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### *Cover*

Mašhad, Kitābhāna-i Āsitān-i Quds-i Raḍawī 300, f. 1v  
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A.C. Bowen, *Simplicius on the Planets and Their Motions. In Defense of a Heresy*, Brill, Leiden - Boston 2013 (Philosophia Antiqua, 133), XXI + 329 pp.\*

Within the history of the reception of ancient cosmology in later ages Aristotle's *De Caelo* plays an important role.<sup>1</sup> *Simplicius on the Planets and Their Motions* is devoted to a specific point in the late antique exegesis of this Aristotelian treatise,<sup>2</sup> namely the problem of planetary motions and the solution to it provided by Simplicius (d. 555 AD) in his commentary on the *De Caelo*. Planetary motions are indeed a problem for him: while throughout his commentary he is committed to showing that the Aristotelian description of heavens is the right one, on this particular issue he substitutes Ptolemy's system for Aristotle's (pp. 84-6). Bowen focuses on Simplicius' "preference for post-Aristotelian planetary hypotheses" (p. 51), and wonders why. The answer lies for him in the well-known debate on the nature of heavens that arose in the first half of the 6<sup>th</sup> century between Simplicius and Philoponus. Challenged by Philoponus in a lost work whose main though not exclusive source of knowledge for us is Simplicius himself,<sup>3</sup> the Aristotelian doctrine of the eternity and divinity of heavens was endorsed by Simplicius, and argued for in the commentary that he devoted to the *De Caelo*, not without addressing harsh criticisms to Philoponus. In Bowen's book, four introductory chapters (pp. 27-93) are followed by the translation of Simplicius' *In De Caelo* II, 10-12 (= pp. 470.29-510.35 Heiberg), and by a series of comments on selected topics (pp. 201-98). Figures and tables are provided at the end of the *Introduction* (pp. 22-25) and between the translation and the comments mentioned above (pp. 181-97).

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\* This review, written in 2014 and originally planned for *Aestimatio*, has not been published there due to technical reasons. I thought it better not to postpone the publication further.

<sup>1</sup> On this reception see E. Grant, *Planets, Stars, and Orbs: The Medieval Cosmos, 1200-1687*, Cambridge U. P., Cambridge 1994, in part. pp. 27-31, and M.-P. Lerner, *Le monde des sphères*. Vol. I. *Genèse et triomphe d'une représentation*, Les Belles Lettres, Paris 1986, in part. pp. 111-30 and pp. 195-236, as for the Latin Middle Ages and the early modern age; H. Hugonnard-Roche, "L'Épitomé du *De Caelo* d'Aristote par Averroès: questions de méthode et de doctrine", *Archives d'histoire doctrinale et littéraire du Moyen Age* 59 (1984), pp. 7-39, and G. Endress, "Averroes' *De Caelo*. Ibn Rushd's Cosmology in his Commentaries on Aristotle's *On the Heavens*", *Arabic Sciences and Philosophy* 5 (1995), pp. 9-49, as for the reception in Arabic philosophy.

<sup>2</sup> Systematic exegeses of the *De Caelo* include (i) Alexander of Aphrodisias' commentary, which is lost but attested by Themistius and Simplicius; (ii) Themistius' paraphrase, which is lost in Greek but attested in Hebrew translation; the latter was made on the basis of the Arabic version (in itself lost), and (iii) Simplicius' commentary. An up-to-date account of recent scholarship on Alexander's commentary *apud* Themistius and Simplicius has been provided by E. Coda, "Alexander of Aphrodisias in Themistius' Paraphrase of the *De Caelo*", *Studia graeco-arabica* 2 (2012), pp. 355-71.

<sup>3</sup> Philoponus wrote three works on the topic of eternity *vs.* the temporal createdness of the cosmos. (i) The one which has come down to us almost in its entirety in Greek is his attack against Proclus, which contains also his own exegesis of the *Timaeus*: Iohannes Philoponus, *De Aeternitate mundi contra Proclum* ed. H. Rabe, Teubner, Leipzig 1899 (repr. G. Olms Verlag, Hildesheim - Zürich - New York 1984). (ii) The work against which Simplicius reacts in his commentary on the *De Caelo*, which was written before the *De Aeternitate mundi contra Proclum* and is referred to by Philoponus himself as *De Aeternitate mundi contra Aristotelem*: ἐν ταῖς πρὸς Ἀριστοτέλην περὶ τῆς τοῦ κόσμου ἀϊδιότητος (Philop., *De Aet. Mundi contra Proclum*, p. 258.24-25 Rabe). The doxographical fragments of this work, lost but attested both in Greek and Arabic, have been translated into English by Ch. Wildberg, *Philoponus. Against Aristotle, on the Eternity of the World*, Cornell U.P., Ithaca 1987. (iii) A treatise on the temporal createdness of the universe, which is attested only in Arabic and has been translated into English by S. Pines, "An Arabic Summary of a Lost Work of John Philoponus", *Israel Oriental Studies* 2 (1972), pp. 320-52 (repr. in *Studies in Arabic Versions of Greek Texts and in Mediaeval Science*, The Magnes Press - Brill, Jerusalem - Leiden 1986, pp. 294-326) and into French by G. Troupeau, "Un épitomé arabe du *De Contingentia mundi* de Jean Philopon", in É. Lucchesi - H.D. Saffrey (eds), *Mémorial André-Jean Festugière. Antiquité païenne et chrétienne*, Cramer, Genève 1984, pp. 77-88.

