because what is seen can be known from a distance, while what is heard [only] when it comes close to hearing. (3) This occurs the more [yattīrā'it hāwvyā hādē] when what is seen is faster than all things [kōll šebwātā], i.e. [when] it is fiery. What is heard is less in its speed in coming to hearing, like something that is moist in its stroke.</p>	<p>(1) Lightning is seen before the thunder is heard, even though it is produced after the thunder. (2) That is, vision precedes hearing, so that the eye sees a distant thing before the ear hears [it], because it only hears it when it is near to hearing. (3) This occurs often [kaṭīran mā yakūna hādā], since the sharpest of things is vision and the fastest of it is in the likes of the light of fire and similar things, while the most languid of things is hearing / everything [kull šai'] (?) / with which moisture is mixed, and delay from hearing (?).</p>	<p>(1) ... and that is lightning, except that the lightning is seen before the thunder is heard, while it is constituted after it. (2) The reason for this is that the thing that comes to the eye arrives at the eye before the hearing of what is heard, because we see a thing from a distance, but only hear its sound when we have come close to it.</p>	<p>(1) You see the lightning before you hear the thunder, but lightning is not produced except before thunder. (2) But vision precedes hearing, so that the eye sees a distant thing, while the ear does not hear [it] until it [the thing] approaches it. (3) The sharpest of things is vision and the fastest of it is in the likes of the light of fire. "When sound is blended by striking wood against wood, you see it occurring falsely, or its physical (viz. visual) contact lingers until the sound is heard."⁵³</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

The last part of the passage is already difficult to understand in the Greek. In the Syriac, the situation is made worse by the rendition of the Greek 'airy' (*aerōdēs*) by 'moist' (*tallil*).⁵⁴ The simplest solution to the problem is offered by version Y, namely excision. Whether this is due to the translator or a subsequent copyist is difficult to determine, but this tendency

⁵³ Rather than attempt a translation of the last part of the passage, I quote, in inverted commas, the translation given by Brafman (p. 226), for the time being (cf. n. 56 below).

⁵⁴ For an attempt at explanation, see RYSSSEL 1880, 43, note d, who suggests that the Syriac translator understood ἀερωδῆς in the sense of "misty" (nebelig, trübe); cf. R. PAYNE SMITH, *Thesaurus syriacus* (Oxford 1879–1901) col. 4437.

to omit difficult passages and words is also observed elsewhere in Y. Version F is the only one in which the notion of 'moisture' (*billa*) is retained. In this and in other respects F is the most faithful of the three versions to the Syriac Vorlage. We see, for example, that the words *kaṭīran mā yakūna hādā*, though not very satisfactory, must answer to *yattīrā'īt hāwṃyā hādē* of the Syriac, and it may perhaps be that *kull šai'* somehow results from a displacement of *kōll šebwātā* of the Syriac.

Two points may be made concerning version K. The first is the exact agreement of the wording in the sentence "The sharpest of things ... in the likes of the light of fire" in this version and version F. Both Stern and Brafman thought it likely that the three Arabic versions were made independently of one another.⁵⁵ The agreement here between F and K speaks against that view, unless, of course, we are dealing with an instance of later contamination. Secondly, the last part of the passage in K, whatever its exact sense, cannot be derived from the Greek or Syriac version of *On the Cosmos* as we know them, leading us to assume either a later interpolation or the use of an additional source by the translator.⁵⁶

Some of the observations made above concerning the three Arabic versions may be confirmed further by comparing the names given to different types of thunderbolts and lightning in the passages that immediately follow those quoted above.

⁵⁵ STERN 1965, 391; BRAFMAN 1985, 57.

⁵⁶ A possible indirect source will be Arist. *Mete.* 369b 9–11, which, like the passage here, talks of the delayed perception of the sound of a stroke in explaining the delayed perception of thunder, using the example of oars striking water. A Syriac passage derived from there posits an even longer delay and talks of the oars rising a second time before the sound is heard (Nicolaus Damascenus, *On the Philosophy of Aristotle*, Syriac version, MS, Cambridge University Library, Gg. 2.14, fol. 344r, 11–4). This is then rendered into Arabic, in a translation attributed to Ḥunain ibn Ishāq and Ishāq ibn Ḥunain, as follows (Olympiodorus, *Commentary of Aristotle's Meteorologica*, Arabic version, 'A. BADAWI, *Commentaires sur Aristote perdu en grec et autres épîtres* [Beirut 1971] 142.9–11): "This is shown by the fact that when someone sees a sailor striking with his oar, his vision falls on the oar and rises with it from the first stroke, but he does not hear the sound of its stroke. When the oar rises (صعد) a second time (ثانية), then, he hears the sound of the first stroke." While I am still unable to make any good sense of the passage in K, it is tempting to suggest some emendations on the strength of these parallels, such as reading ثانيا ("second") for فاسدا ("false", "corrupt") and صعوده ("its ascent") for عوده, corrections which might make the last part of the passage yield a sense approximating to "you see a second fall and a rising from it ... before a sound is heard."

