**Typescript of General Intro to volume 5 in the series (= book IV in Diehl’s Teubner edition) – to get all the goodies, you need to buy the book.**

**Introduction**

1. **The Structure of Book IV**

Book IV of Proclus’ *Timaeus Commentary* continues the structure introduced at the opening of Book III. Proclus takes Plato's dialogue to provide an account of ten gifts bestowed on the visible cosmos by its creator, the Demiurge.[[1]](#footnote-1) Each of these gifts makes a progressively greater contribution to the goodness of the Demiurge's creation, rendering it ever more perfect and its life ever more divine and blessed. Book II (Volumes 3 and 4 in this series) deals with the first seven gifts of the Demiurge:

### Being perceptible due to the presence of the elements (*Tim*. 31b).

### Having its elements bound together through proportion or *analogia* (31c).

### Being a whole constituted of wholes (32c).

### Being spherical in shape so that it is most similar to itself and similar to the paradigm upon which it is modelled (33b).

### Being self-sufficient or autarchês (33c).

### Rotating upon its axis makes it similar to the motion of Intellect (*Tim*. 34a, cf. *Laws* 10. 898a).

### Being animated by a divine World Soul. (*Tim*. 34b).

Book IV (the present volume) provides the last three Demiurgic gifts to the cosmos:

### Time, in virtue of which it is a moving image of eternity had by its intelligible paradigm, the Living-Being Itself (*Tim*. 36e–37a).

### The heavenly bodies in it, which Plato describes as the ‘instruments of time’ and Proclus as ‘sanctuaries of the gods’ (*Tim*. 39d; *in Tim*. II 5.28).

### All the living things within the visible cosmos make it an even more perfect or complete imitation of its paradigm since the Living-Being Itself contains four genera of living things: celestial, aerial, aquatic and terrestrial living things (39e–40a).

Proclus’ commentary in Book IV does not exhaust the tenth and final gift of the Demiurge. The present volume contains his account of the celestial genus of living things. The final section of the present work begins his discussion of the sub-lunary gods, a topic that continues in Book V. The nature of the breaks between the books, however, finds some rationale in Plato’s text. At 40d4–5 Timaeus says that he is finished discussing the visible and created gods. He next turns to a genealogy of the ‘traditional gods’ such as Ouranos, Okeanys and Tethys, referring to them initially as ‘daemons’. In fact, Proclus’ discussion in Book IV is a sort of preface to the discussion of the traditional gods taken up in Book V, for at the end of IV he raises the question of why Plato called these gods ‘*daemons’*. So Book V actually starts with the first substantial discussion of these traditional gods – beings whom Proclus now denominates ‘sub-lunary’ or ‘generation-producing *gods’*. Allowing for ten pages that form this transition to Book V, the sections of Book IV dedicated to each of the Demiurgic gifts are roughly equal – about fifty pages each.

 The subject matter of these sections, however, is not as sharply separated as the architectonic implied by the notion of the ten gifts might suggest. The planets involved in the ninth gift come about for the sake of ‘distinguishing and preserving the numbers of time’ (*Tim*. 38c6–7). Proclus in fact treats this gift as tantamount to granting the cosmos a second kind of time, which he calls ‘visible time’. Thus there is a strong connection between the seventh and eighth gifts. Moreover, the Sun, Moon and planets – which are the principal means through which the numbers of visible time are manifested – are themselves members of the class of celestial living beings. Since celestial living beings are the first among the four kinds of living thing granted to the cosmos in the tenth gift, there are strong connections here too. In this introduction, I’ll take up three issues that arise in Book IV.

 First, Proclus’ insistence that the ten gifts bestow *progressively greater* blessings upon the cosmos might seem initially puzzling. After all, Plato himself says that the visible cosmos could not be made eternal in the same manner in which its intelligible paradigm is. So the gift of time looks like a bit like a prize for being runner-up. How can the world’s temporality be a greater benefit to it than the fact that it is animated with a divine World Soul (the sixth gift)? Doesn’t time simply measure the activities of the World Soul and the things that transpire in the cosmos that it enlivens? As we shall see, however, this objection treats time all too passively – as if it were nothing more than a metric of events that take place in the world. Proclus’ view of time makes it much more elevated and much more active.

Next, there is a series of puzzles about Proclus’ treatment of Plato’s account of the motions of the stars and planets. Proclus’ commentary was written several centuries after the composition of Plato’s text. The study of astronomy did not stand still in the intervening years. Proclus and the other Neoplatonists regard Plato’s text as revealing a divine truth intimated to its author by the gods themselves. Yet Plato’s dialogue contains an account of the movements of the stars and planets – and perhaps even the Earth itself (40b8)! – that is not quite that of the astronomical theories of Proclus’ own day. How should a Platonist weigh the apparently competing accounts of the ‘modern’ models, which include epicycles and eccentrics, against the authority of Plato?

Finally, the place of the tenth gift as the final one in the order of exposition – and thus the most important – also raises a puzzle. How can it be that adding kinds of living creatures to a cosmos that is itself a living creature, endowed with soul and intellect (*Tim*. 30b8), make it ever so much better? Given the correlation between unity, simplicity and divinity on the one hand, and multiplicity on the other, it seems strange to think that adding multiplicity to the cosmos should be the best present that the Demiurge can give. Proclus’ solution to this puzzle will come back again to the various notions of whole and wholeness that run through the entire *Timaeus Commentary*.

 In the following sections I shall provide a brief overview of these three issues.

**2. The eighth gift of time: Eternity and the higher time**

The Neoplatonists’ views on time have been the subject of a significant body of secondary literature.[[2]](#footnote-2) Indeed, this is one of the most closely scrutinised aspects of neoplatonic metaphysics. This is perhaps for two reasons. First, one of the earliest investigations of the subject proposed parallels with twentieth-century discussions on the distinction between static and flowing time or McTaggart’s A and B series.[[3]](#footnote-3) Thus it was initially thought that the Neoplatonic view of *time*, at least, might have more connection with contemporary metaphysics than other features of their philosophy. The second reason for this scrutiny has to do with our sources. The scholarly discussion of the individual Neoplatonists’ views on time has been encouraged by the existence of Simplicius’ *Corollary on Time*.[[4]](#footnote-4) This is an extensive digression in which Simplicius breaks the flow of his *Commentary on Aristotle’s* *Physics* (773.8–800.25) to discuss competing views on the nature of time among his predecessors. This discussion includes valuable information about subsequent Neoplatonists’ critical reception of Plotinus’ views about time and eternity (*Ennead* III.7), as well as Iamblichus’ alternative to the Plotinian view. Proclus is discussed only briefly and Simplicius believes that he holds ‘pretty much’ the same view as Iamblichus (795.4–6).

The fact that Simplicius’ discussion appears in the context of a commentary on *Aristotle’s* treatment of time is, I think, significant in explaining the attention given to the views of the Neoplatonists on time. To be blunt: Aristotle’s discussion of time is much closer to the problems and presuppositions that animate contemporary work on the subject than Plato’s *Timaeus* is. What Simplicius relates about his predecessors is tantalising for us moderns because the *context* in which he presents it dictates that he emphasise those aspects of the Neoplatonists’ views that are relevant to the Aristotelian puzzles about time. These puzzles, in turn, are puzzles that we moderns can readily understand. But in fact we don’t get very far trying to understand the views of Iamblichus, Syrianus and Proclus on time by approaching them via Aristotle’s puzzles about time. This fact was brought home to me by reading Steel’s magisterial essay on the Neoplatonic doctrine of time.[[5]](#footnote-5)

Steel begins by noting Albert the Great’s complaint that Aristotle’s account of time doesn’t get at what is *really* important: the relation of time to eternity. If you ask a modern philosopher what the relation is between these two, then – assuming that he or she is willing to grant that there is such a thing as eternity – the answer will simply be that they are opposite and incompatible *ways* in which *objects* exist. Abstract objects like numbers or sets exist timelessly, while concrete particulars all exist in time. Except for discussions of God’s relation to time in philosophy of religion, contemporary work on the philosophy of time does not have much to say about eternity. Likewise, Aristotle himself did not give much attention to the nature of eternity. Perhaps the closest we get to an account of it on Aristotle’s part is that it is ‘the fulfilment (*telos*) of the whole heaven, the fulfilment which includes all time and infinity’ (*Cael*. 1.11, 279a26). Taking this seriously, we would say that the relation between eternity and time, then, is that the former includes the totality of the latter: eternity is simply everlastingness. But this seems slightly at odds with Aristotle’s remarks in the previous lines (279a11–23), which suggest an atemporal notion of eternity.[[6]](#footnote-6) So Albert the Great’s complaint about the absence of a discussion of the really important issue about time – its relation to eternity – points to a strong similarity between Aristotle’s approach to the philosophy of time and that of contemporary philosophers.

Although there was a tradition of commenting on Aristotle’s *Physics*, the Neoplatonists did not begin by theorising about time from Aristotle’s puzzles in *Physics* 4.10. Rather, they started from Plato’s *Timaeus*. The key fact about time that needs to be explained, by their lights, is how it can be true that time is – as the divine Plato tells us – an *image* of eternity, one that is *mobile* according to number, while eternity *remains in one* (*Tim*. 37d1–7). None of these three ideas in Plato’s text is perfectly clear. The Neoplatonists started their elucidation of Plato’s view of time with the first clause. Since the paradigms of which images are images were regarded as causes by Platonists, eternity is thus prominent among the *causes* of time. While Aristotle asks about what time *consists in* – motion? the numerable aspect of motion? – he does not inquire after its *causes*. This latter question, however, is utterly central to the Neoplatonists’ accounts of time. The reason for this difference lies in the different methodologies of Aristotle and the Neoplatonists. Aristotle’s discussion of the nature of time is *aporetic*: it begins from a set of puzzles that emerge when we push to their logical conclusions common-sense beliefs about time (*Phys*. IV.10). Plotinus, Iamblichus and Proclus, however, take as their point of departure reflections on Plato’s *Timaeus*. This *inspired text* itself tells us that the ways that we commonly speak about eternity (and presumably thus about eternity’s image – time – too) involve fundamental confusions (*Tim*. 37e5). So the Neoplatonists would think that *of course* we should investigate time by interpreting Plato’s works rather than by means of Aristotle’s aporetic method. We can’t rely too much on common sense and our ordinary ways of talking. We know that our everyday platitudes about time are not a good starting point because Plato tells us that our ordinary usage is riddled with confusions and Plato’s text is inspired. Plato’s dialogues thus have a primacy for the Neoplatonists that they do not have for modern philosophers of time, who tend to pursue a methodology much closer to Aristotle’s. When we seek to understand the nature of time, we take truisms about time, as well as our best theories in physics, as starting points for theorising.[[7]](#footnote-7) If we want to understand the views of Proclus and the other Neoplatonists on time we must first consider some of the key comments in Plato’s *Timaeus*. To the extent that Plato’s text is alien to contemporary philosophical theorising about time, so too are the views of the Neoplatonists.