Bowen frames much of his discussion against the backdrop of Simplicius' struggle against Philoponus. Chapter One opens with the claim that "The great digression at the end of Simplicius' *In de caelo* 2.12 [492.25-510.35] is an apologia precipitated by Philoponus, the renegade Platonist, and his attack on Aristotle's arguments for a fifth simple body, aether" (p. 27). Even if Philoponus' rejection of Aristotelian cosmology is not mentioned in the commentary on *De Caelo* II, 10-12, it counts for Bowen as Simplicius' real target. The attack directed by Philoponus against the theory of the aether and its movement lies in the background of what *prima facie* seems to be a highly specialised discussion of the difficulties in the homocentric theory, and an excursus on their solutions. Bowen's interpretation pivots on the idea that Simplicius was well aware of the limits of the homocentric theory: when faced with Philoponus' objections, he looked for a solution compatible with his own assumption of the circular and (by the same token) eternal motion of the heavens. Philoponus' main objection runs as follows: were it true that the entire cosmos rotates about its centre, the planets should not exhibit rotations about their own axes, nor apogees and perigees – something that, says Bowen, Simplicius could only agree to. As a matter of fact, this was precisely the reason why he himself sided with Ptolemy. However, by no means could Simplicius endorse the general conclusion drawn by Philoponus from this, namely that, if so, then there is no aether endowed with circular, eternal motion. Bowen thinks that Philoponus' criticism "brings to fore two points against Aristotle", namely the rotation of the planets about their axes, and their apogees and perigees "in which he sides with Philoponus. The danger here is heresy: Simplicius is now obliged to show that his agreement with Philoponus does not entail Philoponus' blasphemous conclusion" (p. 28), hence the subtitle of the book, *In Defense of a Heresy*.<sup>4</sup>

It is vital to this reconstruction to connect with Philoponus what Simplicius says in his commentary on *De Caelo* II, 10-12, especially in the section labelled "digression". As Bowen has it, "The digression is the apologia in full" (p. 64). As we have seen before, this long passage which concludes Simplicius' commentary on *De Caelo* II 12 deals with the difficulties in the cosmic picture of *Metaphysics* XII 8, where all the spheres rotate about Earth, the center of the universe (pp. 14, 92); but it is Bowen's conviction that, beyond its face value, the "digression" is in reality a reply to Philoponus. The latter is not mentioned, however: Simplicius presents Xenarchus' objections and solves them by quoting the counter-arguments developed by Alexander of Aphrodisias. After this, "long after Philoponus' objections to the Aristotelian aether have been answered, does Simplicius again take up, without mentioning Philoponus, the question of the homocentric planetary theory (...). So the astronomical digression (παρέκβασις) at the close of *In de caelo* 2.12 is, logically speaking, a part of Simplicius' attempt to deal with Philoponus" (p. 15).

The question why Philoponus is not named, if the "digression" points to him, is answered at pp. 30-32: while in the case of other criticisms addressed by Philoponus it was "tactically useful to name him" (p. 31), in this case it was not. On the whole, the reader gets the impression that the burden of Simplicius' entire commentary was to refute Philoponus. The latter is repeatedly described

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<sup>4</sup> The adjective "blasphemous" alludes to the interpretation of the commentary on the *De Caelo* as a reassessment of the divinity of the heavens advanced by Ph. Hoffmann, "Simplicius' Polemics: Some Aspects of Simplicius' Polemical Writings against John Philoponus: from Invective to a Reaffirmation of the Transcendence of the Heavens", in R. Sorabji (ed.), *Philoponus and the Rejection of Aristotelian Science*, Duckworth, London 1987, pp. 57-83. Hoffmann's thesis is endorsed by Bowen: the "narrower aim" of this commentary consists for him in "repudiating the impiety and atheism of those who deny the truth as it is found in the *De caelo*" (p. 10); the commentary is cast as a scholarly exercise, which in turn is a step in the philosophical assimilation to God (pp. 54-5). The section studied by Bowen was devoted by Simplicius to "redeeming himself and the late Platonist preference for more recent astronomical hypotheses" with respect to Aristotle's (p. 69).

as a “renegade convert” (pp. 6, 11, 27) who abandoned Platonism for the Christian doctrine, an account of Philoponus’ literary output which has been propounded in scholarship, but has been also criticised.<sup>5</sup> Bowen endorses this opinion without qualifications.