Greek 395a 21–28 ⁵⁷	Syriac 144.12–22	F 95r 5–11	Y 299r, 147.6–11	K 186r 20–186v 2
κεραυνός ("thunder- bolt")	zalqā d-māhē ("flash that strikes")	ṣā'iqā ("thun- derbolt")	lama'ān barqī ("fulminous flash")	ṣā'iqā ("thun- derbolt")
πρηστῆρ ("fire-wind")	PRYSṬYR d-nāhet men l-'el ("prēstēr that descends from above")	al-inṣidā' ("fission, cracking")	ṣā'iqā ("thun- derbolt")	al-muttaṣila ("joining") [?]
τυφῶν ("smoking bolt")	paq'ā ("thun- derbolt", < verb paq', to burst open)	al-qādīf ("hurler") ⁵⁸	BQ' (بغا) ⁵⁹	–
σκηπτός ("falling bolt")	SQYPYṬWS	–	–	–
ψολόεις ("sooty")	kebritānē ("sul- phurous")	al-qtārī ("smoky")	–	al-inṣidā' ("fission, cracking") [?]
ἀργής ("vivid") [oi ταχέως διᾶττοντες ἀργήτες (sc. λέγονται)]	rāhōṭē d-lā pāsqīm ("runners that do not divide")	al-'addāf' ("runner")	–	–
ἔλυκίαις ("forked")	'qalqlē ("crooked")	al-makwīya ("crooked")	–	–
σκηπτός	SQWPṬWS	al-wāṣila ("arriving")	–	–

F is again the most faithful of the three versions to the Greek and the Syriac in attempting to provide counterparts for all seven names. In calling the swift bolt (*argēs*) the 'runner' ('*addā'*) it follows the error of the Syriac.⁶⁰ While the derivation from the Syriac is less clear with some of the other terms, it may be noted that F also follows the Syriac where it translates the word 'smoky' (*aithalōdēs*) of the Greek as 'moist' (*tallil*).⁶¹ The tendency in Y to avoid difficulties in translation by resorting to omission or paraphrase

⁵⁷ Cf. the translation by Thom in the present volume together with the accompanying notes.

⁵⁸ Written القادف (*sic*) by Brafman in the text (p. 95), but transcribed 'qadhaf' in his commentary (p. 227).

⁵⁹ So the word asterisked by Brafman (*شعا*, without diacritical point on the first letter) should no doubt be read in the light of the Syriac *paq'ā*.

⁶⁰ The "runners" of the Syriac corresponds not to ἀργήτες but rather to διᾶττοντες of the Greek. How ἀργήτες came to be translated as "undividing" remains a mystery (misconstruction of the word as consisting of privative ἀ- and ῥήγνυμι?).

⁶¹ Greek, 395a25–6; Syriac, 144.18–9: "of the striking flashes, those which are moist (*tallilīn*) are called 'sulphurous'" (cf. RYSEL 1880, 44, note c); F95r 8–9: "of the destructive thunderbolts, those with which moisture (*billa*) is mixed are called 'smoky.'" The word

is observed again in the latter half of this passage, where no attempt is made to give the equivalents of the different names.⁶² The passage of K is corrupt and curtailed, making it difficult to decide where the three terms mentioned should be assigned in the table, but its agreements with F (*ṣā'iqa* as equivalent of *keraunos/zalqā*; occurrence, though displaced, of *inṣidā'*, as well as of *muttaṣila*, from the same root as *wāṣila*) suggest again that the two versions are not completely independent of each other.

5. Concluding Remarks

The Syriac and Arabic versions of *On the Cosmos* will be of interest to different people for different reasons. The value of the Syriac version for the critical edition of the Greek text is reasonably clear, but the full exploitation of the Syriac evidence for this purpose is work that has yet to be carried out. The value of the Arabic versions in this respect is less clear, and proper critical editions of these Arabic versions, as well as a more detailed study of the relationships between them and to the Syriac version, will be required before they can be applied to the textual criticism of the Greek text. The Syriac and Arabic versions are also of interest for what they can tell us about the societies that produced them and for the influence they had on later works in the two respective traditions. I have given some instances where the Syriac version of the work was used by later Syriac authors, but one can, I believe, be reasonably certain that these will not be the only instances. Little study seems to have been done on the use of the Arabic versions of the work by later authors, and here too, given the survival of the work in several manuscripts, one might expect future research to reveal cases where these Arabic versions provided sources of material and inspiration for authors in later times.

'moisture' is also found in K at 186v 1–2: "if it contains moisture (*nadan*) or inflammation, we call it a 'fission'."

⁶² Y299r, BRAFMAN 1985, 147.9–11: "There are thunderbolts whose descent is slow, and those which are heavy, and those which are like crooked lines; all of them are called 'thunderbolts' (*ṣawā'iq*)."