Some aspects of Plato’s discussion of time in *Timaeus* 37c6–38b5 seem familiar enough. He remarks that time came into being with the heavens (38b6) and that prior (*prin*) to their existence there were no divisions of time, such as days, months or years (37e1–2). Reading this, we might short-circuit the problem about how one could speak coherently about what occurs *prior* to time by imagining that Plato is only expressing a kind of mutual dependence between things that undergo change and the time in which changes take place. It is not that there was some sort of quasi-time *before* the Demiurge created the heavens and thus inaugurated real time.[[8]](#footnote-8) Rather, if the story of the cosmos’ creation is read non-literally, this aspect of Plato’s discussion of time simply points to the fact that there is some sort of intimate connection between time and change. So this thread in Plato’s text looks much like the considerations upon which Aristotle’s constructs his definition of time as ‘the measure of motion with respect to before and after’.

The less familiar aspects of Plato’s discussion involve the relation of time to eternity and the relation of the visible cosmos to the Living-Being Itself upon which it is modelled. As noted above, Plato calls time a movable image of eternity. Temporal existence is the best that the Demiurge can do to make the visible cosmos resemble its eternal paradigm. The former ‘goes along according to number’ while the latter ‘remains in one’ (37d5–8). This passage suggests that time itself has one or more non-temporal explanations or causes: the eternity that characterises the Living-Being Itself and the Demiurge’s activity in creating something that can resemble in some ways that eternity. This aspect of Plato’s discussion looks far stranger from a modern perspective. Yet it was this aspect that primarily motivated Neoplatonic theorising about time from Plotinus onward.

It was clearly part of Plato’s view that the visible cosmos is itself a living being, which has its life in virtue of a World Soul. Plotinus understood Plato’s realm of Forms as having a kind of life as well.[[9]](#footnote-9) Plotinus’ innovation with respect to time and eternity was to connect these two things with the *life* of the soul and that of intellect respectively (III.7) So when Plato says that time is an image of eternity, Plotinus understands this to mean that the life of the soul is an image of the sort of life had by the intelligible Forms. This is one way to explicate the cryptic claim that time is an image of eternity. But it is not an explanation that was accepted by the subsequent Platonic tradition.

Proclus gives a variety of reasons for rejecting Plotinus’ view, but the very first one in his list is that it fails to be consistent with Plato’s *Timaeus*.[[10]](#footnote-10) (The priority of this objection illustrates my claim that the Neoplatonists take this dialogue to be the primary evidence which any adequate theory of time must account for.) If time were identified with the discursive life of the World Soul, then the Demiurge would have conferred time upon the cosmos at the point at which he made it ensouled. But in the progressive addition of Demiurgic gifts that Proclus supposes to structure Plato’s dialogue, time comes *after* the visible cosmos’ ensoulment and it is granted by the *Demiurge*, not by the World Soul. Thus time cannot be the life of the World Soul or any consequence of psychic activity. Proclus’ objection thus rests not only upon the idea that the *Timaeus* is the ultimate arbiter for views about the nature of time, but also upon his view about the structure of that work – specifically that each of the ten gifts of the Demiurge is a greater and greater contribution to the sensible cosmos’ divinity.

Neither would the subsequent Platonic tradition rest content with the idea that eternity is the life of intellect. While Plotinus supposed that the realm of Forms was also in some sense a realm of intellects with its own life and the realm of being, there is no rigorous treatment in Plotinus of the relations between Being, Life and Mind (or Intellect) as these things pertain to the intelligibles. It was left to subsequent Platonists – perhaps beginning with Porphyry, but certainly and especially Iamblichus – to systematise the intelligible stratum of Plotinus’ ontology that lies between the One and soul. Part of that systematisation resulted from thinking carefully about the relative priority of different predicates. Plato said that the intelligible Living-Being Itself was eternal. But if it is eternal, then Eternity[[11]](#footnote-11) is something distinct from it and prior to it. Proclus puts the point this way:

If the Living Being is, and is said to be, eternal as a result of participation, but Eternity has not been said to participate in the Living Being, nor been found to be derived from it eponymously, then it is obvious that the former is secondary and the latter is simpler and more fundamental, since Eternity does not participate in the Living Being due to the fact that [Eternity] is not a living thing, for neither is visible time something living … For this reason, Eternity is something greater than [the eternal Living Being], for that which is eternal is neither identical to Eternity nor something greater than Eternity. Just as everyone says that what is ensouled or is endowed with intellect comes after soul or intellect, so too surely that which is eternal is secondary to Eternity. (*in Tim*. III 10.11–21)

Thus Plotinus must be wrong: Eternity cannot be the life of the Living-Being Itself nor of any other eternal intelligible object. If these things *are eternal*, then they are *not Eternity itself*, nor is their activity the source of Eternity. Eternity is something higher in which they participate. Iamblichus located Eternity perhaps in the Good or perhaps in the One-Being. In any event, it is among the ‘hidden’ things that are ‘beyond Being’ – that is, above intelligibles like the Living-Being Itself. Proclus follows Iamblichus (and Syrianus) in this respect and identifies Eternity with ‘the single comprehension (*mia periochê*) of the intelligible henads’ (III 12.14–15). As such, Eternity is not merely responsible for ‘the changeless continuation (*anexallaktos diamonê*, 12.18)’ of the things subsequent to it. It ‘*arranges* them, forming them, as it were, and by this very fact at the same time *makes them* to be wholes.’ This active role for Eternity foreshadows a similarly active role for its image – time. As we shall see, on Proclus’ view time does not merely provide a metric for the changes that take place in time: it actively orders what takes place.

Let us now turn away from eternity to the question of time. Temporal things participate in time. This is what makes them temporal. Proclus accepts Iamblichus’ general account of the metaphysics of participation. This involves a distinction between, on the one hand, an unparticipated monad (or paradigmatic cause), and on the other hand, the participated Form which results from the former and which in turn accounts for the character of the things that participate in it. Proclus states this principle in the following terms:

For in every order there is an unparticipated unit at the head, prior to the things that are participated. There is also an appropriate and connate number corresponding to the unparticipated things, and from the unit the dyad results, just as is the case with the gods themselves. (*in Tim*. II 240.6–10 = fr. 54 (Dillon); cf. *ET* prop. 53)

This principle applies to time as well. In his *Corollary on Time*, Simplicius explains how Iamblichus applied this line of reasoning to the case of time:

… he seems to postulate a single ungenerated ‘now’ that is prior to those that are participated, and from this [results] the things that are transmitted to the participants. As in the case of the now, so too in the case of time. There is one time prior to temporal things, and there are several times that come into being in what participates – cases in which doubtless one [time or event?] is past, another is present, and another is future. (*in Phys*. 793.3–7).

This distinction between the unparticipated monad of time and participated time in Iamblichus has been characterised as a difference between static and flowing time. Sambursky argued that it approximated McTaggart’s A and B series.[[12]](#footnote-12) Sorabji, however, correctly pointed out that Iamblichus’ higher-order time was posited on the basis of very different philosophical considerations and served a very different purpose within Iamblichus’ Neoplatonism.[[13]](#footnote-13)

 Proclus accepts a similar distinction between the unparticipated monad of time and the time whose passage gets enumerated when we say that another day has gone by.

We seek the cause of the existence of numerable time. This, therefore, is something that itself remains immobile, unfolding what gets counted in accordance with itself. If, generally speaking, visible time (*emphanes chronos*) is mobile [or such as to flow (*kinêtos*)] … it is necessary for there to be time that is immobile in itself, in order that there should be the kind of time that is mobile [i.e. that which can flow]. That time which exists in the former respect is time as it truly is in itself, and that through which [there is another time] in the things that participate. The latter is mobile along with these participants, extending itself into them. (III 26.21–30)

Just as the unparticipated monad of Eternity belongs above the intelligibles, so too the unparticipated monad of time is an *intellectual* nature that is *prior* to soul (III 27.19–25). Hence Plotinus was wrong here too: time is not the life of the soul or any other result of psychic activity. Time – at least the unparticipated monad of time – is prior to the soul and provides the participated time in virtue of which the soul’s activities are measured. Proclus does appeal to a parallel argument to the one above concerning the eternal character of the intelligibles: since soul’s activities take place in time, it is not the source of time (III 22.1–8). But this is not the first consideration that he advances against Plotinus’ view. The principal objection to making soul the source of time is that this does not fit Plato’s text:

In the first place, Plato – the person with whom we all wish to agree on matters pertaining to the divine – said that time was established by the Demiurge when the cosmos *already* had an arrangement both in terms of its soul and its body. He did not say that time was established *within* the very soul, as he did when he said that the harmonic ratios were set up within the soul by the Demiurge. (III 21.13–18)

The evidential priority given to consistency with the Platonic text again illustrates the way in which the Neoplatonic view of time is grounded in the authority of the *Timaeus* rather than in reflections on our common-sense views about time, as Aristotle’s account is.

 This is not to say that Proclus’ view of time is a simple explication of Plato’s obvious intention in the *Timaeus*. It is a consequence of unparticipated time’s intellectual status – prior to all soul and to the visible cosmos – that it is a *cause* of changes in the lower psychic and visible realms. Perhaps this is an idea that is consistent with Plato’s *Timaeus*, but it is surely far from obvious that it is one that his spokesman, Timaeus, expressly intends. It is also a view that finds only dubious support among our common-sense remarks about time. When we say things like ‘Time has not been kind to this battered copy of *Proclus Diadochus in Platonis Timaeum Commentaria*’ we do not literally mean that it is *time* that has caused its pages to become brittle. It is the exposure of the acid in the paper to humidity or UV light that has caused the pages to become brittle. While this exposure takes place *in time*, it seems implausible to think that *time* *itself* is a cause, distinct from the presence of the acid and the exposure to humidity or UV light. Proclus, however, argues that time is shown to be a substance, not a mere accident, by its status as an important cause of change.

Furthermore, if time was not a substance (*ousia*), but was instead an accident (s*ymbebêkos*), it would not have exhibited the creative power that it actually does, whereby it makes some things come to be eternally, while others have a limited temporal duration. (III 23.22–4)

Thus time does not merely *measure* the lifespan of this book: it is among the *causes* of its lifespan. Proclus uses this observation as a further argument against the Plotinian view that time is a product of soul. Soul makes things move or change. Time, however, is ‘is what has aroused (*egeirein*) the products of creation toward their own ends and is the measure of the wholes and what provides a certain eternity [for the world]’ (III 24.1–2). So when we consider our decrepit book, soul provides the *life* (i.e. the source of specific changes that take place in it), while time provides the *span*, so to speak.

 Several factors explain this rather extraordinary conclusion on the part of Proclus. On the one hand, there is the insistence that time plays a parallel role for the visible cosmos that Eternity plays for the intelligible one. Since Eternity or Aeon is among the highest causes – being not merely among the henads, but the comprehension or *periochê* of the henads – Eternity does not merely endow the intelligibles with their eternality. It ‘includes in a transcendent manner the essences and henads of the intelligibles’ (III 24.17–18). Eternity ‘arranges them, forming them, as it were, and by this very fact at the same time makes them to be wholes’ (III 12.21–2). So if time is to play a similar role for temporal things that Eternity plays for the eternal ones, it will need to do more than just measure their duration.

But why think that Eternity plays such an active role among the intelligibles in the first place? Dodds first considered the possibility that the substantial role for Eternity in Iamblichus and Proclus owed something to its identification with Aeon in the *Chaldean Oracles* (fr. 49 = *in Tim*. III 14.3–10).[[14]](#footnote-14) Great gods *do* things: they don’t merely lend their effects a single quality like eternity. So Neoplatonic efforts to weave together Plato with the Oracles may have given Iamblichus and Proclus a reason to accord Eternity a very active role.