Chapter Two addresses the main epistemological question implied in Simplicius’ Ptolemaic allegiance: that of the status of the astronomical hypotheses. “(...) as Simplicius says, though each hypothesis distinguishes appearance and reality and then posits a state of affairs enabling one to ‘save’ or account for the phenomena, none of the hypotheses is demonstrably true (ἀληθές, κατ’ ἀλήθειαν). Rather, for him, the true account (ὁ ἀληθὴς λόγος) neither admits the apparent planetary motions as real, nor utilizes hypotheses; instead, it reasons on the basis of duly established physical theory that the planets move with motions that are simple, smooth, circular, and ordered” (p. 37).

This claim commits Bowen to something more than the traditional distinction between mathematical astronomy and physics, already noticed in the scholarship.<sup>6</sup> What Bowen labels “the empirical limitations of astronomy” pave the way to Simplicius’ conviction that “our observations of celestial bodies (...) are largely matters of inference” (p. 53). Faced with conflicting astronomical hypotheses, and forced to admit the flaws of the homocentric theory, Simplicius came to the conclusion that “the true, unhypothetical account is established in the light of physical theory” (p. 53), with little or no concern with observable data. Thus, one of the most important subsidiary arguments advanced by Bowen is the claim that the topic “save the phenomena”, which lies in the background of Simplicius’ position mentioned above, appeared only relatively late. The non-specialist reader gratefully acknowledges the important piece of information that “the context in which the ideas of these planetary motions” i.e. stations and retrogradations “really became known to the Greeks and Romans was neither the tradition of Platonic and Aristotelian philosophy or cosmology (as Simplicius suggests) nor the quasi-indigenous Greek and Roman celestial science prior to the late second century BC. Rather, it was horoscopic astrology, a discipline which is devoted to determining the fate of the native on the basis of the positions of the seven planetary bodies, and which first appears in Greek and Roman worlds in Egypt in the very late second century BC, if not more recently” (pp. 231-2).

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<sup>5</sup> The controversial issue concerning Philoponus’ literary career consists in that he authored both philosophical commentaries typical of the school of Ammonius Hermias (of whom he was a pupil, and whose courses on Aristotle he edited), and theological works where he expresses his Christian allegiance. The problem of the dates of his works is interwoven with this bipartition, so to speak, of his literary output. The polemical *De Aeternitate mundi contra Proclum* mentioned above was published in 529, the year of Justinian’s anti-pagan edict; thus, 529 and this work are often presented in scholarship as the turning point in Philoponus’ career: formerly a Platonist, according to this narrative he then “converted” to the Christian creationist creed. However, there is evidence that Philoponus was engaged in the anti-eternalist battle already in his commentary on Aristotle’s *Physics*, written as early as in 517, and that he continued even after 529 to write commentaries on Aristotle in typical Neoplatonic vein. All this creates a cluster of problems which have been solved in various ways. K. Verrycken, “The Development of Philoponus’ Thought and its Chronology”, in R. Sorabji (ed.), *Aristotle Transformed. The Ancient Commentators and their Influence*, Duckworth, London 1990, pp. 233-74, posits a sharp distinction between Philoponus as a Platonist and Philoponus as a Christian writer, a reconstruction which lies in the background of Bowen’s label “renegade convert”. Verrycken’s hypothesis has been challenged in scholarship: see C. Scholten, *Johannes Philoponus. De Opificio mundi. Über die Erschaffung der Welt (...) übersetzt und eingeleitet von C.S., Herder, Freiburg - Basel - Wien - Barcelona - Rom - New York 1997*, in part. vol. I, pp. 19-35, and U.M. Lang, *John Philoponus and the Controversies over Chalcedon in the Sixth Century. A Study and Translation of the Arbitrator*, Peeters, Leuven 2001, in part. pp. 5-9. Given the importance of Philoponus in Bowen’s analysis, it seems to me that this discussion should have been taken into account.

<sup>6</sup> Hugonnard-Roche, “L’Épitomé du *De Caelo* d’Aristote par Averroès”, p. 39, has a clear-cut formulation for this: “Le rejet de l’astronomie hors du domaine de la science du *De caelo* est déjà formulé par Aristote lui-même, et la distinction entre l’astronomie mathématique et la physique est traditionnelle dès l’Antiquité, comme P. Duhem l’a montré”. Reference is given to P. Duhem, *ΣΩΖΕΙΝ ΤΑ ΦΑΙΝΟΜΕΝΑ. Essai sur la notion de Théorie physique de Platon à Galilée*, Hermann, Paris 1908.

