This article will demonstrate Jacob’s extensive use in his *Commentary on the Hexaemeron*1 of the Aristotelian theory of the four elements, arranged in concentric spheres according to their relative weight, which thereby give structure to the physical cosmos. This theory is at the heart of Jacob’s cosmology—which describes both the physical world and the wider, theological cosmos reflected in it—enabling him (1) to interpret in scientific terms the mystery of the upper waters in the Genesis account, and (2) to reveal the hierarchy of divine, angelic and human nature through the symbolism of the luminaries and their elemental composition. We shall also see (3) how Jacob uses this theological-physical cosmology and adapts authoritative astronomical sources to formulate an original account of astronomy, which proves scientificaly that God is the maker of all and (4) provides a refutation of astrology.

With the onset of Islam, Jacob was concerned to assert that the Christian God is the creator of the cosmos, and that the Creation is reliably described in Genesis. The supremacy of God as revealed from his Creation pervades the *Hexaemeron*. Each memra begins with a brief account of God’s act of creating and a reference to the nature of the Trinity and its role in Creation. Everything that is made is useful and necessary for mankind, for whom the world was created (cf. *Hex.* 142a), and all phenomena such as winds and rain occur ‘at the command of God’, even noxious winds, which are God’s chastisement of mankind (cf. *Hex.* 81a, 90a). Jacob’s use of scientific sources seeks to prove that Greek philosophy is in agreement with Moses, and indeed merely elaborates what he, as a ‘lover of brevity’, leaves unsaid (*Hex.* 69a). That which does not agree with the Mosaic account is dismissed or corrected and is described as foolish and godless speculation. Jacob furthermore cites popular gnomic writings such as the Chaldean Oracles

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1 For the text, see J.-B. Chabot, *Iacobi Edesseni Hexaemeron seu in opus creationis libri septem* (CSCO 92, Syr. 44; Paris 1928); for a Latin translation A. Vaschalde, *Iacobi Edesseni Hexaemeron seu in opus creationis libri septem* (CSCO 97, Syr. 48; Leuven 1932). In this article, I shall use the abbreviation *Hex.* for all hexaemeral work.
and Hermes Trismegistus to demonstrate the veracity of the Genesis account, showing that ‘truth is the more credible when it is stated and witnessed by those who are adverse’ to it (Hex. 70a–71a and 149b–150b).

Jacob uses the most authoritative scientific and theological sources to put together a more detailed cosmology than that of Basil, on whose Hexaemeron he modelled his own. He differs from Basil in his use of scientific material in two respects; firstly, to make his cosmology more comprehensive, he adds many more lists, for example, a list of winds influenced by the Pseudo-Aristotelian account in the De mundo; that of stones from Theophrastus’ De lapidibus; and that of continents, cities, seas, and mountains shown by Darmesteter to be from Ptolemy’s Geography. In this way he includes as much as possible about the world (cf. Hex. 89b–90a). Secondly, he uses and adapts scientific material with a more ambitious and original spirit than Basil, building up a carefully structured picture of the entire cosmos, correcting both his sources and Basil’s account where necessary. The tone of Jacob’s work, which is more scientific than that of Basil, comes from the different intentions of the two writers: Basil’s Hexaemeron is a series of sermons during Lent for a congregation, in which his use of Platonic and Aristotelian cosmology,

2 As Martin observes, Jacob seems to have used only Greek scientific sources and knew a body of literature that we do not have any more; cf. J.P.P. Martin, ‘l’Hexaméron de Jacques d’Édesse’, JA 8.11 (1888), 155–219, 401–490. Much of the material which cannot be traced probably comes from lost cosmological summaries.

3 The references in this article will be to the Syriac version of Basil’s Hexaemeron, edited and translated by R.W. Thomson, The Syriac Version of the Hexaemeron by Basil of Caesarea (CSCO 550–551, Syr. 222–223; Leuven 1995). It is, however, likely that Jacob would have used both the Greek original and the Syriac version.

4 The De mundo includes many topics that Jacob discusses in Memra II, his compendium of natural science, and must have appealed to scientific hexaemeral writers since it describes the universe as a system made up of heaven and earth and the elements which are contained in them and talks of the ordering and arranging of all things, preserved by and through God.

5 J. Darmesteter, ‘Jacques d’Édesse et Claude Ptolémée’, Revue des études grecques 3 (1890), 180–188.

6 Jacob would have had access to a wide range of philosophical sources in the original texts, as well as to translations and summaries. Jacob’s Hexaemeron, ‘like Philoponous’ before him, served as a compendium of contemporary scientific knowledge, with sections on cosmology, geography and most aspects of natural history’: S. Brock, ‘From Antagonism to Assimilation: Syriac Attitudes to Greek Learning’, in N.G. Garsoian, Th.F. Mathews, and R.W. Thomson (eds.), East of Byzantium. Syria and Armenia in the Formative Period (Washington 1982), 17–34.

7 Basil reminds his congregation of humanity’s place in the world and ultimate destiny within the wider context of the ‘beginning’ and ‘end’ of the created cosmos with its final judgement, cf. P. Rousseau, Basil of Caesarea (California 1994), 319–320.