Even if we leave aside this potential motivation, there are other features of Neoplatonic metaphysics that lend credence to the idea that time should play an important causal role in ordering the visible cosmos. Time is a perfectly general and universal ingredient in every causal interaction. When the pages of a book become brittle through acidification, time passes. When the stars move along their courses, time passes. In Neoplatonic metaphysics, the more general the feature, the closer it is to the One and thus the higher it is as a cause. Simply being is more general than being a wombat. Hence Being is a higher, and thus more powerful, cause than Wombat Itself. Given the omnipresence of time in all that happens, it is only natural to suppose that time is among the highest of all causes.

**3. The ninth gift: visible time and the planets**

On the one hand, Plato’s text tells us that time is an image of eternity. On the other, he says it came into being with the heavens. If Eternity transcends the things that are eternal, then time should similarly transcend the things that are temporal. However, the idea that time came to be with the heavens suggests that in some sense it is there – in the heavens.

Proclus utilises the distinction between the unparticipated monad of time and participated time to accommodate both aspects of Plato’s discussion. The higher time is ‘hypercosmic’ and intellectual, while the lower time is ‘encosmic’.

Having now provided such a distinction between these two kinds of time and the conceptions that pertain to the single and simple kind of time, Plato intends to deal with the remaining kind and to make the text at hand about the multifarious kind of time that is participated in a divisible manner – an [objective] toward which the theory about the planets makes a contribution (for it is through motions of these things dancing around the Sun that the kind of time that is understood in conjunction with [them] is produced). This introduces the ninth Demiurgic gift to the cosmos. (III 53.16–26)

Proclus finds further evidence of this distinction between the two kinds of time in Plato’s specific choice of terminology. At 37c6, when he first broaches the topic of time, Timaeus tells us that the Demiurge gave *thought* (*epinoein*, c8) to what he could do in order to make the visible cosmos more like its intelligible model. At 38c3, however, Plato writes that the Demiurge generates the planets as instruments of time ‘as a result of his reasoning (*logos*) and discursive thought (*dianoia*)’. Proclus is quick to fasten on this distinction between non-discursive intellectual apprehension (*noêsis*) and discursive thought and reasoning (*dianoia*) as evidence that Plato intends to distinguish higher, intellectual time from the lower, flowing time (III 53.27, ff). This will probably strike most modern readers as the sort of molehill-to-mountain construction project that is characteristic of the Neoplatonic commentary tradition. It is, however, entirely consistent with their methodology for reading Plato. Each dialogue has a *skopos* or objective and every aspect of the dialogue may be interpreted in terms of it. There is nothing about a Platonic dialogue that is merely accidental: every aspect contributes to the communication of Plato’s divinely inspired philosophy. This episode also illustrates the manner in which Plato’s dialogue – indeed, every detail of Plato’s dialogue – was regarded as the primary and most salient evidence for the construction of a correct theory of time.

 A similar attention to detail is present in Proclus’ discussion of the relation between time and the heavens. Proclus notes that Plato tells us that time came to be together *with* (*meta*) the heavens (38b6). This shows that neither the heavens nor time came to be in the sense of having a beginning.[[15]](#footnote-15) Whatever comes to be in that sense comes to be *in* (*en*) time (III 50.2–4). But clearly there could be no coming to be of time at some moment of time. Thus the claim that time came to be together with the universe indicates only that the visible universe is the first thing to participate in time with respect to both body *and* soul. (Soul itself is, of course, a prior participant. But the visible cosmos is the first participant that shares in time with respect to both its body *and* soul.) Plato’s words, correctly understood, affirm that both time and the universe are ungenerated and can never be destroyed.

 Specific aspects of the visible cosmos ‘preserve and distinguish the numbers of time’ (*Tim*. 38c6). Thus, different heavenly bodies make known the numbers of various temporal periods such as a day, a month or a year. This is not to say that a day or a year *is* the motion of sphere of the fixed stars or the completion of the Sun’s cycle. Rather, the day or the year is the transcendent god in which each day or year participates:

The Month Itself or the Year – the individual period, that is – since it is always one is itself a specific god who determines the measure of a motion in a manner that is motionless. After all, from whence does it come about that these periods are always *the same* unless it is from some cause that is *unmoved*? And from whence does the *difference* between their complete cycles (*apokatastasis*) come about other than from *differences* among the unmoved causes? And from whence do we get the *incessant* character [of their rotations] that repeats again and again to infinity unless it is from the *infinite* *powers* in these [causes]? (III 88.30–89.4)

This metaphysical conclusion finds a welcome agreement in both the ‘sacred tradition’[[16]](#footnote-16) and Plato’s *Laws* (X 899b2).

Where we have numbers, we have a unit or a monad in terms of which those numbers are defined. That is, two is twice the monad; three thrice the monad and so on. The monad of the numbers of time is the Platonic Great Year (39d2–7). This number is:

… a measure by which all the other measures have been encompassed and in terms of which the entire life of the cosmos has been defined, as well as the diverse articulation of bodies and the lifespan that takes place across the all-perfect period. (III 91.13–16)

Here too Proclus is keen to go beyond an approach that is *doxastikos* – that is, one that relies on sense perception. He is critical of attempts to calculate the length of time it takes for the stars in the heavens to come back to the very same place and argues that we should take a more elevated (*epistêmonikos*) approach to the matter. The Platonic Great Year should instead be thought of in terms of a number or power that extends to every aspect of the life of the cosmos. Its procession, its bending back toward its starting point, and its convergence upon itself mean that it temporally figures the atemporal ‘process’ of remaining, procession, and reversion. At least in the context of the *Timaeus Commentary*, Proclus seems largely uninterested in calculating the number of solar rotations corresponding to this ‘whole or universal period of time’. What is genuinely important is how the monadic unit of visible time mimics Eternity:

… the time that belongs to the period of the universe [i.e. the Great Year] *is* complete [unlike a day or a month] because it is not a part of anything [i.e. of any greater duration]. Rather, it is universal or total (*holos*) in order that it may imitate Eternity. The latter is indeed wholeness in the primary manner, but the one which conveys its wholeness simultaneously to every substance. But time does so in conjunction with duration, for temporal wholeness is the articulation (*analixis*) of the wholeness which remains in a concentrated form (*synespeiramenôs*) in Eternity. (III 92.18–24)

Proclus thus eschews entering into the existing debate on the actual length of a Platonic Great Year[[17]](#footnote-17) and concentrates on the contribution that the Great Year makes to the completion or perfection of the visible cosmos. Plato’s dialogue is philosophy of nature – to be sure – but it is a *higher* philosophy of nature. It does not omit discussion of the paradigmatic causes of that which takes place in nature, as Proclus alleges that others do (*in Tim*. I 2.1, ff). Unlike, say, the question of the physical composition of the heavenly bodies (*in Tim*. II 42.5–51.1; III 114.9–115.4), this is one of those cases where Proclus seems anxious to concentrate on the higher causes rather than dwelling on the astronomical details.[[18]](#footnote-18)

The same emphasis on higher paradigmatic causes is also evident in his treatment of the planets and their motions. Each visible planet is both a living-being (*zoôn*) and also divine. However, the visible planetary creature is merely the lower life of the god that is its cause. Each planet, Proclus insists, has a double life: one intellectual, the other divisible in terms of the body (III 71.28). In virtue of the former, it is a god, while in virtue of the latter, it is a living being. Keeping in mind what the planets really are (in Proclus’ view) perhaps helps to explain why he is so opposed to astronomical theories that make use of epicycles and eccentrics in order to explain the complex motions exhibited by the planets. Even if one could envision a coordinated system of such nested circles that would describe the motion of the visible body of a heavenly god around the universe, it is hardly proper to imagine that divine souls are associated with bodies that get shunted around by such mechanisms.

In fact, none of these hypotheses [purporting to explain planetary motion by eccentrics or epicycles] satisfies the standard of the probable. Some stand opposed to the simplicity of divine things, while others that have been contrived among the more recent [theorists] posit a motion for the heavens like it were a machine. (III 56.28–31)

Plato’s concern in his discussion of the planets, then, is not principally with the movements of the visible living creatures in the heavens, but rather the nature of the divine intellectual souls upon which these planetary creatures depend.

The idea that Plato’s dialogue, properly interpreted, addresses higher concerns than those of contemporary astronomy is clear from Proclus’ initial comments on *Timaeus* 38e6–39a4.[[19]](#footnote-19)

You might say that the **oblique** motion of the Different shows the obliquity of the [circle of] the Zodiac (for the motion of the planets is one that takes place with reference to the poles of the zodiac, to put it in technical terminology – for such a definition is not without some value for those who are discussing the celestial bodies). However, the more enlightened (*epoptikôteros*) alternative is to say that it shows the cause of genesis and the deviation (*parallaxis*) that pre-exists in the things in the heavens, for genesis participates in Difference and variety derives from the revolution of the Different, while Sameness derives from the [circle of] that Same that is always invariant. (III 73.27–74.7)

Some of Proclus’ terminological choices here call for comment. First, he is rather casual about the technical terminology. When he says that the motion of the planets is κατὰ γὰρ τοὺς τοῦ ζῳδιακοῦ πόλους … (ἵνα μαθηματικῶς εἴπωμεν), he must realise that the more common way to put the point is to say περὶ τοὺς τοῦ ζῳδιακοῦ πόλους – terminology he knows well since he uses the phrase six times in his own astronomical work, the *Hypotyposis*. The use of κατὰ here is probably meant to pick up on the first words of the lemma: κατὰ δὴ τὴν θατέρου φορὰν πλαγίαν οὖσαν. So the conventional language of astronomy is at the beck and call of Plato’s divinely inspired text. Moreover, the term *parallaxis* has an established astronomical sense in which it refers to the apparent difference in the location of a heavenly body resulting from the different positions from where the observations are made (cf. Proclus, *Hyp*. 4.53), as well as the more general sense of deviation or mutation. It seems to me that here Proclus plays with that double sense: the *real* parallaxis in the heavens is the pre-existent cause of sub-lunary changes. This cause is associated with the motions of the planets and thus the rotation of the World Soul’s circle of the Different with which they are associated. (Recall that this invisible and non-spatial psychic circle is ‘positioned’ relative to the circle of the Same at the angle the ecliptic makes with the celestial equator (*Tim*. 36d1–4).) Rather than entering into competition with the theories of the astronomers, Plato’s dialogue points to a higher, ‘more enlightened’ perspective from which we can see the more general truths about the cosmos. These observations about the manner in which Proclus transposes Plato’s claims about the actual motion of the visible planets into a higher theological key bring us to our next topic. This transposition takes the Platonic text out of competition with contemporary views about astronomy and also reinforces the point that Platonic *physiologia* is the most elevated form of natural science.[[20]](#footnote-20)

**4. Platonic exegesis and contemporary astronomy**

Some conflicts with contemporary astronomical theory, however, could not be avoided. Plato’s dialogue provides an unambiguous order for some of the planets. The Earth is in the centre and above it we find in order: the Moon, Sun, Venus and Mercury (38d1–3). This order agrees with the order of whorls in the Myth of Er in the *Republic* (616e–617b) and with the *Epinomis* (986a–87b). From about 200 bce, however, the so-called ‘Chaldean order’ became much more widely accepted. This order places the Sun in the middle with a triad of heavenly bodies on either side: Moon–Mercury–Venus, Sun, Jupiter–Saturn–fixed stars.[[21]](#footnote-21) This appears to be an issue where one must decide between contemporary astronomy and Plato, for they appear to be quite incompatible. A second issue also arises in Proclus’ *Commentary*: that of the precession of the equinoxes. We will discuss Proclus’ response to both these specific problems after looking at the general question of the place of developments in astronomy for interpreters of Plato.