However, one may wonder if this licenses the overall picture expounded in this book. As we have seen before, Bowen construes Simplicius' commentary on *De Caelo* II, 10-12, as a defence of that "true, unhypothetical account" which remains unaffected by any criticism raised on the basis of observable data: a science whose epistemic status places it, as it were, above them. It is rewarding to pause and follow the argument concerning the rise of the topic "save the phenomena".

The starting point is the idea that this problem was an entirely new one: "prior to the late second century BC the Greeks lacked a technical vocabulary for station and retrogradation, and (...) these phenomena were quite marginal to their thinking" (p. 232). Once again, the non-specialist reader treasures this piece of information and takes it for granted. But not so with the epistemological implications drawn by Bowen. The principle "save the phenomena" is described as if it originated precisely from the awareness of the irregular motions of the planets, leaving the reader with the doubt that such an issue was unknown to Aristotle. In fact, the epistemic principle of accounting for the data of perception (σώζειν τὰ φαινόμενα) is traced back to Plutarch's *De facie*, which is described as "the earliest occurrence of the slogan in this form" (p. 251). The principle σώζειν τὰ φαινόμενα is repeatedly labelled a "slogan" (*ibid.* and p. 259), something which suits with Bowen's understanding of it: "These expressions occur in different contexts and indicate different tasks. In some instances, one is to account for an apparent irregularity and thus to save the phenomena by explaining it away; in others, the task is to explain a regularity and thus to preserve or maintain it; and in others still the meaning of the expression is left vague. With this in mind, let us distinguish the slogan «(διὰ) σώζειν τὰ φαινόμενα (saving the phenomena)» from the project itself, and try to determine what the project was originally by considering the early occurrences of the slogan" (p. 251).

According to Bowen, the "project" was conceived no earlier than in the 1<sup>st</sup> century AD, and amounted to explaining planetary stations and retrogradations, i.e. something that Aristotle was unaware of and uninterested in. Simplicius, in Bowen's account, "takes for granted that Aristotle was indeed aware of the fact that, unlike the Sun and Moon, the five planets make stations and retrogradations. This assumption, however, is not warranted by any evidence that has come down to us. Indeed, so far as one can tell given the evidence extant, it is an artifact of his manner of reading Plato and Aristotle, and derive from his interpretative agenda" (p. 230).

Even if one is ready to consent that Simplicius had an acute awareness of the implications of the apparent irregularity in celestial motions, one may resist the conclusion that the principle "save the phenomena" has nothing to do with Aristotle. In Bowen's account, this topic is a product of a span of time between the 2<sup>nd</sup> century b.C. and the 1<sup>st</sup> century AD. "Given the present state of the evidence, the most that we should allow is that the project of explaining the retrogradations and stations of the five planets only began to take shape after the late second century BC as Graeco-Latin writers tried to address the problem of planetary motion in greater detail than ever before. The slogan 'save the phenomena', first appears in a text written some years after this, however. There is, of course, no way to determine whether this slogan was coined specially to encapsulate this new project in astronomy or whether it was borrowed from an analogous project in a different domain" (p. 259).

It seems to me that there is indeed a way to begin to explore the origins of this formula, and one which might lead to question some of Bowen's assumptions on Aristotle mentioned above. In the early 1960s, G.E.L. Owen devoted a fundamental study to the admittedly similar principle τινθέναι τὰ φαινόμενα in Aristotle.<sup>7</sup> Owen's primary aim was to redress the idea that in Aristotle's theory of

<sup>7</sup> G.E.L. Owen, "Tithenai ta Phainomena", in S. Mansion (ed.), *Aristote et les problèmes de méthode*, Publications Universitaires de Louvain - B. Nauwelaerts, Louvain - Paris 1961, pp. 83-103 (repr. in J.M.E. Moravcsik [ed.], *Aristotle*.



science *φαινόμενα* always indicates empirical observations;<sup>8</sup> more importantly for the issue at stake here, he focussed on two Aristotelian passages which are worth quoting in full, because they do not play any role in Bowen's analysis. The first is located in the *Prior Analytics*:

Διὸ τὰς μὲν ἀρχὰς τὰς περὶ ἕκαστον ἐμπειρίας ἐστὶ παραδοῦναι, λέγω δ' οἷον τὴν ἀστρολογικὴν μὲν ἐμπειρίαν τῆς ἀστρολογικῆς ἐπιστήμης (ληφθέντων γὰρ ἱκανῶς τῶν φαινομένων οὕτως εὐρέθησαν αἱ ἀστρολογικαὶ ἀποδείξεις), ὁμοίως δὲ καὶ περὶ ἄλλην ὁποιοῦν ἔχει τέχνην τε καὶ ἐπιστήμην (*An. I*, I 30, 46 a 17-22).