* 1. **Physical astronomy and philosophical hyperastronomy**

As Segonds (1987) pointed out, Plato’s philosophy stresses the importance of studying the heavens for overcoming the confused thinking that results from the soul’s embodiment (*Rep*. VII 527d; *Tim*. 90d; *Epinomis* 678d). So a good Platonist has reason to attend to astronomy. But, on the other hand, Plato’s own astronomical speculations were very much part of the infancy of the study. If one both takes Plato’s clear advice to study the heavens and also holds that Plato’s writings are divinely inspired – as the Neoplatonists did – then following the first bit of advice at least seems to throw doubt on the authority of Plato’s texts. What is a Platonist to do?

Pythagoreanising Platonists such as Adrastus and Theon sought to read subsequent astronomical developments like epicycles into the vague places in Plato’s text.[[22]](#footnote-22) (Eccentrics were clearly out of the question, since the myth of Er insists that the whorls upon which the planets are mounted are all homocentric.) But the Iamblichean insistence on explicating Plato from Plato frowns on this approach, so another tactic was developed. Whatever role Iamblichus himself might have played in this interpretive strategy, we can see it stated most clearly in Proclus.

Proclus’ *Exposition of Astronomical Hypotheses* serves both as an introduction to the underlying assumptions of Ptolemy’s (2nd century ce) astronomy and also as an occasion for Proclus to distinguish the properly philosophical approach to the heavens from the merely mathematical or physical ones.

My friend, the person whom the great Plato deems a true philosopher is happy to abandon sense perception and the entire errant Being of the heavens and to study astronomy beyond the heavens (*hyperastronomein*) – up there [in the intelligible realm] – and to investigate Speed Itself and Slowness Itself in true number. (*Hyp*. 1.1.1–1.2)

As Segonds has shown, this description of truly philosophical astronomy is really a cento of near quotations and allusions from Plato’s dialogues. Hyperastronomy – the proper business of the philosopher – then studies, not the bodies in the heavens or the mathematical models that might ‘save the phenomena’, but the *hypercosmic causes* of these things.

Hyperastronomy is not simply an option that one might take instead of conventional astronomy. We *must* ascend to such hypercosmic causes if we wish to understand, for the hypotheses of the astronomers fail by their own lights. If the point of astronomy as Ptolemy and other astronomers practise it is to provide an account of the physical causes whereby the planets are moved by regular circular motions on a series of spheres, then Proclus thinks that their effort fails. Near the end of the *Exposition*, Proclus presents the proponents of epicycles and eccentrics with a dilemma.[[23]](#footnote-23) Either these things are real or they are merely conceptual constructions, adopted for the purpose of making predictions (or post-dictions) of the positions of the heavenly bodies. If the former, then the astronomers have *not* in fact shown the movements of the heavenly bodies to be regular, but instead they are irregular and filled with changes. If, however, the epicycles or eccentrics are merely conceptual, then the astronomers have unwittingly slipped from dealing with physical bodies to dealing with mathematical concepts and are providing causes for natural motions on the basis of things that have no existence in nature. The first argument behind the first arm of the dilemma is nicely summarised by Proclus in the *Timaeus Commentary*.

The hypothesis of eccentric circles, according to Proclus, ‘destroys the common axiom for natural things: that all simple motion is either around the centre of the universe or away from the centre or toward the centre’ (146.21–3). If a planetary body is moved on an eccentric orbit, then the centre of the universe (i.e. the Earth) is not the centre around which it rotates. The hypothesis of eccentric orbital circles was invoked to explain changes in the velocity or brightness of heavenly bodies, as well as the inequality of the astronomical seasons.[[24]](#footnote-24) Proclus’ criticism is that this proliferates the natural motions in the universe because we are now postulating a heavenly body that has something other than the three natural motions: going around the Earth in a circle, going straight down toward the Earth, or going straight up away from the Earth. It is true one can correctly describe the planet’s motion as describing a perfect circle around *some* point. But the fact that this point is not the *Earth* means that our inventory of natural simple motions is now greatly expanded – at least if one insists that all simple natural motions are to be defined by reference to the centre of the universe where the Earth is stationed. It is presumably on the basis of the primacy of the cosmic centre and Earth’s location there that Proclus claims that the astronomers have failed at their task.

This may not be a fair criticism, since astronomers do not seem to take themselves to be committed to the task of explaining the movements of the heavenly bodies in terms of regular circular motions *around the central Earth*. Geminus, for instance, says only that ‘it is assumed generally in astronomy that the Sun, the Moon and the five planets undergo circular motion with regular velocity in the opposite direction to the cosmos’ (i.e. to the fixed stars).[[25]](#footnote-25) Proclus presumably feels justified in enforcing this additional constraint upon them because of the special status of the centre of the universe (*in Tim*. II 106.15–23) and the fact that the Earth is ‘the first and most senior of the gods’ (*Tim*. 40c2) means that it must be stationed there (*in Tim*. III 143.14–25). Once again, I think we see here the evidential primacy of Plato’s inspired text.

The hypothesis of epicycles brings with it the same problems as eccentrics. After all, even if the system in question locates the centre of the deferent[[26]](#footnote-26) on the centre of the cosmos, it is nonetheless the case that the planet that moves on the epicycle has a putatively natural motion that is not *simple* circular motion around the universal centre (or simple linear motion toward or away it). In addition, Proclus raises difficulties about the manner in which the deferent and epicycle are combined. Do the spheres that account for the epicycles have a similar or different composition from the deferent sphere? If the former, then why are they moved in different ways? If the latter, then we are proposing to explain the *natural* motion of the heavenly body as a function of the motion of spheres that have different composition and thus lack natural community (*sympatheia*) with one another (*in Tim*. III 146.24–8).

Given that the astronomers cannot save the phenomena by appeal to spheres that move with a simple *geocentric* motion, Proclus thinks we should accept that there is, in fact, an irregular aspect to the motions of the heavenly bodies.[[27]](#footnote-27) As a good Platonist, however, he cannot allow that their movements are *irregular* in a manner that implies a genuine ‘wandering’ incompatible with their divinity. Plato, after all, expressly warns us against this kind of impiety (*Laws* VII 821b–822c) and Proclus takes this warning seriously (*in Tim*. III 56.21–5). The planetary motions of progression, station and retrogradation are to be explained in terms of acts of *will* on the part of the divine souls that rule over each of the heavenly bodies (III 117.9–19). While the fixed stars exhibit only two perfectly circular motions – rotating on their individual axes and moving with the movement of the Same – planetary divine souls have a movement that is ‘regularly irregular or irregularly regular’ (III 57.6). This irregularity or *anomôlia* is not the kind that is incompatible with divinity. It isn’t the consequence of anything like human indecision or revisions of a plan in light of new information.[[28]](#footnote-28) We can know this because planets do the same complex dances again and again. As Proclus says, they have ‘apokatastasis’ – that is, cycles that bring them back to the same relative position with the other heavenly bodies at regular intervals. The planetary souls move the associated heavenly bodies within their planetary depths (i.e. have apogee and perigee), as well as moving forward or backward in their orbits or standing stationary, because this pattern is a middle term between the perfectly regular and exclusively circular motions of the fixed stars and the very irregular rectilinear motion that is supposed to be characteristic of the sub-lunary realm. Moreover, the regularly irregular motion of the planets serves as a *paradigm* that the much more irregular motions in the sublunary regions imitate imperfectly. In technical Neoplatonic terminology, the regularly irregular planetary motions ‘antecedently comprehend’ (προλαμβάνειν) the sub-lunary ones by having them in a ‘causal-anticipatory way’ (κατ’ αἰτίαν).

There is continuity between different orders of being in Proclus’ metaphysics (III 122.1–25). If A and B are in some sense opposed (as regularity and irregularity are) then the metaphysics of procession requires that there be an intermediate between them that is ‘both A and B’. Thus there must be a sequence from entirely orderly or πάντῃ τεταγμένων to the entirely disorderly or πάντῃ ἀτάκτων that goes via an intermediate stage of orderly disorder or τεταγμένη ἀνωμαλία.[[29]](#footnote-29) Nature abhors vacuums and gaps. So the self-initiated spiralling motion of the planets is not an affront to the divinity of the heavens. It is precisely what the continuity of the cosmos *requires*. The real explanation of complex planetary motions is thus ultimately metaphysical or theological, appealing to the necessity of a middle term between extremes of just the sort that we find in the case of the planets.

Astronomers who invoke to eccentrics and/or epicycles to give a quasi-mechanical explanation[[30]](#footnote-30) of such matters are misguided. This is not to say that astronomy of the sort that we find in Ptolemy is *entirely* pointless. Their models should be regarded instrumentally since they ‘analyse the complex motions [of the planets] into simple ones so that through them we might more easily get hold of the points at which these complex motions make a complete cycle (*apokatastasis*) since the grasp [of these facts] doesn’t come about easily from the motions themselves but is built up only from simplifications’ (III 145,25–7).[[31]](#footnote-31) We can use these models to retrodict the positions of the planets for the purposes of casting horoscopes, but it is a mistake to regard them as explanatory.

* 1. **Proclus and Ptolemy on the planetary order**

By the time of Proclus, Ptolemy’s works were by far the most influential and authoritative source for astronomy and astrology. In Chapter 1 of Book IX of the *Syntaxis* (or *Almagest*) he takes up the question of planetary order. He notes the ancient consensus that Saturn, Jupiter and Mars are the outermost of the planets, while the Moon is closest to the central Earth. On the order of remaining planets, he observes the disagreement between the Platonic–Pythagorean order and ‘that of the more ancient astronomers’, i.e. the Chaldean order. He notes that one argument in favour of the former – that we never see the Sun eclipsed by Mercury or Venus in the same manner in which we witness lunar eclipses – is hardly decisive. Measurements of the distances to the planets would settle the matter of their order, but we don’t have a visible parallax for any of the stars, this method is not available to us. Having no better basis for making a decision, Ptolemy opts for the Chaldean order on the grounds it is *more natural*. Putting the Sun at the mid-point separates Venus and Mercury (who always appear near the Sun) from those planets that can appear at any elongation from the Sun.

 Ptolemy’s *Planetary Hypotheses* take up the question again, and Ptolemy again notes that we cannot ‘we cannot settle this matter with certainty’. He does, however, present new arguments to explain the fact that there are no observed occultations of the Sun by anything other than the Moon, thus further clearing any obstacle to the Chaldean order. More importantly, he provides a calculation of planetary distances. However, this calculation in fact assumes the Chaldean ordering and then works out the distances based on the minimum and maximum distances of the Sun and Moon that were computed in the *Syntaxis* and the ratios of the greatest to the least distance for Mercury and Venus. So the Chaldean order is a hypothesis utilised to work out the planetary distances. Thus one cannot, strictly speaking, infer the order from the distances calculated in this manner – a point that Proclus makes in his discussion of the Chaldean order (*in Tim*. III 63.20).