It falls to experience to provide the principles of any subject. In astronomy, for instance, it was astronomical experience that provided the principles of the science, for it was only when the phenomena were adequately grasped that the proofs in astronomy were discovered. And the same is true of any art or science whatever (trans. Owen, *ibid.*, p. 113).

The second passage comes from the *De Caelo* itself, where Aristotle contrasts practical knowledge with scientific inquiry on nature precisely on the grounds that the task of the latter is to account for the *phainomena*: τέλος δὲ τῆς μὲν ποιητικῆς ἐπιστήμης τὸ ἔργον, τῆς δὲ φυσικῆς τὸ φαινόμενον αἰεὶ κυρίως κατὰ τὴν αἴσθησιν (III 7, 306 a 16-17),<sup>9</sup> a tenet which, in my opinion, should have been compared with the passage of *Physics*, II 2, 193 b 22-35 advocated by Bowen as a support for his claim that Aristotle's cosmological theory is largely independent of observable data. "Granted, – says Bowen – Aristotle himself admits that inquiry about the heavens is difficult. But at no point does he allow that one is therefore permitted to take a position concerning their motions that is unwarranted by argument" (p. 38). In order to substantiate this claim, Bowen has recourse to *Physics* II 2, 193 b 22-35, which he summarises as follows: "a text in which Aristotle writes briefly about the distinction between physical theorists (ὁ φυσικός) and certain scientists (ὁ μαθηματικός), that is,

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*A Collection of Critical Essays*, Doubleday & Co., New York 1967, pp. 167-90, and in J. Barnes - M. Schofield - R. Sorabji [eds], *Articles on Aristotle. I. Science*, Duckworth, London 1975, pp. 113-26, cited here after this pagination).

<sup>8</sup> The other meaning of τὰ φαινόμενα, which is discussed in the *Nicomachean Ethics*, has to do with the notion of *endoxa*. This too has attracted discussion: see M. Nussbaum, "Saving Aristotle's Appearances", in M. Schofield - M. Nussbaum (eds), *Language and Logos. Studies in Ancient Greek Philosophy presented to G.E.L. Owen*, Cambridge 1982, pp. 267-93. More germane to the argument here is to follow Owen's analysis of *EN* VII 1, 1145b5-6, which is worthy to be quoted: "If there is more than one use for the expression *phainomena*, the uses have a great deal in common. (...) As for his favourite example, astronomy, Aristotle knew (or came to realise) how inadequate were the observations of the astronomers (*PA* I 5, 644b24-28). And of the biological 'observations' many were bound to hearsay, *legomena* to be treated with caution (e.g. *HA* II 1, 501a25 - b 1). Such *phainomena* must be 'properly established', ascertained to be 'true data' (*A.Pr.* I 30, 46 a 20, 25). In the same fashion the *endoxa* must pass the appropriate scrutiny, but in doing so they too become firm data. (...) Nor is it in the least surprising if Aristotle, writing in the tradition of Parmenides and Protagoras, tended to assimilate these different senses of *phainomena*. For Parmenides, the 'mortal opinions' include not only the supposed evidence of the senses but the common assumptions (and specifically the common uses of language) which form men's picture of the physical world. (...) It is in the same broad use of the word that it is to be found in the formula from the *Prior Analytics*. In the *De Caelo*, it is true, Aristotle observes that it is the *phainomena* of perception by which we must ultimately test the adequacy of our principles in physics (...). But this is not to say (and it does not commit Aristotle to supposing) that in the *Physics* proper the analyses either start from or are closely controlled by our inspections of the world. (...). He evidently has in mind the claim made in the *Topics* that the first premisses of scientific argument can be established by methods which start from the *endoxa*" (pp. 117-8).

<sup>9</sup> Owen's understanding of the wording of this sentence is instructive: "to *phainomenon aei kurios kata ten aisthesin* 'the perceptual *phainomenon* that is reliable when it occurs', not, as Tricot translates, 'l'évidence toujours souveraine de la perception sensible.'" (p. 117 n. 13).

between philosophers engaged in the study of Nature (φύσις) and non-philosophers who also study Nature but characteristically with the help of mathematics” (*ibid.*).

Whether or not this passage and Simplicius’ commentary on it license Bowen’s conclusions about the epistemic status of astronomy in Aristotle and in his Neoplatonic commentator, is a question that goes beyond both the limits of this review and the skills of the reviewer, implying as it does an in-depth analysis of no less an issue than Aristotle’s notion of science;<sup>10</sup> but it seems to me that a discussion of the two passages of the *Prior Analytics* and the *De Caelo* mentioned above would have been appropriate, especially because the case in point is, in both passages, astronomy. From the admittedly narrower point of view of the history of the formula “save the phenomena”, one may surmise that the philosophers, scientists, and doxographers taken into account here – Plutarch, Archimedes, Seneca, Stobaeus, and Geminus – did simply elaborate on Aristotle’s own *τιθέναι τὰ φαινόμενα*.

The core of Simplicius’ “apologia” consists in showing that Plato and Aristotle are in agreement about the nature and movement of the heavens, and in particular about the sidereal rotation (p. 32). Bowen is right, in my opinion, when he insists on this point. But if Simplicius embarks on this, it is because the divinity and the eternity of the heavens had long been established by Plotinus as one of the main points in his reassessment of the Platonic universe,<sup>11</sup> and was by Simplicius’ lifetime part and parcel of the legacy of Platonism. Far from being an uncontroversial assumption, this had implied on Plotinus’ part to take resolutely the way of interpreting the temporal creation of the cosmos in the *Timaeus* as a didascalical device, and by the same token to part company with those Platonists who took literally this narrative, as if it were the faithful account of the Demiurgic deeds performed in succession, and who, by way of consequence, took on its face value the lapidary *γένεσθαι* of *Timaeus* 28 B 7.<sup>12</sup> Recent scholarship has highlighted that Simplicius’ cosmos is that of Plotinus. What has been observed apropos the overall picture of Simplicius’ cosmos<sup>13</sup> proves to be true also for

<sup>10</sup> Bowen thinks that for Simplicius “when astronomers consider the heavenly bodies, they too do not treat them *qua* physical by focussing on what belongs to them intrinsically; rather, they view them as moving bodies exhibiting configurations and ignore any intrinsic connection that these configurations might have to the bodies themselves” (pp. 39-40). If this means that for Simplicius science can indeed reach counterintuitive conclusions, I think it is true; if this means that Simplicius either was unaware of or parted company with Aristotle’s principle *τιθέναι τὰ φαινόμενα*, it seems to me that the point deserves discussion. The starting point should be precisely to take into account Aristotle’s assessments about the *φαινόμενα* and our scientific knowledge of them. Useful remarks are provided by J.F. McCue, “Scientific Procedure in Aristotle’s *De Caelo*”, *Traditio* 18 (1962), pp. 1-24, and by G.E.R. Lloyd, “Saving the Appearances”, *The Classical Quarterly* 28 (1978), pp. 202-22 (repr. in Id., *Methods and Problems in Greek Science*, Cambridge U.P., Cambridge - New York 1991, pp. 248-77).

<sup>11</sup> To substantiate this claim would exceed the limits of a review, but suffice it to mention that Plotinus was engaged from the beginning of his literary career in establishing that the visible cosmos, far from being the product of an inept activity of the Gnostic fallen soul, emanates necessarily from the causality of the intelligible realm.

<sup>12</sup> The fundamental study is M. Baltes, *Die Weltentstehung des platonischen Timaios nach den antiken Interpreten*, I-II, Brill, Leiden 1976-1978; on Plotinus and his understanding of the narrative of the *Timaeus* *δηλώσεως χάριν* (“zur Verdeutlichung”) see vol. I, pp. 123-46; on the main topic of the temporal createdness *vs.* eternity of the cosmos in the Platonic tradition, the reference work is H. Dörrie † – M. Baltes, *Die philosophische Lehre des Platonismus. Platonische Physik (im antiken Verständnis). Bausteine 125-150: Text, Übersetzung, Kommentar*, Frommann-Holzboog, Stuttgart Bad Cannstatt 1998 (*Der Platonismus in der Antike. Grundlagen – System – Entwicklung*, 5), pp. 84-180 (texts and translations); pp. 373-535 (comm.).

<sup>13</sup> See Ph. Hoffmann, “La place du *Timée* dans l’enseignement philosophique néoplatonicien: ordre de lecture et harmonisation avec le *De Caelo* d’Aristote. Étude de quelques problèmes exégétiques”, in F. Celia – A. Ulacco (eds), *Il Timeo. Egesesi greche, arabe, latine*, Plus, Pisa U.P., Pisa 2012 (Greco, Arabo, Latino. Le vie del sapere. Studi, 2), pp. 133-80. See in part. pp. 154-5: “Le traité 40 de Plotin introduit donc dans la cosmologie de tradition platonicienne une idée fondamentale, selon laquelle la substance du ciel, certes, n’est pas un cinquième corps comme le veut Aristote, mais est en quelque sorte une version transcendante du feu, pure, lumineuse, douce, non caustique et non destructrice, qu’il faut à la fois situer



the “digression”. Here Simplicius construes Plato as asking astronomers (τοῖς μαθηματικοῖς)<sup>14</sup> to account for the movements of the planets as they appear to the observer:

Καὶ εἴρηται καὶ πρότερον, ὅτι ὁ Πλάτων ταῖς οὐρανόσφαιραις κινήσεσι τὸ ἐγκύκλιον καὶ ὁμαλῆς καὶ τεταγμένον ἀνευδοκίᾳ ἀποδιδούς πρόβλημα τοῖς μαθηματικοῖς προϋτείνει, τίνων ὑποτεθέντων δι’ ὁμαλῶν καὶ ἐγκυκλίων καὶ τεταγμένων κινήσεων δυνήσεται διασωθῆναι τὰ περὶ τοὺς πλανομένους φαινόμενα (*In De Caelo*, pp. 492.31-493.4 Heiberg).