Nonetheless, Ptolemy also gives another argument based on planetary motion. The motions of the Moon and Mercury are similarly complex, involving both an epicycle and a centre for the deferent that orbits the Earth.[[32]](#footnote-32) In the *Planetary Hypotheses* this fact is attributed to their mutual proximity to the air, for ‘spheres nearest to the air move with many kinds of motion and resemble the nature of the element that is near them.’[[33]](#footnote-33) This resort to physical factors to explain planetary motions contrasts with Ptolemy’s purely mathematical method in the *Syntaxis*.[[34]](#footnote-34) Proclus’ *Timaeus Commentary* does not discuss this argument, though it does discuss the calculation of planetary distances. Perhaps this omission may be explained. Proclus presumably would not have given much credence to this argument since he rejects eccentrics wholesale. Such eccentrics are incompatible with the centrality of the spindle of Necessity in the Republic’s myth of Er, and moreover, Proclus argues that they would necessitate either void or spheres that pass through one another (*in Remp*. II 227.28–229.7).

Given his efforts to show that considerations offered for the Chaldean order are not decisive, you might expect that Proclus would defend the Platonic order. This is not so however. There is one bit of evidence about the order of the planets that *is* decisive: the testimony of Julian the Theurgist.[[35]](#footnote-35)

The theurgist, however, obviously deems that the matter stands thus when he says the god integrated the Sun’s fire into their *midst* as a seventh and made the six other Zones dependent upon it – [an assertion] it would not be licit to remain unpersuaded by.[[36]](#footnote-36) (III 63.21–4)

Proclus goes on to explain the Platonic order given in the *Timaeus* as a result of the fact that Plato was attending to the way in which the Sun and Moon are associated, since they come from the same hypercosmic cause. Presumably the fact that the Moon’s light is borrowed from the Sun makes this evident, since Proclus goes on to say that Eudemus reported that Anaxagoras was the first to assume this.[[37]](#footnote-37) In a related passage in the *Republic Commentary*, Proclus argues that Plato was simply speaking in terms that his contemporaries would understand.

Thus, Plato too followed the astronomers of his time, by which it is also clear that the father of the myth did not announce all things as he himself saw them, but rather he added such things as were most widely accepted at the time – as is doubtless the case with the claim that the Sun is seventh from the sphere of the fixed stars and immediately above the Moon. For it is not only here [in the myth of Er] that one finds this idea, but he also appears to say this in the *Timaeus*. I also know that some astronomers say that the Sun is in the middle of the seven planets, although this has not been demonstrated through assumptions that are altogether necessary. How, in general, they have tried to do this, we have discussed sufficiently in the *Commentary on the Timaeus*. Nonetheless, when one hears from the Chaldeans among the theurgists that ‘the god then integrated the Sun among the seven and made the six other Zones dependent upon it’, or one hears from the gods themselves that ‘god established the solar fire in the place of the heart’ (*Or. Chald*. 58), then might you not fear that – as Ibycus said – ‘I have traded honour among men for sinning against the gods.’ (A line that Socrates also quotes in the *Phaedrus* [242d1). While I adhere to what has been revealed by the gods, I also say that on these matters Plato conformed with the astronomy of his time, for Aristotle too thought this, adhering to the astronomical views of those around Callippus. (*in Remp*. II 220.1–21)

So while Plato’s wisdom is divine, it is more indirect than that of other divine revelations, such as the Oracles or Julian. In any event, the true value of Plato’s distinctively Pythagorean natural philosophy lies not in its attention to the specific *spatial* relations among heavenly *bodies*, but to the *non-spatial* relations among their *intelligible causes*. Remember that, on Proclus’ view, Plato communicates the point that the Sun and Moon stem from the same hypercosmic cause by (merely apparently?) giving them spatial positions proximate to one another.

Proclus’ attitude in these matters follows that of Iamblichus (fr. 70 = *in Tim*. III 65.7–66.8). According to Iamblichus, the Platonic order of the planets is due to the causal role that the planetary gods play in relation to Becoming. The Sun and Moon (whose light is borrowed) are the Father and Mother of Becoming respectively, while Mercury and Venus work in close association with the Sun. The specific causal roles that they play in relation to the sub-lunary realm of Becoming appear to be adapted from astrological notions of planetary influence. Neither Proclus nor Iamblichus says so *explicitly*, but it seems to me that their general strategy is to read Plato’s claims about spatial order as claims about associations among causes. This affords Plato a ‘higher truth’ to reveal through his claims about the order of the planets: claims that are only seen as mistaken by those who view these things as *doxastikôs* rather than *epistêmonikôs*.

* 1. **The precession of equinoxes**

Comparing his own observations with those of earlier Greek astronomers, Hipparchus (2nd century bce) noted that the star Spica had moved 2° relative to the position of the autumnal equinox. Hipparchus concluded that the equinoxes move relative to the signs of the Zodiac at a rate of ‘not less than 1/100th of a degree a year’. Two and a half centuries after Hipparchus, Ptolemy’s observations confirmed this movement in the longitude of the stars relative to the equinoctial and solsticial point. He also added that that it takes place around the pole of the ecliptic (*Syntaxis*, VII.2–3).

Since this movement is a motion of the sphere of the fixed stars relative to the solsticial and equinoctial points, we could think of it in two different ways. We could suppose that the position of the equinoctial point simply changes. Perhaps the Earth moves ever so slowly. Alternatively, we could suppose that the sphere of the fixed stars slips ever so slightly eastward. The latter is certainly Ptolemy’s understanding of the observations (*Syntaxis*, VII.4). Hipparchus’ own understanding of the phenomenon of precession may have been cosmologically neutral.[[38]](#footnote-38)

Such an additional stellar motion, however, is not at any way hinted at in Plato’s *Timaeus*, so Plato’s text looks incomplete relative to the state of contemporary astronomy. Moreover, from the point of view of Proclus’ metaphysical hyperastronomy, the assignment of *multiple* motions to the sphere of the fixed stars would be very undesirable. Since the sphere of the fixed stars is the highest heaven, it would be fitting for it to have only a single motion. Simplicity in motion correlates with degree of perfection and the sphere of the fixed stars is the most perfect or most complete (*teleiôtatos*), since this sphere contains the entire sensible cosmos. The occupants of the highest sphere of the visible heavens – the individual star-gods – should then have two motions, rotating with the sphere while each also turns upon its own axis (*in Tim*. III 123.11–20). Accordingly, Proclus argues that Ptolemy is simply wrong: the observations do not support the claim that the sphere of the fixed stars has any additional motion. Proclus presents two arguments. The first is that Ptolemy’s view makes predictions that are not empirically verified. The second is an appeal to various authorities.

Proclus thinks that if Ptolemy’s account of precession were correct, then Ursa Major should not now be visible.[[39]](#footnote-39) On the basis of *Illiad* 18.487–9 Proclus assumes that Ursa Major is (at least from the latitude where the Greeks live) a circumpolar constellation (i.e. one whose stars never dip below the horizon). This is in fact true. He assumes that Homer lived about 1500 years before him. A rough figure for precession is one degree eastward motion every 100 years. (In fact, on Hipparchus’ figures it is 1° 15′, which is doubtless why Proclus says ‘more than’ 15 degrees.) Since the path of the ecliptic lies at an angle to the celestial equator, precession should result in observed changes in latitude as well as changes in longitude in a star’s position relative to the equinoctial and solstitial points. In short, Proclus thinks that if the stars were moving in the manner and at the rate at which Ptolemy says, Ursa Major should not be continually visible by now – that is, during Proclus’ lifetime. But it is. Therefore Ptolemy’s view of precession is mistaken.

However, the Ptolemaic theory of precession does *not* in fact have the observational consequence that Proclus attributes to it. This is because the extent of the change in stellar position is not uniform. It depends on the star’s declination. The change of 1° 15′ per century is a maximum, not a minimum. It appears that Ptolemy was aware of this fact (*Syntaxis*, 7.3, 19.1–10).

Proclus also appeals to authorities to reject Ptolemy’s interpretation of precession (*in Tim*. III 124.26–125.4; 125.17–31, ff). First, he notes that the *Chaldean Oracles* speak of the forward motion of the stars. (Presumably, he thinks they speak *only* of the forward motion of the stars and not, in addition, to any other motion.) Julian the Theurgist denies that the fixed stars wander. Thus Ptolemy is wrong. Second, the Egyptians and Chaldeans had many, many more observations to work with and *they* agreed with Plato. Finally, Proclus insists that the Chaldeans were master astrologers, but they did not utilise the ‘notional signs’ that Ptolemy introduces to compensate for the fact that the constellations of the Zodiac are on the move through the ecliptic.

Proclus is alone among the Platonic philosophers and astronomers in simply denying the precession. Theon of Alexandria (fl. 364) before him accepted the precession, as did Simplicius and Ammonius after him. Simplicius claims that Ammonius observed Arcturus right where it should be given Ptolemy’s observations and the lapse of time (*in Cael*. 462.20). Simplicius himself notes just the metaphysical considerations that I alluded to above: *if* the sphere of the fixed stars were really *fixed*, then we would have a nice, tidy progression – one simple movement for the sphere, two for each fixed star, and then each planet would have three (its own, that of the sphere containing it, and the motion of the universe). However, because of the observations, Simplicius accepts precession and posits a sphere uninhabited by stars outside the sphere of the stars. This final ‘blank’ sphere moves the sphere of the fixed stars and all that it contains ‘with a simple motion to the east’ (462.26). Simplicius learned to live with this additional complication, but apparently Proclus couldn’t. Is this an intellectual scandal? Was Proclus simply being ‘whimsical’ or ‘dogmatic’?[[40]](#footnote-40)

It is important to put this in context. Proclus stands among a very small number of philosophers and astronomers who actually *address* the question of precession. We have, in fact, mentioned most of them already. It is notably absent from the writings of Geminus, Cleomedes, Theon of Smyrna, Manilius, Pliny, Censorinus, Achilles, Chalcidius, Macrobius and Martianus Capella where discussion of it would seem to be salient.[[41]](#footnote-41) So it is not the case that Proclus stands out as someone who denies precession while everyone around him accepts it. The evidence we have on the matter suggests that very few, even among the educated, were aware that there was an issue to be resolved one way or the other.

It is also true that the precession has implications for astrological practice. Proclus is not mystery-mongering in appealing to the astrological practices of the Chaldeans as an objection to precession. Ptolemy stands at the head of the method that is now called ‘tropical astrology’ where the signs of the Zodiac are identified not with the constellations – which shift, thanks to the precession – but with regions of the ecliptic. In *Tetrabiblos* I.22 Ptolemy pegs the first degree of Ares to the vernal equinox and identifies the twelve signs with divisions of 30° each.