It was in fact stated earlier also that Plato (who unequivocally assigned the circular, the smooth, and the ordered to the heavenly motions) put forward a question for mathematical scientists—Given what hypotheses will it be possible that the phenomena of the wandering [stars] be saved by means of smooth, circular, and ordered motions? (trans. Bowen, p. 145).

Of course Plato did nothing similar; rather, it was Plotinus’ “Plato” who raised the question of how to harmonise the rotation of the planets about their axes and the circular motion of the cosmos. In his treatise *On the Movement of Heaven* (II 2[14]) which, together with *On Heaven* (II 1[40]), lies in the background of Simplicius’ cosmology,<sup>15</sup> Plotinus depicts Plato as raising and solving the question of individual celestial motions if compared with the circular and perfect motion of the universe:

Καὶ Πλάτων δὲ τοῖς ἄστροις οὐ μόνον τὴν μετὰ τοῦ ὅλου σφαιρικὴν κίνησιν, ἀλλὰ καὶ ἐκάστω δίδωσι τὴν περὶ τὸ κέντρον αὐτῶν· ἕκαστον γάρ, οὗ ἔστι, περιειληφὸς τὸν θεὸν ἀγάλλεται οὐ λογισμῷ ἀλλὰ φυσικαῖς ἀνάγκαις (II 2[14], 2.24-28).

And Plato gives the stars not only their spherical motion with the whole universe but also individual motions, each around its own centre: for each in this place encompasses God and rejoices, not by rational planning but by natural necessity (trans. Armstrong).

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dans une sorte de continuité génétique avec le feu d’ici-bas, mais également dans une transcendance. La position de Plotin rend donc possible la doctrine qui est proposée par Proclus et par Simplicius, selon laquelle la substance du ciel est composée des quatre éléments comme Platon l’a affirmé dans le *Timée*, mais néanmoins est différente des quatre éléments que nous connaissons ici-bas. La substance du ciel est d’un type très particulier, dans lequel prédomine l’espèce la plus pure du feu, c’est-à-dire la lumière, ce qui permet à Proclus et surtout à Simplicius d’harmoniser en toute tranquillité le *De Caelo* d’Aristote et le *Timée*, d’oublier le refus plotinien de la cinquième essence, et tout à la fois de donner aux quatre éléments comme règne le monde sublunaire, en affirmant que la substance céleste est d’un type tout à fait transcendant: une lumière dont la description donne lieu à des pages nombreuses et précises aussi bien dans le commentaire de Proclus sur le *Timée* que dans le commentaire de Simplicius au *De Caelo*”. That Plotinus’ assessment of the nature of the heavens lies in the background of Simplicius’ cosmology has been shown also by J. Wilberding, *Plotinus’ Cosmology. A Study of Ennead II.1 (40)*. Text, Translation, and Commentary, Oxford U.P., New York 2006, in part. pp. 123-6.

<sup>14</sup> The astronomers who, in Simplicius’ narrative, took on themselves to solve the problem raised by Plato were Eudoxus (p. 493.4-5 Heiberg) and Callippus (p. 493.5-9 Heiberg). Bowen’s translation “mathematical scientists” is grounded on his idea that Simplicius’ usage “is in accord with Aristotle’s”, where he detects a nuance: “the μαθηματικοί are scientists devoted to the study of Nature who characteristically define their subject-matters by (...) employing arithmetic and/or geometry to make deductions about these objects” (pp. 203-4). A useful comparison might be set between Simplicius’ usage and Porphyry’s. The latter says that Plotinus “studied the rules of astronomy (περὶ τῶν ἀστέρων κανόνων), without going very far into the mathematical side (οὐ πᾶν τι μαθηματικῶς)” (*Vita Plot.*, 15.21-22, trans. Armstrong); in commenting upon the adverb μαθηματικῶς, A.-Ph. Segonds puts the term on equal footing with “astronomer”, translating “non pas en tant qu’astronome (on se rappellera que μαθηματικός = astronome au moins jusqu’au xvii<sup>e</sup> siècle)”: see L. Brisson, J.-L. Cherlonneix, M. O. Goulet-Cazé, M.D. Grmek, J.-M. Flamand, S. Matton, D. O’Brien, J. Pépin, H.D. Saffrey, A. Ph. Segonds, M. Tardieu, P. Thillet, *Porphyre. La Vie de Plotin*, II. Vrin, Paris 1992, p. 271.

<sup>15</sup> See above n. 13.

That Simplicius had Plotinus' treatise *On the Movement of Heaven* ready to hand when he was writing his commentary on Aristotle's *De Caelo* was demonstrated by a short, fundamental study by Ph. Merlan in 1935.<sup>16</sup> Near to the close, Merlan said: "Wenn nun Simplicios hier Plotinos zitiert, so bringt er *Enn.* II. 1<sup>17</sup> in Verbindung mit der auf dem Boden der Peripatos entstandenen Frage nach der Rolle der in der uranischen Theologie des Aristoteles neben der des Äthers und der Himmelsseele". It comes as no surprise that it is indeed Plotinus' contention that the heavens and the entire universe are eternal, perfect and divine (although giving room to coming-to-be and passing away in the sublunar realm) that paves the ground for Simplicius' plea for the eternity and divinity of heaven.<sup>18</sup>

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<sup>16</sup> Ph. Merlan, "Ein Simplicios-Zitat bei pseudo-Alexandros und ein Plotins-Zitat bei Simplicios", *Rheinisches Museum für Philologie* 84 (1935), pp. 154-60. Comparing Simplicius, *In De Caelo*, p. 382.8-19 Heiberg (= comm. on *De Caelo*, II 1, 284 a 14 - b 5) with the commentary by the pseudo-Alexander (Michael of Ephesus) on the *Metaphysics*, pp. 706.31-707.11 Hayduck (= comm. on *Metaph.* XII 8, 1074 a 14), Merlan proves that the pseudo-Alexander quotes Simplicius *verbatim* apropos the circular movement of the heavens; in search of Simplicius' source, Merlan discovers that it is Plotinus. "Wie es nun scheint, billigt Simplicios auch diese Lehre des Alexandros, wenn er sagt dass die κίνησις εἰς ὁμοιότητα τῆς νοεραῆς ἐνεργείας ἀποκαθίσταται. Und nun zitiert er zustimmend 'jenen Göttlichen': διὸ καὶ ὁ θεὸς ἐκεῖνος ἐρωτήσας, διότι κύκλῳ κινεῖται ὁ οὐρανός, ὅτι νοῦν μιμεῖται, φησὶν. Wer, was wird hier zitiert? Heiberg verweist im Apparat z.d. St. auf Platons *Timaios* 34a. (...). Zitiert ist vielmehr Plotins, *Enn.* II. 1" in fact, II 2[14] "(περὶ κινήσεως οὐρανοῦ ἢ περὶ τῆς κυκλοφορίας) und zwar der erste Satz, lautend: διὰ τί κύκλῳ κινεῖται; ὅτι νοῦν μιμεῖται" (p. 159).

<sup>17</sup> Once again the exact reference is to II 2[14], which is unequivocally referred to by the citation pinpointed by Merlan (see the preceding note).

<sup>18</sup> Taking into account Plotinus as one of the sources of Simplicius' commentary on the *De Caelo* would help also to solve some minor questions which have attracted disproportionate attention, like that of Simplicius' quotation (p. 371.2 Heiberg) of Heraclitus, fr. 96 DK (= fr. 76 Marcovich), νέκυες γὰρ κοπρίων ἐκβλητότεροι, which had been mentioned by Hoffmann, "Simplicius' Polemics", p. 70, as expressing Simplicius' disgust for the Christian veneration of relics. Bowen has a long note on this (p. 6 n. 27), where a number of details including ancient personal hygiene are discussed. But Simplicius here does nothing if not quoting Plotinus *verbatim*. In his treatise *On the Three Principal Hypostases*, V 1[10], 2.40-43 Plotinus has recourse to Heraclitus' sentence (in exactly the same form it has in Plutarch, *Quaest. Conv.*, IV 4, 3, 669 a, which may well have been his source) to invigorate his own idea that the divinity of the cosmos, and our own participation in divine nature as well, depend upon soul. Plotinus says: ἔστι δὲ καὶ ἥλιος θεός, ὅτι ἐμψυχος, καὶ τὰ ἄλλα ἄστρα, καὶ ἡμεῖς, εἴπερ τι, διὰ τοῦτο· νέκυες γὰρ κοπρίων ἐκβλητότεροι ("The sun too is a god because it is ensouled, and the other stars, and we too, if anything is, are god for this reason; 'for corpses are more fit to be cast out than dung'", trans. M. Atkinson, *Plotinus. Ennead V.1, On the Three Principal Hypostases*, Oxford U.P., Oxford 1983, p. 54). Simplicius' source is evidently Plotinus, as pointed out already by K. Praechter, "Simpl. *In Aristot. De Caelo* p. 370, 29 H.", *Hermes* 59 (1924), pp. 118-9.