[I]t is reasonable to reckon the beginnings of the signs also from the equinoxes and solstices, partly because the writers make this quite clear, and particularly because from our previous demonstrations we observe that their natures, powers, and familiarities *take their cause from the solstitial and equinoctial starting-places, and from no other source*. For if other starting-places are assumed, we shall either be compelled no longer to use the natures of the signs for prognostications or, if we use them, to be in error, since the spaces of the zodiac which implant their powers in the planets would then pass over to others and become alienated. (trans. Robbins (1940)

This is a substantive theory about how astrology works and one that the friends of real, as opposed to merely notional, signs might reasonably reject. Moreover, the shift to tropical astrology represents a discontinuity with the earlier, Chaldean sidereal tradition. Ptolemy himself seeks to downplay the extent of discontinuity in his discussion of the Chaldean system (*Tetrabiblos* I.21), but any reader insightful enough to see the manner in which he utilises precession to argue for the tropical frame of reference will see the extent of the innovation. The Christian Origen (*Philocalia* 23.18) grasped the implications of precession and urged it as an objection against astrology.[[42]](#footnote-42)

Careful examination of the evidence we have for the practice of casting horoscopes in the time period after Ptolemy supports Proclus’ contention that most astrologers had no need of his innovations.[[43]](#footnote-43) Commenting on the conservatism in astrological practice, Jones remarks:

The real objection to Ptolemy’s precession theory was not astronomical in nature but astrological. Change the frame of reference for a horoscope, and you will find the Sun, Moon, and planets not only at different degrees, but often in different zodiacal signs possessing radically diverse qualities and influences; and when the equinoctial and solstitial points shift, this affects also the division of the zodiac by the ascendant and the other cardinal points. The interpretation of the horoscope will be utterly different. But the old methods resulted in successful astrological predictions, did they not? (op. cit,, 38)

Citing the passage from the *Timaeus Commentary* that we have been concerned with, Jones concludes that Proclus’ scepticism was reasonable in context. Even by Proclus’ day, horoscopy based on Ptolemy’s system could not claim a track record of success that would allow it to compete with (what nearly everyone at the time regarded as) the well-documented success of the older precession-free theory.

 Throughout this introduction I have been urging the view that Proclus is best understood as a philosopher who accords Plato’s dialogues a kind of evidential primacy over nearly ever other consideration. This explains the peculiar emphasis on time’s relation to eternity as well as his curiously non-physical interpretation of planetary order and his theory of planetary motion. Curiously, however, the rejection of precession, which initially appears to be a shining example of putting Plato first,[[44]](#footnote-44) actually turns out to be a well-founded conservatism about astrological practice.[[45]](#footnote-45)

**5. The greatest gift of all: the four kinds of living creature**

At *Timaeus* 39e4–9 the visible cosmos is made more like its intelligible paradigm by the introduction of the four kinds of living being. The paradigm – Living Being Itself – had four Forms of living creature present to it and the Demiurge now introduces sensible counterparts to these four intelligible kinds into the cosmos that he (timelessly) creates. Given the opposition between unity and divinity, on the one hand, and multiplicity on the other, you might wonder how the Demiurge’s gift of more kinds of living being makes the sensible cosmos more divine.

One obvious thought is that by putting the stars and planets in it, he puts *gods* in it (inter alia). Surely *that* must contribute to making it divine and blessed. But Proclus’ view is in fact more subtle than that. By putting visible counterparts of the four genera of living beings in it, the Demiurge bestows the final form of *wholeness* upon the cosmos. In this case, *adding* more things equates to making it more *unified* because of the kind of whole that these additional things make up.

 Proclus famously distinguishes three notions of wholeness.[[46]](#footnote-46) Some wholes are wholes-prior-to-the-parts. Other wholes are wholes-in-the-parts, while yet others are wholes-of-parts. We can see this triadic understanding of wholeness illustrated earlier in the *Timaeus Commentary* at II 196.25, ff where Proclus applies this threefold distinction among wholes to the genesis of the World Soul by the Demiurge.

The Demiurge makes the soul one whole, prior to its division into parts – i.e. prior to the introduction of the portions that correspond to the number series 1, 2, 3, 4, 6, 8, 9, 27 and the means that fill the intervals between them (*Tim*. 35b4–36b5). Prior to this division, the Demiurge mixes the two kinds of Being, Sameness and Difference (the divisible and indivisible kinds) into an intermediate mixture (*Tim*. 35a1–35b3) which forms the substrate of the ‘soul stuff’ that he goes on to divide out in portions. This is supposed to correspond to the whole-*before-*the-parts, since ‘the Demiurge does not destroy the whole when he uses it up in the parts’ (*in Tim*. II 195.32–196.1). It is thus analogous to the transcendent and unparticipated Form that is the paradigmatic cause of the participated Form. It communicates F-ness to its effects without being divided among them. It ‘remains in itself’. Similarly, this soul-mixture retains its wholeness in spite of being ‘parcelled out’ in portions corresponding to the number series just enumerated. What is true of a material thing, like bread dough divided into portions, is not true of the immaterial *ousia* of the World Soul. Proclus says that this is because the Being, Sameness and Difference from which it is composed is both divisible and indivisible. So it is divided into portions (in one sense) but also remains a whole. It is thus a whole-prior-to-the parts.

The phase of the psychogony corresponding to the portioning out into the sequence 1, 2, 3, etc establishes the whole-*of-*the-parts. It is the harmony – i.e. the ratios – between the portions that make this a whole essentially constituted by these parts. The Demiurge makes just the requisite amount of soul stuff to constitute these parts for ‘the whole-of-parts is neither more nor less than the appropriate parts’ (*in Tim*. II 236.2–3).

The phase of the psychogony where the Demiurge forms a continuous strip of the psychic stuff, then splits it down the middle, and joins the two strips end to end, constituting the circles of the Same and the Different, corresponds to the whole *in* the parts. The relevant consideration here seems to be that the three ingredients (Being, Sameness and Difference) as well as *all* of the harmonic ratios are *in each* of the circles. This notion that the whole in its entirety is in each part is the distinctive characteristic of the ‘whole in the parts’. A whole in the parts is something that resembles the unity of the intelligible world, where ‘each is in all and all is in each’.

In the discussion of the wholeness conferred upon the universe in the tenth gift, Proclus applies these different notions of wholeness to the universe itself rather than just the World Soul. The visible universe gets the first kind of wholeness – the wholeness-prior-to-the parts – when the Demiurge makes it a living being endowed with soul and intellect (*Tim*. 30b8). Proclus writes:

when that which was moved in a discordant and disorderly fashion was arranged and received order, then soul, intellect and divine unification *supervened* (ἐπιγενομένης). (*in Tim*. III 97.22–24)

This is a case of wholeness prior to the parts, because although these features may presuppose a certain arrangement, they are not *constituted* by it. They are prior.[[47]](#footnote-47)

The visible universe is also a whole-composed-*of-*parts. But it is not composed of just any parts: the universe is a whole composed from *whole parts*. Proclus places significant weight on *Tim*. 33a7 where Timaeus says that the Demiurge made the universe ‘a single whole, composed from wholes’ (ἕνα ὅλον ὅλων ἐξ ἁπάντων). The visible universe enjoys the second kind of wholeness because of the harmony that is established between these parts as a result of their being bound by proportion. The following passage illustrates this phase of the creation of the universe:

As the dialogue goes on, he then gave the second kind of wholeness to it when the double revolutions [of the circles of the Same and the Different corresponding to the celestial equator and the ecliptic] were set up, and the elements [in the world’s body] were bound together by proportion, as well as when the circles of the soul were arranged in terms of the monad, the triad, the tetrad and the heptad, for the universe is composed out of these things as parts. In fact, these things essentially constitute the universe as the universe. (*in Tim*. III 97.24–29)

Elsewhere Proclus argues that the heavenly spheres that make up the greater part of the universe are such that (a) they couldn’t make up anything but the universe and (b) the universe couldn’t be made up of anything but them (II 62.17–24). The essentially constitutive character of the universe’s parts means that they are harmonised – just as the portions within the World Soul are harmonised – and thus it too is a whole of parts.

 The third form of wholeness – the whole-*in*-the-parts – arises as a result of the fact that the parts that make the universe a whole-*of*-parts are themselves wholes. This means that they are such that every part of the whole is in each one. As such, each such whole is itself a (micro) cosmos and the whole (*in Tim*. III 99.5).

In any case, in the words at hand (*Tim*. 39e4–6) he gives the third form of wholeness to it, for it is necessary for each part of it to become a whole or for each part to have all things in a manner that is appropriate to itself, so while the heaven [has all things] in a celestial manner, the air [has all things] in an aerial manner, and the Earth terrestrially. This is the whole *in* the part, and it is through [exhibiting] this [kind of wholeness] that what includes all the living beings [sc. the cosmos] is assimilated to a greater degree to the paradigm [sc. the Living Being Itself]. (III 97.24–98.6)

On Proclus’ understanding, then, the creation of the four kinds of living being within the visible cosmos (*Tim*. 39e4–9) is simply a specific case of a more general endowment. The Demiurge endows the visible cosmos with the wholeness-in-the-parts in a very general sense. He does this in a very specific sense in making the four kinds of living being.

In the case of the kinds of living being, Plato’s text distinguishes four kinds based on where they reside: celestial, aerial, aquatic and terrestrial (*Tim*. 39e10–40a2). Proclus considers the relation of this division, based on habitation, to the division between gods, angels, daemons, demi-gods and mortal creatures that he thinks is part and parcel of Platonism. He rejects the view that this passage assigns gods to the celestial region, daemons to the air, demi-gods to the water and mortal creatures to the Earth, as *Epinomis* 984b might suggest (III 107.30–108.5) Instead, he follows Syrianus[[48]](#footnote-48) in locating *all* these ranks within *each* of the four kinds of living being – though he maintains silence, in this passage, on whether there are any mortal, celestial creatures.[[49]](#footnote-49) He is clear, however, that there are gods, daemons, heroes and even mortal creatures (i.e. birds) that are found in the aerial kind. It is consistent with what he writes here that all should be present in the aquatic and terrestrial kinds too.[[50]](#footnote-50) In fact, if he wants to carry through with the idea that in engendering the four kinds of living being within the visible cosmos the Demiurge introduces the kind of wholeness characteristic of a whole-in-the-parts, he *must* think this. It is characteristic of a whole-in-the-parts that all that is in the whole of which it is a part is in the part in a manner appropriate to it. If the tenth gift bestows this kind of wholeness upon the visible universe, then each of the four kinds of living being must exhibit all the ranks – gods, daemons, demi-gods and mortal creatures – that occur in the visible universe.

 In any event, the status (*taxis*) of god as opposed to daemon is a relational notion, according to Proclus, so we may expect some terminological fluidity. At the conclusion of Book IV, Proclus raises the question of why Plato refers to what Proclus regards as ‘sub-lunary gods’ as *daemons* (*Tim*. 40d6–7). Here too he thinks that Syrianus’ teaching solves the problem:

He [sc. Syrianus] says that there are daemons among the celestial beings as well as gods among the things in the sub-lunary realm. But all [the members of] the genus up there are called ‘gods’ because he calls the form (*idea*) of the celestial gods a genus (*genos*) (and daemons too have been brought in through this term). However in this case [i.e. in the lemma under discussion] the entire plurality [of superior beings are referred to as] daemons. In the former [context], the property that is distinctive of divinity predominates, while here it is the property that is distinctive of daemons – a fact which, when looked upon in isolation, led some people to separate the divine and the daemonic in terms of the celestial and the realm of Becoming. But it is requisite to station both [kinds] in both [places], and although the divine [kind] abounds up there and the daemonic down here, nonetheless the divine [sort] does exist down here. (III 154.32–155.9 = Syrianus *in Tim*. fr. 20 (part) in Klitenic Wear)

The immediate effect of what the Demiurge does is that none of the parts that compose the visible god that is the universe are themselves exempt from divinity. There are gods (as well as daemons) *everywhere* – even here in the sub-lunary region. Syrianus and Proclus anticipate that some people might object to the idea that gods could be present to the gross matter of the sub-lunary region. In response, our Platonists point to the success of theurgical animation of statues. Here the theurgist fashions matter in such a way that it can participate in a god. Are we to believe that the *Demiurge* is unwilling or unable to do just what the theurgist does? Of course not!

 This implications of the tenth gift of the Demiurge to the visible cosmos are not insignificant to Proclus’ view of matters. When modern interpreters wrestle with the problems of Plato’s *Timaeus*, questions about the meaning and significance of 40d6–e2 do not loom large.[[51]](#footnote-51) Yet this passage provides Proclus with occasion for one of his relatively rare allusions to the problems that beset his world (III 152.32–153.16). He comments that people – and I think we may assume that Saffrey was correct and that Proclus means specifically *Christians*[[52]](#footnote-52) – more easily forget the gods that are nearest to them. Every cult or sect agrees that there is a single first principle that is divine, and they call upon this highest god for aid. Some of them stop there with only the one god, while others acknowledge that there are additional gods and also daemons, but forget about heroes. All of these people neglect the gradations of divinity that are more proximate to them. Proclus claims that the greatest task for philosophy is to fill in all the stages of procession so that we know both the intermediates and the *final* terms. In short, Proclus thinks that too many people ignore the divinity that is immediately present to us even in the region below the Moon. Proclus claims that Plato’s own words alert us to this very danger.

Plato right at the beginning celebrated and announced the generation of the sub-lunary gods as divine and intellectual, there being no need whatsoever of any such [corresponding] indication in the case of the celestial gods. (III 152.27–30)

The implication of the last remark is that there is no need to stress the fact that the stars and planets are gods. Every right-thinking person – leaving aside, of course, the Christians[[53]](#footnote-53) – knows *that* already. But even right-thinking Platonists (e.g. Plotinus) may have failed to appreciate the extent to which the gods are present right here in the sub-lunary region.[[54]](#footnote-54)

 Lane Fox (1987) documents the evidence that pagans in late antiquity sincerely hoped for a direct manifestation of the gods and believed that this was possible. Proclus’ interpretation of the tenth gift of the Demiurge locates a basis for such hope in the inspired text of Plato’s *Timaeus*.

**6. Conclusion**

Throughout his commentary on this portion of the *Timaeus*, Proclus treats Plato’s words as the best guide to the truth about the nature of time and eternity. It is truly an inspired text and thus has evidential primacy in providing an account of the nature of time. Where Plato discusses the motions of the stars and planets, or alludes to the Great Year, Proclus seeks to understand his words as referring primarily to the intelligible causes of these things. Plato’s text is altogether more “elevated” and thus not in direct competition with writers like Ptolemy. While the Demiurge’s population of the visible cosmos with various divinities does not occupy modern readers of the dialogue to any great extent, Proclus regards this as a key part of the Plato’s text. The basis of this difference is not hard to understand. Proclus regards the goal of living as assimilation to the divine. Plato’s account of the population of the cosmos with all the kinds of living things – and especially gods and daemons – assures us that the gods that we seek to become like are everywhere. We are not severed from the divine even here in the realm of Becoming.

**Works Cited**

Baltzly, D. (2008). 'Merological Modes of Being in Proclus.' *Ancient Philosophy* **26**(2).

Bouché-Leclercq, A. (1899). *L'astrologie grecque*. Paris, Leroux.

Bourne, C. (2006). *A future for presentism*. Oxford and New York, Clarendon and Oxford University Press.

Callataÿ, G. d. (1996). *Annus Platonicus: A study of world cycles in Greek, Latin and Arabic Sources*. Louvain, Institut Orientaliste, Université Catholique de Louvain.

Dodds, E. R. (1963). *Proclus: The Elements of Theology*. Oxford, Clarendon Press.

Evans, J. (1998). *History and Practice of Ancient Astronomy*. Oxford, Oxford University Press.

Fine, G., ed. (2008). *The Oxford Handbook of Plato*. Oxford, Oxford University Press.

Goldstein, B. R. (1967). 'The Arabic Version of Ptolemy's Planetary Hypotheses.' *Transactions of the American Philosophical Society* **57**(4): 3-55.

Heath, S. T. (1981). *Aristarchus of Samos: the ancient Copernicus*. New York, Dover.

Hedgus, T. (2007). *Early Christianity and Ancient Astrology*. New York, Peter Lang.

Joly, E. T. (2003). 'Time is not a product of the soul: Proclus versus Plotinus.' *Laval théologique et philosophique* **59**(2): 225-234.

Jones, A. (1990). *Ptolemy's first commentator*. Philadelphia, American Philosophical Society.

Jones, A. (2009). 'Ancient Rejection and Adoption of Ptolemy's Frame of Reference for Longitudes' in *Ptolemy in Perspective: Use and Criticism of his Work from Antiquity to the Nineteenth Century*. Jones, A., ed. Netherlands, Springer**:** 11-44.

Klitenic Wear, S. (2011). *The Teachings of Syrianus on Plato's Timaeus and Parmenides*. Leiden, Brill.

Kutash, E. (2011). *The Ten Gifts of the Demiurge: Proclus' Commentary on Plato's Timaeus*. London, Duckworth.

Lane Fox, R. (1987). *Pagans and Christians*. New York, Knopf.

Lernould, A. (2001). *Physique et Theologie: lecture du Timee de Platon par Proclus*. Pas-de-Calais, Presses Universitaires du Septentrion.

Lloyd, G. E. R. (1973). *Greek Science After Aristotle*. New York and London, Norton.

Martijn, M. (2008). *Proclus on Nature: Philosophy of Nature and its Methods in Proclus’ Commentary on Plato’s Timaeus*. Leiden, Brill.

Pedersen, S. and Hannah, R. (2002). 'Celestial Dynamics at the Crossroads: Proclus' reassessment of Plato in the light of empirical science.' *Antichton* **36**: 65-79.

(1904). Proclus: *In Platonis Timaeum Commentaria*. Leipzig, Teubner.

Robbins, F. E. (1940). *Ptolemy: Tetrabiblos, edited and translated into English*, Harvard University Press.

Saffrey, H. D. (1975). 'Allusions antichretiennes chez Proclus: le diadoque Platonicien.' *Revue des Sciences Philosophiques et Philogiques* **59**: 553-562.

Sambursky, S. (1962). *The Physical World of Late Antiquity*. New York, Basic Books.

Sambursky, S. and Pines, S (1971). *The Concept of Time in Late Neoplatonism*. Jerusalem, Israel Academy of Sciences and Humanities.

Scotti Muth, N. (1993). *Proclo negli ultimi quarant'anni : bibliografia ragionata della letteratura primaria e secondaria riguardante il pensiero procliano e i suoi influssi storici (anni 1949-1992)*. Milan, Vita e Pensiero.

Segonds, A. (1987). 'Proclus: Astronomie et philosophie' in *Proclus: Lecteur et interprète des anciens*. Pépin, J. and Saffrey, H. D., eds. Paris, Éditions du C.N.R.S.**:** 319-34.

Shaw, G. (1995). *Theurgy and the Soul: the neoplatonism of Iamblichus*. University Park, Pennsylvania State University Press.

Sider, T. (2001). *Four-dimensionalism : an ontology of persistence and time*. Oxford and New York, Clarendon and Oxford University Press.

Siorvanes, L. (1996). *Proclus: Neo-Platonic Philosophy and Science*. New Haven, Yale University Press.

Sorabji, R. (1983). *Time, creation and the continuum : theories in antiquity and the early Middle Ages*. London, Duckworth.

Steel, C. (2001). 'The Neoplatonic doctrine of time and eternity and its influence on medieval philosophy' in *The medieval concept of time: studies on the scholastic debate and its reception in early modern philosophy*,Porro, P. ed. Leiden, Brill**:** 3-31.

Taub, L. C. (1993). *Ptolemy's universe: the natural philosophical and ethical foundations of Ptolemy's astronomy*. Chicago, Open Court.

Taylor, A. E. (1928). *Commentary on Plato's Timaeus*. Oxford, Clarendon Press.

Urmson, J. O. and Siorvanes, L. (1992). *Simplicius: Corollaries on place and time*. London, Duckworth.

Vlastos, G. (1968). 'The Disorderly Motion in the Timaeus' in *Studies in Plato's Metaphysics,* Allen, R. E., ed. London, Routledge**:** 379-420.

1. Kutash (2011) argues that this notion of the ten gifts structures the entirety of Proclus’ dialogue – not merely the commentary subsequent to the introduction of the gifts at *in Tim*. II 5.17–31. I agree that the notion of the ten gifts structures Proclus’ commentary in the present volume and the previous two in this series (Book III). I have some hesitation about the manner in which Kutash thinks that it organises the material in volumes 1 and 2. Moreover, I think that the influence of the ten gifts as an organising principle peters out in Book V (the sixth and final volume in this series). [↑](#footnote-ref-1)
2. For the period 1949–92 see Scotti Muth (1993). For 1990 to the present, the De Wulf–Mansion Centre maintains an online bibliography at <http://hiw.kuleuven.be/dwmc/ancientphilosophy>. [↑](#footnote-ref-2)
3. Sambursky (1962), 17–20. [↑](#footnote-ref-3)
4. Translation in Urmson and Siorvanes (1992). [↑](#footnote-ref-4)
5. Steel (2001). [↑](#footnote-ref-5)
6. For discussion, see Sorabji (1983), 125–7. [↑](#footnote-ref-6)
7. Four-dimensionalism and presentism are competing views of time, but recent books by proponents of each seek to show how their preferred view derives support from platitudes about time as well as showing that their theory is consistent with the theory of relativity. Cf. Sider (2001) and Bourne (2006). [↑](#footnote-ref-7)
8. Or at least Proclus and the other Neoplatonists did not think so. This reading was defended in antiquity by Plutarch and Atticus (cf. Proclus, *in Tim*. I 276.31–277.7 and III 37.7–38.12) and again in the modern era by Vlastos (1968). [↑](#footnote-ref-8)
9. Cf. III.8.8; V.1.7; VI.6.8. [↑](#footnote-ref-9)
10. *in Tim*. III 21.14–24.31. This textual criticism probably derives from Iamblichus’ *Timaeus* *Commentary*; cf. fr. 63 (Dillon) = Simplicius *in Phys*. 793.23, ff. Cf. Joly (2003). [↑](#footnote-ref-10)
11. In what follows, I’ll write ‘Eternity’ with a capital letter where the context suggests we are talking about some specific intelligible principle, like a Form. While this convention works well enough for Plato, with the someone like Proclus the matter is more complicated because there are different orders of intelligible things. In fact, it turns out that for Proclus Eternity is not a Form – it is higher than the intelligibles and among their causes. Even so, the use of the capital letter indicates that we are in a context where we are looking for a specific intelligible, belonging to some order or other, rather than just talking about eternity in the abstract. [↑](#footnote-ref-11)
12. Sambursky (1971). [↑](#footnote-ref-12)
13. Sorabji (1983), 12. Sorabji concedes that there is some resemblance between Iamblichus’ notion of flowing time and McTaggart’s A-series, but thinks that we ought not credit Iamblichus with anticipating the modern distinction unless there is clear evidence that he has anticipated McTaggart’s notion of the B-series as well. Sorabji argues that he did not. I am inclined to go further than Sorabji: because Iamblichus’ distinction seems to be a consequence of applying more general principles about participation to the case of time, it does not seem quite right to say that he anticipates even McTaggart’s A-series. McTaggart’s distinction arises from reflections on tense. If we suppose that a philosophical distinction consists not merely in the drawing of a boundary that isolates a class, but in the reasons for isolating it, it seems to me that it is a mistake to credit Iamblichus with even half of McTaggart’s distinction. What Iamblichus was doing was part of a very different philosophical project, with only tenuous connections to that of McTaggart. [↑](#footnote-ref-13)
14. Dodds (1963), 228. [↑](#footnote-ref-14)
15. See pp. 20–2 of Introduction to Volume II in this series for an extended discussion of Proclus arguments against the literalist reading of the universe’s creation. [↑](#footnote-ref-15)
16. It appears that there *may* have been rituals associated with the Oracles celebrating the Seasons, Months, etc. [↑](#footnote-ref-16)
17. For this thriving industry, see Callataÿ (1996). [↑](#footnote-ref-17)
18. Lernould (2001) argued that the theological aspect of Proclus’ treatment of the *Timaeus* largely dominates his treatment of Plato’s dialogue as a work of *physiologia*. For a useful corrective, see Martijn (2008), especially 6–7. [↑](#footnote-ref-18)
19. The lemma begins: They [sc. the planets] started to turn according to the motion of the Different which was oblique … [↑](#footnote-ref-19)
20. Cf. *in Tim*. I 2.5, ff. [↑](#footnote-ref-20)
21. Cf. Macrobius, *in Som. Scip.* I.19 for a discussion of the competing orders and the claim that the Chaldean order has become the dominant one. [↑](#footnote-ref-21)
22. Theon 188.25–188.1 (Hiller) cited in Segonds (1987), 321. [↑](#footnote-ref-22)
23. *Hyp*. 7.50.3–53.1 [↑](#footnote-ref-23)
24. Lloyd (1973), 61–5. [↑](#footnote-ref-24)
25. *Elementa astronomiae* 1.19.1–3 Ὑπόκειται γὰρ πρὸς ὅλην τὴν ἀστρολογίαν ἥλιόν τε καὶ σελήνην καὶ τοὺς ε πλανήτας ἰσοταχῶς καὶ ἐγκυκλίως καὶ ὑπεναντίως τῷ κόσμῳ κινεῖσθαι. [↑](#footnote-ref-25)
26. That is, the large circle upon whose circumference the epicycle is located. [↑](#footnote-ref-26)
27. Pedersen and Hannah (2002) credit Proclus with being the first to call into question the presupposition that celestial motion must be circular. [↑](#footnote-ref-27)
28. Cf. Geminus, *Elementa astronomiae* 1.20.5–7 for the contrast between the perfectly regular and circular motions of the heavenly bodies and human fallibility. [↑](#footnote-ref-28)
29. At *in Tim*. III 80.5–10 Proclus specifies more exactly the nature of this regular irregularity: the planets’ motion is that of the spiral. This is an intermediate motion between the strictly circular motion appropriate to the fixed stars (79.14) and the rectilinear motion that is found in the realm of Becoming. Cf. 148.31 for idea that the length of a spiral can be calculated from straight lines and circles. [↑](#footnote-ref-29)
30. Cf. III.56.30–1, ὥσπερ ὑπὸ μηχανῆς ὑποτίθενται τὴν κίνησιν τῶν οὐρανίων. [↑](#footnote-ref-30)
31. Reading ἐκ τῶν ἁπλῶν with Schneider for the manuscripts’ ἀπλανῶν. [↑](#footnote-ref-31)
32. See figure 3 in Jones (1990), 8. [↑](#footnote-ref-32)
33. *Planetary Hypotheses* 1.2.3, Goldstein (1967), 7. [↑](#footnote-ref-33)
34. Taub (1993), 111–12. [↑](#footnote-ref-34)
35. Julian the Theurgist was the son of Julian the Chaldean. The Chaldean Oracles were believed to have been dictated by the gods to Julian, either directly or through the medium of his son. The son himself was a wonder-worker of prodigious repute who conjured rainstorms, stopped plagues and cast thunderbolts at the emperor’s enemies. See CHPLA, 161. This passage seems to be drawn from a prose work by Julian the Theurgist that Proclus quotes at several points with variations. Lewy (1956), 123–25 draws them all together and translates the combination as follows: ‘The demiurge bent heaven into a curved shape, and attached to it the great multitude of the fixed stars, forcing fire to fire, so that they may not move through wearisome strain, but by a fixture that is not subject to vagaries. He sent underneath six planets, and in their midst the seventh: the fire of the Sun; and he suspended their disorder on the well-ranged girdles of the spheres.’ Given the identity of the writer, this must be treated as a divine revelation about the order of the planets that, as Proclus says, it would be impious to disbelieve. [↑](#footnote-ref-35)
36. ᾧ μὴ θέμις ἀπιστεῖν. I am unsure how much to read into Proclus’ way of putting this point. It seems just possible that the order of the planets – considered now as the visible bodies of the heavenly gods – are merely matters for *pistis*. *Pistis* or *doxa* is the cognitive attitude that correlates with sensibles and it is inferior to the attitudes we may toward more intelligible objects. Hence, nothing too important is at issue in the question between the Platonic and Chaldean orderings of the planets. [↑](#footnote-ref-36)
37. Plato himself reports that Anaxagoras thought that the Moon’s light was dependent upon the Sun (*Crat*. 409a9–b1 = A76; cf. B18). It is unclear whether Anaxagoras took this as evidence that the Sun was positioned immediately above the Moon. Heath (1981), 85 mentions this evidence from Proclus. [↑](#footnote-ref-37)
38. Siorvanes (1996), 290. [↑](#footnote-ref-38)
39. *in Tim*. III 125.4–16; cf. *Hyp*. VII 234.7–23. [↑](#footnote-ref-39)
40. Sambursky (1962), 145–49 and Taylor (1928), 209 cited in Siorvanes (1996), 285. To the list of critics we might add Bouché-Leclercq (1899) who, having just discussed Proclus’ view, contrasts his school with the Aristotelian one in the following terms: ‘Le grain de folie mystique qui travaille les cerveaux platoniciens n'entre pas dans l'école d'Aristote’ (p. 115). [↑](#footnote-ref-40)
41. Evans (1998), 262. [↑](#footnote-ref-41)
42. Cf. Hedgus (2007), 32. [↑](#footnote-ref-42)
43. ‘The spread of Ptolemy’s tables during the first two centuries after Ptolemy, as evinced by the extant copies on papyrus and the planetary almanacs dependent on Ptolemy, seems to have had surprisingly little effect on the methods of generating horoscopes.’ Jones (2009), 32. [↑](#footnote-ref-43)
44. Cf. Segonds (1987), 331: ‘Les astronomes se trouvent donc tout simplement ruiner l'ordre de l'Univers, et le choix entre des hypothèses qui finissent par contredire l'ordre du monde et, au contraire, les enseignements parfaitement clairs des Dieux eux-mêmes ou de Platon, n'est pas vraiment difficile. C'est l'autorité des Dieux qu'il faut suivre, c'est 'enseignement de Platon qu'il faut défendre, puisque l'on ne viole pas l'ordre de l'univers en le faisant.’ [↑](#footnote-ref-44)
45. Siorvanes (1996), 292–3 reaches a similar conclusion about Proclus’ reasonableness in rejecting precession, though for somewhat different reasons. He thinks that Proclus was justified on grounds of theoretical simplicity and economy. [↑](#footnote-ref-45)
46. See *ET* prop. 67. For discussion, see Baltzly (2008). [↑](#footnote-ref-46)
47. Compare *in Parm*. 826.37–827.1 where certain qualities which supervene upon bodies (τὰ ἐπιγιγνόμενα τοῖς σώμασι) come about by virtue of rational-forming principles (*logoi*) since the mixture of these bodies is not sufficient for them. Such rational-forming principles are like Aristotelian Forms in providing an internal origin of change and development. They may presuppose a certain material composition for their presence, but they have a causal efficacy above and beyond that of the matter. This is particularly true in the Neoplatonic adaptation of the notion of rational-forming principle, since here matter – considered in itself, and not simply as a qualified kind of proximate matter – is causally inert. [↑](#footnote-ref-47)
48. 108.5–28 = Syrianus, *in Tim*. fr. 19 in Klitenic Wear (2011). I disagree with what I take to be Klitenic Wear’s reading of this passage, for it appears that she assigns only mortal creatures to the terrestrial kind and only spirits and fish to the aquatic kind. [↑](#footnote-ref-48)
49. Proclus might point to the fact that the Timaeus assigns each human soul to a heavenly body. Alternatively, he seems to take seriously the Orphic notion that the Moon is ‘another Earth’. Cf. *Orph. fr*. 91 (Kern) quoted at II 48.15 and III 142.15 and mentioned again at II 282.11 and III 172.21. [↑](#footnote-ref-49)
50. *in Tim*. III 108.13–16 τὸ δὲ ἔνυδρον πάντων τῶν διαλαχόντων τὸ ὕδωρ γενῶν καὶ τῶν ἐν ὕδατι τρεφομένων, τὸ δὲ πεζὸν τῶν τὴν γῆν κατανειμαμένων καὶ ἐν γῇ συνισταμένων τε καὶ φυομένων ζῴων. If the notion that the rank of god is manifested in the terrestrial case causes you alarm, recall that the Earth is itself ‘the very first and most senior of gods of all such gods as have come to be within the heavens’ (Tim. 40c2–3). Proclus claims that the physical, terrestrial body is not that which is most truly the Earth, but it is nonetheless the final manifestation of the intelligible Earth and filled with life (*in Tim*. III 135.20). [↑](#footnote-ref-50)
51. The index locorum for the 600 page *Oxford Handbook of Plato* (Fine (2008)) yields exactly zero citations of *Timaeus* 40d–e. [↑](#footnote-ref-51)
52. Saffrey (1975), 558–9. [↑](#footnote-ref-52)
53. Cf. III 71.5–8 where Proclus claims that in *Tim*. 38e3–6 Plato provides an account of the fact that each planet is a living being, dependent upon a divine soul, ‘for those who are capable of seeing it’. Festugiére asks who might be deemed incapable of seeing this, and the answer, of course, is the Christians. Cf. Clement, *Protrepticus* 6.67.2.10 where Clement complains that those who regard the stars and planets as gods confuse God with God’s works. [↑](#footnote-ref-53)
54. Shaw (1995) argues that Iamblichus was anxious to restore divinity to the realm of material things in response to Porphyry and Plotinus. [↑](#footnote-ref-54)